

## **LANDSCAPE URBANISM IN THE CENTER OF MOSCOW: NEW HYBRID MODELS OF PARK AREAS**

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It is necessary to reconsider the role of natural areas and landscape approaches to improve the quality of urban environment for a sustainable development of modern cities. The development of city's green infrastructure, what is integrated in "landscape urbanism" term, implies the restoration of environment natural components by expansion of urban boundaries or searching for reserved areas of "abandoned" landscape in a city structure [10]. Creating a new development strategy of natural environment territories, in terms of post-industrial reality and progressive urbanization is the part of city's spatial development that must be adapted and supplied carefully. It is necessary to search for new development models of urban space, where the landscape typology and nature features are the means of environment identity [13]. The rapid degradation of natural areas, as a result of "densification" of a city and building development in the largest cities of Russia, primary Moscow, was observed from the beginning of 90-ies of the 20th century. It has led to the disappearance of natural areas, what influenced an environmental stress strengthening in different parts of an urban space, especially in its center, and strong recreational pressure on park areas, that are the most popular within a city. For changing this situation and creating a new scenario for parks development in the center of Moscow, it is necessary to form new urban objects, both in the center and in the middle and peripheral parts of the city. Scenario of sustainable urban development at different urban levels includes innovative ideas for life harmonization, associated with the concept of "living" cities, sustainable urbanization, preservation of historical heritage and new building technologies [5].

**Key words:** sustainable urbanism, space hybridization, model properties, blue-green infrastructure, local plants, the idea of linear park

### **INTRODUCTION**

The symbiosis of landscape and urban planning approaches of city development involves the creation of hybrid spaces based on transformation of existing urban areas of a city [11]. The urban development problem of many European cities' central parts reveals the scarcity of natural areas for recreation. The solution depends on a competent strategy of preservation and development of historical and natural areas in the context of urban fabric, especially in the circuit of water areas. Creating a system of interconnected park areas at the periphery of water bodies in "walking" distance from landscaped residential complexes and office buildings, designed on the principles of "green" architecture, should form ecological stability knots in the new city natural frame. Such hybrid spaces with "natural gravity" areas in different parts of a city can be created, by adding green vehicle-to-pedestrian communication areas, squares and embankments, a new landscape-urban system of a city is formed, with improved performance of environmental comfort and environment safety for all residents [6]. Modern examples of such approach are the projects of Madrid Rio in Madrid, Aranzadi Park in Spain, Toronto's Lower Don Lands in Toronto, Beregovaya Liniya in Belgrade, Tagus Linear Park in Lisbon and many others. They demonstrate not only the soft integration of new objects in urban city

structure, but their strongest “landscape” impact on the surrounding area as well. The examples above became the basis for comprehensive study and, adapted to Russian realities of urban policy, but also revealed new development method in formation strategy of new types of multicultural public and recreational park areas. Over the past five years the largest parks in Moscow such as Gorky Park, Neskuchny garden and Muzeon undergone a serious analysis and assessment of natural potential. Reconstruction of these parks along with natural potential preservation and the emphasis on the socio-cultural aspect in the formation of urban environment allowed to adapt each of the parks to new city's needs and its residents. This urban facility has a certain set of properties and differs from usual methods of urban areas development, representing a hybrid model of a linear park by the water “with blurred boundaries” between city, river and park area [2].

### **GOAL AND OBJECTIVES**

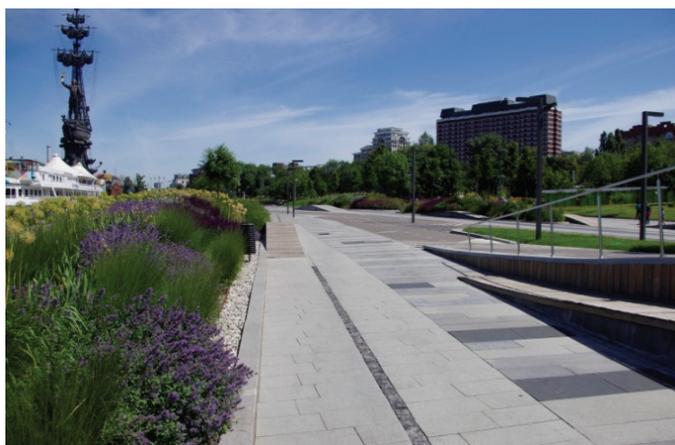
The goals of the research are the revealing and comprehensive study of the properties of the linear Park hybrid model in the light of the theory of landscape urbanism. Objectives of the research includes a comprehensive assessment of their impact on surrounding areas, an offer of the methods of hybrid space maximum adaptation in the context of historical city center and the development of this hybrid model on different urban levels.

