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Shaping the image of a city on the example of a development of parts of waterfront in Bydgoszcz - a relation of Rother's Mills and Nordic Haven buildings

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Abstract According to Alexander Wallis, the city's cultural values relate to its historic and architectural, symbolic and religious, artistic and prestigious values. They are represented by individual buildings, monuments, sculptures, street furniture and entire urban complexes - streets, squares, parks, engineering works, and finally entire districts and urban landscapes. [1] In Bydgoszcz these values are represented by the Mill Island. After years of neglect, together with its immediate surroundings it has been re-incorporated into the city's structure, becoming a full-fledged, attractive and highly prestigious social area. The article presents a history of creation, functions and mutual relations of revitalized historic Rother's Mills complex and Nordic Haven - a modern residential and commercial development and also aims to analyze the impact these buildings had on the space and surroundings of the Mill Island. The two architectural ensembles, arranged in mutual spatial relations, shape the landscape of the downtown, river bank part of Bydgoszcz on different principles. These buildings, as part of a historical urban layout of the city, represent extremely different methods of developing its areas requiring special protection and attention.

1. Introduction

The Brda River and buildings adapted to its waterfront have always been the main element of urban composition shaping the image of Bydgoszcz. The waterfront downtown area of the city has retained to this day a legible historical urban layout dating back to the 17th century. This plan includes a space of the Mill Island, its natural conditions and built-up areas that contribute to a contemporary image of this part of the city. Its historic, architectural, symbolic, artistic and prestigious heritage, as well as functional and spatial connection with the city and the river, influenced past and present development of the entire urban structure of Bydgoszcz.

Over the centuries, the area of the Mill Island has been subject to numerous architectural and urban transformations. In the past, acting as an industrial centre of the Bydgoszcz Canal as a water route, after its partial backfilling, Mill Island lost its primary role, and its facilities and space were subject to progressive degradation. After years of neglect, attempts to restore the role and rank of this area of the city have been made in a number of studies. It was pointed out that a primary goal in a development of the Mill Island is to protect its heritage, including the cultural landscape. At the same time, all transformations should maintain its harmonious image, without disturbing existing values and historical layers. In planning documents it was considered necessary to maintain a proportion of high buildings



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shaping the outline of the Old Town complex, including the prominent objects that due to architectural values stand out in the landscape of Bydgoszcz. It was considered necessary to respect a historical context with a requirement to adapt new buildings to the historical urban composition and to preserve a proper coexistence of historical and contemporary elements.[2]

Kevin Lynch in his work "Image of a city" presented a number of factors that make up a harmonious city and enrich its meaning and values. Using visual analysis the author indicated that the most important value, taking into account space, time and complexity of the environment, is a legibility of the urban landscape. Guided by the above indications, this article confronts, via visual analysis, the revitalized historic Rother's Mills complex with the modern Nordic Haven residential and commercial complex created in 2013-2016 in a context of shaping urban landscape in the space and surroundings of the Mill Island and the entire city.

2. Functional and spatial development of the Mill Island

The Mill Island, initially consisting of three independent parts, is placed in Kujawy region, in the Toruń-Eberzwałdzka Basin, in the lower, southern bend of the Brda River. On the east it bordered a village, which received city rights in 1346 under Magdeburg law. The settlement stood at a crossing of a river and an intersection of important trade routes between Kujawy and Pomerania. An organized, checkered urban layout of Bydgoszcz was closed on the east by a hill and a moat, on which stood the district governor's stronghold. In the northwestern corner of the city, on the banks of the Brda River and its branch Młynówka, a Gothic parish church of St. Marcin and Mikołaj was located. The church was a dominant feature of Bydgoszcz and of the Mill Island. The Island's area was distinguished by favorable geographical location, separated by a river, but also bordering directly with a developing settlement.

The first warehouse and production facilities of the Mill Island were built in the 16th century on the eastern side, nearest to the city (Figure 1). Bydgoszcz at that time was developing economically and spatially as a centre of regional importance. The prominence of the city was increased by a location of a private mint, later a royal mint, on the Mill Island in 1594. The mint occupied entire space of the eastern part of the Island. It was a heavily built-up area separated from the settlement by a river. All buildings, including a wark, smithy, coach house, stable, manor and treasury were built meridially, taking into account the shape of the area and the route of the river. Buildings were mostly wooden or half-timbered, up to two floors high. In 1688 the mint was closed and the well maintained buildings were given new functions. The mint yard was changed into a flour mill, a bleaching room and a dormer room into a stable, a smithy into a miller's house, and a tenement house where coins were minted into a tannery.

