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Politics, History, and Height in Warsaw



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Ryszard Kowalczyk is a professor at the University for Ecology and Management in Warsaw. He has compiled more than 60 years of research, consulting, and teaching in various universities and research institutes in Poland and overseas. He has also been a UNESCO expert for vocational and technical education in the Middle East (1983–1989). His main fields of research are: structures, dynamics of structures, and structural systems of tall buildings.

Jerzy Skrzypczak was an academic teacher and supervisor of theses at the Technical University of Warsaw from 1955 to 2002. Skrzypczak has won numerous awards and distinctions in urban planning and architectural competitions, including the Distinguished Honor Award of the Association of Polish Architects in 2005. Since 1998 he has been the general designer and partner of Biuro Projektów Architektury J&J Spółka z o.o.

Wojciech Olenski is an urban planner for the City of Warsaw. Since 2007, he has specialized in city landscape modeling, with special reference to simulation of high-rise buildings in the spatial structure and panorama of the city, and the preservation of the UNESCO registered historical complex. He has elaborated a methodology for evaluating the location and form of tall buildings.

This paper describes the present high-rise boom in Warsaw, which is related to unprecedented development of the capital of Poland in the last 15 years and the spatial expansion of a high-rise zone created 40 years ago on the western side of the city center. Today, Warsaw is ranked fifth in Europe in terms of the number of high-rises and is considered the second-most preferred city in Europe (after London) for high-rise investment (see Table 1). The contemporary skyline of Warsaw combines the historic panorama of the Old Town complex (a UNESCO World Heritage Site since 1980) with a large cluster of modern skyscrapers around the centrally located Palace of Culture and Science. For the past five years, by using 3-D computer simulations, it has been possible for urban planners to design a future city skyline with new skyscrapers while maintaining visual protection of the Old Town silhouette.

Introduction

The contemporary skyline of Warsaw, as seen from the waterfront of the Vistula River, is composed of two independent landmark clusters (see Figure 1): one is visible on the escarpment in the form of a historical silhouette of the Old Town, defined by church and palace towers; the other, located in the distant background is the New City with skyscrapers. The coexistence of two different concentrations of building types, extending parallel to the river, is the defining characteristic feature of the Warsaw cityscape.

Presently, the city skyline is changing its scale and shape. This is most visible in the Western Center District (so called “Warsaw Manhattan”) – a special area with skyscrapers designed over 40 years ago as a counterpoint to the domination of the controversial Palace of Culture and Science. In the last 10 years, the number of high-rises erected in this area has doubled, and the height of towers has increased by 50%. But the biggest changes

will occur in the near future (see Table 2), as the next ten high-rises are planned here, half of which will exceed 200 meters in height. In total, in the last seven years, developers submitted plans for nearly 70 tall buildings.

Digital Model of Warsaw Cityscape Transformation

For the evaluation of the city skyline, a comprehensive urban elaboration was developed in the Municipal Office of Town Planning and Development Strategy of the City of Warsaw based on precise methodology, the consideration of different scales of perception of tall buildings and the use of a digital 3-D model of the city as a tool. The virtual 3-D model of Warsaw was made in 2007–2008 by two specialized geodetics and geoinformatics companies, using data from aerial photos and field measurements. The digital model is compatible with the GIS software used by urban planners.



Figure 1. Structure of the left-side panorama of Warsaw seen from the Vistula River. © Wojciech Olenski

City	Existing 100 m+ tall buildings	Under construction	Planned	Tallest building height in 2013 (rank in Europe)	Tallest building planned
Moscow	93	23	8	339 m (1) Mercury City	360 m Federation Towers – Vostok Tower
Istanbul****	42	21	23	261 m (5) Sapphire Tower	–
London	38	6	44	306 m (2) The Shard	–
Frankfurt am Main	30	2	23	259 m (6) Commerzbank	369 m Millennium Tower
Paris***	27	1	6	231 m (16) Tour First	320 m Hermitage Plaza
Warsaw	17	4	20*+30**	237 m (18) Palace of Culture & Science	282 m Kulczyk Investment Tower

* Projects approved by City Hall (with land use conditions or in local development plans)
** Projects waiting for the decision of City Hall
*** Includes Courbevoie, the location of La Défense
**** Considered to be part of Europe

Table 1. European cities with the greatest number of buildings taller than 100 meters. Source: City of Warsaw documentation and CTBUH Skyscraper Center.

