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URBAN REGENERATION OF BROWNFIELD SITES AND ITS IMPACT ON THEIR IMMEDIATE SURROUNDINGS — A CASE STUDY OF ŁÓDŹ (POLAND)

Abstract: This article presents the opinions of residents of the immediate surroundings of three Brownfield Site Urban Regeneration Projects completed in Łódź (Poland) in the years 2006–2016, i.e. Manufaktura (textile industry facilities transformed into a mall), “Lofts at Scheibler” (a former spinning plant transformed into residential buildings with accompanying services) and EC1 (adaptation of a former EC1 power plant for cultural and educational purposes), and their impact on their immediate environment. The article presents the results of questionnaire surveys conducted by the author in 2017 on 587 respondents residing within a walking distance, i.e. up to 500 m from the above-mentioned investment projects.¹

Key words: brownfield, urban regeneration, Manufaktura, Lofts, Łódź, Poland

REWITALIZACJE OBSZARÓW POPRZEMYSŁOWYCH I ICH WPLYW NA NAJBLIŻSZE OTOCZENIE — PRZYPADK ŁÓDZI

Streszczenie: Artykuł ma na celu zaprezentowanie opinii mieszkańców najbliższego otoczenia na temat trzech zrealizowanych w Łodzi w latach 2006–2016 rewitalizacji obszarów przemysłowych i ich wpływu na otoczenie. Omawiane przedsięwzięcia to: Manufaktura (zakłady przemysłu włókienniczego przekształcone w centrum handlowo-rozrywkowe), „Lofty u Scheiblera” (dawna przędzalnia przeznaczona na funkcję mieszkalną wraz z funkcjami towarzyszącymi) oraz EC1 (adaptacja dawnej elektrociepłowni EC1 na cele kulturalne i edukacyjne). Autorka przedstawia wyniki własnych badań kwestionariuszowych przeprowadzonych w 2017 roku na próbie 587 respondentów mieszkających w zasięgu pieszym tj. do 500 m od powyższych inwestycji.²

Słowa kluczowe: obszary przemysłowe, rewitalizacja, Manufaktura, loft, Łódź, Polska

¹ Gehl, 2014: 121; Order No. 9 of the Minister of Local Economy and Environmental Protection of 29 January 1974 on indicators and guidelines for residential areas in cities: a walking distance is 500 m.

² Gehl 2014: 121; Zarządzenie nr 9 Ministra Gospodarki Terenowej i Ochrony Środowiska z dnia 29 stycznia 1974 r. w sprawie wskaźników i wytycznych dla terenów mieszkaniowych w miastach, zasięg dojścia pieszego równy jest 500 m.

1. Introduction

In the last two decades many projects that involved the adaptation of former factory facilities into new functions were completed in Poland. The dynamic political changes which occurred after 1989 resulted in the closing down of many large establishments. Therefore, there remained large brownfield sites within the spatial structures of cities which were slowly deteriorating. The issue of their regeneration had already become a subject of broader interest in the 1990s (Domański 2000; Gasidło et al. 1999; Gasidło 1998; Lorens et al. 1996; Glumińska et al. 1996; Dresler 1995). Such areas are, on the one hand, a problem for city administrators and, on the other, they may be seen as an extraordinary potential which may be used when developing interesting projects with the purpose of reinforcing the identity and cultural heritage of a given place while taking into consideration the current needs of local communities (Maciejewska et al. 2019; Moterski 2019; Nowakowska et al. 2017; Siwirska 2016).

This potential was noticed by private investors who started to carry out projects involving the adaptation of post-industrial areas for commercial purposes, e.g. *Stary Browar* (old brewery) in Poznań or *Manufaktura* (industrial mill) in Łódź. Moreover, after Poland joined the European Union in 2004, there appeared new opportunities to apply for financial support to carry out regeneration of brownfield sites. Many local government authorities took up such opportunities, thus saving some elements of their cultural heritage which were important to them. Simultaneously, however, they decided to bear significant costs of their maintenance in the future.

In 2015, upon adopting the Law on Urban Regeneration and Guidelines regarding urban regeneration in the operational programmes for the years 2014–2020, the approach to financing such projects from funds earmarked for regeneration changed. Degraded areas³ and areas⁴ that have undergone regeneration, as currently indicated by the city authorities, are supposed to constitute settled areas where certain social problems can be identified. Such areas certainly do not include brownfield sites, however, and they may constitute an object of urban regeneration within the Municipal Urban Regeneration Programme⁵ on the condition that the planned operations are compatible with the regeneration area and

³ A degraded area is an area in a critical situation due to the concentration of negative social phenomena, particularly unemployment, poverty, crime rates, a low level of education and social capital, as well as an insufficient degree of participation in public and cultural life. Such an area may be marked as degraded on the condition that at least two from among the negative phenomena listed below occur: economic, environmental, spatial-functional, technical (pursuant to Art. 9 (1) of the Law on Urban Regeneration, 2015).

⁴ A regeneration area may include the entire degraded area or a part thereof (however, it cannot exceed the following limits: 20% of the area of the municipality, 30% of its inhabitants) (pursuant to Art. (1) and (2) of the Law on Urban Regeneration, 2015)

⁵ According to the Law on Urban Regeneration (2015), the Municipal Regeneration Programme is a document on the basis of which a municipality may undertake urban regeneration activities within the previously indicated regeneration area.

contribute to the actual prevention of negative social phenomena presented in the analysis (Art. 10 (3) of the Law on Urban Regeneration, 2015).

