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SPATIAL TRANSFORMATION OF A HERITAGE CITY BY INFILL DEVELOPMENT: THE CASE OF RACIBORZ OLD TOWN

The sustainable development of urbanised space requires the implementation of long-term measures concerning pre-existing and planned development. Development strategies for large and small cities emphasise space transformation following environmental principles. This can be considered as a tool to facilitate the sustainable development of existing urban layouts. Hence, the principal objective is to identify problems with sustainable infill in city centres. This paper will use Raciborz as a case to show how implementation guidelines can be developed that are sensitive to the city's spatial development history. Against this background, comments will be made on selected design scenarios of a city block that contained the site of the former Raciborz Synagogue. These scenarios are considered optimal from the standpoint of the city's urban quality, understood as a conglomerate of functional, technical, aesthetic, and social values. It also points to conflicts and conflicting expectations concerning the site in question and defines a framework for compromise.

Keywords: city centre, infill development, heritage, spatial transformation, spatial development factors

1. INTRODUCTION

This paper will discuss aspects of urban heritage preservation in cities. Urban heritage is an important part of the heterogeneous city structure and is usually subject to strict control. It consists of tangible and intangible elements of various historical

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value and significance, scale, and spatial context. This includes objects/complexes of lower importance that have been rearranged or transformed that altered their previous appearance.

The ICOMOS definition defines heritage as a broad concept that includes natural and cultural environments. It encompasses landscapes, historic places, sites, built environments, biodiversity, collections of past and continuing cultural practices, knowledge and living experiences. It records and expresses the long processes of historic development that form the essence of diverse national, regional, indigenous, and local identities and is an integral part of modern life. It is a social dynamic reference point and a positive instrument for growth and change.

The conditions of postmodernity question the resilience of common values and references that are constantly changing. Technological tools can make the perception of change quick often leaving people little time to understand and adapt to such change leaving no references for a stable identity. Martorell suggests that heritage may be a powerful element anchoring societies/communities to universal values that strengthen attachment to a location and its social and cultural contexts [Martorell 2016]. Each locality or community's particular heritage and collective memory are irreplaceable and an essential foundation for development, both now and into the future. Moreover, the relevance of sustainable economic, environmental, and social conditions will be seen as interconnected elements of the same process (UNESCO). The increasing significance of heritage in the process of transforming sites/cities toward sustainability presents challenges for their preservation and maintenance. Currently, the process of reformulating the concept of heritage and its protection is ongoing with the needs and conditions of the contemporary [Szmygin 2016].

Research and practice have demonstrated that urban heritage plays an important role in enhancing the quality of life in cities and contributes to economic growth globally. So, the protection, conservation, and enhancement of a heritage asset has become a key strategy in achieving urban sustainability. It will also allow preserving and improving the spatial culture at the architectural level as well as the more abstract, intangible level. As a result of random and uncontrollable processes and the expression of a conscious design, spatial culture will create a valuable background for future development [Gerber 2012]. Today cities are confronting strong tensions for implementing policies and programs for sustainable action [Fouseki, Guttormsen, Swensen 2021]. This involves the continuing challenge to provide secure and sustainable places to live in the face of intense development pressure, dynamic spatial and social change and a diverse range of possibilities and contradictions [James 2015]. Efforts to achieve sustainability are often in conflict with economic growth and effectiveness [Jabareen 2006] and threaten the value and integrity of heritage. Conservation and, in the case of architecture, proper functional and technical adaptation can ensure the continuation of a work's tangible and intangible life [Barbosa, Oliviera, Pinho 2010]. From this standpoint, the preservation of a building or architectural complex of historical value becomes possible via its adaptive reuse, which

corresponds broadly to contemporary requirements as well as supplementation via extension [Rogerson 2020]. Thus, the notion of preservation also refers to locations/sites where important, prestigious buildings, of often high historical and aesthetic value, once stood.

One important way of intervening in heritage sites is infill development. Infill development seeks to construct or redevelop homes, businesses, and public facilities on unused and underutilized lands within existing urban areas. Infill is a crucial ingredient in accommodating growth and leading communities to be environmentally and socially sustainable. It encourages more compact and interconnected urban development that can better meet community needs by making them affordable, walkable, safe, cohesive, and socially supportive.

1.1. Urban interventions in heritage areas of cities

Historic cities incorporate a promise for the future. They contain the “genetic code” and “genetic seeds” of specific deep structures and corresponding human practices and processes that future generations may benefit from [Fouseki, Gutormsen, Swensen 2021]. Once reactivated, these seeds can develop in different soils, bringing social relevance, emotional content, and sensorial enjoyment to emerging new urban structures [Stefano 2010]. Change in urban structures is inevitable. Buildings, streetscapes, and urban areas continuously evolve according to technological change and the needs of their inhabitants. In cases of evolutionary development or redevelopment after disasters, it is essential to determine the role of contemporary architecture and its effect on change in heritage areas. Agreement on interventions that will protect and conserve the unique character and quality of a historic environment recognized by communities as important for future generations must be started.

