Londzina street in Zabrze: architecture and urbanism between the city and the ironworks

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Londzina street in Zabrze: architecture and urbanism between the city and the ironworks
The paper investigates the urban evolution of Londzina Street in Zabrze, Poland, during the late nineteenth and early twentieth centuries. It examines how municipal and private heavy-industrial efforts shaped the city's development, highlighting the tension between traditional compact urban quarters and the emerging garden city concept. The paper conducts research on urbanism, architecture and history through historical analysis, cartographic review and spatial interpretation. It explores Zabrze's spatial structure, as a miners' village and then a town; the garden city concept's influence on worker estates in England and Germany; and the functional and spatial conflicts during urban formation. The study

reveals that industrial enterprises, not municipal authorities, were the primary drivers of modern urban planning solutions in Zabrze, challenging conventional views of city formation in Silesia.

Keywords: Donnersmarck Steelworks, Zabrze, garden-city movement, early twentieth-century urban planning in Silesia, nineteenth-century industrial towns

1. Introduction

The paper shows the evolution of an industrial city's urban structure created on two levels – the city-forming activities of the municipal authorities and the efforts of private foundations related to the industrial hubs – which significantly impacted the city's development during the Industrial Revolution.

It examines the transformation of a street in Zabrze, illustrating the creation of new urban structures where traditional compact urban quarters, rooted in historical forms, intersect with the modern garden-city concept. This clash highlights the tension between preserving historical urban forms and adapting to changing social needs.

The research presents an opportunity to apply the case study method to a selected workers' housing estate currently located in Poland, linked to archival and historical analysis to answer not only general questions about how contemporary cities were born at the interface between the existing urban fabric and industrial areas, but also to identify possible urban development paths and generally why it was in workers' housing estates that innovative solutions were more often implemented. The research followed the methodology set out by Robert K. Yin,[1] combining three primary methods of describing a given space.

The choice of the settlement at Londzina Street in Zabrze was dictated by the requirements of the combined methodology, which required, for a complete analysis of the issue at each of the scales discussed later, reaching for archival materials containing source data dating from around the mid-nineteenth century and available to researchers in Poland. The knowledge of the legal system, historical and contemporary, in force in the area in terms of spatial planning and building regulations is not without significance, which enabled a better understanding of the subject and, consequently, a correct analysis of the whole issue.

The spatial development of Zabrze, illustrated by the Donnersmarck Steelworks housing estate, shows, both in form and spatial structure, many features in common with other settlements in mining areas, not only in former Germany but in different parts of Europe.

Although the case study in this research only concerned one workers' settlement in Silesia, its insights contribute to the broader understanding of how industrialisation shaped urban landscapes and workers' settlements across Europe. Analogous solutions and spatial contexts, although often in a different political situation, were arising at the same time throughout Europe, with the establishment of workers' patronage estates. The mechanisms uncovered, such as the pivotal role of private industrial actors (rather than municipal authorities) in pioneering urban innovations, the tension between historic compact quarters and emerging garden city concepts, and the hybridisation of rural and urban spatial models are not unique to Silesia but reflect transnational patterns observed in mining and industrial towns across the continent.

This article broadens the discussion on the garden-city movement by showing that, alongside the well-known British model of Ebenezer Howard, similar ideas were also emerging in Germany, including early formulations of Theodor Fritsch. While Fritsch's later association with nationalist and racist ideologies has rightly led to his marginalisation in contemporary

[1] YIN, Robert K. *Case study research: Design and methods* (3rd ed.). Thousand Oaks: Sage Publications, 2003, p. 5.

scholarship, recognising these early parallel developments helps place the Zabrze case within a broader European context. This comparative view highlights how urban concepts spread across national borders, shaped by diverse political, social and industrial conditions. The industrial revolution is, in this case, a universal phenomenon, which contributed to the emergence of similar types of housing in other parts of the continent in places associated with mining, smelting or industry in general, such as Bahnschacht Colonie in Walbrzych, Eisenheim in Oberhausen, Schüngelberg in Gelsenkirchen, Emscher-Lippe in Datteln, the Cité Ouvrière at Mulhouse, Bata Housing in Zlín and Vítkovice in Ostrava.[2] The idea of the garden city spread throughout Europe in conjunction with industry, creating similar spatial patterns.[3] More than the cities themselves, industry, as a vehicle of "open structure", became a leading force in the implementation of the latest urban theories at the turn of the twentieth century, and settlements formally emerging in rural areas across Europe developed more dynamically and according to more modern patterns than "urban" settlements.

A comprehensive understanding of the issue of the spatial relationship formed between the new and historic urban fabric will allow this phenomenon to be studied in the future by comparing it with settlements created *cum cruda radice*, with only a natural context, without reference to existing buildings and urban planning traditions.

The findings from the Zabrze case offer valuable insights for international scholars and practitioners concerned with the challenges of post-industrial urban revitalisation. By analysing how past industrial actors addressed housing shortages, social needs and spatial integration, the study contributes to contemporary debates on how to balance historic preservation with modern urban development. Situating the Zabrze example within this European framework positions the research as a reference point not only for local or national heritage, but also for comparative urban studies and global discussions on sustainable regeneration strategies in former industrial regions.

1.1. Zabrze: Location, history and its role as an industrial centre of Silesia

Zabrze is a city in today's Silesia Province, Poland, in the eastern part of the historical region of Silesia. The area has a rich mining tradition that was initially concentrated in the region's western part (Lwówek and Złotoryja having been founded in the 1320s).[4]

The first records of settlement in Zabrze date back to the mid-thirteenth century. The city's and the area's history is complex. Of necessity, this brief overview simplifies it. Until the end of the tenth century, Silesia was under Czech rule[5] (though some researchers dispute this[6]). By

[2] LAMPARSKA, Marzena. Osiedla patronackie w cywilizacyjnej przestrzeni Europy: kulturowe dziedzictwo robotniczej codzienności. In: *Acta Geographica Silesiana*, 26, 2017, pp. 51–61; BONNINGHAUSEN, Helmut. Osiedla robotnicze na terenie Ruhry i ich ochrona. In: *Ochrona Zabytków*, 29/3, 1976, pp. 210–215; LUDWIG, Bogna. Osiedle patronackie Książańskiego Zespołu Kopalń na przykładzie osiedla przy szybie „Bolesław Chrobry" w Walbrzychu. In: *Architectus*, 2(20), 2006, pp. 45–60.

[3] PASTOR, Antonio Blanco, CANNIFFE, Eamonn, and JIMENEZ, Carlos Rosa. Learning from Letchworth and Welwyn Garden City: Garden cities' policies for developing existing settlements in the contemporary world. In: *Land Use Policy*, 132(09), 2023, article 106759.

[4] HERZIG, Arno, RUCHNIEWICZ, Krzysztof, and RUCHNIEWICZ, Małgorzata. Śląsk *i jego dzieje*, Wrocław: Via Nova, 2012, p. 35.

[5] DAVIES, Norman, and MOORHOUSE, Roger. *Mikrokosmos. Portret miasta środokowoeuropejskiego*, Kraków: Znak, 2002, p. 76.

[6] See for example: BAŃCZYK, Przemysław. *Trudne Początki Polski*, Wrocław: Fundacja na Rzecz Nauki Polskiej, 2008, pp. 199–206.