The inspiration for conducting the research presented in the article included the above-mentioned changes in approaching brownfield sites as objects of regeneration. These changes resulted from the fact that similar projects completed in the period between 2004 and 2013 (in many cases financed from EU funds for regeneration projects) did not address the actual problems of degraded areas or their inhabitants. The author's intention was to discover what the inhabitants of the immediate surroundings of the features which underwent regeneration on brownfield sites think about them and what changes they notice not only as regards space, but also the socio-economic dimension. The author selected the post-industrial city of Łódź as the area of study, because this city has significant regeneration needs as compared to the rest of the country. The author focuses on three regeneration projects completed in Łódź: *Manufaktura* (2006), "Lofty u Scheiblera" ("Lofts at Scheibler") (2010) and *Regeneration of EC1* (2012). The three adaptations selected for this study constituted a huge challenge for the investors as regards the spatial, technological and economic dimensions. Each of the projects represents a different purpose. Moreover, they are projects which have had a noticeable impact on the general city structure. Currently, they are recognisable locations not only among the inhabitants of Łódź, but also among tourists.

The aim of the article is to present the three projects mentioned above from the perspective of an inhabitant of their immediate surroundings, particularly the impact on their immediate environment.

2. Theoretical background

Urban regeneration of brownfield sites should contribute to the improvement of a local community's quality of life and constitute an important element of city development policy, especially in the case of cities with a rich industrial tradition. They may have great potential which – if used appropriately – may help to improve the social and economic sphere as well as to respect the principles of sustainable development (Klapperich 2002; Grimski et al. 2001; Syms 2001). Depending on the country, its endogenous features and its economic, historical or geographical conditions as well as the policy pursued, the interpretation of the term "brownfield" is different (Adams et al. 2007; Ganser et al. 2007; Olivier et al. 2005; Alker et al. 2000; Yu-Ting et al. 2000). Pursuant to a study carried out by Cabernet (Concerted Action on Brownfield and Economic Regeneration), there is no universal definition of brownfields in the European Union. Some European countries refer mostly to ecologically degraded and contaminated areas (e.g. Zwicker-Schwarm 2007). The majority of definitions, however, present the European and American perspective. In the European context, the following definition developed within the CLARINET network is offered: (Contaminated Land Rehabilitation Network for Environmental Technologies): "Brownfield (sites) are sites that had previously been under the influence of their users and

the surrounding areas, which are neglected or underutilised, which may have potential problems with lack of maintenance, which are located mainly in developed urban areas and require intervention to bring them back to beneficial use” (Kurtović et.al. 2014).

Pizzol et al. (2016) point out that the regeneration of brownfield sites may contribute to city development, however, it requires great effort and funding both from the public and the private sector on account of the complexity of such types of undertakings. Therefore, it is important to make a good choice of the area where regeneration actions will be taken and to get to know well all the factors which may have an impact on the success of the regeneration process.

Skalski (2009) believes that looking for investors and ways to redevelop brownfield areas is a prerequisite for the success of city policy which manages urban space intelligently and economically. It is particularly important in the case of cities such as Łódź where there are many undeveloped brownfield sites. Engaging the private sector in regenerating brownfield areas and bringing them back to the inhabitants is a key issue.

Many publications, both foreign and Polish, have appeared on the transformation of brownfield areas and adapting them to new functions in which different aspects of the issue have been discussed. Some of the aspects discussed in literature, which in the author’s opinion are useful from the point of view of this article, are the following: protection of post-industrial monuments simultaneously taking into consideration the needs of users (Lenartowicz et al. 2012; Wójcik 2009; Lenartowicz 2010, 2007, 2006; Legrand 2006; Petz 2006) technological and economic problems occurring when adapting brownfield areas (*inter alia*: Walczak 2016; Szewczyk 2012; Domański 2009; Thornton et al. 2007; Żychowska 2006; Ostręga et al. 2005; Stratton 2000); architectural-urban aspects and aspects of cultural heritage protection (*inter alia*: Cysek-Pawlak et al. 2018; Walczak 2017; Wojnarowska 2012, 2013; Kaczmarek 2010, 2001; Couch et al. 2003; Russell et al. 2001).

The brownfield regeneration process gives them back an opportunity to operate effectively by creating a new morphological and functional unit. At the same time, such a process significantly changes the organisation of urban space and creates a new dimension for urban development (Kaczmarek 2001). Therefore, it is important that this process and providing these objects with new functions is consistent with the existing urban structure and does not constitute a revolution, spatial, economic or social, in the immediate surroundings thereof.

It is also worth mentioning that urban regeneration is listed as one of factors in gentrification. It certainly depends on endogenic features of a particular area, conditioning factors within which it functions (Lees 2019; Górczyńska 2015; Zukin 2010) as well as municipal policy. However, identification of such a threat when developing a project allows one to prevent it or minimise its effect. As a rule, urban regeneration should be planned in a way that allows it to create the so-called social mix in the area undergoing urban regeneration so that the incoming inhabitants do not cause the moving out of the less affluent members of society (Guidelines for Urban Regeneration... 2016).

When transforming historic post-industrial buildings to new functions, it is crucial to make sure that their layout and urban arrangement, as well as the character of the industrial architecture, are maintained (Zbiegieni 2009). Specific solutions used in production facilities such as the space and height of buildings, roof covering, materials and construction, engineering structures as well as architectural solutions themselves, result in such buildings being exceptional and unique. In the past, they constituted clear and dominating spatial and architectural features (Gubański 2008). Therefore, the role of historic building inspectors is so important; on the one hand, they should insist on maintaining authenticity when renovating buildings, whereas on the other hand they should reach a compromise with investors in order to use their potential for the benefit of urban regeneration projects.

