DWELLING SPACE IN THE SUDAN:
OFFICIAL POLICIES AND TRADITIONAL NORMS

Volume 1

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CONTAINS PULLOUTS
DECLARATION

This thesis has been composed by myself
and is my original work

Hashim K. Mahgoub
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Praise be to Allah, the Cherisher and Sustainer of the Worlds. By His will, we hope that this work be beneficial to the Sudanese traditional people to whom it was dedicated.

I wish to express my sincere thanks to my supervisor Professor C.B. Wilson for his continuous interest, assistance and supervision both during my presence in Edinburgh and my period of stay in Sudan.

Grateful thanks are due to all those who helped to make my field studies successful, whether the Government administrators or the Hadendowa and Rashaidaa tribespeople whom I am writing about. In this respect, I should also like to thank Dr. William C. Young and Dr. Hassan Mohamed Salih. My discussions with them were invaluable to my work. Thanks are also due to the staff members in the Department of Colour Photography, Ministry of Information, Republic of the Sudan, and Sudan Colour Photography Laboratories for processing and printing the photographs taken by the author which are included in the thesis.

I should like to express my deep gratitude and indebtedness to the University of Khartoum which financed this work. I should also like to thank my colleagues, the staff members in the Department of Architecture, University of Khartoum for their concern, encouragement and support throughout the period of my study. My thanks are also extended to my colleagues in the Department of Architecture, University of Edinburgh.
My deep gratitude is due to my extended family: my mother, brothers and in-laws. My wife, Amna Bedri and my children, Yasmin, Yousra and Khalifa, who shared with me the burden of this work. In addition to her academic responsibility and housework, my wife helped me also with her stimulating discussions.

In particular, I am grateful to Dr. Felix Park who patiently edited most of this work despite his academic and family responsibilities. I should also like to thank MPG Secretarial Services, who typed this thesis, for their high quality service and friendly attitude.
ABSTRACT

The thesis is concerned with assessing the impact of Sudanese official dwelling space policies upon the settlement and housing of traditional societies and with proposals also for a more appropriate approach than the present one.

The official policies currently in use in the Sudan are very rigid in nature. They are unresponsive to the different norms of the various traditional societies found in the country. This lack of sensitivity derives from the fact that the policies are based on a positivistic philosophy of planning and urban development which does not allow the specific social and cultural needs of traditional people to be acknowledged. As a result, the application of these policies is causing various serious practical problems and defeating the purposes they were intended to serve. The whole situation in the housing sector calls for a revision of dwelling space policies based on a more flexible approach.

The phenomenological philosophy of Martin Heidegger, and in particular his explication of the relationship between the process of building and human existence, reflects a deep concern for the existential needs of human communities. The concept of existential space developed by Christian Norberg-Schulz expresses these philosophical views in detailed, concrete and structural terms. Considered together, Heidegger's speculations and Norberg-Schulz's proposals can be used as a basis for a more appropriate approach to
meeting the needs of traditional groups.

As an application of the phenomenological approach to understanding traditional people and also to planning their re-settlement and housing, two Sudanese traditional nomadic groups have been investigated. The socio-cultural characteristics and the patterns and use of dwelling space of each group are analyzed both in their nomadic and urban settled lifestyles. The findings of the investigation demonstrate the value of using the concept of existential space based on the phenomenological approach. The benefits that would be gained by founding settlement and housing policies on such an approach are discussed.
Dwelling space policies occupy a central position in Sudanese official housing policy. These policies are intended to achieve environmental, public health, economic and social objectives. The first two objectives rely upon easing congestion inside housing areas. The third objective is achieved by linking the classification of housing land and the provision of dwelling space to the financial ability of the allottees of such land. The social objectives are accomplished through allocating space for public and social facilities and by laying out community residential areas, both large and small, around public places and open spaces.

In pursuit of their social and cultural objectives, official policies aim to support a uniform, and ideal (by official standards) socio-cultural system. This is achieved by allocating fixed amounts of space for a standard set of official, or officially recognized, institutions and by laying out housing areas according to a standard planning patterns. Such inflexible planning is also a result of the rigid nature of the overall dwelling space policies.

Sudanese traditional societies are highly diversified in terms of their ethnic, social and cultural characteristics. This is given expression in the varying nature of traditional socio-cultural institutions. It is also reflected in the varying needs of these societies for private and public dwelling space, as well as the different ways in which they relate these categories of space to one another. This variation is in sharp contrast to the rigid space
standards adopted by official practice. The lack of responsiveness to the needs of traditional societies is a result of the adoption of a positivistic approach to planning — positivistic in the sense of the philosophical movement which dominated the countries of the West in the latter part of the nineteenth century. This approach has no means of recognizing the values upon which traditional societies and their institutions are based. On the contrary it aims at reforming these societies according to scientifically based social and cultural systems.

The application of insensitive official policies to traditional societies is causing various serious problems including the substantial impairment of social and cultural life. As this life is also integrated with all other activities including those related to the economy and the education of children — this has a very broad negative effect on the life of these societies. In addition to this, the application of the policies leads to both overcrowding and under-utilization of dwelling space, thus causing various environmental, public health, economic and social problems. As a result of this, these policies are defeating the same purposes they were supposed to serve.

A recent investigation conducted by the National Housing Commission into the acute housing problem shows that the revision of dwelling space policies can contribute substantially to overcoming these problems. Such a revision should begin by adopting an approach which is more sensitive to the needs of traditional societies and which is based upon a more appropriate philosophy of existence.
Considered in its totality the philosophy of Martin Heidegger focuses on explicating the meaning of human existence. As part of this, he explains the meaning of being in terms of the process of building. Heidegger shows why space constituting a building should not be organized only to allow the people living there to cope with weather conditions and secure their livelihood. Equally important, it should permit these people to maintain their social relations according to their specific cultural norms.

Despite the philosophical depth with which he has dealt with the relationship between human existence and the process of building, Heidegger does not explain the structure of space in an elaborate manner. Christian Norberg-Schulz, who is strongly influenced by Heidegger, describes the 'existential' dimension of space in a detailed and applicable concrete way. This is developed through his concept of 'existential space'. Space is imagined in terms of various levels and elements which correspond to the concrete environment. The human being, in pursuit of his social and cultural objectives, tries to actualize and 'concretize' this image by creating a concrete environment. Accordingly, policy makers, physical planners and architects should help him to accomplish this goal and enable him to exist with all his social relations and cultural dimensions.

Considered together, the relevant writings of Heidegger and Norberg-Schulz provide a comprehensive phenomenological approach to dwelling space. By basing official policies on such an approach we could ensure that the specific needs of traditional societies were
well catered for. Through this, we could contribute in overcoming the various problems resulting from the application of current positivistic policies. However, before adopting this approach we have to discover whether it is suitable for addressing the problems of housing and dwelling in a specific context.

As a test of the phenomenological approach, the thesis closely investigates two Sudanese tribal groups. The groups were examined in both their traditional (nomadic) and urban lifestyle. The examination of the nomadic lifestyle demonstrates the use of the phenomenological approach as applied to traditional people in their natural condition. The investigation in the urban lifestyle helps us show the value of the phenomenological approach as a basis for criticizing the results of the application of official policies.

The thesis has more than one aim. It attempts to examine official dwelling space policies and identify the problems resulting from their application. It also aims to show how traditional norms control the organization and use of dwelling space in a traditional society. Thirdly, it is concerned with identifying and testing an alternative approach which can enable the formulation of policies more responsive to traditional societies.

The thesis contains nine chapters and two appendices. Chapter One describes official housing policy and practice in a general way. Major components of the policy are reviewed, as are significant settlement and housing schemes which were based upon official practice and reflect official policy. The major problems which have
ensued from the application of the policy are then identified.

