Contributions for the Rehabilitation of the Castro da Senhora do Bom Sucesso - Mangualde (Portugal)

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Abstract. Portugal is undoubtedly, a destination for the practice of Nature Tourism, containing a vast and rich natural, historical and cultural heritage. This settlement, Castro of Senhora do Bom Sucesso is a place where the surrounding landscape stands out with several mountains around it, in an environment where the flora and fauna, characteristics of this region, stand out. The whole history of the place, refers to a certain period of the past, valuing it and able to make the experience that the Nature Tourism can provide even better. Being one of the highest places in the central region of Portugal, it is for many people, a special place of enjoyment and relaxation. In this place, hundreds of years ago, there were between 80 and 100 houses of ancient people from the Celtic culture. Later, due to the abandonment by Men, these houses became disused, falling into a rapid decay process with the collapse of walls and roofs, making the roads impassable and the place covered with vegetation. Thus, in this work, in methodological terms, based on literature review, the collection of cartographic elements of the place, and in the field and cabinet studies, it was possible to develop an investigation on the Military Heritage of the region, in order to analyze in detail, the relation of the nature of the place with the architecture. This work resulted in a proposal for the site of the former Castro do Bom Sucesso, with the main objective of creating an Ecotourism Park, around the Celtic culture and autochthonous nature, organized in the following main equipment: i) Reception of the Ecotourism Park; (ii) "Celtic Bungalows"; iii) Celtic Interpretation Center; iv) biological pool and v) Camping. The paper presents the main elements developed, from the design to the form and location of the equipment that, to be built, is believed to improve the regional economy through a scientific, didactic, cultural and sustainable tourism.

1. Introduction

Through Architecture, the space is configured in order to provide sensations to the human being. The importance of configuring it around nature and rural space, humanizing it, adds it even more value and, with the relation of all other elements, makes this strategy smarter for the work to turn out as wanted.
It should be noted that tourism has been growing in Portugal, and that it is a destination of excellence for the practice of nature tourism, with a rich natural heritage. They are characteristics that increasingly drive these projects of a natural nature and in convergence to nature, valuing the human being's involvement with architecture, through evolution and technological progress. It can be said that nature will always be present in Architecture as a permanent force of action which brings with it characteristics that can be explored in a very rich way in its understanding, such as textures, colors, temperatures and contrasts, in such a way, as if Architecture is an extension of nature [1].

Living and experiencing space is the "key"; taking advantage of the existing ruins and being able to "transport" them to the present day, mainly from the "Celtic Interpretation Center", in addition to other associated equipment such as new temporary housing, without forget all the added value for their functionality, inherent in the practices to be developed and the association of support infrastructures with character in relation to nature and its landscape, it is believed that the elements proposed here will lead to an Ecotourism Park of excellence to be sought by people from all over the world.

2. Geographical location
The study area (Figure 1) is located in Chãs de Tavares, municipality of Mangualde, Viseu district, located in the central region and sub-region of Dão-Lafões, with approximately 7300 inhabitants.

Figure 1. Geographical location of the study area (Center of Portugal)

The Nature is the main characteristic of this region, with a vast plateau surrounded by mountains, integrated into the plateau Beirão, flanked to the northeast by the mountains of Nave, Cota and Lapa, the Northeast by the mountains of Caramulo, Graalheira and Montemuro, and to the southeast by the
mountain of Estrela. The highest point and with best views, is located at a maximum altitude of 765 meters, on the top of Bom Sucesso mount, in Chãs de Tavares. In hydrographic terms, the territory is bathed to the northwest by the river Dão and by its affluent Ludares; it is important to point out that at Southeast the Mondego River, the largest fully Portuguese river, marks the border of this county.

With regard to the main city, Mangualde, it can be said that is at a distance 290 km from Lisbon of and of 150 km from Oporto, with accesses essentially by motorways or roads of approximately similar characteristics. Access to Mangualde can also be done by railroad, by the Beira Alta railway line, from Lisbon, and that goes to the Guarda to 63km, with a connection to Europe (Spain and France).