### **MATERIALS AND METHODS**

The river is the main city-forming structure of the central part of the city. It's right bank is bordered by unique areas, such as Vorobyovy Gory, Neskuchny garden and Muzeon park. At the periphery of the last one, in the result of landscape transformation of transport artery, socially oriented hiking and cycling communications appear in the natural environment. This is new Krymskaya embankment, formed on the principles of landscape urbanism. Such hybrid model of space affects regeneration of disturbed areas adjacent to the river and becomes a vector of the urban transformations of the city's central part. Without breaking the identity of Moscow historical center, it is blended harmoniously into the existing landscape and urban context. Today, the growth of attendance and new park area popularity, as a single natural and recreational space, occurs. Attendance of Gorky Park during the week is 20 000 people, and 100 000 — on weekends and holidays with a serious communication pressure on natural areas [18]. After refunctionalization of the entire natural area structure in 2011—2012 it became one of the most function filled parts of the linear park and, as any new hybrid urban model, it has new properties. Following the current trend of sustainable urbanism, admitted by Douglas Farr [4], for creating sustainable systems it is essential to integrate transportation system with land use and technologies with the development of biodiversity corridors in a specific ratio. Stable system bonds are reflected in properties of the hybrid model, and according to sustainable landscape urbanism, the model can be developed in time harmoniously only in case of “work” or action of each property. According to the urban planning theory and practice of landscape urbanism, hybrid models have the following properties: interconnection between landscape, architecture and urban context, formation scenario of area composition, historical contextuality, versatility, social special-

ization of area potential opportunities, visually-coloristic approach, seasonal and temporal variability, identity, horizontal, saturation, scale identity of architecture and landscape, permeability of spatial-planning structure, environmental comfort and safety, accessibility [10]. Observing the development of the linear park hybrid model, one can confidently say that some properties are perfectly manifested, and some properties are manifested partially, or require serious improvements and revision in engineering. Otherwise, such models may contain design and reconstruction errors in the future. It will inevitably reduce the level of psychological and environmental comfort in the center of Moscow, and also affect the future sustainable development of the regenerated areas. Let's consider the impact of hybrid model properties of urban park area and compare advantages and disadvantages of these properties. Interconnection between landscape, architecture and urban context, in my opinion, fully disclosed in presented area. It is manifested through the history of the place, functional connections of all territory parts with architecture and unique landscape. Its influence extends to all the surrounding areas and associated with regeneration of these areas in the city center. According to the plans of Moscow government Krymskaya embankment should become the only one pedestrian route from Vorobyovy Gory to “Krasniy Oktyabr” former factory [18].

Formation scenario of an area composition is closely connected with historical contextuality and versatility that will involve horizontal linkages in structure of an urban fabric. Central city part renaissance keeps creative and cultural reconstruction of the city as a space for meetings and presentations, space to “see and be seen, as the newly open living space” (Hoppula [3]). These properties are interrelated and have a great “read” in the space. Historical context is kept by the Moskva River as the main city-forming element with the unique landscape of three park areas. Preserved natural landscape of Neskuchny garden and Gorky Park is integrated with the urban landscape of the Krymskaya embankment (Fig. 1).



**Figure 1.** The urban landscape of Krymskaya embankment — historical context and the versatility of the pedestrian communication in the landscape with local plants (photo by the author)

Social specialization of the area potential opportunities involves an area social adjustment for people of all ages and interests. In this context, the present model of park area improves life quality in the city and is designed for every person of different age