While historic areas typically exhibit a range of heritage values, such as social, historical, and architectural, the design quality and aesthetic values of a new insertions are also important [Sanders 2015]. While the impact of new development in historical and design contexts may be seen as subjective, increasing development pressure has pushed governments and the conservation community to provide more objective guidance and rules to secure the quality of outcomes [Mac Donalds 2011]. Guidelines and rules are presented as general principles at the global community level and more precisely elaborated for countries, regions, and cities. Urban and architectural interventions in heritage areas are now based on international documents and charters such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM) and the International Commission on Monuments and Sites (ICOMOS) [Elnokaly, Elseragy 2013]. An ongoing debate is now occurring globally on the need for such standards to achieve

some level of consensus at an international level. It is worth underlining that communities and, more widely, space users also play a significant role in participatory actions on a local scale.

2. HISTORY OF RACIBORZ: PHASES OF ITS SPATIAL DEVELOPMENT

Raciborz is a medium-sized city located in the Silesian Province of southwestern Poland on the banks of the Oder River at a crossroad of many important trade routes. Reference to Budorgis – presumably Raciborz – can be found on Ptolemy's map from 142-147 CE. The city gained municipal rights in 1217 under Flemish Law, and later in 1299, Prince Przemyslaw transferred power in Raciborz to the city council according to the Magdeburg Law. Beneficial rights provided good conditions for the city's development. This history has strongly influenced the city, shaped its multicultural nature, and brought prosperity, wars, and threats. Raciborz first belonged to the Silesian dynasty of Piasts (up to 1551), later to the Habsburgs and finally was attached to the Kingdom of Prussia. After the First World War (as was the case of the predominant part of Upper Silesia), Raciborz was ethnically mixed, having citizens of both Polish and German origin. A plebiscite in 1921 established a border between Poland and Germany based on nationality. The new border saw Raciborz remain a German city. After the Second World War Raciborz was incorporated into Poland [Newerla 2008].

The Old Town of Raciborz is situated on the left bank of the Oder River, with the castle located on the opposite (northern) bank. Chronicles from the eleventh-century mention Raciborz Castle and its layout that follows the old settlement plan dating to the thirteenth century. Gothic and Renaissance elements are present in the Castle's architecture. Initially, Raciborz Castle was owned by the Silesian Princes and later belonged to Czech and German ducal or noble families.

The spatial development of the city reflects its history according to the prevailing social, political, and economic conditions. Its geographical location and the rights mentioned above received in 1217 and 1299 allowed Raciborz to grow from a small settlement into a city of regional significance.

Raciborz's nineteenth-century spatial layout formed most probably in the second half of the thirteenth century. It is typical for towns founded in the Middle Ages and has an almost-regular circular shape containing dense development framed by the city's fortifications. Based on a rectangular grid, the original plan covers about 30 hectares being a single, regular plot of 50 by 200 feet. Three plots (or a multiple of three) were joined into larger blocks. This system was readable in the nineteenth century in the northern and southern frontages of the Market Square. The module adopted in the eastern frontage resulted from the distance between the already ex-

isting Dominican and parish churches. Market Square is rectangular with dimensions ranging from 200 to 400 feet with a long axis along the north-south line forming an essential part of the urban compositional system [Barciak, Sepial 2011]. There may have been a town hall, a cloth hall and other public services connected with the Market Square. This hypothesis is largely conjecture because there is no evidence and archaeological proof. Residential buildings were initially wooden and gradually replaced with brick starting from the fourteenth and fifteenth centuries [Piekarski 2004].

The entire system of city fortifications consisted of walls, towers, gates, and a moat. The city's defensible location allowed it to avoid the construction of a full circle of fortifications. From the north, the city was protected by the river and from the east by wetlands. The construction of brick fortifications would have been a significant challenge for the then-urban community and taken considerable time to complete. As a result of great efforts in the late Middle Ages, Raciborz had a full brick circumference wall with a total length of about 1750 m. The southern defence walls were the thickest (2.2 m to 3.05 m) with much thinner walls on the western side. The external face was always thicker (about 0.8 m), and the internal face reached a width of approximately 0.15 to 0.3 m [Kozłowska, Turakiewicz 2004]. Its strength from the north was the river, from the east the swamp, and from the south and west the moat. In the construction of the walls, the so-called unfired brick, obtained from an outside kiln, was used. The grey-red colour of this block is the result of insufficient sintering of the clay and sooting in the brick structure. A sand-lime mortar was used to join the blocks [Pluska 2000].

Major roads connected the gates to the central square. Formerly, only two gates led to the city: the western one, known as Wielka (the Great), Mikołajska or Glubczycka, and the northern one, called Odrzanska or Zamkowa. A third gate, the southern one, called Nowa, was built most likely in the mid-fourteenth century. Rescue archeological research at the discovery of the relics of the Great Gate was carried out in 2016 and 2017. This allowed its exact location to be known and the examination of the foundation walls of both the Gate and north section of the defensive wall having a 3 m length and 2.4 m width [Turakiewicz 2018]. As in the case of many walled cities, the fortifications have not survived with only fragments of the brick city walls and one gate called the Prison Tower remaining. The rest became damaged over time, mainly during intense urban development in the 1900s. The new urban fabric that extended the city walls damaged the old fortifications. As in the case of many fortified cities in Europe, significant remains of Raciborz walls and defences survived below ground.

