AGATA PIĘT[1]

THE PAST AND THE FUTURE – IN SEARCH OF THE NEW PURPOSE FOR THE UNUSED BUILDINGS AND SITES

PRZESZŁOŚĆ A PRZYSZŁOŚĆ – W POSZUKIWANIU NOWYCH SPOSOBÓW ZAGOSPODAROWANIA NIEUŻYTKOWANYCH BUDYNKÓW I TERENÓW

A b s t r a c t

As we live in the present we are also witnesses of what has been in the past and we notice changes taking place in the urban tissue. In the present we might have influence on the appearance and structure of the city, and while being aware of city's past – shape its future. In the built environment there are plots and buildings that have lost their original purpose because of different reasons. Main goal is to present various ways of developing unused buildings and areas. The author analyzes examples of possible transformations of unused areas and buildings, as well as their impact on the surroundings. The redevelopment of unused areas by introducing new buildings is one of the possible solutions. Other is adaptive reuse of the existing buildings (both historical and contemporary) for new functions, which may be a response to the needs of contemporary cities in the terms of ensuring diversity, as well as combining tradition with modernity in architecture.

Keywords: adaptive reuse, redevelopment

S t r e s z c z e n i e

Żyjąc w teraźniejszości jesteśmy również świadkami tego co było w przeszłości i dostrzegamy zmiany zachodzące w tkance miejskiej. W teraźniejszości możemy wpływać na wygląd i strukturę miasta, a mając świadomość jego przeszłości – kształtować jego przyszłość. W środowisku zbudowanym znajdują się działki i budynki, które z różnych powodów utraciły swoje pierwotne przeznaczenie. Celem pracy jest przedstawienie różnych sposobów zagospodarowania nieużytkowanych budynków i terenów. Autorka przeprowadza analizę (badania terenowe i literaturowe) przykładowych rozwiązań przekształceń nieużytkowanych terenów i budynków, a także ich wpływu na najbliższe otoczenie. Zagospodarowywanie nieużytkowanych terenów poprzez wprowadzenie nowej zabudowy jest jednym ze stosowanych rozwiązań. Inne to przeznaczanie istniejących obiektów (zarówno historycznych, jak i współczesnych) na nowe funkcje, co może stanowić odpowiedź na potrzeby współczesnych miast w aspekcie zapewnienia różnorodności, a także połączenia tradycji z nowoczesnością w architekturze.

Słowa kluczowe: adaptacja, przebudowa

[1] Ph.D. Arch. Agata Pięt, The Institute of Technical Sciences, Department of Architecture, University of Applied Sciences in Nysa, agatapiet@gmail.com; ORCID 0000-0003-2682-4211

1. INTRODUCTION

There are many unused lands and buildings in modern cities. Examples of big areas that have lost their original purpose are e.g. post-railway, post-industrial, post-military and post-industrial waterfront areas. Buildings that find new use can be those which are part of cultural and industrial heritage, but also those that have no historical value, but because of different reasons, including economical ones, are transformed. Nowadays, the redevelopment of areas and buildings for new functions is also connected with the issues of circular economy, which is one of the factors related to sustainable urban development.

2. NEW WAYS OF DEVELOPING UNUSED AREAS

In urban areas there are many sites that have lost their original purpose. They include post-industrial areas, situated on the outskirts of the cities and in their centers. The next areas are those in the vicinity of the railway infrastructure. They can be located directly at the railway stations, on the site of former railway sidings and technical facilities; often in the city centers. New development and buildings might be introduced in these areas.

2.1. POST-INDUSTRIAL AREAS

Brownfields occupy extensive surfaces in urban and suburban tissue. The introduction of new functions in areas of this type may be difficult, among others due to the large soil pollution caused by their industrial history. For this reason, new solutions are sought that enable their optimal use.

An example of a post-industrial area in close proximity to the city center is the Buiksloterham – the district of Amsterdam located on the north side of the Ij canal. Amsterdam is a city whose development is planned in accordance with the principles of sustainable development, set out in a document drawn up by specialists in various fields at the request of the city authorities.[2] Buiksloterham was an industrial district with seaports, for which the main goal is to introduce a residential and office function. The implementation of the redevelopment project is atypical due to the economic crisis in the initial phase. This has led to a slowdown in work and a shift towards a circular economy.[3] Various projects are implemented in the district, including De Ceuvel on the site of the former shipyard, as well as Schoonschip (eng. Clean Boat), under which houses built on water are connected to bridges. Inhabitants of the Schoonship form a community focused on living according to the rules of sustainable development.

