Social Housing: Introducing spatial analysis to Andean Communities.

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Abstract

"Architecture become a brainwashing work, the whole way of thinking has been already conditioned" (LEACH, 2011). The legacy of modern functionalism is recognized in the universal formulas applied to architecture. However; the next design agenda should be structured in the dynamic network of societies. The contemporary tasks require specific studies of the systems to generate coherent interactions.

Design answers should preserve the unique character and sense of the places. Generic solutions came from general assumption of the problems, which is not real. Social patterns and spatial process are interaction forces highly define by the environment and the time. For this reason the comprehension of how people work together with the form and function gives particular variations that should be organized and shaped by the architecture.

The aim of this paper is to study how logics and functions of the space should be properly introduced before designing architectural strategies. The present research is based on the analysis of the cultural, social, economic and environmental configurations in the Andean unplanned settlements in Ecuador. These studies show that the mentioned settlements have complex systems of social and environmental interactions based on the cultural and economic configuration of the communities. The complexity of the spatial layouts constitutes the conceptual framework for architectural strategies. For this reason the spatial configuration analysis is an important tool to diagnostic how people conceive and work on living places. In the same way, the social and spatial image of the Andean settlements should be projected in social housing solutions and in the articulation plans between unplanned settlements and urban areas.

1 Introduction

The rapidly growing of rural areas near cities is a major concern for countries as Ecuador. New areas are growing spontaneously with a lack of urban planning. Several projects have been developed to encourage challenge of social housing in unplanned developments; however, general solutions do not solve specific problems.

The analysis of the social-cultural function and the physical arrangement of the space are crucial facts to be studied because, human behavior finds possible to exist in its own spatial form. Even in small settlements the "complex systems and patterns arise out of a multiplicity of relatively simple interaction" (BRAVO, 2011).

This essay will study the spatial configuration analysis as an important part of the study to face housing solutions in Andean communities of Ecuador. Unplanned settlements located in rural areas at the north highlands in Ecuador share the same environmental, social, cultural and economic layouts; but social housing solutions are strategies not related to the site conditions.

The aim of this proposal is to demonstrate how far the analysis of the spatial and people's patterns can be applied to social housing solutions in a rural context and how the outcome of this study could influence the connection among inhabitants, settlements and urban areas.

2 The spatial configuration analysis

Theories of modernism stated universal regulations for architecture; however "…a universal formula for architecture would, if followed, render architecture the same and unchanging, and therefore untimely dull" (Hillie, 2004). The problem with these theories is that architecture remains normative but, not analytic. Architecture could not been considered as a general true because design decisions should be strongly supported in the interaction network for a specific space, which has determined social, cultural, economic and spatial configurations.

The spatial configuration analysis could be applied at any scale, from a settlement to a big city. Bill Hillie stated in his book "Space is the machine": "We can see then that Teotihuacan (Mexican city) is built according to a formula no less than the city of London (England's capital city), but the formula is different. In spite of initial doubts, its internal logic, and presumable its social logic, are just as consistent. Just as London is the expression of one kind of social logic, so our strange towns are just consistent expressions of another" (Hillie, 2004). Then, the important thing is to understand how space irregularities generate general functions of systems in spaces at different scales, inside or outside urban areas.

3 Abstract networks of interaction

Living places are complex networks of space which support activities, movement and interaction. The analysis of these abstract networks describes how people work together with the configuration of a certain space, because the space is structured in specific social process and patterns. “Building and settlements forms become one of the primary expressions of culture” (Hillie, 2004). For this reason, the analysis and comprehension of the form and function of the spaces, gives the necessary elements to make design strategies.

Traditional indigenous construction systems and vernacular technologies are part of the history and evolution of the interaction network in Andean Communities in the north Highlands in Ecuador. Even if “architecture is primarily a vernacular art”; vernacular objects cannot be repeated as architectural solutions (Scruton,1977). Then, the analysis of the vernacular building process layout is the starting point to give design solutions: “…interventions…can only be based on our understanding…Where this understanding is deficient, the effects can be destructive, and this will be more the case to the degree that this false understanding is held in place by value system” (Hillie, 2004). At the end, the architectural solutions for Andean Communities should comprehend existing patterns of people so the relation with new patterns could be successfully developed.

4 Ecuadorian Andean Communities

Indigenous communities in Highlands in the north part of Ecuador are mostly located in the provinces of Imbabura and Carchi. The capitals of the provinces are small cities that are considering inside general urban strategies. Nevertheless, part of the communities lives in unplanned settlements in rural areas. The INECE (Instituto Nacional de Estadisticas y Censos del Ecuador) made the following numbers regarding the general situation of rural settlements in Imbabura and Carchi provinces: “50.70% of the population works in agriculture. Additionally, the 29.2% of the dwellings do not have treated water, 45.5% do not have access to sewer system and the 45.3% uses firewood stoves for cooking” (INECE, 2010). In fact, besides numbers, Andean communities also share the properties of cultural, economic, social and environmental spatial layouts.

5 Cultural, economic, social and environmental spatial layouts

First, building process is part of the common cultural legacy of these communities. The construction process is an example of an exchange rite, which is called Minga. “Minga is a native way of collective work, based on the reciprocity. Mingas are part of the social organization of the Andean Communities.” (KLAUFUS, 2009). The process is regenerative, if a family is helped once, they feel happy to retributive the same benefit to another family. Furthermore than considering building process as a strong community work, it is a behavior that constitutes a particular cultural pattern.

