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Urban Green Space in Transition: Historical Parks and Soviet Heritage in Arkhangelsk, Russia

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Abstract: *Urban green space has been largely underestimated as a prospect for healthy and liveable environments in many post-socialist countries after the fall of state socialism. In the Soviet Union, green space in the city was a part of urban planning, albeit more as a proclamation and was, for the most part, implemented in a top-down manner. During the post-socialist transformation, economic restructuring dwarfed the debate on urban nature and greening. Over the last few years, a change can be witnessed in this respect: urban nature relating to residential quality and well-being has become more relevant to people, their perceptions and daily practices. This paper analyses the development and main characteristics of urban green spaces in Arkhangelsk, Russia. It discusses the importance of urban nature for people's well-being and housing and its contribution to social cohesion and local identity. This paper argues that urban greening is not only a planning tool used to create liveable and healthy urban environments but also an important strategy in awareness raising and public involvement activities.*

Keywords: urban green space; parks; post-socialist transition; Russia; Arkhangelsk.

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Introduction

Urban green space as a resource of urban nature was largely underestimated in most of the state socialist countries and thus was also underdeveloped as a prospect of healthy and liveable environments (Ignatieva et al. 2013), despite the proclamation of the importance of green spaces, for example, in the Soviet Union. In the phase of post-socialist transformation, new priorities, such as economic restructuring, dwarfed the debate on urban nature and greening (Haase et al. 2014). Over the last few years, a change can be witnessed in this respect: The role of urban nature relating to residential quality and people's well-being has started to become more relevant to people, their perceptions and daily practices in post-socialist cities (Ignatieva et al. 2013). Urban nature is becoming increasingly seen as having value and potential (Belyaev et al. 2010). This paper focuses on Russia, a place where there is only limited systematic information regarding urban green space, its use and the main factors influencing its use in cities. Even more limited is the knowledge concerning the analysis and assessment of green spaces regarding their improvement of people's livelihoods, their moderation of different (either cold or hot) urban climates and their specific contribution to people's well-being. Although some large metropolises such as Moscow and St. Petersburg have received attention due to national and international research (Ignatieva et al. 2013; Kochurov and Ivashkina 2012), smaller and more remote cities such as the industrial city of Arkhangelsk in distant Northern Russia, have practically been overlooked. However, Arkhangelsk provides an interesting example of urban greening strategies which were carried out from the 18th century through the Soviet Era and up until the post-Soviet transition. Therefore, the city of Arkhangelsk is highly suitable for this study because it represents a typical city of European Russia with its characteristic and comparatively homogenous wooden-built structures. Statistically speaking, Arkhangelsk can be considered a green city thanks to a large number of parks, gardens, squares, boulevards, green areas and urban forests; however, the last decades of transition have led to the deterioration of many parks due to a lack of finances, meaning that the number of green spaces has been decreasing rapidly in favour of construction. While the legacy of the Soviet park tradition based on communist ideology is still apparent, there is a large discrepancy between what green spaces have remained and what is needed today. The discussion deals with Arkhangelsk in particular, while in general similar phenomena can be found today in many post-Soviet cities.

Set within this context, this paper aims to analyse the development and main characteristics of urban green spaces in Arkhangelsk. It further aims to reveal the importance of urban nature to people's well-being and housing and its contributions to sustainable urban development which foster social cohesion and local identity.

Methodically, both primary (field research, semi-structured interviews with citizens and experts and participatory observation in Arkhangelsk) and secondary (literature review) data were collected. The information on urban green space (size, elements and management) available in Arkhangelsk's administrative reports along with the general city plan and land and forest inventory report (Forestry Expedition 2009) were used as basic data and were verified during field research in 2003-2015.

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Development and Planning of Urban Space: Home and Housing and Why Greening is Overlooked

Arkhangelsk, one of the oldest cities on the Arctic Coast, is situated in the European part of Northern Russia at the mouth of Northern Dvina River which pours into the White Sea. In comparison to the majority of other Northern Russian cities which were founded primarily at the beginning of the 20th century, Arkhangelsk received city status in 1584 when it was the most important seaport of medieval and early-modern Russia - hence its status as "gateway to the Arctic". Thus, urban development incorporating a type of greening dates back to the historical past around the time of the Emperor Peter the Great. Today, Arkhangelsk is one of the largest seaports in Northern Russia and an important centre of saw mills, timber, shipping and the fishing industry (Feklistov 2014).