Chapter Two examines one of the largest settlement and housing projects implemented under official policies the re-settlement of the Sudanese Nubians. This experience involved a traditional group of a distinct culture rooted in an ancient civilization. It was significant not only because of its scale and because it dealt with a major traditional group, but also because it illustrates well the application of dwelling space policies on various levels of dwelling environment from the high level of choosing a location for the new home for the Nubians down to the design of individual dwellings.

Although the Nubian re-settlement provides a clear illustration of the application of official policies to a traditional group, the findings of this experience cannot be used to assess the appropriateness of current policies for all Sudanese traditional groups. A long period of time (more than twenty years) has elapsed since the Nubians were re-settled. In addition, the Nubians were a marginal group of a distinct culture. Thus, in order to assess the appropriateness of the policies for traditional Sudanese people the examination needs to be extended to include a range of traditional groups. This is what is dealt with in Chapter Three and Four.

Chapter Three examines the socio-cultural characteristics and traditional dwelling environments of six Sudanese tribal groups. Considered in terms of the major ethnic entities, religions and socio-cultural systems in the Sudan, this sample of groups is
considered to be fairly representative of Sudanese traditional people.

Chapter Four considers the impact of official policies on traditional societies by examining certain tribal groups as they live in, and respond to, officially planned dwelling environments. The groups examined are from the same tribes dealt with and described in Chapter Two and Three. This makes it possible to relate the responses of these groups to their socio-cultural characteristics.

Chapter Five deals with the formulation of a comprehensive phenomenological approach to replace the inappropriate one upon which current policies are based. The chapter is composed of three main parts. The first one presents the ideas of Heidegger regarding the process of building and its relationship to human existence. The second reviews the formulation of Norberg-Schulz concerning the existential dimension of the physical environment. Based on these two approaches, the third part of the chapter develops a more comprehensive approach which can address the current housing problem in an appropriate way. To demonstrate this approach and test its value, the following three chapters describe and examine field studies of two Sudanese traditional groups.

Chapter Six describes two tribes (the Hadendowa Beja and Rashaidaa) as they live their nomadic lifestyle together in the same region in Eastern Sudan. The examination focuses on establishing the relationship between socio-cultural characteristics and dwelling space.
Chapter Seven examines the two tribes in their urban lifestyles as they live together in the major town 'Kassala' in Eastern Sudan in similar officially planned and designed housing areas. The chapter tries to establish relationships between the different responses of the two towards a similar dwelling environment in which they live and their socio-cultural characteristics.

Chapter Eight assesses the validity of the phenomenological approach to dwelling space, as well as the likely value of basing official policies upon it.

The final chapter is concerned with general conclusions and recommendations. In addition to dwelling space policies, it also considers other matters which are closely related to these policies.

The thesis ends with two appendices: both of which are related to the Nubian people and their re-settlement. Appendix (A) reviews the socio-cultural characteristics of the Nubians and their indigenous dwelling environment. Appendix (B) throws light on the intentions and actions of the official policy makers during the preparatory stages preceding the re-settlement of the Nubians. It throws light also on the responses of the Nubians towards these intentions and actions.
CHAPTER ONE

OFFICIAL HOUSING POLICIES IN THE SUDAN:
A PRELIMINARY EXAMINATION

1.1 INTRODUCTION

This chapter examines official housing policies in the Sudan. The formulation of national housing policies, and establishment of official practice which controls development in this sector throughout the country started with the beginning of the Condominium (Anglo-Egyptian) Administration. Thus the examination of the policies will start from the time that the Condominium Administration replaced the Mahadist state towards the end of the nineteenth century.

The Condominium Administration continued to govern the country for about seven decades, and during this period it contributed substantially to the setting up of national housing policies and the installation of several legislative and executive bodies. These policies were of far reaching effect. Many of them were adopted by the national administrations which took over after the country gained Independence in the mid fifties. They are still highly influential in housing practice at the present time.

In the last decade of the nineteenth century the Condominium Administration chose Khartoum as the capital of the country. Consequently, a master plan was prepared in order to guide
development there.\(^{(1)}\) It was completed over the course of several decades. Housing was given special consideration in that development. The housing schemes which were planned and executed by the Condominium Administration in the capital are regarded of a special significance because they set the example for the developments implemented later at various parts of the country. These schemes have also had a strong impact on official housing policies.

During the periods of both the Condominium and national administration, the great majority of housing developments were implemented as site and services schemes. In these schemes residents were allocated open plots to develop by themselves in partially serviced housing land.\(^{(2)}\)

This chapter focuses on policy components such as national development plans, policy regulations, circulars and orders. But, as building practice in the housing sector is strongly connected with these policies, settlement projects and housing schemes which are of a special significance will also be included.

1.2 OFFICIAL HOUSING POLICIES: AN HISTORICAL REVIEW

Towards the end of the nineteenth century – Kitchener, the governor of the Sudan under the Condominium Rule, chose Khartoum as his capital and steps were taken to plan the capital on a modern basis.\(^{(3)}\) This was the first experience of its kind in the country. The policies set up in preparation for this process, and the major
planning characteristics which they have generated, have had a long-lasting effect on official policy and practice ever since.

The housing land in the new capital was classified according to the economic status and occupation of the inhabitants, each one of the three categories of the population being housed in one of the three towns which together form the capital. The government officials, who were mostly of foreign origin and subjects of the Condominium countries (Egypt and England), were housed in Khartoum, the natives in Omdurman. The poor working class, most of whom came from the western parts of the country, were accommodated in Khartoum North. In addition to this system of classification, the division between these socio-economic groups was intensified by the three towns being separated from one another by the Blue and White Niles (Fig. 1.1).

The planning of the first housing schemes in Khartoum town was intended mainly for accommodating high government officials and was characterized by generous space standards. The standards were as high as 140 to 90 yards width for roads, 15 acres in area for public squares, and 8,000 and 6,000 sq. m. for housing plots. With the adoption of such high standards, the Condominium Administration wished to avoid congestion inside the housing areas. They were also as a means of enhancing micro-climate and as precautionary measure against public health problems. Due to the fact that the spirit of enmity between the foreigners, who constituted the majority of the inhabitants of this scheme, and the Sudanese was still rife, the high space standards served also purposes of security. The wide

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roads and large town squares were considered very important for controlling attacks of the Dervishes (the followers of the Mahadi). (6)

In addition to the scheme referred to above, more housing areas were also needed for the dwellers of Khartoum town who had to be displaced from the quarters in which they live in order to enable erection of the civic buildings required by the Condominium Administration. (7) The dislocated people were constituted of two main components: poor natives and relatively more affluent migrants mostly Egyptians or people of Middle-Eastern and Mediterranean origin. In preparation for this second housing scheme, the Administration decided to divide residential areas into three classes: first, second and third. The division was based on the standard of building materials and overall cost of constructing the house. In the first class areas, the houses had to be constructed of stone and red bricks, and the minimum cost of the house was set at £500. While the use of mud was made permissible in the second class areas, the boundary walls were to be constructed of stone or red bricks, and the minimum cost was fixed as £300 for this class. With regards to the third class areas, no minimum cost or standard of construction materials was set for the houses. (8)

Besides the original settlers and government officials, Khartoum was also inhabited by poor workers who were engaged in the building industry and settled in slum areas at the southern edge of the city. During the first three decades of this century the development in the capital attracted more migrants from various
parts of country, the population of the slum areas increased greatly. Each ethnic or cultural group lived together in a Deim (quarter in Arabic) which bears the name of the group, and accordingly these areas were referred to as the Old Deims of Khartoum. The inhabitants living in each Deim were socially well integrated and possessed a lifestyle rich in co-operation. (9)

