

Article

Greenery of early modernist housing estates on the example of the Waldenburg (Wałbrzych) agglomeration (1919-1927)

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Abstract: On the example of the Wałbrzych agglomeration housing estates once the most important mining and industrial region in Lower Silesia, this article illustrates the specific significance of the designing of green spaces, including urban layouts, and the issue of protecting unique trees and green spaces in the concepts of estates from the early modernism period after the First World War, in the years 1919-1927. The Wałbrzych housing settlements are crucial due to the fact that they were among the first of their kind, not only in Lower Silesia, but in the whole of the Weimar Republic. The concepts developed during the designing process soon spread beyond the borders of the country. On the basis of literature and source studies it was possible to reconstruct design ideas concerning the composition of green areas in most housing estates in the discussed area. The most interesting were presented, grouped according to the landscape and functional aspects of the use of greenery in housing estates. This made it possible to select specific solutions applied by designers, to indicate sources of inspiration and theoretically developed rules, which both then and now seem to be extremely adequate.

Keywords: greenery; housing estates; Lower Silesia; preservation and renewal of heritage

1. Introduction

Modernism is at times associated primarily with functionalism and a rationalist approach to design. The first period of this trend remained deeply connected with the concepts that first appeared in the early 20th century. In Germany, the Art Nouveau ideas initiated by Camillo Sitte, the activities of the first heritage protection organisations (*Heimatschutzbewegung*) and then Howard's widely discussed theory laid the foundations for design concepts in the first decade after the World War. Modernism provided additional sources of inspiration and indicated new formal interpretations, both urban and architectural. The postulate to protect the landscape, its natural and cultural values became one of the most important ideological foundations in design. Regionalism of the early modernism period was part and parcel of the landscape and developed the existing compositional rules. Arranging greenery in urban layouts was an important issue. Its special social role was also recognised.

The architecture and urban planning of early modernist housing estates is already a partly researched issue in contrast to the concept of urban greenery of the *greenbelt* type which was also developing on the basis of Howard's visions in the late 1920s and 1930s. The problem of designing greenery, however, so important for these housing estates is hardly taken up, apart from the ecological and conservation aspects ¹as a leading subject of research ⁶. Only the issue of employee gardens (*Kleingarten*) has received more attention ⁶. In a comprehensive study of the housing estates of the Wałbrzych agglomeration in the interwar period, only the issue of the history of designing green spaces in residential complexes in the early modernism period was signalled ⁹. The topic is worth discussing, in particular due to the pioneering significance of the housing estate projects in the Wałbrzych mining and industrial district.

On the example of the Wałbrzych (germ. Waldenburg) agglomeration housing estates, this article illustrates the specific significance of the designing of green spaces, including urban layouts, and the issue of protecting unique trees and green spaces in the concepts of estates from the early modernism period after the First World War, in the years 1919-1927 [A1]. The role of both tradition and innovative, research-based approaches to these issues is indicated.

The Wałbrzych housing settlements are crucial due to the fact that they were among the first of their kind, not only in Lower Silesia, but in the whole of the Weimar Republic. The concepts developed during the designing process soon spread beyond the borders of the country. This also applies to the development of principles and methods of composing the greenery of these settlements. Greenery systems were used there both as elements of urban composition and as recreational facilities. Reference was made to tradition and new or significantly altered forms were introduced. Carefully considered decisions were successful in that the greenery in the early modernist housing settlements in the Wałbrzych agglomeration still belongs to one of the better designed layouts and can still be a model for contemporary developers of urban plans for residential complexes.

2. Materials and Methods

The study is based on a typical research method used in the humanities. The historical background has been characterised in relation to the problem of architectural and urban design of housing estates of a selected period in Germany. A review of the scientific literature on the selected research subject has been carried out. Available archival documents – designs, maps, drawings, photographs, and written reports preserved in the State Archives in Wrocław (APW) and its branch in Kamieniec Ząbkowicki (APW Kamieniec), as well as the collection of the Porcelain Museum in Wałbrzych – were analysed. Local press queries were carried out, especially those stored in the collection of the Wałbrzych Museum, as well as professional press, especially the *Schlesisches Heim* magazine, concerning the aspect of designing and implementing greenery systems in the housing estates of the Wałbrzych region. Field research was carried out and up-to-date reports on the condition of the presented greenery in the housing estates were found. On the basis of the study of the available scientific literature and sources, it was possible to reconstruct design ideas concerning the composition of green areas in most estates of the selected period in the discussed area. The article presents the most interesting of them, grouping them according to the landscape and functional aspects of the use of greenery in housing estates. This made it possible to select specific solutions applied by designers, indicate sources of inspiration and adopted, theoretically developed, rules.

3. Results

3.1. Ideological background. Early modernist housing estates – from Art Nouveau to regionalism

In the period before and just after World War I, the immediate environment began to play an increasingly important role for the Art Nouveau artists. Criticism of the artificiality of classical and historical patterns in relation to the designs of the historicist period also began to include the inspirations of early Art Nouveau derived from Gothic and Far Eastern art. In Germany this manifested itself in the form of a mental and cultural movement. Its slogan became the protection of national heritage (*Heimatschutzbewegung*). Breslau became the seat of the organisation *Schlesischer Bund für Heimatschutz*. Its founder Hans Poelzig and Max Berg, an important activist, were teachers and mentors for younger architects [10]. Thanks to that the design trend spread in architectural literature and academic teaching. The interest of Art Nouveau artists in the Middle Ages and their fascination with nature led them to perceive the value of historic buildings not only in their individual form, but also in combination with their surroundings. The emerging principles and institutions of conservatory protection also drew attention to the issues of landscape protection together with its natural values. These problems were included in

theoretical and design architectural considerations, in which the planning of green spaces came to the fore.

Ebenzer Howard's book has played a special role in integrating greenery arrangement issues into urban design 12. In the spirit of Art Nouveau, the author tried to develop principles combining the advantages of urban and rural life. The solution was found in the decentralization of cities by creating a network of self-sufficient garden-cities surrounding the superior centre. These postulates were partly put into practice in Lower Silesia by building villa districts near cities f. e. in Wrocław (Breslau, Kleinburg, 1872-1900), then suburban garden settlements and districts in Wrocław: Gartenstadt Bischofswalde, 1908-1911, Gartenstadt Carlowitz, 1911 and other cities: Neustadt Waldenburg, 1904, Gartenstadt Neisse and Gartenvorstadt Liegnitz, 1911 14.