Today even detailed archeological excavations cannot establish the exact course of the walls. When considering the city gates, there is no evidence of how they looked or their architectural features [Turakiewicz 2019].

It should be mentioned that the dense development within the city walls that evolved over the ages always respected the main principles of the original layout until the advent of the nineteenth century (Fig. 1). Established in 1848, a railway

The city's development then spread beyond the old fortifications, creating new housing estates and districts along the original east-west and north-south axes. Successful industrial development brought with it increased building density within the Old Town and outside the city walls. New buildings and street blocks appeared along the above-mentioned axes enlarging the Raciborz urban area (Fig. 3).

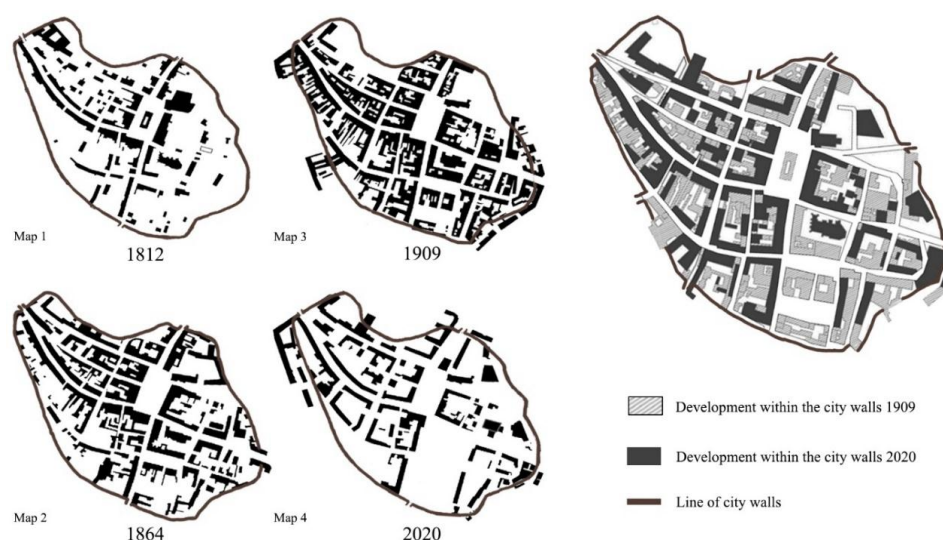


Fig. 3. Stages of the spatial development of the Old Town of Raciborz in the years 1812-2020: comparison of development density between the city's most prosperous period (1909) and today [original work]

A sinusoidal process describes the city development. The flux of economic prosperity, war, and emographic change saw Raciborz with 3000 residents in the immediate post-war period. Comparing this population figure to the 50.000 plus figure in 1939 shows the dramatic scale of the decline. The post-war number of inhabitants reached and exceeded 70.000 in the 1970s [Wawoczny 2007]. However, the demographic changes in Poland in the last thirty years reduced the city population to 50.000.

2.1. Damage and rebuilding of the city after the Second World War

The Second World War brought damage to 85% of the urban fabric in Raciborz, including many buildings with significant heritage values (Fig. 4-5). The rebuilding process started in 1945 and generally respected the original layout and building dimensions. Because of the urgent housing demand, there were no conditions and financial resources for careful redevelopment of the former existing heterogeneous

architecture of the Old Town with its rich variety of forms and details. Architecturally, the 1940s brought a wave of Eclecticism. In Poland, like other countries, there was a reinterpretation of the so-called Socialist Realism. Inspired by the traditional Polish manor house heritage architecture, this allowed for differentiated forms and volumes to new buildings. Urban conceptual proposals favouring enclosed building blocks instead of open urban forms enabled the preservation of the original Medieval layout. Paradoxically, eclecticism rescued the nature of the Old Town. This architectural style, full of free citations from the past was compulsory in Poland until 1955. While this rebuilding process persisted, modernism eventually returned with its purist aesthetics resulting in reconstruction that did not respect the past. Poor economic housing resulted in ugly mundane development in some of the most significant parts of the city with aesthetically displeasing modernist blocks of flats in the Old Town landscape. At the same time, architectural projects started to restore heritage objects. These projects based on studies of archival documents and old urban plans brought very satisfactory results (Fig. 4) [Newerla 2008].

