

## **Structure, De-structure, Re-structure. The Second Life of Industrial Heritage**

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### **Abstract**

*The evolution of the modern city caused a series of changes in relation to industrial architecture units: from peripheral points, they become core elements within the urban organism. Witness to the development of the city, the existing industrial heritage deserves a second chance, by preserving the valuable elements and proposing new ways of use. The restructuring of the urban tissue must not ignore the valuable buildings dedicated to this architectural program, the former industrial areas becoming a key-tool in urban regeneration projects. In this regard, a series of questions arise: Can the industrial unit become once again a landmark for the community? What are the factors that determine the new way of using the industrial buildings? How can we intervene on an industrial heritage building, while respecting its authenticity and adapting it to new functions? What kind of strategies can be adopted in the regeneration process of a former industrial heritage site? The answer to these questions is discussed in the present paper.*

### **Rezumat**

*Evoluția orașului modern a provocat o serie de modificări în ceea ce privește unitățile de arhitectură industrială: din punctele periferice, acestea au devenit odată cu extinderea limitelor urbane elemente centrale în cadrul organismului urban. Martor al dezvoltării orașului, patrimoniului industrial existent merită o a doua șansă, prin păstrarea elementelor valoroase și propunere unor noi modalități de utilizare. Restructurarea țesutului urban nu trebuie să ignore clădirile valoroase dedicate acestui program arhitectural, fostele zone industriale devenind instrumente-cheie în cadrul proiectelor de regenerare urbană. În acest sens, o serie de întrebări se cer a fi puse: Poate unitatea industrială deveni din nou un punct de reper pentru comunitate? Care sunt factorii care determină noul mod de utilizare a clădirilor industriale? Cum putem interveni asupra unei clădiri de patrimoniu industrial, respectând în același timp autenticitatea și adaptând-o la noile funcțiuni? Ce fel de strategii pot fi adoptate în procesul de regenerare a unui fost sit industrial? Răspunsul la aceste întrebări este discutat în lucrarea de față.*

**Keywords:** industrial heritage, cultural value, use value, conversion, urban regeneration

## **1. Introduction**

The industrial heritage is a multifaceted type of heritage, being defined by the *Nizhny Tagil Charter for the Industrial Heritage* as consisting of “the remains of industrial culture which are of historical,

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technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education” [1]. Therefore, together with the singular architectural works, the panoply of industrial heritage includes groups of buildings, sites and landscapes, designed and created intentionally by man. Because of its dimensional and functional complexity, the influence of industrial architecture upon the modern city was significant. Through their location and size, the former industrial facilities have left their mark on the city, conditioning its structure and influencing the future urban development. Nevertheless, the transformations undergone by the urban areas in the last century caused the interdependent relationship existing between the city and the industry to be in a constant change, consequently influencing the importance held by this architectural program within the urban core.

## **2. Industry and city - tensions and imbalances**

Started in England in the late XVIII century, the industrial revolution represented one of the striking phenomenon in our recent history, its effects being poignant even today. The industrialization triggered a series of defining transformations in the European landscape (and not only), influencing the economic development of the region and also marking its social, political and cultural frame. The catalytic element of this phenomenon - the continuous improvement of scientific knowledge - led to a considerable development of the industry, the former manufacturing enterprises gradually being replaced by large industrial units. The increasing number of industrial facilities in a short period of time generated a series of major changes, the main consequence of the industrialization consisting in the transformation of the social and urban context. Also, the economic growth has engaged the migration of population from rural to industrialized areas and the colonization of a wide territory, the transformations within the social structure influencing important aspects of cultural and economic life. On the other hand, this demographic growth has resulted in a restructuring of the territory, through the densification of the existing urban centers and the development of new ones. The city acquired a new industrial face and a new order [2], as the transformations produced in the industrial era left their mark on the human society and the urban landscape in an unmatched manner.

