DOI: 10.23817/2023.defarch.4-4

IZABELA PIKLIKIEWICZ-CZARNECKA
ORCID: 0000-0002-5370-9027
Poznan University of Technology, Poland

OFFICE ARCHITECTURE AND THE CITY TO LIVE

ARCHITEKTURA BIUROWA A MIASTO DO ŻYCIA

Abstract

The city to live is a city composed by architecture. Urban buildings seamlessly blend with public space, which begin to penetrate into the interior of the objects, creating a new zone available for public use. This process is particularly noticeable for modern office architecture. The aim of the article is to investigate the occurrence of public space located in the area of office buildings. Examples of Polish and foreign office buildings were selected for the study. The research methodology was based on literature sources, environmental interviews with the authors of buildings or building managers, and descriptions and plans of office buildings provided by architects. The results of the research show data that has been subjected to architectural-functional analysis in a broader urban-social context. The analysis presents the factors determining the creation of public spaces in office buildings and related design directions.

Keywords: office architecture, public space, innovative functions

Streszczenie

Miasto do życia to miasto wypełnione architekturą. Budynki miejskie łączą się płynnie z przestrzenią publiczną, która zaczyna wnikać do wnętrza obiektów, tworząc nową strefę dostępną do użytku publicznego. Ten proces szczególnie zauważalny jest dla współczesnej architektury biurowej. Celem artykułu jest zbadanie występowania przestrzeni publicznej lokalizowanej na obszarze obiektów biurowych. Do badań wybrano przykłady biurowców polskich i zagranicznych. Metodologia badawcza została oparta na źródłach literaturowych, wywiadach środowiskowych z autorami obiektów lub zarządcami budynków oraz opisach i planach biurowców dostarczonych przez architektów. Wyniki badań ukazują dane, które poddano analizie architektoniczno-funkcjonalnej w szerszym kontekście urbanistyczno-społecznym. Analiza przedstawia czynniki determinujące powstawanie przestrzeni publicznych w obiektach biurowych oraz związane z tym kierunki projektowe.

Słowa kluczowe: architektura biurowa, przestrzeń publiczna, innowacyjne funkcje

1. INTRODUCTION

Office buildings are an integral part of the landscape of the modern city. Office architecture often faces the challenges of satisfying the aesthetic and functional needs of users and investors. There is also a growing awareness of their importance to the inhabitants of the cities where they are located. New branches of science and innovative methods of solving current problems strongly related to the comfort of use of buildings are being developed.[1]

[1] A. Elsakksa, O. Marouf, M. Madkour, *Biomimetic Approach for Thermal Performance Optimization in Sustainable Architecture. Case study: Office Buildings in Hot Climate Countries*, "IOP Conference Series: Earth and Environmental Science" 2022, vol. 1113, art. no. 012004. DOI 10.1088/1755–1315/1113/1/012004.

Recent years have focused the debate on the design of office buildings also around the theme of health care.[2] The role of office buildings in energy-efficient design is widely discussed, which has a huge impact on the environment and the quality of use of a given office building.[3] The effects of design activities related to this are undoubtedly observable through the form, the use of materials[4] and the general physical appearance of the office building. The use of technologically innovative solutions and products represents a great opportunity for the emergence of office architecture by creating it as an icon, landmark or dominant in a given urban structure. In practice, this means that office buildings become a showcase of the city and not only an investor's marketing element. For architects, designing office buildings can be an opportunity to realize the most outstanding ideas that cannot be realized in other areas of design. On the other hand, the prerequisite for achieving these goals is to be aware of the expectations of contemporary users and to try to satisfy them by shaping the architecture. This involves meeting the needs of diverse social groups, time limits and limited space.[5] A crucial aspect is to take into account the importance of the quality of public space for mental health.[6] which is a strategic factor influencing the quality of life and work in the city. In the analysis, office buildings represent an area of use not only for employees, but also for the local community. Taking into account the above issues, the study aims to highlight the importance of architecture as an essential element in urban design in terms of the space available for public use[7] in the city.

