

CHAPTER II

BUILDING FORM AND ITS DETERMINING FACTORS

The factors influencing the form of the primitive buildings may be classified into two major categories, socio-cultural factors and physical environmental factors. In this chapter, different points of views about the house forms of primitive and vernacular buildings were discussed.

2.1 Socio-Cultural Approach

Amos Rapoport states in his book "House Form and Culture, 1965,"

" The subject of house form and its determining factor overlaps many disciplines - architecture, cultural geography, history, city planning, anthropology, ethnography, cross cultural studies, and even the behavioral science. It is therefore necessarily cross-disciplinary and must call on the work of many observers in diverse fields and reflect many intellectual debts."

Amos Rapoport presents his basic hypothesis that the primitive building form is not merely the outcome of physical environmental forces but is the consequence of a whole range of socio-cultural forces acting in their broadest terms. In turn, he argues, the climatic conditions, construction technologies, and locally available materials act as modifying forces whereas the socio-cultural forces are the primary determining factors. His hypothesis is based on the fact that the reasons for the great number of house types are hardly explained in the context of relatively few climatic types, limited number of materials, or other physical factors, but can be clearly explained by viewing a house type in a given society as the expression of ideal environment reflecting the societies common world view and way of life. Focusing on this hypothesis, he tries to link primitive and vernacular buildings to life patterns, beliefs and desires.

According to the definition by Robert Redfield (1953, p. 85), the socio-cultural aspect is the sum of the concepts of culture, ethos, world view, and national character. He defines each term as follows:

1) culture - the total equipment of ideas and institutions and conventionalized activities of a people.

2) Ethos - the organized conception of the ought.

3) World View - the way people characteristically look out upon the world.

4) National Character - the personality type of a people, the kind of human being which, generally, occurs in this society.

Rene Dubos defines in his book, "Man Adapting, 1965, p. 7," that a house is a human fact, and even with the most severe physical constraints

and limited technology man has built the house in ways so diverse that they should be explained by cultural values.

In discussing the reasons for the forms of houses and settlements, Rapoport suggests to think of them as a physical embodiment of an ideal environment. And also he considers the house as a physical mechanism which reflects and helps create the world view, ethos, and so on, of a people.

Rapoport says that house form is the result of choice among existing possibilities, and he induces the concept of criticality to understand the possibilities of the degree of choice and freedom with regard to the house.

Rapoport suggests some important aspects which affect built form as follows:

- 1) some basic needs,
- 2) family,
- 3) position of women,
- 4) privacy,
- 5) and social intercourse (Rapoport, Amos, 1965, pp. 61-69).

The following are summary of his arguments on above aspects.

1) Some Basic Needs

The specific manner of gaining a livelihood is an important aspect of dwelling form. These basic needs can be expressed more specific terms such as breathing, visual tasks, eating and cooking habits, purity and cleanliness requirements, sitting and sleeping. He argues with pertinent examples that the primitive building form is greatly influenced

according to the different criteria of these basic needs for livelihood in different society.

2) Family

There are great differences in family structures which are significant in relation to house forms which differ equally as well. Rapoport shows how house form differs between areas with polygamy, monogamy, and exogamy.

3) Position of Women

Rapoport points out the court houses in Greece, North Africa and Latin America as the examples to support his hypothesis that the extreme need for privacy for women leads to this form of house. The windows and roofs of the court houses are designed to prevent anyone from intruding into the intimacy of the house. Rapoport maintains that the privacy is protected not only by the blank walls, small openings, and other physical devices, but also by custom - few outsiders are ever invited in, and when they are, the women's portion of the house is strictly prohibited.

4) The Need for Privacy

There can be considerable variations in the definition of privacy, how it is achieved, and which are the important considerations. Different attitudes to sex and shame, personal worth, territoriality, and the place of the individual may affect the house form. For example, where there are extreme need for privacy like India, each house is surrounded by a low wall or the house elements are arranged around a central court

with a blank wall facing the street. The transition between street and private domain of the house becomes very important in this case.

