Revitalization of buildings and urban areas on the example of Gdańsk, Venice, Milano and Zabrze

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Abstract. Revitalizations are becoming a common activity giving new life to the abandoned buildings, districts, degraded areas, etc. The necessity of such actions results, among others, from the changing needs of users of these spaces, climate change and new technologies used. These activities are a strategic element of urban policy. They also fit into the context of sustainable development, causing a change in the value, reception and perception of degraded spaces and objects. New functions give a new quality, but also affect the neighbourhood, improve the quality of the immediate environment. They also enable the elimination of spatial conflicts, as well as the introduction of ecosystem services that reinforce the multi-range potential of these areas and facilities. During the study trips, the authors analyse in detail interesting examples of successful revitalization. The revitalizations are discussed: the factory building in Venice on the Giudecca Island (Italy), the entire quarter in the old town of Gdańsk (Poland), the mine shaft in the post-industrial (mining) city of Zabrze (Poland) and housing estates with office buildings of Milano (Italy). The aim of the research was to analyse the effects of revitalization activities in these European cities. Relationships and correlations in these activities were analysed. The research also concerned the applied principles that may have an impact on the effectiveness of revitalization and its positive implementation. The quality of revitalized space and its impact on the surroundings was also analysed. Particular attention was paid to the importance of qualitative research at the revitalization programming stage. The analyses concerned various sizes and scope of the revitalization activities, i.e. from the object to the building quarter. The research results indicate the existence of universal principles of successful revitalization, which are applicable at different scales of revitalization. At the same time, the applications indicate 12 golden rules for a successful revitalization. The importance of qualitative research at the revitalization programming stage is underlined. These studies constitute the success of revitalization. Qualitative research conducted at the stage of programming activities may ensure the coherence of activities in various scales of urban space (from the object to the city's quarters) and prevent the transmission of conflicts and problems to other urban areas.

1. Introduction

The subjects of the article are transformations in urban tissue resulting from revitalization activities. Selected examples are 4 cities from different regions of Europe, from the Polish city - Gdańsk and Zabrze and from Italy - Venice and Milan. These are cities in which revitalization was carried out. Gdańsk, Venice and Milan are tourist cities with an interesting history and historic architecture. Zabrze is an industrial city of Upper Silesia, a city which from the mining industry (hard coal mines)
is becoming a post-industrial tourism city. In every mentioned place, the revitalization takes place in a different way. But it always concerns often degraded urban tissue, which is given new functions and brings back to a new life.

During the study trips to the aforementioned cities, the authors carried out observational studies on the changes, photographic documentation and interviews with users. Based on the research, they made summaries. The article presents the most important conclusions.

2. Research helpful in revitalizing
Because the authors present the Silesian School of Quality Research, they pay special attention to the importance of pre-design qualitative research in revitalizations. A well-preparatory research phase is a guarantee of meeting the needs of users of revitalized objects and spaces [1-4]. The author's methodology of qualitative assessments is described in references [1], [2], [5], [6]. However, problems resulting from non-use of research in design are given in [3]. Examples of teaching methodology of design using the research used in teaching architecture students are discussed in [7].

It can be said that the whole essence of revitalization lies precisely in the initial stage - research, or the correct recognition of problems to be solved, needs and goals of revitalization. Studies supported by research will be justified, and the risk of error is reduced to a minimum.

3. Venice
This revitalized area concerns the Giudecca island and old post-industrial buildings. Facades were renovated and buildings were adapted for new functions like a hotel (Hilton), a restaurant, a SPA centre, apartments, tourist apartments for rent and space around. The renovated clinker brick buildings were supplemented with contemporary details and highlighted at night. In particular, the Hilton hotel is important for the entire revitalized area, because it gives a new quality of space and affects the whole (Figure 1).
4. Gdańsk
The revitalization of Gdańsk concerns the strict Old Town with a beautiful old town. Revitalization is currently taking place in two parallel and complementary directions. The first is the adaptation of the former cereal granaries, and the second is the introduction to the historical tissue as a complement to the urban quarters and frontages of the new facilities. New features are mainly apartments (tourist) with accompanying functions (services, gastronomy, trade). Excellent location gives special value to the investments. Also, an excellent contemporary architecture gives a whole new quality. This is an example of a perfect symbiosis of historical and contemporary architecture. Modern architecture is not only a supplement but a background for historical objects, while adapted historical objects acquire an interesting character through new elements and details (Figure 2).
Figure 2. Photographs of the revitalization of the old city of Gdansk, 2018

5. Zabrze
Zabrze belongs to the typical mining towns of Upper Silesia, which are in the post-industrial tourism industry. The mines were made available to the visitors of the project numerous tourist attractions. There are priority municipal investments. The city in the revitalization sees a chance for further
development. An interesting object of the former mine shaft "Maciej" revitalized by a private investor. The pane was organized, a restaurant, sale of meetings, a gallery, a shop, a tourist centre. The historical shape has been preserved by adding contemporary elements made of steel and glass. Attractive night lighting is also fast (Figure 3, 4).

