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## Industrial Spaces in Small and Medium Cities in Southern Poland – The Selected Examples

To cite this article: Jakub Blachut 2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **471** 112082

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# Industrial Spaces in Small and Medium Cities in Southern Poland – The Selected Examples

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**Abstract.** The industrial areas of small and medium size Polish cities, which were the elements of large industrial districts in the past, are the subject of the article. The effects of historical spatial conditions, the impact of industrial districts on these cities, as well as the consequences of transformations from the turn of the eighties and nineties of the last century are analysed. In the last twenty years, there have been profound changes in the industrial areas of urban spaces. Many of them did not raise after the period of systemic transformation and changes of the centrally planned economy to free market. The transformation of urban and suburban space has been and still is the effect of these changes, changing the purpose of the old industrial buildings and establishing the existence of new structures in open areas, such as “greed field”. In turn, this results in the reconstruction of the existing transport systems and road corridors, profound changes in the city’s infrastructure and affects human resources, directing new workforce to the routes. In addition to the transformation of the spatial structure of the city, a new standard of work space organisation has appeared: on the one hand, based on the old tape production system, and on the other, closed and isolated. The author presents a selected example of cities from the Bielsko Industrial District, which was established in the first half of the XIX century, and its area currently amounts to 2,6 thousand km<sup>2</sup>. Currently, the machine, automotive, textile and metallurgical industries are mainly developing in this district. Furthermore, there are two subzones of two special economic zones in the BID: Katowice and Cracow. After years of stagnation, today the largest industrial areas are developing on the outskirts of the cities and villages, where industrial zones or economic activity zones are built. Such areas are located in Bielsko-Biała, Żywiec, Pszczyna, Czechowice-Dziedzice, Wilkowice, Rybarzowice, Skoczów, Cieszyn, Jasienica, Kęty and Andrychów. In small and medium-sized cities, the process of transformations and changes taking place under the influence of the development of industrial areas is particularly visible.

## 1. Introduction

The article was devoted to industrial areas in medium-sized cities in the area of southern Poland, which in the past were the elements of large industrial districts. The historical spatial conditions, effects of system transformation from the turn of the eighties and nineties of the last century were analysed, as well as elements of the development of new industrial areas in their range.

In the last twenty years, deep changes have taken place in Polish cities, particularly in zones where industrial areas have been located. Many industrial plants that operate in these areas did not rise after the system transformation period and the changes of the centrally planned economy to free market one. The result of which was and still is the transformation of industrial urban and suburban spaces. The effect of these changes is the change in the purpose of old industrial buildings and the establishment of



new industrial structures and the construction of plants in open areas, not invested, which functioned as agricultural areas. These types of areas have obtained the term “green field”. The construction of “green field” areas, in turn, causes changes in the functional areas of the city and the development of areas that were field reserves. It also forces the transformation of the existing transport systems and road corridors affecting the deep changes in the city’s infrastructure. In addition to the transformation of the spatial structure of the city, a new standard of work space organization appeared: on the one hand, based on the old production belt system, and on the other hand, closed and isolated from the city. In industrial districts, there was a great potential in human resources, which was redirected to new development directions. In the areas of cities that were based on a given branch of industry, new development opportunities appeared.

## **2. Structure and location of industrial districts in Poland.**

The industrial district is a cluster of several to a dozen or so industrial centres (towns with industrial plants) in a small area. Their process of creation and development was closely related to the benefits that were brought by the focus of production activities during the formation of the industrialized areas and the industrialization of the given area for the agglomeration. In addition, the occurrence of specific mineral resources used in production in a given area. Extensive processes of industrialization in Poland began in the first half of the XIX century. However, the regions in which mining and metallurgical activity were already growing were already developing. Nowadays, the development of industrial districts depends, among others, on: labour resources (especially qualified personnel), stable market, existence of economic infrastructure – banks, warehouses, forwarding companies and opportunities for cooperation with research and development institutions. Currently, several crystallized industrial districts exist in Poland. The dominant industrial characteristics in their areas is determined and depends on the specificity of the region or geological conditions. The industrial structure of the districts is being transformed due to the dynamics of economic processes, the emergence of investors, or the closure of non-profitable industries. The main industrial districts in Poland include:

- The Warsaw district with centres in Warsaw, Pruszków, Grodzisk Mazowiecki, Legionowo, Ożarów and Wołomin. Its development began in the XIX century in the Russian partition. It was dominated by diverse industrial sectors – fuel and energy, metallurgy, electromechanical, precision, chemical, paper and food industries. Thanks to its location in the administrative centre of the country, it is well connected with the rest of the country and the world;
- The Upper Silesian industrial district (GOP) with the main centres in Katowice, Gliwice, Zabrze, Chorzów, Ruda Śląska, Tarnowskie Góry, Mysłowice, Sosnowiec, Dąbrowa Górnicza and Rybnik. Just like the Warsaw district was created in the XIX century as a raw material district (hard coal mining), on the border of the Prussian and Russian annexations, however, almost all industry branches have developed here over time (steel, chemical, electrical engineering, including transport, food and others), approx. 18% of the sold production of the Polish industry came from the GOP region in 2011, this region is characterized by low unemployment, but also a strong degradation of the natural environment.
- The Lodz industrial district the main centres include Łódź, Zgierz, Aleksandrów Łódzki, Pabianice, Ozorków, Sieradz. It was one of the centres of the Russian partition industry, developed in the XIX century primarily as a district of the textile and clothing industry, currently threatened with unemployment and depopulation (in the last decade) in connection with the competition of cheaper Asian textiles, the specificity of the district industry caused that its population is strongly defeminized;
- The Old Polish industrial district. Its main centres include Kielce, Starachowice, Skarżysko-Kamienna, Ostrowiec Świętokrzyski, Wierzbica and Radom. There is a raw material district, an important industrial centre of the Russian partition, formerly based on local metal ores, nowadays, among others, on rock raw materials, metallurgical and metal industries, as well as electromechanical, mineral (especially cement), ceramic and footwear industries (in Radom) have been developing;

- The Gdańsk industrial district, main centres: Gdańsk, Gdynia, Sopot, Kwidzyn, Starogard Gdański. The shipbuilding industry was developing (currently in crisis, due to the competition of Asian shipyards), the fuel, chemical, cellulose and paper, fish processing industries are developing;
- The Krakow industrial district. The main centres are: Kraków, Brzesko, Bochnia, Skawina, Trzebinia, Chrzanów; extension of the GOP to the east, traditionally iron industry (Arcelor-Mittal ironworks, former Lenin's ironworks, then the ironworks of Sędzimir), metal industry and mineral industry (cement and lime kilns), but also modern industries – electrochemical (Telefonika producing electric and fibre cables in Myślenice and in Krakow), electronics industry (software – Comarch), and finally the food industry (confectionery, tobacco, milling, brewing);
- The Wrocław industrial district – main centres: Wrocław, Oława, Jelcz, Brzeg Dolny. The industrial plants of various industries mainly concentrated in Wrocław (metal industry – including production of washing machines, machine industry – including the production of railway wagons, clothing, food and others), production and assembly of trucks and buses (Jelcz), chemical industry (Brzeg Dolny), footwear industry (Oleśnica);
- The Bielsko industrial district – industrial centres: Bielsko-Biała, Cieszyn, Żywiec, Czechowice-Dziedzice, Andrychów, the extension of the GOP to the south, car industry (Fiat factory), electromechanical (electric and diesel engines), traditionally the textile industry – wool, food (among others, brewing);
- The Szczecin industrial district – the main centres: Szczecin, Police, Nowe Czarnowo, mainly the machine industry – shipbuilding and food (including fish) and chemical (phosphate fertilizer factory in Police) and energy (the Dolna Odra power plant in Nowy Czarnów),
- The Bydgoszcz-Toruń industrial district – the main centres: Bydgoszcz, Toruń, Janikowo, Inowrocław, electromechanical and chemical industry (the Unilever cleaning products factory in Bydgoszcz, the factory of synthetic fibres Elana in Toruń, chlorine production and soda industry), food industry (among others, fat – based on the processing of rape grown in the Kuyavia).

