URBAN PUBLIC SPACES FROM THE STANDPOINT OF SUSTAINABLE DEVELOPMENT

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Abstract. In respect of ecological framework of the city, special place holds the issue of optimal solution for the urban public spaces on the three main levels: provision of the rational functioning in the general structure of the functional and planning city organization; creation of the spatial architectural accents in the body of the city and the development of the urban society's communication. All the above mentioned is inseparable from the ecological optimization of the residential territories in the cities, where the innovative and far seeing approaches for the solution of the traffic problems have special significance.

Keywords: sustainable development, ecological optimization, urban public spaces, dialectics, social communicating, socialization, circulation

INTRODUCTION

In September 2015 as the part of the UN 70th General Assembly in New York took place the UN summit devoted to sustainable development where the rules of development after 2015 were decided and new development vectors were approved. This summit was concluded with the document "Transforming our World: The 2030 Agenda for Sustainable Development" which set 17 goals and 169 tasks for Sustainable Development.

The main tenet of all the above mentioned goals is "Leave no one behind". It has determined that the whole functional and planning structure of residential environment, their architectural substance and infrastructure must satisfy the needs of all the people, first of all those who have disabilities, children and older people. One of the first solutions, the one which was already in use in codes, became the provision of the unimpeded entrances in the building of various destinations and creation of the safe public spaces in city structure, comfortable for the development of the social communicating.[1]

The global report on culture for sustainable development of the cities prepared by UNESCO according to The 2030 Agenda for Sustainable Development notes that urban public spaces are inseparably connected with culture and require protection and proper development of their public and functional diversity.[2]

Council of Europe determines that public spaces, together with their importance "in architectural and aesthetic shape of the city…plays a necessary educational role, is ecologically significant…in satisfaction of public's demands in recreational and leisure respects…"[3]

In the documents of the Council of Europe open public space is defined as "public living room for the locality" (Council of Europe, 1986), and Recommendation on the historic urban landscape from 2011 state that loss of public urban spaces and their decisive deformation can result in deterioration of the quality of living in the city. "On the one hand, urbanization provides economic, social and cultural opportunities that can enhance the quality of life and traditional character of urban areas, on the other hand, the unmanaged changes in urban density and growth can undermine the sense of place, the integrity of the urban fabric, and the identity of communities. Some historic urban areas are losing their functionality, traditional role and populations." [3],[4]

More and more urbanists agree that battle for the achievement of the goal of sustainable development is going to be won or lost exactly in the cities, which were always the impelling force and the "cradle" of innovative ideas. That's exactly why it's necessary to stimulate in cities the development of innovations of the long lasting influence on life of society and provision of their untroubled improvement. More frequently urbanistic discussions are devoted to technologies and innovations, primarily those, which must be used for the improvement of life of population and creation of the future inclusive places, possibility of energy generation from the renewable sources and technologies that conduce social integration in cities. [5] In pursuit of encouraging sustainable development in the cities, special UN Environment Program (UNEP) works in partnership with UN-Habitat, World Health Organization, etc.

In present time of vigorous urbanization, taking in account context of sustainable development set by Paris agreement, and other international programs in the realm of development, it becomes clearer, that cities are going to be the source for the solutions of the problems which the world encounters, rather than the cause of them. If urbanization process is well planned and properly organized, it can become an important implement in achieving sustainable development in developed as well as in developing countries.

Sustainable (ecologically self-sufficient) development is connected directly to dialectics and ecology. Dialectics, being the science of universal interconnections and causes of events, the source of which is unity and struggle of opposites, is a basis of sustainable development. Ecologization of all the fields of human activity and ecological reconstruction of nature and artificial environment is a necessary feature of sustainable development.

Specific critical events in planning and modernization of urban public spaces reach the age of enlightenment, when precise measurements became dominant in all fields of human activity. As of today, in city reconstructions, especially their central parts, too often one can find cases of degradation of public spaces, primarily connected with destruction of polyfunctional meaning of "urban street", which from ancient times, used to be a place of developed communication of city's population, and gradually, in process of development of urban formations, transformed into transport corridors, thus having lost its meaning in the living organism of the city.

