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LOCATION OF HIGH-RISE BUILDINGS IN WROCLAW

LOKALIZACJA BUDYNKÓW WYSOKOŚCIOWYCH WE WROCLAWIU

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Summary: The aim of the paper is to discuss the arrangement of the existing and new high-rise buildings in Wrocław, as well as to determine the impact of their location on spatial order. The author uses a descriptive method, simple statistical methods, a deductive method and empirical inference. The subject of the research is Wrocław, with special attention to high-rise objects location. The basic research covers the period of 2010-2017. The question of planning and building high-rise objects was discussed in Wrocław studies of conditions and directions of spatial development (2010 and 2017). As the recent years reveal, the number of very high buildings in Wrocław is not on the rise. However, Wrocław is prepared for their arrival.

Keywords: Wrocław, high-rise building, spatial order, urban spatial structure, study of conditions and directions of spatial development of the commune.

Streszczenie: Celem artykułu jest omówienie rozmieszczenia istniejących oraz zasad lokalizacji nowych budynków i innych obiektów wysokościowych we Wrocławiu, a także określenie wpływu ich lokalizacji na ład przestrzenny. W artykule wykorzystano metodę opisową, proste metody statystyczne, metodę dedukcyjną oraz wnioskowanie empiryczne. Przedmiotem badania jest Wrocław ze szczególnym uwzględnieniem lokalizacji obiektów wysokościowych. Podstawowy okres badawczy dotyczy lat 2010-2017. Kwestia budowy obiektów wysokościowych została omówiona w studium uwarunkowań i kierunków zagospodarowania przestrzennego Wrocławia, zarówno w dokumencie z 2010 jak i 2017 roku. Jak pokazuje praktyka ostatnich lat, budynków wysokościowych we Wrocławiu nie przybywa. Jednak Wrocław jest przygotowany na ich przybycie.

Słowa kluczowe: Wrocław, budynek wysokościowy, ład przestrzenny, struktura przestrzenna miasta, studium uwarunkowań i kierunków zagospodarowania przestrzennego gminy

1. Introduction

Various dominant objects play an important role in the contemporary city landscape. These objects distinguish themselves from the environment in terms of cubature, dimensions, and often also their height. They testify to the “metropolitan” character of the area and make it stand out against the background of the surroundings making it become unique. The focal items which are the subject of this article, especially the mentioned buildings, are the so-called high-rise objects.

A high-rise object is considered to be one whose height is over 55 meters. Wrocław stands out against the background of large Polish cities in terms of tall buildings. The most famous and tallest building is Sky Tower. Over 190 buildings in Wrocław have at least 10 floors. In comparison, there are approximately 200 such ones in Warsaw, over 150 in Poznań, less than 60 in Katowice, approximately 150 in Munich, more than 80 in Prague and about 50 in Marseille [www 1].

The aim of this article is to discuss the arrangement of the existing and new high-rise buildings in Wrocław, as well as to determine the impact of their location on spatial order. The author uses a descriptive method, simple statistical methods, a deductive method and empirical inference.

2. High-rise buildings – general characteristics

The Polish law categorizes buildings into 4 groups. It distinguishes (see Table 1):

- low buildings,
- medium-height buildings,
- tall buildings,
- high-rise buildings.

Table 1. Classification of buildings by height

The group	The height (m above ground level - AGL)	Residential buildings (number of overground floors)
Low buildings	up to 12 inclusive	up to 4 inclusive
Medium-height buildings	from 12 to 25 inclusive	from 4 to 9 inclusive
Tall buildings	from 25 to 55 inclusive	from 9 to 18 inclusive
High-rise buildings	higher than 55	–

Source: own study based on [Rozporządzenie Ministra... 2002, § 8].

The classification among a particular group is determined by the appropriate technical and operational requirements which need to be met. In case of high-rise buildings, these requirements are the most stringent.

Most high-rise buildings in the world are relatively new and were built in the 21st century. They are the manifestation of modernity but at the same time the

scarcity of space. They are primarily residential and service related in function. In Wrocław, at the beginning of the 21st century, several high-rise buildings were also planned. However, the financial crisis curtailed this intention. Sky Tower was erected though plans for two more skyscrapers: Odra Tower and Angel River, have been significantly reduced.

The tallest building in the world is Dubai's Burj Khalifa which is nearly 830 meters high (828 m high AGL to roof). It boasts 163 storeys above the ground. The construction was completed in 2009 and was put into operation in early 2010 [www 2].