The competition for the development of *Great Berlin* in 1910, the international urban planning exhibition taking place at the same time (Berlin, 1910) as well as the Town Planning Conference in London organised by the Royal Institute of British Architects (1910) 19 an opportunity to lay down final principles of planning modern cities. Among the new ideas were polycentric town planning, separation of new development by green belts and wedges of greenery and zoning of urban development, which referred to Ebenzer Howard's idea of the "garden city".

The Green Manifesto of Leberecht Migge from 1918 20, a well-known landscape architect already at that time, became the last decisive element for the formation of a programme for improving the functionality of estates of the interwar period in Germany. Migge advocated solving the social and economic problems of the German people by creating gardens, parks and first of all small, vegetable gardens (200-400 m²) to supplement food and also to improve the climatic qualities of residential areas 21.

3.2. Historical background. Attempts to solve the housing problem in the Weimar Republic, Lower Silesia and Lower Silesian Coal District after World War I

After the First World War, the Weimar Republic created a favourable situation for the development of the theory and practice of housing estates design. On the one hand, the housing shortage due to industrial development and war damage was desperate; on the other hand, a favourable political climate was created for attempts to solve this problem. Power passed into the hands of Social Democrats. Their programme included the improvement of living conditions of workers and civil servants. Apart from efforts to improve working conditions, the housing programme became an equally important element of the government's social policy 22. Immediately after the war, on the basis of the idea propagated in Germany by Leberecht Migge and Hermann Muthesius 26, the authorities developed the concept of housing development which consisted in erecting small *Kleisiedlung* housing estates with home gardens 23. Legal tools were applied which allowed for the launching of economic and social mechanisms [A2]. In 1918, the first communal housing cooperatives (*gemeinnützige Baugesellschaften*) were established 22.

In July 1919 the company Schlesisches Heim (Schlesische Heimstätte)[A3] was founded in Silesia 27. Its aim was to erect cheap, small houses for workers and civil servants in suburban settlements and to build rural settlements near towns and villages. The urban and architectural programme of these settlements was initially run exclusively by Ernst May [A4]. He also outlined a general vision of these developments 32. In his vision, the city of the future was to have a centre with high dense buildings, on the periphery of which small settlements of detached houses would be built, connected to the main centre by efficient public transport. The urban and architectural concepts were to draw inspiration from the layout and development of the Silesian countryside. May proposed complexes of scattered, street-based and oval-village-shaped settlements, concentrated around a village green (*Streusiedlung*, *Strasensiedlung*, *Angersiedlung*), depending on the local landscape conditions and needs 34. Apart from flower and vegetable gardens, the buildings were to be surrounded by greenery planted around squares and streets. With time, however, the activities of the Schlesische Heimstätte company domi-

nated the housing market in the construction of suburban settlements. It operated in 22 town districts, cooperated with the administration of towns and municipalities, especially suburban ones, and with local companies and societies 34.

The region of the Lower Silesian Coal District (Niederschlesischen Steinkohlbezirk), and in particular Waldenburg itself (now Wałbrzych), the second largest city in Lower Silesia, suffering from the greatest housing shortage on a national scale 35, was the first, in a sense experimental area of May and the Schlesische Heimstätte company's activity. In a short period of time, thanks to the efforts of the administration, party and trade union activists, a mining housing fund Treuhandstelle für Bergmannswohnstätten in Niederschlesischen Steinkohlbezirk was established with its seat in Salzbrunn (Szczawno Zdrój) 35, which cooperated with construction companies and communal cooperatives facilitating the financing of investments. In cooperation initially with local mining and industrial tycoons, first of all with Fürsten v. Pless Consolidierte Fürstensteiner Gruben, and later with communal companies, the Silesian organisation Schlesische Heimstätte erected more than twenty housing estates between 1919 and 1924 in Waldenburg, Gottesberg (now Boguszów) – two towns of the mining district and several neighbouring communes. Land for the construction of housing settlements was purchased and 815 flats were erected, financed from the funds of the district and the state (5.8 million marks from the state mortgage, 1.9 million from other sources) [A5] 35. In the following years, the acceleration of works on the erection of communal settlements was significantly influenced by the Act of 1924 on rents 22 which, by increasing the fee for mortgage charges, provided an additional source for the construction of new flats. In the years 1924-1927, a further 1,353 residential premises were built in the Waldenburg area.

3.3. Greenery in panoramas and views from housing settlements in the Waldenburg area

The hilly and mountainous terrain of the Waldenburg area made it possible to create special landscape effects. Housing estates were built at the foot of towering peaks – small ones like Wilhelmshöhe (Gediminas Hill) or quite impressive mountains like Schwarze-Berg (853 m above mean sea level, Borowa) or Hochwald (850 m, Chelmiec), on the edge of old villages and developing mining towns, usually neighbouring with vast areas of private forests, mostly owned by the Hochbergs, but also by the state. The artists were perfectly aware of the possibility of exploiting the landscape values of the area. Ernst May knew the surrounding mountains and villages and made sketches of them in his sketchbook [A6]. Most of these settlements were created as special landscape complexes. They were created as separate units, carefully integrated into their environment. This was manifested in the conscious and extremely careful shaping of the panoramas of the complexes. This problem was raised, among others, by May himself when discussing the issues of designing housing estates. He emphasised the necessity of subordinating an urban complex to a dominant feature. In most cases, these were already existing church towers in neighbouring villages. This is how the housing estate in Gottesberg was designed. In the settlement Stadtparksiedlung (Gaj) a chapel was to be built as a dominant element. The housing estate on Sandberg (Piaskowa Góra) in Salzbrunn was subordinated to the dominant of the Catholic church, and the housing estate in Dittersbach (Podgórze) near Waldenburg to the dominant elements of the Lutheran church. The designed housing estates were adapted to the existing development method in the neighbourhood, its intensity and the height of the buildings; they received similarly shaped composition nodes, dilution of the building fabric in the form of squares and street extensions. This created an analogous urban pattern, which imitated in the landscape the spontaneity of the settlements' development. The settlements built by or in cooperation with Schlesische Heimstätte show that the best results were achieved when the topography was preserved and followed. Small slopes, escarpments or depressions gave the settlements a natural and picturesque landscape. The location of settlements on hills or slopes opened up views of the surrounding panorama.