3. Area of study

3.1. The context of Łódź

Łódź is located in central Poland and is the country's third largest city as regards population.⁶ It is an academic, cultural and industrial centre. Before the political and economic changes in 1989, it was the country's centre of the textile and film industries. Łódź is an exceptional place due to its history and an incomparable post-industrial heritage, a fact confirmed by its recognition as a monument.⁷ There are numerous spatial structures and single buildings in the city which were mostly developed in the time of the city's prime, i.e. during the time when it was the centre of the European textile industry. Industrial facilities in Łódź were an important element of urban planning and very often they determined the size and shape of quarters and the location of some streets: "Without a doubt Łódź is a city developed for industry and by industry" (Nowakowska et al. 2017: 51).

In the past, 20% of downtown Łódź was made up of industrial areas (Walczak 2017) and, therefore, Łódź is an interesting case from the point of view of studying the role of post-industrial areas in the morphological and functional structure of the city (Kotlicka 2008). One can clearly distinguish the former industrial districts developed by Scheibler, Poznański, Grohman and Heinzl within the city structure, in which houses for workers and clerks, administration buildings, hospitals, schools and shops were erected next to mansions and gardens adjoining factory buildings (Sierecka-Nowakowska 1999). The immediate surroundings of brownfields in Łódź are usually residential developments, which is significant from the perspective of conducting research on their perception by the local community. Such factors as location and good commuting, as well as the cultural value connected with a given area, are important within the transformation process

⁶ In 2019 the population of Łódź was 682,680 (<http://demografia.stat.gov.pl/bazademografia/Tables.aspx>, data as of 24.11.2019)

⁷ Regulation of the President of the Republic of Poland of 16 February 2015 on recognising "Łódź – multicultural landscape of an industrial city" as a listed monument (*Journal of Laws* 2015, item 315).

(Latosińska 2010). The distinctive feature of Łódź is its adaptation of former factory facilities for different purposes: didactic, commercial, office space, residential, hotel, cultural, gastronomic, which have been carried out since the 1890s by both the public and private sectors. The latest feature of this type, opened in 2020, is Monopolis – a former spirit plant transformed into a business, entertainment and cultural centre. Łódź is also a city for which urban regeneration of the downtown area, where several post-industrial buildings are located, is a key element in the city’s development. In 2015 Łódź, along with Bytom and Wałbrzych, received governmental support as a city which urgently needs regeneration activities. Currently major investments are being carried out within the urban regeneration of the Łódź Downtown Area.

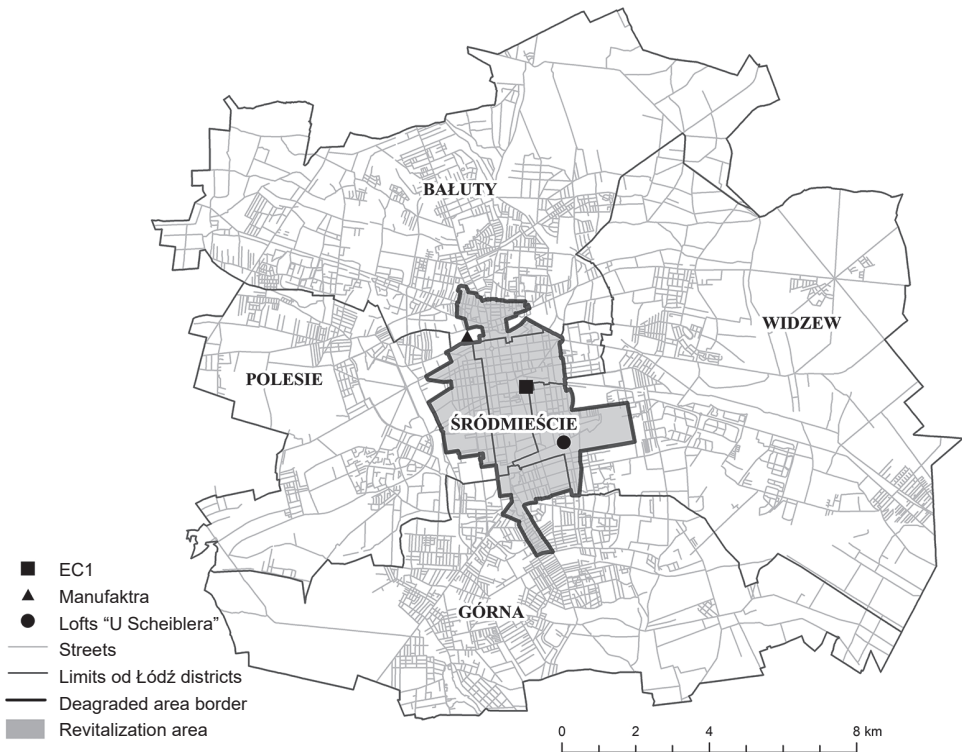


Fig. 1. Location of the projects examined in Łódź and its districts

Source: P. Kurzyk.

All the three projects analysed in this article are located in the downtown area of Łódź (Fig. 1) and within the area of the simplified local urban regeneration programme of selected downtown and post-industrial areas of Łódź.⁸ In 2016,

⁸ Resolution no. XXXIV/568/04 of City Council of Łódź of 14 July 2004 as regards adopting “the simplified local urban regeneration programme of selected downtown and post-industrial areas of Łódź for the years 2004–2013”, as amended.

