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A VIEW FROM ABOVE – SKYSCRAPER AND THE CITY

SPOJRZENIE Z GÓRY – WIEŻOWIEC I MIASTO

Abstract

From the very beginning, skyscrapers met with ambivalent opinions. From admiration of their art-like soaring forms to the loath of their disconnection from the city structure. From praising their effect on the city's silhouette to criticism of what they are doing to the perception of the streets by pedestrians. Challenging tasks for architects, tokens of financial success for investors, and the embodiment of all evil for city activists. The article aims to present how contemporary high-rise buildings deal with all those contradictory expectations and show how (if at all) introducing a sustainable approach allows for a shift from sculptural forms of minor-to-non-connection to the city structure to more humanised, city-shaping-friendly solutions.

Keywords: city, effect, skyscrapers

Streszczenie

Wieżowce od początku spotykały się z ambiwalentnymi opiniami. Od podziwu dla ich artystycznych, strzelistych form po niechęć do ich odłączenia od struktury miasta. Od pochwały ich wpływu na sylwetkę miasta, przez krytykę tego, co robią, po postrzeganie ulic przez pieszych. Trudne zadania dla architektów, oznaki finansowego sukcesu dla inwestorów i ucieleśnienie wszelkiego zła dla miejskich aktywistów. Artykuł ma na celu przedstawienie, w jaki sposób współczesne wieżowce radzą sobie z tymi wszystkimi sprzecznymi oczekiwaniami i pokazanie, w jaki sposób (jeśli w ogóle) wprowadzenie zrównoważonego podejścia pozwala na przejście od rzeźbiarskich form drugorzędnych do niepowiązanych do struktury miasta do rozwiązań bardziej humanizowanych, sprzyjających kształtowaniu miast.

Słowa kluczowe: miasto, efekt, drapacze chmur

1. ADMISSION

The history of skyscrapers began in the nineteenth century, and the appearance of this type of building immediately aroused extreme emotions. They resulted from the real impact of these buildings on users and the built environment and a powerful connection with the sphere of imagination.

High-rise buildings carry a rich semantic layer. The upbeat version is mainly associated with breaking new barriers, escaping from the mundane and limitations, and finally, almost literally realizing dreams of reaching for the sky. In this vision, technology solves most of the ills of the modern world, giving an elegant and orderly answer to the question of protecting

space from overpopulation. The skyscraper becomes a monument of hope for a society living in prosperity and peace, as in the popular sci-fi Star Trek series.

In a more sceptical approach, their creation testifies to the investor's wealth and becomes a natural testimony to his power. They are seen as monuments of pride and the desire to dominate the world. They do not create a city but break it up, segregating and alienating its inhabitants. They are the source of pathology and the deterioration of social ties. They refer to the archetype of the Tower of Babel, associated with its negative connotations. Hence, the almost equal, if not more, popular perception of this type of development as a version of the dystopian, anti-human city of the future. Cities are known for such popular dystopias as *Bladerunner* or *Gotham*.

On the one hand, we have buildings that are supposed to be the primary form of development. On the other hand, the same structures are identified with the worst phenomena shaping our communities.

But how is it? This article tries to bring the issues as close as possible in its limited volume.

2. TALL BUILDING – A MATTER OF CONTEXT

Before considering the impact of tall buildings on the city, it is necessary to pay attention to a rather important aspect regarding the very definition of a tall building. According to the studies of one of the most important and oldest organizations dealing with the issue of tall buildings – existing since the late 60s of the twentieth century, Council on Tall Buildings and Urban Habitat (CTBUH) – the question of what object can be described as a tall building is not so obvious.

According to this organization's guidelines dealing exclusively with the issue of tall buildings in the world, the definition includes several aspects. Naturally, the obvious question of the physical height of the building is taken into account first. However, even this seemingly simple parameter is not unambiguous. It is subject to different measurement categories (height to last used level, to the roof, to the end of the installation on the building, etc.). In addition, many other aspects are considered, such as the proportions of the building itself, its technical equipment, function, etc. More importantly, at least for the considerations contained in this article, to qualify an object as tall, attention should also be paid to the critical role of the context in which it operates. A building of the same height will be perceived differently in the case of the centre of an American city or Asian metropolises and completely different, for example, in the centre of Warsaw or the historical buildings of European cities.

