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Protection and Reuse of Industrial Heritage: Dilemmas, Problems, Examples

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**Protection and Reuse of Industrial Heritage:
Dilemmas, Problems, Examples**

edited by Sonja Ifko and Marko Stokin

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Editorial

It gives us a great pleasure to present the second edition of our publication of ICOMOS Slovenia with selected articles they were presented at the 2th International Symposium on Cultural Heritage and Legal Issues, Protection and reuse of industrial heritage: Dilemmas, Problems, Examples, in Bled between the 1st and 3th October 2015.

The Council of Europe's early positions towards industrial heritage were a reaction to the consequences of the industrial decline in western Europe, and the principles were further developed in Recommendations of the Committee of Ministers of the Council of Europe in 1987 and 1990 [R(87)24 and R(90)20]. In 2013, the Parliamentary Assembly of the Council of Europe adopted the Resolution 1924 (2013) on Industrial Heritage in Europe, which draws attention to the most recent issues relevant for the integrated conservation, intelligent rehabilitation and sustainable revitalisation of industrial heritage sites and landscapes of Europe. One should also mention the constant alerts coming from the side of the Congress of Local and Regional Authorities of Europe to strengthen the local authorities' role in the preservation of industrial heritage "in situ". Lately, the initiative about European Industrial and Technical Heritage to be used as one of the central themes of European Heritage Days 2015 was put forward and actually implemented in many European countries. On the other side, ICOMOS Slovenia as an active member of ICOMOS International and ICOMOS Europe has dedicated an important part of its efforts towards international cooperation and pooling forces in the field of industrial heritage protection. Joining forces with the Council of Europe build synergies in following-up the Council of Europe conventions with revisiting these references and taking stock of the new challenges and issues at stake. Our common goal is to integrate innovative ideas, define new positions and open new perspectives with the aim to give this important dimension of our common heritage of Europe the role it deserves in the future multilateral and trans-frontier co-operation.

The present publication brings eleven new articles from different countries, especially focused on south-east Europe industrial heritage, were after the fall of Yugoslavia the new economic order led the collapse of many industrial factories and towns from socialist period and they are now in the process of decline. The nature of economic and political circumstances in south-east Europe are constantly and increasingly challenging the survival of industrial heritage - even "listed" monuments. Public interest is not always sufficiently expressed in decision-making process. The same is true about expectations of heritage communities associated with industrial heritage which still have little means of being expressed and taken on board. There has been an increasing trend of exploitation industrial heritage from which the traditional professional institutions are excluded because they are self-limited to their classical "protection" role instead of developing management approach. The fact is that changes affecting industrial heritage and its role in society require new responses and innovative solutions.

Sonja Ifko, Marko Stokin

Review

The book 'Protection and reuse of industrial heritage: Dilemmas, problems, examples' raises one of the most significant questions of heritage protection that came into the international public eye at the turn of the 20th and 21st centuries. In this period, many international organisations and bodies involved in heritage management have been engaged in various aspects of industrial heritage. Since UNESCO and Council of Europe are the most prominent international governmental organisations, the publication attempts to put stock in standards developed in the framework of UNESCO World Heritage Programme and Council of Europe's activities and confronts them with efforts of major universal non-governmental organisations, such as ICOMOS and TICCIH. The aim of giving an overview of international standards is itself worthy. The book combines them with a selection of analytical articles about the state of statutory protection, public perception, conservation and reuse by analysing cases from Western and South-Eastern Europe. The state-of-the-art comparison between the situation in both groups of countries shows that the South-Eastern countries lag behind the Western ones in every aspect of industrial heritage protection but the academic historical knowledge, the efforts of museum and conservation service experts and civil society activities, mainly organised at local levels.

The articles collected in the publication offer over 140 pages of intensive reading of well-documented overview of the industrial heritage history in selected countries, discuss problems and to some extent also exemplify good practice. The authors are renowned authorities in the field of industrial heritage research and the topics of their presentations cover well the purpose of the book. There are some discrepancies in technical format of individual articles, one could also come across some translation insufficiencies but such minor imperfections cannot override the prevailing positive impression.