The local authorities organized the Old Deims into large residential blocks measuring 100m x 100m and which were separated by roads 40 metres wide. Each family was provided with a plot ranging in size from 30 to 60 sq. m. Inside the large blocks the plots were served by lanes 5 metres wide set out in a gridiron pattern. In general, the overall planning of the Deims was repetitive and extremely uniform (Fig. 1:1). These planning measures, especially the system of roads, enhanced air flow and enabled the provision of certain basic services - such as the drainage of rain water through open ditches. The uniformity of the layout did not reflect the social diversity of the groups living there. (10)

By the third decade of the century the population of the Old Deims had increased markedly due to the influx of migrants too poor to develop their own houses and who accordingly settled with their kinspeople already living there. This led to excessive overcrowding, and the environmental problems ensuing from this. Air movement was diminished by the fact that the inhabitants started to build boundary walls around their undersized plots in order to ensure the privacy of their families. Moreover, the housing conditions in the Deims also began to cause serious public health problems from lack
of latrines and basic sanitary services. The re-planning of the Deims therefore became imperative. However as the Administration intended to implement the housing schemes aimed at rehousing the town settlers to be displaced from central locations in the city, a decision was taken to establish the New Deims – as they were referred to later – in a site to the west of that occupied by the Old ones (Fig. 1.2). (11)

Besides the housing schemes just described, the Condominium Administration also intended to implement other schemes in various administrative centres located at different parts of the country. Before embarking on this it was essential to form the appropriate institutions and take the necessary policy measures which could direct and control this massive housing development. Accordingly, the municipal councils were formed in 1938 whose terms of reference included overseeing the physical planning and development of the major administrative and urban centres. During the same year the Standard Building Regulations (Municipalities) were also enacted. The Regulations, with their clauses which exceed one hundred, cover many aspects of the environment. What concerns us here most are those which direct the planning of housing areas and control design and building inside housing plots. (12)

Regulation no. 12 fixes the minimum width of streets and lanes. This is set as 20 metres for main roads and 10 metres for secondary streets and conservancy lanes.
Regulation no. 17 prohibits the erection of temporary or permanent buildings on roadsides and public open spaces without permission from the local authorities.

Regulation no. 18 specifies the minimum size of housing plots as 200 sq. m. It also fixes the minimum width of the frontage of the plot to not less than one third of the depth of such plot. In any case this should not be less than 10 metres.

Regulation no. 19 aims at controlling development inside housing plots by restricting the maximum area which can be built. This should not exceed half the plot in first class areas, and two thirds in lower income class areas.

Regulation no. 21 also controls development inside the housing plot, but this time specifies the minimum width of the open space required around the main building of the house and adjacent plots. The space required at the rear side of the plot should not be less than 2.5 metres in width. In the first class areas where the house may be of more than one storey, this should not be less than half the height. In this class areas, similar open spaces should also be left on both sides of the built up area and this should not be less than 1.5 metres in width. In the lower income class areas this is required at one side only.

Regulation no. 67 specifies the minimum space standards of the rooms intended for human habitation. The area of such rooms should not be less than 9 sq. m. and the volume not less than 20 cu. m.
These regulations could be seen as a means of preventing the repetition of the irregular and congested housing areas, and the overcrowded and unhealthy living conditions, which prevailed in the Old Deims and other parts of Khartoum and Omdurman during the first three decades of this century.\(^{(13)}\) The regulations dealing with roads and their widths are important measures against the creation of dead-end alleys and thus facilitate provision of the basic services to all housing plots. Those aimed at restricting the built-up part in the plot acted as a measure against overbuilding in such plots in order to accommodate several families as was the common practice in those days. Moreover, these regulations, by requiring open spaces around the built-up part, ensured reasonable levels of ventilation for the rooms of the house, and enabled drainage of rain water from the plot. The regulation fixing the minimum areas and volumes of the room were necessary to prevent overcrowding indoors. Thus, we can conclude that these regulations were mainly aimed to maintain public health and environmental quality inside housing areas.

In preparation for the forthcoming massive housing development, in 1947 the Condominium Administration approved the Towns Land Scheme\(^{(14)}\) which provided important guidelines and controls for such a development. As part of this Scheme, housing land was classified into three residential classes according to the annual income of the allottees: high, middle and low income classes. Article 24 specified the period of the lease of land, the minimum size of housing plot and the permissible construction materials in each income class area (Table 1.1).
This system of classification can be considered a continuation and elaboration of that adopted by the Administration during the first decade of this century. In principle both systems are based on the financial capability of the allottees of housing land. This can also be linked to a major economic policy adopted around the same years and which aimed to sell land in order to finance the servicing of housing schemes. In line with this, the large size of the plots and long periods of lease could be regarded as a means of attracting rich people into buying housing land. The allocation of large plots for this income group could also be seen as a measure to ensure development of privately owned housing land through the financial capabilities of the allottees. Despite the elapse of time, and the change in the political systems from colonial to national as the country gained its independence in the mid fifties, this system of classification and its underlying economic strategy has persisted. At the present time it forms a major component of the official housing policy.

In 1949 the population of the Old Deims increased to about 30,000. The state of overcrowding and poor public health in them promoted the local authorities to start implementing the New Deims housing scheme in the same year. Confronted with the magnitude of the task of finding the land necessary for such a scheme, those authorities had to take a variety of measures in order to deal with the situation. One measure adopted was to reduce the size of the housing plot to 200 sq. m. which was far below the minimum set by the Towns Lands Scheme (1947) as 300 sq. m.
More measures had to be taken to ensure that the inhabitants would not develop the plots in an unruly manner, and that each family could cope with the limited space allocated for it. Another measure, saw that the inhabitants were supplied with sample house designs to choose from. (16) To compensate for the small plots, ample space was allocated for public land uses. The large area earmarked for public facilities measured about 40 acres. Moreover, numerous secondary public open spaces (measuring 600 sq. m.) were evenly distributed throughout the entire housing scheme (Fig. 1.2). The space standards of roads were high, in comparison to those of the Old Deims, as they ranged from 40 to 10 metres in width.

The high standards of public space were important measures against congestion, and thus contributed to the environmental quality and public health of the New Deims. They also enhanced the social life there. Besides this, the concern of the authorities about the social life of the inhabitants was reflected in the disposition of housing plots which maintained the social fabric. This was achieved by accommodating each ethnic group together in the same Deims in a similar way to that of the Old Deims. (17) This concern, however, was not reflected in the extremely uniform overall planning of this scheme (Plate 1.2) as it did not consider the socio-cultural diversity of the groups re-housed there.

The New Deims was the first massive housing development implemented by the Condominium Administration. It was also the first one which was executed as a site and services scheme where the allottees were provided with open plots to develop by themselves in
a partially serviced housing scheme. The significance of this experience lies in the fact that it demonstrated clearly the complexity of settling the poor traditional people within the limits of the public funds and housing available. This was revealed through the findings of the social investigation of the inhabitants of the New Deims conducted during 1950 and which had the intention of generating guidelines for future similar development aimed at such low income groups. (18)

What concerns us most in these findings are those concerning the strong impact of the small size of the plot on the social life of the inhabitants. The limited space provided there did not allow the creation of a separate courtyard within the plot; a necessary measure for ensuring segregation between sexes. This is in response to a requirement of Islam, the religion of the groups living in the Deims. As a result of this, the reception of the guests in the house and the sleeping arrangements of the family members at night became a complicated matter. The small size of the plot also diminished the social life of the family in another way. It did not permit the accommodation of the newly married couples within the same plot in which their parents live, in compliance to an important social norm. (19)

In response to these findings, the committee undertaking this social investigation established certain recommendations which were supposed to guide future development. It recommended that a small plot, such as those allotted for the inhabitants of the Deims, should be used only for accommodating an elementary family, the
parents and their children. It recommended that, if this size of plot is accepted in a housing scheme, an open area of land should be reserved at the side of the scheme in order to provide accommodation in the future for the married children of the community housed therein. The committee also emphasized that the social requirements of the inhabitants should be taken into consideration when making any housing arrangement. (20)