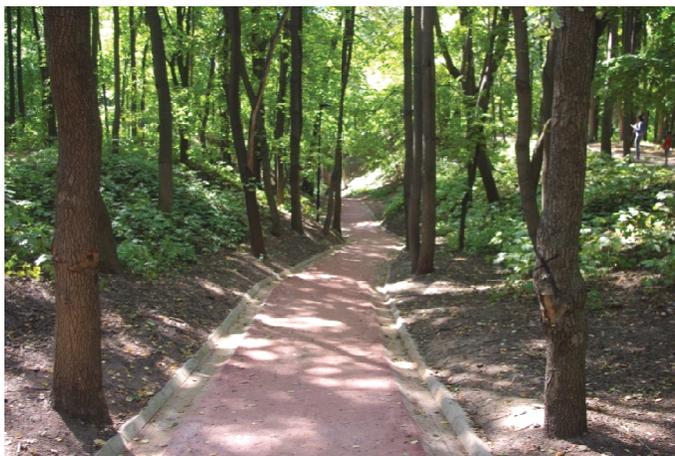
and social status [15]. Park functional zoning includes a playground, areas for recreation and cognitive rest, sports grounds, recreation near the water, beach area, dance floors, hiking and biking trails, equipment rental and many more. The territory as a whole and individually has different recreational areas of interest for all users of this space. Each of the parks associatively filled with a specific set of landscape tools and color images, maintaining the identity of the hybrid model. Along with historical memory of the place, the new aesthetic concept of parks development fits the idea of linear parks in Moscow center perfectly. However, visual coloristic range of Neskuchnyi garden could be more expressive, using, for example, means of landscape design as the forest canopy design of different types or color vegetation array of modern sculpture “to reinforce” a pleasant comfort and identity, named “cultural goodwill” by Pierre Bordeaux (Ilmonen [3]) (Fig. 2).



**Figure 2.** Contemporary Sculpture “The Power of dogs”, made in a rack and pinion technology — by Hungarian sculptor Gabor Miklos Szoke (photo by the author)

One of the most important properties of a hybrid landscape of urban area is its seasonal (all-weather) and temporal variability. Year-round use of the natural area is a very important component of any architectural and landscaping concept. Then the landscape is perceived as aesthetic value especially in the colder seasons, using it for different kinds of leisure activities and socializing in a winter landscape. For Russia, with its climatic features, including the long winter period, late autumn and protracted spring colors, landscape support is required. Changes of all-weather and time-variability to enhance the identity of the hybrid model of park landscape is needed again in the structure of Neskuchnyi garden (Laine [3]) (Fig. 3).

By the horizontal saturation of hybrid urban landscape forms of vegetation design and work with the natural territory relief are proposed. In this case, the selection of landscape plant components are made by formation of multi-tiered perennial plants adapted to Russian climate conditions. It is necessary to integrate the soft nature components in the area of landscape structure with decorative effect creation of perennial ground cover plants, bushes and forest edges, by analogy with the natural forest.



**Figure 3.** The typological structure of Neskuchnyi garden — actively changing steep terrain with no evidence of area variability (photo by the author)



**Figure 4.** The “capture” of new territories in the circuit and on the periphery of the linear park — Krymskaya embankment (photo by the author)

Four final properties are the main problems of hybrid park area. The permeability of the space-planning structure of territory is violated due to intensive recreation and communication pressure. It is unevenly between Gorky Park, Krymskaya embankment and Muzeon. Scale identity of architecture and landscape manifests itself in the contradiction of urban development throughout the territory, at the end of the 20th century, urban development was improved on park areas. And today, the new hybrid model influences on the transport infrastructure in the center of the city actively, creating huge traffic jams at the external part of the Garden Ring in Moscow (Fig. 4).

There are two more properties of hybrid urban landscape which has not been met. Environmental comfort, safety and territory accessibility related to parks recreation popularity, which is manifested in the shortage of parking spaces. The presented hybrid

model of park area is a new and very interesting landscape, urban facility at the natural and urbanized area in the center of Moscow. Historically in the context of the urban fabric, it actively influences the surrounding area. Buildings density in the central part of the city, and the popularity of the place determined the main problems of further sustainable development of the hybrid park model. In order to overcome the negative impact of the properties above there are appropriate methods for the qualitative improvement of urban planning situation and fix design errors of future projects.

Method of park area restructuring involves working with typology of each section of park area landscape and focusing on changing terrain and former transport routes. The method is also aimed at finding reserved territories in the circuit and on the periphery of linear park hybrid model for personal transport parking organization. In this connection, the example of the Krymskaya embankment reconstruction, performed by architectural “Wowhous” Office, is significant [9]. In the project a high level of modern design with social and environmental aspects compete with place popularity and, as a consequence, led to miscalculations in the organization of a sufficient number of places for vehicles parking.