According to Italian theorist and urbanist Carlo Sini, the city in the process of its development underwent the main stages. On the first stage, classical city represented relations between architectural substance and the space in specific symbolic and sacral dimension. On the second stage, during he middle ages, the city was a carrier of rhetoric and word. The present third stage of the city's historical development (from baroque to informational contemporaneousness) is distinguished with text dominance, which seemingly doesn't require spaces for orators and listeners, due to public communication happening mainly in written form with prevalence of electronic devices today. [6]

On the third stage of city's historical development, based on Cartesian understanding of the world as a mechanism, came the systematic destruction of interaction between historically formed processes in urban spaces in prevalence of simplification and circulation above many needs of urban individual, separated from the general need of socialization.

Similarly, problems of urban transport organization where regarded almost independently from the size of society, historical and cultural values, urban structure and buildings, ecological needs, almost separately from the complex process of integration of the individual in the urban environment. In this situation, economical interests of society became crucial in determining significant prevalence of transport in urban spaces of modernized cities.

This time is marked with substantial demolitions of the whole blocks of historically formed buildings for creation of the large-scale technological structures of the bourgeois city. Yet, in great degree, it was negated in the city by emergence of exclusively public spaces, such as passages, galleries and parks. Thus, in the first half of the 20th century, public spaces underwent radical functional simplifications: street – as a corridor for circulation, square – as a joint between these corridors, and transport efficiency, as a characteristic of a decent solution capable of providing transportation of maximal quantity of passengers and cargo. Such a gap between primal meanings of urban streets, squares and blocks received an undeserved support from German antebellum urbanism, Italian modernism, etc. [7]

THEORETICAL OVERVIEW

In sustainable development of the cities, one of the most crucial is the problem of creation of healthy, aesthetic, ecological and sustainable urban environment. This aesthetic and ecological environment has a direct influence on sustainability of urban life, healthy and aesthetic urban environment has a positive effect on the residents and creates an image of safe and peaceful city; this environment positively affects main sense organs (vision, hearing, smell etc.), similarly to natural influences. Ecological buildings and structures without trouble turn part of ecosystem and become its indelible components. Such an environment confers high life quality upon an individual, gives him or her a possibility for perfection and develops communication among residents. Such an environment must be maintained by ecological activity of the city society, and stay in ecological equilibrium with natural environment because of its inclusion in the city. Sustainability of planning and construction refers to all the problems which pertain sustainable development of the city: ecological improvement of buildings and structures, providing ecological equilibrium, creation of the healthy environment, smart reduction of the use of resources, encouragement of communication in society and its ecological education and reclamation[8].

First attempts to distinguish traffic function from socialization function in street and square spaces where introduced in "Garden Cities" by Ebenezer Howard (1902) [9], "Superblock" in Radburn [10], "Neighborhood units" by Clarence Perry [11], German "Siedlungen" in Weimar Republic [12], Roosevelt New Deal "Green belt towns" [13], postwar English "New Towns" [14], "corporate cities" in the United States [15], and Scandinavian and North European "neo-empiricism" in 1960s – 1970s. [16]

However in those works, it was proposed to preserve social ecology of the city's residential areas via creation of green spaces (mainly parks), which, unfortunately, perpetuated use of urban streets and squares exceptionally for transport. Thus, social life of the public had been virtually supplanted from urban spaces to the suburban ones, and the trend of separation between residential, social, labour, consumption etc. spaces had emerged. Each of those "specially equipped" spaces could be situated in different parts of the city. Such functional redistribution of spaces proved inconsistently expensive and virtually unfeasible. This system was relevant only in theory in experimental projects, while in real world it became incongruent. As a result of such transformations rose urban criminality, recreational structure was destroyed, commenced the collapse of urban space and society. People literally abandoned streets and squares in favour of automobiles. Speedways and highways, multilevel junctions etc. which required even more space for transport, led to cardinal division of circulation, socialization and other functions of residential areas with transport streets, which, in turn, brought the number of cities (especially their central parts) to real ecological crisis, to exacerbation of safety and effective functioning of transport network. Nevertheless, similar approach is often used today as well, in reconstruction and planning of the cities of "informational age".

Main tenets of different approach to modernization and construction in central parts of historical cities pertain to 1960s, and dwell on favouring urban community above other aspects. [17] Those tenets are presented in "Traffic in Towns" by Colin Buchanan [18], and in "Life and death of Great American

cities" by Jane Jacobs[19]. This new approach has deserved a definition of "Traffic calming" due to shifting of street planning away from the dominance of transport communications. Buchanan claimed that: "Even minimum knowledge of present day conditions in our cities reveals that traffic congestion has already endangered the well-being of many inhabitants and the efficiency of many activities. Conditions are destined to become extremely serious in relatively few years unless drastic measures are taken against the potential increase of vehicles circulating our streets" » [18] (p. 15).

