

The Issue of Wrocław's Expansion Following the First World War, and Urban Planning Concepts and Housing Estates of the Interwar Period

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This text presents part of the research on the history of Wrocław's expansion during the interwar period and the construction of modern housing estates and residential complexes, most of which have survived to this day.¹ The aim of this study is to highlight the specific merits of residential architecture in the German part of Wrocław. The objective of the research, however, is to produce a report in line with the European Union's long-term strategy on architecture and urban planning, as well as heritage protection and conservation. This stems from an awareness of the significant role of heritage in shaping the identity of Europeans, countries and regions. It was not until 1921 that an urban planning competition was announced for the expansion of Wrocław, resulting in two concepts by the eminent architects Adolf Rading and Ernst May. Housing associations were soon established, which initiated the creation of the three largest estates: Sepolno (Zimpel), Popowice (Pöpelwitz) and "Eichborn Garten". A significant expansion of Wrocław's territory did not take place until 1928. The economic crisis and the Nazis' rise to power in 1933 halted the development of modern urban planning, although the construction of housing estates continued until 1941. The research hypothesis that the characteristics of interwar residential buildings remain relevant to this day was adopted.

Introduction

Wrocław, located in south-western Poland, was part of the German Reich until 1945. During the interwar period, between 1918 and 1933, the city was home to many distinguished architects and urban planners, such as Hans Poelzig, Max Berg, Adolf Rading, Hans Scharoun and Ernst May. Thanks to their work, Wrocław was regarded as a major centre of modernist thought under the banner of "Neues Bauen".

At the beginning of the 20th century, Wrocław, alongside Dresden, Leipzig, Cologne and Frankfurt am Main, was one of the most densely populated cities in Germany. Overcrowding was primarily due to the limited area occupied by the city. In 1914, it had 540,000 inhabitants and covered an area of approximately 4,910 hectares. Other urban agglomerations with a similar population had areas three, four, or even five times larger. Wrocław was severely affected by excessive population density (there were approximately 90 square metres per inhabitant, whereas in

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Cologne, for example, this figure was 310 square metres).² This situation significantly hampered the development of the capital of Lower Silesia.

As a result of the First World War, parts of East Germany, including areas of Greater Poland, Pomerania and, above all, Upper Silesia, were incorporated into the Polish state, which had been restored in 1918. This led to a massive migration of people moving from the former territories of the German Empire to the Weimar Republic, which was then in the process of being established. Most migrated to Lower Silesia, including its capital, Wrocław. The city authorities had to resolve new, serious social and economic problems, and above all, provide housing for the new settlers. The difficult situation was exacerbated by rampant inflation, as well as revolutionary sentiments amongst the population.

The need to provide new housing and to reduce the density of existing buildings posed a significant challenge for the city authorities. Even before the First World War, the city's then building councillor, Max Berg, sought to resolve this problem by seeking the German government's approval to expand the city to include neighbouring villages. However, such efforts were effectively thwarted by the authorities of the Wrocław County. After the First World War, the problem had become so acute that the Wrocław municipality established a separate Department for Urban Expansion and Development (*Stadterweiterungsamt*). Fritz Behrendt was put in charge of the city. Max Berg described the situation in Wrocław as follows: "The most common form of housing in Wrocław is tenement blocks (*Mietkaserne*), even for the affluent middle class, whilst low-rise buildings and detached houses can only be found in the affluent villa districts. [...] Whilst cities of a similar size in western Germany cover a larger area – for example, Frankfurt am Main covers 13,500 hectares and Cologne 12,000 hectares – Wrocław's administrative area is a mere 4,900 hectares."³

It was emphasised at the time that "in addition to high-rise and high-density development, the area is dominated by very small, even tiny flats, which significantly increase the overcrowding of residents within a small area."⁴ In 1928, the architect Fritz Behrendt described the dire housing situation in the capital of Lower Silesia: "Wrocław, the most densely populated German city, the city with the highest number of flats on the fifth or even sixth floor, a city where infant

2. Behrendt F (1922) Der Wettbewerb zur Erlangung eines Bebauungsplanes der Stadt Breslau und ihrer Vororte. *Der Städtebau* 19 (3/4): 21.

3. Berg M, Konwiarz R (1922), Wettbewerb für Vorentwürfe zu einem Bebauungsplan der Stadt Breslau und ihrer Vororte. *Zentralblatt der Bauverwaltung* 42: 257.

4. *Ibidem*: According to the 1916 census, for every 1,000 dwellings there were on average 731 small dwellings with only one or two rooms suitable for heating, 213 medium-sized dwellings with three or four rooms suitable for heating, and only 56 dwellings with more than four rooms suitable for heating. In 1916, 22.4% of all dwellings in Wrocław consisted of only one heated room and dark rooms or unheated chambers as adjoining rooms, and 190 dwellings per 1,000 dwellings in Wrocław had only one living room (76 in Berlin, 46 in Bremen, in Halle 25, and even in Essen only 24).

mortality and the incidence of tuberculosis reach, if not the highest, then certainly alarming levels, a city which, in terms of housing shortages, occupies an inglorious place on the podium, where at least 130,000 inhabitants live in dwellings that do not meet even the most basic sanitary and housing requirements – this is the sad result of a century-long stage of development”.⁵

To draw up a development plan for Wrocław, an urban planning competition was launched in 1921 for the expansion of the city and its suburban districts. As part of the Wrocław competition, two concepts were developed by the eminent architects Adolf Rading and Ernst May. Outside the competition, Max Berg (Wrocław’s city architect and designer of the famous Centennial Hall) presented his own design for the city’s redevelopment.

The competition had a significant impact on German urban planning circles and on the development of new concepts for the design and redevelopment of cities and housing estates. The eminent architect and urban planner Fritz Schumacher stated that the competition was one of the most important in the development of modern urban planning thought in Germany at that time.

At the same time, the Department of Housing and Housing Estates (Deputation Siedlungs-und Grundstückswesen) was established, and construction of the first housing estates began in 1919. Soon, the first housing associations in Wrocław were established, which initiated the creation of the three largest housing estates: Sępolno (Zimpel), Popowice (Pöpelwitz) and “Eichborn Garten”, within the city’s narrow boundaries, making maximum use of the available land.

Due to a dispute between the city authorities and the district administration of the suburban municipalities, the city’s territory was not significantly expanded until 1928. In Wrocław, the economic crisis and the Nazis’ rise to power in 1933 brought the development of modern urban planning to a halt. It was not until after the Second World War that some of the ideas contained in the competition entries were put into practice.

Literature Review

The residential developments in Wrocław from the interwar period have not yet been catalogued or described, nor has a comprehensive monograph been published on the subject. The merits of this pre-war housing have not been described in detail.

Particularly noteworthy is a multi-authored work in the form of an architectural lexicon on Wrocław.⁶ However, it contains only brief descriptions of some of the topics covered in the work.

5. Behrendt F (1928) Die Breslauer Eingemeindung. *Schlesische Monatshefte* 5(1): 2.

6. Eysymontt R, Ilkosz J, Tomaszewicz A, Urbanik J (eds.) (2011), *Leksykon architektury Wrocławia*, Wrocław: Via Nova.

The urban development of Wrocław during the interwar period and the competition for the city's expansion were presented by Wanda Kononowicz,⁷ Jerzy Ilkosz,⁸ Winfried Nerdinger,⁹ Claudia Quiring, Wolfgang Voigt, Peter Cachola Schmal, Eckhard Herrel.¹⁰

The subject of Wrocław's housing companies and cooperatives has rarely featured in the literature; there are only brief references to the activities of the best-known ones, such as Wrocław Housing Association Ltd (Siedlungsgesellschaft Breslau Aktien-Gesellschaft), The "Own Home" Housing Cooperative – Eichborngarten Ltd. (Siedlungsgenossenschaft Eigenheim Eichborngarten G.m.b.H.) and the A Silesian Homestead cooperative, a provincial housing development company with limited liability (Schlesische Heimstätte, provinzielle Wohnungsfürsorgegesellschaft m.b.H.).¹¹

7. Kononowicz W (1995) Pierwszy plan generalny Wrocławia (1924) i początki kompleksowego projektowania urbanistycznego. In J Rozpędowski (ed), 301-338. *Architektura Wrocławia*, vol 2, *Urbanistyka do roku 1945*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej; Kononowicz W (1997) *Wrocław. Kierunki rozwoju urbanistycznego w okresie międzywojennym*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej; Kononowicz W (2011) Rozwój urbanistyczny i polityka mieszkaniowa Wrocławia w okresie Republiki Weimarskiej. In R Eysymontt, J Ilkosz, A Tomaszewicz, J.Urbanik (eds), 93-98. *Leksykon architektury Wrocławia*. Wrocław: Via Nova.

8. Ilkosz J (1996) Koncepcje urbanistyczne Maxa Berga na przykładzie projektów przebudowy Berlina w roku 1910 i Wrocławia w latach 1919-1920. In J Rozpędowski (ed.), 359-398. *Architektura Wrocławia*, vol. 2, *Urbanistyka*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej; Ilkosz J (2019) Adolf Radings städtebauliche Konzepte im Kontext des Wettbewerbs zur Erlangung, eines Bebauungsplans der Stadt Breslau 1921–1922. In J Ilkosz, B Störtkuhl (eds), 87-106. *Adolf Rading in Breslau. Neues Bauen in der Weimarer Republik*, Schriften des Bundesinstituts für Kultur und Geschichte der Deutschen im östlichen Europa, vol.72. Oldenburg, Berlin Boston: Verlag De Gruyter.

9. Nerdinger W (2023) *Architektur in Deutschland im 20. Jahrhundert. Geschichte, Gesellschaft, Funktionen*, München: C.H. Beck.

10. Quiring C, Voigt W, Schmal P C, Herrel E (eds.) (2011), *Ernst May 1886-1970*, München: Prestel Verlag.

11. Störtkuhl B (2011) Ernst May und Schlesische Heimstätte. In C Quiring, W Voigt, P Cachola Schmal, E Herrel (eds), 33-49. *Ernst May 1886–1970*. München-London-New York: Prestel; Urbanik J (2013) Dwelling houses of building Cooperative Schlesische Heimstätte in Wrocław (former Breslau) and in Silesia in 1919-1941 as a precursor of modern ergonomics in architecture. In *Proceedings of 7th International Conference, UAHCI, held as part of HCI International - Universal access in human-computer interaction, design methods, tools, and interaction techniques for eInclusion* (Las Vegas, NV, USA, July 21-26, 2013). Berlin, Heidelberg: Springer, 376-385; Urbanik J (2014) Notheime - ergonomically designed crisis houses of the Building Cooperative "Schlesische Heimstätte". In *Proceedings of 8th International Conference, UAHCI, held as part of HCI International - Universal access in human-computer interaction, design for all and accessibility practice* (Heraklion, Crete, Greece, June 22-27, 2014). Berlin, Heidelberg: Springer, 303-313.

Among others, Wanda Kononowicz¹² has written about selected housing estates in Wrocław.

A single monograph by Sigurd Fleckner has been written on the activities of the Reich Research Society for Economic Efficiency in Construction and Housing (Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen – RFG).¹³ Winfried Nerdinger also discussed this issue in a broader context.¹⁴

Further information was also provided by articles by Jadwiga Urbanik and Edyta Naworska.¹⁵

The activities of the Werkbund in the context of the WuWA housing exhibition, which included a model experimental housing estate in Wrocław, are described in a publication by Jadwiga Urbanik.¹⁶ Regarding the Werkbund itself in the context of architecture, comparative material was drawn from the following publications by Winfried Nerdinger¹⁷ and Vittorio Lampugnani.¹⁸

12. Kononowicz W (1991) Z problemów urbanistyki dwudziestolecia międzywojennego. Osiedle ogrodowe Sępolno we Wrocławiu. *Roczniki Sztuki Śląskiej* 15: 60-91; Kononowicz W (1995) Pierwszy plan generalny Wrocławia (1924) i początki kompleksowego projektowania urbanistycznego. In J Rozpędowski (ed), 301-338. *Architektura Wrocławia*, vol 2, *Urbanistyka do roku 1945*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej.

13. Fleckner S (1993) *Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen: 1927 - 1931; Entwicklung und Scheitern*. Aachen: Hochschulschrift, Technische Hochschule, Dissertation.

14. Nerdinger W (2023) *Architektur in Deutschland im 20. Jahrhundert. Geschichte, Gesellschaft, Funktionen*, München: C.H. Beck.

15. Urbanik J (2022), Towarzystwo badawcze RFG i ergonomia w niemieckiej architekturze okresu międzywojennego. In MJ Sottysik, M Stępa (eds.), 242-253. *Architektura przemysłowa, portowa i miejska XX wieku*. Gdynia, Gdańsk: Urząd Miasta Gdyni, Wydział Architektury Politechniki Gdańskiej; Urbanik J, Naworska E (2022) RFG and the beginnings of modern living In *Proceedings of 17th International Docomomo Conference - Modern Design: Social Commitment & Quality of Life* (València, Spain, 6-9 September 2022). València: Docomomo International, 55-62.

16. Urbanik J (2019) *1929 WUWA 2029. The Werkbund Exhibition in Wrocław*. Wrocław: Muzeum Architektury.

17. Nerdinger W (2023) *Architektur in Deutschland im 20. Jahrhundert. Geschichte, Gesellschaft, Funktionen*, München: C.H. Beck; Nerdinger W. (eds.) (2007), *100 Jahre Deutscher Werkbund 1907-2007*, München: Prestel Verlag.

18. Lampugnani V M (2011), *Die Stadt im 20. Jahrhundert*, Berlin: Verlag Klaus Wagenbach.

The Nazi era in Wrocław has been described by Jerzy Ilkosz,¹⁹ Wanda Kononowicz²⁰ and Beate Störtkuhl.²¹ The following studies were used for a comparative analysis of the German region.²²

Aim of the Study & Methodology

The text was compiled using the traditional methods of an architectural historian. The research was based on thorough archival searches at the Wrocław City Building Archive, the State Archives and the Museum of Architecture, as well as in German archives such as the Plansammlung Technische Universität in Berlin and the Deutsches Museum in Munich. The IRNS Institute in Erkner and the Staatsarchiv in Berlin. A review of contemporary literature concerning both Wrocław's housing developments and those across Germany was also carried out. Such studies are essential to understand the state of research on Wrocław's interwar housing estates and to present new findings against the backdrop of existing knowledge. The research undertaken has made it possible to present the history of the activities of the city authorities and the architects who designed the housing estates, to determine the contemporary value of these complexes, and to showcase Wrocław as a unique place on the map of interwar Germany and present-day Poland.