The overall evaluation of the publication could be summed up as follows: it is of great value for readers interested in the issues of industrial heritage and also for heritage experts in general. One could only hope that the message of the book reaches decision makers, as well. The tone of some articles is somehow pessimistic but on the other hand authors share the conviction that education, awareness-raising and international cooperation can make headway in improving the situation.

Dr. Jelka Pirkovič



Factory Litostroj Ljubljana. Photo: Sonja Ifko.

Museum Project Zagreb Industrial Heritage: History, State of Affairs, Outlook: an Impetus for Raising the Awareness of Industrial Legacy

Summary

The period from the end of the 19th century onwards characterizes the intensive development of processing industry and plants connected to building the utility network in Zagreb (Croatia). The majority of all industrial complexes regarded as heritage sites are nowadays located in the wider city center area and are commonly considered valuable cultural and development potential.

Case studies presented in the paper provide a brief insight into the construction history of industrial facilities, application of the legal protection system in practice and management challenges in general. Due to reckless and hasty reuse of former industrial zones, some heritage structures have been endangered by the interests of high-profit making real estates investments. Despite legal protection, the lack of efficient control in the protective measures implementation has led to neglect and decay of listed buildings or even deliberate exposing to damage. The City authorities are decisive, liable and the most influential component in the process of heritage preservation as well as the creation of future directions for changing the perspectives of the industrial legacy.

In 2009 Zagreb City Museum launched the project Zagreb Industrial Heritage: History, State of Affairs, Outlook, aiming to research aftermath of the industrialization, process that crucially impacted urban development and social changes in the Modern and Contemporary era. The root intentions were raising the awareness, promotion and public presentation of the legacy of industry, as well as the stimulation of rethinking the heritage management models to be applied to valuable industrial buildings. Project goals, methodology, activities and achievements are respectively presented in the paper.

1 Introduction: On industrialization as a driver of modernizing the periphery

By the end of the 19th century, Zagreb, the administrative center of Croatia and Slavonia, was a peripheral town of the Austro-Hungarian Empire, with no particular political and economic significance. Although it functioned merely as a transit hub by-line, connection to the southeastern arm of the Vienna – Trieste railway in the early 1860s and the concurrent emergence of industrial enterprises were key factors in the process of modernization. End 19th century saw the beginnings of intensified industrialization, which was reflected in the higher share of industrial production in the total economy of the city. Zagreb was gradually grown first into a local, then the regional economic center ¹.

By the establishment of the Kingdom of Serbs, Croats and Slovenes (from the 1929 to 1941 Kingdom of Yugoslavia), after World War I a new political and economic territory was created. The structure of the economy and the achieved level of economic development of the northwestern regions were ahead of the rest of the country. These circumstances influenced the transformation of Zagreb in the center of finances, trade and industry of the newly established state. At the same time, a centralized public administration kept Zagreb

¹ Karaman, I. (1991). *Industrijalizacija građanske Hrvatske 1800-1941*. Zagreb: Naprijed.

at the political periphery². The global economic crisis in the early 1930s combined with a further strengthening of the state interventionism severely weakened financial strength of private entrepreneurs³. Nevertheless, local businesspeople managed to keep Zagreb on the position of the industrial center of regional importance. Between the two world wars, industrialization was the mover of economic power, driver of urban development, population growth and changes in demographic structure as well.

Transurban routes of the interstate railroads, as well as the concentration of industrial premises in their vicinity, have been the constant challenge to the urban development of Zagreb. Appreciation exclusively the interests of the foreign investors and the remote possibility of the influence of domestic factors in deciding on the position of the railway lines that during the 1860s passed through the city resulted in long-term harmful solutions. Branch line which led through Zagreb to the main railway Vienna – Trieste and railway Budapest – Zagreb – Rijeka interrupted the local traffic communications and had impeded the planned spread of the city to the south. Zagreb has since developed longitudinally, wherein areas south of the railway lines have taken on the features of the periphery. At the beginning of the 20th century, the need for the adoption of a new masterplan intensified the efforts for the solution of urban traffic problems caused by the railways. Accepting of minimally invasive, unassuming financial solution for improving the local traffic communications in 1911 did not eliminate key issues⁴. City traffic was enhanced by building the rail overpasses during the 1930s and by the construction of an elevated railway in the eastern part of the city after the World War II.

