Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych
Oddział Polskiej Akademii Nauk w Lublinie / Politechnika Lubelska

Greenery in a modernist area

ORIGINAL ARTICLE: https://doi.org/10.35784/teka.8668
Received 02.11.2025, accepted 22.12.2025, published 31.12.2025

Patrycja Zawiska
https://orcid.org/0000-0003-4695-0960
patrycja.zawiska@put.poznan.pl
Institute of Architecture and Physical Planning,
Faculty of Architecture, Poznan University of Technology

Abstract: The article presents research on the issue of shaping greenery in the 21st century in the context of modernist architecture. The studies include an analysis of the characteristic features of gardens designed during the modernist period and contemporary concepts, a case study of a green space project in Poznań, and the formulation, based on data, of a set of features which, according to the author of the article, should characterise a modern garden designed among modernist buildings. The comparisons, examples and conclusions refer to gardens designed within urban developments in private, semi-private and public spaces. The research emphasises the role of creating well-thought-out green space layouts that highlight the characteristic features of architectural objects, combining existing details with new ideas and creating environmentally friendly spaces. The information provided can serve as guidelines for the design of greenery in the context of modernist buildings for the development of future architectural concepts. The method of green space design presented in the article may also serve as inspiration when developing concepts for the creation of landscape interiors in the context of other styles.

Keywords: urban garden, modernism, context of place, climate protection, green space design, ecological solutions

1. Introduction

Greenery is essential for human health [11], especially in urban areas, where the fast pace of life, daily responsibilities and stress require increased amounts of rest for the human body, preferably in nature [13, 15]. A number of cities lack sufficient parks, squares, and roadside green belts [12]. Furthermore, in semi-private and private spaces, a significant portion of the area in front of buildings is also managed in the form of concrete driveways, rubbish collection areas, and paved paths. Caring for existing greenery and even expanding its areas, e.g. by removing paving stones from pavements, is becoming a necessity in the 21st century, when one of the main issues facing the world is global warming [14]. Green areas in the city, private and semi-private gardens, green walls, roof gardens, etc., when properly managed, have a significant impact on cooling urban spaces [7, 16].

Housing estates, individual streets and city districts are often characterised by unique features of particular architectural styles and trends, or influences from different cultures, and even the actions of local authorities. One of the significant architectural trends that has survived to this day in urban areas is modernism. The main features of this movement in architecture include: cubic and geometric forms, uncomplicated lines, wide openings in walls, open plans inside buildings, the use of traditional and modern building materials, façades characterised by simplicity, no decorations, flat roofs with the possibility of creating a roof garden, subdued colours, and functionality of solutions [3]. Common characteristics of modernism can be found in many countries [6], and these design trends have also influenced the design of green areas.

On the other hand, completely new buildings are constructed every day in districts with a distinctive local character. Some of these projects refer to the surrounding buildings in terms of form, volume, height or detail [1]. However, just as often, buildings that are completely different from their surroundings are constructed next to diverse historical

buildings. As in architecture, current trends in green design differ from concepts proposed centuries ago, or even just a few years ago. Moreover, both in historical and modern architecture, landscape designers propose stylised solutions (e.g. French, Japanese, glamour gardens, etc.). The phenomenon of stylising green spaces seems to be a more common practice than stylising architectural structures.

2. Methodology

The aim of the research presented in this article is to identify common features of garden design in modernism and the 21st century, and to highlight the positive aspects of green space design that reflects the architectural context of a place, introducing innovative ideas into the concept. For research purposes, based on a literature review, an analysis of the design of green areas during the modernist period and architectural design in the 21st century was carried out, and similarities were identified; an analysis of the author's design of greenery for a modernist villa in Poznan was also carried out. The analysis of common features is presented in Table 1, and a case study was conducted to present the greenery design in a modernist context. The research was used to formulate conclusions about the design possibilities of adapting the existing building context to the formulation of modern design concepts with solutions for the environment. The conducted research may support the work on future design studies for many architects and landscape architects.