The aim of this study was therefore to examine the influence of the city authorities on Wrocław's development and housing policy during the interwar period; to highlight the specific merits of housing construction in pre-war Wrocław, taking into account the activities of the Werkbund and the State Research Society for Efficiency in Construction and Housing (Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen - RFG), and presenting Ch. Dawes's plan against the backdrop of the city's problems concerning the lack of land for development (the city development competition), as well as presenting the transformations in the design of housing complexes and estates during the Weimar Republic and the Third Reich.

19. Ilkosz J (2021), *German modernism in the shadow of the NSDP – the experience of Wrocław (1933-1945)*. In J Purchla, Ż Komar (eds), 273-294. *Dissonant heritage? The architecture of the Third Reich in Poland*. Kraków: International Cultural Centre.

20. Kononowicz W (2005) *Mieszkalnictwo osiedlowe Wrocławia w okresie III Rzeszy*. *Archivolta*, (1): 18-25.

21. Störtkuhl B (2021) *Practices in building housing and settlements in the Nazi era. Case study Breslau*. *Architectus* 26(3): 25-34.

22. Nerdinger W (2023) *Architektur in Deutschland im 20. Jahrhundert. Geschichte, Gesellschaft, Funktionen*, München: C.H. Beck; Lampugnani V M (2011), *Die Stadt im 20. Jahrhundert*, Berlin: Verlag Klaus Wagenbach; Benz W, Harlander T, Pahl Weber E, Pyta W, von Saldern A, Schäche W, Stephan R (eds.) (2023), *Planen und Bauen im Nationalsozialismus – Voraussetzungen, Institutionen, Wirkungen*, Hirmer; Düwel J, Gutschow N (2019), *Ordnung und Gestalt. Geschichte und Theorie des Städtebaus in Deutschland 1922 bis 1975*, Berlin: DOM publishers.

The reason for addressing this topic is to highlight a social aspect that was so important then and remains so today. During the interwar period, housing estates were built in accordance with Clarence Perry's American theory of the "neighbourhood unit".

Another objective of the research is to prepare a report in line with the European Union's long-term strategy on architecture and urban planning, as well as heritage protection and conservation. Particular attention has been paid to listed buildings and historic urban complexes. This stems from an awareness of the significant role of heritage in shaping the identity of Europeans, countries and regions (*Davos Declaration. Towards a high-quality Baukultur for Europe, Conference of Ministers of Culture, 20–22 January 2018, Davos, Switzerland*).

The research hypothesis that the characteristics of interwar architecture remain relevant today was adopted, and an attempt was made to answer the question: Why are the interwar housing estates of German Breslau still accepted by the residents of Polish Wrocław today?

Development Concepts for Wrocław

The dispute between the Wrocław city council and the county authorities, which exercised jurisdiction over the villages and suburban settlements, prevented the city's boundaries from being extended until 1928, when pursuant to a law enacted by the government in Berlin, the area of Wrocław was expanded by approximately 12,000 hectares.²³ This gave the city the space it needed to continue developing. Unfortunately, this came too late, as the economic crisis and, later, the outbreak of the Second World War prevented Wrocław from expanding further.²⁴ Paradoxically, this dispute led to the emergence of innovative urban planning concepts in Wrocław, covering both housing construction and the planning of residential estates. These included: Max Berg and Ernst May's concepts of Wrocław surrounded by smaller satellite towns, as well as Adolf Rading's idea of linking the city's urban development with the economic growth of its hinterland, namely the Silesian province.

23. E Fr (1928) Entwurf eines Gesetzes über die Erweiterung des Stadtkreises Breslau. Nach der Vorlage an den Preuss. Landtag. *Deutsche Bauzeitung. Stadt und Siedlung* 62(2): 29-30; Das Breslauer Eingemeindungsgesetz. (1928) *Breslauer Zeitung*: 109; Breslaus Weg zur Großgemeinde. (1928) *Breslauer Zeitung*: 109.

24. About the conflict between the town and the county council: Ilkosz J (2025) *Gdyby. Niezrealizowane wizje nowoczesnego Wrocławia w latach 1910-1939*. Wrocław: Muzeum Architektury we Wrocławiu: 25-77.

Competition for the expansion of Wrocław

After the First World War, Max Berg, the city's architect at the time, and Fritz Behrendt, director of the City Expansion and Development Office (Stadterweiterungsamt), began preparations for a competition designed to determine the direction and manner of Wrocław's future development. The competition for the expansion of the city and its suburban municipalities, organised by Wrocław City Council in conjunction with the county authorities between 1921 and 1922, sparked a wide-ranging debate among urban planners. The competition brief covered the administrative area of Wrocław and its suburban municipalities, totalling 16,000 hectares (an area with a radius of approximately 10 km from the city centre). The Wrocław competition was the third to be organised in Germany, following the competitions for the expansion of Berlin ("Greater Berlin") in 1910 and for the expansion of Düsseldorf in 1912. Architects and urban planners from Germany and Austria were invited to the competition announced in Wrocław on 1 March 1921, and its aim was, among other things, "to draw up a development plan that would present proposals for the design and expansion of the existing road and rail network, the regulation of undeveloped parts of Wrocław and its suburbs, and improvements that could be introduced in already developed areas of the city and its suburbs. [...] In the future, housing needs, commercial activity and local transport were to link the city of Wrocław with the surrounding municipalities, creating an economic unit. [...] When dividing up undeveloped areas, open spaces were to be ensured to avoid overly dense development. Existing forests were to be preserved, whilst parks and meadows, cemeteries, exhibition grounds, playgrounds, sports fields and shooting ranges were to be appropriately distributed. Where the majority of the population lived in districts with multi-storey buildings, open spaces designated for allotment gardens were to be reserved within a reasonable distance. New areas for residential development were to be separated from industrial districts and divided into zones of closed and open development. The undeveloped area should be divided into residential districts in such a way that, in conjunction with existing buildings, it would accommodate the anticipated population growth up to 1950. This was intended to relieve pressure on the most overcrowded areas".²⁵

Of the entries submitted for the competition, the two most interesting were the urban planning concepts by Adolf Rading and Ernst May. These proposals not only contained solutions beneficial to Wrocław, but also introduced new ideas in the field of urban planning, which were widely discussed both during the competition debate in 1922–1923 and in subsequent years.²⁶

25. Der Wettbewerb zur Erlangung eines Bebauungsplanes der Stadt Breslau und ihrer Vororte. (1922) *Deutsche Bauzeitung*, 56(39): 242-244.

26. See also: about the competition, Ilkosz J (2025): 39-61.

Adolf Rading's Concept for the Development of Wrocław

Adolf Rading was a newcomer to urban planning, yet he was among the six architects shortlisted in the competition for the development and expansion of Wrocław's boundaries (1921–1922); indeed, it was his designs, much like Ernst May's plans, that were most frequently discussed within Wrocław's architectural community. Adolf Rading favoured a radial layout for the city (see Figure 1). The distinctive feature of his concept was that he based his planning on an in-depth economic, financial and demographic analysis, carried out to determine the directions of Wrocław's development. Such principles of urban design were later implemented by the Swiss architect Martin Mächler, and Max Berg also followed this approach.²⁷ According to the architect's plans, the Wrocław metropolitan area was to cover a radius of 60 kilometres and expand radially in three directions: along the Oder and the railway line to Brzeg (Brieg) and Opole (Oppeln) – south-east, towards Legnica (Liegnitz) and Głogów (Glogau) – north-west, and along the railway line leading to Wałbrzych (Waldenburg) – south-west.

Whilst working on the project, Adolf Rading described in detail his vision of the modern city, whose fundamental problem, in his view, was housing, even if part of the urban population had to be accommodated in densely built-up rural areas. The architect believed that the then-popular idea of small, rural-style housing estates was a reaction to the poor living conditions in tenement blocks, which lacked sanitary facilities, whilst the outbuildings formed enclosed courtyards with no possibility of ventilation. The architect argued that "all tenement blocks were targeted for demolition; instead of tackling this specific type of tenement block, no progress was made in solving the problem. It was simply sidestepped."²⁸ He believed that, for practical reasons, tenement blocks could serve as an equivalent to detached houses, provided the design was functionally well thought out.

However, the most important principle he sought to apply was to break away from designing within the confines of a closed housing estate. His proposals for

27. Ilkosz J (2019) Adolf Radings städtebauliche Konzepte im Kontext des Wettbewerbs zur Erlangung eines Bebauungsplans der Stadt Breslau 1921–1922. In J Ilkosz, B Störtkuhl (eds), 87-106. *Adolf Rading in Breslau. Neues Bauen in der Weimarer Republik*, Schriften des Bundesinstituts für Kultur und Geschichte der Deutschen im östlichen Europa, vol.72. Oldenburg, Berlin Boston: Verlag De Gruyter; Göckede R (2005) *Adolf Rading (1888–1957). Exodus des Neuen Bauens und Überschreitungen des Exils*, Berlin: Gebrüder Mann Verlag; Kononowicz W (1995) Pierwszy plan generalny Wrocławia (1924) i początki kompleksowego projektowania urbanistycznego. In J Rozpędowski (ed), 301-338. *Architektura Wrocławia*, vol 2, *Urbanistyka do roku 1945*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej; Kononowicz W (1997) *Wrocław. Kierunki rozwoju urbanistycznego w okresie międzywojennym*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej; 96; Störtkuhl B (2018) *Modernizm na Śląsku 1900–1939. Architektura i polityka*. Wrocław: Muzeum Architektury: 144-145.

28. Rading A (1920) Neue Kleinmiethaus Bebauungen. *Der Städtebau*, 17(11/12): 106; Rading A (1921) Kleine Miethaus Bebauungen. *Ostdeutsche Bauzeitung* 19(73): 313.

future housing estates were based on layouts in which both terraced and detached houses were situated along the street in a linear or zigzag pattern, as well as around star-shaped squares (see Figure 2).

The architect was convinced that "the fundamental requirement for urban housing development must be to start the design process with a single flat..."²⁹



Figure 1. Adolf Rading, *Competition Design for the Expansion of Wrocław and its Suburban Communes, 1921-1922*

Source: *Der Städtebau*, (1922) 19: 39.

29. Rading A (1922), *Neu Zeit - Neuer Weg. Der Städtebau*, 19(9/10): 100.

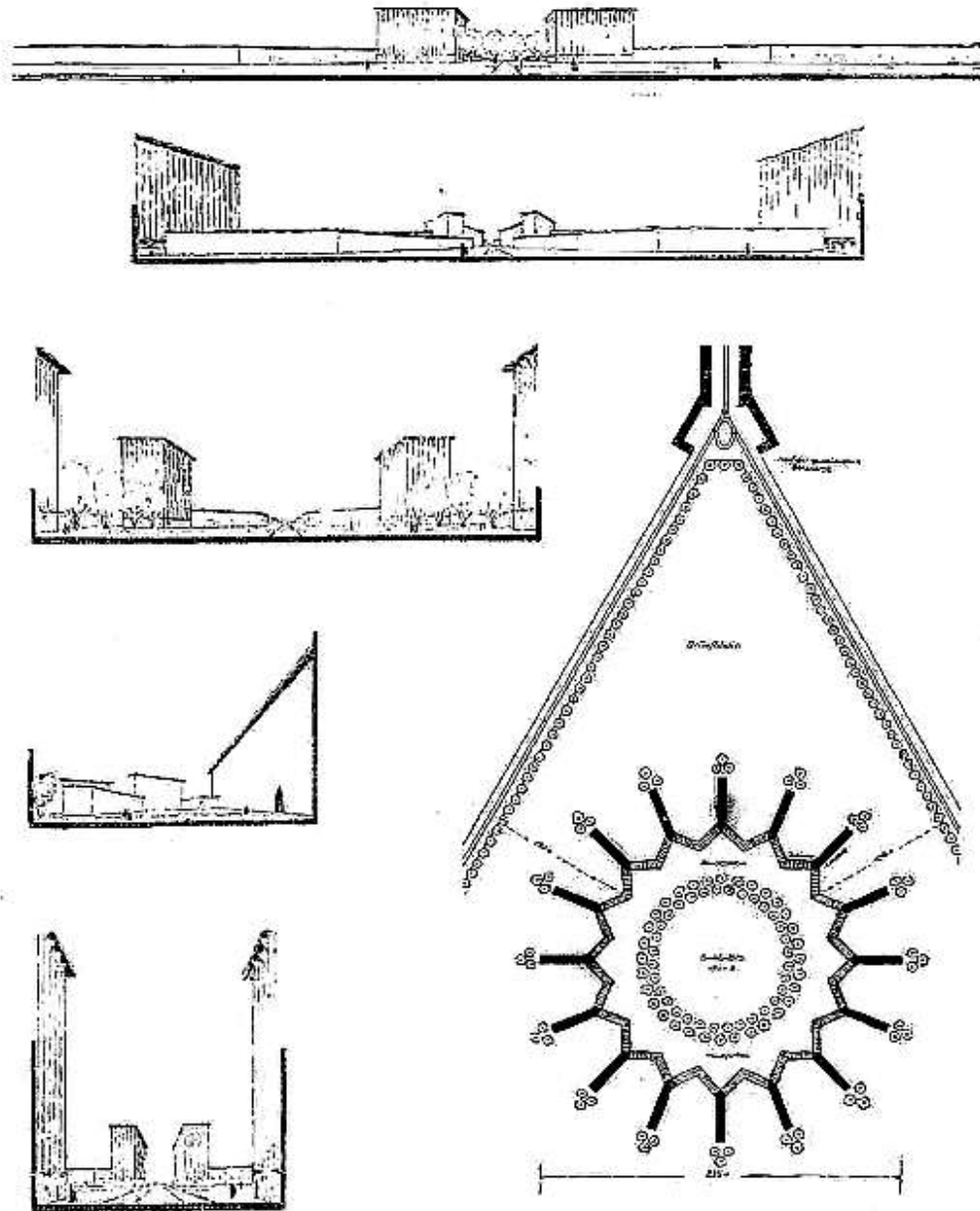


Figure 2. Adolf Rading, *Wroclaw Expansion Design, Housing Development Concepts*
 Source: *Der Städtebau* (1922) 19(9/10): 101.

The character of the houses varied greatly: from terraced single-family homes to detached multi-family blocks of two or more storeys, usually topped with flat roofs, on which the architect intended to situate recreational terraces. In areas situated away from the centre, the architect permitted low-rise development, but consistently adopted an island layout for the housing estates, which allowed individual residential complexes and existing rural centres to be separated by green spaces and parkland.