Name	Architects	Height	Status	Function	Comments
Kulczyk Silverstein Properties Tower	A. Wyszynski	282 m	proposed	mixed-use	–
Trade Tower Center	J. Skrzypczak J. Jańczak	235 m	proposed	offices	on the site of Intraco II Tower
Palace of Culture and Science	L. Rudniew	231 m	1955	office	protected monument
Warsaw Spire	Jaspers-Eyers Architects	220 m	2015	offices	conflict with UNESCO skyline
Złota 44 Tower	D. Libeskind	192 m	2013	apartments	–
Warsaw Trade Tower	Majewski, Wyszynski, Hermanowicz Architekci/RTKL	208 m	1999	offices	conflict with UNESCO skyline
InterContinental Hotel	T. Spychala	164 m	2003	hotel	–
Rondo 1	Skidmore, Owings & Merrill	159 m	2006	offices	–
Cosmopolitan	H. Jahn	159 m	2013	apartments	–
Warsaw Financial Center	J.Skrzypczak J.Jańczak / KPF/ Epstein & Sons	144 m	1999	offices	2008: winner of Trane Showcase Building Award
Prudential	M. Weinfeld	69 m	1936	offices	protected monument
Cedergren / PASTA	B. Brochowicz-Rogoyski	55 m	1908	offices	protected monument

Table 2. The highest buildings in central Warsaw (including the oldest).

The two main objectives of the analysis are protection of the historical cityscape and creation of a modern city center. Tall buildings are studied, both as architectural objects and urban structures. The analysis allows visualization and review of all newly proposed

tall buildings, enabling a decision process with regard to the buildings' siting and height. Practical objectives of the analysis concern the limitation of existing and new skyscraper zones, subjecting some areas to mandatory

height limits (in the background of the UNESCO complex) and defining the maximum number and size of tall buildings in the city center. This is related to the so-called "visual absorption capacity" (VAC) in relation to the cityscape. In a climate where the scale of tall buildings is increasing every year, this analysis helps drive discussion about the future shape of city panoramas, and the possible limits of Warsaw landscape transformation.

Tall Buildings as a Main Feature Of the Expanding City Center

Throughout the history of the spatial development of Warsaw, the city center was always marked by the highest buildings and towers visible in the panorama. In medieval times, the most important landmark of Warsaw skyline was a Gothic cathedral with an enormous 80-meter tower, which was captured on many historical drawings of the city skyline. The tower was a great engineering achievement, not only because of the height but also due to very difficult foundation conditions. Unfortunately, after 100 years it was destroyed by a hurricane in 1602.

The first real high-rise that served as an office building was the headquarters of the Swedish telephone company Cedergren, also known as PASTa, completed in 1910 in the "Chicago School" style. With its height doubling the width of the street frontage, the 55-meter tower had an interesting quasi-historical façade and an observation terrace on the top.

The first modern skyscraper in Warsaw was built between 1931 and 1933 for the Prudential Insurance Company and quickly became the highest building in the city, and a symbol of modern Warsaw. At the time it was the second-highest building in Europe. Its elegant 66-meter tower was accented by stone façades. It was built on a welded steel frame, one of the first such solutions in the world and was designed by Stefan Bryła, one of the pioneers of welded structures. Current reconstruction plans call for restoring the 1936 television station mast built on the roof of the skyscraper and destroyed in World War II. Both high-rises, PASTa and Prudential, have been preserved in

