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Development of the urban space surrounding selected railway stations in Poland

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ABSTRACT

At present, many railway stations, in spite of being architecturally valuable, are subject to de-capitalization and degradation, which increasingly leads to demolition including elements or even entire railway stations of historical importance. Therefore, there arises a need to transform these facilities – as well as their nearby surroundings – into service areas not only for railway passengers but also for the consumer or tourist. This article presents an overview of the types of development of functional and spatial areas around a railway station, as well as the building itself, on selected examples in cities of Poland. In past historical periods, the surroundings of railway stations often became the new core of the studied centres, creating new urban structures. Train station forecourts, as well as access roads leading to railway stations, became specific links of railway infrastructure, the main points of which were railway stations, with the original urban layout. Unfortunately, the decline in the importance of rail transport has contributed to the recession and degradation of these spaces, and often to changes in their functions. This article refers to the concept of redevelopment of the railway station area, which emphasizes the creation of hubs integrating various modes of transport on the one hand, and transforming the area around the stations into an area of development of new business activities, on the other. Some of the discussed train stations have undergone a thorough renovation (e.g. Kraków Główny, Katowice and Poznań Główny), frequently in an attempt to allude to global trends in the commercialization of space and transport integration within station squares. However, this poses a problem and a challenge for decision-makers attempting to redevelop such facilities and the spaces associated with them.

KEY WORDS: railway station, commercialization, urban space, transportation hub

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1. Introduction

With the development of industry, railways became an increasingly important factor accelerating the spatial expansion of towns and cities. Hub stations, in which rail tracks criss-crossed from different directions (often countries), required more staff, which further facilitated the economic well-being of a given town or city (SOIDA ET AL., 1997). Each city is subject to different social and economic conditions which change over time, but in spite of these, the spatial structure from the point of view of rail transport is organized by two basic elements. These are railway hubs, in this case railway stations with local and regional businesses concentrating around them, and the connections between the hubs, i.e. railways (RODRIGUE ET AL., 2006). One of the most expressive

elements of this infrastructure, which greatly influences the development of urban spaces, are railway stations. In addition, railway stations constitute a form of connection with the spatial structure of a city, and their mutual interaction adjoins the area of the railway station. Over time, the role of such squares and their influence on the nearby space has changed. Station squares have undergone an evolutionary change resulting in the adaptation of their space to the development of civilization. Originally they primarily served travellers, and their development was subordinate to the movement of pedestrians. In the inter-war period, it was the development of alternative means of transport to railways, which served the mass customer, and the train station sites were subordinated to the traffic (car parks, maneuvering yards and driveways) (ZAŁUSKI, 2010). Nowadays,

more and more station forecourts are well-suited to the specific sectors intended for pedestrian traffic as well as vehicles, but a striving for the complete exclusion of these zones from traffic is beginning to intensify.

This study aims to review and give information in the scope of presenting the development of functional and spatial areas around the railway station as well as the station building itself, using selected examples of Polish cities. The stations were selected in such a way as to show a diversity of investments in urban space and they are also significant cross-service hubs in Poland – Katowice, Cracow and Poznań. These facilities constitute a reference to worldwide attempts to develop railway station areas, but the locations of the stations in relation to their urban systems are different.

2. A railway station in urban space

Railway stations are landscape dominants and at the same time are facilities connecting rail transport with urban space. These buildings are very often showpieces and impose their character on their surroundings. Unfortunately nowadays, with the organizational changes of railway transport in Poland due to the progress of civilization, the function of the passenger service has been reduced, and many train stations are subject to de-capitalization, worsening the reception of the whole area. The literature on the subject distinguishes several ways of using facilities excluded from their primary use for railway transport (ZALUSKI, 2009):

- protection of the value of the facility without changing its use;
- leasing, mainly to service facilities until a total de-capitalization of the facility;
- adapting the facility to perform new functions;
- demolition of the facility and change of land use;
- demolition of the facility and abandonment of the site;
- abandonment of facilities and areas.

