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LANDSCAPE INTEGRATION AND ITS FOUNDATIONS. METHOD OF APPLICATION FOR REMOTE BUILDINGS IN RURAL AREAS

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I. INTRODUCTION AND OBJECTIVES

The insertion of remote rural buildings into the landscape is a challenge for the regional policy and landscape management. Their landscape integration constitutes a social and administrative demand which, however, lacks solid theoretical approaches and specific methodological developments which contribute to the standardization of the approaches.

This piece of work states the following main objectives. On the one hand, it offers theoretical contributions which help to establish the conceptual foundations of landscape integration and, on the other hand, it provides a methodology of analysis and evaluation for the landscape integration applied to remote rural buildings, in order to allow their use in other spatial and thematic fields.

Likewise, this piece of work has another objective: it shows the results obtained from applying the methodology in various research projects about the integration of remote rural buildings into the landscape which have been carried out in Andalusia. Its aim is to determine the criteria which the buildings aspiring to the «Natural Park Label» have to achieve on this subject. This is a quality eco-label acknowledged by the regional administration.

II. DEVELOPMENT AND APPLICATION SCOPE OF LANDSCAPE INTEGRATION

The problem of integrating buildings into the landscape has undergone an increasing interest in the Spanish society, as it already happened in more advanced societies. Its demand emerges as a result of social unrest caused by the spread of the housing development in rural areas and also due to the locations and typological modalities used.

In rural areas, landscape integration, being understood as a public intervention, has a still incipient stage of development, at least in our spatial context. On the contrary, it was in the urban areas where this model of territorial management emerged and where its path has been increasing, especially in the historic downtowns.

It has not been until the 20th century that integration of the remote rural architecture into the landscape has been a subject of reflection in itself, having as main referents Lloyd Wright's Fallingwater and Villa Malaparte in Capri. Similarly, different tendencies linked to Land Art have experimented with the search for the fusion between architecture and landscape.

The integration of rural buildings into the landscape, as a territorial policy instrument, constitutes a more recent subject matter, undoubtedly due to the lower incidence that constructive activity has traditionally had in these spaces. In the beginning, landscape integration policies were restricted to protected natural areas, or valuable landscape areas within Rural Development Policies.

However, the need for the integration of buildings into the landscape reaches the territory as a whole, especially in areas with a more constructive dynamism. This need results in the presence, still incipient, of landscape integration in the housing and spatial planning legislation, and its inclusion in regional laws about landscape, as in Valencia, Cataluña or Galicia. In Andalusia, landscape integration is implicitly recorded in the housing legislation.

Nevertheless, despite these regulatory requirements, the concept of landscape integration does not have a precise and fully accepted formulation.

III. THE MEANING OF LANDSCAPE INTEGRATION.

The term commonly used for landscape integration indicates *«Making someone or something become part of a whole»*. The subordination of one part to the whole entails understanding *integration* in the sense of *adaptation*. Landscape integration, so understood, constitutes an intervention strategy in the territory which aims at channelling the transformations of the landscape or correcting the ones which have been already carried out into adapting them to the landscape used as a reference. More precisely, it would consist of adjusting an object or territorial action to the physiognomic characteristics of a given landscape, or some of its components.

The overall objective of fitting human activities into the landscape can be achieved through various strategies of integration into the landscape:

1. Adaptation to the existing landscape. It consists of attaining the adaptation of the object to the physiognomic features of the landscape unit where it is inserted.
2. Adaptation to the existing landscape components. The adjustment or mimesis of the physiognomic qualities of one (or some) of the landscape components is intended.
3. Connexion to the existing landscape. This connexion can be understood as a stage prior to the full adaptation, establishing a dialogue between object and landscape.
4. Connexion to the components of the existing landscape.
5. Connexion to landscapes or landscape components of historical and heritage value.

The most common techniques used are mimesis or the object camouflage, its concealment, fragmentation or reduction in volumes.

The application of a landscape integration strategy constitutes a useful tool for various models of landscape management: protection of quality landscapes, improvement of valuable landscapes subject to a certain degree of alteration, recovery of degraded landscapes, and creation of landscapes.

IV. LANDSCAPE INTEGRATION APPLIED TO REMOTE RURAL BUILDINGS.

Landscape integration of human activities is not a particularly developed subject within the field of science. In studies of urban landscape, the integration into the landscape has been included only implicitly. As far as it is concerned, the integration of rural buildings into the landscape has focused on agricultural buildings (O'Farrell, 1987; Di Faccio, 1989; Mezquita, 2002) or greenhouses (Rogge, Nevens y Gulinck, 2008), and to a lesser extent on residential buildings (Tassinari, 2007). The heritage value of traditional rural buildings has also gained an increasing interest (Gakell y Tanner, 1998; Grazuleviciute, 2008). In Spain, the works of García Navarro (1997), Ayuga (2001), García Moruno (2003) and Hernández (2004) stand out, focusing particularly on agricultural buildings, as well as Mérida's y Lobón's (Mérida *et al*., 2004, 2005), pointed towards rural buildings, being fully understood as a rural complex and being connected to the features of the landscape where they are located.