Having analyzed traffic situation in the United Kingdom Buchanan came to conclusion that the necessary in future infrastructural constructions were not only going to be unfeasible from the standpoint of harm to environment and ecology, but also because of the lack of space and means. To resolve this problem Buchanan has proposed concept of traffic integration and mobility, that is to use new solutions: direct transport flow must be restricted as much as possible, and its regulation must be based on narrowing streets, reduction of the capacity of crossroads etc. because the street capacity is not a derivative of the demand, but, on the contrary, demand must be regulated by reasonable policy of network capacity reduction. [20] [21]

The idea of transport attrition, according to Jane Jacobs, reduces the need in automobiles simultaneously with reduction of convenience of using them, and requires, in turn, attainment of equilibrium between demands of automobiles and pedestrians. In 1971 in Delft, Netherlands, in line with movement Woonerf [22], the community of Delft itself demanded that streets of residential areas were perceived as a whole as space for pedestrians' socialization, for children's playing activity etc. In the same time pedestrians must have unimpeded access to automobiles on account of functional and planning structure improvement and its influence on social behavior of pedestrians and automobile drivers. To achieve this, the following methods where suggested:

- removal of pavements – arrangement of street spaces in one level;
- discrete paving for different functions in urban space;
- slowing down the traffic speed due to complex outline of the streets, narrowing traffic lanes, use of street decorations, especially botanical ones etc., and arrangement of playing areas for children.[23]

As of today the most widely spread way of speed reduction is a restriction to 30, in some cases 10 km per hour, that is arrangement of the so called "areas 30", where pedestrian priority is provided, especially in places of vigorous activity concentration along the streets, primarily in residential areas of the cities.

Specialists of the specifics of urban public spaces formation adduce different vectors of city planning tenets. O. Oliynyk, for an instance, formulates following principles of regeneration and preservation of public spaces:

- preservation of the degree of integration;
- providing "visual perception" of the public space environment;
- inheriting development;
- uninterrupted configuration;
- following blue line of the restricting surfaces
- preservation of authenticity of special and planning structure [24] [25].

Significant importance for equipment of public pedestrian spaces, especially those of large sizes, has the use of auxiliary elements, such as specially equipped resting and observation places, special vegetation, arrangement of fountains, open water reservoirs, installation of sculptures etc.

CONCLUSION

Based on conducted analysis, it is possible to determine as strategically congruent and optimal probable shift of urban spaces from transport use and imparting function of urban socialization to them. Accomplishment of this conduces creation of effective network of pedestrian and alternative (mainly bicycle) traffic.

Not least important is the use of urban spaces for efficient revalorization of historically formed architectural and urban environment. This environment epitomizes historical identity of urban community , but unfortunately, still doesn't have necessary cultural and aesthetic significance in unity of functional and planning structure and architectural substance together with elaborate aesthetics of

landscaping spaces, which still are often reduced to the level of framing transport connections and junctions.

Such strategy is particularly important in the process of reconstruction of historical cities with orientation on optimal modernization, as opposed to constant expansion and unscaled increase in construction, which contradicts the orientation on feasibility of sustainable development.

References:

[1] An architecture guide to the UN 17 Sustainable Development Goals Volume 2/ - Royal Danish Academy – Architecture, Design, Conservation, Copenhagen ISBN: 978-87-7830-833-7

[2] Agenda for Sustainable Development, Resolution 70/1. 2015 Access mode: https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf (date of access 12.12.2021).

[3] Council of Europe (1986) Recommendation No. R (86) 11 of the Committee of Ministers to Member States on Urban Open Space, Strasbourg: Council of Europe.

[4] Recommendation on historic urban landscape, Paris, 10 November 2011. Access mode: https://whc.unesco.org/uploads/activities/documents/activity-638-98.pdf (date of access 11.01.22)

[5] Larysa P. Skoryk. Interaction of the Functional and Planning Characteristics of the Urban Structure. K. – National academy of fine arts and architecture. Research and Methodology Papers ISSN 2411-3034. https://doi.org/10.33838/naoma.28.2019.68-75

[6] Sini C. Forme e senso. Paradosso 1996;1.

