Creation and Preservation of Value with Landscape Design in Post-industrial Revitalization Projects

Anna Adorján
Doctoral School of Landscape Architecture and Landscape Ecology,
Szent István University adorjan.anna.berta@ybl.szie.hu

Abstract

As a landscape architect and urban planner, in my PhD research I focus on opportunities and difficulties in utilizing industrial areas. In this paper, I will show how this topic is linked to landscape architectural design, from the aspects of intellectual-aesthetic content and usefulness-feasibility.

The unique features of industrial areas bear both advantages (urban structure features, functional connections, existing utilities and valuable building stock) and disadvantages (contaminated soil, complicated ownership, uncertain utility network).

Environmental decontamination and the elimination of hazards might account for 50-70% of the total budget, and this only results in a completely neutral, harmless area with no specific values of its own.

It is important during the revitalization process that the area should receive a new function while retaining its unique image, and the buildings that – owing to their former industrial functions – have a peculiar look, can be used in interesting, innovative ways.

In this paper I will present and analyze already finished international and Hungarian revitalization projects where the quality of green surfaces and ecological restoration are important elements and where former industrial buildings and objects were renewed as integral parts of the design.

The research goal is to demonstrate the importance of the unique features and characteristic elements of industrial landscapes, as well as their usefulness in creating new, contemporary functions.

Keywords: blownfields, design, green surfaces, industrial area, landscape architecture, revitalization.

Introduction

The following issue is still current after 10 years:

„In the past fifteen years the location of industrial areas within the city has changed radically in Hungary.

Cities have been growing around industrial facilities created during the almost century-long industrial development, which has made several problems appear. Meanwhile, desindustralization has become stronger and some industrial areas are no longer necessary for industrial production. There has also been an increase in the real estate market, and the functional change of such areas has intensified…

So-called brownfields have become a central issue in urban development, and their efficient revitalization needs intervention…" (Barta *et al.* 2006/1).

The main aspect of the urban development and land use of today and the near future is sustainability and reclamation. This tendency can – and has to – be followed in land use by revitalizing „brown belts", brownfield areas and former industrial areas.

International and Hungarian examples of industrial restorations and revitalizations show that functional change holds great potential (Weilacher 2009). After the transition, these areas can once again become an organic part of the cultural and economic life of the city, the local identity and the green surface system as well (Adorján 2015). Traditionally, the role of landscape architecture is the forming and development of the environment, fitting anthropogenic structures into the landscape and the upholding of ecological interests. Nowadays, a greater emphasis is on revitalized and transitional areas in landscape architecture works around the world, where their role is even greater (Zeisel 2006).

In this paper I analyze Western European and North American examples of revitalization projects of brownfields or former industrial sites with a large proportion of green surfaces and cultural functions (Table 1). The chosen examples also have in common that typical industrial elements are in harmony with their new functions as well.

What are the common characteristics of the study areas?

Most of existing landscape elements are artificial, due to the former use of the areas. Metal structures no longer used for their former functions are typical. The main objective is the utilization of buildings, green surfaces and open spaces for cultural and recreational purposes.

Table 1. Basic data and specifications of sites.
1. táblázat: *A vizsgált projektek alapadatai.*

Project name	Area (ha)	City/ country	Renewal period	Original function	New function	Designer
The Steel Yard	1,4	Providence / USA/Rhode Island	2001-2009	steel fabrication facilitys	education, work training, events, park	Klopfer Martin Design Group,
High line park	1,5	New York/ USA/ New York	2003-2011	elevated railroad	park, walkway	James Corner Field Operations, Diller Scofidio & Renfro and Piet Oudolf
Les Fonderies Jardin public	2,3	Nantes/ France	2004-2009	textile factory	covered public space, gardenm museum	ADH Doazan+ Hirschberger
Kultúrgyár („Culture Factory")	5,6	Ózd/ Hungary	2009-2016	steel works	culture, education, park	Archinvest 97, MIXA studio &co

The following 4 projects will be analyzed:
1. The Steel Yard - Providence
2. High line park- New York
3. Les Fonderies Jardin public – Nantes
4. Kultúrgyár („Culture Factory") – Ózd

During the analysis, I am looking for evidence for my hypothesis that landscape architecture design plays a main role in the new function of areas. The other main question is whether former industrial elements are part of the design in these post-industrial sites and how these elements can be reused.

Materials and methods

I analyzed the chosen examples through available photographs and literature, and in the case of the Hungarian site, on-site experience. These sites

are revitalized brownfields - former industrial and transportation areas - with new cultural and social functions, and with an important quantity of open space. The projects are chosen from different part of the world, from different sized cities and only the four most interesting in our point of view, due to the strict requirements of publication.

1. Steel Yard was transformed from a former metal works into a building complex with cultural and community functions, as well as art education and artwork.