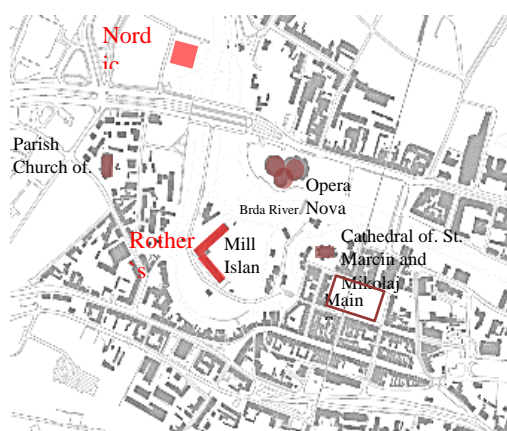


Figure 1. The relationship of Nordic Haven and Rother Mills in the city center of Bydgoszcz on the Brda River (source: author's own study).

From the mid-eighteenth century, Bydgoszcz was experiencing serious economic, political and social difficulties, which contributed to the city's decline and degradation of its urban space. Many buildings in the former mill area were abandoned and demolished before 1774. The restoration of the significance and importance of the Island took place in the fourth quarter of the 18th century and resulted from the construction of the Bydgoszcz Canal in 1772-1774. The canal performed important transport functions in this part of Europe. Along with its creation, locks were erected, and river banks were regulated and corrected for the use of hydropower. Miedzywodzie canal was tidied up and expanded, creating conditions for driving equipment of a new mill and fulling mill. This area was connected to the city with new bridges: the first was the northern bridge, built in the direction of the city lock, connecting the Mill Island with the royal granaries which were built in 1789. The second bridge was set out in 1791 as the extension of Niedźwiedzia Street. The road layout in these areas was adapted to the crossings. In the following years, thanks to the economic development caused by the flow of goods through the Bydgoszcz Canal, Mill Island strengthened its position in the city structure, performing industrial and warehouse functions. This was confirmed by placing further facilities in this area, and in the years 1848-1851 the largest mill complex was erected, the so-called Rother's Mills.

In the western part of the Mill Island, in the area of former gardens, huge mills were built, along with technical facilities, including: a boiler room with a chimney, a granary, a turbine house, an engine room, a pumping station and a culvert for fish. Volume of the entire development was over 42,000 cubic metres, and the usable area over 7,500 square metres). The property was founded on a plan of a letter L with the main building on a square plan, with two elongated rectangular wings. The building was partly founded on water using pile foundations. The facilities were characterized by careful workmanship and consistent architectural details. The façade of the main building was made of solid, burnt bricks on a stone foundation. The southern part was built on a ten-axis grid, the western part on a twelve-axis grid, with a regular pattern of window openings and a regular division of storeys and cornices with a decorative brick thread. The wings were constructed as a half-timbered structure, the whole was covered with a gable roof with rafter and purlin truss. In the years 1851–1919 the facilities were managed by Die Königliche Seehandlung Societats zu Berlin and after 1919 they were taken over by the city of Bydgoszcz, and after World War II by the state treasury.

After 1945, the Mill Island gradually became a degraded area, and despite its history, importance and location in the historic part of the city, it was an enclave of peripheral development. Along with the degradation of its role, the Saw Bridge, culverts, valves, bridge and lock house at Rother's Mills were dismantled. In the former burghers' gardens allotments were arranged, later converted into a park. At the beginning of nineteen seventies, the process of complete liquidation of the industrial activity of the Mill Island facilities and the takeover of assets by various entities began, some of the buildings were taken over by the L. Wyczółkowski District Museum of Bydgoszcz. In 1992, the Mill Island was entered in the provincial register of monuments as an area of cultural and natural protection. [3]