Arkhangelsk is famous for its wooden churches, chapels and peasant houses but also residential houses, roads and wooden boardwalks (Fig. 1). The choice of wood as a construction material is typical for this region, which is almost exclusively covered by the taiga and continues to be one of the biggest timber producers (Vasilieva and Popova 2011). Today, 4000 out of 6000 buildings in Arkhangelsk are made of wood. Most of them were constructed between 1930 and 1950 during the so-called "industrialisation of the North" when Arkhangelsk became the "all-Union mill" and the "monetary factory of the country" (Belyaev et al. 2010). Therefore, the population of Arkhangelsk in approximately 20 years (1917-1937) increased by more than ten times. Since the main goal during those years was a swift increase in the rate of industrial production, housing for the "recruits five" was often built employing a residual principle: the two-storey panel-corridor-type barracks were a typical attribute of the urban landscape of newly built city districts during the Soviet period. Before the 1970s, these residential areas had neither a water supply, sanitation nor drainage systems.

In the Stalin and Khrushchev periods, typical residential stone houses were built and even prevail until today. The political transition after 1990 brought with it a phase of extreme uncertainty and decay: Residents waited for many years for the state's decision on renovations and new flats, but nothing ever came to fruition (Belyaev et al. 2010). The lack of funding hindered any work which was to be done on the ageing wooden houses and, in turn, worsened living conditions. Under such circumstances, greening ideas and projects neither have lobbying power nor a chance to be realised; however, at the very least they serve to make people aware of their benefits despite the bad housing conditions. This constellation is quite relative to other post-socialist countries and cities and makes Arkhangelsk a very illustrative and knowledge-contributing case to the discussion on "post-socialist greening".

Critical Housing Analysis
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Figure 1: Wooden Arkhangelsk: wooden boardwalks near old buildings (left) and in newly built districts (right)

Greening Strategies in Arkhangelsk: From Pre-revolutionary Times through the Soviet Era to the Period of Transition

Historically, Arkhangelsk had only a small number of parks: the park on Moseev Island (which today is flooded), the park at the Maritime Cathedral in Solombala, the Peter Park and the Alexander Park which served as a sport stadium in Soviet times. As far back as the 18th century, the areas surrounding housing were "greened" largely thanks to foreigners who began to improve their neighbourhoods (Belyaev et al. 2010); for example, trees and shrubs were used for decoration. At the beginning of the 20th century, the first general plan was created and industrial, residential areas, the city centre and also open spaces were defined. In the post-WWII years, activists established the All-Russian Society for the promotion and protection of urban green planting. Representing both the implementation of the ideas of the green city and current needs of urban development, the society became an important environmental movement (Vasilieva and Popova 2011). A significant contribution in this respect can be attributed to the Dendrological Garden, which actively participates since the 1940s in the greening of the city and promoting the planting and reproduction of tree and shrub species adapted to the extreme environmental conditions of the north (Feklistov 2014).

The importance of available green space for everybody was one of the essential goals in urban planning of the Soviet Union. With the exception of a handful of historical parks and gardens from the period of Peter the Great, most of the green spaces in Arkhangelsk were established during the Soviet period. Furthermore, per capita and minimum size targets of public green space were developed for each settlement according to population size and geographical conditions. Arkhangelsk, a city belonging to the category of population between 250,000-500,000 inhabitants, should have 34.4 sq. m of green space per capita. To accomplish this target, extensive greening took place including the construction of large parks and squares such as Victory Square in 1942. Thus, green targets are not only an instrument of the post-socialist period but have been deeply rooted in town planning of Russian cities for decades.