The courtyard surrounded by buildings is entwined with the girder network of former utilities. The green surfaces of the yard have been raised, enabling the contaminated soil to clean on-site, therefore the soil did not have to be excavated from the whole area. Retaining walls of raised surfaces were created from the products of the former factory, cold-formed steel

Fig. 1. The Steel Yard by Klopfer Martin Design Group – Providence, Site plan Klopfer Martin Design Group (photos Christian Phillips, source http://www.landezine.com/index.php/2015/03/steel-yard-post-industrial-landscape-redesign-klopfer-martin-design/).
1. ábra: *The Steel Yard, Martin Klopfer Design Group – Providence, terv: Klopfer Martin Design Group, (fotó: Christian Phillips, forrás: http://www.landezine.com/index.php/2015/03/steel-yard-post-industrial-landscape-redesign-klopfer-martin-design/).*

plates. The red colour of the metal structure also appears in the pavement. The use of materials can be described as functional and simple (Fig. 1.). Plants include undemanding perennials and primarily pioneer tree species (Anon. 2015).

2. High Line Park (Section 1 and 2) in New York City is perhaps one of the most well-known examples of brownfield redevelopment. Its success is indicated by the number of visitors, which almost exceeds the capacity of the area. In the professional sense, the high number of visitors marks it as a clear success. Its unique feature is that it is a „linear public park" created on an abandoned elevated railroad section.

The High Line is a 1-mile (1.6 km) New York City linear park built on a 1.45-mile (2.33 km) section of the former elevated New York Central Railroad spur called the West Side Line, which runs along the lower west side of Manhattan; it has been redesigned and planted as an aerial greenway.

Fig. 2. High Line Park New York – design elements form the park, before and after pictures. (source http://krunal1210.blogspot.hu/2012/06/high-line-park-in-new-york.html).
2. ábra: *High Line Park New York – részletek a parkból, előtte-utána képek. (forrás http://krunal1210.blogspot.hu/2012/06/high-line-park-in-new-york.html).*

During the transformation process, a large portion of existing tracks was preserved, which became port of the concept as border elements or were transformed into pieces of furniture (Fig. 2.). After abandonment, spontaneous succession started on the area – the new plant communities primarily consist of adaptable, low-maintenance perennials that tolerate the conditions of this green roof (Joshua David 2011).

3. Les Fonderies Jardin public, a public garden created from a former foundery, is a unique example of preserving the structure of industrial buildings. The area is located in the new eco-district, in its surroundings new residential and office buildings have been erected with sustainable energy solutions and transportation. The structure of the factory hall does not only function as a set for the public garden, the metal structure also provides shade and acts as a fence (Fig. 3.).

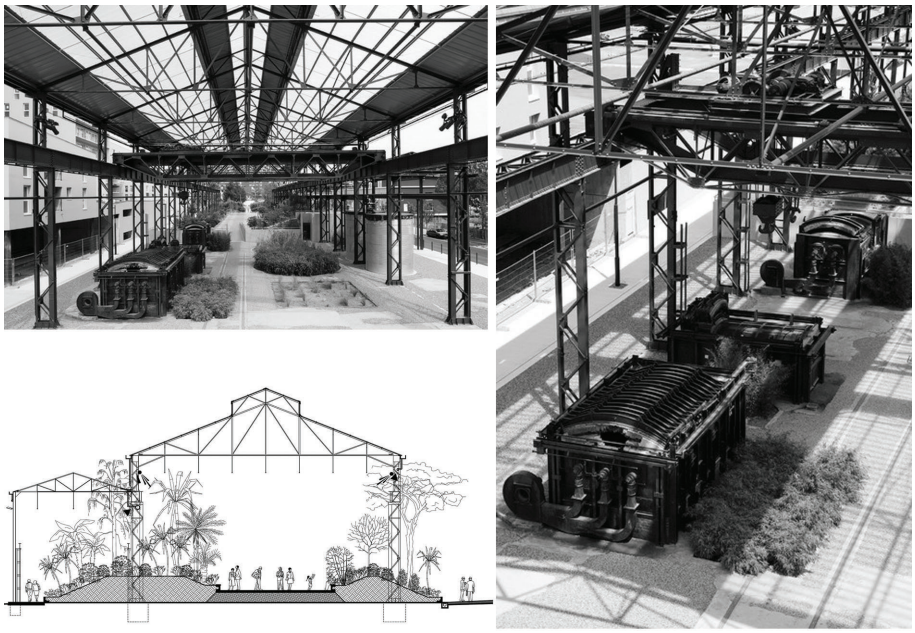

Fig. 3. Les Fonderies Jardin public – Nantes – inside or outside? (photos by Hervé Abbadie, sectional drawing from ADH Doazan+Hirschberger, source: http://www.landezine.com/index.php/2009/09/foundries-garden/).
3. ábra: *Les Fonderies Jardin public – Nantes – külső vagy belső tér? (fotó Hervé Abbadie, metszet ADH Doazan+Hirschberger, forrás: http://www.landezine.com/index.php/2009/09/foundries-garden/).*

4. In the case of the „**Culture Factory**" project, the brownfield area designated for rehabilitation is located in the enclave-like historical centre of Ózd, the former industrial town in Northern Hungary. The local government is planning to achieve an eco-cultural utilization of the area, using EU funds. (Adorján 2015).

