

Architecture, tourism and sustainable development for the Douro region

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ABSTRACT: this paper deals with sustainable construction and architecture in the douro Region touristic facilities. We claim that this has vital role in achieving the tourism full potential for conservation and development of the region with recognized potential for tourism growth. Buildings that make possible tourism occupation, involve extra consumption of energy and natural resources, when compared to average levels of local communities.

To make progress on this, we are gathering a representative set of tourism compounds that will be evaluated through criteria from evaluation methods of sustainable construction like SBtool, LiderA, LEED and BREEAM. We are gathering data related with the comfort experience of this buildings users, aiming to know the ratio between tourists demands of comfort, and final consumption of resources.

As result of this research, we intend to refine environmental certification criteria in this specific geographical context and building category, and if necessary, define corrective intervention strategies and guidelines.

1 INTRODUCTION

In Europe, "increased demand for sustainable destinations, were nature and local communities play a key role"(ETC, 2006) along with a growing environmental awareness are recognized as crucial factors in the success of tourism products. The Portuguese National Strategic Tourism Plan (MEI, 2006), places "Gastronomic and Wine Tourism" in first of the 10 strategic products. Nowadays, the Upper Douro and Douro International, combine the strands "Wine" and "Nature" with recognized potential for tourism growth. However, architecture and contemporary construction are synonymous with intervention and change of preexisting ecosystems. Moreover, the buildings that are necessary for leisure and tourism activities, imply an extra consumption of energy and natural resources, when compared to consumption levels for regular dwelling.

The original development impetus of the industry associated to the Demarcated Wine Region of Alto Douro, with 250 years of existence, has little in common with the current demands of growth and development of the "Gastronomic and Wine Tourism" concept. In many cases Tourism, understood as "leisure, culture, mobility and knowledge, is just a synonym for unsustainable "(Costa, 2006).

To overcome such problems, in one hand "the policies of destination management should be improved with a more consistent and coherent planning"(ETC, 2006). Tourism growth should follow ecotourism models, understood as a scientific approach to planning, management, development of tourism products and sustainable activities. On the other hand, at a small scale analysis, attention to architecture and construction detail of tourist facilities, is central to "explore the potential for tourism promoting conservation and development, avoiding the negative impact on the ecology, culture and aesthetics"(Lindberg, 2002). In Order to have Tourism contributing to

national cohesion, reduction of interior desertification and following the latest theories of Ecology and Nature Conservation, it is also necessary to know the factors that interfere with the comfort feelings of visitors and users of Tourism buildings. The comfort parameters required by visitors should converge with the need to lower the levels of energy consumption and reduce landscape and environmental impacts, such as solid waste, sewage and water use. In a region that is a unique example of the balanced relationship between human activity and nature, visitors will most probably tend to settle in the most sustainable facilities.

Despite that we don't know the ratio between the tourists demands of comfort and final consumption of resources, the result of individual small decisions in architecture to satisfy these requirements are reflected exponentially in the environmental indicators of the tourist region.