The position of the railways profoundly influenced the planning area for the industry. Relying on a zoning system, 1887 Masterplan laid the foundation of modern urban planning. An area on a south of the railroad tracks, as well as the western and eastern edges of the inner city, were predicted for the industrial enterprises. By the construction of the factory complexes along the southern border of the tracks, a limitation for expansion of the city to the south was furtherly strengthened. Intensive construction of an industrial zone on the southeast outskirts, along with the central drainage canal, began in the early 20th century. Between the two world wars, factory facilities and social housing were concentrated there, remaining in that area until the beginning of the 21st Century.

The rapid growth of the population of Zagreb from 1890 to World War I had largely been a consequence of the increased intensity of industrialization, which stimulated the immigration of workers from the city surroundings. In a decade 1900 to 1910, the number of industrial enterprises with more than 20 employees has doubled. Moreover, a quarter of all factories in Croatia and Slavonia was concentrated in Zagreb in the eve of the World War I. By 1918, planned settlements were built for skilled, mostly foreign workers, whereas spontaneously built substandard housing provided accommodation for a large number of the newly arrived unskilled workforce⁵. In the early 1920s, Municipality of Zagreb involved in solving the housing crisis by building dwelling units for the employees of the City, workers and the poverty. In combination with the development plans for certain areas and parts of the city, expansion of the urban infrastructure, improving the quality of public transport services and the construction of educational, health and social services has given positive results till the World War II.

After 1945, during the socialist planned economy period, the influence of industry was manifested by merging and expanding of the existing, and by a construction of the new complexes. Driven by ideology, large industrial premises appeared in eastern and western suburbs, combined by the newly erected dwellings, were providing existence for thousands of workers coming from the provinces.

2 Šimončić-Bobetko, Z. (2005). *Industrija Hrvatske 1918. do 1941. godine*. Zagreb: AGM.

3 Berend, I. T. *Decades of Crisis: Central and Eastern Europe before World War II*. Berkeley-Los Angeles-London: University of California Press.

4 Knežević, S. (1992) *Regulatorna osnova Milana Lenucija za dio Zagreba od željezničke pruge do rijeke Save iz 1907*. *Radovi Instituta za povijest umjetnosti* 16(16), 168-197.

5 Radović Mahečić, D. (2002). *Social Housing in Zagreb between the Wars*. Zagreb: Horetzky.

2 Zagreb industrial heritage: protection system, management challenges and prospects

2.1 The legal protection system and heritage management

According to the National Registry of Cultural Goods, three historical industrial complexes and five factory facilities in Zagreb have been protected as industrial heritage due to historical and architectural values. Including one factory building, inscribed to the Registry's tentative list, historical complexes and most of the individually protected facilities are located in the wider city center area [6]. The majority of all protected industrial structures, built from the 1890s to 1940s, are to be transformed into a public, business or residential facilities.

The paper focuses on three complexes selected by the criteria of the originally preserved structure, interiors, machinery and equipment, historical context, a value of the architectural design and deterioration risk as well. Analysis of the current condition of premises, as well as the critical query of the plans for their reuse, has detected certain "weak points" and shown general issues in evaluation, protection and use of the industrial heritage potential. In this matter, Zagreb is not an isolated case, but an example of a pattern to treat industrial heritage in Croatia.