In 2004, the city of Bydgoszcz developed a program [4] designed to transform the post-industrial area into a space of culture, recreation and tourism. Greenery has also been revitalized, which is one of the elements of the city's green areas system and attractive public space. Along the Brda River and the Mill Island, green routes were restored, the river bank zone and existing animal habitats were secured. The architectural program was aimed to preserve the historical character of the island, taking into account the current requirements and expectations of users. A number of works have been planned for the renovation and adaptation of infrastructure, including six buildings from the industrial architecture complex, technical, communication, recreation, sports and tourist infrastructure. In the years 2006–2007, according to the design of the Warsaw studio Grupa 3J, a historic building was revitalized at 6 Mennica St., new footbridges were built to connect the island with the city and the Międzywodzie canal was rebuilt as a pool cascade course. In subsequent years, the historic street underwent renovation, an amphitheater, playground, green areas were developed, and the river bank was partly rebuilt. The most

important achievement in the protection of unique historical values was revitalization of five historic buildings for the needs of the District Museum. The Museum of Archeology was established in a renovated White Granary, the European Money Center was set up at 4 Mennica St., a house of Leon Wyczółkowski in a building at 7 Mennica St., and Gallery of Modern Art in the Red Granary.[5]

In 2013, the western bank of the Island was completed by a modern double-wing facility of Marina Bydgoszcz with a hotel and a marina for sailors designed by Zivva Design Laboratory - Tomasz Rokicki. The building was harmoniously integrated into the surrounding natural and architectural environment, owing to the shape of the buildings, the use of wood as a facade material and architectural details. The whole construction of the marina and the surrounding bridges, through the culvert channel, bounds on Rother's Mills from the west and corresponds with their monumental brick and stone wall. In terms of functionality, this hotel and sports facility is one of the elements of the Bydgoszcz Water Junction and enriches the area of the Mill Island with new functions. At the same time, its form is an important element of the river bank space of Bydgoszcz, connected to the downtown urban system.

Since 2004 the following revitalization works and new development projects for this area did not include Rother's Mills. Over the decades, they have not undergone renovation and adaptation to new functions. This largest complex of buildings closing the space of the island was subject to extensive devastation over the years. It was not until 2016 when the buildings were bought by the city of Bydgoszcz and the revitalization works began. A number of conservation works started and a new functional program was developed that would transform this monument into i.a. "water gardens" educational centre and restore its visual charisma within the island's space.

In relation to the surroundings of the Mill Island and the downtown parts of Bydgoszcz, as well as functional changes in this area, in 2013 the construction of a residential and office Nordic Haven building began (Figure 2). It was erected directly on the banks of the Brda River, in a previously undeveloped area. There used to be bourgeois gardens there, in the 19th century there were docks, a small shipyard, and in 1943–1944 an anti-aircraft shelter under a part of the area. In the north it borders with a university campus and sport and recreation areas. On the southern side it neighbours the Mill Island, from which it is separated by four-lane Marszałka F. Foch street, a communication route with the highest traffic intensity in Bydgoszcz.



Figure 2. The revitalized space of the Mill Island from the east with the buildings of the District Museum L. Wyczółkowski, from the west side of Rother's Mill, from the north the Nordic Haven tower and Opera Nova. (source: author's photo)

The architectural design, developed by Nizio Design International, proposed a cascade and terrace form of the construction on a trapezoidal plan, with a clear division into a residential and office part. This apartment building located at Artura Grottgera Street is 55 meters high and is divided into 16 storeys above ground. As Mirosław Nizio - the author of the project - emphasized, the shape was inspired by granaries typical of the architectural landscape of Bydgoszcz. To quote the author - *"we wanted to create a building that in its form will correspond to the historical surroundings and blend in with it despite its modern shape."* From the side of Grottgera Street, the building is four storeys high and

continues to rise in terraces towards the river, adapting to the height of existing tenement houses on the neighboring plots (Figure 3).