2 DOURO REGION

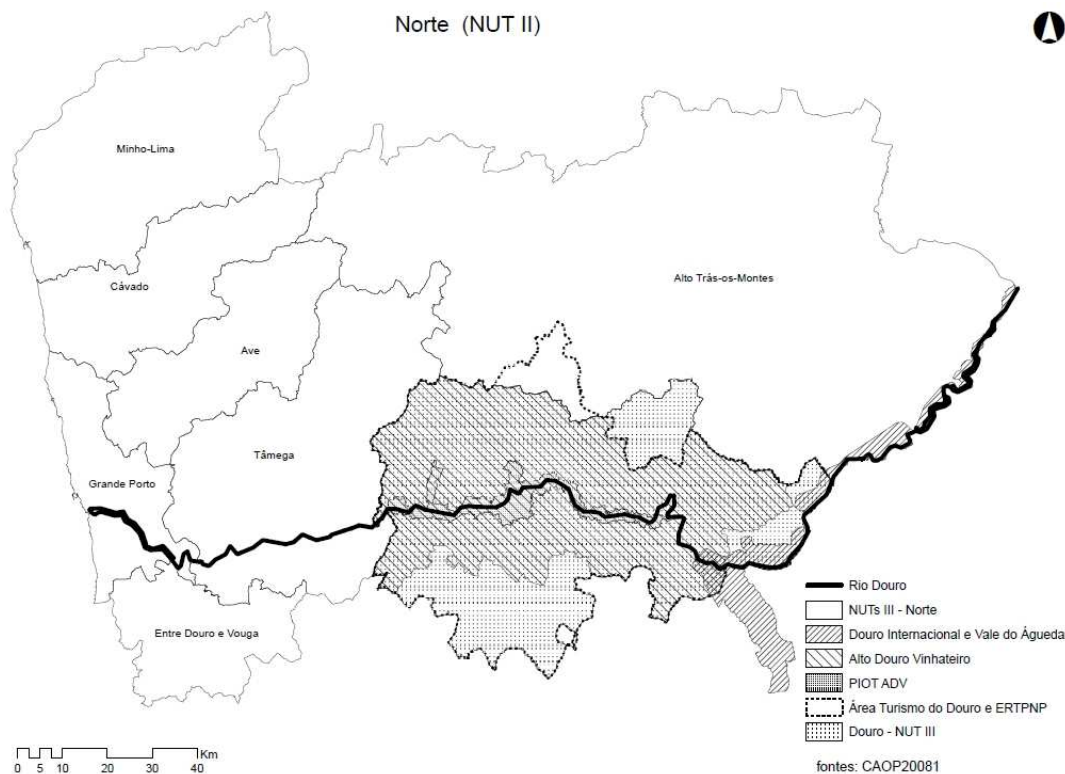


Figure 1. Map of North (classification of territorial units for statistics – NUT II) and Entities: Douro River; North Regions NUT III; International Douro and Águeda Valley; Alto Douro Wine Region; Intermunicipal Plan for Land Use Planning of the Alto Douro Wine Region; Areas of responsibility of the Douro Tourism and Regional Tourism Entity for Porto and northern Portugal; Douro Region – NUTIII.

Much is yet to be done in the Douro Region, regarding the growth of construction for tourism purposes, justified by key factors of Portugal differentiation. There are clear intentions of promoting tourism, in order to stimulate rural development and fight desertification, stated in the National Strategy for Sustainable Development and in all sectoral policies regarding the Conservation of Nature and Biodiversity (Zorrinho, 2005). It is though mandatory to know the specificity of these region and sub-regions to sustain the interventions in the near future. Figure 1 pretends to give an overview to this region in terms of territorial compartment and institutional organization that shares the Douro river as the main common and unifying element. The sub-region Alto Douro Vinhateiro, recognized for the Vineyard of Porto Wine, is a Unesco World Heritage Site and one example of a successful relationship between human economic activity, and demanding natural elements. This region has critical characteristics of fragile water re-

sources, though its proximity to an apparently stable river. Further upstream the "International Douro is an orographic enclave formed by the River Douro and its tributary the *Águeda*, natural border between Portugal and Spain, has unique characteristics in terms of geology and climate, affecting communities of plants and animals, including birds, and the actual human activities" (ICN, 2007). This particular area was recognized as Natural Park in 1996 (RCM, 1996) and crosses three NUTIII regions, starting from *Douro*, continues to the Northeast into the *Alto Trás-os-Montes* and stretches Southeast the *Centro* NUTIII region. Several other entities, not listed on *figure 1*, have general territorial management and tourism specific skills for a region that has a wide diversity of landscape, morphology, geology, climate, demographic and socio-economic characteristics. Forestry and agriculture are relevant economic activities in the region, both for its historical and contemporary significance. Though the industrial and tertiary activities and tourism services are sectors that should lead the economic future Douro region, only with all vigorous sectors can the region effectively set the population. Data reveals that Municipalities with positive demographic trends have in common the existence of alternative activities to the primary sector due to the possibility of obtaining better wages and the existence of a greater diversity of employment opportunities, enabling the incorporation of young people with higher education levels more heterogeneous than in rural societies.