In Europe, in terms of the tallest buildings, Russia (above all Moscow) is at the forefront with a few buildings higher than 300 m AGL [www 3]. In Poland one of the tallest buildings is the already mentioned Wrocław's Sky Tower (see Figure 1). Other leading buildings in the ranking of the highest ones were located in Warsaw: Palace of Culture and Science (office) 230.7 m. high, Warsaw Spire (office) 220 m, Żłota 44 (residential) 192 m, Warsaw Trade Tower (office) 187.2 m. [www 4].



Figure 1. Sky Tower – view from Powstańców Śląskich Street

Source: own collection.

High-rise buildings apart from prestige and recognition are the result of a progressive tendency to intensify the density of housing. This, in turn, is the answer to the increase in purchase prices and rental property. In the largest Polish cities (including Wrocław), the fastest rise in property prices took place after the accession to the European Union, especially in 2005–2007. However, as a result of the financial crisis in 2007 and the subsequent years, there was no expected increase in the number of high-rise buildings. Consequently, the buildings of this type in Wrocław include

primarily historic buildings (mostly churches) or buildings built in the 20th century (see Table 2). The other dominant objects not so remarkable in terms of height and cubature, are: the Centennial Hall, the Town Hall, the Olympic Stadium and the City Stadium.

Table 2. List of the highest buildings in Wrocław

Building	Height (m AGL)
Sky Tower	212 (206 to roof)
Hall of Residence „Kredka”	110 (85 m to roof)
St. John the Baptist Cathedral	97,5
Church of St. Elizabeth	92
St. Michael the Archangel Catholic Church	80
Church of St. Augustine	78
Hall of Residence „Ołówek”	70
Holy Cross Church	69
Drzewieckiego 24 Skyscraper	64
Odra Tower	61
Gubińska 8 Skyscraper	58

Source: own reasearch based on [www 5; www 6].



Figure 2. Sky Tower from the perspective of a nearby housing estate

Source: own collection.

Figures 1 and 2 show the tallest building in Wrocław, Sky Tower. The first photograph shows Sky Tower from Powstańców Śląskich Street, while the second one, from the perspective of a nearby housing estate (photo taken from Kamienna Street, parallel to Powstańców Śląskich St.). The design intentions were curbed by the crisis. The highest skyscraper was originally supposed to measure 258 meters and the entire complex was to consist of 5 skyscrapers. Ultimately, the finished Sky Tower consists of 3 skyscrapers, of which the tallest is 212 m. AGL, another 54-92 m. AGL, and the so-called base in which the shopping mall is located is 19 m. high [www 7].

Another high-rise specimen which was supposed to measure 130 m., is Odra Tower, which is 61 m. high [www 8]. Next is Angel Wings, intended to be two towers at 160 and 140 m. high. It finally formed an apartment building called Angel River which is 55 m. high [www 9]. Another highlighted landmark in the landscape of Wrocław is the Rędziński Bridge which is the longest reinforced concrete suspension bridge in Poland whose pylon is 122 m. high [www 10].

Figure 3 shows the panorama of Wrocław with St. John the Baptist Cathedral towers and other high-rise objects.



Figure 3. Wrocław panorama with St. John the Baptist Cathedral towers and other high-rise objects

Source: own collection.

In conclusion, it should be said that high-rise buildings have economic, ecological and symbolic benefits. However, they also have defects. Their composite anomalies can turn into social costs, such as the height of obscuring the view. In the literature of the subject, much attention is drawn to certain negative effects of the influence of high buildings on the environment. One of them is the dwarfing effect on other buildings, the other is the occupation of almost the entire building plot or mega-walls – the melting of several high-rise buildings. There is also the problem of similarity of projects (copied dominant-clones) [Oleński 2008, p. 110]. In order to prevent the negative impact of high-rise buildings on space and society, they should be taken into account in the spatial planning policy. This problem was further characterized by describing chosen aspects of the spatial planning policy in Wrocław.

3. High-rise objects in Wrocław studies of conditions and directions of spatial development

The question of building high-rise objects was discussed in the study of conditions and directions of spatial development of Wrocław both in the document of 2010 and 2017. The 2010 document lists 12 high-rise landmarks in the Old Town area and another 12 in the city centre outside the Old Town, including the housing estate at Grunwaldzki Square and single housing estates in the downtown area. In addition to this area, there are blocks of flats in housing estates, church towers, The Spire (Iglica), the Olympic Stadium lighting masts and manufacturing facilities (e.g. chimneys).

