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INTRODUCTION

The scientific proceedings *Landscape Architecture and Art* of the Latvia University of Agriculture (LUA) increasingly wider and deeper continue to study the conclusions of research on the context searches of the city environment and its green landscape space.

The research is summarized not only by professionals and doctoral students of the Latvian architectural science, but also by scientists from universities abroad.

The themes of articles include processes of transformation of urban construction theories that are relevant to the changes of the functional zoning in recent years, focusing also on the green plantation area – reconstruction of parks, squares and street landscaping.

The research material also summarizes the visually aesthetic evaluation of backyards of residential areas of multi-apartment houses and quality and density of the green plantations. The results of scientific research draw attention to the fact that municipalities still have much to do in order to create a compositional balanced perception of green plantations and architectural shape of buildings. It is also attributable to not losing the silhouette of the city's historic building behind a dense tree cover. In turn, more and more frequent use of delimiting outer walls of glass makes it possible for the green structure to visually "break" from the outdoor space into the inner space. Avant-garde in technologies and the quest for architectural and "green wedges" harmony undeniably gives an aesthetic contribution to the urban expressiveness.

The issue of publications also includes articles on the cultural historical landscape space, which is related to the research on the building sites of old parks and manors as well as landscapes of the churches of Latgale.

The collected articles can also be useful for architects and urban planning professionals, and authorities responsible for the maintenance and protection of the cultural heritage.

By the increase of the number of new scientists in architecture and art, undeniably, a serious contribution is given to the opportunities to develop and maintain the cultural landscape of the towns and the countryside in Latvia.

This academic year is notable for the Latvia University of Agriculture as our *Alma Mater* marks its 150th anniversary. A beautiful gift for their University have given the young scientists this year, who hold the Doctor of Science (Architecture) degree with a major in Landscape Architecture – Kristine Dreija "Historic gardens and parks of Latvia in the present rural landscape" and Evita Alle "Contemporary art in the Latvian cultural landscape".

PRIEKŠVĀRDS

Latvijas Lauksaimniecības universitātes (LLU) zinātnisko rakstu izdevums *Landscape Architecture and Art* aizvien plašāk un dziļāk turpina aplūkot pētījumu atziņas par pilsētvides un tās zaļās ainavtelpas konteksta meklējumiem.

Pētījumus apkopojuši ne tikai Latvijas arhitektūras zinātnes speciālisti un doktoranti, bet arī zinātnieki no ārvalstu universitātēm.

Rakstu tematika ietver pilsētbūvniecisko teritoriju transformācijas procesus, kas saistāmi ar pilsētplānojuma funkcionālā zonējuma izmaiņām pēdējos gados, nesot līdzi arī zaļo stādījumu teritoriju - parku, skvēru un ielu apzaļumojumu rekonstrukciju.

Pētījumu materiāls apkopo arī daudzdzīvokļu dzīvojamo zonu iekšpagalmu vizuāli estētisko vērtējumu, kā arī pagalmiem līdzās esošo ielu zaļo stādījumu kvalitāti un blīvumu. Zinātnisko pētījumu rezultāti vērš uzmanību uz to, ka pilsētu pašvaldībām vēl daudz darāmā, lai kompozicionāli sabalansēti veidotos zaļo stādījumu un ēku arhitektoniskā veidola uztvere. Tas ir attiecināms arī uz pilsētas vēsturiskā apbūves silueta nepazaudēšanu aiz blīva koku apauguma. Savukārt, aizvien biežāka norobežojošo stikla ārsienu pielietošana dod iespēju zaļajai struktūrai vizuāli „ielaucties" no ārtelpas iekštelpā. Avangards tehnoloģijās un meklējumi arhitektūras un „zaļo ķīļu" harmonijā nenoliedzami dod estētiski augstvērtīgu pienesumu pilsētvides izteiksmīgumam.

Krājumā ietvertas arī publikācijas par kultūrvēsturisko ainavtelpu, kas ir saistīts ar pētījumiem par veco parku un muižu apbūves teritorijām, kā arī par Latgales dievnamu ainavām.

Rakstu krājumā publicētais var noderēt profesionālajā darbā gan arhitektiem, gan pilsētplānošanas speciālistiem, gan par kultūras mantojuma saglabāšanu un aizsardzību atbildīgajām institūcijām.

Pieaugot jauno arhitektūras un mākslas zinātnieku skaitam, nenoliedzami tiek dots nopietns pienesums Latvijas pilsētu un lauku kultūrainavas attīstības un saglabāšanas iespējām.

Šis studiju gads ir Latvijas Lauksaimniecības universitātes zīmē, jo mūsu *Alma Mater* svin 150 gadu jubileju. Skaistu dāvanu savai universitātei šogad ir pasnieguši jaunie zinātnieki, kas ieguvuši doktora grādu arhitektūras zinātnes ainavu arhitektūras apakšnozarē – Kristīne Dreija „Latvijas vēsturiskie dārzi un parki" un Evita Alle „Mūsdienu māksla Latvijas kultūrainavā".

Aija Ziemeļniece
Editor in Chief

CONTENTS

The Landscape After: approach of *Landesgartenschau* to reconstruct postindustrial territories

Valeriy Nefedov, *Saint Petersburg State University of Architecture and Civil Engineering*

Abstract. Postindustrial territories landscape transformation on the example of *Landesgartenschau* 2012 in Bamberg, Germany organization are analyzed as approach to change the quality of space with positive ecological dynamic. Variety of mixed recreational functions, offered during landscape exhibition time, had been provided due to the landscape structural changes and successful natural resources regeneration. Making additional efforts to create new components in the landscape after industrial using had initiated important economic and social process on previously depressed territory.

Keywords: postindustrial territory, landscape transformation, *Landesgartenschau*, ecological reconstruction.

Introduction

Increasing role of postindustrial territories landscape-ecological reconstruction becomes more evident as urban development is going more quickly towards new spaces on the cities periphery cultivation. Situated between new expanded residential areas and historical centre zones, many industrial territories are occupying very convenient positions nearly to transport infrastructure and parts of potentially attractive landscape, for example, rivers and canals. After enterprises closing as technology became obsolete lost interest of developers to these territories is explained by additional expenses on the land reclamation and space rehabilitation. These reasons are of course economically understandable. But at the same time these often abandoned spaces in the cities have increasing importance on the way to solve many problems in the urban landscape, firstly, ecological and social.

Landscape of "gray" belt, where old industrial buildings are for a long time surrounded with ecologically non balanced, aesthetically non attractive and functionally non effective used open spaces, becomes the subject of required scientific researches to improve existing situation. The necessity to find and to substantiate the possibility for landscape design technologies using makes really topical different strategies analyzing, combining effective economic mechanisms and natural recultivation. Transformation of depressed territories in many cases not obligatory includes the industrial buildings demolition, that might take a big amount of financial resources. The aim to find the solution when consecutive changes in the landscape on these territories could go towards positive qualities achievement by resources of nature regeneration with future self regulation introduction might be the way to more sustainable development.

Already during several decades German experience to combine territories ecological reconstruction, economical development and social adaptation by regularly landscape events like *Gartenschau* (Federal Gardening Exhibition) arranging gives many reasons to think about this way as evident approach to change mostly negative image of postindustrial territories towards mainly positive situation. One of the most interesting aspects of such transformation is the approach of new landscape structure creation to provide social activities increasing in the friendly environment maintenance. Example of passed *Landesgartenschau* in Bamberg on 2012 [4], already became the history, has in scientific sense some important positions to be analyzed.

Methods and purposes

Traditionally the places for future *Gartenschau* organization in Germany are determined according to the national programs and are realized with necessary financial supporting [1]. The aim to transform postindustrial landscape from problematic situation towards sustainable developed territories usually includes a lot of technological, ecological, aesthetical, cultural, social, economical and even political aspects. Each case and each site has several peculiarities, as from the point of view of natural resources of the site, as well from the point of preserving or partly demolishing industrial buildings. In Bamberg on 2012 Bavarian Garden Show had been arranged on the territory of 18.5 hectares [2], where previously industrial functions had dominated.

During long time (started on 1856) of using for textile industry development by Bamberg Mechanical Cotton-Spinning and Weaving Company big part of territory was occupied by

factory buildings between two water spaces. From 1927 the Erlangen-Bamberg cotton mill (ERBA for short) had developed big amount of raw fabric production, that was successfully continued up to late 1992 and early 1993, when the factory had filed for bankruptcy [4]. From that moment the problems of territory using had started to grow, because occupying very attractive for new development site, surrounded by water and nearly to residential areas, industrial structures and ecological consequences became the braking factor on the way to involving this territory to new active life. Open spaces around the structures step by step, staying in rest, had received natural re-plantation (pioneer vegetation), but this quality of landscape did not gave too much occasions for effective using.

In 2007 idea to arrange *Landesgartenschau* on the previously used by ERBA territories was offered by Stadt Bamberg and the works of landscape transformation had taken place from 2009 up to 2012. Total expences for the program realization were 14.2 Million Euro [2]. Such important and really significant for the city postindustrial territories rehabilitation became possible because of correctly understood role of such regeneration, when the landscape is analyzed from many aspects and is modified on the vector of sustainability.

For certain logic of postindustrial landscape transformation understanding, as Bamberg example might be taken for many others problematic sites positive changing, one of the first important research method is *contextual analysis*. In order to solve any problems of such territories several positions have to be analyzed, including:

1) the quality and location of main industrial buildings valuation for the possibility to be potentially used.
2) content, quality and placement of existing components of landscape.
3) surrounding functional priorities, directions and location of main links to postindustrial territory.
4) existing network of pedestrian communications and its relation to the structure of landscape.

Looking at the site of *Landesgartenschau* in Bamberg from the contextual aspect it was quite evident, that location of big area with main industrial buildings in the south-western part along the canal, technologically required for previous use, had complicated the links with nearly existing residential areas, and the territory development had to include additional link and entrance in the eastern part, providing wider possibilities for visitors. Quite important factor in contextual sense was existed for long time and well cultivated area of collective gardens in the north-western part of island. Such important natural and socially required resource of territory became one of the strongest factors for the future landscape functional transformation. Some of existed previously buildings because of their height dimensions and location were carefully analyzed from the position of potentially dominated visual symbols of the site as the memory of previous using.

Continuing of research methods applying on the postindustrial territories could be done on the way of open spaces landscape *structural analysis*, that it is necessary to make in order to understand such positions, as:

1) structure of riverside spaces with existing (or non existing) trees and bushes vegetation.
2) location and dimensions of open green spaces, that might be used for any activities planning.
3) variety of vegetation, existing natural accents and their location on the territory.
4) resistant green spaces with ability to carry additional recreational loading.
5) existing (or non existing) relief, plastic and dimensions of its profile.

For territory in Bamberg northern water boundary had more natural resources, as the destructive influence of industry on this part had less pressure. Riverside landscape there during long time had not visible planning organization, but big trees had created effect of natural green space adoptable for stay and movement. Territory of ERBA enterprise itself had up to 2009 year minimal landscape green components (except line of high trees along canal) and with priority of plane relief, representing the area with very required landscape transformations and nature elements integration. Buffer spaces in the southern-eastern part, between enterprise and residential areas were originally more green, offering additional potential for open green spaces equipment and different recreational functions introduction. The structure of landscape in the northern part, occupied by collective gardens, was quite monotones, subdivided in private small gardens with narrow pedestrian paths and ecologically balanced environment.

Landscape transformation as the object of research

Idea to arrange Landesgartenschau on the territory of former ERBA enterprise for the theoretical researches is quite interesting from the point of view how by means structural and functional landscape optimization to provide for the territory possibility on sustainable development, spending money less to season decorations, flower exhibitions or temporary expensive construction, but mostly on long time providing for the people to have adopted nature with the structure of spaces and accessibility on very attractive level. In this case solution to arrange *Gartenschau* is analyzed as certain scientific approach to create landscape with minimal decorative temporary qualities, but basing

Fig. 1. Small summer cafe integrated in the landscape. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

on natural resources to achieve new quality of landscape with big resource for social activities development and culture of space raising.

Using the concept of postindustrial landscape as the process of single-minded qualitative changes and analyzing Bamberg *Landesgartenschau* 2012 experience as one of latest examples it is possible to offer certain positions, that might be applied for analyzing similar problematic areas after long industrial using.

Conditions for the landscape changes

Looking at many years German experience in *Gartenschau* "technologies" using for the landscape transformation one of principal position, that makes possible to do any steps towards postindustrial territories regeneration, is providing coordinated program on the base of centralized and local budget combining, permanently private and state investments using to create conditions for consecutive recoupment of investments. The factor of payback becomes more important in the process of postindustrial territories transformation as possibilities for it are contained in the variety of functions, that might be included in former industrial buildings, and in the new approaches to arrange the system of small pavilions for different kinds of services (including small cafe), based on small business interests (Fig. 1). Commercial sense of landscape transformation becomes more widely integrated, involving visitors to participate in the economical supporting of such changes. To solve ecological problems of postindustrial landscape more often means to find non standard solutions of economical questions, as the possibilities of centralized financial supporting are traditionally limited. And this condition requires tolook for landscape solution how step by step return invested money, creating necessary spaces and centers. Of course the occasion to return part of money by sailing the entrance tickets existed during *Gartenschau* period, but the aim is to give later for the visitors chance to use equipped spaces without any payment.

Another important condition to provide successful transformation of postindustrial landscape from problematic to positively solved situation is contained in the additional improvement and equipment of transport effective system. Thinking about regenerated space means to answer many questions, including take into account increasing number of private cars potentially arrived to the areas of improved landscape and not always providing for people possibility to use bicycle for coming there. Solution, taken in Bamberg, was quite adequate to the limited spaces for big car parking planning nearly to the entrances. Location of the sites for future landscape regeneration in the industrial zones has some additional spatial resources to arrange parking areas aside from entrances location and to use convenient shuttle-bus as very effective transport. Thousands of Bamberg *Gartenschau* visitors had used every day

Fig. 2. Entrance pedestrian path with possibility to "read" landscape composition. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Fig. 3. New bridge along and over the river embankment - the space to feel water closely. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Fig. 4. Garden of insects - part of educational landscape space. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Fig. 5. Urban farm for young visitors, interested how to take the milk from cow. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

this way for arrival to new areas and this solution was quite positive as well for ecology of exhibition area. Especially for children-visitors the offer of small carts was offered nearly main entrances, and for the parents it was not the problem to spend some hours with little kids, moving on long distance.

The third condition to provide effective use of positively transformed postindustrial landscape is enough density and attractive network of the paths creation to main recreational facilities. In the case of Bamberg *Landesgartenschau* territories one of the most important solutions included new pedestrian paths network creation, including path along the river in the concept of ERBA-park. Spatial interpretation of these pedestrian ways was coordinated with the main idea of the territory - not only to see, but to interact with landscape. In order to avoid monotones space quality of long pedestrian ways planted vegetation along them was supplied with small textual information and benches to provide in the space scenario certain accents, possibility for short rest and attention attraction (Fig. 2). Such "interactive" character of transit spaces psychologically allowed to reduce the feeling of distance on the way and gave the chance to alternate visual communication with transformed landscape. The same aim was achieved by making new elegant bridge along and over the river embankment, that as well provided long distance visual interruption (Fig. 3).

Required qualities of the new landscape

In various parts of postindustrial territories different opportunities to offer for the visitors many activities scenarios usually exist, and the aim of landscape design in this case includes certain qualities of space providing, that might give the chance to use the spaces as possible effectively. One of basic qualities on such territories is attractiveness for interaction and recreation all ages groups of visitors. Functional alternation and structural organization could follow totally flexible way in the planning interpretation, but certain concentration of spaces for small children with parents closely to main entrances has evident reason. For this part of visitors really depending on as possible shorter distance to move in Bamberg *Landesgartenschau* big variety of playgrounds and interactive structures were offered. Combining of entertaining and developing spaces for children was successfully realized there on examples of small educational gardens with insects sculptures made of wood, as well as for more elder kids in the area of urban farm the knowledge of milk taking from cow on the rubber imitator was clearly demonstrated (Fig. 4, 5). Environment for adventures becomes more required

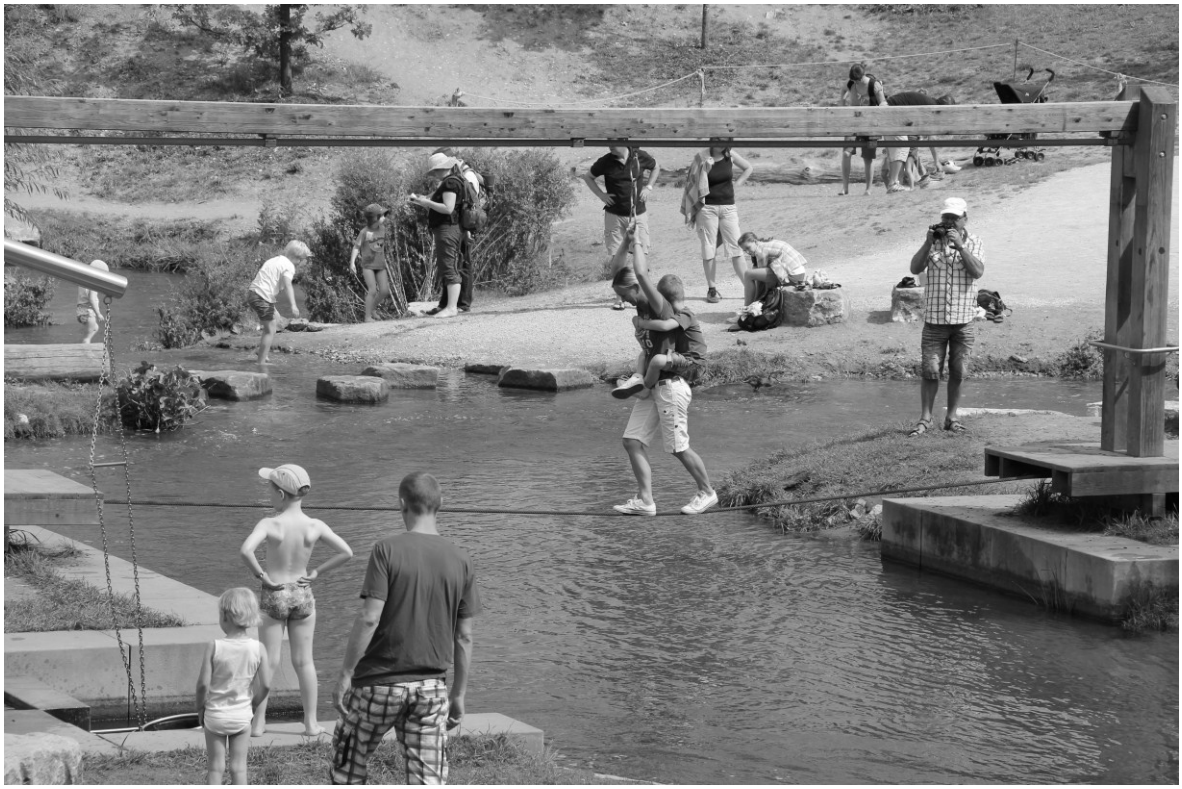

Fig. 6. New fish-canal with some extreme spaces for different ages visitors.
Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

in contemporary recreational landscape organization, and not only for children and teenagers. As the answer for this trend in Bamberg ERBA-park along new artificial canal it was possible to find several extreme zones with special equipment for different age potential users (Fig. 6). For young generation visitors different sport areas might give real feeling of required dynamical way of rest, and for this aim open spaces with necessary equipment could be the solution to provide their sustainable interest. For elder people, again combining entertaining and developing versions of rest, spaces like urban farm and urban vegetable-garden in the structure of postindustrial territory could provide attraction another group of visitors, giving permanently new information and involving in the interaction with exhibition space (Fig. 7).

Thinking about important qualities of transformed postindustrial territories it is necessary to mark such quality as color variety and alternation of nature accented zones. Especially after industrial using, when in the memory of several generations the main, key image of territory was mostly in gray color with minimal differences, due to variety of colors it could be possible to offer another space without negative psychological references. It does not means the necessity to use big quality of flowers in the open spaces landscape design, but supposes different colors in all components of landscape using, including several active parts of ground surface covering, small architectural forms, sculptural accents, some natural accents by colorful plants and special means of artificial relief shaping. Among interesting solutions in this sense in Bamberg *Landesgartenschau* such bright colors compositions as painted metal supporting walls of small high rows in vegetable-garden and contrast alternated colors in series garden (pharmacy garden, roses garden, Web garden, VIP garden, Radio garden, under water garden) were used (Fig. 8). To provide comfort and enjoyment - this aim is important in different colors using, mixing possibilities of natural materials with resources of artificial ones.

Accessibility for handicap people has to be guaranteed, and this quality put adequate requirements for all transformed territories organization. Located not far from residential areas, open spaces on postindustrial territories could have many actively or passively used zones, independent on people possible health troubles. Coming to such territories, this group of visitors is looking for wide variety of actions scenarios and is interested in the different events participation. Concentration of main points and zones of activities along equipped paths with hard and flat ground surface covering potentially is answering to the principal requirement of accessibility providing. Thinking about big amount of elder age visitors, the organizers of Landesgartenschau in Bamberg had arranged special Red Cross service on bicycle version, moving around mostly intensively visited places.

Fig. 7. Vegetable garden is offered for experiences people and for all, who would like to know more. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Fig. 8. Colors variety in thematic gardens put important accents in open space landscape. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Humanity of postindustrial territories landscape organization supposes many people different interests integration with professional responsibility to arrange environment without any barriers.

Methods of landscape transformation

Looking at example of Bamberg *Landesgartenschau* as approach to transform territories with certain problems towards more actively used space and ecologically balanced environment some of methods could be marked as potential for application. One of resources for such methods using is related with converted industrial buildings. Functional changing of interior spaces and adaptation to new using means in this case looking for such functions combining, that might have the most effective answer for the visitors interests, including arranging of small cafe, technical exhibitions with preserved mechanisms or interactive installations including, souvenirs shops or products exhibitions organization. Several industrial structures, that were included in the new landscape in Bamberg, had less technological sense, but more addressed to the memory of site and previous using remembering. Tall tower, that visually dominated over transformed landscape, together with factory chimney had created very resistant vertical accent, and for the future using, especially tower, might give additional sense for the panorama site location.

The structure of former controller centre was included in scenario of entrance space, keeping atmosphere of previous industrial enterprise.

Next method of postindustrial territories landscape transformation is connected with such positions as new spatial and structural components introduction, involving additional natural resource. Method of structural landscape change using is especially required after long time domination in the factories territories such characteristics as monotones, flat ground level surfaces and minimal variety of nature components. Answering to the aim of attractive spatial content providing not only for picturesque forms to look at but really different spaces creation to be used for various activities, Bamberg *Landesgartenschau* authors had operated with new artificial relief and new artificial canal construction. Plastically reach and silhouette active relief was done by using of waves and hills with grass surface by covering recultivated soil in the bottom (Fig. 9). Such technological solution became possible as previous territory using, especially profile of textile production, had not created ecological problems to the ground pollution, and big amount of replaced soil became convenient material for sculptural interpretation and significant transformation of open spaces relief. Structuring artificial hills by small supporting walls, that might be used as the seats, and putting flexibly and spontaneously many colored benches on the slopes, the spaces of new hills were included in the landscape scenario as the best and very intensively used parts of transformed landscape. This position is quite important to mark that in postindustrial territories in not mostly required a big amount of new vegetation planting, but creation in the image of space something radically new and really opposite to previous situation. In this sense new fish-canal, length 1200 meters (expenses for construction 2 Million Euro), done in the centre of ERBA-park from July 2009 up to March 2010 [3], really radically changed landscape situation in quite big part of territory. Crossed by several pedestrian bridges and filled with water vegetation along sloped embankments, the canal with very curved valley like streamer, with dimensions of water mirror pulsation and equipment for extreme games became very intensively used by visitors (Fig. 10). New functional and compositional axe as curved canal and green valley had totally destroyed previous monotones image of space adding at the same time a lot of dynamic activities for different ages people.

Fig. 9. Artificial green hills as opportunity to cover recultivated soil and to make landscape different. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Fig. 10. Water valley of artificial canal as the space for different activities and for nature regeneration. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Fig. 11. Cascade of flowers ribbon as certain memory of textile production reminder and spirit of space keeping. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

Fig. 12. Small forms design might be quite innovative and have more artistic sense for interaction. Bamberg *Landesgartenschau*, Germany [Source: photo by author, 2012].

The method of open spaces wide functional filling on postindustrial territories is very important to introduce better recreational offer, including contacts with the nature, cultural development, sport activities and knowledge broadening. Following to this version of open spaces functional transformation in Bamberg *Landesgartenschau* areas sport sites were alternated with thematic gardens, playgrounds for kids connected with sites for the rest on the hills, many cafe zones combined with sites for games and rest, vegetable gardens included together with urban farm. Existed previously areas of collective gardens were developed and arranged simultaneously as exhibition space. For additional people attraction in the area of collective gardens small living houses for renting were constructed with new agricultural sites. This important agricultural functions integration was one of main ideas to provide permanent territory using and to follow concept of sustainable development. Between the functions, that not often are included in contemporary park landscape, it is necessary to mark fragment of space, looks like cemetery. On small site with conditional graves the landscape possibilities to compose such spaces with plants, flowers, sculpture of glass, stone or metal were arranged. Making developed paths network crossing different functions zones the authors of concept - Berlin, *Tragwerksplanung* (*Brückenbauwerke, Leitfaden*): *Grad Ingenieurplanungen*, *Ingolstadt* [2] were realized the system of rest points with seats and tents between plants, composed in different ways and vegetation assortment. Such functional alternation of places to move and to sit, to play and to see was reflected on the structure of landscape and fixed in the nature infrastructure, giving total impression on flexible used spaces for wide diapason users interests.

Between the methods of landscape visual transformation one it is significant to mark - the method of semantic environment modeling, following the spirit of postindustrial territories. It was reflected in several sites and objects interpretation in order to make certain symbolical "bridges' with the history and peculiarities of previous industrial use. For example, some playground structural interpretation was arranged as wooden long sloped ribbon very similar visually to long fabric ribbon and equipped for different ages children games. Space for modern using with such thematically accented memories on previous use has evident resource for identification and gives additional task for making landscape in another way. One of structure looked like loom for fabric production but instead fabric the ribbon of cascaded flowers had remained the character textile industry (Fig. 11).

This aspect of landscape design is related to additional efforts to fix certain part of space history and at the same time to provide for the future, even under radical functional changes, consequent nature components widening as necessary condition on sustainable development.

The means of landscape design for territory transformation

Making the collating analysis of landscape situation on postindustrial territories before and after transformation it is possible to understand the role of landscape design means, firstly such as role of green infrastructure construction. The aim to change significantly ecological situation on such territories can be achieved mostly not only by increasing of vegetation density and quantity, but in very important scale by choosing of the most resistant local plants for new structure of spaces creation and making of assortment variety in certain parts with required identity. Biodiversity as very important quality of green infrastructure creation and the mechanism of constructed ecosystem future self-regulation it is necessary to put special attention.

Perennial plants using and minimal requirement for the future artificial supporting, priority of natural growing with long time sustainable image keeping and following to the peculiarity of each functional zones content give more sense to the territory rehabilitation. Landscape structure as the answer to mostly required kinds of activities could become flexible enough by placing principal components of green infrastructure along main communicative paths and around different dimensions open spaces. Answering to the economic reasons creation of postindustrial landscape as the park supposes minimal expenses on temporary compositions and putting maximal efforts to construct resistant ecosystem with natural structure, including canal or river valley for future self-balanced development.

Open spaces equipment with small architectural forms as special means to provide comfortable stay for visitors has in such areas wide sense and visible importance. Together with the vegetation small forms help to transform open spaces into adopted and scaled “green rooms” for different users groups with variety of staying scenarios. New design and technologies are required to make these “rooms” equipment more flexibly used and better integrated in the landscape. At the same time in the interpretation of these forms special design or artistic resource exists, meaning combination, for example, the place to sit with the occasion to see some actions or to contact with integrated sculpture, as well “sitting” nearly (Fig. 12). Making place from the point of view priority of action and interaction with equipped environment supposes to offer more small forms that allow to move and to change position or have kinetic character. Visible possibility to move or replace several seats on the green hills and using of traditional for private gardens hammock nearly to small cafe and kids playground might have influence on better social adaptation in postindustrial territories.

Conclusion

Territories previously used for industrial production are representing big spatial resource for urban landscape transformation by means consecutive ecological reconstruction with more balanced situation receiving. Different approaches already used in the international practice for this aim have wide diapason of methods and planning solutions, demonstrating mostly positive results for depressed territories rehabilitation. Development instead closed industrial functions new residential areas or business and trade centers construction, answering economic reasons, only partly might solve the problem of ecological reconstruction. German experience to use for this purpose *Landesgartenschau* as approach to transform former industrial areas into ecologically balanced areas by arranging such event as big landscape technologies exhibitions has certain priorities from the point of view green infrastructure growth and gives a lot of subjects for analysis.

Evident necessity to change the quality of depressed spaces in this way has main answers on the direction to arrange sustainable landscape with wide variety of users activities, operating in economic and cultural aspects. For the landscape organization this way represents wide possibility for experimental spaces modeling, combining changes of relief and water components, introducing means of vegetation distribution following mostly new functional logic of space.

As evident effectiveness of this approach it is possible to mark the opportunity to receive as result of transformation the landscape that is not similar to traditional park or only landscape exhibition. Landscape in this way gives for visitors as additional education and opportunity for active movement, as well as relax in natural surrounding and social contact between different generations. This concentration of different functions with adequate landscape interpretation helps to think about another structure of spaces, where choice to do something very different, often radically opposite, is reflected in certain “cell” or “pixel” spatial subdivision, and they are integrated by developed paths network. From the strategy view point of postindustrial territory development first step

like *Landesgartenschau* quite often gives powerful impulse for next steps of the space redevelopment and these following stages of landscape transformation, for example, as residential construction in the part of depressed territories, become successful continuation due to already done ecological changes. Advanced process of positive landscape transformation allows to overcome as well certain psychological rejection, related to postindustrial situation, in the public imagination and to change to more attractive space qualitative index.

To make such landscape sustainable means starting from the using of mixed (ecologic, economic, social) processes activation step by step to find compromise between dynamic changes of spaces structure, providing active recreational opportunities, arranging temporary events and profitable actions in regenerated green infrastructure to receive enough resources of landscape stability for long time using, and additional functions integrating. Experience of Landesgartenschau during several decades gives some positive answers to this concept of postindustrial territories transformation and might be considered as one of effective approaches of contemporary urban landscape creation instead existed problems.

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Kopsavilkums. Postindustriālo teritoriju ekoloģiskā rekonstrukcija ievērojami pieaug. Šāda veida teritorijas bieži vien tiek nodefinētas starp vēsturiskām un perifērijas zonām, tuvumā pie transporta infrastruktūras un pie upēm vai kanāliem.

Nepieciešams atrast un pamatot jaunas iespējas ainavu dizaina tehnoloģijā, kas padara patiešām aktuālas dažādas attīstības stratēģijas, analizējot un apvienojot efektīvus ekonomiskos mehānismus un dabas rekultivāciju. Jau vairākus gadu desmitus Vācijas pieredze, lai apvienotu teritorijas ekoloģisko atjaunošanu, ekonomisko attīstību un sociālo adaptāciju, regulāri organizē, piemēram, *Gartenschau* (Federālā Dārzkopības izstāde) un sniedz plašu informāciju, lai mainītu galvenokārt negatīvo tēlu postindustriālajās teritorijās. Racionāli plāno un ievirza postindustriālās teritorijas daudz pozitīvākā virzienā. Līdz ar to, lai noteiktu loģisku postindustriālo teritoriju ainavas transformācijas izpratni, *Bamberg Landesgartenschau* (2012. g.) tiek uzskatīts par atbilstošu piemēru daudzām citām problemātiskām šāda veida vietām.

Rakstā tiek analizēti ainavu dizainu līdzekļi, kas palīdz pārveidot postindustriālo teritoriju, iegūstot daudz līdzsvarotāku ekoloģisko situāciju. Šāda veida pieeja veido efektīvu rezultātu ainavas transformācijas procesos un rezultātā tiek iegūtas izglītojošas teritorijas, kur ir iespējams aktīvi atpūsties un baudīt dabas apkārtni, veidot sociālos kontaktus starp dažādām paaudzēm un tās nav līdzīgas tradicionālajiem parkiem.

The silhouette of the East side of the Jelgava city

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Abstract. The present article analyses the importance of silhouette, and the object of the research is the silhouette of the East side of the Jelgava city. The analysed territory has experienced cardinal landscape transformations, which have outlined new sights, massifs and formations in the city silhouette. The research applies a comparative method by comparing the silhouette of the Jelgava city East side and the silhouette of the Bauska city West side. In order to obtain qualitative information, several surveys were carried out to obtain the society's opinions as regards the territory under analysis. The aim of the research was to obtain new finding and society's opinion about the integration of the modern solutions into an urban environment that transforms the silhouette of the city.

Key words: silhouette, landscape space, sights.

Introdution

Our attention in the landscape composition will be paid on the object because of its form. Relation among the elements creating the form could be so ordinary, so obvious, so easy to understand, that we instantly like the object set in such way like single separate quiddity. Or else its form is directly that we have known for very long, therefore, it can take our interest, because we are used to see it and because it has more associations in our minds. Relative force with the help of which different composition object will draw attention, relative interest and lasting of the interest, observer will feel inside, is very important aspect in every planning. Since spatial compositions are bigger and it is possible less to perceive viewpoints, as well brain memory abilities are more significant in the achievement of the total composition effect. The same is referable to the style and characteristics, as well as to the unity and perfection of emotional effect. Landscape composition can create pleasure even if it creates wider view angle than it could be included in figurative unit. There could be three – dimension unit, plan organization and rise that can be renewed in mind from the different viewpoint memories possibly created from different location viewpoints [2, *92−93*]. In every particular situation the image of the building and surrounding outdoor territory is very important to the courtyard. Perceiving spatial environment, forms and proportions of subjects have big importance as visual images through mediation of that we get information both about the essence and correlations of these subjects, and space type, measures, proportions [4, *74–94*]. Information that reflects surrounding architectonically organized environment and objective qualities of its separate forms not only gives necessary knowledge that helps to orientate in increasing variety of spatial forms, but rather substantially affects our emotions either [3, *120–121*]. From the informative point of view the most characteristic, easy perceived features are silhouette and plastic formation. Silhouette is recited by artificially created spatial form projecting with natural landscape or sky background. In turn, the features of plastic formation more clearly come to the light in inhomogeneity and dynamics of the spatial structure, as well as in the lights and darks game of surfaces. Therefore, in the dominant form of environment perception – in movement – silhouette and plastic formation are the most capacious and emotionally the most active information parts [1, *105*]. In general cases common spatial construction originality depends on the silhouette of spatial system (lines) – vertical culmination of the composition, on the planning (horizontal mass composition) and on the plastic formation referring both to the form (form system) in common, and its separate elements [3, *44*]. Consequently, the present article analysed the importance of the silhouette of this spatial system, and distinguishes society's opinions as regards the performed transformation processes in the analysed Jelgava city territory.

Materials and Methods

The research was carried out during the period from the beginning of the year 2013 until March. To establish the present situation, a comparative method was applied in order to obtain qualitative visual examples of the historical and present day photographs. The comparative method was applied to analyse the silhouettes of two cities – Bauska and Jelgava. The location of the analysed territories is illustrated in the Figures 1 and 2. In the process of research, the photos were taken of the Northern side of the Bauska city and of the East side of the Jelgava city, because today these territories introduce

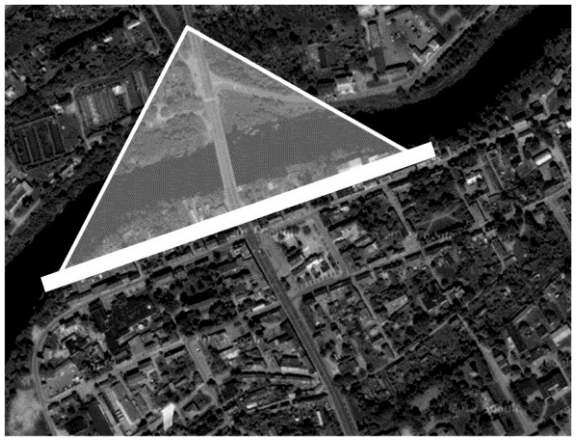

Fig. 1. The West side sight lines approaching the city of Bauska
[Source: construction by author, 2013].

Fig. 2. The East side sight lines approaching the city of Jelgava
[Source: construction by author, 2013].

important sceneries upon approaching the city territory, as well as cultural and historical objects, and new transformation processes in the city of Jelgava. For a more thorough investigation, the silhouette transformation processes of these cities were also analysed over a longer period of time, and the corresponding historical photo-material were obtained from the National Digital Library of Latvia from the collection of the Letonica Project "Zudusi Latvija" and compared to the present day situation. In order to obtain qualitative information, a statistical data analysis (survey) for 133 people was carried out in the research. Out of them 103 were women, and 30 were men, and the average age of the respondent group was 29.5 years. The survey comprised 4 questions regarding the reconstructed territory in the city of Jelgava, which outlines the landscape spatial transformations in the city silhouette. To summarize the results, a monographic or descriptive method was applied, which was based on the findings and results obtained in the research from the group of respondents.

Results and Discussion

The historical center of Bauska has evolved along the left bank of the *Mēmele* river and in the composition of its building there dominates an approximately three kilometers long network of parallel streets (*Rīga*, *Plūdoņa* and *Kalēju*) which within 200 m in width along the river forms the so-called backbone with street connections [6]. The research established by comparing the present day photographic material of the Bauska city to the historical photographs, the area has not experienced significant changes, see Figures 3, 4, 5 and 6. A narrow stretched area of approximately 400 m along the river with its side-branch is a picturesque natural base where in springs there may be observed the force of the river bed but in the summer its refreshment is enjoyable. The watercourse with flood-land meadow and slope of the old castle ruins creates recreationally rich landscape space which closes the western part of the town's historical center [6].

Conversely, a rapid attraction of investments by local governments of the Zemgale region over the last decade has contributed to the tendencies to renew and preserve the historical building parts of towns. It has enabled architects to seek new architectural artistic values and a functional balance in the culturally historical part of the urban space. Looking at the implemented projects and development proposals, as well transformation processes of the historical part of the city, in the detailed plans there are developed criteria that determine the necessary to retain or not to retain the present green structure by analyzing its context in the building zone. The evaluation of the dendrological peculiarities of plantations in designs (width of tree branches, the root system, the nature of the canopy) is just as important as building height of the building, the tint of the facade paint, the compositional compatibility of the roof landscape in the street building. In the current volatile conditions of the economic and social processes, there is quite often simplified an important urban knowledge, giving priority to short-term businesses and tax attraction by the local government rather than the inputs of values in the perspective. The cultural and historical heritage is attributable not only to the preservation of individual objects but also to the totality of several elements-space, landscape, view lines, intellectual fulfillment, etc. It is also a greater responsibility of architects and landscape architects [6]. Consequently, the radical transformation processes of the East side silhouette

Fig. 3. View at the city of Bauska [Source: from the National Digital Library of Latvia from the collection of the Letonica Project "Zudusi Latvija", http://www.zudusilatvija.lv/objects/object/5662/, the original is stored in the National Library of Latvia].

Fig. 6. View at the city of Bauska today [Source: photo by author, 2013].

Fig. 4. The greatest flood ever experienced in Bauska in 1928. Panorama of Bauska, The river *Mēmele*. Timber brought by the flood [Source: from the National Digital Library of Latvia from the collection of the Letonica Project "Zudusi Latvija", http://www.zudusilatvija.lv/objects/object/13558/, the original is stored in the National Library of Latvia].

Fig. 7. A postcard, the alternative name: *Gruss aus Mitau, Die Aa-Brucke* [Source: from the National Digital Library of Latvia from the collection of the Letonica Project "Zudusi Latvija", http://www.zudusilatvija.lv/objects/object/9772/, the original is stored in the National Library of Latvia].

Fig. 5. View at the city of Bauska today [Source: photo by author, 2013].

Fig. 8. View at the river Lielupe and the city from the East side [Source: photo by author, 2013].

Fig. 9. View across the Driksa river at the Holy Trinity Church Tower
[Source: photo by author, 2013].

Fig. 10. The former Upes street renamed as J. Cakste boulevard from 1989
[Source: from the National Digital Library of Latvia from the collection of the Letonica Project "Zudusi Latvija", http://www.zudusilatvija.lv/objects/object/10813/, the original is stored in the National Library of Latvia].

Fig. 11. J. Cakste boulevard in autumn 2005
[Source: photo by author, 2005].

of the Jelgava city is clearly illustrated in Figures 7-13. When approaching the centre of Jelgava from the East side, the first significant natural barrier is the river Lielupe, which can be seen in its historical image in the Figure 7, but the corresponding image of the present day Lielupe river, which has significantly changed, can be observed in the Figure 8. Moving across the bridge of the Lielupe river and stepping onto the Pasta sala Island, some more impressive changes of the sight appear, see Figure 9. Whereas; the Figures from 10-13 clearly illustrate the significant transformations of the J. Cakste boulevard. The images clearly illustrate the impressive, historical sight line transformations. The analysed territory was reborn in the 21st century in a brand new modern form.

Fig. 12. J. Cakste boulevard in the spring 2013 [Source: photo by author, 2013].

Fig. 13. The new visual image of the J. Cakste boulevard [Source: photo by author, 2013].

The part of the boulevard promenade will continue also down the existing Driksa bridge creating under the bridge the pedestrian zone with separate stairs. The bank slope will be made with a concrete support wall with railing. The basis of the architectonical constructive solution of the pedestrian bridge is the system of hanging shrouds at two support pilaster. It makes the bridges look visually light and actractive. At the opposite side of the bridge Pasta island is projected as the green recreative zone for public activities and peaceful walks. It is planned to create the sculpture garden, locations for children plays and activities by additionally propping the bank line of the island. At the bridge in the island a coffee house with small boat station and roof terrace above it where the sight lines to the river and the boulevard promenade will be seen. At present not only the street reconstruction project, but also the building of a new pedestrian bridge is realized. The bridge connects the town space with the green landscape space of the Pasta island and the new plantations with J. Cakste boulevard. The bridge is the continuation of the pedestrian zones of Driksa street (sorb lane plantations) to the Lielupe left bank. The walk and trade zone mentioned (250 m) in the span from Katolu to Akademijas street is to create a new architectonically expressive image of the town space. It is also referred to taking off the transport load in this space. But in part of pedestrian street from Akademijas street to J. Cakstes boulevard (150 m) or the connection at the bridge, reconstruction of the inner courtyard zone of hostels is to be realized. There a small square is necessary which would be compositionally as a green point at which the axis of urban space –the axis of the Driksas street pedestrian zone to which the side axis of Saint Trinity church would be connected [5]. Whereas, the Great Synagogue (1875-1879) cupola designed by the Latvian architect Oscar Alexander Johann Baar is illustrated in the Figure 15. The synagogue was destroyed in the summer of 1941, during the German occupation. The image illustrates a tower of the German Lutheran Holy Trinity Church (built in 1688) with an octagon belfry (1862). The Church was destroyed during the World War II, only the oldest part of the tower (covered with a pyramid-shaped roof) and the church gates have remained today. A bridge was built on the wall mounts with the Le Havre system lattice trusses across the Driksa river (80's of the 19th century). The next bridge over the Driksa river was built in 1937, none of these bridges have remained until today [7]. Consequently, the newly built bridge, presented in 2012, has significantly transformed the Driksa river and its neighbouring Pasta sala Island, where there are additional landscaping and construction processes still in process. The modern image of the Mitava bridge and the transformations carried out in the 21st century can be seen in Figures 14, 15 and 16.