The industrialization process is thus closely related to the development of the city. The transformations produced by the industrialization have radically changed the city, the industrial revolution being the main responsible for the appearance of our contemporary cities. The industrial development of the urban centers has allowed an alteration of the cityscape, the image of city being forever changed. If at the beginning of the XIX century, the location of the industrial units was outside the urban center, being influenced by the resources exploited, low price of land, water presence and the proximity to transportation route [3], during the XX century, with the expansion of the city's limits, the industrial units were incorporated by the urban fabric. Thus, from a complete separation between the city center and the industrial activities, the modern city changed its appearance, the presence of vast industrial facilities within the urban center being perceptible even today. As a result, the industrial units have become over time an integral part of the urban core, structuring and conditioning the evolution of a vast territory.

Despite the positive impact had on the development of the modern city, the presence of those large industrial spaces within the urban limits generated considerable repercussions on the urban environment, especially after 1960, when the deindustrialization phenomenon started. The technological progress of the last decades, together with the necessity for the peripheralization of the industry, coincided with the onset period of regress in industrial evolution, the consequences of

this phenomenon being experienced at an economic, social, cultural and urban level as well. The deindustrialization triggered along the economic decline of the region, together with the rocketing unemployment. These effects had a negative impact on the lives of the community members, causing a diminution in their living standards, social tensions, but also the depopulation of the area. The cultural resources were also endangered, the continuous destruction of valuable industrial buildings being synonymous with the operation of erasing the memory of the place and its cultural identity. This series of events led to the collapse of a considerable contingent of existing industrial units, which have restricted their activities or have been closed and abandoned. Thereby, a large number of obsolete industrial spaces appeared, a direct consequence of this process being the fragmentation and de-structuring of the urban tissue. The changes in the morphology, development and function of the city resulted in a deterioration of the urban image and a loss of spatial cohesion.

The opportunities associated with the industrial architecture were not yet acknowledged by the community members, authorities or investors. Therefore, the ignorance of these remains and the increasing land value of the former industrial sites, directly proportional to the degree of neglect of the existing structures, led to massive actions of dismantling and demolition of industrial sites, in order to use the recovered land for new types of development. These interventions were rather reprehensible, contributing to the disappearance of a substantial number of culturally significant industrial heritage units. Thus, the unhealed scars left by these operations within the urban fabric require for proper solutions of intervention in relation to the relics left behind by the industrialization. In order to solve these problems, it is necessary to ask ourselves some questions: what generated this attitude of rejection in relation to our industrial legacy? Is industrial heritage worth saving? How can this be done?

### **3. Our unloved heritage**

The legacy left behind by the industrialization does not excite the public interest as other types of architectural heritage do, being considered inferior in terms of value and treated as such. Despite the tangible advantages offered by the industrial heritage as part of urban regeneration projects, a significant number of former industrial spaces are constantly threatened by extinction. The negative effects of deindustrialization, along with the continued ignorance of the qualities and potential owned by the industrial heritage, lead to tabula rasa actions, generating an irreversible loss of cultural resources. These actions can often find their answer in the society's attitude regarding the heritage of the industrial era, the sensitive relation born between industry and community requiring in this respect some explanations.

An initial answer in this regard is the fact that human attitudes regarding the cultural heritage is at all inherited, but shaped according to the needs and the system of values possessed by the contemporary society. As stated by Stuart Hall, culture is concerned with the production and exchange of meanings between the members of a society, the meanings attributed to a cultural asset being subject to permanent change [4]. Understood in this way, the relation between the society and the category of cultural goods acquired from previous generations is often dissonant: the act of creating any kind of heritage is selective by nature, excluding those who do not share the meanings attached to cultural resources [5]. Thus, the appreciation of a cultural asset is relative. In other words, the legacy of the past can arouse among the members of the contemporary society a sense of attachment and identification, or a state of non-acceptance and denial. Despite the incorporated values, the historic industrial architecture is commonly included in the latter category, being neglected and rejected by the society.