Rapoport also compares the Japanese houses with the western houses to show different attitudes to privacy. The Japanese give great importance to the privacy from the outside world so that their house maintains extreme privacy from the outside world by high wall or fence. Inside the high fence, however, there is little concern with privacy and no worry if people can hear one another. On the other hand, the western house has little privacy from the outside but has extreme internal privacy.

5) Social Intercourse

The meeting of people is also a basic need since man has been defined as a social animal. Rapoport insists that not the meeting itself but the place and time people meet affect the form of the habitat.

2.2 Physical Environmental Approach

Victor Olgay states in his book, "Design with Climate, 1963,"

" House design has reflected, throughout its history, the different solutions advanced by each period to the continuing problem of securing a small controlled environment within a large scale natural setting - too often beset by adverse forces of cold, heat, water, and sun."

James Fitch defines in his book, "American Building, The Environmental Forces That Shape It, 1972," the architecture as the third environment. He uses the terms of the micro environment or the first environment to define man himself, the macro environment or the

second environment to define the terrain he lives, and the meso environment or the third environment to define architecture. He argues that man was compelled to invent architecture in order to surround himself with a new environment tailored to his specifications, interposed between himself and the outside world.

John E. Oliver says in his book, "Climate and Man's Environment, 1973, p. 223," that food and shelter are the mainstays of man's life on earth. He states that the nature of man's shelter depends largely upon the conditions of the environment in which man lives, and climate is one base on which the type of shelter needed is determined. And also he maintains that the primitive people of the world, using the limited resources at hand, developed shelters that were in perfect harmony with the climatic conditions under which they lived.

It may be possible to theorize on the nature of the buildings best suited to a given set of climatic conditions and, in this respect, a number of writers have suggested the optimum type of construction and design principles.

Drew and Fry, for example, suggest in their book, "Tropical Architecture in the Humid Zone, 1956," that the ideal room for a hot-dry climate is a cave; the ideal for a hot-wet climate is an arbor of leaves. This suggests that a cave possesses the quality of minimizing annual and diurnal temperature ranges and, in a desert realm, will provide an internal temperature close to the annual mean of the outside desert regime. An arbor of leaves in the hot-wet climate would reduce the radiation load and inhibit entry of rain while at the same time it provides an open framework to allow passage of cooling breezes.

The different strategies in controlling indoor environments can be called the terms defined by Banham in his book, " The Architecture of the Well Tempered Environment, 1969". He defines that the difference between shelter in hot-dry and hot-humid environments can be considered in terms of the conservative mode versus the selective mode. According to his definition, the conservative mode concerns the practice of maintaining internal conditions of uniform temperatures, be they warm or cool, in comparison to prevailing external conditions, while selective mode utilizes part of outdoor conditions to enhance indoor comfort. In the hot-dry situation conservative mode concerns the maintenance of a non-fluctuating core interior temperature by protecting it from intense solar radiation in daytime and the low temperatures at night.

Outside the tropical realm, primitive shelters are necessary to overcome the problem of cold by conserving heat, rather than excluding it. The best-known constructions in this respect is the igloo, a house form that is rarely found today. Using extremely limited resources, the igloo represents a building that is well adapted to hostile environmental conditions (John E. Oliver, 1973, p. 223). The hemispherical shape not only minimizes the proportion of area exposed, but represents a streamlined building capable of withstanding high winds.

Middle-latitude continental climate, with severe winters and warm moist summer, have been countered by some admirable dwellings. Nomadic people of such regions required a home suited to the extremes of climate, but also portable. In this region several architectural styles may be found. The forested regions provide the materials for wooden huts,

with steep roofs to prevent snow accumulation. On the plains, Siberian nomads used a double tent, or yurt, the inner chamber of which was reasonably comfortable (Fitch, James M. and Branch, Daniel P., 1960, pp. 134-144).

It is impossible to describe all of the variations upon the few types of dwellings described above. Man's ingenuity and his comprehension of the environment in which he lives has given rise to dwellings of amazing diversity.