Greenways as a new type of urban green construction at the foreign architectural practice

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Abstract. The article overviews the development of a new type of green public spaces - greenways. It describes the creation of the first greenways in the urban agglomeration Raleigh-Chapel Hill in the State of North Carolina. Features and benefits of greenway are identified. The creation of greenways as a new type of green public spaces is connected with post-industrial production and disadvantages of modern urban lifestyle. The article describes aesthetic spiritual benefits of greenways for recreation and revitalization. To illustrate the benefits of greenways, results of the analysis of recreational infrastructures of four cities located in different countries - Nashville, Dresden and Irkutsk - are presented. The greenway project for the northern suburb of Irkutsk developed by the students of Irkutsk National Research Technical University is described. The article concludes that the creation of greenways in Irkutsk will improve living standards of city residents and create more favorable opportunities for leisure activities, aesthetic meditation and revitalization in the open air. Greenways should be created in other cities of Russia.

Introduction

A greenway emerged as an independent urban landscape element in the last quarter of the 20th century.
The first greenways were created in the USA in the Raleigh – Chapel Hill agglomeration in the early 1970s. However, the philosophical ideas underlying the designation and arrangement of greenways go back to the second half of the 19th century, to the founder of the modern American landscape design, Frederick Law Olmsted [1].

Greenways represent green corridors designated for movement of people (on foot, at a run, by bicycle, by horse or boat), which connect municipal districts, cities, natural parks, wildlife reserves, natural monument monuments, and just places where the wild nature is preserved.

Charles Little, an American specialist in landscape planning, gives the following four-part definition of greenways:

A greenway is an open space created along a natural corridor, such as a river bank, a stream dale, a mountain ridge, extending along a railway track reconstructed for recreational purpose, along a canal, picturesque road, or another route.

Any landscape direction for walking on foot or riding a bicycle.

An open spatial link connecting parks, wildlife reserves, cultural monuments, or historical places to each other as well as to popular public city areas.

A greenways can also be represented by a man-made strip of linear parks, designed as a park route or a green belt [2].

Important component of a greenway is its environmental aspect – the creation of opportunities for animal and birds to move through densely populated areas and overpass busy traffic arteries. The fundamental difference of a greenway from a common bicycle path lies in the greater attention to the natural component of the route. A greenway is not just a path but necessarily a green belt along it, the goal of which is to serve as the basis for people’s aesthetic communing with nature along the route, act as a refuge for animals and birds, and also purify and freshen the air in cities. Therefore, the width of greenways can exceed a kilometer, and in places were a greenway passes through compact planning areas, it can taper to 15-20 meters. The greenway and new natural parks replacing an old railway branch in the state of Virginia, USA, are 15 to 45 meters wide but they extend for 80 kilometers, connecting several cities.

Greenways can ensure the following types of recreational opportunities:

- Walk
- Family recreation and open-air picnics
- Environmental enlightenment and education
- Visiting the natural, cultural, and historical points of interest along the greenway
Horseback journeys, equestrian sport
Bicycle rides, ranges for bicycling

Greenways became widely spread throughout the USA. Now, each state and city has its own program for construction of greenways specifically defining design and comprehensive landscape measures and development of recreational activities. The system of greenways created in metropolitan areas of Tennessee – Nashville, Knoxville, Memphis, Chattanooga agglomerations – is distinguished and indicative [3].

The creation and improvement of greenways in Tennessee is systematic – every 5 years. The Tennessee Department of Environment and Conservation creates a Greenway Development Plan in the state's cities. Extensive experience in designing of greenways has an architectural firm Barge, Waggoner, Sumner & Cannon from the city of Oak Ridge [4].

Methods

For research purposes, several methods were used. In 2003, the (author) A. Lyapin interned with the National Recreation and Park Association at Tennessee (City of Nashville, City of Chattanooga, City of Murfreesboro) where he dealt with a new type of urban green public spaces. Thus, the first sociological method used is Participant observation in the process of greenway designing.

Literature review was used for studying history of the greenway creation in US cities and key features of greenway projects. The next stage of the study aimed to identify benefits of greenways for city residents.

The authors used the method of qualitative Comparative analysis of existing urban recreational systems in cities having and lacking greenways. Nashville (Tennessee, the USA) and Dresden (Saxony, Germany) were used as cities having greenways, and Irkutsk, Russia were used as cities lacking greenways.

These three cities were studied using the Case method. The study revealed that activities of voluntary public organizations play a crucial role for creating greenways. In this regard, the method of Sociological analysis was applied to describe the role of public organizations, initiators, customers and investors of greenway projects. The basis for the sociological analysis was the method developed by the French sociologist Alan Touraine [5] and Russian sociologist Oleg Yanitsky [6]. Based on the identified patterns, the authors suggested a greenway project for Irkutsk. A group of students of the architecture department of Irkutsk National Research Technical University...
supervised by the author Andrei Lyapin developed a detailed greenway project for Irkutsk.