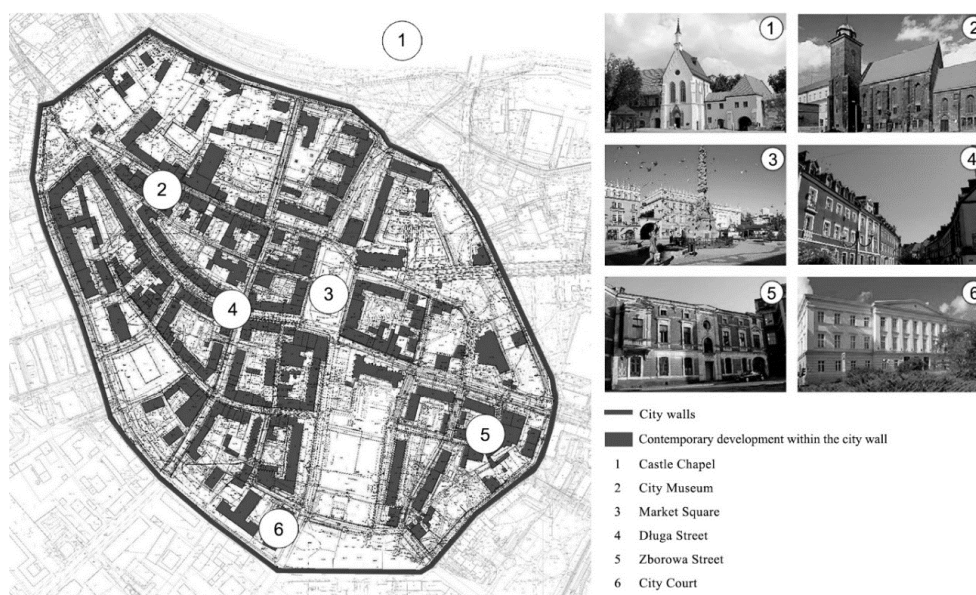


Fig. 4. Major heritage sites and buildings of Raciborz and their location on a plan of the city [original work]

The Old Town today is a lower density of development than before the war. While the frontages of its streets were rebuilt, many of the interiors of city blocks remained void. Some of the undeveloped areas have been transformed into car parks and recreational areas. The paradox is that these spaces improved the living

quality for the residents when compared to the pre-war urban form of the old city, which was more densely packed and congested. The original urban layout of Raciborz at different phases of its development in contrast to the contemporary city structure, illustrates the process of transition from an incremental urban growth pattern to a patchwork one (Fig. 8). Heritage objects are mixed with contemporary buildings as well as those from 1950-1970. New and old roads, paths, parking areas, squares and recreational spaces are now interweaved into the urban fabric. The mosaic of styles makes future spatial interventions more difficult. There is no predominant style that might be used to unify the urban and architectural forms.

Overall, the rebuilding of the city after the Second World War stopped when all the “easy” and “less problematic” lots within the Old Town were filled with the new development. Areas too large, with more difficult building conditions or undetermined ownership, remained empty. The economic conditions pushed investors out of the central area to the adjacent zones. Nevertheless, infill projects continued.

Although the complete reconstruction of pre-war Raciborz is neither possible nor justified, smart interventions can be made to improve the city’s amenities and provide conditions for its future sustainable growth. Sensitively designed infill development can help to achieve efficient spatial, aesthetic, and social outcomes [Reep 2009].

The concept of the “city genetic code” is relevant regarding the city of Raciborz. This code tracks the zoning and urban layout defined at the locations, which has developed over time. The urban form experienced minor changes from the Middle Ages until WWII even as the buildings were transforming. The contemporary challenge is to propose new ways of embedding urban heritage values into modern city structures. Cities are physical manifestations of our competitive and cooperative behaviours. The tension between these two forces generates dynamic equilibriums whose material expressions are cities and their evolutions. Hence an urban genetic code is proposed, according to which cities emerge by connecting nature and urbanity. It is a sum of multiuse, independent micro-areas, centrality, job locations, parks, shopping services and amenities. Isobenefit Urbanism proposes change and future expansions by postulating complete preservation of historically valuable areas with minor interventions that offer contemporary services and development out of heritage centres. From an environmental angle, Isobenefit Cities are resilient, low carbon, and adaptive [D’Acci 2014].

2.2. Factors that condition Raciborz’s spatial development

The history and scenario of the spatial changes of Raciborz are remarkably similar or the same as other European medium-sized cities with long and rich histories and dramatic events that disrupted and hampered their development. Historical events such as wars, catastrophes and attempts to recover from them created a complex

conglomerate of conditions. These conditions, properly identified and documented, should allow us to formulate scenarios for the further development of the city in all its aspects, based on the potential of the historical spatial system, heritage structures, and social energy.

Economic and legal factors as well as socio-spatial, strongly condition future interventions into the urban and architectural tissue of Old Town Raciborz. Tab. 1 lists the main challenges and opportunities that Raciborz's spatial development faced.

