

Visitors' Terraces as Components of the Urban Environment of Airports



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Abstract The paper covers the results of research on the urbanization processes of airport territories. Ways to remove social barriers and ensure universal access to road infrastructure, recreation and local culture have been explored. The paper represents the experience of arranging visitors' terraces as components of social and cultural space at the territory of airports. Events and places worth seeing are categorized in 5 parameters. Areas where potential visitors concentrate and attracting sights (3) are defined. Characteristic features of visitors' terraces intended for attendance, factors (6) for evaluating the arrangement, siting (3) within the system of spatial organization of terminal cities and airports are defined. For the system of spatial organization of the international airport "Boryspil", 3 options for arrangement of visitors' terraces are proposed. Each of the options has its advantages and disadvantages. Suggestions are given in order to satisfy the social demand for the visual accessibility of a number of workflow operations in the airports and the environment.

Keywords Airport · Terminal city · Spatial organization · Sustainable development · Non-aviation · Visitors' terraces

1 Problem Statement

Modern trends in the development of airports are based on the spread business model, which turns airports into a kind of urbanized area [1–3]. This transformation effects airports not only spatially but also functionally. In particular, the expansion of additional services for air passengers and visitors which is 200–250 contributes to the growth of non-aviation revenues up to 46% of the total income of the airport [4]. Even today, even for small airports, the quantity and quality of non-aviation services are among the main selection criteria for potential airport users (passengers, visitors, etc.).

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The concept of sustainable development of countries defines the ways of urban development of territories especially those which are close to airports, and the principles of safe urban area where social barriers are removed, public access to road infrastructure is ensured; safe, accessible and open green areas and public places are widely available particularly for women, children, elderly and disabled people. Such urban areas create favorable conditions for the development of tourism, recreation, local culture, which are also relevant for airports.

The airport as a part of urban areas needs a good solution for a number of relevant problems, in particular, spatial planning, integration of transport infrastructure, social and economic changes, etc. [5].

In a crisis caused by the COVID-19 pandemic, airports can lose up to 40% of passengers and up to 50% of revenue according to ACI World experts. Therefore airports address the issues of economic development and promote energy efficient, environmental and social projects, which will affect their spatial organization [6].

2 Analysis of Research and Publications

The works of Güller and Güller [2], Kasandra [3], Veretennikova and Vilensky [7], Stangel [8], Bosma and Nikolaeva [9], Timchenko et al. [10] are devoted to the tackling problematic issues related to the urbanization of airports and the arrangement of city airports.

Conditions for generating urban processes in the area of influence of airports are considered in the works of Baburov [11], Bondar and Solodilova [12].

Works of Agieieva [13, 14] are devoted to special issues related to the transformation of the architectural environment of airports into a social and cultural space with relevant conditions, restrictions and requests.

This paper contains the results of the author's research of urbanization of airports and mostly the satisfaction of social demand for visual accessibility of a number of workflow operations in the airports and the environment.

Purpose of the paper:

- to determine features of spatial organization of terminal cities (henceforth TC) in particular the arrangement of visitors' terrace (henceforth VT) with regard of sustainable development of airports and urbanization of their territories;
- to define VT characteristic features for areas where visitors concentrate, criteria for evaluating the arrangement and siting within the system of spatial organization of terminal cities and airports;
- to give proposals on how to arrange VT in the system of spatial organization of Boryspil International Airport.