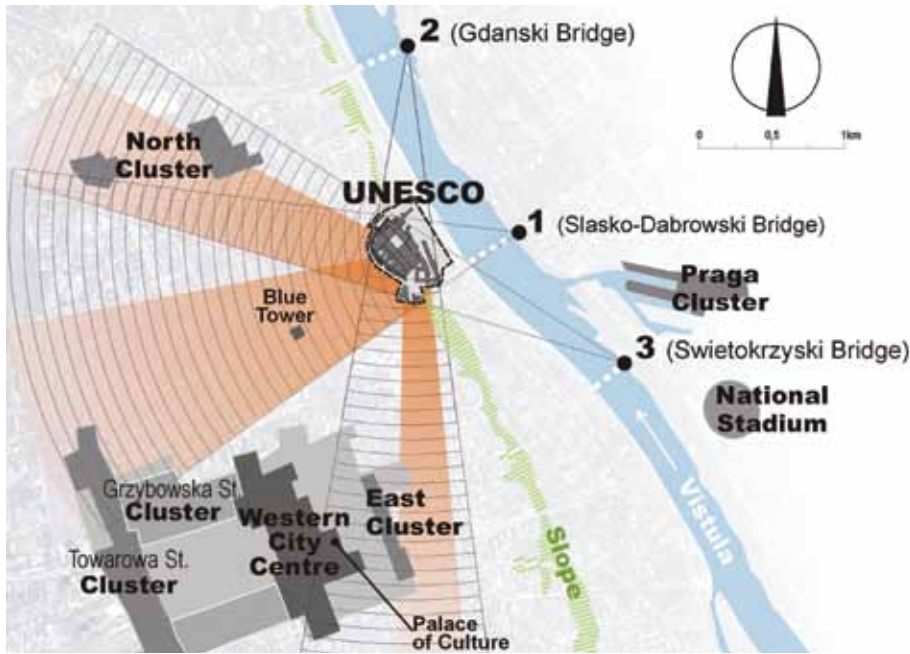


Figure 2. Map of Warsaw high-rise zones and view protection corridors of the UNESCO Area. © Wojciech Olenski



Figure 3. Palace of Culture and Science. © Nnb

the city landscape, in spite of serious damage they sustained during World War II. Meanwhile, most of the pre-war high-rises planned in the urban concept of the so-called Greater Warsaw were never realized.

The first high-rise constructed after World War II was an enormous and eclectic structure called the Palace of Culture and Science (231 meters, built 1951–1953) – a “political” building that dominated the landscape of the center of Warsaw that had been damaged in the war. The “gift” to the people of Poland was designed by Soviet architects in the official socio-realistic style with steel frame construction and a semi-stone façade, and could be seen from almost every point of the city (see Figure 3).

At the same time, the first stage of the post-war reconstruction of Old Town was finished, situated on the left bank above the Vistula River, with the characteristic shape of the Gothic cathedral surrounded by the cube shapes of historic houses. Thirty years later, in 1984, the Royal Castle was reconstructed completing the missing piece of the historic skyline of the old city. In September 1980, the entire Old Town complex was added to the UNESCO World Heritage List as “an exceptional example of the global reconstruction of a sequence of history.”

After Soviet domination was ended by the Polish Solidarity movement, a long discussion started in the urban planning community about how to continue the reconstruction of the city and reduce the dominance of the unwanted “Soviet gift.”

Why Tall?: The East Side of Marszałkowska Street and the Western High-Rise District

The process of planning and building the city center also presented an opportunity to reduce the exposure of the Palace of Culture. In 1959, the city held an urban design



Figure 4. The Western District of Warsaw City. © Jerzy Skrzypczak

competition for the redevelopment of the East side of Marszałkowska Street – a modern shopping and residential district located on the east side of the destroyed main street of Warsaw. It was composed of two units of different scale: the horizontal block of shopping malls with a length of 800 meters, rising behind three modernistic apartment towers of 80-meter height. At the end of the commercial passage, a kind of “anti-dominant” icon, was built in the form of a circular glass pavilion housing the State Savings Bank.

Architects and ordinary people liked the new east side complex, but the scale of buildings was still not enough to fully offset the Palace of Culture in the skyline.

The more spectacular changes in downtown’s landscape were related to the development of the Western Center – the area located west of the Palace of Culture. The area was supposed to be a multi-functional city center, with cinemas, theaters, galleries, and shops, and with the best transport accessibility: central station, parking lots, and multi-level streets.

In 1969, Jerzy Skrzypczak of Warcent, the municipal planning agency of the City of Warsaw, proposed a scheme of spatial and functional solutions for the western center that

proved to be very important for the future Warsaw skyline and the cityscape of the downtown area (see Figure 4). The key objectives adopted in the project were:

- The creation of an elongated high-rise cluster consisting of five rectangular skyscrapers not lower than the main shape of the Palace of Culture, arranged in a dynamic, non-linear composition.
- The establishment of an average of 160 meters as a sufficient scale to decrease the visual dominance of the Palace of Culture.
- The creation of a lower podium between the towers, designed for public functions and north-south pedestrian traffic.
- The establishment of two different scales of perception, to be taken into account in each aspect of the design: a large urban scale and a pedestrian scale.
- The establishment of a modern and elegant architectural form for building exteriors and interiors.