2. OFFICE ARCHITECTURE AND HUMAN SPACE

2.1 AIM OF RESEARCH

The aim of the research is to analyze selected reference areas of Polish and foreign office buildings in terms of their accessibility for public use. The research process consists in detecting public areas accompanying office buildings, determining their availability and location

[2] E.M. Gomaa, M. Kamar, M. Madkour, *Environmental Architectural Design during the Pandemic Era: Office Buildings as a Case Study*, "IOP Conference Series: Earth and Environmental Science" 2022, vol. 1113, art. no. 012003. DOI 10.1088/1755–1315/1113/1/012003.

[3] G. Galbiati et al., *Methodology for Energy retrofitting of Modern Architecture. The case study of the Olivetti office building in the UNESCO site of Ivrea*, "Journal of Building Engineering" 2021, vol. 44, art. no. 103378. DOI 10.1016/j.jobe.2021.103378.

[4] H. Bazazzadeh et al., *Efficient Shading Device as an Important Part of Daylightophil Architecture; a Designerly Framework of High-Performance Architecture for an Office Building in Tehran*, "Energies" 2021, no. 14(24), art. no. 8272. DOI 10.3390/en14248272.

[5] R. Li, *A Preliminary Study on the Landscape Design of the External Space of Commercial Complexes: Taking Happy Harbor as an Example*, "Journal of Architectural Research and Development" 2022, vol. 6, no. 6, pp. 23–34. DOI 10.26689/jard.v6i6.4472.

[6] H. Hematian, E. Ranjbar, *Evaluating urban public spaces from mental health point of view: Comparing pedestrian and car-dominated streets*, "Journal of Transport & Health" 2022, vol. 27, art. no. 101532. DOI 10.1016/j.jth.2022.101532.

[7] R.B. Naya et al., *Quality of public space and sustainable development goals: analysis of nine urban projects in Spanish cities*, "Frontiers of Architectural Research" 2023, vol. 12, pp. 477–495.

in relation to the office building. It is also important to determine the purpose of creating supplementary spaces[8] and the factor determining their implementation.

2.2 RESEARCH METHODOLOGY

The research material was based on literature sources, environmental interviews with facility authors or building managers[9] as well as descriptions and plans of office buildings provided by architects (Table 1). Reference objects were selected for the study, distinguished at least by publication on the internationally renowned ArchDaily platform.[10] Due to environmental interviews, two office buildings that apparently had spaces available for public use were excluded from the research material. Five foreign objects and two Polish ones were examined. The authors of the projects are distinguished and experienced architects of world renown. The construction of the buildings studied is the period of 2015–2021. Office buildings whose functions are not completely closed to public use and are not subject to a rigorous process related to strict data protection were deliberately included in the research area. The collected research material was subjected to an in-depth architectural and functional analysis.

Table 1. Research methodology. Own elaboration.

Office (localization)	Research methodology					
	Literature research	Author's description	Access to photos and plans	Interviews	Awards	Functional and architectural analysis
Yidian Office Complex (China)	•	•	•		•	•
Fifth + Tillery Office Building (USA)	•	•	•			•
Carlsberg Group Central Office (Denmark)	•	•	•		•	•
Home Office Tower (China)	•	•	•			•
Amazon Spheres (USA)	•	•	•		•	•
Olivia Garden (Poland)	•	•	•	•	•	•
Concordia Design Wroclaw (Poland)	•	•	•	•	•	•

[8] Supplementary area understood as an area with additional functions accompanying office functions, not related to the maintenance of the facility, available for public use.
[9] Interviews conducted by e-mails.
[10] www.archdaily.com (access: 27.06.2023).

3. RESEARCH RESULTS

3.1 CHARACTERISTICS OF THE STUDIED URBAN AREAS

As a result of research of Polish and foreign office buildings located in the urbanized structure, areas and zones that are intended for public use have been identified. For the purposes of the study, they were called Supplementary Areas (SA). The factor determining their selection from other office areas is their availability to outsiders, regardless of whether they are employees of a given office building. The research process allowed for a simplified listing of zones and office spaces according to this criterion (Table 2). Separate typology refers to the architectural functions performed in office buildings and in the external areas belonging to them. The complexity of the studied problem lies in determining the availability of office areas for public use. The research process takes into account the importance of limiting office areas, which should not be made available to outsiders in order to ensure the comfort of work for regular users of the given office building.[11]

Table 2. Types of office spaces and zones available for public use. Own elaboration.