Recently published *PROT-N* (North Regional Plan for Territory Planning) recommends the adoption of a wide range of principles and guidelines for strategic options and operational objectives set for the protection, re-qualification, enhancement and management of water resources, especially by its great relevance for regional development. The main goals are to ensure the management of basin water resources, strengthen Iberian cooperation in water resources field, and to promote socio-economic enrichment of riverside areas, through activities related to nature tourism and leisure, taking advantage of traditional hydraulic heritage and cultural values. This document refers to Tourism, as a transversal activity with strong territorial impact, that interacts and depends on several factors for its economic, social and environmental sustainability. Three fundamental assumptions are identified in the *PROT-N* as guides to ensure tourism regional development – Excellence, Sustainability, Competitiveness and Innovation. Also, regarding the regional model for energy, *PROT-N* recommends the adoption of best practices for monitoring and benchmarking the Region. In order to assess the progress in energy-environmental sustainability each subregion should define its goals and actively measure them. Tourism is to be set under tight rules on energy performance according to the energy certification legislation (SCE, 2006) requiring that the new 5-star ventures must have class A+ and the 4-star tourism developments should have class energy A or A+. Other *PROT-N* recommendations emphasize the need to promote rail infrastructure in the region and improve integration and coordination of public transport offered by the different operators.

The Douro region is currently facing marginalization of its territory in the national and European level. The socio-economic decline seriously threatens territorial cohesion in a region that struggles to maintain minimum levels of territory occupation and access to local public services and amenities. According to *PROT-N*, the main challenges for this region are to increase its critical mass in terms of population, its attractiveness, competitiveness and its capacity of being self supportive. To realize these ambitions it is mandatory to ensure the pursuit of excellence, the promotion of innovation and encouragement of partnerships between public-sector private.

Among the main *PROT-N* Strategic Guidelines for the Douro region is highlighted the need to strengthen key economic and productive vocations of the region, rearranging and qualifying the business areas and promoting tourism that focuses on local vocations, resources and values, as a major vector of development.

3 TOURISTS

Data from the Department of Tourism (DGT - tourism in Portugal, the main source markets, 2001-2004), reveals that the tourists who visited Portugal in recent years are mainly from countries such as Spain, Germany, United Kingdom, France and other northern Europe countries. The environmental and ecological awareness and the importance that ecology has on public opinion, is higher in the visitors origin countries, than in the general populations of the visited regions. The "German tourists have a higher environmental orientation than those of other na-

tionalties, and more than 50% takes into account environmental concerns in their decisions to travel"(Kaae, 2001). Given that Portugal second largest source of tourist is Germany, in terms of overnight stays in hotels (about 16.4% in 2004, according to INE and DGT), it is of extreme importance in the strategic development of Douro tourism to consider the relevance given by this tourists to environmental issues. Moreover, we should note that this market is decreasing the amount of arrivals in Portugal since 2000, which could, among other things, be a reflection of deviation to other destinations with more environmental awareness than Portugal. These tourists are mainly distributed by about 874 *Pensões* (hostels), along many regions of North and Center of Portugal. In terms of number of accommodation category, Hotels appear in second place with 563 units, with the regions of Lisbon, Center and North holding the largest number of units, with about 66% of the total offer (Costa, 2006). It should also be noted that 2004 saw an increase accommodation capacity in Campsites 3.7%, and Rural Tourism, more 5.1% of beds than 2003 (Silva, 2005).

We want to know to what extent is the "eco-efficiency" factor relevant in the satisfaction of tourists visiting the Douro Region?

4 STATE OF THE ART

Architecture and construction, understood as a means for human settlement, represent irreversible transformation of the natural environment. The growing interest in various forms of tourism, in the most recent period of human history, pursued the industrialization and is associated with the development of "spare time" concept. Since recent evidence of growing global awareness of the scarcity of resources, mankind is increasingly committed to redefining processes to reverse the trend of increasing natural resources and energy consumption. It is now required that tourism architecture ensures the sustainability of systems in which they operate. We are looking for models of sustainable development to reconcile economic development, social justice and the efficient management of natural resources. The WTO Global Code of Ethics for Tourism, dedicated the 3rd Article to the Tourism as a factor for sustainable development. It states that " All the stakeholders in tourism development should safeguard the natural environment with a view to achieving sound, continuous and sustainable economic growth geared to satisfying equitably the needs and aspirations of present and future generations"(OMT, 1999). Also a specific reference is made to construction of infrastructure, which "should be designed and tourism activities programmed in such a way as to protect the natural heritage composed of ecosystems and biodiversity and to preserve endangered species of wildlife".