Method of layer-by-layer modeling of renewing nature means the use of 3 tiers of plant components in the structure of the landscape to change its identity [12]. The main objective of the method is the change of visual image composition. In world practice, there is a tendency not only in the returning nature in a city but the creation of natural landscape, following the principles of humanist ecology and environmental design [8]. This approach involves accented work with natural biotope of selected urban area, deep knowledge and understanding of development dynamics of trees and shrubs, perennial grass and meadow crops [13]. In the course of this work, the typological structure of the territory in closed and open areas, meadow spaces and natural oases is determined. Territory restructuring on different types of sites with “spontaneous” nature possesses sufficient resources to recreate the natural undergrowth and forest edges by analogy with forests. In the middle of the XX-th century “imitation” of nature meant the union of natural habitat and plants of the climatic zone in a single landscape composition [8]. Selection of additional vegetation were performed by formation of tiered perennial plantings so, that the work of a landscape architect was almost imperceptible to landscape supervisor.

The method of integration of park area water-green infrastructure in city center urban fabric means “step by step” adaptation of the right bank of the Moscow-river to the new recreational needs of society in new natural environment. The method is designed for active research of functional connections methods between the main city-forming element, the river, and natural and urbanized landscapes of three park areas in order to regenerate the urban space. A vivid example of the use of this method is a general plan of Perm, where “key” moments of city regeneration is creation of stable water-in-green frame of open spaces [1].

## **RESULTS AND THEIR DISCUSSION**

The analysis results of a new linear park hybrid model on different urban levels from territory elements to the landscape typology demonstrated that reconstruction stages of three park areas are aimed at preserving the natural heritage and the development

of recreational infrastructure in the central part of the city. Most of the properties have a positive effect on the actively changing social, cultural, environmental and aesthetic performance of architectural and town-planning object in the center of Moscow. However, environmental comfort, safety and territory accessibility are not provided with competent restructuring of adjacent areas on the level of design for parking space search. For stepwise solution of these issues in the sustainable development of the linear park hybrid model offers new methods of its landscape renovation. The results of their implementation in the central part of the city will affect urban development of the entire area of the Moskva River. The development concept was elaborated in the project of “Project Meganom” architectural bureau, which became design competition winner for coastal areas development of the Moskva River [18]. The main focus is on the environmental strategy and the overall concept of coastal areas development of the main water artery of the city.

### **CONCLUSION AND RECOMMENDATIONS**

In General, landscape-urban hybrid model of park area enhances life quality in the city and represents a great practical and scientific interest. Combining the properties of hybrid areas with regeneration methods and the process of de-industrialization, water-green infrastructure can obtain the status of environmentally sustainable and socially efficient spaces. The appearance of such hybrid landscape-urban objects that are city stable based on the principles of landscape urbanism and associated with the return of nature in Russian cities.

The main results of scientific work were presented in two reports on the international landscape conferences in Saint-Petersburg and Stockholm in 2015 and 2016. Theoretical bases are developed in the master thesis in 2015. The scientific research presented in article expands scientific knowledge of the ecological way of stabilizing park areas in the central part of Moscow. It is necessary to continue this work for useful integration of the theory and practice at all town-planning levels. The presented model of the organization of the inhabited environment shows new opportunities of regeneration of building of the Russian cities and formation of strategy of their sustainable development for the change of the quality of human life in the city. It gives a positive resource for the creation of “living” cities” with the steady natural and architectural environment.

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### **REFERENCES**

- [1] Appenzeller, M. Gietama, R. City regeneration today. *TOPOS: The International Review of Landscape Architecture and Urban Design* — 2010, № 73: Sustainability, 2010, pp. 18—23.
- [2] Meyer, E.K. River Park as a Place of Movement. *TOPOS: The International Review of Landscape Architecture and Urban Design* — 2014, № 89: Sustainability, 2014, pp. 76—82.
- [3] Arabianranta. Rethinking Urban Living. (City of Helsinki Urban Facts. City of Helsinki Economic and Planning Center. Art and Design City Helsinki Oy). — WS Bookwell Oy, Porvoo, 2007. P. 288.