Ernst May's Concept for the Development of Wrocław

Ernst May was also a novice in the field of urban planning, and his urban design concepts were limited to the planning of suburban housing estates, mostly on a small scale. The Schlesische Heimstätte cooperative, which he headed from 1919 to 1925, had close ties with the Wrocław County Office and the Wrocław District Office.

For this reason, the architect supported the county authorities' negative stance towards the city expansion project. Consequently, he proposed the concept of satellite towns, which would allow the county authorities to retain jurisdiction over the suburban municipalities, whilst the satellite towns would form a so-called "municipal union" with the main city.

Ernst May's interest in the planning of housing estates and residential buildings stemmed from the theory of his mentor, Raymond Unwin, with whom he had undertaken an apprenticeship. His mentor instilled in him Ebenezer Howard's ideas regarding the "garden city".³⁰ However, the architect adapted the English concepts to the context of the local "Heimatschutzbewegung" (homeland conservation movement). The concept of satellite towns was based on the de-agglomeration of a large metropolitan area with a population of 600,000. Ernst May proposed surrounding the main city with a ring of satellite towns, each with an anticipated population of 50,000 to 100,000 people.³¹ Describing his concept, he stated: "The system of satellite towns around Wrocław comprises settlements of all sizes. Whilst most of them were planned as satellite towns combining residential and commercial functions, with their own more or less developed industry, usually linked to existing enterprises, for some settlements a purely residential function was more appropriate [...]. Connecting the individual satellite towns to the central city is, in the case of Wrocław, relatively easy to achieve, as most of them can be linked to the city centre by extending existing exit roads. The existing railway network in Wrocław, which in many respects requires improvement, also facilitates the development of individual satellite towns [...]"³²

He went on to explain: "Despite their full local autonomy, [satellite towns] will nevertheless remain constituent parts of a larger entity, closely linked to the central city, from which they will derive cultural and economic benefits that are lacking in the satellite towns themselves. This is the main difference between a satellite town and an ordinary small town."³³

30. Herrel E (2011) „Stete „Reifung“ Studienjahre, Villenbauten in Frankfurt und Kriegsgräber an der Front, „Constant Marturing“ Student years, house-building in Frankfurt and war memorials on the front. In C Quiring, W Voigt, P Cachola Schmal, E Herrel (eds), 15-31. *Ernst May 1886-1970*. München-London-New York: Prestel.

31. The model for the satellite towns was based on a plan drawn up by Raymond Unwin in 1909. cf. Lampugnani V M (2010), 344. On the May's concept see: Nerdinger W (2023), 216-217.

32. May E (1922) Stadterweiterung mittels Trabanten. *Der Städtebau* 19(5/6): 54.

33. Ibidem: 52-53.

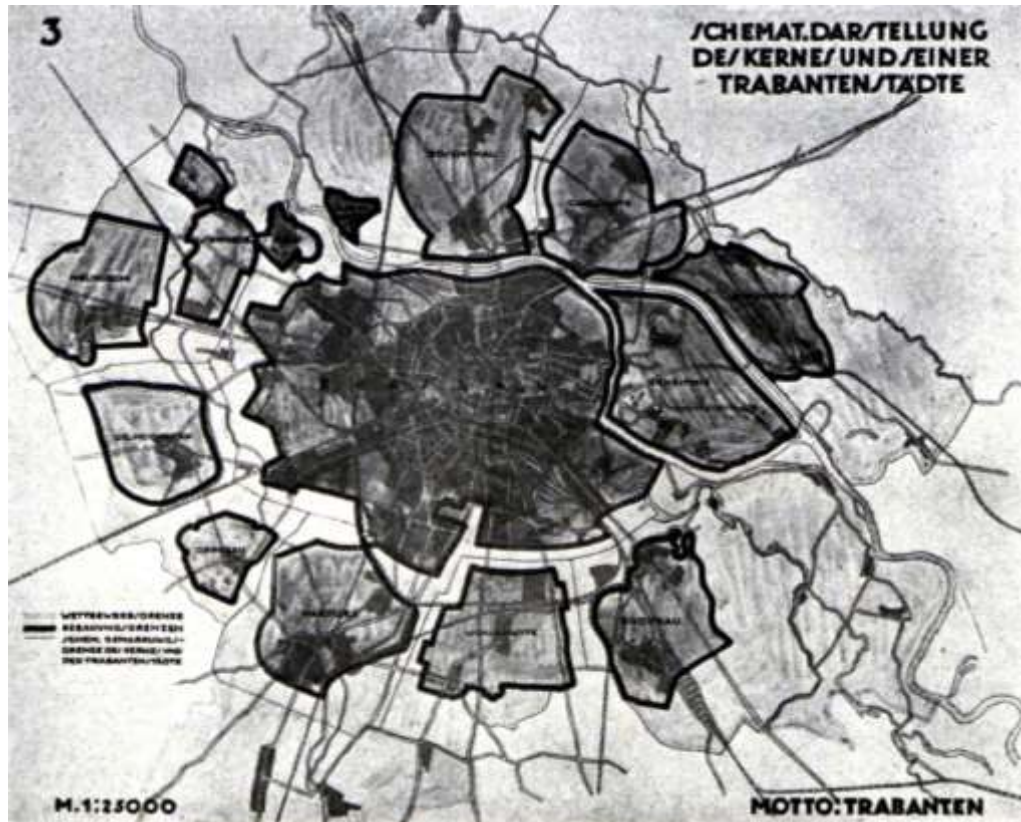


Figure 3. Ernst May, Herbert Boehm, *Competition Design for the Expansion of Wrocław and Suburban Communes, Satellite Layout, 1921-1922*
 Source: *Der Städtebau* (1922) 19: 48.

Unfortunately, the competition brief limited the architects to an area with a 10-kilometre radius, whereas May needed an area with a 30-kilometre radius to present his concept. In his competition entry, the architect presented only satellite housing estates arranged around the city centre (see Figures 3-4). He could not come to terms with the rejection of his concept. Until his departure from Wrocław for Frankfurt am Main in 1925, he fought against the Wrocław architectural community and opposed the expansion of the city's boundaries. It was, however, a battle with no chance of success. In 1924, even his mentor Raymond Unwin advised him to seek a compromise, writing: "One cannot radically alter the character and development of a sprawling city. I believe it would be wise if you did not push the matter too hard, but sought a compromise. Then you will certainly succeed in developing satellite towns and suburbs that lie closer to the centre and are no longer so invariably self-contained".³⁴

34. A letter from Raymond Unwin to Ernst May dated 26 November 1924, Deutsche Kunstharchiv Nürnberg, NL Ernst May, I.C-753 (from: Störtkuhl B (2011) Ernst May und Schlesische Heimstätte. In C Quiring, W Voigt, P Cachola Schmal, E Herrel (eds), 33-49. *Ernst May 1886-1970*. München-London-New York: Prestel).

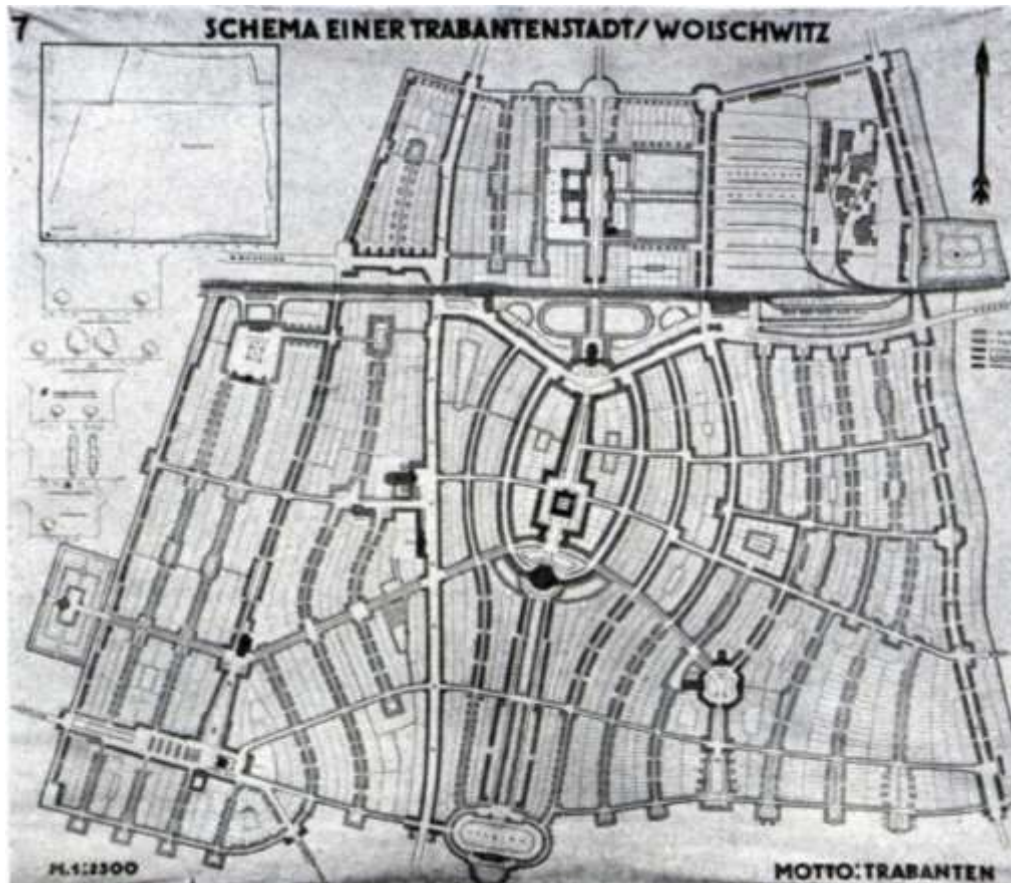


Figure 4. Ernst May, Herbert Boehm, *Competition Design for the Expansion of Wrocław and Suburban Communes, Wojszyce Satellite Housing Estate, 1921-1922*
 Source: *Der Städtebau* (1922) 19: 47.

Max Berg's concept for the Development of Wrocław

Another proponent of the “satellite town” concept even before the First World War (1911) was Max Berg. He presented it in his design for the satellite “garden city” of Sobótka. This was a concept for the expansion of Sobótka in the form of a housing estate that would serve as a residential hinterland for a large urban agglomeration (see Figure 5). The architect then proposed an alternative solution for the residential zone of a city such as Wrocław. He considered it beneficial to de-agglomerate the city by surrounding its core with two rings of housing estates. The inner ring would consist of close suburbs such as Biskupin (Bischofswalde), Osobowice (Oswitz) and Różanka (Rosenthal) and Karłowice (Karlowitz), whilst the outer ring would consist of towns near Wrocław, such as Leśnica (Deutsch Lissa), Oborniki (Obornigk), Trzebnica (Trebmitz) and Sobótka (Zobten). To illustrate this concept, he chose Sobótka, due to the town's unique location amidst the forests at the foot of Mount Ślęża. In the architect's view, thanks to a rapid rail link to Wrocław and the use of local transport

circling the built-up area, it would be an ideal place for living and recreation. Sobótka was to be a typical example of a “garden city”, drawing on the English model.³⁵

Between 1919 and 1921, as part of the project to redevelop Wrocław, Max Berg developed numerous concepts crucial to the city’s future development, in which he advocated, amongst other things, the principle of separating the workplace from the home. Even before the First World War, he had observed that the city’s structure should incorporate two main elements: residential areas and workplaces. The architect proposed dividing the city into functional zones, rejecting concentric divisions and instead proposing a radial layout of zones flanked by green wedges, which were to be integrated with the city centre.³⁶

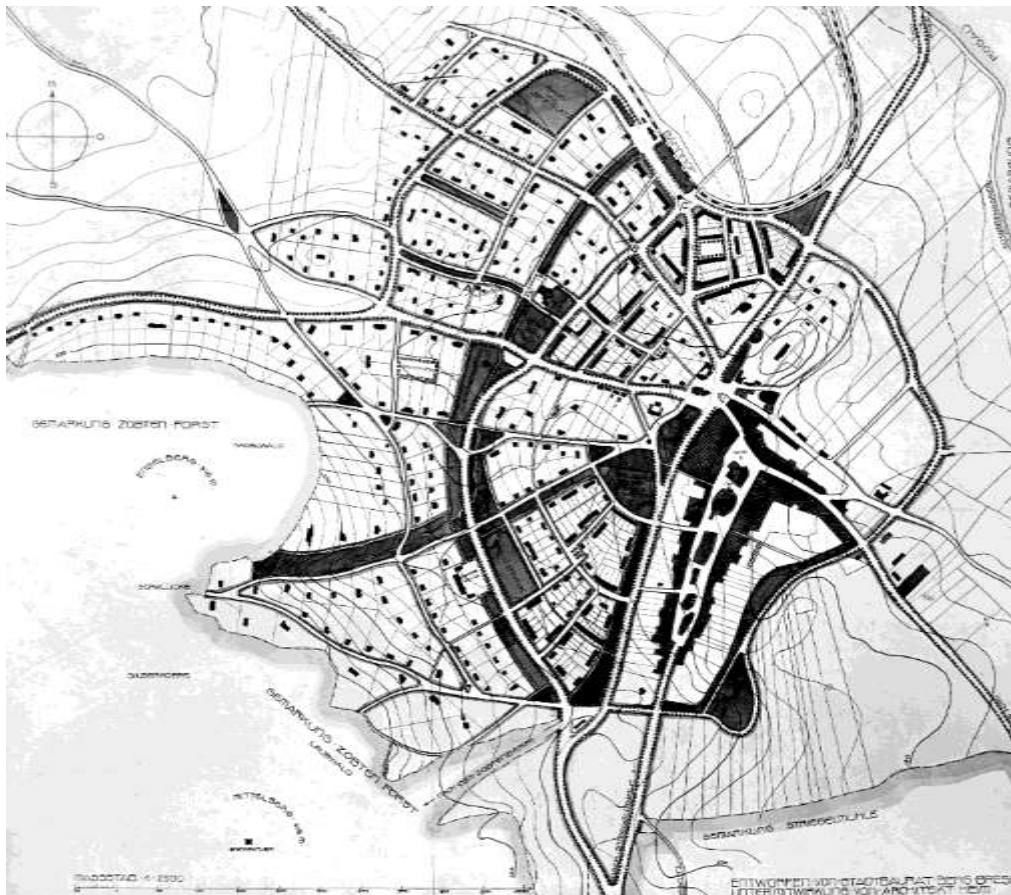


Figure 5. Max Berg, Paul Heim, Reconstruction Design of Sobótka, Never Build, 1911

Source: Schlesien (1911/1912) 5(18): 499.