According to recent reports of WTO, Europe reveals growing interest in activities associated with rural tourism and directly linked with nature. This is also probably related to the fact that the population residing in large urban areas is growing worldwide. The proportion of world's urban population should grow up to 60% by 2030, according to the information services of the United Nations (UN, 2005).

Tourism is now globally understood as determinant to economic and social development. Nations such as Sweden and Finland, already enjoy the results of coherent policies to improve environmental indicators, presenting the world's highest levels of development (Esty, 2006). In Portugal, we see ambitious presentations of documents such as Guidelines of the National Strategic Plan for Tourism (MEI, 2006) and the Lisbon Strategy. There we can find explicit intentions to "accelerate Tourism growth" and follow a sustainable model, along with the desire to promote "agricultural and forestry policies that reconcile the productive activities, services, nature conservation, the sustainable use of natural resources and protection of the landscape". These political commitments to "accelerate growth" should be replaced by the desire to "consolidate and qualify", not to further underline the divergence with international and European referential contexts. It is increasingly "difficult to support the claim that sustainable development is continuous economic growth" (Partidário, 1997). Doubts as to the proper implementation in the field of sustainable planning policies, are still fed by reports indicating that 63% of all new tourism projects for the Algarve (South of Portugal), will be in Protected Areas. Moreover, these "developments" where only presented as "five-star hotels" (Rosa,2007). If doubts arise at the level of choosing the most sustainable localization, more uncertainties lie on the effective con-

struction of these tourism buildings that are likely to be caught by the Vicious Circle of Blame (Cadman, 2000) represented in figure 2.

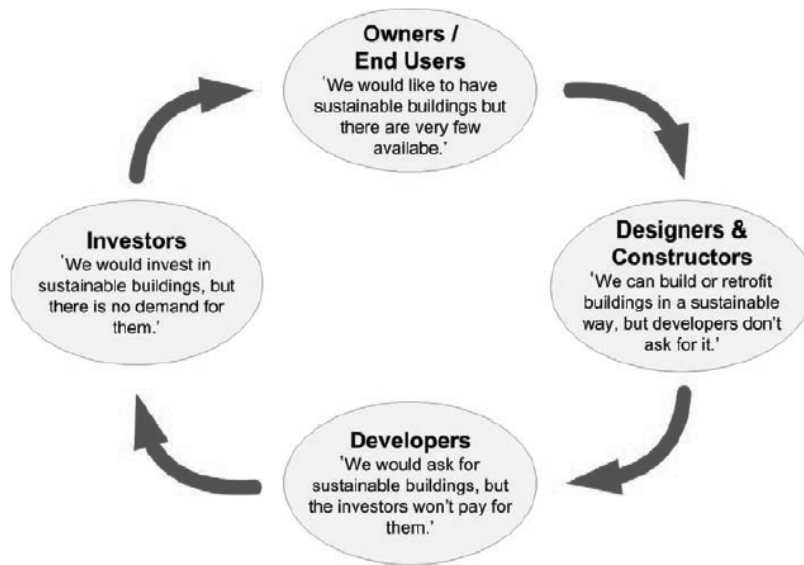


Figure 2. The Vicious Circle of Blame, adopted from Cadman, 2000 (FiBRE,2008)