Among the models of operation there is also modernization and adaptation, which open up the public space within the historic interior of the station. These efforts are aimed at restoring architectural quality, while enhancing utility and spatial values (RACON-LEJA, 2006). In Poland, 120 stations had been modernized by 2015, which constitutes 20.6% of all active facilities of this type subject to the management of the Polish State Railways Ltd. Both architecturally and historically significant buildings (e.g. Białystok, Bielsko-Biała Główna, Opole Główne and Przemyśl Główny) were renovated (Fig. 1A) as well as those style-less

stations originating from the period of a centrally planned economy (e.g. Działdowo, Leszno, Chodzież, Ostrów Wielkopolski) (Fig. 1B). The largest share of modernized stations occurs in Lower Silesia, Greater Poland and Silesian provinces (respectively this is 13.3% and 10.8% of all facilities in a given region), while by the end of 2015 in Kuyavian-Pomeranian and Podlaskie provinces only one station (Bydgoszcz Główna and Białystok) had been modernized. During modernization work, most of the railway stations' intended use was changed, where some of the premises were allocated to commercial activities. Facilities which are meant to serve passengers, such as catering and shopping, are the most common (Fig. 1C). Some of the railway stations also provide cultural activities (e.g. a municipal library in Rumia, an amateur theatre in Szamocin, a railway museum in Węgorzewo), as well as services (e.g. a hair salon in Białystok, a Pentecostal church in Mysłowice, the Warszawa Wileńska shopping centre) (TAYLOR, 2007). In addition, well-preserved railway buildings of outstanding architectural and historical value can themselves be tourist attractions. At present, railway stations generally only serve for rail transport, and are less frequently supplemented by other types of transport, such as in Ełk (additional long-distance bus service ticket office), Namysłów and Płock (local interchanges between rail and bus transport). Buildings characterized by a greater diversification of handling different forms of transport are, however, more frequently created within large interchanges connecting at least two modes of transport, e.g. railway and city transport (Katowice), railway and long-distance bus services (Poznań), railway, long-distance bus services and city buses (Kraków). The use of the building itself, as well as its nature and importance, influence the development of the railway station surroundings. Multi-functionality of stations also affects the frequency of traffic, not only for the purposes of travel, but also in relation to the shopping and service establishments within them.

3. Development of the surrounding area of a railway station

Station buildings and areas directly adjacent to them, occupied by station forecourts, should strengthen the functions directly related to passenger handling and should also aim at commercializing unnecessary space by making it available to commercial and service activities (ZALUSKI, 2009). Station buildings, or the streets running alongside the stations, became specific links to the railway infrastructure, whose main

points were the railway stations, with the original urban layout. According to CZARNECKI (1970), in terms of organization, these areas belong to the city, but from the functional point of view they are part of the station complex. The station forecourt should be a nodal area in which various means of transport (urban, coach and rail) are interconnected.

In addition, they take different forms – a square or a street, and they have different uses – for pedestrians, for transportation, mixed, as well as for area organization – a promenade, a parking space, a street network, a service area, public transport stops, spatial clutter (Fig. 2).



Fig. 1. Modernized railway stations in Białystok (A), Działdowo (B) and Kołobrzeg (C)

As mentioned earlier, the method of spatial development of railway surroundings results from the significance of the railway station in the national or regional transport system. However, the station structure plays a key role, especially the location of the station building in relation to the tracks and platforms (the following type of building station location are distinguished: front, cross, mixed, two-level). This location has a direct effect on the range of influence of the station in the spatial structure of the city and the type of public space created around the building.

while to a lesser extent around the entrance to the building. All food, service and shopping areas are located in the immediate vicinity of ticket offices and lounges for travellers. The “level” of urban space, which provides access to the station (parking spaces, promenades, taxi ranks, driveways), has much less investment, whereby this phenomenon is modified by the size of the city. In the cases mentioned above, shopping centres were established in the immediate vicinity of the railway station, which reduced the need to invest in train station forecourts.

