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# LANDSCAPE COMPOSITION DEVELOPMENT STAGES IN MULTI-STOREY RESIDENTIAL AREAS OF THE BALTIC SEA REGION

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**Abstract.** Several stages of development tendencies exist in the multi-storey residential area courtyards of the Baltic Sea region. These stages can be divided into three groups of courtyards. The first group comprises those multi-storey residential area courtyards that have not experienced any improvement and rearrangement of the spatial environment over the last 10 years. These are mostly realized in the period of the Soviet Union. The second group is characterized by the fact that courtyards in the modern multi-storey residential areas are successfully planned and correspond to inhabitants' recreation possibilities, but are not attached to the general urban planning system. This group comprises courtyards that were built over the last five years. The third group considers those modern courtyards that correspond to functional solutions of landscape composition planning and provide a pleasant environment. Consequently, the present state of courtyards in the Baltic Sea region urban multi-storey residential areas is diverse and flexible.

Keywords: landscape composition, multi-storey residential areas, the Baltic Sea region countries.

# Introduction

This article presents information on present condition of urban multi-storey residential area courtyards in the Baltic Sea region and analyses development stages of their landscape composition. The earlier researches touched upon such topics as the location of multi-storey residential areas in the urban environment, spatial planning structure in the urban environment planning and development, but there are only few researches on the landscape composition of courtyards in the multi-storey residential areas. The changes that took place over the last years in Latvia and other Baltic Sea region countries have greatly affected the field of multi-storey residential areas. Multi-storey residential area building process has been chaotic and implemented without full understanding of main aims and results to be achieved. This type of situation is not only typical for Latvia, but can be observed also in other countries of the Baltic Sea region. Most courtyards in the multi-storey residential areas do not correspond to the needs of the modern multifunctional environment.

It is now obvious that the modern multi-storey residential housing fund has been neglected, and this has caused multiple irreversible problematic factors for successful development, planning and improvement of these regions. European countries' residential area planning has two basic aspects – the introduction of sustainable development principles and changes in population density in the multi-storey residential areas. In the European Union there are multiple successful examples of multi-storey residential area reconstructions, and their experience could be applied in the Baltic Sea region. The analyzed examples of the Baltic Sea region multi-storey residential area courtyards, their construction and development aspects notably reflect the current processes of the topical issues discussed.

The territories under analysis are divided into three groups. The first group comprises the 5 to 12 - storey building residential areas that were build in large amounts over the period of the second half of the 20th century. The courtyards in these regions face spatial landscape composition problems. There are also inconsistencies in functional areas and technical solutions, the overload of parking lots, pollution of spatial environment, and depreciation of recreational places. Development of spatial environment composition is neglected. The second group comprises modern multi-storey residential areas and their courtyards that were built in the 21st century, mostly from 2005 until present. These are new multi-storey residential area courtyards with poorly planned and non-functional open spaces. The courtyard territories that would provide good conditions for residents of multi-storey residential areas are not adequately and functionally exploited. Insufficient attention is paid to the multifunctional load on the territory that is especially noticeable in the first and second groups of courtyards. It is necessary to facilitate rational and functional exploitation of the spatial environment planning. The third group comprises those courtyards with adequate and successfully planned landscape compositions. They provide decent outdoor territory exploitation possibilities for every resident's needs and requirements. These courtyards were built over the period from 2000 until 2005. The aim of this research is to analyze the modern characteristic guidelines for the development of courtyard landscape composition in the multi-storey residential areas of the Baltic Sea region countries.

#### **Materials and Methods**

To determine the current condition of these courtyards in multi-storey residential areas of the Baltic Sea region, heuristic and empirical methods were applied during the period between 2008 and 2010. The research process revealed and acknowledged multiple courtyards of the multistorey residential areas in the countries of the Baltic Sea region, a sociological survey was carried out, interviewing inhabitants throughout Latvia. To define the specifics of the present condition of these regions, the multi-storey residential courtyards were divided into three major groups. The heuristic methods were based on direct observations of territories concerned, relying on several author-proposed aspects. The spatial landscape composition planning was analyzed. The empirical methods applied were the following: fixing and observing the current condition of these regions and analysis of the legal framework. The results obtained reflected important information and evaluation of the current condition of courtyards. The living environment of the outdoor space is created by the landscape architecture, urban planning, territory planning, landscape ecology and environment accessibility territories that can provide functional and aesthetically arranged and organized multistorey residential area courtyard territory.