3. Comparative analysis

Table 1. Greenery in modernism vs. greenery shaped in the 21st century. Source: author's study based on a review of the literature [10]

Greenery	**21st century**	Retention system implementation measures: rain gardens, infiltration wells, pots, etc.	Style follows architecture or stylised spaces: glamour, Japanese garden, etc.	Sensory, rehabilitation, educational and recreational spaces	Inexpensive, easy to maintain, useful and flexible	Space with a wide range of functions: barbecuing, sports, summer kitchen, playground, representative elements by the water, etc.	Use of modern technologies	Obligatory creation of space for waste recycling	Gardens are created by architects and landscape architects alike
Modernism	**No.**	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**
A strong interplay of function and form	1.								
Coherence between the building and the garden	2.								
The garden is designed to serve social functions and improve mental health	3.								
A formally simple layout	4.								
Maximum greenery in contrast to the greyness of cities	5.								
The garden appeals to the senses	6.			X					
The garden provides a sense of shelter; it creates another interior/room	7.								
A space with many functions: for exercise, sunbathing, playing, growing vegetables	8.					X			

Greenery	21st century	Retention system implementation measures: rain gardens, infiltration wells, pots, etc.	Style follows architecture or stylised spaces: glamour, Japanese garden, etc.	Sensory, rehabilitation, educational and recreational spaces	Inexpensive, easy to maintain, useful and flexible	Space with a wide range of functions: barbecuing, sports, summer kitchen, playground, representative elements by the water, etc.	Use of modern technologies	Obligatory creation of space for waste recycling	Gardens are created by architects and landscape architects alike
Modernism	**No.**	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**
Inexpensive, easy to maintain, useful and flexible	9.				X				
Recommended use of new technologies in gardening	10.						X		
Greenhouses, pergolas, walls	11.								
Creation of space for waste recycling	12.							X	
Gardens are created by architects and landscape architects alike	13.								X

For centuries, architectural design styles have been modified under the influence of current, constantly changing fashions; social needs; cultural influences; technological innovations, political systems and decisions [4]; climate change; economic and social changes; etc. Table 1 lists selected, characteristic and dominant features of modernist and 21st-century green spaces. The "X" sign indicates that the conditions of compliance are met in both cases.

4. Greenery designed in a modernist context – case study of a project in Poznań

The project entitled "Greenery design for: the rebuilding and extension of a single-family residential building, with a change of use to a service building (doctor's offices, treatment rooms, spa)" was prepared as part of a rebuilding and extension project designed by PhD Eng Arch Marcin Giedrowicz[1], which preserved modernist features and details with introducing contemporary 21st-century solutions. The building undergoing reconstruction was originally constructed in the modernist style within a villa-type development in Poznań. The design task was to arrange the green area next to the facility being rebuilt and extended. The greenery design was prepared by Patrycja Zawiska, the author of this article.

The design of the object being rebuilt and extended, for which a greenery concept has been developed, is characterised by: preservation of the modernist main volume of the object with its extension and the introduction of contemporary frame details on vertical windows in the new part of the building; change of the existing residential function of the object to service purposes related to the provision of medical services. The most characteristic external elements of the building are the window muntin details, the vertical arrangement of the façade cladding, the representative entrance area to the building, the glass connector and the courtyard between the old and new part of the building.

The context of modernism with elements of contemporary solutions in the architectural design was the starting point for creating the garden concept. According to the author of the article and the greenery arrangement concept: the form of the building; modernist details on the façade – vertical cladding elements should be emphasised by using similar details in the greenery composition around the building, as well as emphasising the building's volume through the garden layout. In addition, the functionality of the building's interior should be reflected in the geometry and

1 Detailed information about the rebuilding and extension project is available in the article: Giedrowicz, M. and Nadolny, A. „Adaptacja i rozbudowa modernistycznej willi na przedpolu dzielnicy „Abisynia" w Poznaniu. Zagadnienia kontekstualne, konserwatorskie i budowlane w ujęciu współczesnym", Zeszyty Naukowe Politechniki Poznańskiej. Architektura, Urbanistyka, Architektura Wnętrz, Z.16, 2023, 107–122, http://dx.doi.org/10.21008/j.2658-2619.2023.16.8 [9].

functionality of the garden. The entire design was to introduce plant species, surface types and other easy-to-maintain solutions. The design was to meet as many pro-ecological aspects as possible.

The idea behind the project was to create a representative space around the building, emphasising its modernist architecture with contemporary elements, including the colour scheme and detailing of the façade. The concept involved creating a relaxation area in the courtyard with modern, uniform seating, pots and seasonal plant compositions. The front of the garden was to consist of a pylon (with a logo) and plantings in the form of evergreen plants combined with grasses, perennials and existing trees. The space near the car park and the entrance to the property, where vegetation adapted to the shade and pH of the soil near tall trees was planted, was also important for the visual perception of the building.