Other industrial districts are: The Sudeten district (limited to the Wałbrzych district by some industry geographers), the Carpathian region, the Rzeszów district, the Tarnobrzeg district (core of the pre-war Central Industrial District), the Lublin district, the Piotrków-Bełchatów district, the Częstochowa district, the Opole district, the Legnica-Głogów district.

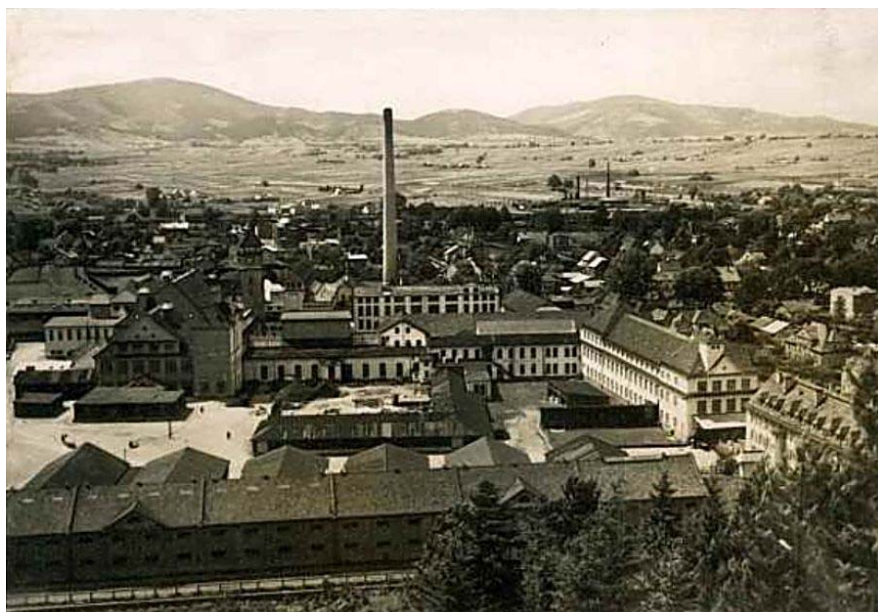
### **3. Characteristics of the Bielsko industrial district and the analysis of the selected example of the city**

The Bielsko industrial district is the fourth largest industrial district located in the strongly urbanized region of Poland in the Silesian voivodeship. It covers cities, such as: The Bielsko-Biała agglomeration, Andrychów, Cieszyn, Czechowice-Dziedzice, Kęty, Pszczyna, Żywiec and Skoczów. This district is characterized by a favourable location due to the supply of energy and minerals and the tradition of work in factories. The establishment of this district is connected in particular with the textile industry, which developed rapidly until the nineties of the last century, in particular cotton factories in Andrychów and the wool factories in Bielsko-Biała. Other industries include the machine, automotive and metallurgical industries. The most famous factories located on its territory are the chemical plant in Oświęcim, as well as the brewery in Żywiec. In Bielsko-Biała, there is also a well-known cartoon production company. In addition, this district includes an oil refinery and a coal mine.

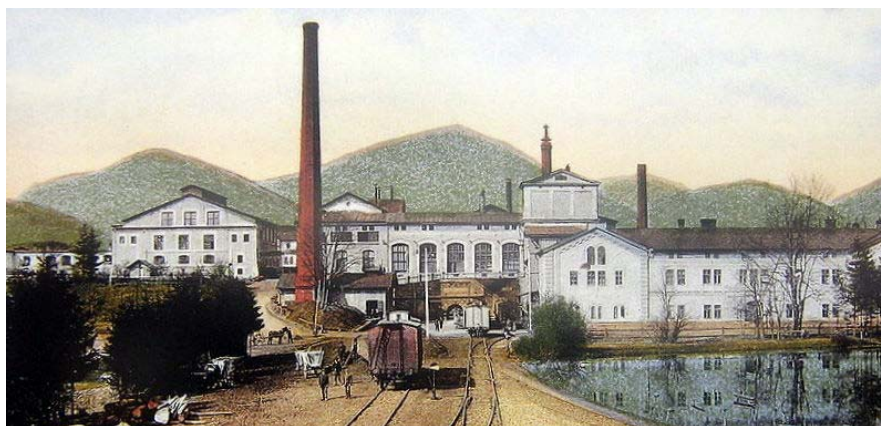
The Bielsko Industrial District was established in the first half of the XIX century, and its area is currently 2,6 thousand. km<sup>2</sup>. Currently, the machine, automotive, textile and metallurgical industries are developing in this area in this district. In addition, subzones of two special economic zones are functioning within the BOP: Katowice and Krakow. After years of stagnation, today, the largest industrial areas are developing on the outskirts of cities and villages where industrial zones or economic