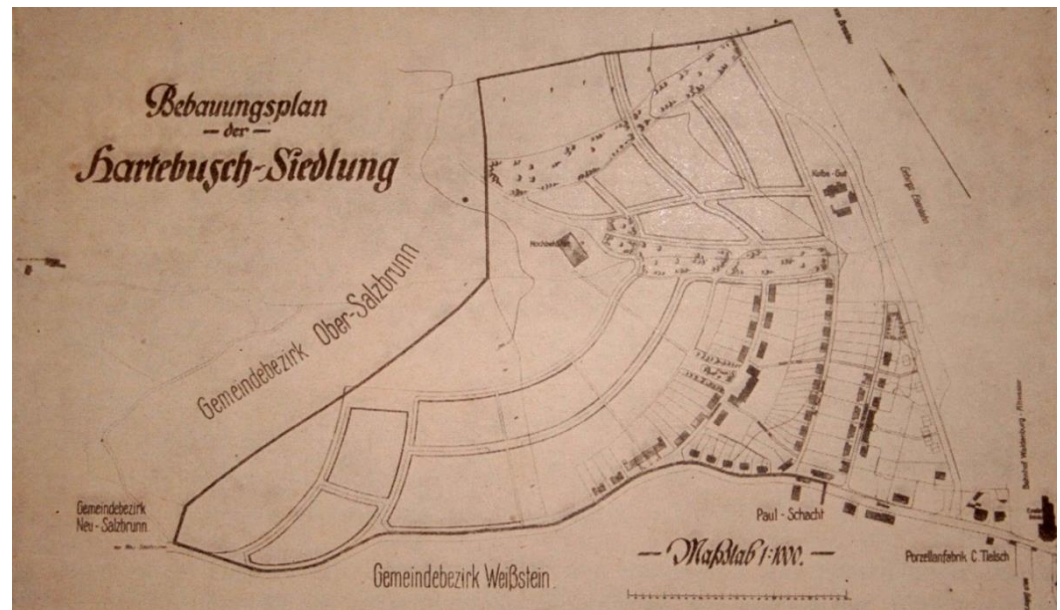


Figure 1. The project of the housing estate Hartebusch (part of Stary Zdroj in Wałbrzych). Original version developed by Hermann Jansen. From [36](p. 91).

Hermann Jansen [A7] took particular care to exploit these opportunities 39. When, after the First World War, the city authorities of Waldenburg independently made another attempt (after the foundation of Neustadt; Nowe Miasto) to build a large residential district, they asked this well-known Berlin academic for a design. Jansen repeated in **arrangement of** Hartebusch Siedlung in Waldenburg the principles of spatial organisation used in the Berlin housing estates of his design Figure 1. However, the specific topographical conditions dictated special solutions. Due to a shortage of land in the neighbourhood of Waldenburg, it was decided to locate the housing estate on this exceptionally steep slope. This imposed a kind of terraced layout on the whole settlement Figure 2. Along the main road, the estate is enclosed by a row of multi-family buildings. Along the main streets the composition nodes were regularly arranged in the form of squares and terraces connected with the largest three-storey multi-family houses, from which one could admire the panorama of Waldenburg and Altwasser (Stary Zdrój) 9.

Perhaps it was this successful settlement that inspired Ernst Pietrusky [A8] 41 to shape a similarly situated settlement in Nieder Hermsdorf (Sobięcin Dolny) Figure 3 (a). Unfortunately, most of the planned viewpoints were not completed. The project of Ernst Pietrusky's housing estate in Nieder Hermsdorf was selected as a result of a contest announced in the magazine *Schlesisches Heim* 29[44]. The architect based his conception on a strict representation of the terrain's shape; the irregular lines of the streets were running horizontally. Probably this naturalness as well as the use of high building density for a housing estate of this type were decisive for the choice of this solution. As in the case of the settlement on the slopes of Wilhelmshöhe in Hartebusch Siedlung, squares were to play a very important role in the layout of the Nieder Hermsdorf housing estate, including appropriately placed squares at the end of the streets in the form of viewing terraces opening onto the valley of the stream flowing through the village.

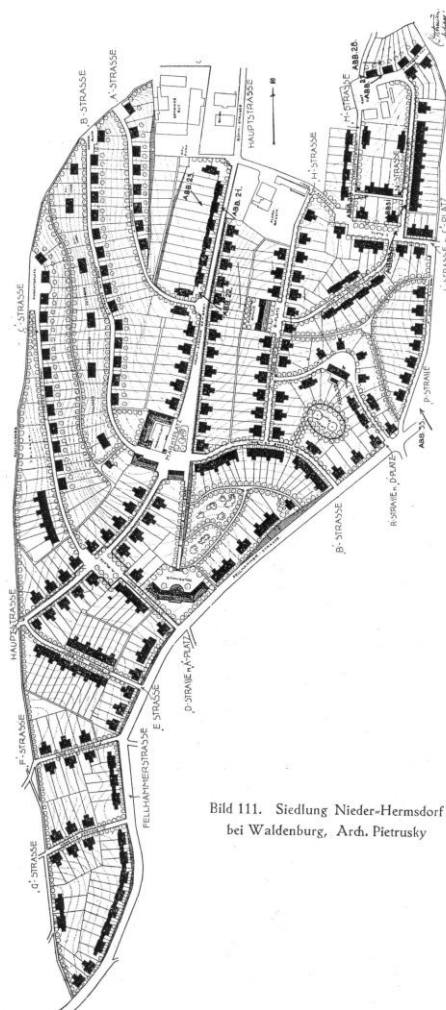


Figure 2. The housing estate in Hartebusch Siedlung (Stary Zdroj in Waldenburg) at the time of construction. From Muzeum Porcelany w Wałbrzychu, Oddział Historyczny (MHW) 2505.