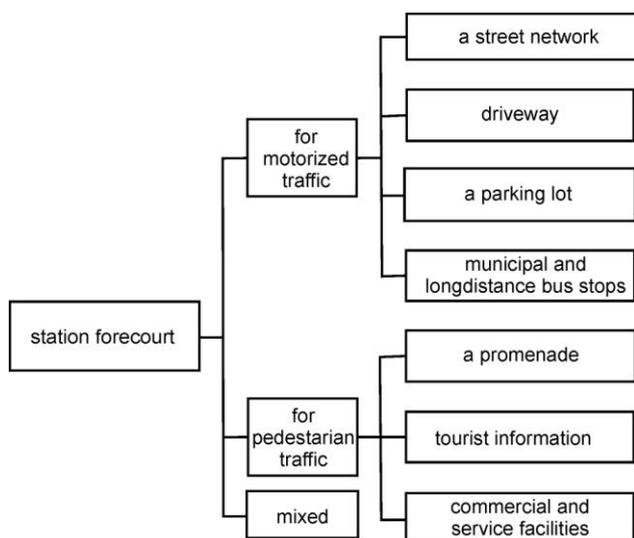


Fig. 2. Development of railway station surrounding area

A relatively rare solution is to locate the station building over the platforms (Warszawa Centralna, Poznań Główny) or under the platforms (Kraków Główny). The area of its direct influence is then concentrated mainly at the train station’s level,

A much more common layout of the railway station takes on an island form. Such facilities, due to their location between the tracks, may be deprived of direct public space, and the investments are then located near the exit from the underground passage (Piła Główna, Opole Główny) (Fig. 3A), or a footbridge over the tracks (Krzyż, town of Krzyż Wielkopolski). In the case of the Piła Główna station, commercial and service activities, as well as catering, are concentrated at the exit to the tunnel. In addition, there is also a public transport stop in the close vicinity, which enhances transportation accessibility. In Krzyż Wielkopolski (the Krzyż station), the passage down from the footbridge over the tracks turns directly into the road leading through railway housing estates (Fig. 3B), and there are no other service points. The situation of island stations with a direct connection to the transportation system of the city is diverse due to the fact that the access road (the access road), replaces the railway station forecourt and its functions (e.g. Korsze, Nowe Skalmierzyce and Kluczbork). A good example of taking advantage of such a situation is the Leszno

train station, where the traffic (parking spaces, driveways, taxi ranks), public transport (a bus stop) and cycling (a designated cycle path) are all present

in front of the building (Fig. 3C). In some cases, the island station may also have a train station forecourt, such as in the case of Grajewo (Fig. 3D).

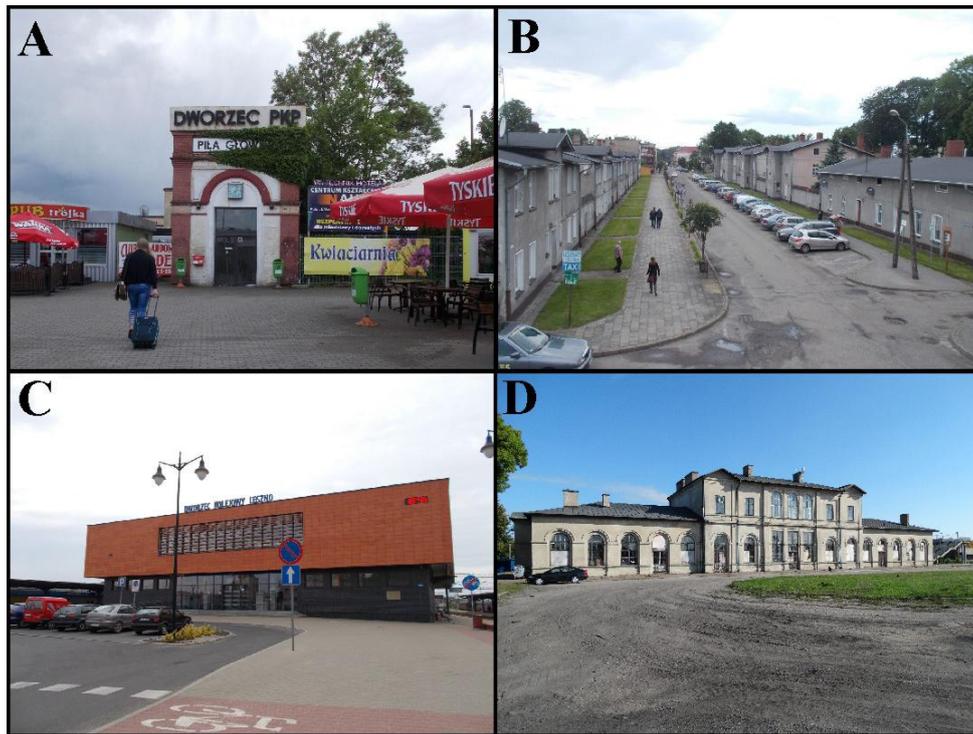


Fig. 3. Diversified spatial development around island railway stations in Piła (A), Krzyż Wielkopolski (B), Leszno (C) and Grajewo (D)