Fig. 14. A postcard, the alternative name: *Mitau, am Ufer des Drixe* [Source: from the National Digital Library of Latvia from the collection of the Letonica Project "Zudusi Latvija", http://www.zudusilatvija.lv/objects/object/18451/, the original is stored in the National Library of Latvia].

Fig. 15. The new bridge looking from the J. Cakste boulevard [Source: photo by author, 2013].

Fig. 16. The bridge looking from the Pasta island [Source: photo by author, 2013].

Fig. 17. Mitava bridge [Source: photo by author, 2013].

Another important and interesting source of information for the research is the results obtained from a group of respondents. The group comprised 131 respondent, out of them 70 were women and 61 men; the average age was 40 years. Respondent answered six questions. The first four questions, the expressed opinions as regards the analysed territory in the city of Jelgava, exploitation possibilities, and landscape solutions are clearly illustrated in Table 1. Whereas; the last two questions of the research were composed in a free form and any one of the 131 respondents had the opportunity to widely express their opinion as regards the aspects they prefer and the issues they find problematic and unnecessary in the analysed Jelgava city territory. From the obtained data, the answers of 4 respondents were not useful, because they have not expressed their opinion on this subject matter. Consequently, the useful, qualitative, and informatively wide answers were obtained from the rest 127 questionnaires, altogether 254 different answers. The greater emphasis was placed on the fact that the handrails of the Mitava bridge are too unsafe for little children, see Figure 17.

Other respondents were not satisfied by the new concrete Driksa river embankment, the chosen landscape elements, the height of the bridge in comparison to the surrounding territory and other aspects that should be considered by the planners and designers of these territories. Respondents evaluate the area positively and are in general satisfied, but they emphasize the aspect that the territory could be slightly differently designed from the stylistic perspective, and they would prefer a lesser amount of concrete elements.

Conclusion

The integration of the modern solutions into an urban environment is a complicated process. The society is used to living in a certain, familiar environment. Therefore; whenever some kind of drastic transformations that affect not only the city silhouette but also the perception of the society about a certain territory are initiated, the most part of the society perceive these processes very critically and negatively. This fact was proven in the research process by the data obtained from the respondents. Consequently, it is necessary to involve a greater part of the society in such types of transformations by considering its opinion, because these are the people who live in this territory and will use the area and search for the most appropriate recreation possibilities for each individual. The facts established in the research and the opinions of the respondents as regards the analysed territory are also essential for any other researches on the transformation processes in the urban environment territory and its neighbourhood area.

TABLE 1

Summary of the obtained results from the research survey [Source: counstruction by author, 2013]

No	Research question	Obt. results
1	Did you find the reconstruction of the J. Cakste boulevard to be necessary?	%
	Yes, certainly, some improvements were necessary;	78.9
	No, no improvement were necessary;	0
	It is hard to say, I practically do not visit this territory;	8.3
	It was necessary, but the reconstruction proposition could be slightly different.	12.8
2	Do you approve of such modern solutions in the urban environment?	%
	Yes, I approve;	84.2
	No, I don't approve;	3
	I partially approve, because I find that other territories of the Jelgava city should be developed instead of this;	7.5
	It is hard to say, I have not considered this.	5.3
3	Do you find the size of the Mitava bridge appropriate for the Driksa river embankment territory?	%
	Yes, it is perfect;	39.1
	No, I find it inappropriatly massive and unsafe;	9.8
	No, it is inapproriate, the bridge was not necessary;	7.5
	The bridge is large and beatiful, but it could be slightly lower;	21.8
	Another solution should have been chosen;	11.3
	It is hard to say, I have not seen the territory yet.	10.5
4	Will you consider the Pasta sala Island for performing summer entertainment and walks when the territory is fully reconstructed?	%
	I will visit the area every time I plan my leisure time;	21.8
	I will visit the area only to see how the Pasta sala Island is transformed;	35.3
	I will not visit the area because I plan my free time outside the city territory;	4.5
	I will not visit the area because such places do not appeal to me;	0.8
	Pasta sala Island will now become one of my favourite, regularly visited territories for leisure and spending free time;	18.8
	Non of the above mentioned.	18.8

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Kopsavilkums. Raksts aptver pētījumu par pilsētas silueta transformāciju 21. gadsimtā, kur par pamatu tiek analizēts Jelgavas pilsētas siluets austrumu pusē. Pētījumā definētā teritorija piedzīvojusi kardinālus ainaviskās telpas transformācijas procesus, kas iezīmē jaunas skatu līnijas, apjomus un formas pilsētas siluetā. Pētījums veikts laika posmā 2013. gada sākuma līdz martam. Pētījumā esošās situācijas noteikšanai tika izmantota salīdzinošā metode, kur analizēti 2 pilsētu – Bauskas rietumu un Jelgavas austrumu puses siluets. Pētījuma procesā veiktas salīdzinošas fotofiksāciju analīzes, kur Jelgavas pilsētas DA puses siluets salīdzināts ar Bauskas pilsētas Z puses vēsturiskajiem skatiem, kādi šie silueti ir bijuši un kādas pārmaiņas piedzīvotas 21. gadsimtā. Pētījumā izmantotie vēsturiskie fotomateriāli iegūti no Latvijas Nacionālās bibliotēkas, digitālās bibliotēkas "Letonica" projekta "Zudusī Latvija" kolekcijas. Pētījuma procesā tika veikta statisko datu apstrāde (aptauja) 131 respondentam. Respondentu grupu veidoja Jelgavas pilsētas iedzīvotāji vecumā no 20–65 gadiem. Respondentu jautājumu klāsts ietvēra sešus jautājumus par rekonstruēto teritoriju Jelgavas pilsētā, kas tieši atrodas un iezīmē ainaviskās telpas izmaiņas pilsētas siluetā. Rezultātu apkopošanai un noteikšanai izmantota monogrāfiskā jeb aprakstošā metode, kas pamatojas uz pētījumā iegūtajām zinātniskajām atziņām un rezultātiem no respondentu grupas. Raksta mērķis, iegūt jaunas atziņas un sabiedrības viedokli par mūsdienīgu risinājumu integrēšanu pilsētvidē, kas izmaina pilsētas siluetu.

Mūsdienīgu risinājumu integrēšana pilsētvidē ir ļoti sarežģīts process. Sabiedrība ir pieradusi dzīvot kādā noteiktā un sev labi pārzināmā vidē. Tiklīdz tiek veiktas šīs kardinālās pārmaiņas, kas ietekmē ne tikai pilsētas siluetu, skatu punktus, apjomus u. c. aspektus, kā arī sabiedrības uztveri par kādām konkrētām teritorijām, tā vairākums šo procesu uztver ļoti kritiski, noraidoši un negatīvi. Šādu faktu pētījumā pārliecinoši pierādīja arī iegūtie dati no respondentiem. Līdz ar to šāda veida transformācijas procesos ir daudz vairāk jāiesaista sabiedrība. Nepieciešams daudz vairāk uzklausīt sabiedrības viedokli, jo tieši šī aktīvā daļa, kas dzīvo Jelgavas pilsētā ir tā, kas izmantos un meklēs sev atbilstošas atpūtas iespējas šajā pētījumā analizētajā teritorijā. Pētījumā konstatētie fakti un respondentu viedoklis par analizēto teritoriju Jelgavā ir vērā ņemami un nozīmīgi arī citu turpmāku pētījumu veikšanai par transformācijas procesiem pilsētvides teritorijās un tās apkārtnē.

Green Infrastructure Planning as a part of Sustainable Urban Development – case studies of Copenhagen and Wroclaw

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Abstract. This short study identifies the green infrastructure planning process and its contribution to sustainable urban development. The analyses presented in the paper are mainly based on the case study made in Copenhagen (Denmark), with some comparisons with Wroclaw (Poland). The analysis regards the greenery planning organizations, policies, strategies and implementation tools for green space policies (namely 'Pocket park'). Moreover, the study has uncovered some main differences in this two cities related to importance of green infrastructure plans in the overall urban development process.

Keywords: green infrastructure; pocket park; sustainable urban development.

Introduction

Sustainable urban development seems to be nowadays the main challenge facing our cities in the 21st century. It comprises many different aspects regarding our social, economical and environmental stability as the society. One of the problems dealing with this topic is the urban planning process. The aim of this paper is to present the green resources management undertook to achieve a possible good level of city's sustainability. The report presents the case studies made in two cities: Copenhagen (Denmark) and Wroclaw (Poland). It describes the process of including the greenery issue into the urban masterplans, policies needed for achieving the 'green' goals and some examples of the new ideas supporting the green infrastructure planning process. These are the main issues addressed in the report.

Importance of urban green spaces

Urban green spaces with trees as the major component play role in every aspect of sustainability issue: (social, economic and environmental) [13]. Urban green space has a range of values to urban society. Social include the positive impact on people's physical and mental health (providing settings for physical exercise, reducing ultraviolet radiation and air pollution, lowering stress levels). The connection between public health and the provision of free, accessible, open green space – particularly in towns and cities – is obvious to most people [23]. Besides, by being actively involved in tree planting and management local communities can be strengthened and crime rates can be reduced. Greening improves the urban image and quality of life. Economic values of urban green include the urban agriculture production and positive impact on real estate prices and business development (attractive environments for business to settle in and people to live in). Environmental values of urban green are: water management, protection of soils, moderating harsh urban climate (cooling the air, reducing wind speeds, giving shade), intercepting particles and gaseous pollutants (reducing air pollution), contributing to the cost-effective sustainable urban drainage systems, preserving and enhancing the ecological diversity of the environment of urban places, increasing biodiversity through the conservation and enhancement of the distinctive range of urban habitats [13].

Greening is the distinctive concept of the most sustainable urban form – the eco-city, which emphasizes urban greening, ecological and cultural diversity, and passive solar design [20]. In addition, the approaches of the eco-city emphasize environmental management and other key environmentally sound policies.

What is 'green infrastructure'?

One concept that has gained greater interest from scientists and planners during recent years is that of 'green infrastructure', defined as the physical green environment within and between our cities, towns and villages. It is a network of multi-functional open spaces, including formal parks, gardens, woodlands, green corridors, waterways, street trees and open countryside. It comprises all environmental resources, and thus a green infrastructure approach also contributes towards sustainable resource management [24] and highlights the importance of the natural environment in decisions about land use planning [25].

Green infrastructure is today one of the most important terms when we think about planning the contemporary city. It is an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations [2]. It contributes to a very high level of achieving the sustainable urban form [20] and supports the natural life system [2]. The term 'green infrastructure' relates itself to the meaning of the term 'built infrastructure', which is critical to the continuance and growth of the community as the essential part of the city [2]. The 'infrastructure' term referred to greenery helps to promote the importance of green spaces as one of the basic installations for the urban planning system, because it emphasizes the same level of priority as, what we could call, the 'grey infrastructure' (roads, sewage system, utility lines). Moreover, the 'green infrastructure' term underlines the idea of connections between green spaces, which seems necessary in the case of its contribution to sustainable development in a more general scale. As a concept, the planning and management of a green infrastructure network can guide the creation of a system of open space hubs and links that support conservation and associated outdoor recreational and other human values, connect existing and future green space resources, and 'fill in' gaps [1].

Pocket parks

In this report, the 'Pocket park' concept is used as one specific way of implementing green infrastructure planning and green space policy in general. The 'Pocket park' concept derives from the USA, but has recently also been implemented in parks of Europe [15]. Pocket parks are small parks accessible to the general public. 'Pocket' size of the park enables to create new green spaces everywhere in the urban areas, especially with significant lack of this kind of places. They are local meeting places, a fertile little oasis with room to hang out and play [4]. Moreover, the planned network of this kind of small parks will contribute in the future to the whole green infrastructure plan of the city and will improve the quality of many existing green spaces.

Pocket parks are frequently created on a single vacant building lot or on small, irregular pieces of land. They also may be created as a component of the public space requirement of large building projects. Although they are too small for physical activities, pocket parks provide greenery, a place to sit outdoors, and sometimes a children's playground. They may be created around a monument, historic marker or art project. In highly urbanized areas, particularly downtowns where land is very expensive, pocket parks are the only option for creating new public spaces without large-scale redevelopment. In inner-city areas, pocket parks are often part of urban regeneration plans and provide areas where wildlife such as birds can establish a foothold. Unlike larger parks, pocket parks are sometimes designed to be fenced and locked when not in use [26].

Methods and Materials

The main steps of this study are as follows: What is the connection between green infrastructure planning and sustainable urban development? – review of literature that is related to sustainable urban development and green infrastructure planning.

Interview: how does the green structure planning look in Copenhagen compared to the other cities in the world? – Cecil C. Konijnendijk, professor of Green Space Management, University of Copenhagen.

Interview: how does the green infrastructure planning look in Copenhagen? – Christine Nuppenau, parkplanner, City of Copenhagen.

Interview: use of the 'pocket park' concept in Copenhagen, as one element of implementing green infrastructure planning – Karin Kragsig Peschardt, PhD student, University of Copenhagen.

How can the process of green infrastructure planning in Wroclaw be described? – review of planning documents related to urban development.

How do green infrastructure planning in Copenhagen and Wroclaw compare? Urban planning documents used in the report:

1) City of Copenhagen. *Copenhagen's Green Accounts*. 2010.
2) City of Copenhagen. *A Metropolis for People.* 2009.
3) City cf Copenhagen. *Copenhagen Climate Plan.* 2009.
4) City of Copenhagen. *Pocket parks, trees and other green stuff*. 2008.
5) City of Wroclaw. *Wroclaw Urban Masterplan*. 2010.
6) *København*s Kommune. *Københavns Gårdhaver.* 2010.
7) *København*s Kommune. *Tag Parken i Lommen.* 2010.

Author's research period: September 2010 - January 2011.

Copenhagen

Copenhagen is the capital and the largest city of Denmark, with an urban population of 1,181, 239 in the Greater Copenhagen area (2010) and a metropolitan population of 3,732,000 (2010) in the *Öresund* Region. Copenhagen is situated on the islands of Zealand and Amager. First documented in the 11th century, Copenhagen became the capital of Denmark in the beginning of the 15th century. During the 17th century, under the reign of Christian IV, it became a significant regional centre. With the completion of the transnational *Öresund* Bridge in 2000, Copenhagen has become the centre of the increasingly integrating *Öresund* Region. Within this region, Copenhagen and the Swedish city of *Malmö* are growing into one common metropolitan area. In 2008, Copenhagen was the most visited city of the Nordic countries with 1.3 million international tourists [9]. Copenhagen is a major regional centre of culture, business, media, and science, as indicated by several international surveys and rankings. Life science, information technology and shipping are important sectors and research & development plays a major role in the city's economy. Its strategic location and excellent infrastructure with the largest airport in Scandinavia [8] located 14 minutes by train from the city centre, has made it a regional hub and a popular location for regional headquarters [17] as well as conventions. In 2008, the British magazine "Monocle" crowned Copenhagen number one in the list of "The World's Top 25 Most Liveable Cities" [4]. The magazine highlights, amongst other characteristics, the scale of the city, its architecture, the clean harbor, the effectiveness of its transport system and bicycles. Copenhagen is also considered one of the world's most environmentally friendly cities. The water in the inner harbor is so clean that it can be swum in, and 36 % of all citizens commute to work by bicycle. Every day they cycle a total of 1.2 million km [3]. Since the turn of the millennium, Copenhagen has seen a strong urban and cultural development and has been described as a boom town [22]. This is partly due to massive investments in cultural facilities as well as infrastructure and a new wave of successful designers, chefs and architects [11]. As of 2010, Copenhagen is ranked as the 10th most expensive city in the world according to Forbes [10].

Wroclaw

Wroclaw is the main city in south-western Poland. It is situated on the River Oder (Polish: *Odra*). Wroclaw is the former capital of Silesia and today, capital of Lower Silesian Voivodeship. Over the centuries, the city has been either part of Poland, Bohemia, Austria, Prussia or Germany. According to official population figures for June 2009, its population is 632,240, making it the fourth largest city in Poland. Wroclaw is now a unique European city of mixed heritage, with architecture influenced by Bohemian, Austrian and Prussian traditions. Wroclaw's major industries were traditionally the manufacture of railroad cars and electronics. In recent years the City Council has run an active policy to attract foreign investors from the high-tech sector. After 1989, Wroclaw became a significant financial centre and houses the headquarters of several nationwide financial institutions. The city has just started a project 'Classifieds for climate', whose goal is the transformation of Wroclaw in the most green and friendly city in Central Europe, focusing on increasing the attractiveness of the city in terms of quality of life of local communities. The project is scoped on a large scale, and green is one of the major thematic areas. The first step in the ecocity aspirations are already being implemented or already completed investments such as construction and reconstruction of sewerage and sewage treatment plants, the process of transformation of the city of Wroclaw from monocentric to polycentric, expenditure on education and physical education, modern and environmentally friendly animal shelter. It all has to make the city more comfortable. Other actions are to make the city less expensive: energy management project in Wroclaw education, environment-friendly projects in the construction of the stadium, the procedures to save energy in the activities of the City Council, the project of building 10 stations charging electric vehicles [27].

Results (1): green infrastructure planning

How do the urban planners deal with the green resources in both cities? What are they main goals? How do they prioritize the greenery? And what is the final result of their work for us as citizens?

Copenhagen

The Municipal Plan and the City District Plans are prepared by the Finance Department, which is part of the City Council (Fig. 1). They are renewed every four years and they don't include the green infrastructure (*grøn infrastruktur*) - except of the network of green bicycle routes. The blue and green infrastructure plans for the city (2260 ha of green spaces, including parks, nature areas, sports areas, allotment gardens, churchyards, playgrounds, cemeteries, green corridors) (Table 1) are realized by the Technical and Environmental Department - Parks and Nature (Fig. 1), which is also responsible

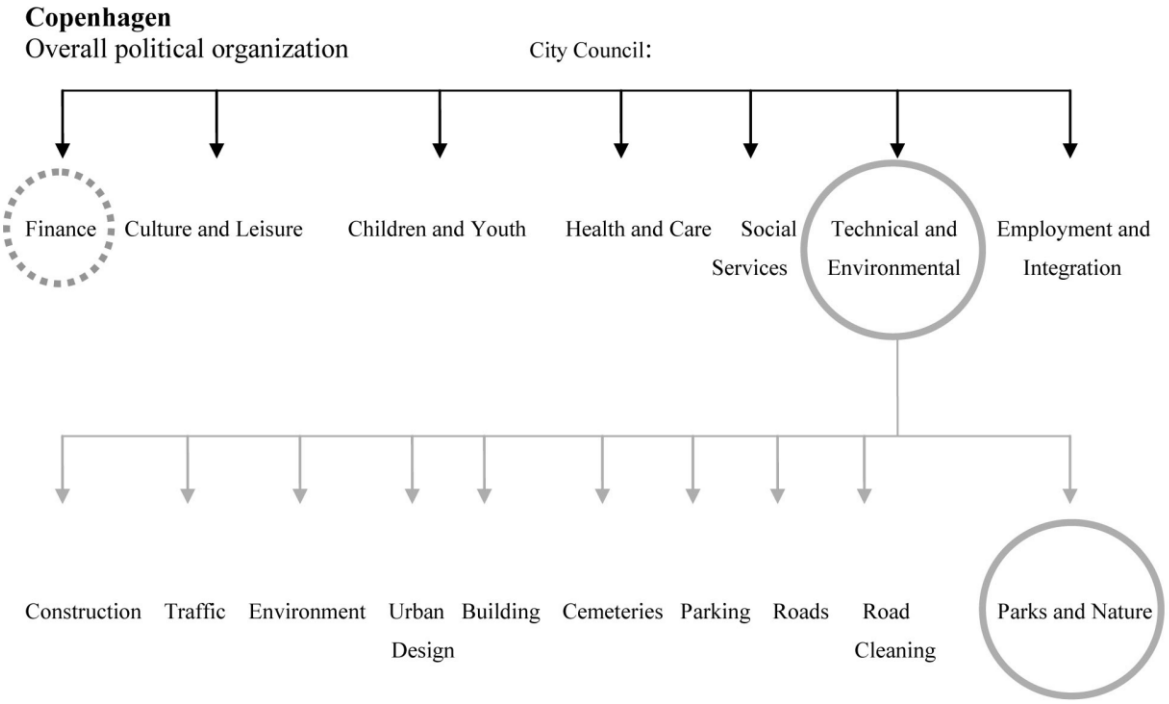

Fig. 1. Overall political organization – Copenhagen [28].

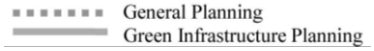

TABLE 1

Green spaces – Copenhagen [Source: construction by author]

Cemeteries	Parks and Nature Areas	Green Roofs	Playgrounds	Street Trees
5 (137 ha)	21 (1200 ha)	26	127	17.000

for the Copenhagen Climate Adaptation Plan [18]. Moreover, all city districts have their own local political committee and they are planned for individually.

The city of Copenhagen has several documents dealing with the green infrastructure issue, including its Park policy (2003), Copenhagen ECO-metropole 2015 (2006), Pocket parks, trees and other green stuff [6], Put the park in your pocket (2009), Green roof policy guidelines (2010) – for local planning purposes, Strategy for biological diversity (2010) – analysis and suggestions for future planning and maintenance, and Strategy for climate adaptation (2010) – analysis of climate threats, initiatives to adapt the city to climate changes. The strategies influences the proposals for green networks and parks (planned in 2011 & 2012). Moreover, a green (and blue) structure plan for municipal overall planning purposes is planned to be developed (2011) [18].

The Park policy (2003) has three overall topics: Protection and development, Areas in reasonable distance and Quality. The policy emphasizes the importance of maintenance and development of the blue and green infrastructure, based on the historical landscape and city development. It underlines the city's need a various network of green spaces – local areas, district parks and parks of regional importance, as well as increasing the quality of parks through the maintenance and range of experiences [18].

Sustainable urban planning demands very good strategies for the next years, as it should compromise the needs of today's society with the future needs. Climate Adaptation Plan (*Københavns Klimatplan*) [5] is an example of a long term strategy, where the green infrastructure planning is one of the core issues. Green spaces are presented as a very important part of rainwater solutions, e.g. parks as the places of collecting the runoff, green areas where there is an increased risk of flooding etc. [21].

Green infrastructure planning is one of the key aspects when we think about sustainability in the urban sense. The goal of Copenhagen for the year 2015 is to be the capital with the best environment in the world. The objective regarding the green infrastructure planning case is to be a green and blue capital. Copenhagen was already mentioned as the most livable city in the world due to the green areas in 2008 by the British magazine 'Monocle'.

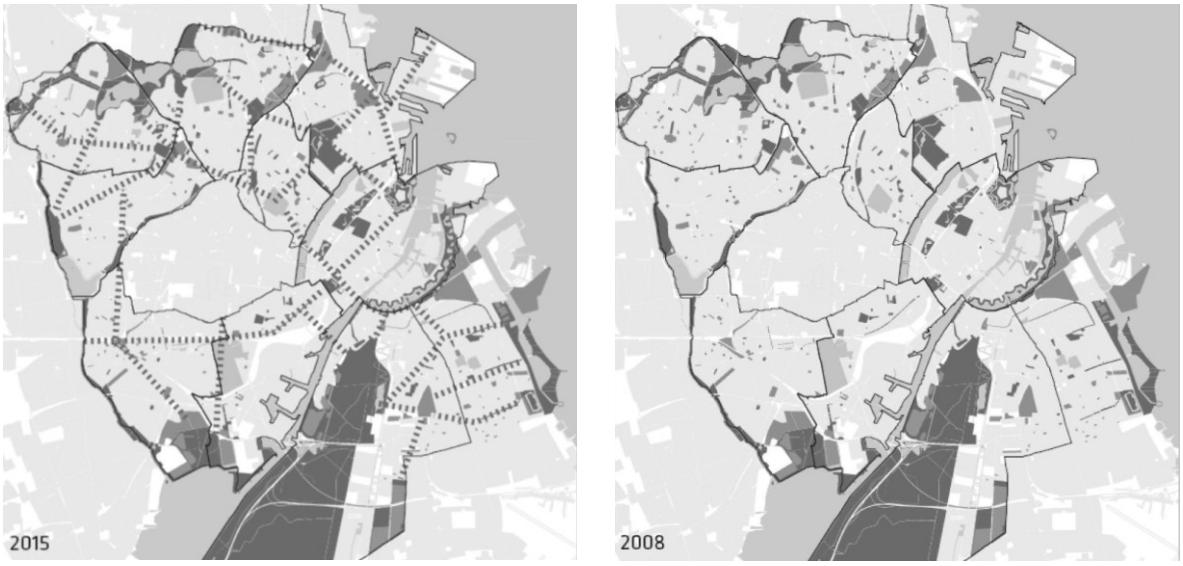

Fig. 2. Green network in Copenhagen – plans for 2015 [Pocket parks, trees and other green stuff, 2008].

Today 60 % of the inhabitants (estimated) can walk to a park, a nature area, a public bath in the harbor or a beach in less than 15 minutes – the goal city wants to achieve is to increase this number to 90 % [3]. The City has already secured space for parks in the new urban areas and still improving the existing parks with funding from special renovation projects such as the current renewal of Fælledparken, and with increased appropriation funding of DKK 3 million per year until 2015. City of Copenhagen wants to encourage its inhabitants to visit parks and nature areas double as often as today. There are special plans of strategy for green volunteer work (for example, registration the number of bats in the city's parks), as well as establishing the new green cycle route – The Christianshavn Route [4]. Moreover, the city plans to improve its green network (Fig. 2), connecting existing and planned parks and nature areas (*parker og naturområder, mv*.), sport and recreational areas (*grønne idræts- og fritidsarealer*), cemeteries (*kirkegårde*) and allotment gardens (*kolonihaver*) till 2015.

The new proposal regarding improving the quality of green spaces in the city is project called 'Copenhagen's Garden in the Yard' (*Københavns Gårdhaver)*, which is part of the strategy related to making Copenhagen greener and CO_2 neutral till 2025 [14]. The aim of this plan is to transform 12 yards in the city every year into high quality gardens. The initiative goes from citizens, who can contact the City Design Center (Center for Bydesign), if they wish to suggest their yard for redesigning process. The landscape architect prepares the project, which is introduced to the Technical and Environmental Administration. After that, City of Copenhagen makes a decision about allocation the financial support and the new garden is ready within two years.

Wroclaw

The Municipal Plan (Wroclaw Urban Masterplan) [7] for the City of Wroclaw is realized by the City Development Office, which is part of the Architecture and Development Department (Fig. 3). The main map of the Municipal Plan includes all the green spaces, but without specifying their function. More detailed information regarding the green issue is presented on the Environmental Protection and Development map (Fig. 4). This map includes information regarding: protected areas (existing and planned), 'high' and 'medium- high' greenery (forests, parks, squares, allotment gardens, educational gardens), greenery connected to the system (cemeteries, sport areas – existing and planned) and location of the blue areas in the city. The 'green infrastructure' term is replaced by different terms, like 'system of environmental connections', 'greenery system'.

'High greenery' including parks, forests, green squares, street trees, isolation greenery, allotment gardens covers 22 % of the city area (Table 2). The most important cities' green structure elements are managed by different organizations.

Public Green Space Management is under the inspection of Architecture and Development Department (Fig. 3). Its responsibility regards supervising urban forestry areas, maintained by private companies.

The main policy related to green infrastructure planning is Wroclaw Urban Masterplan. Environmental Protection and Development is one of the key issues presented in this document.

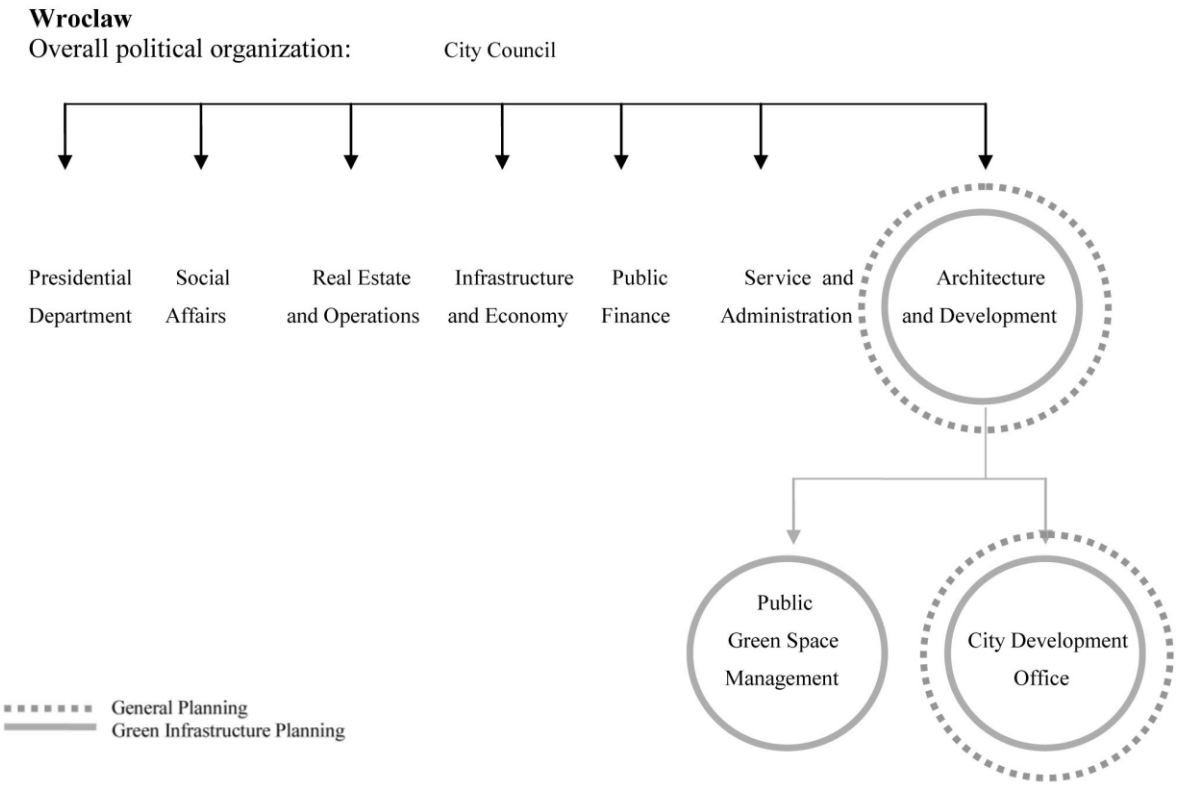

Fig. 3. Overall political organization [27].

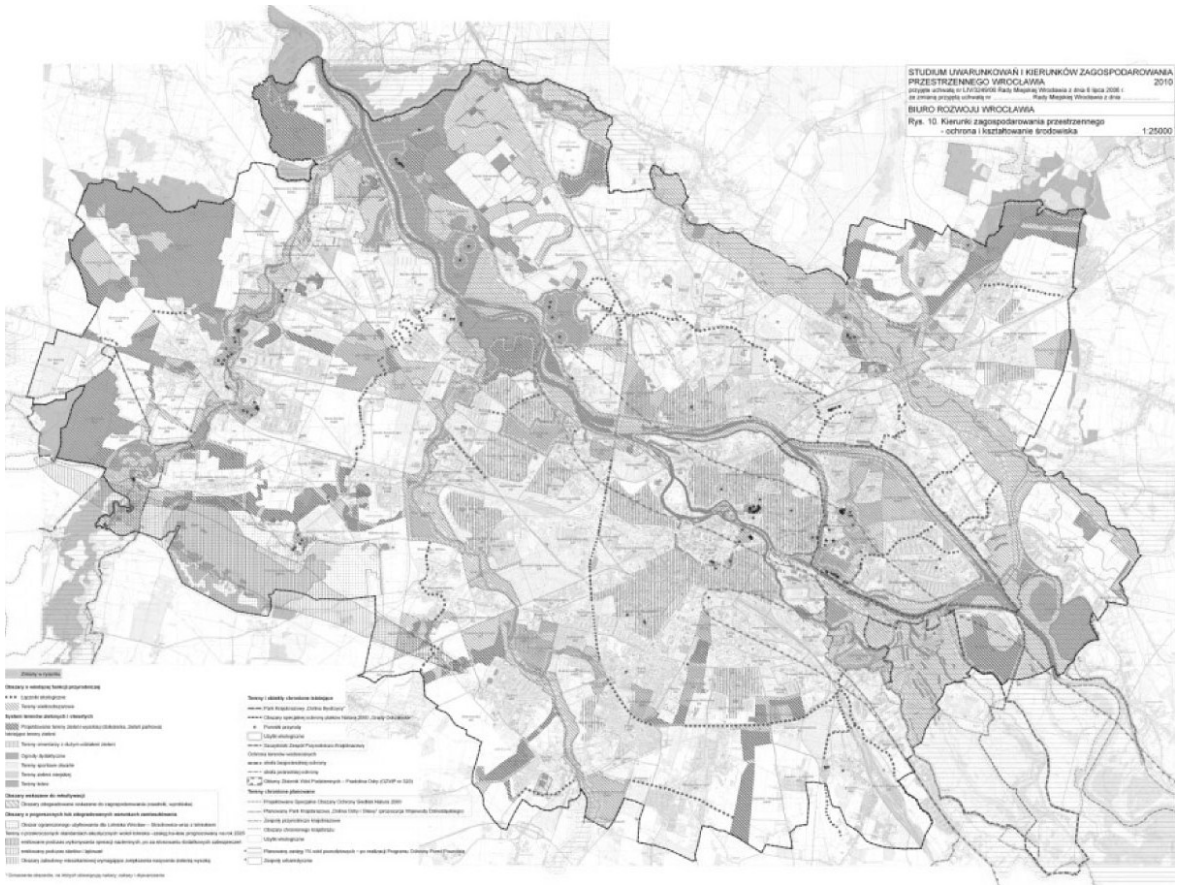

Fig. 4. Environmental Protection and Development - Wroclaw [Source: Wroclaw Urban Masterplan, 2010].

TABLE 2

Management of green spaces – Wroclaw [Source: Rozalski, 2009]

Public Green Space Management	National Forests Department, Forests Organizations	Municipal Cemeteries Management	Municipal Areas Management	Allotment Gardens Organization	Wroclaw Municipality and private owners
45 parks (559.76 ha); 124 green squares, 9 boulevards and promenades, 11 isolation greenery areas (115.93 ha); temporary and not maintained greenery (78.66 ha); street trees (499.38 ha); Municipal Forests (management cooperated with Roads and Maintenance Management) 910.45 ha	national forests (1340.66 ha)	municipal and parish cemeteries (155 ha)	settlement greenery areas (341.1 ha)	allotment gardens (1435 +/- 2 ha)	agriculture areas (arable lands, meadows, orchards) 12 900 ha

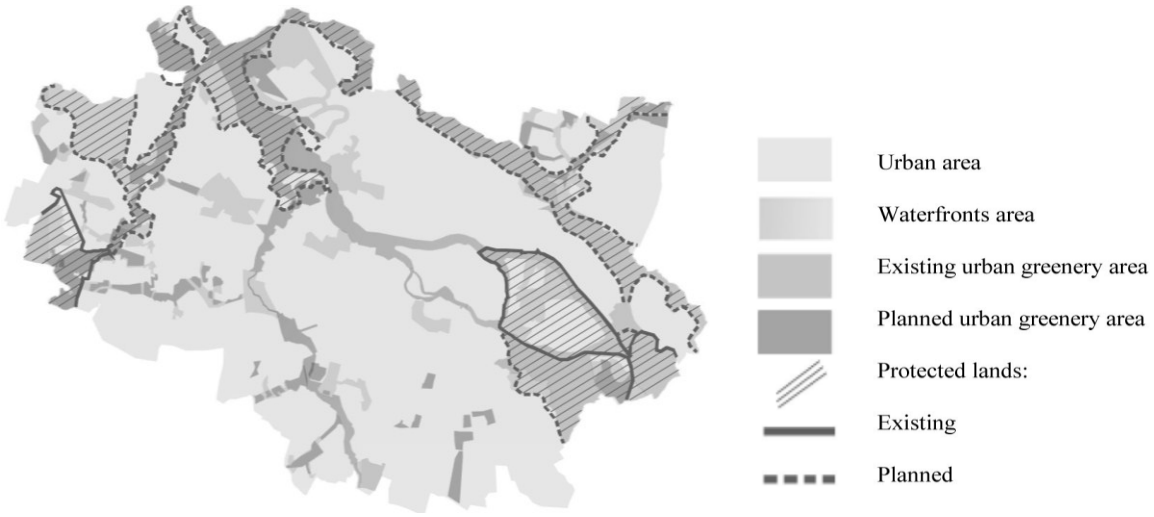

Fig. 5. Green space management and protected riversides landscapes according to the Urban Masterplan 2010 [Source: construction by author].

System of the Green and Open Spaces is defined as a part of the functional structure of the city. It includes: river valleys with surrounding green areas, large urban forestry areas, Botanical Garden and Zoological Garden, areas protected because of delivering water and sewage drainage, parks, squares, sport, recreational areas, cemeteries, airport, military areas, agriculture areas [7].

The city plans to gradually transform the areas of private allotment gardens into the public open spaces. This process will decrease the today's distance between green areas (>2 ha) and settlements, which is very often more than 500 m. The reason for that transformation is the current location of allotment gardens - close by the heavy traffic roads, industry areas or historical sites. The same process of replacement regards the agriculture areas in the city - 12 900 ha is covered by arable lands, meadows, orchards – gradually being transformed to sport, recreation or park areas. Another goal concerning the green infrastructure is to increase the importance of forests outside the city, which don't fulfill its social function through the lack of recreational facilities, information and connections with the other areas. The city plans to extend the number of green areas, their quality and links between them within the urban boundaries, but there are no specific policies for that (Fig. 5). An important step in emphasizing the importance of green spaces can be already mentioned, namely the project 'Classifieds climate-friendly city' – a social media consulting, where one of the major thematic areas regards greenery issue. The project provides for the use of public consultation on social media as a tool for not only presenting the residents of the planned projects, but most of all consultation and an exchange of opinions. All residents are invited to participate in public consultation on the relevant urban development areas. During the 'greenery discussion' citizens were asked about: what kind of recreation they prefer in green spaces, what they consider as the most important for green spaces and what they expect from the forests on the fringes of the city.

Results (2): 'pocket parks' as implementation tool for green space policy

An example of an implementation tool for green infrastructure planning is that of the 'Pocket park' (*Lommepark*), referring to a small park accessible to general public in the middle of a crowded city. Pocket parks are an important element of green infrastructure planning in Copenhagen. They are a significant part of the strategy developed for a green capital 'Pocket parks, trees and other green stuff' [6], as well as one of the strategic objectives for Copenhagen 2015 - 14 new pocket parks till 2015, especially in districts where green areas are scarce (Fig. 6). Pocket parks with the other parks will be part of a green network, making it easy, comfortable and safe to go about the city [6], playing role as the local meeting places, a fertile little oasis with room to hang out and play [4]. 'Pocket park' concept is also included in the city's Climate Plan, as they contribute to the climate through cooling the city on the hot days, absorbing rain on the wet days, supporting the green and healthy environment in an urban setting, opening possibilities for fun and sport activities to the benefit of health, acting as a synergy between buildings and green spaces (living oases, meeting place), optimizing water absorption (buffering the flows to sewers during heavy rains and enhancing green areas with stored water for warm and dry days) – as water will be an integral part of the design (flowing, freezing, cooling) [5].

The first list of the proposals for the pocket parks location in Copenhagen is prepared by the citizens' groups (local communities). The next step is the new list made by Municipality according to the accessibility of the land (City of Copenhagen is allowed to establish a new place for the park only on the municipal area; many private owners make the process too complicated) [16].

The first pocket park in Copenhagen was designed and constructed at Odinsgale (*Nørrebro*) (Fig. 7). The two next pocket parks are under design phase right now (1. Litauens Plads – Vesterbro, app. 4000 m2, part of Urban Heat Island Strategy – the warmest district in the city; 2. Heraldsgade – Nørrebro – 470 m2) [16]. The goal for the city is to establish 14 new pocket parks till 2015, as the effect of the Climate Policy for Copenhagen and the strategy 'Pocket parks, trees and other green areas'.

Pocket park plays an important role in the green infrastructure planning process. It can significantly help to fill in the gaps in the green network of the city. Moreover, it improves the quality of existing green spaces and the planned network of pocket parks opens in the future possibilities of creating new green links.

There is no comparable type of green policy in Wroclaw. The city puts stronger effort on creating the new large scale green areas, instead of improving the existing small green squares, which could play a similar role to this one represented by the pocket park. Hence, a transformation of allotment gardens into public open spaces will result in a new quality of green areas in Wroclaw, but not on a 'pocket' scale. However, the cities greenery is represented by many small size green spaces (e.g. backyards), which could be adapted to pocket parks after achieving a high quality requirement (one of the pocket park's characteristics) [18]. But first they have to be included in the whole green network of the city and be a part of a green politics, as it is in Copenhagen.

Discussion

Do we have some general idea for achieving the good level of sustainability for our cities? How can we plan the urban environment in the right way to be sure that in the future it will fulfill the needs of next generations as well? And, finally, how to make the best of living in the city for its users in everyday life?

This short study has uncovered some key findings that may improve the green infrastructure planning process in the way of its best contribution to sustainable urban planning. The case studies made in two European cities have shown how the urban planners from two different countries try to deal with this problem and how they perceive the role of urban green spaces. Green infrastructure planning is gradually gaining prominence in urban planning.

When comparing Copenhagen and Wroclaw, the first difference relates to the structure of organizations responsible for planning process.

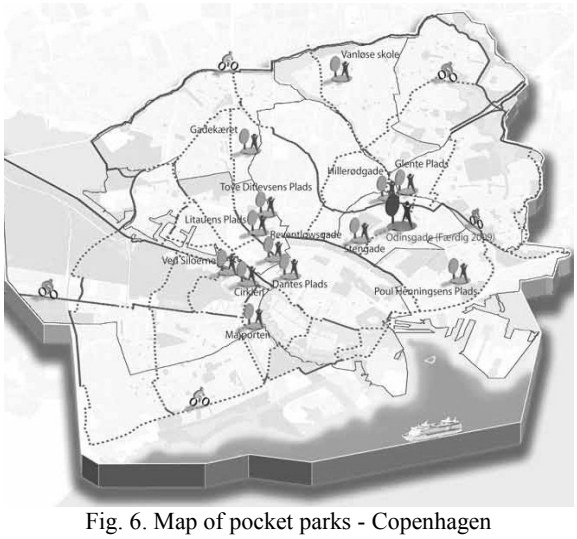

Fig. 6. Map of pocket parks - Copenhagen [Source: *Tag Parken i Lommen*, 2010].

Fig. 7. Pocket park – Odinsgale (Copenhagen) [Source: photo by author, 2010].

In the City of Copenhagen, departments of general planning (Finance) and specified green infrastructure planning (Parks & Nature) work independently. Moreover, there are separated units, like Urban Design and Building. In Wroclaw, on the other hand, there is one department realizing masterplans for both overall and environmental planning (City Development Office). This perhaps results in lower importance of green infrastructure planning in Wroclaw Urban Masterplan. Furthermore, Parks & Nature in Copenhagen is responsible for both planning, management and maintenance, while Public Green Space Management in Wroclaw only supervises green spaces areas maintained by private companies.

Another problem mentioned in the report is terminology. Both cities use the term 'green network' in their policies. However, City of Copenhagen defines it as 'green infrastructure', while in Wroclaw this definition is converted to 'system of environmental connections' or 'greenery system'. As it was mentioned earlier in the report, the first term increases the importance of green spaces in the planning process. Therefore, lack of this type of terminology may influences unfavorable decisions regarding greenery in the further urban development.