Remote rural buildings as the subject of landscape integration.

Remote rural buildings take part in the rural landscape at a different extent. The intensity of their presence depends on the nature of the type of dominant rural landscape and the proximity to radiating points from the construction activity, as well as the structure of the property of the land.

The landscape prominence of remote rural buildings derives primarily from its typological singularity. Due to their small size and scattered nature, their participation in the landscape does not materialize in the formation of types of landscape but their consideration is restricted to being a component of specific nature from the landscape they belong to. On a more detailed scale, these landscape components leave their specific nature behind and acquire a superficial nature, incorporating constructive ramifications, space elements and linear components. Thus, the remote rural building, being understood in its broadest sense, is constituted by a set of components among which the main construction is just one more component, though one of the most important. The set generates, at this scale, a microtype of landscape.

The impact of remote rural buildings on the landscape varies, depending on factors such as the peculiar sizes of the whole, their location and the type of construction used. In generic terms, there are two patterns in the relationship between architecture and landscape typology which can be distinguished. In the first of these, which is the most common, the rural building is a dominant element in the landscape, acquiring an important role. This is the case of farms, both organic with an economic role and those purely residential. The opposite pattern is formed by the buildings that blend in the existing landscape, giving up their role. This occurs in various typologies associated with forest and mountain environments.

Integration of remote rural buildings into the landscape.

The process of integrating rural buildings into the landscape entails a number of methodological steps: study of the existing landscape, characteristics of the traditional environment, definition of the criteria for landscape integration and evaluation of the degree of integration.

The knowledge of the scenic characteristics of the territory is necessary to determine the value of the landscape and to establish the layout of landscape management and landscape integration strategy to be adopted. Secondly, the study of the landscape will be useful to assess the presence and the importance of the environment as a component of each type of existing landscape in the area of study. It will also be helpful to know the existing relationships between traditional building types and landscape units where they are inserted. Fourthly, it will be essential to take as reference the construction environment in order to be able to establish landscape integration measures. On the other hand, the detailed analysis of a given landscape unit will be useful to determine the most appropriate locations for certain typological patterns, by means of the study of the conditions of vision. Finally, determining the nature of the landscape will be essential for the selection of items, marks or traces that allow their use as a reference for the integration of buildings, following the corresponding strategy for landscape integration.

As for the deep knowledge of the varieties of the traditional existing environment in the territory, it also represents a decisive stage for the establishment of landscape integration criteria, as some of the strategies for landscape integration which are likely to be used, can take the traditional environment as the landscape component of reference. On the one hand, this is explained because a traditional construction is automatically integrated into the landscape to which it belongs: traditional structures are rooted in the territory, due to their constant presence, at a human scale, in time. Furthermore, traditional buildings provide the landscape with intangible values such as the ones of identity character. On the other hand, the traditional environment still constitutes the principal modality of scattered environment over large rural areas, as it happens in large inland parts of Andalusia. Chronologically, traditional buildings have been considered to be those prior to the great transformations undergone in the Mediterranean countryside around the decades of the 50s and 60s last century.

In Andalusian rural areas, the existing models of traditional architecture are numerous. Some are very vast and are found in virtually all the areas studied, such as farms, both the more functional ones, of organic growth and irregular morphology, and the more formal ones, which are planned and regular in their design. Other traditional typologies have a more restricted location to certain regions and types of landscape: rectangular single-storey houses traditionally used by farmers in the North Mountain Range of Seville, mountain-houses in Aracena, large orchard-houses also in Aracena and in the area of the Guadalquivir valley, salt houses and tide mills on the Atlantic coast of Andalusia, typical houses from La Alpujarra, mills from Cabo de Gata area, stone buildings at the peaks of Sierra Nevada and Sierra de Baza, houses where farmers and herd stay in Doñana, and so on. Among these architectural types, buildings of administrative origin are also included (houses for road workers, mining villages, old railway stations) as well as more unusual types, such as mixed constructions (cave houses from the eastern betic high plains) or

primary buildings such as small huts, buildings made of vegetable materials on the Atlantic coast of Andalusia, or stone buildings in the area of the subbetic mountain range.

Landscape integration criteria

Common integration criteria which all constructions must carry out have been distinguished from the specific integration criteria applicable to the different types of architecture which new constructions follow. To this end, two important typological groups have been established: typologies adapted to some of the architectural models exiting in the environment of the new construction, and typologies unconnected with traditional architecture.