Critical Housing Analysis
Volume 3 | Issue 2 | 2016 | 61-70
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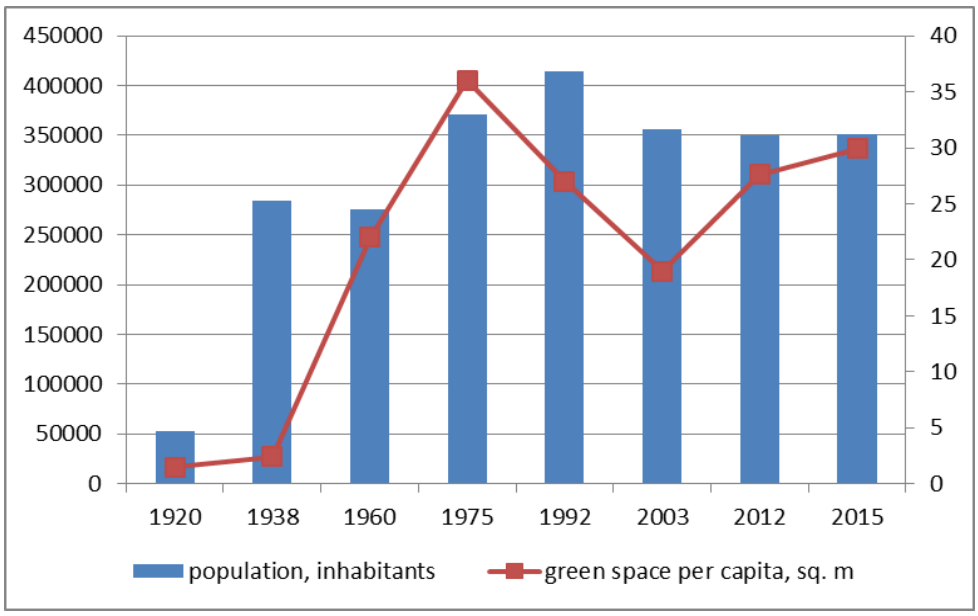
Per capita green space significantly increased in the city during the Soviet period (Fig. 2), namely from 2 sq. m (1850) to 18-25 sq. m (1950-60) to a maximum of 37 sq. m (1970s). However, in the early post-Soviet period, per capita green space declined to 27 sq. m in the 1990s and to 19 sq. m in the 2000s. This correlates with population growth and the new construction boom which included new houses for the upper-middle class as well as shopping malls and commercial space (Fig. 2). Population and commercial growth also results in extreme air pollution, mainly from the pulp and paper industry, and thus former green spaces were not only built but, additionally, became themselves sources of pollution.

Figure 2: Dynamics of green space and population change in Arkhangelsk



Source: Babich et al. 2008; Feklistov 2014; city administration of Arkhangelsk 2015; Forest Expedition 2009.

Today, 350,982 people live in Arkhangelsk in an area of 295 sq. km and scattered throughout nine territorial districts. With an area of 10,334 ha, public green spaces and parks make up 35% of the city's total area or 29.9 sq. m per capita (City Administration of Arkhangelsk 2015). Compared to other Northern Russian cities, Arkhangelsk has a higher percentage of green space, only "topped" by Murmansk (56.5%) and Petrozavodsk (44%). For a comparison, temperate climate cities like Moscow provide 28%, St. Petersburg 27%, Kazan only 17% and Vladimir 9%. According to the Arkhangelsk's general plan, the total green space shall expand to at least 3,446 hectares of which 1,050 hectares, or 36.2%, still need to be converted. The current green space is made up of 57 parks, squares, boulevards and gardens, including larger wooded and wetland areas.

Today, maintenance of the existing parks and gardens is covered by the local budget allocated for the improvement of Russia's territorial districts, as well as the district administration's supplemental budgets. Due to a lack of funding, greening happens sporadically. The entire management of green spaces can, at this point, be characterised by a total lack of a governing structure. However, such a governance perspective is extremely relevant to the improvement

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of the urban environment, while also to developing technologies for the recovery of contaminated areas with low-cost green infrastructure strategies based on an ecosystem services approach (Dushkova et al. 2015; Ignatieva et al. 2013). This is of special importance for the fragile northern "cold" ecosystems which have a slow rate of purification/restoration from industrial pollution and disturbance.

