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**ECOLOGICAL ASPECT OF URBAN DEVELOPMENT
OF RAILWAY STATIONS IN THE STRUCTURE
OF THE CITY**

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The modern stage of the development of urban space is taking place in the context of an ecological paradigm. This requires addressing the environmental safety issues and the preservation of ecological balance based on the integrity of the landscape-ecological framework of territories. Rail transport is a significant technological factor influencing the environmental performance of the city. Its network not only connects cities with each other, but also occupies significant (7-9%) urban areas. These are mainly railway stations of various functional purposes. The goals of this article are to show the impact of their architectural-urban organization onto the ecological performance of the urban space and to identify perspective directions of future development.

The railways network and stations significantly changed the urban landscape during the first industrial revolution. In this period, many railway stations were located near rivers according to technological requirements. Engineering preparation of the territories for their construction included works on lowering the water level, embankment, topography levelling. Greened areas near railway stations were shrinking, giving way to cities roads, the station square, the station buildings, including coal depots, and the ferry depots. Examples are: Paris (France), Stuttgart, Berlin (Germany), Kyiv, Kharkov (Ukraine) and many others.

During the second industrial revolution, the railway network became the basis of the city's transport and communication framework (base). This has caused the planned location of the industry in the around of existing railway lines and building of new stations that serve manufacture. This process has continued the negative changes in the natural base of urban areas and environmental degradation.

Today, rail transport is considered to be the most environmentally friendly transportation, but railways and stations separate the city's space and destroy the city's landscape-ecological framework. To change this situation, effective architectural and urban transformation of the territories of these objects is necessary, especially in the central part of the city. Multi-functional railway station

complexes are formed on their base, covering an area of up to 40 ha or more. The high density of the built-up area and the intersection of a large number of communications of different types of transport make the environmental parameters of these areas worse.

The occurrence of new construction and transport technologies has opened up new opportunities for improving the environmental performance of urban areas in railway station zones. An analysis of the world's practical experience has revealed two main methods of the spatial and planning organization of railway stations, which provide successful solution of environmental problems.

First of all, this is the usage of underground space to accommodate the passenger platforms of the railway station. This allows reducing the building area of the railway complex, to increase of the planting of greenery area and to reduce the noise level. An example of such a solution is the reconstruction of the railway station in Studgard (Germany). The implementation of the project will make it possible to combine the urban areas previously separated by the railway station and improve the integrity of the natural landscape.

The reduction of the total area of the railway complex is also achieved by the creation of multi-layered structures using underground and aboveground space. An example is the project that is developed for Mr. San Francisco (USA). It provides for the improvement of the ecological characteristics of the city area by creating a green terrace above the passenger platforms of railway and bus transport during the reconstruction of the railway station. Such a solution is an ingenious symbol of the search for harmony between nature and technology.

It can be argued that the using of these techniques is a promising direction for the formation and reconstruction of railway stations in terms of improvement of the environmental performance not only of railway stations but of the whole city also.