

# Morphology of the Habitat

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**Abstract—** The understanding of the basic morphology of habitat is based on the theoretical study of rural structures and on the study of practical examples from the field of analysis from the physical and environmental frameworks that influence the formalization of the place. The genesis of formation and the analysis of the structure of settlements considers the economic and political forces that have influenced them, the social structure that characterizes them, the art and architecture that mark and symbolize their space and the territory in which they operate, noting that their characteristics are expressions of human intervention to regulate the space in which they live to their conveniences and objectives. The research is supported by the comparative method and establishes a framework for analysis resulting in a system of relations determined by human society and the physical environment that serves as support.

**Index Terms—** Territory, morphologies of occupation, structure of the settlements, physical and environmental resources, organization of space.

## I. INTRODUCTION

We set out for this research work aiming to deepen scientific knowledge about man's relationship with the environment that surrounds him, investigating the matrices that best characterize that reciprocity who, as affirms Norberg-Schulz associating here the idea of genius loci – that "is a Roman concept. The ancient Romans believed that there was a spirit of place, the genius loci (genius - spirit, loci - place). Each occurred where life held his own genius manifesting itself both in location and in the spatial configuration and the characterization of its articulation." [1] – it results in the interaction with human structures, especially with the cluster as a piece of connection of the territory, that both contributes to transform it how is transformed by it.

## II. THE INTERVENTION OF MAN IN TERRITORY

When man intervenes in the territory, as we see on fig. 1, it's obvious that he is necessarily changing it and creating a space that expresses his reason for existing, constituting a univocal relation which is revised in the primary formation of clusters, not in a derogatory sense, but perceived as an interpretation of a reality that is characterized by principles of a primary dependent economy based on the value of the soil, whose space, as reaffirmed in Schulz in [2], is determined by a Two-way process, which is reflected in both the architectural space and existential space:



Fig.1 – Village of Fermoselle, Spain

- 1) In the first case, the rural settlements arises as a reflection of this interaction as we can see in fig.2, basing on the needs of communities, be their material or simply derived from religious, social and cultural tradition of the geographical area in which it operates;



Fig. 2 – Village of Fornillos, Spain

- 2) In the second case, it arises the relation to the environmental situation of the area, an intimate relationship with the value of the soil, weather conditions and community heritage that gives a local nature, and even be confused with it in a communion of principles and rules.



Fig. 3 – Village of Fornillos, Spain

Another significant aspect that appeared in the field work, as occurs in fig. 3, lies in the fact that from a structure with its own balance, the men looked to build - supporting himself in housing cells, storage and processing - other fixing poles that reflects the relationship between human structures and their physical environment, and from it his senses of evolution. That is, the settlement expands or contracts defining a spatial image that is the expression of physical, social, economic, human and cultural relations.



**Fig. 4 – Plan os Fornillos, Spain**

These types of behaviors justifies the different relationships established between the two fields illustrated in fig. 4 and 5, ensuring knowledge about the object of study and a practical basis on which we realize the development of the settlements, the phenomenon that determine them and the elements that constitutes its form.



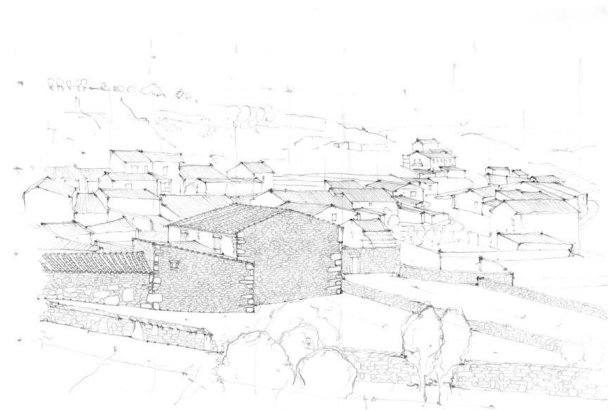
**Fig. 5 – View of Fornillos in the middle of other settlements**

Refocusing these issues, Olivier Dollfus [3] considers that the structure of a settlement rests on a system of relations determined by human society and in a physical environment that serves as support, allowing us to understand the relationship between man and the environment, with the finality of classifying the human structures that results from it. Moreover, we meet the same idea in the work “Popular Architecture in Portugal” in [4], where the architect Francisco Keil do Amaral underlines the idea that this feeling is due, “not only to the lay of the land, as well as the largest way that is made the exploitation of the land. Between stretches of wild landscape, opens up large tracts of cultivated land, large borders around villages, whose proximity is given us by advanced guards of tortuous Negrellos” that is an autochthonous tree.