Recent decades have brought significant economic development to Poland. This has provided cities with greater development capital and flexibility in entering alliances and partnerships that accelerate municipal funding of urban and architectural interventions in odd-town areas. While conservation plans have been completed for Raciborz, only a few infill buildings have been built in the Old Town area. Selected fragments of the city's fortifications have been uncovered along nearby public spaces. Archeological investigation has allowed insights into underground heritage. European and state funding dedicated to cultural heritage has proved to be of great assistance in carrying out and completing these projects. Raciborz is located within the Katowice Agglomeration (which has a population of 4 million people) and has drawn benefits from microtravel, especially during the pandemic. The growing number of tourists arriving in Raciborz has become an impetus for the development of services. Buildings that accompany tourism have initiated change in the exhibition of key art objects, such as an Egyptian mummy or other items stored at the Municipal Museum. While no detailed rehabilitation plan is in place for the Old Town of Raciborz, study programmes and projects focusing on fragments and individual plots are underway. The active participation of the employees and students of the Faculty of Architecture of the local State Higher Vocational School on essential sites and spatial problems is also notable.

In recent years, new heritage building restoration technologies have been developed. New materials that can be used to secure, repair, and fill in historical substances have become available. This primarily concerns damp proofing, which utilizes material and technological systems that allow simultaneous addressing of future damp penetrations, the transport of moisture through the walls via capillary action allowing the rendering of damp walls affected with saltpetre rot and biological contamination with plasters that are resistant to harmful salts. New methods of façade and roof renovation (cleaning methods for a wide selection of plasters, mortars, and paints) allow buildings of significant historical value to be restored to their former glory [Zawadzki 2021]. These technologies are becoming increasingly widespread, accessible, and affordable with clients receiving support via the know-how of contractor companies. We also cannot ignore the significance of new technical solutions that adapt buildings to contemporary standards and functions thereby expanding the potential for adaptation, modernization, and implementation of the complicated functional programmes inside them.

Methods of studying and documenting heritage buildings have also developed [Oliviera, Pinho 2008] due to the Internet and social media. This allows increased

access to archival materials, including those in private hands. Municipal conservation services have likewise grown bringing active participation in architectural and construction interventions in historically valuable areas promoting innovative materials and technologies [Leixnering, Hollerer 2021].

Tab. 1. Factors and possible support measures that were found to affect future interventions in the Old Town area of Raciborz

Factors	Possible Actions
Economic and Legal	
<ul style="list-style-type: none"> – a growing level of wealth thanks to the successful economic transformation that lasted for the last thirty years – heritage is an essential asset in strengthening tourism and stimulating local/regional growth, even if bringing threats and provoking conflicts between cultural institutions (the City Museum and the Museum – the Piast Castle) – lack of complex and consistent conservation programmes 	<ul style="list-style-type: none"> – procuring funding for heritage restoration; institutional and private developers can apply for National/European funds afford also accepting programmes requiring initial personal financial participation; local governments start large-scale projects – development of the infrastructure accompanying tourism: services and facilities e.g., food, leisure, culture – attempts to initiate programmes and projects relating to fragmentary tasks
Technical and scientific (professional)	
<ul style="list-style-type: none"> – new and innovative materials and technologies available for heritage restoration – access to a wide selection of research findings on heritage objects, archive and private data repositories, and suitable policies easing interventions 	<ul style="list-style-type: none"> – disseminating reports with research results, and the professional publications among officers/specialists responsible for heritage protection in cities – collection of data and information
Social	
<ul style="list-style-type: none"> – growing residents' and city users' awareness of advantages that heritage brings to a city: heritage considered as a provider and supporter of continuity, identity, a sense of place, and sustainability 	<ul style="list-style-type: none"> – public participation programmes involving local communities in decision-making processes concerning the future site or building use – granting municipal money for Citizens' Funds
Spatial	
<ul style="list-style-type: none"> – architectural and urban heritage shaped according to the course of history, especially influenced by damage caused by the Second World War (but also previous wars and battles) and the reconstruction that followed 	<ul style="list-style-type: none"> – dissemination of knowledge about the history of architecture and the urban space among residents and tourists: exhibitions, publications, websites

Source: original work based on McConnell, Wiley 2010.

Contemporary city-dwellers, including those in Raciborz, appreciate the historical legacy and the role that heritage buildings, complexes and districts play in forming the identity of cities and enhancing their positive image and brand. The

importance of place and its significance to city users reinforces and enriches the social tissue. It also builds a sense of unity and readiness to participate in transforming the city and its fragments. As J. Szmelter [2018] argues, the matter of work, as a physical object, is also a manifestation of values that jointly define it as cultural heritage. Today heritage is not only something to protect but also a potential that can be used for future development. It is indisputable that a city's economic development and prosperity correlates with the skilful use of cultural heritage assets. Incorporating cultural heritage into economics and social transformation will also help ensure its effective preservation [Purchla 2014].

The contemporary image of historically significant places and buildings is a result of the transformation of past urbanized space across centuries or decades. Settlement structures, especially their centres, have transformed following a course dictated by political, economic, social, and technical determinants. Hence, interweaving periods of prosperity and decline have left their material traces within space. Development in these areas allowed for spatial expansion, a manifestation of wealth expressed via architecture, and technical and formal experiments. At the second end of the spectrum are wars and catastrophes, especially the Second World War. The experience of this war, although it may appear distant in time from the perspective of a human lifespan, is still evident on many levels including urban space and the collective consciousness. Raciborz belongs to a group of Polish cities that were most affected by the war.