It is an essential caveat because the impact on the city and its creation will also vary depending on this context. These differences can be very significant, and a building of similar height complementing the development of Manhattan can have a positive or neutral impact. In contrast, the same building built in the vicinity of medieval buildings will even disturb the reception of the layout and constitute a severe disadvantage to the harmonious space of the city. These concerns are well known in Europe – an example is the wave of criticism that met with the tallest (until 2022) building in Sweden (as well as the whole of Scandinavia) built in 2005 in Malmo Turning Torso by S. Calatrava. Issues were raised, the impact on low-rise space that the construction of a much higher facility will have. Its unique form,

which was supposed to ensure a high aesthetic level of the building, raised concerns about the relationship (or rather the lack thereof) with the already existing tissue.

3. DOES THE BUILDING CREATE A CITY?

The influence of tall buildings on the perception of the city is unquestionable. Both when it comes to individual facilities and much more often in the case of their concentration, whether in the form of business or residential districts. However, it is not disputed that, especially in the case of the tallest buildings, the decision to build them is primarily based on the belief in achieving the Bilbao effect. The construction of this one building will impact the perception of the whole city by spectacularly breaking different limitations. What is essential, however, is most often technical barriers because formal and functional aspects are necessarily subordinated to them in high-rise buildings.

In this spirit, many tall buildings have been built and are being built. Natural dominants even force the rest of the city to orient itself to its location. Such a case is the aforementioned Turning Torso, but probably similar goals were pursued by the designers of many buildings – especially those with an international reputation. A perfect example of this is the projects of Norman Foster, who himself assumed, when designing Shanghai Bank, to achieve a lasting impact on architecture and the region by creating “the best office building in Asia”. But such high-profile aspirations accompanied many other projects of this (and not only) architect. In the descriptions of many of them, we will also find references to the Bilbao effect, which they may not have repeated. Still, having both the potential of the designer’s brand and being unique solutions, they achieved it to some extent.¹

However, is their presence beneficial for the city space? This question is significantly more challenging to answer.

The creation of a city by tall buildings is a somewhat ambivalent issue. Of course, by separating the communication routes of the streets, even entire districts of skyscrapers create an urban layout. However, the predominance of the vertical dimension makes it difficult for users of these spaces to interact with the city known to people who have lived in the towns for hundreds of years. They are transforming the scale proper to man into ravines of overwhelming facades limiting contact with the space above the buildings.

4. THE CITY CREATES A BUILDING

Regarding 15-minute cities, skyscrapers can be seen as an ideal answer to this issue or as its caricatured perversion. The idea of locating essential functions within the available distances is crystallised here. Almost from the beginning of its operation, there have been ideas of equipping high-rise buildings with tasks that can provide their residents’ needs. Such ideas were presented by Le Corbusier in his plan for Paris – creating the concept of a city/non-city of points embedded in greenery.² Their inhabitants would not need to move within,

¹ I. Mutuli, *The Gherkin: Foster’s Monumental Building in the Heart of London* [in:] Archute, 17.08.2023, <https://www.archute.com/gherkin-london/> (access: 20.08.2023).

² Le Corbusier, *The City of To-morrow and Its Planning*, Dover, New York 1987.

having most of the functions at the distance of the elevator trip. Currently, skyscrapers are also equipped with various services to settle some matters on the spot, in fact, not only as part of a short walk but even a walk that does not even require preparations necessary for moving around the streets – clothes adapted to weather conditions, social interaction or elevator travel.

The introduction of urban elements also manifests itself in pro-ecological issues. Most often, they concern an attempt to break the natural detachment of users of tall buildings from greenery. These attempts are visible in the early projects of the trend (such as the Commerzbank building in Frankfurt designed by Norman Foster), but also in a different approach and the newer Bosco Verticale solution (designed by Stefano Boeri).