![Figure 3. The restaurant - the "Maciej" shaft, Zabrze, 2017](image)

![Figure 4. The "Guido" Zabrze mine-room, 2019](image)
6. Milan
Revitalization consisted in the activation of space through the construction of new residential and office buildings. The Citylife project is located in the centre of Milan's historical exhibition area near the park. The building complex introduces to the urban context a new model of work and recreation, with pedestrian, bicycle and circular accessibility underground. In the centre of the project there is a business district - three office towers at "Piazza delle Tre Torri": torre Isozaki, torre Hadid and torre Libeskind.

The Zaha Hadid City Life Milano residential complex is 7 curved, with a wavy line of buildings from 5 to 13 storeys. The façades are covered with ceramic tiles with composite sun protection frames made of wood. Buildings have many sustainable development solutions, for example photovoltaic panels, geothermal systems (Figure 5, 6, 7).

However, Libeskind referred to traditional Milanese architecture. The complex consists of a courtyard surrounded by 5 buildings with individual geometry, accenting the peaks of buildings, which refers to the surrounding urban fabric. Ecological facade materials were also used: concrete panels and natural wood panels (conglomerate). The complex was awarded the CENED C + Italian energy certificate.

Many recreational functions were provided in the development of the space, which isolate inhabitants from road transport, enabling active recreation and fun. The new development creates a coherent whole with the already existing buildings and fits into the historical surroundings [4], [6], [8].

Figure 5. City Life Residences in Milan, historic district Milanese, Italy, Daniel Liebeskind Architects, 2015
7. Final applications
The examples of four cities mentioned and tested confirm the importance of revitalization for modern functioning and further development. By revitalizing, we not only keep or save interesting objects, eg post-industrial, but above all, by giving objects new technical quality, we create interesting public spaces, objects and functions. Revitalizations on the example of Gdańsk and Zabrze become the driving force for further development of cities. Similarly, in Venice, the revitalized space gave a new quality, restored the place for re-use, cleaned the space in terms of technical, aesthetic and functional. Both the beauty of buildings from the previous era and interesting additions and details of modern architecture were shown. Together, it creates a perfectly complementary space. Also in Milan in the post industrial district located in the historic area, with the help of revitalization, the attractiveness of the area has increased. New residential and office buildings have been created, which in their form and structure refer to the historical surrounding buildings, at the same time introducing new functions, values and pro-ecological technologies.

The main purpose of revitalization is to meet the needs and expectations of users in various qualitative aspects, in compliance with applicable building regulations and within the scope of financial capabilities. The revitalization project should be well prepared. Revitalization is always based on real knowledge about the object, district, housing estate, and context. Often, well-defined views on needs can confuse us. Only the preliminary, research phase consisting in a good recognition
of the actual current state, real needs and expectations of residents, as well as potential opportunities gives reliable information. For this reason, all investment decisions of revitalization should be started from carrying out professional qualitative assessments with the analysis of the real estate potential. Through qualitative assessments, a set of information is obtained from the built environment and its users. Based on the analysis of the results obtained, the conclusions drawn can be used to formulate correct guidelines for the program and revitalization project. The rest are detailed solutions, designers' answers using their skills, technical knowledge and available resources [9].

8. Conclusions
As a summary of a few years of discussing the problem of revitalization, the authors propagate the set of obvious principles of successful revitalization, which are presented below. 12 golden rules for successful revitalization [7]:

1 - Think about the goal and financing.
2 - Understand the needs - perform qualitative research, enable users (residents) - participation.
3 - Get the program and concept.
4 - Present to the users (residents) - explain, listen to comments, suggestions, set a common position, meet expectations, make corrections, adjustments.
5 - Design strictly according to the concept.
6 - Finish the budget and plan the implementation, prepare a revitalization schedule.
7 - Follow the project.
8 - Do it openly, happening, invite users (residents) - educational role.
9 - Monitor, observe, draw conclusions, supplement with observational research, improve, add.
10 - Enjoy good revitalization.
11 - Publish and show others a good example.
12 - Plan another revitalization [10]

The 12 principles provided guarantee a revitalization that meets expectations and needs. It should be remembered that revitalization is not just a superficial change in aesthetics, it is a comprehensive and comprehensive activity aimed at meeting the needs and expectations of residents in various qualitative aspects (quality: technical, functional, organizational, behavioral and economic) [5]. The set of 12 points contains obvious elements, but unfortunately not always fully implemented. Each element in the author's opinion is important. Particularly point 2 - qualitative research. It should be emphasized that you cannot go straight to design in revitalizations. The whole essence of revitalization lies precisely in the initial stage - research or design with the use of research, correct recognition of problems to be solved, needs and goals of revitalization. Revitalization is a renewal, restoration of the original state, transformation for the better not only in the architectural and urban tissue, building resources but also on the social level, in the consciousness and hearts of people, after all we do it for people? [11] We often forget about it, we do not do it to make it nice for ourselves. The image is also important, the perception of the city, perception, and the pretext for the renovation of space and facilities. But you can say about a successful revitalization only when space or an object serves residents, they are needed, they are as they would like. Because revitalization is to serve primarily the users themselves [9], [12].

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