An awareness of a broadly understood appearance of the city before its destruction has allowed us to better understand its current form and specify further transformation trajectories.

2.3. Case study – The Synagogue Block

As mentioned above, the city lost most of its compact urban tissue in addition to buildings of high historical value, including Gothic churches that were later successfully rebuilt. The city centre became less dense: City blocks were wiped from the face of earth, with the ancillary development of most blocks destroyed. One of the most affected areas was the Old Synagogue block in the centre of Raciborz within its city walls, close to the Main Market Square. Therefore it was selected as a case study to show possible approach to urban intervention strategies.

This rectangular block is located between streets of high historical significance, such as Szewska, Mickiewicza and Mlynska (Fig. 5). Mickiewicza Street links the Market Square with a nearby train station and acts as one of the city's major compositional axes.

The rectangular block that was the site of the Old Synagogue is in the centre of Raciborz in close to the Main Market Square. It is located between streets of high historical significance, such as Szewska, Mickiewicza and Mlynska, that delimit

the block (Fig. 5). Mickiewicz Street links the Market Square with a nearby train station and acts as one of the city's major compositional axes.

The name Szewska Street (Shoemaker Street in English) is derived from shoemaker stands that were initially used to sell shoes, as reported in a chronicle from 1377. The chronicle also mentions the essential role of this part of the city in its development. The area of the Synagogue, even before its erection, hosted important municipal functions, including the first school to be established in Raciborz in the fourteenth century on the corner of Mickiewicz and Szewska street, and the Pod Trzema Koronami Hotel, which opened in 1771. This part of the Old Town also included some important large-scale buildings: A Gothic parish church and a monastery of the Joannites. Maps of Raciborz's Old Town from various periods invariably depict Szewska Street as densely developed. The central part of the area was occupied by a large building – a synagogue. Built in 1828, the synagogue was remodelled and extended in 1889 after the purchase of an additional plot near the previous building by the Jewish community. The Synagogue was severely damaged during the Kristallnacht of 1938 (Fig. 6). Its remains were dismantled in 1958. The remaining buildings and neighbouring blocks were destroyed in 1945 [Wawoczny 2007b]. At present, the corner of Mickiewicz and Mlynska streets features two small-scale office buildings and a small townhouse from the nineteenth century. The informal pedestrian path that links Mickiewicz Street with the Town Hall, an important route for residents, crosses the block along its diagonal.



Fig. 5. Location of the Synagogue block (to the left) and a view of the site as seen in the present day (on the right) [Google Maps]



Fig. 6. Left: Synagogue in Raciborz, view from the south [from the collection of the Municipal Museum in Raciborz]; right: the Synagogue during the fire of 1938 [www.nasz raciborz.pl]

The block on which the synagogue used to stand should be filled with development with a density similar to the masses and building lines of neighbouring areas. During the post-war reconstruction, the southern frontage of Mickiewicz Street was set back relative to the previous building line, which reduced the area of the block. This change is irreversible as the south-eastern corner is occupied by a small-scale office building with neutral architecture. Its existence now determines the contemporary building lines of two perpendicular streets. It necessitates the infill of missing development in the northern part of the plot. A small tenement house that survived the war confines this area from the north and is an obstacle. There are two contradictory characteristics of this area that can affect its further development: the diagonal pedestrian path from the Main Market Square to the Town Hall, and the use of the place that was occupied by the synagogue. The green public garden that covers most of the block abuts an extensive park, which extends the accessible greenery complex in the city centre. The ambiguous status of this area in terms of identity and image has become an opportunity to propose a diverse range of design proposals [Labadi, Logan 2015].