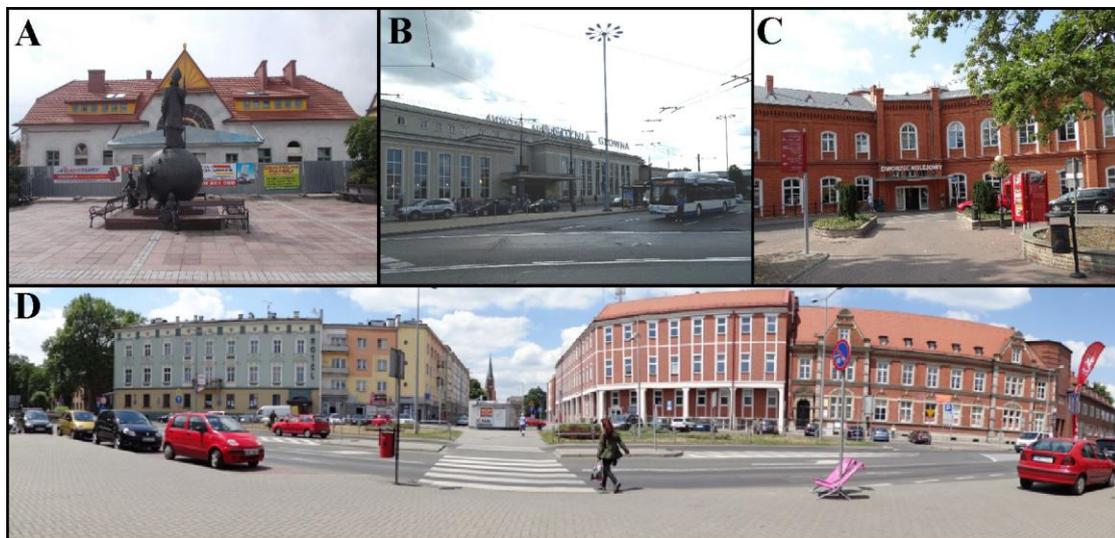


Fig. 4. Diversified spatial development around the edge railway station in Rabka Zdrój (A), Gdynia (B), Kostrzyn on the Oder (C) and Racibórz (D)

The last type of railway station location, which is the most common in Poland, has an edge form. In this case, the impact of the station building has the greatest direct range covering the entire space and taking the form of a semicircle (e.g. Brzeg, Łąpy, Nowy Sącz, Rawicz, Żywiec). As a rule, these areas perform functions related to mixed traffic (motorized and pedestrian), and the investments incorporate the entire station forecourt. Spatial

development takes on different forms, characterized by a mixed nature. Commonly, the area surrounding the station consists of an access road, parking spaces, and pedestrian routes, such as promenades (Fig. 4A), where public transport stops are often located (Fig. 4B). Not infrequently the railway station building is adjacent to the main streets of the city, as in the case of Racibórz (Fig. 4D), and then the railway functions are separated from

urban functions. In the example shown, the station square replaces the city street network and the parking spaces with a kiosk located in the central part of the square, but unfortunately pedestrian traffic has been marginalized. An interesting investment is in Kostrzyn (town of Kostrzyn on the Oder), where the information and tourist area, presenting both the history of the junction and the railway station as well as the city is located behind the access road (Fig. 4C).