Despite the fact that this investigation was mainly based on a single housing process, its findings and recommendations are considered of special significance, because the inhabitants involved in this process represented broad sectors of the population. They were from the low income groups, who according to the results of a population census conducted a few years after the implementation of this housing scheme — in 1955, constituted 85% of the total population. (21) Moreover, the inhabitants of the Deims are Moslem, and this religious group also form the majority of the total population. (22)

In preparation for the large developments planned in various administrative centres in the country, the Condominium Administration formed the Central Town Planning Board in 1946. The Board was entrusted with the setting up of the appropriate policies needed for controlling development and growth in urban centres. In the year 1950 the Board issued several circulars which were aimed at organizing dwelling space by the recommendation of space standards for housing plots and the measures which controlled the sub-division and amalgamation of such plots.
Circular no. 8 deals with the space standards and general proportions of the housing plots. It recommends that the small plots should be square in shape thus discouraging their sub-division in order to accommodate more than one household. In general terms, the circular recommends the layout of the plot in such a way that would facilitate the development of the house along an east-west axis therefore increasing natural ventilation. It also recommends, in line with the Local Government Regulations of 1938, that the road frontage of the plot shall not be less than ten metres, and that the depth of such plot shall not exceed three times its frontage. (23)

Before recommending space standards for the housing plots in the various income group classes, Circular no. 8 points out that such standards may vary in different regions of the country, and thus should be considered as just a guideline. With regard to the high income class areas, the Circular recommended 30 metres for the width of the frontage of the plot and from 1,200 to 900 sq. m. for its area. For the middle income class areas, it recommended 25 metres as the minimum for the width of the frontage and from 900 to 625 sq. m. for the area of the plot. As for the low income class areas, the third class, it did not recommend a minimum for the width of the frontage but proposed that the area be from 625 to 300 sq. m. Although Circular no. 8 recommended 300 sq. m. as the irreducible size of the housing plot, it considered 200 sq. m. as acceptable in the special case of re-planned slum areas - "the natives' lodgings" as it was referred to at that time. (24)

Circular no. 7 was aimed at providing guidelines for the re-
planning of slum areas, which during the early fifties were endangering public health in the various urban and rural centres. (25) This Circular recommended space standards for both private and public land uses. With regard to the housing blocks, it recommended that if one of the dimensions measured from forty to fifty metres long the other one should be a hundred metres or more. This was seen as an important measure to ensure that each plot would have a road frontage and that access to such plots would not be gained through dead-end alleys which had been the common practice in non-planned housing areas during these years. Concerning the size of the housing plots, the Circulars issued set 200 sq. m. as the minimum area, but considered 300 sq. m. as more preferable. These minimum standards were to be adopted only where roads were made wide enough and sufficiently large and small public open spaces included in the layout of housing areas. (26)

With regard to public space in re-planned slum areas, Circular no.7 recommended ten to twelve metres as the minimum width of secondary roads, and set ten metres as the irreducible minimum even if the road was planned as a cul-de-sac. The same Circular also emphasized the importance of public open space in such areas, and recommended 30m. x 30m. as an acceptable size for them. In this respect, this Circular recommended larger sizes of open space which were intended for certain purposes such as some types of sports activities. In general terms, the measures set in Circular no.7 can be seen as a means of controlling the development and preventing the overbuilding of re-planned slum areas. (27)
During the early fifties the Khartoum Municipal Council prepared local orders which were issued under Section 55 of the Local Government Ordinance 1951 as regulations for buildings. These regulations were very much in line with those enacted in 1937, as they were mainly aimed at ensuring the environmental quality and public health inside housing areas, as well as the sound construction of the individual dwellings. To accomplish the two former objectives, these orders also specified certain minimum standards for: the widths of the clearances around the built-up part of the housing plot (Orders 44 to 49); area and volume of individual rooms intended for use as living or sleeping rooms (order 54); and the area of windows in such rooms (Order 50).

The issuing of these local orders could be regarded as an important measure in controlling the large scale housing development which had been taking place in the New Deims, and also as a means of preventing the recreation there of the congested and unhealthy living conditions of the Old Deims. This can also be considered as necessary for controlling the forthcoming large scale development intended for re-housing the people dislocated from the central parts of Khartoum. Despite the fact that they were aimed at dealing with local circumstances in the capital, and considering the elapse of time since they were issued, these orders have been of very wide and far reaching effect. At the present time they are used, without any substantial modifications, for controlling the development of buildings throughout the country.

In 1956 the Sudan gained its Independence. This very
significant incident in the life of the nation was succeeded by important and large scale administrative achievements and organizational steps. As part of this process, the Town Planning Regulations were enacted in 1957 as guidance in the development of urban areas under the newly-born national administration. Some of these Regulations dealt with the classification of housing land which was divided into four income group housing areas. The Regulations recommended minimum space standards for the housing plot in the upper three income class areas. They recommended 400 sq. m. for the first class, 300 sq. m. for the second and 200 sq. m. for the third. (30)

Besides the minimum sizes of the plots, these Regulations also specified the minimum standards for construction materials that were permissible in each income class area. According to the Regulations, the houses in the first class areas were to be constructed of permanent materials, i.e. red bricks and stone. The boundary walls in the second class areas were to be constructed of permanent materials but the main building of the house could be constructed of mud or mud bricks. The houses in the third class areas could be built of any materials except thatch. The houses in the fourth class areas, which were of a temporary nature, could be constructed of thatch. (31)

The recommended space standards were soon increased by the Central Town Planning Board during the same year of the enactment of the Town Planning Regulations. In 1957, the C.T.P.B. recommended the following standards for the size of the housing plot: 800 sq. m. for
the first class housing areas; 400 sq. m. for the second class; and
300 sq. m. for the third class. The action of the C.T.P.B. was seen
as a result of pressure from politicians who wanted to gain
popularity among their constituents. (32) It could, however, also be
perceived as a response to the findings of the investigation
conducted on the inhabitants of the New Deims (referred to above)
and which revealed the social problems that may ensue from
accommodating traditional societies in small housing plots.

The recommendations of the C.T.P.B. brought those space
standards very much in line with the ones included in the Towns Land
Scheme of 1947, not only in magnitude but also in essence, as both
sets of standards were linked to the financial capability of the
inhabitants. Thus, despite the significant political change from
colonial to national administration after the country gained
Independence, the official policy concerning classification of
housing land remained the same. This was probably because the
national administration adopted the same site and services economic
policy by which the initial cost of the development as well as the
general maintenance of housing schemes is to be covered by revenues
from sales of housing plots and annual rates paid by the
inhabitants.

In the late fifties the Government of the Sudan commissioned
Doxiadis Associates, the prominent international planning consulting
group, to give advice on planning matters and prepare master plans
for the capital and its Three Towns and Port Sudan. The report
presented by this group in 1959 included important policy
recommendations based on conclusions about official planning in
certain housing areas in the Three Towns. Those conclusions and
recommendations were mainly centred around the unjustifiably high
space standards allocated for both private and public land uses such
as the housing plots, public open spaces and roads. In response to
this, the report recommended alternative space standards for housing
plots which ranged from 720 sq. m. for the highest income class
areas to 120 sq. m. for the lowest. (33)

The report of Doxiadis Associates identified the main problems
ensuing from the allocation of these high space standards as
escalation of the initial cost of housing land, as well as the cost
of transportation for the people living there. Accordingly, the
report cautioned against the pursuit of the official policies
concerning dwelling space and recommended specific corrective
measures. In particular, it recommended the reduction of the space
standards of housing plots and roads. In terms of the general
planning of housing areas, it recommended adherence to economical
layouts with shorter lengths of roads and service lines. (34)

In the late fifties, the country witnessed the preparation of
the first national plan for economic and social development which
was intended to direct development in these sectors during the
period from 1961 to 1970. Accordingly it was referred to as the Ten
Year Plan. The part of this Plan dealing with the housing sector did
not recommend lower standards for dwelling space in response to the
guidelines set by Doxiadis Associates. This is the first indicator
of the lack of response to these guidelines. (35)
The lack of response to these guidelines regarding the reduction of the standards of dwelling space was also evident in the first large scale site and services housing development implemented by the national administration for the extension of Khartoum during the first half of the sixth decade. The sizes of the housing plots, for example, were much in line with the recommendations of the C.T.P.B. (1957), as they were in the range of 1,000 sq. m. for the high income class areas and 300 sq. m. for the low income group areas. The space standards for public land uses in the high income class areas were also very high. The main roads were 30 metres wide, the large open area earmarked for central public facilities measured 30 acres and the secondary public open spaces ranged between 8,000 to 4,000 sq. m. in area. The standards for such land uses in low income group areas were far lower. The main roads were 15 metres wide and the secondary public open spaces were about 1,200 sq. m. in area.