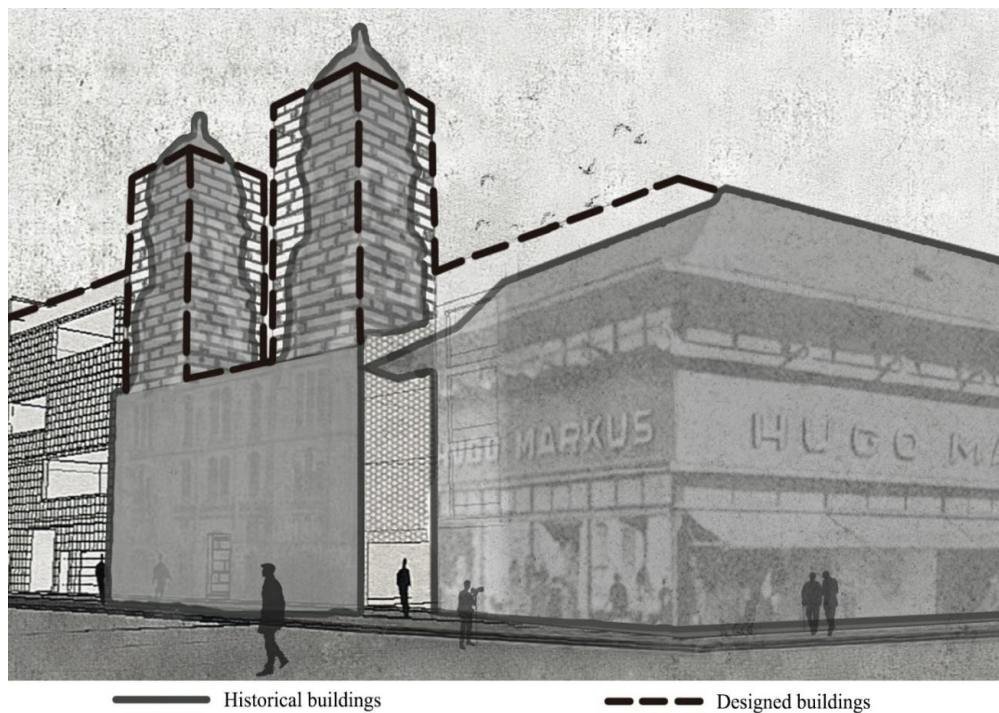


Fig. 7. Sample comparison of the dimensions of existing and newly designed development as featured in design proposal [D. Poluk, based on a design by students B. Jonak and S. Merkel from PWSZ in Raciborz, 2017]

Three proposals presented in Fig. 7-10, respectively, present different solutions to the difficult design problem that is the Synagogue block. Design proposal 1 (Fig. 7-8) attempts to faithfully recreate the dimensions of the development and highlight the rank of the place by adding a prestigious function to a new building (an art gallery). Solution 2 (Fig. 9) focuses on recreating the peripheral development of the block, enclosing it fully. Proposal 3 features development along Mickiewicz Street, but leaves the site open inside the block, which preserves the diagonal pedestrian path (Fig. 10). All the proposals account for the ‘genetic code’ of the city and respect it [Oliviera, Pinho 2008]. An effective interpretation and translation of the values found in this code allow contemporary urban designers and architectural forms to attain authenticity. To create urban designs of infill development concordant with the “genetic code”, one must first correctly decipher and interpret the original urban layout and account for and protect the city’s skyline [Stachura 2016].

The theoretical design of the Synagogue block demonstrates the complexity of conditions that must be met to inspire creative design solutions.

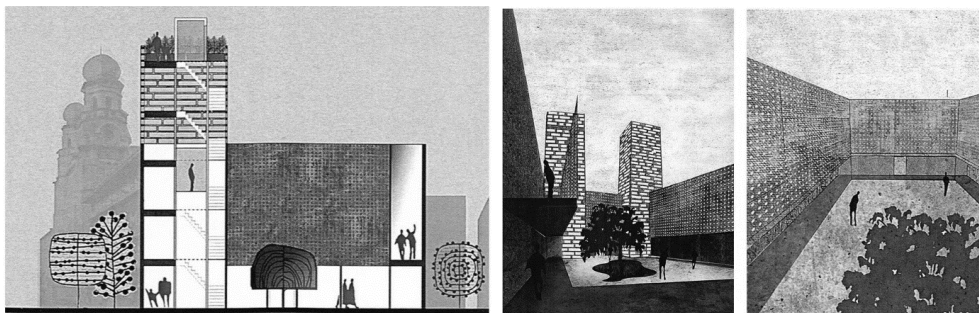


Fig. 8. Design proposal 1: the recreation of development dimensions within the block [D. Poluk, based on a design by students B. Jonak and S. Merkel from PWSZ in Raciborz, 2017]

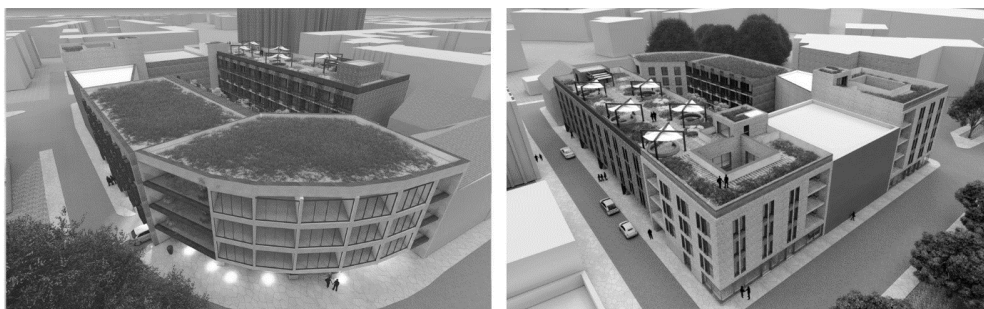


Fig. 9. Design proposal 2: filling in the block with peripheral development [D. Poluk, based on a design by students B. Jonak and S. Merkel from PWSZ in Raciborz, 2017]