35. Berg M (1911/1912) Die Besiedlung des Zobten unter Erhaltung seiner Landschaftlichen Schönheit. *Schlesien* 5(18): 497-501.

36. In “City”, he designed skyscrapers intended to address the housing shortage by housing public institutions within them, whilst the buildings previously occupied by these institutions were to be converted into residential accommodation. Ilkosz J (2025), 124-125; Lampugnani V M, (2010), 288.

In the years 1919-1921, as part of the Wrocław reconstruction design, Max Berg created many concepts important for the future development of the city, in which he promoted, among other things, the principle of isolating the workplace from the place of residence. Even before the First World War, he noticed that the structure of the city should take into account two main elements - residential areas and workplaces. The architect proposed dividing the city into functional zones, not agreeing to concentric divisions and presenting instead a radial layout of zones adjacent to green wedges, which were to be integrated with the city center.

This approach to planning ensured good ventilation within the urban fabric and allowed for its further development. In Max Berg's view, the direction of urban development should be guided by the city's historical layout, as well as by natural and topographical conditions and demographic factors. A starting point could be the natural course of rivers, towards which the city should open up. "A residential zone, comprising both low-rise and high-rise buildings, interwoven with green spaces, gardens and playgrounds, always planned in accordance with health requirements, ideally in the rural setting of integrated suburbs and conveniently connected to the business city centre, is one objective.



Figure 6. Max Berg, Ludwig Moshamer, Richard Konwiarz, Albert Kempter, Wrocław Rebuilding Design, 1919-1921

Source: *Siedlung und Stadtplanung in Schlesien, I. Breslau, 1. Stadtplanung, 2. Wohnung und Siedlung* (1926). Magistrat der Hauptstadt Breslau (ed), Breslau: 13.

The business and work zone – a centre planned in accordance with other health requirements and with a view to maximising time efficiency and energy savings – is the second objective towards which the urban planning of the future strives." The architect also proposed: "[...] the preservation of undeveloped areas in the city centre for use as green spaces. This applies above all to Kepla Mieszczńska (Bürgerwerder).

There is still the possibility of establishing a central park here, which, thanks to the creation of further bridge connections alongside the existing ones, would provide much-needed green spaces for the built-up districts of Wrocław on the right and left banks of the Oder".³⁷

In Max Berg's designs, the central park in Kępa Mieszczkańska would have been surrounded by a housing estate comprising five- and six-storey blocks of flats (see Figure 6). It would not have been a low-rise "garden city"-style estate, as favoured by most architects of the time. Max Berg, like Adolf Rading, did not rule out the possibility of locating large-scale housing estates with "townhouse"-style buildings near the city centre, but these were to be arranged in a loose layout and surrounded by greenery.³⁸

Housing Cooperatives and Modern Housing Estates in Wrocław – First Half of the 1920s

The projects mentioned above had a significant impact on the development of modern urban planning concepts; however, the construction of new housing estates in Wrocław after the First World War looked rather bleak due to the constraints imposed by the city's boundaries. As was written at the time, "there is a growing danger that the city will suffocate within the tight corset imposed upon it".³⁹ The number of housing units lacking after the First World War stood at 11,500, excluding the current demand for 2,400 new homes per year.

Before the First World War, there were virtually no housing cooperatives or public utility companies in Wrocław responsible for housing construction. The construction of small flats within large tenement blocks was almost exclusively the domain of private investors, who were often lacking in professional expertise and usually heavily involved in land speculation. Projects were carried out on a small scale, without any logical connection, making full use of the available building plots.

The situation changed when, in 1919, the town hall established Department for the Construction of Small Flats (Department for Small-Scale Housing Construction), whose remit was to review applications for planning permission, administer subsidies and ensure that buildings constructed with public funding met economic, health and aesthetic standards.

Tarnogaj (Dürrgoy)⁴⁰ was the first post-war municipal development project, designed and managed in-house, with construction overseen directly by the city's

37. Zukünftige Baukunst in Breslau als Ausdruck zukünftiger Kultur. (1921) In G Hallama (ed), 28-41. *Deutschlands Städtebau. Breslau*. Berlin.

38. Ilkosz J (2025): 123-129.

39. *Siedlung und Stadtplanung in Schlesien, I. Breslau, 1. Stadtplanung, 2. Wohnung und Siedlung* (1926). Magistrat der Hauptstadt Breslau (ed), Breslau: 54.

40. Eysymontt R, Ilkosz J, Tomaszewicz A, Urbanik J (eds.) (2011), *Leksykon architektury Wrocławia*, Wrocław: Via Nova: 682-683.



Figure 8. Paul Schreiber, *Small Houses Estate, Tarnogaj, Kamieniecka Street, 1920*

Source: *Siedlung und Stadtplanung in Schlesien, I. Breslau, 1. Stadtplanung, 2. Wohnung und Siedlung* (1926). Magistrat der Hauptstadt Breslau (ed), Breslau: 25.

Schlesische Heimstätte

During research into the housing development of interwar Wrocław, 29 housing cooperatives involved in the construction of new homes were identified. However, the most significant role was played by the following cooperatives: Schlesische Heimstätte, Provinzielle Wohnungsfürsorgegesellschaft m.b.H, Siedlungsgesellschaft Breslau AG and Siedlungsgenossenschaft Eigenheim Eichborngarten G.m.b.H.

The Schlesische Heimstätte, a provincial housing association (provinzielle Wohnungsfürsorgegesellschaft m.b.H.), sought to improve the city's poor housing situation; founded in June 1919 and led until 1925 by the young architect Ernst May, who was just starting out on his professional career. At that time, May was influenced by the work of Theodor Fischer and Raymond Unwin, as well as by the movement for the preservation of the homeland (Heimatschutzbewegung), meaning he showed an interest in architecture with traditional features.

Schlesische Heimstätte specialised in building affordable and functional homes for the less well-off. It developed a catalogue of ready-made designs. It built housing estates comprising small flats and kitchen gardens in the municipalities and towns around Wrocław and throughout Silesia. The architectural and urban planning concepts were intended to draw inspiration from the rural buildings of Silesia. The buildings were designed to resemble traditional farmhouses and farmsteads.

Siedlungsgesellschaft Breslau AG - Phase One

In the same year, 1919, a cooperative was established Breslau Housing Association Ltd, a company closely linked to the town but operating as an independent, financially self-governing public utility limited company. The majority stake was held by the town council, which, through appropriate representation on the management board and supervisory board, also secured a decisive say in all aspects of the cooperative's operations.

In line with its remit, Siedlungsgesellschaft Breslau AG incorporated a brickworks and a sawmill into its structure as subsidiaries and was involved in the wholesale supply of building materials. Design work was commissioned from Wrocław architects, who were also entrusted with overall supervision of the construction. Contracts for the actual building work were awarded through a tender process. Local craftsmen and labourers were given preference for the construction work. It was only the public authorities' oversight of housing that made possible what had been sought long before the outbreak of the war: action for the public good, large-scale economic development and building of land, uniformly arranged residential blocks, systematically designed housing estates and entire districts, and the cost-effective construction of flats thanks to the large number of projects, their standardisation and typification.

Even before the city's boundaries were extended in 1928, construction work on housing estates had begun. In 1919, Siedlungsgesellschaft Breslau AG began preparatory work for the construction of two large housing estates: Popowice (Pöpelwitz) and Sepolno (Zimpel). For the latter, the city made land available at cost price, whilst the land for the former was acquired on favourable terms.

The Popowice housing estate, situated in the west of the city, was intended for industrial workers and covered an area of 46.9 hectares. It was built between 1919 and 1927 by Siedlungsgesellschaft Breslau AG, based on an urban design by Theodor Effenberger, who designed most of the houses (see Figure 9). In addition, the houses were designed by Hans Thomas, Erich Grau and Richard Gaze.⁴¹ The urban design blended tradition with modernity. Both a linear layout and perimeter-style block development were employed, with gaps between the blocks to ensure good ventilation. Within the estate, a church and a school were built on spacious, green squares.

A total of 1,780 flats were built to accommodate 8,000 residents, with a population density of 170 people per hectare. The development comprised a mix of buildings of varying heights, tapering downwards towards the centre of the estate, ranging from five and four storeys at the perimeter to three and two storeys in the interior. Each flat in the medium- and low-rise buildings had a garden ranging in size from 80 to 300 m². The flats ranged in size from 50 to 90 m² and consisted of 2- or 3-room units in detached houses or 2-, 4-, 6- and 8-family dwellings.

In 1926, "Siedlungsgesellschaft Breslau AG" organised a competition to design the entrance square to the Popowice housing estate from the side of what is now Legnicka Street (Frankfurter Str.), i.e. the current Wiślany Square (Manfred von Richthofen Pl.). Thirty-one entries were submitted to the competition. First prize was awarded to Ludwig Moshamer (see Figure 10), who went on to realise his design.⁴² It was the only housing estate built at that time to be completely destroyed during the Second World War.

41. May E (1922) Stadterweiterung mittels Trabanten. *Der Städtebau* 19(5/6): 32, Effenberger T (1921) Die Siedlung Breslau Pöpelwitz. *Schlesisches Heim* 2(3): 65-68; Effenberger T (1928) Wohnungsbauten in Breslau. *Deutsche Bauzeitung. Moderner Wohnbau* 62(6): 77-88.

42. Wettbewerbe. Breslau. (1926) *Ostdeutsche Bauzeitung* 24(22): 191-192, Wettbewerbsergebnisse. Breslau. (1926) *Ostdeutsche Bauzeitung* 24(38): 335.

The Sepolno garden estate, situated in the eastern part of the city, in the immediate vicinity of Szczytnicki Park, was built between 1919 and 1935, mainly by Siedlungsgesellschaft Breslau AG and partly by a subsidiary of GEGFAH (*Gemeinnützige Aktiengesellschaft für Angestellten-Heimstätten*).⁴³

The urban design was created by architects Hermann Wählich and Paul Heim from Wrocław, whilst the individual buildings were also designed by: Albert Kempter, Hans Thomas, Erich Grau, Richard Gaze, Paul Häusler, Fritz and Paul Röder, Kurt Langer, Wilhelm Brix, Heinrich Busmann, Hugo Althoff and Max Schirmer (see Figure 11). The estate's plan was amended four times during construction, although its main compositional principles remained unchanged.

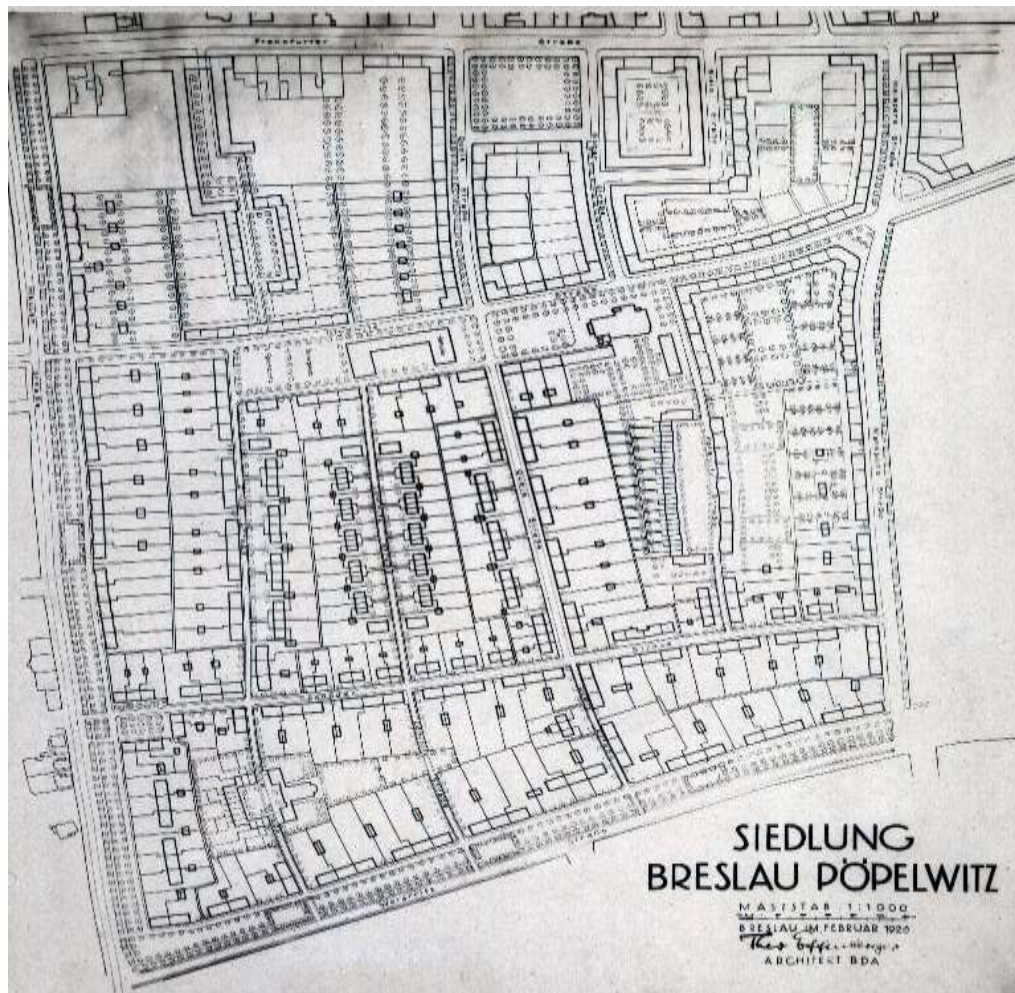


Figure 9. Theo Effenberger, Popowice Housing Estate Design, 1926

Source: Museum of Architecture in Wrocław.

43. *Siedlung und Stadtplanung in Schlesien, I. Breslau, 1. Stadtplanung, 2. Wohnung und Siedlung* (1926). Magistrat der Hauptstadt Breslau (ed), Breslau: 34; Wählich H, Heim P (1920) Siedlung Zimpel. *Ostdeutsche Bauzeitung* (18)55: 241-242; Wählich H, Heim P (1920) Siedlung Zimpel. *Schlesisches Heim* (1)5: 2-8. Por. Kononowicz W (1991) Z problemów urbanistyki dwudziestolecia międzywojennego. Osiedle ogrodowe Sepolno we Wrocławiu. *Roczniki Sztuki Śląskiej* 15: 60-91.



