

Housing building typology definition in a historical area based on a case study: The Valley, Spain



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ABSTRACT

This paper introduces the problem of the abandonment of historical housing located in city centres. These constructions are usually excluded from the cultural heritage conservation processes, and therefore a large quantity of them is currently unlivable, and because of this there is an urgent need to propose solutions. However, the extent of the existing building stock and the additional difficulty of protecting its patrimonial value requires an accurate analysis. This work makes a contribution to the definition of historical housing areas by cataloguing the different dwellings, hence it underlines the need to define building typologies in order to simplify the multiparametric analysis and identify the main vernacular characteristics on such a wide scale. This definition of typology may include all the parameters which value and characterize a historic house through an approach which combines a territorial, urban, architectural, and construction perspective. Likewise, data processing will enable the selection and definition of building typology. The methodology proposed serves as a policy guideline for analysis of buildings in historical centres, prioritising the preservation of the cultural heritage value and the recovery of the historic use of urban space. This method has been tested in a previous case study of the Jerte Valley (*Valle del Jerte*), located in The Central System, Spanish and Portuguese: Sistema Central. This study approaches the analysis of a vernacular housing stock of three thousand dwellings by: first, taking into account the complexity of the historical area analysing the territory, landscape, architecture and urban variables; then, by selecting the representative building typologies; and, finally, by defining information sheets. The culture heritage of the Valley, based on adequate information, will be protected.

1. Introduction

Before now, European culture heritage conservation has been nearly limited to the protection of monumental architecture, without consideration for some of the simplest and most popular buildings that comprise the historical cities (Commission, 2007), hence historical housing stock has not been regarded in urban development policy, leading to a gradual abandonment over the years. Urban Development Fund programs have been carried out by the European Union in order to promote and fund urban regeneration plans (Commission, 2000). However, only a few of them refer to heritage or cultural sites.

Some of the serious consequences of this abandonment are summarized below (Tuan & Navrud, 2008):

- oversight of cultural values, the historical link with the past and the social and cultural traditions are of great importance, in order to give the current cities and societies meaning and character;
- waste of material resources and traditional crafts and techniques,

which rely on the design skills of local tradesmen;

- worsening of space problems and loss of construction land belonging to city centres, which entail the waste of urban services already in place;
- increasing energy expenditure, owing to the fact that the existing building stock constitutes the sector with the greatest potential energy savings;
- historic population centres and economic activity are both in decline as current proposals to revitalize them do not exist.

For these stated reasons, there is an urgent need to increase proposals for urban heritage, preserving their outstanding patrimonial value (Nyseth & Sognnæs, 2013). Aside from this, the analysis becomes a complex task due to the large size of the housing stock, multiple case studies, and the difficulty in performing individual studies, it is necessary to carry out a housing stock simplification for an extensive approach in the analysis at large scale.

The objective of this paper is to apply a methodology to identify the

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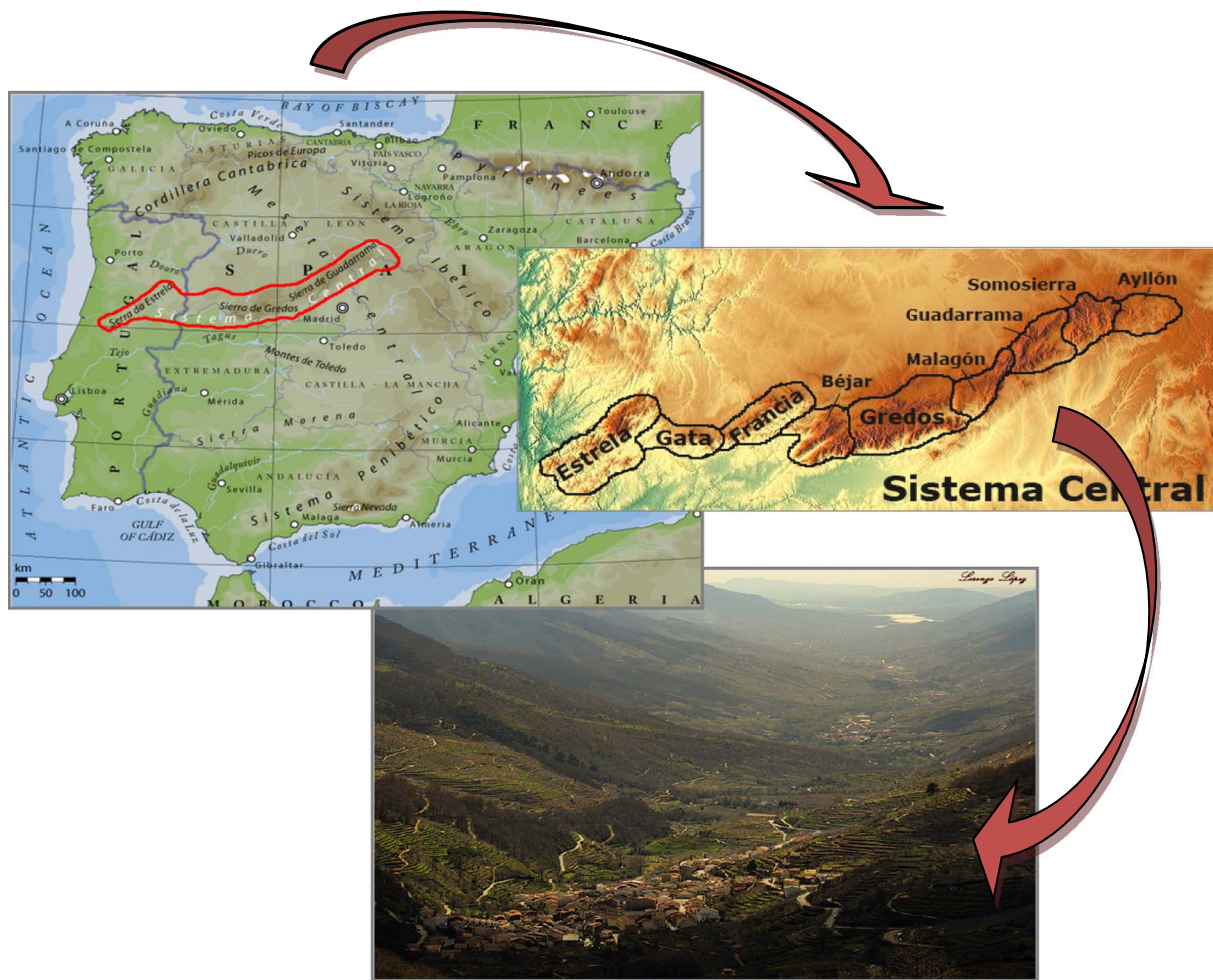