Fig. 1: *Zabrze and its location in the eastern part of Silesia from the nineteenth century until now. By J. Kleszcz.*

the late tenth century, the land became part of Mieszko I's state[7] (the progenitor of today's Poland), then part of the Duchy of Silesia in 1138,[8] which soon became part of the Czech Crown.[9] The land transitioned to Habsburg rule after the Battle of Mochacz in 1526.[10] Zabrze was still a small village at that time, with evidence of iron mining from this period.[11]

As a result of the three Silesian wars (1740–1763), most of Silesia, including Zabrze, came under Prussian rule. The second half of the eighteenth century saw intensive smelting industry development,[12] and the Frederician colonisation and settlement policies of Frederick II of Prussia to populate and develop economically underdeveloped regions, particularly in Silesia. New settlements (colonies) were founded, now elements of the city's urban structure. The discovery of easy-to-exploit coal deposits in 1790 marked a turning point,[13] transforming Zabrze from an agricultural settlement into a rapidly growing mining and industrial centre. In 1905, after the merging of three neighbouring communities, it even became "the largest village in Europe at the time",[14] with over 54,000 residents. (Wrocław, the historical capital of Silesia and the region's largest city, had a population of about 461,000 while Katowice, today's provincial government seat, had about 35,000 residents.) This period saw intensive urban and architectural development, shaping the structure characteristic of most European industrial areas. In 1915, the municipality's name changed to Hindenburg.

World War I brought further geographical changes. In 1918, the Republic of Poland was reborn, and much of Upper Silesia, including Zabrze, became disputed between Germany and

[7] TYSZKIEWICZ, Lech A. *Słowianie i Awarowie*. Wrocław: Ossolineum, 2009, p. 133.
[8] *Księstwo śląskie*. In: Jan Harasimowicz (ed.), *Encyklopedia Wrocławia*. Wrocław, 2006, p. 455.
[9] HERZIG, Arno, RUCHNIEWICZ, Krzysztof, and RUCHNIEWICZ, Małgorzata. Śląsk i jego dzieje, Wrocław: Via Nova, 2012, p. 44.
[10] GALAS, Alicja, and GALAS, Artur. *Dzieje Śląska w datach*. Wrocław: Wydawnictwo Rzeka, 2001, p. 105.
[11] JURKIEWICZ, Anna, and ZIEMBA, Stanisław. *Województwo katowickie. Przewodnik*. Warszawa: Sport i Turystyka, 1962, pp. 130–144.
[12] Ibidem.
[13] GREIER, Piotr. Historia gospodarcza Górnego Śląska (XVI–XX wiek). In: Joachim Bahlcke, Dan Gwarecki and Ryszard Kaczmarek (eds), *Historia Górnego Śląska. Polityka, gospodarka i kultura europejskiego regionu*. Gliwice: Dom Współpracy Polsko-Niemieckiej, 2011, pp. 309–340. p. 316.
[14] HNATYSZYN, Piotr, and MUSCHALIK, Piotr. *Zabrze: powroty / heimkehr / come backs*. Zabrze: Urząd Miejski, Zabrze, 2007, p. 7

Poland. After the three Silesian Uprisings and a referendum, Zabrze remained under German control but became a near-border town, with the Polish–German border just about 1 km south and 3 km east. In 1922, Hindenburg was granted city rights by Prussian decree.[15]

In 1945, the city became part of the new Polish state. Until the 1990s, heavy industry primarily developed, especially mining and smelting, until significant changes occurred, especially with the closure of the steel mills and mines.

1.2. State of research

The workers' estate at Londzina Street has gained little international recognition, except for Alessandro Ariel Terranova's thorough analysis of its urban and architectural value in his master's thesis at the University of Pisa (tutors: Marco Giorgio Bevilacqua, Magdalena Żmudzińska-Nowak, Assunta Pelliccio, Luigi Pellizzoni and Stefania Land)[16] and previous articles concerning elements of Londzina Street by this paper's authors.[17]

1.3. Objective and the construction of the paper

The paper is designed as a multi-stage study of urbanism, architecture and history. The analysis progressively narrows from the geographical, spatial and historical context to the urban planning near the Donnersmarck Steelworks and finally to the development of Londzina Street (formerly Hochbergstrasse) and its focal point, the school building.

The research covers several aspects:

- analysis of Zabrze's spatial structure from a historical perspective, showing its evolution and main development directions during urban formation
- analysis of the state of knowledge on the idea of garden cities in Germany and its impact on worker's estates
- historical analysis of a selected complex of industrial buildings in Zabrze (Donnersmarck Steelworks)
- analysis of functional and spatial conflicts in the studied area of Zabrze during the formation of its urban structure

The paper follows the IMRAD structure extended by conclusions.

2. Materials and methods

The research method involved steps to determine whether and to what extent industrial buildings in Silesia reflected the late nineteenth- and early twentieth-century shift in urban planning. This shift, initiated by industrial plant owners rather than municipal authorities,

[15] *Amtsblatt der Regierung zu Oppeln*, Oppeln: F. Weilshaeuser'schen Buchdruckerei, 28.10.1922, No. 26, p. 353.

[16] TERRANOVA, Alessandro Ariel. The revitalization of Ul. Londzina: Enhancing workers' estates as a post-industrial historical heritage in Zabrze, Poland. Master's thesis in architecture and building engineering. Pisa: University of Pisa, 2017, pp. 1–352. https://etd.adm.unipi.it/theses/available/etd-09252017-093616/unrestricted/The_revitalization_of_ul_Londzina.pdf (accessed 29.05. 2023).

[17] ŚWIERZAWSKI, Jakub, HU, Ming, KLESZCZ, Justyna, KMIECIK, Piotr, and KAMATE, Dieu Merci. The potential of higher education institutions as catalysts for revitalization in urban planning: A case study of a Medical Simulation Centre at the workers' housing estate of Donnersmark Ironworks in Zabrze. In: *HOUSING ENVIRONMENT*, 44, 2023, pp. 92–100; ŚWIERZAWSKI, Jakub, HU, Ming, KLESZCZ, Justyna, KMIECIK, Piotr. The transformation of post-industrial heritage: Cultural, urban, energy and environmental benefit; A case study from Zabrze, Poland. In: Jitka Cirklová (ed.), *AMPS PROCEEDINGS SERIES 35.1: Prague – Heritages; Past and Present – Built and Social*. Prague: Czech Technical University & AMPS, 2024, pp. 455–463.

transitioned from compact city quarters towards improving labourers' living conditions by adopting the emerging and revolutionary idea of garden cities.

The initial analysis of a facility on Londzina Street in Zabrze regarding its potential adaptation for a museum and academic facility raised questions about the building's importance and its urban context: is it a unique, very early housing estate reflecting Ebenezer Howard's concept, or merely a witness to history? This distinction influences how the building should be treated and the extent of interference with its structure, determining whether it is a monument or merely part of a larger structure. The data collected is directly acquired through field research, and queries and analysis are obtained through logical argumentation.[18]

A single-case–study analysis method was used to illustrate the creation and transformation of the urban fabric at the intersection of municipal and private property in early twentieth-century Zabrze, then a German city.