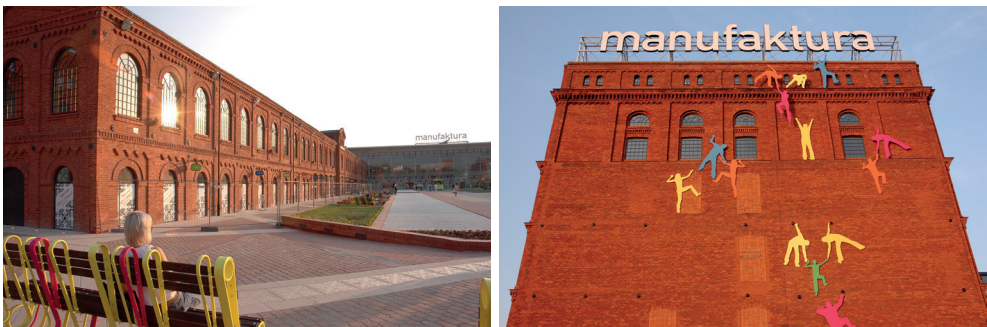
the city authorities identified⁹ a degraded area as understood under the Law on Urban Regeneration (2015). This degraded area is tantamount to the urban regeneration area and it includes the Lofts and EC1. Manufaktura, on the other hand, is located next to its boundary (Fig. 1). It shows that the surroundings of the projects under discussion have features of an area in crisis, i.e. there are numerous social, spatial-functional, environmental, economic and technical problems.

3.2. Short characteristics of projects selected for the study

3.2.1. *Manufaktura*

The site on which today there is a busy mall called Manufaktura was towards the end of the 19th century a factory owned by Izrael Poznański. For some decades the factory generated thousands of jobs for the inhabitants of Łódź and was contributing to the history of Łódź's textiles. The political transformations in Poland after 1989 resulted in the closing down of the factory which led to a slow deterioration of the building complex. In the early 2000s a French investor became interested in this facility and decided to renovate it. In 2003 a French company Apsys Polska started construction works. "A total of 90 000 m² of historic interiors were renovated. The entire investment cost approximately 200 million euros."¹⁰

When the project was being developed, there were many discussions regarding the relatively large area for parking and different commuting issues. By introducing a facility generating so much traffic into the city centre, one could expect congestion and traffic jams in this area, which indeed is currently the case. Inspectors of historic buildings, on the other hand, drew attention to the fact that the original layout of internal roads had not been maintained but was replaced by a spacious



Figs 2–3. Manufaktura directly after opening (2006)*

⁹ Resolution no. XXV/589/16 of City Council of Łódź of 10 February 2016 as regards marking the degraded area and the urban regeneration area in the city of Łódź.

¹⁰ <https://www.manufaktura.com/site/478/powstanie-manufaktury/historia>, data as of 9.11.2019.

* All the photos are taken by the Author.



Fig. 4. Market Square (2018)

square, to numerous demolitions, elimination of the internal rail track network and the historical setting of the streets and the square (Hanzl 2008; Piątek 2006).

The facility was opened on 16 May 2006. Initially, only the shopping centre started to operate and slowly the remaining buildings were occupied (Figs 2, 3, 4). In 2009 the historic spinning plant of Izrael Poznański was put into use and the four-star Andels Hotel opened its doors. The cultural realm of Manufaktura includes such facilities as the Museum of Modern Art “ms²”, the Museum of the Factory, and the Teatr Mały theatre. The public space designated within the project (the square) serves Łódź inhabitants for different forms of activity throughout the year (Fig. 4). In 2017 it was named the Łódź Women Textile Workers Market Square. Manufaktura has become an important place on the tourist, cultural and commercial map of Łódź. Moreover, in recent years residential buildings have been constructed in its vicinity.

3.2.2. “Lofts at Scheibler”

Another project presented here was established on the site of a former factory complex. The factory buildings, on the one hand, referred to classicist models and on the other constituted a turning point in the architecture of industrial Łódź. They were made of red unclad brick and became a sort of canon for such types of architecture for the next few decades (Koboжек 1997). The monumental building of the spinning plant itself was almost 207 metres long and included a four-aisle main body with four storeys (Popławska 1973).

In 1994 this enterprise was transformed into a joint stock company called Uniontex S.A. Its insolvency was declared in July 2003 and the receiver who was then appointed sold some of the real property to an Australian developer, Opal Property Developments, which undertook regeneration of the brownfield site and adapted it for residential purposes (Figs 5, 6). This was the first such extensive project in Poland in which post-factory areas were used for residential premises.

The existing buildings were adapted to create over 400 lofts with a total useable area of 34 thousand m² within the historic facility. It was possible to implement changes in this area on the condition of following the guidelines provided by the inspectors of historic buildings. It is definitely a project distinguished by its architectural form, although it is also believed that “lofts are just an apartment building hidden behind a factory façade” (Walczak et al. 2009, p. 150).



Figs 5–6. The historic spinning plant before adaptation for lofts (2006)

A building permit was issued in 2006 and construction works lasted until 2010. The first buildings were delivered in the same year. In 2006 a sales agency started to operate and all the apartments on offer were sold very rapidly. When construction work started, buyers had to pay a small percentage of the apartment’s value. The remaining amount was supposed to be paid after delivery. Some buyers treated lofts as an investment and bought several apartments. While the project was being built, the crisis hit and some of the buyers withdrew from their purchase offers losing their advance payments. As sales were scarce, the developer who had taken huge loans became insolvent and declared bankruptcy in April 2012. Unsold real properties were held by the receiver who used the funds gained from the sales of apartments to pay the liabilities of the Lofts owner towards their creditors (Groeger et al. 2016). Thanks to a significant improvement of the economic situation all the apartments eventually found tenants (Figs 7–9).

“Lofts at Scheibler” is a gated housing estate (Tobiasz-Lis 2011) whose development is associated with the process of gentrification (Grzeszczak 2010). The area is restricted and guarded 24/7. It should be pointed out that both the occupation of the lofts and the developer’s investments carried out in the vicinity (on available development land) in connection with development of a rental market resulted in the inflow of more affluent inhabitants to this part of the city as well as the development of retail and service infrastructure.



