

*A. V. Volkova, G. M. Agieieva, Ph.D
(National Aviation University, Ukraine)*

New face of air traffic service's objects

These are the results of the proposals development for the construction, airfield control tower in the territory of one of the local airports. The authentic traditional symbols of Ukraine such as the fertile fields of ears and white bird stork are the basis of the architectural and artistic image of this special purpose object.

In September 1992, Ukraine became a member of ICAO (International Civil Aviation Organization). This provided Ukraine with the opportunity to open new horizons in civil aviation, successively reform management system and move to a new level of mobility. Nowadays airports require reconstruction and modernization. And since the development of airports in most cases is accompanied with the increasing of the territories in size, the requirements for visual control are changing as well.

Architecture of domestic airports recently received a new high-rise accents, which are airfield traffic control towers (ATC), and the leading specialized organizations of Ukraine were involved in the creation of those [1-3]. According to the modern world practice, this element of the airport integrated development requires an individual approach from architects as well as architectural and artistic silhouette solution and, consequently, the respective financial costs [2].

Towers are blocked with a set of buildings designed to house maintenance services of airport. The buildings within the complex have different storeys and volumes, but they act as "minor" in the composition of the object of special purpose, allowing you to enhance the contrast between high-rise ATC's buildings characteristics and development that surrounds it.

The aim of the diploma project educational qualification of "Bachelor" in the direction of 6.060102 "Architecture" is to create the expressive, architectural and artistic image ATC, space-planning, design and engineering solutions which should ensure the implementation of modern technologies of air traffic.

Design was preceding stage of the regulatory study and operational documentation, research of the world's and domestic experience in the design, construction and operation of premises [2, 3].

On the basis of the analysis of the existing airport master plan and possible prospects of its development it was decided to develop a project proposal for building a new ATC without blocking of existing buildings.

At the same time, it made possible to implement the principle of increasing the volume of the building to accommodate the maximum permissible for the technological standards of services and businesses. Estimated number, which is the maximum number of aircraft that should be served during 1 hour, is defined the category III of ATC and, consequently, the size of the premises to accommodate the specialized units (services) and buildings generally (Figure 1, 2).

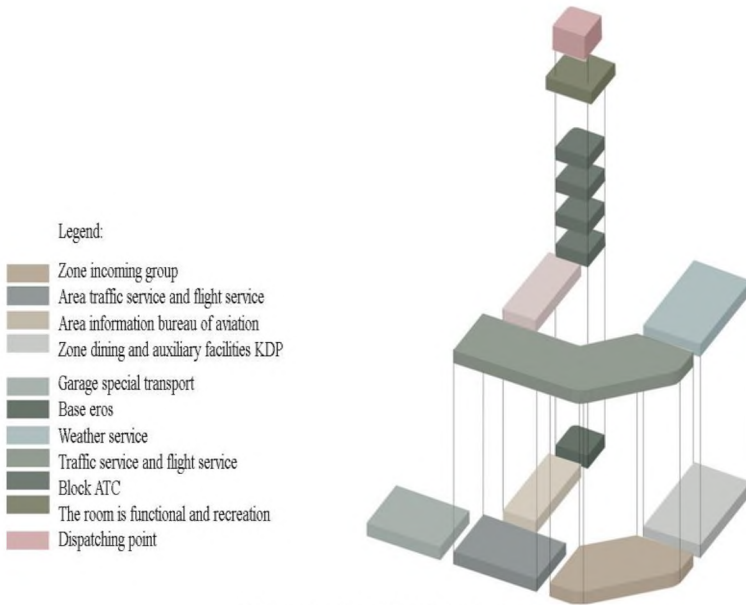


Figure 1. Functional zoning scheme

The building is U- shaped and this helped in creating a composition landscape courtyard. Stylobate - storey part - designed to accommodate pre-flight training unit. The ATC has seven floors. On the sixth and seventh floors the recreation area and dispatch hall are located respectively (Figure 2, 3).



Figure 2. General view of building



Figure 3 . The facade of the building



Figure 4 . General view of the designed object

The basis of the architectural and artistic image of the special purpose object are authentic, traditional symbols of Ukraine: the fertile fields ears and white bird stork.

Using the idea of fertile ears in the facade is looking good in a perspective view (Figure 4). The idea of a bird is transmitted through color and is clearly visible

from the species point located opposite the main entrance to the building (Figure 5).

The project design, compared to similar objects, characterized by the following technical and economic indicators (Table 1).

Table 1

Techno-economic performance of modern domestic ADV

№№	Name indices	Airport «Donetsk»	Airport «Kharkiv»	Project decision
1	Total land area, ha	2,12		0,9
2	Building area, sq.m	2951,06	1697,90	1300,00
3	Total area, sq.m, totally:	4422,00	3189,60	2900,00
	including			
	- ATC		3044,90	3487
	- garage building		88,30	114
4	ATC's height	47,50	43,60	26,6

Conclusion

1. Studying of the designing and building experience of special purpose facilities at the airport revealed the current trends and made possible to create one of the main components of the complex airport, the airfield - control tower.

2. The clear from architectural and artistic view control point (CDP), space-planning, design and engineering solutions which ensure the implementation of modern technologies of air traffic over the territory.

References

1. Ukraïnoruh: achievements and prospects / air navigation. - №5, in November, 2010. - P. 22-30.

2. New airdrome airport dispatcher tower Ukraine / AV Volkova // Effective technologies in construction: the International Scientific - Technical Conf., April 2016. : Abstracts. - K. : KNUCA, 2016 - S.139-140 [Supervisor - GN Ageev].

3. Current practice high-rise building special purpose facilities at the airport / AV Volkov, GM Ageev / urban environment - XXI century. Architecture. Construction. Design: II Intern. nauk. and practical. Congress, 5-18 March 2016 g. : abstracts. - K. : NAU, 2016 - S.9-10.