

Reconstruction of airports as a social request

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Annotation - The results of research on changes in the architectural environment during the reconstruction of airports are presented. Architectural decisions of air terminals constructed during the second half of the twentieth century are considered. on Ukrainian territory; the dynamics of changes in the planning decisions of airport terminal complexes during the reconstruction of airports.

Keywords - *airport; air terminal; passenger terminal; reconstruction*

I. INTRODUCTION

By 2023, Ukraine plans to increase the airport capacity by half, and to bring the level of airport services in line with international standards [1]. These tasks require significant investments in the construction of new, reconstruction and modernization of existing buildings and facilities of airports.

II. RESOLVING THE PROBLEM

In Ukraine, during the century, various facilities were built on the territory of the airports, which provide comprehensive services for air transportation. Among them there are air terminals, passenger and cargo terminals, command dispatching stations, aerodrome dispatching towers, workshops of board catering, dining rooms, hotels, parking lots, etc. Each of these objects performs its functions, but belongs to a single system providing the modern level of safety and comfort of air transportation. The history of airport construction has several stages, each of which is closely linked to the history of aviation development and the country as a whole. Each phase has its own "social demands", the technologies of design, construction and operation of buildings and structures.

According to official data, during 2018, the total passenger traffic through Ukrainian airports amounted to 20.55 million people, which is 24.5% higher than in 2017. On international flights, passenger traffic amounted to 18.36 million people, which indicates a significant increase in business, tourist and private activity of citizens as a result obtaining Ukraine in May 2017 a visa-free regime with the European Union.

The growth in demand for air travel requires the creation of conditions for new airlines, in particular, low-cost companies; renewal of fleets of aircraft; construction of new,

reconstruction and modernization of existing buildings and facilities of airports, etc.

III. MAIN PART

The world and national experience of the reconstruction of air terminals shows that the increase in the capacity of air terminals and, as a consequence, the area and construction volume is accompanied by significant changes in planning decisions and the architecture of existing buildings, reorganization of service and technical territories (STTs), peron and so on. In most cases, the terminal occupies a major place among the buildings and facilities of the airport [2]. Passenger terminals are a phenomenon of the last decades when there was a need to expand existing terminals, changes in the technology of passenger service to various airlines, etc. The technology of servicing passengers in international aviation requires other approaches to the design, construction and operation of passenger terminals in comparison with air travel within the country.

Areas of reorganization are not only the flight attendant, the service and technical territory, the railway station area, the access roads, etc. Urban development decisions are being updated, the architecture of buildings, structures of airports and adjoining territories is changing. Existing terminals due to moral deterioration change the original functions and lose the role of composite accents for the development of the airport's territory.

Existing buildings are partially losing ground and acquire new functions. But a number of objects require special attention in terms of preserving the historical and cultural heritage. First of all, it's air terminals - the main buildings connecting the station and the platform; peculiar gateway to the city and the country as a whole.

Airports, losing the functions of the composite nucleus of the building, do not lose their architectural, historical and cultural value. In the architecture of domestic airfields, various styles - Romanian Functionalism (Chernivtsi), Constructivism (Kyiv / Zhulyany), Stalin Empire (Kharkiv, Lviv) and others - were reflected.

Most air terminals of domestic airports belong to a group of small single-hole complexes, the throughput of which does not exceed 400 pass / h. For such hubs, in most cases, a classic

linear (frontal) scheduling scheme is used that provides minimum lengths (30-40 m) for the passage of passengers from urban transport to aircraft. Planning of buildings allows, in the presence of reservation adjacent territories, to add additional volumes to increase the capacity of the terminal.

Such decisions were made in the 60's and 80's of the twentieth century, in the airports of Ivano-Frankivsk to increase the throughput to 400 pass / h, Dnipropetrovsk - to 700 pass / year, Kharkiv - to 650 pass / hour [3, 4].

The expansion of the terminals under the linear scheme leads to the following changes:

- extending the front of the building;
- the length and area of the territory of the platform, the railway station area, increase;
- there is tracing of access roads, etc.

The further development of aviation requires the introduction of new technological solutions for the maintenance of aircraft, air travel and, as a result, more complex spatial organization of the airport's territory.

Preparation of the country for holding the final part of the European Football Championship Euro-2012 and the implementation of infrastructure projects was accompanied by complex work on the reconstruction of five airports. New passenger terminals are being built (Boryspil, Donetsk, Lviv, Kharkiv, Kiev), air traffic control complexes (Donetsk, Kharkiv), and others.

Creation of comfortable conditions for providing large volume of air transportation leads to an increase in the surface and linear extent of passenger terminals (for example, the length of the terminal D at the airport "Boryspil" reaches 1 km), the reorganization of the service and technical territory, including station square, etc.

Worldwide experience in the design and construction of airports and buildings is actively used. In particular, the general contractor for the construction of Terminal D at the airport "Borispol" was a joint venture of Dogus / Alarko / YDA (Turkey).

The architecture of new huge passenger terminals in the area and volume is more characteristic of industrial objects: frame systems with large steps of columns, thin-walled spatial structures, world lights, overpasses, etc. Constructive and technical solutions take an active part in shaping exteriors and interiors.

A significant part of the responsibility for the compositional integrity of the building assume the services of air traffic – Air Traffic Control (ATC), whose height reaches considerable size. Therefore, they themselves need an individual approach to architectural and artistic and urban development [5].

The approaches to assessing the importance of sections of roads and railways connecting the airports and cities of the country as tourist destinations are changing. It also requires the search for appropriate conceptual city-planning, architectural-planning, design, environmental solutions, extraordinary approaches to advertising and informational support, etc.

Taking into account the strategic importance for the investment, industrial and social attractiveness of the region and the country, the design of modern airports is carried out on a competitive basis, with the involvement of well-known architects, specialized design organizations, including international ones.

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The development of aviation and the increase in the volume of air transportation requires the reconstruction and modernization of existing buildings and structures, which are accompanied by changes not only the operational qualities of individual objects, but also the architectural environment of airports in general.

During reconstruction, together with objective (normative, technological) factors, the architectural, historical and cultural value of existing objects should be taken into account, the principles of continuity and harmonization of the components of the system of improvement of their aesthetic and operational qualities should be taken into account.

It is important to take into account the influence of the renewable architectural environment on the visual perception of a person, his mental state while staying in the zone of increased activity of passengers and ground transport, etc.

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