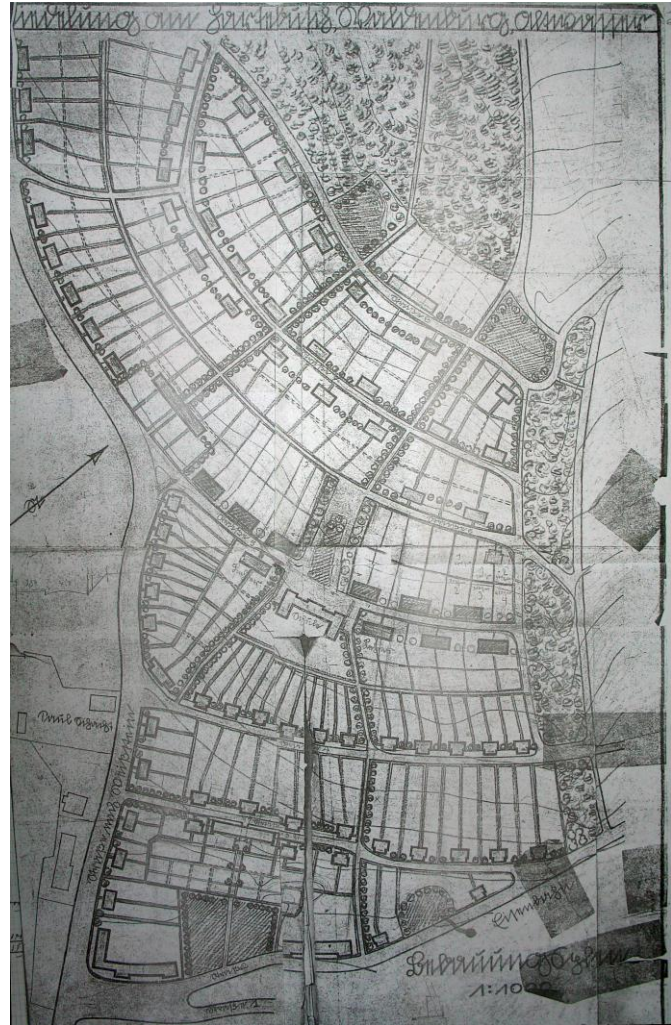
3.4. Greenery in the settlements: squares, green spaces, tree rows and alleys

The designing solutions of this period emphasised the role of green spaces, both larger areas and street tree rows. In the settlement Hartebusch designed by Jansen, in a manner typical of him, between two main horizontal streets running along the contour lines, in the middle of the settlement a public green zone was laid out – squares and playgrounds. They constitute the skeleton of the settlement, which is emphasized by the grouping of multi-family buildings and the creation of a green space between them, Eichenplatz (i.e. Oak Square, now Zawisza Czarny Square), where the architect decided to preserve the centuries-old oak trees. Below the two main streets two levels of parallel streets were designed, and above them one. To the north, at the end of the streets, Jansen planned to leave a green belt in a shallow ravine, subordinated to the compositional axis created by the water tower visible over the housing estate. On the other side of this green space, on the north-eastern slope of the hill, he designed the second part of the housing estate, in a similar terraced arrangement.

Another version of the project was prepared by Otto Rogge [A9] Figure 3 (b), building advisor at the municipal office 948. He took even more care to preserve the existing valuable trees and arrange new plantings along the estate streets. The lower main street of the estate, the original village road, is lined with rows of lime trees Figure 2 and 4. In the highest part of the settlement, there is a large square called Buchenplatz (i.e. Beech Square, Gediminas Square), where beech trees are to be protected. All squares and plazas of the settlement were connected to extremely steep pedestrian walkways, in some places arranged as stairs, running up and down the hill. At most of them, tree rows were designed to highlight their course. The architectural lines were also planned to be highlighted by connecting the free-standing buildings with rows of trees. From the first stage of construction, tree rows were planted along the streets; for this purpose, specific species were chosen, e.g. the lime alley was supplemented with faster-growing chestnut trees. The centuries-old oak trees were preserved, but unfortunately the beech trees were partly cut down.



(a)



(b)

Figure 3. (a) The project of the housing estate in Nieder Hermsdorf (Sobięcin Dolny) developed by Ernst Pietrusky. From [29]; (b) The project of the zoning of the settlement Hartebusch on the slope of Wilhelmshöhe (Stary Zdrój), made in the municipal office of Waldenburg. Reproduction without scale. APW (Archiwum Państwowe we Wrocławiu) Oddział w Kamieńcu Ząbkowickim (Kamieniec), Acta specialia des Magistrat zu Waldenburg, [21], p. 6, Siedlung am Hartebusch, Waldenburg Altwasser, Stadtbaurat, 1 : 1000, b.r. (after 1920).



Figure 4. The housing estate in Stary Zdrój in Wałbrzych (Hartebusch Siedlung). The lower main street (Żeromskiego Street) of the estate, the original village road, lined with rows of trees. Photo author 2009.

Ernst May had a slightly different approach to the design of the green spaces in the neighbourhood when he planned the housing settlement – Stadtparksiedlung 9 Figure 5. It was to be a housing complex resembling the villages near Waldenburg, with buildings appearing to be spontaneously developed. The intention was similar to the construction of Neustadt or the settlement Hartebusch – the creation of a completely independent urban organism. The land to be developed were located behind a mountain railway viaduct, far from the town, surrounded by forests on all sides. The solution proposed by May took into account the shape of the land (levelling was kept to a minimum). The two main roads run inside the area along a closed lenticular circumference. Small, semi-detached, single-family houses were designed on both sides of the streets. The plots marked out on both sides have a variety of shapes. Not only is the main square planned, but also several small squares inside the settlements. The complex has charming alleys. There is no rigidity, there is variety, each section has a different curve due to the terrain. The narrow streets are winding, almost like country paths. Diverse groupings of buildings are created around squares, accents and compositional nodes are created, despite the use of identical architectural objects. The complex is an interesting example of implementation of the “garden settlement” concept. The idea was based on the creation of a small semi-rural centre – a square with a school and a chapel in the north-eastern part (from the town side), closed on two sides with two-storey frontages, with passages in the middle, which could satisfy the needs of the inhabitants. It also had its advantages in terms of the landscape. The introduction of the square created a hierarchy of space and gave independence to the settlement that was thus gaining a rank equivalent to the neighbouring industrialised villages [49-50]. Both the main square and all small squares of the settlement were filled with greenery - some of them only low. However, the basic greenery in the settlement was to be private fruit and vegetable gardens, with flowers, creating a rural landscape.