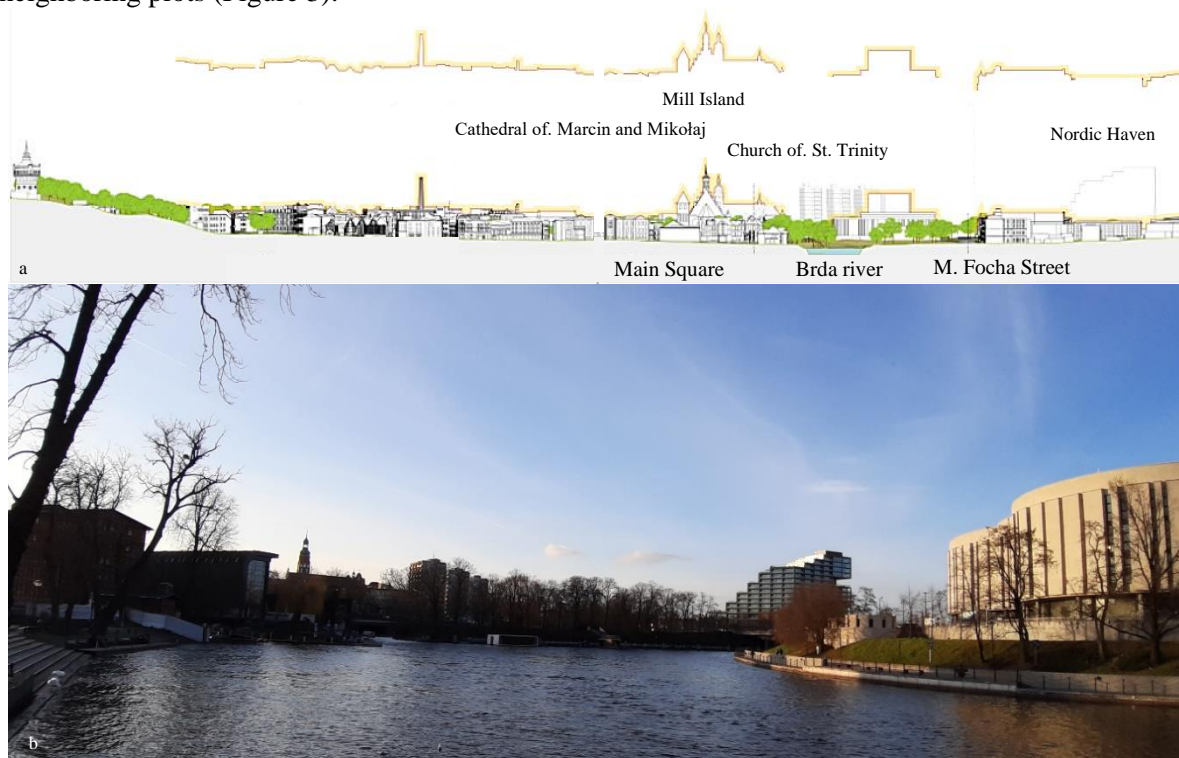


Figure 3. a, b - Downtown part of the Old Town with a cross section showing the architectural dominants of this area. View of the Mill Island with Rother's Mills and the opposite Nordic Haven object (source: a - own study based on Shaping the landscape of the city of Bydgoszcz MPU, b - photo by the author)

From the fourth to the fifteenth floor apartments were designed and communication provided by four staircases connected at the ground floor by two entrance halls, located in the northern and the southern part of the building. For the convenience of residents an elevated courtyard covered with greenery, observation deck directed at the Brda and Mill Island, green roofs, as well as terraces and loggias around apartments were designed. The building is covered with a light glass envelope, highlighted with window frames and clear glass balustrades on the upper floors. The glass was contrasted, in loggia niches, with natural terracotta slabs in dark brick color. The residential function was supplemented by commercial and office premises located on the first four storeys above the ground. A separate hall leads to this space, located in the western part of the building. In the last stage of the work, the designers planned to install characteristic vertical wooden elements in the lower part of the facade, whose purpose, in addition to aesthetic values, was to provide sun protection and sound insulation for the building.

3. Shaping the image of the city

As Kevin Lynch in his publication "Image of a city" writes, forms must be manipulated so as to maintain consistency between multiple images. Important landmarks should be recognizable in different conditions, but in a specific rather than abstract way. While a complexity of a modern city calls for continuity, it also provides great pleasure: a contrast and specialization of individual form. A distinction of elements and their tuning to functional and symbolic differences will give them a specific character. The contrast will be enhanced if the distinguished elements are drawn into a close and vivid relationship. The individual character of each of them will intensify.[6]

The downtown landscape of Bydgoszcz is balanced in terms of height of most buildings. It is dominated by public buildings, towering church towers, chimneys of historic factories and modern

buildings. Rother's mills and Nordic Haven are expressive, coherent and suggestive elements of the Mill Island, and their contrasting design, remaining in close relationship with each other, redefines the image of the city. Both architectural ensembles, located compositively in mutual coexistence, complement the historical spatial arrangement, using different architectural methods and forms of spatial development. Until now Bydgoszcz downtown did not have designs on such a scale, and their implementation required special attention to the implementation of design concepts and protection of the existing heritage.