De Ceuvel is a complex of buildings realised in accordance with the principles of the closed loop economy, which is considered an experiment to creatively disseminate knowledge about sustainable development, also through play.[4] Its name comes from the former shipyard, which was located in this area. This site, which ceased to be used at the end of the

[2] *Sustainability Agenda 'Sustainable Amsterdam'*. Available on the internet: https://assets.amsterdam.nl/publish/pages/675721/sustainable_amsterdam_27-3-2015.pdf (27.01.2019).

[3] DELVA Landscape Architects, Studioninedots, Metabolic, *Circular cities. Designing post-industrial Amsterdam. The case of Buiksloterham.* 2016. Available on the internet: https://www.metabolic.nl/publications/circular-buiksloterham-designing-post-industrial-amsterdam-eng/ (17.11.2018).

[4] http://deceuvel.nl/en/ (12.11.2018).

20th century, was left unused for a long time due to the high soil pollution. In 2012, the city of Amsterdam decided to organize a competition in which the prize was free use of the land for 10 years.[5]

The winning team, being a creative group of architects, constructors, landscape designers and experts in various fields, proposed a solution based on the principles of closed circuit management, also due to the lack of funds to carry out the investment. Materials that are reusable have been acquired and design team focused on solutions that will ensure low cost of future maintenance.[6]

The opening of the De Ceuvel project in a new form took place in June 2014. 16 "house-boats" located in the area were adapted to office functions, through raising ceilings. Installations were carried out at ground level due to soil contamination. The boats were also located above ground level, and access to them was provided from footbridges (Ill. 1). All boats were equipped with photovoltaic panels, air-to-air pumps and toilets without rinsing.[7] In their vicinity, there is, among others, building named Cleantech Playground, which serves for educational purpose about energy-saving solutions. In De Ceuvel there are, among others, helophyte filters and a struvite reactor. Also biogas is produced; food is cultivated and later used to prepare dishes in a cafe.

Also phytoremediation method is used to clean the soil of impurities – plants were introduced to cleanse the soil, and the area was called the Puryfying Park. Only 4 existing trees were left within it, and new plants were introduced.[8] The condition of plants and their cleansing influence are monitored on an ongoing basis by the employees of the University of Ghent.

Ill. 1. View towards the path above the ground and house-boats in De Ceuvel in Amsterdam (photo: author)

Ill. 2. View towards the cafe De Ceuvel in Amsterdam (photo: author)

The implementation of the De Ceuvel project turned out to be a big success and became an inspiration for the creation of further developments consistent with the principles of sus-

[5] Glasl S., *How a hip area in Amsterdam blossoms out of nothing*, Smart Magazine, 2015. Available on the internet: https://www.smart-magazine.com/en/de-ceuvel-amsterdam-urban-project/ (17.11.2018).

[6] Bakker P., *Buiksloterham Woningontwikkeling in het oog van een orkaan,* De Architect, no. 3, 2014, pp. 40–43.

[7] http://deceuvel.nl/en/ (12.11.2018).

[8] Vrolijk M., *Experimenteren op De Ceuvel*, Tuinen Landschap, no. 21, 2015, pp. 44–47.

tainable development and closed loop economy in the Buiksloterham district. The important thing is that the redevelopment of unused land in this way can have a positive effect on their future use. The result of the De Ceuvel project after 10 years will be obtaining a new area, with already purified soil, prepared for the implementation of new investments. Due to its industrial past, it was impossible to use the area immediately. While waiting for a new way of development in the future it was temporarily used for another purpose. Temporary use is the present of the terrain – the transitional period between the past and the future.

Important, also for economic reasons, is reusing the existing buildings that have lost their original purpose. In accordance with the closed loop principles, a new function has been found for unused "house-boats" that would otherwise be disposed of. The building of the De Ceuvel cafe was also built of materials obtained from the lifeguard booth (Ill. 2). In this way, buildings and materials left from the demolition were given a second life. This demonstrates the approach to design with using the smallest amount of new materials, using what is already there. Designing in this way is consistent with the principles of sustainable development – beneficial for economic and environmental reasons.