2.2 Case Study 1: Steam-powered flour mill

Industrial complex of a steam-powered mill for the production of flour (Zagreb Steam-mill) had been originally built in the 1860s. After the fire that destroyed a majority of the plant, the facility was rebuilt from 1906 to 1908, to be further extended and added on to, following the requirements of the upgraded production. The ensemble formed a mill and transmission building, flour storage, silos, boiler room, engine room with a chimney, office buildings, warehouses, commercial and residential buildings [Figure 1]. The historical industrial complex has been protected as a site of significant urban, architectural, cultural and historical values and a prominent landmark as well. The necessity of restitution of the construction corps and façade, along with the possibility of noninvasive conversion, is legally prescribed for the integrated production assembly consisting of a mill and transmission building, storage and silos (an example of the early application of reinforced concrete structures to an industrial facility in Croatia)⁶.



Fig 1: Steam-powered flour mill 2007, Zagreb City Museum.

6 Arčabić, G. (2008). Zagrebačka industrijska baština u Registru kulturnih dobara Republike Hrvatske: pregled, stanje, potencijali. *Informatica museologica*, 38(1-2), 22-29.

Part of the production assembly was damaged by fire in 1988, followed by ceased production [Figure 2]. South wall of the mill building was collapsed in 2013 due to destroyed iron structure and in 2014 occurred the removal of all structures of a vulnerable static. Plenty of ideas on the renewal of the historical complex for cultural (museum of contemporary art, archives, public library) and commercial reuse have emerged in last decades. However, none of them were implemented. Although protected as historical entity witnessing to the beginnings of industrialization in Zagreb and the application of new architectural and construction techniques and materials, a steam-powered mill has remained a neglected ruin.⁷ The City of Zagreb is the property owner, and the location is legally treated as a strategic project, implying the future of the complex is in the hands of municipal authorities departments. Until the announcement of the binding architectural and urban competition for the complex renewal, remains of the historical mill will certainly be subject to questioning the various possibilities since it has been located on a connection line between the centre and the newly built settlements in the south.



Fig. 2: Steam-powered flour mill: part of the historical complex damaged by fire 1988, Zagreb City Museum.

2.3 Case Study 2: Workshops for repairing the locomotives and wagons

Since the construction, workshops for repairing the locomotives and wagons (Hungarian State's Railways Machine Shop) have been an important industrial plant, both strategically and economically.⁷ The core of the complex, completed in 1894, consists of the locomotives and wagons repair shops, the blacksmith and the turning shop [Figure 3]. Up to 1918, a series of upgrades, expansions and constructions of new facilities followed up. Substandard structures, which have been more frequent since the 1930s and particularly since 1945, nowadays impede the heritage characteristics visibility of the historical industrial complexes. After World War II former Machine Shop facilities were integrated into the newly established Railway Vehicles Factory, which completed the process of relocation from the city center in 2011.

⁷ Paladino, Z. (2012). Zaštita zagrebačke industrijske baštine izradbom konzervatorskih elaborata Gradskoga zavoda za zaštitu spomenika kulture i prirode u Zagrebu. Godišnjak zaštite spomenika kulture Hrvatske, 33(33/34), 147-172.



Fig. 3: Workshops for repairing the locomotives and wagons 2007, Zagreb City Museum.

The original ensemble, along with valuable structures upgraded during the first half of the 20th century (e. g. the water tower), has been protected since 2004 as a site of significant urban, architectural, cultural and historical values and a prominent landmark, as well.⁸ Besides preserved structural elements of a typical shed, the peculiar value was contributed to conserved authentic interiors and technical equipment (pneumatic hammers, presses, lathes and mobile platform for handling the wagons) [Figure 4]. Underway relocating the production of the Railway Vehicles Factory, preserved industrial landscape, buildings, machinery and equipment were considerably damaged and partly destroyed.



Fig. 4: Workshops for repairing the locomotives and wagons: turning shop 2009, Zagreb City Museum.

Due to location, the industrial area of a former Machine Shop is relevant for an urban development of the center of Zagreb. In 2006 the City of Zagreb purchased the whole brownfield which has since been treated as the strategical project. Relocating of industry, urbanization and transformation of former industrial into the zone of predominantly commercial purposes, including residential, public and social facilities, is anticipated in the Masterplan. Along with occasional attempts at maintaining events organized by initiatives of cultural industry projects, the ensemble is out of function. The local authorities have not yet launched binding architectural and urban competition for the brownfield conversion and the former industrial complex renewal and reuse.

