Water as an Agent of Urban Regeneration in Postindustrial areas

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The aim of the research is to open the discussion of role of water bodies as an agent in the process of urban regeneration. Finding sustainable solutions to foster the regeneration schemes in postindustria l urban areas has become an important and updated subject in field of architecture and urban planning

Having passed the damages of the Second World War, globalization and massive changes in environmental policies, industrial cities in Europe started to shrink by entering the late years of the 20th century. By start of the 21st century the term "postindustrial" accounted for shrinking industrial urban settlements which were equipped with deserted factory buildings and large number of emptied residential complexes. Not long after, seeking for potential and active regenerative elements to improve the life in postindustrial urban sites has become a serious matter of debates [1], [2]. This was followed by the emergence of the term "sustainable development" from extensive international concerns. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs [3]. In these case, not only several efforts have been done to describe the term, but also it has been debated that this phrase can guarantee our future so as to interact with the environment at its best. Among extended discussions over sustainable development, the term "three pillars of sustainability" stands as a proper and in the same time concise phrase to evaluate and discuss developments [4]. In this research it was tried to discuss a water-related part of a regeneration project through three pillars of sustainability: Natural, Social and Economic. To discuss the sustainability towards the aim of the research, a minor body of water which plays a significant role in a regeneration scheme in Lodz University of Technology has been selected. The existence of water in industrial processes have always been a necessity, hence there are plenty of water bodies in the vicinity of industrial cities. The criteria for choosing this case study on the one hand, is to emphasize on including useless-deserted bodies of water in regeneration of postindustrial urban sites, and on the other hand, is to depict that interaction with water bodies could account for positive points even when they come in a small-scaled size.

Case Study

The Lodz University of Technology (TUL) was established in 1945, and now it has three campuses which are called by alphabetic order A, B, C. Among the three, Campus B enjoys several historic buildings and gardens, as this campus was formerly a large compound complex consisted of several textile mills and owners' villas (fig. 1.). Before turning into an academic center, most of the factories were steam-powered and coal was used as the main fuel with a great deal of fire hazards. Therefore, a water reservoir was built for the extinguishing purposes.

The industrial complex turned into Campus B of Lodz University of Technology as a result of a comprehensive regeneration project in the 1990s. The process, however, started much earlier. The first academic activities reach back the 1960s, when the first wing of the faculty of civil engineering was completed. Initially, it was replacement of old industrial buildings with the new purposely designed structures. The policy towards the old factories gradually changed in the 1990s based on the economic reasoning as well as growing awareness of industrial heritage importance [5]. The water reservoir initially remained obsolete and there was a serious threat that it would be filled. Fortunately upon the initiatives of the academic staff of the Institute of Architecture and Urban Design, the reservoir was preserved and in the early 2010s was landscaped to become a campus garden with a pond in the middle (fig. 2.). What is more, in 2011 a pedestrian bridge spanning to sides of the former factory reservoir was designed by students of architecture [6]. Nowadays, this pond provides not only a picturesque view for the students and other users of the park but also a tiny habitat for a number of species like squirrels, birds and fish (fig. 3.).

Fig. 1. A historical view of the industrial complex in second half of 19th century; source: Schweikert factory letterhead in the collection of National Heritage Board in Lodz

Methodology

In order to initiate a debate on including water bodies in the processes of urban regeneration in postindustrial sites, the research is centered on a small body of water as the case study. This case-based study is built over analytical information which are developed through site observation and desk studies. The analytical information are written in terms of qualitative contents and are supported by referencing to related studies.

Exploring the sustainability of the project begins by evaluating the appreciation of nature within the "Pond at TUL". Although this is not originally a natural pond, it can be regarded as a natural element with some effective ecological influence. This pond creates and supplies water for minor species that live in park [7]. Thus it is crucial for the biodiversity of this area, which was proved by a research done for similar reservoirs in Huddersfield, UK [8]. Moreover, it can function as a good example for climate change mitigation considering the fountain and the cooling activity of water. Added to these criteria, it also creates a scenery view towards the park, in reduction of pollution [9] and in the landscape of the park as a small blue-green natural environment. This, in turn, is a part of the expanded blue-green network of the city of Lodz, which includes multiple ponds and narrow streams along with green spaces extended all over the city. After all, it can be confirmed that this is a sustainable natural element and will continue to exist.

In terms of social aspects, the first thing to mention is the natural beauty it brought to the park. This, in turn, created a great deal of attraction and absorbed not only university students but also people from neighborhood to spend their free time around the water. Many people find this place memorable as they take pictures, and recently it has been observed that couples did lovelocks on the bridge over the pond. Thus, we can say that the locals have actively appreciated the pond and this intimate relationship will be in progress.

Coming to the economic aspect, having widely explored, there is not a gastronomy activity in the vicinity of the pond and also since it is located in a public property, a rise in the real estate and job opportunities are not applicable for the exploration. Hence, it looks hard to find a directly profitable effort within the Pond at TUL. However, the garden is an informal recreation place for academic staff and students, and therefore indirectly supports their creativity/productivity. Furthermore, the pond contributes to an improved image of the university as it is an iconic view for introduction in academic commercials, as an example, if TUL manages to attract more students, then there is more financial benefits coming to the university. After all, this pond provides nature and people with some benefits but does not make eye-catching economic profits. Fortunately maintaining the pond does not require massive funds and there are no worries that the university will take care of them. But, considering the economic sustainability, we cannot say that this project will remain sustainable if the funds are cut.

