

## SECTION 9. ARCHITECTURE AND CONSTRUCTION

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### EXAMPLES OF MODERNIST ARCHITECTURE IN AVIATION TRANSPORT INFRASTRUCTURE: PRESERVATION ISSUES

#### ВЗІРЦІ АРХІТЕКТУРИ МОДЕРНІЗМУ В СЕРЕДОВИЩІ ІНФРАСТРУКТУРИ АВІАЦІЙНОГО ТРАНСПОРТУ: ПРОБЛЕМИ ЗБЕРЕЖЕННЯ

**Agieieva G. M.**

*Candidate of Technical Sciences,  
Senior Research Associate,  
Chairman of the Airfield technical  
support Committee  
Association "Airports of Ukraine"  
of Civil Aviation  
Kyiv, Ukraine*

**Агієєва Г. М.**

*кандидат технічних наук,  
старший науковий співробітник,  
Голова аеродромно-технічного  
комітету  
Асоціація «Аеропорти України»  
цивільної авіації  
м. Київ, Україна*

The development of airports is accompanied by changes in their spatial organization, including the construction of new buildings and the reconstruction of existing structures. In some cases, based on technical and economic feasibility studies, certain facilities are repurposed or demolished. These may include primary, auxiliary, and specialized buildings that no longer meet modern technological requirements for air traffic management, ground security operations, and passenger comfort.

For example, airport terminal complexes may include facilities with various functional and cultural significance (such as terminals, pavilions) that were constructed during different stages of an airport's development, particularly during its expansion or modernization [1–3]. Some buildings, which may lose their original architectural designs and be partially or completely demolished, once served as the "business card" of a city and country [2].

These are primarily buildings constructed based on individual architectural projects that incorporated innovative architectural, structural, engineering, and technological solutions for their time. This phenomenon is particularly evident in structures that represent the heritage of modernist architecture (1960s–1990s).

Among the most well-known examples are buildings located at international airports (IA hereinafter) in the United States, designed by architect Eero Saarinen:

- **Airport terminal, Dallas IA, Washington** (constructed between 1958–1963);
- **Passenger terminal of Trans World Airlines (TWA), John F. Kennedy IA (New York)** (constructed between 1957–1962).

Among Ukraine's aviation transport infrastructure, a notable example of modernist architectural heritage is the terminal building at **Boryspil International Airport, now known as Terminal B**.

Constructed between 1959 and 1965, the building was designed as an individual project by an architectural team led by Anatolii Dobrovolskyi [3, 4].

#### **Architectural and Functional Significance**

All three airport terminals under discussion:

- Belonged to the category of large and medium-capacity terminals;
- Played a key compositional role within the airport's architectural environment and contributed to the formation of panoramic cityscapes in the spatial planning system surrounding airports [4].

Over 60 years of operation, these buildings underwent:

- **Replanning** (Boryspil IA, Dallas IA);
- **Modernization** (Boryspil IA, Dallas IA);
- **Changes in their role within the airport terminal system** (Boryspil IA, John F. Kennedy IA).

Despite these modifications, they have retained their status as exemplars of modernist architectural heritage. This is officially recognized for the TWA terminal, which received:

- New York City Landmark designation (1994);
- Inclusion in the National Register of Historic Places (2005), followed by decommissioning as an airport terminal and repurposing as a hotel, with maximum preservation of its original architectural, planning, structural, and design elements [5].

For many years, the Boryspil IA terminal building, with a capacity of 1,600 passengers per hour, played a central role:

- It was the only terminal within the airport complex;
- It served as the technological focal point of the forecourt and apron, contributing to the recognizable identity of the airport's built environment [1–4].

The building attracted not only air travelers but also visitors, thanks to its innovative architectural, planning, technological, and structural solutions, which provided access to prime observation points for activities on the apron and airfield. These included:

- Spacious waiting halls, separated from operational areas;
- Open terraces, functioning as observation decks;
- A double-curved shell roof, rectangular in plan ( $50.9 \times 57.6$  m) with a rise of 8.9 m [4];
- Extensive glazed facade systems within its enclosing structures;
- Landscaping of the forecourt and green areas along access roads.

### **Subsequent Development of Boryspil IA**

The Boryspil IA expansion involved:

- Construction of new passenger terminals A and C, extending along the forecourt, as well as Terminal F on its perimeter;
- Construction of Terminal D (with a capacity of 3,000 passengers per hour) and a multi-level open-air parking facility for 2,038 vehicles, interconnected by an elevated roadway and a pedestrian bridge;
- Reorganization of ground transport routes (including road and rail access), which resulted in the loss of the forecourt's primary functions, transferring them to the elevated roadway and parking complex in front of Terminal D [4, 6, 7].

The terminal building itself has undergone multiple reconfigurations and renovations over time. Notably, external and internal ramps were dismantled, along with open terraces that once served as observation decks, while additional structures were added [2, 4]. Its functionality was also altered, as it was converted into Terminal B, becoming part of a multi-terminal complex designated for limited passenger flows and specific airline services. As of 2025, the building remains preserved but is no longer in use.

Nevertheless, it is important to note that the structure continues to dominate the architectural composition of the airport complex, which also includes Terminals A, B, and C [4]. The growing interest in preserving modernist architectural heritage among specialists and the wider public has contributed to the development and continuous expansion of a dedicated mapping system covering the entire territory of Ukraine. Notably, Kyiv's modernist heritage includes 70 identified sites, among which the airport terminal building (Terminal B) at Boryspil IA is a significant example [8].

Studying and disseminating knowledge about the historical and social contexts of modernism, as well as the innovative urban planning, architectural, structural, engineering, and technological solutions of that period, help raise public awareness of national cultural heritage and the need for its preservation [8, 9]. This is particularly relevant in the aviation transport infrastructure of Ukraine [1–4, 6–9].

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