Parallel to this generic reflection on reasons why buildings are highly unsustainable, in the Portuguese context it is clear that innovative and sustainable products available on the construction industry take too much time to be actually used. To illustrate this fact, the most consensual example can be found in the small number of solar panels for domestic hot water installed in Portugal, when compared to the rest of Europe and locations with less Sun radiation. Even with recent government direct incentives of about 50% of total investment necessary for acquiring a solar water heating systems (Medida Solar Térmico 2009) that significantly raised the number of installations, demand for this efficient proven technology continues very low. Possibly, some other reasons that block innovation and sustainable construction to be applied specifically to Tourism are: stakeholders are insensitive to added value of eco-efficiency and are unwilling to take the risk of innovative solutions, preferring the safety of conventional solutions, architects and designers involved in the construction processes, don't deal with multi-disciplinary teamwork; architects and designers unable to calculate and communicate the tangible benefits of sustainable building solutions over conventional solutions; high institutional bureaucracy consumes too much time between the start and completion of the project withdrawing the innovation factor; lack of eco-efficiency studies applied specifically to the Tourism buildings and infrastructure to sustain decisions for eco-efficient architecture - though there are several studies focusing on implementation, management and monitoring of eco-tourism facilities, where there is a social, anthropological, environmental or cultural study object, very little focus has been made on construction and architecture solutions; added value and positive differentiation of sustainability certification is not yet demonstrated for tourism services and buildings - at the moment (December 2009), Portugal has only five tourism services certified by the Community eco-label (Label created in 1992 and revised in 2000 by the European Parliament) and three LiderA certified Buildings.

Large investment projects advanced for the Region will hardly change the business model of conventional tourism, despite exhibiting "green" ambitions and applying to higher market levels. While these investments, "normally display substantial quality standards and formally present good sustainability indicators in terms of consumption of water resources, energy or waste management", most often they neglect singularities of the local context and the region only fulfills the function of support for the tourism activities that are immediately most profitable.

Douro region needs to adopt touristic standards based on the contemporary adaptations of the original Ecotourism model. The term Ecotourism was “coined by Héctor Ceballos-Lascuràin in 1983, and was initially used to describe nature-based travel to relatively undisturbed areas with an emphasis on education”(Rajan, M). Nowadays, Ecotourism is synonymous with models of sustainable tourism development that meets in the present, the needs both of the tourists and visited regions, at the same time protects and ensures equal opportunity for the future. The management of resources must be such that the economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, ecological processes, biodiversity and all systems of life support.

4.1 Some examples

The subject region has no significant or consistent ecotourism projects established, as far as we have been able to perceive, nature oriented tourism accommodations are built in current standards and no innovative solutions are yet explored.

The eco/sustainable/community-based tourism, widely presented as tool for development of poor countries or regions, has its actual benefits and effectiveness progressively questioned and debated. Although there are many early succeeded experiences, only a hand-full of examples have lasted for more than a decade (Luleciler, 2009). In relatively stable Occidental countries, where social and cultural issues aren't extremely delicate, focus on economic and environmental sustainability allows some space for creativity and experimentation.

In this context, we would like to present a couple of international innovative and systematized solutions to illustrate in what extent ecotourism models can evolve and be reinterpreted to incorporate value in areas with similar problems and opportunities as the Douro region. The examples were chosen only for the simplicity and small scale and innovative approach, though are not to be seen as a best practices or “how to do” solution for the Douro region.