TYPES OF OFFICE SPACES / ZONES	
	
PRIVATE	PUBLIC (SA)
• Work space • Interior circulation area • Technical zones (facility service) • Social facilities • Closed zones • CSS creative supplementary spaces	• Entrance area (hall, reception, information point) • Food zone • Chill out space • Public circulation area • Recreational zones • Service and commercial zones • Exhibition zones

3.2 REFERENCE EXAMPLES – CHARACTERISTICS OF SUPPLEMENTARY OFFICE AREAS

During the research process, the studied office areas were clarified. Due to their accessibility to public use and their location in an office area, they constitute a specific part of the urban area. Analyses show that they create a kind of buffer between typical public urban spaces such as squares, streets, bike paths and private or semi-private office spaces. This factor is particularly reflected in foreign examples (Table 3). This is visible in the implementation of public spaces in the outdoor areas in the form of green recreation and leisure zones. In the four foreign objects studied, they are adjacent to the ground floor level and connect with the entrance zone of the building. In the Fifth + Tillery Office Building, the front green zone has been extended to the inner atrial area, where the staircase is located. This procedure is intended to encourage the user to explore the object. This is a deliberate architectural effort to create a public space in the central part of the building. An interesting example of semi-public office space is Amazon Spheres. The project was built in a heavily urbanized part

[11] F.A. Mustafa, SA Azeez, *Role of office layout typology in saving time and distance spent by users: Case of office buildings in Erbil city*, "Ain Shams Engineering Journal" 2022, vol. 13, no. 5, art. no. 101742. DOI 10.1016/j.asej.2022.101742.

of the city, adjacent to the Amazon office building complex. It is a workplace located in green spaces housing about 400 species of wild and rare plants. The building was created with the residents of crowded Seattle in mind. A similar, although on a much smaller scale, solution of an office garden can be found in Poland. It is the Gdańsk Olivia Garden office building (Ill. 1).



Ill.1. From the left: Polish office Olivia Garden, source: https://www.archdaily.com/969091/exotic-workplace-garden-malinowski-design-urban-and-landscape/614dfbfe9f45c901646de3e5-exotic-workplace-garden-malinowski-design-urban-and-landscape-photo?next_project=no (access: 20.06.2023) and from the right: American Amazon Spehers, source: https://www.archdaily.com/920029/amazon-spheres-nbbj/5d161191284dd16860000109-amazon-spheres-nbbj-photo?next_project=no (access: 20.06.2023).

Immersed in greenery, the office area has been designed for a model completely blended with vegetation and additional functions. There is a relaxation area, a dining area, a seating area and a multifunctional stage. Other supplementary areas identified in the research process include public green roofs, outdoor recreation areas, gymnasiums, cafes, dog park and exhibition hall. SA are located in both the exterior and interior parts. Certainly, the difference between the studied spaces is their availability for public use. Some of them have been designed to allow unrestricted access to public areas for outsiders. Others have limited access. The issue of the availability of SA for general use is quite complex. Office buildings are workplaces that handle data processing. Therefore, the ability to build public spaces in such objects requires conscious architectural and pre-design analysis. The research process shows that they should be designed in such a way as to provide office workers with the best possible working conditions, while at the same time allowing city users access to additional functions.

Table 3. Supplementary office areas examined in research process. Own elaboration.

Office / localization / architects / yr	Supplementary areas (SA)	Type of location	Accessibility	Area sqm
Yidian Office Complex / Shanghai / Jaques Ferrier Architecture / 2015	Large areas of low green, green path with access to the green roof of the ground floor	Outdoor, blending with local landscape	Access to public use limited to the first floor	42,400