The first building constructed in the Western District was the Central Railway Station (1972–1975), a great example of functionalist architecture, which supported a “floating” roof. Soon after, the first two high-rise buildings were completed – they were the Warsaw Twin Towers, headquarters of the Commercial Bank and Foreign Trade Head Offices (1975–1979) and LIM Center, including a Marriott Hotel (1980–1989). Ultimately the towers were built on a 40 x 40 meter site and reduced to 140 meters in height. Their form and layout favorably changed the scenery around the Palace of Culture and Science.

After the political transformation of the country in 1989, the construction of skyscrapers was continued by Skrzypczak’s office, in cooperation with international architectural firms. Several other design offices also started tall building projects in the city. In the next decade, three high-rises were completed in the northern part of the Western District (see Figure 5):

- Warsaw Financial Center (Kohn Pedersen Fox, 144 meters, 1999)
- Rondo One (Skidmore, Owings & Merrill in cooperation with AZO, 159 meters, 2006)

“After Soviet domination was ended, a long discussion started in the urban planning community about how to continue the reconstruction of the city and reduce the dominance of the unwanted 'Soviet gift' – the 231-meter-high Palace of Culture and Science.”

- InterContinental Hotel Vienna (Tadeusz Sychala, 164 meters, 2003), designed in an unusual “cut-out” shape to provide natural lighting to nearby housing

One exception to the ordered urban arrangement of the western high-rise district was a mixed-use commercial center called Złote Tarasy (Golden Terraces), located close to the Central Railway Station, from which sprung the Skylight Tower (105 meters). In the Golden Terraces complex, all forms, including the tower, were comprised of curves.

The next stage of the vertical development of western city center came in the last few years, when many large investments were made in Warsaw. The heaviest implications come from the possibility of construction of 10 to 15 new skyscrapers within the high-rise zone. Now under construction are two important residential towers: Złota 44 (see Figure 6) and Cosmopolitan. Close to the first Twin Towers in the south part of the district, construction will soon begin on a 180-meter-tall office tower by Juvenes for BBI Development and the Archdiocese of Warsaw. Nearby, the proposed 257-meter Lilium Tower, will most probably will be postponed for several years.

Meanwhile, in the northern part of the western city center area, three existing office buildings will be demolished to make space for much higher buildings, measuring from 160 to 200 meters in height. In total, the number of skyscrapers in the Western District will rise in number from the five originally planned to 15, and in height to at least 200 meters.



Figure 5. Three new skyscrapers built in the Western City Center after 1989 – (from left): InterContinental Hotel, Rondo 1, and Warsaw Financial Center. © Wojciech Olenski



Figure 6. Złota 44, Warsaw. © Wojciech Olenski



Figure 7. Commercial Bank and Foreign Trade Head Offices, Warsaw. © Wojciech Olenski

High-Rise Boom in Warsaw: *Genius Loci or Signum Temporis?*

In the past two decades, the image of the Palace of Culture and Science has undergone a positive change and become a tourist attraction and a symbolic landmark. Simultaneously, an escalating building boom caused an increase in the value of land around the Palace. In 2011, the city accepted a local plan for the development of the central area around the Palace of Culture, featuring a planned concentration of skyscrapers higher than the Soviet palace. Several 3-D simulations comprised a virtual model of the city that demonstrated the optimal composition and height of a cluster of five tall buildings. Three of the towers will measure 220–245 meters, dominating the city skyline and visually absorbing the silhouette of the Palace. This new central core will be the point of spatial reference for the rest of the skyscrapers planned in downtown Warsaw.

The high-rise boom in Warsaw is related to the acceleration of urban growth in the biggest Polish cities after the nation joined the European Union in 2004, which is in concert with the worldwide trend of concentrating economic and social development in major



Figure 8. Transformation of Warsaw left-bank skyline seen from the opposite site of Vistula River. © National Digital Archive 1962 / Wojciech Olenski 2007/ Joanna Latala 2013

cities. According to some economic reports Warsaw is the second-most preferred city in Europe (after London) for real estate investment. The central area is extensively built-up, with a very good transportation system and centrally located institutions.

In the last five years, almost 70 tall buildings have been proposed by investors in the central city, most of them office and hotel buildings. Residential high-rises also recently started in the city center, typified by Złota 44 and the Cosmopolitan. The Warsaw high-rise boom even survived the economic crisis of 2008. Global real estate firms such as Kulczyk Silverstein Properties, Ghelamco, and BBI Development maintain strongholds in the city.