Figure 1. View from the connector between the new and existing part of the facility. *Source: author's work*

Figure 2. Detail of a bench in the main, representative part of the complex. *Source: author's work*

Figure 3. View of the parking and a plant composition with vertical decorative frames, reminiscent of a characteristic detail of the expanded part of the building. *Source: author's work*

Throughout the project, vegetation suitable for growing in shade and partial shade was proposed, shielding inconvenient landscape features outside the plot; in colours or fading towards red, highlighting the distinctive details of the façade cladding and brick elements in the garden. Plant species were introduced that maximise air purification, regulate humidity, and improve the surrounding microclimate. The surfaces used are an eco-friendly solution: a gravel-filled eco-grid, which serves as a biologically active surface in the project, along with a composition of elongated concrete slabs and a mineral-resin path. The design features interesting, modern forms of rectangular, elongated garden pylons, contributing to the composition of green interiors, echoing the modern detail of the windows in the extended part of the facility. The lighting in the project aims to highlight the main compositional dominants: trees, pylons, and plant compositions designated at characteristic points in the garden.

5. Discussion

Referring to Table 1 – common features of greenery in modernism vs. that shaped in the 21st century – based on a case study of the actual designed space, we can again see the application of similar common features to the design of modern gardens in the context of modernist architecture, including designing spaces with a specific, complex functional program; creating a space that appeals to the senses of smell, sight, hearing, and touch; and creating a concept for inexpensive garden maintenance. Garden space in Poznan was designed by the author of this article, who is an architect, which may be a reference to the concept of conducting the design process in modernism, which was dedicated to both landscape architects and architects.

Twenty-first-century landscaping in the context of modernist architecture:

1. It can fully continue modernist principles and fully shape the space in this specific way.
2. It can achieve a completely new character of the garden by abandoning the context of the site.
3. It can be an attempt to emphasize modernist features and details while introducing completely new solutions.

From the outset of her research, the author of this article focused on the possibilities of creating a garden with modern features while retaining modernist detail. She also presented, in her opinion, a highly aesthetic solution that aims to constitute a dialogue between 20th and 21st century garden architecture. This work demonstrates a significant number of common features in shaping innovative concepts rooted in modernism, which significantly facilitates the implementation of Design Direction No. 3, which was identified as the right approach.

6. Conclusions

This article discusses the design of green spaces within the context of modernist architecture. For research purposes, a comparison of current architectural trends and 20th-century concepts was conducted based on literature data, and an analysis of the actual garden design concept within the context of characteristic modernist urban development was conducted. The analyses led to the following conclusions:

- Gardens shaped in modernism and in the 21st century have many common features.
- The choice of design direction when shaping a garden rests with the architect or landscape architect. This article can serve as a guide for designers, demonstrating the effects of creating a concept that reflects the context of the site while introducing innovative architectural solutions. Shaping a modern garden embedded in a historical context can lead to a highly aesthetic and functional solution that meets the expectations of the designer and investor.
- When working on the development of an idea closely related to the context of the place, many other factors that will influence the project should also be taken into account: climatic and water conditions; sunlight; adaptation for disabled people; modern technologies in horticulture; possible use of local plant species and materials; care for biodiversity; the need to protect pollinating insects and birds; the possibility of air purification / increasing the humidity level / providing space that has a positive impact on the physical and mental health of people in the city [2, 8].

Regardless of one's own developed ideas or principles of shaping greenery, before design work, one should always consider aspects of the historical context of the place, the existing tissue and previously developed arrangements and ideas in the area of the designed space [5].

References

[1] AlFadalat M, Al-Azhari W. An integrating contextual approach using architectural procedural modeling and augmented reality in residential buildings: the case of Amman city. *Heliyon*. 2022;8(8):e10040. https://doi.org/10.1016/j.heliyon.2022.e10040.

[2] Baum M. Housing estate greenery in shaping the quality of housing environment on the example of Bialystok. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2019;15(4):7–13. https://doi.org/10.35784/teka.1505.

[3] Beyaz Ç, Çilen E. Evaluation of Modern Architecture Criteria in the Context of Sustainability and Architectural Approach; Modern Period in North Nicosia. *Sustainability*. 2023;15(13):10005. https://doi.org/10.3390/su151310005.

[4] Boguszewska K, Przesmycka N. Shaping of the systems of greenery in the districts of Lublin Cooperative Housing (LSM) in the context of planning and implementation of the project. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2018;14(2):97–110. https://doi.org/10.35784/teka.1786.