2.2. POST-RAILWAY AREAS

The post-railway areas are one of the terrains that lose their function. As a result of that process new development sites are appearing in the city centers. In such places, new office and residential districts are being implemented, for example at the Wien Hauptbanhof station. There are also examples of finding new use of the elements of railway infrastructure.

An example of such a solution is the High Line in New York, where a linear park 6 meters above the ground level was created on the already unused railway trestle (Ill. 3, 4, 5, 6). The flyover in Manhattan was put into use in 1934 and ensured pedestrian collision-free access to the ground level.[9] It was used until the 1980s, mainly for food transport. After this time, it remained undeveloped and plans to demolish and use the area for other functions began to appear. At that time, the High Line initiative was created. Its main goal was to transform the flyover into a public space for residents, as it was an important element in the identity of the district. After many years, the city authorities agreed to allocate the flyover for a recreational purpose due to the expected positive impact on the revitalization of the district and the potential increase in property prices in the neighborhood.

In 2003 a competition for land development was announced, which was won by the team: Diller Scofidio + Renfro and landscape architect – James Corner from Field Operations. The project was implemented in three stages, each of them has a different character – there are both concrete slabs used that give the trestle of urbanity as well as wild plants. On the part of the High Line, also railway tracks have been left, which show the history of this infrastructure facility.[10] The transformation of the old railway flyover to the recreation area proved to be a great success and, as expected, contributed to the revitalization of the district. In the vicinity of the High Line many office buildings, art galleries and a museum were created; there are also secluded places for organizing meetings and lectures. The important thing is that the project was made possible thanks to the spontaneous action of the residents of this part of the city, who set up an initiative to preserve the identity and history of the place.

[9] http://www.thehighline.org (22.06.2013).

[10] Schafer R., *Architektura krajobrazu a rozwój miasta*, Architektura-murator, no. 6, 2010, pp. 34–41.

Ill. 3. View towards the initial part of the High Line flyover in New York (photo: author)
Ill. 4. View towards the cafe at the High Line flyover in New York (photo: author)

Ill. 5, 6. View to the High Line flyover in New York (photo: author)

3. ADAPTIVE REUSE OF THE UNUSED BUILDINGS

In the structure of cities there are also buildings that lose their original function. Some of them are historical buildings, which are part of the cultural or industrial heritage. There are also modern buildings that do not present historical value, which for various reasons, after a short period of use, are remained unused.

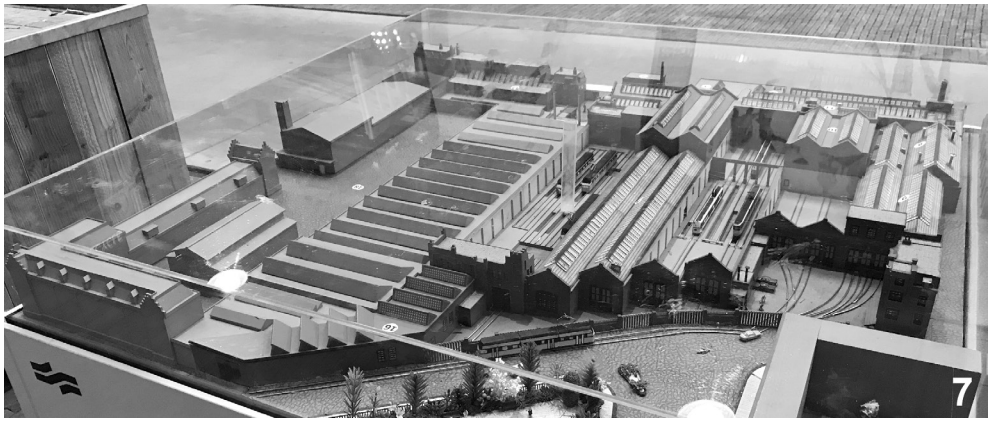
3.1. HISTORICAL BUILDINGS

Historical buildings give identity to places, their adaptation to new functions should be done in accordance with their historical values, and in the case they are protected by law – with conservation guidelines. Such buildings are already rooted in the urban tissue; often, even when they are not used, they are characteristic places in districts and represent their uniqueness. Bringing them lives back, giving new purpose by introducing new functions and regaining splendor may contribute to the revitalization of the closest surroundings. Their

presence in the structure of the district testifies to the continuation of urban tissue and provides diversity, which is an important element in the shaping of modern cities.