⁸ Dumbović Bilušić, B. (2001). Strojarnica Državne Ugarske željeznice u Zagrebu – Elementi za stvaranje novog urbanog identiteta. In M. Goršić (Ed.), Grad za 21. stoljeće (pp. 243-252). Karlovac: Društvo arhitekata, građevinara i geodeta.

2.4 Case Study 3: The City's slaughterhouse and cattle market

The Slaughterhouse and cattle market in Zagreb was one of the largest municipal investments between the two world wars. It was designed and built between 1928 and 1931 after the project of the Berlin architect Walter Frese, who specialized in the construction of industrial complexes of similar purposes. The modern plant was processing domestic raw materials, using resources from the predominantly agrarian structured economy⁶.

The ensemble is protected in 1999 as a prominent place in the architectural heritage of Zagreb. In 2004 the whole historical industrial complex was listed in the National Registry of Cultural Goods. The process plant, designed by the principles of modern functionalist architecture, is linked with more traditionally formulated entrance buildings along the access road [Figure 5]. The value of ensemble is also reflected in applied design and construction solutions (e. g., zenithal lighting) as well as the combined materials (reinforced concrete, iron structural elements, facade cloaked in bricks). Authenticity and identity of the process plant and equipment parts are preserved [Figure 6]. Slaughter halls, a section for intestines processing, space for sampling and analysis, cold storage, icehouse and water tower complex, market hall, boiler room and engine room, workers' laundry, dressing rooms, a dispensary, management building and laboratories, offices and restaurant share monumental features⁷.



Fig. 5: City's Slaughterhouse and cattle market 2007, Zagreb City Museum.

Since the mid-1980s, the plants of the former City's slaughterhouse and cattle market operated within the company Zagrepčanka - meat industry. In 2000, Zagrepčanka declared bankruptcy and a year later the City of Zagreb purchased land and real estates of a former factory. Due to unresolved property, legal proceedings were initiated, halting opportunities for further investments. Although indicated as a suitable concert place, an exhibition space, as well as an adequate polygon for civil society activities and occasional presentations of creative industries, in the past decade a permanent purpose for a protected historical industrial complex has not been found⁹.

9 G. Arčabić & M. Meštrović (Eds.). (2015). Rethinking industrial sites: stručno-znanstvena analiza prostornih mogućnosti kompleksa nekadašnje gradske klaonice i stočne tržnice u Zagrebu = professional and scientific analysis of the spatial possibilities for the former complex of the City's slaughterhouse and cattle market in Zagreb. Zagreb: Muzej grada Zagreba.

2.5 Management Challenges and Prospects for the industrial heritage

According to the Masterplan, transformation directions of protected historical industrial complexes in Zagreb are rather uniform. Vast brownfields in the wider city center are to become zones of predominantly commercial purposes, including residential areas as well¹⁰. Such apparently simple solution, led by the profit-making approach, hides numerous



Fig. 6: City's Slaughterhouse and cattle market: slaughter hall 2012, Zagreb City Museum.

hazards limited not exclusively to the sustainability of former industrial facilities, but to the public interests in general. Putting the public interest in the background, in a case of conversion the areas of primary importance for urban development, as well as prolonging the implementation of architectural and urban competitions, with clearly defined programs of protection and default opportunities for content reuse of heritage structures, are especially concerning. Although facing with legal procedures and public reactions due to non-transparent operations and business activities, combined with a recession, the City authorities have not activated an extraordinary development potential of the aforementioned brownfields since last fifteen years.