Figs 7–8. The spinning plant building after adaptation for lofts – view from Tymienieckiego Street (2018)

Fig. 9. One of the entrances to the lofts (2018)

3.2.3. Regeneration of EC1 and its adaptation for cultural and artistic purposes

The last of the projects presented in this study constitutes an element of a broader city programme called the New Centre of Łódź.¹¹ The project involved the adaptation of the area of the former EC1 power plant (Figs 10, 11, 12) and its use for cultural, artistic and educational purposes. The planning process started in 2007. In 2008 a cultural institution, “EC1 Łódź – City of Culture”, was established and, together with the Investment Section in the City of Łódź, they commenced work on carrying out changes in the development of the area. The project was supposed to be implemented together with *Fundacja Sztuki Świata* (World Art Foundation). After the city authorities changed in 2010, a notorious conflict started between one of the leaders of the foundation and the city. As a result, the facilities were administered exclusively by the city. In 2010 renovation works and modernisation of the post-industrial building started, however, they overran considerably generating additional costs for the city. EC1 was put on a list of indicative projects of the Łódzkie Voivodship, i.e. projects whose scope is more than local in scale. Therefore, it was a project addressed to a wide audience. The total value of the project was over 265 million zlotys, of which over 82 million was provided by the European Regional Development Fund.¹²

The cubature, form and most façade elements with their unique details have been fully retained (Figs 13, 14, 15). Maintaining this type of facility, however, constitutes a challenge for the city as well as a long term financial commitment. In 2016 a planetarium was opened in the EC1 East building. In the West wing of the EC1 complex, on the other hand, there is a Science and Technology Centre with a domed 3D cinema. *Łódzka Komisja Filmowa* (Łódź Film Commission) and *Narodowe Centrum Kultury Filmowej* (National Centre for Film Culture)

¹¹ Resolution No. XII/241/2015 of the City of Łódź Council of 20 May 2015 amending the resolution on accepting the New Centre of Łódź Programme.

¹² <https://ec1lodz.pl/historia-ec1>, data as of 9.11.2019

also have their headquarters here as well.¹³ Both initiatives refer to the city's rich film traditions.

With its architectural form, EC1 dominates the city landscape. Thanks to its convenient location (next to the Łódź-Fabryczna railway station) and good commuting links, new residential and office investments are appearing in the neighbourhood.



Figs 10–12. EC1 area before changes (2006)



Figs 13–15. The Project “Revitalisation of EC1 and its adaptation for cultural and artistic purposes” after completion (2018, 2015)

4. Data, methods and characteristics of the respondents

The article presents the results of questionnaire surveys conducted in Łódź in May 2017 on a non-representative sample of **587 respondents**. Nonprobability and random sampling was applied. The respondents were inhabitants of the immediate surroundings of Manufaktura, the “Lofts at Scheibler” complex and EC1 who live within walking distance, i.e. within a maximum distance of 500 m. It enabled the researcher to collect information directly from persons who are actual users of the immediate surroundings of the projects that were analysed, who know the area well and who observe the impact of the new projects on the neighbourhood every day. Such sampling did not require a complete population inventory and made use of persons who were easily accessible and willing to cooperate.

¹³ In 2017 Łódź became a member of the Creative Cities Network as a UNESCO city of film. The project is operated by *Narodowe Centrum Kultury Filmowej* (National Centre for Film Culture).

The applied sampling did not guarantee sample representativeness, but it may be a premise for learning more about the population (Miszczak et al. 2013).

The research area was marked on the map of Łódź and divided into three zones, each dedicated to a separate location. Interviewers¹⁴ were assigned to the above-mentioned zones. The surveys were conducted in compliance with standardised techniques based on direct communication with the respondents using questionnaire interviews (Gruszczyński 2003). An advantage of this technique, which is significant from the point of view of the study, was the opportunity to explain the questions asked by the interviewer and to reach a particular group of respondents. In the questionnaire developed by the author, multiple choice questions were used. For a better reflection of the degree of acceptance of a particular phenomenon or respondent's opinion, Likert's scale was also applied in some instances.

The respondents were able:

- to evaluate the designs of Manufaktura, "Lofts at Scheibler" and EC1, their development and direct impact on the vicinity and the image of a given place;
- to share their observations as regards the advantages and inconveniences connected with completed adaptations of facilities for new purposes;
- to indicate effects which these projects had caused not only as regards urban space, but also in social and economic circumstances.

A lot of information used in the article also originates from the author's personal archives developed during her cooperation on these projects. An important element of this study is also a reference to the local and national provisions of the law in force. The background to the publication is provided by academic and research achievements in the field of regeneration of post-industrial areas.

A total of 587 respondents took part in the questionnaire study in the three locations. Almost 58% of them were women. The biggest share of women was observed in the case of the EC1 location (63%) (Table 1). Interestingly enough, the largest group of the respondents (34%) were persons from the age group under 25, whereas the smallest group were persons of retirement age (13%) (Fig. 16). Most of the respondents had secondary education (45%) or higher education (34%). The smallest group of the respondents (8%) declared that they only had primary education. It must be mentioned that 31% of the respondents were students/pupils (Fig. 17). As far as professional status is concerned, the largest proportion of the respondents declared "remunerated work" (38%). Nearly 1/5 of the respondents were old age or disability pensioners. One tenth of the respondents claimed that they were either entrepreneurs or self-employed. Only 2% of them were unemployed (Fig. 18).