Green infrastructure planning in both cases includes blue and green areas. However, there are some differences of defining green spaces. For example, Copenhagen emphasizes the importance of playgrounds, while this type of areas are not even mentioned in Wroclaw as a part of the green network. The similar situation regards green roofs, which almost don't exist in Poland. Moreover, there is some distinction of functioning the cemeteries. Although this areas are part of a green network in both cases, their roles are different. In Copenhagen cemeteries have and extra function as recreational open spaces, while in Wroclaw sport activities on this areas are not practiced.

Another difference in the green infrastructure planning for this two cases is the urban agriculture approach. Allotment gardens in Wroclaw – because of its location (traffic areas, proximity of historical sites) – are planned to be converted from private to open public green spaces. This process may help to achieve the goal of 500 m distance to green areas (>2 ha) within the city borders. And all agriculture areas will be replaced in the future overall planning by areas with different function. The opposite process can be observed in Copenhagen. The urban agriculture issue will be promoting in the forthcoming green infrastructure plans as the

'Urban garden' concept [19], so the meaning of this idea will be increasing and it will become an integral part of the urban green network in the future.

Important difference regarding green infrastructure planning in both cities are green policies. City of Copenhagen has a range of them. Branding of green spaces in Copenhagen is visible and important part of urban planning. They are strongly promoted and every citizen has an easy access to them through the Municipality website. However, lack of many legally binding instruments results in treating green spaces not in a very strict way, as it is in some countries in Europe (Netherlands, United Kingdom) which have more green policies [12]. In the United Kingdom, the principal policy driver for improving opportunities for outdoor recreation is currently the 'greener, safer, cleaner' approach for neighborhood renewal, advocated by the Department of Communities and Local Government. This has the potential to harness local and national resources in creating a high quality network of streets, parks, pedestrian and cycle routes, which in turn could also provide real benefits for transport and environment policy too [23].

The example of implementation tool for green space policies in Copenhagen is 'Pocket park'. Case of Odinsgale points some weaknesses regarding its function as a meeting place (not many users) or keeping biodiversity area (lots of concrete surfaces), so its local contribution to sustainable urban development can be discussed. Nevertheless, on a general scale, it plays an important role of filling in the gaps in the green network of the city. Moreover, 'Pocket park' is a part of Climate Policy, what adds some extra value for green spaces as an integral element of future overall planning.

There are no specified policies regarding greenery in Wroclaw. Green spaces are part of some more general political objectives related to environmental issues. This results in a lack of implementation tools as e.g. 'Pocket park'. Nevertheless, the city emphasizes the importance of close distance to green, but large spaces (>2 ha). Process of transformation the allotment gardens to the public spaces is to be the main solution to achieve this goal.

Green infrastructure planning in Wroclaw is still remaining a challenge for urban planners. However, this may change in the future. City has already established a new goal to be the most environmentally friendly and green among all Central European countries. And greenery has been one of the issues discussed during open for the public consultations. This may be the first step towards establishing the new political aims related to green infrastructure planning as an integral part of sustainable urban development of the city.

Conclusions and recommendations

This short study has presented the way of thinking about green infrastructure by the urban planners and politicians, as well as its importance in an overall planning process. The case study for Copenhagen has shown the green issue as the significant element of the main strategies related to urban planning. The concept of 'Pocket park' is still being implemented, so the further research on it seems to be necessary to improve its functions related to sustainability requirements. The 'Urban garden' concept referring to urban agriculture needs more studies to be successfully put into practice, as it is a new step of developing a green network of the city.

The case study for Wroclaw has suggested the need of establishing an independent department in the City Council, which could successively implement the green infrastructure plans into an overall planning. The next main political objective should be that one regarding the green policies related specifically to green spaces. As long as there is a lack of this kind of documents, the importance of green infrastructure is never prioritized by the urban planners. Moreover, there is a necessity of emphasizing the need for green spaces through marketing and branding of this places among the citizens. This is the only one successful way of promoting the city itself as the 'green' one.

Acknowledgements

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Kopsavilkums. Autora pētījumā iegūtie rezultāti galvenokārt balstīti uz pieredzi, kuru vadīja un konsultēja Kopenhāgenas universitātes profesors Cecil C. Konijnendijk. Galvenais jautājums, kas ir ieviests ziņojumā attiecas tieši uz zaļās infrastruktūras plānošanas procesu divās Eiropas pilsētās: Kopenhāgenā (Dānija) un Vroclavā (Polija).

Autora pētījuma mērķis: atrast labu praksi, kas būtiski varētu ietekmēt pilsētas ekosistēmu un tās ilgtspēju kopumā. Kopenhāgena ir izvēlēta kā atbilstošs piemērs ekoloģiski orientētai pilsētai plānošanas sistēmā, kur ir attīstīta ilgtspējas joma daudz augstākā līmenī un ir iespējams salīdzāt ar citām pilsētām pasaules mērogā. Ziņojumā uzsvērts, kas ir svarīgi zaļās infrastruktūras veidošanā. Līdz ar to tiek sniegti atbilstoši risinājumi, kurus iespējams ieviest arī daudzās citās Eiropas valstīs. Pētījuma rezultāti ir balstīti uz pilsētu plānošanas dokumentiem (piemēram, zaļā politika), kā arī uz diskusijām ar speciālistiem, kas strādāja autora analīzes laukā.

Researching the Current Situation of Street Greenery in Latvia's large cities

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Abstract. Street greenery is one of the most important public green spaces that enhance the aesthetic and ecological quality of urban environment. Firstly street greenery helps create a city's visual image and it provides extra public space and secondly it ecologically links bigger green planting areas (parks, squares, etc.) and improves the microclimate. The aim of the study was to analyse the current situation and characteristics of street greenery in Latvia's large cities in order to determine the aspects limiting and enhancing aesthetic and ecological quality. Four cities were selected as study objects - Liepaja, Jelgava, Valmiera and Rezekne. Landscape inventory, photo fixation of street greenery, assessment of landscape ecological and aesthetic characteristics and examination of spatial plans of local municipalities were used in the research. The results indicate that street greenery is mainly arranged as street enclosing or bordering elements. They are formed as linear green groups, consisting mostly of trees, grass and hard ground cover. In general landscape ecological and aesthetic characteristics of the street greenery are of low quality and not in mutual accordance. Also the study did not reveal the landscape ecological aesthetic design approach used in the planning of street greenery. Generally, the cities selected for the research pay attention to the regular management and stewardship of street greenery. One of the aspects limiting aesthetic and ecological characteristics of street greenery is the long winter season, city's extreme conditions, vandalism and underground utilities and communication network in the green zones of the streets, which strongly influence the choice of plants. The analysis of spatial plans of local municipalities showed that street greenery is not distinguished as green areas of the cities. The description and recommendations regarding street greenery deal with the street as a unit of technical infrastructure. The main conclusion of the study is that in the future there should be more detailed descriptions of development of street greenery in spatial plans of local municipalities. They should reflect the main principles of development of street greenery either including both aesthetic and ecological characteristics.

Keywords: street plantations, street greenery, urban landscape, landscape ecological and aesthetic characteristics, spatial plans of local municipalities.

Introduction

The recent urbanization, when an increasing proportion of the population is moving from rural to urban life, activates the need for high aesthetic and ecological quality green areas, which include street greenery as well [12]. The proportion of urban green areas is declining over time, so there must be conservancy of the existing greenery system and creation of new green spaces that that would complement the existing green areas. Different patterns of green spaces could be located and included in the city's structure: semi-natural areas (urban woodlands, meadows, etc.), managed parks and gardens, complemented with linear plantings along the streets [12, 20].

A city with high quality and abundant greenery creates a good impression about its planning and management, and about a healthy environment for the residents [11]. Vegetation in the city brings many aesthetic, ecological, environmental, economic and social benefits. There are many benefits from vegetation [1, 11, 20, 22, 23] and woody plants [2, 4, 12, 13, 16, 19] mentioned in examined literature (Fig. 1). Plants, especially trees improve the city environment by shading, intercepting pollutants, attenuating noise, attracting wildlife, as well as by aesthetic preferences and social economic benefits.

City residents spend a great part of the day on the streets. The traditional image of a street consists of trees, shrubs and sometimes flowers [22]. At the same time street greenery is an important public area which additionally should provide safety, functionality, aesthetical and ecological qualities. All that could be achieved with developing street greenery as an urban greenway. Urban greenways are varied systems that include different types of linear green areas that link natural and urban green spaces. The term 'green' is indicated by vegetation and naturalness, however, the term 'way' refers to the movement from one area to another [12, 20].

In Latvia, where the weather includes long winter season with snowfall, the majority of street greenery consists of easy care and resistant vegetation - trees and grass. In Latvia's cities, renewable and newly planted street greenery (plantings where trees have historically been and then disappeared or trees are planned for development of existing greenery system) could be found. Street plantings for reconstruction (street plantings in very poor condition, which could become extinct in the following 15 years), retained and maintained street plantings (street plantings in good condition, which will not

require reconstruction of trees due to aging in the following 15 years) and street plantings with containers and trellises with climbers [3] could also been found there.

One of the most important aesthetic characteristics found in Latvia's climatic zone is the seasonal changes of vegetation. Plants express different seasons through blossoms in spring and summer, fruits and coloured leaves in the autumn and evergreen foliage and peculiar bark in the winter [19]. Therefore it is important to create street greenery not only using trees, but complement them with blossoming shrubs and flowers, thus improving both the aesthetic and ecological quality of a particular area which is enhanced by the biological diversity of the green plantings.

The aim of the study was to analyse current situation and characteristics of street greenery in Latvia's large cities, in order to determine the aspects limiting and enhancing aesthetic and ecological quality and to prepare the starting material for gradation of street greenery types depending on their aesthetic and ecological characteristics. The main tasks stated were the following:

1) to carry out a survey of street greenery in four cities: Liepaja, Jelgava, Rezekne and Valmiera;

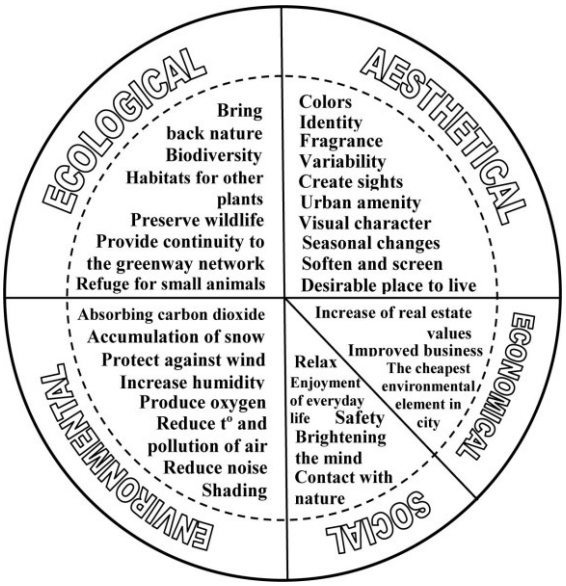

Fig. 1. Benefits from street trees and other plants [Source: construction by M. Jankevica].

2) to analyze landscape ecological and aesthetic characteristics of street greenery;
3) to examine planning and normative documents regarding the development and maintaining of street greenery.

Materials and Methods

The research objects were the main streets of Liepaja, Jelgava, Rezekne and Valmiera cities. All four cities represent four of five Latvian regions, created after the completion of administrative and territorial reform in 2009 [25]. Liepaja is located in Kurzeme, which is the Western Latvian region near the Baltic Sea. This region is characterized by pine forests, sandy seacoast and plain or wavy terrain. Jelgava represents Zemgale - Central region of Latvia with wide plains. The Eastern region - Latgale is characterized by Rezekne city, which is abundant with hills, lakes and forests. The last selected city Valmiera is located in Vidzeme region - in the North of Latvia, which is rich in forests and hilly landscapes (Fig. 2). All the selected cities, except Rezekne, are the largest in their respective regions in terms of population. Rezekne is the second largest city in Latgale. In the research study, 70 different streets were selected. Most of them were national transit streets and local streets, in the sections of which plantings are designed or will be created.

In the selected cities a landscape survey and assessment of ecological and aesthetic characteristics of street greenery were carried out. A field survey was carried out to collect objective data for further evaluation of aesthetic and ecological characteristics. During the survey, landscape inventory of the street greenery and photo fixation was carried out. To evaluate different ecological and aesthetic characteristics, the landscape ecological aesthetics assessment method [6, 7] was used in the landscape inventory. The assessment matrix from this method was adapted for particular research by selecting only those criteria that are appropriate for evaluating street greenery. The following criteria were used in the assessment matrix: *Use of unusual expressive plants* and *Use of native plant species, Biodiversity* (different plant species and plantation type were identified), *Quality of man-made elements* (character of landscape facilities), *Visible human intention, Wilderness* (applied land management and visible stewardship – human care about the place and landscape) and *Naturalness, Compositional coherence* (visual character of the streetscape). The criteria applied in the study are shown in Table 1. Description of the current situation was used for marking each criterion in the assessment matrix. Photos of the current situation were taken during the research from June to October 2012, covering the summer period. Pictures were used as a visual material for further assessment. Visual information available on Google Street view was examined to get a full spatial impression of the selected streets.

Fig. 2. Location of selected cities on map of Latvia [Source: construction by M. Jankevica].

The last stage of this study was the analysis of planning and normative documents of the four selected cities. There were Local municipalities' spatial plans and information on street greenery and maintenance were analysed. Current Spatial plans (including Explanatory note, Environment report and Graphic part), Strategy of sustainable development and City programme of the integrated development were analysed in the study to point out the main principles as well as limiting aspects of the development of street greenery.

Results and Discussion

Aesthetic characteristics of surveyed street greenery

Aesthetic characteristics of street greenery were evaluated according to visual character (compositional coherence), quality of man-made elements (street facilities), use of unusual expressive plants (different colourful plantings) and visible stewardship. Most of the street plantings were of linear and regular arrangement along both sides of the street – 54 % (Fig. 3). These types of plantings were found in the centre and next to main streets of the selected cities. Mixed plantings were located along the small residential areas and natural territories – 36 %. These plantings consist of different plant species and are located in asymmetric separate groups. Messy unarranged plantings were detected next to abandoned and neglected city areas – old war town and industrial zones – 10 %. Comparing to other cities, Rezekne and Liepaja have a regular straight street network, which provides a space for linear plantings. Jelgava and Valmiera are limited by rivers so the street network is dependent on the natural topography including curvilinear loop pattern. Accordingly, street plantings in Valmiera mainly consist of mixed plant material.

Street greenery includes different man-made facilities: carriageways, sidewalks, lamp posts and sometimes parking lots. In most cases of Latvia, a carriageway is made of old cobblestone in historical areas or asphalt in other part of the city. Sidewalks are made of concrete paving, granite cobblestones or round rock cobblestones (found in 8 cases). Trees are planted in lines of grass (found in 40 cases) or cobblestone limited planting beds (found in 13 cases) (Fig. 4). There are some places in Jelgava where turf and grass pavers are used next to the roots of trees.

Fig. 3. Street planting with common lime *(Tilia x vulgaris)* in Rezekne [Source: photo by M. Jankevica, 2012].

Fig. 4. Ash leafed maple *(Acer negundo)* and cobblestone sidewalk in Jelgava [Source: photo by M. Jankevica, 2013].

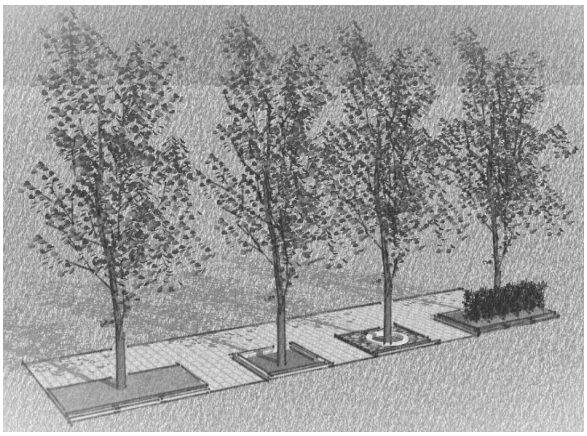

Fig. 5. The most detected design solutions for trees in selected cities [Source: construction by M. Jankevica].

The current situation of street materials is different according to degree of street depreciation and the last time of reconstruction. Good quality elements were found in streets with recent improvements while poor quality elements were found in neglected outskirts of the city. In this rated category, Jelgava is notable, because there are many different combinations of sidewalk coverage used to increase the aesthetics of the urban environment (Fig. 5).

In general, 23 different street tree species, 13 non-native species and 10 native species were found in examined four cities. After determination of the surveyed diversity of street tree species, the current situation shows that highest variety of street trees was in Jelgava, where most of the plant species are non-native. The dominant foreign tree species found in surveyed street greenery were common lime *(Tilia x vulgaris)*, horse chestnut *(Aesculus hippocastanum)* and ash leafed maple *(Acer negundo)*. Lime is a very popular tree in Latvia's cities; it is displayed in both Liepaja and Valmiera emblem. Street greenery in Jelgava is formed by smaller trees as well. Those have longer lasting decorative characteristics also after the short Latvian summer season, for example, Swedish whitebeam *(Sorbus intermedia)*, European rowan *(Sorbus aucuparia)* and hawthorn *(Crataegus horrida)*. These plants have beautiful blossoms in spring and colourful fruits during the autumn.

A wide variety of plants with coloured leaves is also used: field maple *(Acer campestre)*, northern red oak *(Quercus rubra)* and different sorts of Norway maple *(Acer platanoides)*. Thus, the urban environment of Jelgava changes with the season and improves the aesthetical quality of the city. In Liepaja different lime species were found – several trees of Caucasian lime *(Tilia x euchlora)* are recognized as trees of national importance (Fig. 6). The results of an unreasonable Soviet nature transformation program in Liepaja are still visible by the poplar species, which were planted in most of Latvian towns because of their fast-growing and easy shaping nature. In the 90s massive destruction of poplars began in Latvia, due to the fluffy white catkins that fill the air and the ground. Compared to other cities surveyed, two poplar species: hybrid black poplar *(Populus canadensis)* and balsam poplar *(Populus balsamifera)* were found only in Liepaja (in war town area, which is relatively sparsely populated, and its development is very slow). Variety of street trees in Valmiera was very poor, but it is improved by the use of shrubs and different flowers. Most of the street trees surveyed in Valmiera and Rezekne was old and tall. Therefore, generally street plantings consist of groups of native plant species.

Street greenery needs human commitment and care. Trees, like lime and ash leafed maple, require regular trimming of the crown. In addition, the lawn beneath the trees also needs regular care. Likewise, vandalism is a serious problem. There were broken new plantings of lime trees found in Rezekne. Similarly in Jelgava and Rezekne annual flower plants tend to be plucked, dug up and stolen. It is important for the city to develop a greenery management plan. Street greenery in the city centre is cared for (86 %), but in the outskirts may notice overgrown lawns and deadwood trees (14 %). Large tree planting groups as detected in Valmiera and Rezekne, do not need regular pollarding. A study of selected cities proved the following - the bigger the city, the more of a problem - regular specific maintenance of street greenery in all urban areas is not possible.

Ecological characteristics of street greenery in selected cities

The following criteria were used for evaluation of ecological characteristics of street greenery: Use of native plant species, Biodiversity (different plant species and plantation types found), Wilderness (applied land management) and Naturalness (visual character). Urban environment is a limited area, which is created principally for human needs. Thereby adapting naturalness in street greenery is a great challenge for city planners. Different grasses, shrubs and wildflowers can create naturally looking environment. However, formation of urban greenery in Latvia largely depends on long winter seasons. This is the reason why there were linear street plantings consisting of trees in most analysed cases from the selected cities. Natural greenery groups are feasible outside the compact city centres next to highways and sparse building areas – 31 %. Naturalness as a principle of landscape ecological aesthetics can be adapted in Jelgava because of its wide streets [5], still significant meaning in street greenery planning and establishment is attached to parking lots, thus decreasing the space for new plantings.

A vast majority of different plant species and types can be found in green spaces for recreation – parks, squares and waterfront areas [7]. Comparing similar researches on green spaces and plant diversity of Latvia, street greenery shows poor diversity of the plant species chosen for greenery. The most varied plant types were found in Jelgava and Liepaja. These two cities are similar in total area. Rezekne and Valmiera are smaller, thus the biodiversity of plants is appropriate to small area of these cities. Therefore, different shrubs, annual and perennial flowers shape the street greenery in Valmiera (Fig. 7). Plant diversity and choice of definite plant species are also influenced by street width and free space for greenery. The area of street plantings should be wide enough because it is used for underground utilities and communications network, accumulation of snow in winter, and it is also subjected to the impact of harmful substances from vehicles and road maintenance. The survey of the selected cities shows that conifers are rarely used as street trees in Latvia, except for Liepaja, which is located in the coastal area of the Baltic Sea and there are good conditions for growing of pines.

The most often found native tree species in the majority of street plantings were Norway maple *(Acer platanoides)*, English oak *(Quercus robur)*, silver birch *(Betula pendula)* and European rowan *(Sorbus aucuparia)*. Recent European studies demonstrate poor diversity of tree species used in urban areas [16]. The most popular tree species in Europe are maples *(Acer)*, chestnuts *(Aesculus)* and limes *(Tilia)* and criteria for selecting and planting particular tree species are low maintenance,

Fig. 6. Planting next to a pedestrian street in Liepaja [Source: photo by M.Jankevica, 2012].

Fig. 7. City greenery of common box *(Buxus sempervirens)* and marigolds *(Tagetes)* in Valmiera [Source: photo by M. Jankevica, 2012].

avoidance of structural problems, suitability for local conditions and availability in European nurseries [16]. However, this research proves that in Latvia other native plants are frequently used in street plantings. Most of these plants are tall and suitable for large-scale landscapes. Therefore, city planners are looking for new planting options and unconventional tree species.

Wilderness in urban environment can be brought back by masses of local plant species and shrubbery. Street greenery is not suitable for these types of plantings. Wilderness provides wildlife and diversity of native species. Street plantings in city centre demonstrate human care and responsibility for the environment, in that way excluding the unaffected natural regeneration. Wilderness in the analysed cities was detected outside the city centre and next to industrial areas.

TABLE 1

Comparison of street greenery ecological and aesthetic characteristics between selected cities

[Source: construction by M. Jankevica]

Criteria	Selected cities			
	Liepaja, 28 streets	Jelgava, 22 streets	Rezekne, 10 streets	Valmiera, 10 streets
Visual coherence	linear arranged plantings (12), mixed plantings next to natural areas (9), messy plantings in outskirts (7)	linear ordered plantings (16), mixed landscaped plantings outside the city centre (6)	city centre is very compact with linear plantings (5), mixed landscaped plantings next to small residential areas (5)	linear plantings are located next to main streets (2) and alleys of oaks (3), mixed irregular plantings (5)
Quality of man-made elements	30 % of streets are reconstructed (9) with new facilities and pavement	many reconstructed streets (12) with different types of pavement, new facilities	reconstructed main streets (5) with new pavement, other streets need change of hardcover (5)	reconstructed main street and highway (2), hardcover is too close to trees (5)
Use of unusual expressive (foreign) plants	*Tilia x vulgaris, Populus canadensis, Acer negundo, Aesculus hippocastanum, Populus balsamifera, Tilia x euchlora, Tilia platyphyllos*	*Tilia x vulgaris, Sorbus intermedia, Robinia pseudoacacia, Acer negundo, Acer campestre, Quercus rubra, Aesculus hippocastanum, Crataegus horrida*	*Tilia x vulgaris, Acer negundo, Thuja occidentalis, Aesculus hippocastanum, Crataegus horrida*	*Tilia x vulgaris*
Visible human intention	tree crowns are formed where linear plantings appear (15), mown lawn (24), weedy lawn (4)	tree crowns are formed (14), mown lawn (16), at the end of the centre – weedy lawn edges with seedlings (6)	tree crowns are formed (5), grass is mown in all cases (10)	tree crowns are formed (4), grass is mown in all cases (10)
Naturalness	landscaped greenery next to natural areas – meadows, Liepaja Lake (4), unmown lawn with wildflowers (2)	landscaped greenery where lawn is not groomed (2), natural look landscape next to small residential areas (4)	landscaped greenery next to small residential areas - different species of trees are rhythmically repeated (5)	natural protected areas - historical alleys of oaks (3), landscaped greenery next to nonessential streets (5)
Biodiversity	different trees, annual and perennial flowers, few shrubs, many native plant species	different trees, annual and perennial flowers, few shrubs, local wild plants in unmown lawn	different trees, few shrubs and flowers	different trees, shrubs, annual and perennial flowers
Use of native plant species	*Pinus sylvestris, Betula pendula, Acer platanoides, Salix fragilis, Fraxinus excelsior, Alnus glutinosa, Sorbus aucuparia*	*Quercus robur, Sorbus aucuparia, Alnus glutinosa, Betula pendula, Acer platanoides, Carpinus betulus*	*Acer platanoides, Quercus robur, Betula pendula, Fraxinus excelsior, Sorbus aucuparia, Picea abies*	*Betula pendula, Salix fragilis, Quercus robur, Picea abies, Acer platanoides*
Wilderness	next to neglected city areas, industrial territories	outside the city centre, next to old unmanaged streets, highways	outside the city centre	outside the city centre

Interaction between aesthetic and ecological characteristics

It is possible to include both ecological and aesthetic characteristics in Latvian city greenery system. The approach of 'ecological aesthetics' is not common for Latvian landscapes. The greenery of city centre still expresses more landscape aesthetics, though plantings in the outskirts provide ecological functions (Table 1). There is a need to reach a compromise between those two directions by using wildflowers, natural plantings and 'messy ecosystems' [15] where spontaneous and wild vegetation is left. This way of landscaping requires public involvement and change of perception because 'messy' landscapes can look attractive if people know the ecological function of what they view. The survey of the selected cities shows, that none of them had green street edges – informally arranged plantings with native and ornamental plants. Vegetated edges are associated with roads and incidental locations to supplement city green spaces [1, 12]. These types of plantings provide landscape ecological aesthetics with masses of coloured and textured grasses and indigenous traditional plants, flowers and shrubs.

At the moment 40 % of analyzed streets are reconstructed and well-kept. In most cases of the selected streets, greenery is not restored. Therefore, much attention has been paid to the maintenance and care of the existing plantings. The criteria to selecting the trees for urban environment are low level of maintenance and avoidance of problems caused by limited conditions. There could be criteria for ecological and aesthetical values.

Currently, the created street greenery system in all the selected cities is average and unconvincing, so the improvement for the city environment can include new possibilities for ecological aesthetics.

Results of analysis of spatial plans and normative documents of local municipalities

Urban greenery and landscape ecological aesthetics deserve attention and financial support using policies and laws. This is the way to enforce different landscape approaches in practice. In most of the analysed documents, streets were mentioned as a technical infrastructure (Table 2) with their main function of providing transport movement [9, 17, 21, 24].

Street plantings were separately divided from transport structure and added to green structure in the spatial plan of Liepaja [21] and a programme of development of Jelgava [8]. Also, in all the plans the future vision of street development was defined by the technical infrastructure and further direction of street plantings was not mentioned.

Possible solutions to the image of the city are referred only in Liepaja spatial plan in the research of green structure [21]: the creation of new street plantings, change of the greenery plant species, the recovery of historic avenues, to create flower plantings on the windowsills, green facades for the limited streets, etc. The spatial plan of Valmiera provides a special protection of trees and alleys, thereby ensuring a spectacular diversity of the urban area [24]. Several protected oak alleys that dominate in the urban street plantings are noted in the land use plan.

Looking at urban care and maintenance provisions, the recommendations for all green spaces of lawn mowing, cleanliness maintenance and branch lopping have been mentioned [10, 14, 18]. In Valmiera these types of rules have not been developed yet (Table 2). At the moment these rules are not so strict as to affect the desire for the landscape of ecological aesthetics, but allow average height of the lawn in summer season (10-15 cm) that limits the design and maintenance of natural grassland.

In general, urban planning documents focus on the cultural space and technical infrastructure of the city. Public green spaces, including street greenery, are only mentioned and play no major role in future development. However, that should not be that way - urban planners need to think more broadly about urban green structure as it was included in Liepaja Spatial plan. Green structure of the city does not confine itself with natural green areas and public spaces. It is a complex system where street greenery has a linking function.

TABLE 2

Street greenery system in planning and normative documents of local municipalities
[Source: construction by M. Jankevica]

Description	Liepaja	Jelgava	Rezekne	Valmiera
Description of current situation of streets	+	+	+	+
Street greenery is separated from street infrastructure	+	+	-	-
Further vision of development of streets	+	+	+	+
Further vision of development of street plantings	+	-	-	-
Description of required management for street plantings	+	+	+	-
Street greenery marked in graphic part	+	-	+	+/-

Conclusions

Street greenery builds a variety of natural and urban landscape interaction, provides nature with high visual aesthetic quality in a limited territory and secured outdoor recreational opportunities. There are many ecological, environmental, aesthetic, economic and social benefits and preferences of street plantings. This type of plantings should connect the current green spaces in the city with rural area and improve the visual character of the city.

There are many limiting nature and human factors preventing the implementation of ecological and aesthetic quality of street greenery - extreme conditions of cities, salt scattering and accumulation of snow in winter time, underground utilities and communications network and vandalism, which restrict plant variety selection.

In the selected cities the following types of street greenery were found: tree-lined streets with grass verges, tree-lined streets with shrubs, streets with grass verges and occasional trees. No green street edges with mixed vegetation, which could provide high ecological and aesthetical values, were found.

Overall, the examination of each city showed that the best current situation is in Jelgava, because more than a half of surveyed streets are reconstructed, the selected plants are varietal and colorful, but there are few native species. There is a lot of abandoned and messy street greenery in Liepaja, but it is positive that the spatial plan of this city includes recommendations for future development of street plantings. Rezekne has a compact city centre with arranged tree-lined greenery, but there are problems with vandalism. Valmiera currently has homogeneous street greenery; for all that most of the tree species, except for lime, are native. Assessment of aesthetic and ecological characteristics showed that Urban street greenery in Latvian cities is on average level. Usually street greenery provides landscape aesthetics and limiting ecological functions. This gap in Latvian urban planning needs to be filled by a search for new possibilities to improve overall landscape ecological aesthetics – by pleasant visual preferences and requirements for bringing nature back to the city.

Spatial planning documents mention street greenery, but there is a lack of information about the current situation of plantings, further plans and necessity of planting development, preferred types of street greenery, appropriate plant species and desirable composition. The existing greenery system could be upgraded by a database of actual and planned street plantings, including different plant species, age and visual parameters. Street greenery and other green spaces rated according to aesthetic and ecological values will improve the city development and management plans.

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Kopsavilkums. Pilsētas apstādījumi nodrošina vairākas estētikas, ekoloģijas, vides, ekonomiskas un sociālas funkcijas. Ielu apstādījumi kalpo gan kā pilsētas vizuālā tēla veidotāji, nodrošinot papildus publisko zaļo telpu, gan arī ekoloģiski sasaista lielākas apstādījumu teritorijas (parkus, skvērus, ūdensmalu teritorijas u.c.) un uzlabo pilsētas mikroklimatu. Pētījuma mērķis bija analizēt Latvijas lielāko pilsētu ielu apstādījumu pašreizējo situāciju, lai noteiktu estētisko un ekoloģisko kvalitāti ierobežojošos un veicinošos aspektus. Par pētījuma galvenajiem uzdevumiem tika izvirzīti: ielu apstādījumu izpēte Liepājā, Jelgavā, Rēzeknē un Valmierā; ielu apstādījumu ainavas ekoloģisko un estētisko īpašību analīze; ar ielu apstādījumu izveidi un uzturēšanu saistīto plānošanas un normatīvo dokumentu izpēte. Ainavas ekoloģisko un estētisko īpašību izpētē tika veikta ielu apstādījumu ainavas inventarizācija, fotofiksācija un plānošanas un normatīvo dokumentu analīze.

Rezultāti liecina, ka ielu apstādījumi galvenokārt darbojas kā ielu norobežojošie elementi. Tie ir veidoti kā lineāras augu grupas, kas sastāv no kokiem, zāliena un cietā ieseguma. Ielu apstādījumos tiek izmantotas dažādas koku sugas, ietverot svešzemju augu sugas ar dekoratīvām īpašībām un pilsētas apstākļiem piemērotas vietējo augu sugas. Pilsētas apstādījumu uzturēšana ietver regulāru zāliena pļaušanu un koku, krūmu formēšanu. Pilsētas centrā šie principi tiek ievēroti biežāk nekā perifērijā. Latvijas klimatiskajiem apstākļiem raksturīgā ilgstošā aukstā perioda dēļ ielu apstādījumos netiek izmantots plašs augu sortiments, galvenokārt dominē dažādas koku sugas un vasaras puķes. Dekoratīvie krūmi un ziemcietes tiek izmantoti retāk, jo ielu apstādījumu zona bieži vien tiek izmantota sniega uzkrāšanai ziemā, kā arī tajā nonāk kaitīgās vielas, kas ir ielu pretapledošanas materiāla sastāvā. Dabiska veidola ielu apstādījumi bija sastopami ārpus pilsētas centra blakus privātmāju rajoniem un maģistrāliem ceļiem. Savvaļas izskata apstādījumi tika konstatēti pie industriālām teritorijām. Pētījumā tika secināts, ka analizētajās Latvijas pilsētās ielu apstādījumi pēc estētiskajām un ekoloģisko īpašību izvērtējuma ir vidējā līmenī, un abi aspekti nav savstarpēji saskaņoti. Parasti ielu apstādījumi nodrošina ainavas estētiku un ierobežotas ekoloģiskās funkcijas. Tāpat pētījums neatklāja ainavas ekoloģiskās estētikas dizaina pieejas izmantošanu ielu apstādījumu veidošanā. Galvenokārt pilsētas plānotāji pievērš uzmanību regulārai ielu apstādījumu kopšanai un uzturēšanai. Kā vieni no galvenajiem ielu apstādījumu estētisko un ekoloģisko īpašību ierobežojošajiem faktoriem ir garā ziemas sezona, pilsētas ekstremālie apstākļi, vandālisms, kā arī pazemes inženierkomunikāciju tīkls ielu zaļajās zonās, kas ietekmē augu izvēli pilsētas apstādījumiem. Plānošanas un normatīvo dokumentu analīze parādīja, ka ielu apstādījumi netiek izdalīti atsevišķi kā pilsētas zaļās teritorijas un tiek saistīti kopā ar ielas inženiertehnisko raksturojumu.

Pēc pētījumā iegūto datu analīzes kā viens no secinājumiem ir, ka Latvijas pilsētu apstādījumu plānošanā ir jāmeklē jaunas tehnoloģiskas iespējas, lai uzlabotu ainavu ekoloģisko estētiku – iekļautu pievilcīgus vizuālos skatus, ko kopā ar ielu veido bagātīgi un daudzveidīgi apstādījumi, vienlaicīgi nodrošinot arī ekoloģiskās prasības un ideju par dabas ienešanu pilsētā. Nākotnē būtu jāizstrādā detalizētāki ielu apstādījumu izveides pamatprincipu apraksti plānošanas un normatīvajos dokumentos. Tiem būtu jāatspoguļo galvenie ielu apstādījumu attīstības principi, tostarp ietverot arī ainavas estētiskās un ekoloģiskās īpašības.

The yards of multi-story residential buildings in the Historic Centre of Riga

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Abstract. The study aims to define planning guidelines for the architectonic outdoor space of yards of multi-story residential buildings in the Historic Centre of Riga (hereinafter referred to as the HCR) based on the needs of the residents. The work includes a literature review and the empirical study.

The literature review examines the historical development of the building in the suburbs of Riga, the regulatory laws of the yard management. Also an insight into the planning principles of the cultural and historical city environment is provided based on the needs of the residents in the urban outdoor space. In the literature review, the character of the yards of multi-story residential buildings of the HCR is studied using the historical and contemporary photographs. The example of Copenhagen is discussed as a positive foreign practice in planning and management of yards of multi-story residential buildings.

In the empirical study, by population surveys, the intensity of use of the yards and the activities revealed in them are identified. Also the residents' views about the importance of different functions and their provision are found out, and the yard perception is studied. Within the empirical study, the study of the outdoor space of the multi-story residential buildings of the HCR is carried out, using the comparative matrix that fixes the functional zoning and the structure of the yards. The residents' favorite landscape elements and the development scenarios for the yards are identified by applying the photography method.

The study confirms the hypothesis that the yard landscape utilities does not match the needs of the residents due to insufficient provision of children's playgrounds, recreation and decorative functions. The obtained results indicate that the current practice of the management of the yards uses its recreational and social sustainability potential very poorly, thus reducing the total value of the HCR as an unified ensemble.

Key words: needs of the residents, yards.

Introduction

The HCR as a cultural and historical value of international importance is included in the World Heritage List of the United Nations Educational, Scientific and Cultural Organization since 1997. The unique value of this area creates an indivisible whole, which includes the structure of planning and architecture, the city's panorama and skyline, natural elements and greenery, a certain way of life and other diverse values [5].

In the architecture sub-sector, studies on the landscape of the HCR are mainly carried out in the context of greenery, with special attention to the gardens, parks and squares. While in the yards, so far the effects of the greenery on micro-climate [6], the building planning and development of the structure of the yards have been studied. Although in the architecture sector, several studies have been carried out on the development of the urban construction, the habitat and the city's architectural space, the yards of multi-story residential buildings of the HCR have been addressed only indirectly [3,5, 26]. The study examines the yards in the section of the needs of the residents, thus including an aspect so far unstudied.

Since the multi-story residential buildings are mainly concentrated in the nucleus of the HCR and the external parts of the nucleus, the study's general set consists of the yards of multi-story residential buildings of these two distribution areas of the HCR. The study does not include Old Riga, the Boulevard circle and the area of the Central Market.

The yards in the HCR take a considerable part of the outdoor space, but currently only narrow and specific population groups are permanently using them. The observations of the initial study and interviews point to a need for new approaches to the planning of the yards, so as, without parking and waste disposal functions, these areas would also be also used for recreation and communication.

Literature review

Historically the nucleuses of the HCR and the external parts of the nucleus have been created as a part of the suburbs of Riga from the 14th century. The current regular street network in these HCR zones has remained without major changes since the 19th century, while the principle of parcellation of the block of houses "back to back" dates back to earlier times – in the Riga city construction projects it appeared in the 17th century. The parcellation established orientation of the facades of the multi-story residential buildings against the street that along with the fences created the street front, while the ancillary buildings and the gardens were located inside the blocks of houses. Gradually, the areas

covered with gardens decreased to small patches located in the depth of the plot, initially giving place to the woodsheds, stables and coach houses, but later – to the warehouses, factories, workshops [2, 3, 17, 18, 19].

Its current features, the nucleus of the HCR and the external parts of the nucleus obtained due to the rapid changes during the period of the second half of the 19th century to the World War I, when, following the cancellation of the ban on the construction of brick stone buildings in 1858, the suburbs of Riga were under the transition to the closed perimeter building, mostly in the form of high-rise rental buildings. Along with the building density and intensity growth, the vacant parts of the parcels often were reduced to the minimal size set in the building regulations, while small gardens or yards with greenery were maintained mostly in the depth of the external part of the parcel of the nucleus of the HCR [3, 17, 18, 21, 25].

In the yards of multi-story residential buildings, the historically dominant household functions were fixed in the postcards of the early 20th century and until today it is a popular storyline in photographers' works, thus confirming not only the practical need of these functions, but also their importance in the creation of the character of the location. The communication of the residents in the yards during various household activities and the children playing are often reflected in the photographs of the socialist period. In the contemporary photographs it is substituted by the socialization that takes place in the framework of recreational activities [10, 29]. In turn, as evidenced by the photographers' creative work and field studies, the modest and heavily worn improvements of the yards in many places have remained unchanged from the time of socialism mainly due to the existing binding laws.

Under the effective legal provisions, the involvement of a certified landscape architect is mandatory only in the development of improvements of the public outdoor space, thus for the most part of the yards of multi-story residential buildings of the RHC, this requirement is not binding. The analog principle is also applied in the case of greenery – the involvement of an arborist is only mandatory for public greeneries. Similarly, the recommendations for the hard coverings in the yards suggest high-value, stylistically appropriate materials for the cultural and historical environment only for the public outdoor spaces. However, in order to ensure development of the yards of multi-story residential buildings of the HCR conformity with public interests, they should be subject to the same requirements as the public outdoor spaces.

The positive foreign practice is examined on the example of Copenhagen as the yards of multi-story residential buildings in Copenhagen built at the turn of the 19th and the 20th centuries resemble the yards of the nucleus of the HCR and the external parts of the nucleus by the building type, structure and scale, enabling to compare the techniques used in their planning and management. As the yards of multi-story residential buildings houses are part of the urban green structure, their development is determined by the city's overall development strategy. Although, the development strategies of both cities are based on the principle of sustainability, the long-term vision of Copenhagen for a complete abandonment of fossil fuels by 2050 is concrete and measurable, while the vision of Riga "Riga - opportunity for everyone!" is not only non-measurable, but also abstract and ambiguous in interpretation [4, 12, 16, 24, 28].

In the development program of Copenhagen, such directions as energy, transport, water supply, waste management, environmental quality, etc., are mutually integrated with each other and clearly serve for attaining long – term aims. Accordingly, the yard planning, creating them as the shared areas for residents of the surrounding houses, is part of the Copenhagen`s commitment to its "Eco - metropolis" status, where green areas are close the residents, providing opportunities for physical activities, recreation and meetings [16, 28].

In the management of the yards of multi-story residential buildings houses of the HCR, the experience of Copenhagen should be adapted. However its literal takeover, creating the shared outdoor space inside the block of buildings, in the most part of the HCR is impossible due to the configuration of the building therefore it is not desirable as it would result in a fundamental change of the historical structure of the building and the character of the place. Using the Copenhagen experience, a gradual pulling down of the garages would be desirable in the yards of the HCR, along with the construction of the aesthetic high-quality sheds for sorted waste containers, laundry drying and bicycles. Also the use of recyclable materials and ecologically appropriate species is necessary for the promotion of sustainability and biodiversity.

Methodology of the empirical study

The empirical study of the yards of the multi-story residential buildings houses in the HCR is carried out, using three methods: population survey, field studies and photography method.

The population survey

The survey was used in the study to determine the habits of the use of the yards by the residents of

the multi-story residential buildings and to study the perception of the yards. The survey took place from January to October 2012, bringing together 535 respondents. In order to discuss the specifics of the yards of the HCR at the city level, the residents of were interviewed from both the nucleus of the HCR and the external parts of the nucleus, and the rest of the area of Riga – 237 and 298 people, respectively. Thus, the general set of the survey is formed by residents of the multi-story residential buildings in Riga, and at the confidence level of 95 %, the error of the study is 4.2 % [7]. The inquiry forms were distributed in both paper and electronic format, to the randomly selected respondents. The paper format survey forms were found incompletely filled in approximately 20 % of cases, these inquiries were not included in the data processing.

The key questions of the survey include 3 blocks according to the features studied in them. As the first, staying of the residents in the yard is studied - both by its frequency and distribution in the daily and weekly perspective. Within this block, specific activities practiced in the yards are also studied. The second block of the questions regards the opinions of the residents of multi-story residential buildings upon the functions of the yards – their importance and compliance with the needs of the respondents. The attitudes, feelings and associations of the residents are studied in the final part of the survey.

The data collected in the survey are processed by computer, using the software SPSS 14.0. Each of the factorial features had an empirical distribution line to assess the suitability of their varying frequencies to carry out the analysis of the contingency. In the case of too low frequency of some factorial features the regrouping of the data was found. The primary information analysis was done for all the questions, using the empirical distribution lines, medians or mode determination. In the secondary analysis of the information, the analysis of contingency was used. In the section of the results, only coherences with 90 % of the significance level ($p < 0.1$) were interpreted.