Similar spatial relations had already occurred in Bydgoszcz when, on a site of former Royal Mills located on the other side of the Brda, opposite the Rother's Mills, the monumental building of Opera Nova was erected. Similar rules are followed by BRE Bank development, designed by Bulanda, Mucha Architekci sp.z o.o., erected in 1995 – 1998. This construction, repeatedly awarded, has become an impulse for the revitalization of the Brda quays in Bydgoszcz.

In order to analyze the architectural form of the featured buildings, it was necessary to assess their dimensions in relation to views of the outline of downtown space. The transformations made to this landscape must not disrupt the urban harmony and order, and the visual focus of attention should still be directed to places particularly exposed in the city, i.e. the buildings of historic churches and Opera Nova, located on the opposite bank of the river.

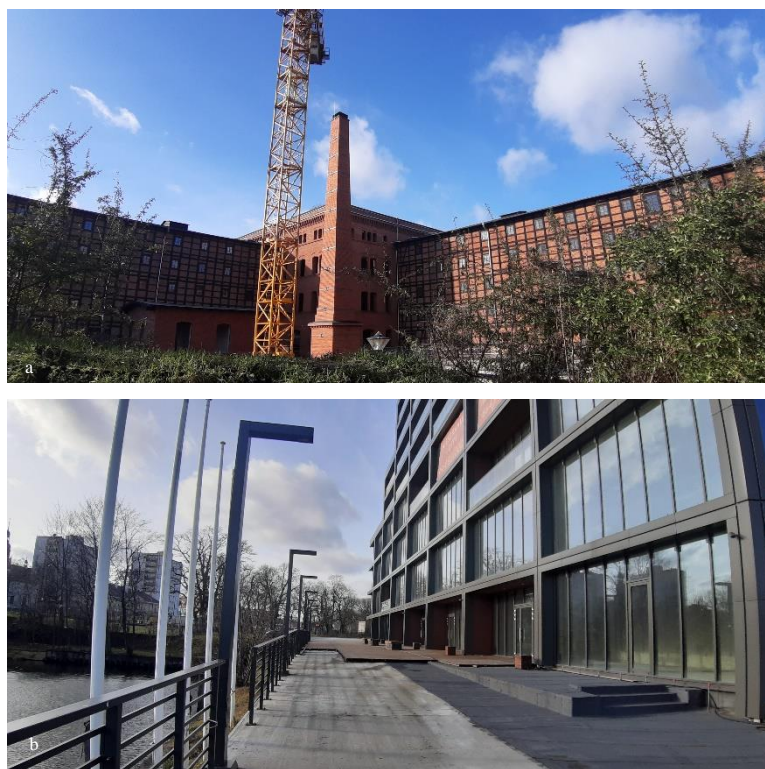


Figure 4. a, b - Mills Rothera solid historical and contemporary Nordic Haven facility, (source: a, b – photo by author)

The two wing post-industrial complex of Rother's Mills, with the main building as the connection, is the predominant element of the Mill Island (Figure 4). It visually closes the western part of the public space of the area, giving its form and function a clear architectural structure. The scale of the construction, its physical features, including the materials used, application of regular architectural separations and a division into two distinct wings, shaped the downtown image of Bydgoszcz from the 19th century. It also contributed to maintaining its functional continuity and a clear relationship with the city's urban layout. From the Młynówka side, the brick buildings contrast with the residential dwellings

on the other bank of the river, and at the same time their simple and clean form visually connects them with the other structures of the Island. The purposely achieved integration of the image of bank areas was also preserved by harmoniously integrating their form into the surrounding nature and the urban greenery system. The visual qualities of these features are emphasized by the lawn, which is a foreground of the development and a part of the revitalized fragment of the Island. The green extensive lawn is a wide open space that increases the depth of the view of the monumental structure. An important element distinguishing the identity of mills in the city is also their name.[7] Rother's Mills historically, functionally, economically and socially identify the Island. In a characteristic and unambiguous way, due to the aquatic location, simple form, usable continuity, unique architecture throughout the city, despite the changed function, they connect to the representative public space of Bydgoszcz.