Second, there is a giving assumption of the poverty in Andean Communities; instead of money circulation they have strong and organized exchanges to get something. Indigenous are no expecting houses for free. At the moment, a person decides to build a house he or she accumulates enough food and drinks in order to feed people who will work in the project. In the same way people prepare materials from the site that will be used in the construction. The arrangements do not involve huge money investments. “Meals offered to the workers are based on carbohydrates harvest by them and protein juices based on corn” (KLAUFUS, 2009). Therefore, Andean communities have its particular economic configuration where the money is not the only way to make exchanges.

Third, it is important to identify real social patterns of the spatial configuration in order to make a diagnostic of the problems. In Andean communities “The most important problem that a social housing should face is the overcrowding the unhealthiness” (KLAUFUS, 2009). The extreme cold at nights and rains make impossible for the people to survive without protection, “that is why homeless are not common in this areas” (INECE, 2010). Just providing houses is not the answer to the overcrowding and unhealthiness conditions. Indigenous use to keep inside houses, animals and solid wastes. Also, parents, children and other relatives live all together and all the activities are developed in the same space. Consequently these social patterns are guidelines to propose spatial functions and forms, to develop gradually new patterns.

Finally, social houses must be conceived inside the environmental context. The weather of high mountains at the north part of Ecuador is temperate dry but windy. The temperature decreases rapidly during night. Indigenous have developed construction techniques with local materials in order to provide insulation to the houses. For example, clay tiles are used for roofing. Besides, the insulation properties, clay tiles are impermeable and tough. Also, the mixture of water and soil, called adobe, is used to build walls. This material keeps the heat of the day until the night. The study of the environmental layout is important to comprehend the actual physical configuration of the space, because further solutions cannot avoid tangible necessities.

6 Case of study: Un techo para mi país, Ecuador.

Since 2008 “Un techo para mi país, Ecuador” UTPMP, became one of the strongest projects of Social Housing in Ecuador. The UTPMP has three stages of action. “First, it is the construction of emergency houses. The second stage is the development of systematic plans in education, health, legal consultancy, microcredit assistance and qualification of jobs. The last strategy is to build a sustainable neighborhood” (UTPMP, 2011). So, to start the project, benefited families pay for 10% of the cost temporal dwelling and the rest is financed by sponsorships. The prototype of house has $18m2^2$ and is made of wood particleboards and zinc. All materials are acquired from different parts of Ecuador. Finally, the emergency dwelling is built in any place available in the owner’s lot.

Prefabricated solutions for social housing, as the UTPMP's emergency houses, are general concepts that are not related to a specific spatial configuration. The Emergency houses´ prototype was created in Chile. In this country mining and agriculture are important productions. For this reason wood and zinc were considered as options for a fast and cheap mass production. Ecuador does not have the same conditions as Chile. Besides the fact that the particleboards and zinc sheets are not available in Ecuador's highlands, boards and metal are highly impractical for houses that needs insulation systems. As consequence inhabitants are exposed to extreme cold conditions during night. Architectural solutions cannot be indifferent from the specific zone and spatial networks, strategies should be based on observation studies and evidence.

7 New agenda for social housing projects

However, the spatial configuration studies are important tools to get complete spatial image of a specific social process. This analysis is not just a two dimensional exercise on plans. Through the information obtained from how the people works with function and form in settlements, spatial and social problems could be identified. Obviously design strategies for social housing should be linked to a general urban master plan, because rural areas should be connected to the near cities.

8 Conclusions

The spatial analysis is a necessary tool to face housing solutions in Andean settlements in Ecuador. The study of the configuration of the unplanned space gives evidence to understand different factors from complex social patterns. Communities in rural areas have people's patterns of social and cultural relationships which structure is supported in the environmental and economic layouts. Therefore, architectural strategies should refer to the specific variables of the site "…design is not a simply picture…, but a picture of a potential object and of a potential social object, that is, an object that is to be experienced, understood and used by people" (Hillie, 2004).

Social housing strategies could not consider as a general solution for all regions or countries. Universal statements of design are strictly regulatory but not analytic. In fact, this is the most dangerous legacy that the modern functionalism leaves to architecture. On the contrary, the idea should be to understand the form and function logics of any space in order to perform design answers that preserves the unique character and sense of the place, otherwise interventions could be negative.

Besides the reformulation of the architectural strategies, the next agenda is to think about contemporary demands in terms of specificity and complexity. At the present time most of the architectural products are "consequences of universal prescriptions…but simple systems should become more complex" (WEINSTOCK, 2011). Patrick Shumacher, in his Parametrical Manifesto stated: "Architecture finds itself at the mid-point of an ongoing cycle of innovative adaptation – retooling the discipline and adapting the architectural and urban environment to the socio-economic era of postfordism. The

mass society that was characterized by a single, nearly universal consumption standard has evolved into the heterogeneous society of the multitude" (SCHUMACHER, 2008). Therefore, architecture could not be considered any more as the universal formula. Standardization of production is not any more the way to generate efficient models. The understanding of diversity, multiplicity and complexity is the guide to create elements at any scale, but sensible to the specific dynamic requirements.

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