The Role of Nature in Developing a Sustainable City and Shaping Social Cohesion

The development of urban greening in state socialist Arkhangelsk came about from the need to solve three key problems of the city: to provide for safe sanitary conditions and aesthetics of the urban environment; to create places where citizens could spend leisure time in an outdoor setting; and to shape opportunities for people to meet and communicate.

The strategy of greening the streets of Arkhangelsk reduces transport emissions up to 35%; furthermore, green spaces (especially under trees) contain 20-80% of dust and minimise the overall noise level up to 25% (Babich et al. 2008; Feklistov 2014). Plants along the facades of buildings contribute to the cooling of walls and surface temperatures up to 7°C. In addition, the air temperature close to vegetation in the hot season is up to 4-8°C lower than in the open area (Dushkova et al. 2015; Feklistov 2004). Coniferous trees, one of the main types of species in Arkhangelsk, reduce the strength and speed of wind in the winter up to 10 times (Forest expedition 2009, Dushkova et al. 2015); this is of great importance since the frequency of weather with wind forces more than 4-5 m/c (i.e. beginning of negative physiological changes in the human organism) in Arkhangelsk is very high. Urban green space, providing for a healthy environment in Arkhangelsk, contributes to a 25% reduction in mortality rates relating to respiratory diseases: Citizens and especially children from districts with a higher per capita green area have fewer respiratory diseases – asthma, bronchitis – compared to their neighbours from "green-poor" districts (Dushkova et al. 2015). The results of our interviews with citizens of Arkhangelsk clearly demonstrate the therapeutic effect of urban green space on mental health (e.g. leading to stress reduction, functioning as a source of inspiration), its contribution to ecological education and its fostering of a feeling of home among citizens (Dushkova et al. 2015).

Historically, Soviet ideology in all of its projects attempted to achieve visible prosperity. In this sense, the city with its urban green areas was often perceived as a "postcard" that should represent not only the living city and its people but also the city's official and "nice" side (i.e. city as an open-air museum). The urban green area was perceived as decoration and a space to be observed, but not to be touched or appropriated; it did not "belong" to the inhabitants. This might explain why a large part of urban green space in Soviet times was developed as an aesthetic accessory and not a place of everyday use for the local population.

It is, however, fair to say that in the Soviet period green spaces also functioned as places for the meeting and interaction of citizens. Greening projects were often carried out without taking into account ecological aspects and long-term management. This led to the situation where inhabitants of these new buildings were obliged to take care of the courtyards/backyards, squares and parks themselves. For this purpose, voluntary get-togethers

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of city residents known as "subbotnik" (taking place on Saturdays) and "voskresnik" (on Sundays) appeared in order to improve or clean up green spaces (Fig. 3). People were involved in such "social cohesion practices", while at times involuntarily since their sense of agency was rather limited. Such measures aimed to contribute to the ecological and sanitary improvement of the affected green spaces and surrounding residential areas while, at the same time, promoted collectivism as the main purpose of public life within the major leitmotif of state socialism (Ignatieva et al. 2015).

Figure 3: Public participation in greening during subbotniks: 1938 (left) and 2014 (right)

Management of Green Space within the Post-Soviet Urban Planning Concept

The new planning concept of Arkhangelsk established after 1991 by the urban planning department focuses on the on-going process of urbanisation, which utilises green areas yet to be affected by the development of residential complexes. It leads to the increase of anthropogenic pressure on existing urban green areas and the worsening of the ecological situation in the city.

Protecting existing green areas from development and the growing demand of parking represents the greatest challenge for Arkhangelsk's central districts since their establishment during the time of Peter the Great. Those districts which were created during the Soviet era have a higher amount of green area in comparison to the central districts. However, these green areas need extensive repair and improvement after decades of neglect and lack of management. New residential areas constructed over the last few years often completely lack green space (Feklistov 2014).

According to the city's general plan of further development (2009), one of the main tasks is the increase of green space by 70% in relation to the actual total area. However, today, maintaining existing parks and gardens is at the expense of local and supplemental budgetary funds allocated for the improvement of territorial districts. Given the lack of funding, greening and landscaping is sporadic and is characterised by an almost complete lack of "network governance" (i.e. poor coordination among departments dealing with green areas

Volume 3 | Issue 2 | 2016 | 61-70
Available online at www.housing-critical.com
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and city departments dealing with traffic or with those authorising building permits). Conflicts often occur due to differing needs within the urban planning strategy.

