Urban Rehabilitation: an instrument for sustainable cities
The case of Covilhã, an old industrial area in Portugal

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Introduction

The tendency of planning policies to focus on the building structure of the cities at the expense of ecological elements, in many cases, has led to the abandoning of various urban spaces, such as the old industrial areas. This article presents a project for urban rehabilitation of an old industrial area in Covilhã, a small Portuguese city near the border with Spain, in the Serra da Estrela mountain region. The goal of this project is to promote the urban rehabilitation by integrating the ecological elements (such as the existing stream) and the old industrial building structure together as landmarks for urban design. The main objectives of this urban rehabilitation project are:

- To propose the urban rehabilitation of old industrial buildings with a stream as the element of sustainability, promoting a balance between them;

- To create a leisure area with a riverside walk in order to promote the integration and the enhancement of the stream in the local context and throughout the city;

- To create an ecological corridor along the stream to ensure the environmental balance of this area by integrating the ecological structure into the urban system;

- To allow the rehabilitation of old industrial buildings and, above all, the buildings heritage that goes back to an industrial past, still present in the collective imagination of the inhabitants. In summary, this urban rehabilitation proposal aims to qualify and improve the image of the city based on the principles of sustainability.
Sustainability in urban rehabilitation process

Challenges in Portugal

In Portugal, recent planning policy has been based on the expansion of cities. Often, urban expansion areas are bigger than needed with problems in terms of waste of infrastructures, creation of urban voids or discontinuity. Nowadays the order is to rehabilitate instead of constructing new urban areas. New instruments are designed to encourage a planning praxis and urban rehabilitation. These planning instruments, “Urban Rehabilitation Plan” and “Safeguarding Cultural Heritage Plan” are signs of policies which are aimed at the rehabilitation of consolidated areas. The principle of sustainability – financial, socio-cultural and environmental terms, is one of the urban rehabilitation issues.

Importance of ecological elements

The ecological structure and the building structure of the urban system are city components, such as in Covilhã, an old textile centre in the interior of the country. The building structure is a result of the relationship between society and territory, represented by the built elements (such as roads, buildings or monuments). The ecological structure is the part of the city landscape that includes the most ecologically sensitive areas and it is essential for the sustainable balance of the urban system [1].

In the Portuguese planning system, the ecological structure of the cities is considered one of the land uses inside urban perimeters. However, it is common praxis in planning to privilege the urbanized structure of the city in its built component to the detriment of the natural structure in its ecological part. This practice has been promoting the disregard of ecological structure, like marginal zones in the city, leading to the disqualification of the urban image.

The stream as the element of sustainability in Covilhã

In Covilhã, the concentration of manufacturing since the 18th century is inseparable from the streams of the city, Carpinteira and Goldra. The industrial buildings are the result of the rise of textiles localized adjacent to the streams. These streams are the most important ecological elements and enclose the valleys in the middle of which lie the urban fabric. This industrial heritage is an identity factor of inhabitants, which is a result of the memory of the past, present and also the perspectives for the future. Given that nowadays no longer is the city important as an industrial centre, the rehabilitation of this heritage is an urgent topic.

Characterization of case study area

In this context, the urban rehabilitation project is define for an area (with 7.88 hectares) crossed by Carpinteira stream along over 535 meters. The margins with steep topography are bounded by old granite walls and 42 old industrial buildings, mostly vacant and deteriorating. For each of these buildings, a characterization card has been created, which includes the photo, location, typology (housing, industry, services), time of construction, number of floors, construction area, occupation (permanent, temporary or vacant) or building condition (to be maintained or
demolished). This is a low density (population and housing) area and more than half of its buildings are in a poor state of repair or in ruins. The nonexistence of housing, facilities and spaces for collective use contribute to local indifference. With polluted water and rundown buildings, this waterfront has been transformed into a smelly and nasty corridor, producing a negative city image. In the urban rehabilitation project the issue is not only one of buildings but also one of public spaces.

Figure 1: Case study, an old industrial area in Covilhã

Urban design solution: actions and decisions

The main element of the solution is a riverside walk (900 meters long) which is proposed as the landmark for the integration of stream and buildings. It goes through the terrain following the longitudinal direction of the Carpinteira stream and taking hold of the natural and built landscape elements. The path was designed based on the level curve of the terrain, adapting it to its characteristics. The creation of a leisure and green area is proposed with facilities, to help stimulate the local interest.

Figure 2: Urban rehabilitation of an old industrial area

Figure 3: Riverside walk near the Carpinteira stream
The presence of housing, services and trade offers a range of uses and activities, promoting interest. One proposal which stands out specifically aimed at the ecological structure is the green corridor of a *non aedificandi* area along the stream, which guarantees the protection of its ecological values. Rehabilitation has been the watchword, particularly with regard to the old industrial buildings, which acquire new functions and housing.

![Figure 4: Diversity of activities](image)

A symbolic entrance was designed on the riverside walk along the edge. By starting the journey here we have an educational farm, placed on different levels connected by ramps in order to have agricultural use. This farm is crossed longitudinally by a wooden walkway that integrates it into the urban fabric.

A free-time activity and a sports centre are proposed, providing cultural and sport for different ages that can occur inside buildings or outdoors. The proposal includes urban walls to maintain the alignment of the existing granite walls. Along the way there are elements which emerge for people to enjoy the waterfront such as viewpoints, kiosks, gardens or terraces connected by the riverside walk and side rails.

In the transition from one side of the waterline to the opposite side, there is an industrial zone to enhance and be integrated in the project. This space is subjected to the *non aedificandi* [2] regime. The project measures are small interventions in order to overcome the state of degradation of the buildings, expand existing access ensuring pedestrian and automobile traffic, guarantee the continuity of the floor and remove elements impeding urban legibility.

![Figure 5: Green spaces and pedagogic farm for collective use](image)
Taking advantage of the topographical characteristics, there is an amphitheatre that is part of the Arts House for the teaching of performing arts. There is a proposal for a housing zone (comprising 71 houses, single or collective buildings), marked by the presence of new buildings for collective housing and a student residence resulting from the rehabilitation of an industrial building, claiming the status of Covilhã as an university city.

Also in this area we can find office buildings, a silo with 73 public car-parking and the largest green space for collective use. This is a multifunctional garden, which allows the enjoyment of a privileged view over the valley of Carpinteira, equipped with furniture for leisure, relaxation and sport. There is a proposal for a coffee-bar that uses a ruin of an industrial building adjacent to the water line to place its esplanade.

**Acknowledgements**

This project demonstrates that it is fundamental to consider the buildings heritage and the ecological elements in urban rehabilitation. This result is achieved by intervention in an ecologically sensitive area where the creation of a socially and culturally diverse space is proposed.

**References**