5. GEOGRAPHY MATTERS

Of course, the impact and its assessment vary depending on the location and geographical context. A comparison of the layout of European cities with American ones shows this quite clearly. The cradle of skyscrapers – North America – due to the development of cities at the time of the construction of buildings (which was also the reason for their creation) shapes the layout of the town entirely differently than the European continent, in which, however, the dominant city-forming function is historic city centres with their low buildings and dominants of churches, castles and town halls. On the one hand, this means an entirely different structure of cities and their shape. On the other hand, it also affects the effects of introducing tall buildings into the city. In contrast, in the European version, it is more often a kind of contrast and a matter of changing the functioning urban systems – rarely for the better. In America, however, it was more about creating this centre than searching for its contemporary continuation or the relationships of forms complementing the existing historic fabric.

Looking at the buildings of Manhattan or Chicago, the presence of skyscrapers seems (ignoring other aspects) quite natural. Similarly, a walk through the district of La Defence or the centre of Frankfurt does not raise surprises with subsequent projects of tall buildings. The accumulation itself weakens the most straightforward effect: the difference in height concerning neighbouring buildings. Only the contrast between the historic buildings of European cities provides a slightly more disharmonious experience. However, the issue is entirely different in cases like the Tuning Torso. The only such tall building in the area – dominant, both high-rise and through contrast with the surrounding buildings and high-quality architecture – semantic. Completely different revitalisation of the site as in the case of Quay Quarter Tower in Sydney, Australia or Vancouver House in Vancouver, Canada. However, whether they realise the hope of reviving the community or remaining more independent remains an open question.

However, returning to geographical differences, it is worth noting that significantly lower altitudes characterise most European projects. In contrast to the super-tall and futuristic buildings built in Asia or even the United States, most European projects are significantly subdued in architectural expression and significantly lower. This is due to several issues, not the least important of which is weaving into the historical tissue. This forces design limitations to some extent. In addition, the communities of cities where these buildings are built seem to be more sensitive to historical aspects, and their voice is more audible than, for

example, in Central Asia, where investors are more influential. The power of public opinion is undoubtedly related to the combination of political factors and society's role in the state. Designers in Europe have to reckon with a significant number of opinion-forming centres and legal regulations.

Part of this striving for compactness of buildings also results from ecological assumptions – particularly from the premises of energy efficiency, which also affects thinking about the body of the building. Norman Foster's projects in Frankfurt and London are an excellent example of how pro-ecological beliefs significantly affect the shape of high-rise buildings. As a result, however, it seems that more often in these solutions – at least in the declarative layer – attempts are made to pay attention to the environment. At least in theory, it offers a set of keys to somehow minimise the negative impact on urban space.

6. THREE AND A HALF PERSPECTIVES

Skyscrapers, like all human products, can be evaluated from different angles. For this article, three of the possibilities will be presented. Their choice was influenced by the importance of these aspects and a certain generality. Because many other issues arise from them, and, in principle, they contain most of the approaches that could affect the assessment of the effects of the creation and application of this typology.

The perception issue is also significant regarding the relationship between the building and the city. The feelings of the inhabitants determine the success or failure of spatial systems. It is not without reason that analysing reactions to adopted methods is one of the most critical trends in theoretical research.

6.1. ECONOMIC PERSPECTIVE

Investors bring many issues to the design process. In addition to expectations as to function and form, apart from inspiration and the first reason for creating the object – the idea of its construction, they also bring some of the barriers the designer has to face. The architect, of course, is bound not only by the social aspect but also by an utterly mundane civil-law contract and the budget. It is impossible to escape the issue of costs in design, just as it is impossible to run considerations of form.

High economic issues evoke buildings like few others currently under construction, which happens on many levels. The very genesis of this typology is associated with minimising land costs and maximising profits from the building area. The economic calculation is the root from which the idea of building upwards has grown.

Nowadays, nothing has changed in this respect. Still, high-rise buildings are the answer for investment in places with significant land prices, and there is a demand for residential, office, etc. space.

In this approach, the creation of the city is less important. Or at least creating a friendly town. This aspect appears only as an element of the game for the client's money. However, it should not be underestimated – just as it led to the creation of tall buildings, it is a severe change source. Tenant satisfaction, who also evaluates and appreciates the social aspects of the building, is an essential factor in the assessment of the building, translating into the profitability of the investment.

