

# Recovering Derelict Industrial Landscapes in Portugal: Past Interventions and Future Perspectives

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*Abstract:* The decline of several industrial sectors in the last decades and the landscape left had a profound environmental, social, cultural and economic impact on the communities of which they are integral part. The 20<sup>th</sup> century industrial landscapes are becoming obsolete, threatening to end their original productive social and economic roles in the communities where they belong. Those areas, currently consuming large tracts of land, underutilized, obsolete or abandoned, and located in areas characterized by low market demand for redevelopment, present a dramatic challenge to current and future generations. This phenomenon encompasses all categories of manufacturing in all parts of the world, although, the article will focus on urban industrial landscapes, where reclamation may represent an important role in city development by creating multifunctional sites. To exemplify the importance of those spaces in the urban landscape, this paper will analyze two industrial reclamation projects realized in Portugal during the last decade (Parque Tejo-Trancão-Expo 98 and Braga Stadium-Euro 2004), and an industrial landscape with a significant cultural and environmental value, where it is urgent to intervene (the old industrial landscape of the Arade valley). The significance of those projects to achieve a sustainable urban landscape is discussed. This article shows that the industrial landscape should be viewed as a resource and its recovery as an opportunity to develop new multi-functional landscapes.

*Key-Words:* Post-industrial, Reclamation, Multifunctional landscapes, Sustainable development, Portugal.

## 1 Introduction

The effects of the globalization of industry over the past decades has had a profound effect on the traditional industrial areas all over the world and produced a vast array of obsolete industrial facilities and the various impacts, which are generated from them. The formal products of the modernist movement have become obsolete, forcing this generation to decide on the disposition of the last generation's industrial environment.

In this context, abandonment, sale or demolition of such facilities, were fairly common approaches to dealing with facilities that were designated as 'surplus' no longer serving their original production functions [15]. However, the creation of new and more severe environmental legislation, and the public pressure related with the need to protect the environment, increased the necessity of converting post-industrial sites into multifunctional landscapes [23].

Within every problem there is an opportunity. Derelict and contaminated industrial sites are unrealized resources for initiating urban regeneration and ecological restoration [1, 6, 26]. These sites are

often in advantageous locations near city centres, situated along waterways, supported by existing infrastructure, and adjacent to residential communities. These Landscapes are environmentally -impaired assets that need to be returned to productive use, and reintegrated into the surrounding community.

Landscape reclamation at large scale could restore natural processes and functions, regenerate several areas of the city, create multifunctional landscapes and promote sustainable growth [10, 22]. The present article discusses the development of new multi-functional landscapes in derelict industrial landscapes of Portugal as opportunities of sustainable development.

## 2 From deindustrialization to the renewal of post-industrial landscapes

The contemporaneous city results from a long transition beginning at the end of the nineteenth century [35]. This period was influenced by the accumulation of different visions, different urban models and by significant changes in consumption

and production patterns. Those changes were so fast and alert many city planners. Patrick Geddes in his *Cities in Evolution* and Ebenezer Howard in his *Garden Cities of Tomorrow*, each published in the beginning of the twentieth century, sensed that the Industrial Revolution was going to modify the sense of balance of village around a commons [16, 19].

During this period almost all representations of the European capitals tried to demonstrate the relevance of the modern culture, emphasising their industrial complexes, commercial ports and railway stations [11]. Throughout this time cities grew in proportion to the scale of their industries, reason why the loss of industry without a comparable shift to new forms of economic activity eroded the tax base and caused a “ballooned public sector” [33].

The end of the twentieth century has brought a break in the industrial sector and the way in which it manifests itself physically and geographically in the world. This paradigm break brings with it an accelerating obsolescence of several industrial landscapes [20, 36]. The entire industrialized world is experiencing similar effects of the restructuring of the global economy, the automation of production processes, and the relocation of industry to areas characterized by low production costs. This process termed ‘deindustrialization’ created severe economic, social and ecological repercussions [1, 4, 27, 28].

The industrial era left behind a legacy of derelict landscapes. Urban core areas became economically disadvantaged, socially distressed and environmentally degraded through industrial contamination and process decline [21, 30]. For this reason reclamation projects should redefine the post-industrial landscape through community-based, interdisciplinary action that integrates longer-term solutions based on social, economic and ecological objectives.

Motivation for this increased interest and ‘affection’ for industrial structures is difficult to pinpoint, though it can be traced in the city planning of the early seventies. Efforts which focused on preservation and conservation as a strategy for economic revitalization were motivated by a major international occurrence: a violent reaction against the Urban Renewal policies of the 1950's and 60's which not only decimated the historic cores of many industrial cities, but also failed miserably in achieving the social and economic goals it purported [3, 24].