4. Functional and spatial transformations of selected railway stations and their surroundings

In the course of the evolution of the spatial structure of the city, the significance of the railway station and its forecourt is also changing, as the area dedicated to the service of travellers develops places with services and commercial features (highlighting that the process takes place in facilities with a convenient transportation location). This leads to a change in the spatial planning of the surroundings of the railway station. As pointed out by ZŁUSKI (2010), modern trade is essential for improving the quality of railway stations, however, it will only take place on condition that there are enough customers using the rail transport. Multi-functional shopping centres may become integral parts of railway stations, as in Warszawa Wileńska, Katowice, Kraków Główny and Poznań Główny. The second solution is to locate a shopping centre in the immediate vicinity of the train station, often at the station square, such as VIVO! Piła in Piła, Złote Tarasy in Warsaw, Galeria Amber in Kalisz, Galeria Bałtycka in Gdańsk (Gdańsk Wrzeszcz) and others. Shopping centres have local and regional links, and their location in the railroad impact zone provides a sufficient number of consumers (LEDWOŃ, 2006). Increasingly, centres that integrate transport, shopping and services are also emerging, as these stations are visited not only for the purpose of travelling, but also for the daily handling of non-transport related matters (shopping, use of services). These actions refer to global trends, where the surrounding areas of railway station and railway stations themselves are transformed in the context of creating of a new pole of economic growth in the city (BERTOLINI, 1996). These trends are related to the fact that most railway stations occupy very valuable urban areas, often located in city centre zones (BERTOLINI, 1996; OOSTEN, 2000). Nowadays, areas around stations are often de-capitalized, which results from the competitiveness of other modes of transport, especially individual motor

vehicles and coach transport, which leads to a decrease in the number of rail travellers. This unfavourable tendency affects mainly long-distance rail transport. In light of the outlined conditions of contemporary railway stations, as well as their nearest surroundings, they should be transformed into service zones not only for rail passengers. At this point, a reference is made to the concept of revitalization of adjacent areas as nodes in the transport network and places for new business to activate these areas. With this assumption, railway stations should play an important role in the exchange between short and long distance transport (BERTOLINI & SPIT, 1998) and their spaces should be commercialized while integrating innovation into old architectural and historical context (STEVANOVIĆ & STEVANOVIĆ, 2014). The following are examples of cities where the role of the surrounding area of the railway station has changed, but they present different solutions in the pursuit of new quality while improving the accessibility of the railway station.

Katowice is an example of a city in which the railway station was relocated in the 1970s. Namely, it was moved westwards from the original station building, while preserving the historical building dating back to the 19th century (Fig. 5). The station and its forecourt were originally well-organized areas for travellers. The whole facility was built in the centre of the city on the Wrocław – Mysłowice line. The access road led to the building itself, and the forecourt constituted a friendly and neat space, with small architecture and greenery, as well as a place designated for parking horse-drawn carriages, and later cars.

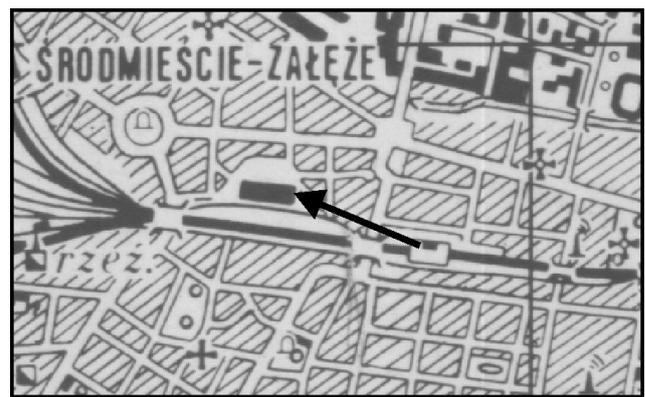


Fig. 5. Relocation of the railway station in Katowice (Source: a topographic map from the 1980s from the collection of State Archives in Katowice)

The future train station, built owing to the necessity to provide more space for travellers, was unique in Europe in terms of its architectural design and was intended to be a dominant feature and an integral part of Katowice's urban space.

Apart from its function as a service for travellers, the building was equipped with premises for numerous commercial and service purposes (GAZOWSKA, 2012). The construction of the new railway station required the transformation of urban space, which consisted in the creation of a railway station square by demolishing some of the existing buildings (Fig. 5). The square was intended for public transport, where a style-less pedestrian footbridge was constructed over it from the station building to the opposite street and it dominated the landscape.

The existing station building was brought into use in 2012, and in the course of the reconstruction, the passenger service space was reduced to the

benefit of the development of the accompanying base (services, commerce and catering), i.e. the commercialization of its space. In addition, in the building itself, a municipal bus service centre (Communal Association of the Upper Silesian Industrial District, *pol.* KZK GOP) was located, and under the railway station, on level "-1", an underground public transport station was located (for buses only) (Fig. 6B). The space in front of the station was significantly reduced in favour of Galeria Katowicka (Fig. 6A) and was dedicated exclusively to pedestrian traffic. The whole complex is a small integrated transport, commerce and service centre (Fig. 6), however, the lack of long-distance bus transport is clearly noticeable.



