

niezależną od ścian zewnętrznych konstrukcję.

Podsumowanie

Przedstawione wyżej przykłady rewitalizacji obiektów inżynierskich pokazują, jak bardzo różnorakie mogą być sposoby rozwiązywania przedmiotowego problemu. Działania w tym zakresie zależą nie tylko od rodzaju obiektów, ich przeznaczenia, czy rangi, którą pełniły do tej pory. W równej mierze zależą one również od otoczenia w jakim się znajdują obiekty.

Jak pokazują powyższe przykłady, podejmowane działania są różnorakie. Rewitalizacja przestrzeni może obejmować zarówno poprawę jakości technicznej obiektów inżynierskich (z uwzględnieniem również kwestii estetycznych), jak i ich rekonstrukcję czy odbudowę, czy też zmianę przeznaczenia obiektów inżynierskich (co zawsze się wiąże z określonymi zadaniami projektowo-budowlanymi).



Il. Gazometry po przebudowie - zespół usługowo-mieszaniowy Źródło: archiwum woli.waw.pl

Jak widać na przykładach przytoczonych zrealizowanych inwestycji, problem

УДК 725.04

CRITERIA OF AUTHENTICITY IN THE REHABILITATION OF THE INDUSTRIAL HERITAGE IN RELATION TO THE USE/FUNCTION IN EUROPEAN COUNTRIES WITH APPLICATION IN RIVERSIDE SOUTH ARCH (LISBON)

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The paper presents the development of a set of authenticity criteria for the conservation of historic places. It aims to define criteria of authenticity re-

rewitalizacji przestrzeni jest zagadnieniem dość szerokim. Z pewnością problem ten będzie w najbliższych latach ciągle aktualny, co prowokuje do badań naukowych w tym zakresie.

THE REVITALIZATION OF BRIDGES AND ANOTHER ENGINEERING OBJECTS

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The paper presents different approaches to solving the problem of engineering revitalization, including bridges. Presented are examples of revitalization in different environments. This article attempts to show the diversity of the revitalization of architectural space.

Literatura:

1. Lesław Bichajło, Dariusz Sobala. „The High Line Nowe spojrzenie na nieprzydatną infrastrukturę mostową w miastach”, VII Krajowa Konferencja Estetyka Mostów, Warszawa – Jachranka 13-15 Kwietnia 2011r.

2. Jerzy Stanisław Ebing. „Nowe funkcje budowli inżynierskich”, www.zawodarchitekt.pl/artykuly/za1001_budowle.html

3. Marta Kołpanowicz. „Kraków doczekał się loftów”, Krakowski Rynek Nieruchomości 4/2008, Kraków.

4. Wojciech Prastowski. „Odkrywamy Wrocław: Wieża ciśnień przy alei Wiśniowej”, www.tuwroclaw.com

5. Praca zbiorowa: „Rewitalizacja obiektów inżynierskich umiejscowionych w historycznym środowisku”, VI Krajowa Konferencja Estetyka Mostów, Warszawa – Jachranka, 16-18 kwietnia 2008r.

6. Praca zbiorowa: „Wybrane zagadnienia rewitalizacji obiektów budowlanych”, Płock 2014.

Źródła internetowe:

www.bridgeofflowersmass.org

www.loftykraków.pl/lofty/e1/projektmlyn

www.thehighline.org

www.zawodarchitekt.pl/artykuly/za1001_budowle.html

Поступила в редакцию 1.12.2014 г.

sterdam, Manchester and Portuguese cases in the municipalities of Almada, Seixal and Barreiro and Arc Riverside South in Lisbon.

Introduction. This study was conclusive for the perception of new forms of industrial heritage rehabilitation, taking into account the ancient uses and functions in buildings, to enter and serve in the best way the future of cities.

The structure of the research is based on the notions of "Authenticity of function/use of the industrial heritage" but taking into account the difference in cultures and trends in case studies at European level.

"Adaptive reuse" is an expression that figures prominently in discussions relating to redundant cultural properties in a number of European countries, especially in relation to former religious structures such as churches and monasteries and to monuments of the industrial revolution [5].

This investigation led to the understanding of the intervention of several entities, for example: the Institute of Architectural and Archaeological Heritage Management (IGESPAR), the general direction of national monuments and Buildings (DGEMN), and the European Route of Industrial Heritage (ERIH)

The development of a set of authenticity criteria for the conservation of historic places is a major contribution in order to be able to choose and set priorities at the national and international levels classification for all the categories of World Heritage (World Heritage List).