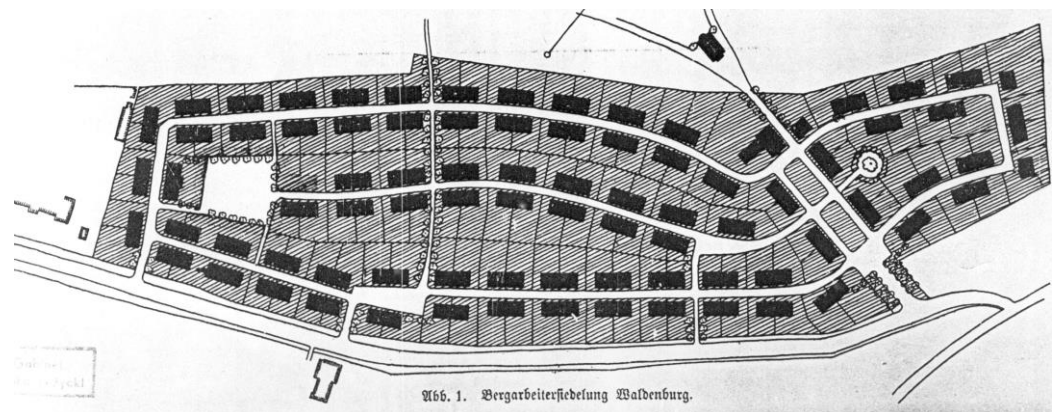


Figure 5. The project of the settlement Stadtparksiedlung in Waldenburg (Gaj in Wałbrzych) developed by E. May. From [49](p. 3).

In the unusually careful design of the Nieder Hermsdorf settlement Figure 3(a), Pietrusky was inspired by both the propositions by Jansen and some of May's ideas in the design of the greenery. The concept was based on keeping as the main street a road connecting an orphanage, which had been erected in the former village at the end of the 19th century, with a folk house designed in the southern end of the settlement, on a hill, to which a line of stairs in greenery would lead, preceded by a triangular square, constituting the settlement's main square 4729. The author planned three-storey buildings with commercial premises on the ground floor. Thus, the square was to constitute the functional and spatial centre of the settlement. The remaining streets were laid out along curve lines in accordance with the slope's contours, crossed with streets running down the slope of the terrain 46. The irregular course of the streets introduced diversity and a high individualisation of space, despite the use of typical buildings. The use of small

squares was to highlight the rank of selected objects, and in the final version it was used to create distinctive places where the life of the settlement would concentrate.



Figure 6. View of one of the streets – Kresowa Street, in Sobięcín (Nieder Hermsdorf). Photo author 2010.

The housing settlement was conceived as a compact and closed urban layout whose composition was based on emphasising the main axis, within which the centre of the housing settlement was developed, clearly marked and emphasised by the use of higher buildings. The streets and narrow pedestrian passages were to be planted with tree rows. Numerous green squares and enriched the layout. In the eastern part of the settlement, at the foot of the slope, a rectangular elongated square was planned with a small square connected to it at the corner, and above it an irregular square in the bend of the street. In their vicinity, at the crossroads of the streets, a small rectangular square was to be the foreground to the kindergarten and school building. In the original version, another large rectangular square with a bay was planned at the south-western end of the settlement, as well as squares at the ends of the streets on the western side, one of them with a viewing terrace. There were also to be two large squares on the settlement, a kind of small park sheltered by a screen of trees. They were located within the quarters of single-family housing on large plots extending the public greenery with private gardens Figure 6. The larger of the squares was adjacent to the steps leading up to the folk house on the settlement's main traffic route. The project was not fully implemented. However, during construction, the greenery in the settlement was introduced from the beginning in accordance with the project. Lime trees, maple trees and chestnut trees were planted along the streets. Some of them also appeared in private front gardens introduced here 51. Similarly to Hartebusch Siedlung, a lime-poplar alley 52, which ran in the neighbourhood and was later supplemented with maples and old pines on the top of the hill, was preserved. A centuries-old yew tree at the northern end of the settlement was also treated with due respect. In 1925, a park (Volks Park) was established in the north of the settlement. Within several years the settlement became a green enclave, which of course did not reduce the health problems of its residents. From the very beginning, the biggest inconvenience for the housing settlement was the extremely close vicinity of the coking plant and chemical works. Already in the 1920s, questions were asked about the acceptable pollution indicators when establishing settlements in the Waldenburg area 53. It is possible that the Nieder Hermsdorf settlement was one of the places because of which the issues of industrial pollution started to be addressed.



Figure 7. View of housing estate of Weißstein (Biały Kamień) in early 1920s. MHW 2881.

Similarly shaped green squares, parks, streets and alleys were designed in other housing settlements built in the region of Waldenburg in cooperation with Schlesische Heimstätte. Squares, some of which were to be planted with trees, others only with low greenery, were an integral part of the layout. In the settlement planned as an extension of Gottesberg (1919) E. May, apart from the square functioning as a market, designed also a triangular green square in the middle of the development surrounded by single-family terraced houses 54. In the competition-winning design of the housing settlement in Neu Salzbrunn (Nowe Szczawno) (1920), Theo Effenberger, already a well-known designer from Wrocław, the author of the housing settlement in Pöpelwitz (Popowice in Wrocław) (1919) [A10] that was under construction at that time 55, introduced an irregular square surrounded by compact building frontages at the end of the axis of the layout – a street emerging from the former communication junction in front of the railway viaduct 9[57]. In the second of the settlements planned in Rothenbach (Gorce) for the Schlesische Kohlen und Kokswerke company, May and his teammate Bussmann proposed a square in the centre, with a semi-circular outline, with a school and a church (or folk house?), surrounded with a park (1921)58. These complexes were not realised. In Weißstein (Biały Kamień in Wałbrzych) the designers chose solutions with squares in the centre of the housing settlements divided into workers' gardens (1924) Figure 7 and Figure 15 (b) 9.



Figure 8. View of settlement on Sandberg (Piaskowa Góra) and Salzbrunn (Szczawno) in the interwar period. MHW 2877.



Figure 9. View of housing estate in Gottesberg (Boguszów). Ulica 1 Maja (Street of 1 May) with rows of lime trees. Photo author 2015.