¹⁴ The interviews with the inhabitants were conducted by students of the Spatial Economy Major in the Faculty of Geographical Sciences and the Faculty of Management of the University of Lodz.

Tab. 1. Share of respondents as regards sex (in %)

| | Men | Women |
|-------------|-------|-------|
| Total | 42.2% | 57.8% |
| EC1 | 37.2% | 62.8% |
| Lofts | 46.0% | 54.0% |
| Manufaktura | 44.2% | 55.8% |

Source: own study.

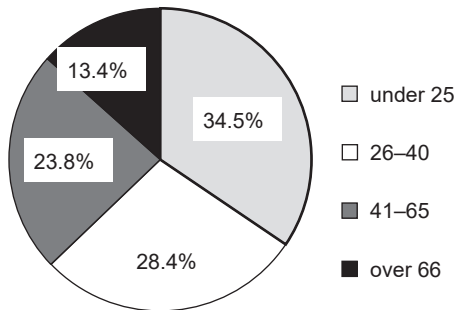


Fig. 16. Respondents' age

Source: own study.

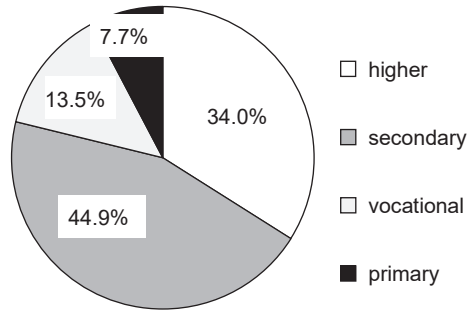


Fig. 17. Respondents' education

Source: own study.

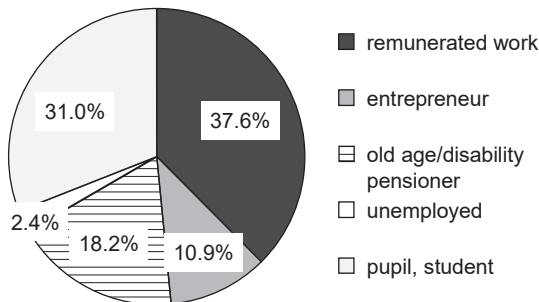


Fig. 18. Respondents' professional status

Source: own study.

Most respondents (46%) with a short period of job experience (less than 10 years) live in the vicinity of the lofts. It is a result of quite a significant expansion of new housing investments in this area. In the case of EC1 and Manufaktura, on the other hand, many respondents (38% in both cases) claimed long residence in the particular location (Fig. 19). When juxtaposing it with the age structure of all the respondents, a conclusion may be drawn that for many of them it has been their only place of residence so far.

More than half of the respondents (58%) declare that they are not the owners of the premises where they live. Tenants of residential premises form the largest percentage (62%) of the respondents in the vicinity of Manufaktura. The biggest

number of apartment owners (50%) were interviewed in the vicinity of the lofts (Table 2).

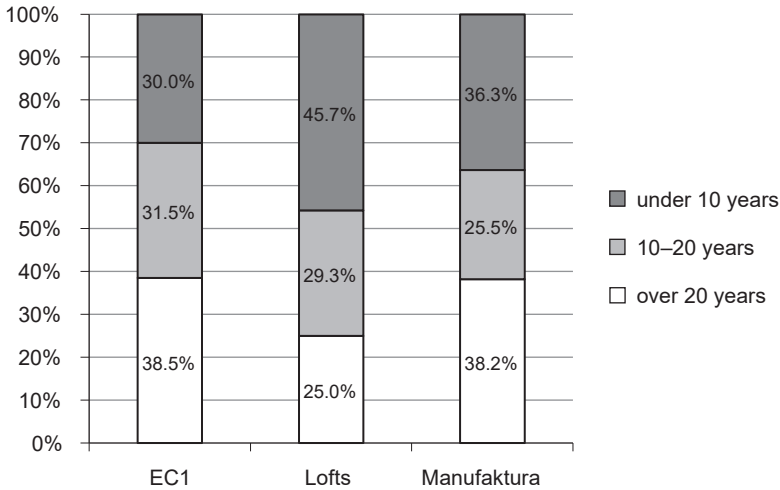


Fig. 19. How long have you been living here?

Source: own study.

Tab. 2. Division into apartment owners and tenants

| | Owners | Tenants |
|-------------|--------|---------|
| Total | 42.4% | 57.6% |
| EC1 | 43.7% | 56.3% |
| Lofts | 49.6% | 50.4% |
| Manufaktura | 37.5% | 62.5% |

Source: own study.

5. Results

At the beginning of the interview the respondents were asked about the reasons behind their choice of place to live. They could provide a maximum of three reasons. The responses were quite varied, however the biggest number of the respondents in the case of all three locations indicated that the main reason was the fact that “their family live here/used to live here”. In each case, approximately 15% of the respondents indicated the response “due to location” and “it’s near my workplace”. In the case of Manufaktura many respondents marked the answers: “because of good commuting links with other parts of the city” (11%) or “shops nearby” (9%). In the case of EC1 and Manufaktura, approximately 4% of the respondents indicated that they had no other option (e.g. they obtained a council flat here), which confirms that in the immediate surroundings of the investigated projects there are low-standard premises. According to the vast majority of the

respondents (c. 80%), the execution of all the projects selected for analysis was necessary for the city and in general the investments were evaluated positively.