The authenticity criteria previously defined by UNESCO influenced the methodological research process, which structured the definition authenticity criteria in the rehabilitation of the industrial heritage in relation to the use/function of the built, for application in Arc Riverside South (ARS) (area located on the South side of the mouth and estuary of the Tagus River (Lisbon) where there are deployed several industrial complexes currently disabled which were built during the last three centuries in the municipalities of Almada, Seixal and Barreiro).

The study aims to define criteria of authenticity regarding the use/function of the industrial heritage, validated by experts through the Delphi method.

The idea of preserving the industrial heritage is interesting for keeping past memories preserved through buildings and adds value to old buildings through new investments to be carried out by assigning new functions to the built.

Methodology and case studies. In Europe the case studies chosen were located in the cities of Barcelona, Amsterdam and Manchester.

i) *Barcelona.* The city, bounded Northwest by the mountains and Southwest by the Mediterranean Sea, has early adopted a philosophy for the restructuring process based mostly with a strong connection with the sea.



Figure 1. – Riverside South Arc (Lisbon)
(photo modified by the author and with drawal from the site <http://www.bing.com/maps/>)

Its primary industrialization has begun by the sea, with small boat traditional industries, but also on its periphery along the rivers, where there are installed industries that take advantage of the water to energy production.

The consolidation of the industrial sector was subsequently linked to urbanisation. The commercial sector too evolved as result of industrial advances and the potential market generated by urban growth [2].

In the majority of the situations in the city of Barcelona and in the study cases chosen, unique features of rehabilitation were detected as to the authenticity and the use of

industrial buildings. Examples of what has been said come as follows:

- it is common to find industrial buildings that have been rehabilitated in the very heart of the city;

- the rehabilitation of industrial buildings with addition of new modern buildings that stay together and having both the same use/function;

- structural excavation for access to the building by a lower quota, so as not to affect its originality, authenticity and memory, and thus create new spaces for entrance;

- the sum of various spaces within a rehabilitated building to form a functional building in order to maintain their authenticity and the new function;

- the function to predict how the industrial buildings worked and how they are going to work in their new surroundings, and with its new use;

- unique historic marks of two centuries of industrialization with features left by a high-industrialised town in the old times.

In general the rehabilitation of buildings is made with the same materials that were once the originals, recreating the plasticity of time. This is conclusive that there is a concern in maintaining the industrial building as it was, but also adapt it to new uses to serve and be integrated in the current city, which is a constant in the examples (case studies). As for industrial buildings, in their origin they have characteristics similar or even equal in terms of their material plasticity, however varying in terms of insertion in the city.

ii) Amsterdam. Amsterdam started to develop in the banks (left and right) of the river Amstel and in 1250 it was established the first link between the two banks, which enabled communication between the settlements of Nifwendijk, Zeedijk and Warmoesstraat. In the years 1450, 1597 and 1625 the three most important water channels for the development of river transport and industry location were built.

Industrial buildings have the particularity of being rehabilitated in large numbers be-

cause there are many examples of industrial factories.

It was conclusive for this work that there are three types of industrial rehabilitation where the concern is to safeguard the memory of the original range of industrial complexes inserted into the urban fabric:

- Finding solutions for the rehabilitation of industrial buildings inserted into the central core of the city focuses on "transformation or adaptation" of the interior of buildings for new uses such as cultural and museum spaces adapted to new technologies;

- In industrial peripheral areas, such as industrial clusters of heavy industry, it is concluded that there is greater manipulation and diversification of uses given to the built, thus creating cultural spaces, outlets, offices, buildings of nightlife and in most cases the buildings with greater value are only rehabilitated retaining its original value;

- The windmills spread over the coastal areas can be considered as the first traditional industrial buildings. His rehabilitation was made using almost entirely handmade techniques, recreating every past memory and plasticity, thus structuring a vast museum, culture and recreation area.

iii) Manchester. The industrial revolution began in England in the eighteenth century and due to this revolutionary event a set of technological changes impacting the economic and social level has occurred. England is also a pioneer country in the conservation of urban heritage.

The city of Manchester is notable for being the first industrial city.

Textiles have been one of the industrial sectors that more have contributed to the early development of Manchester.

It was found that the rehabilitation of the building clusters is performed according to three proposals for the revitalization of the surrounding industrial area:

- the first proposal aims at the rehabilitation of the complex and the adaptation to new uses such as housing and services;

- the second proposal aims at the rehabilitation of a historic industrial complex area

(heritage) where investment is necessary to keep alive the memory of the place;

- the third proposal is the addition of new buildings while retaining the industrial characteristics at the level of applied materials in construction.