Tree rows were equally important for the composition. In the case of the housing settlement in Sandberg (1918-1919), rows of lime trees and chestnut trees on both sides of the street constituting the basis of the complex emphasised its character. Through the use of cul-de-sac, resembling agricultural homesteads, it skilfully imitated the development of a typical mountain village stretching along the green banks of a creek Figure 8 59. The housing settlement in Gottesberg was enriched by street bays with rows of trees: lime trees, maples, and chestnuts Figure 9. In the above-mentioned Effenberger's project the compositional skeleton was to be the ring street – Ringstrasse, with one-sided development, on the outer side of the housing complex surrounded by a tree row, from which the Salzbach (Szczawnik) valley and on the other side on the housing settlement on the Hochwald Mountain would be visible. On both housing settlements in Dittersbach (Podgórze in Wałbrzych) – Neuhäuser Siedlung and Melchior Siedlung (1920), designed by E. May and adapted in the municipal office by Daehmel 961, one could enjoy the views of grand alleys. At the Melchior shaft (after the war it was renamed into the Mieszko shaft) these were lime alleys on both sides of the railway tracks Figure 10, while at the second settlement the old lime alley, Neuhäuser Allee, was preserved, running from the village near the Catholic church up the slope towards the castle and the manor in Neuhaus (Nowy Dwór). Similarly as in Nieder Hermsdorf, front gardens separated by rail fences appeared in front of the houses in both these settlements. They were also created in subsequent small settlements in Konradsthal, Nieder Salzbrunn or Adelsbach near Waldenburg (Konradów, Szczawienko and Struga) (c. 1923-1925) 9.

The preservation of some green spaces within the designed housing settlements was also due to reasons of economy and knowledge of the influence of physiography. This can already be seen in the earliest post-war project by Jansen, where the architect left green ravines, difficult to be levelled and threatened by cold air flow. Similarly, he approached May's physiographic issues with great emphasis, probably largely influenced by R. Unwin. In mountainous areas consideration of rules was particularly important which he highlighted in his articles. A characteristic feature of his projects was the precise adaptation to topographic and physiographic conditions. Taking advantage of the terrain's shape in addition to improving the microclimatic values, significant savings on levelling works during construction usually resulted in a smooth curvilinear line in the urban composition 58. Consequently, the settlements had small interiors and the inhabitants enjoyed various views from successive places along the streets. In the Waldenburg region, the settlements built in this period, usually in areas difficult to develop, with steep slopes, were given a layout based on running streets parallel to the slope countour.

In the case of the Dittersbach housing settlements the main streets were laid out in wide arches, forming serpentines and horseshoe shapes, surrounding green spaces. In May's designs (Stadtparksiedlung), the attention is drawn to the extremely precise mapping of the terrain in the course of the streets which as a result were laid out along a winding line. A completely new theoretical problem was the design of settlements on steep slopes (Rothenbach) 58. May drew on limited experience. There were no patterns of regular village buildings, he drew some inspirations from the towns of the Sudeten foothills, e.g. Silberberg (Srebrna Góra) 65 and probably also from Gottesberg, known from the times of designing. He developed a layout following the contours of the hill, with farm buildings at the gables of the houses or in a separate line at the back of the plot.



Figure 10. View of Melchior Siedlung in Dittersbach (Podgórze in Wałbrzych) in early 1920s. MHW 2877.

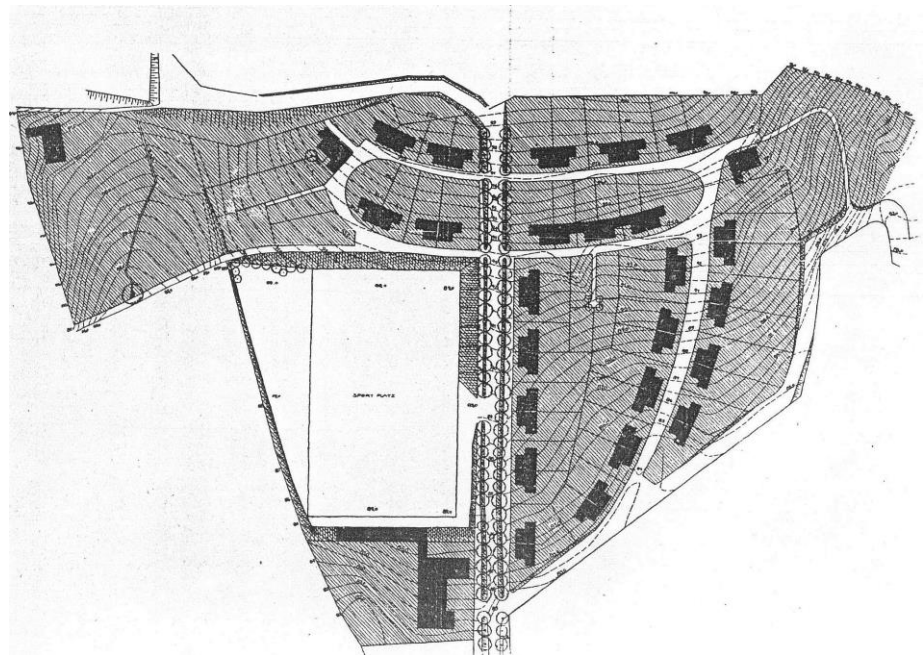


Figure 11. The project of Neuhäuser Siedlung in Dittersbach (Podgórze in Wałbrzych) developed by E. May. From [62].



Figure 12. View of Neuhäuser Siedlung (behind the railway overpass) in Dittersbach (Podgórze in Wałbrzych) in the interwar period. MHW 3085.

3.6. Employee gardens, tradition and design

A particularly important issue was the provision of housing settlements with home gardens (*Kleingarten*) or workers' gardens (*Schreibergärten*) according to sociological assumptions and government guidelines. This was an idea developed on the basis of government recommendations of the time, but it had an old tradition in the [Waldenburg](#) district. Initially, when the initiative in housing matters belonged to the owners of mines and factories, as well as the railway authorities, who wanted to provide manpower in their plants, patronage settlements were established. These mostly small complexes, consisting of several houses, were equipped with a common area, a playground, small social facilities and workers' gardens. The entire housing settlement area was divided into small plots. Wooden sheds, pigsties and dovecotes were built among them. Also in the case of municipal or communal multi-family houses, at least some of the flats were equipped with workers' gardens, as was the case in the new districts of Waldenburg – Neustadt (1904) or the new part of Weißstein (1904), where for a short period of time the uninvested lands were allocated for this purpose.