3. The Military Heritage in the District of Viseu

The existence of fortified settlements in Portugal, Castros, has been at the core of some discussion and gave rise to some theories. One of these theories maintains that this type of fortified settlements, would constitute the origins of a settlement that had followed the late culture Castreja in the northwest of Portugal [2]. This culture was associated with the Lusitanians, warrior people who defended a territory, embedded in the idea of defense of the motherland and therefore, would include the genesis of what is now Portugal. Others considered them to be colonies of more advanced people, metallurgists, notably the Eastern Mediterranean, who set out to exploit the territory's resources and who were forced to build walls around the villages for their defense.

The first fortified settlements between the fourth and third century BC were inhabited by men who practiced a relatively developed agro-pastoralism, resorting to the help of the animal force in the agricultural works while taking advantage of the resources that the domestication of animals and plants notably through the development of techniques such as weaving and the production of milk products and the exploitation and processing of copper [3].

In the second century BC many early settlements were left without their inhabitants, and even of those who remained occupied, a few information are known. The greatest vestiges of these populations that arrive until our days on the top of the mounts of the municipalities are of the first century BC.

In the study region, from a bibliographical research and field analysis, 24 Castros were identified (Figure 2). It was interesting and important to study the existing Castros around the area of intervention, in the parish of Chãs de Tavares.
Figure 2. Location of the Castros surveyed in the region of Viseu

4. Project proposal for the Rehabilitation of the Castro do Senhora do Bom Sucesso

4.1 Introduction
Sustainable development is a subject that has been addressed and practiced, being a key challenge for buildings. The demand for development that meets the needs of the present without compromising the future generations has been growing: all citizens of the planet have a duty to ensure, in each of their activities, the minimization of the use of natural resources, energy saving and reduction of pollution.

Thus, sustainable materials are used in the project: cork insulation which is now seen as a superior quality material, used in numerous sustainable constructions; light steel, characteristic for its short term of execution and easy transportation; and the "Oriented Strand Board", made up of 100% natural resinous woods from plantations intended for this purpose and exploited in the framework of sustainable forest management [4].
4.2 Ecotourism Park proposal

For the development of the program of the proposal, a chronology was used from the beginning of the route that is considered more logical for the tourist, in terms of its needs, being organized generally in 5 parts (Figure 3): i) Reception of the Ecotourism Park; ii) "Celtic Bungalows"; iii) Celtic Interpretation Center; iv) Biological pool; and v) Camping.

![Figure 3. Schematic intervention program implantation for the Ecotourism Park of Senhora do Bom Sucesso](image)

The development of the proposal stems from the need to respect existing space, its natural forms and its buildings and existing spaces with historical value. Existing buildings, façades and existing granite walls (ruins) have an architectural, historical and cultural value, which we immediately commit to respect. They are buildings that are held together for an immutable time and fixed to a memory of the past of the inhabitants of the region.

In this way, it is necessary that interventions take extreme care to create an unbreakable cohesion between the past and the present, always respecting the materialization and rural architecture, fulfilling an adequate level between existence and present needs. It is intended that Architecture is an extension of nature, always respecting the surrounding environment and terrain, that being a member of nature, remains untouched and virgin in the implementation of all interventions.

Celtic culture relies heavily on symbology for its daily acts and doings, so throughout the intervention, the tourist must "feel" this symbolism, characterizing all space in a simplified form of what existed there in the millennial past [5].
i) Reception of the Ecotourism Park
To design the main equipment, it was considered as basic concept the Celtic symbolism "triquetra" that symbolizes the three faces of the great mother, creative energy of the universe and that can be associated to the three phases of the year that existed in the past: spring, summer and winter (Figure 4). The Reception takes place at the end of the depression and in the continuity of the ground begins the cover (in the form of a shell) that extends throughout whole the building and surrounds it, using the same construction process used in the interpretation center. The building is covered with cork and with triangular shapes, as if it were the extension of the ground in the form of rock.