The field studies

The field studies were carried out with the aim to identify the current state of the yards of multi-story residential buildings of the nucleus of the HCR and the external parts of the nucleus, based on the evaluation matrix. During the yard inspection, the information about zoning, functions, improvement elements of these areas and the emotional aesthetic resources were fixed in the matrix.

The field studies were carried out in the periods without snow - from October 2011 to September 2012, in total, there were surveyed 207 yards in the area of the nucleus of the HCR and the external parts of the nucleus. Accordingly, at the level of confidence of 95 %, the error of the study is 6.8 % [7]. The evaluation matrix data are processed using the software SPSS. The data have undergone both the primary and secondary analysis. The primary analysis of the information includes creation of the empirical distribution lines and determination of the median in several cases. In the secondary analysis, the analysis of the contingency is carried out. In the section of the results, only the coherences with 90% of the significance level ($p < 0.1$) are interpreted.

The photography method

The photography method is used to study the impact of the landscape elements on the preference of the yards thus finding the needs of residents in relation to the yard improvement. The method is borrowed from the studies of the major American environmental psychologists, the doctors of psychology of the University of Michigan - Dr. Rachel and Stephen Kaplan [11, 13, 14, 22]. The method is based on the evaluation of the preference of photographs. Preference is defined as a value, showing the extent to which the individual prefers the photograph or to what extent it is pleasant [11]. According to the studies carried out, the preference is interpreted as an intuitive moving towards effective functioning [15, 27]. While the evaluation of the preference is considered to be a valid and reliable way of evaluating the quality of the environment for over 40 years [1].

The study was carried out in 2012, from March to May, 90 students of various undergraduate and post-graduate study programs of the Latvia University of Agriculture and 2 lecturers participated in it. Accordingly, at the level of confidence of 95 %, the error of the study is 10.2 % [7]. Each of the respondents evaluated the preference for 20 yard photographs according to the 5-level scale, where “1” represents the lowest and “5” - the highest level of the preference. Each photograph was displayed for 5 seconds. In all the photographs, the backyard type yard was displayed in the nucleus of the HCR and the external parts of the nucleus. Half of the respondents evaluated original photographs, but the other half - photomontages in which one of the elements of the landscape was replaced by another.

Various widely spread landscape elements of the yards were mutually replaced: greenery, cars, elements of household and recreation. In the photomontages, the elements under the study were freely replaced one by another, except in individual cases, where due to the specific location of the elements, they were consistently replaced by an equivalent element in terms of the location. In the study, elements were mutually replaced rather than through photo montage added or removed from in

order to avoid the impact of different compositions on the evaluation of the preference. Due to similar reasons, all the photographs were converted to black and white ones, to eliminate the impact of the colors.

When processing the data with the software SPSS, the average preference evaluation of each original photograph and the photomontage was determined. For the obtained results, the contingency analysis was carried out to determine the effects of the mutual replacement of the landscape elements on the level of the preference of the yard. Also the impacts of various factorial features to the preference level were tested. In the section of the results, only the coherences with 90 % of the significance level ($p < 0.1$) were interpreted.

The results of the empirical study

The results of the empirical study of the yards of multi-story residential buildings in the HCR were obtained using the method described above – surveys of the residents of the apartment houses, field studies and the photography method.

The specifics of the yard perception and usage in the HCR

As in other parts of Riga, in the yards of multi-story residential buildings of the nucleus of the HCR and the external parts of the nucleus, the majority (53.2 %) of the residents uses them at least once a day. However, analyzing in the week's perspective, the HCR is specific, with a larger proportion of the residents that use the yards only on working days. The analysis of contingency shows ($p = 0.09$) that they are mostly people to whom the apartment is not the only permanent place of residence. Overall, about 10% of the residents in the HCR use the apartment and the yard only on working days, which is two times more than in Riga in total. However, the main tendency everywhere in Riga is the use of the yards regardless of the day of the week, being characteristic to nearly half (48.5 %) of the respondents.

Studying the intensity of the yard use in the 24-hour perspective, a gradual increase in the use of yards for the evening in the HCR is stated, while on the whole in Riga, the yards are used equally intensively during the day and in the evenings. Summarizing the information provided by the respondents on the stay in the yards, it is evident that approximately a quarter (24.5-27.0 %) of the residents does not use and not stay in the yards of the RHC at all, that within the margin of the error coincides with the data obtained for Riga as a whole.

The necessary activities such as waste disposal and car parking prevail within the activities implemented in the yards of the multi-story residential buildings of the nucleus of the HCR and the external parts of the nucleus. Among the optional activities, the most popular are sitting on a bench and children playing, which is done by only every fifth of the apartment house residents. The social activities occur as a result of the necessary and optional activities and are carried out in the yards by approximately a quarter of the respondents in form of communication with neighbors. Other optional or social activities suggested by the inquiry have not exceeded the threshold of 10 % (Fig. 1) from which it is concluded that the environmental quality of the yards is low and most people stay there due to the need and not by their own choice [8, 9].

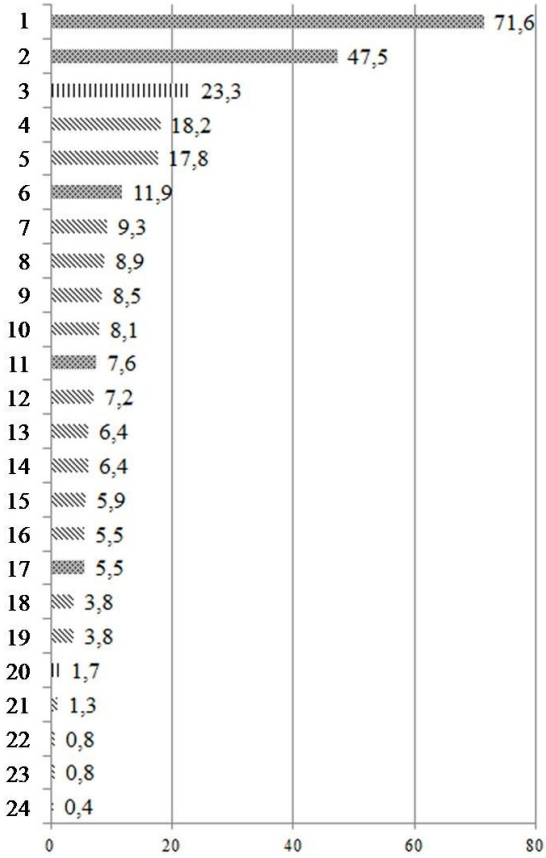

Fig. 1. The activities carried out in the yards of the HCR, where necessary activities, optional activities, social activities. 1 – waste disposal, 2 – car parking, 3 – communication with neighbours, 4 – sitting on a bench, 5 – children playing, 6 – walking with a dog, 7 – smoking, 8 – improvement, 9 – gardening, 10 – reading, 11 – firewood preparation, storage, 12 – bird feeding, 13 – picnic, 14 – laundry drying, 15 – sunbathing, 16 – individual sports, 17 – bulky waste disposal, 18 – walking with a cat, 19 – car care, 20 – team sports, 21 – rainwater collection, 22 – composting, 23 – pet care, 24 – board games [Source: the author's based].

In order to compare the activities carried out in the yards of the multi-story residential buildings in the HCR with the overall situation in Riga, the analysis of contingency was carried out. For all the activities, where the frequency of their carrying out is statistically related to the location of the yard ($p < 0.1$), in the HCR all activities were stated less frequently, that gives evidence of a relatively lower quality of the environment in this part of the city.

The significance level of the functions and their provision in the yards

In order to judge the importance of different functions of the yards of multi-story residential buildings, the respondents were asked to evaluate the functions according to their importance in the scale of 5 from "extremely important" to "completely unimportant". For analyzing the data of each given function, a median was determined that expressed the average significance level of the specific function among the respondents. As a result, by their importance to the residents, the functions are divided into 3 groups (Table 1).

The importance of some functions differs between genders - for women household ($p = 0.089$) and socialization ($p = 0.084$) functions in the yards are more important than for men. While the importance of recreation of a particular individual depends on whether the apartment is the persons only residence - for those respondents that part of the time live in a private house, summer cottage or farmstead, a recreation in the yards is less important ($p = 0.051$). It can be concluded that the residents of multi-story residential buildings, who have the opportunity to choose, prefer a recreation in private outdoor spaces.

TABLE 1

Functions in the yards of the HCR
[Source: construction by author]

Functions	Significance level	Provision, %	The zone being present in the yards , %	Problem level
Household	Important	71.0	94.2	Low
Car parking	Important	64.8	91.3	Low
Decorative	Important	33.1	52.4	Med.
Children's playgrounds	Important	26.9	3.4	High
Socialization	Quite important	61.4	-	Low
Peaceful recreation	Quite important	35.9	14.6	Med.
Active recreation	Minor	35.2	1.0	Low

The actual provision of the proposed functions in the yards of multi-story residential buildings of the HCR is evaluated as inadequate to the needs of the majority of the respondents. Compared to the HCR, in other parts of Riga, the residents are more satisfied with the functions provided in the yards ($p = 0.009$). The respondents think that in the yards of the HCR, the provision of children's playgrounds, representation, calm and active recreation functions is insufficient. With the provision of the representation function in the yards, particularly dissatisfied are respondents to whom the apartment in the HCR is not the only permanent place of residence ($p = 0.006$). This could be due to higher requirements for the visually aesthetic quality of the environment and with opportunities to compare the yard with another private outdoor space available for them. The residents who live in the particular apartment for a long time are particularly dissatisfied with the provision of the representation and decorative functions in the yards. As dissatisfaction with the decorative function of the yard rises in a direct proportion to the duration of the respondent's living in the multi-story residential building ($p = 0.046$), it shows the gradual degradation of the environment in the yard over a longer period of time, which is respectively visible, when living for a longer period of time in the given location.

While evaluating provision of the function of socialization, men are less satisfied with it than women ($p = 0.006$). Since socialization is the resultant to other activities in the yards, it must be concluded that the existing improvement, in particular, for men, does not provide a sufficiently long stay in the yards to meet the need for socialization.

Based on the levels of the importance of the functions for the residents and their actual provision, and also taking into account the presence of the particular zones in the yards identified in the field studies, in the yards of multi-story residential buildings in the HCR especially problematic is the provision of the function of children's playgrounds. While from this aspect, the decorative and peaceful recreation functions in the yards of the HCR are averagely problematic (Table 1).

The perception of the yards

Half (48.9 %) of the respondents perceive the yard as their own area, and almost as many (45.6 %) permanently or at least occasionally engage in the improvement and care of the yard. The respondents that own the apartment rather than rent it more often perceive the yard as their area ($p = 0.006$) - 57.3 % and 36.2 %, respectively. The trend to perceive the yard as their area and engage in its improvement and

care also gradually increases with the increase of time of residence of the respondent in the particular apartment ($p = 0.008$ and $p = 0.005$).

In the survey, the respondents were asked to indicate the first association that they felt at the thought of the yard of their multi-story residential building. Although the question is of an open type and the respondents could give a completely free response, it was possible to group the findings; in addition, many of the first association representative words precisely repeated many times (Fig. 2).

In comparison with the city of Riga, the inhabitants of the HCR associated the yard with greenery and the children's playground less frequently, while pits, narrowness and car parks, come to mind to the respondents even 3 times more frequently than in other parts of the capital ($p = 0.053$). No surprise that with the question of whether anything pleases the particular individual in the yard, in their responses the residents of the HCR were more denying – in this part of the city something flattering in the yards is spotted by only every third of the respondents, while elsewhere in Riga nearly half of the residents of multi-story residential buildings can find something positive in their yards ($p = 0.003$).

Greenery (60.0 %) is the main source of joy to the residents of the HCR, and it is often emphasized that it is created and cared by themselves. Most respondents get joy from a variety of woody plants, among which especially highlighted are horse chestnut trees that, in proportion to their actual distribution in the yards, have been mentioned more often than other species. Without greenery, the respondents are also overwhelmingly pleased with the comfortable resting places, the possibility to place a car and a well yard care - each of these aspects are mentioned by about 7 % of the respondents. While such characteristic, specific elements of the HCR as historic pavement and ancient sense are highlighted by only several individuals.

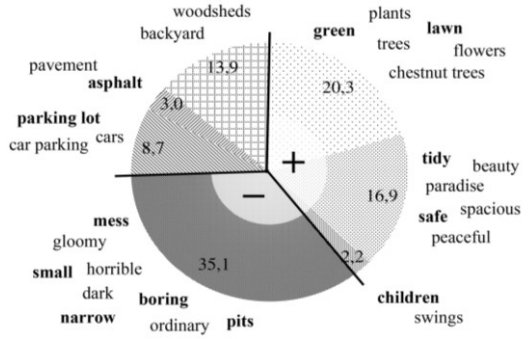

Fig. 2. The first association of the residents when thinking of the yard of their multi-story residential building in the HCR, where greenery, positive concept, children's playgrounds, a negative concept, car parking, hard cover, not classified concept
[Source: the author's based].

The functional and structural construction of the yards in the HCR

In the field studies, when recording the functions provided in the yards, 77.0 % of cases show clearly readable zoning. Unfortunately, this is rather due to the small number of functions provided in the yards (Table 1) than due to a sound, rational layout of the yards. Actually, the yards are provided with the household (94.2 %) and car parking (91.3 %) functions. In addition, for the provision of the household functions, the required elements are mostly waste containers - woodsheds and sheds for drying clothes are recorded at 15.9 % and 0.5 % of the surveyed yards, respectively. In relation to woodsheds in private properties, an alarming trend is found from the point of view of conservation of the structure of the building of the cultural and historical environment - the demolition of the woodsheds with the aim to set up the parking lots ($p = 0.011$).

In the yards of multi-story residential buildings of the HCR, a great attention is paid to the delimitation of the area, in order to reduce both an unauthorized access and parking. Gates and various types of barriers in the gate space are found in 65.7 % and 23.7 % of the surveyed yards, respectively. When comparing the gate proportion in different possession of the existing properties, the municipal properties are equipped with gates less frequent, therefore in these yards the residents more frequently make various delimiting elements to protect the recreation and decorative zones from cars. Large-size stones, flower containers, wire and wood fences, metal chains are mainly used for delimitation in the yards.

The initiative of the residents in the personalization of the environment in the yards is reflected in the creation of objects of art, mostly wall paintings (Fig. 3 and 4). Although currently in the field studies these types of objects are seen in only 1.5 % of the cases, they have a considerable potential in the creation of the identity of the neighborhood and the sense of community. The studies have shown [20, 23] that work invested by the individual is the determining factor to identification with a particular place. Thus, for the wall paintings to function not only as decorative elements but also to serve in promoting social sustainability, they must be planned and created by the residents themselves.

The study of the emotional aesthetic resources points to the problematic character of the yards in the HCR from the aspect of diversity — almost 3/4 the surveyed yards are classified as simple or ordinary. This issue also emerges in analyzing the data collected in surveys of the residents where "boring" is one of the phrases that are repeated in several occasions while describing the first association of the yard.

Fig. 3. A painted gate space in the yard of Street Matīsa
[Source: photo from author private archive, 2012].

Fig. 4. A painted wall in the yard of Street Stabu in the HCR
[Source: photo from author private archive, 2012].

The needs of the residents for improvement of the yards of multi-story residential buildings

When analyzing the effect of various elements of the improvement on the evaluation of the preference of the yards, a statistically reliable correlation is found in 12 of 20 pairs of photos used in the study. The highest average increase in the preference was found for wall paintings and a variety of plants, less positive impact was observed for the surveillance cameras. While the depiction of the waste containers, cars and air conditioners in the photographs of the yards consistently reduced the preference level. The effect of such recreation elements as benches and playground equipment on the preference were ambiguous that is mostly due to the small number of photographs used in the study.

In comparing the average standard deviations of the preference, it is found that the respondents have been very united in their opinions of the undesirable elements and the solutions of the improvements in the yards, while concerning the positive practices a larger diversity of opinions has been observed. Analyzing the gender, place of residence and the study program as factorial features, their impact on the preference evaluation is not significant, demonstrating the possibility to create universal yard design guidelines.

The obtained results indicate the residents needs of the aesthetically high-quality waste container sheds, the reduction of car parking lots and air conditioner stands in the yards of the multi-story residential buildings in the HCR. Taking into account the narrowness and the specific configuration of the yards in the HCR, the wall paintings are considered to particularly perspective in the improvement of the quality of the outdoor space.

Mutually comparing the average preference evaluations of the photos used in the study, it can be concluded that the respondents prefer large, multifunctional yards. At the same time, small size yards got as high average preference evaluation, but only if they had vegetation or original elements. Thus, the respondents have outlined two different development scenarios preferred by the residents, depending on the configuration of the yard. In small, narrow yards of multi-story residential buildings, which are mostly localized in the nucleus of the HCR, a special attention should be paid to the increase of vegetation and emphasizing the individuality of the yards through original elements, while at the exterior part of the nucleus of the HCR the yards must be used most rational to provide the residents with diverse functions.

Conclusions and the design guidelines

For conservation and development of the cultural and historical heritage, in the binding laws the requirements set to the public outdoor space should be subject to all the yards of multi-story residential buildings in the HCR, identifying a suitably qualified specialist attraction to the development of improvement projects and the yard care. In addition, for an effective regeneration of the yard environment, it would be necessary to develop and apply financial instruments such as the real estate tax reliefs as well as the co-financing for reconstruction of the yards.

1) The yard improvement solutions should be developed in cooperation with the real estate residents, providing an opportunity to participate in all stages of reconstruction – design, development and maintenance.
2) Before the commencement of the project development, the landscape reading of the yard should be done for determining the historical planning structure, with special attention of the existing coverage constructions with the purpose to identify the authentic cobblestone paving.
3) The authentic cobblestone coverings should be reconstructed under the historic planning structure or integrated into the new planning if the original improvement structure of the yard is not determinable.
4) The authentic stone woodsheds and other outbuildings should be reconstructed and integrated in the new planning of the yard. The preserved woodsheds made of wood should be renewed, subject to a uniform stylistics within the yard.
5) The species for the greenery should be chosen accordingly to the growing conditions in the yards, preferring highly durable, decoratively stable and easy to care genus. The vertical greenery is especially desirable.
6) The creation of stylistically suitable objects of art according to the character of the cultural and historical environment is desirable, in particular, wall paintings.
7) A gradual demolition of garages should be done, construction of new garages in the yards should not not permissible.
8) In plots of land where, due to the existing building density, it is impossible to fully ensure all the necessary functions, they should be implemented on the basis of the needs of the residents, primarily ensuring the household, decorative, children's playground, and calm and active recreation functions.
9) Parking lots are only allowed in the yards of the plots of land with the permitted building density of 60 %, primarily the household and recreational functions must be provided.
10) For the waste containers, functional and visually aesthetic, high-quality sheds should be created. In the cases of a sufficient yard area, similar sheds are also advisable for drying clothes and bicycle parking. Solutions of the household functions should be made in the most compact way, in order not to interfere with the provision of the recreational functions.

For the provision of more sustainable development of the yards of multi-story residential buildings, it would be desirable to involve residents in planning, thus strengthening the identity of the community and promoting the identification with the place. Although, the initiative of residents in the improvement of the yards of the HCR is already widespread the selected solutions often do not correspond to the nature of the cultural and historical environment. Therefore for a successful involvement of the residents in the planning, the work of public education on the preservation of the cultural and historical values should be continued at the State level, that Latvia has undertaken by ratifying the Convention on the protection of the world cultural and natural heritage.

While at the city level, it is necessary to define a clear vision for the development of Riga and specific, measurable long-term goals that include a consistent improvement of the outdoor space.

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Kopsavilkums. Pašlaik noslēguma fāzē esošās valsts un pašvaldības dzīvojamo māju privatizācijas ietvaros Rīgā kopumā privatizācijai nodots vairāk nekā 5000 māju. Pēc māju pārņemšanas aktuāls kļūs jautājums ne vien par ēku efektīvu apsaimniekošanu, bet arī par piesaistītās zemes racionālu izmantošanu un labiekārtošanu. Pētījumā izstrādātās Rīgas vēsturiskā centra daudzdzīvokļu māju pagalmu arhitektoniski ainaviskās telpas projektēšanas pamatnostādnes veicinās pagalmu rekonstruēšanu atbilstoši iedzīvotāju vajadzībām, kas ilgtermiņā palielinās ne vien katra konkrētā pagalma izmantošanu, bet arī uzlabos pilsētas vides un tās iedzīvotāju dzīves kvalitāti.

Raksts ietver literatūras apskatu un empīrisko pētījumu. Literatūras apskatā aplūkota apbūves vēsturiskā attīstība Rīgas priekšpilsētās, kā arī sniegts ieskats kultūrvēsturiskās pilsētvides plānošanas principos, kas balstās uz iedzīvotāju vajadzībām urbānajā ārtelpā. Literatūras apskatā pētīts arī RVC daudzdzīvokļu namu raksturs pēc vēsturiskajām un mūsdienu fotogrāfijām, kā arī aplūkots Kopenhāgenas piemērs kā pozitīvā ārzemju prakse pagalmu plānošanā un apsaimniekošanā.

Empīriskajā pētījumā, veicot iedzīvotāju aptaujas, apzināta pagalmu izmantošanas intensitāte, tajos realizētās aktivitātes, noskaidrots iedzīvotāju viedoklis par dažādu funkciju nozīmīgumu un nodrošinājumu, kā arī pētīta pagalmu uztvere. RVC daudzdzīvokļu māju pagalmu lauka pētījumi veikti izmantojot salīdzinošo matricu, kur fiksēts pagalmu funkcionālais zonējums un labiekārtojuma struktūra. Iedzīvotājiem tīkamākie labiekārtojuma elementi un pagalmu attīstības scenāriji apzināti, izmantojot fotogrāfiju metodi pagalmu patikas vērtēšanai.

Pētījumā apstiprināta izvirzītā hipotēze, ka pagalmu labiekārtojums neatbilstību iedzīvotāju vajadzībām nepietiekamo bērnu rotaļu, atpūtas un dekoratīvo funkciju nodrošinājuma dēļ. Lauka pētījumos konstatēts, ka pašlaik pagalmos faktiski tiek nodrošinātās saimnieciskās un autostāvvietu funkcijas. Salīdzinot ar pārējo galvaspilsētas teritoriju, RVC daudzdzīvokļu māju pagalmi ir specifiski ar zemāku vides kvalitāti, ko apliecina šaurs tajos īstenoto aktivitāšu loks, kas galvenokārt ietver vien obligātās saimnieciskās darbības. Tāpat RVC iedzīvotāji ir mazāk apmierināti ar pagalmu vizuāli estētisko kvalitāti un apsaimniekošanu, salīdzinot ar situāciju Rīgā kopumā.

Pētījuma rezultāti norāda uz apstādījumu, jo sevišķi kokaugu, nozīmīgo lomu iedzīvotājiem patīkamas daudzdzīvokļu māju pagalmu arhitektoniski ainaviskās telpas veidošanā. Saskaņā ar aptaujām esošie apstādījumi ir galvenais iedzīvotāju iepriecinājuma avots pagalmos, ko apliecināja 60 % respondentu. Arī fotogrāfiju metodē apstādījumi ievērojami un konsekventi paaugstināja pagalmu patikas vērtējumu. Pētījumā iegūtie rezultāti norāda, ka pašreizējā daudzdzīvokļu māju pagalmu labiekārtošanas un apsaimniekošanas prakse ļoti nepilnīgi izmanto teritorijai piemītošo rekreatīvo un sociālās ilgtspējas veicināšanas potenciālu, tādējādi mazinot RVC kā vienota ansambļa kopējo vērtību.

Harmony in Indoor/Outdoor Context in the Architecture of 21st Century Schools

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Abstract. Mankind has recognised the damage brought upon the nature and is looking for ways to amend it. The nature and its importance in modern human lives have become even more significant and affect all areas of life including environmental art. The present research addresses the development of school architecture in 20th-21st centuries and confirms the general social and, accordingly, architectural trend toward openness and harmony with nature. Abundant use of curved and multifaceted glazed surfaces on vertical and horizontal planes of exterior building walls makes integration of indoor and outdoor space very visible. When analysing environmental harmony in school interiors one may see that a most essential condition for indoor-outdoor harmony is a presence of a landscaped greenbelt. In order to take practical steps on the way to harmonious environments in school buildings and other objects, according to their function, as well as in towns and cities in general, long-term urban greening development and preservation plans should be as detailed as possible and their implementation should be established in the law. This would help in reaching better results in harmonious environment development.

Keywords: harmony, outdoor space, indoor space, glass systems.

Introduction

Subject's relevance and explanation

In the 21st century technologies have brought rapid changes in modern urban space. Glazed facades have transformed cultural historic urban landscapes in architectural, energy efficiency and social communication aspects. As glazed facades help to dissolve barriers between indoor and outdoor space, direct communication between the two forms. In Latvian climate, with insufficient optimum lighting and insolation of rooms in winter period, glass systems are a prospective construction material from energy efficiency point of view. The latest technological achievements provide a possibility to insert heating elements in glass systems, and they may be equipped with cooling facilities as well. Effective methods have been found for care and maintenance of glass systems. This has opened up new impressive opportunities in outdoor/indoor space design yet also established certain threats, or risk factors. Depending on the type of outdoor space, one may discern three large groups in joining outdoor/indoor space.

Architecture in a picturesque natural landscape. For example, a building at the sea, a river or a lake, in a meadow or forest, with glazed façade or fixed casement window with an open view to nature-shaped landscape. We may be quite sure about environmental quality and harmony when indoor space connects to a picturesque natural landscape. In such cases the proposed objective almost always is achieved. The only thing left to do is, in designing stage, to carry out a timely and well-considered evaluation of possible seasonal changes of colour and mood. The most significant interspatial communication spot in this case is located indoors. The presence of nature mostly leaves a positive impact on the inner harmony of environment and people because the human being is a part of nature. The situation in urban environment is different.

Architecture in urban environment in which one has to count with the existing urban situation, imposes a double load. In this case the viewing direction goes from indoors to outdoors and the other way round. The second option is as much important as the first one. The third option should be mentioned, too: the use of plate glass in glazed facades from exterior side. In this case glazed mass acts as a multiplier and helps to increase green volumes of parks and historic and cultural environment optically. At building design it is important to evaluate not only the impact of urban environment upon interior decoration, but also how building's content and function will expose itself in outdoor space, i.e. urban environment. Such interspatial communication imparts significant responsibility upon creators of environment not only from the aesthetic but also psychological aspect of harmony. One of risk factors is a non-evaluated and unbalanced application of glass systems in environment architecture in relation to Latvian mentality: comparing to a European citizen, an average Latvian is more introvert, unsociable and, in a psychological sense, still under the spell of communistic genocide consequences. Society in Latvia still needs time in order to get rid of fear and to accept the openness offered by the new glass systems architecture step by step.

Proportionally, the most significant part of environment design situations are cases when we

can design outdoor/indoor space in correspondence with the building's function and established programme. Those buildings have adjacent land territories. Possibilities of harmonious development are extensive in such cases however the know-how in Latvian situation is insufficient.

The bottleneck of previous research

"Issues of public outdoor space system development and aspects characterising its quality up to now have not been among the primary focus of research. Also, the problems of regenerating historic environment's outdoor space and structure of building development plan have up to now been mainly addressed from the aspect of historic and modern stylistics of architecture, overlooking the issue of how reconstruction of historically very significant objects might influence environmental quality as to its recreativity [1]."

In relation to interspatial communication, the art of Chinese and Japanese gardens possesses millennial well-cultivated traditions in creating harmonious landscapes that may be viewed from inside through an opening. However, climatic, floristic and cultural differences do not let us use this method in Latvia; in the best case it may be done only indirectly. At present, there are no studies particularly addressing possibilities of harmonised outdoor/indoor space development. The situation is even more dramatized by the heritage of soviet times, both due to the quality of construction process and the low morals of society in reference to the collective living space. Society takes a relatively good care of everyone's private environment, yet does not find it possible to invest equal effort in maintaining the common life space, and education institutions may be able to encourage positive attitudes in this aspect. These problems create a necessity to develop a set of measures in order to further public development including studies of outdoor/indoor harmony development options in particular settings, and possibilities of a practical application of such harmony. In a long term, this would help to create a humane, friendly environment for a city dweller of any age to live happily, work and raise up seed. The possibilities offered today by the European Union set new requirements to Latvian education system, too, obliging it to prepare not only globally competitive specialists but also an inclusive society.

Aim of research

Because the hypothesis of research already addresses thestatement that, within 21st century technologies, a new architectural landscape is evolving, it is important to study the interaction of outdoor/indoor compositional elements through a glass system and the importance of its context in the spatial development of modern environment, landscape architects and to bring out the possibilities of harmony development in the conditions of Latvia. It is the basis for developing a successful cooperation of architects/interior designers, and the results of this cooperation, on their part, depend on theoretical and ideological approach to the tasks of architectural design process. At present it is very important because landscape architecture is still new and the principles of outdoor/indoor interaction and their ideological development, or future vision, are unclear. This aspect has been insufficiently studied: earlier there was no clear necessity for it. Now it is important that, as a result of a general commercial pressure, environmental balance were not upheaved but, on the other way round, improved and developed further. Important sources of harmony development in interspatial context are the many objects already built.

Basic standpoints of the present work are vested in the main political strategies of Latvia [11]:

1) participation in the European Union and, consequently, striving towards European standards;
2) belonging of Latvia to Northern European, or Baltic, sea region and looking for common ties in the area of residential building development.

Materials and Methods

Classic i.e. comparative (or, informative) architectural research was chosen as the main method. It helps to gather an extensive informational material on built objects and to make a precise exposition of the essence of the theme under research, i.e. interaction of spaces through glass systems and make conclusions by help of visual comparison. This, on its part, is the basis for making further conclusions on possibilities of the development of harmony in the future. One shall also employ auxiliary methods such as graphoanalystic method, analysis of photographic materials and sociological inquiries with comparisons of data obtained.

Results and discussion

Architecture today offers a very rich assortment of research material; therefore, within the limits of the present article, we will touch only upon the main tendencies of this aspect illustrating it with typical examples.

Employment of indirect and reflected light in architecture and interiors should be mentioned as one of the ways how outdoor/indoor harmony is expressed.

It is achieved by employment of light shafts, refracted and collapsed glass systems, and mirrors in architecture. These techniques are virtuously used by Gunnar Birkerts (1925), a prominent architect of Latvian origin in the United States who designed

and built buildings that gained popularity in the world, especially due to employment of indirect light systems in architecture. He also patented this system in his time.

The concept is already here
I search for words to express it.
It is the methaphor of glass
Appropriate
Free flowing and amorphous
When heated it the glory hole.
Crystalline and structured when cold
and formed.
The perimeter envelope is analogous to
the amorphous
The interior supporting srtucture
expresive
of the order
of the crystal.
Great contrasts.

(Gunnar Birkerts' poetic metaphor dedicated to the Corning Museum of Glass) [1].

Birkert's creative work proves that outdoor/indoor harmony is possible to achieve not only on above ground level but also between underground spaces and above ground. As the theme of this research relates to schools, his designed Lincoln Elementary School in Columbus, Indiana, 1965 (1967) should be mentioned as example.

The closed central part of this school is lighted on two levels by using indirect light system, innovative for the time [2]. Indirect daylight fills the space with a velvety radiance; such lighting is recognised to be more suitable for learning process than direct light because sunrays and the view from window do not hinder the concentration of children.

Another school building designed by Birkerts, Lillibridge Elementary School Addition, Detroit, Michigan, 1962 (1963), convinces that one may come close to harmony if the light enters the room in a direct way as well, but only through glass systems situated high above ground. Communication, or the angle of view, in such cases, looking from inside to outdoor landscape, does not touch the ground [3]. Interior space is filled with a gentle breeze-like light.

Light in itself is an absolute value and its use as the only communication means between indoors and outdoors makes it possible to approach harmony; this is proved by extremely many architectural objects in the whole world. M. Kundziņš (1936), a long-term teacher of the Functional Design Department of the Art Academy of Latvia who developed a bionics course for artists and taught it in the Academy from 1980 to 2004, summarised his knowledge in the book "*Dabas formu estētika*" ("Aesthetics of Natural Forms", 2008).

The present work sums up the criteria of harmony analysis. In accordance to M.Kundziņš' observations harmony may be described mathematically, proved geometrically with golden section, substantiated by colour coordination, correspondence of forms, bonding of nature and art, and also the unity of the man's emotionality and spirituality with the nature's laws etc. In his designing process Gunnar Birkerts goes deeper than laws set by the mind and consciousness. In autumn of 1983, in the University of Illinois, Birkerts announced: "After many years of work, done according to methodologies of my teachers where academic approach to designing, i.e. problem solving, largely took over, I have recently liberated myself from theories and methodologies and, without the least of doubt, accepted the strong influence of intuition upon the process of creation [4]."

This, probably, opened the source for the growth and fruitfulness of Birkerts' creative work. Consequently, here his investment in school architecture should be mentioned: award of the American Institute of Architects for Cornell University Uris Library Addition Itaca, New York, 1980 (19820) [6], University of Iowa College of Law Iowa City, Iowa, 1979 (1986) [5] and a number of outstanding libraries playing an important role in education process as such.

As a second way of the manifold expression of outdoor/indoor harmony one should mention windows that serve not only as a source of light, but, in successful cases, also as frames of a picturesque landscape. Historic origins of this method can be found already in the art of ancient Chinese and Japanese gardens; naturally, window openings were not glazed due to privileged conditions set by those specific climates.

In comparison to the historic heritage, the spirit and trends of the present century are graphically characterised by the new extension of the Art Academy of Latvia in Rīga, 13 Kalpaka Boulevard 2010 (2012), designed by SZK un Partneri), in contrast with the historic building block designed by architect Wilhelm Bockslaff at the start of the 20th century, initially for the needs of the Commercial School of Rīga Stock Exchange. The majestic architecture of the historic building designed in the forms of romantic eclecticism, its interior, abundantly decorated with art nouveau details and ornamental stained glass, declares an indisposition for an outdoor/indoor dialogue (Fig. 1). The interior decoration's essence integrates well into the human-created one and expresses a frozen self-satisfaction (Fig. 2). The new extension, on its part, accentuates the openness of indoor space to the outdoors, its dynamics and transformations, seasons

of the year changing (Fig. 3). This architecture confirms a general tendency of this age – the man is looking for a way back to the nature and harmony. The adjacent park's presence has been successfully employed in outdoor/indoor dialogue here. By help of a ramp, the window to nature has, in a way, assumed culminating looks, something like "the light at the end of a tunnel". Paradoxically, one should still admit that this window opening, not corresponding to the classic beauty standard, i.e. proportions of the golden section, ideally frames the dark, naked silhouettes of old trees on the background of a blue sky shining in the March sun.

The architect has not intended to stay here, and the nature, hurriedly passing the man, can only lightly caress him. However, for a city dweller, unpampered by the nature, and especially for a becoming artist, this is a powerful source of inspiration. In contrast to a brutally-finished wall plaster the window towards the nature seems like peeping into a paradise.

Fig. 1. New addition of the Art Academy of Latvia designed by SZK and partners. Facades, view from building's backyard [Source: photo from author's private archives].

Fig. 2. View of staircase design in the historic block of the Art Academy of Latvia [Source: photo from author's private archives].

Fig. 3. View of interior design in the new addition of the Art Academy – entrance ramp [Source: photo from author's private archives].

The third type of outdoor/indoor harmony one should mention is employment of large glazed surfaces in the architecture of schools joining interior recreation and transit areas with a picturesque natural outdoor landscape. A graphic example is the new addition of Jelgava Secondary School No. 4 designed by architect A. Ziemeļniece. An effective means of artistic expression in this case is the convex part of the glazed façade that allows nature to be a part of interior decoration in a much stronger way than it would be in the case of a linear glazed façade (Fig. 4; 5 and 6). For primary school children in their short study breaks it helps to feel the calming touch of nature, to gain strength for the next class and to preserve inner balance in a situation of tension or competition. Interior colour palette is harmonious, too: warm orange colours dominate in contrast to north-west orientation of the glazed façade part. The sun rays penetrate this building part in the evening when studies at school are already over and direct sunlight does not upset anyone. In such well-considered architectural design no additional expenses for sunblind purchase are necessary. A dialogue with the outdoor space involving a garden in the school's backyard, is present also in the dining room's addition. An analogous approach, or a testimony to the characteristics of this age, is employed in the recently built International School of Latvia, 2009 (2010), in Piņķi, Babītes region, 2 Meistaru street (Fig. 7 and 8).

Project's authors, architects D. Zalāne and A. Roķis, have made the following comment on the harmony of outdoor/indoor dialogue:

"Indoors and outdoors of the International School are visually integrated, with the aim to create a sense of common space with two functionally different areas – indoors dominated by study function, and outdoors dominated by rest function. Technically speaking, it has been achieved by adjoining indoor atrium with the external front yard with a voluminous glass surface in the height of two levels. Studies and leisure time have been conceptually 'united', focusing them around a visually united common space with atrium and backyard, creating a feeling of them flowing into each other. Entering the school is designed with an overhang adjoining front yard's area and organically leading pupils into the building's main part – atrium, the focus of the school's life" [12].

Fig. 4. Facades of Jelgava Secondary School No. 4, architect A. Ziemeļniece
[Source: photo from author's private archives].

Fig. 5. Foyer of Jelgava Secondary School No. 4, architect A. Ziemeļniece
[Source: photo from author's private archives].

Fig. 6. Foyer of Jelgava Secondary School No. 4, architect A. Ziemeļniece
[Source: photo from author's private archives].

Fig. 7. International School in Piņķi, Babītes parish, architects D. Zalāne, A. Roķis. Facades
[Source: http://www.zalane.lv/lv/projekti/publiskas-ekas/48-latvijas-starptautiska-skola/
full-gal-70-464/#imageLatvijas Starptautiskā skola].

Fig. 8. International School in Piņķi, Babītes parish, architects D. Zalāne, A. Roķis.
Lobby design in dialogue with outdoor space [Source: http://www.zalane.lv/lv/projekti/publiskas-ekas/48-latvijas-starptautiska-skola/full-gal-70-464/#imageLatvijas Starptautiskā skola].

Fig. 9. View form interior upon atrium in a building of the Faculty of rural engineers designed in soviet time [Source: photo from author's private archive].

The third subtype of outdoor/indoor harmony one should mention is standard designs for the needs of higher education institutions developed in soviet times. The block of the Rural Engineering Faculty of the Agricultural University of Latvia, with analogous designs all over the former soviet territory, may serve as a characteristic example. There, architects offered a possibility to make a harmonious link between outdoors and indoors by creating a glazed atrium with a beautiful garden. By embracing atrium with ground floor lobby, in the transit zone one may feel a touch of nature (Fig. 9). The movement easily slides past an artificially grown, well-tended natural landscape in miniature.

An example of a most intensive outdoor / indoor communication and a testimony of a general tendency is reflected in the new Swedish Openspace school [8]. It is built in Stockholm and is the first school where classrooms have no walls. The school is a logical follow-up to the Nordic education system winning always more followers in the whole world thanks to its treatment of pupils. The aim of this education system is to bring up a free, harmonious personality in the spirit of cooperation, in contrast to the ruling system which produces "parts for the big machineries of the world".

In the building's rectangular perimeter one has planted an expressive interior design, open to outdoor space not only through glazed facades but also through voluminous glass systems in ceiling, thus breaking down the traditional sense of the room as a cage-like place. The man, being a part of nature, is looking for the way to a spiritual and physical balance, or harmony. "The existing education system is not able to ensure the growth of a harmonious personality. The volume of information accumulated by mankind has created a situation when since early childhood certain branches of learning are divided into several paths. One of them is followed by scientists, another one – by artists, and both seem totally different …

Those are ways of learning about the world, the rational and the emotional way. After all, the man is a whole, with his own mind and feelings. For a harmonious personality, interaction with the world gives a chance to perceive all types of information and to look upon all things and phenomena in their interconnection" [10].

Conclusion

Results obtained in the present research confirm the proposed hypothesis that the development of outdoor/indoor harmony, within technologies of the 20^{th} - 21^{st} century, form a new space with landscaped architecture. The observed tendency of openness is still following an upward curve and addresses many areas of social life. Therefore, a harmonious outdoor/indoor dialogue should be granted an important role based on theoretical viewpoints stemming from advanced interdisciplinary research. One the most important indicators of society development are its education system and school architecture subordinated to it. The existence of described tendencies is proved by a research made on the architecture of school buildings. Proportion of glazed facades and window opening areas gets increased in relation to floor area in corresponding indoor rooms. Diversity of employed glazed surface forms enforces outdoor/indoor communication, too. Thus, for example, employment of convex or broken multifaceted glazed surfaces integrates the nature, or urban environment, in interior designs. It makes the dialogue between outdoor and indoor space gain an unprecedented echo. The said research confirms that mankind is intensively searching for the way back to nature, peace and harmony, in step with scientific achievements.

Because environment creation is a long-term project (bigger trees, for example, reach maturity in 30-50 years) I believe that long-term urban development projects should include as detailed a greening expansion vision as possible. City landscape architects-in-chief, on their part, and their subordinate administrative structures should strictly follow that certain projects be integrated in and not disharmonized with common urban greening projects. Such a farsighted strategy would provide a chance to improve not only architectural landscapes in cities, their ethical and esthetical quality and silhouettes, but also indoor space quality, because both spaces have become closely linked. Architects and interior designers, on their part, would have a chance to use such a greening expansion plan as a basis for their work and create harmonious environments taking into account existing and envisioned landscapes of this plan. This would be a practical step on the way to harmony between outdoor and indoor spaces.

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Kopsavilkums. Harmonija - saskaņa, samērīgums (krāsu toņu harmonija; harmonija arhitektūrā; cilvēka iekšējā harmonija). Šajā rakstā tika analizēta izglītības iestāžu ārtelpas un iekštelpas harmonija mūsdienu arhitektūrā, kuras izteiksmes veidu, materiālu un formu iemieso apjoma ziņā pieaugošu stikloto plakņu pielietojums būvmākslā. Stikls kļuvis par neizsmeļamu iedvesmas avotu arhitektiem, interjēristiem, māksliniekiem un, pateicoties savām fiziskajām, emocionālajām, psiholoģiskajām īpašībām, sniedzis plašas iespējas ēku veidošanas mākslā. Stiklotas plaknes, lietotas plašā dimensiju spektrā, kļuvušas par mūsdienu arhitektūras un pilsētvides neatņemamu sastāvdaļu, veido jaunu arhitektoniski ainavisku telpu. Tomēr, lai pēc trīsdesmit vai piecdesmit gadiem nebūtu bēdīgi jāsecina, ka šādā vidē mēs nevaram dzīvot, savlaicīgi tiek pētīts un analizēts pozitīvais un negatīvais šīs tendences pienesums kopējā dzīves telpā. Tas pavēris gan jaunas, grandiozas iespējas telpu veidošanas jomā, gan radījis arī zināmus draudus jeb riska faktorus. Svarīgi augšminētajā ilgtermiņa mākslas veidā nenokavēt brīdi, apstāties un uzdot sabiedrībai, ekspertiem un administrācijas pārstāvjiem retorisko jautājumu:"Quo vadis?".