References

1. International Civil Aviation Organization (ICAO) (2013) Airport Economics Manual. DOC: 9562, 3rd edn. ICAO, Montreal, Quebec, Canada
2. Güller M, Güller M (2003) Del aeropuerto a la ciudad aeropuerto, El Precio Es En Dolares, Spanish
3. Kasarda J (2000) Planning the aerotropolis. *Airport World Mag* 5(5):52–53
4. Pavelko V (2017) Development of non-aviation activities of airports of Ukraine. *Global and national economic problems*, vol 17, pp 397–399
5. International Civil Aviation Organization (ICAO) (2009) Airport planning manual. Part 1 master planning. DOC: 9184-AN/902. Ed.5. ICAO, Montreal, Quebec, Canada
6. Airports Council International (ACI) (2020) The impact of COVID-19 on the airport business. Vanishing traffic, a collapse in revenues, and rising business risks. *ACI Advisoru Bulletin*, ACI World, Montreal, Quebec, Canada
7. Veretennikova K, Vilenskii M (2019) Dynamics of spatial development of near-airport territories of the largest cities of the Russian Federation. *Urban Studies*, vol 1, pp 44–57. <https://doi.org/10.7256/2310-8673.2019.1.28780>
8. Stangel M (2019) Airport city—an urban design question. Helion Publishing House, Poland
9. Bosma J, Nikolaeva A (2013) The airport: prototype of the global city? In: Berkens M, Linders J (eds), *Megastructure schiphol. Design in spectacular simplicity*. NAI010 Publishers, Rotterdam, pp 199–217
10. Timchenko S, Rundin D, Ismailova N (2018) Prerequisites of formation of the aero policy in the territory of the Rostov agglomeration and his functional and spatial organization. *Archit Mod Inf Technol* 1(42):235–253
11. Baburov V (2015) Conditions of urban development driven by airport activity. In: *Materials of the international scientific and practical conference science education and experimental design 2015*. Moscow, Architectural Institute Moscow, pp 325–328
12. Bondar L, Solodilova L (2015) Recommendations for design of technological processes of passenger service at airport terminal complexes. *Ind Civil Eng* 6:64–69
13. Agieieva G (2020) Unitary urbanism of airports. In: *Abstracts of the 3rd International scientific and practical conference Eurasian scientific congress 2020*. Barca Academy Publishing, Barcelona, Spain, pp 205–211
14. Agieieva G (2019) Air traffic control towers – media dominants of the macro environment of the airports. *Urban Plan Spat Plan* 70:27–43
15. Lozhachevska O, Palamarchuk Yu (2009) Formation of the strategy of economic development of the airport passenger terminal. *Condor*, Kyiv
16. Planespotting. <https://www.vno.lt/en/planespotting>. Accessed 28 Jan 2021
17. Five ideas for a romantic date. <https://pink.ua/news/3731>. Accessed 28 Jan 2021
18. Dittrich E (2005) *Der Flughafen Tempelhof: In Entwurfszeichnungen und Modellen 1935–1944*. Lukas Verlag, Germany
19. AEROPROJECT (1988) Manual for the design of airport terminal complexes (to SNiP II-85–80 Stations). Part 1. Air terminal complexes of the USSR air routes. Aeroproject, Moscow
20. Ministry of Regional Construction of Ukraine (MRCU) (2019) SCN B.2.2-9:2018. Public buildings and structures. Substantive provisions. MRCU, Kyiv
21. First airplane observation platform in Lithuania opened at Vilnius Airport. <https://www.vilnius-airport.lt/ru/news/b-vilniusskom-aeroportu-otkryta-pervaia-v-litve-ploshchadka-dlia-nabliudeniia-za-samoliotami>. Accessed 28 Jan 2021
22. Golubev G, Angelini G, Modorov A (1967) *Modern stations of railway, river, sea, automobile and air transport*. Stroyizdat, Moscow
23. Tempelhof Project GmbH. <https://www.thf-berlin.de/de/tempelhof-projekt-gmbh/>. Accessed 28 Jan 2021
24. Tempelhof airport. https://ru.m.wikipedia.org/wiki/%D0%A4%D0%B0%D0%B9%D0%BB:Tempelhof_airport.jpg. Accessed 28 Jan 2021

25. Tempelhof Airport Berlin. <https://terleev.uk/berlin-tempelhof-2017>. Accessed 28 Jan 2021
26. Lenotti W (1988) More than just a place to land. History, function and future of the Vienna Airport. Compress Verlag, Vienna
27. Agieieva G, Volkova A, Zaharchenko A (2017) Development of airport infrastructure and its impact on the location of air traffic services. In: Proceedings of the 20th conference for junior researchers science–future of Lithuania. transport engineering and management 2017. Vilnius, Lithuania, pp69–73
28. Transport and Airports (2011). <https://www.sztkd-itf.sk/euros2011/transport-and-airports/>
29. Aeropuerto Internacional de Viena. <https://www.aeropuertos.net/aeropuerto-internacional-de-viena/>. Accessed 28 Jan 2021
30. Etceterini D (2021) Go to Vienna, or spotting in Schwechat. <https://etceterini.livejournal.com/72581.html>. Accessed 28 Jan 2021
31. Los Angeles International Airport. <https://migranty.com/ads/452>. Accessed 28 Jan 2021
32. Kaliforniya Los Angeles. <https://zohenko.ru/uz/kaliforniya-los-andzheles-los-andzheles-marshruty-iz-aeroporta.html>. Accessed 28 Jan 2021
33. Boryspil International Airport (2012). <https://www.retroua.com/year/1977/page/3/>. Accessed 28 Jan 2021
34. History of Boryspil airport: how it all began. https://www.avianews.com/aviation_history/1965/new_borispol_terminal.htm. Accessed 28 Jan 2021
35. Airport Map. <https://kbp.aero/ru/airport/map/>, last accessed 2021/01/28.
36. Kyivcenteraero: Regional Branch. <http://uksatse.ua/index.php?act=Part&CODE=320>. Accessed 28 Jan 2021
37. United Nations (2021) Development and international co-operation: environment report of the world commission on environment and development: note by the secretary-general. <http://www.un-documents.net/a42-427.htm>. Accessed 28 Jan 2021
38. Agieieva G, Burchak A, Sukach T (2019) Air traffic control tower: changings of initial options. In: Proceedings of the XIV international scientific conference AVIA-2019. Kyiv, Ukraine, pp 21.23–21.27
39. Dyomin M, Dmytrenko A, Chernyshev D, Ivashko O (2020) Big cities industrial territories revitalization problems and ways of their solution. https://doi.org/10.1007/978-3-030-42939-3_37
40. Orlenko M, Dyomin M, Ivashko Y, Dmytrenko A, Chang P (2020) Rational and aesthetic principles of form-making in traditional Chinese architecture as the basis of restoration activities. *Int. J. Conserv Sci* 11(2):499–512