The parts of the project are the following: renovation of the existing City Museum a new outdoor industrial heritage area – public park and walkway; the construction of the educational building and the exhibition area of the National Cultural Digital Archive Centre in the former power plant.

Several plans were created for the re-use of the girder network of the area as a design element, or even as an elevated pathway. However, due to ownership problems and economic troubles of the municipality, the metal structures were torn down. Without the girder structure, the project lost a lot of its uniqueness (Fig. 4.). Construction is underway on most of the area and several other elements can still be preserved.

Results and discussion

The examples show that preserved elements play an important role in the contemporary function in these particular examples. However, aside from **preservation**, other, value-increasing actions were taken on open spaces, **reinterpretation** and **transition** of former elements can also be observed.

Preservation means that a pre-existing object or feature of the site is kept in its place, integrated into the new function and landscape architec-

Fig. 4. Ózd Cultural Factory, before, planned and actual status. (source: Author's own photo, Visualisation – MIXA Stúdió, Author's own photo).
4. ábra: *Ózd Kulturgyár, a terület előtte, tervezett és megvalósult állapotban. (forrás: saját fotók, látványterv MIXA Stúdió).*

ture design. Built elements, girders, railroad tracks are good examples of this. This category should only be used if the objects undergo nothing but basic repairs and cleaning, or, in case of land formations, fine landscaping.

Fig. 5. Detail from the Steel Yard, photo by Christian Phillips. (source http://www.landezine.com/index.php/2015/03/steel-yard-post-industrial-landscape-redesign-klopfer-martin-design/).
5. ábra: *Részlet a Steel Yard-ról, fotó Christian Phillips. (forrás: http://www.landezine.com/index.php/2015/03/steel-yard-post-industrial-landscape-redesign-klopfer-martin-design/).*

Examples for preserved elements include railroad tracks of High Line Park, the Steel Yard, the raster of girders in The Steel Yard or the complete structure of the building in Nantes. In other areas, preserved open-space elements could include the metal structure of bridges, repair tunnels of buildings, pools of cooling ponds, paved surfaces of loading docks stc.

Preserved elements can include:

– Built elements, fences, pools;

– Relief, terrain, retaining walls, slag heaps;

– Infrastructural elements, girders, tracks;

Reinterpretation is the next step in using pre-existing elements in landscape architecture design. But what does it mean in my approach of revitalization of former industrial areas?

Reinterpretation is used when existing elements get some additional meaning during their re-use. This could be a significant, symbolic colour, which emphasises the unique shape of the object.

Another possibility is to give the object a new function, without changing anything else about it. A good example of this is a metal structure that used to hold utilities, now functioning as the gate of the area. Machines kept in Les Fonderies Jardin in Nantes have become space-defining elements, statues in the open industrial hall.

Even bigger changes can be achieved by adding to the element. This is demonstrated by the basketball hoop of The Steel Yard, placed on the existing supporting structure (Fig. 5.).

In conclusion, reinterpretation is when existing elements become part of the open space by

– getting a new, symbolic colour;

– or getting a new function with or without the addition of new parts;

The girders of Ózd would have been kept with a new coat of paint and new functions, which would have been a good example of reinterpretation, so successful elsewhere.

Transition is the most exciting and most creative category for the landscape designer. When changing the function of post-industrial sites, elements of the industrial past can be used for other than decorative purposes as well. The necessary pieces of furniture and architecture can be created from materials found on site or previously manufactured there.

High Line is a good example for that, where carts were transformed into benches, while more benches were created by folding the tracks into

shape. In The Steel Yard, elevated beds are supported by retaining walls made of cold formed steel plates, a former product of the facility (Fig. 1, 2).

In conclusion, transition is a transformation when the object is not only supplemented with additional pieces, but undergoes significant modification and a functional change, becoming almost unrecognizable.

Conclusion

The research confirmed that preserved, reinterpreted and transitioned elements contributed to the new function of these post-industrial sites significantly, while retaining the historic value of the area. The international examples show that pre-existing elements were regarded as valuable, in the non-financial meaning. The unique atmosphere they create goes far beyond the per tonne price of metal objects.

The analysis of the financial value of the existing element and their cultural, communal importance is not an easy task, but for further project it would be very useful to the decision-makers to be able to count and compare both, and it could became a new research topic – especially in case of industrial heritage buildings but also landscape elements – for the future.

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