The major part of the city territory is occupied by the multi-storey residential areas that reveal multiple problems of spatial environment. Multiple negative features are present in the multi-storey residential areas, affecting the possibility to successfully and functionally organize the courtyard. A great problem is the impact by the numerous inhabitants of the nearby residential areas which poses inconveniences to the functionality of courtyard (Ile 2010). These characteristics can be observed in the first and second groups. Serious problems occur with developing and humanizing the living environment that was created during the post-war period - the mass housing. Having regained the property rights for separate housing-free land territories, they are sold to different investors who propose to plan and construct new buildings, ignoring the already existing housing standards and principles of the area (Strautmanis et al. 2003). The courtyards in these multi-storey residential areas are degraded, insufficiently landscaped, and any free spaces are often used as parking spots. These courtyards present the ignorance of landscape composition, which, if observed, could provide more successful planning in these residential areas and would ensure a pleasant, useful spatial environment for the residents in certain territory (Figs. 1, 2).

Courtyards in the first group typically have functional planning insufficiencies that result in various problems. There is another opposite tendency, where the main accent is placed on the architecture of the new multistorey residential area, but the ideas and solutions for the landscape composition of courtyards are abandoned (Īle 2010). The second group included those multi-storey residential area courtyards with common characteristics. These characteristics are typical for courtyards of the second group that were built over the period of the last five years.



Fig. 1. Dilapidated courtyard territory, example in Latvia



Fig. 2. Degraded children playground, example in Latvia

These courtyards of multi-storey residential areas are well established, adapted to inhabitants' needs, but they are not in accordance with the rest of the city's buildings, transport systems and landscape (Īle 2010). The third group's characteristics, planning system and rational exploitation principles can be applied as successful and sustainable solutions that correspond to modern perception of landscape composition development. Most of such courtyards can found in the territory of Sweden and Finland.

The first aspect that determines the planning of a courtyard's landscape composition is housing. The appropriate building silhouette, scale and proportions, lighting and shading, surface plastic, as well as the presence of well-known materials and recognition of surrounding nature territory allowed the old masters to create masterpieces as the acknowledgement of the nation's power of spirit and talent (Strautmanis 1977). One of the most popular Finnish garden cities is Tapiola, in the development of which, a harmonious interaction between housing and natural environment is achieved. One of the main priorities of the territory is considered to be the effective, overall spatial landscape environment building (Brinkis et al. 2006). Such multi-storey residential areas and their courtyards are to be found in Finland. In Helsinki, the capital of Finland, in the 20th century a transition between structurally amorphous housing and its purposeful decentralization could be observed. The tendency was approved by the Helsinki General Plan and the suburban planning scheme created in the midcentury, but as a result of decentralization that took place at the turn of the century, there have occurred new, wide residential complexes in the northern and the western parts. They are architectonically structurally connected with the landscape environment and embody progressive garden city housing principles (Brinkis et al. 2006). In any specific situation the image of housing and surrounding environment plays an essential role. Successful courtyard planning solutions, in comparison with the Baltic States, are found in the multi-storey residential areas of Stockholm that belong to the third group of courtyards as classified by the author of the present paper. Stockholm is currently constructing the Hammarby Sjostad wide-scale residential area project. The main focus of the project is to expand the central part of Stockholm, using a lake surface as the central element of project structure. At the same time, it is a possibility to transform a degraded industrial and harbor territory into modern city area (Treija 2001) (Fig. 3).

The planning system in Sweden is termed "community planning", which is a system that focuses on enhancing or altering the production and consumption of society that is normally left up to the market to determine. Planning is about formulating strategies to improve the quality of



Fig. 3. Hammarby Sjostad in Stockholm

life for Swedes and quality of the natural environment. Planning and environmental policies focus on this "dual" purpose of urban development patterns and green space preservation - crafting guidelines and policies to ensure that humans are close to nature and that natural areas maintain their ecological functions (Nelson 2002). Having analyzed all three groups, a second aspect was proposed, which defined the planning and amount of green structures for inhabitants' recreation purposes. The large amounts of green structures among multi-storey residential areas are constructed in Denmark. The territory planning specialists in Denmark often use a method of surrounding big cities with greenery, and the satellite cities are built linearly in their surrounding area. In the planning project of Copenhagen city, it is intended to locate residences along the radial transport freeways, preserving the greenery between the residential complexes (Brinkis et al. 2006).