Atkarībā no ārtelpas tipa ir izdalāmas trīs lielas grupas ārtelpas un iekšteplas savienošanā. Pirmkārt, arhitektūra gleznainā dabas ainavā. Piemēram, pie jūras, upes, ezera, pļavā vai mežā būvēta ēka ar stikotu fasādi vai vitrīnas tipa logu ar atvērtu skatu uz dabas veidotu ainavu. Mēs varam justies lielā mērā droši par vides kvalitāti un harmoniju, ja tiek savienota iekštelpa ar gleznainu dabas ainavu. Šādos gadījumos gandrīz vienmēr izvirzītais uzdevums sasniedz mērķi. Otrkārt, arhitektūra urbānā vidē, kurā jārēķinās ar esošo situāciju pilsētvidē. Treškārt, arhitektūras un ārtelpas vienlaicīga jaunrade atbilstoši ēkas funkcijai un uzstādītajiem mērķiem. Tiešu pētījumu par āŗtelpas un iekštelpas harmonijas attīstības iespējām Latvijā pagaidām nav. Situāciju dramatisku padara padomju laikos atstātais mantojums gan ar savu izpildījuma kvalitāti, gan sabiedrības zemo morāles līmeni attiecībā pret kolektīvo dzīves telpu. Tā kā XXI gadsimta tehnoloģiju ietvoros veidojas jauna arhitektoniski ainaviska telpa, tad ir svarīgi izpētīt ārtelpas un iekštelpas kompozīcijas elementu mijiedarbību caur stiklotu plakni un tās konteksta nozīmi mūsdienu vides telpiskajā attīstībā, izkristalizēt harmonijas attīstības iespējas. Tas ir pamats, uz kura attīstīt ainavu arhitektu-arhitektu-interjeristu veiksmīgu sadarbību, kuras darba augļi savukārt secīgi ir atkarīgi no projektēšanas uzdevumu teorētiskajām un idejiskajām pamatnostādnēm. Kā viens no ārtelpas un iekštelpas harmonijas izpausmes veidiem, jāmin netiešās un atstarotās gaismas pielietojums arhitektūrā un interjēros. Kā otrs harmonijas daudzveidīgās izpausmas veids starp ārtelpu un iekštelpu jāmin aile, kas kalpo ne tikai kā gaismas avots, bet arī kā ierāmējums gleznainai ainavai veiksmīgos gadījumos. Kā trešais ārtelpas un iekštelpas harmonijas veids jāmin lielu stiklotu plakņu pielietojums izglītības iestāžu arhitektūrā, kas savieno interjera rekreācijas un tranzītzonas ar gleznainu dabas ainavu ārtelpā. Kā trešā virziena paveids - veidojot stikotu ātriju ar skaistu dārzu, harmoniski sasaistīt ārtelpu un iekštelpu. Aprakstītajā pētījumā tika analizēts ārtelpas – iekštelpas komunikācijas veids un harmonijas faktors tajā. Analizējot harmoniju ar salīdzinošo foto un grafoanalītisko metodi kā arī apsekošanu dabā tika pētīti tās noteicošie faktori: arhitektoniskais veids kādā ārtelpa komunicē ar interjeru, forma, krāsa, proporcijas, cilvēku psiholoģiskās likumsakarības u.c. Kopumā pētījums apstiprina, ka latviešu arhitektu darbos, kas projektēti izglītības iestāžu vajadzībām 20.-21. gadsimtā pieaug ārtelpas-iekštelpas savstarpēja integrācija, pateicoties dauzveidīgam stikloto plakņu pielietojumam arhitektūrā un vispārējam tendencēm vides mākslā. Ēku stikloto fasāžu un aiļu laukumu proporcija palielinās attiecībā prêt attiecīgo iekštelpu grīdu laukumiem. Arī pielietoto stikloto plakņu formu daudzveidība pastiprina ārtelpas un iekštelpas komunikāciju. Tā piemēram – uz ārpusi izliektu vai lauzītu,

daudzšķautnainu stiklotu plakņu pielietojums integrē interjēros dabu vai urbānu vidi. Tas nozīmē, ka dialogs starp ārtelpu un iekštelpu iegūst vēl nebijušu rezonansi. Tā kā vides veidošana ir ilgtermiņa projekts, piemēram, lielie koki sasniedz savu briedumu 30-50 gados, uzskatu, ka ilgtermiņa pilsētvides attīstības projektos būtu jāizstrādā un jāiekļauj iespējami detalizētāka apzaļumošanas attīstības vīzija. Savukārt pilsētu galvenajiem ainavu arhitektiem un tam pakļautām pārvaldes struktūrām būtu strikti jāseko, lai atsevišķi projekti iekļautos kopējā pilsētvides apzaļumošanas projektā, nevis disharmonētu ar to. Šāda tālredzīga stratēģija pavērtu iespēju uzlabot ne tikai pilsētu arhitektoniski ainavisko tēlu, tā ētisko un estētisko kvalitāti, siluetu, bet arī iekštelpu kvalitāti, jo tās kļuvušas savā starpā cieši saistītas. Savukārt arhitektiem un interjēristiem būtu iespēja balstīties savā darbībā uz šādu apzaļumošanas attīstības plānu un izmantot maksimāli lietderīgi tā esošo un paredzamo skaistumu savos darbos, veidojot harmonisku vidi. Tas būtu praktisks solis ceļā uz ārtelpas un iekštelpas harmoniju.

Historical vegetation used as camouflage at *Festung Breslau* (Fortress Wrocław)

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Abstract. Areas around fortified cities offer extra historical values, which were introduced into landscape centuries ago. Historical vegetation at former fortresses was a part of 'living defensive systems'. Large areas of land and roads were planted with appropriate plant species according to military instructions. The combination of local species and land configuration (natural defence areas) protected the fortification and deployed troops. Fast growing trees and shrubs were moulded into hedges, clusters and lanes screening and camouflaging the fortress's roads and plots of land. Studies of historical vegetation at fortresses are based on collecting old technical guidelines, maps and aerial photographs, as well as on field research. In this article, the authors present general examples highlighting the role of vegetation used for camouflaging fortifications. The example discussed is *Festung Breslau* (Fortress Wrocław) over 120 years after its construction.

Key words: camouflage, historical vegetation, *Festung Breslau*.

Introduction

In the authors' opinion, *Festung Breslau* possesses camouflage green typical of that of German fortresses, planted in response to the introduction of dedicated technical guidelines in 1905 [17]. The hypothesis put forward in the paper calls not only for the consideration of general issues related to unique fortress structures, but also to a broadly understood fortress landscape, including camouflage and observation. In order to determine whether the fortress has any features distinguishing it from other surviving domestic complexes it is necessary to examine the historical aspects used to establish the main context in which the fortifications were erected. The study was designed to preliminarily examine the types of fortress greenery with a view to establishing whether it is subject to any threats and how the fortress greenery in the former fortress plots can be managed. To this end, the authors present some general remarks based on field observations, as well as results of their examination of archival sources.

Camouflage, deceit and concealment used in fortification can be of interest to a landscape architect. Over its long history, the world has been constantly changing, experiencing innumerable wars, which has affected the cultural landscape. As the nature of war has altered, so the camouflage, which has had to meet the current requirements, has been modified. Consequently, the rules of the deadly 'hide-and-seek' have changed all the time as well. Misleading and incorrect information obtained by direct or indirect observation could determine the results of battles in various theatres of military operations. Vegetation, being part of landscape, could either hide or show off a given area to enemy fire or observation. Because of the country's geopolitical changes, Poland's territory constitutes a unique military park with former Polish, Austrian, French, Soviet, Russian, Prussian and German fortifications [5].

First scientific studies regarding the fortress landscape in Poland focused on investigating the existing situation and determining possible options as regards the development of fortress sites and their greenery were carried out in Cracow under Prof. Janusz Bogdanowski (1923-2003) and a team of scientists from the Technical University of Cracow. The research done in the last 25 years has not only encompassed architecture, but also the exposure of facilities in landscape on the example of Fortress Cracow and Fortress Przemyśl in the Austro-Hungarian Empire. It was preceded by surveys of archival sources, which disclosed a number of connections between landscape and defensive architecture. They covered for instance masking vegetation and activities related to the concealment of facilities and soldiers from the enemy. It is noteworthy that the area taken up by masking green was sometimes bigger that the areas of the villages adjacent to a town or of its individual districts.

Following the sociopolitical turning point of 1989, historical fortifications grew in importance, principally due to ownership changes and increased accessibility of former fortress areas to a broad spectrum of scientists and enthusiasts alike. However, the changes also marked the beginning of a gradual degradation of the facilities, which had lost their owners, and so are no longer subject to maintenance or care. At the same time, the natural and ecological value of the fortifications subject to secondary succession started to rise.

Studies of former fortress sites, focusing on their nature, possible use for recreation or tourism, quickly covered the whole country. The studies were conducted at over a dozen sites throughout Poland, including: Gdańsk (*Festung Danzig*), Giżycko (*Festung Boyen*), Toruń (*Festung Thorn*)

Poznań (*Festung Posen*), Srebrna Góra (*Festung Silberberg*), Szczecin (*Festung Stettin*), the so-called *Międzyrzecki Rejon Umocniony* (*Ostwall* or *Festungsfront im Oder-Warthe Bogen)*, Warsaw and Wrocław (*Festung Breslau*). A number of steps have been taken in association with the Society of Friends of Fortifications, whose many field units are still active today. This led to the establishment in 2002 of Poland's first Fortress Cultural Park – at *Srebrna Góra*.

Camouflage in fortifications

Camouflage is a means of disguising the true nature of objects [8]. At the turn of the 20th century, normal practice was to camouflage both fixed and field fortifications. Professor Bogdanowski (1896) described camouflage as various devices or efforts aimed at hiding, covering or optically deforming fortifications or their parts [1]. The visual aspects connected with fortifications derive from mimetism, which in the world of animals was researched by A. H. Thayer (1849-1921) [11]. His observations were utilised in the 'human world of armed conflicts', in painting warships in the so-called dazzle camouflage, which made it difficult for the enemy to accurately determine the distance to them while aiming guns.

Form, shadow, texture and colour are unique features of land, which to a large extent determine measures to be taken to mask various facilities. Although such technical solutions as painting or covering roads with camouflage nets were also applied, greenery played the predominant role in introducing camouflage. Planting extensive sections of fortresses with various species of flora became a universally accepted practice. Furthermore, it was officially governed by technical regulations and quickly became a landscape-affecting factor. Plants used for camouflaging fortresses included above all local trees and bushes, which did not require introduction. It is also for this reason that variety was preferred; from formal and linear arrangements, e.g. in the form of lanes, through arrangements typical of rural burial grounds or cultivated green areas, to solitar trees, informal and loose tree clumps. Where possible, greenery was thickened and filled in, to make it similar to that in areas adjacent to fortress plots. Naturally, the character of the camouflage depended on landscape type; it was different in strongly urbanised areas and different in suburban or rural areas. The plant camouflage was designed to look naturalistically, with its soft lines to a large extent mimicking the natural landscape of tree stands and loose groups of trees. The use of rhythm and formal plantings forming geometric arrangements was to imitate burial grounds, brickyards, parks, gardens, orchards and standard lines of vegetation along transport routes. Landscape camouflage was also used to blur outlines of fortress facilities against the background of earthen embankments and the horizon. The diversification of tree species, varied forms and habits was necessary to create a natural space, in which monocultures were avoided, among other things, in order to protect plants against pests. The variety of form was also connected with the need to ensure sufficient protection against observation from air, at the same time enabling own observation points to be set up for instance in trees.

However, trees and bushes were used for military purposes for much longer. They were utilised to create obstacles around fortresses. However, sometimes vegetation made defence more difficult. In 1806, at *Festung Silberberg* (Fortress *Srebrna Góra*), which guarded a strategically important mountain pass, in fear of Napoleonic soldiers, extensive stretches of forest around the town's defences were felled. This created approaches open to own artillery and making an attack by the enemy's infantry difficult. The tree stumps were used to erect defensive facilities: palisades, barricades and blockhouses.

Role of vegetation in fortifications

At present, however, because of a change in the nature of armed conflicts and the way in which wars are waged, the old plantings perform ecological, protective and aesthetic functions. Formerly, vegetation played varied functions related to fortifications. It was used in screens, obstacles (Fig. 1), technical applications (e.g. as a building material, for ground stabilisation), but also for decoration. Vegetation connected with garrisons was used inside fortresses, performing the function referred to above in representative locations, barracks or gardens. In turn, tactical green was connected with supply and transport routes related to the fortress's logistics. The following groups of greenery [10] can be distinguished:

1) Obstacle-type green, formed in approaches and midfields around fortifications. Used independently or as an element accompanying moats, pits and infantry obstacles in the form of barbed wire entanglements, often hidden in land depressions. Appropriately selected and planted bushes and trees could also be used as live obstacles. Also forests were used as obstacles, but this topic goes beyond the scope of this paper.
2) Camouflage green, intended for optical deformation and to confuse enemy observers to make them interpret landscape features wrongly. It was formed by existing groups of trees and bushes, typical of suburban areas, such as alleys,

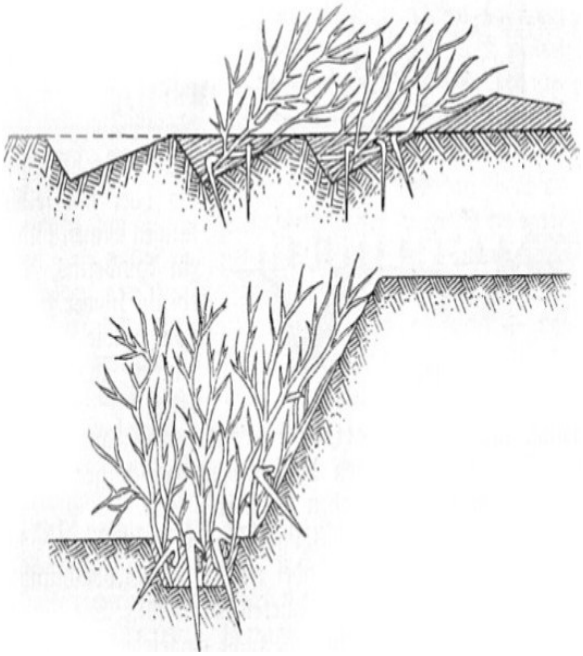

Fig. 1. Tree branches and bushes sharpened and pointed towards an advancing enemy [14].

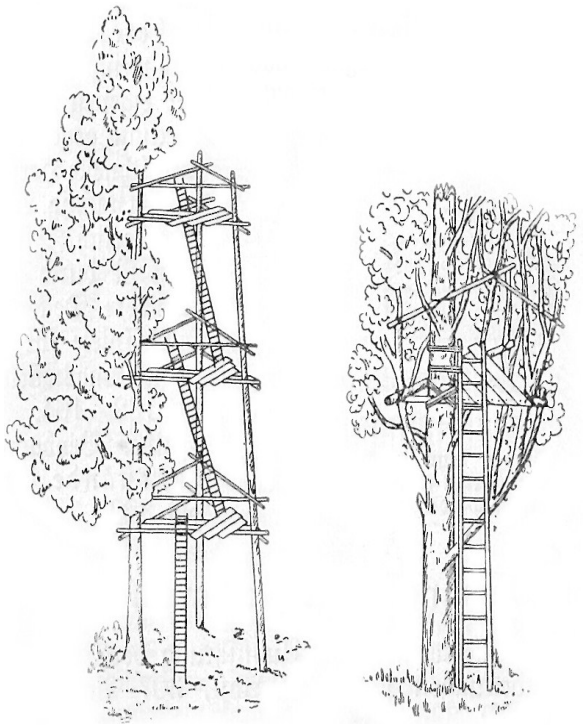

Fig. 2. Combined trees/bushes & wire obstacles [14].

lanes, clumps of trees, orchards, parks or burial ground green. Their areas were covered with vegetation made to resemble nearby farmlands or urban greenery (parks, burial grounds) and clumps of trees or bushes (as well as town forests, cultivated land, etc.) typical of a given part of the town.

3) Green performing an obscuring-and-accompanying function (Fig. 2), whose purpose was to make movement of own troops more difficult to detect by the enemy. To this end, principally trees with a round or wide-spreading form and fast-growing bushes were used. These were planted along routes connecting detached fortifications with storehouses, food warehouses, ammunition depots, railway lines, fortress roads and stake storages.

The intended camouflaging effects [9] can be roughly divided into:

a) Deformation, used as a deliberate loss of features indicating the intended use of the camouflaged fortifications.
b) Confusion, i.e. an intended obscuring of the location of the camouflaged facilities.
c) Misinformation, understood as measures designed to make the determination of the actual use of a facility more difficult, where such a facility cannot be camouflaged, whatever the reason.

4) Green performing an accompanying-and-masking function, planted to obscure transport routes (roads, railway lines, etc.). How effective was obscuring-and-accompanying green in camouflaging infrastructure and troops to an outside observer is shown in the table.

TABLE 1

Visibility of items (people and objects) depending on the distance of observation
[Source: Środulska-Wielgus, J., 2002, p. 135]

Item	Type of object or facility	Distance in metres (approx.)
1	Detached house	5,000
2	Single tree	3,000
3	Smaller tree, bush, single individual	1,000-2,000
4	Human figure, telephone pole, tree silhouette and trunk, house window	900-1,000
5	General outline of a human figure (movements of arms or legs), large tree branches	700-800
6	Tree branches, barbed wire entanglements	500-600
7	Colours, details of a human figure, outlines of headwear, clothing, small twigs, window shutters, weapon type (machine gun, Kalashnikov assault rifle)	300-400
8	Face oval and clothing colours, tree types	250-300
9	Face outline, clothing and weapon details, leaves on trees, barbed wire	150-200
10	Face features, e.g. nose or mouth, leaf shape, tree bark	70-100

Materials and methods of historical analysis

The study object – *Festung Breslau* (Fig. 3) – was built in the Prussian Empire in the early 20th century, and has been within the Polish territory since 1945. The fortress encompassed both banks of the Odra River, and was divided into right- and left-bank sectors [13]. It was used as a storage place and was capable of perimeter defence against an army equipped with field combat assets. It was an important crossing point on the Odra River and boasted a well-developed railway network and industrial hinterland. During the final stage of its development, there were erected some hydro engineering facilities, including fortress weirs that enabled the approaches to be flooded to create water obstacles on the tributaries of the Odra River: Czarna Woda, Ślęza, Widawa and Oława [6]. The fortress's extension was accompanied by a very fast development of aviation, which also had an impact on camouflaging the fortifications. Taking into account that observations could be conducted not only from balloons, masking vegetation was planted within the fortress's plots and along its roads.

During the last 25 years, the studies into *Festung Breslau* have primarily focused on building structures (Infantry Forts – ISt, Infantry Shelters – IR, Mobilization shelters – U) , and less on aspects related to landscape, ecology, land development or the condition of the existing vegetation. The current status of studies into the historical vegetation connected with *Festung Breslau* indicates a very limited availability of historical materials in the form of documents and planting plans. In this respect, the authors have used the topographic maps to be found at Archives de la Societe des Nations in Geneve and a description of the fortress construction. To some limited extent, also the results of surveys and analyses done as part of practicals by students of the Institute of Landscape Architecture in Wrocław in the years 2005-2006, presented in a 2007 publication by Potyrała [7], were used.

The most interesting piece of information about *Festung Breslau* is to be found in a report concerning the arrangement of artillery, drawn up by a so-called artillery officer (*Artillerie Offizier von Platz)* on 29 June 1911 [16]. The report claims that the southern line of defence had weak points as regards movement of own artillery and its possible retreat on roads (non-masked retreat routes). We also learn that visibility from the identified artillery positions was limited to hills from which close aims could be struck with direct fire. Similarly, a freight ring railway embankment, along which five artillery positions were placed, was also not protected (Fig. 7). The passages under the embankment had a strategic importance and also required protection, including camouflage. The required trees and bushes were consequently planted, which was attested by a site visit and a regular arrangement of the vegetation.

Because some archival materials survive, we can trace the history of the construction of the fortifications making up the fortress's defense core. Certain general conclusions regarding the planning and arrangement of greenery can be drawn. Between 1880 and 1905 infantry forts were erected in Wrocław. Of importance was also the period 1910-1912, when the bunkers on the right-hand bank of the Odra River were redeveloped into infantry bunkers (*Infanterie Stutzpunkt)* [12]. The areas around and between the forts and the bunkers were designed to provide appropriate shelling fields. During the redevelopment, concrete firing sites, bunkers for guards and emergency services were added, and most probably during this stage proper work connected with vegetation camouflage was done. To the best of the author's knowledge, there are no sources containing information about trunk circumference, crown size or tree spacing. Tentative field observations indicate that some trees were already growing in the fortress plots when the fortifications were started to be built. Such information could only be provided by invasive studies of individual specimens by means of, for instance, a Pressler drill.

A tentative analysis of the stand of trees was conducted on the basis of a general survey. The age of the was determined using a table drawn up by Prof. Longin Majdecki, by measuring their diameter at a height of 130 cm. No results of previous surveys of stands were available, and so the analysis was principally based on field measurements taken in the years 2010–2012. It is worth noting that the adopted tree age determination method is not very accurate, as the trees covered by the analysis had been growing in various habitats in different parts of the city, with different groundwater levels, soil and other factors.

Some general information can be found in the 'Technical guidelines on how to make fortifications unrecognizable to the enemy' issued by the General Inspection of the Engineer Corps in Berlin in 1905 (T.V. A 27) [17]. The guidelines specified that camouflage should be prepared using local species of trees and bushes grown in nurseries arranged in the hinterland of the fortresses in which they were to be planted. The planting plan was to include detailed steps individually adapted to specific fortress structures, taking account of the local habitat conditions. The steps were taken and then their effectiveness was verified from ground and air during peace time in order to make any necessary adjustments before war broke out. The list below includes the species of trees and

bushes grown in fortress nurseries and enumerated in the Guidelines referred to above.

a) coniferous trees (*Nadelhölzer*)

Abies alba
Abies procera
Larix
Pinus sylvestris
Picea abies

b) deciduous trees (*Laubhölzer*)

Aesculus alba
Alnus
Betula
Carpinus
Fagus
Fraxinus
Qurcus (pedunculate oak*)*
Platanus
Populus (e.g. alba, tremula)
Robinia pseudoacacia
Sorbus
Tilia
Ulmus

c) shrubs (*Straücher*)

Caragana pygmaea
Berberis vulgaris
Ligustrum vulgare
Crataegus monogyna (hawthorn, slow growth rate)
Lonicera
Salix alba
Salix acutifolia
Corylus avellana
Laburnum anagyroides

d) fruit trees (*Obstbaüme*)

Cerasus
Juglans regia
Malus
Prunus (Prunus spinosa, blackthorn)

Also earthwork and coverings of finished embankments were taken into consideration:

a) seeds (*Samensorten*) (50-60 seeds per square metre)
Cereals (Hordeum, Avena, Triticum)
Grasses
Fagopyrum
Lupinus
Vica sativa
Trifolium
*Sinapis alba (*appropriable*)*
Seradella
Brassica napus
Medicago
Rapistrum Crantz
Ammophila arenaria
Pisum

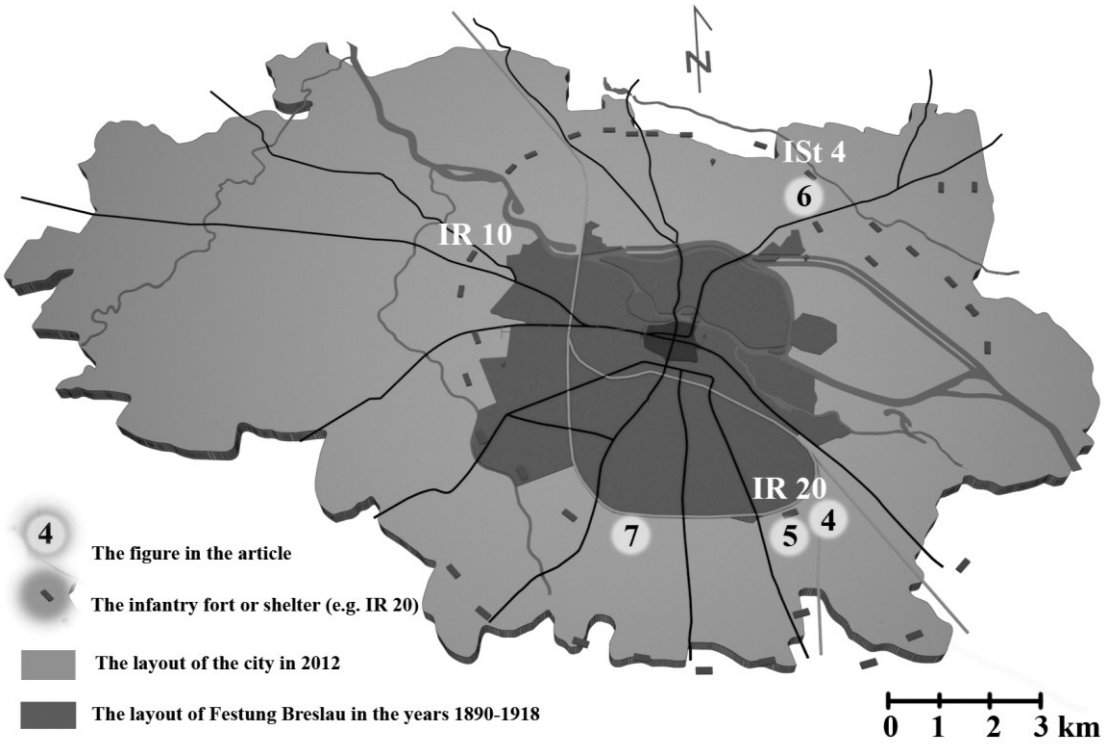

Fig. 3. The layout of *Festung Breslau* in 1914, and the fortress against a 2012 city map [Source: construction by author, 2013].

Results

Camouflage green at *Festung Breslau* was to be found principally in approaches to various facilities, often along fortress plots and in the neck portions of forts and infantry bunkers. Some facilities were built below the ground surface, lower than the neighbouring areas (e.g. IR 10, IR 20), and their earth forms were planted with vegetation, which had a positive impact on their concealment. In this way, landscape based on natural and soft lines was formed (e. g. forts along the Widawa River), thanks to which the outlines of individual fortifications, which could otherwise have been seen against the horizon, were blurred. Their areas were covered with vegetation made to resemble nearby farmlands or urban greenery (parks, burial grounds) and clumps of trees or bushes (as well as town forests, cultivated land, etc.) typical of a given part of the town.

On most fortress plots, along the neck sections and along the boundaries of the fortress plots and infantry bunkers there survive historical lanes (Fig. 4–7). They are composed of the tree species (mainly deciduous) listed in the 'Guidelines'; the oldest specimens are 100–140 years old. They include primarily:

Acer platanoides
Acer pseudoplatanus
Aesculus hippocastanum
Carpinus betulus
Fraxinus excelsior
Robinia pseudoacacia
Quercus robur
Tilia cordata

The trees were accompanied by thorny or spiny bushes, which – if need be – were turned into obstacles in approaches to fortress guns. Today, we can see the following species:

Berberis vulgaris
Ligustrum vulgare
Crataegus monogyna (with the trunk circumference of some specimens reaching 120 cm - ISt 5)

In 1945, territorially, the city of Wrocław (former *Breslau*) found itself within the Polish People's Republic. In the years 1960-1989, additional bushes were planted; the species used were those popular in green areas or allotment gardens, e.g.:

Pinus strobus
Pinus mugo
Picea omorica
Taxus baccata
Juniperus communis
Populus hybridis
Symphoricarpos albus

After 1905, *Festung Breslau* saw some planned planting of vegetation for masking purposes. It was during this period that most probably the first trees and bushes were planted, after they had reached the size required for specific locations. According to the 1905 'Guidelines', they could be grown in city-owned nurseries (*Staatliche Baumschule*), e.g. near today's *Szczytnicki* Park, at market gardens (*Gartnerei*) or in nurseries of ornamental plants for horticulture (*Gartenbau*). There is no doubt that planting for camouflage was designed and carried out after landscape analysis, with a view to ensuring appropriate conditions for deception and disguise. Since then, trees and bushes have become an integral part of the fortress, subject to registration and observation by spies.

Apart from planting new camouflage vegetation, care was taken of the existing plants, e.g. withered trees were replaced or healthy trees regularly pruned. This was aimed at making structures look like areas of natural green. On the other hand, the later, 1910 Guidelines for waging warfare by fortresses [14] included instructions for preparing the fortress for possible defence, specifying that areas connected with suburban development could be used as sites capable of putting up defence, provided some field fortifications are first prepared. Some relevant information was provided in mobilization plans, which usually identified lanes and alleys to be cut down or to be turned into obstacles on access roads to the fortress. This applies, for instance, to *Festung Glogau* (Fortress Głogów).

Currently, the infantry former forts and shelters of *Festung Breslau* are grown over with herbaceous plants, grass, bushes, trees and other plants (Fig. 8). Coniferous species occur occasionally or not at all. Successive generations of plants deriving from camouflage green have been growing without the required care and appropriate management. Despite the above, some historical plants have survived and can now be admired in the form of lanes along the neck sections and approaches to forts as well as along former fort roads in vegetation screens. At present, such green has an ecological value, but on none of the fortress facilities it is managed for purposes related to recreation or ecological education. In the south of the city, clusters of tree clumps on unfinished 1914 positions constitute an excellent shelter for birds and other animals. On a macro scale, the historical green related to the camouflage function constitutes a valuable element of urban green, whose formation requires connectors in the form of patches and corridors.

Fig. 4. An alley of lime trees (*Tilia cordata*) along *Wiaduktowa* Street near IR 20 in the autumn [Source: photo by author 2012].

Fig. 5. A line of bare oak trees (*Quercus robur*) dating back to the early 1930s along *Konduktorska* Street [Source: photo by author 2012].

Fig. 6. A line of bare ash trees near ISt 4 (*Fraxinus excelsior*) dating back to the early 1910s along *Przejazdowa* Street. [Source: photo by author 2012].

Fig. 7. A line of ash trees (*Fraxinus excelsior*) along *Koszycka* Street next to a freight railway line in Wroclaw [Source: photo by author 2012].

Fig. 8. A line of black locust trees (*Robinia pseudoacacia)* along the neck of IR 20 in *Wiaduktowa* Street next to a freight railway line in Wroclaw [Source: photo by author 2012].

Discussion

During the study no planting plans for Festung Breslau were found, which made interpretation of the existing green arrangements significantly more difficult. However, such plans may still be available in the source materials that have been inaccessible to the authors to date. According to the authors' knowledge, the unique character of the solutions applied at each of the German fortresses during the historical period in question was a direct result of the recommendations set out in the technical guidelines. Such a latitude allowed adaptation of vegetation to the current needs arising from the lie of the land, the land cover, the river network, and the strategic situation of the fortress and its structures. This was for instance the case at Festung Thorn (*Toruń*), the greenery of whose forts and accompanying facilities was characterised as similar to that to be found in the surviving natural habitats near *Toruń*. However,

it also has a number of semi-natural plant communities, which grow in the neighbouring post-forest land [2] In this regard, Festung Breslau calls for further studies to establish similarities and differences between natural vegetation and that introduced into the fortress plots and midfields. Furthermore, as far as the camouflage green of *Festung Breslau* is concerned, the authors believe that it was a special period of the development of urban green and allotment gardens as well as the introduction of roadside plants.

The beginning of the 20th century saw Wrocław (*Breslau*) as a city and fortress modern in terms of architecture and the development of technology. At the time, city planners were fond of the garden-city concept (*Gartenstädte*). This was a result of the activities of Sir Ebenezer Howard and the city planning method he proposed in 1889. At that time, Wilhelmine Germany followed the rules of *Heimatschütz*, i.e. a homeland protection style combining landscape and nature protection [3].

All historical vegetation related to camouflaging *Festung Breslau's* facilities should be analysed from the perspective of the two Guidelines referred to in the paper: the 1905 Technical guidelines on how to make fortifications unrecognizable to the enemy and the 1910 Guidelines for waging warfare by fortresses. Because of this, the purpose and character of plants can only be determined with a high degree of probability in the case of fortress plots. All the other areas call for extra care and careful formulation of conclusions as to the origin and locations of trees and bushes with the camouflage function, covering-and-accompanying function or ornamental function. The age of the trees and bushes, even if corresponding to the period in which plant camouflage was started, cannot be regarded as the exclusive determinant of the proper role of a given plant.

Perhaps in future, chronology-based analysis can be used, if appropriate methods are applied, to recognize individual species and their locations. Each fortress plot together with its facilities requires special archival and field studies, focused on the site and its immediate surroundings. Such an approach ensures optimisation of the gathering of data relating to the planting process and of the attempt to recreate the planting process. All signal signs overlooked in the field may result in obtaining incorrect information, on a principle similar to intended misleading of the enemy's observers watching the fortress from the outside, probably against the outfield masks.

As disclosed by preliminary studies into selected facilities, *Festung Breslau's* tactical green is still in a state allowing its partial recreation within the fortress plots. However, due to the lack of care, it collides with the fortifications and technical facilities existing in the plots. No necessary fill-in vegetation is planted in the former fortress plots either. Although Wrocław had no typical castling roads, the city had fortress roads connected with its transport infrastructure. The bringing of roads up to modern standards irretrievably deprives many of them of post-fortress camouflage plants. Tactical green, although planted according to typical guidelines, deserves to be preserved, because of its consciously composed nature and integrity with the fortress's facilities. Studies into this are still in progress. 2014 will see the centenary of the outbreak of WWI and the 124th anniversary of the creation of *Festung Breslau* (1890-1918). In the authors' opinion, further studies are needed into the theoretical aspects, but also the practical aspects of the fortress green – by attempting to fill in and redesign it – of Infantry Fort No. 6, which is looked after by the Wrocław Fortification Association.

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Kopsavilkums. Teritorijas ap nostiprinātām pilsētām pienes papildus vēsturiskās vērtības, kas tika ievestas ainavā daudzus gadsimtus atpakaļ. Vēsturiskā veģetācija pie bijušajiem cietokšņiem bija daļa no „dzīvības aizsardzības sistēmām". Lielas zemes platības un ceļi tika apstādīti ar atbilstošām augu sugām pēc militāriem norādījumiem. Tika veidots vietējo sugu un zemes konfigurāciju (dabas aizsardzības zonu) apvienojums, aizsardzības stiprinājumi un izvietots karaspēks. Modelēti krūmi žogu veidā, stādīti ātri augoši koki, veidotas joslas pie cietokšņa ceļiem un zemes gabaliem.

Pētījumā par pamatu izmantota informācija par vēsturisko veģetāciju pie cietokšņiem, apkopotas vecās vēsturiskās kartes, analizētas aerofotogrāfijas un veikti lauku pētījumi. Šajā rakstā autori izceļ veģetācijas lomas nozīmi, kuru izmantoja nocietinājumiem. Rakstā analizēts cietoksnis Festung Breslau (Vroclavā) vairāk nekā 120 gadus pēc tā celtniecības.

Revitalization of the historical parks and gardens

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Introduction

Historical parks and gardens are very important historical resources which hold social, cultural and political historical evidence. They have been created to fulfill the requirements of fashion and the understanding of parks and gardens as recreational areas for the determined period of time. "As a direct correlation of expression among human and nature, gardens are obtaining a global significance and are a testimony of culture, style, period and the originality of an artist. The landscape of Latvia, with the development of Riga, countryside castles and manors, and small towns, has become abundant with historical gardens; continuous, professional maintenance and recognition of their value are most important in their preservation. Historical gardens, parks and city garden areas are significant components of Latvian cultural heritage, which maintenance by the future generations is necessary to the interests of society of Latvia and Europe" [8].

Over time, historical territories might lose their characteristics due to changes of functions, new constructions or ecological issues.

As regards the preservation and maintenance of historical parks and gardens, usually terms such as restoration, renovation and reconstruction are used. These concepts involve activities which differ in their objectives and results though their everyday applications may overlap.

Historic Garden Options for the future

A regulation of the Cabinet of Ministers of the Republic of Latvia No.112 "General Construction Regulations" defines:

Restoration – the renewal of the historic appearance of a structure on the basis of scientific research or historical information.

Renovation – the repair (capital repair) of a structure or a part thereof in order to renew the structure or a part thereof by changing the discarded support elements or constructions, as well as the introduction of targeted functional or technical improvements in the structure without changing the dimensions and function thereof.

Reconstruction – the rebuilding of a structure or a part thereof by changing the dimensions of the structure or a part thereof and changing or retaining the functions, or changing the functions without changing the dimensions [17].

Restoration of cultural monuments – the restoration of a cultural monument to its original shape and pattern, excluding hypothetical changes and considering historical strata [14].

Conservation of cultural monuments – the physical, chemical or constructional consolidation of the current condition of a cultural monument or a part of a cultural monument [14].

Regarding historical parks and gardens, the "Lexicon of garden and landscape architecture" by M. J. Vroom gives following the explanations, which mostly corresponds to the legislation of Latvia.

Object restoration is a complete renewal to the initial and original shape and appearance, or at least in concept to its initial and original shape and appearance. The methods of restoration are fully based on the respect to the original materials, archeological evidences, original project and authentic documents. During the restoration works, several basic principles are to be taken into account: current historical evidence cannot be destroyed, neither falsified nor create afresh, alienating from the truth and genuine shape and appearance. Intervention of any qualitative restoration is to be eradicated as much as possible except for any intervention based on a high respect to esthetic, historical and psychological honesty to a cultural heritage.

Renovation is the repairing and adjustment of buildings, parks and gardens to other necessities, involving new planning for some positions in comparison to the original one. The old greenery can be replaced; road surfacing and ponds or pools or other water reservoirs can undergo important repairing.

Reconstruction of parks and gardens is an extreme form of renovation or restoration – rebuilding and transformation. In the case of historical parks and gardens, they are transformed or planned anew, corresponding completely to the characteristics and original concepts to the location. Used materials and constructions have to encourage the artistry. Greenery has to be replaced if the current is no longer appropriate [11].

Doing research on what has occurred and what is occurring currently with historical parks and gardens in Latvia, in neighboring countries and in Western Europe, smaller or greater changes are recognized as necessary for the up-to-date use of these parks and gardens. Most common objects are being restored, renovated and reconstructed, though the majority are improved or repaired and supplemented with various functions and activities according to the understanding of what can be permitted within historical context.

This process might be called revitalization, or in medical terms reanimation. **Revitalization** is the functional activation of an old urban complex by adjusting it to a new public function. [18]

Revitalization of historical gardens has taken place already for a century, with manifestations both positive and negative. Formerly, there were approximately 2000 manors and half manors and approximately 800 various parks and gardens. The establishment of gardens in Latvia began in the 18th Century with characteristics influences from the Renaissance and Baroque periods, while the 19th Century gave way to scenic parks which are the so-called English Parks. In the beginning of the 19th Century, numerous parks and decorative gardens were created. This is completely understandable – the economy and households were recovering from the devastation of the Northern War and Great plague; Napoleon's incursion affected the landlords of the Baltic States just a little, and farmers' riots were too disorganized to distract landlords to maintain the beauty of their manors. [3] Parks from the beginning of the 19th Century include *Mežotnes, Cēsu Castle, Cīrava, Kazdanga, Durbe, Eleja, Tiņģere* and *Vandzene*.

The refinement of the trees took a place in the middle of the 19th Century, engaging more significant and even more scientific characteristics. [3] A great example is the *Skrīveri* manor park-arboretum. Dendrological parks were also built in the *Bornsminde* manor, *Jaungulbene, Stāmeriena* and *Vecgulbene, Asare, Lilezere*; with dendrological supplementation in the park of *Kazdanga*.

Elements of Romanticism became popular in the middle of the 19th Century – pavilions, grottos, artificial debris. Latvian parks were developed and implemented with trees of before-unseen leafage: beetling or weeping leafage or strictly vertical, pyramidal or column-type leafage. Aspirations to return to a regular planning of gardens was noticed in, for example, the *Zvārtava* and *Nordeķu* manor parks. The end of the 19th Century and the beginning of the 20th Century saw the creation of new parks and the reconstruction of existing ones. The *Bornsmine, Krāslava* and *Cēsu Castle* parks experienced such reconstruction. Georg Kufalt, the director of the Riga city gardens, who worked in Riga as well as throughout Latvia and even abroad, had a great role in the creation of new parks. The historical manor gardens of Latvia experienced dramatic losses. In the beginnings of the 20th Century, nobility disappeared, and in 1920 agrarian reform saw the majority of the manors abandoned, turned over to the State, and divided and distributed among the farmers. The new Republic of Latvia needed administrative buildings, schools, agricultural schools, sanatoria and buildings for various associations and culture establishments. The former manor buildings were perfect for such requirements. [2] Meanwhile, unfortunately, the society lacked an understanding of the historical and cultural values and their usage. As regards to the parks, there was a general dismissal among the working people. The only interested persons were biologists and foresters, who evaluated the parks as objects of dendrological rarity. Many manor centers were given to educational establishments and organized as schools, technical colleges, and orphanages; parks became sports grounds. Smaller manors faced even worse fates – they became apartments; parks became orchards and gardens. After World War II, the condition of the parks turned even worse – trees were cut for fuel for army hospitals. During the war, many buildings were destroyed, and schools were overloaded, so manor buildings were adapted to the needs of schools. During the period of collectivization, or kolkhoz, manors were used as bureaus, so the nearest parks became parking for the kolkhoz machinery, and even stock-farms were built. If a manor was adapted to the requirements for establishing schools, then apartment buildings for teachers were built in the park; later, after the municipal economies developed, parks were dug up for the water supply and sewerage networks. Where parks were not destroyed completely, bandstands and dance platforms were constructed. Most commonly, parks were not maintained, and they overgrew with copse wood and self-sowing trees. Over time and with popular education, there was an effort to groom the parks and to clean the underwood. Significant mistakes were made – original bird nesting grounds and wildlife biotopes were destroyed.

Nowadays, the level of education and the standard of living permits travelling, getting acquainted with the historical and cultural heritage abroad, compare, evaluate and wish to have a high-quality environment for work and recreation; there still is a lack of understanding as to what is necessary and what is proper to create in a historical park. Quoting *I. Janelis:"Does the center of the park have to be left empty and quiet as a museum hall at the entry of the week? Yes, definitely, because even initially it has been created for quiet,*

contemplative walks, observation of the nature beauty, occasionally even for playing (not sports), but only for a small number of attendances."[2] Unfortunately there is a point of view that an expensive parcel of land on which the park is located has to be made attractive by means of various activities which might bring material wealth. Nevertheless, a park as an artistic and social phenomenon requires life and a modern function, not an exaggeration with activities in it.

After researching revitalized historical parks and gardens in Latvia and in neighboring countries, we have divided them into 2 groups:

Complexes of parks with private, renovated manors and castles. These parks are in the best condition, the owners being interested in their environmental qualities. These are public parks, and commercial services are offered.

Parks managed by a municipality. These parks do not perform fruitful, high-quality activities due to a lack of resources. Revitalization is based on a society's goodwill and its understanding of needs and possibilities. In such cases, the parks are usually maintained with few and minor improvements, albeit with several exceptions. These are public parks.

Among all the parks and gardens which have experienced revitalization, we have chosen only a few which are considered to be the most typical and have the most recognizable characteristics

Findings

1st group. One of the first parks to be revitalized, involving commercial, gnostic and entertaining functions, is the ***Bīriņu Castle Park***.