Fig. 6. The new railway station and Galeria Handlowa (shopping centre) in Katowice (A), underground bus station (B)

In the case of Poznań, there is a whole complex of passenger stations in the city centre, as there are four buildings of this type: Poznań Główny (an old building), Dworzec Zachodni, Dworzec Letni and Poznań Nowy, which together create a large railway complex (Fig. 7A). However, it should be highlighted that all the above mentioned stations, in spite of their usual preserved separateness, in practice serve the same station – Poznań Główny. The historic Poznań railway station, dating back to 1879, featured typical styling for its epoch. Namely, from the side of the access road, it had a representative corporeal structure in the arcade style, and its characteristic feature was the island station (DOMINAS, 2013). There were parking places on the station square, and a further tram stop with a square. Unfortunately, during the war, the railway was destroyed and then rebuilt in the 1960s and 1970s, giving it a modernist appearance.

In 2012, a completely new railway station building (located next to the old island type) was opened. The station is located over the platforms (Fig. 7B) - there are only two such stations in Poland, the other one is Warsaw Central Station

(<http://pkpsa.pl/dla-pasazera/dworce-opisy/warszawa>). The building is an integral part of the shopping, service and communication centre, including the Avenida shopping centre (former Poznań City Centre) and a long-distance bus station (Fig. 7C), as well as municipal bus stops in close proximity. Unfortunately, the station square is in need of renovation and better integration of motorized traffic with pedestrian traffic. An additional advantage of the whole investment, which improves accessibility for travellers, is the proximity of the Poznań Fast Tram (*pol.* PST).

A completely different example of a modern communication and service centre, but also the relocation of the railway station building, is Kraków Główny (Cracow Main Station). The old railway station, built in 1847 in the city centre, has survived to the present day (Fig. 8A), but the vast railway station square has changed radically. This space was the functional area of the city's transportation system. The square had an access road, where carriages, cars and trams stopped, as well as areas designated for pedestrians. Nowadays, this public space is exclusively designated for pedestrians and

is additionally supplemented by small architecture. In addition, a part of the train station was dedicated to Galeria Krakowska shopping centre (Fig. 9A), which constitutes an integral part of the Cracow Transport Centre (*pol.* KCK). This location for the

shopping centre, with the chaotic interior of the facility, is intended to "capture" and retain the potential consumer for a longer time period (ZALUSKI, 2009).