Also of note, the first tower of the Western District the 140-meter Commercial Bank and Foreign Trade Head Offices, built in 1979 (now Oxford Tower), is about to change its architectural form and height (see Figure 7). Its expansion plan calls for adding additional floors to the existing building and connecting it with a newly erected building. In the place of the existing building, two towers of approximately 200 to 235 meters in height will be erected and connected by an external

lift shaft structure. The dynamic and slender form of the two new towers will create a characteristic spatial element of the southern panorama of skyscrapers in Warsaw and will complement an expanding city skyline.

The Cityscape “Verticalization” Process

The diversity and quantity of vertical changes in the Western District of Warsaw allows for the definition of some

critical observations and conclusions that can be relevant and helpful for other expanding historical cities. These changes have occurred in two different epochs related to two opposite political and economical systems (the centrally-planned and free-market economies) and following two divergent architectural styles (modernism and post-modernism). Additional conditions, existing only in Warsaw, that enrich the vertical cityscape include the coexistence of the symbolic landmark of the Palace of Culture and Science in the city center, the strong visibility of the left-bank panorama of Warsaw divided into historical and modern zones, and the partly preserved original urban concept of the Western District, planned 40 years ago.

The “verticalization” of the Warsaw cityscape can be described as an urban process that presents opportunities and threats for the imageability of the city (Lynch 1960).

Opportunities for Imageability

The most important positive associations of new tall buildings in Warsaw mostly refer to the visual and symbolic perception of the cityscape and to ecological solutions:



Figure 9. Visual anomalies caused by high-rises in the Warsaw panorama. © Wojciech Olenski

- The Warsaw tall building zone is forming a highly visible and attractive symbol of the modern metropolis (see Figure 8) that results from the real economic growth of the city, and not solely from stylistic or political decisions.
- The high-rise cluster is harmoniously coexisting with the historical silhouette of the Old City, as a secondary background that can be compared with a mountain silhouette in the flat terrain; it still has the ability to grow up in the future without harming the UNESCO complex.
- Tall buildings have acted to lower the visual impact of the Palace of Culture and Science in the city skyline, and also have influenced a change in the symbolic perception of the Palace, which had become a historical landmark.
- Most of the tall buildings erected over a relatively long period of time take a similar approach to visual expression through the scale of the buildings, for example, the dominance of glass façades in blue and green colors and compact solid shapes. Some of the buildings are leaders in ecological and sustainable solutions, such as “Rondo 1” designed by SOM, which is the first LEED-EB:OM (Engineering Buildings: Operations and Maintenance) 2009 Gold Certified building in Central Europe.

Threats to Imageability

On the negative side, there are unfortunate mistakes in need of correction. There is also a risk to the future of high-rise development in Warsaw. Both are rooted in visual

deformations produced by some tall buildings and in insufficient legal regulations and planning considerations:

- Some skyscrapers are constructed in random locations out of the western high-rise zone or well outside the downtown area. This has resulted in the creation of isolated dominances that deform the cityscape in both small and large scales (see Figure 9).
- The high cost of land in the city center and the unfinished process of establishing land property regulations cause aberrant situations, such as those in which one tall building is demolished to build a new, much higher tower. For example, a new 200-meter-high tower is planned on the site of Ilmet Tower, which measures 90 meters. Another side effect of high land prices is the slowing of high-rise development in the center area close to the Palace of Culture, where three towers of between 220 and 245 meters in height were proposed in a local development plan adopted in 2010.
- The system of landscape protection established for the Old Town is not fully implemented into the city planning policy, and there is no specification of height limits for the expanding city center.
- The clear and detailed principles behind the original concept of the western high-rise district have transformed over the last 20 years, due to the economic pressure of new investments, frequent changes in the spatial planning system and individual

“The Warsaw tall building zone is forming a highly visible and attractive symbol of the modern metropolis that results from the real economic growth of the city, and not solely from stylistic or political decisions.”

decisions of the city government. In a new high-rise investment, one can observe the growing intensity of development through the increase of buildings’ height and the dimensions of the floor area, the diversification of the architectural form of tall buildings and the escalating ignorance of the existing context.

Warsaw Tall Buildings – To Be Continued...

Urban analysis and digital 3-D simulations of the Warsaw cityscape will be continued, especially the protection system of historical panoramas and the visual integrity of the UNESCO complex. The shape and scale of the future high-rise zone will be defined by the architectural quality of new projects, their relationship with the cityscape and with the principles of the western high-rise district. In the coming years, the results of “paper” concept and regulations will be seen in the living laboratory that is Warsaw. ■

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