Office / localization / architects / yr	Supplementary areas (SA)	Type of location	Accessibility	Area sqm
Fifth + Tillery Office Building / Austin / Gensler / 2020	Green entry plaza, expansive outdoor lobby, large social stair for exploring by visitors, small architecture with elements of rainwater	Outdoor, linearly at ground floor with access to an open external staircase	Access to public use	17,551
Carlsberg Group Central Office / Copenhagen / C.F. Møller Architects / 2021	Indoor atrium with seating pads, outdoor seating space connected with existing garden	Outdoor, linearly along the facade	Limited access	23,200
Home Office Tower / Beijing / People's Architecture Office / 2021	Shared meeting rooms, a cafeteria, gym, market, public space with seating for rest and gathering	Outdoor and indoor creating a reinforcement of the existing structure	Access to public use	22,210
Amazon Spheres / Seattle / NBBJ / 2018	Multi-level botanical garden, terraces with banquettes and chairs, outdoor dog park, outdoor recreational green space	Outdoor and indoor, on the circulation area	Limited access to public use	67,000
Olivia Garden / Gdansk / Malinowski Design Urban & Landscape / 2021	Seating space, working space, seating platforms, green garden with tropical plants, stage for meetings, food zone, chillout zone	Indoor, integrated with office space	Limited to access public	800
Concordia Design Wroclaw / Wroclaw / MVRDV / 2020	A cafe, food hall, exhibition hall, auditorium, multifunctional roof with the biggest green wall in Poland	Indoor, integrated with office space	Limited to access public	7,000

3.3 FACTORS DETERMINING THE CREATION OF HUMAN SPACE IN URBAN OFFICE BUILDINGS

An important aspect of the research turned out to be the discovery of the cause and purpose of creating additional space in the examined office buildings. This led to finding the factors determining the creation of the studied spaces (Table 4). The purpose of data collection is to determine the intentions of the authors of the studied objects, which contributed to the selection of the presented architectural solutions. Most of them result from local conditions and multifaceted analysis of the location of a given object. A clear example of this is the Home Office Tower (Ill. 2).

It was a residential facility located in Tiantong Yuan, which is known as sleeping city with a population of over 700,000 inhabitants. The transformation of the residential building into office and public functions was intended to solve the problem of the ghost town. During the day, the city was devastated, abandoned by residents heading to work in Beijing. The building has been enriched with functions of cafe, gym, shared office and meeting rooms. The ground floor of the building was reinforced with a structure that created an open public space with seats, tables and low green areas. A similar approach to changing the image of the local space



Ill. 2. Home Office Tower with public space on the ground floor, source: https://www.archdaily.com/994646/home-office-tower-peoples-architecture-office/63b6a3a7987c956d2f1f014b-home-office-tower-peoples-architecture-office-photo?next_project=no (access: 20.06.2023).

by adding additional spaces is the Fifth + Tillery Office Building. The facility is located in an area marked by the image of warehouse buildings. The creation of an external and internal SA is intended to encourage local residents to visit the facility and enjoy the charms of the created public space. The opposite architectural approach with the use of supplementary spaces is the example of the Yidian Office Complex in Shanghai. Located directly next to an attractive green area and a water channel, it uses local values by extending the green zones on the roof of the ground floor of the building. The roof was designed to connect it to the level of the pavement, which allows people from the outside to enjoy charms both from the surrounding green areas and the office public space. A similar solution involving the use of existing green areas with high aesthetics and historical values was applied in the Carlsberg Group Central Office building. The external public space intersects with the internal atrium created by a multi-level meeting zone. However, the interior is a semi-public zone, limited to public use. The creation of additional spaces aimed at respecting both historical and modern needs of users and opening up to visitors was provided in the Polish building Concordia Design Wroclaw. The building's public spaces are designed to respect the history of World War II and should be a meeting place for a dynamic, creative community. The goal of creating a meeting place was also set in the Olivia Garden project. The specificity of creating a year-round green space in the building resembles the Amazon Spheres office building. However, Olivia Garden is a much smaller building. Nevertheless, the facility offers a space for meetings, work, a dining area and a multifunctional stage. This facility differs from the others in terms of limited access to public use. Entrance to the building is possible by buying a full-day ticket or with a specific package.[12]

[12] Tickets are available at https://bilety.oliviastar.pl/buy-ticket/en (access: 25.06.2023).

Table 4. Factors determining the creation of supplementary areas. Own elaboration.