Figure 10. Ludwig Moshamer, buildings at the Wiślany Square (Boberplatz), No Longer Standing, Postcard ca. 1930
Source: private collections.

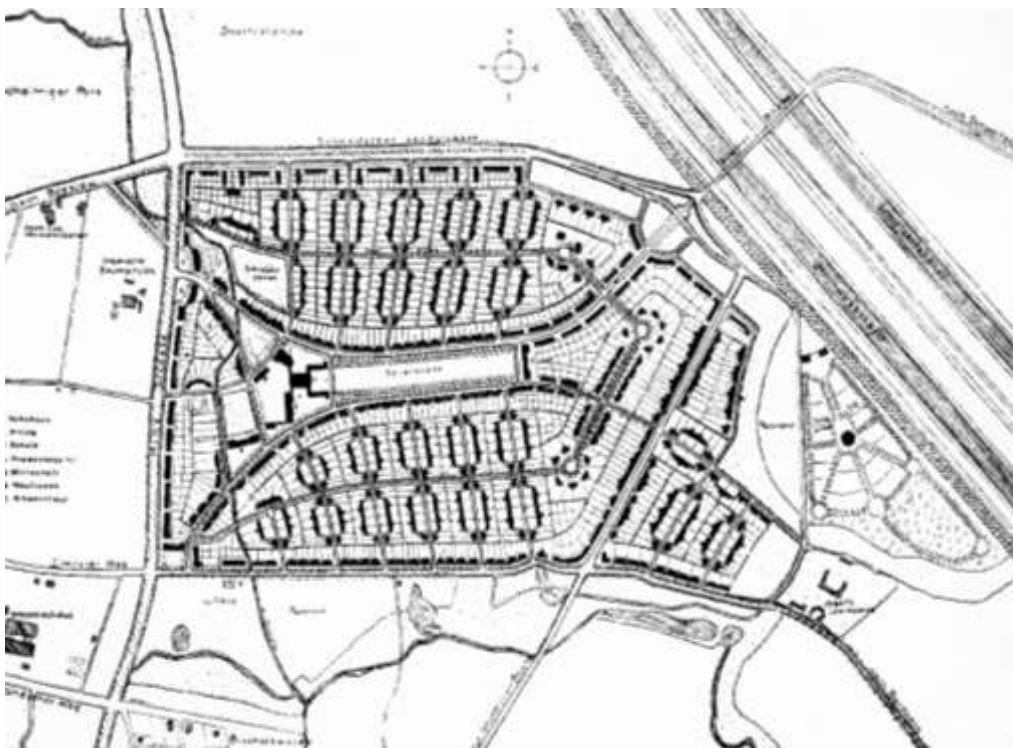


Figure 11. Paul Heim, Hermann Wählich, first version of the Sepolno Housing Estate Design, 1919
Source: *Schlesisches Heim* (1920) 1(5): 3.

Only low-rise, two-storey buildings were constructed. The abundance of greenery became the dominant feature of the plan (see Figure 12). A school, an Evangelical church, and a range of amenities and shops were situated around a centrally located square. On an area of approximately 100 hectares, 2,200 flats were built to accommodate around 10,000 residents (see Figure 13).



Figure 12. Herman Wählich, *Sepolno Housing Estate Design, 1919*

Source: *Schlesisches Heim* (1020) 1(5): 4.

The population density was 115 inhabitants per hectare. Two- to four-room flats with kitchens ranging from 50 to 125 m² were built in detached, semi-detached and terraced houses. The size of the gardens ranged from 80 to 500 m².

During the interwar period, Siedlungsgesellschaft Breslau AG built many other small housing estates and residential complexes. Between 1922 and 1925, on a 3-hectare site on Henrykowska Street, south of the main railway station, in the south-eastern part of the city, Siedlungsgesellschaft Breslau AG built, to designs by Paul Heim and Albert Kempter, a complex comprising 233 flats with 1, 2, 3 and 4 rooms plus a kitchen, ranging in size from 40 to 85 m², for around 1,000 residents. The three-storey buildings were arranged around a large internal courtyard, designed as a communal green space.



Figure 13. *Sepolno Housing Estate, Aerial Photo, ca. 2011*
Source: photo Stanisław Klimek.

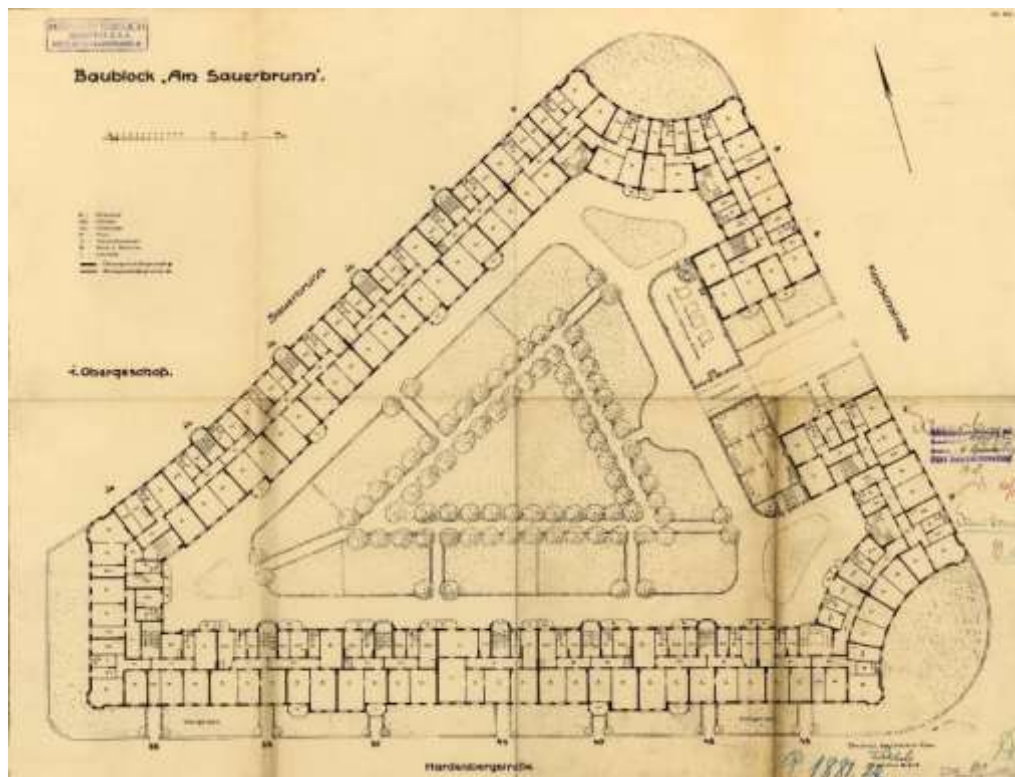


Figure 14. *Hermann Wahlich, Building Complex Design at Kwaśna Street, 1926*
Source: Museum of Architecture in Wrocław.

In the interwar period, Siedlungsgesellschaft Breslau AG implemented many other small housing estates and development complexes. In the years 1922-1925, on a 3 ha plot of land, on Henrykowska Street, south of the main train station, in the south-eastern part of the city, Siedlungsgesellschaft Breslau AG built, according to the designs of Paul Heim and Albert Kempter, houses with 233 apartments, 1-, 2-, 3- and 4-room with kitchen, with an area of 40 to 85 m², for about 1,000 residents. The three-storey houses were situated around a large inner courtyard, designed as a common green area.

In addition, "Siedlungsgesellschaft Breslau AG" developed housing estates in various parts of the city along Kwaśna Street (Am Sauerbrunn) (see Figure 14), Jantarowa Street (Agathstraße), Głogowska Street (Glogauerstraße), Czarnieckiego Street (Alsenstraße), Zajęcza Street (Wildestraße) and Żeglarska Street (Katzbachstraße). The buildings were designed to match the number of storeys and height of neighbouring buildings and, where the size of the plot allowed, they also featured gardens attached to the flats.

Housing associations were established to manage the flats in gated communities; their boards were elected by the tenants from among themselves. The housing associations were subordinate to Siedlungsgesellschaft Breslau AG; they remitted rent payments to it and handled local administration. The boards served in an honorary capacity, whilst support staff were paid by the Cooperative.⁴⁴

Siedlungsgenossenschaft Eigenheim Eichborngarten G.m.b.H.

Particular mention should be made of the project carried out by the Siedlungsgenossenschaft Eigenheim Eichborngarten G.m.b.H.), which operated independently of the city. In 1919, the cooperative purchased 30 hectares of former agricultural land in Grabiszyn (Gräbschen).

Grabiszyn Estate⁴⁵ was built between 1919 and 1926 in the southern part of the city, designed by Paul Heim (see Figure 15). The houses were co-designed by Albert Kempter (see Figure 16). The estate is surrounded by 3- and 4-storey perimeter buildings; the interior is largely made up of detached houses as well as 2-, 3- and 4-family terraced houses with gardens ranging in size from 80 to 600 m². Along Józefa Hallera Street (Kürassier Str.), three-storey six-family houses were built, whilst on Grabiszyńska Street (Gräbschener Str.), buildings were constructed in which the ground floor was occupied by shops, with the next three storeys serving as residential accommodation. A total of 790 flats were built. According to the 1919 plan, the estate was to include a community centre, two churches (Protestant and Catholic) and a school. Ultimately, the Catholic church, the Protestant parish hall and the school were built.

44. *Siedlung und Stadtplanung in Schlesien, I. Breslau, 1. Stadtplanung, 2. Wohnung und Siedlung* (1926). Magistrat der Hauptstadt Breslau (ed), Breslau: 34.

45. Eysymontt R, Ilkosz J, Tomaszewicz A, Urbanik J (eds.) (2011): 493-494.

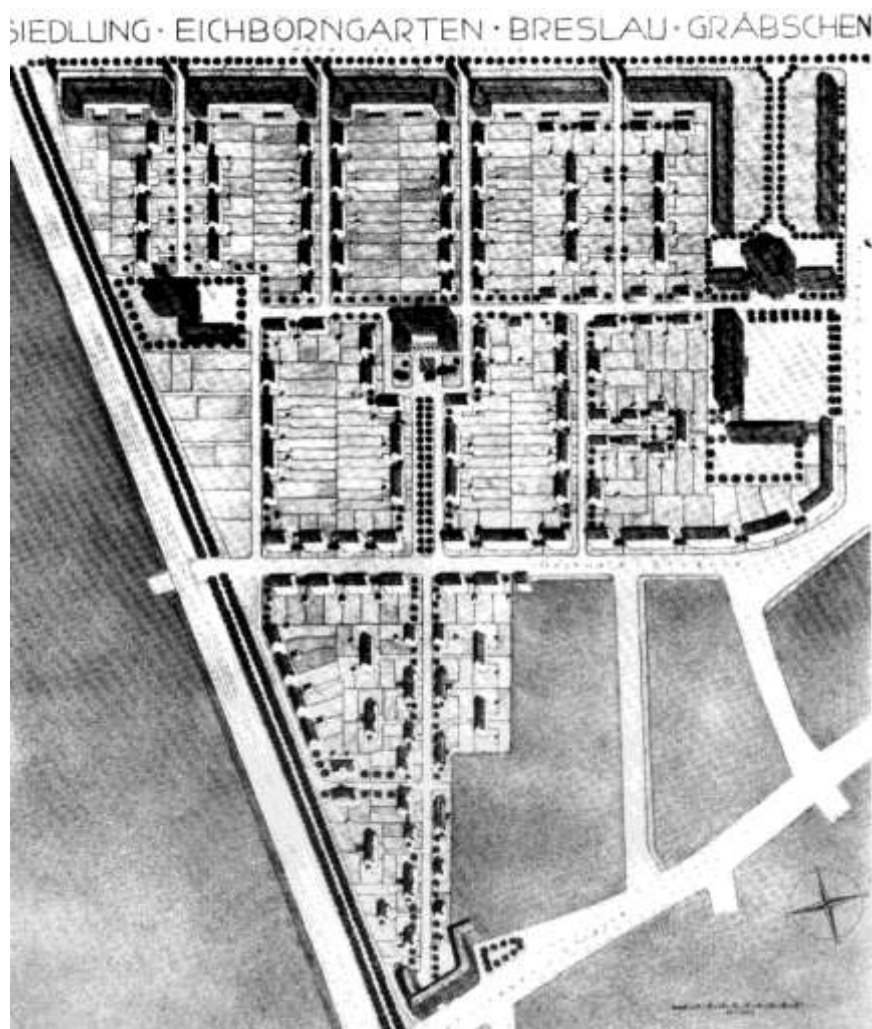


Figure 15. Paul Heim, *Grabiszyn - Eichborngarten Housing Estate Design*, 1922

Source: *Siedlung und Stadtplanung in Schlesien, I. Breslau, 1. Stadtplanung, 2. Wohnung und Siedlung* (1926). Magistrat der Hauptstadt Breslau (ed), Breslau: 36.

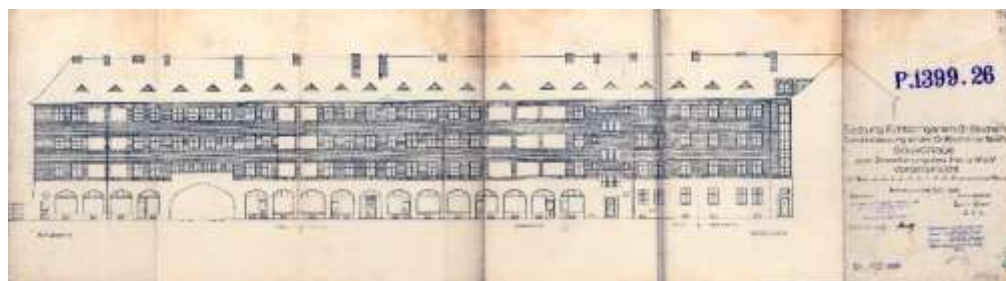


Figure 16. Paul Heim, Albert Kempter, *Grabiszyn – Eichborngarten Housing Estate, Design of Houses at Grabiszyńska Street (No Longer Standing)*, 1926

Source: Museum of Architecture in Wrocław.

Housing Cooperatives and Modern Housing Estates in Wrocław – The Second Half of the 1920s

By 1 April 1924, compulsory subsidies from the Reich, the state and the municipality, as well as voluntary municipal subsidies, had been introduced; in addition, loans from state and private employers were made available if the construction costs could not be covered by mortgage loans on a profitable basis.

As a result of the progressive and ultimately complete devaluation of the currency, the housing finance system found itself in an ever-deepening crisis, which threatened to bring all construction investment to a standstill and, by the end of 1923, had indeed led to its stagnation.