[7] Hall P. "Reinventing the City", a lecture given in the series "The City in the 1990s: Livable for Whom?", printed in Institute of Urban and Regional Development, University pf California at Berkeley, Research Paper, 1989;(175):5

[8] Viktor V. Volkov Settlement territory as a leading component of the ecological framework of a big city. Communal economy of the cities 4, 157. 2020 ISSN 2522-1809 (Print); ISSN 2522-1817 (Online) DOI 10.33042/2522-1809-2020-4-157-32-37

[9] M. G. Meerovich Idea of Garden Cites by E. Howard and the soviet labour town-gardens// Herald TGASU. 2009. №4. URL: https://cyberleninka.ru/article/n/ideya-goroda-sada-e-govarda-i-sovetskie-rabochie-poselki-sady

[10] Eric Charmes (2010) Cul-de-sacs, Superblocks and Environmental Areas as Supports of Residential Territorialization, Journal of Urban Design, 15:3, 357-374, DOI: 10.1080/13574809.2010.487811

[11] Michael W. Mehaffy, Sergio Porta & Ombretta Romice (2015) The "neighborhood unit" on trial: a case study in the impacts of urban morphology, Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 8:2, 199-217, DOI: 10.1080/17549175.2014.908786

[12] Berlin Modernism Housing Estates : How to Protect and to Adapt aWorld Heritage Site of Social Housing in Times of Climate and Demographic Change, in [Conservation Turn - Return to conservation : Tolerance for Change, Limits of Change : Proceedings of the International Conferences of the ICOMOS, International Scientific Committee for the Theory and the Philosophy of Conservation and Restoration, 5-9 May 2010, Prague Český Krumlov, Czech Republic, 3-6 March 2011, Florence, Italy][Firenze : Polistampa, 2012.] - Permalink: http://digital.casalini.it/10.1400/191326

[13] Jason Reblando, "New Deal Utopias," *Places Journal*, November 2010. Accessed 15 Dec 2021. https://doi.org/10.22269/101123

[14] Clapson, M./ The English new towns since 1946: What are the lessons of their history for their future?/ Histoire Urbaine/50 (2017/3), pp. 87-105

[15] Oliver J. Dinius, Angela Vergara/ Company Towns in the Americas. Landscape, power, and working-class communities/ University of Georgia Press/ 2011

[16] Natasha Vall (2013) Social engineering and participation in Anglo-Swedish housing 1945–1976: Ralph Erskine's vernacular plan, Planning Perspectives, 28:2, 223-245, DOI: 10.1080/02665433.2013.737710

[17] Castells M. The Information Age, Economy, Society and Culture, Blackwell, Oxford, 1998.

[18] Buchanan C. Traffic in Towns: a Study in the Long-Term Problems of Traffic in Urban Areas London: Her Majesty's Stationery Office, 1963.

[19]   Jacobs J. The Death and Life of Great American Cities. New York: Random House, 1961.

[20]   "Green Book on urban environment" by the Commission of European Communities, 1991.

[21]   Poole F. Traffic Congestion (including the Road Traffic Reduction Bill 1997/98), Research Paper 98/16, Business and Transport Section, House of Commons Library, London, 1998.

[22]   Gharrehbaglou, M&Khajeh-Saeed, F.(2018) Woonerf, A Study of Urban Landscape Components on Living Steets. Journal of MANZAR, 10 (43):40-49

[23]   Witelegg J. Transport for a Sustainable Future, John Wiley and Sons, Chichester, 1994.

[24]   Olena Oliynyk.   Features of spatial organization of the system of pedestrian zones in the historical center of Kyiv. Arkhitekturnyi visnyk: Collection of scientific research, KNUCA, 2021. Issue 22-23. P. 55-65. https://doi.org/10.32347/2519-8661.2021.22-23

[25]   Olena Oliynyk. National originality of the architecture of Khreshchatyk as a unique ensemble of the period of totalitarianism. E3S Web Conf.Volume 33, 2018. High-Rise Construction 2017 (HRC 2017)   Article   Number   01039   Published   online: 06   March   2018 DOI: https://doi.org/10.1051/e3sconf/20183301039   https://www.e3s-conferences.org/articles/e3sconf/pdf/2018/08/e3sconf_hrc2018_01039.