Fig. 1. Research area: The Valley, Spanish Central System mountain range (*Sistema Central*).

dominating building typologies (BTs) in a historic dwelling stock. The BTs definition allows for examination of multiple historical buildings. These studies will be used in urban regeneration process: improvement of strategic policies for economic development and re-use (Yung, Langston, & Chan, 2014), (Yıldırım & Turan, 2012), building appraisal and refurbishment (Vicente, Ferreira, & Mendes da Silva, 2014), (Theodoridou, Papadopoulos, & Hegger, 2011), energy performance assessment (Filogamo, Peri, Rizzo, & Giaccone, 2014), environmental and economic sustainability assessment (Barbero-Barrera, Gil-Crespo, & Maldonado-Ramos, 2014), or support for risk reduction (Santos, Ferreira, Vicente, & Mendes da Silva, 2013). Some others will refer to: planning regulations, revitalisation of vulnerable neighbourhoods, and/or improvement of the quality of life.

To sum up, this paper describes the development of a practical case study presented in the Jerre Valley (The Valley hereinafter) (Fig. 1), situated in The Central System, Spanish and Portuguese: *Sistema Central*. The Valley holds eleven villages and a stock of three thousand historical dwellings. Different types of dwellings may be found in the area and, as the houses are in a critical state of semi-abandonment, urgent and protective refurbishment actions are required.

2. Material and methods

Previously, different methodologies have been developed to determine BTs with definition of standards, based on general data collection (Cetiner & Edis, 2014), (Pellaquim Radice, 2014), (Brandão de Vasconcelos, Pinheiro, Manso, & Cabaço, 2015), (Heo, Augenbroe, Graziano, Muehleisen, & Guzowski, 2015), (Lu, Im, Rhee, & Hodgson,

2014). However, the historic cities research should be widened: the links between the building and plots are based on sociocultural, economic and historical contexts. Consequently, a gradual approach from the city implementation to the construction process in the territory is proposed. The key features are identified on four levels: the territory, urban planning, architecture and construction (Table 1). Data has been obtained through fieldwork, literature, or municipal planning regulations of the area. Other available data has been published by the National Statistical Institute, the cadastre or the land registry.

2.1. Territory and landscape parameters

The historic settlement in the geographical space is studied in this first level. It refers to two features that have determined the foundation of the town and its rooting in the territory: physical variables (altitude; latitude and longitude; configuration and layout; predominant orientation; relief and topographic position; soil and vegetation; climate and microclimate) and human (historic events; population; origin and foundation economy) (Barbero-Barrera et al., 2014), (Silva & Henriques, 2014), (Rodríguez Algeciras, Gómez Consuegra, & Matzarakis, 2016) (Table 1).

In The Valley an information sheet was designed in each village (e.g. collection of territory and landscape data in Navaconcejo in Fig. 2). This data enabled us to differentiate the building typology into two zones: the large core in the valley bottom and the small one in the mountain. The first villages (Zone 1) of 1000–2000 inhabitants are arranged linearly, following the course of the river, which is characterized by gentle gradients (< 5%), warmer temperatures in both

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