Downsview Park, located at derelict military air base in Toronto and Fresh Kills, on the site of the world's largest landfill on Staten Island, New York, are representative of these trends and are the most

comprehensive examples of landscape reclamation practices applied to post-industrial sites of North America [37]. In Europe the Ruhr valley of Germany constitutes a good example of post-industrial landscape reclamation, where specialists spent ten years exploring innovative possibilities for waste lands.

### 3 Emblematic post-industrial landscape reclamation projects of Portugal

A small number of landscape reclamation projects have been done until 1986, year of the Portuguese membership in the European Community [31]. Portugal had not followed the steps of the developed countries and just in the end of the 90's a part of the Portuguese nation, changed view and attitudes toward older industrial structures and sites: initially considered blighted elements in an urban area, derelict, undesirable or redundant.

In Portugal there is still a long way to go for this type of interventions to achieve sustainable development, once the private sector prefer the more cost effective alternative to build new facilities than to renovate existing, abandoned and degraded sites. Therefore the realised reclamation projects were several times associated with other international events as the two case studies analysed in the following chapter. Actually the current practice of post-industrial landscape redevelopment is mainly site-specific and driven by economic development motivations, not offering the full potential for sustainable reuse and revitalization beyond property lines.

#### 3.1 - Parque Tejo-Trancão - Expo 98

Park Tejo-Trancão is the most emblematic example of post-industrial landscape reclamation project realised in Portugal (figure 1). It is located in the oriental part of Lisbon, in the right margin of the river Tejo, in a transition area between the municipal districts of Lisbon and Loures.

Before being a park, this area was composed by several industrial structures like a landfill, scraps, a sewage treatment plant and many obsolete industrial buildings. The high indexes of contamination and degradation of this landscape, the proximity of the Natural Reserve of the estuary of Tejo and the intention to develop the world exposition Expo'98 constituted decisive arguments for the intervention in this specific area.

With approximated 90 ha, the park links physics and thematically with the Park Expo'98. The main

objective of the project was the creation of a new public space, redirecting the expansion of the city and re-establishing the relationship between city and river.



Figure 1- Past, Present and Future of the landscape of the Park Tejo-Trancão, Lisbon (adapted from CLWE, 1998).

The Expo98 park brought many benefits, once it implicated the decontamination of the place and the creation of attractive conditions, through the construction of high quality multifunctional space where citizens could enjoy the riverfront area. Nine years after this space is one of the most utilised public spaces of the Metropolitan area of Lisbon.

The conceptual solution proposed by PROAP-studies and projects of Landscape Architecture and Hargreaves Associates analysed the problems of the place, converting them in opportunities of artistic expression. Besides the ecological and functional sense of the proposed structure, the solution serves the parallel intention of establishing a spatial organization to translate a coherence and formal unit reading the group. The scenic values were also essential in the development of the concept of the park, supported by the creation of visual corridors and by the establishment of elevated platforms of

observation of the exceptional views on the river and the marsh.

The project developed a space with several selected uses like sport recreation and passive recreation areas, zones for cultural activities and environmental education. The sport recreation areas included tracks for bicycles, docks for fishing, ramps for small boats, thematic parks and an equestrian center. The sport competition areas incorporated a golf academy, several tennis courts and informal lawns for active sports as soccer and rugby. The areas for cultural activities are informal spaces for musical exhibitions, theatre and any other cultural event [34]. In this way the elements of the program promoted flexibility for a wide range of activities by the creation of numerous informal spaces in the organization of the park, that provide varied social, cultural and physical activities.

### 3.2 - Braga Stadium - Euro 2004

The extractive industry implies a temporary use of a specific landscape [5, 7, 18]. This activity usually leaves behind spaces with huge potential for multifunctional landscape creation. The Braga Municipal Stadium (figure 2), constructed against the stone wall of the Monte Crasto quarry will be analysed as a multifunctional reclamation project that accumulates in his architecture a sequence of decisions which will be listed.

The Braga Stadium was projected by the architect E. Souto Moura and constructed in a derelict quarry located in the urban area of Braga in North Portugal for the needs of the Euro2004 football competition. The stadium is part of a sports complex built in an area occupying more than 74 ha. A space that includes the stadium with capacity for 30100 people, olympic pools, and several other multifunctional facilities linked by numerous accesses where it is possible to contact with nature and feel the spirit of the old landscape – the quarry. The forty-metre height of the stadium measures the difference between the urban nucleus and the natural esplanade which, extending northwards makes up with the lowland of the river Cávado.