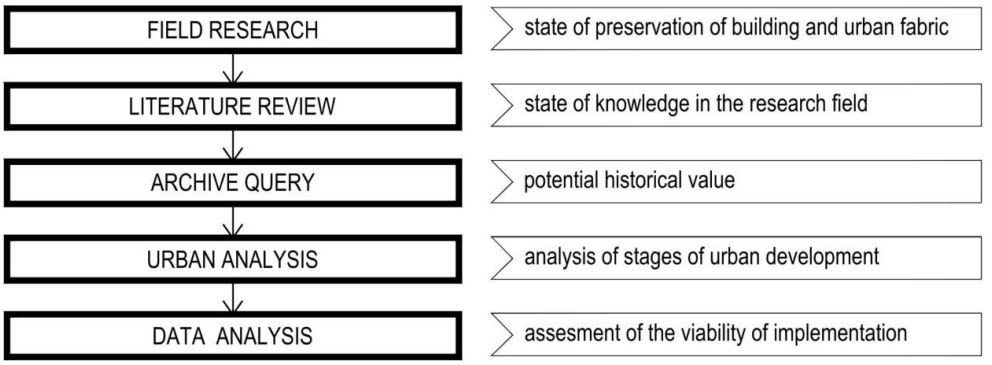

Fig. 2: *Methodological scheme. By J. Kleszcz.*

The next stage involved a historical and interpretative analysis of cartographic materials, design documentation and other archival materials, including school books, from publicly accessible archives and the State Archives in Katowice, Gliwice branch. The search was conducted in January 2024.

The research methods included a literature review on the development of garden cities in Germany and Silesia and the settlement's growth in Zabrze. The study followed the PRISMA protocol guidelines for systematic review and meta-analysis.[19]

[18] NIEZABITOWSKA, Elżbieta. *Metody i techniki badawcze w architekturze*. Gliwice: Wydawnictwo Politechniki Śląskiej, 2014, pp. 184–186.

[19] SHAMSEER, Larissa, MOHER, David, CLARKE, Mike, GHERSI, Davina, LIBERATI, Alessandro, PETTICREW, Mark, SHEKELLE, Paul, STEWART, Lesley A, and PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: Elaboration and explanation. In: *BMJ*, 349, 2015, g7647–g7647.

3. Results

3.1. The estate is an early example of the implementation of the garden city concept in Silesia within German urbanism

Ebenezer Howard's book *To-morrow: A Peaceful Path to Real Reform*[20] initiated a social movement to build garden cities as an alternative to conservative attempts to heal contemporary cities suffering severely from the Industrial Revolution and urbanization.[21] Ideas for the implementation of Howard's theoretical framework emerged quickly,[22] primarily in the UK, where the Garden City Association was established as early as 1899.[23] An analysis of concepts developed before and after Howard's theory, up to the end of World War II, shows the significant influence of garden cities on the emergence of town planning as an independent discipline.[24] Three British developments from this period are assumed to represent Howard's idea best. These are Letchworth and Welwyn Garden City, created with Howard himself, and Hampstead Garden Suburb, initiated by Henrietta Barnett.[25]

Letchworth Garden City was the first town built on Ebenezer Howard's principles.[26] Much of the town, now with over 33,000 residents, was based on a masterplan by Barry Parker and Raymond Udwin, designed around the pre-existing small settlement of Letchworth and connected to two villages, Willian and Norton. The masterplan, published in 1904,[27] after a limited competition won by Parker and Udwin.[28] The estate development process was described in detail by Charles Purdom a few years after it was created,[29] from site selection to voting on the naming of Letchworth Garden City. After the Second World War, development expanded beyond the original plan, with the eastern side remaining incomplete. The new estates of Grange, Jackmans, Lordship and Manor Park were created on the north and south sides.

[20] HOWARD, Ebenezer. *To-morrow: A peaceful path to real reform*. London: Swan Sonnenschein & Co. Ltd., Paternoster Square, 1898.

[21] PURDOM, Charles Benjamin. *The Garden City: A Study in the Development of a Modern Town*. London: J. M. Dent & Sons Ltd., 1913, pp. 14–16; PASTOR, Antonio Blanco, CANNIFFE, Eamonn, and JIMENEZ, Carlos Rosa. Learning from Letchworth and Welwyn Garden City: Garden cities' policies for developing existing settlements in the contemporary world. In: *Land Use Policy*, 132(09), 2023, 106759; MILLER, Mervyn. *English Garden Cities. An Introduction*. Kemble Drive, Swindon: English Heritage, Letchworth Garden City Heritage Foundation, 2010, pp. 4–7. https://historicengland.org.uk/images-books/publications/english-garden-cities-introduction/english-garden-cities/ (31.10.2023); TIZOT, Jean-Yves. Ebenezer Howard's Garden City Idea and the Ideology of Industrialism. In: *Cahiers victoriens et* édouardiens, 87 Printemps, 2018.

[22] HOWARD, Ebenezer. *Garden cities of tomorrow*. London: Swan Sonnenschein & Co. Ltd., Paternoster Square, 1902; UNWIN, Raymond. *Town planning in practice: An introduction to the art of designing cities and suburbs*. London: T. Fisher Unwin, 1909. https://archive.org/details/townplanninginp00unwigoog/page/n12/mode/2up (31.10.2023); OSBORN, Frederic James. *New Towns After War*. London: J. M. Dent & Sons, Ltd., 1942.

[23] MILLER, *English Garden Cities* ..., p. 13.

[24] MAGNAGO LAMPUGNANI, Vittorio, ALBRECHT, Katrin, BIMLMAIER, Helene, and ZURFLUH, Lukas. *Manuale zum Städtebau Die Systematisierung des Wissens von der Stadt 1870–1950 / Urban planning manuals: The systematization of knowledge about the city 1870–1950*. Berlin: DOM Publishers, 2017.

[25] MILLER, *English Garden Cities* ..., p. 17.

[26] LEWIS, John. Preserving and maintaining the concept of Letchworth Garden City. In: *Planning Perspectives*, 30(1), 2015, pp. 153–163; MILLER, *English Garden Cities* …, p. 18; FISHMAN, Robert. Howard and the Garden. In: *Journal of the American Planning Association*, 64(2), 1998, pp. 127–128; PURDOM, Charles Benjamin. *The Garden City after the War: A discussion of the position of the Garden City at Letchworth and a proposal for a national housing policy*. Letchworth Victoria House Printing Co., 1917. https://onlinebooks.library.upenn.edu/webbin/book/lookupid?key=ha102435700 (accessed 31.10.2023).

[27] PURDOM, *The Garden City: A Study in the Development of a Modern Town*, p. 42.

[28] MILLER, *English Garden Cities* …, p. 18.

[29] PURDOM, *The Garden City: A Study* …, pp. 37–62.

Welwyn Garden City was the third, after Letchworth and Hampstead Garden Suburb, commissioned by Howard, Frederic Osborn and Charles Benjamin Purdom in 1919,[30] on land purchased from Lord Desborough Panshanger and Lord Salisbury by the Garden Cities and Town Planning Association. Osborn created the first provisional layout in 1919, but it was abandoned due to railway way-leave requirements. The second sketch, by Melville Crickmer, defined the industrial-area location but was abandoned in favour of Louis de Soissons' 1920 plan,[31] which led to a population of 13,500 inhabitants by 1938.

Mervyn Miller states that many garden-city settlements also belonged to a tradition of industrial housing created by enlightened self-interest, giving examples such as Bournville (1895), the Cadbury village and Port Sunlight (1888), the Lever village.[32] Unwin's plan for Joseph Rountree's industrial village, New Earswick (1902), continued the sequence.