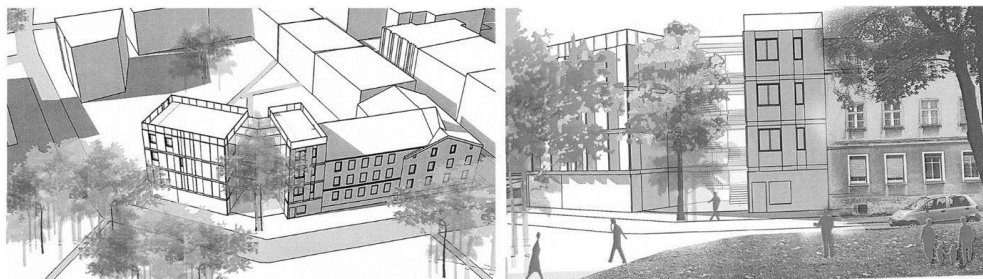


Fig. 10. Design proposal 3: filling in the southern frontage of the block and preserving the existing, diagonal pedestrian path [D. Poluk]

3 CONCLUSION

Infill development can enhance and increase the attractiveness of urban space. By recreating a compact and unifying urban and architectural form, we can restore the scale and aesthetic value of damaged or decayed urban tissue. Beginning with the Second World War reconstruction, infill development has been an important tool for protecting heritage remnants such as urban blocks and architectural complexes. The spatial quality and utilization of architectural heritage for new functions will stimulate economic growth and help generate new activities that enhance how residents identify with a place [Griffiths, Lunen 2018].

This paper has presented the problem of urban and architectural interventions within Raciborz Old Town. Reconstruction began over seventy years ago. The preservation of its original urban layout and the architectural quality of the new buildings was dependent on their historical value and period of restoration. Buildings of high historical value were rebuilt in compliance with archival documents, and urban blocks were infilled (either entirely or in part) with a new development based on the prevailing economic conditions in Poland at the time. The first phase was eclectic, later followed by modernist features applying panel block technology.

There are many opportunities to improve the heritage of the city centre's spatial quality and make it more sustainable [Griffiths, Lunen 2018]. But significant challenges remain unaddressed due to their high complexity and the necessity to engage significant resources. One such area is the urban block – a former synagogue site. The synagogue was destroyed by fire in 1938 and ultimately demolished in 1958. This area is the subject of a multi-aspects urban analysis, including compositional aspects and traffic connections. The conclusions from the above-mentioned studies are as follows:

1. Infill development should respect the city's generic code – the scale of the original development, its articulation and historical land divisions.

2. Buildings that no longer exist but are still present in the public consciousness can become an inspiration for contemporary architectural solutions that commemorate them and become a starting point for generating important new sites within the city's space. In combination with a prestigious function, such as a cultural facility, there may be a possibility to restore the significance of a now-decayed area.
3. Conflicts of interest or "temporary" forms of use preserved by custom can act as obstacles to expected transformation, as well as a field of negotiation.
4. Public transportation used throughout every design phase is fundamental for sustainable design.

Conceptual architectural designs and site plans presented in this paper demonstrate a range of possibilities that meet the selected criteria and considerably improve the spatial, social, and economic value of Raciborz's Old Town. The general findings can be applied to cities that are similar in scale and spatial problems.

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PRZEKSZTAŁCENIE PRZESTRZENNE MIASTA O ZNACZENIU ZABYTKOWYM POPRZEZ ZABUDOWĘ UZUPEŁNIAJĄCĄ NA PRZYKŁADZIE MIASTA RACIBORZA

Streszczenie

Zrównoważony rozwój przestrzeni zurbanizowanych wymaga wdrożenia długofalowych środków z zakresu istniejącego oraz planowanego rozwoju tego regionu. Strategie rozwoju dużych i małych miast kładą nacisk na transformację przestrzeni zgodnie z zasadami ochrony środowiska. Działania te można uznać za narzędzie ułatwiające wprowadzanie zasad zrównoważonego rozwoju w istniejących planach urbanistycznych. W związku z tym głównym celem artykułu jest określenie problemów związanych ze zrównoważonym uzupełnieniem tkanki centrów miast. W artykule tym jako przykład wykorzystano miasto Racibórz, aby pokazać, w jaki sposób mogą zostać opracowane wytyczne wdrożeniowe, które zapewnią podtrzymanie historycznego aspektu zagospodarowania przestrzennego miasta. Na tym tle pod rozważanie poddane zostaną wybrane scenariusze projektowe kwartału miejskiego, w którym znajdowała się była synagoga raciborska. Scenariusze te są uważane za optymalne z punktu widzenia jakości tkanki miejskiej, rozumianej jako konglomerat wartości funkcjonalnych, technicznych, estetycznych i społecznych. Wskazują one również na konflikty i sprzeczne oczekiwania dotyczące danego miejska i określają zasady wypracowania możliwego kompromisu urbanistycznego.

Słowa kluczowe: centrum miasta, zabudowa uzupełniająca, dziedzictwo, przekształcenia przestrzenne, czynniki rozwoju przestrzennego