Due to the dynamics of symbols and meanings attached to cultural goods, the origin of this rejection of the industrial heritage must be sought especially throughout its historical evolution. The socio-

political changes of the last half of the past century triggered a number of mutations within the collective identity, that have significantly influenced the way the society relates to the relics of the industrial age. The emotional assessment of industrial heritage becomes an extremely difficult task, the products of industry being manipulated to meet the political, economic and cultural requirements of the society [6]. The industrial development has always been politically motivated: if the hyper-industrialisation of the communist era has placed the worker in the center of the social structures, the industry having a key role in the country's development, the privatization of the former enterprises, started in the early years of the democratic regime, coincided with an unprecedented decline of indigenous industrial units. Thus, the association between the phenomenon of industrialization and the political regime determines an overlapping of effects (partly negative) caused by the frequent changes of power, the community perception regarding the industrial heritage being strongly affected. The nostalgia of the past era is extinguished naturally with the disappearance of the last generation of "working people", a feeling of rejection replacing the attachment towards the industrial architecture. Therefore, the denial of architectural heritage left behind by the industrialization can be seen as an action of erasing a previous social identity.

At the same time, the industrial heritage is carrier of messages regarding the control and the social exploitation, bringing back negative memories of class and power struggles. Interpreted from this perspective, the industrial resources can be regarded as exponents of "power", constituting a tribute to the entrepreneur or the supreme authority. The industrial heritage becomes the legacy of the privileged class, being excluded from the cultural background of the common citizens.

On the other hand, the "Time" factor seems to be one of the main responsible for the blamed attitude of the society in relation to the legacy of the industrial age. The paradoxical combination of the two words, "heritage" and "industry" only highlights the sensitive relationship born between the community and the architectural heritage left behind by industrialization. In addition, the cultural value of industrial architecture was only recently recognized by the experts in the field of conservation. Recently enrolled in the panoply of cultural heritage, the product of the industrial age has not been fully assimilated by the society, a period of time being necessary in this regard.

Simultaneously, the industrial units contribute to creating a familiar setting: the industrial buildings form the everyday environment in which the community performs its activities on a daily basis, being also an archive of memories storing the lives of ordinary people [7]. Compared to other categories of architectural heritage, considered to be exceptional in terms of their cultural values, the industrial spaces are considered mediocre, deprived of any remarkable qualities. This attribute is enhanced by the society's preconception about the idea of beauty. The unconventional aesthetics of the industrial units, often austere, marked by the absence of ornamentation, appears to be a crucial factor in determining the attitude of the community in relation to the resources of the industrial age. Nevertheless, the industrial architecture favored over time a reinterpretation of the aesthetic concept. From the early XX century, the structure is seen as an artistic element, therefore, deprived of decorations, the industrial building generates through its structural expressiveness a new aesthetic.

Furthermore, ignoring the cultural component, the built environment can be appreciated, albeit only as in terms of its use value. However, when a building no longer serves its original purpose, it is considered obsolete and outdated. The loss of function may be associated with the diminishing capacity of the building to meet the requirements imposed by the new use. In this respect, the abandonment of industrial buildings, along with the minimization of their reuse potential entails an underestimation of this heritage and the rejection for this architectural program.

Nevertheless, the architectural heritage of the industrial era is a precious resource, that must not be ignored. In this regard, the encouragement and involvement of the community in the rehabilitation

projects of historic areas, along with the increased awareness of the values possessed by the industrial units, is vital for the perpetuation of this heritage. Frequently, however, the only solution to improve the community's perception in relation to the relics of the industrial age consists in a total transformation of the postindustrial landscape. The reinterpretation of the meanings attached to the former industrial unit, by implementing new architectural programs, encourages the appropriation of these resources by the community. Thereby, the reshaping of the built environment can lead to an improvement of former industrial areas, causing a change of attitude regarding the members of the society.

#### **4. Saving the industrial past through conservation, tourism and reuse**

The existence of abandoned industrial sites within the urban centres represents one of the pressing problems of today's architectural heritage. If at the beginning the last century, these complexes were located outside the city, today with the expansion of urban boundaries, the industrial sites have become an integral part of the city, dominating a vast territory. The industrial architecture represents a special category of heritage, clearly expressing the different phases of transformation undergone by the society over the years. In addition, the industrial building, through its tangible and intangible components is an evidence to human innovation and creativity, being often a space loaded with meaning that transposes an extinct history and a specific way of life. Although the deindustrialization phenomenon has influenced the economic and social life of the territory, brutally marking the cityscape, the specificity of the former industrial centers can be recovered. The industrial spaces can take on new functions, the regeneration projects of former industrial units generating a renewal of the urban image and contributing to the restructuring of a large territory.