But in the early twentieth century, most worker housing was built by different purpose-specific societies or clerks (for example, the Wekerle Estate at Kispest, south of Budapest, designed by Karoly Kos[33]). These were created by industrial facilities for employees and their families. This solution appeared in Upper Silesia as independent settlements founded *cum crude radice*, such as Giszowiec, for the employees of individual mines, steelworks and factories.[34] However, this occurred several years later than the analysed case, requiring an urbanised neighbourhood and established urban context. Miller states that German interest in the idea came much later, influenced by Ernst May (1886–1970), who worked for Unwin at Wyldes around the 1930s.[35]

According to Gerhard Fehl, who analysed the garden-city concept, the 1930s and 1940s in Germany marked the proper development of the idea in the former Weimar Republic.[36]

At the same time, there was a dispute over the authorship of the original idea of the garden city between Howard and Theodor Fritsch. Fritsch had published his theory two years before Howard.[37] As a result, it is possible to speak of a dispute between English and German theory, although, according to Bernhard Kampffmeyer writing in 1906,[38] the intensification of adverse factors related to the urban environment in connection with industrialisation influenced the search for an antidote in England and Germany similarly, leading to similar conclusions simultaneously. Fritsch's omission from later studies on garden cities was primarily due to his association with Nazi philosophy and the racist and anti-Semitic overtones of his later

[30] MILLER, *English Garden Cities* …, pp. 31–32.

[31] Ibidem; PURDOM, Charles Benjamin. *The building of satellite towns*. London: J. M. Dent & Sons, Ltd., 1925, p. 205.

[32] MILLER, Mervyn. Garden Cities and Suburbs: At Home and Abroad. In: *Journal of Planning History*, 1(1), 2002, pp. 6–28; BRYSON, John R., and LOWE, Philippa A. Story-telling and history construction: Rereading George Cadbury's Bournville Model Village. In: *Journal of Historical Geography*, 28(1), 2002, pp. 21–41; HARRISON, Michael. *Bournville: Model Village to Garden Suburb*, Chichester, UK: Phillimore, 1999.

[33] BALDWIN HESS, Daniel, TAMMARU, Tiit, and VAN HAM, Maarten. *Housing Estates in Europe: Poverty, Ethnic Segregation and Policy Challenges*. (The Urban Book Series). Cham: Springer, 2018; MILLER, Garden Cities and Suburbs …, p. 12.

[34] TOMCZAK, Anna Aneta, and SZOSZKIEWICZ, Julia. The idea of the garden city in Polish urban planning thought at the beginning of the 20th century. In: *Builder*, 317 (12), 2023, pp. 48–53.

[35] MILLER, Mervyn. Garden Cities and Suburbs …, p. 12.

[36] FEHL, Gerhard. The nazi garden city. In: S. Ward (ed.), *The garden city: Past, present and future*. London and New York: Spon Press, Taylor & Francis Group, pp. 86–106.

[37] FRITSCH, Theodor. *Die Stadt der Zukunft: Gartenstadt*. Leipzig: Hammer-Verlag, 1896/1912.

[38] KAMPFFMEYER, Hans. *Die Gartenstadtbewegung in England*. Leipzig: Teubner, 1909. https://diglib.tugraz.at/die-gartenstadtbewegung-1909-259 (accessed 10.05.2024).

publications.[39] Therefore, the mainstream publications (even German ones) ignore Fritsch's influence on the development of ideas within Germany, focusing on Howard's ideas rather than the native tradition.[40] The Deutsche Gartenstadtgesellschaft (German Garden City Association), founded in 1902, also disregarded his version of the garden city.[41]

Much research on the garden city movement in Germany is territorially limited to modern Germany, excluding areas now in other countries (including parts of Poland), which significantly limits the accuracy of the analysis.[42]

Regardless of its origins in Germany, Howard's legacy has profoundly influenced housing estates in the UK and internationally. According to sources, the idea has gained many supporters within and beyond Europe,[43] with at least 57 garden-city communities in England,[44] and at least 32 new towns from 1946 to 1970 referencing this idea.[45] Internationally, examples include pre- and interwar developments in present-day Poland: Giszowiec in Katowice (1907),[46] Miasto Ogród Młociny (1914), Podkowa Leśna (1925), Kolonia Letnia Żarki (c. 1932)[47] and Miasto-Ogród Sokolniki, Tuszyn-Las or Grotniki.[48]

In addition to settlements explicitly identified as garden cities, many new ones were influenced by the idea, whether English or German, without clearly naming them as such, particularly factory settlements that did not rely on collected funds for development but were founded. This also ties the concept under discussion directly to Howard's vision rather than its earlier and later German counterparts.[49] However, by the time the Londzina estate was founded, the Eden estate in Oranienburg, established in 1889 with Theodor Fritsch's participation, had already been propagated.[50]

The construction of the Londzina Street settlement occurred during the early phase of the garden-city (also known as völkische) idea's development without a clear theoretical reference. However, several indications, discussed later, point to the fact that the workers' settlement in Zabrze was one of the first implementations of this concept in Germany.

The significance of workers' estates (patron colonies) within the city and their influence on the urban landscape of Upper Silesia has been well-documented. However, publications have

[39] SCHUBERT, Dirk. Theodor Fritsch and the German (völkische) version of the Garden City: The Garden City was invented two years before Ebenezer Howard. In: *Planning Perspectives*, 19(1), 2004. pp. 3–35.
[40] Ibidem.
[41] Ibidem, p. 14.
[42] HARRIS, Teresa. The German Garden City Movement: Architecture, Politics and Urban Transformation, 1902–1931. Submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in the Graduate School of Arts and Sciences. Columbia University, 2012, p. 6. https://core.ac.uk/download/pdf/161439728.pdf (accessed 10.05.2024).
[43] BARANOWSKA, Magdalena. Miasta-ogrody, utopia a rzeczywistość. In: *Acta Universitatis Lodziensis. Folia Geographica Socio-Oeconomica*, 8, 2007, pp. 21–23.
[44] MILLER, Mervyn. *English Garden Cities …,* pp. 109–115.
[45] VERNET, Nicolas, and COSTE, Anne. Garden Cities of the 21st Century: A Sustainable Path to Suburban Reform. In: *Urban Planning*, 2(4), 2017, pp. 45–60. DOI: 10.17645/up.v2i4.1104, ISSN 2183–7635, p. 48.
[46] TOFILSKA, Joanna. *Giszowiec. Monografia historyczna.* Katowice: Muzeum Historii Katowic, 2016.
[47] MALCZEWSKA-PAWELEC, Dorota. Realizacje idei „miasta-ogrodu" w międzywojennej Polsce na przykładzie Podkowy Leśnej oraz Kolonii Letniej Żarki. In: *Kwartalnik Historii Kultury Materialnej*, 68(4), 2020, pp. 581–604.
[48] BARANOWSKA, Miasta-ogrody, utopia a rzeczywistość ..., pp. 15–38.
[49] SCHENK, Tilman A., and BROMLEY, Ray. Mass-Producing Traditional Small Cities: Gottfried Feder's Vision for a Greater Nazi Germany. In: *Journal of Planning History*, 2(2), 2003, p. 119.
[50] SCHUBERT, Theodor Fritsch …, p. 17.

not addressed the blending of historically formed and new urban fabric, i.e., the confrontation between the "quarter" city and the Howardian garden city.

Ewa Waryś has described the types of urban compositions in Upper Silesian cities.[51] Moreover, others' analyses focus on individual compositional elements that are morphologically separated from the urban fabric, such as industrial plant complexes, workers' housing estates, interwar housing complexes and inner-city compositions, often omitting the transitional spaces, processes and phenomena that arise where different morphological units meet. Despite the name, this division is a functional, not a morphological one.