**General (Main Body)**

Existing trends in the urban lifestyle show that the share of people employed in the physical working environment is decreasing while the share of workers in the sphere of services, information technology and intellectual activities is increasing.

Thus, the lifestyle of a larger number of city residents becomes inactive and monotonous which affects their physical and mental health [7]. Modern industrial production isolates workers from the natural environment. Deficient interaction with the nature, inability to use aesthetic and health-improving natural resources have negative health effects and cause depression.

At present, city residents spend time in the open air only during their holidays. The share of leisure time is increasing which is a positive trend. The Danish architect Jan Gel, which is one of the modern ideologists of friendly urban environment creation, believes that it is time that we created a modern recreational infrastructure in cities based on natural factors and designed for active leisure activities of city residents [8].

The US cities have achieved the greatest results in creating new recreational systems of pathways and greenways. The country adopted federal and state legislative acts regulating the creation of greenways. In 1983, the Congress adopted the Legal Act on National trails. Each state has its own greenway creation program. In the state of Tennessee, the greenway creation program is being implemented by the State Department of Environment and Conservation and the non-profit greenways Foundation. Architecture companies develop greenway projects and coordinate them with general urban development plans. The greenway project development experience gained in the cities of the state of Tennessee (the architecture company "Looz and Assistants" in Nashville and the architecture company "BWSC" in Chattanooga) allowed the author to make conclusions about benefits of new green public spaces - greenways in cities throughout the world.

To identify benefits of greenways for the urban recreational system, leisure opportunities in cities having greenways and lacking them were compared. To identify benefits of greenways, the author used two well-known cities – Nashville, the USA (with a population of 691 thousand
people) and Dresden, Germany (with a population of 547 thousand people). To prove that the creation of greenways can improve planting, leisure and recreational systems of cities with poorly developed recreational infrastructures, the author used his hometown Irkutsk, Russia (with a population of 624 thousand people). Irkutsk is located in the Asian part of Russia, near Lake Baikal, 200 kilometers from the Mongolian border and 1000 kilometers from the Chinese border. All the cities are centers, main cities of their regions. Nashville is the capital of Tennessee, Dresden is the main city of Saxony, Irkutsk is the capital and the largest city of Irkutsk region.

The planting and recreational systems of each city were compared. Nashville has the most advanced and diverse system of green public spaces designed for leisure and recreation of residents. Quality differences in planting and recreational systems are evident when studying the number of types of green and recreational facilities in each city. In Nashville, the planting and recreational system consists of 22 elements (parks, squares, natural parks, boulevards, quays, water recreational routes, historical monuments, memorial parks, etc.), in Dresden – of 13 elements, in Irkutsk – of eight elements. Greenways were created only in Nashville and Dresden. Greenways in Dresden are the system of walking routes. It was created on the basis of the oldest walking route in Europe - the Elbe Route known since the 18th century [9]. Greenways link all elements of the planting and recreational system (parks, quays, historical parks, city forests). Alone or with friends or relatives, each city resident can walk around the city through parks along a special walking trail surrounded by plants. Greenways are a new type of the planting and recreational system.

Greenways have one feature which distinguishes them from all other elements of urban landscaping - parks, boulevards, and quays. Greenways are created and maintained by public organizations of volunteers. Greenways are the property of public organizations of residents who create them and monitor their safety and conditions. Greenways are not municipally or privately owned. They are created quickly, during a few months, or one or two years which requires low financial expenses.

The project team of the Irkutsk National Research Technical University under the leadership of Associate Professor of Architecture Andrey Lyapin has executed projects of greenways for the city of Irkutsk in Russia. The greenway in Irkutsk will take place along the Kuda river. The greenway will be realized on the basis of a historical walking route and will have a length of 20 km.

A large and well-known Siberian public organization “The Great Baikal Trail” was involved into the greenway project developed for Irkutsk. This
organization has been creating recreational and tourist routes on the shores of Lake Baikal for more than 15 years and has extensive volunteering experience.

Results

The study on aesthetic and recreational benefits of a new type of urban green spaces - greenways- was the basis for researches on organization of leisure activities for city residents. Based on the research materials, the author obtained results which can improve recreational activities of Irkutsk residents and urban planting. A group of students of the architecture department of Irkutsk National Research Technical University supervised by the author developed a greenway project based on the historical route along the Kuda River in the northern suburb of Irkutsk. A report on greenway peculiarities and benefits was presented to Irkutsk municipal authorities.

The Russian expert in historical landscapes Nataliya Shestopalova carried out a detailed analysis of the greenway project developed by the students for Irkutsk. Nataliya Shestopalova presented her report at the conference and published an article dealing with this project in Paris [10].

Conclusion

In the 1980s, greenways were created in the most developed countries of Europe and the USA. Greenways improve leisure activities of city residents, create great opportunities for development of city recreational systems, contribute to the high aesthetic quality of the urban environment.

The creation of greenways in Irkutsk and Harbin will significantly improve living standards of residents and create much more favorable opportunities for leisure activities, aesthetic meditation and revitalization in the open air. Greenways should be created in other cities of Russia, China and other Asian countries as well.

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