National heritage – *Bīriņu* Castle was built from 1857 till 1860 based on the project of Fredrick William Hess in the styles of Historicism Neo-Gothicism (it was rebuilt/reconstructed in the beginning of the 20th Century by the project of Rudolf Heinrich). In 1925, book manufacturers health insurance fund started to reconstruct *Bīriņu* Castle and inaugurated a sanatorium in which asthma and heart diseases were treated. *Bīriņu* Castle was again established as sanatorium after World War II. After the liquidation of the sanatorium in 1995, the castle was managed by "*Saule Bīriņu Pils*" Ltd. Today, there is a hotel with a large park which consists of several smaller ones. One of the most ancient is *Priežkalna* Park, with the tombs of Count Mellin's family being built in 1819. Today, the charnel and the alley are the only ones still preserved. The beginning of the mourning alley has been outlined by a great and heavy gate. Much later *Mežaparks,* or the Park of Emily, was created simultaneously alongside the construction of the vary building of the castle (in the middle of 19th Century). The owner of the castle, August von Pistolkorss, created this spacious park as a present for his beautiful and beloved wife Emily. There are long, meandering airing trails which can nowadays be ridden by bicycle. Landscape Park is of smaller dimensions and embraces the castle from the stable of horses till the Gardener's house hotel. At the borders are located the Garden of Birds, but at the very center of the park is the Oak of Love. The Regular Garden, located between the castle and the lake, was built on terraces with centered steps. On both sides of the garden are plantations of lindens, sheared in regular shapes. There is an arbor at the lake. There are several entertaining activities offered in the park: guided tours, horse riding, and bicycle and boat rentals; in the Regular Garden are concerts, marriage ceremonies, and other celebrations and festivals.

Dikļu Castle Park. *Dikļu* Manor is an ancient property of the von der Pahlen family. The history of *Dikļu* Manor was kept from the beginning of the 15th Century, when this property had been owned by Gotshulk von der Pahlen. The von der Pahlen family lorded for 300 years, after whom came Tiesenhausen and Baron von Volf.

The current building was built in 1896, when it was owned by Baron Paul von Volf. It is an impressive building in Neo-Baroque style with a mansard roof. In the ensemble of the caste, there is also a barn which is older than the castle itself – it was built at the end of the 18th Century in the style of late Classicism. Both in the castle and in the barn is a hotel with premises for various events. South of the castle is a pond, which is said to have had an oak floor in the basin. Behind the pond, *Mežaparks,* or Landscape Park, with an area of 20 ha, was created at the glens of the *Mazbriedes* River; approximately 20 exotic trees are planted here, among them The Great Linden (perimeter – 5 m).

***Rūmene* Manor.** *Rūmene* Manor is located in the region of *Kandava*, at *Rūmene,* and was renovated in 2009. The Neo-Gothic *Rūmene* Manor house was built in 1876 by the architect Theodore Zeiler. The manor house is located on the hill, and its facade is connected with the park by a system of steps and terraces which lead to the pond with a heart-shaped island. This system of terraces is a great rarity in Latvia, and it can be considered one of the most prominent Neo-Renaissance constructions in Latvia. The landscape park of *Rūmene* Manor was planned by the landscape architect George Kufault. The area of this park is 7.8 ha, and it contains 364 species of sparse trees. Since 1957, park has been on the list of especially protected landscape features. *Rūmene* Manor is planned as a 5-star country residence for the Riga

hotel "Hotel Bergs" for recreation, events, banquets and conferences, with the possibility of overnight stays.

***Mālpils* Castle Manor.** Its history began in 1760, when, under the supervision of Landrat Gustav von Toub, the *Mālpils* Manor house was built. During the governance of von Toub, the Romantic 22-ha manor park with airing trails, bridge of love and scenic ponds, was established. Today, it is a protected park of the landscapes of the 19th Century. In the park are both local and exotic species of trees and other plants, including for example spruce blue, Colorado spruce, the gray walnut, Hollandaise linden, and others. In 1905, *Mālpils* Manor burned down, and in 1907 the architect William Bockslaf began anew the planning works of *Mālpils* Manor, creating the building as it remains today. There is a monument to the founder of the manor, G. V. Toub, which was set after his death in 1775 and now renovated.

The territory of the manor and the park is groomed and equipped – new benches, cobbled paths, fountains, a pond and greenery are found throughout the territory. The inauguration of the renovated *Mālpils* Manor took place in December 12, 2008, which coincided with the 150th birthday of the architect of the manor, W. Bockslaf. In honor of this event, a sculpture of Bockslaf, by the well-known Latvian sculptor Gleb Panteleyev, was unveiled.

In **Lithuania**, too, there are several manors and castles which have undergone revitalization for adjustments to their tourism and recreational functions.

***Taujena* Manor, *Ukmergė* region, Lithuania.** *Taujena* Manor was built in the middle of 16th Century. At the end of 18th Century, the owner of the manor was count Benediktas Marikonis, who married M. Radvilaite in 1785 and owned the manor as the dower. In 1802, the Classicism-style manor was based on the project of Pierre de Rossi, who created an English-style garden that remained the biggest garden in Lithuania between the world wars. The manor park has a landscape planning, little relief and a pond. The manor park was mentioned as far back as 1698; it is considered to have been created by Michael Boniface Masalkis. After the death of B. Marikonis, the manor was owned by the Radwills. In this period, deer and fallow-deer were let into the park, and swans and other birds settled in the park. Today, *Taujena* Manor is a center of agricultural tourism, entertainment and of various events and conferences, with a spruce park, ponds and recreational opportunities.

Fig.1. *Bīriņu* Castle Park
[Source: www.facebook.com].

Fig. 2. *Dikļu* Castle Park
[Source: www.panoramio.com, photo by Lemartin].

Fig. 3. Renovated *Rūmene* Manor
[Source: www.kulturaskarte.lv].

Fig. 4. *Rūmene* Manor terrace and
renovated pergolas [Source: www.apollo.lv].

Fig. 5. Renovated *Mālpils* Manor Castle
[Source: photo by M. Strīķis].

Fig. 6. *Mālpils* Manor Park Pond with a fountain
[Source: photo by M. Strīķis].

Fig. 7. William Loudwig Bokslaf (1858-1945) sculpture
in *Mālpils* Manor Park (1858-1945),
author Gļebs Panteļejevs
[Source: www.redzet.lv].

Fig. 8. Renovated Taujena Manor
[Source: turizmogidas.lt].

Fig. 9. The holistic perspective of Taujena
manor and park [Source: taujenudvaras.lt].

Fig. 10. The main facade of Taujena Manor
[Source: taujenudvaras.lt].

Fig. 11. Revitalized Taujena Park
[Source: juodasisrikis.weebly.com].

Bistrampole **Manor** is located 14 km from *Panevezys.* The manor has persisted since the 15th Century. From the end of the 17th Century until 1940, the manor was owned by the Bistrama family. Later, the manor was nationalized and eventually left unattended. The Classicism-style castle was built in 1850. Ten buildings of the whole ensemble of the manor still exist, the majority of them renovated. Significant is the fact that Nobel laureate writer Henryk Sienkiewicz lived and worked in the manor while collecting materials for his historical trilogy *Flood*. For the renovation and adjustment to touristic functions, The EU Structural Funds provided assistance. The latest object is a stable of eight stalls, first opened in May 2013. The beginning of the creation of the park is about the beginnings of the 19th Century. It is a landscape park with tree ponds, a pavilion and bridges. The pavilion was constructed on a compositional axis in front of the main facade of the castle. A part of the park already has been renovated, including the pavilion. Approximately 400 m^2 is addedicated flowerbed.

In **Estonia**, too, are impressive ensembles of manors which have engaged many new and modern functions.

Palmse **Manor** is one of the most magnificent manors in Estonia, located in the beautiful, nature-surrounded National Park *Lahem*. *Palmse* Manor – an open-air museum is the first fully renovated manor complex with parks, gardens and historical buildings in Estonia. In the 52-ha territory, there are more than 20 different buildings and constructions. During the 13th Century, there was a Cistercian monastery, yet later it became a property of the Baltic-German Pahlen family. The Pahlen family was in charge of the property from 1677 until 1923, when it was abandoned by the government. The renovation of the ensemble began in 1971 and was prolonged until 2004 with several interruptions. The manor castle, which was built in 1780, has been renovated completely to its genuine beauty and glory. The rest of the ensemble buildings have been renovated, assigning them to other functions. Today, there is a summer exhibition hall, a bodega, a hotel and a restaurant; Cavalier house is now the summer guest house as well as a souvenir and book store. From the sauna and café opens a great view to the lake. In the Palm house, there is a collection of exotic birds and fished. The park is full of old, sparse trees; there is a swan pond and pavilion.

Vihula **Manor.** The first documented written evidence of *Vihula* Manor, *Lahemaa* National Park, took a place in 1501. At that time, the manor was owned by Danish Baron Hans von Lode. In 1820, after the manor was devastated during the Great Northern War, it was bought by Alexander von Schubert. The majority of the buildings of the

Fig. 12. The holistic perspective of Taujena Park pond with Taujena Manor [Source: photo by MariukasM, on Flickr].

Fig. 13. Renovated Bistrampolis Manor [Source: www.bistrampolis.lt].

Fig. 14. Renovated Building of the Bistrampolis Manor complex [Source: www.bistrampolis.lt].

Fig. 15. The Bistrampolis Manor Park [Source: www.turizmozinios.lt].

Fig. 16. Palmse Manor Ensemble in Estonia [Source: www.aviastar.org].

manor ensemble were built between 1820 and 1840. The most important buildings were finished only in 1880. The Schubert family lived in the manor until 1940; they generally farmed and made spirits. From 1951 until 1982, the manor was a home for the elderly, but after a fire in 1982 the manor was handed over to the *Vira* collective farm. As of 1991, the owner of the manor is the *Vihula Mõis Corp.* In the ensemble of *Vihula* Manor, there are two main buildings and 25 other buildings and constructions. Currently, the overall area is 8000 m^2. A complete restoration of all the manor buildings took a place between 2008 and 2012. The objective was to restore and preserve its heritage and to protect the natural value as much as it is possible while assigning modern functions to the buildings and parks.

The overall area of the park is 47.49 ha. It was created in the English style of the middle of the 19th Century. One of the components of the park is a small river, *Mustoja.* The regular element of the garden is an oval honorary yard with a driveway which leads to the main building of the manor. Its symmetry is accented by two larches. The manor garden consists of a kitchen garden, an orchard and a flower garden. The "*Kaval-Ants*" garden was built around a small pond with a fountain and cascades.

The revitalized manor complex offers a wide choice of services: hotel and spa, sports and minigolf field, eco farm with domestic animals and pasture, horse farm, playground, market, and a walking area with bridges, an arbor, a pavilion of views and many other activities.

The destinies of the described manors and parks are in the hands of new owners. Hopefully, development will preserve the significance and importance of the heritage.

2nd group. These parks are run by municipalities or their enterprises. Manor buildings have been schools or other governmental establishments for several years.

***Gaujiena* Manor** ensemble contains the castle, manor house, gardeners house, masonry-walled orchard, glass house, ice house, stable, cart house, the stable master's and horse driver's house, manor staff apartment and household buildings, brewer's house, beer cellars, and distillery. The central part of the manor's development area was formed at the end of the 18th Century, yet the castle was built between 1850 and 1860 in the style of late Classicism by the von Wulf family, later supplemented by a six-column portico. Since 1922, it is the *Gaujienas gymnasium*. Currently, in the former brewer's house, where composer Jāzeps Vītols lived from 1922 until 1944, is a memorial museum "*Anniņas*".

The park is located on the banks of *Gauja*, encompassing the whole development of the manor ensemble. The park was built at the end of 19th Century and at the beginning of the 20th Century.

Fig. 17. Palmse Manor Castle [Source: http://commons.wikimedia.org/wiki/Category:Palmse_manor].

Fig. 18. Palmse Manor Landscape with Castle, Sauna and Rotunda [Source: www.gopalace.lv].

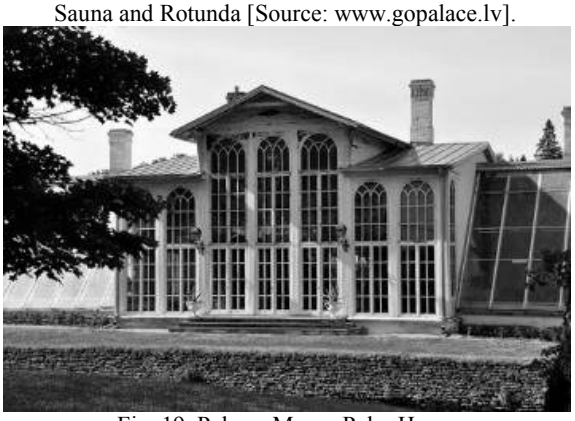

Fig. 19. Palmse Manor Palm House [Source: www.panoramio.com].

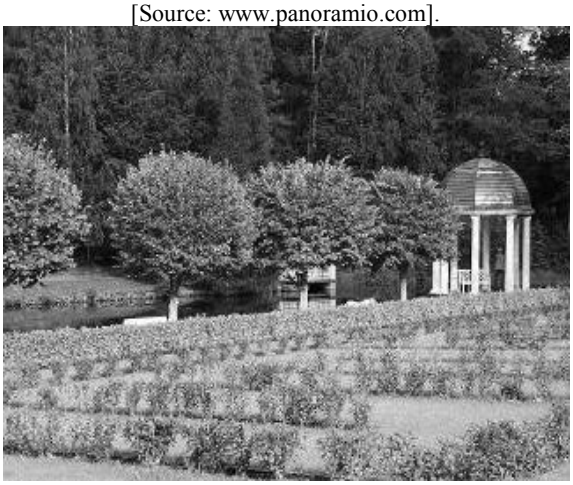

Fig. 20. New greenery created in Palmse Manor [Source: www.panoramio.com].

The protected area is of 17.4 ha. The park can be divided into three parts: The Upper Park, or the Yard, involves the main buildings of the manor, including the castle; the second part, the brewer's house, or "*Anniņu*" museum neighborhood, with a spring "*Lauvasmutes*," ponds and a choir platform; the third part is a territory between *Gauja* and its abrupt banks with romantic nature trails along the river.

***Naukšēni* Manor.** The first documentation of *Naukšēni* Manor is related to the period of the Livonian order, around the year 1500, when the property was called "*Schwarzenbrunn*" (Black Springs) and owned by Jost Furstenberg, who is believed to be a relative of the order master William Furstenberg. During the Livonian War (1558-1582), the property was completely destroyed during the conquest of Ivan IV Grozny (Ivan The Terrible), so the manor was relocated to the *Naukšēni* hamlet owned by Furstenberg. At the end of the 16th century, at the *Rūja* River, the construction of *Naukšēni* Manor began. The current appearance of the manor house dates to 1843 and is a typical building in the empire style. The manor house, stables, barn, the clock house
(or dairy), and the park are a national heritage. The park and the forested park occupy a 50-ha territory at the banks of the *Rūja* River. In 2005, the platform of the park was renovated to its genuine and historical appearance.

In the manor park, there are trees of rare occurrence such as cork trees, Siberian spruces, walnuts, cedars, European larch and silver maple/sugar maple. The construction of the decorative garden began at the end of the 17th Century, later being introduced as a landscape park. The territory between the castle and household buildings has a regular planning with sheared hedges, graveled paths, lawns, and groups of trees and bushes. The southwest part of the park has English planning with wide glades and prospect views. At far side of the forested park, on the banks of the *Rūja*, there is a hill fort, *Naukšēnu Kābele.*

During Latvian independence a boys' correctional institute (in the USSR, vocational secondary school) was established at the manor castle. Today, there is a social correction institution, "*Naukšēni*," in the renovated manor complex.

In the manor house, there is the Human Museum of *Naukšēni*, designed to collect and maintain materials about *Naukšēni* and to introduce guests to the interesting persons who once lived in the municipality of *Naukšēni*.

Fig. 21. The holistic perspective of Vihula manor [Source: www.klint.envir.ee/eng/].

Fig. 22. The Vihula manor landscape [Source: www.gopalace.lv/public/].

Fig. 23. Main buildings of Vihula Manor [Source Flickr: Main Manor buildings in summer - Vihula Manor Country Club & Spa].

Fig. 24. Greenhouse and Flower Garden in Vihula Manor [Source: Flickr: Vihula Manor garden - Vihula Manor Country Club & Spa].

Fig. 25. The most antique building of the Ensemble of the Manor is Watermill [Source: photo of cultural heritage monument of Estonia number 15970].

Fig. 29. The Portal of Gaujiena Manor Park [Source: www.fotoblog.lv].

Fig. 26. Gaujiena Castle – Gaujiena Gymnasium. [Source: www.fotoblog.lv].

Fig. 30. The Manor-house of *Naukšēni* Manor [Source: www.panoramio.com/photo/52975770].

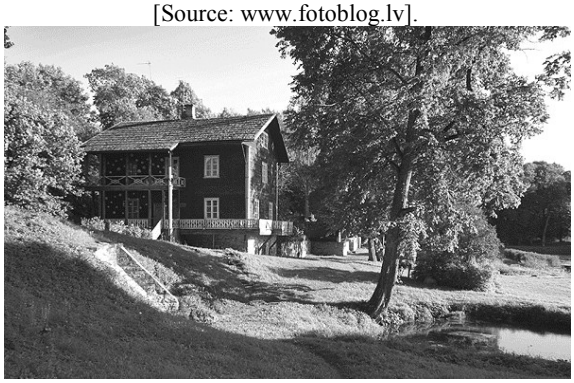

Fig. 27. Memorial museum of Jāzeps Vītols "Anniņas" [Source: www.fotoblog.lv].

Fig. 31. The View of The Park from *Naukšēni* Manor-house [Source: www.vietas.lv].

Fig. 28. Open-air stage for Choir Celebrations in Gaujiena Park [Source: www.fotoblog.lv].

Fig. 32. Cheese Diary or Clock Tower of *Naukšēni* Manor [Source: www.latvia.travel/lv/nauksenu-muiza-ar-parku].

***Burtnieki* Manor Park** .The building seen in the picture 34 is the *Burtnieki* Manor, which was built in the 17th Century on the foundation of the middle ages. It was a three-story Baroque building. It was not preserved until today, however. The building was destroyed in 1944, and after the war there were bureau and recreation centre buildings constructed on the remains of the former manor. The *Burtnieki* Manor Park, located in front of the manor house, is a national protected nature object. It was created at the *Burtnieku* Manor Castle, and it had a pond cascade (using moats of the former castle), a plantation of trees of a rare occurrence, uniformed granite block stairs, fountains, etc. The construction works were begun by the Shredder family around the year 1860. It occupied approximately 29.2 ha and had one of the most groomed parks among the countryside manor parks in Latvia with more than 70 different species of bushes and trees. In the park, there was an air bridge, constructed toward the end of the 19th Century, and a garden vase "Seasons". The park was fenced in by a brick wall with wrought iron gates. Further toward the castle ruins is a more spacious landscape park. Within the territory of the park, there was a platform built in the 1987 and two linden alleys, The Alley of Love and The Sigh Alley. There have been no evident changes made to the park in recent years, though it is groomed and with impressive flowerbeds. The owner and manager of the manor is the municipality of *Burtnieki*.

***Pakrojo* Manor, Lithuania**. This manor is an example of the late-Classicism which is the greatest ensemble of 43 buildings in Lithuania, the ensemble having experienced different times. The oldest buildings in the manor are the tavern and the brewery. The majority of buildings in the manor were constructed at the end of the 18th Century and the beginning of the 19th Century. The latest owner of the manor was Julius Rop. The territory, including the living and constructions area, occupies 48.2 ha. The construction of the ensemble involves different types of stylistics. The owner of the manor is the Municipality of *Pakrojo.* Currently, the ensemble is being renovated to fulfill the requirements for varied tourism and recreation.

The central building in the manor complex is unique to Lithuania. It is a rectangular, two-story building with two porticoes. A six-column portico is located in the center of the main facade and two four-column porticoes in both end facades. The landscaped manor park, a structure that has been preserved until today, was created between 1850 and 1860. From one side, the territory is surrounded by the *Kruoja* River and its dam; from the other side, rubble-wall. In the park, there are about 26 species of trees, from which some are more than 100 years old. Around the castle is a spacious lawn and gates which lead to the castle. It is said that these gates were purchased in Riga.

The ensemble of the manor is adorned with a unique arched bridge, renovated a few years ago, over the *Kruoja* River. This is the only bridge of its kind in Lithuania. It was built in 1821 from dolomite after a model of the Roman aqueducts. The bridge serves also as the dam to raise the pond.

Fig. 33. The renovated open-air stage of *Naukšēni* Park [Source: www.draugiem.lv/nauksenuestrade/].

Fig. 34. The Historical Image of Burtnieki Manor. [Source: www.letonika.lv; origin. National Library of Latvia].

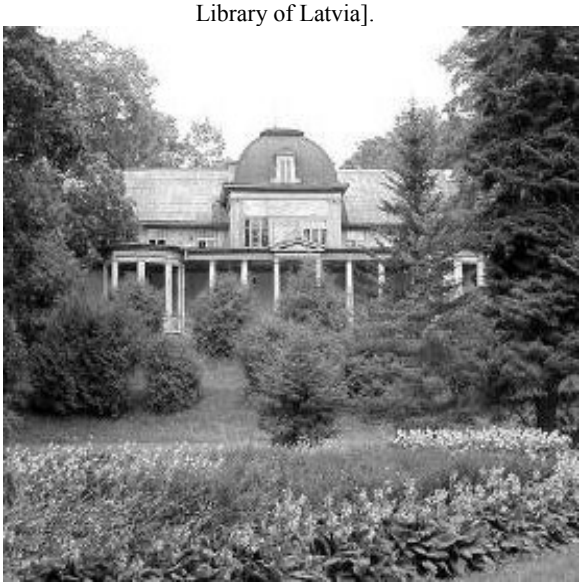

Fig. 35. The greenery of Burtnieki Manor is carefully maintained [Source: www.tripmondo.com].

Fig. 36. Renovated Stairs, which steps are made of monolithic Finland granite, which was carried to Latvia (Each step – 4.3 m length) [Source: www.tripmondo.com].

Fig. 38. The Central building of Pokruojo Manor – The Castle [Source: http://alkas.lt/wp-content].

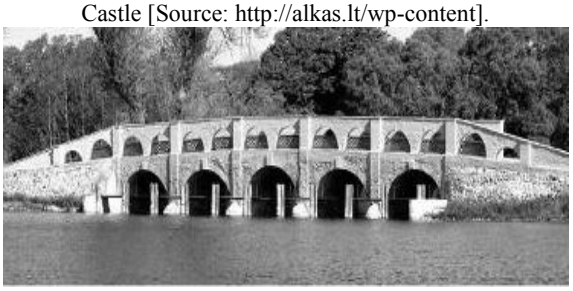

Fig. 39. The Original Arch Bridge [Source: www.pakruojistic.lt].

Fig. 37. The Ensemble of the Pokruojo Manor [Source: www.pakruojistic.lt/foto-galerija/ pakruojo-dvaro-sodyba].

Fig. 40. The Pokruojo Manor Park [Source: http://lietuva.cc/pakruojo-dvaras/ http://www.panoramio.com/photo/44121416].

Conclusions

More than 100 years have passed since nobility ceased to exist in Latvia, and properties have had new owners and landlords who, for different reasons, could not, were unable to or were unwilling to maintain them, of course with exceptions. Investors in the manors have appeared in recent years, and they have renovated the buildings of the manor, establishing commercial entities, mainly hotels, conference halls, restaurants and other services. As parks are integral parts of manors, they have obtained a higher quality format. These improvements to the parks cannot be called restoration or reconstruction, yet there are cases of renovation. The majority of the parks, especially those which are managed by municipalities, are revitalized; yet revitalized not as an implementation of vivacity, but in terms of maintenance of vitality. Through intensive investment, as the parks undergo maintenance and especially as the ponds undergo renovations, a number of recreational and decorative objects are placed in the parks. These include bridges, arbors, benches, etc.

In these cases, the issue of authenticity, or at least consideration of stylistics, is raised. The issue of authenticity is relevant also in the renovation of plantations. Comparing the results of revitalization of manor parks in Latvia to Estonian and Lithuanian manor parks, both private and municipality-managed objects, our neighboring countries present notably better results in renovation and exploitation. In this article, I have not taken a look at the results of the analyses of the greater castle parks and the most significant gardens and parks in cities, which is the objective of subsequent research.

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Kopsavilkums. Pētījumā par vēsturisko dārzu un parku revitalizāciju tika mēģināts atrast formulējumu tam, kas pašlaik notiek, vai noticis pirms dažiem gadiem Latvijas, Lietuvas un Igaunijas vēsturiskajos muižu parkos. Dažādas izmaiņas laika gaitā notikušas, taču paveiktais lielākoties neatbilst likumdošanā formulētajiem jēdzieniem restaurācija vai rekonstrukcija. Daļēji varētu uzskatīt, ka notikusi renovācija jeb atjaunošana. Latvijas muižu dārzu un parku vēsture ir bijusi ļoti nelabvēlīga, daudz kas ir zaudēts un vēl arvien līdzekļu trūkuma dēļ ir vāji konservēts. Lielākajā daļā vēsturisko dārzu un parku notikusi sakopšana, tas nozīmē, ka likvidēts liekais, kas radies laika gaitā. Dažviet ir pievienotas jauni, mūsdienīgai lietošanai paredzēti objekti, pārsvarā bērnu rotaļām paredzētas iekārtas. Jaunu funkciju piešķiršanu, nemainot plānojumu un uzbūvi, varētu nosaukt par atdzīvināšanu jeb revitalizāciju. Revitalizācija ir sena apbūves kompleksa (teritorijas) funkcionāla aktivizācija, pielāgojot to jaunai sabiedriskai funkcijai. Veicot pētījumu, konstatēts, ka vēsturisko muižu, kuru ēkas ir renovētas vai rekonstruētas, un kuras ir privātīpašums, parkos ir ne tikai atjaunoti parku elementi, galvenokārt ceļu tīkls un dīķi, bet arī pievienoti jauni elementi-strūklakas, skulptūras, tiltiņi. Lielākā daļa muižu parku, kuru izmantošana nav saistīta ar komerciju nav guvuši vērā ņemamas izmaiņas, to revitalizācijas pakāpe ir tikai dzīvības uzturēšana, lai neaizietu bojā tas, kas vēl palicis. Ir arī izņēmumi, kuru labākie paraugi atspoguļoti rakstā. Salīdzinājumam veikta arī vairāku Lietuvas un Igaunijas vēsturisko, atjaunoto muižu un to parku apskate.

Latgale Upland church everyday landscape in development and growth of region and society

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Abstract. This research has been made as a succession of different aspects of a landscape, a succession, which forms a connection. This connection leads to everyday landscape from global tendencies. The aim of the research – to identify the connection of the factors, which develop during the interaction between church landscape and culture, as well as political planning and society.

The influence of Europeanization and globalisation is like an exit factor when it comes to the transformation processes of church landscapes. In addition, these factors may be considered as a basic and large scale factor. The next level of researched factors – the interaction of planning and landscape. The planning forms a direct connection between church landscapes of Latgale Upland and the planning processes in European and national level. At the same time it involves connections of different scale and planning tendencies. Apart from landscape management and planning, the characterisation of landscapes has been considered in more detail, which has been selected as the next level of factors. When applied to landscapes of small measure, such as church landscapes, it is possible to apply and integrate the results of this method into the planning process of landscapes of larger measure.

Nevertheless, the most significant thing concerning the formation of a successful connection still is the involvement and participation of local inhabitants. The development planning must include all these levels and factors influencing the landscape. The church landscape serves as a reflection of the connection between global processes and local daily landscape. Church landscapes interacts with such social phenomenon as tourism. Therefore church landscape serves also as a feedback from an individual to the collective body and wider public.

Key words: everyday, characterization, development, sacral tourism.

Introduction

This landscape study on the Latgale Upland is based on for already six years lasting research on the church landscapes in Latgale. The Latgale Upland is located on historically formed region in eastern Latvia, called Latgale. Church landscapes are an important part of the cultural history of Latgale. The sacred landscape of Latgale is unique; and by comparing the development history of cultural landscapes of Latvia, its development history of cultural landscapes is different [20]. And as it is typically to Latgale, it is possible to find there all of the traditional denominations (Catholic, Orthodox, Lutheran, Old Believers) as well as the shrine of believers in Moses [11]. This study is designed as a chain of different aspects of landscapes which make a connection. This connection from the global trends leads to everyday landscapes and reflects its interaction with both individuals and broader community.

Small-scale and specific areas of landscape in opposition to large-scale landscapes require a special approach for landscape studying and method of characterization. It is necessary to adapt and adjust general methods to particular circumstances.

The aim of this study is to look at the chain of factors that form the interaction of churches with cultural landscapes, region and community. The formation of region is discussed as the interaction between the various groups of interest of a community.

Frequently the diverse landscape of the nature and cultural heritage of Europe is seen as an important economic value, providing recreational and tourism opportunities, as well as an attractive environment for living and entrepreneurship [15].

Awareness and promotion of the values of cultural landscape is the opportunity of a region to develop – tourism, preservation of the traditional cultural heritage, the ability to use environment for leisure, culture and education [25].

Usually everyday landscapes are those where the provided environmental values coexist with the functional load and therefore can be hidden for an ordinary observer. Landscape architects, architects and other professionals related to this field possess the ability to perceive and discover the hidden value of the landscape and its multifaceted potential.

Results and discussion

Globalization - Europeanization – landscape

Geography of religion describes sacred landscape distribution on a large scale. It is expected that in the future, the development of geographical religion is influenced by two processes – globalization and Europeanization [8]. Globalization would be expressed as a development of immigrant religions. People migrate, change the place of living, often bringing with them also their religion.

Europeanization in religion is expressed as the preservation of trends that are historically developed in each country despite globalization. Historical development is continued by a country and the development of mutual interaction of the sacred power that is similar to the transformation of mutual interconnection of the various religious organizations.

Besides these two determining trends, there are other factors affecting the formation of a landscape. Globalization and Europeanization determine the vastness of factors that need to be included in the development planning of a landscape.

Planning - landscape

As the next link of the chain is the interaction of planning and landscape. Planning can be divided by different levels ranging from global to local, thereby creating different levels of logical connection. Planning involves linking of different levels of planning, taking into account the overall planning trends.

Landscape planning and management is difficult because of the holistic nature of landscapes [1]. It is not uniform and does not have set limits, and may belong to many different owners. Linking and availability are required measures that are needed to be able to ensure a successful development of an area [1].

It is important to draw attention to the regional values of culture and their preservation in the context of the planning of the local territory and development programs. This is particularly important for the region of Latgale, where the cultural heritage is one of the main objects of tourist attraction. But it should not be forgotten that not only the church building itself, but also the area around it and the existing landscape elements in it also are of great importance.

Landscapes in the planning documents of areas in Latvia during the last decade have become a significant element. However, the scientific studies on landscape and the experience of scientists can still be considered as inadequate in order to be able to fully use a landscape for the development potential of a territory [14].

It is important not only to foresee the protection of visual aspects or development of a landscape in planning and development. Landscape does not consist of visual aspects only [19]. Protection, management and planning of a landscape must be able to encompass resources of a landscape, adjust individuals as well as the overall activity of a society. It is also important to create an enabling environment for entrepreneurs, as well as to provide a sustainable development of a landscape [23]. Not only economic, political, and cultural factors, but also social factors are significant. The environment for living is needed to be developed not only for maintaining the values of the past, but also by taking into account the requirements existing nowadays, and wishes and intentions in future [27]. Also the rich cultural heritage of the city of Bucharest has to face the lack of complex approach. Legislation on conservation and protection does not cover all the territory but functions for individual buildings and, in some cases, areas adjacent to them. The legislation which would include other elements of the landscape does not exist [27].

The landscape has a holistic nature, hence integrated researches, planning and management is needed for a sustainable development. A variety of landscape measures are essential for the management and planning. Each planning level includes different landscape parameters with which it is necessary to work. Landscape characterization is one of the methods for landscape planning and development. By fulfilling all the steps of a method for landscape characterization [28] it is possible to use it for a wide variety of landscapes. Applying it to small-scale landscapes, the results can be integrated into a planning process of a larger scale landscape.

The fulfilment of the first stage of the method of landscape characterization in the development, which includes – definition of the aim, research of graphical materials and research of the area (Table 1), is followed by a reversible process of the characterization methods of landscapes – characterization, selection of the evaluation method and the application of the results of characterization. The last step of this method determines the importance and usefulness of landscape characterization. On the basis of a precisely and scrupulously carried out characterization it is possible to form classification of landscapes and interpret data, taking into account the scale and aim of landscape characterization. And after the interpretation of the data it is possible to create suggestions for the improvement of the condition of a landscape.

TABLE 1

Landscape characterization use in planning of development [Source: modified by author, 28]

Steps	Parts of the method	A detailed description of the method
1	Description	The direction of use of a landscape should be defined. The aim, scale, involved people and supporters are to be chosen.
2		Research of graphical materials, including factors related to the nature and culture, as well taking into account social factors. In this step it is possible to distinguish basic types of a landscape.
3		Research of the area where aesthetics, the factors of perception of the landscape and the comprehension of the disposition of a landscape is studied.
4	Usage of the results of the description	Classification and description. Creation of a map of the character of a landscape, description of the character and distinguishing between the basic characters.
5		Selection of a method for result analysis and interpretation of data.
6		Evaluation that is followed by suggestions for the improvement of the condition of a landscape, incorporation of the results in the planning politics, development of the strategies and guidelines of a landscape, suggestions for the development of a landscape.

Landscape characterization – landscape

Already for a decade landscape characterization and the use of this characterization in landscape management has been used in a number of countries, for example, in England. Landscape is changing continuously as the landscape is dynamic, because it is affected by various and different processes. However, it is wished to change the landscape so that it does not lose its cultural value [6]. But the problem is as follows – to what extent and how to manage the transformation processes of a landscape correctly.

A number of scholars have expressed the view that there exists a necessity for new data on landscapes and methods for their obtaining [1, 9, 10, 36]. The method of data collection on area inspection similarly as to this study is connected with studying of specific situations [31] and rarely is used for large-scale territories. If a specific aim of characterization is not distinguished, this method is less effective for a large-scale landscape and is more useful for small-scale landscapes. But if the research is conducted for a small-scale landscape, it is quite difficult to integrate data in the overall development management of landscape planning.

In my opinion, there exists a way how to create a solid system for planning at all levels with a variety of scales of a landscape – there should be a unifying basic principles for the assessment of different types of landscapes. Therefore, it can be concluded, that there is a necessity for a different specification of landscape inspection according to the scale of a landscape space.

Fixation of elements is one of the results of the characterization of a landscape. The list of elements and their frequency of occurrence can serve as a good tool for planners in order to identify the usage at the particular period of time and intensity, as well as problems and deficiency [9]. By revealing the unstudied side of the landscape, planners obtain more detailed information and can perform spatial development management of a landscape that is attracted to a real life situation. If the aim of the landscape characterization is well-defined, then it can be used for various scales of landscape spaces. Landscape characterization is used for the management of cultural heritage on a large-scale landscape planning, for example, on the scale of Europe [6].

Therefore, it can be concluded that the use of landscape characterization for the planning of development is vast as it provides a comprehensive overview of the landscape. Landscape characterization promotes the understanding of the structure and changes, and provides on the theory based foundation for a suitable planning of development.

Landscape characterization provides information, not judgment. It does not identify good or bad landscapes, it provides parameters of the landscape character [6]. Using the landscape characterization along with other planning tools it is possible to make justified decisions on planning.

People – landscape

It should be stressed that still the most significant thing is the desire and participation of the local people. Political forces can make decisions on spatial development of the region, but they will not work effectively without the involvement of the local people. For various reasons, nowadays in the Latgale Upland one can find well-maintained church landscapes (Fig. 1, 2, 3) as well as abandoned and badly maintained churches and their surround areas (Fig. 4, 5).

Fig. 1. Photograph well preserved rēzeknes old believer church landscape [Source: photo by the author, 2011].

Fig. 2. Well preserved Bērzgale catholic church landscape [Source: photo by the author, 2011].

Fig. 3. Well preserved orthodox Moskvina church landscape [Source: photo by the author, 2011].

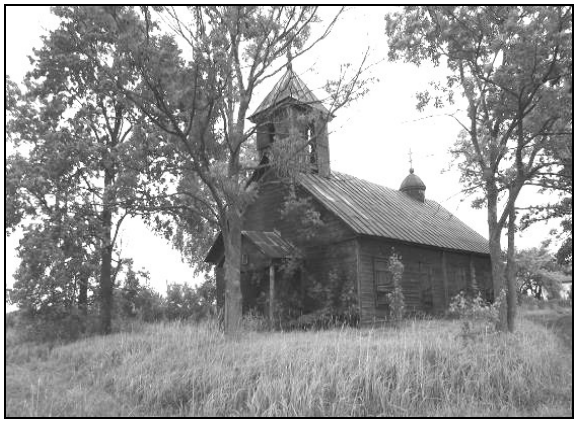

Fig. 4. Abandoned old believer Bondariski church and territory [Source: photo by the author, 2011].

Fig. 5. Ustroņu catholic church territory left without attention [Source: photo by the author, 2011].

The local people are the ones who live and form this environment [12]. Landscape creates the quality of life, but it is also important to remember that the protection of landscape, management and planning are directly connected with the society which is responsible for it [37]. The processes of landscape transformation are affected not only by the quality of landscape protection, management and planning, they also interact with the local society, its level of education and social activity. It is necessary to include the opinion of experts and society in the decision-making process on landscape management, as well as to conduct a survey of the local people as the perception of the place may vary in regions.

The evaluation of a landscape is based not only on the level of education and social status but also the place and its history of development are important influencing factors [17]. In the planning of landscape development all aspects should be connected and all the layers of the landscape should be comprehended as a complex interaction of a variety of different processes. Not only nature is a valuable resource, also the cultural environment is valuable [4]. Another facet can be seen here. If the landscape and its cultural and historical character are a value, then it is important not only for the local people and experts but also for visitors and tourists of a landscape on a larger scale. Thus, tourism becomes a stimulating factor for the maintenance and development of the place.

Tourism – landscape

According to Šļaka [29], spatial accessibility is limited by factors such as spatial desolation and vandalized buildings, the small sizes of the access paths and their invisibleness. In addition, churches are not only spatially but also regarding to the level of information is of burdening availableness [29]. Accessibility is needed for the development of landscape space [2, 3, 34]. The importance of accessibility is formed by increasing the polarization between the urban and rural environment.

It is believed that the ancient pilgrimage routes are closely connected with tourism nowadays [26]. A pilgrim and a tourist are concepts that have been developed long time ago [7] and according to the opinion of Vukonic – the meaning of these approaches become more similar [35]. While the Collins-Kreinera [7] in its research reveals that a pilgrim and a tourist can be seen as something similar only in situations when the trip includes visiting of religious sites.

Religion is not only the centre of life for many people but it is also affected by human migration and tourism. Religion is considered not only as a motivation to travel around one's own country but also to go on international trips [5, 13, 22, 30]. Sacred places can be divided into three groups: pilgrimage shrine, religious tourist attraction point; religious festival place [18]. Sacred places in Europe mostly fall into one of these groups [30]. The same division exists also in Latvia. Most of the church landscapes in the Latgale Upland are tourist attraction points as described in the official website of the Latvian Tourism Development Agency [32]. The basilica in Aglona, which also is located in the Latgale Upland, is a popular destination in Latvia for local and foreign tourists, and pilgrims, where hundreds of thousands of pilgrims every year arrive for the feast of the assumption of Blessed Virgin Mary into heaven (Fig. 6, 7).

Fig. 6. Aglona basilica in usual summer day, and during the 15 of August, with pilgrimage [24].

Fig. 7. Aglona basilica during the 15 of August, with pilgrimage [16].

Tourism that is connected with the cultural heritage can be considered as a social phenomenon [21]. Although a view exists that it is enough to feel [33], it is also important to see and take particular interest in this territory and objects. The researches of the field of tourism on cultural heritage have developed in various directions that are connected with architectural elements, elements of culture and nature [21].

Conclusion

Such factors as globalization and Europeanization should also be taken into account for the planning on local scale. One should be aware that along with the protection of visual aspects, management and planning in planning and development, church landscapes should be comprehended as usable resource. But it is difficult to be aware of the church building as not the only resource but also the church landscape and its elements.

Landscape characterization is a method which can well integrate and evaluate elements of a small-scale landscape in that way ensuring the principles of succession in landscape planning. When protecting, managing and planning church landscapes one should remember how all of these activities should be focused, firstly, on increasing the quality of life of local residents. It will provide the feedback for the overall regional development.

In addition, the consciousness of the protection of collective traditions is connected with the social phenomenon – tourism that is dedicated not only to the attendance of churches but also to the church gardens and landscapes. In this way church gardens and everyday landscapes serve as a linking point for the individual with the collective and a wider society. These areas become not only a tourist attraction point but also a stimulating factor and resource for the development of the region and society.

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Kopsavilkums. Šis pētījums ir kā vairāku ainavas aspektu sasaistes secīguma pētījums. Šī sasaiste ved no globālajām tendencēm līdz ikdienas ainavai. Pētījuma mērķis – identificēt faktoru sasaisti, kas veidojas mijiedarbojoties dievnamu ainavai un kultūrai, kā arī politiskajai plānošanai un sabiedrībai.

Eiropeizācijas un globalizācijas ietekme ir kā izejas faktori dievnamu ainavu transformācijas procesiem. Turklāt šie ir uzskatāmi par pamata un liela mēroga faktoriem. Pētījuma nākamā līmeņa faktori – mijiedarbība starp plānošanu un ainavu. Plānošana veido tiešu sasaisti starp Latgales Augstienes dievnamu ainavām un plānošanas procesiem Eiropas un valsts līmenī. Tajā pašā laikā šie faktori veido dažādu mērogu un plānošanas tendenču sasaisti . Bez ainavas plānošanas un vadīšanas, arī ainavas raksturošana pielietojama vairākos aspektos, un tā ir izvēlēta kā nākamais sasaistes punkts. Pielietojot maza mēroga ainavām, kā, piemēram, dievnamu ainavām, to ir iespējams pielietot un integrēt šīs metodes iegūtos rezultātus ainavas plānošanas procesā arī lielākā mērogā.

Vēl joprojām vissvarīgākais šajā sasaistē ir vietējo iedzīvotāju iesaistīšana ar ainavu saistītajos jautājumos. Attīstības plānošanai jāiekļauj visi šie līmeņi un faktori, kas ietekmē ainavu. Dievnamu ainava ir kā globālo procesu sasaistes ar vietējām ikdienas ainavām atspulgs. Turklāt dievnamu ainavas veido sasaisti ar tādu sociālo fenomenu kā tūrisms. Tādējādi šīs ainavas veido atgriezenisko saikni no individuālā uz kolektīvu un tālāk uz plašāku sabiedrību.

The rubble style – searches of new artistic means of expression for the facade finishing in the Latvian rural architecture of the 19th century

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Abstract. In the rural architecture of the 19th century, there's an interesting phenomenon observed, which is associated with searches of new artistic means of expression for the facade finishing. This phenomenon can conditionally be called the *rubble style,* as exactly small granite chips, embedded in the plaster between the boulders in different combinations created expressiveness of the facades of buildings. Such a solution is found in the architecture of the rural sacral, estate and public buildings. These *rubble style* expressions may also be divided into several groups.

Keywords: architectural heritage, manor and sacral architecture, monument protection.