In conclusion, the lack of awareness of cultural and economic developing possibilities of the brownfields and perceiving the culture in a very traditional, limited manner, should be emphasized as major obstacles in managing industrial heritage in Zagreb. Furthermore, the exceeding influence of the local authorities in decision-making process upon the methods of management of valuable structures raises the questions of the competencies, ultimate intentions and responsibility regarding the achievements and failures. Inefficient control in implementing the protective measures, and sometimes even unresolved property issues, contribute the dereliction and deterioration of sites in combination with aggressive modifications of authentic structures. Ultimately, the existing managing model applied on protected industrial heritage complexes, if it is so to be called, leads to the compromising sustainability of heritage features of the protected buildings.

Following the aforesaid, Zagreb needs a radical attitude change towards the industrial heritage perception. The synergy of the competent services of protection, strategic planning and assets management, an educational and research institutions, museum professionals and civil society organizations is required in preserving the heritage and reactivation of its development power. A joint effort should be focused on pushing arguments based on the international experiences and insisting on the socially responsible acting of decision-makers.

10 Generalni urbanistički plan Grada Zagreba: namjena. Retrieved from <http://www.zzpugz.hr/prostorno-uređenje/generalni-urbanisticki-plan-grada-zagreba/>.

3 Museum project Zagreb industrial heritage: History, state of affairs, outlook

3.1 Origins and Project goals

Launching the Project, Zagreb City Museum's team was guided by the cognizance of industrialization as a key driver of global economic and social changes in past two and a half centuries, and by the awareness of the deep presence of the legacy of industry in the material and immaterial environment at the local level. Curiosity for a more comprehensive understanding the complexity of the industrialization phenomenon, as well as the awareness of the need for change the attitude towards heritage attached to industry, were triggers for the Project undertake. Besides, the effects to the environment, society and the individuals have determined fundamental research issues.

Cataclysmic effect on pre-industrial communities and the landscape caused a time long distance for the legacy of the industrial age to become recognized as historical, cultural, architectural and technological value, and a part of the global heritage^{11, 12}. Although recent phenomenon, the perception of industrial landscapes, facilities and equipment as a cultural worth segment has been embedded in the Western European and North American practice of the monument protection for half a century, whereas the first industrial sites entered the World Heritage List nearly three decades ago. Transition process in Croatia has conditioned quite a late deindustrialization, but the rapid decline in industrial production from 1990 onwards. Implications for industrial sites are dramatic, not exclusively at the monument protection field, but also concerning delays in activating development potential of certain brownfields, as clarified in the preceding sections (2.2, 2.3, 2.4, 2.5).

The Zagreb City Museum's Project started in 2009, and its final stage is planned to end in 2016. The Project has gathered experts in various areas in their search for common goals:

- To research, evaluate and present the industrial legacy from historical, social, town planning, architectural and technological point of view
- To influence building of awareness on industrial heritage being a part of universal heritage and an important segment in development of the human civilization
- To set up a warning about wastage of valuable heritage structures
- To update and systematically question sustainability methods applied to industrial heritage
- To provide solutions for reuse of valuable industrial structures

The goals are to be reached through:

- Cycle of study exhibitions, to present a reflection of industrial development in the city of Zagreb and its inhabitants
- Professional meetings, to point to actual issues and discuss the outlook of industrial heritage
- Workshops organized in cooperation with institutions in the scientific field of architecture and urban planning, as well as organizations of civil society, to provide conceptual designs for the conversion of the former industrial complexes
- Lectures and presentations, to give insight into different experiences on reuse the heritage structures in urban areas
- Professional guidance, to enable direct contact of visitors with industrial heritage
- Publications

3.2 On Methodology

The Project relies on research and interpretation of archival documentation and museums' collections, with no pretensions to be qualified as a scientific one. Since it has been conceived and conducted by the museum institution, new findings and notions have been

¹¹ Palmer, M. & Neaverson, P. (2012). *Industrial archaeology: principles and practice*. London-New York: Routledge.

¹² Cossons, N. (2012). Why preserve the industrial heritage?. In J. Douet (Ed.), *Industrial Heritage Re-tooled: The TICCIH Guide to Industrial Heritage Conservation* (pp. 6-16). Lancaster: Carnegie Publishing - TICCIH.

publicly presented via study exhibitions – the primary communication medium.