From a point of view of the modern urban planning theory, one of the large scale living environment development possibilities is the functional differentiation of the inner quarter space. Its resulting primary task is to determine and facilitate its potential for recreation possibilities. According to Danish urban planner Jan Gehl, the functional and aesthetic spectra of public spaces can denote three main focuses: the necessary activities, the possible activities and the social activities (Treija *et al.* 2003). All the above-mentioned focuses are essential for the further improvement of landscape composition in courtyards of multi-storey residential areas, and can be related to all groups considered.

## **Results and Discussion**

In the context of united Europe, the more topical has become the term *Baltic Sea region* that comprises countries around the Baltic Sea. They are united by a common geographical and historical space, as well as common goals for the future development (Treija 2000). Consequently, the countries of the Baltic Sea region could be analyzed and compared to each other in order to determine the current condition of courtyards of multi-storey residential areas according to the three group categories previously discussed that were analyzed by the author according to the following aspects (Table 1). Aspects proposed by the author of the paper were evaluated according to the criteria: good (G), almost good (AG), average (A), and bad (B).

| The criteria directions  | First<br>group | Second<br>group | Third<br>group |
|--|----------------|-----------------|----------------|
| Functional planning  | В              | AG              | G              |
| Infrastructure planning  | В              | AG              | G              |
| Access   | AG             | AG              | G              |
| Parking lots   | В              | AG              | G              |
| Pedestrian movement  | А              | А               | G              |
| Sidewalks  | В              | В               | G              |
| Traffic and sidewalk partition                                       | В              | А               | G              |
| Environment accessibility  | В              | В               | G              |
| Traffic duty   | В              | В               | G              |
| Society influence  | В              | А               | AG             |
| Environment pollution  | В              | В               | G              |
| Green area condition   | Α              | А               | G              |
| Landscape plantations  | Α              | А               | G              |
| Technical accomplishment of landscape elements                       | В              | AG              | G              |
| Children playground  | В              | А               | G              |
| Active and passive recreation<br>activity areas for any age<br>group | В              | A               | AG             |
| Courtyard insolation   | А              | AG              | G              |
| Climate conditions, draughts   | А              | AG              | G              |
| Safety of the inhabitants  | В              | А               | G              |
| Reasonable planning  | Α              | AG              | G              |
| Foreseeability   | А              | А               | G              |
| Lighting   | В              | А               | G              |
| CONDITION OF<br>BUILDING   | В              | AG              | G              |

 Table 1. The aspects analyzed in the multi-storey residential area courtyards

The characteristic landscape composition guidelines of the Baltic Sea region countries are defined by environment aspects and factors. In each of the analyzed groups, these environment aspects and factors differ because each group exists in a different development level. The division into groups allows for better understanding of the present condition of these regions, as well as determines and emphasizes the most topical problems from sociological surveys. Opinions of residents on the most precise characteristics of the residential area were presented (Fig. 4).

Results have revealed that the current state of the landscape composition in multi-storey residential areas is diverse. The region contains both multi-functionally constructed courtyards and very low quality multi-storey residential areas (Te 2010).



**Fig. 4.** Characteristics of multi-storey residential area: A – predominating attended spatial environment, maintained infrastructure; B – well-organized territories, both visually and functionally disturbing elements, objects; C – residential area is dilapidated, requires improvements

All problems enlisted above are topical and it is necessary to find solutions for their elimination. It is essential to consider the balanced environment development in these territories. In the context of balanced development, it has now increasingly become more typical to consider the recycling and re-using the existing resources. In urban planning a greater attention is paid to renovation of degraded territories. There are several reasons for that: the acceptance of balanced development, increasing amount of restricting building regulations in historical city centers, active involvement of society in protesting actions against building processes in the green areas in suburban territories (Treija 2001). An important aspect that has to be considered primarily is the involvement of inhabitants in all processes regarding renovation of living environment and degraded territories. Southern countries for a long time have been working on politics for urban planning process to successfully interact with society. An essential aspect is not only the experience of large cities, but also the small towns, where urban planners emphasize the importance of public involvement in the planning processes (Liepa-Zemeša 2008). The next most important step in the development of these regions involving residents in all processes is the mass housing reconstruction. In multi-storey blocks there are