6.2. SOCIAL PERSPECTIVE

Socially, it is difficult to find positives in high-rise buildings. Most studies highlight this typology's rather negative impact on the community's functioning. In the midst of the allegations, there are research results showing the detachment of residents and users of high-rise buildings from urban life – they are less likely to leave their apartments and participate in outdoor activities. Paradoxically, solutions to support the comfort of life, such as introducing auxiliary functions to this type of building, exacerbate the problem by removing some or most of the reasons for interaction within the community on the street. As Jahn Gehl says, above the fifth floor, we are cut off from the city – we do not see what is happening at ground level, and the observer from below does not see us.³ We consistently disappear from the field of observation and, thus, potential interactions. Invisible actions are not an incentive to join them.

It is also pointed to increased gentrification and economic disparities – higher rents and attractiveness of apartments naturally predestine skyscrapers as a place of residence for wealthier strata. They are condemning less affluent districts to lower buildings, not entirely in quotes. Potentially, this may translate into the breakdown of the city and the creation of ghettos. This approach is valid for communities consisting of tall buildings but maintaining a certain level of implementation. A slightly opposite example can be observed in Asian countries, where skyscraper districts are intended for the wealthier, but poorer communities are not filled with lower buildings.

On the contrary, the desire to use free space, generated by economic calculations, fills them with tall buildings with many micro-apartments. They are creating the human equivalent of anthills, not providing proper spatial solutions and showing that excess and deficiency can lead to pathological solutions. They also support visions of dystopian behemoth cities. They allow you to verify the ideas of architects proposing urbanisation in the form of endless buildings.

“... glocal skyscraper is one trend that attempts to mediate and articulate the complex negotiations between universal building type and local cultural associations... becoming a large-scale signifier of identity and community”⁴.

Buildings constructed in the pro-ecological spirit try to address these problems to some extent. One of the simplest (though not technological) ideas is introducing greenery to facades and spaces in buildings. Such as this is the case, for example, at Bosco Verticale. Trees growing on the terraces next to the apartments are to be a substitute for contact with nature in the city. They also minimise, to some extent, the effect of detachment from the ground – providing vegetation and a particular illusion of connection with the world. Shared spaces in Norman Foster's Commerzbank in Frankfurt had a similar purpose. In addition to being part of the ventilation system, they were supposed to allow for social interaction – constituting a substitute for life at street level.

The general problem regarding the actual impact of buildings is the total amount of research, contradictory results and their translation into implementation. Among the mentioned issues is the lack of knowledge or anecdotal knowledge of developers/designers, which

³ J. Gehl, *Miasta dla ludzi*, Wydawnictwo RAM, Kraków 2014.

⁴ E. Höweler, *Skyscraper: Designs of the Recent Past and for the Near Future*, Thames & Hudson, London 2003.

makes it impossible to take conscious action. It is also the conservativeness of the environment, which avoids risky solutions and limits creativity. Theoretically, it strives for new solutions, but practically within a strictly defined framework. Spreading ideas depends on realising an example – often in another city. All this means that these buildings are essentially created as independent entities, unrelated to the environment on a deeper level. Their assessment is based on issues integral to the construction, and topics that treat the problem more broadly are less recognised. Introduced surveys and research at the use stage can be a valuable source of support for design work.

6.3. THE PERSPECTIVE OF IDEAS

An aspect of paramount importance – both in the context of the city and the investor’s interest – is the image issue. Tall buildings – especially those aspiring to be of various types of “best-” carry a substantial ideological load.

From the point of view of the organisation or person financing such an investment, it is simply an excellent medium. Its existence proves not only the strength of its investor but also focuses attention on him – providing an advertising effect. A highly desirable factor in the current economy is based on logo recognition and selling value even more than a product.

The same applies to the city. Here, too, we can observe the image aspect. Of course, tall buildings are dominant – high-rise and often semantic. It often mixes essential functions. But also, by breaking further limitations, they provide additional contexts relevant to their perception. Thus, they take over the role in the city that until recently was played by cathedrals. Symbols and signs that organise space.

6.4. PHYSICAL ASPECT – SELECTED ISSUES

The problematic nature of the form – mainly related to the possibility of its reception only from a considerable distance – has already been signalled above. A few more aspects can be mentioned, but the most prevalent concerns issues related to the impact of buildings on the area’s access to light – thus on the comfort of life in the city and the well-being of residents.