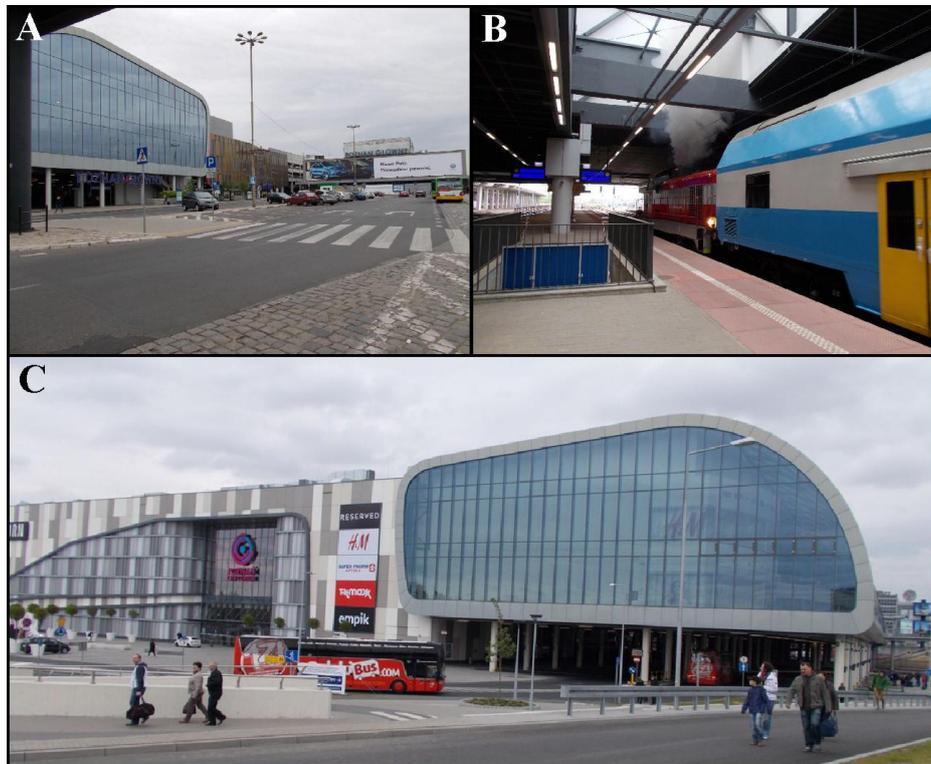


Fig. 7. The old and new railway station buildings in Poznań (A), one of the platforms under the new station building (B), and long-distance bus station, as well as a shopping centre with services (C)



Fig. 8. The old, decommissioned railway station in Cracow (A) and the new underground station (B)

In 2014, a key element of the centre was put into operation, namely a modern underground railway station (Fig. 8B), which replaced the old building, which is now completely decommissioned. According to MAŁECKA (2006), the whole surroundings of the multi-storey railway facility aims to improve transportation in the centre of Cracow with its alignment to EU standards. In addition, the location of the station under the platforms, the transportation availability with

both sides of the city centre, as well as the location of the Cracow Fast Tram (*pol.* KST) stop (Fig. 9B) and the public transport bus stops (Fig. 9C) constitute an optimal arrangement of Cracow's local traffic and interchange services. This is complemented by the Malopolski Bus Station (*pol.* MDA, formerly the Regional Bus Station, *pol.* RDA), which serves national and international long distance buses (Fig. 9D).



Fig. 9. Galeria Krakowska (A), Cracow Fast Tram Stop (B), public transport bus stops (C) and the lower platform of the Malopolski Bus Station (D) in Cracow

The examples presented in the study show various attempts to create modern interchange centres from the vicinity of the train station, which will also attract the non-travelling consumer. However, these activities are limited to the construction of shopping centres, which have not been very well incorporated into the historic space of the stations. The most intensely developed interchange and shopping centre was built in Cracow, but at the same time, the importance of the railway station itself and of the railway station's square was lost, especially as the historic building no longer fulfills its original role. Also in the case of Poznań, the station square was not adapted during the construction of the new railway station together with the shopping centre to perform an integrative transportation role. The example of Katowice reveals the lack of full integration of various means of transport, which resulted in the dispersion of transportation throughout the city centre (e.g. the bus station is located quite far from the railway station; moreover, the regional bus transport often uses random bus stops of a *de facto* temporary nature, and does not provide the traveller with even a minimum level of facilities). It should be added at this point that the described new train stations with their solutions refer to the global tendency whereby the building is no longer an architectural and spatially dominant feature, but it is important to integrate it with surrounding urban spaces (CONCCICAO, 2011). In the case of Katowice, the

railway station was located behind the tenement houses and partially covered by the facade of the shopping centre, while in Poznań the railway station building was merged with the shopping centre, and in Cracow, it was moved underground.

5. Conclusion

Railway stations in Poland have varying degrees of influence on their surrounding space and the functional structure of the urban organism within which they are located. This space has evolved and modified with the changing position of rail transport in the country's transportation system. The original position of the railroad was elitist, and the spaces around the railway stations were adapted primarily for passenger service. Over time, the railway has had to give way to other means of transport, especially bus and car transport, and then the railway station squares were reorganized to serve motorized traffic. The contemporary rail regression has translated into the degradation of the stations and their surroundings. Railway infrastructure managers, and especially railway station managers, undertake actions aimed at restoring and adapting such facilities and railway areas to new economic conditions. The changes affect not only the buildings, whose spaces are subject to maximum commercialization, but also the station forecourts are adapted to serve not only the passenger but also the consumer. An increasingly frequent planning process is the integration of

the railway station with shopping centres, which should translate into improving the quality of the development of these railway areas.