In conclusion, the case studies are similar (among themselves) and representative of the beginnings of industrialization during the 19th century until the 20th century. During this period the building was altered and extended with the best technology of the time.

Proposals for rehabilitation were defined as the new role of the built, losing some features of construction and plasticity in function of the new use, but gaining a new momentum with new projects to the buildings. The addition of new buildings came to help the revitalization of the built heritage with services and housing.

Soon, these case studies resulted in premises, influences, construction methods and different ways of projecting, rehabilitate and revitalize the industrial territory.

The progress made in other regions of the world will be of great help in designing a strategy for the rehabilitation of the Portuguese built industrial heritage. Our main concern will be with an area on the left bank of the Tagus river, just in front of Lisbon, where a lot of industrial clusters relevant to our research can be identified (RSA - Riverside South Arc).

iv. Laboratory of experimentation - Riverside South Arc (Portuguese case study).

The Riverside South Arc (RSA) is a restructuring project defined by the authorities of a well-defined area of the Tagus estuary that begins at Fonteda Telha and ends at Alcochete. Several municipalities are involved in this important rehabilitation project, which has been affected by the financial crisis in Portugal. All the projects will be re-considered to adapt it to the new circumstances and this will clearly be a major challenge for those involved in the redesign of the project.

The ambition is to design "a big metropolis of two banks focused on the Tagus River".

The rehabilitation and revitalization of the old industrial complexes of Margueira (municipality of Almada), National steel industry (municipality of Seixal) and CUF/Quimigal (municipality of Barreiro) emerges as an opportunity to leverage the development of Riverside South Arc in the context of the Lisbon Metropolitan Area (LMA). The urban plans that will be implemented over the next decades are described below.

v. Municipality of Almada.

Plan of urbanization Almada Nascente PUAN, 2002 (55 hectares of the Margueira/run time - 15 years /architecture - Rogers Stirk Harbour + Partners) includes an area of approximately 115 hectares between Cacilhas, Covada Piedade and involving and integrating the former shipyards of Margueira/Lisnave.

The project was thought to be structured according to the main drive forces of the market in terms of demand for housing, service areas and leisure, culture spaces, terminal cruise interface, and the possibility of an underwater tunnel (for metro) to unite the cities of Almada/Lisboa.

The Lisnave in Margueira was a company that acted at industrial level in international naval maintenance and repair.

The Lisnave was one of the emblematic companies of the Portuguese economy in the years 50 and 60 of the last century, the largest shipyards at European level and among the best worldwide. In the early seventies it was touched by a world crisis in the sector and the Almada shipyard has been abandoned.

vi) Municipality of Seixal.

Detailed plan for the South Bay in Seixal 2008 (intervention area 546 ha/architecture from Risco) is structured for the revitalisation of the deactivated industrial areas and all so the construction of a new zone of mixed housing/buildings and services, cultural spaces, ecological infrastructure, roads and recreation spaces.



Figure 2. – Aerial view from the shipyard Lisnave (photo modified by the author and taken from the site <http://forum.autohoje.com/off-topic/41124-almada-cidade-da-agua.html>)

Very early populations who settled on the banks of the Tagus River realized that wind power was a windfall for navigation. In the municipality of Seixal several tide mills were constructed.

The existence of hydraulic mills in Portugal appears documented from the 10th century. Several documents referred these industrial constructions while not describing them in detail, which does not allow the collection of technical elements [4].

The buildings were designed with a cereal milling system (consisting of casters and wheels), which operate between low and high tides.



Figure 3. - Aerial view of the location of the Seixal tide Mills (photo modified by the author and with drawal from the site <http://www.bing.com/maps/#Y3A9cWY1ZnI3Zzc3MHE1Jmx2bD0xNCZzdHk9bw>)

All of this tide mills in the picture above are classified as property of public interest, but only one is rehabilitated (the tide mill of Corroios/Museum).



Figura 4. - Tide mill of Corroios/ Industrial Museum (Photo by the author)

vii) Municipality of Barreiro.

Urbanization plan of Quimiparque / Municipality of Barreiro / 2007 Intervention area of 210 hectares/runtime 18 years/ Architecture – Risco. This intervention will build new spaces, which are identified by services and housing, a new Gare with land transport interface, a river terminal adapted to new functions, a pond for water sports and a green ecological park. Industry in the former chemical park can remain active (structured and divided into plots, construction of the third bridge over the Tagus river which is now cancelled).