many options for physical transformation. The development of these options can critically affect the social structure of estates. The choices made can affect the way buildings are used and the process of managing them. They are critical to the success of regeneration (Towers 2000). The image and architectonic solutions of surrounding buildings are essential indicators of expressiveness in these social outdoors, which are usually very depressing in large-scale multi-storey residential areas; therefore, one of the possible ways for enhancing environmental regeneration is the intensification of housing in order to optimize the scale of environment space and expand its functional spectrum. Depending on the scale of determining elements in relation to the free inner quarter space scale, the intensification of housing could be achieved both for the multi-storey and smaller building construction methods (Treija et al. 2003). Forms, surface, space and size that compose the architectonic of buildings have unchanging aesthetic expressiveness that creates a base for emotional impact on the viewer. The importance of aesthetics requirements in architectural works is significant (Grišins 2001). When planning new residential areas or cities on flat relief surfaces, it is necessary to consider the whole silhouette of housing scheme and some of the spatial relations as one of the most important prerequisites for harmonization of relations between environment and newly created systems (Strautmanis 1977). This type of solution can be related to the analyzed residential areas from the first group. By changing the relation of spatial scale to free courtyard territory, it would facilitate and significantly improve the quality of living environment.

Urban planning is not only the science and art, but also economy and politics. Therefore, in order to ensure sustainability, it is necessary to develop strict guidelines for developing spatial structures of city. The territory development important to the city landscape and essential part of the public spaces, as well of those where large-scale development takes place, are to be performed according to the plan accepted by all parties interested (Liepa-Zemeša 2008). Without a common region development plan containing detailed humanization proposals there would be an obvious chaos and that is likely to occur in the residential community of Riga. Therefore, it is necessary to make projects of detailed plan stringent regulations in all the mass-production residential areas (Strautmanis et al. 2003). This characteristic is mostly typical for multi-storey residential area courtyards of the second group. These territories present rationally created housings, but the planning of landscape composition and green areas of the territory are neglected, they are not connected and coherent with the rest of the city planning system. Therefore, multiple

conflict situations occur that affect the image of multistorey residential area courtyards within the second group. This can be explained by the financial aspects that are not rationally used in the process of building, which results in a disorganized environment for its inhabitants. The green environment in residential guarters has an essential positive effect on the well-being and health of its inhabitants, as well as it creates appropriate playground territories for children. In general, satisfaction and well-being of inhabitants increases (Economic... 2006). The sense of usefulness and organization approve the standards of beauty that occurred in a long process of natural selection (Grišins 2001). Every inhabitant of the multi-storey residential area wants to live in an aesthetically pleasant environment in order to feel peace and have rest and recreation possibilities after a long business day. The data obtained from sociological surveys reflect what corrections inhabitants find necessary to be done primarily in their courtvards to improve multi-storey residential areas (Fig. 5).

The data obtained prove the author's proposed spectrum of problems that hampers or completely obstructs the development of these courtyards, where one of the most important issues is the functionality. The data collected from the sociological surveys precisely define opinions of multi-storey residential area inhabitants regarding the functionality of living space.

The third group of multi-storey residential areas encompasses those courtyards where landscape composition corresponds to modern sustainable environment aspects. These courtyard types can be found in Denmark, Sweden, and Finland. In many cities studied, the promotion of compact development within each city structure or comprehensive plan is given a clear priority. Stockholm's new structure



Fig. 5. Primary corrections of multi-storey residential area courtyards: A – territories need to be demarcated and restructured with buffering plantations; B – reconstruction of parking lots; C – elimination of trees, bushes and degraded objects; D – construction of new children playgrounds and reconstruction of old playgrounds; E – organization and creation of new and safe infrastructures; F – everything is good, nothing needs to be improved or changed



**Fig. 6.** Functionality characteristics of courtyards in the multistorey residential areas: A – courtyard planning corresponds to the country standards, successfully fulfills their functions, and does not pose danger for any age group; B – disorganized, nonfunctional planning does not correspond to children playground necessities, presence of draughts, overpowering intrusion of inhabitants from nearby residential areas; C – did not consider it

plan, for example, takes sustainability as a main theme and endorses a compact regional spatial pattern (Beatley 2000). The courtyards of the third group can be characterized as capable to resolve the issue of functional planning to such a degree where significant solutions are found in the infrastructure improvement and planning. Traffic is one of our biggest environmental problems. To alleviate its negative effects, urban planning must offer alternatives, enabling people both to refrain from travelling in many everyday situations and to opt for other means of transport instead of taking a car (Ryden et al. 2005). The bicycle path network in and around the area conforms to a high standard, and most of the paths to important destinations are short and fast (Ryden et al. 2005). Some positive examples of the significant development tendencies of multi-storey residential area are to be found in Tapiola in Finland, and in the new residential area Hammarby Sjostad in Stockholm in Sweden. Such areas can be created with the help of progressive functional, economic and aesthetic factors that deal with questions concerning the quality of living space and conditions in the broad urban planning aspect (Ile 2010). Tapiola is the very first garden city in Finland. Today, Tapiola is already over 50 years old, an internationally acclaimed pioneering effort for modern city planning and construction that has risen to the level of a historical landmark community. From an architectural perspective, Tapiola is considered to be a valuable and versatile urban implementation. Tapiola is a unique combination of highly designed living comfort, pleasant garden areas and physical exercise venues, diverse commercial services, jobs and top level cultural offerings (Tapiola... 2007). We must build on this to do even better, and preserve our high quality of life for our children (A lively... 2009).