The adherence of official practice to rigid planning patterns, inflexible space standards and building regulations, and lack of response to the socio-cultural characteristics of the inhabitants has always been justified by the system controlling the classification of housing land which bases itself on the income variable alone. This means, therefore, that the allottees of any income group area could be of a heterogenous socio-cultural make-up. However, large scale housing schemes, and massive resettlement processes, such as the one involving the Sudanese Nubians which took place in the mid sixties, has proved contrary. This showed the rigid application of official policies on ethnic groups whose distinct
cultures are characterized with, among other aspects, unique village planning and housing architecture. Due to its significance in demonstrating the application of such policies in traditional societies, this experience is examined in detail in the next chapter.

In terms of the inequitable allocation of dwelling space between the rich and the poor, the housing schemes forming the extensions of Khartoum were similar to previous ones implemented by the Colonial Administration. These schemes were also similar to earlier ones in that the disposition of the housing plots within each income group residential area was not based on social factors but rather on the drawing of lots. As a result of this, in many cases closely related households were dispersed in distant locations in the same housing scheme.

The planning of the first extension of Khartoum executed by the national administration set the example for other housing schemes implemented during the second half of the sixties in the provincial capitals - such as Kassala and Medani. In addition to the segregation and unequal distribution of space for rich and poor, the planning of these schemes aggravated this polarization through the accommodation of the high income groups at central locations in the towns and leaving the low income groups at the peripheries.

By the end of the sixties, the official housing sector had failed to reach the targets set for it in the Ten Year Plan. Regarding the site and services housing schemes, towards which most
of the development was directed, only 30% of those schemes were
planned and provided with basic services. (36) This was attributed to
the adoption of high space standards, especially in the areas
allotted to the higher income group; a policy which had consumed
land and the huge amount of public funds spent on the services
component. (37) The failure to finance the development of public
space in an appropriate manner adversely affected the micro-climate
of these schemes. The vast under-developed expanse of land (Plates
from 1.1.1 to 1.2.5 taken from the extensions of Khartoum
implemented during that decade) has increased the negative effects
of both direct solar radiation and dust storms. These are considered
to be serious environmental problems especially in that most of the
housing development during the T.Y.D.P. had taken place in urban
centres located in the hot, arid and dry part of the country (Fig.
1.5).

The inability of the official housing sector to reach the
targets set for it by the Ten Year Plan is also explained by the
invalidity of the economic policy adopted by this sector. The
1967/68 National Household Sample Survey shows that the majority of
the urban population falls within the low income groups. (38) These
findings were in line with the results of the 1955 Population Census
which revealed that such groups formed 85% of the total population.
This indicates the impracticality of an economic strategy which aims
to finance the initial cost, and maintenance, of housing schemes
through funds paid by the high income groups who constituted a small
proportion of the allottees. Accordingly, this casts doubts on the
need to link the classification of housing land to financial status
as such a system of classification was also aimed at serving the same economic objective.

Due to the application of high space standards to high income groups housing areas, the rate of occupancy was very low during the sixties. According to the Population and Housing Surveys of 1964/65 the average rate of occupancy per room was 1.1., and that of the housing plots 4 persons per plot. (39) Another investigation into housing in Africa conducted during the mid sixties also revealed the low housing densities in the Sudan in comparison with other African countries. While the densities in the second and third class areas in the Sudan varied from 65 to 15 persons per acre, those in the majority of the countries in East and West Africa ranged from 200 to 150 persons per acre. (40)

In terms of the general layout, the planning of officially planned housing areas which were implemented during the period of the Ten Year Plan throughout the country was very uniform. In principle it consisted of a hierarchy of community areas surrounding an area of public space. While the largest community areas were planned around a large open space earmarked for public facilities, the smallest neighbourhood units were arranged around a small public open space (Fig. 1.3). In addition to the rigidity of the layouts, the uniformity of the planning was also followed from the adherence to inflexible space standards for the various categories of residential land uses. Considered as a percentage of the overall housing land allocated for each scheme, the housing plots were allocated 45%, the roads 35% and the public land uses 20%. (41) At
the present time, official practice throughout various parts of the country still adheres to rigid planning patterns and allocates space for the different residential land uses according to fixed percentages.

The Five Year Plan of 1971/76 approved the continuation of the development in the housing sector as site and services schemes. But, in general terms, this Plan did not set clear quantitative or qualitative targets for development in this sector. Accordingly, during the first half of the seventies housing schemes were implemented on a piecemeal basis, whenever and wherever they were urgently needed. The developments completed during that period fell far short of the housing needs. Many of the schemes which were implemented lacked basic services. (42)

The space standards applied during the period of the Five Year Plan were very much in line with those used during the Condominium Administration era. (43) Towards the mid seventies higher standards were applied in certain schemes planned for the very high income groups - who were mostly expatriates. This formed part of an economic strategy aimed at financing the housing sector and infusing into the national economy foreign elements. As a result of inappropriate policies these schemes were not provided with all the basic services. Consequently, the partially developed large expanses of land allocated created environmental problems which were associated with such levels of development and were referred to above.

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During the second half of the seventies, the state of the national economy continued to deteriorate. In response to this, the government resorted again to the policy of implementing special schemes in order to attract the savings of expatriates. This was also seen as a means of enticing those expatriates to contribute directly in meeting housing demands by investing in real estate. The state of chaos which was, however, characteristic of the national policies during these years, did not permit the housing sector to provide the basic services to these schemes in an appropriate manner. This, together with the shortages in building materials and the rising cost of buildings, did not encourage the expatriates to invest. Consequently, many major towns were left with even more expanses of partially developed land. (44)

The task of developing individual housing plots was far more difficult for the allottees working inside the country. Although some statistics and other indicators (45) point to an increase in the median income during the mid and late seventies, still during these same years the estimates for building a conventional house amounted to more than five times that same median level. From this it becomes apparent that about 75% of the urban population could not afford to pay for such a house. Investigations examining the option of housing the working class in prefabricated houses revealed that it would take an average worker earning L.S. 600 per annum, and devoting 25% of his income to housing, 100 years to pay the cost of the house. These findings also cast doubts on the feasibility of high rise development as a means of providing housing for the masses as the cost of constructing a flat would be similar to that of a prefabricated house. (46)
By the mid seventies the country was greatly affected by the global economic problem resulting from the sudden rise in oil prices. As a consequence, development in various projects in the rural areas was curtailed thus escalating the pace of rural urban migration. Urban centres which were not equipped to accommodate their original inhabitants, were surrounded by slum areas created by the influx of the migrants whose numbers amounted to about 30% of the total population of these centres. Confronted by this acute housing problem, the policy makers had to formulate a contingency one year plan before preparing the Six Year Plan 1977/83.