The study emphasized that high-rise buildings should be located primarily [Studium 2010, p. 111]:

- near major traffic junctions,
- in the area of the so-called “gates” of the city or its parts,
- in the area of planned service centres,
- along the urban interiors which are important in terms of the arrangement of transportation arteries,
- in other exposed areas.

It was also pointed out that locations resulting from other conditions than composition can threaten the design of the city. These buildings were regarded as a threat to spatial order.

In the latest study of 2017, the issue of high-rise buildings and other high-rise objects was given even more attention. The study highlights that recent investments such as Sky Tower, Odra Tower, The Rędziński Bridge, etc. have significantly changed the city’s silhouette. The document specifies, among others, the restrictions to the locations of such objects.

The groups of indicative areas were established, forming the so-called high mantle. The value of the indicator in the given group is the maximum allowable height for new buildings, except for the single height dominant (the study points out where they may be located). The development zones (W1-W5) were designated up to: inner city area 25 m. AGL, with the possibility of upgrading up to 55 m. AGL (W1), 40 m. AGL (W2), 25 m. AGL (W3), 18 m. AGL (W4), 12 m. AGL (W5), and; the separate group (W0) included areas for which the maximum height was specified in the local spatial development plans [Studium 2017, pp. 123-124].

In determining the admissible altitude, the layout of existing buildings and planned investments was mainly considered (70% of the height of the buildings in the area was crucial). Recreational and religious facilities are evaluated and planned separately.

Dominant landmarks, including buildings and other high-altitude objects, should be planned and located in places justified by the urban planning and design, i.e. primarily [Studium 2017, p. 123]:

- stressing particularly important places such as transportation hubs,
- in the gates of the city or its parts,
- along major transport routes,

- on the closures of the viewing axes,
- in compositional systems with disordered hierarchy of dominant landmarks,
- in areas where composite macro-elements have already been located.

Further high-rise buildings are planned to be located in places where they will create specific altitude compositions with the environment, in particular in the following areas [Studium 2017, p. 124]:

- South Centre,
- the Społeczny Square,
- Grunwaldzka axis in the vicinity of the Szczytnicki bridge,
- The City Stadium.

The following principles were formulated [see more: Studium 2017]:

1. The location of high-rise buildings should be included in the shaping of urban entities.

2. High-rise buildings should be included in local land development plans.

3. It should be ensured that the boundaries of the local plan cover a larger area than the investment area associated with the development of the building.

4. One should ensure that the neighbourhood and adaptation to composition are respected, as well as spatial and social needs.

5. The disproportions appearing in the zones of contact areas with different height ranges should be mitigated; ensure that they are adjusted to the urban context.

6. One should allow for the protected views and view axes.

7. Differences in height should be limited to a maximum of two storeys e.g. on two sides of a transportation route or a square. If the buildings are located in farther distances and are insulated with greenery, one can depart from this rule.

8. Particularly in justified cases, it is permissible to increase the height of the adjacent buildings in excess of the maximum allowable height of the building, adapting it to the dimensions of the buildings on the other side.

9. Excessive height of buildings in the inner city area is allowed in justified situations, namely, when it is dictated by compositional and spatial considerations which should be considered as a fundamental criterion for the decision.

4. Conclusions

As the developments of recent years reveal, the number of very high buildings in Wrocław is not on the rise. However, Wrocław is prepared for their arrival. This subject was included in the old and new study of the conditions and directions of city development. There are, however, more and more tall buildings (22-55 m.) which are also changing the landscape and the silhouette of the city.

It should be emphasized that the situation of high-rise buildings in Wrocław is strongly connected with shaping the transportation system [Ossowicz 2010, p. 209].

The planning and shaping of new building development mainly considers:

- important transport corridors,

- displaying valuable views,
- ordering and building around dominant landmarks,
- containing the dispersal of this type of buildings,
- coherency with the environment,
- monitoring the panorama and the city silhouette.

Some cities deliberately abandon high-rise buildings. An example of such a city is Munich. In Wrocław there is space for high-rise buildings but their location must be subject to planning and constraints as described in this study. This way they will not interfere with the spatial order.

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