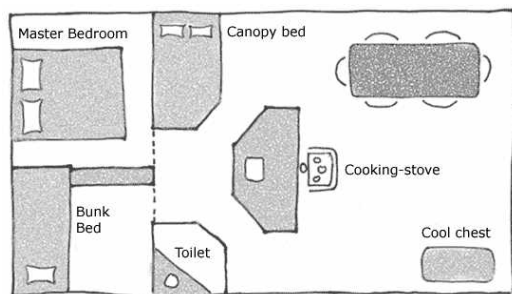


Figure 3. Feather Down Farm tent layout
www.featherdownfarm.com

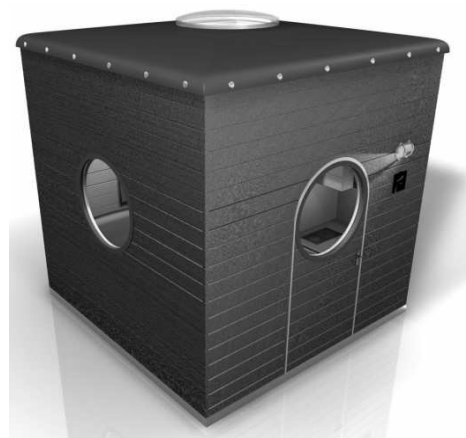


Figure 4. *Carré d'étoiles* 3D CAD simulation
www.carre-detoiles.com

Figure 3 is available on the internet site of “Feather Down Farm®” which is a farmers' alliance in the United Kingdom, Holland, Belgium, Germany and United States of America. This on-line tourism business structure is located in selected farmland and rural areas. The Feather Down farms pretends to recreate the rural experience, in harmony with the rhythm of such life. Operating only on working farms where the farmers are passionate guardians of the countryside. Every Feather Down farm has its own speciality: one might specialize in beef; another in organic products; one might be dairy; another might combine cattle with horses or sheep. Not entering in architectural or marketing value judgments, the model Feather Down farm tent, is described

as “incredibly spacious and comfortable”, with a “traditional interiors” recreating ancient rural life. Though this business is not globally presented as independently eco certified franchising structure, it aims to emphasize site historical significance and rural conservation is high on the agenda. Some farms are into a Higher Level Environmental Stewardship Schemes, aiming to encourage many aspects of conservation. This work includes restoration of old ponds, ditches, fences and hedges as well as constructing new ponds and lakes to encourage wildlife habitats of rare and endangered plants and animals.

Figure 4 is the key image of a totally different approach to what promoters name as “get away from it all tourism”. This “*Carré d’étoiles*” is also on-line tourism business structure which proposes the rediscovery of night spent in the open air, through a forward-thinking innovative type of accommodation. It is a portable and reversible structure set to be placed in any compatible environment. The concept is declared to be based on wisdom and perfection, daring architecture cube shaped accommodation embodying stability and probably a spaceship like experience. Each “cube” is hi-tech equipment and is prepared to proportionate superb sky gazing experience. Each module comes with a sky observation kit, including telescope, stellar chart and pedagogic astronomy games. Some construction details are declared as environment friendly, namely bio-ethanol chimneys and recyclable wood structure.

5 THE APPROACH

Within the Douro geographical context, these research focus is to analyze the architectural features of region's most representative tourism buildings, identify what defines and determines comfort and satisfaction of buildings visitors and users and finally, promote corrective strategies for the analyzed buildings along with organized information to support future building projects.

The fieldwork is being prepared with the objective of gathering architectural surveys on each chosen touristic facility. Though Christian Baumgartner (Costa, 2006) states that “visitors are not interested in staying in a sustainable hotel in a non sustainable region”, we feel that the sustainability isn't yet assessed nor guaranteed in the building lever and so, the regions sustainable balance can be irreversibly compromised.

The World Tourism Organization (Inskeep, 1998) recommends that the principles of sustainable tourism development should undergo a careful analysis of the tourists satisfaction levels so that destinations retain their popularity and attractiveness. Tracking this recommendations in the architectural perspective, means that primary focus in the shape of data gathering near visitors and users of buildings, is necessary to minimize environmental damage and promote the use of eco-efficient techniques of construction and design. This detailed data, collected from visitors and direct users complies with the principle of “participatory tourism, which argues that” sustainable tourism is reflected in a strategy to convert the traditional model and the incorporation of new parameters management (Fraguell, 1998). This will permit a solid setting of standards for “environmental comfort” in the region.

The ambitioned result, will not create another assessment system of sustainable construction, the aim of this research, is to find concrete solutions, starting from the existing systems available and the new data collected on site, in order to develop indicators to assess sustainable construction in the context of the Douro region. This research aims to provide specific data to improve existing methods such as SBTool, LiderA, LEED or BREEAM in the specific analysis of tourism buildings.

6 CONCLUSIONS

The potential conflicts or benefits that arise from local versus global construction standards is one of the key factors to determine the outcome of the region touristic success extremely dependent on territorial landscape identity. Conflicts can arise due to scarce resources abuse and misuse, whereas in this sense buildings and particularly those related to tourism use have incontestably responsibility if not properly conceived and managed. Benedicts can be found if small scale, locally integrated touristic facilities which are in harmony with the local landscape and where tourists share space with hosts and social exchange occurs (Luleciler, 2009).

Sustainable tourism is an extensively proclaimed strategic goal for the Douro region, this ongoing work and other related and critical investigation is indispensable to provide valid input for local governance decisions and territorial management tools.

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