Figure 13. Workers' gardens around residential buildings in Hartebusch Siedlung shortly after construction. MHW 2507.



Figure 14. Home gardens in Stadparksiedlung in first years of development. MHW 2507.



(a)



(b)

Figure 15. (a) Fragment of the project of the housing estate in Sandberg. Reproduction without scale. Archiwum gminy Szczawno, 65/103, s. 62, Errichtung von 25 Bergmannshäusern, Lageplan Klein Siedlung Ober-Salzbrunn, M. 1:1000, der Ausführende Wilhelm Kahmann, Bad Salzbrunn 4 Juli 1920.; (b). Central square with workers' gardens in Friedenhof Siedlung in Weißstein in archival photography from the mid-twenties of the twentieth century. From [35](p. 98).

To a large extent the functional solutions of the settlements had to be derived from the layout of rural houses, as the population was usually first-generation migrants from the countryside. The idea of a house with a garden for each family, derived from Howard's theory and implemented by Unwin, in whose studio May worked during his internship in England, was a response to social needs. In earlier periods, the need to cultivate at least a piece of land was secured by providing each flat with a workers' garden. In the projects of the Schlesische Heimstätte studio both concepts were combined. In the early modernist housing settlements, gardens could have the character of agricultural facilities with a considerable area of 1,500-2,500 m² – as in the case of the housing settlement on Sandberg, which initially, similarly to the housing settlement in Goldschmiden

(Złotniki in Wrocław), was to be rented mainly to agricultural workers. In Gottesberg each flat located in the first row of two-storey single and semi-detached buildings with single-storey connectors was provided with a large garden (450 m²) behind the buildings and with sheds in the connectors between the houses 66. In Stadtparksiedlung, gardens varied in size (200-500 m²), in the Nieder Sobięcín settlement the differences were more significant depending on the type and location of buildings (130-350 m²). Most often, the size of plots exceeded 200 m² as in the settlements in Rothenbach (200-300 m²) or Dittersbach – Neuhäuser Siedlung (200-300 m²). The smallest were plotted for multi-family housing settlements in Melchior Siedlung 100-150 m², Gottesberg 70 m², while in Weißstein they slightly exceeded 50 m². The plots were carefully planned and enclosed with fences. This created chequered or fan-shaped green arrangements. In the gardens the outbuildings were erected, which in many housing settlements were designed together with the remaining buildings (e.g. in Dittersbach, Weißstein, or Konradsthal). Vegetables and flowers were grown. In most settlements poultry and even domestic animals were also kept. Although in some cases it was strictly forbidden even to have dovecotes (Nieder Hermsdorf). The attachment to this form of contact with nature and relaxation after working hours is evidenced by the fact that the planned green spaces in the housing settlement Hartebusch were parcelled and changed into gardens; the same happened at the end of the 1920s and 1930s (in the Waldenburg agglomeration only two pre-war housing settlements had public green spaces).

4. Discussion

The specific location of the Waldenburg agglomeration settlements in the mountains imposed unusual solutions, but their creators, prominent German architects of that time H. Jansen, E. May, T. Effenberger, E. Pietrusky or associated with this city only O. Rogge, introduced certain principles that were later adopted as the basis for planning housing complexes. It also referred to the design of green spaces in housing settlements. Greenery systems were used both as elements of urban composition and as recreational facilities. In the new housing settlements, along with the regulation of streets, carefully considered planting was introduced – mainly rows of lime trees, maples and chestnuts. Traditional solutions of roads in the form of alleys, an early modern idea, which at the turn of the 19th and 20th century was popularised in Germany in the urban planning handbook by H. Stübgen, were preserved. The idea of the square as an element highlighting the compositional nodes was also taken up. This form of introducing urban greenery, developed at the turn of the 17th and 18th centuries, from the beginning of the 19th century started to appear in plans of new residential districts of Silesian cities, and gained particular popularity in the Art Nouveau era. In early modernist solutions it took a slightly different form. In Jansen's design it took the shape of small park complexes (perhaps due to the need to preserve the old trees). In the concepts of E. May and other architects associated with the Schlesische Heimstätte, squares were transformed into green squares at street intersections and much larger central housing settlement squares where the most important services were concentrated. Just as the architecture and urban planning of these housing complexes was based on studies of the local development, the same approach was followed with regard to the shaping of green spaces. The studies respected the local natural and cultural landscape. Inspiration was sought in the immediate surroundings of the designed area, and attempts were made to interpret the rules governing nature and the local community. In this way the settlements gained coherence with their surroundings and an effect of spontaneity in the urban arrangements. Care was given to monuments of nature – oaks and beeches in Hartebusch Siedlung, yew trees in Nieder Hermsdorf, or the historic alley leading to Neuhaus. The designs of greenery layouts skilfully applied the principle of quotation, i.e. literal imitation of traditional solutions and prudent stylisation (e.g. in urban planning it was the use of an oval centre, in architecture – semi-circular passages, dormers of the “œil de bœuf/ox-eye window” type, classical cornices, etc.) in the form of a line of village buildings along a stream (Sandberg),

a kind of a village green, a green square analogous to a common village grassland (Stadtparksiedlung), a manor courtyard (the housing settlements in Weißstein), rural roads with scattered buildings interwoven with short rows of trees and tree-lined street bays (the housing settlements in Gottesberg and Dittersbach). New forms were introduced based on distinguished traditional compositional rules (in urban planning – a layout with a height and spatial dominant, a different choice of building density, in architecture – diversified proportions of window sizes and shapes), such as green squares at the intersections of streets and pedestrian alleys (Stadtparksiedlung) or in the middle with Unwinian cul-de-sacs (Sandberg), as well as attractive semi-circle or horseshoe layouts of buildings surrounded by greenery, inspired by English baroque and classicist *crescents* (the Dittersbach housing settlements and the unrealised settlement on Gleisberg in Waldenburg – Parkowa Góra in Wałbrzych). Careful attention was also paid to the arrangement of household and workers' gardens. Their attractiveness in the landscape was determined by the skilful division of land, well-designed garden architecture, and well-tended crops (for this purpose an advisory magazine was published).