Figure 5. -Aerial view of the plant during the 20th century (photo modified by the author and taken from the book's withdrawal SENA. 1958)

The increasing mechanization of agriculture (but also the traditional) required, even in the 19th century, a sharp industrial fertilizers consumption, whether chemical or organic. In Portugal factories such as CUF,

Companhia União Fabril, was founded in 1865 [3].

The CUF industrial complex was deployed in the early 20th century in the municipality of Barreiro. Barreiro was transformed in an industrial hub owing to the railway infrastructure, shipbuilding facilities, river transport and some cork industries. The legendary industrial Alfredo da Silva decided to invest in the construction of an Industrial Union in Barreiro, that became one of the largest industrial centres of Europe. In the year 1977 the CUF started Quimigal and a decade later went to Quimiparque. At the end of the first decade of the new millennium the company Baía do Tejo retained the management of the industrial complex and industrial areas plan in ARS project.

In conclusion, the case studies helped us to understand how significant projects have been carried out at European level in what rehabilitation of industrial heritage is concerned. Different contexts in terms of regions, activities, cultures and methodologies have been considered. The understanding of the intervention of the various entities involved in the process and of similar methods and differentiated approaches to revitalization of industrial buildings is of the utmost importance to theoretical support the definition of strategies for the rehabilitation of the industrial heritage. The result of the research culminated in the perception of architectural heritage protection concepts that create and define parameters for the existence of a good practice in the current world and in the European context.

**КРИТЕРИИ АУТЕНТИЧНОСТИ ПРИ
РЕАБИЛИТАЦИИ ОБЪЕКТОВ
ПРОМЫШЛЕННОГО НАСЛЕДИЯ С
ИЗМЕНЕНИЕМ ИХ
ФУНКЦИОНАЛЬНОГО
ИСПОЛЬЗОВАНИЯ В ЕВРОПЕЙСКИХ
СТРАНАХ НА ПРИМЕРЕ НАБЕРЕЖНОЙ
ЮЖНЫЙ АРЧ В ЛИССАБОНЕ
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В статье описывается исследование, которое ставит своей целью на базе имеющейся системы ЮНЕСКО разработать новую систему критериев аутентичности для реабилитации объектов промышленной архитектуры, являющихся историческим наследием. Автор пользуется методом Дельфи и приводит результаты экспертной оценки опыта реализации ряда аналогичных проектов в Барселоне, Амстердаме и Манчестере, а также в Португалии – набережная Южный Арч в Лиссабоне, портовые доки Алмада Насценте, реабилитация южной гавани в Сейхале, Куимипарк в Баррейро.

References:

1. ALHO, Carlos, *Authenticity Criteria for Conservation of Historic Places*, University of Salford, Manchester, 2000
 2. BUSQUETS, Joan, *Barcelona the urban evolution of a compact city*, Nicolodi editore, 2005, p. 99.
 3. DOCOMOMO IBERICO, *A arquitectura da indústria, 1925-1965, registo docomomo ibérico*, 2000.
 4. NABAIS, António, *História do Concelho do Seixal-Património industrial-Moinhos de maré*, 1986, p. 19.
 5. *Working papers collected by ICOMOS, Nara conference on authenticity*, 1994, p. 6.
 6. Câmara Municipal de Almada-<http://www.m-almada.pt/xportal/xmain?xid=cmav2>
 7. Câmara Municipal de Seixal-<http://www.cm-seixal.pt/cmseixal.site>
 8. Câmara Municipal de Barreiro-<http://www.cm-barreiro.pt/pt>
 9. IGESPAR, *Instituto de Gestão do Património Arquitectónico e Arqueológico* <http://www.igespar.pt/pt/>
 10. UNESCO, Portugal, *Organização das Nações Unidas para a Educação, Ciência e Cultura* <http://www.unesco.pt/cgi-bin/home.php>
 11. UNESCO, *The Operational Guidelines Implementation of the World Heritage Convention OUV Authenticity Integrity World Heritage in Danger*, Prof. Dr. Marie-Theres Albert Chair Intercultural Studies, UNESCO Chair in Heritage Studies, Director of IGS Heritage Studies, 2012, pdf.
 12. ICOMOS-
<http://www.international.icomos.org/home.htm>
 13. *European Route of Industrial Heritage* -
<http://www.erih.net/>
- Поступила в редакцию 1.12.2014
Bibliography:
Поступила в редакцию 1.12.2014 г.