![Figure 4](image)

**Figure 4.** Proposal for the Reception of the Ecotourism Park of Senhora do Bom Sucesso: a) ground floor 0; b) 3D image

ii) Celtic Bungalows
The project of the Bungalow module consists of the relationship that exists in the Celtic past through the symbology of Celtic culture, where everywhere it is placed, it will absorb everything for life and for those who want to be in the path of light and wisdom, not possessing a beginning or an end, believed to represent the eternal cycle of life as the "Celtic Knot." The similarity of the same can be seen in the elevation drawing of the bungalows, giving a perfect aspect at the junction of the Celtic Node (elevation drawing) and harmony with proportional relation of the rectangles (golden ratio) (Figure 5). The concept for the typology T0 and T1 is the same, removing only the bedroom of the T1 typology, thus making T0 more compact and similar to T1 as shown in figure 5.
iii) Celtic Interpretation Center
The main interest of the Celtic Interpretation Center requires an interpretive space, open to the public, which preserves, investigates, disseminates and exhibits about military activities and Celtic culture. The choice of the location of the Center was where there are ruins of a rectangular Celtic housing (Figure 6), with associated attachments, with a total area of 119.66m².

The objective is to recover what already exists (ruins) and implement a body that fills the existing empty space through an oval shape for each space, where through a process of modernization one obtains the own shape with triangulations, softening and fitting into the existing landscape.

iv) Biological Pool
A biological pool is a place for contemplation, communication and imagination; so it is a refuge that shelters from the severe forces of the outer world; a biological pool is alive, offering much more than the bath, changing every year's height, allowing you to get in touch with nature in an extraordinary way, diving with frogs, sniffing the flowers of the water lilies, enchanting nature lovers and the culture of the place that was lived by a Celtic settlement previously.
Figure 6. Center of Celtic Interpretation to be included in the Ecotourism Park of Senhora do Bom Sucesso in the proposal: a) ground floor (without scale); b) exterior and interior 3D images

This proposal (Figure 7) arises due to the natural characteristics of the place. On the one hand there is a natural depression, in order to facilitate the implementation of a pool with an area of 250m² for a capacity of approximately 150 people daily; on the other hand, there is a natural spring at the site, which most likely may have been the "anchor" of the early Celtic settlement that flourished there.
Figure 7. Biological pool scheme to be included in the Ecotourism Park of Senhora do Bom Sucesso in the proposal: 1) riparian and aquatic plants, 2) purification zone with plants, 3) membrane separation wall, 4) swimming zone, 5) waterproofing membrane, 6) regularization layer

v) Camping
The camping proposal presents an implantation that intends to take advantage of the morphology of the coverage of the reception program, and of the terrain. The camping is installed, using the distance between the two modules, bathhouses and administration, where two paths are started, with suitable forms to the land and in the continuity with the reception coverage itself. The campsite is divided into 2 zones (Figure 3): zone 1, where the motor homes and roulottes are installed, with all complementary facilities for them and zone 2 where the tents are implanted, also associating all the necessary additional facilities.

5. Conclusions
The Castro da Senhora do Bom Sucesso, cultural past, was present for many people, the stage of great histories and experiences, works of the people of the field, and fighters of wars.

The permanent abandonment of that place led to all this being forgotten and ceasing to exist. It is true that if one is aware that it is impossible to give it the role that in earlier times has been assumed in society, however, nowadays this place can still serve as cultural, low impact actions on the place.

After the field survey of a vast set of Castros in the region (Figure 2), one becomes aware of the routes that existed for the people of that time, being silent elements that speak for themselves. It was observed a whole process of architectonic and landscape decharacterization, which is becoming more accentuated over time, however, it is believed that it is still possible to reverse the situation.

It is hoped that with the research carried out and with the Ecotourism Park project based on it and on the local nature, it is contributing to the increase of the population's awareness for these places and their preservation and development for the rural environment, not being let to fall into its oblivion again.

The creation of the Ecotourism Park with different interests and activities makes the vast existing military heritage, of the zone of intervention, in a theme of greater interest and to be developed in
order to captivate the visit to the national and foreign public. The proposal aims to create an image of compliance with nature and innovation on the spot, making it a unique experience, never forgetting its initial form and identity.

Thus, with the present paper, an Ecotourism Park, around the Celtic culture and autochthonous nature, organized in the following main equipment: i) Receiving of the Ecotourism Park; ii) "Celtic Bungalows"; iii) Celtic Interpretation Center; iv) Biological pool; and v) Camping.

Finally, it should be noted that this work was the result of an academic project, but due to its added value in the various aspects, it is believed that the financial support will emerge and consequently, if possible, the bureaucratic aspects will be overcome. It may be the beginning of a tourism segment around the ancient Celtic culture that was once so important in the region.

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