Although encountering a historical geography and urban studies, the methodology of historiography and a historiographical discourse have been fundamentally used in research and interpretation. The archaeology which field of interest is broad-based in a study of the industrial sites and facilities also influenced the methodological approach^{11, 13, 14}. It is reflected by applying the site identification techniques (a field survey), by the usage of conservation studies and plans made for the monuments protection purpose, as well as by the consultation of specific documentary sources (maps, plans, drawings, aerial photography). Despite opinions that the industrial development studies based solely on documentary sources are not entirely reliable, the site identification techniques combined with the research of historical sources are commonly practiced in a case of sites dating from 19th or early 20th century.

The Project framework consists of a cycle of three study exhibitions that have diachronically presented industrial development, as well as the influence of industry on the city and its inhabitants. Professional meetings, workshops, lectures, presentations and organized on-site tours have been taken place intermittently, in between and during study exhibitions.

Including the monument protection issues (which are associated with the technocentric “industrial archaeology”), under an influence of the new paradigms in the archeology, the Project team has tried to ask some questions and offer relevant answers^{14, 15, 16}. The questions are related to the effects of the industrialization on the environment and the inhabitants, as well as the transformations of the urban industrial landscapes and brownfields.

It should be emphasized that the project Zagreb Industrial Heritage does not offer definitive answers. It is more an attempt to warn about the possible wastage of a development potential of the city and therefore the Project is opened to associates of different profiles that could contribute to the achievement of the goals.

3.3 Activities and achievements

Public response and interest of the media shown for completed programs of the Project speak in favor the success achieved in the areas of education, research and presentation as well as of bringing up-to-date the issue of protection and reuse of the Zagreb industrial heritage. In addition to advertising the exhibitions in electronic media, Project visibility has been encouraged by the intermittent public presentations, attending the international symposia and by the presence on social networks and media as well.

Covering a period from the mid-1860s to mid-1950s, study exhibitions have offered a **comprehensive insight into the importance of industrial heritage**, trying to define the historical context, the meaning and the consequences which the process of industrialization left upon the city of Zagreb and its inhabitants¹⁷. Also, the exhibitions have presented the

13 Cranstone, D. (2005). After industrial archaeology?. In E. C. Casella & J. Symonds (Eds.), *Industrial Archaeology: Future Directions* (pp. 77-91). Springer.

14 Symonds, J. & Casella, E. C. (2006). Historical archaeology and industrialization. In D. Hicks & M. C. Beaudry (Eds.), *The Cambridge companion to historical archaeology* (pp. 143-167). Cambridge: Cambridge University Press.

15 Casella, E. C. (2005). “Social Workers”: New Directions in Industrial Archaeology. In E. C. Casella & J. Symonds (Eds.), *Industrial Archaeology: Future Directions* (pp. 3-31). Springer.

16 Beaudry, M. C. (2005). Concluding Comments: Revolutionizing Industrial Archaeology?. In E. C. Casella & J. Symonds (Eds.), *Industrial Archaeology: Future Directions* (pp. 301-314). Springer.

17 Exhibition Modernization on the Edge of Empire: Zagreb Industrial Heritage from 1862 to 1918. Retrieved from <http://mgz.hr/en/exhibitions/modernization-on-the-edge-of-empire-zagreb-industrial-heritage-from-1862-to-1918,200.html>

current state of affairs of the 18 industrial structures and complexes, the protection system and outlook determined by the Masterplan and detailed zoning plans of each of the city areas¹⁸.

The symposiums, participated by both Croatian and international experts, have aimed **to exchange the experiences and to compare the heritage protection systems** as well as governing models concerning industrial heritage. Besides, the international cooperation covered presentations of possible project ideas and disposable financial support for reuse of heritage buildings via lectures and hosting exhibitions¹⁹. Association for the Protection of Cultural Monuments in the Federal Republic of Germany, French Embassy in Zagreb and the CILAC (Comité d'information et de liaison pour l'archéologie, l'étude et la mise en valeur du patrimoine industriel) supported Zagreb City Museum's programs.