5. Conclusions

The greenery in the early modernist housing settlements in the Wałbrzych agglomeration still belongs to one of the better designed layouts and can still be a model for contemporary developers of urban plans for residential complexes. The introduction of avenues and espaliers and the arrangement of green squares and plazas are worthy of imitation or at least of inspiration. Also in terms of solving household and working gardens, which after a period of certain loss of attractiveness are probably becoming popular again, the ideas from the 1920s implemented in this area may still prove valuable. Probably the most valuable, however, is the very approach to solving design issues taking into account broad social needs. It was based both on the implementation of modern ideas in architectural and urban planning concepts, including the planning of green areas in housing estates, and on respect for tradition in the customs and functioning of local communities. In the city landscape and in the urban interiors of new settlements a sense of the introduction of new values was created, but one that was in line with the principles that had long been present in the area.

Appendix A

A1 Apart from the first effects of the economic crisis in Germany, a fundamental change in the design of housing settlements was brought about by the centralisation process in the operation of housing companies, which began in this very year. The laws on housing issues have also been fundamentally changed

A2 A movement supported by the state since 1919, the Kleingarten Law of 1919 and 1920, then the Heimstättenrecht Law of 1920. The laws of 1920 and two of 1924 recommended the establishment of settlements with large gardens (Heimstätten-siedlung) and gave rise to organisations for such investments (Heimstätte).

A3 The Schlesisches Heim (Schlesische Heimstätte) with the seat in Breslau was founded on 28.7.1919, as the fourth such regional organisation. The first was established in Westphalia in 1918, the last in 1925 in Upper Silesia.

A4 Ernst May (1886-1970), studied in England, where he later served his apprenticeship in the studio of Raymond Unwin, and then studied in Munich. After the First World War, in which he actively participated, he started working in Breslau. He became the technical director of the Schlesisches Landgesellschaft, and later of the Schlesische Heimstätte. He took part in the competition for the development plan of Breslau, promoting the idea of satellite settlements. In 1925 he became the head of the municipal building office in his hometown Frankfurt am Main. He drew up a development plan and until 1930 he de-

signed or participated in designing successive housing settlements of the so-called “New Frankfurt”. He left for the USSR where he led a group of architects working on concepts for large housing settlements in Moscow and new cities (Magnitogorsk, Stalinsk, Nizhni-Tagil). In 1934 he emigrated to Africa. There he developed both urban and architectural projects for monumental buildings. In 1954 he returned to Germany, to Hamburg.

A5 New dwellings built in the Waldenburg agglomeration: in 1924 – 171 (83 private, 88 communal), 1925 – 350 (143, 207 respectively), 1926 – 416 (174, 242 respectively), in the middle of 1927 (140, 230 respectively).

A6 Particularly among the notes drawn during the honeymoon trip around Waldenburg. Note in the collection of the Museum in Frankfurt, exhibited during the Ernst May exhibition in the Museum of Architecture in Wrocław.

A7 Hermann Jansen (1869-1945), lecturer at the Berlin and Stuttgart universities of applied sciences, specialist in urban planning and housing design, member of the Berlin city council, official in the ministry, from 1918 member of the Prussian Academy of Arts, was the author of numerous urban general and detailed designs. Probably the most important of them is a general plan for Berlin (first prize in a competition organised by the city council in 1910), then designs for Berlin districts (Treptow 1914, Westen Berlin 1917, Charlottenburg 1919) and other German towns (Cologne, Leipzig, Schleswig, Nürnberg, Brandenburg, Wiesbaden, Enden – Friesland housing settlement, 1915). He also prepared numerous housing settlement projects for Pomeranian towns (Koszalin, Stargard, Szczecin) and Silesian towns (now: Nysa, Brzeg, Środa, Złotoryja, Świdnica, Bierutów, Namysłów and Ząbkowice). He developed projects of districts in Łódź, Riga, Budapest, Constantinople and Ankara. He commented on small housing settlements (1909) as well as blocks of flats (1910, 1917) and large cooperative settlements (1910). He was also the author of large architectural buildings such as the Great Market Hall in Berlin (1915).

A8 Ernst Pietrusky, after studying in Breslau, was active during the last years of the war in Goldap (Goldapia), starting his architectural career with a project for a housing settlement in Nieder Hermsdorf. Then he was engaged as an architect and town planner in Waldenburg and its surroundings. He designed buildings in modernist style, e.g. the Labour Office and a school in Weißstein. He also designed several other schools in Lower Silesia, e.g. Hans-Schemm-Schule in Glatz (Kłodzko) and the airport in Gandau (Gądów in Wrocław).

A9 Otto Rogge (1866-1955), in 1910 he became the town building master of Waldenburg, then in 1924 – town building advisor. He prepared numerous urban and architectural projects in Waldenburg. He planned the expansion of districts and housing settlements e.g. on the slopes of Gleisberg and Neustadt (from 1927). He designed many public buildings – the Evangelical Lutheran church, numerous schools, e.g. the Catholic school in Altwasser, the Municipal Female Vocational and Trade School, the comprehensive secondary school in Neustadt (1928), the sports stadium with a swimming pool in Neustadt (1926), the management board building of the Municipal and District Health Fund (1930), as well as the communal cemetery in Altwasser.

A10 Theo Effenberger (1882-1968), studied in Breslau and later in Darmstadt. After working in Magdeburg and Augsburg he returned to Breslau in 1907. In 1910 he was one of the co-founders of the Silesian Association for the Protection of Heritage (Heimatschutzbewegung). From 1919 he worked mainly for Siedlungsgesellschaft Breslau AG, designing several housing settlements and housing complexes, among others the mentioned Pöpelwitz (1919-1927) as well as Westend and Viehweide (1925-1929).

Appendix B. Source of Figures

Figure 2, 7-10, 12-14 from the collections Oddział Historyczny Muzeum Porcelany w Wałbrzychu, Figure 3 (b) from Archiwum Państwowe we Wrocławiu, Oddział w Kamieńcu Ząbkowickim and Figure 15 (a) from Archiwum gminy Szczawno with permission of the institutions.

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