activity zones are built. Such areas are located in Bielsko-Biala, Żywiec, Pszczyna, Czechowice-Dziedzice, Wilkowice, Rybarzowice, Skoczów, Cieszyn, Jasienica and Kęty, as well as Andrychów.

Żywiec can be found within the scope of cities, to which the analysis of the structural and spatial conditions within the existing Bielsko Economic District relates. This is a city with special spatial qualities. Located in a deep mid-mountainous depression – the Żywiec Valley, over the Sola and Koszarawa rivers connecting near the city centre. The industrialization of this city is historically related to the development of forest management and the person of Albrecht Ferdinand Habsburg, the then owner of the Żywiec estates. The dynamic development of the city in the mid-nineteenth century was associated with the creation of, among others, a metallurgical plant for the production of bolts, a paper factory and a printing house, and the most famous company invariable associated with Żywiec, the Archduke Brewery. At that time, the city was divided into two districts, the main city of Stary Żywiec remained a residential and service district, whereas the paper factory was located in the Zabłocie district.



**Figure 1.** Paper factories in Żywiec, a historical photograph from the interwar period



**Figure 2.** Brewery in Żywiec, a historical photograph from the interwar period

After World War II, most of the plants were nationalized and underwent reconstruction and development. Along with the development of the Bielsko Industrial Area, new plants appeared in



Żywiec, such as the factory of hospital equipment, industry equipment and the tanning industry. Due to the large timber resources in the cities, sawmills were located there.

Conditions of the areas caused that in 1967 the construction of an artificial water reservoir was completed, which caused the flooding of several villages, among others, Zarzecze, Tresna, Zadziele and Stary Żywiec. The dam in Tresna together with the dam in Porąbka built in the interwar period create a flood protection system in the upper reaches of the Vistula. In addition to flood protection, both water thresholds are hydroelectric power plants, pressed into the electric power supply system of the Bielsko Industrial District. This influenced the development opportunities of the city, the development of the northern side of the city was blocked. Decisions were made on the selection of new industrial areas and the intensification of the existing ones in the Zabłocie districts.



**Figure 3.** A view of the dam in Tresna, the Żywiec lake

This state of spatial development of the city was observed until the moment of political changes. The introduction of the principles of free market economy (including, among others, the mechanism of land rent, competition and the principle of the free flow of goods and services) in the functioning of industrial plants characterized by the past economic system (including the low quality of manufactured goods, high production costs, bad decisions) resulted in the fact that from year to year, the production sphere in the structure of the national economy and individual cities lost its importance. As a consequence, many industrial plants after 1989, unable to find themselves in a new economic reality, declared bankruptcy or had to undergo deep and painful restructuring. One of the possible restructuring paths that a given industrial plant could have chosen after 1989 in order to stay on the market was the process of gradual reduction of the area of the occupied areas and facilities. New entities, usually services ones, were slowly and gradually entering the areas and facilities vacated by industrial plants, and in extreme cases, post-industrial wastelands were created. The effects of the marketization of the economy were visible especially in the areas of industrial districts. In districts, where the number of cities is significant and they are very diverse, far-reaching changes can be observed in many cities in these districts, both in terms of size and functions. The individual example of the city as a result of declining traditional industry has lost its current economic and social position. Other cities have intensively developed other important functions, such as tourism and spa services, or underwent successful ownership transformations. This situation has also affected the Żywiec brewery, which allowed for further development of the city despite the collapse or limitation of production in other plants.