Office / localization / architects / yr	Purpose of creating a supplementary area	Factor determining the creation of areas
Yidian Office Complex / Shanghai / Jaques Ferrier Architecture / 2015	Proximity of the local canal and the need of creating architecture fused with nature	Exogenous
Fifth + Tillery Office Building / Austin / Gensler / 2020	Goal to reimagined local warehouse footprint as a vibrant indoor/outdoor creative office building	Exogenous
Carlsberg Group Central Office / Copenhagen / C.F. Møller Architects / 2021	Goal to achieve harmony with historical garden and be open towards the public	Exogenous and endogenous
Home Office Tower / Beijing / People's Architecture Office / 2021	Goal to revitalise ghost town by converting vacant residential building into office buildings	Exogenous
Amazon Spheres / Seattle / NBBJ / 2018	Goal to create meeting place for employees and biodiversity place in the center of the city for Seattle community	Exogenous and endogenous
Olivia Garden / Gdansk / Malinowski Design Urban & Landscape / 2021	Goal to create a garden that will provide high quality space all year round	Endogenous
Concordia Design Wroclaw / Wroclaw / MVRDV / 2020	Goal to respect historical and modern features of the location, creating a building open to visitors	Exogenous and endogenous

The collected database made it possible to conclude the factors determining the creation of SA. Due to their specificity and source of origin, they are divided into endogenous and exogenous. Exogenous factors are initiated by external causes that determine specific functional needs of a given object. This is, for example, the need to create architecture integrated with nature caused by the close proximity of outdoor green areas and water. It may also be the need to break with the negative local image resulting from the external condition of the existing development. Endogenous factors are initiated by internal causes. The reasons for this are, for example, the need to create a green public space resulting from the strategy of building the image of a given company or the desire to open part of the office building to external users for marketing purposes. Endogenous factors may also result from the typology of work, an extensive functional program or be related to participation with employees of a particular office building.

3.4 CONCLUSIONS

Studies show that office architecture is constantly changing. These changes are rooted in the human factor, which is characteristic of design for people. The collected data show that office buildings have areas available for public use for people who are not necessarily clients of the given office building. The SA examined shall be accessible without restriction or with restriction for public use. The nature of accessibility imposes their division into public and semi-public spaces. They are located inside the building or adjacent to the building's surroundings. Exogenous and endogenous factors have been identified as determining factors for the creation of SA. The exogenous examples presented are initiated by a specific urban location of a given area (Ill. 3). This means that the factor influencing the creation of an office building results strictly from the nature of a given urban structure. This is related to its

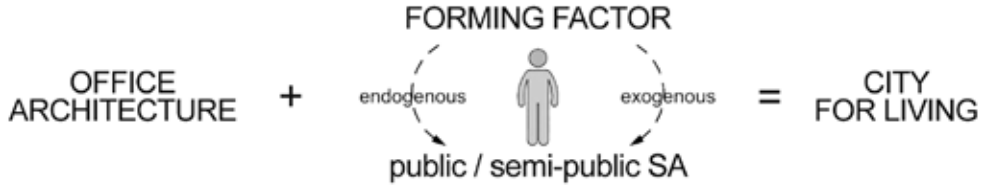
historical, functional, social and current urban ecosystem. This is a valuable conclusion of research showing the importance of architecture belonging to the context of a given place. The collected data show an important ecological direction in the design of office spaces for people with a strong emphasis on localization of greenery as an element of great importance in the creation of urban well-being space[13].



Ill. 3. Examples of endogenous and exogenous needs determining SA creation. Own elaboration.

4. SUMMARY

Office buildings as urban objects have broken a certain degree of autonomy in the sense of their use. When shaping this type of architecture, which is supposed to be a showcase of a given company or a given place, one must accept the fact that it will not be built on its own. It will be shaped for then and future generations, whose needs change with the dynamics of the city and life in it. The user of a sustainable city is encouraged to explore it through public transport, bike paths and charming alleys for city walks. This activity, dictated by the idea of flânerie, opens up unlimited possibilities related to the assimilation of the city, its history and identity. In this image, office architecture can play an important role if it is shaped according to the needs of a given place, community and function. To achieve this goal, project activities taking into account urban forming factors play an important role (Ill. 4). The attempt to deny.



Ill. 4. City forming factor scheme. Own elaboration.

the impact of the building's urban location on the quality of its use is very well illustrated by the example of the Cecil Hotel in Los Angeles. Buildings are increasingly becoming just as important a public space as squares, markets and streets. Office buildings are a place not only for work, but also for important social interactions. Their role in the city is becoming more important not only in visual and aesthetic terms, but also in social and cultural terms

[13] S.J. Knight, C.J. McClean, P.C.L. White, *The importance of ecological quality of public green and blue spaces for subjective well-being*, "Landscape and Urban Planning" 2022, vol. 226, art. no. 104510. DOI 10.1016/j.landurbplan.2022.104510.