De Hallen is an example of the adaptation of the tram depot building for new service and cultural functions, which contributed to the revitalization of the district in the western part of Amsterdam. Halls, about 100 meters long, which from the beginning of their existence served as a tram depot, in 2014 were transformed into a multi-purpose facility. There are different functions such as: offices, entertainment, trade, restaurant, cinema, hotel and library. There is also a recording studio, and a car and bicycle park was built on the underground level.[11]

The site has a surface area of 16 hectares and has ceased to be used as a depot in 1996. Work on redevelopment lasted for many years, various ideas were considered, but ultimately the project was implemented in accordance with the concept from 2011,[12] which was based on the cooperation of the developer and the inhabitants of the district. In the building there are not only commercial functions but also those less economically profitable, which until now were missing in the district, according to residents. One of them is bike repair point, where bikes can be equipped with unique elements. Another is introduction of Denim City – a place where the production of denim could be observed and tailoring workshops are organised.



Ill. 7. A view of the model of the former tram depot in Amsterdam, which currently operates as a multi-purpose building called De Hallen (photo: author)

De Hallen depot was built in the years 1901–1928[13] in the style of the Amsterdam school characteristic in this period, according to the design of the municipal design office of public buildings – for this reason, architects are not known (Ill. 7). Brick in combination with truss girders is a hallmark of the depot halls. Perpendicularly to the longitudinal halls there is a transverse hall, with a glazed roof. On both sides of that hall the entrances are located – from the streets Ten Katemarkt and Tollensstraat (Ill. 8, 9, 10). The architect of the adaptation of the building in the 21st century, André van Stigt, has kept tram tracks in this space to be

[11] https://dehallen-amsterdam.nl/het-gebouw/ (01.06.2019).

[12] Baarveld M., Marnix Smit M., Dewulf G., *Implementing joint ambitions for redevelopment involving cultural heritage: a comparative case study of cooperation strategies*, International Planning Studies, Vol. 23, no. 1, 2018.

[13] *Lang Verwachte Opening De Hallen, Amsterdam-West "Cadeau Voor De Wijk"*, Bouwen Aan Monumenten, 2014, pp. 148–151.

a testimony of the past. Also, the high, monumental entrance doors to individual halls have been restored and represent the history of this place. Access of daylight through skylights to the transverse hall affects the reception of space by users – it makes it recognized as an open space, accessible to everyone, and not a closed place.[14]

Ill. 8, 9. View of the entrance zone to De Hallen in Amsterdam (photo: author)

Ill. 10, 11. Interior of the main hall at De Hallen in Amsterdam (photo: author)

Ill. 12, 13. Residential development in the vicinity of De Hallen in Amsterdam (photo: author)

[14] https://dehallen-amsterdam.nl/het-gebouw/ (01.06.2019).

To the east of the De Hallen building, the area formerly belonging to the depot remained. Originally, this area was to be developed at the same time as tram depot, but eventually it was decided to separate the realisation process of these two projects and residential buildings were created later (Ill. 12, 13). The implementation of the residential function was taken over by the developers of Van Wijnen and Altera, who presented the most advantageous offer and quick construction. They proposed mix of various types of residential housing: private property, subsidized flats, as well as residential premises for rent.[15] A building quarter with two internal courtyards and services on the ground floor at Tollenstraat was built.

The transformation of De Hallen is an example of the adaptive reuse of a building under conservator's protection, which marked its presence in the urban tissue of a given place. An important factor is the inclusion of the residents of the district in the design process, thanks to which it was possible to create not only a multi-purpose facility meeting their needs, but also to contribute to the district's revitalization. Attention should be paid to the preservation of elements that indicate the original purpose of the object, such as tram tracks in a hall located parallelly to the others, which became a main passage (the central space in the building).

3.2. CONTEMPORARY BUILDINGS THAT LOST THEIR ORIGINAL PURPOSE

Buildings that do not have big architectural value, are not always demolished. Currently, according to the principles of the circular economy and continuation in the urban structure, there are examples of adapting those buildings for new functions. Certainly one of the factors that facilitates the adaptation is the type of construction that allows the functional-spatial layout to be shaped in a flexible way. There are also approaches of designing new buildings in a way that will allow their future adaptation for another function (e.g. car park building with a net height of 4 meters).