Insolation – an essential aspect from the point of view of user well-being and related only indirectly to the introduction of pro-ecological issues. It concerned this type of object and almost from the very beginning. For quite a long time, attempts have been made to systemic and individual-design solutions. The problem, of course, affects users both in the building and surrounding facilities. High-rise buildings, through their dimensions, have introduced this issue to a whole new level to some extent. Their creation showed, among other things, the need for legal regulations – the development of this typology of buildings is directly related to the introduction of the first distance regulations due to shading in the United States in 1916.⁵ Currently, the analysis of insolation, related to energy issues, but also to the neighbourhood, is an essential factor shaping high-rise buildings, and solutions to ensure natural light (atria, sunlight reflectors and mirrors of various types) are one of the most commonly used solutions to the problem.

⁵ C. Gray, *In the New York region; The lost skyscrapers of bygone New York* [in:] “The New York Times”, 15.05.1988, www.nytimes.com/1988/05/15/realestate/in-the-new-york-region-the-lost-sky-scrapers-of-bygone-new-york.html?src=pm (access: 05.2023).

This issue is much better in terms of quality and quantity in external terms. Protection against overheating the building – and therefore against excessive energy gain – is a significant design aspect and strongly related to the ecological trend – projects such as the Al Bahr Towers⁶ shows how to combine an effective solution to this problem with an interesting architectural form. However, it is difficult to argue that this brings unique city-forming values. On the contrary, it only deepens the attractiveness of the building itself, remaining at most neutral for its relations with the environment.

A slightly different problem related to the neighbourhood of tall buildings and their impact on this environment is the issue of their reflection of solar radiation, which can potentially damage neighbouring buildings. However, this is quite an individual issue and depends both on the façade material and the shape of the façade's geometry – so this factor is more accidental. Its observation indicates a group of problems potentially related to high-rise buildings and their environmental impact. However, these are not problems that affect many cases – such as shading issues. It is also a manifestation of design focused on the object itself without analysis of the broad impact on the environment.

7. SUMMARY

To sum up, tall buildings – like most human works – can positively and negatively impact our lives and, therefore, the communities we create. In addition, the close link between their creation and the state of the region's economy also influences, as J. Sławińska points out, the buildings' assessment⁷. Translating the financial condition into more significant popularity in periods of economic growth and increased criticism of such facilities during periods of crisis. However, it makes it difficult to identify solutions to problems related to building a city and to link these solutions with the pro-ecological attitude of designers. However, as it seems indisputable, the fact is that despite the introduction of pro-ecological assumptions, tall buildings are objects for themselves. Context is created by their multiplication rather than interaction with existing tissue. Only the category of elements that distinguishes (or attempts) a given building changes. It seems that more often than other buildings, they are separated from the surroundings, which results from both the form and the expectations associated with them. Therefore, they are an ambivalent aspect of urban space, undoubtedly escaping the so-called human scale and much more often created to document the aspirations of those erecting them. They are not devoid of functions, but often, their functionality is limited by technical assumptions. In this approach, aesthetic issues may be another limitation. Studies show that high-rise buildings can aggravate social problems relatively often – mainly a sense of isolation. At the same time, they can be a spatial element ordering the city – high-altitude dominants – taking over the role historically played by churches.

Just as quickly as the answer to the problem of congestion and the solution to excessive urban sprawl, they can become a generator of social issues and an element destroying the structure of the city. Perhaps in this immanent dualism lies the most humanistic aspect of

⁶ S. Attia, *Evaluation of adaptive facades: The case study of Al Bahr Towers in the UAE*, "QScience Connect" 2017, no. 2, art. no. 6. DOI: 10.5339/connect.2017.qgbc.6, https://www.researchgate.net/publication/320761931_Evaluation_of_adaptive_facades_The_case_study_of_Al_Bahr_Towers_in_the_UAE (access: 12.09.2023).

⁷ J. Sławińska, *Ekspresja sił w nowoczesnej architekturze*, Arkady, Warszawa 1997, p. 51.

the architecture of tall buildings. Like almost every other, this is a product of our hands as much as a manifestation of our genius and pride. And its final assessment must consider individual contexts to ensure an objective evaluation. And undoubtedly, their presence in the city's silhouette ignites the imagination of the city's designers, investors and viewers/residents, regardless of the actual implementation of design assumptions and solved problems.

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