The problem of Zabrze's urban structure as an industrial town in the historical context has received few independent analyses.[52] Earlier research focused on housing types based on settlement formation methods in chronological order.[53] Workers' housing estates and their reliance on existing investments, given Zabrze's history of structure formation – initially as a group of villages and only relatively recently as an urban centre – have also been discussed in the broader Upper Silesian context rather than as a case study. Therefore, many analyses include simplifications and generalisations, such as those related to the classification of development types, without considering the broader social context or the emergence and spread of new trends in world urbanism.[54] These analyses describe the development of backyard greenery as amenity gardens, front gardens, individual workers' gardens (so-called *Arbeiersgarten*) or extensive allotment gardens.[55] They are based on period works, which, despite their varied nature, consistently emphasise the positive aspects of worker's self-sufficiency.[56] These works explicitly advocate for the creation of workers' orchards, often giving specific guidelines regarding such spaces' size, form and content.[57]

3.2. Development of Zabrze's settlement structure

The first stage of the Upper Silesian Industrial District development spans from the fifteenth to the end of the eighteenth century, marking the transition from an agricultural economy to

[51] WARYŚ, Ewa. Kompozycje urbanistyczne w krajobrazach miast Górnego Śląska – problemy i potencjał. In: *Journal of Civil Engineering, Environment and Architecture*, 64(3), 2017, pp. 383–396.

[52] WARYŚ, Ewa, and HODOR, Katarzyna. The landscape value of the labour colony in Zabrze. In: *Czasopismo Techniczne: Architektura / Technical Transactions: Architecture*, 6-A(11), 2014, p. 257.

[53] Ibidem, pp. 265–267.

[54] NOWAK-LENARTOWSKA, Alina. *Osiedla przyzakładowe jako problem urbanistyczny regionu na przykładzie Górnośląskiego Okręgu Przemysłowego*. Warszawa: PWN, 1973; NALEPA-ORŁOWSKA, Irma. Typy robotniczego osadnictwa górniczo-hutniczego na Górnym Śląsku. In: Antoni Wrzosek (ed.), *Górny Śląsk, prace i materiały geograficzne*. Kraków: Wydawnictwo Literackie, 1955; SULIMOWSKA-OCIEPKA, Anna. *Osiedla patronackie Górnego Śląska. Studium miejsca oraz znaczenie kultury przemysłowej w przestrzeni zurbanizowanej*, praca doktorska, promotor: prof. dr hab. inż. arch. Nina Juzwa, Politechnika Śląska, Gliwice 2004.

[55] FRUŻYŃSKI, Adam. Powstanie i rozwój zabrzańskich osiedli patronackich od XVIII wieku do 1939 roku. In: Garbiela Brożek (ed.), *Historyczne osiedla robotnicze*. Katowice: Śląskie Centrum Dziedzictwa Kulturowego, 2005, pp. 77–98; ŁAKOMY, Katarzyna. The workers' gardens of Upper Silesian industrial housing estates from the turn of the 19th and 20th century in light of chosen publication form the epoch. In: *Czasopismo Techniczne: Architektura / Technical Transactions: Architecture*, 2-A, 30(109), 2012, pp. 187–196.

[56] ŁAKOMY, The workers' gardens …, pp. 191–193.

[57] SEIDL, Kurt. *Das Arbeiterwohnungswesen in der oberschlesischen Montanindustrie : zum XII. Allgemeinen Deutschen Bergmannstage Breslau 1913 ; Arbeiterwohnungswesen*. Kattowitz: Selbstverl. des Oberschlesischen Berg- und Hüttenmännischen Vereins, 1913; KÖHEL H. *Des oberslesische Arbeitergarten. Ein Gartenbau - Leitfaden fur die oberslesischen Berg- und Huttenarbeiter*. Laurahütte: Druck und Verlag von J. Pramor, 1893; VON REUFFURTG, Hermann. *Gieschewald ein neues oberschlesisches Bergarbeiterdorf der Bergwerksgesellschaft Georg von Giesche's Erben nach Entwürfen der Architekten E. und G. Zillmann, Charlottenburg*. Charlottenburg, Kattowitz: Verlag von Gebrüder Böhm, 1910.

early industrialisation. In 1672, Zabrze was a small settlement with 34 households (the so-called "smokehouses").[58]

The Upper Silesian Industrial District's settlement structure developed typically until the eighteenth century, with settlements mainly located in forested areas. The turning point came in the eighteenth century when residents began extensively utilising natural resources, transforming them into industrial units.[59] In 1790, easily accessible coal deposits were also discovered on the border of today's Zaborze and Pawłów districts in Zabrze.[60] In 1791, one of Upper Silesia's first coal mines was founded here, later known as "Queen Louisa". In 1816, it accounted for 25% of the region's total coal output.

The first half of the nineteenth century marked another significant village development stage, characterised by early capitalist industrialisation. At that time, factory owners began building small workers' houses clustered in so-called colonies. In 1826, Count Carl Lazarus Henckel von Donnersmarck, former starost of the Bytom district, bought the Zabrze domain.

The next development stage occurred between 1850 and 1870, marked by the rapid growth of the rail network and large-scale industry. On November 15, 1845, a railroad section connecting Gliwice and Świętochłowice (now line No. 137) opened, passing through Zabrze. It was part of the Upper Silesian Railway (German: Oberschlesische Eisenbahn, OSE) and extended the line from Kędzierzyn to Gliwice, eventually linking Katowice with Legnica.[61] Additionally, between 1851 and 1857, the OSE established a network of local narrow-gauge railroads known as the "Oberschlesische Schmalspurbahnen" (OSSB), connecting industrial networks, replacing the previous horse-drawn–carriages system.[62] Two routes intersected in Zabrze: Gliwice–Świętochłowice and Zabrze–Bytom. In 1843, von Donnersmarck opened the Concordia mine here, followed by a steel mill in 1851.

In this period, housing associated with industrial plants also developed. By the late nineteenth century, traditional single-storey apartment buildings in such estates were replaced by more elaborate structures, often haphazardly built alongside older urban layouts, without adapting to their urban pattern. Workers' estates also had generally low standards.[63] This began to change with a 1904 government law establishing new housing estates,[64] though it still failed to address urban planning issues.

Following World War I, uprisings and a referendum, part of the region was incorporated into Poland in 1922. Zabrze (then Hindenburg) remained on the German side, sparking rivalry between cities on the two sides of the border. Despite having a railroad station, streetcar lines, schools, factories and mines and a population of over 60,000 employed mainly in industry, Zabrze was known as the largest village in Europe. It was not granted city rights until October

[58] HNATYSZYN, Piotr, and MUSCHALIK, Piotr. *Zabrze: powroty / heimkehr / come backs*. Zabrze: Urząd Miejski, Zabrze, 2007, p. 7.

[59] STANKIEWICZ, Barbara. Rozwój osadnictwa w obszarze Aglomeracji Górnośląskiej w okresie XV w. - lata 80. XX w. Fazy rozwoju. In: P. Opałka and A. Opałka (eds), *Rewitalizacja krajobrazu kulturowego, Szanse i zagrożenia*. Nysa - Opole: Uniwersytetu Opolskiego, 2020, pp. 315–326. ISBN 978-83-7395-928-6, p. 316.

[60] BAHLCKE, Joachim, GAWRECKI, Dan, and KACZMAREK, Ryszard (eds). *Historia Górnego Śląska. Polityka, gospodarka i kultura europejskiego regionu*. Gliwice: Dom Współpracy Polsko-Niemieckiej, 2011, p. 316.