In the next part of the study, the task of the respondents was to evaluate different aspects of developing the lofts, Manufaktura and EC1 (Table 3). In the case of all three projects, the highest score was achieved in the category of building aesthetics and architectural form, however it was the residents of the Lofts neighbourhood who paid the biggest attention to this factor. Positive reception by the inhabitants also referred to good commuting, spatial development, the quality of space and a good choice of functions. The advantage of good commuting was particularly emphasised by the respondents interviewed in the vicinity of EC1 and Manufaktura. The choice of appropriate functions was highlighted in the case of Manufaktura. One in three respondents also evaluated the type of services offered and the business activities pursued in particular locations positively. The most negative opinions referred to the organisation of parking spaces and green areas (Table 3), whereas the worst opinion regarding green areas related to Manufaktura and negative opinions regarding the organisation of parking spaces prevailed in the case of Lofts and EC1. It clearly indicates shortages and unsatisfied needs in those areas.

Tab. 3. Evaluation of particular aspects of the area's development

| EVALUATION COMPONENTS | EVALUATION SCALE [%] | | | | | |
|--|----------------------|------------|------------------------------|-------------|-----------------|------------|
| | Definitely bad | Rather bad | So-so (neither good nor bad) | Rather good | Definitely good | No opinion |
| Aesthetics of buildings | 1.2 | 1.6 | 10.1 | 28.6 | 57.5 | 1.0 |
| Architectural form | 0.5 | 1.4 | 10.3 | 31.6 | 51.2 | 4.9 |
| Aptness of the function introduced | 1.4 | 2.1 | 15.4 | 30.5 | 43.2 | 7.4 |
| Commuting | 1.7 | 2.3 | 16.7 | 30.0 | 47.6 | 1.7 |
| Type of services offered / business activity pursued | 1.4 | 3.2 | 17.0 | 35.6 | 34.2 | 8.6 |
| Quality of space | 0.9 | 1.6 | 13.1 | 33.8 | 45.5 | 5.1 |
| Area development | 0.9 | 2.3 | 14.4 | 32.2 | 45.7 | 4.6 |
| Organisation of parking spaces | 6.1 | 13.9 | 23.2 | 21.1 | 22.5 | 13.3 |
| Green areas | 4.0 | 9.5 | 23.6 | 30.7 | 27.4 | 4.7 |

Source: own study.

Next, the respondents were asked if in their opinion the implementation of the projects analysed also contributed to social and economic changes in the area. In total, 60% of the respondents believed that there was such an impact, whereas 37% responded: "definitely yes". 16% of the respondents believed that the implementation "did not" or "rather did not" contribute to social and economic change (Fig. 20).

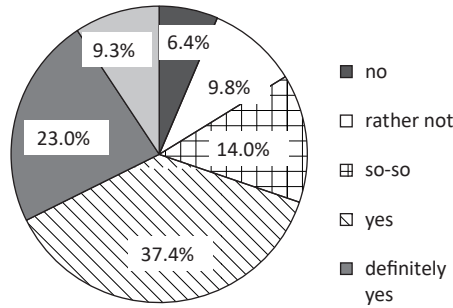


Fig. 20. Did the construction of the analysed projects contribute to social and economic change in the area?

Source: own study.

The respondents who noticed that the investment analysed had an impact on the social and economic environment were asked to identify such changes and assess their scope and degree (Table 4). According to the respondents the implementation of the projects definitely contributed to an increased attractiveness of the city for tourists as well as to an increased number of places to spend free time,

Tab. 4. Identification and evaluation of social and economic changes in the area which occurred, according to the respondents, as a result of the construction of the investigated projects

| EVALUATION COMPONENTS | EVALUATION SCALE [%] | | | | | |
|--|----------------------|------------|-------|------------|----------------|------------|
| | Definitely not | Rather not | So-so | Rather yes | Definitely yes | No opinion |
| Creation of new jobs | 1.4 | 3.2 | 9.4 | 31.8 | 30.1 | 24.1 |
| Development of local entrepreneurship | 1.7 | 5.6 | 13.2 | 27.6 | 22.9 | 29.0 |
| Enrichment of local cultural offer | 0.9 | 2.8 | 11.6 | 27.5 | 34.5 | 22.8 |
| More opportunities for spending free time | 0.3 | 3.5 | 8.4 | 25.3 | 41.2 | 21.1 |
| Improved attractiveness to tourists | 1.4 | 1.9 | 9.7 | 24.6 | 40.8 | 21.7 |
| Increased value of property in the neighbourhood | 0.7 | 4.3 | 12.1 | 23.4 | 25.2 | 34.4 |
| Improved safety | 3.9 | 9.9 | 24.5 | 20.6 | 12.3 | 28.8 |
| Improvement of living conditions | 3.9 | 14.8 | 20.9 | 19.0 | 12.2 | 29.1 |
| New investments thanks to the new surroundings | 1.7 | 3.9 | 12.6 | 34.6 | 22.0 | 25.1 |
| Larger number of new business enterprises | 3.3 | 3.3 | 14.1 | 30.7 | 20.0 | 28.6 |

Source: own study.

to a richer local cultural provision, which was particularly highlighted in the case of Manufaktura and EC1. Approximately 60% of the respondents believe that the projects generated new jobs (particularly Manufaktura) and had an influence on the development of entrepreneurship. In the case of all three projects, more than a half of the respondents noticed that new investments have appeared in the area due to the new surroundings. It is also important to mention that the number of successful business enterprises has increased and that the value of real property in the neighbourhood has also grown, which was particularly emphasised in the case of Lofts. The economic aspect of the impact of the adaptations that were carried out on their surroundings was highlighted. Only 1/3 of the respondents mentioned the improvement of living conditions or security.

The next question referred to the influence of the adaptations carried out on the improvement of the neighbourhood image (Fig. 21). A vast majority of the respondents (78%) believe that the projects had a positive influence on how the area is perceived. The opinion that there was no such influence or that there was rather no such influence was expressed by only approximately 7% of the respondents.