References

[1] Bazazzadeh H. et al., *Efficient SHading Device as an Important Part of Daylightophil Architecture; a Designerly Framework of High-Performance Architecture for an Office Building in Tehran*, "Energies" 2021, no. 14(24), art. no. 8272. DOI 10.3390/en14248272.

[2] Chęcinski B., Malinowski D., *Exotic workspace garden/Malinowski Design Urban & Landscape* [in:] ArchDaily, https://www.archdaily.com/969091/exotic-workplace-garden-malinowski-design--urban-and-landscape/614df bfe9f45c901646de3e5-exotic-workplace-garden-malinowski-design--urban-and-landscape-photo?next_project=no (access: 20.06.2023).

[3] Elsakksa A., Marouf O., Madkour M., *Biomimetic Approach for Thermal Performance Optimization in Sustainable Architecture. Case study: Office Buildings in Hot Climate Countries*, "IOP Conference Series: Earth and Environmental Science" 2022, vol. 1113, art. no. 012004. DOI 10.1088/1755–1315/1113/1/012004.

[4] Galbiati G. et al., *Methodology for Energy retrofitting of Modern Architecture. The case study of the Olivetti office building in the UNESCO site of Ivrea*, "Journal Of Building Engineering" 2021, vol. 44, art. no. 103378. DOI 10.1016/j.jobe.2021.103378.

[5] Gomaa E.M., Kamar M., Madkour M., *Environmental Architectural Design during the Pandemic Era: Office Buildings as a Case Study*, "IOP Conference Series: Earth and Environmental Science" 2022, vol. 1113, art. no. 012003. DOI 10.1088/1755–1315/1113/1/012003.

[6] Hematian H., Ranjbar E., *Evaluating urban public spaces from mental health point of view: Comparing pedestrian and car-dominated streets*, "Journal of Transport & Health" 2022, vol. 27, art. no. 101532. DOI 10.1016/j.jth.2022.101532.

[7] Isett S., *Amazon Spehers/NBBJ* [in:] ArchDaily, https://www.archdaily.com/920029/amazon-spheres-nbbj/5d161191284dd16860000109-amazon-spheres-nbbj-photo?next_project=no (access 20.06.2023).

[8] Jin W., *Home Office Tower/People's Architecture Office* [in:] ArchDaily, https://www.archdaily.com/994646/home-office-tower-peoples-architecture-office/63b6a3a7987c956d2f1f014b-home--office-tower-peoples-architecture-office-photo?next_project=no (access: 20.06.2023).

[9] Knight S.J., McClean C.J., White P.C.L., *The importance of ecological quality of public green and blue spaces for subjective well-being*, "Landscape and Urban Planning" 2022, vol. 226, art. no. 104510. DOI 10.1016/j.landurbplan.2022.104510.

[10] Li R., *A Preliminary Study on the Landscape Design of the External Space of Commercial Complexes: Taking Happy Harbor as an Example*, "Journal of Architectural Research and Development" 2022, vol. 6, no. 6, pp. 23–34. DOI 10.26689/jard.v6i6.4472.

[11] Mustafa F.A., Azeez SA, *Role of office layout typology in saving time and distance spent by users: Case of office buildings in Erbil city,* "Ain Shams Engineering Journal" 2022, vol. 13, no. 5, art. no. 101742. DOI 10.1016/j.asej.2022.101742.

[12] Naya R.B. et al., *Quality of public space and sustainable development goals: analysis of nine urban projects in Spanish cities,* "Frontiers of Architectural Research" 2023, vol. 12, pp. 477–495.

Author's Note

Izabela Piklikiewicz-Czarnecka, PhD, Arch.

Architect and researcher at the Faculty of Architecture, Poznań University of Technology. Through her professional experience, she focused her research area on analyzing office architecture in order to deepen knowledge about creating the best possible working environment. Enthusiast of dialogue between architecture and socio-spatial context and military architecture.

izabela.piklikiewicz-czarnecka@put.poznan.pl