The situation changed dramatically following the introduction of the Charles Gates Dawes Plan (foreign capital injected into the German economy); from April 1924, a period of economic recovery began on a scale previously unknown in Germany – the “Golden Twenties” (Goldene Zwanziger Jahre). Massive subsidies to building societies led to a boom in social housing. Between 1925 and 1930, over 1 billion marks of public money was allocated annually in Germany to the development of housing.

Once the currency had stabilised, the financing of new buildings constructed with public subsidies was carried out in accordance with the guidelines on the use of the portion of the municipality’s property tax revenue earmarked for construction projects. From this source, the municipal treasury received funds in 1924 that could be allocated to supporting housing construction, amounting to 5,261,052 marks, and in 1925 – 6,006,862 marks.⁴⁶

To address the housing shortage in the country, the Reichstag passed a law in March 1926 to promote housing construction. To this end, a commission was set up to investigate new ways of rationalising and financing construction. In 1927, Marie-Elisabeth Lüders, then a member of the Reichstag, applied for a portion of the funds to be allocated to experimental projects. Her proposal was accepted, and the Reichstag commission was transformed into a new association.

In 1926, the Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen (RFG – State Research Society for Efficiency in Construction and Housing) was established in Germany,⁴⁷ to conduct and fund research into rational

46. *Siedlung und Stadtplanung in Schlesien,...*: 35-37.

47. Urbanik J (2022), Towarzystwo badawcze RFG i ergonomia w niemieckiej architekturze okresu międzywojennego. In Sołtysik M J, Stępa M (eds.), 242-253. *Architektura przemysłowa, portowa i miejska XX wieku*. Gdynia, Gdańsk: Urząd Miasta Gdyni, Wydział Architektury Politechniki Gdańskiej; Urbanik J, Naworska E (2022) RFG and the beginnings of modern living In *Proceedings of 17th International Docomomo Conference - Modern Design: Social Commitment & Quality of Life* (València, Spain, 6-9 September 2022). València: Docomomo International, 55-62. See. Nerdinger W (2023), 237, who wrote: „29 czerwca 1927 Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen (RFG) (Państwowe Towarzystwo Badawcze do spraw Ekonomiki Budownictwa i Mieszkalnictwa). 24 RFG committees, which once again

housing development and to support exemplary housing projects. The members of the RFG were the most distinguished architects of the time, who sought to incorporate the Society's guidelines into their designs and projects. The RFG dealt not only with the internal layouts of flats and their floor areas, and with new materials and technologies introduced to reduce the cost of building houses, but also with their correct orientation in relation to the cardinal directions, which ensured adequate sunlight in the rooms and, consequently, healthy living conditions. As a result of research conducted by the RFG, optimal flat sizes were established, corresponding to a specific number of people in the family: 45 m², 57 m², 70 m². The RFG's activities also influenced the design of many German housing estates not under the Society's supervision. These were often co-designed by architects who considered the RFG's guidelines to be sound, or who were themselves members of this research organisation and felt a duty to implement its programme.

Although RFG existed for only five years, being dissolved on 5 June 1931, its guidelines permanently transformed housing architecture in the Weimar Republic. Through its activities, it contributed to laying the foundations of modern ergonomics, which deals, amongst other things, with adapting dwellings and their fittings to the needs of future occupants. In the very first year of the RFG's existence, the state made 10 million marks available to the society for research into the rationalisation of housing and the reduction of construction costs.

Siedlungsgesellschaft Breslau AG - Phase Two

In Wrocław, in the late 1920s, housing estates were also built in Księża Małe (Klein Tschansch/Ohlewiesen) and Pilczyce (Pilsnitz). Both can be classified as fully modernist developments.

The Pilczyce housing estate was built on land incorporated into the municipal area of Wrocław in 1928. The land was purchased by housing cooperatives, with Siedlungsgesellschaft Breslau AG acting as the largest investor. Had the company's original plan been realised, it would have been Wrocław's most modern housing estate, designed by Paul Heim and Albert Kempfer. The design envisaged a grid-like layout of the estate with two- and three-storey houses featuring flat roofs in the Neues Bauen style, interspersed with green spaces (see Figure 17). The flats were intended for low-income workers employed in the industrial plants located in the neighbourhood.

included Gropius and May, allocated substantial grants and aid funds and supported the construction of experimental housing estates where new solutions were to be tested and evaluated by the RFG. Due to the concentration of power and resources, the RFG became the leading institution working towards the rationalisation of building. In April 1929, a conference attended by 40 trade associations drew over 1,500 participants. Conservative architects such as Paul Schultze-Naumburg, Emil Högg and Cornelius Gurlitt had opposed the RFG from the moment of its inception.

The plan was to build 1,600 flats for 6,400 people on a 32-hectare site. By 1933, only the houses on Górnicza Street (Richthofen Str.) had been completed.⁴⁸



Figure 17. Fritz Behrendt, Heinrich Knipping, Paul Heim, Albert Kempfer, Pilszyce Housing Estate Design, 1929

Source: Museum of Architecture in Wrocław.

48. Eysymontt R, Ilkosz J, Tomaszewicz A, Urbanik J (eds.) (2011): 483.

Another housing estate Księża Małe⁴⁹ was built between 1928 and 1929 according to an urban design by Paul Heim and Albert Kempter, on land incorporated into the city in 1928. It formed part of Hugo Althoff's (then city architect) programme for the construction of rational social housing estates. The developer was Siedlungsgesellschaft Breslau AG. The house designs were created by Paul Heim, Albert Kempter, Hans Thomas, Gustav Wolf and Rudolf Sack. On an area of 12.3 hectares, 762 two- and three-room flats with floor areas of 45 m², 57 m² and 70 m² were planned for 3,048 residents, most of which lacked bathrooms. Rows of houses, situated parallel or perpendicular to one another, were built around a large rectangular green recreational area. Only on the side of the main access road (Opolska; Oppelner Str.) were the houses arranged in a zigzag pattern and at an angle to the orthogonal layout (see Figure 18). The amenities plan included: a pavilion with a community hall (unrealised), shops, a nursery, and a central heating boiler house with a communal bathhouse and laundry. Księża Małe was the first fully realised housing estate of the Neues Bauen movement. The architects adapted the flats' specifications to the RFG guidelines. It represented Wrocław at an exhibition entitled "Wohnung für das Existenzminimum" during the 2nd International CIAM Congress in Frankfurt am Main.

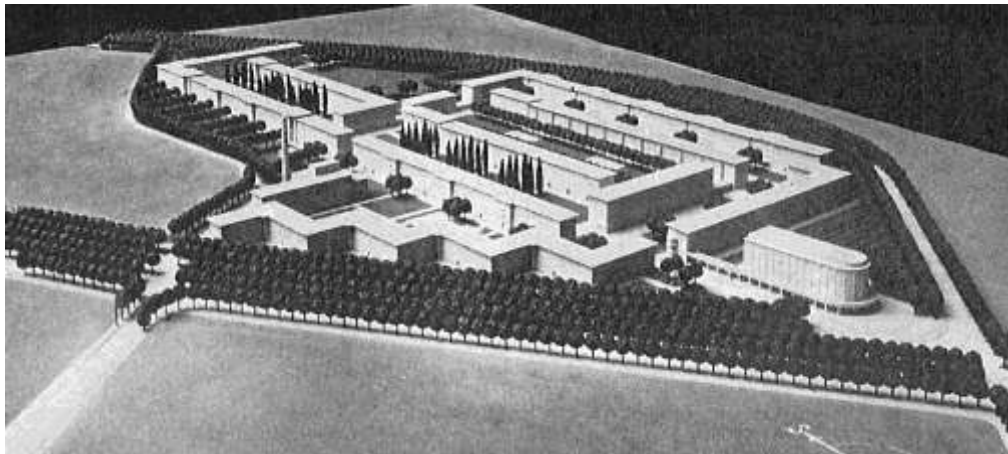


Figure 18. Fritz Behrendt, Heinrich Knipping, Paul Heim, Albert Kempter, Księża Małe Housing Estate Design, Model, 1929

Source: *Deutsche Bauzeitung* (1929) 67(67): 579.

In 1929, the Silesian Branch of the Werkbund organised an exhibition in Wrocław under the slogan "Home and Workplace" ("Wohnung und Werkraum" Exhibition - WuWA).⁵⁰ Its main aim was to showcase various approaches to housing

49. Ibidem: 484-485, Kononowicz W (1995) Ewolucja osiedla mieszkaniowego we Wrocławiu okresu Republiki Weimarskiej - Księża Małe. In J Rozpędowski (ed.), 445-478. *Architektura Wrocławia*, vol. 2, *Urbanistyka do roku 1945*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej.

50. Urbanik J (2019) 1929 WUWA 2029. *The Werkbund Exhibition in Wrocław*. Wrocław: Muzeum Architektury.

construction in Germany and abroad. The initiative was launched by Heinrich Lauterbach, founder and chairman of the Silesian Branch of the Werkbund. An important part of the exhibition was a model, experimental housing estate, financed and built by Siedlungsgesellschaft Breslau AG (see Figure 19). The programme regarding the types and sizes of flats, as well as construction techniques and materials, was agreed with the RFG. Eleven Silesian architects were invited to take part in the project. They were Paul Heim, Albert Kempter, Theodor Effenberger, Ludwig Moshamer, Heinrich Lauterbach, Paul Häusler, Moritz Hadda, Emil Lange, Gustav Wolf, Hans Scharoun and Adolf Rading.

The aim of building the housing estate was to showcase new types of affordable small and medium-sized flats, and in particular new house designs, new technologies, new building materials, new interior fittings and a new colour scheme. The completed houses, with their interiors already fitted out, were open to the public for three and a half months, and were then let for two years to test the new solutions. The estate was designed by Adolf Rading and Heinrich Lauterbach, who planned it in accordance with new urban planning principles ensuring residents free access to fresh air, sunlight and green spaces. The complex also included a single-storey nursery. A total of 132 flats were presented, including 103 small ones (with an area of 45–60 m²) and 29 larger ones in multi-family and single-family homes – detached, semi-detached and terraced. Most of the houses were in the Neuse Bauen style. They were designed according to Le Corbusier's five principles of modern architecture.

It was the last major display of modernism in architecture in Wrocław.

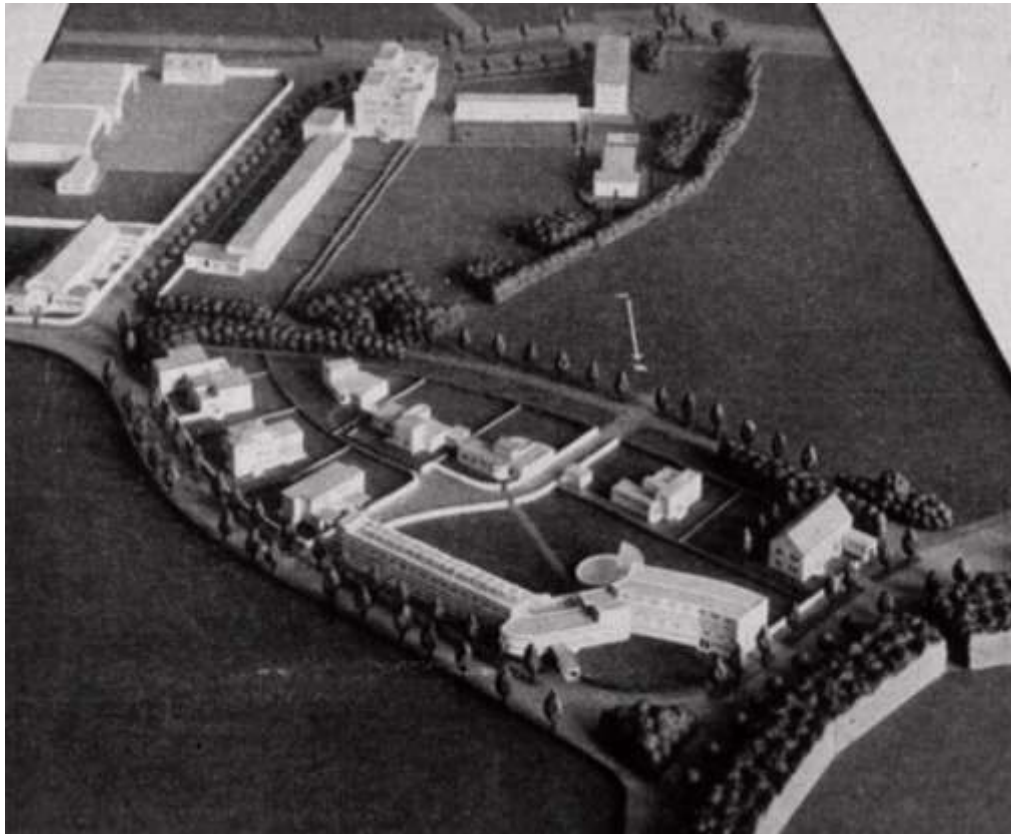


Figure 19. Heirich Lauterbach, WuWA Werkbund Exhibition Housing Estate Design, Model, 1929

Source: *Die Form* (1929): 97.

Housing Estates from the 1930s under National Socialism

Soon afterwards, in 1932, the Wrocław Academy of Art and Design was closed for financial reasons, leading many distinguished architects and artists to leave the city.