[61] HALOR, Jakub. 160 lat Kolei Górnośląskiej. In: Świat Kolei, 11, 2006, pp. 36–41.

[62] JAKUBOSZCZAK, Paweł. 150 lat Górnośląskich Kolei Wąskotorowych. In: *Stalowe Szlaki,* 2(119), 2014, p. 9.

[63] STANKIEWICZ, Barbara. Rozwój osadnictwa w obszarze Aglomeracji Górnośląskiej w okresie XV w. - lata 80. XX w. Fazy rozwoju . In: *Rewitalizacja krajobrazu kulturowego, Szanse i zagrożenia*. Nysa - Opole: Wydawnictwo Uniwersytetu Opolskiego, 2020, p. 320.

[64] NOWAK-LENARTOWSKA, Alina. *Osiedla przyzakładowe jako problem urbanistyczny regionu*, Warszawa: PWN, 1973.

1, 1922 (despite applying as early as 1875).[65] In the 1920s, the idea of merging Gliwice (German: Gleiwitz), Zabrze and Bytom (Beuthen) into the so-called Tri-City appeared. This was intended as a model metropolitan organisation to influence residents across the border. Two architectural competitions were announced for the city-centre reconstruction, attracting prominent German architects such as Max Berg, Paul Bonatz and Hans Poelzig. Their urban designs were not implemented, and the concept was abandoned with Hitler's rise to power. Nevertheless, modernist facilities from the interwar period, such as St Joseph's Church, the Sparkasse edifice by Dominikus Böhm and the municipal swimming pool on Krakow Square, emerged from these transformations.[66]

3.3. Evolution of Zabrze's urban structure and the development of workers' colonies

During Upper Silesia's rapid industrial growth between 1890 and 1920, Zabrze was a rural centre, expanding alongside nearby gradually incorporated villages. This led to the initial separation of the settlements, which eventually merged to form the city.

The distinctiveness of the city's structures stemmed partly from its decentralisation, shaped not by a unified urban planning policy but by the social and spatial policies of individual industrial plants.

The microscale of the analysed area serves as an interface between the state and private sectors, and the historical and contemporary. This character is still evident in the city's island-like spatial structure, which is isolated within the former villages by green belts.

The uniform character of workers' housing in Upper Silesia was based on the previous experience of the authorities and industry in the Ruhr area, where mining and smelting developed earlier. The main reason for building workers' colonies in these areas was to address the dramatic housing shortage and worsening demographic situation caused by rapid industrial growth and a massive influx of people. Overcrowding in existing housing, rising rents and difficulties in providing minimum living conditions for workers worsened with ineffective legislation, increased migration and challenges in maintaining stable employment.

This led to a different approach in Upper Silesia's later developing area. A sharp increase in population occurred between 1890 and 1910, reaching 116.8% in Zabrze.[67] Industrial plant management took on the task of building worker housing, preventing a severe housing shortage despite a 20,000-worker increase in Zabrze plants between 1900 and 1912, including 12,000 married workers.[68] The free-housing market could not accommodate the estimated 60–80 thousand people needing shelter by 1913. Thus, housing construction became almost exclusively the task of factories, as private developers showed restraint.[69]

The building of workers' estates was to accommodate young couples, strengthening their ties to the workplace. In doing so, they offered relatively low rents in flats near the workplaces.

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[65] KRZYSZTOFIK, Robert. *Lokacje miejskie na obszarze Polski : dokumentacja geograficzno-historyczna*, Pr. Nauk. UŚl, no. 2484. Katowice: Wydawnictwo Uniwersytetu Śląskiego, 2007, pp. 84–85.

[66] CHOJECKA, Ewa, GORZELIK, Jerzy, KOZINA, Irma, and SZCZYPKA-GWIAZDA, Barbara. *Sztuka Górnego Śląska od średniowiecza do końca XX wieku*, Katowice: Muzeum Śląskie - Muzeum Rejestrowane, 2009, pp. 347–374.

[67] SEIDL, *Das Arbeiterwohnungswesen in der oberschlesischen Montanindustrie* …, p. 2.

[68] Ibidem, pp. 1–3.

[69] Ibidem, p. 5.

They often included amenities such as small plots for growing vegetables or utility rooms, encouraging rural workers to settle and achieve partial food self-sufficiency.[70]

Support for workers' housing in Upper Silesia took three forms, varying in industrial enterprise participation: financial assistance for employees' independent housing construction (the so-called "Beihilfehäuser"), which was quickly abandoned due to the low efficiency; company-built houses for employees with families; and dormitory houses for unmarried employees.[71] In rural areas designated for housing and additional social services such as baths, laundries, schools, day-care centres, inns, etc., housing was not built as estates. However, it was subject to building regulations specific to that area. This required setting aside individual buildings and favoured lower-density, lower-rise developments. Meanwhile, rural-style buildings were seen as modern in urban areas, where more intensive, compact building was permitted,[72] despite reflecting the area's origins.

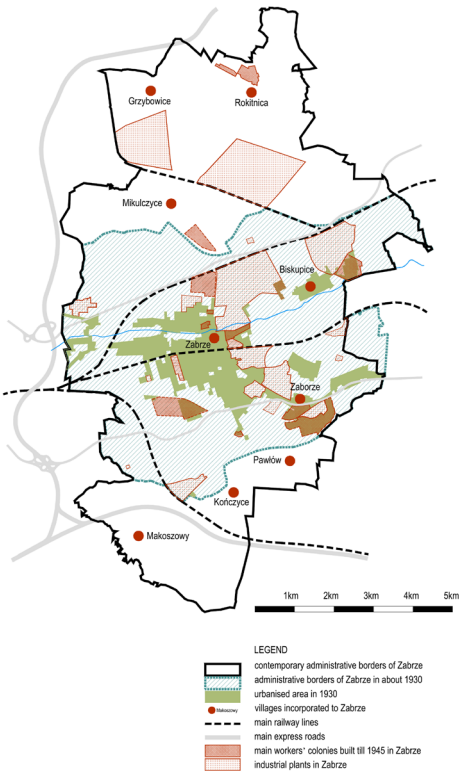

Fig. 3: *The urban structure of Zabrze as a city and its evolution. By J. Kleszcz.*

3.4. Development of today's Londzina Street (German. Hochbergstraße)

The first residential buildings for the Donnersmarck ironworks were likely built on today's Londzina Street (formerly Hochbergstrasse) in the late 1860s and early 1870s.[73] Their spatial layout can be traced to an 1882 plan of Zabrze.[74] In 1899, a system of fire hydrants was installed along Paul- and Noahstrasse, adjacent to Hochbergstrasse.[75] In 1902, Noahstrasse was paved, and an iron bridge connected it to Hochbergstrasse. The rebuilt Noahstrasse reached the same height as Hochbergstrasse, greatly facilitating vehicle traffic, suggesting that Hochbergstrasse was already paved.[76] In March 1906, the Donnersmarck steelworks administration demolished the earlier residential buildings. Local press reported that modern Swiss-style houses would be built in their place.[77] Simultaneously, the steelworks also began demolishing old residential buildings on Emmystrasse (today's Jarosław Dąbrowski Street).[78]

[70] Ibidem, p. 5; KÖHEL, *Des oberslesische Arbeitergarten*…; ŁAKOMY, The workers' gardens …, pp. 188–189; WARYŚ, Kompozycje urbanistyczne w krajobrazach miast Górnego Śląska …, p. 388.
[71] Ibidem, pp. 12–18.
[72] Ibidem, pp. 42–46.
[73] *Der Oberschlesische Wanderer,* 1907, Jg. 80, No. 14, p. 5.
[74] Hindenburg 3308, 1:25000, Königl. Preuss. Landes-Aufnahme 1882, Herausgegeben 1883.
[75] *Der Oberschlesische Wanderer*, 1899, Jg. 72, No. 173, p. 2,
[76] *Der Oberschlesische Wanderer*, 1902, Jg. 75, No. 225, p. 2.
[77] *Der Oberschlesische Wanderer*, 1906, Jg. 79, No. 54, p. 6.
[78] *Der Oberschlesische Wanderer,* 1906, Jg. 79, No. 66, p. 6.