Interinstitutional cooperation and cooperation with non-governmental organizations (NGO) has shown results in presenting the conceptual designs for reuse of the former industrial complexes and enabled faster perception of the Project among target groups. The initiating motive for the exhibitions conducted in partnership with Academy of Dramatic Art in Zagreb was to enrich the Zagreb City Museum collection with contemporary photographs of documentary and artistic value and to give opportunities for young artists to exhibit their works²⁰. The goal of the workshop entitled *Muljara*, conducted by Zagreb City Museum and the ARCHIsquad architects (NGO), was to present possible content reuse of the cement factory complex in the Zagreb outskirts.

In the context of promoting the protection and reuse of industrial heritage, the intention of one-year program *Rethinking industrial sites* was to analyze the situation of the former Zagreb City's slaughterhouse and cattle market as well as to present the possibilities of its transformation. In partnership with educational institutions in the scientific field of architecture and urban planning research (Universities in Ljubljana, Novi Sad, Sarajevo and Zagreb), Zagreb City Museum implemented a program on behalf of the client City of Zagreb (Office for the Strategic Planning and Development of the City). Ideas arising from the program *Rethinking Industrial Sites* will serve as references and guidelines for future activities which are to be carried out by the City of Zagreb for the historical complex²¹.

Since 2010 Museum has organized a dozen of guided tours to industrial heritage sites and objects, trying to provide a **touch to heritage** for interested participants. In addition to the Museums Night 2010, program visitors could enjoy in the showing of history documentaries on the Zagreb industrial companies and advertising clips recorded in the latter half of the 20th century. A part of the program took place inside the factory premises of the Zagreb Brewery, where the visitors had exclusive access to the structures built at the end of the 19th century.

4 Conclusion

Zagreb City Museum launched the project entitled *Zagreb Industrial Heritage: History, State of Affairs, Outlook* reacting on deterioration and uncertain future to industrial heritage sites. In more than fifteen programs conducted since 2010, the root intentions to raising the awareness, promotion and public presentation of the legacy of industry have been realized.

18 Exhibition *The Industrial Center of the State: Zagreb industrial heritage from 1918 to 1945*. Retrieved from <http://mgz.hr/en/exhibitions/the-industrial-centre-of-the-state-zagreb-industrial-heritage-1862-1918,463.html>

19 Exhibition *New Uses for the Old Industrial Buildings*. Retrieved from <http://mgz.hr/en/exhibitions/new-uses-in-old-industrial-buildings-forty-years-of-post-industrial-monuments-in-germany,238.html>

20 *The Photography of Industry - Exhibition of Student Works from the Photography Chair, Academy of Dramatic Art in Zagreb*. Retrieved from <http://mgz.hr/en/exhibitions/the-photography-of-industry---exhibition-of-student-works-from-the-photography-chair-academy-of-dramatic-art-in-zagreb,461.html>

21 Exhibition *Rethinking Industrial Sites*. Retrieved from <http://mgz.hr/en/exhibitions/rethinking-industrial-sites-professional-and-scientific-analysis-of-the-spatial-possibilities-for-the-former-complex-of-the-city%E2%80%99s-slaughterhouse-and-cattle-market-in-zagreb,517.html>

Supported by the international and national institutions, governmental and municipal authorities, as well as non-governmental organizations and individual cooperators, a series of exhibitions, symposiums, lectures, workshops and guided tours were run to achieve comprehensive insight into the importance of industrial heritage.

The evaluation of the programs completed from 2009 to 2015 reveals positive feedback from the participants and visitors, media support, as well as the growing interest of students toward industrial heritage issues. The impact to rethinking the heritage management models has only been reflected at the implementation level of survey competitions, involving mainly students of Architecture and Economic Geography. Although supported by the City of Zagreb administration, the Project has not reached the decision-makers. Impetus effect for launching and implementation of development projects on brownfields has not been recorded.