In line with adopted policy, the one year contingency plan, referred to as the Amended Six Year Plan for Social and Economic Development, was mainly directed at urban housing and the site and services type of development. In this respect, it recommended the implementation of site and services housing schemes in 13 major towns with a capacity of 28,000 housing plots. It also recommended the improvement of squatter areas in Khartoum and Port Sudan. With regards to the standards of dwelling space and construction materials in the recommended schemes, this Plan for the first time authorized the provincial executive councils to adopt the standards which suit their circumstances. This was in line with the policy adopted at that time for regionalism and decentralization as part of which the authorities of the Central Town Planning Board were delegated to the provincial Popular Executive Councils.

It soon became clear that the Amended Plan was very ambitious, as by the end of the period of the Plan (June 1977) some of the
provincial councils had not even started the implementation of the recommended development. Those councils which had started the process had not completed leasing the plots to the allottees and had yet to start collecting the charges needed for providing the basic services for the new schemes. (50)

The Six Year Plan of 1977 to 1983 paid special attention to the housing sector and its urgent, as well as long term, needs. This plan was also the first of its kind to set clear quantitative and qualitative objectives. It also approached the problem in this sector in a more realistic manner. Accordingly, it recommended meeting the accumulated and new housing needs in stages. (51)

With regards to the share of this Plan in meeting the total housing needs, development was to be concentrated on urban areas and particularly the major towns whose population exceeded 20,000. This included the provision of 152,000 new housing units, the improvement of 42,000 housing units in squatter areas, and the preparation of development plans for the major towns and their suburbs. This Plan was much in line with the previous ones. This is not only evident in the way it directed most of the development to urban areas, but also in its concentration on site and services schemes. 80% of the developments in this Plan were intended to be implemented in such a way. However, the expatriates also got their share in this anticipated development. About 12% of the housing units were to be allocated for this sector of the population. (52)

Various factors collaborated in substantially diminishing
development during the period of this Six Year Plan. The huge accumulation of unfulfilled development from previous plans—especially the Amended Plan—was one factor. This was compounded by the declining state of the economy and shortages in building materials, as well as of labour and housing experts due to mass migration to the oil-rich Arab states.

Towards the end of the seventies these factors strongly affected the use and development of the third class areas. This is reflected in the state of overcrowding in the small housing plots which were intended for the accommodation of elementary families but were inhabited by extended families. The number of extended families was a response to the high rate of rural urban migration, as well as migration for work abroad. Faced with such overcrowding, and the high demand for maintaining the privacy of women, the families living there had to extend their houses towards surrounding roads. As a result of this, the paving, planting and sometimes fencing of the roadsides by the inhabitants has become common practice in urban areas (Plates 1.3 to 1.4). But, as the roads in the third class areas are not wide enough, such practices partially obstruct traffic and endanger the lives of the people using the roadsides.

The development of the housing plot in the low income group areas have also been affected in another way. In many cases allottees who had managed to improve substantially their incomes through migration abroad, took advantage of the lax application of the building regulations and invested their capital in high rise developments within their small plots (Plates 1.5 to 1.6). This
reduces the levels of air flow inside the housing areas and diminishes the privacy of the householders living in the vicinity. Such environmental and social problems cast further doubt on the value of linking the classification of housing land and allocation of dwelling space with economic status since this is more liable to change than other variable, such as social and cultural characteristics, for example. (54)

Despite the slender resources available for the housing sector, and the new authorities delegated to the provincial councils, at the end of the seventies development at various parts of the country was undertaken along the same lines which had unreasonably consumed housing resources during the previous decades. The consequence of this was clearly evident in the magnitude of the uncompleted services accumulating from previous development plans. These included water supply for 128,000 housing units, electricity for 159,000 units, general improvement of services for 170,000 units, and the re-planning and provision of community services for 160,000 units to replace existing squatter areas. (55)

The magnitude of the housing problem, and the failure of the policies adopted to contain it, demanded the revision of the whole situation in this sector. In response to this the National Housing Commission was formed in July 1979. The Commission, which was entrusted with the formulation of national housing policies and plans, was composed of forty five members representing various political, executive, academic and research bodies which are concerned with housing and planning. (56)
The NHC appointed six technical committees in order to assess the magnitude of the housing problem as an important stage leading to the formulation of the appropriate policies and plans. The committees were entrusted with investigating the following aspects of the problem: needs and standards, building materials, finance, services, manpower and legislation. By adopting this approach, and appointing qualified and experienced specialists to the committees, it has been possible for the first time to deal with the problem in a systematic and relatively comprehensive manner.

In 1985, after some years of thorough investigation, the NHC published its report. This shows the depth and magnitude of the housing problem and reveals the acute shortage in financing building materials, skilled labour and technical know-how. At the same time it estimates the amount of housing needs required current and future demands. Besides the unfinished services components accumulated from previous development plans (referred to above), the report assesses the housing needs till 1991 as 645,000 housing units, requiring 127,353 feddans (133,720 acres). The volume of finance needed for this development, which includes the cost of building materials, labour and services according to the current housing densities, amounts to 8,330 million Sudanese pounds. By exposing these findings, the report shows the very wide gap between the available resources and housing needs.

The NHC's report criticizes official dwelling space policies and considers the adoption of high space standards as one of the main factors behind the unjustifiable wastage of housing land and
To demonstrate the value of adopting lower standards, the report computes the savings in land and capital which could be made by reducing the size of housing plots. By reducing the size of plots from 800, 600 and 300 sq. m. for the first, second and third class areas to 400, 300 and 200 sq. m. the amount of land required for housing development till 1990 will be cut down from about 127,400 (133,770 acres) to about 47,100 feddans (49,455 acres) and the cost of services components from 3,146.8 to 1,773.75 million Sudanese pounds.

The report also recommends the rationing of dwelling space allocated for various residential private and public land uses. With regards to private space, it recommends the reduction of the size of housing plots. Through such measures it should be possible to cut down the cost of the services components, and reduce the length of the boundary walls thus saving on building materials and labour. This should also shorten the journey to the places of work thus saving on energy and time.

During the first decades of this century the Condominium Administration was involved in registering and enacting legislations controlling acquisition of land. The national administration which took over continued with these efforts. In response to the legislative policy adopted, most of housing land has been allocated to the allottees on a lease basis. This has kept the majority of such land under government control. Accordingly it is possible to contribute substantially towards overcoming the current housing problem by adopting more rational dwelling space policies.
1.2 SUMMARY AND CONCLUSIONS

The thrust of dwelling space policies has been made in three major directions: the classification of housing land, the allocation of both private and public space, and the control of development within the housing areas. These policies have specific objectives, but their application has led to various kinds of problems which have substantially aggravated the current housing problem.

The policy regarding classification of housing land can substantially diminish social and cultural life. The dispersal of socially related households who do not fall within the same income group at different housing areas can weaken social ties. This dispersal will also diminish the role of the communal socio-cultural institutions which are created within the housing areas. As such institutions sometimes have an economic role, the policies of classification of housing land may also cause economic problems. In terms of the economic criterion, the accommodation of socially and culturally dissimilar households in the same housing areas may not encourage the inhabitants to contribute in developing public space. Such space, in this case, will not have any special socio-cultural significance for the group accommodated there.

The policies regarding the allocation of both private and public space are causing various kinds of problems. The provision of more space than is required, considered together with the slender private and public funds available for developing house land, leads
to the under-development of such land. This consequently results in an unreasonable waste of land, as well as the public funds which are spent on servicing vast areas occupied by housing schemes. The allocation of too much space also causes serious environmental problems by aggravating the effect of both direct solar radiation and dust storms. Moreover, the policies also waste resources in other ways. They lead to an increase in the cost of transportation and lengthen the journey from housing areas to work places.