Very different and diverse artistic means of expression are found in the Latvian architecture of the 19th century. A key role is played by the application of various building materials, through which the external artistic image of buildings is largely determined. During this time new artistic image searches commence, associated with the expression of the ideas of rationality in the European architecture, which date back to the middle of the 19th century. They occupy an important place in the works of the familiar architectural theorists E. Viollet – le Duc [1], G. Semper [2], J. Ruskin [3] and A. Krasovsky [4]. The theoretical knowledge of G. Semper (1803-1879) in this area is based on a critical complex analysis of architecture, science and art of the 19th century. He considers it inappropriate to get too carried away only with structures and materials, historical prototypes or theoretical explorations. G. Semper is linking these concepts together and offers his own form of artistic theory, the essence of which – a picturesque construction mass sorting is derived only from the function. A. Krasovsky puts forward a similar thought, specifically focusing on the building material, as a factor forming the artistic expressiveness. In turn, his colleague I. Kitner contends that *there is no reason not to use the advantages of the material from which the building is erected, and hide it under the plaster* [5]. For A. Krasovsky, as well as for I. Kitner and G. Semper, a material is as important as the architectural and artistic decoration, it can replace or add to it. Such material was brick- on the external walls of the buildings erected, which did not require frequent maintenance and was resistant to our climatic conditions. Brick buildings became the symbol of practical efforts of the era. Brick was exposed not only in the architecture of residential but also in public buildings (hospitals, schools, court houses), cult buildings and industrial building facades. The material began to determine the artistic image of the buildings of different functional significance. This led to the so-called brick style - one of the formal types of the eclectic style. Often the red brick, more rarely the yellow brick combined with a rubble- wall.

The combination of the two materials is popular in both the estates' and the sacral architecture, mainly in the second half of the 19th century. Here it is possible to give many examples –the outbuilding at Zaķumuiža (*Waldenrod*e) (the second half of the 19th century), the basement of the Ģraši (*Geistershof*) Manor (the second half of the 19th century), the outbuilding of the Ērberģe (*Herbergen*) Manor (1875), the Galēni (Vidsmuižas Manor) (*Galen*) Catholic Church (1910-1912), the Stirniene (*Stirnian*) Catholic Church (1902-1907) and the plebanian, Velēnas (*Wellan*) Lutheran Church (1896-1898, the builder J. Brauns), the Rinda (*in Angermünde*) Lutheran Church (1833-1835, the tower and the sacristy, 1904), the Kaplava (*Koplau*) Orthodox Church (the second half of the 19th century), Dalbe (*Dalbingen*) Lutheran Church (1868-1869, arch. N. Gusēvičs), etc.

Brick typically was used around the aisles, in corners of buildings, eaves, gable edges and along with the boulder creates an expressive and picturesque external image. But before then, and at the same time the formal stylistic trend, which we may call *the rubble style,* was not possibly defined until now. Its peculiarity and the character are mainly determined by the facade finishing technique –embedding granite chips in a mortar and combining these surfaces with plaster, red brick and rubble-wall. This combination can be divided into several groups.

Fig. 1. The outbuilding at Zaķumuiža [Source: the author's photo, 2011].

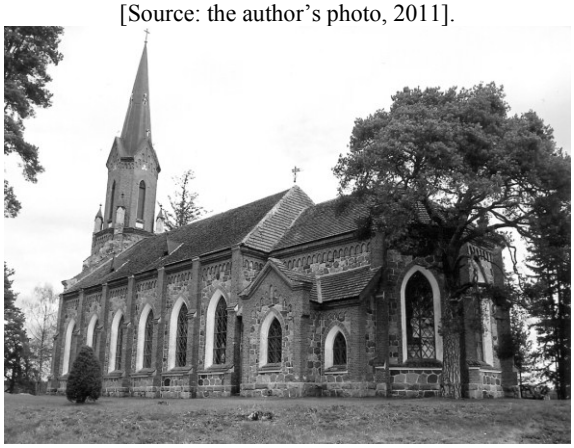

Fig. 2. The Velēnas Lutheran Church [Source: the author's photo, 2009].

1. Mortar as a binding material has no longer any visual significance. Boulders and placed among them rubble are so dense that mortar is practically not visible. Such examples are not too many, but they are found throughout Latvia, both in the estate and sacral architecture. Quite an impressive example is the Salnava Catholic Church (the second half of the 19th century). This type of the facade solution may also apply to the Felicianova watermill (the 19th century), in the external walls of which the black granite rubble fill all the mortar surface between the boulders. It seems that these rubbles encircle the boulders and as a winding ribbon connects them in a lively and winding dance. Very close to this example, there are also designed the outbuilding facades of the Pasiena (Possin) Manor, on this boulder – rubble surface creating peculiar, not seen elsewhere, and perhaps based on the local artisan's creative fantasy, Gothic blind windows. The same mortar visual neglect type may be attributed to an outbuilding at the Lamiņi (Lievenhof) Manor (the 19th century) and to the same function building of the Naukšēni (Naukschen) Manor (the 19th century). Without plaster and mortar with rubbles - only the red brick and rubbles - such solution seemed attractive not only to a single builder of the second half of the 19th century, even at the Ērberģe Manor, where the outbuilding's construction time- in the red brick frame and a rubble - wall around, is recorded on the mortar surface and it is F. v. H. 1875, thus highlighting not only the construction time but also the person who contributed to this good work. It was the owner of the Manor - Baron Franz von Hahn.

2. In the *rubble style* as the second ranked the objects, in the facades of which equally important and visually perceptible are the boulders, and between them in the mortar embedded rubbles, the red brick in the openings, cornices and in other constructively necessary places. There are many such buildings and they are found in all regions of Latvia. In this group fall the sacral buildings, objects common in manor buildings and buildings created in other parts. Here are some examples: the Varakļāni (*Warkland*) Lutheran Church (1878), the Saraiķi (*Sarraicken*) Lutheran Church (the parish room - 1798), the Kolka (*Kolken*) Lutheran Church (1885, arch. T. Zeilers), the outbuildings at the Zemīte (*Samiten*), Vandzene (*Wandsen*), Vīķi (*Zarnau*), Dzērbene (*Serben*), Ezere (*Esser*), Lēnu (*Gross-Lehnen*) Manors, the Dundaga (*Dondangen*) parish house, the Allaži (*Allasch*) mill, etc. This group should also include the Vecpiebalga (*Alt-Peebalg*) Manor magazine, the façade of which above the arches, instead of the closing stones, is decorated with inscriptions, dedicated to house builders and supporters. Special attention is paid to two buildings, located opposite the main façade of the palace - the barn and the magazine. The barn (the end of the 18th century, the beginning of the 19th century) is a spectacularly large building covered with a steep gable roof, the ends of which are partially oblique. At its one end, there is a ramp leading to the first floor of this building, as at this end the building has a high basement. The main facade of the magazine (1810) consists of a distinctive porch arcade. Its pillars and the top of the openings surrounding bands are plastered and tinted light. The rest of the wall's part is solved in this time's traditional manor architecture way - rubble-walls are complemented by in mortar embedded small granite rubble. This group also includes one of the oldest buildings - the Skaistkalne (*Schönberg*) Manor barn (1793) and the Valmiera (*Wolmar*) parsonage outbuilding (1795). The buildings' façade rubble is as a porridge, in which separate boulders are floating. With what persistence the local master had to regularly and rhythmically embed the granite rubble into the mortar. Fantastic perseverance, patience and gumption were on the facade makers' agenda. These rubble imprints often have no compositional sense and yet they largely constitute the buildings' external artistic image. The Kūļciem Orthodox Church (1890), now abandoned to the mercy of fate, the Valdemārpils (*Sassmacken*) Orthodox Church (1889-1890) and other sacral buildings may also apply to this group.

Fig. 3. The Felicianova watermill
[Source: photo by author, 2010].

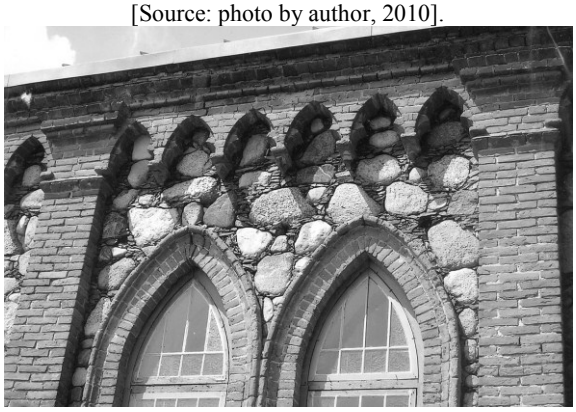

Fig. 4. The Salnava Catholic Church
[Source: photo by author, 2008].

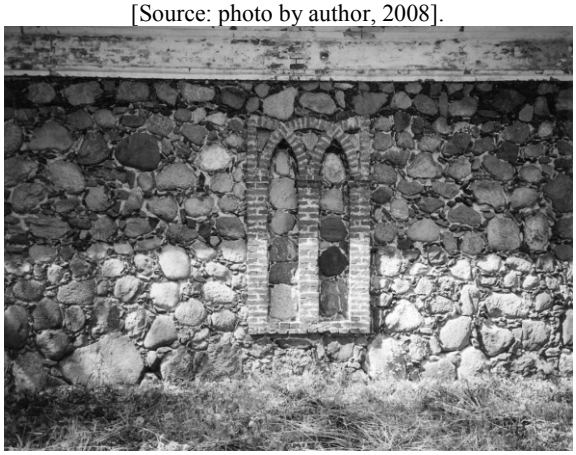

Fig. 5. The outbuilding of the Pasiene Manor
[Source: photo by author, 2005].

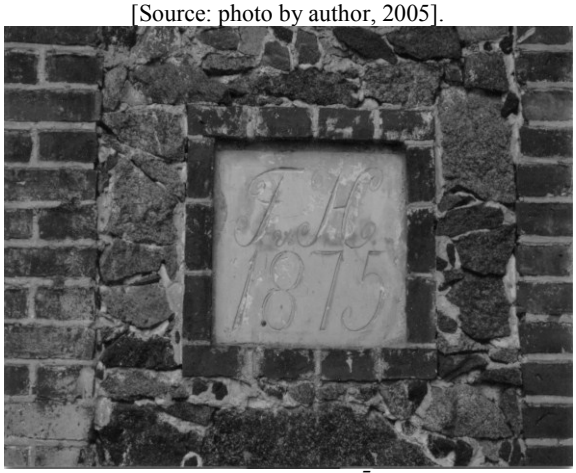

Fig. 6. The outbuilding of the *Ērberģe* Manor
[Source: photo by author, 2010].

3. Doodles, ornaments, ancient masters' hobby, world vision and momentarily feel – so one would like to call the next group of *the rubble style*. It is the most interesting group of this trend in the terms of the plot, and like the rest, in its artistic charm it is the most improperly evaluated. A peculiar kind of the rubble pattern was created in one of the Nurmuiža Manor (*Nurmhusen*) outbuilding's facade (the second half of the 19th century). The rubble is sorted in whorls that are going parallel to each other, among them concentric circles are embedded, elsewhere not specifically expressed rubble press strands encircle boulders and follow their external shape. In general, the facade creates a mosaic effect, it is largely expressive and resembles a fantastic vision. A different approach to this *rubble style* type, the builder has exposed to the facade of the servant houses of the Vecbrenguļi (*Alt-Wrangelshof*) Manor (1854). Here, rhythmically embedding the rubble into mortar, there were depicted birds, larger animals, although smaller in scale, a triangle with a circle in the centre, of the biblical symbols reminiscent of the God's eye (only missing the Gloria rays and the so-called Sun theme occurring in the 18 and 19th century folk construction objects, wooden building decorations and artistic solutions of the wooden joinery. One example is the Borne Church of the ethnographic open-air museum (the 1537s, 1650s, 1840s). The door frame, supposedly, from the earliest construction period, there is featuring a rosette, the Sun motif mentioned before, which later with modifications has been obscured [6]. This shows that such a popular theme in art is detectable through centuries. Right there is a barn from Dižgaiļi / Kuldīga District, Turlava Parish /, where in the centre of the door sash is the same Sun motif [7]. This motif is also found on many household items – on the 18 and 19th century bast-baskets, chests, dowry chests, wardrobes, etc. The Sun motif can be also seen on the facade of the Nurmuiža Manor outbuilding, although here the rays lie linear rather than leaf-shaped.

This type of reproduction of the animal world on the facade of the servant house of the Vecbrenguļi Manor is rare and even the servant house itself, presumably dates back to the 18th century. Quite impressive is its mighty steep gable roof with the oblique ends and folded up roof edges. In some places, the Sun motif is not expressly visible in the facade decoration of the Ģipkas (*Gipken*) Lutheran church. In turn. on the whole the exterior wall finishing of the Dārta (*Dorotheenhof*) Lutheran Church (1895-1896) is similar to the facade solution of the Kolka Orthodox Church – the builders or the builder of both churches with the rubble windings have particularly stressed the external contours of the boulders, around several windings are composed. Although, for the builder of

the facades of the Dārta Church it seemed too little, he introduced tree motifs, both growing and upside down. While on the facades of the Roja (*Roje*) Lutheran Church (the spike 1854, the parish room area 1878), between rubble are visible initials *F. M.* and such as the letter *N. The rubble style* was grateful not only for the representation of initials, but also for the years, as it has been successfully done on the outbuilding facade of the Gricgale (*Gritzgalln*) Manor.

4. Another of the *rubble style* versions or the groups is the subordination of the facade finishing to the rubble imprints which have a dominant role. The boulders are as if floating in the sea of rubble, but in this case, the mortar based surface has its own meaning, in contrast to the solution, where it was not seen at all. In this way, the Lutheran church facades at Kaltene (*Kalleten*) (1848, the sacristy in 1880, the extension in 1896), at Mazirbe (*Klein-irben*) (1866) are dealt with. Here the construction of the Church was built by the building master A. Šrots, while works were carried out by local craftsmen and workers. So, the rubble pattern on the church facade was made by their hands. This version also attributes to the Swiss house facade of the Krimulda (*Cremon*) Manor (the end of the 19th century), the drying-kiln facade of the Turaida (*Treyden*) Manor (the second half of the 19th century). This building is dominated by the classical stylistic forms, containing a loose, column- based anteroom and white tinted plaster bands on the main facade around the window openings and elsewhere. The same artistic solution of facades is found in the Kolka Orthodox Church (1890-1892, arch. A. Edelsons), the Nurmuiža barn (the second half of the 19th century), the outbuilding of the Jaunmokas Manor (the second half of the 19th century), the outbuilding of the Vandzene Manor (the 19th century) and in many other places.

5. *The rubble style* has not only made friends with the red brick, but also with plaster shaped bands behind which brick is hidden. It is a very popular decorative solution of facades in the rural architecture of the manor building, sacral and public buildings. The following buildings were built both during the classical period and later, when the idea of rationality itself had already gained popularity. Thus, an original decorative design pattern of the facades was created, which we can conditionally call - the white band phenomenon. Here, solutions tend to be different. From applicative-marked double pilasters at the background of tiny rubble imprints on the surface, as on the stable facade of the Jaunbrenguļi (*Neu-Wrangelshof*) Manor (the first half of the 19th century), the classical pilasters and half-columns in the same rubble pattern enclosure on the facade of the Madalena Catholic Church (1821). But mostly on this type of façades in the plaster bands, just the opening edges and corners of buildings are formed and without the use of bricks it was hard to do it. Such are many buildings in Latvia, for example, the forge at the Naukšēni Manor (the second half of the 19th century). The building is small, cube-shaped, covered with a gable roof, the ends of which are partially oblique. The exterior wall is a wall of boulders with a tiny rubble fragment in the mortar, the edges of the window openings are in a light tinted plaster, but the building's corners - from stone rusts. This also applies to the same group of outbuildings in the Gricgale Manor (the mid 19th century), the Cesvaine (*Sesswegen*) Manor (the 19th century), the Biksēre (*Libbien*) Manor (the mid 19th century), the Parish House of Dikļi (*Dickeln*) (1851), which later served as a post office, the Aumeistari (*Serbigal*) church pub (the first quarter of the 19th century), the writer and poetess A. Brigadere's Museum *Sprīdīši*, which was originally a mill (1840), Cimzas (a magazine of the manor (the 19th century) and many other ones. Very rarely there are met buildings, where with rubble imprint surfaces, architectural forms are marked applicatively, for example, on the facade of the residential buildings of the Dzērbene Manor, the so-called Spotted house -pointed arches.

And what do we see of the *rubble style* in other locations, in the neighborhood and the world? The earliest examples, where various facade materials are used, date to the ancient Greek city of Olympia (supposedly, the end of the 3rd century B. C.). Here the rubble- wall is supplemented by the rubble or brick-like sherd curves. Also, later such combination of materials was not a historical novelty. Even the *Holy Monastery of Grand Meteoron* (the 14th century) in Greece. A very similar solution is also in Verona, where the city's medieval defense wall is built from boulders, red brick bands and mortar surfaces, which would have no effect. We are not in isolation from neighboring countries, Lithuania and Estonia. *The rubble style*, though so far not defined, was not strange there, and all its variations. Its manifestations appear in the Pakruojis Manor (the first half of the 19th century), on the outbuilding facades of *the Joniškėlis* Manor (the first half of the 19th century) and elsewhere. The rubble and boulder equivalents are on the facade of the servant house of the *Rokiškis* Manor (the second half of the 19th century). While in Estonia the facades in such a way were designed for the *Moora* Manor (around 1900), the magazine of the Peddast Manor (1879), the estate manager's house of the Karula Manor (around 1900) and other places.

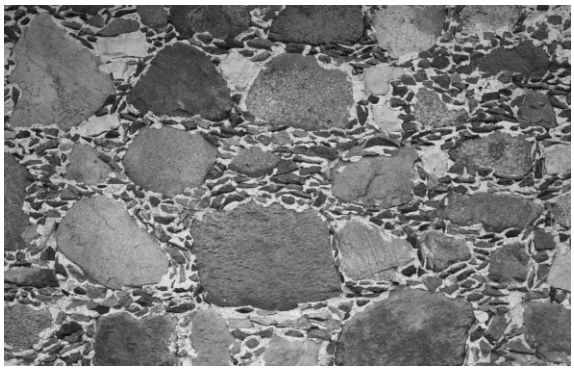

Fig. 7. The outbuilding of the Lēnu Manor
[Source: photo by author, 2012].

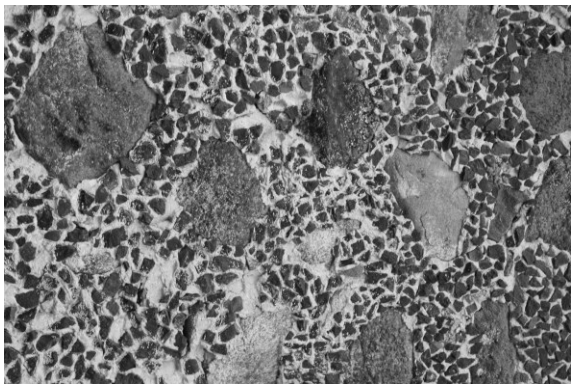

Fig. 8. The outbuilding of the Dzērbene Manor
[Source: photo by author, 2012].

Fig. 9. The Vecpiebalga magazine
[Source: photo by author, 2012].

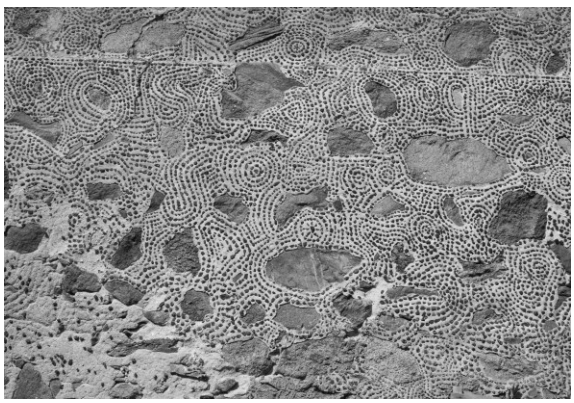

Fig. 10. The outbuilding of the Nurmuiža Manor
[Source: photo by author, 2011].

Fig. 11. The servants' house of the Vecbrenguli Manor
[Source: photo by author, 1999].

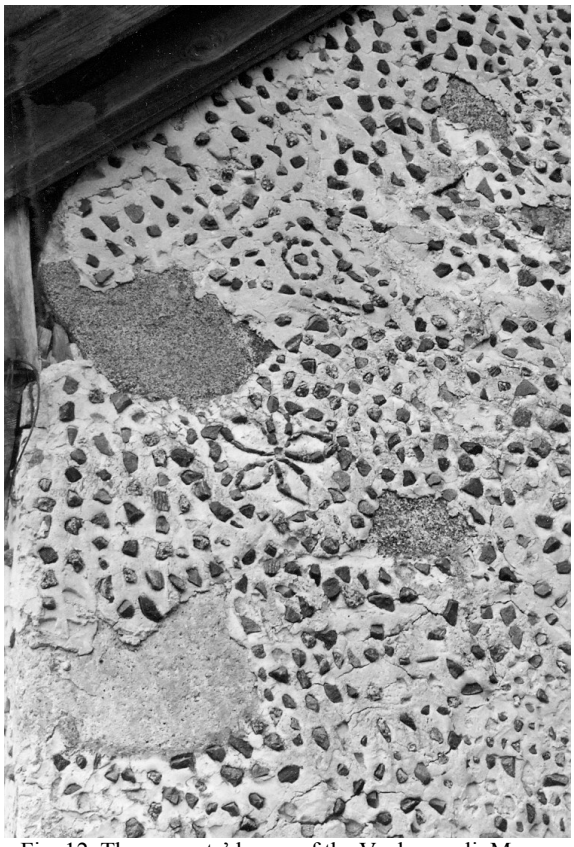

Fig. 12. The servants' house of the Vecbrenguļi Manor
[Source: photo by author, 1999].

Fig. 13. The servants' house of the Vecbrenguļi Manor
[Source: photo by author, 1999].

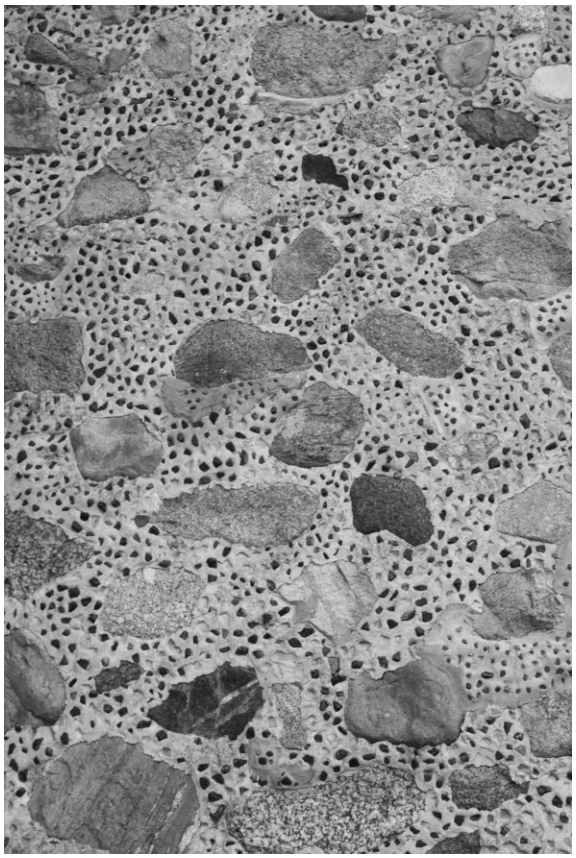

Fig. 14. The barn of the Mazirbe Lutheran Church
[Source: photo by author, 2011].

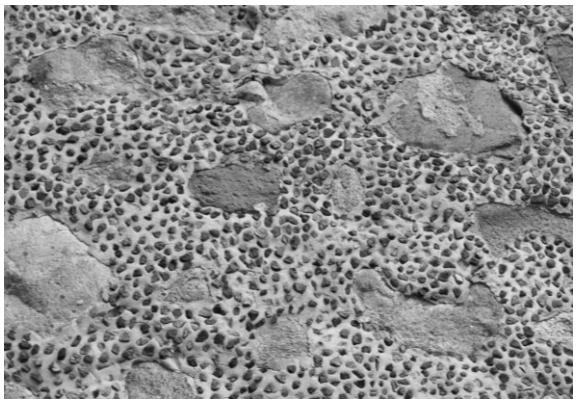

Fig. 16. The Kolka Orthodox Church
[Source: photo by author, 2011].

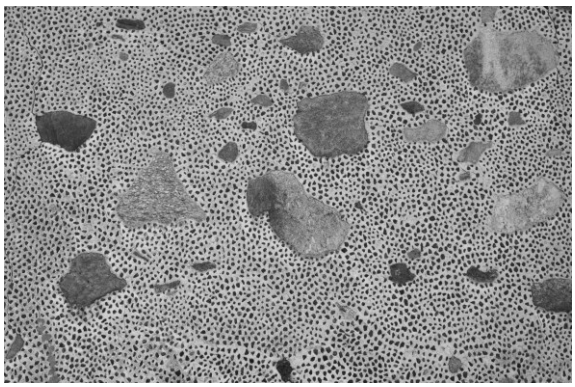

Fig. 17. The Kaltene Lutheran Church
[Source: photo by author, 2011].

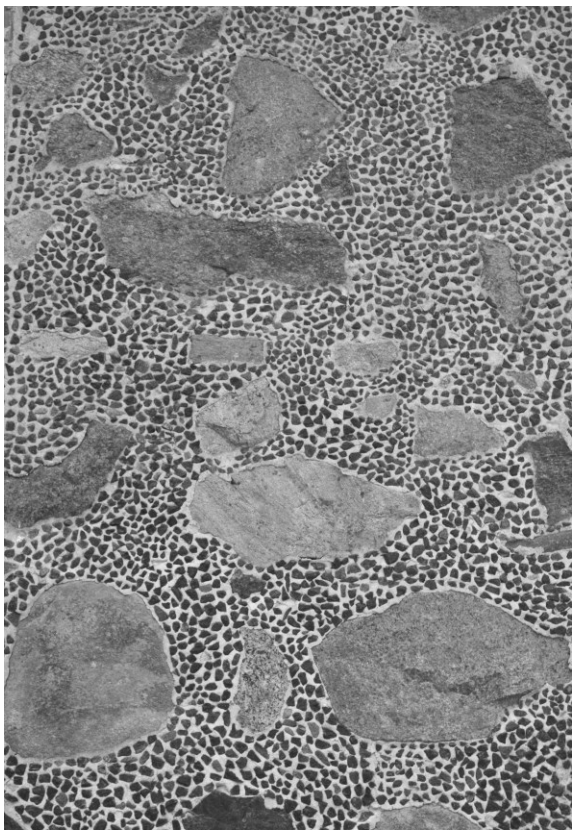

Fig. 15. The barn of the *Nurmuiža* Manor
[Source: photo by author, 2011].

Fig. 18. The *Madaliņa* Catholic Church
[Source: photo by author, 2011].

Fig. 19. The Jaunbrenguļi Manor stall [Source: photo by author, 1999].

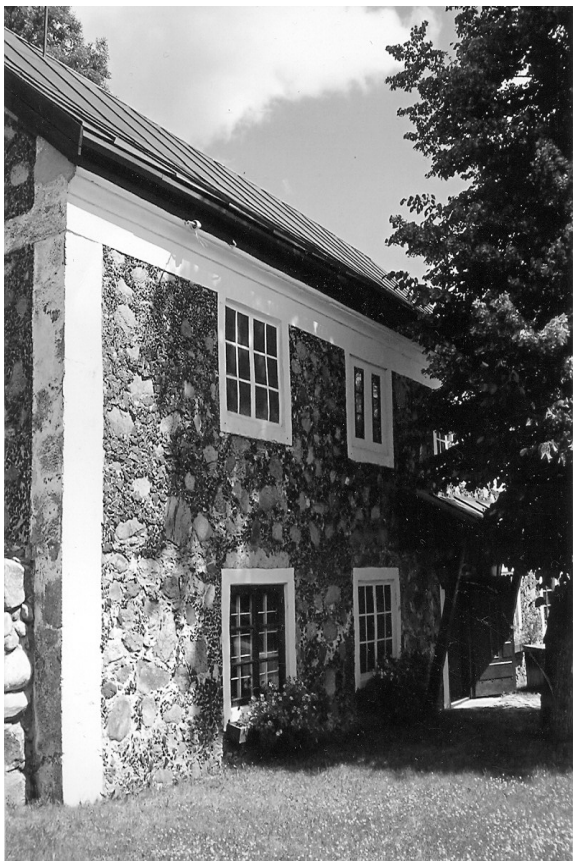

Fig. 20. The outbuilding of the Cesvaine Manor [Source: photo by author, 1998].

Fig. 21. The residential building of the *Dzērbene* Manor (*Spotted house*) [Source: photo by author, 2001].

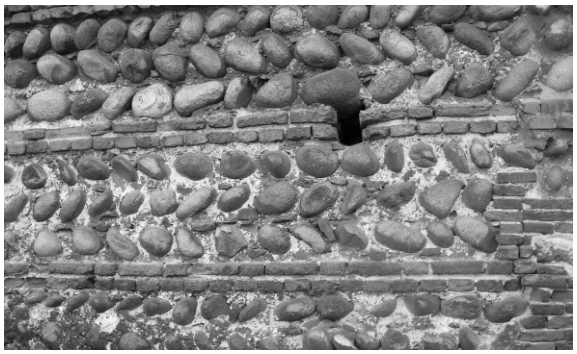

Fig. 22. The medieval defensive wall the Italian city of Verona [Source: photo by author, 2007].

Fig. 23. The protection wall fragment of the city of Olympia in Greece [Source: photo by author, 2007].

Fig. 24. The outbuilding of the Pakruojis Manor [Source: photo by author, 2008].

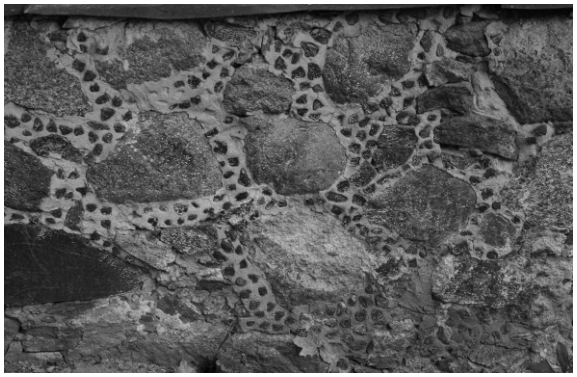

Fig. 25. The outbuilding of the *Joniškelis* Manor in Lithuania [Source: photo by author, 2008].

All those *rubble style* examples, which may be divided into several groups form a peculiar and rich in traditions facade finishing type. These buildings we take for granted as an integral part of the cultural environment and call traditional, but their detailed investigations so far had not been made. This study is an attempt to do something good in this case. It must be concluded that the *rubble style* is rooted in remote antiquity and as a formal stylistic trend of a decorative facade solution has emerged in the Baltic region in the 19th century. *The rubble style* is not specific to a particular region of Latvia, it is manifested in all regions and also in the architecture of the neighboring counties. This *style* shows how local artisans have searched solutions in the artistic means of expression, using local materials, craft opportunities and imagination. The existence of many buildings is threatened. The reason is mismanagement, arbitrariness and neglect. It cannot be said about the sacral architecture, as many churches are renewed, restored and serve their original function. It is more complicated with the manor buildings, in some places they experience a rebirth, in other parts get hopelessly lost and the last ones are more. Undoubtedly, the rubble *style* is a value that as the region's future should be further surveyed and identified.

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Kopsavilkums. Latvijas arhitektūrā 19. gs. sastopami visai dažādi un daudzveidīgi māksliniecis kās izteiksmes līdzekļi. Būtiska loma bija dažādu būvmateriālu pielietojumam, ar kuru palīdzību lielā mērā tika noteikts ēku ārējais mākslinieciskais tēls. Šajā laikā radās jauna mākslinieciskā tēla meklējumi, kas saistāmi ar racionālisma ideju izpausmēm Eiropas arhitektūrā, kuras meklējamas jau 19. gs. vidū. Šāds materiāls bija ķieģelis, kurš tika eksponēts ne tikai dzīvojamo, bet arī sabiedrisko ēku, kulta celtņu un rūpniecības ēku fasāžu arhitektūrā. Taču pirms tam un vienlaicīgi eksistēja līdz šim nedefinēts virziens, kuru varam dēvēt par *šķembu stilu*. Tā īpatnību un raksturu galvenokārt nosaka fasāžu apdares paņēmiens – javā iestrādājot granīta šķembas un šīs virsmas kombinējot gan ar apmetumu, gan sarkano ķieģeļu un laukakmeņu mūri. Šīs kombinācijas var sadalīt vairākās grupās.

1. Javai, kā saistošam materiālam vairs netiek dota nekāda vizuāla nozīme. Laukakmeņi un to starpā liktās šķembas ir tik blīvas, ka java vairs praktiski nav redzama. Šādu piemēru nav pārāk daudz, taču tie sastopami visā Latvijā, gan muižu, gan sakrālajā arhitektūrā. Piemēram, Salnavas katoļu baznīca (19. gs. otrā puse), Felicianovas ūdensdzirnavas (19. gs.) u. c. Liekas, ka šķembas apvij laukakmeņus un kā vijoša lenta tos sasaista spraigā un līksmojošā dejā.

2. *Šķembu stila* otrajā grupā ierindojami objekti, kuru fasādēs vienlīdz nozīmīgi vizuāli uztverami gan laukakmeņi, gan starp tiem javā iespiestās šķembas, gan sarkanie ķieģeļi ailās, dzegās un citās konstruktīvi nepieciešamās vietās. Šādu ēku ir ļoti daudz un tās sastopamas visos Latvijas novados. Šajā grupā ierindojamas gan sakrālās celtnes, gan muižu apbūvē sastopami objekti, gan citās vietās radītas būves, piemēram, Varakļānu (1878), Saraiķu (1798), Kolkas (1885., arh. T. Zeilers) luterāņu baznīcas, saimniecības ēkas Zemītes, Vandzenes, Vīķu, Dzērbenes, Ezeres muižās, Dundagas pagastnams, Allažu dzirnavas u. c. Šai grupai jāpieskaita arī Vecpiebalgas muižas magazīna, kuras fasādi virs arkām, slēgakmeņu vietā grezno uzraksti, veltīti nama cēlājiem un atbalstītājiem., kā arī kādas senākas ēkas – Skaistkalnes muižas rija (1793) un Valmieras pastorāta saimniecības ēka (1795).

3. Ķiņķēziņi, ornamenti, seno meistaru vaļasprieks, pasaules redzējums un acumirklīgā noskaņa – tā gribētos nosaukt *šķembu stila* nākošo grupu. Tā sižetiski ir visinteresantākā šī virziena grupa un tāpat kā pārējās, savā mākslinieciskās izteiksmības burvībā nav pietiekoši novērtēta. Savdabīgs šāda veida šķembu raksts veidots Nurmuižas saimniecības ēkas fasādē (19. gs. otrā puse). Šķembas kārtotas vijumos, kas līkloči iet paralēli viens otram, vietām starp tiem iestarptināti koncentriski apļi, citur ne īpaši izteikti šķembu iespiedumu vijumi apvij laukakmeņus un seko to ārējiem apveidiem. Kopumā fasāde rada tādu kā mozaīkas iespaidu, ir lielā mērā izteiksmīga un atgādina fantastisku vīziju. Citādāka pieeja šī *šķembu stila* paveida darinātājam bijusi veidojot Vecbrenguļu muižas kalpu mājas (1854) fasādi. Šeit meistars ritmiski spiežot šķembas javā vietām attēlojis putnus, lielākus dzīvniekus, kas gan mērogā ir mazāki, trīsstūri ar apli centrā, kas no Bībeles simboliem atgādina Dieva aci (trūkst tikai Glorijas stari un arī t. s. saulītes motīvu, kas sastopams 18. un 19. gs. tautas celtniecības objektos, koka ēku rotājumos un būvgaldniecības izstrādājumu mākslinieciskos risinājumos. Saulītes motīvs vietām ne īpaši izteikti vērojams Ģipkas luterāņu baznīcas fasāžu apdarē. Savukārt Dārtas luterāņu baznīcas (1895-1896) ārsienu apdare kopumā līdzīga Kolkas pareizticīgo baznīcas fasāžu risinājumam – abu dievnamu veidotāji vai veidotājs ar šķembu vijumu īpaši izteikti akcentējuši laukakmeņu ārējās aprises, ap tiem veidoti vairāki vijumi. Kaut gan Dārtas baznīcas fasāžu veidotājam ar to ir licies par maz, viņš vietām ir veidojis eglītes motīvus, gan augošā veidā, gan arī ar kājām gaisā.

4. Vēl viens no *šķembu stila* variantiem jeb grupām ir fasāžu apdares pakārtošana tieši šķembu iespiedumiem, kuriem ir dominējoša loma. Laukakmeņi it kā peld šķembu jūrā, taču šajā gadījumā arī javas veidotajai virsmai ir sava nozīme, pretēji risinājumam, kur to neredzēja nemaz. Tādā veidā risinātas ir luterāņu baznīcu fasādes Kaltenē (1848., sakristeja 1880., paplašinājums 1896.), Mazirbē (1866). Minētam variantam attiecināma arī Krimuldas muižas Šveices māja fasāde (19. gs. beigas), Turaidas muižas kaltes fasāde (19. gs. otrā puse).

5. *Šķembu stils* ir sadraudzējies ne tikai ar sarkano ķieģeli, bet arī ar apmetumā veidotām joslām, aiz kurām ķieģelis tiek slēpts. Tas ir Latvijas lauku arhitektūrā ļoti populārs fasāžu dekoratīvais risinājums, gan muižu apbūvē, gan sakrālajā un publisko ēku arhitektūrā. Šādas ēkas tapušas gan klasicisma laikā, gan vēlāk, kad racionālisma idejas jau bija ieguvušas popularitāti. Tādejādi veidojās savdabīgs fasāžu dekoratīvā noformējuma veids, kuru nosacīti varam dēvēt par balto joslu parādību. Šeit risinājumi mēdz būt dažādi. No aplikatīvi iezīmētiem dubultpilastriem sīku šķembu iespiedumu virsmas fonā, kā Jaunbrenguļu muižas staļļa fasādē (19. gs. pirmā puse), klasicismam raksturīgiem pilastriem un puskolonnām tādā pašā šķembu raksta ieskāvumā Madaleņas katoļu baznīcas fasādē (1821). Taču lielākoties šāda veida fasādēs apmetuma joslās veidotas ir tikai ailu apmales un ēku stūri, bez kuriem neizmantojot ķieģeļus bija grūti. Tādas ir daudzas ēkas Latvijas laukos. No senākiem citzemju piemēriem, kur fasādēs lietoti dažādi materiāli nāk no senās Olimpijas pilsētas Grieķijā (domājams, 3. gs. beigas p. m. ē.). Šeit laukakmeņu mūri papildina šķembu vai ķieģeļveidīgu lausku ielikumi. Arī vēlāk šāds materiālu apvienojums vēsturiski nebija jaunums. Kaut vai *Holy Monastery of Grand Meteoron* (14. gs.) Grieķijā. Ļoti līdzīgs risinājums ir arī Veronā, kur pilsētas viduslaiku aizsardzības siena veidota no laukakmeņiem, sarkano ķieģeļu joslām un javas virsmām. *Šķembu stila* izpausmes nav svešas arī Lietuvā un Igaunijā.

Visas minētās *šķembu stila* grupas veido savdabīgu un tradīcijām bagātu fasāžu apdares veidu. Šīs ēkas mēs uztveram kā neatņemamu kultūrvēsturiskās vides sastāvdaļu un dēvējam par tradicionālām. Jāsecina, ka *šķembu stils* sakņojas tālā senatnē un kā formāli stilistisks virziens fasāžu dekoratīvajā risinājumā uzplaucis Baltijas reģionā 19. gadsimtā. *Šķembu stils* nav raksturīgs kādam noteiktam Latvijas reģionam, tas izpaudies visos novados un arī kaimiņzemju arhitektūrā. Šis *stils* liecina par vietējo amatnieku meklējumiem fasāžu mākslinieciskās izteiksmes līdzekļu risinājumos, izmantojot vietējos materiālus, amatnieciskās iespējas un izdomu. Neapšaubāmi *šķembu stils* ir vērtība, kas kā reģiona parādība ir turpmāk pētāma un apzināma.

Concept of Seasonality for Landscape Architecture

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Abstract. Landscape seasonal change is taken-for-granted aspect of landscape. To live in, plan and design landscape with respect to seasonal opportunities and constrains it is necessary to understand the phenomenon. To answer a research questions – what concept of seasonality consists of and how landscape scientists understand season's phenomenon – as a most appropriate research method inferred was content analysis. As a research data were used five selected articles from book "Seasonal Landscapes" H. Palang, A. Printsmann, & H. Soovali (Eds.) Landscape series, volume 7, (2007) Springer. The paper investigates how the researchers experience and explicate phenomenon of seasonality. The research resulted in five distinct thematic categories – 'time', 'human', 'space', 'architecture' and 'phenomenon' with several subcategories each. Since the target of research is to find components for concept of seasonality for landscape architecture the category 'architecture' was set intentionally, other categories rose from research. For some categories the point of saturation when scientists continue reporting essentially the same ideas was reached. As theoretical investigations on the phenomenon of seasonality in landscapes are far away from completeness and it is premature to set a stable paradigm, the format of research disclosed in this paper is considered to be descriptive instead of interpretative. The results reached by methodology used were over expected.

Keywords: seasonality, content analysis, phenomenon.

Introduction

Spatial atmospheric openness of landscape to climate impermanence is subject to diurnal, weather and seasonal rhythms. Due to the Earth revolution around the Sun and the Earth axial tilt the landscapes trooping away from equator experience seasonality to an increasing degree. Also topography, altitude and microclimatic conditions are a reason for seasonal variety in landscape. This is independent phenomenon. If we believe in notion that the best things in life are free, then the seasonality is free for sure. To live in, plan and design landscape with respect to seasonal opportunities and constrains it is necessary to understand the phenomenon.

The seasonal character of landscape is a component of regional landscape identity. Landscape seasonal change is taken-for-granted aspect of landscape. That could be feasible explanation for the fact of simplifying knowledge of seasonality and scarcity of investigations of this phenomenon in landscape architecture theory and practise. The lack of consistent theoretical framework of seasonality in landscape resulted in necessity to conduct this research and required to focus on selection of appropriate methodology.

The research questions set for this paper are – what seasonality consists of and how landscape scientists understand season's phenomenon. The target of research is to find components for concept of seasonality for landscape architecture. The landscape architecture is an anthropocentric discipline which joins aesthetics and utility of landscape for humans.

The definition of 'landscape' by European Landscape Convention is grounded on human perception [1]. This is a cusp of disciplines between landscape architecture and phenomenology. The phenomenology as a science developed from movement in philosophy and humanities. "Phenomenological research is the study of lived or experiential meaning and attempts to describe and interpret these meanings in the ways that they emerge and are shaped by consciousness, language, our cognitive and noncognitive sensibilities, and by our preunderstandings and presuppositions" [9, 614]. Also Gadamer marked what the role language plays in bringing experience to understanding [9, 388]. The research started from a perspective free from hypotheses. Seasonality is a reality. Since seasonality is taken for granted aspect of everyday life through phenomenological approach the paper investigates how the researchers experience and explicate phenomenon of seasonality.

The part of investigation results were presented on the 17th Annual International Scientific Conference "Research for Rural Development" of the Latvia University of Agriculture held in Jelgava, Latvia in 2011.

Data

As a research data were used five selected articles from book "Seasonal Landscapes" H. Palang, A. Printsmann, & H. Soovali (Eds.) Landscape series, volume 7, (2007) Springer [7]. Due to the research method used these were considered as verbal data.

1) Dodgshon, R. A., & Olsson, E. A. *Seasonality in European Mountain Areas: A Study in Human Ecology* [2].
2) Jones, M. *Seasonality and Landscape in Northern Europe: An Introductory exploration* [3].
3) Lindstrom, K. *From Experiential to Chronometric Seasonality – The Establishment of Seasons as a National Symbol in Modern Japan* [6].
4) Palang, H., Printsmann, A., & Soovali, H. *Seasonality and Landscapes* [8].
5) Stobbelaar, D. J., & Hendriks, K. *Seasonality of Agricultural Landscapes: Reading Time and Place by Colours and Shapes* [10].