An example of a contemporary building that was adapted and transformed into another function is the former office building in The Hague. In 2012, as a result of the meeting of the city authorities with scientists (focusing on issues related to agriculture) and employees of the creative department of the Deloitte company, it was decided to introduce urban agriculture to the de Schilde building. 70 design teams took part in the announced competition. Company Urban Farmers was selected as winners, having experience in this field, gained through the construction of a facility with such a function (250 m^2) in Switzerland. The 7-storey de Schilde, built for Phillips in the 1950s, gained the new name – the New Farm, and a greenhouse with plants was built on its roof. On the floor below there are aquaria for breeding tilapia, which makes it possible to produce food in the aquaponics system. This solution is compatible with the principles of circular economy. The surface area of the greenhouse and storeys with aquariums is 1,900 m^2 – several times more than the municipal farm in Basel, Switzerland. The remaining floors of the New Farm building were designed for restaurants, offices, spaces for culinary workshops, as well as dedicated to creative environments focusing on solutions consistent with the principles of sustainable development.[16] The development of the building

[15] https://europe.uli.org/uli-netherlands-transformation-de-hallen/ (02.06.2019).

[16] van Assen S. [et al.], *Urban Challenges, Resilient Solutions: Design Thinking For the Future of Urban Regions*, Trancity Valiz, 2017.

as a vertical farm is a solution introducing the cultivation of food to cities – which might result in reduction of transport costs.

Unfortunately, in 2018, Urban Farmers went bankrupt; it turned out that the costs of growing vegetables in the greenhouse on the roof are 5–8 times higher than the cultivation on the grounds of the Westphalian agricultural area.[17] Half of the revenues came from organized tours of the building as well as catering services, which indicates that the public is very interested in such solutions. The introduction of an urban farm of such a large surface area in the city centre turned out to be an experiment that failed in terms of economic aspects, but increased public awareness of such solutions – it fulfilled an educational role. Not always unconventional solutions turn out to be successful in all fields.

4. CONCLUSION

The presented examples show the diversity of activities undertaken in the urban areas regarding the transformation of land and buildings once used in a different way, on which, for various reasons, this activity ceased. Transformation of the existing buildings show the tendency to keep them in the urban tissue, no matter if they are historical or were realized nowadays. It happens because of the principles of sustainable development, the approach to design in accordance with the rules of circular economy and, consequently, the search for new functions for existing buildings. In order to connect the past with the future, temporary solutions in the present are applied – which are only a transitional stage for the building and sites but in turn will enable them to be redeveloped in the future (e.g. De Ceuvel).

By adapting historical buildings to new functions, the architectural tradition is maintained and new elements are introduced at the same time. However, the transformation of contemporary buildings is done by applying new solutions in terms of functional and technical aspects, but also those related to circular economy principles, where not only the building is re-used, but also the construction materials. Other way is to introduce functions consistent with the idea of sustainable development (e.g. urban farm in Hague). Transforming and giving new functions to historical buildings allows combining tradition with modernity in architecture. It might be achieved by keeping the elements showing history, e.g. tram and railway tracks, which are a testimony of old identity.

In summary, the transition of a building or site from the past into the future may be smooth, and in the meantime a temporary solution may be introduced. It is important to strive for the maximum usage of what is already there, as well as to respect the tradition and preserve the unique character of each of the buildings. Transformations also include modernity, which does not always have to be manifested through technological solutions, but can be implemented through originality and striving to form creative experimental solutions (e.g. introducing new non-obvious functions in De Ceuvel and Hague).

[17] Sijmonsma A., *Vertical farming is difficult in the Netherlands,* Available on the internet: https://www.hortidaily.com/article/6044518/vertical-farming-is-difficult-in-the-netherlands/ (published: 7.05.2018; access: 04.06.2019).

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[3] Belder M., *De Hallen Amsterdam succesvol herbestemmingstraject*, Renovatie Totaal, no. 2, 2016, pp. 16.

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[12] http://deceuvel.nl/en/ (12.11.2018).

[13] https://dehallen-amsterdam.nl/het-gebouw/ (01.06.2019).

[14] https://europe.uli.org/uli-netherlands-transformation-de-hallen/ (02.06.2019).

[15] http://www.thehighline.org (22.06.2013).

Author's note:

Agata Pięt, architect, studied at Technical University in Wrocław and Universidade Lusiada in Lisbon, PhD in Architecture at Technical University in Wrocław, Poland. Phd thesis on the functional and spatial layouts of the railway stations at the turn of the 21st century. Main research interests are: multifunctionality and redevelopment of the unused areas.