The main public access is located to the North, by means of a parking esplanade the dimensions of which are controlled by means of a netted plantation. From the esplanade, climbing the gentle slope, we approach the Stadium diagonally, accompanied by its foreshortened lateral views. From this point of view, the Stadium appears as a concave recipient, as an open vessel, later perceiving the interior space and the surrounding structure. Ascending the gentle slope, the foreshortened figures are transformed into

a frontal vision of the North Stand's concrete structure [29].



Figure 2- Aerial view of the Braga Stadium – Before and after the reclamation.

This visual conflict between the geometric and formal expressiveness of the stadium and the natural, shapeless walls which surround it, finally find a point of synthesis in the pressured roof, in which the cables (symbolizing the bridges that were constructed by the Inca civilization) deformed by the weight are able to camouflage the repetitive sequence in the changing texture of its natural environment.

In this specific project architecture and its surroundings were treated as the same thing, at least from the Landscape Architecture point of view. Both, architecture and its environment are constructed using the same techniques, to reach the same goal, to construct a unique balance. They are only differentiated by their degree of visibility, in their desire to appear present or unperceivable, formal or environmental. This option enables the opportunity to create a multifunctional landscape and emphasises the great possibilities that lay beneath a derelict post-industrial landscape.

The Braga Stadium project is an example for future interventions because it used derelict land to create premium urban space minimizing

environmental and aesthetical impacts of the former industrial activity.

#### 4. The Arade valley industrial landscape - the necessity of a near future intervention.

“In the opening years of the twenty-first century, that seemingly old-fashioned term landscape has curiously come back to vogue” [12] and with him the necessity to reclaim derelict landscapes in detriment of consuming new landscapes. This thought is particularly true in regions where the potential benefits of a certain reclamation project would bring profits at several levels, as it is the case of the old industrial area of the Arade valley.

The importance of the river Arade and its surroundings in the local, regional and national context can be attested by several archaeological tracks that had been found submerged and around it. However, it was only in the beginning of the twentieth century that the implantation of an industrial center in the river margins promoted some development of the area (figure 3).

The circumstance of the First World War had a great importance for the development of this industry, once it absorbed all the production. At this time almost two thirds of the population worked on industry [25]. Even so, during the sixties the industrial activity collapsed and numerous industrial structures left abandoned. However, the memory of the place remained as fragments of collective history of an activity that shaped lives along time. A memory that if will not be protected faces the risk of disappearing forever.



Figure 3- Aerial view of the Arade valley old industrial landscape.

The destiny of this whole industrial landscape is still unknown, although during the last decade, some of the interventions that had been accomplished contributed to the disappearance of some buildings with significant meaning. In this way, it is essential to take to practice a group of coordinated actions that allow the recover of this post-industrial landscape. Unlike explanations that tend to become dominant, the reclamation of the industrial landscape of the river Arade is not just a type of insurance against forgetfulness. It is an instrument of social legitimation [9, 13] and a strategy to reclaim and valorise a post-industrial site in order to turn it into a multifunctional landscape [2, 14, 32].

This industrial area describes today more than a hundred years of local and regional history, constituting a testimony of an industrial, cultural and social conception and evolution which documents and interprets considerable values for the industrial heritage of Algarve. For this reason the reclamation of this post-industrial landscape, should result essentially from new activities projected to introduce in the space, in order to valorise landscape and protect the industrial heritage.

However it is clear, that the analysis and recovery of this landscape constitutes an opportunity that tends to be lost in time. Considering the growing urban pressure leading to the disappearance of various industrial infrastructures, some with heritage value and significant relevance at local and national level, little has been done in order to conserve and rehabilitate.

## 5. Conclusions

The reclamation projects of derelict industrial areas should follow design principles that promote sustainability, reduce negative environmental impacts, and foment economic prosperity, social inclusion, multifunctionality and a better quality of life. For this reason reclamation projects should reinforce landscape character taking into consideration the spirit of the place and integrating the pre-industrial existence in the new landscape, in order to achieve sustainable development.

After the analyses of this article it is possible to conclude that even if in Portugal the post-industrial landscape is commonly experienced negatively as fragmented and incoherent because it is difficult to conceive a legible whole. The projects presented constitute representative examples of post-industrial landscape reclamation in Portugal enabling a sense of spatial enlargement, with high degree of complexity, richness in discontinuities and with diverse ecological and social benefits.

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