[5] Boguszewska KL. Historical elements of garden architecture of the spa park in Nałęczów. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2019;15(1):7–15. https://doi.org/10.35784/teka.1489.

[6] Ciarkowski B. Post-war modernist architecture in Poland as part of the european heritage of twentieth-century concrete-based architecture. *Technical Transactions*. 2019;8:5–18. https://doi.org/10.4467/2353737XCT.19.077.10856.

[7] Djekic J, Mitkovic P, Dinic-Brankovic M, Igic M, Djekic P, Mitković M. The study of effects of greenery on temperature reduction in urban areas. *Thermal Science*. 2018;22(4):988–1000. https://doi.org/10.2298/TSCI170530122D.

[8] Dudkiewicz M, Krupiński P, Stefanek M, Iwanek M. Sensory garden in the school area. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2020;16(1):87–93. https://doi.org/10.35784/teka.713.

[9] Giedrowicz M, Nadolny A. Adaptacja i rozbudowa modernistycznej willi na przedpolu dzielnicy „Abisynia" w Poznaniu. Zagadnienia kontekstualne, konserwatorskie i budowlane w ujęciu współczesnym. *Zeszyty Naukowe Politechniki Poznańskiej. Architektura, Urbanistyka, Architektura Wnętrz*. 2023;Z.16:107–122. http://dx.doi.org/10.21008/j.2658-2619.2023.16.8.

[10] Imbert D. The Landscape of Modernity. *Between Garden and City: Jean Canneel-Claes and Landscape Modernism*. Pittsburgh: University of Pittsburgh Press; 2009. p. 1–12.

[11] Kondo MC, Fluehr JM, McKeon T, Branas CC. Urban green space and its impact on human health. *International Journal of Environmental Research and Public Health*. 2018;15(3):445. https://doi.org/10.3390/ijerph15030445.

[12] Niedzielko J, Łochnicka A. Green areas in Białystok. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2019;15(4):23–29. https://doi.org/10.35784/teka.1504.

[13] Pattamon S, Chuangchai W. The Importance of Urban Green Spaces in Enhancing Holistic Health and Sustainable Well-Being for People with Disabilities: A Narrative Review. *Buildings*. 2023;13(8):2100. https://doi.org/10.3390/buildings13082100.

[14] Patyna K, Riekste A. Revitalization through recovery. Transformation of roads into human-friendly spaces on selected examples. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2023;19(1):26–38. https://doi.org/10.35784/teka.3602.

[15] Szumigała PP, Urbański P, Tomczak P, Walerzak M, Sosnowska S, Szumigała KO. The idea of sustainable development in the landscape contemporary cities. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2021;17(3):34–54. https://doi.org/10.35784/teka.2830.

[16] Tokajuk A. Modernity in Architecture as the Synergy of Ideas, Tradition and Nature – Opera in Bialystok. *Teka Komisji Architektury, Urbanistyki i Studiów Krajobrazowych*. 2019;15(1):41–47. https://doi.org/10.35784/teka.1466.

Zieleń w modernistycznej przestrzeni

Streszczenie: W niniejszym artykule zaprezentowano badania dotyczące problematyki kształtowania zieleni XXI wieku w kontekście modernistycznej zabudowy. Badania obejmują: analizę charakterystycznych cech ogrodów projektowanych w okresie modernizmu oraz współczesnych koncepcji; studium przypadku projektu zieleni w Poznaniu wraz ze sformułowaniem, na podstawie danych, zbioru cech, którym według autorki artykułu powinien charakteryzować się nowoczesny ogród zaprojektowany wśród modernistycznej zabudowy. Porównania, przytoczone przykłady i wnioski dotyczą ogrodów projektowanych w zabudowie miejskiej w przestrzeniach prywatnych, półprywatnych i publicznych. Badania podkreślają rolę kształtowania przemyślanych układów zieleni akcentujących cechy charakterystyczne obiektów architektonicznych, łączących istniejące detale z nowymi pomysłami oraz kreowania przestrzeni prośrodowiskowych. Udostępnione informacje mogą stanowić wytyczne w projektowaniu zieleni w kontekście modernistycznej zabudowy dla opracowywania przyszłych koncepcji architektonicznych. Metoda działania projektowania nowej zieleni ukazana w artykule może być inspiracją również podczas opracowywania koncepcji dla tworzenia wnętrz krajobrazowych w kontekście innych stylów architektonicznych.

Słowa kluczowe: miejski ogród, modernizm, kontekst miejsca, ochrona klimatu, projekt zieleni, rozwiązania proekologiczne