**Fig. 6 – Draw of Feroselle by Joana Diogo**

Let's say that, in practical terms, this research aims to demonstrate that human intervention in the territory is reflected in the architectural and existential spaces and pointing to consistent behaviors that order a method that is based on two stages of analysis:

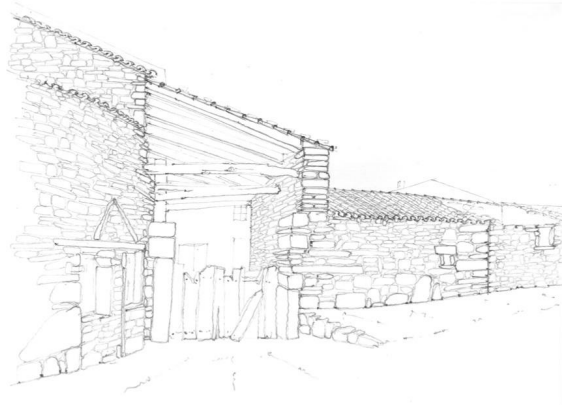


**Fig. 7 – Image of Fornillos, Spain drawn by Joana Diogo**

1) Theoretical study on rural structures, addressing the principles that define them and identifying the characteristics of morphological elements, in which the variations are the reflection of environmental responses;

2) Study on the practical examples from the field of analysis, as we illustrate in fig. 7 and 8, in which all the investigation comes to the territory and performs an approximation to the cluster to determine this path, a knowledge of the physical and environmental units and scales of rural settlements that structures the territory and rises to the rank of humanized space. The research in this specific field, understands that the morphology of rural habitat demonstrates that the complexity of phenomena that involve awareness, implies the need for scientific knowledge to interpret and frame hypotheses and confrontations between the results of the analysis, using the effect of successive approximations that establish the contrast between what does not change - the essence of the territorial unit, and what varies - the formulation of typologies and morphologies. These assumptions demanded that the creation of a stable field of analysis that helped to realize that in the morphological in the typological and in the formal fields, the expressions resemble in defined areas, although with marked differences arising from the influence of factors that are reflected in the definition

of the image of the territory which, in turn, is expressed in the morphology of their habitat.



**Fig. 8 – Draw of a house in Fornillos, Spain by Joana Diogo**

We find in the work of Pedro de Llano, realized about the Popular Architecture in Galicia, a similar response by stating that "given the profound relation existing between popular architecture and the environment around it, the difficult would be the understanding of this study, without counting before with an elemental knowledge of geographical space, defined not only for the accidents and the natural elements that characterizes them, but also for the human action in the field trying to find better living conditions that is translated in the creation of an artificial habitat" as we read in [5].



**Fig. 9 – Street in Fermoselle, Spain, drawn by Joana Diogo.**

The research on the implementation of human structures in a given environment, born by looking for a place that provides favorable conditions for its location that articulate different scales which, despite not being inseparable, are complementary to characterize the relationship between the organization of the mesh, the rural settlement and characterize the public space as a pole attachment. We believe that in the specific field of rural housing morphology, the study about the pole attachment helps to clarify the idea that the formation of modulating the built structure, analyzed isolated, when receives physical and environmental influences changes and adapts to the field depending it's the behavior to topographic settings, inducing effects of microclimate nature that Juan Manuel Báez Mezquita in his investigation into Popular

Architecture concludes that "the physical environment of population of Sanabria offers some unique characteristics and establishes a singular relation between the forms of architectural construction and nature, where the stone houses, the bridges and the cultivated fields goes thru a large dialogue with nature"[6]. Although according to Panerai [7], the physical space being "capable of objective analysis that permits to reveal a first level of signification that is specific of the architecture. He can form a stable base on which will be articulated other contents accessible to other readings". The author, in [8], also warns that the "relative autonomy of form does not excludes neither the economic and cultural determinations nor even the weight of the sociological conditions in the practices of the inhabitants. This wants to mean that the research always has a provisional character, open to new contributions which are based, among others, in the concepts of identity, clarity, connection, continuity, adjacency and purpose, whose methodological approach aims to contribute to enhance the intervention strategy in a field that has consistently be forgotten, rediscovering a memory that interests to preserve in conjunction with phenomenological approaches of the habitat, in order to ensure the balanced development of the rural landscape. It seems us also important to note that the methodology of analysis allows, under any circumstances, to define a system of references and a system of variables from which are set out some of the criteria of this analysis and clarified the morphological elements that should inform the different scales of the cluster approach. This position reinforces the complex and varied character that informs the various stakeholders on the formation of rural settlements, determining therefore the need of the research that we have been doing in order to ensure the validity of classifications to establish the conclusions made about the analysis.

### III. CONCLUSION

In the specific case of the morphology of habitat we concluded that one of the factors that influences the diversity of forms of the cluster is the differentiation of the natural conditions of the geographical environment, including elements such as relief, the morphology of the terrain, drainage lines and local climate, constituting by their multiple combinations the foundation of diversified environmental images. Another differentiating factor is the social relations understood, in the broadest sense of the word, as the institutional and political forms in each context and the relations of production, including different social behaviors. Results of research that with different factors of analysis, ones more intrinsic to the object than others - but all related to each other - set out a system of relationships that is not limited to the analysis of that particular frame, but it completes in the full cover of fields and phenomena more diverse, being the morphology of clusters the one that best allows us to analyze the variation in the form of rural settlements, establish the criteria and variants that inform the typological analysis. In



light of these assumptions, the systematization of the influence exerted by different agents on the spatial elements of structural mesh, we conclude that there are four determinant key factors:

- 1) The structure of property, which allows the subdivision of the territory into allotments;
- 2) The structure of roads and routes that ensure the distribution and communication in the territory;
- 3) The structure of the settlements, which consists of grouping the constructed models and clarifies the relationship of housing cell with its surroundings.
- 4) The spatial structure that groups the open spaces of the rural settlement.

In synthesis, we conclude that exists in the field of analysis situations of objection, continuity, indifference and likeness that establishing which is the sense of affinity between the settlements and its implantation sites, as well as the degree of correlation between the factors of the environment and the humanized expressions of occupation of the territory, using the variety of morphological phenomena.

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