The provision of too little private and public space leads to the overbuilding and congestion of housing areas. This diminishes air flow and thus causes environmental as well as public health problems. The allocation of too little private space can cause social problems, as it may not permit the desirable levels of privacy within housing plot. The provision of too little public space may also diminish public social life. The overcrowding of public space may obstruct traffic and endanger the lives of those using this part of dwelling space.

The policy regulations controlling the development of private space are, in some cases, leading to social, economic and environmental problems. The creation of open spaces around the built-up part of a housing plot and the erection of boundary walls between adjacent plots, in compliance with the building regulations, can significantly diminish co-operation between socially related households who are accommodated side by side. As mentioned above, the erection of boundary walls where they are needed will lead to unreasonable wastage of private funds. Moreover, it will also
diminish air movement within housing areas and create unuseable narrow alleys inside individual housing plots.

The policy regulations and directives controlling development of public space may also diminish social life by not permitting the creation of non-official and traditional communal places. On the other hand, the creation of such places in an illegal way may lead to serious public health problems because, in line with official housing practice, illegal buildings are not usually supplied with basic services such as sanitation.

The general planning of housing areas and layout of neighbourhood units which are implemented as part of the official practice in various regions of the country is uniform and repetitive. This is because such planning patterns are generated by the same set of policies. The delegation of certain legislative powers to provincial councils has not led to any noticeable flexibility in the application of official policies in the different regions.

By applying repetitive and almost standard planning patterns, the official practice has no doubt saved time and effort both in the stage of planning and in the setting out of the schemes on site. But, it appears that the rigid application of housing policies has been one of the main reasons behind the current acute housing problem. Through the provision of too much space, in some cases, and too little space in other cases, this has led to economic, environmental, public health and social problems. As a result of
this, the application of official policies is defeating the objectives such policies are set to serve.

It is clear that there is an urgent need for revising and re-formulating current dwelling space policies. Such a pursuit should begin by investigating the actual space requirement of the Sudanese people in order to integrate them in official policies. In this respect, a special consideration should be given to traditional societies. In addition to the 80% of the total population who inhabit rural areas, the 40% who live in ethnic enclaves in the squatter areas at the edges of major towns could also be considered traditional societies. The emphasis on this sector of the population does not stem only from their being a majority, but also because they are the most deprived of housing services as is evident from their share in the previous development plans.

Considered in terms of ethnic and socio-cultural characteristics, the people of the Sudan are very diversified. A very large number of tribes inhabit the country (Fig. 1.6). They include the pure Arab Rashaidaa who migrated from the Arabian peninsula just a century ago. They also include the Negro South Eastern Nuba, who by living in their remote and mountainous territory, managed to avoid contact with the outside world and thus retained much of their local culture. In between these two tribes there are many ethnic shades. In addition to the ethnic diversity, the people of the Sudan follow numerous religions. Besides Islam and Christianity, the tribes of the southern regions believe in and practise several local religions.
This ethnic and socio-cultural diversity is reflected in their dwelling environments. This is apparent from the variations between the settlement and house types of various cultural groups. Accordingly, the task of identifying the space requirements of traditional societies may be a complex one. This thesis is dedicated to investigating this problem as well as the impact of official policies on some of these societies. The following chapter starts this pursuit by examining a re-settlement experience which clearly manifests the application of official policies to the re-settlement of a traditional society.

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52. Ibid. p.13.


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56. Ibid. Table no.1.

57. Ibid. p.19.

58. Ibid. pp.89-93 and Table 34.

59. Ibid. Tables 42-45.

60. Ibid. Tables 42-45.

61. Ibid. p.86 and 89.

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FIGURES:

Fig. 1.1: A sketch map showing the three towns and the residential areas which existed before 1945 (not to scale).

KEY

1- Khartoum town. 4- The River Nile.
2- Omdurman town. 5- The Blue Nile.
3- Khartoum North town. 6- The White Nile.

Fig. 1.2: An aerial photograph of Khartoum showing the Old Deims (surrounded by thick lines) in 1951.

(Source: FAWZI, S.E., "Social Aspects of the Low-Cost Housing in the Northern Sudan").
Fig. 1.3: An aerial photograph of Khartoum showing the New Deims (surrounded by thick lines) in 1953. The Old Deims do not appear here because they were demolished.

(Source: FAWZI, S.E., "Social Aspects of the Low-Cost Housing in the Northern Sudan")
Fig. 1.4: A third class residential community area layout.
(Scale 1: 7,500 (Capacity 1,2090 x persons).)

KEY

1, 2, 3 and 4- Small community area.
5- Central space for shopping and other communal facilities.
6- Space for intermediate schools and playgrounds.
7- Space for primary school.
8- Public open space.
9- Neighbourhood unit.

NOTE: The large community area shown above consists of four small community areas (1, 2, 3 and 4) grouped around a central space (5) earmarked for erecting shopping and other communal facilities. (1) illustrates the layout of a small community area and shows a detailed planning of a neighbourhood unit.

I. DESERT.
Approximate Location: North of 17°N, but excluding the Red Sea area.
Annual Rainfall: Less than 2 inches (50 mm)
Types of Vegetation: In general there is no identified vegetation species in this zone with the exception of some areas along the basins of three short seasonal streams which are covered by stunted shrubs and spares growth of herbs and grass.

II. SEMI-DESERT ACCASIA SCRUB AND SHORT GRASSLAND OF NORTH-CENTRAL SUDAN.
Approximate Location: 14°-11°N, and including the Red Sea area.
Annual Rainfall: 24 inches (50-200 mm)
Types of Vegetation: The vegetation in this zone is a varying mixture of grasses and herbs, either without any woody plants or more usually, with a variable scatter of scrub and bushes separated by bare areas. Annual and perennial grasses occur in about the same amount. The growing season is short because the rainy season extends for less than three months. In the years of low rainfall there is almost complete failure of annual plant growth. This is more common in the eastern parts of the country. During the dry season the ground is covered by yellow-brown, often spares, grasses, thorny bushes and trees with scanty foliage.

III. LOW WOODLAND SAVANNA OF CENTRAL SUDAN.
Approximate Location: 10°-17°N, and including Toposa area in south-east Equatoria.
Annual Rainfall: 8-30 inches (200-750 mm)
Types of Vegetation: The vegetation in this zone is composed of grasses with trees, shrubs or bushes. Annual grasses pre-dominate over perennial. Due to the short rainy season and low rainfall the available shrubs and small trees are thorny and characterized with sparse foliage. However towards the southern margin of this zone broad leaved trees and palms grow. In this vegetation zone, the verdure during the rainy season contrasts with the browns and yellows of the dry season. But the growth during the rainy season is diminished by the fires which are set by the inhabitants in order to clear areas for cultivation.

IV. HIGH WOODLAND SAVANNA.
Approximate Location: 5°-10°N, but excluding Toposa area.
Annual Rainfall: 30-50 inches (750-1,250 mm)
Types of Vegetation: This zones receives frequent rainfall for six to nine months. During the long rainy season perennial grass grows up to the height of 5 feet (1.5m) and trees put forth abundant foliage. But during dry season grass dries and trees shed their leaves. Very fierce fires result from the combustion of dry tall grass, and this diminishes the foliage of trees further.

V. SWAMP GRASSLAND OF SOUTHERN SUDAN.
Approximate Location: 5°-10°N, but excluding Toposa.
Annual Rainfall: 30-50 inches (750-1,250 mm)
Types of Vegetation: This zone is covered during rainy season by flood water which rises to about 3 to 6 feet (.9 to 1.8 m). Due to this grasses grow to heights exceeding 15 feet (4.5 m). When rain ceases the water disappears, except from low-lying areas. The dry brown grass in high areas may be fired by the inhabitants, leaving bare blackened earth. A short growth may reappear in such areas. (Source of the information mentioned above: LEBON, J.H.G., "Land Use in Sudan". Geographical Publications Limited, London, 1965. pp.20-23.)
Fig. 1.6. The tribes of the Sudan and the location of their territories.