The development of industrial spaces is associated with the emergence of new investors and the creation of a subzone of the Katowice Special Economic Zone (KSSE). KSSE is strongly associated

with automotive, production of subassemblies for the automotive industry. Therefore, there were also plants related to the production of subassemblies in the city. Currently, it is the second largest industrial branch of the city. In addition, the development of some plants has been limited by the reconstruction of the space around them through the residential development. This is best seen on the example of the Żywiec brewery, which has become the victim of its own success. Similar problems also occur in the currently operating industrial zone of the city, which is intensely built-up. The new subzone was opened in the neighbouring Radziechowy commune, on April 20, 2016, a new “Żywiec Zdrój” bottling plant was opened there, and the completion of the investment in the form of another PINTA brewery is planned in 2018.

In view of the above analyses, when planning the city’s development policy, in which high industrialization occurs, it is possible to shape centres activating the peripheral areas of the city. It can be assumed that at least part of the analysed industry will continue to develop, which will translate into the development of the endogenous sector, as well as development, also qualitative, of the city and its surroundings.



**Figure 4.** The residential buildings surrounding the industrial plant – Żywiec brewery

The large role of the industry in the development of the city means that planning the right regional policy and its instruments is a big challenge. Support measures in the desired places may not give the expected effect relative to the assumptions, but it may develop in unforeseen places.

#### 4. Conclusions

The last 20 years of the free market economy have significantly transformed Polish cities, influenced their spatial structure. The way of functioning has undergone significant transformations. Cities which were shaped at the end of the eighties of the last century are definitely different from modern cities, both in functional, morphological and physiognomic terms, as well as demographic and social structures. Systemic transformation, which began in Poland in 1989, significantly affected the course of phenomena and processes taking place inside the urban tissue. The functional transformations of the industrial areas taking place in the cities were and still are an important element of these transformations. Industrial zones, which are located in the spatial structure of the cities, lying within their administrative borders, have been severely affected by the effects of political and economic changes.

The process of relocation, atomization and restructuring of industrial plants was one of the forms of these changes, as a result of which industrial areas were transformed. The process of functional succession, or the process of gradual entering into industrial areas of non-industrial business entities or the creation of post-industrial wastelands in these areas was the process that could be most easily observed and analysed after 1989.

The largest growth rate of non-industrial entities or post-industrial wastelands was recorded in 1999–2004. The process of functional succession has been more intensive in cities only since the late 1990s until today. When examining the process of functional reconstruction in industrial areas in a selected city in the Bielsko industrial district, it is worth paying attention primarily to the structure of new business entities. The development of industrial areas consisting of gradual entering beyond these areas has fundamentally affected the spatial structure of the cities. It has changed the functional structure of business entities operating in industrial areas.

Industry is a significant city-building function. Foreign capital contributed to the development of some plants. There is no correlation of industrialization with the size of the city. One cannot see the correctness of location and development, so the role of chance can be big. Commuting to work and reduction of unemployment are the result of industry development in the cities. The development of industry can be, through commuting to work and increase in demand for endogenous services, a way to activate part of peripheral areas. There is a need to study cases in terms of location factors, effects of industrial development and their spatial extent, as well as support methods and effectiveness of various instruments in different spatial configurations.

## References

- [1] Kaczmarek S., Post-industrial areas in the cities – a problem or a challenge? [in:] Słodczyk J., (ed.), *Changes of the spatial structure of the cities in the functional and spatial sphere*, Opole. Mazur-Belzyt K., 2008.
- [2] Słodczyk J., Śmigielska M., The selected aspects of the use of post-industrial areas in urban zones [in:] (ed.), *Contemporary directions and dimensions of urbanization processes*, Publishing House of the Opole University, Opole, p. 237–248
- [3] Niezabitowska E., *Architecture and industry. A new look*, Silesia Publishing House, Katowice, 1997.
- [4] Sikorski D., The process of functional succession in the selected industrial areas in Wrocław [in:] Słodczyk J., Śmigielska M. (ed.), *Contemporary directions and dimensions of urbanization processes*, Publishing House of the Opole University, Opole, 2008, pp. 285–296.