After 1933, between 1933 and 1936, during the early years of the Third Reich, the concept of small-scale housing estates and private homes (Kleinsiedlungs- und Heimstättengedanke) was promoted under the new political conditions, as part of suburban housing developments (Stadttrandsiedlungen), thus repeating the crisis-era solutions from the early period of the Weimar Republic. The aim of tying urban workers to the land and providing them with food from their own plots was to mitigate the effects of the economic crisis. The idea of small settlements was ideologically motivated. As early as 1931, they were intended for the unemployed and workers on reduced hours. From 1934, the housing provision was mainly taken up by full-time workers with more than four children. The estates consisted

of monotonous rows of identical detached houses on plots of land, arranged in an east-west or north-south alignment.⁵¹

Between 1936 and 1940, so-called “people’s housing” (Volkswohnungen) was built for workers at factories involved in the Four-Year Plan and for members of the Wehrmacht, in the form of housing estates modelled on garden cities.⁵² It was recommended that streets be designed with soft, flowing alignment lines. These were cheap flats with minimal floor space and furnishings. The Act on the New Shaping of German Cities (Gesetz zur Neugestaltung deutscher Städte) of 4 October 1937 was a new piece of legislation concerning the 41 Reich cities listed in the Führer’s decree and all the capitals of the individual regions. Wrocław was also included on this list. The redevelopment plans concerned not only the city centre but also housing estates situated on the outskirts of the city, for families living in the centre.⁵³

It seemed that following the expansion of Wrocław’s boundaries in 1928 and the end of the economic crisis of 1929–1930, new opportunities had emerged for the development of new housing estates, particularly as the unresolved problem of housing shortages persisted. Radical changes took place in the housing policy of the new Nazi government. Social housing associations, such as Schlesische Heimstätte, which had previously been under the Ministry of Social Welfare, were placed under the authority of the Reich Ministry of Labour. In turn, all housing cooperatives were taken over by the German Labour Front (Deutsche Arbeitsfront, DAF). There was a change in the way housing construction was financed. State aid was directed mainly towards private owners, rather than, for example, housing

51. “To address the severe housing shortage, private housing construction was supported through loan guarantees on the capital market and a drastic reduction in interest rates of over 50 per cent. As state funds were to be allocated to rearmament, in accordance with Hitler’s uncompromising directive – “Everything for the Wehrmacht” – housing construction, like consumer supplies, was largely handed over to the private sector. Whilst in the Weimar Republic between 1924 and 1930 around 50 per cent of new residential buildings received direct state funding, during the National Socialist era only around 12 per cent of residential buildings received support. Housing cooperatives taken over by the German Labour Front (Deutsche Arbeitsfront – DAF) lost their social character. Following the simplification of complex guarantee schemes, and thanks to incentives and the steering of the private economy, over 330,000 dwellings were built in 1936 and 1937. However, as early as 1937, due to the further intensification of construction activity in the armaments sector, shortages of construction workers and materials began to emerge, which led to a renewed decline in the number of flats being built and a steady increase in the housing deficit.”, cf. Nerdinger W (2023), 282.

52. “Housing construction companies lost their role as businesses and were transformed into trustees of the National Socialist Settlement Association (Nationalsozialistischer Siedlungsverband), which was to carry out its tasks in accordance with the guidelines of demographic policy, racial hygiene, economic policy and culture. The German Labour Front (Deutsche Arbeitsfront – DAF) took over the organisation of housing estates within the framework of its housing office. See Lampugnani V M (2010), 591.

53. cf. Planen und Bauen im Nationalsozialismus – Voraussetzungen, Institutionen, Wirkungen (2023), 433-477; Düwel J, Gutschow N (2019), 226-313.

cooperatives which built flats for rent. Consequently, estates of owner-occupied detached or semi-detached houses were built, primarily to meet the housing needs of every "comrade" (Volksgenosse).⁵⁴ Although Nazi ideologues distanced themselves from the architecture of the Weimar Republic, in terms of social amenities they adopted the concept of the so-called social minimum, which had already been implemented in Silesia and Wrocław since 1919 in projects by Ernst May, Herbert Böhm and the Schlesische Heimstätte cooperative.

The housing estates from the 1930s were situated in Wrocław's Maślice (Masselwitz), Stabłowice (Stabelwitz) and Żerniki (Neukirch) districts – the very areas that Ernst May had sought to develop between 1919 and 1925, designing small housing estates for them.

The first of the two largest housing estates was the Nowy Dwór (Mariahöfchen) estate, situated in the south-west of the city and designed in 1935 by Heinrich Knipping for the employees of the nearby rolling stock factory Linke A.G (see Figure 20). This concept was revised at the City Planning Office in 1937 by Herbert Boehm. The estate was laid out on a plan resembling a triangle. The large scale of the development was comparable to housing estates from the Weimar Republic era, such as Sępolno, Grabiszyniek and Popowice. Herbert Boehm planned the construction of multi-family, two-storey or single-family terraced houses, situated in the eastern part of the estate.

In its western section (which was never built), the architect envisaged a development of semi-detached houses. Individual sections of the estate were designed by Franz Auer, Herbert Wiehr, Hans Stosberg and Albrecht Jaeger. The latter, a pupil of Adolf Rading and partner of Hugo Leipziger-Pearce, was a talented architect whose work was part of the Neues Bauen movement. The other architects based their careers on collaboration with the new authorities. Hans Stosberg, who between 1940 and 1943 designed, among other things, houses for officers and officials on what are now Henryka Arctowskiego Street (Tirpitz Str.) and Podróźnicza Street (Skagerrak Str.), located within other housing estates in Wrocław, was the principal designer of the model town of IG Farben in Oświęcim.⁵⁵ With the outbreak of war, construction work was halted and the housing estate was never fully completed.

The second major housing estate was built between 1935 and 1938 in Muchobór Mały, as part of a development project carried out by Niederschlesischer Kleinwohnungsbau GmbH, Neuland-Gemeinnützige Wohnungsbau GmbH and DEWOG (Deutsche Wohnungsfürsorge AG). The estate was designed by Heinrich Knipping, Paul Häusler and the architectural firm Buchwald & Hesse (see Figure 21).

54. Beate Störtkuhl described the housing problem during the Nazi era: Störtkuhl B (2018) *Modernizm na Śląsku 1900–1939. Architektura i polityka*. Wrocław: Muzeum Architektury: 355-361; Störtkuhl B (2021) Practices in building housing and settlements in the Nazi era. Case study Breslau. *Architectus* 26(3): 25-34.

55. cf. Ilkosz J (2021), *German modernism in the shadow of the NSDP – the experience of Wrocław (1933-1945)*. In Purchla J, Komar Ż (eds), 273-294. *Dissonant heritage? The architecture of the Third Reich in Poland*. Kraków: International Cultural Centre: 289.

The third project was a housing estate intended for employees of the Rheinmetall-Borsig arms factory, located in the Psie Pole district in the north-western part of the city (see Figure 22). It was designed in 1940 by Herbert Boehm, who justified the construction of the estate on the grounds of maintaining the factory's production, thereby exempting it from Fritz Todt's decree suspending all construction work except for projects "of key importance to the war".⁵⁶

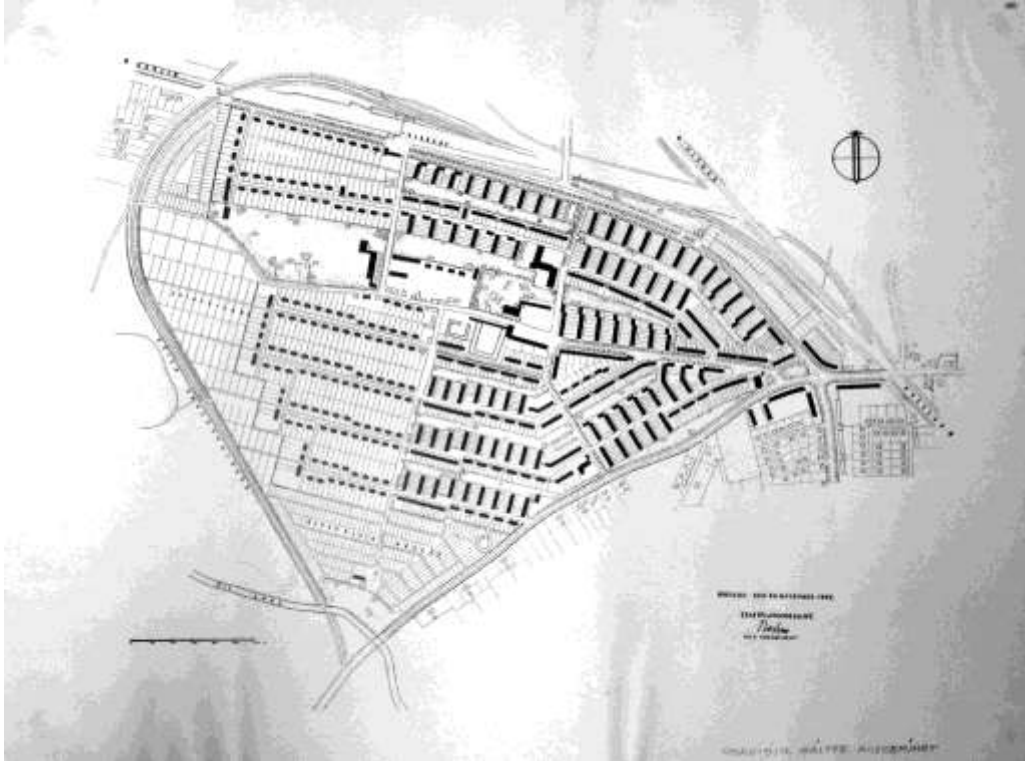


Figure 20. Herbert Boehm, Nowy Dwór Housing Estate Design, 1937

Source: State Archives in Wrocław.

56. Störtkuhl B (2021): 32.

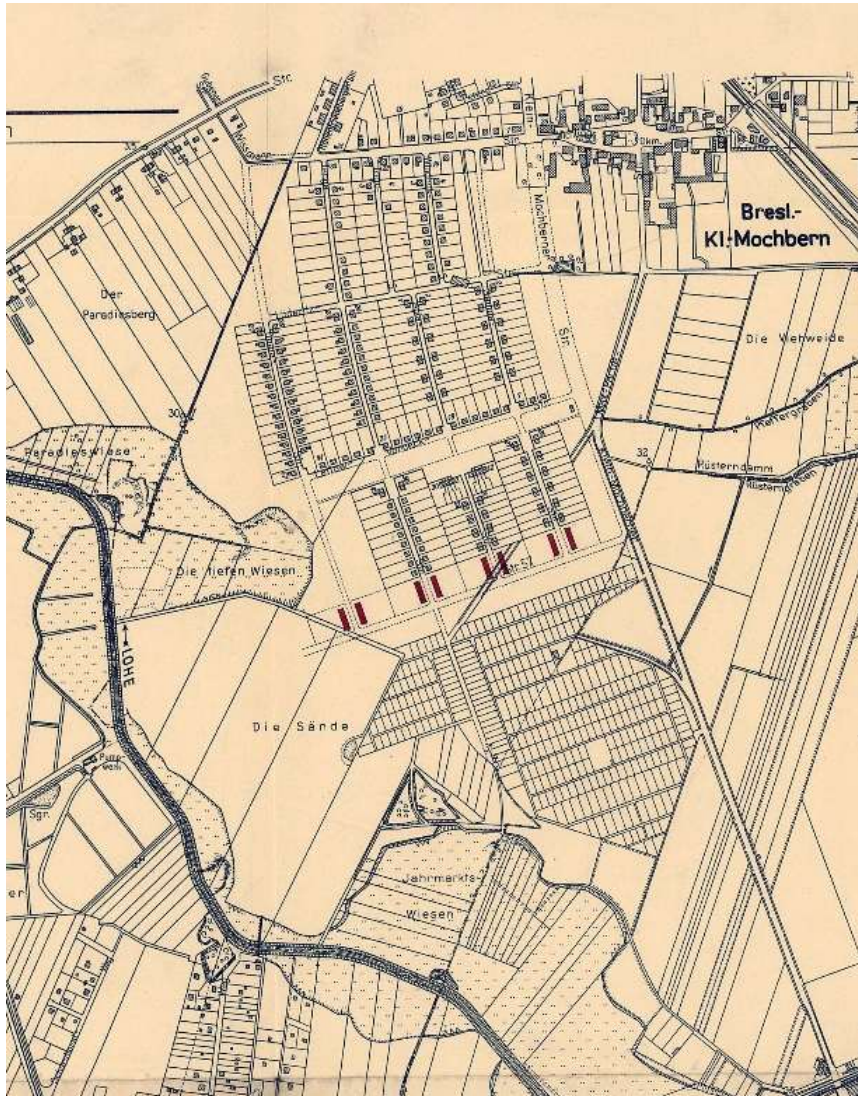


Figure 21. Muchobór Mały Housing Estate Design, 1933

Source: Museum of Architecture in Wrocław.



Figure 22. Herbert Boehm, Housing Estate Design in Psie Pole for Employees of the Rheinmetall-Borsig Arms Factory, Model, 1940

Source: private collections.

The housing estate was developed by the Deutsches Heim cooperative, and the construction work was supervised by the cooperative Schlesische Heimstätte Provinzielle Treuhandstelle für Wohnungs- und Kleinsiedlungswesen GmbH. Herbert Boehm's design envisaged a linear layout of two-storey, multi-block multi-family houses, comprising 1,800 flats, surrounded by green spaces and complete with administrative facilities, including: a youth centre, a church, a school, a community centre, a nursery, a cinema and shops. The individual buildings were designed by Franz Auer and Herbert Wiehr – architects associated with the Schlesische Heimstätte cooperative. Like the estate in Nowy Dwór, this development was never fully completed after work was halted in 1943. Only one-sixth of the planned development was finished. The completed section is located on what is now Majora Jana Piwnika-Ponurego Street.⁵⁷

Herbert Boehm produced many other housing estate designs that were never realised. These included, amongst others, housing estates in Pilczyce (Pilsnitz, 1937), Biskupin (Bischofswalde, 1939), Partynice (Hartlieb, 1939) and Żerniki (Neukirch, 1940).

Conclusions

To date, around 150 housing estates and residential complexes from interwar Wrocław have been identified, designed by such eminent architects as Paul Schmittenner, Ernst May, Adolf Rading, Hugo Leipziger-Pearce, Alfred Jäger, Heinrich Lauterbach, Theo Effenberger, Herman Wahlich, Paul Heim, Albert Kempter, Hans Thomas and Gustav Wolf. This is the city's difficult and degraded architectural heritage.

In today's world of property development, where housing estates are built with profit as the primary consideration, it is worth taking a closer look at the housing estates constructed in the interwar period, which still exist today and remain in use. What is more, they are greatly appreciated by residents. In a poll for the most liveable places in Wrocław, the top three spots on the list were taken by pre-war housing estates, despite their progressive deterioration and the lack of proper maintenance. It would therefore be worth identifying the reasons for this state of affairs.

The flats designed during the interwar period largely comply with RFG guidelines, regardless of whether they date from the Weimar Republic or the Nazi era.

Moreso, they meet the expectations of the modern middle class. It was during the interwar period that functional principles of housing design were established, such as the orientation of rooms in relation to the cardinal directions. These principles remain relevant to this day. Although modern, the architecture of these houses often drew on traditional forms. This appealed to the average homeowner then, and continues to do so today. The most distinctive feature of pre-war housing estates is their urban planning. Low-rise houses, up to two or three storeys high, are accompanied by private gardens allocated to each flat, as well as suitably large communal green spaces serving as recreational areas and meeting places that foster

57. Ibidem.

neighbourly bonds. This is an essential condition for the formation of a housing estate community. Moreover, all interwar estates were equipped with so-called basic services - schools, churches, shops - so they fully meet Clarence Perry's guidelines for a housing estate (neighbourhood unit). Perhaps this is precisely why the new residents of post-war Wrocław came to appreciate these places so much. Despite their undeniable advantages, the technical condition of the houses is not perfect.