In this regard, the central position occupied by the former ensembles within the urban organism, along with their impressive size, represent important assets in the regeneration process. The solid structure, the spatial adaptability of the internal layout and the structural flexibility allow the remodeling of the industrial architecture, thus making it ideal for taking over various functions. Equally, the attached values, the distinctive character and landmark function of the industrial buildings act as a cultural advertisement and supports the revaluation of these resources. On the other hand, the lack of interest and appreciation of the investors, authorities and community members, their uncertain legal status, generated by frequent changes in ownership, the physical degradation and inadequate lighting, thermal comfort or acoustic isolation, together with the contamination of buildings and land - represent economic impediments and contribute to the ignorance or, even worse, the destruction of the valuable industrial units.

However, starting with the '70s, there has been a revival of industrial heritage. The appreciation of the architectural and archaeological uniqueness, together with the recognition of their cultural values, contributed to the reassessment of the industrial architecture and to the desire to save the relics left behind by the industrialization. As a result, the first saving actions of the industrial heritage were undertaken in the United States, followed closely by the UK. The new interventions caught the interest of the cultural authorities empowered, a large number of vestiges left behind by the industrial period being proposed for *conservation*. Consequently, the first conferences debating the problem of industrial heritage were conducted in Ironbridge (1972), Bochum (1975), Stockholm (1978), Lyon and Grenoble (1981). In 2003, The International Committee for the Conservation of the Industrial Heritage (TICCIH) adopts *The Nizhny Tagil Charter For The Industrial Heritage*, a primary document in the field of industrial heritage protection. With the increasing appreciation of experts in heritage conservation, the first effects concerning the protection of industrial sites appeared: Völklinger Hütte Steelworks in Germany was the first industrial site included in the UNESCO list of World Cultural Heritage. Following this model, a considerable number of industrial buildings and sites were listed, being subject to a legal protection regime. The main effect

of these conservation actions coincided with a decrease in number of demolished industrial units, the listing of industrial heritage components ensuring the perpetuation of these cultural resources. In the context of the inherent changes undergone by the contemporary society, the conservation of the industrial relics is perhaps the only chance for the recognition of the region's industrial past, ensuring the authenticity and integrity of its cultural heritage.

A decade later, sensing the economic potential and consistent with the criteria set established by various documents adopted in order to protect the historical industrial buildings, in almost every European country regeneration projects have been implemented, concerning the revival of the former industrial spaces through *reuse* operations. The idea of protecting and preserving abandoned industrial structures, buildings and areas, rather than destroying or eliminating traces of former industry seemed more than adequate [8]. In light of these actions, the industrial heritage was seen as an instrument for economic reinvigoration, a variety of reuse projects were launched after 1980 in order to transform the postindustrial centers. The conversion of industrial spaces favors the enhancement of the heritage object, contributing to their recognition and strengthening the attached values, while encouraging the building's openness to the community [9]. As a result, a large number of urban and suburban industrial units were converted into residential buildings, hotels, art centers, schools, libraries, cinemas, sports halls, offices or shopping centers. The reuse of former industrial sites can be seen as a key-element in urban regeneration projects, providing the restructuring of the urban tissue and the (re)branding of the city. Adapting the former industrial spaces to new uses represents a solid alternative to demolition, thereby supporting the sustainable development of the territory.

The *cultural tourism*, another tool used for the revival of industrial heritage, has its origins in France, where, since 1960, it has been applied in the form of eco-museums, for the knowledge of industrial practices and community life [10]. Since 1970, this concept was adopted by a large number of Western countries, the impact of these actions being dependent upon a number of factors, such as the typology and scale of the industrial unit, its location, the financial support and the preferences of the actors involved in the process. In the recent years, the industrial heritage was granted an increased attention, causing the actors involved in tourism development to notice the exceptional potential of these industrial resources. As a result, the increased number of industrial buildings converted into museums, alongside the development of themed itineraries for the study and promotion of industrial activities (like The European Route for Industrial Heritage - ERIH) are a testimony to the cultural and social benefits resulting from the integration of industrial heritage in the life of the community, through tourism.