When taking into account this entire range of problems, the terribly needed new green infrastructure in the city of Arkhangelsk should be developed based on the following concept: It should be established not only as a random mosaic of different green spaces, but as an entire complex of interconnected green infrastructural elements, including green corridors, roofs, ecological axes along city roads and river embankments as well as resource-saving technologies. It should adopt progressive ideas from the Soviet period, such as support from the Dendrological Garden and organised public activities (e.g. "subbotniks", etc.). Of great importance is the creation of new squares, parks and gardens in the newly built-up areas as these areas have a higher population in comparison to older districts. There is great potential for such green space in the courtyards (backyards) of the new buildings. An increase in green areas in old city districts is surely restricted by the heritage status, but also possible through the introduction of new technologies, such as vertical and container gardening, greening roofs and walls, etc.

The implementation of low impact design principles in urban green management can provide a sound strategy since these principles take into account the character of the local plant communities; they also contribute to the creation of biologically sustainable and pollution-resistant ecosystems (Haase et al. 2014). There are promising examples originating from the Soviet period, such as the planting of poplar due its resistance to atmospheric pollution. Additionally, direct involvement of local residents with the designing of the landscape and creation and maintenance of green spaces can contribute to a sustainable co-development of the city and an increase in public responsibility, vandalism reduction and social interest in maintaining and improving the quality of the urban area as a home and place for everyday life for all.

Conclusions

The case of Arkhangelsk illustrates how the experience from the post-Soviet context can enrich the international discussion on urban development and green/public space. After the fall of state socialism and the establishment of a post-Soviet capitalist regime, urban space has been characterised by an extreme privatisation of urban space, the exclusion of citizens from decision-making regarding space development and use and a strict control of space by local authorities and business elites. Despite a liberalisation and internationalisation of values and consumption practices, the legacy of the Soviet era still shapes Arkhangelsk's modern urban culture and the identity of its citizens. The main functions of green areas developed in Soviet times – aesthetic inspiration, recreation, sanitation as well as providing a space for encounters – have prevailed until today. However, the vectors have changed: The function of urban green spaces as a postcard view or aesthetic accessory was replaced with an understanding of green areas as a space for local people and their wants and needs. In this regard, green space can be seen as a place for the everyday social interaction of city dwellers: public discussion, action (subbotniks), protests (e.g. ecological activities against the demolishing of green areas for new building projects). However, the societal role of green space that was central during Soviet times is apparent up until the present due to its contribution to the collective memory

Volume 3 | Issue 2 | 2016 | 61-70
Available online at www.housing-critical.com
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and national identity. Therefore, many streets from the Soviet past were not renamed just as Soviet artefacts, such as memorials (e.g. to V. Lenin) and squares, were not demolished. Within the current planning debate in Arkhangelsk, urban green space is often the subject of discussions and conflicts which brings together the different perceptions of urban space, for example, as a home and environment for local people to live or a place for investment and new housing and commercial projects.

Today, Arkhangelsk needs new ideas in order to find a balanced way to navigate its history and traditions (including those from the Soviet period), while it also needs innovations in planning, design and management of urban landscapes. Certainly, proper planning and management are required, while additionally increased participation among stakeholders and decision-makers can help to foster an appreciation for the multiple benefits of urban green areas. From its experience with the development of green areas during Soviet times, Arkhangelsk has a lot of potential regarding the creation of a sustainable green infrastructure which could enhance the quality of urban life. The key to sustainable green development might not lie with maintaining the number of square metres of green space per inhabitant, but in an enhancement of the quality of the green areas and a proper distribution of green throughout the city. The example of Arkhangelsk, as one of many cities across Russia, illustrates that citizens need to take an active role in greening and environmental protection actions. Regarding the future, there is some well-founded hope that environmental concerns will become a part of mainstream strategies of urban development throughout the entire country.

Volume 3 | Issue 2 | 2016 | 61-70
Available online at www.housing-critical.com
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