Among the common landscape integration criteria, location stands out because of its importance. As a general rule, a construction integrates more easily into the landscape if it is located in a unit or type of landscape where the environment, regardless of its typological characterization, constitutes a notable component in its landscape.

The remaining common criteria have to do with different elements: land alterations, access and internal roads, parking esplanades, functional elements of the building, auxiliary facilities, signalling and signage elements, and infrastructures (exterior lighting, wiring, solar panels, fuel tanks, etc.). Finally, it is necessary to establish general criteria for the buildings layout, both with regard to the mechanisms of aggregation, in the case of detached buildings, and also to the distribution pattern, in the case of detached multiple buildings (e.g. bungalows).

Rural buildings must also fulfil some integration criteria of a specific nature which deals with the typological modalities used. First, it deals with the typologies adapted to the traditional architecture models existing in the territory. Specifically, the measures proposed consist, on the one hand, of the new construction adaptation of volume, composition and physiognomic features from its respective typological pattern in all the relevant landscape varieties, and both in the main building and, where appropriate, in auxiliary buildings: size, composition, holes, coatings, coverings, round outlines, vegetation, etc. On the other hand, a spatial criterion should also be followed, as is the location in the distinctive physiographic units of their typological model.

On the other hand, specific landscape integration criteria for constructions which are not adapted to the traditional architecture have been established. These criteria are more restrictive, and aim to achieve a reasonable degree of physiognomic adaptation of the construction to the existing landscape or to some of its close components (relief, rocky areas, vegetation, etc.). The suggested measures affect, for example, the location of the building, its volume, the treatment of facades and roofs or the use of visual displays. Regarding the location pattern, reduced visual basins and poor visual impact are the general parameters that an appropriate landscape integration of these constructions has to fulfil. The volume of the construction must be, in general, of limited dimensions and with a predominance of horizontality in its composition, especially on the roofs. The use of natural materials or appropriate colours in the treatment of facades produces better results from a landscape point of view.

The use of visual displays constitutes a palliative measure for landscape integration which can turn out to be very appropriate for typologies of difficult adaptation to the environment. In any case, the most effective visual display is the one provided by an appropriate location adapted to the topography.

The evaluation of landscape integration

The evaluation of the degree of integrating constructions into the landscape consists of two stages. The first one consists of assessing the degree of compliance of each of the criteria by establishing a numerical scale. The assigned values can vary from the measurement results, from previously established ranges, or from a qualitative estimate of the existing difference in the measure degree of compliance, on those variations which are not susceptible to mathematical treatment.

The evaluation proposal combines the reckoning of the degree of compliance for each of the landscape integration criteria with the exclusive ratings given for serious deficiencies of some of the variables used. By means of the first procedure, a sum of the points which have been reached is made in each of the criteria, setting a threshold which shows an acceptable level of integration; from this threshold on, the integration is considered positive, though it is susceptible to improvement in certain aspects. Through the second procedure, the cases which don't fulfil some of the criteria marked as most relevant are intended to be excluded, even if they fulfil the other criteria properly. In the case of buildings typological different from the traditional architecture, the evaluation of the integration criteria must estimate the final level of integration achieved through the implementation of the different integration criteria, individually or jointly. Therefore, even if it is advisable to ensure an acceptable level of compliance in each of them, it is technically possible to achieve a reasonable degree of landscape integration with the extensive use of only one criterion.

In any case, the best integration is achieved before the construction process. For this reason, one of the primary objectives of a policy of integration of remote buildings into the landscape in rural areas (and for landscape integration in general) consists of introducing the integration in the design stage, to make it a crucial component for its final design.

V. CONCLUSIONS AND PERSPECTIVES

Landscape integration constitutes a social and institutional demand more and more consolidated. This demand requires theoretical foundations and methodological developments in order to avoid its transformation into a set of isolated and inconsistent activities. In this sense, a set of theoretical contributions have been proposed in this piece of work. They can contribute, on the one hand, to the necessary conceptual basis for landscape integration, and, on the other hand, to go into the knowledge of its genesis and evolution in depth. Likewise, it also presents a methodological contribution applied in various research projects and specific pieces of work which have been carried out in the Andalusian territory. It is useful for the analysis of the integration of remote rural buildings into the landscape. Its methodological design, efficiently adapted, can be extrapolated to other human interventions in rural areas, such as infrastructures.

Landscape integration, particularly in the case of remote rural buildings, also means an outstanding tool for the value enhancement strategy of particular interventions on the territory. In this sense, the new functionality of rural areas requires new forms of intervention, and landscape integration emerges as one of them. The fact of developing it properly is a challenge for rural environment managers and society in general.