The deterioration of this heritage and the need for proper restoration necessitate the launch of programmes to safeguard this valuable part of the city's heritage, modelled on those already in place for Wrocław's exemplary Werkbund WuWA housing estate. These programmes must be underpinned by a thorough gathering of knowledge (historical studies and archival research). The issue of housing construction from that period has not yet been comprehensively studied; no inventory of housing estates has been carried out, particularly those destroyed during the war, and these too played a decisive role in how the authorities and the society of Wrocław at the time addressed housing problems.

It is also worth examining this issue through the lens of the European Union's long-term strategy, particularly with regard to research in the fields of architecture and urban planning, as well as heritage protection and conservation, which aims to respect the aesthetics and architectural quality of existing buildings. Particular attention has been paid to listed buildings and historic urban complexes. This stems from an awareness of the significant role heritage plays in shaping the identity of Europeans, countries and regions (*Davos Declaration. Towards a high-quality Baukultur for Europe, Conference of Ministers of Culture, 20-22 January 2018, Davos, Switzerland*).

Bibliography

- Behrendt, F. "Der Wettbewerb zur Erlangung eines Bebauungsplanes der Stadt Breslau und ihrer Vororte." (The competition to obtain a development plan for the city of Wrocław and its suburbs.) *Der Städtebau* 19, no. 3/4 (1922): 21-30.
- _____. "Die Breslauer Eingemeindung." (The incorporation of Wrocław.) *Schlesische Monatshefte* 5, no. 1 (1928): 1-5.
- Benz, W., T. Harlander, E. Pahl Weber, W. Pyta, A. von Saldern, W. Schäche, et al. (Eds.) *Planen und Bauen im Nationalsozialismus – Voraussetzungen, Institutionen, Wirkungen (Planning and building under National Socialism – prerequisites, institutions, effects.)* Hirmer, 2023.
- Berg, M. "Die Besiedlung des Zobten unter Erhaltung seiner Landschaftlichen Schönheit." (Settlement of the Zobten while preserving its scenic beauty.) *Schlesien* 5, no. 18 (1911/1912): 497-501.
- Berg, M., and R. Konwiarz. "Wettbewerb für Vorentwürfe zu einem Bebauungsplan der Stadt Breslau und ihrer Vororte." (Competition for preliminary designs for a development plan for the city of Wrocław and its suburbs.) *Zentralblatt der Bauverwaltung* 42 (1922): 257-263.
- Breslaus Weg zur Großgemeinde (Wrocław's path to becoming a greater municipality.) *Breslauer Zeitung*, (1928) bns.
- Das Breslauer Eingemeindungsgesetz (The Wrocław Incorporation Law.) *Breslauer Zeitung*, (1928) bns.

- Der Wettbewerb zur Erlangung eines Bebauungsplanes der Stadt Breslau und ihrer Vororte (The competition to obtain a development plan for the city of Wrocław and its suburbs.) *Deutsche Bauzeitung*, 56, no. 39 (1922): 242-244.
- Düwel, J., and N. Gutschow. *Ordnung und Gestalt. Geschichte und Theorie des Städtebaus in Deutschland 1922 bis 1975.* (Order and Form. History and Theory of Urban Planning in Germany 1922 to 1975.) Berlin: DOM Publishers, 2019.
- Effenberger, T. "Die Siedlung Breslau Pöpelwitz." (The Breslau Pöpelwitz settlement.) *Schlesisches Heim* 2, no. 3 (1921): 65-68.
- _____. "Wohnungsbauten in Breslau." (Residential buildings in Wrocław.) *Deutsche Bauzeitung. Moderner Wohnbau* 62, no. 6 (1928): 77-88.
- E Fr. "Entwurf eines Gesetzes über die Erweiterung des Stadtkreises Breslau. Nach der Vorlage an den Preuss. Landtag." (Draft of a law concerning the expansion of the city of Breslau. Submitted to the Prussian Landtag.) *Deutsche Bauzeitung. Stadt und Siedlung* 62, no. 2 (1928): 29-30.
- Eysymontt, R., J. Ilkosz, A. Tomaszewicz, and J. Urbanik (Eds.) *Leksykon architektury Wrocławia.* (Lexicon of Wrocław Architecture.) Wrocław: Via Nova, 2011.
- Fleckner, S. *Reichsforschungsgesellschaft für Wirtschaftlichkeit im Bau- und Wohnungswesen: 1927 - 1931; Entwicklung und Scheitern.* (State Research Society for Efficiency in Construction and Housing: 1927 - 1931; Development and Failure.) Dissertation. Aachen: Hochschulschrift, Technische Hochschule, 1993.
- Göckede, R. *Adolf Rading (1888-1957). Exodus des Neuen Bauens und Überschreitungen des Exils.* (Adolf Rading (1888-1957). Exodus of the New Architecture and Transgressions of Exile.) Berlin: Gebrüder Mann Verlag, 2005.
- Herrel, E. "„Stete „Reifung“ Studienjahre, Villenbauten in Frankfurt und Kriegesgräber an der Front, „Constant Marturing“ Student years, house-building in Frankfurt and war memorials on the front." ("Constant maturation" – student years, villa construction in Frankfurt and war graves at the front.) In *Ernst May 1886–1970*, edited by C. Quiring, W. Voigt, P. Cachola Schmal, and E. Herrel, 15-31. München-London-New York: Prestel, 2011.
- Ilkosz, J. "Konceptje urbanistyczne Maxa Berga na przykładzie projektów przebudowy Berlina w roku 1910 i Wrocławia w latach 1919-1920." (Max Berg's urban planning concepts as exemplified by the reconstruction projects of Berlin in 1910 and Wrocław in 1919-1920.) In J. Rozpędowski (ed.), 359-398. *Architektura Wrocławia (Architecture of Wrocław)*, vol. 2, *Urbanistyka (Urban planning)*. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej, 1996.
- _____. "Adolf Radings städtebauliche Konzepte im Kontext des Wettbewerbs zur Erlangung eines Bebauungsplans der Stadt Breslau 1921–1922." (Adolf Rading's urban planning concepts in the context of the competition for obtaining a development plan for the city of Breslau 1921–1922.) In *Adolf Rading in Breslau. Neues Bauen in der Weimarer Republik*, edited by J. Ilkosz, and B. Störkuhl, 87-106. Schriften des Bundesinstituts für Kultur und Geschichte der Deutschen im östlichen Europa, vol.72. Oldenburg, Berlin Boston: Verlag De Gruyter, 2019.
- _____. "German modernism in the shadow of the NSDP – the experience of Wrocław (1933-1945)." In *Dissonant heritage? The architecture of the Third Reich in Poland*, edited by J. Purchla, and Ż. Komar, 273-294. Kraków: International Cultural Centre, 2021.
- _____. *Gdyby. Niezrealizowane wizje nowoczesnego Wrocławia w latach 1910-1939.* (If: Unrealized Visions of Modern Wrocław, 1910-1939.) Wrocław: Muzeum Architektury we Wrocławiu, 2025.

- In dem Wettbewerb für die Bebauung des Zugangs zur Siedlung Pöpelwitz bildenden Geländes. (In the competition for the development of the access area to the Pöpelwitz settlement.) *Zentralblatt der Bauverwaltung* 46 (1926): 445.
- Kononowicz, W. Z problemów urbanistyki dwudziestolecia międzywojennego. Osiedle ogrodowe Sępolno we Wrocławiu. (From the urban planning problems of the interwar period. The Sępolno garden estate in Wrocław.) *Roczniki Sztuki Śląskiej* 15 (1991): 60-91.
- _____. "Ewolucja osiedla mieszkaniowego we Wrocławiu okresu Republiki Weimarskiej - Księżę Małe." (The evolution of the housing estate in Wrocław during the Weimar Republic - Księżę Małe.) In *Architektura Wrocławia (Architecture of Wrocław)*, vol. 2, *Urbanistyka do roku 1945 (Urban planning until 1945)*, edited by J Rozpędowski, 445-478. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej, 1995.
- _____. "Pierwszy plan generalny Wrocławia (1924) i początki kompleksowego projektowania urbanistycznego." (The first general plan of Wrocław (1924) and the beginnings of comprehensive urban planning.) In *Architektura Wrocławia (Architecture of Wrocław)*, vol 2, *Urbanistyka do roku 1945*, edited by J. Rozpędowski, 301-338. Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej, 1995.
- _____. *Wrocław. Kierunki rozwoju urbanistycznego w okresie międzywojennym. (Wrocław. Directions of Urban Development in the Interwar Period.)* Wrocław: Oficyna Wydawnicza Politechniki Wrocławskiej, 1997.
- _____. "Mieszkalnictwo osiedlowe Wrocławia w okresie III Rzeszy." (Housing estates in Wrocław during the Third Reich.) *Archivolta* 1 (2005): 18-25.
- _____. "Rozwój urbanistyczny i polityka mieszkaniowa Wrocławia w okresie Republiki Weimarskiej." (Urban development and housing policy of Wrocław during the Weimar Republic.) In *Leksykon architektury Wrocławia*, edited by R. Eysymontt, J. Ilkosz, A. Tomaszewicz, and J. Urbanik, 93-98. Wrocław: Via Nova, 2011.
- Lampugnani, V. M. *Die Stadt im 20. Jahrhundert.* (The city in the 20th century.) Berlin: Verlag Klaus Wagenbach, 2011.
- May, E. "Stadterweiterung mittels Trabanten." (City expansion using satellite districts.) *Der Städtebau* 19, no. 5/6 (1922): 51-55.
- Nerdinger, W. (Eds.) *100 Jahre Deutscher Werkbund 1907-2007.* (100 Years of the German Werkbund 1907-2007.) München: Prestel Verlag, 2007.
- _____. *Architektur in Deutschland im 20. Jahrhundert. Geschichte, Gesellschaft, Funktionen.* (Architecture in Germany in the 20th century: History, society, functions.) München: C.H. Beck, 2023.
- Quiring, C., W. Voigt, P. C. Schmal, E. Herrelo (Eds.) *Ernst May 1886-1970.* München: Prestel Verlag, 2011.
- Rading, A. "Neue Kleinmiethaus Bebauungen." (New small apartment building developments.) *Der Städtebau* 17, no. 11/12 (1920): 105-113.
- _____. "Kleine Miethaus Bebauungen." (Small apartment building developments.) *Ostdeutsche Bauzeitung* 19, no. 73 (1921): 313-315.
- _____. "Neu Zeit - Neuer Weg." (New era - New path.) *Der Städtebau* 19, no. 9/10 (1922): 99-103.
- Schmidt, R. "Ein Beitrag zur Frage der Satellit-Städte." (A contribution to the question of satellite cities.) *Deutsche Bauzeitung* 59, no. 85 (1925): 674-676.
- Siedlung und Stadtplanung in Schlesien, I. Breslau, 1. Stadtplanung, 2. Wohnung und Siedlung* (Settlement and urban planning in Silesia, I. Breslau, 1. Urban planning, 2. Housing and settlement.) Magistrat der Hauptstadt Breslau (ed), Breslau, 1926.

- Störtkuhl, B. "Ernst May und Schlesische Heimstätte." In *Ernst May 1886–1970*, edited by C. Quiring, W. Voigt, P. Cachola Schmal, and E. Herrel, 33-49. München-London-New York: Prestel, 2011.
- _____. *Modernizm na Śląsku 1900–1939. Architektura i polityka*. (Modernism in Silesia 1900–1939. Architecture and Politics.) Wrocław: Muzeum Architektury, 2018.
- _____. "Practices in building housing and settlements in the Nazi era. Case study Breslau." *Architectus* 26, no. 3 (2021): 25-34.
- Urbanik, J. "Dwelling houses of building Cooperative Schlesische Heimstätte in Wrocław (former Breslau) and in Silesia in 1919-1941 as a precursor of modern ergonomics in architecture." In *Proceedings of 7th International Conference, UAHCI, held as part of HCI International - Universal access in human-computer interaction, design methods, tools, and interaction techniques for eInclusion* (Las Vegas, NV, USA, July 21-26, 2013). Berlin, Heidelberg: Springer, 2013, 376-385.
- _____. "Notheime - ergonomically designed crisis houses of the Building Cooperative "Schlesische Heimstätte"." In *Proceedings of 8th International Conference, UAHCI, held as part of HCI International - Universal access in human-computer interaction, design for all and accessibility practice* (Heraklion, Crete, Greece, June 22-27, 2014). Berlin, Heidelberg: Springer, 2014, 303-313.
- _____. *1929 WUWA 2029. The Werkbund Exhibition in Wrocław*. Wrocław: Muzeum Architektury, 2019.
- _____. "Towarzystwo badawcze RFG i ergonomia w niemieckiej architekturze okresu międzywojennego." (The RFG Research Society and Ergonomics in German Architecture in the Interwar Period.) In *Architektura przemysłowa, portowa i miejska XX wieku*, edited by M. J. Sołtysik, and M. Stępa, 242-253. Gdynia, Gdańsk: Urząd Miasta Gdyni, Wydział Architektury Politechniki Gdańskiej, 2022.
- Urbanik, J., and E. Naworska. "RFG and the beginnings of modern living." In *Proceedings of 17th International Docomomo Conference - Modern Design: Social Commitment & Quality of Life* (València, Spain, 6-9 September 2022). València: Docomomo International, 2022, 55-62.
- Wahlich, H., and P. Heim. "Siedlung Zimpel." (Zimpel settlement.) *Ostdeutsche Bauzeitung* 18, no. 55 (1920): 241-242.
- _____. "Siedlung Zimpel." (Zimpel settlement). *Schlesisches Heim* 1, no. 5 (1920): 2-8.
- Wettbewerbe. Breslau (Competitions. Breslau.) *Ostdeutsche Bauzeitung* 24, no. 22 (1926): 191-192.
- Wettbewerb-Ergebnisse. Breslau (Competition results. Breslau.) *Ostdeutsche Bauzeitung* 24, no. 38 (1926): 335.
- Zukünftige Baukunst in Breslau als Ausdruck zukünftiger Kultur. (Future architecture in Wrocław as an expression of future culture). In *Deutschlands Städtebau. Breslau*, edited by G. Hallama, 28-41. Berlin, 1921.