Although the conservation of the industrial unit, together with the cultural tourism support the perpetuation of the industrial heritage, by safeguarding its cultural values, the conversion is the only method able to facilitate the long-term economic survival of the industrial building. Therefore, by considering the industrial heritage as an integral part of the regeneration policies, the reconciliation of heritage conservation needs and the requirements of the development strategies is ensured, thus providing a new life for the former industrial spaces.

## 5. Types of intervention

In the afore mentioned intervention methods, implemented for the renewal of the former industrial units, the size of the object becomes fundamental. In this regard, the building, the group of buildings, the site or the industrial landscape should be treated separately, due to the specific problems required of each category. Thus, the revival of *singular industrial buildings*, designed to meet specific requirements, involves a difficult process, the determination of the proper method of intervention being influenced by the characteristics of the build object. Regarding *the industrial*

*site*, the complex relations born between the existing buildings and the setting become essential in this process. *The industrial landscape*, on the other hand, represents the most challenging category of industrial heritage, due to its remarkable size. The urban context and the natural environment situated in the proximity of the industrial object can not be ignored, as the setting becomes a key element in the assessment of the industrial heritage, also contributing to the definition of its character.

The rehabilitation projects often require the conservation and / or selective conversion of valuable buildings, the remaining edifices being, most often, demolished. In rare cases, the entire complex is saved, without the loss of its formal integrity. Some argue that *the selective conservation of "convenient" fragments of history* can lead to a permanent loss of its authenticity and character, facilitating a dissonant representation of the past. By altering the compositional unit, the industrial complex can lose its coherence, becoming incomprehensible. On the other hand, maintaining unaltered the industrial unit limits the reuse possibilities and the further development of the patrimonial object. Therefore, the desire to totally preserve the vestiges of the industrial age is as inopportune as the option for completely erasing the history [11]. However, in some cases, the rehabilitation of the industrial resource can cause a radical change in the cultural landscape, the memory attached to the building being severely affected.

Most often, however, the industrial heritage rehabilitation projects promote an *object-oriented* approach as the spatial dimension is left aside, the surrounding landscape being completely disregarded. Nevertheless, a building can not be sensed independently from its setting, without dramatically altering the perception of the architectural object and jeopardizing the sense of place. Equally, it is not reasonable, nor sustainable to act upon isolated elements and ignore the surrounding landscape [12]. Thus, the answer consists in a holistic approach, which takes into account the buildings and the surroundings. At the same time, different scale of interventions must be provided.

The strategy used to revitalize the former industrial buildings should take into account all the implications resulting from the change of function, by considering the economic, social, cultural and environmental impact. Also, in the current context, the need to preserve the relics of the past is balanced by the required sustainability of the intervention. In addition, the reuse of industrial heritage demands for the reconciliation between the current needs of the new users and the conservation requirements imposed by the patrimonial asset. The possible approaches should be analyzed holistically, by considering the industrial building, easily adapted to new functions, as well as the entire industrial site, which, regarding its size, becomes more difficult to transform.

## 6. Conclusions

As mentioned above, the relationship between industry and cities is a constantly changing and mutual one, any intervention on the existing industrial heritage having major implications upon the urban environment. As opposed to the demolition and dismantling of industrial units, the regeneration of former industrial sites can be seen as an essential component of the urban evolution, being inseparable from the changes that are experienced by the contemporary city.

The rehabilitation of former industrial areas involves the creation of a well-defined strategy based on the determination of the optimal balance between preservation and transformation. The reuse of industrial heritage entails the reconciliation between the current needs of the new users and the conservation requirements imposed by the patrimonial asset, in order to maintain the character of the patrimonial asset. In this regard, the process of rewriting the history - by converting the former industrial areas - must take into account all the implications that this action could have upon the

built heritage and on the cultural identity of the community. Therefore, the change in paradigm, resulted from the transformation of the industrial unit from a place of production into a place of consumptions, should be thoroughly analyzed. In order to respect the uniqueness of the intervention area, the rehabilitation projects must be carried out with responsibility, by considering the valuable components incorporated by the industrial object. In this respect, the reuse of former industrial buildings, by proposing appropriate new functions, allows the preservation of the built heritage, while contributing to the remodeling the targeted area.

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