

## ARCHITECTURE AND CONSTRUCTION

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### **AIRPORT CONSTRUCTION: CHANGING THE EMPHASIS OF DEVELOPING COMPETENCIES OF HIGHER EDUCATION STUDENTS**

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The construction and operation of civil aviation airports has a centuries-old history. The individual stages and practices of its operation correspond to the stages of development of aircraft construction and society as a whole.

The challenge of time for airport construction is to take into account the processes associated with the increase in the size of airports, their approach to built-up area, the rearrangement of internal infrastructure; integration of transport infrastructure of local, regional and world levels, creation of multimodal transportation systems, etc. [1, p. 129]. According to the forecast of European Organisation for the Safety of Air Navigation (EUROCONTROL), urbanization of areas close to airports, despite the crisis in the aviation industry related to the COVID-19 pandemic, will remain a trend of development and management of territories in pandemic and post-pandemic time.

At the initial stage, the airports provided take-off and landing operations for military aircraft, insignificant conveyance of air passengers, cargo and mail transportation and demonstration flights of new aircraft (air show), etc.

Modern airports are large transportation providers and multimodal hubs, the capacity of which can reach considerable values, and size of development area and impact of airports is equal to and exceeds 2000 hectares. The development and operation of such formations are

closely connected with the solution of urban planning problems. As a result, business models which appear and are being implemented focus on:

- increase of the economic potential of airport and commercialization of nearby areas [2, p. 5–5];
- sustainable development of territories and communities in the influence area of airport [3, p. 225].

The implementation of these business models creates a demand for specialists of the appropriate level and provides conditions for higher education students to develop the relevant competencies.

In Ukraine, the practice of training specialists for civil aviation, in particular, construction and operation of ground facilities, is associated with two institutions of higher education the National Technical University of Ukraine (NTUU) "Kyiv Polytechnic Institute named after Igor Sikorsky" (1932-1933) and the National Aviation university (from 1968 to the present) [4, p. 17].

For over 50 years, the National Aviation University has been training specialists in majors "Construction of airfields", "Operation of airfields", "Operation of air transport" for ground support of civil aviation not only in Ukraine but also in the countries of Council for Mutual Economic Assistance [4, p. 18].

Currently, higher education students are trained in major 192 "Construction and Civil Engineering" (area of specialty is "Roads and airfields" and "Industrial and civil construction") and 191 "Architecture and Urban Planning" (area of specialty is "Architectural Environment Design").

Traditionally, courses "Vertical planning of airfields", "Road and airfield coverings" and "Buildings and constructions of airports" are taught for students of major 192.

Higher education students who have major 191 are able to study strategic directions of development of airports and transport infrastructure of the country; urban planning related to the operation of airports during the course of "Theory of Urban Planning". Students are involved in informal study of world practices of urban planning and creation of tourist destinations [5, p. 30].

Teachers and researchers of the National Aviation University take an active part in seminars and trainings on the approximation of the country's legislation in the field of aerodrome / airport certification and airworthiness to the relevant regulations and standards of the European Union (EU). Most of them are aimed at supporting the sustainable development of Ukraine's civil aviation and its integration into the EU transport system (Twinning Project UA / 48b), etc.

The National Transport Strategy of Ukraine for the period up to 2030, the State Target Program for Airport Development for the period up to 2023 and the concepts of integrated urban development until 2030 taking into account the development of international and regional airports are implemented by development and accomplishment of relevant innovative projects. In particular, in June 2021, within the framework of the International Investment Forum "Southern Development Strategy", projects on construction of international airport and related infrastructure in the city of Genichesk, reconstruction of the airport in Kherson were presented.

In the context of development strategies of the National Aviation University, airports and transport industry of Ukraine for the period up to 2030, the priorities of strategic development and effective management of the Faculty of Architecture, Construction and Design were identified [4, p. 27]. Particular attention was paid to the participation of scientists and teachers in innovative projects and involvement of young scientists and higher education students.

Conditions and opportunities for individual educational tracking for higher education students with bachelor's and master's degrees at the National Aviation University allow future engineers for airfields operation (major 192) and architects (major 191) to realize personal potential and participate in innovative projects on development of airports and areas close to them.

The list of compulsory disciplines includes specialized and practical training, humanitarian and socio-economic training what contributes to developing integrated, general and professional competencies. The course "Theory of Urban Planning" is the theoretical basis for substantiation of design decisions on development management and development of cities including airports located inside or outside cities. The content of practical tasks is focused on study of world and domestic experience, reflects current trends in urban development, airport construction, development management and urban development. However, it is based on the principles and laws of urban policy of the state [5, p. 26].

In 2020-2021 academic year, the list of free choice disciplines includes the following courses "Architecture of airport buildings and facilities" (major 191) and "Urbanization of areas close to airports" (major 192). Other proposals on adjustment of educational and professional programs, dissemination of world practices on airport construction and territory management are discussed and implemented.

Hopefully this will be a basis for bringing back the Department of Urban Development or creation of a new structural unit the Department

of Urbanization and Construction of Aerotropolises. This enables consolidation of goals and sectoral focus of the Department activities, concentration of scientific potential to ensure opportunities for appropriate training of higher education students, their employment in area of strategic development and socio-economic development of regions and integration of civil aviation into transport system of the European Union.

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