Sustainable native architecture in Qashqaie nomads in Iran

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ABSTRACT

This paper is an education model of natural architecture. In the case study of this study, Qashqae tribe housing in Iran, as one example of a sustainable native culture has been considered. The aim of this research is educational uses for architecture that could be introduced with concepts such as natural environment, built environment and authorities of life sequence on architecture. Another objective aim is providing a basic practical model for housing pattern design for sitting nomads. The qualitative research method has been selected because of geographic division of tribes and the nature of the subject. The instruments used in this study are library and detailed field studies include observation and information record, taking pictures, maps, architectural drawings and at last interviews. Also, examples of black-tent Qashqai complexes have been studied for the field data. After the library and field studies, the required analysis has been taken that includes; the analysis of the human encounter to the natural environment and built environment and how human act in space and time. The main finding of this study is providing a study model of native architecture. Second, is presenting the human settlement pattern that derived from the encounter of human and natural environment. In this pattern, subjects such as; division of human and animal spaces, multi-use use of space, human behaviors in space - time, Simplification and sustainability of architecture in various dimensions has been illustrated. In this study, we have tried by consideration to the tips of nomadic life draw the attention of the architecture spectators in educational district to the main regards of human in building environment. Findings of this research in the practical field could be applied for accommodation patterns design of sedentary tribes by public area.

INTRODUCTION

The Qashqais are one of the nomadic Turkish-speaking tribes living in the south-central Iran. As said by historians, the Qashqais nomads have immigrated to this region about ten centuries ago. They are a nomadic tribe, immigrating between cold (a nine-month period) and tropical (a three-month summer period) regions. They live in black tents woven out of goat’s hair. The Qashqais provide all their needs, from food, clothing and housing to apparatus, from the materials available in their surroundings.

One of the characteristics of the tent, its inability to resist the penetration of raindrops or sunshine, has been a barrier to its widespread utilize. Another important subject is that nomadic populations have a high density in plains and bushes.

Numerous factors have supplied to the widespread use of black tents in these lands. In such regions where only shrubs are available, it is rather difficult to finding wood for building houses. The use of Black tents for housing requires the smallest amount of wood in quantity to their size. Therefore, it can be argued that the geographic division of black tents is directly influenced by regional conditions and plants.
Settlements:
This research project, field studies were carried out on several different samples drawn from the Qashqais’ settlements in southern Iran. These settlements are mostly formed by similar elements around a black tent. These settlements consist of a black tent (usually placed at the center), a kitchen, a place for milking animals, a corral, a hencoop, a kennel and a manger. One of these settlements is described along with all its components as an example. In this settlement, the main black tent has been raised northward, away from the summer sun shining from the opposite way. Nomads use slopes of the land as a best point on the corral and the territory in order to control animals. They also use slopes among hills to eliminate the nuisance caused by adverse winds. Access to a motorway has become gradually possible in front of the qapu (the outdoor space just in front of the main black tent).

Fig. 1: (a) Qashqais black tent front view (b) The black tent inside

Fig. 2: (a) Qashqais black tent view (b) The black tent inside

Fig. 3: (a) Behind of black tent (b) The kitchen and water musk place
Fig. 4: The settlement Plan

The separation of animal and human provinces in nomadic settlements:

The topographic characteristics of land and its efficient utilize is one of the subjects to which nomads pay much attention in their choice of settlements. Safety and sheltering, the route of adverse winds, protection against heavy flows of water, sufficient light and a good vantage pinnacle on the territory and the surrounding environment, all have been important factors for nomads. Topographically, Nomads do no clearing operation in their animal domain, but in dealing with the human section of their settlements they keep in clearing in order to build level terraces along hill sides.

For functional purposes, nomads separate their settlements into two different domains, one for their animals and the other for human settlement. These two provinces are separated by an in-between space. This intermediate space is made based on a result of a proper distance in terms of man’s illustration, acoustic and olfactory senses, in such a way that while preserving the control over animals, possible fine distinctions caused by them are eliminated.