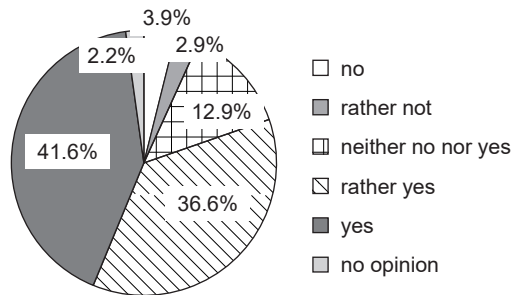


Fig. 21. Impact of the projects on the image of the surroundings

Source: own study.

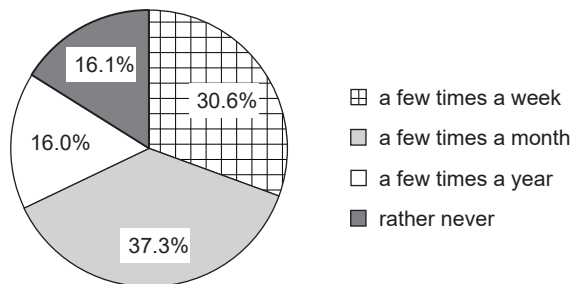


Fig. 22. Frequency with which the respondents use the space generated within the projects

Source: own study.

The next question referred to the frequency with which the respondents used the space created within the examined projects (Fig. 22). Most of the respondents (37%) use these sites a few times a month. One in three respondents uses them frequently, i.e. a few times a week. Approximately 16% of the respondents do not use the analysed sites at all.

Next, the respondents were asked if they noticed any inconveniences connected with the area in the vicinity of the completed projects. Over 70% of the respondents answered “no” or “rather not”. The remaining 30% of the respondents were asked to identify the inconveniences. The greatest number of persons indicated the answer “traffic jams”, mostly in the case of Manufaktura and EC1, and, next, a lack of parking space, which was mostly mentioned in the case of Lofts. Heavy traffic was also mentioned, as well as many events organised there, which was particularly emphasised by the respondents in the case of Manufaktura and EC1. One in four respondents from the vicinity of EC1 mentioned that noise is a nuisance. An increase in rent in the neighbourhood was also noticed by the respondents from all three locations. A few persons mentioned the problem of littering and a decreased sense of security.

6. Conclusions

Upon analysis of the literature, case studies and results of the surveys described above, the following conclusions may be drawn:

- 1) The projects carried out in Łódź and analysed in this article are perceived positively by the inhabitants of their immediate surroundings. They are perceived as necessary for the city, which makes one optimistic about future projects.
- 2) It is believed that the new functions have been correctly chosen, which was particularly visible in the opinions expressed about Manufaktura. This means that the facility meets the needs of the inhabitants as far as its purpose is concerned.
- 3) In spite of unfavourable opinions of the inspectors of historic buildings, in the case of all the projects the respondents positively evaluated the aesthetics of the modernised buildings and their architectural form. The assessment of Lofts was the best in this respect.
- 4) Certain shortages were indicated as regards green areas (especially in the case of Manufaktura) and parking spaces (particularly in the case of Lofts and EC1).
- 5) It was observed that the changes which occurred as a result of implementing all three projects had an impact on the social and economic environment. Using them appropriately may support sustainable development of the city as highlighted by Klapperich (2002), Grimski et al. (2001) and Syms (2001).
- 6) The impact on the city’s attractiveness to tourists, as well as on the improved image of their immediate surroundings, was emphasised in the case of all three locations.
- 7) The vast majority of the respondents mentioned positive effects of living in the vicinity of the projects analysed. The projects, particularly Manufaktura

and EC1, became new places to spend free time; they enriched the city's cultural life and created new workplaces.

- 8) The disadvantages mentioned by the inhabitants included traffic jams, particularly near Manufaktura and EC1, as well as not enough parking spaces near the Lofts. Noise was the biggest nuisance for people living close to EC1. Therefore, it is important that such processes and providing facilities with new functions be inscribed in the urban tissue and not cause any revolution, either special, economic or social, in the immediate environment.
- 9) In the vicinity of all the three projects analysed in this article, new investment projects appeared thanks to the advantage of a good neighbourhood.
- 10) An increase in successful businesses located in the vicinity of the projects is noticeable. It is particularly the case in the vicinity of Lofts.
- 11) The projects discussed in the article had little influence on the general improvement in the living conditions of the inhabitants of the immediate surroundings or on improved security, which confirms that the projects failed to address the problems suffered by the urban regeneration area and its inhabitants.
- 12) Thanks to the new projects, new inhabitants and users appeared in the downtown area, which contributed to its revival and the introduction of the so-called social mix in the Łódź regeneration area. A potential threat may be the "pushing out" of the current inhabitants of these neighbourhoods, for example due to the increased value of property and rental costs. Lees (2019) points out that the gentrification process is less intensive in Poland than in the cities of Western Europe, however it is an issue which should be taken into consideration when developing projects for brownfield regeneration. Identification of such a threat enables one to prevent it or at least to minimise its effects.

Summing up, local authorities should have a clear policy on brownfield area development, in particular in such cities as Łódź. They should cooperate with investors when preparing projects of adaptations of brownfield sites, which is emphasised by Skalski (2009) and Pizzol et al. (2016); they should cooperate in finding optimal functions and, at the same time, take actions with the aim of limiting the gentrification process (Lees 2019; Górczyńska 2015). The case of Łódź shows that urban regeneration of brownfield areas may trigger changes in the immediate environment and have a visible impact on it. As the heritage and its potential are immense, such projects may constitute an important element of city development and the city's urban regeneration policy.

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