- [4] Farr, D. Sustainable Urbanism: Urban design with nature (2008) John Wiley & Sons, Inc., 352 p.
- [5] Nannan, D., Zhang, L., Ruff, S. From Expo City to Sustainable City. TOPOS: The International Review of Landscape Architecture and Urban Design — 2010, № 70: Sustainability, 2010, pp. 19—27.
- [6] Gleeson, R. Toronto's Lower Don Lands. TOPOS: The International Review of Landscape Architecture and Urban Design — 2010, № 73: City Regeneration, 2010, pp. 62—67.
- [7] Information on <http://archsovet.msk.ru/competitions/moskva-reka/meganom-moskva-reka>.
- [8] The Contemporary Garden. Phaidon Press Limited. ISBN 978 0 71 48 4958 4-2009. 111 p.
- [9] Information on <http://wowhaus.ru/mobile.php?n=287&p=1> Архитектурное бюро Wowhaus: Крымская набережная <http://wowhaus.ru/architecture/crimea-quay.html>.
- [10] Krasilnikova, E. Landscape Urbanism. Teoriya-Praktika: scientific monograph / Krasilnikova E.E. Volgograd: LLC IAA Oblastnye vesti, 2015. P. 1: scientific and practical bases of landscape urbanism [Text]. 2015. P. 156 (in Russian).
- [11] Information on <http://green-city.su/landshaftnyj-urbanizm-novyj-vzglyad-na-staruyu-problemu>.
- [12] Nefedov, V. Urban landscape design. SPb, Luibavich. 2012. 317 p. (in Russian).
- [13] Nefedov, V. How to return the city back to people. M.: Iskusstvo — XXI век, 2015. 160 p.: ill. (in Russian).
- [14] Information on: <http://green-city.su/beregovaya-arhitektura-i-dizajn-sredy-u-vody/> (in Russian).
- [15] Information on: <http://www.scientific.net>.
- [16] Information on: [www.mka.mos.ru](http://www.mka.mos.ru).
- [17] Information on: [www.park-gorkogo.com](http://www.park-gorkogo.com).
- [18] Information on: <http://archsovet.msk.ru/article/konkursy/ekologiya-reki-strategiya-i-praktiki>.

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## **ЛАНДШАФТНЫЙ УРБАНИЗМ В ЦЕНТРЕ МОСКВЫ: НОВЫЕ ГИБРИДНЫЕ МОДЕЛИ ПАРКОВЫХ ТЕРРИТОРИЙ**

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Для устойчивого развития современных городов необходимо пересмотреть роль природных территорий и ландшафтного подхода в улучшении качества городской среды. Развитие зеленой инфраструктуры мегаполисов, объединенное термином «ландшафтный урбанизм», подразумевает восполнение природных компонентов среды при расширении городских границ или поиск резервных участков «заброшенного» ландшафта в структуре города [10]. При создании новых стратегий развития территорий природная среда в условиях постиндустриальной действительности и прогрессирующей урбанизации является той составляющей пространственного развития городов, которую необходимо бережно адаптировать и восполнять. Необходим поиск новой модели развития городского пространства, в которой типология ландшафта и компоненты природы являются средствами идентичности среды [13]. Стремительная деградация природных участков в результате «уплотнения» города и застройки в крупнейших российских городах, в том числе и Москве, наблюдалась с 90-х гг. XX в. Она привела к исчезновению внеархитектурных пространств, что, в свою очередь, повлияло

на усиление экологической напряженности в разных частях городского пространства, особенно в его центре, и сильнейшей рекреационной нагрузке на парковые территории, наиболее востребованные городом. Для изменения этой ситуации и создания нового сценарного развития парков в центре Москвы необходимо формирование новых урбанизированных объектов, как в центре, так и в средней и периферийной части города. Сценарий устойчивого развития города на разных градостроительных уровнях включает инновационные идеи по гармонизации жизни, связанные с понятием «живущие» города, устойчивой урбанизацией, сохранением исторического наследия и новыми строительными технологиями [5].

**Ключевые слова:** устойчивый урбанизм, гибридизация пространства, свойства модели, голубая и зеленая инфраструктура, местные растения, идея линейного парка