Figure 5. Attention to the topography and the annoying wind in settlement choice
Fig. 5: Attention to the topography and the annoying wind in settlement choice

Simplification:
Economy, lifestyle and even immigration have contributed to changes in the Qashqais’ some characteristics. As housing units, tents have to be well-suited with nomadic lifestyle and stable migration. It must also be easy for nomads themselves to construct, pack, carry and raise these tents. Therefore, tents must meet the subsequent minimum requirements: they must be light, small and portable, be warm in winter and cool in summer, be resistant against wind, rain and winter storms, be reasonable priced by all people even the poor ones, and at last be simple to make by local people themselves.

Fig. 6: (a) The black tent outside view (b) The black tent inside view

The factors containing a tent can be divided into four components. The first component, namely the roof and the trunk, is woven out of goat’s hair, with tight and intermingled piece of hairs of thread. Ropes comprise the second component, often woven out of sheep’s wool or goat’s hair with various designs and patterns. The third component consists of Columns, poles, chains, spikes and pins made of different types of wood. Bowers made of thin pieces of straw; wood and thread compose the fourth component of a tent.

All the materials talk about above are light, compact in size, and easy to move from place to place without the risk of being broken or damaged. Nomads have paid attention to ecological self-sufficiency and accessibility in their choice of materials for making tents. These materials include wood, straw and goat’s hair. Self-sufficiency,
Simplification, sustainability, economic factors and the speed of building houses, have all been important to the nomads.

**Multipurpose design:**

Raise black tents are carried out differently in each season of the year. During summer, caused by the hot weather, one side of the tent is left open, so that air can pass freely through it like a cubic hallway. In winter, in contrast, caused by heavy rain falls, poles is connected end-to-end to the middle of the tent’s roof, sustained by columns from below, dividing the roof into two equal divides like a slope upper floor. It is interesting that nomads use their tents multipurpose in different seasons without adding any new materials, just re-arranging the structural apparatus.

![Fig. 7: (a and b) The view and form of summer black tent](image1)

![Fig. 7: (c and d) The view and form of winter black tent](image2)

*The multi-used complex of the tent’s inner space:*

Each tent provides as a complete housing unit where places for sleeping, eating, entertaining guests, the kitchen and the storeroom are set in a space of a few square meters. This is based on a systematic arrangement in which each part of the tent is nominated to a particular function.

The interesting point concerning an educational and practical approach to the study of Qashqai architecture is the conventional division of the tent’s inner space and its multifunctional use. The following plan shows each separate areas of activity within the tent’s inner space.
The conventional division of the tent’s inner space can be confirmed accordingly based on the following diagram:

1) The male space: sitting together, resting, entertaining guests, sleeping place.
2) The section for men’s belongings such as guns, toolboxes, suitcases, clothing and etc.
3) The female Space: sitting together, entertaining guests and sleeping place.
4) The uncarpeted space for accessing the food supply.
5) The food supply including dairy skins and small piece sacks.
6) The space near the hearth as a space for sitting together and cultural activities considered to be holy among the nomads.

This six-part conservative division of the tent’s inner space can serve as a sign for creating new spaces in a larger scale, as shown in the following diagram. In fact, this study suggests that observing the activities carried out inside the space created by native architecture can lead to unique educational results. This can also lead to the progress of practical and functional patterns for architectural design.

The below pattern is one based on the real life conditions of the Qashqai nomads. Separating different spaces in this pattern offers a multispace home unit. This functional division can be used for designing housing units for those Qashqaiis who plan to live in stable settlements.
Conclusion:

This study is for the time being combined attempt to introduce and explain the educational and practical approach to the study of native architecture. To achieve this purpose, black tents used by the Qashqais were studied and considered as a sustainable native culture of Iran. This paper deals with the relationship between human beings and nature, and how their option of settlement influences territory topography and the separation of human and animal domains in nomadic settlements among the Qashqais. In addition, concepts such as generalization, sustainability and multi-use building were set up in relation to the Qashqais’ housing. The multifunctional use of one solitary space was another concept referred to in this paper, as a result of which a limited space serves several different functions during the day. This multifunctional space can be turned into several separate spaces, which in addition to educational advantages to architects; can be a source of idea for architectural designs for those people from a nomadic background in their changeover from single-spaces to multispace houses. Finally, it should be kept in mind that in studying native architecture, it is possible to effectively and usefully transmit several concepts such as those mentioned above to architects: concepts which in addition to serving educational purposes, can be used in the practical aspects of designing.

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