Fig. 2. Aerial pictures showing the reservoir and its surroundings in the years 1989 (reservoir still in its original shape), 2009 (nearly dried-out reservoir), 2021 (current state after regeneration); source: Łódzki Internetowy System Informacji Przestrzennej

Results

Thoroughly assessed, the pond at TUL, shows a great deal of sustainability in terms of an architectural and urban development and in the meantime plays a distinctive role in the regeneration scheme and life of Technical University of Lodz. In other words, as an environmental element and a social attraction, the pond is functional with an acceptable level of appreciation and in economic dimension there is not any defective aspect with the sustainability of the pond.

Fig. 3. The current state of the pond in the middle of landscaped post-industrial area (with the Schweikert mill in the background); source: Bartosz M. Walczak

Discussion

Adding water to the regeneration processes is not a new concept [10]. It has been considered for decades now, However, most of the researches and studies were conducted regarding major waterfronts and seldom could they be found related to postindustrial areas. Concerning the type of water bodies, the relationship between site and the blue space differs. The selected case study strongly confirmed that adding minor bodies of water even in size of small pond provides the regeneration practices with more effective and positive points. Although the revitalization was finished, adding the pond to the complex resulted in completion of the regeneration process and equipped the academic complex with more benefits. It is also highly proved that this practice can also be considered as a sustainable effort which will guarantee adding water as a lasting activity in regeneration of postindustrial urban sites. However, on the other hand, there are other factors that can relate to this type of practices ranging from the size and shape of body of water up to the water quality. What is more, factors like type of postindustrial area and role of water before regeneration could be taken into account to create bigger pictures over discussing water as an agent for regeneration of postindustrial urban sites.

Conclusion

The essential need for taking water-related regeneration into action on the one hand and the matter of sustainable future leaves no doubt about the necessity of further studies. Studies which should be conducted in detailed information and in the same time within comprehensive case studies. As mentioned and discussed in previous parts, water, undoubtedly, is capable of playing a critical role in urban regeneration practices especially in postindustrial areas. This study also demonstrates how the usage of water bodies can lead to environmentally, socially, and economically sustainable efforts. Having a sustainable effort in 21st century with the use of water bodies opens brighter horizon how to interact with shrinking postindustrial urban sites. Authors acknowledge that assessing one case study is a limitation to this study, however, extending the studies with a number of case studies and multiple categorizations of water bodies will be taken into account as further researches in order to improve the level of discussion and enhance a strong perspective for water-related regeneration in postindustrial urban sites. Hopefully, minor and major bodies of water will soon find a place in regeneration of postindustrial areas.

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PRAWIDŁOWY SPOSÓB CYTOWANIA
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Abstract: The aim of the research is to open the discussion of role of water bodies as an agent in the process of urban regeneration. Finding sustainable solutions to foster the regeneration schemes in postindustrial urban areas has become an important and updated subject in field of architecture and urban planning. Considering the importance of water in 21st century and numerous water-related postindustrial urban spaces, it seems crucial to build a regenerative relationship between water bodies and postindustrial urban sites. This paper will try to indicate the water bodies and the potential within using them for regeneration activities. The research is based on a minor body of water to open the discussion so as to introduce water bodies into the urban regeneration processes. In this case, the main conclusion of the research here is the purposefulness of introduction of water bodies as regeneration agents in postindustrial urban areas. Further case-based studies along with desk studies will play the main role in building the basic knowledge for the analytic discussion on the subject.

Keywords: Urban Regeneration, Water, Postindustrial areas

Streszczenie: WODA JAKO CZYNNIK STYMULUJĄCY REWITALIZACJĘ TERENÓW POPRZEMYSŁOWYCH. Celem badań jest otwarcie dyskusji o roli zbiorników wodnych jako czynnika w procesie rewitalizacji miast. Znalezienie zrównoważonych rozwiązań wspierających programy rewitalizacji na postindustrialnych obszarach miejskich stało się ważnym i aktualnym tematem w dziedzinie architektury i urbanistyki. Biorąc pod uwagę znaczenie wody w XXI wieku oraz liczne związane z wodą postindustrialne przestrzenie miejskie, kluczowe wydaje się zbudowanie silnej relacji pomiędzy wodą a przestrzeniami publicznymi. Badania będą miały na celu wskazanie przemysłowych zbiorników wodnych i możliwości wykorzystania ich do działań rewitalizacyjnych. Przeprowadzono obserwację wybranego zbiornika w celu weryfikacji hipotezy badawczej. Głównym wnioskiem ze wstępnych badań jest zasadność wprowadzenia zbiorników wodnych jako czynnika wspierającego rewitalizację poprzemysłowych obszarów miejskich. Dalsze badania terenowe w powiązaniu ze studiami literaturowymi posłużą jako podstawa do pogłębionej analitycznej dyskusji.

Słowa kluczowe: rewitalizacja miast, woda, tereny poprzemysłowe