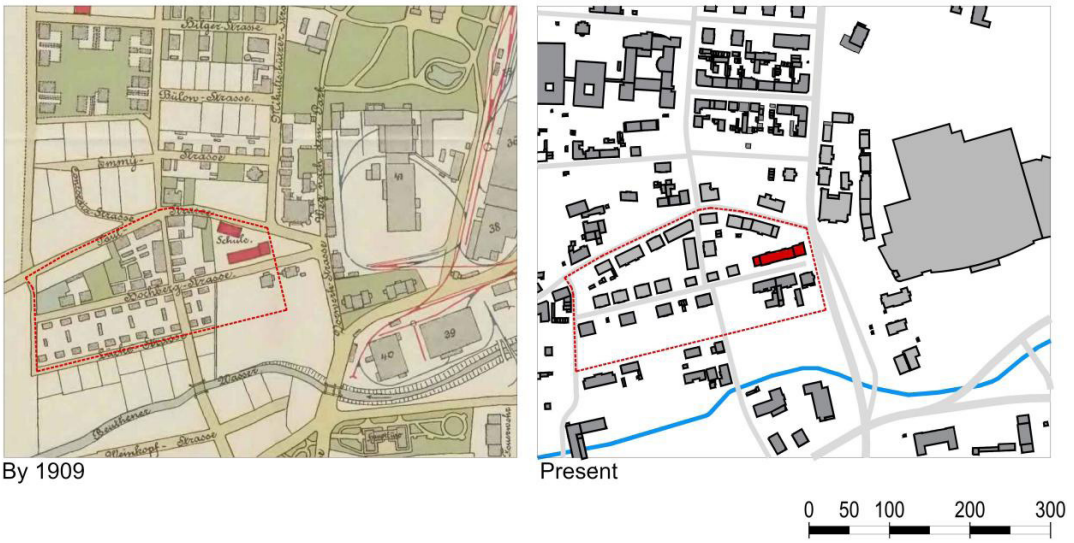

Fig. 4: *The development of Londzina Street (German. Hochbergstraße) began in 1909 and is still going on today. By J. Kleszcz, based on*[79].

Hochbergstrasse was likely extensively rebuilt in 1907 with sidewalks added. An exciting dispute arose between the municipality and the steel mill management over the investment funding. However, given the information from 1902, it can only be assumed that the street was unpaved. It is puzzling that it was considered newly constructed rather than historically repaired. This may relate not to the pavement quality but to the extent of the repairs, which exceeded typical reparations. The redevelopment may have been combined with the construction of new residential buildings owned by the steel mill. According to the cited press release, Hochbergstrasse was used exclusively by employees of the steel mill.[80]

The steel mill's investment report from April 15, 1907 mentions the construction of two residential houses for workers on Hochbergstrasse, costing Mk. 67,033. At the same time, two houses on Zandka (Sandkolonie) were completed for Mk. 9,662, and another five were built, costing Mk. 36,375. Additionally, the main office building was erected for Mk. 37,736, and the fire station for Mk. 56,982.[81]

In 1907, the steelworks invested a total of Mk. 2,127,072.33 in construction, renovation and land acquisition. Notably, the investment in Londzina Street accounted for more than 3% of the company's investment budget and was significantly higher than the total work at Sandkolonie. The first two buildings on Hochbergstrasse were commissioned in the summer of 1907.[82]

[79] Situationsplan der Donnersmarckhutte. Massstab 1:4000. Gegenwartiger Grundbesitz ca. 175 ha 1909. In: *Donnersmarckhutte Oberschlesiche Eisen- und Kohlenwerke Aktien-Gesellschaft* (1910). Berlin: Otto Elsner, p. 53.
[80] *Der Oberschlesische Wanderer*, 1907, Jg. 80, No. 89, p. 6.
[81] *Der Oberschlesische Wanderer*, 1907, Jg. 80, No. 87, p. 6.
[82] D*er Oberschlesische Wanderer*, 1907, Jg. 80, No. 109, p. 10.

Analysing the Zabrze address book records,[83] it can be assumed that the settlement was still unfinished in 1908. The already relatively large (19 residents registered[84]) building listed there, without a number assigned, is probably Hochbergstrasse 15 (the construction date shown on the wall is 1907). Buildings 11 and 13 had not yet been built, and only 8 of the 11 tiny houses planned along Lückestrasse were built (none of which exist today). The address book lists four to eight people in each of them.

For comparison, in 1910, the steelworks had 136 residential buildings in Zabrze, containing 948 apartments. Analysis of cartographic sources suggests that these were generally small settlements, with a few to a dozen buildings. One may distinguish two main types: reasonably large, two- or three-storey buildings containing 12 apartments (from now on referred to as type "A") and small, single-storey houses probably containing two dwellings each (type "B"). In doing so, the steel mill preferred free-standing facilities in contrast with the (also dating from the late nineteenth and early twentieth centuries) typical frontage (quarter) development of today's Staszic Street (Bülowstrasse). The urban structure included the following:

- Hilgerstrasse (today's Maria Curie – Skłodowska Street): 6 "A" buildings, a boarding house and a "people's kitchen"
- The complex along Emmystrasse (today's Jarosław Dąbrowski Street), along with the northern frontage of Paulstrasse (Niedziałkowskiego Street): 6 "B" buildings, 2–4 "A" buildings, and about 10 other facilities, including free-standing urban villas and frontage townhouses, with an intriguing ensemble of three facilities at 10 Jagiellońska Street and 1–2 Zgoda Street, indicating an attempt to later thicken the free-standing facilities into frontage buildings (townhouses)
- The complex in question along Hochbergstrasse (ks. Londzina): 11–14 "A" buildings, 14–16 "B" buildings and about 10 others
- A complex along Hochgesandstrasse (Krakusa) between today's Bytomska, Cmentarna and Bończyka streets (the so-called "Zandka"): 31 "A" buildings, 5–8 "B" buildings, and about 7 others (including a department store [Warenhaus])
- A complex of facilities on Schmidt- and Goethestrasse (today's Kowalska and Goethe Streets, but probably in a slightly altered layout): about 25 "B" buildings.

A summary of the above list (taking the highest values where the purpose of the facilities could not be ascertained) totals 136 residential buildings. The exact coincidence with the previously cited sources can confirm the accuracy of its execution.