Helsinki, like many Scandinavian cities, has a compact urban form and large wedges of green penetrating the urban core (Beatley 2000). The City of Malmö worked out solutions for soil decontamination, the ecocycle, green structure and traffic. The developers prepared individual solutions for buildings (Nilsson et al. 2005). There are three principal motifs for this green commitment: creating an attractive environment for people, favoring biodiversity and improving the stormwater management (Kruuse et al. 2005). Kevin Lynch (1961) argued that you can design the built environment so that people are able to fully identify with their surroundings, orientate themselves and then find their way around. He wrote: a good environmental image gives its possessor an important sense of emotional security. He can establish a harmonious relationship between himself and outside world. This is the obverse of the fear that comes with disorientation (Biddulph 2007). Therefore, it is necessary to observe the successful features of landscape and to explore, how they can be integrated in the residential area planning. The improvements of spatial development in the multi-storey residential areas are necessary not only in Latvia, but also in the whole Baltic Sea region (Ile 2010). Only with thorough planning the sustainability and durability can be achieved, paying the greatest attention to what processes are happening on the ground (lower) level (Liepa-Zemeša et al. 2009).

# Conclusions

In all multi-storey residential area courtyards of the Baltic Sea region considered, where multiple landscape composition problems have been previously enlisted, it would be necessary to define a clear building structure and develop a unified planning method. A clearly defined and prepared building structure in the landscape composition planning process would be able to prevent various degradation factors that would consequently change the whole image of the residential outdoor territory. It is necessary to transform territories of the first group residential courtyards into functional and rationally planned areas that would correspond to modern everyday necessities. Having analyzed the data obtained, it has become clear that the second group of courtyards has not been as greatly affected by problems as the first group; nevertheless, it is advisable for their further development to consider successful examples of courtyards from the third group. Additionally, an important indicator is the different opinions and attitudes of residents towards their living environment. Consequently, sociologic survey results revealed the most topical problems in multi-storey residential areas. These problems should be solved by finding the most effective solutions that would eliminate and prevent negative development features.

The functionality, order and environmental development of courtyards are to be provided for every inhabitant. The living environment should be used only for active or passive recreation purposes for residents. This can be achieved providing decent and aesthetically pleasant environment elements in the courtyards considered.

Every landscape composition of a multi-storey residential area is to provide multi-functionality and rational environment exploitation possibilities for every resident of the territory. The complex of problems and comparisons analyzed can be used in the further improvement and development of the territories considered.

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## KRAŠTOVAIZDŽIO KOMPONAVIMO ETAPAI BALTIJOS JŪROS ŠALIŲ REGIONO DAUGIABUČIŲ RAJONŲ KIEMUOSE

#### U. Īle

#### Santrauka

Baltijos jūros šalių regiono šalyse pastebima tendencija daugiabučių kiemus įrengti keliais etapais. Šiuos etapus galima suskirstyti pagal trijų tipų kiemus. Pirmąją grupę sudaro daugiabučių rajonų kiemai, kurie nebuvo pertvarkyti ir pagerinti daugiau nei dešimt metų – tokiems būtų galima priskirti sovietmečio projektus. Antrąją grupę sudaro tie daugiabučių kiemai, kurie tinkamai suplanuoti, atitinka gyventojų poreikius, tačiau nėra tinkamai integruoti į bendrą urbanistinio planavimo sistemą. Šią grupę sudaro kiemai, kurie suprojektuoti per paskutinius penkerius metus. Trečiąją grupę sudaro modernūs kiemai, kuriuose funkcionalumas suderintas su kompoziciniu kraštovaizdžio planavimu ir kuria malonią aplinką. Taigi Baltijos jūros regiono šalių daugiabučių rajonų kiemų būklė yra įvairi ir prisitaikanti.

**Reikšminiai žodžiai:** kraštovaizdžio kompozicija, daugiabučių kvartalai, Baltijos jūros regiono šalys.