The designers of Nordic Haven building aimed not to violate the existing urban composition of this part of the city. It was located at the intersection in one of the main streets, thus became a tall feature located at an important point of Bydgoszcz. In terms of functionality, the owners planned only flats or premises for long-term rental and lower-level services, which did not have a positive impact on the spatial image and development of this part of the city. The Nordic Haven structure is clearly different from the surrounding buildings. It differs in height, form and finishing materials used, however it corresponds with characteristic industrial buildings of Bydgoszcz. Thanks to the asymmetrical arrangement of the cascading floors, it is also not overwhelming, monolithic block. The building fits into the panorama that opens from the north side of Rother's Mills. The fifty-five-meter building does not exceed the permissible building height in this part of the city. Composition, scenic and altitude analyzes carried out as part of the studies of the Municipal Urban Studio confirmed that it does not disturb the cultural landscape and the historical urban layout.[2] However, as with other individual buildings created in the 21st century, in terms of land development, the developers neglected to relate to the tradition of the Bydgoszcz Canal space and existing values of the natural environment. The concept of marina with a wharf for residents was abandoned, and the commercial part of the building failed to attract tenants. The car park system within the plot and in A. Grottgera Street is also unregulated. Despite these shortcomings, Nordic Haven building together with Opera Nova are examples of modern architectural dominant features located on the left bank of the Brda River and complete its landscape. They also have close visual and compositional connections with Rother's Mills located on the opposite right quay. This area is complemented by the revitalized river bank space and other architecture, performing important cultural, social and representative functions throughout the region. The focal points of this fragment of the city are historic towers of churches: a gothic cathedral of St. Marcin and Mikołaj located near the Old Square and on the western side a neo-Renaissance church of St. Trinity.

4. Conclusion

A domination of historic buildings was broken by implementation of new buildings in the compact structure of the historic centre and it was skillfully adapted to the size of neighboring historic buildings. Both featured developments on the Mill Island and its surroundings were created in the spirit of similar design approach. Revitalization of the mills and the construction of Nordic Haven were carried out in about the same time. Both of them, formally and functionally different, built on the basis of various conditions, penetrated into the historical, economic and social context of the city, creating a diverse shape of the Brda quay in Bydgoszcz. These buildings, so different in form, fit into the contemporary image of the city and shape its image as the city by the water.

As Teresa Bardzińska - Bonenberg notes in her research, "cities and buildings have always been dependent on water. It was available through the natural forms of rivers, streams or lakes, or through the concept of systems whose maintenance became an important factor in organizing social life." [8] Today, a number of quays have been revitalized, some Polish examples include Bulwary Filadelfijskie in Toruń, banks of the Rudawa and the Vistula in Krakow, Vistula Boulevards in Warsaw or boulevards

on the Warta in Gorzów Wielkopolski.[9] Wojciech Kosiński in the book "City and the city's beauty" noted that water and decorative banks in the city's style and their construction have been a mark of prestige for centuries.[10]

The Brda River and the Bydgoszcz Canal have always been important elements on which the spatial and economic development of the city was based. Along with the change in their use, after years of neglect, attempts were made, through multi-stage revitalization programs, to bring back architectural and urban values to these places. The Mill Island with its buildings has become the most important public space of Bydgoszcz as it is filled with symbols referring to the industrial history of this area, but also an area of greenery with new, mainly cultural functions. The river and its waterfront allow for an effective presentation of the changing contemporary downtown panorama, of which the objects of Rother's Mills and Nordic Haven building have become important elements. As architectural focal points they determine the city's style, they are its spatial signs, features providing the downtown space its identity. However, it is still necessary to search for valuable formulas for shaping this particular urban space, which, especially in the surroundings of the residential tower, will have an impact on the urban and landscape values of Bydgoszcz, which has always been connected with water.

Kevin Lynch in his work "Image of a City" called the urban landscape a skeleton that plays an important social role, and when it is alive and integrated with the scenery, it provides residents with symbolic patterns and creates images of collective memory. A good environmental image (of the city) is a source of a feeling of emotional security, and the person who has it can build a harmonious relationship between themselves and the outside world.[6] It remains an open question whether this happens in the case of coexistence of the featured developments.

Acknowledgements

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