The final spatial layout of the settlements, based on the above analysis, is shown in a plan from a commemorative publication issued for the joint-stock company's 50th anniversary.[85]

[83] HELLMANN, F. *Adressbuch für die Gemeinde Zabrze 1908–1909. Unter Benutzung amtlicher Quellen durch den Gemeindebeamten F. Hellmann, Zabrze. Beilage: Spezial-Adressbuch für Handel und Gewerbe von Zabrze*. Breslau: Schlesische Volks-Adressbücher Gesellschaft, 1908. https://sbc.org.pl/dlibra/publication/5385/edition/4949/adressbuch-fur-die-gemeinde-zabrze-1908-1909-unter-benutzung-amtlicher-quellen-durch-den-gemeindebeamten-f-hellmann-zabrze-beilage-spezial-adressbuch-fur-handel-und-gewerbe-von-zabrze-hellmann-f?language=en (accessed 10.05.2024).

[84] Determining the total number of residents is difficult because the address book only lists adult men and single women.

[85] MATSCHOSS, Conrad. *Donnersmarckhütte 1872–1922. Denkschrift zum 50 jährigen Bestehen als Aktien-Gesellschaft*. Hindenburg: Druck. Max Mattisson, 1923, p. 134. https://sbc.org.pl/dlibra/publication/78938/edition/74488/donnersmarckhutte-1872-1922-denkschrift-zum-50-jahrigen-bestehen-als-aktien-gesellschaft?language=de (accessed 10.05.2024).

Notably, it only includes the outlines of company-owned buildings, omitting others (such as the school building).

The ironworks' "social" complex can thus be depicted as 136 residential facilities grouped into five estates and dozens of associated facilities. These included a casino, swimming pool, sports hall, a kindergarten (Kleinkinderschule) and a "household school" (Haushaltungschule), but no typical school facilities. Thus, despite its formal independence from the steel mill, the school (and later schools) on today's Londzina Street was somewhat a supplement to the plant's curriculum offer.

3.5. School building

The findings so far date the construction of the school building on the former Hochbergstrasse to 1872, originally a boys' school. According to previous studies, at the time of its construction, it was the only facility in the quarter in question that was not owned by Donnersmarck Ironworks. In 1907, the Schlesischen Freikuxgelderfonds für Kirchen und Schulen recorded an expense of Mk. 2,500 for the expansion (Umbau) of the school on Hochbergstrasse in Zabrze.[86] In 1908, Royal School Inspector Polatzek, reporting on the state of education in the district, reported that six classrooms had been built in the school on Hochbergstrasse.[87]

Another school redevelopment likely took place in 1910, as evidenced by a local press notice about demolishing eight tiled stoves in the "girls' section" of the People's Catholic School. The announcement also suggests the school was still under municipal management at the time.[88] However, this record may also indicate that there was already a school for girls. The other possible interpretation is that the remodelling was just about its implementation. Undoubtedly, on March 1, 1921, there were already two schools in Hochbergstrasse: school No. XI for boys, with 824 students, including 51 in Polish classes, and school No. XII for girls, with 877 students, 58 in Polish classes.[89]

Fig. 5: *The former school building at Londzina Street, and the street in its present form. By J.* Świerzawski.

4. Discussion

While period literature attributed the rise of workers' settlements in garden-city form to a rational adaptation to land availability and the needs of workers, mainly recruited from rural areas in Upper Silesia, detailed analysis of the local press reveals a less ideal reality. The idea was publicly expressed in various variants over time that as the workers' living conditions stabilised

[86] *Zeitschrift des Oberschlesischen Berg- und Hüttenmännischen Vereins*, 1907, Jg. 46, August, p. 28.
[87] Der Oberschlesische Wanderer, 1908, Jg. 81, No. 224, p. 5.
[88] Der Oberschlesische Wanderer, 1910, Jg. 83, No. 140, p. 4.
[89] Denkschrift über den Kreis Hindenburg O.-S., Hindenburg, 1921. https://www.sbc.org.pl/dlibra/show-content/publication/edition/577096?id=577096 (accessed 10.05.2024).

and employers no longer needed to attract workers from abroad, those employers' enthusiasm for investment in the more lavish features reduced. This can be observed in Zabrze at the interface between the compact city and "rural" settlements, such as in Londzina Street. However, while the industry in Upper Silesia was the first and most comprehensive to implement modern urban planning solutions, there is no definitive evidence to prove this reduction in factory-owner enthusiasm for investment. From our perspective, from over 100 years later, it may prove difficult to verify an objective truth that likely lies somewhere between the views of the period academic literature and opinions expressed in the contemporaneous press.

Zabrze is an example of a city that emerged from rural areas through a bottom-up capitalist modernisation of the countryside and reproducing its idealised form to meet the needs of the heavy-industrial workers at the dawn of the twentieth century. However, it remains to be seen whether this phenomenon is unique to the Upper Silesian area or characteristic of other industrial regions in the same period. Preliminary observations in Wałbrzych, for example, seem to confirm this thesis. The question remains as to whether it was isolated in this process or whether an analogous pattern of development can also be found in other areas of Europe. The question requires extensive historical and morphological research to narrow the study area.

While this study focuses on Zabrze, its conclusions invite comparative research with other European industrial settlements. Future studies could explore how similar dynamics between industrial actors and urban authorities played out in regions such as the Ruhr, Ostrava or Mulhouse, enriching our understanding of the transnational evolution of industrial urbanism.

5. Conclusions

The example of Zabrze showed that industry, as the carrier of the "open structure" rather than the city (the social factor), became the driving force in shaping the latest urban ideas in the early twentieth century.[90] In this arrangement, continuing its traditional form and structure, the city eventually represented a conservative element. Thus, settlements in formally rural areas developed more dynamically and more modernly.

The specific legal restrictions during Zabrze's emergence as an industrial town, which defined the looser nature of smaller-scale and rural developments, favoured specific types of development and shaped the future city. The principles adopted, even though they were implemented before Howard's work was popularised in Germany, led to developments that closely followed garden-city principles. Boundary conditions, knowledge and experience from other parts of the country ensured the results coincided with the theoretical premises. Therefore, transitional solutions for the garden city would have been developed sooner. The idea is a record of the era's general trends, problems and needs regardless of which theory was relied upon.

Hence, the most significant and revealing of all in terms of the manner and quality of the urban-space creation were the places of the interface between urban and rural space – public and private, albeit publicly accessible. The strange spatial creations arising precisely at the point of junction reveal the actual role of the large industrial enterprises, in this case, the mines and steelworks, in complementing the public and social functions internal to their area and, as it were, in place of the municipal authorities, which tried to push at least part of this responsibility formally off the margins of public action.

[90] Slightly earlier, urban planning activities resulted from a conscious policy of the city authorities. See the construction of the new Barcelonian district "Eixample" by Ildefonso Cerdá Suñer.

The complete absence of planning documents from the period of the creation of the city of Zabrze, i.e. the de facto process of transforming a village into a town, proves that it developed spontaneously and haphazardly and that the location of the areas designated for housing development depended primarily on the ownership division and was dictated by the location within the structure of the industrial plant in question, rather than by a logical connection with the existing urban infrastructure.

The city has endeavoured to overcompensate for reality by implementing a place where private and public spaces meet. In the case of Londzina Street, a historical analysis extending the scope of research typical of architectural history made it possible to trace the process. Although complex, it has made it possible to create a space that, even so far, remains coherent, creating a single urban organism in this part. This is one of the few exceptions in the city, where it has yet to be possible to merge most of the workers' housing estates, which were created as islands of development, into one coherent unity.

Although based on a single case, this study offers insights relevant to broader European patterns of industrial urban development. It provides a starting point for cross-national comparisons and contributes to the global discussion on sustainable strategies for revitalising former industrial landscapes.

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