This book is a part of research project "Nordic Dimension in European Cultural Landscape" supported by Nordic Grant Scheme that previously resulted in (1) a Nordic research course "Landscape and Seasonality" held at Roosta in Estonia in 2003 and (2) a special issue on seasonal landscapes of the journal "Landscape Research" in 2005 [4]. Due to above mentioned it is reliable for completeness of theoretic framework.

Methods

To answer a research questions – what concept of seasonality consists of and how landscape scientists understand season's phenomenon – as a most appropriate research method inferred was content analysis. The articles or verbal data has a lot of recurrences. By reading through the articles of book "Seasonal Landscapes" [7] and "Landscape Research" in 2005 [4] the answer on research questions was totally opaque. The aim for use of this method was to break construct of the narrative in the pieces of excerpts or words. It is based on semiotic assumption that word is a sign. The method applied based on The Sage encyclopedia of qualitative research methods [9, 120]. Lester notes that „phenomenology is concerned with the study of experience from the perspective of the individual, 'bracketing' taken-for-granted assumptions and usual ways of perceiving" [5]. Thus the overall research approach for this paper is phenomenology with a content analysis used as a tool. The research was designed with a minimum structure and reasonably maximum depth.

Content analysis is the intellectual process of categorizing qualitative textual data into clusters of similar themes, to identify consistent patterns and relationships between them. Qualitative content analysis is sometimes referred to as latent content analysis. Content analysis is useful for identifying both conscious and unconscious messages communicated by text – what is stated explicitly as well as what is implied or revealed by the manner in which content is expressed. Research approach was entirely inductive – beginning with deep close reading of text and searching for words, phrases, excerpts characterising and describing seasonality concept in the landscape, simultaneously attempting to uncover the less obvious contextual or latent content therein. It was an iterative process – revisiting categories identified previously and combining or dividing them, resolving contradictions, as the text is analysed over and over with an ongoing connection with the data [8, 120].

There are two weaknesses of the method [9, 120]. (1) Because of context dependent meaning and interpretation subjectivity dependent on researcher - in qualitative content analysis, a reliability coefficient of 0.60 is considered acceptable. (2) Content analysis is time consuming due necessity to go deep into texts (words, phrases) and because of need for iterative analyses. Also it can be accomplished using very low-tech materials such as a pencil and paper. The strength of the method which approved later in research is – by breaking the construct of narrative the probability to relieve the latent content increases.

Results

For building up seasonality concept for landscape architecture the research resulted in five key themes or distinct thematic categories – 'time', 'human', 'space', 'architecture' and 'phenomenon' with several subcategories each. The findings are stated into Table 1 to 5. To illustrate findings more transparently the direct quotations are used. Despite the fact that some quotations were relevant to more than one category or theme they were included only once. All categories are related to and complement each other. Despite the fact that some quotations were relevant to more than one category or subcategory they were included only once. As the target of research is to find components to set concept of seasonality for landscape architecture the category 'architecture' was set intentionally. Other categories rose from research.

The crucial character for expression of seasonality is time. The findings for concept of seasonality on the component identified as 'time' are stated in Table 1. In this category there were identified six subcategories labelled as 'change', 'rhythm', 'period', 'calendar', 'spacetime' and 'coherence'. All subcategories reached point of saturation. The subcategories 'spacetime' and 'coherence' is closely related to category 'space'. The subcategory 'coherence' is complemental to category 'phenomenon'. The subcategory 'change' were set for four categories 'time', 'human', 'space' and 'architecture'.

TABLE 1

Category 'time' for concept of seasonality [Source: construction by author]

Subcategories	Quotations
Change	Passage of time; coherence of change; bright succession; seasonal changes; alteration of seasons; variation among seasons; sequence of seasons; transitions between seasons; seasonal development: continuum of minor changes; "movie"- sum of momentary pictures.
Rhythm	Ephemeral and permanent; regular repeating rhythm; permanent and cyclic changes; ever-recurring; intervening phases; seasonal landscape consists of phenomena that have a regular repeating rhythm; natural cycle; ever-recurring activities; rhythms of climate.
Period	Momentary time – specific moment of the year; cyclic time – cyclical dimension; to read time of the year; temporal; monotonous; chronometric time; experiential sense of time (seasons) through everyday actions and perceptions; infinite moment of time.
Calendar	Number of seasons; season arrival date; course of the season - phenomenal qualities; seasonal media events; broadcasts of cherry blossoms; seasonal traditional festivities; task calendar.
Spacetime	Real –life experience of space and time; simultaneously time and space; halt; many things happen together; attendant; seasonally structured patterns of timespace adjustment; seasonally elaborated patterns of time-space adaptation ubiquitous existence.
Coherence	Specific moment and expression in landscape; orientate in time and place: what time is it? where am I? what was and what is going to be? expression of moment in the year; to read time of the year.

TABLE 2

Category 'human' for concept of seasonality [Source: construction by author]

Subcategories	Quotations
Perception	Sense of seasons; subconscious and conscious; immediate perception; spiritual experience; cognitive world of ice; seasons are visible; divine dimension of time; individual experience (of seasons); seasonal associations; immediate perception; indispensable importance for the perception of the landscape; seasonal atmosphere.
Symbolism	Essential component of the character of the region; seasonal image as a national symbol; normative reference image; pure form of seasonality; explicit representation; seasonal artefacts; symbols of national seasonality; "correct" seasonality; seasonal work cycle = eternal cycle of life; model of human life cycle; seasonal image = ideal season = perfect ethical model; prototypic model; sign of status; normative reference image; pure form of seasonality; as label in itself guiding through defined artificial cultural activities; "high points" of season – seasonal characteristics typical for the area are clearly expressed; definition of peak, shoulder, low season (in tourism); off season.
Players	Perception of participant and witness; season-conscious culture; performing culture; seasonal resource use had a gender dimension.
Use	Appreciation; worship; adventure; everyday life; survival; economic exploitation of seasonally different resources; season aimed, season constrained activities; seasonal events; seasonal pattern of resource use.
Influence	Influence on human rhythms; summer activities partly aim to help survival through winter; impact on tourism; impact on daily life; effect on different species of animals; effect on economy, military, winter sport; business seasonality; seasonal holiday life; seasonal sports; off-season inactivity; (monthly) rhythms of activity in different occupations; seasonal rhythms of work in farms.
Meaning	Social meaning through festivals, markets; worship.
Identity	Essential component of the character of the region; (seasons) defining features of national and regional identity.
Reflection	Artistic imageries; vocabulary describing winter conditions; metaphors; artistic landscape representation - mediate the narrative to be experienced; seasons are depicted in art (painting, music).

The findings for concept of seasonality on the component identified as 'human' are stated in Table 2. The landscape architecture is anthropocentric discipline. Also findings in eight subcategories of 'perception', 'symbolism', 'players', 'use', 'influence', 'meaning', 'identity' and 'reflection' apart from lack of theoretical explorations represent expression of seasonality in practice. Subcategories 'players' and 'meaning' did not reached the point of saturation, remaining subcategories did.

The findings for concept of seasonality on the component identified as 'space' are stated in Table 3. There were identified six subcategories labelled as 'scape', 'light', 'colour', 'weather', 'biota' and 'change'. The subcategory 'weather' should be seen together with subcategory 'geographic constrains' in the category 'phenomenon'. Surprisingly subcategory 'weather' was tight in findings however it is the closest component on which natural seasonality is built.

The findings for concept of seasonality on the component identified as 'architecture' are stated in Table 4. There were identified six subcategories labelled as 'planning', 'chance or problem', 'objects', 'landscape', 'change' and 'genius loci'. As the target of research is to find components to set concept of seasonality for landscape architecture the focus on categories 'space' and 'architecture' raised a conclusion that theme was not explored sufficiently and is incomplete. Also the review of remaining articles of the book "Seasonal Landscapes" [7] and articles in "Landscape Research" [4] which was dedicated to seasonality in landscape and are result of the same research project did not prove to select additional articles to be used for content analysis as the verbal data.

Fig. 1. Seasonal coherence – the ice road on the river Lielupe at -10 ^{0}C. Tetele, Ozolnieki municipality, Latvia [Source: photo by author, 2011].

Fig. 2. The ice drift – cyclical time and symbol of spring creep. The river Lielupe, Tetele, Ozolnieki municipality, Latvia [Source: photo by author, 2010].

Fig. 3. Early spring with migratory bird - swan arrived. The river Lielupe, Tetele, Ozolnieki municipality, Latvia [Source: photo by author, 2009].

Fig. 4. The light of sunset of nightless day in midsummer. The river Lielupe, Āne, Ozolnieki municipality, Latvia [Source: photo by author, 2009].

TABLE 3

Category 'space' for concept of seasonality [Source: construction by author]

Subcategories	Quotations
Scape	Icescapes; touchscape; soundscape; perceptible space; spatial boundaries – horizontal, vertical; accessibility – appearance and disappearance of physical or visible barriers; scale and density; surface; predominate; process qualities and pattern qualities; observable properties of objects vary according the time of the season; daily human space.
Light	Idyllic light; light regimes (inter-seasonal variation); duration and intensity of isolation; incidence of light; (impact of) elevation, slope aspect; visibility; daylight; nightless days in summer, sun in midnight; changing patterns of light and shadow might bring out the object in the landscape or conceal it.
Colour	Colour contrasts; tint; colour diversity; duration of colour periods; colourful period; colourful-colourless; maps of colours; pictorial attributes; succession of colourful plants.
Weather	Gradation of different kind of snow; differentiation of seasonal types of rain; extreme temperature contrasts.
Biota	Extensive open space (partly) due to the absence of leaves and other closed upright vegetation; transparent planting; length of growing period; seasonality for both fauna and flora are biologically conditioned; phenologic data; length of growing period.
Change	Dynamism in colours and patterns; use of them (fauna and flora) result in change; patterns and activities of peoples and animals; changing colours; changing forms; changing activities; changes in abiotics; degree of change in shape.

TABLE 4

Category 'architecture' for concept of seasonality [Source: construction by author]

Subcategories	Quotations
Planning	Lack of seasonality in town planning; uninteresting winter months redesign; snow fences; different types of livelihood; season simulacrum.
Chance or problem	Exploit the range of resources available; search of something; escape from something; dormant; current and desired qualities; role of the season in the landscape; season act as obstacle or supporter.
Objects	Second homes for winter activities or for summer vacations; summer villas or cottages; summer guests; caravans, recreational boats substitute second homes; snow fences.
Landscape	Purpose-built seasonal landscapes; summer house landscape; landscape of seasonal work replaced with landscape of flowers; deciduous trees; seasonal landscape quality; ice in mountain – closed road; frozen wetlands – road.
Change	Seasonal mobility; holiday travel; changing landscape elements; wave motion.
Genius loci	Certain places being frequented at certain times of year depending on weather.

TABLE 5

Category 'phenomenon' for concept of seasonality [Source: construction by author]

Subcategories	Quotations
Concept	Natural phenomena and human constructs; socially constructed through preferences and expectations; cultural activities and periodicity of nature; seasonal context; seasonal character; expressions of the seasons; seasonal manifestation; deviation; distinct features; diversity; regime of seasons material and representational dimensions.
Geographic constrains	Regional variability of seasons; climatic extremes; seasonality is inherent to the climatic limitations; season aimed, season constrained activities; uni-dimensional and multi-dimensional nature of seasonality (for mountains).

The findings for concept of seasonality on the component identified as 'phenomenon' are stated in Table 5. There were identified two subcategories labelled as 'concept' and 'geographic constrains'. The category 'phenomenon' is shortest and findings are more theoretical instead of phenomenological form. This also resulted due to reason to be in compliance with research methodology to put quotations only once. However all five categories are complemental to each other and should be seen together.

Fig. 5. Experience simultaneity of space and time during rain downfall in midsummer.The river Lielupe, Tetele, Ozolnieki municipality, Latvia [Source: photo by author, 2010].

Fig. 6. Artistic reflection of "Early spring" (1898-1899) in impressionist Vilhelms Purvītis (1872-1945) painting [Source: the Latvian National Museum of Art collection, publicity photo by N. Brasliņš].

Fig. 7. Artistic reflection of landscape participants – "Swimmers boys" (about 1900) in summer in impressionist Johans Valters (1869-1932) painting [Source: the Latvian National Museum of Art collection, publicity photo by N. Brasliņš].

Discussion and Conclusions

The investigations to answer the research questions of what seasonality in landscape consists of and how landscape scientists understand seasonality phenomenon with the target to find components for concept of seasonality for landscape architecture succeeded with set of three main themes 'time', 'human' and 'space'. These are convincing results with no contradictions noticed. The category 'architecture' was set intentionally to focus on context of landscape architecture. The category 'phenomenon' could be seen as complemental to other categories.

The subcategories of all categories identified showed wide spectrum of themes with varying rate of the point of saturation when scientists continue reporting essentially the same ideas were reached or not reached. The themes of the subcategories identified did not proved on completeness for disclosing all aspects of category to define of what seasonality in landscape consists of. Also labels to subcategories are subject to development.

However the answer on how landscape scientists understand or report on seasonality phenomenon in landscape are achieved and disclosed in this paper. According to phenomenological approach the articles should be seen as verbal data on both on preconception and conception stages. The researchers explore results and discuss research theme simultaneously disclosing experiences. Also researchers recurred on themes in synonymously manner. That could be interpreted that they aimed to translate the preconceptions more clearly in conception stage. The quotations disclosed illuminate more stable paradigms and concepts together with non-conscious descriptions of perceived or lived experience of taken-for-granted seasonality in landscape and attempts to interpret and conceptualise on it. That proved the grounds for phenomenological approach on reading of findings.

It also proved the content analysis as methodology used since in such technique by breaking the construct of narrative both conscious and unconscious messages communicated by text were identified and latent content found. Also normative assumptions and conventional wisdom were bracketed. The weakness detected of selection of landscape researchers for investigation showed that their skills should be developed on reporting obvious everyday life experiences. The format of research disclosed in this paper is considered to be descriptive instead of interpretative. The results reached by methodology used were over expected.

The articles examined by content analysis and review of remaining articles of book "Seasonal Landscapes" [7] and journal

Fig. 8. Openness of winter space on the Jāņu pond Āne, Ozolnieki municipality, Latvia [Source: photo by author, 2009].

Fig. 9. Design imaginaries of spring landscape for the river Lielupe, Tetele, Ozolnieki municipality, Latvia [Source: visualization by author, 2009].

Fig. 10. Flood in unplanned landscape in 2010, Jelgava, Latvia [Source: photo by I. Ķikule, 2009].

"Landscape Research" [4] drew up a conclusion that theoretical investigations on the phenomenon of seasonality in landscapes are far away from completeness and it is premature to set a stable paradigm. No generalisation is made at this stage of research.

In context of values driven by existential aesthetics and concepts of authenticity and diversity of landscape, it highlights importance of recognition of seasonscape and its incorporation in landscape and urban planning and design. Is it an opportunity or a constraint? Like continuum principle coded in seasonality itself there is continuous development of concept on taken-for-granted seasonality aspect in landscape. The point of saturation is crucial for changes – what comes next?

Acknowledgement

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Kopsavilkums. Pētījumā par izpētes avotu lietoti atlasīti pieci raksti no grāmatas „Sezonālās ainavas" (Palang, Printsmann, & Soovali, 2007), kas ir rezultāts vairāku gadu pētniecības projektam „Ziemeļu dimensija Eiropas kultūrainavā". Projekts ietvēra arī Ziemeļvalstu pētniecības kursus "Ainava un sezonalitāte" Roosta, Igaunijā 2003. gadā un speciālo izlaidumu par sezonālajām ainavām žurnālā Landscape Research 2005. gadā. Šāda aprobētā projekta rezultātu lietojums pētījumā palielina varbūtību par teorētiskā ietvara pilnīgumu. Rakstu izpētei izvēlēta satura kvalitatīvā analīze, jo ainavu arhitektūras un tai radniecīgu zinātņu nozaru teorijā iztrūkst tēmas sistēmiskā pamata. Iepazīstoties ar rakstiem pirms šīs pētniecības metodes izvēles, secinājums bija, ka tēmas izpratnē autoriem trūkst skaidrības un stabilitātes atziņās, kas arī noteica nepieciešamību pēc padziļinātas izpētes. Metodes izvēles mērķis bija salauzt stāstījumu vārdos, frāzēs un teksta fragmentos. Satura kvalitatīva analīze, kas tiek saukta arī par latento jeb apslēptā satura analīzi, ir noderīga, lai atklātu gan apzinātas, gan neapzinātas domas, idejas, viedokļus, kas tiek ziņoti teksta formā. Izpētes rezultātā tika izdalītas piecas sezonalitātes koncepta grupas – laiks, cilvēks, telpa, arhitektūra un fenomens ar vairākām apakšgrupām katrai grupai. Lai gan atsevišķi citāti atbilda vairāk kā vienai grupai tie tika iekļauti tikai vienu reizi. Pētījumā veiktā ainavas sezonalitātes koncepta izpētē nostādņu piesātinājuma punkts, kad pētnieki ziņo pēc būtības tādas pašās atziņas, tika sasniegts atsevišķām grupām. 'Telpas' un 'arhitektūras' grupām piesātinājuma punkts vēl nav sasniegts un papildināms turpmākos pētījumos. Izpētes rezultāti pārspēja sākotnēji iecerētos.

Kārlis Barons - the most outstanding garden architect of the second half of 20th century

Gundega Linãre, *Latvia University of Agriculture*

Abstract. Building on the territory of Riga is blessed with talented urban planners. After pulling down of the medieval city's ramparts, the cleared territory was turned into a circle of parks and boulevards. Only five European cities can boast of such planning. These cities are Gothenburg, Brno, Graz, Vienna and Riga. In Riga, the fortress ramparts were begun to be leveled in 1858. The authors of the first planning of boulevards and parks of Riga are the architects – urban planners J.D. Felsko and O. Dietze. In 1859, instead of the former ravelins and bastions of Riga Fortress, on either side of the picturesque canal of the fortress, a park belt was created by Vendt, the architect of Lübeck.

In 1880, this park was transformed by Georg Kuphaldt, the brilliant and talented garden architect, who acquired his education in Germany, at the Royal Gardener's Institute in Potsdam. After him, the gardens and parks of Riga are designed by G. Kuphaldt and K. Barons, the brilliant landscape architects.

Keywords: urban garden architects, system of greenery.

Introduction

Riga is blessed with excellent urban garden architects. **Georg Kuphaldt** has created a structure of the system of greenery in Riga that serves the residents of Riga still today. His student **Andrejs Zeidaks** has rebuilt the parks of Riga according to the new, modern-style of gardens of the 20th century. His most outstanding work is the idea and implementation of the ensemble of the Warrior's Cemetery in Riga. The Latvian riflemen slain in World War I in the battles for independence of Latvia are buried in this cemetery. The architectonic part of this ensemble is crowned by the sculptures of Kārlis Zāle. For the first time in the world in the architecture of memorial ensembles as a dominant - linear plantings of perennials in beds are used, creating a typical linear arrangement of flowers in beds characteristic to Latvian farmhouses. Over the grave yard in the summer, the phlox and rose fragrance is lingering in the air, which is also characteristic to farmhouses. In the short interval between the two World Wars, A. Zeidaks managed to recreate the gardens and parks of Riga in accordance with the latest requirements of the garden art. **Kārlis Barons,** a student of A. Zeidaks, maintained and further developed both his ideas and the parks created by him. Each of them came out to live in different social structures. The most productive years in the life of Kārlis Barons were spent under the yoke of the Soviet Union, where even the list of occupations did not contain the profession of the landscape or the garden architects [1, 2].

Many talented creative people come from Vidzeme- writers, poets, composers, painters, etc.

Kārlis Barons was born in the parish of Drusti of the district of Cēsis (1912). The picturesque romantic landscape, the hills and valleys, the serene peace of the farmstead surrounded by large trees are the unforgettable childhood impressions, which formed the basis for the further creative work in the garden art.

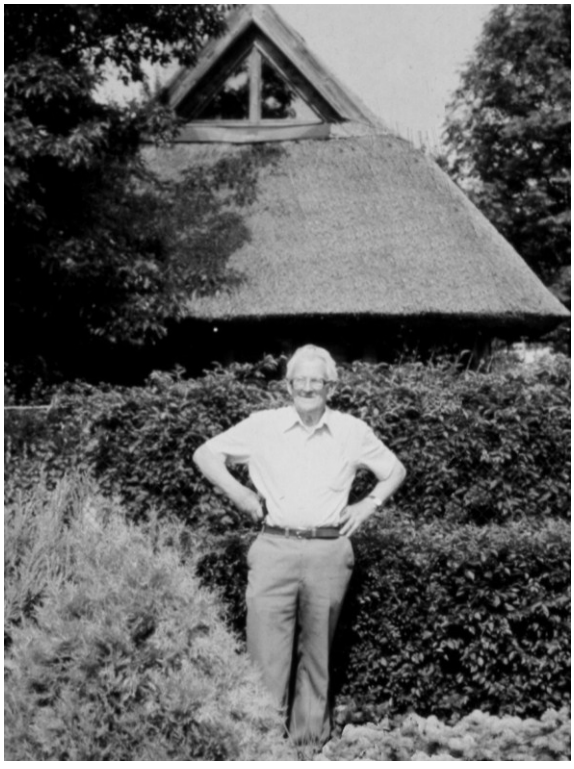

Fig. 1. Karlis Barons, 1974
[Source: photo from author private archive].

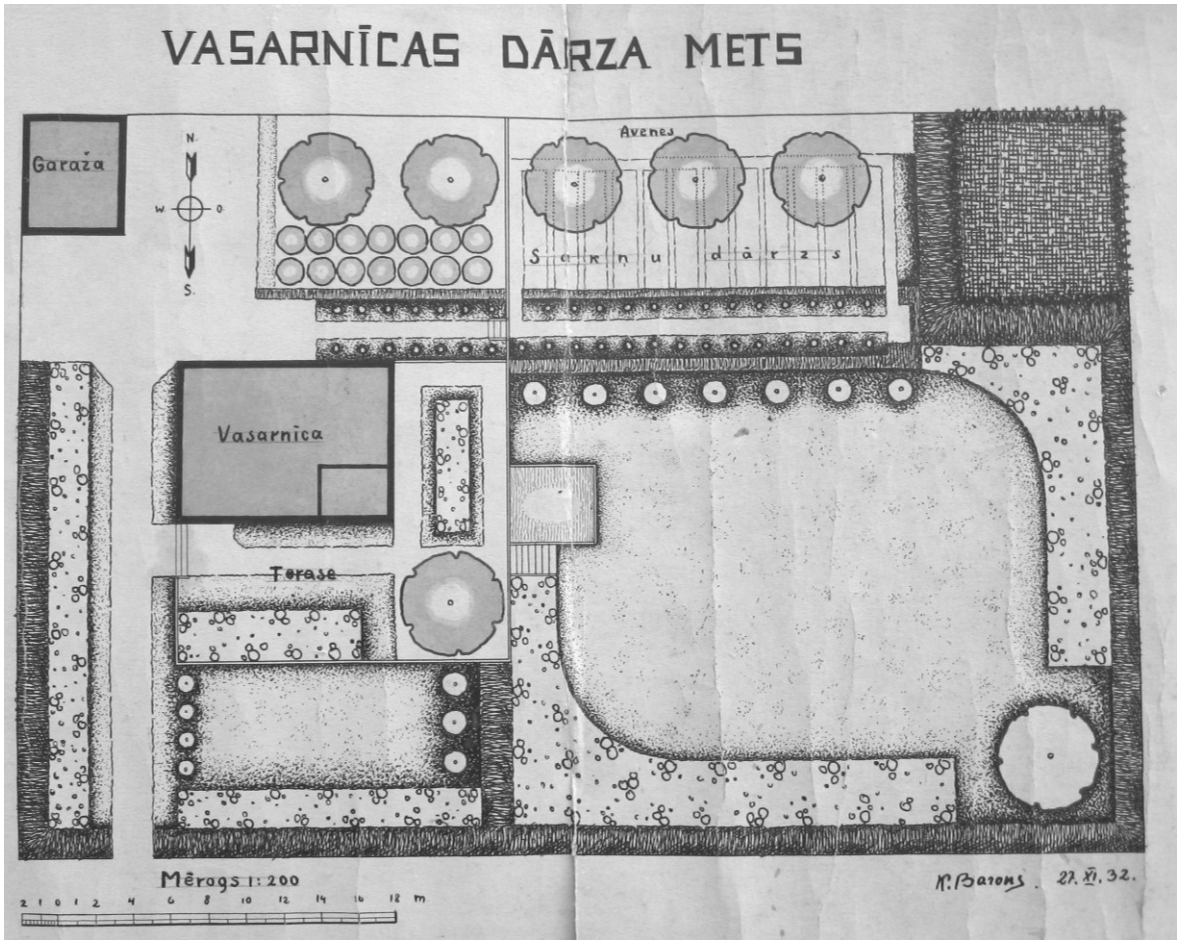

Fig. 2. The sketch of cottages garden. K. Barons, 1932 [Source: material from author private archive].

While learning at Bulduri, a deep interest in the decorative gardening is created as the garden art was taught by architect Andrejs Zeidaks. Only then, the next garden architect realized that the garden art is not lovely outlined flower beds, beautiful shrubs, trees and neat paths, but it is the outdoors building art. The garden design is not based on the idea of abstract beauty, but rather on the functional utility and human needs. In the composition of greenery, the past century manor parks should not be copied, but one has to work in a new style of the garden art, rooted in the traditions of the Latvian nature and the rustic greenery of the Latvian farmstead that echoes with the modern architecture of the 20th century.

The aim of the study is to reflect the work of the first landscape architects of the independent Latvia in the areas of the city environment.

The assignment – to reflect the idea of garden projects and the quest for the Latvian identity context in the compositional creation of the gardens.

Materials and methods

Kārlis Barons immediately used the newly acquired knowledge and rescheduled the greenery of his father's farmstead, where the project was accepted by A. Zeidaks. The Gardening and Beekeeping Magazine / 1936, No. 6 / contains K. Baron's article "Farmstead Greenery" where he published the greenery project of "Lejasmindaugi", his reflections of ornamental horticulture and of the new "reformed type of gardens, at which a great merit belongs to the director of Riga Gardens A. Zeidaks". He wrote, "*The Latvian enjoys the beauty provided by art. Art awakens the man's light forces. Ornamental horticulture requires talent. There you will need each thing intuitively feel, consider*". And again, "*I can safely say - we do not have a house in Latvia, where it would not be possible to have beautiful, aesthetic greenery". "Let's take care of nature and nature will take care of us!"* Here, the first seeds of the garden and the park development of the new independent state lie, based on the understanding of the art of outdoor space creation in the context of the national identity.

The historical Valdeķi Manor (arch. T. Zeilers, 1882) has been rebuilt during the period of the independent state in Latvia, creating a pompous baroque staircase in the entrance, where the new garden is subordinated to it. By A. Zeidak's project, K. Barons carries out the reconstruction of the park as it has plenty of big old trees, therefore only ornamental shrubs are planted, planting also 10 000 perennial flower seedlings and installing walking paths.

Fig. 3. Riga.The park Ziedondarzs. K. Barons, 1940. The fountain (sculptor M. Lange) andrecreation pavilion (arch. A. Kalnins) [Source: photo from author private archive].

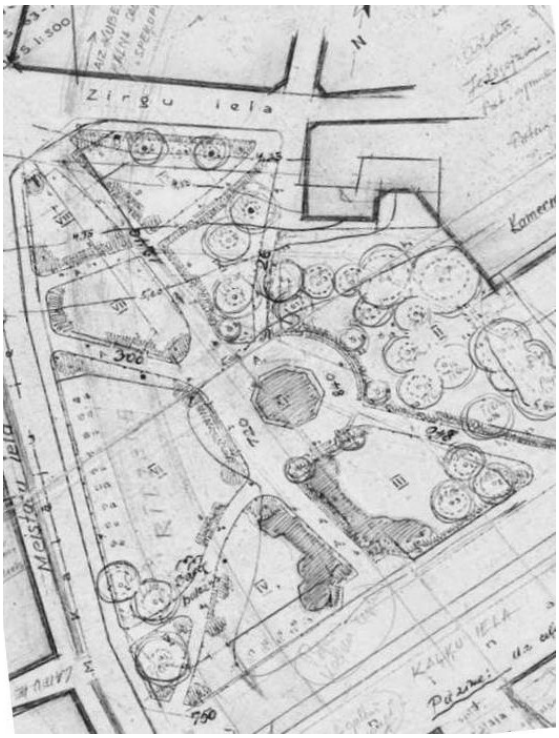

Fig. 4. Riga. The square Livu. The stylistic features of soviet times. P. Seleckis, 1950 [Source: material from author private archive].

After the reconstruction works of the manor house garden, A. Zeidaks invited K. Barons to work in the Riga Garden administration. With few breaks he worked here for 34 years, running the way from the junior drawer – technician to the principal architect of the Riga Gardens.

The creative work in the design of the Riga city environment begins with the creation of the Latvian Society of Horticulture Instructors. About his private practice K. Barons writes, "A beautiful neighborhood embellishes people". It dates back to 06 November 1933. The archive of K. Barons contains a chalet's garden draft of 27 November 1932, where the author writes, "My first project". In April 1937, he arranged his own garden project office, which hired two more employees. Project orders for K. Barons were provided by the Latvian Chamber of Agriculture.

In the place of the old army gunner barracks and gardening –in the corner of Artilērijas street and the present Čaka street, the Riga Garden architect A. Zeidaks had planned to lay out a new park - Ziedoņdārzs, on the project of which also worked the young garden architect K. Barons, passionately drawing plan options of Ziedoņdārzs. Several of his ideas A. Zeidaks included in the final version of the park's plan. The paddling pool and the large, spacious lawns are accepted. Until 1940, K. Barons participates in the Esplanade, Latgale garden (now Moscow garden), Victory Park, Kronvalda Park and other garden and park design and layout works.

K. Barons took part in the International Horticultural Congress in Berlin (1938) and then toured to Germany to see gardens there. In 1939, he familiarized with the greenery in Finland. Over the next years, it was expected to familiarize also with French, Italian and English parks, but the intentions were overlaid by the war.

Fig. 5. Riga. The square Livu. Multistage flowerbed. P. Seleckis, 1950
[Source: photo from author private archive].

Fig. 6. Riga. The improvement of residential courtyard. A. Zeidaks, K Barons,1940
[Source: material from author private archive].

Fig. 7. Riga. The trees groups of Park Uzvaras. K. Barons, 2009
[Source: photo from author private archive].

Fig. 8. Riga. The trees groups of Park Uzvaras. K. Barons, 2009
[Source: photo from author private archive].

In his memoirs, K. Barons describes very vividly his first meeting with the first director of the Riga Gardens Georg Kuphaldt in 1931. A. Zeidaks introduces them to each other and K. Barons spends time walking along the parks of Riga together with G. Kuphaldt. At the canal, the old white-haired man shows a linden tree that he has planted long ago. Now this linden tree is felled, but gardeners have managed to root in one of the low bent branches [2].

By the outset of the war, Riga is ruined. Backyards and fences were removed in the narrow residential neighbourhoods of the 19th century in Latvia that previously separated the earlier boundaries of private property. Yet, in the pre-war years, the Riga City Executive Board asked the Riga Gardens Directorate to design a complex improvement and greenery of the city's old, 19th century residential neighbourhoods. In general, it was a highly advanced, but for those times just a utopian idea. Under the management of A. Zeidaks, such projects were developed for the neighborhoods between Dzirnavu, Lāčplēša, Avotu, Matīsa, Valmieras and Satekles streets.

In these projects, very beautiful and functionally comfortable greenery systems with plants and flower bed plans, children's playgrounds, sports courts and pedestrian streets were intended.

Large, new parks were also designed. In the corner of Riga, Lāčplēša and Satekles streets (now the Hydrometeorological Apparatus Factory) a large park was designed with an open-air stage for concerts and a large children's playground. Another park was planned in Melnsila street, Pārdaugava (now the Āgenskalns Pine residential neighbourhoods). None of these projects were implemented as the war broke out in 1941.

Results and discussion

After the war from October 1944, K. Barons began working as an assistant director for the director of the Ornamental Greenery. From 1945 to 1947, he worked for the Ministry of Agriculture as an agronomist of ornamental horticulture, and from 1947 through the subsequent 20 years, he worked as an agronomist – architect in the Riga Gardens. K. Baron's position titles state that the profession of a garden architect does not exist in the Soviet Union.

The first projects were temporary greenery and squares in the sites of the houses destroyed during the war. A little later, greenery was designed at the embankment of the River Daugava near the Old Town, around the monument to the events of 1905 and around the new Akmens tilts /Stone Bridge/ on both sides of the River Daugava. By K. Baron's projects, squares in the corner of Brīvības and Ropažu streets (1950), in the corner of Kr. Valdemāra and Palīdzības streets (1957), in the corner of Blieķu and Palīdzības streets (1958), in the corner of Miera and Klusās streets (1960), in the corner of Tilta and Alekša streets (~ 1960), the square at the Brasas railway station (1961), the square of Brīvības street, opposite the VEF Culture Palace, Philharmonic Square (1974)-now Liv Square - and many other small greeneries were designed. In 1963, Meteor Garden, Kiev Garden and Communist Brigades Park were laid out. The last two parks were laid out in the places of former cemeteries.

The dendrological solution for a park, developed in 1963, was the greatest achievement of K. Barons in the post-war Riga. In 1963, the park had a very imposing name – the C.P.S.U. XXII Congress Park. The park was planned by architects V. Dorofejevs and Ē. Fogelis. Now, it is called as in the pre-war period - Uzvaras Park /Victory Park/. The park takes up 36.7 ha, the River Mārupīte flows through it, creating picturesque backwaters. The first groupings of woody plants by K. Baron's sketches were already planted in 1961, before the development of the project. The groups of the most quickly growing tree species – the birch and larch - over these years have well grown. Starting from early spring, when the forsythia blooms, until autumn, when the leaves of woody plants colour, the park delights us with bright colour squares, and picturesque sceneries. From the architects' intentions, the network of paths and benches is only partially implemented, but the squares, bridges over the River Mārupīte, the new Puppet Theatre, Circus and other cultural buildings are not built in this park.

In addition to these permanent projects, the yearly duty of K. Barons was to design summer flower bed patterns for Riga. These drawings show that he followed up with the world's fashion trends. The patterns drawn at the beginning of the 1970s are simple and modern, more sophisticated parterre flower bed patterns are created only for the grand Opera carpet -like flower bed. When in 1968, the major "greenery specialists" of several main cities in Russia wanted to get acquainted with the patterns of flower beds, they were greatly disappointed, not finding a single luxurious "flower bed" drawing in the folder of K. Barons [1].

In his daily work, K. Baron often had to use various diplomatic moves to protect the Riga parks from the desire of the Communist Party's champions to plant the park glades full of trees. In this way, the clipped oak hedge around the children's paddle pool emerged in Ziedoņdārzs. In the report, honestly it could be recorded that 300 oak trees were planted in the park. These moves did not always succeed. With bitterness, he said that one of the chairmen of the Executive Committee of the city had seen a beautiful rock-garden in Estonia, and he immediately ordered a number of such rock-gardens in Riga as well. In addition, one of the sites specified was the hillside of the Bastion Hill, so that he could admire it from his office window in Raiņa Boulevard. K. Baron's arguments that such rock-garden stylistically does not fit in with the greenery of the historical Kanālmala /Canal/, of course, were not heard.

Of the bibliographic materials, the book "Greenery" (1959) has to be mentioned, where one of the authors is also K. Barons. Only a few of the older professionals remember this book. In 1960, the book "Garden Art" written by K. Barons was published. In essence, it was the first book in the post-war Latvia, where about the design and layout of the greenery is told clearly and comprehensively, illustrating the text with high-quality drawings, projects and photos. Long after the book came out all over the immense Soviet Union, in their references many of the authors referred to it, although it was unlikely that professionals of other nationalities understood the Latvian language.

The book quickly became a bibliographic rarity and, yet still, talking to professionals, the conclusion is such that this book is on the shelf at your fingertips, and where needed it is used. In 1969, another book of a collective of authors was published under the title "Countryside Greenery", where K. Barons was one of the authors. In addition, starting with 1936, he regularly published articles about garden art in the magazines "Gardening and Beekeeping", "Garden and Apiary" and in the newspaperv "Practical Latvian", and in other periodicals [1, 2].

In 1967, K. Barons began working as the chief professional in the design institute "Komunālprojekts". In office, he had to oversee the greenery design throughout Latvia. Some of the projects he developed himself, for others - the dendrological part was developed, he also helped with advice. During this time, the nursery at Babīte of the Botanical Garden under the University of Latvia, parks in Madona, Kuldiga, Mālpils, Silva Dendrology Park in Smiltene, the greenery of the right bank of the Venta River in Kuldiga, Auce Warriors' Cemetery, reconstruction of October Park in Cēsis, a park in Ulyanovsk, and many other parks, squares and gardens both in Latvia and outside it were designed.

Unfortunately, the scornful attitude prevailing in the Soviet Union towards landscape architecture created a lax attitude towards lay out and care of parks and gardens. In many sites, the work remained half-done. Further, without regular care and watering, many greeneries went to the bad.

In order to help young greenery designers in his own and other design institutes and offices, the Master developed a number of albums with methodological guidance, such as "Methodological guidance in the design of greeneries", "Application of annual, biennial and perennial plants in the greenery design", "Guidance for efficient use of plants for the creation of reservoir and waterfront greeneries" and "Guidance for the use of external forms of trees and shrubs in the design of greeneries".

The contribution of the landscape architecture master K. Barons was holding of lectures and workshops on the design and upkeep of greenery for the educational purposes of the new gardeners. Many mid-level professionals gained real understanding of functional and spatial design of greeneries in these courses, listening to the lectures of K. Barons. For many years, K. Baron took part in the work of the State board examination commission of Bulduri Horticultural Technical School and was invited to be an advisor of diploma papers for graduate students in the specialty of decorative gardening. In addition, K. Barons lectured on greenery design and led the development of projects in the evening courses of decorative gardening organized by the Horticulturists and Beekeepers Association, which later became the Horticulture Open University.

When the Horticulture and Beekeeping Association began holding annual competitions for the most beautiful of the year's republican decorative garden, K. Barons participated in the work of the jury. And although he was the Latvian SSR Agronomist of Merit and the order of the Red Flag of Labour holder, most of all

K. Barons was proud of the fact that he is the first prize and a medal winner named in the name of A. Zeidaks of the Latvian Horticulture and Beekeeping Association.

Conclusions

In the creation of the landscape space of gardens and parks in the Latvian cities, the creative activity of K. Barons has brought great benefits to town planning. Tree lines or some of their groups with the evaluation of the peculiar dendrological characteristics – colour, shape, smell, location, compositional layout of greeneries- is the core of the creative work of Kārlis Barons. Carefully evaluating the blooming time of trees and shrubs, the main view lines – for the perception of colour richness, the uniqueness and originality of the place in the city are created.

With gratitude and respect for the Master's contribution, a careful keep up and maintenance of the gardens and parks laid out by him are continued.

In 2012, the Latvian Society of Landscape Architecture solemnly celebrated the 100th anniversary of Kārlis Barons.

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Kopsavilkums. Rīgas teritorijas apbūvei ir laimējies ar talantīgiem pilsētplānotājiem. Pēc viduslaiku pilsētas cietokšņa vaļņu nojaukšanas atbrīvojušos teritoriju pārveidoja par parku un bulvāru loku. Tikai piecas

Eiropas pilsētas var lepoties ar šādu plānojumu. Šīs pilsētas ir Gēteborga, Brno, Grāca, Vīne un Rīga. Cietokšņa vaļņus Rīgā sāka norakt 1858. gadā. Pirmā Rīgas bulvāru un parku loka plānojuma autori ir arhitekti - pilsētplānotāji J. D. Felsko un O. Dīce. 1859. gadā bijušo Rīgas cietokšņa ravelīnu un bastionu vietā abpus gleznainajam cietokšņa kanālam tika ierīkota parku josla pēc Lībekas inženiera Vendta projekta.

1880. gadā šo parku pārveidoja izcili talantīgais dārzu arhitekts Georgs Kūfalts, kas izglītību bija ieguvis Vācijā, Potsdamas Karaliskajā dārznieku mācību iestādē. Pēc viņa Rīgas dārzus un parkus veido izcili ainavu arhitekti Georgs Kūfalts un Kārlis Barons.

Georgs Kūfalts izveidoja Rīgā apstādījumu sistēmas struktūru, kas kalpo rīdziniekiem vēl šobrīd. Viņa skolnieks Andrejs Zeidaks pārbūvēja Rīgas parkus atbilstoši 20. gs. jaunajam – modernajam - dārzu stilam. Zeidaka izcilākais darbs ir Rīgas Brāļu kapu ansambļa iecere un realizācija. Šajos kapos apglabāti Latviešu strēlnieki, kas krituši 1. Pasaules kara laikā cīņās par Latvijas neatkarību. Skulpturālos tēlus šim ansamblim veidoja tēlnieks Kārlis Zāle. Pirmo reizi pasaulē memoriālo ansambļu arhitektūrā kā dominante pielietoti ziemciešu stādījumi lineārās dobēs, radot Latvijas lauku sētām raksturīgo ziedu kārtojumu lineārās dobēs gar dzīvojamās ēkas sienām. Pāri kapu laukam vasarās vējo flokšu un rožu smaržas, kas arī raksturīgas lauku sētām. Īsajā starplaikā starp abiem Pasaules kariem A.Zeidaks paspēja pārbūvēt Rīgas dārzus un parkus atbilstoši tā laika jaunākajām dārzu mākslas prasībām. Viņa skolnieks Kārlis Barons saglabāja un tālāk attīstīja gan Zeidaka idejas, gan viņa izveidotos parkus. Katram no viņiem iznāca darboties atšķirīgās sabiedriskajās iekārtās. Kārlim Baronam mūža ražīgākie gadi pagāja Padomju Savienības okupācijas laikā, kur pat profesiju sarakstā nebija nedz ainavu, nedz dārzu arhitektu.

Kārlis Barons ir dzimis Cēsu rajona Drustu pagastā (1912. g.) .Vidzemes gleznaini romantiskā ainava, kalni un lejas, lielu koku iekļautās lauku sētas rāmais miers ir tie neaiznirstamie bērnības iespaidi, kas veidoja pamatu turpmākajam radošajam darbam dārzu mākslā.

Mācoties Bulduros, veidojas padziļināta interese par daiļdārzniecību, jo dārzu mākslu mācīja Rīgas Dārzu arhitekts Andrejs Zeidaks. Tikai tagad nākamais dārzu arhitekts saprata, ka dārzu māksla nav vis jauki izzīmētas puķu dobes, skaisti krūmi, koki un glīti celiņi, bet ka tā ir ārtelpu veidošanas māksla. Dārzu projektēšanas pamatā ir liekamas nevis abstraktas skaistuma idejas, bet gan funkcionālā lietderība un cilvēka vajadzības. Apstādījumu kompozīcijā nav jākopē pagājušo gadsimtu muižu parki, bet ir jāstrādā jaunā, Latvijas dabā un lauku sētas apstādījumu tradīcijās sakņotā dārzu mākslas stilā, kas sasaucas ar 20. gadsimta moderno arhitektūru.

Pētījuma mērķis ir atspoguļot Latvijas brīvvalsts laika pirmo ainavu arhitektu darbu iestrādes pilsētvides teritorijās. Uzdevums: atspoguļot dārzu projektu ideju un latviskās identitātes meklējumu kontekstu dārzu kompozicionālajā izveidē.