An analysis was made of selected Polish stations and their direct surroundings, and took into account the location of the railway station building in relation to the entire railway station complex. It was concluded that the station area can have multiple functions, the extent of which is strongly linked to the significance of the station in the national passenger traffic hub and its location within the urban spatial structure. In addition, modern trends in the management of areas surrounding railway stations were recognized, which has allowed for different types of development: for pedestrian traffic, motorized traffic and mixed use. In addition, attention was paid to the development of three transport, commercial and service complexes, covering various types of railway stations: the edge in Katowice, situated above the platforms in Poznań Główny and under the platforms in Kraków Główny. It was also found in all the cases mentioned that, there was a relocation of the railway station with the preservation of its historical railway buildings.

References

- Bertolini L. 1996. Nodes and places: complexities of railway station redevelopment. *Eur. Plan. Stud.*, 4, 3: 331–345.
- Bertolini L., Spit T. 1998. *Cities on rails: The redevelopment of railway station areas*. E & EN SPON, London – New York.
- Conceicao A. 2011. Rethinking the railway station area. Research by design in architecture and urban space. VI Congresso Internacional de Pesquisa em Design. VI International Congress on Design Research, [on-line: <https://repository.tudelft.nl/islandora/object/uuid%3A0044a206-37b9-4535-b86c-9b8faa8c9986>].
- Czarnecki W. 1970. *Planowanie miast i osiedli*. Tom IV. *Sieć komunikacji dalekiego zasięgu*. Państw. Wyd. Nauk., Warszawa.
- Dominas P. 2012. *Kolej w prowincjach poznańskiej i śląskiej. Mechanizmy powstawania i funkcjonowania do 1914 roku*. Księży Młyn Dom Wyd., Łódź.
- Gazowska A. 2012. *Szesnaście żelbetonowych kwiatów. Dworzec kolejowy w Katowicach*. Wyd. „Śląsk”, Katowice.
- Ledwoń S. 2006. Współczesne obiekty handlowe w symbiozie z dworcami kolejowymi. [in:] Załuski D. (ed.) *Dworzec kolejowy w strukturze miasta*. Warszawa: 104–113.
- Małecka D. 2006. Dworce kolejowe – teraźniejszość i przyszłość. [in:] Załuski D. (ed.) *Dworzec kolejowy w strukturze miasta*. Warszawa: 134–141.
- Mapa topograficzna*, 1979, ark. 531.2 Katowice, skala 1:50 000, Warszawa: Państwowe Przedsiębiorstwo Geodezyjno-Kartograficzne.
- Oosten W. 2000. *Railway stations and a geography of networks*. 6th Annual Congress of the Netherlands Research School for Transport, Infrastructure and Logistics, Hague: 1–12 [on-line: <https://repub.eur.nl/pub/455/>].
- Racoń-Leja K. 2006. Wykorzystanie przykrytych przestrzeni publicznych w zespołach towarzyszących współczesnym węzłom kolejowym w obszarach miejskich – potencjał i zagrożenia. [in:] Załuski D. (ed.) *Dworzec kolejowy w strukturze miasta*. Warszawa: 114–120.
- Rodrigue J-P., Comtois C., Slack B. 2006. *The Geography of Transport System*. Routledge, London-New York.
- Soida K., Karniewski J., Roszak T., Dąbrowski H., Podlejski Z., Szafirski T. 1997. *Dzieje katowickiego okręgu kolejowego*. Śląska Dyrekcja Okręgowa Kolei Państwowych, Katowice.
- Stevanović K.N., Milena V. Stevanović M.V. 2014. New directions in the design of railways stations. *Gradevinar*, 66, 8: 739–747.
- Taylor Z. 2007. *Rozwój i regres sieci kolejowej w Polsce*. PAN, Instytut Geografii i Przestrzennego Zagospodarowania, Warszawa.
- Załuski D. 2009. Tereny pokolejowe PKP S.A. – szanse i możliwości przekształceń na nowe funkcje miejskie. [in:] Jarczewski W. (ed.) *Przestrzenne aspekty rewitalizacji. Śródmieścia, blokowiska, tereny poprzemysłowe, pokolejowe i powojkowe*. Instytut Rozwoju Miast, Kraków: 199–242.
- Załuski D. 2010. Dworce kolejowe śródmiejskie przestrzenie podróży. Wydział Architektury Politechniki Gdańskiej, Gdańsk.
- http://pkpsa.pl/dla-pasazera/dworce-opisy/warszawa_centralna.html [access: 18.09.2017r.]