(Source: Simplified from the 3-sheet map produced by THE GOVERNMENT OF THE SUDAN, Department of Statistics, "Sudan Surveys Topo. No.S914-55").
<table>
<thead>
<tr>
<th>CLASS</th>
<th>TENURE DURATION (YEARS)</th>
<th>MINIMUM AREA</th>
<th>BUILDING MATERIALS</th>
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<td>TERM</td>
<td>1ST RENURAL</td>
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<td>3RD CLASS</td>
<td>20</td>
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</table>

**Table 1.1: Housing Classification System (1947)**

(Source: SUDAN GOVERNMENT, Ministry of Interiors, Department of Land Registration).

**PLATES:**

**Plate 1.1.** Vast under-developed area provided for the central space of public facilities in the new extension of Khartoum (implemented during the sixties) is causing economic and environmental problems.  
(Source: the author)
Plate 1.2. The under-development and lack of maintenance of the oversized secondary public open spaces in the first class area in the new extension of Khartoum is causing economic and environmental problems.  
(Source: the author)

Plate 1.3. Overcrowding inside the small housing plots in the low income areas in Khartoum (Hal Al-Zohour) has forced the inhabitants to extend the range of their houses to the road side. This has led to the partial obstruction of traffic.  
(Source: the author)
Plate 1.4. The development and use of the sides of the roads in the low income class areas by its inhabitants is partially obstructing the traffic.  
(Source: the author)

Plate 1.5. The development of high rise buildings in the housing plots of the low income class areas is diminishing air flow, as well as the privacy of the people living there.  
(Source: the author)
Plate 1.6. The development of high rise buildings in the housing plots of the low income class areas diminishes the air flow in these areas and exposes the families living around such buildings.

(Source: the author)
CHAPTER TWO

THE RE-SETTLEMENT OF THE SUDANESE NUBIANS: AN ILLUSTRATION OF APPLICATION OF OFFICIAL DWELLING SPACE POLICIES TO A TRADITIONAL SOCIETY.

2.1 INTRODUCTION.

During the early sixties of this century the Egyptian government decided to build a large dam on the Nile near Aswan and about 93 km to the north of the Sudanese border town of Wadi Halfa (Fig. 2.1). This was called the High Dam of Aswan. As a result of the construction of the dam, most of Nubia - the homeland of the Nubian tribes who inhabited the river banks in southern Egypt and northern Sudan - were endangered by flooding (Fig. 2.1). Before the time of the completion of the dam, in 1965, a new home had to be found and prepared for the people living in this region. The responsibility of re-settling the Sudanese Nubians had to be undertaken by the government of the Sudan.

This was a massive and difficult task for the newly established national administration which had taken over from the Condominium Administration a few years prior to the building of the High Dam. It involved the re-settlement of about 7,190 families, and the planning and construction of a major town and thirty two villages. The task was of a special significance because it was preceded by various stages of decision-making about crucial matters concerning the future of the Nubians including the planning and preparation of
the whole re-settlement project, the planning of individual villages and the house design of the dwellings intended for accommodating the displaced families.

These planning and design processes were undertaken by foreign consultants under the supervision, and with the approval of, the national government consultants. Moreover, the proposed planning patterns and architectural design were made in compliance with official policies and were in line with the official practice of the time. In general terms the whole re-settlement project, as well as the housing scheme are a clear illustration of the application of official dwelling space policies from the level concerning the appropriateness of a site for settling a whole tribe down to the level of designing dwellings for individual households of such tribes.

The task of re-settling the Nubians was difficult and complex because it was not easy for these people to leave their homeland to which they were attached by strong historical and cultural ties. The natural and man-made landscape (in reference to the monuments built during the eras of past civilizations) the traditional village and house types and various aspects of the social and cultural life of the people in Nubia provided them with a profound sense of security and well-being. The Nubians were very much attached to their homeland despite the uncomfortable effects of the extreme weather conditions and the meagre available natural resources in the region. This close and strong bond had been developed over a period of about four thousand years. (2) During this period, the local population had
interacted with various foreign ethnic and cultural groups, and this had given their culture a very special character.

Monuments of the pharaohs were a visible feature in Nubia. Archaeological evidence shows that the Nubians had been living there since those times. In addition to the Ancient Egyptians, they also interacted with the Ancient Greeks and Romans. During the period from the Sixth to the Eleventh Centuries, they had contact with some people who wanted to spread Christianity in the region. From the Seventh Century onwards, the Nubians intermixed and intermarried with Arab and non-Arab Moslem groups who had moved towards Nubia. At first, these latter groups aimed to extend the authority and boundaries of their newly established state, then afterwards their thrust towards Nubia was mainly a means of securing the livelihood of certain tribes.

The impact of these past civilizations on the Nubians was not restricted to religious beliefs. It had extended to, and was reflected in, various aspects of the social and cultural life of the people. Because of this, the Nubians were characterized by a culture distinct from that of other Sudanese people. Most of the foreign groups who interacted with the Nubians did not penetrate further into the Sudan beyond Nubia. In addition, the Nubians remained relatively isolated from other Sudanese cultural groups, even those who lived around the region. Nubia was separated from other parts of the country by expanses of deserts and by rocky sections of the river Nile which made navigation and travel along its banks very difficult (Fig. 2.1).
Despite the apparent uniformity of the Nubian people and relative consistancy in their socio-cultural characteristics there were variations between different groups of the tribe. This arose because the tribespeople who had lived for various periods in other parts of Nubia had been exposed to different external influences during their stays there. As a result of this, the whole tribe was classified into three major ethno-linguistic groups of sub-tribes, the Fadija, Kunuz and Mahas. (4) There were few but significant social and cultural variations between the three groups which justify this classification.

The traditional village planning and house design of the three Nubian sub-tribes appeared similar to each other. Yet, there were in fact some differences which, though they might seem minor, were actually of high social and cultural significance. Due to specific socio-cultural variations between the three groups dwelling space, both private and public, was organized and used in quite a different manner. These differences concerned particularly the privacy and protection of women and reception of guests. They were also due to variations in the degrees of adherence to Islam – the religion of all the Nubian sub-tribes – as well as in the manner in which the people of each sub-tribe practiced this religion.

In dealing with the re-settlement of the Nubians, the policy makers did not take into consideration the roots these people had in the soil of Nubia and the special relationship they had developed with the waters and angels of the Nile and also with the palm trees which lined its banks. (5) They did not show concern for the large
scale socio-physical space in which the Nubian sub-tribes and village dwellers were related to each other and to the other non-Nubian groups who had inhabited this region for many centuries. The village planning and house design intended for re-settlement for the Nubian sub-tribes was extremely uniform. This was not compatible with the varying needs and uses, by these sub-tribes of both private and public space. Moreover, regional and village planning, as well as house design, were made to satisfy specific planning and building regulations and general policy objectives rather than the particular requirements of the Nubian people. For this reason, this re-settlement experience can be considered a clear illustration of rigid application of official dwelling space policies on traditional societies.

The examination of the Nubian re-settlement experience that follows is divided into two main parts. In addition to these parts, the examination is also dealt with in Appendices A and B. Appendix A reviews the socio-cultural characteristics of the Nubians and their indigenous dwelling environment. Appendix B throws light on the responses and actions of official policy makers during the preparatory stages preceding the re-settlement process.

The first part of the chapter considers regional and village planning and house design in the re-settlement area. The main objective of this part is to show application of official policy at various levels of dwelling space.

The second and final part of the chapter summarises the
experience of the Nubian re-settlement. It concentrates on showing how dwelling space was organized in the project in response to general policy objectives and specific official regulations controlling development of private and public space. By considering the physical planning and house design of the re-settlement area, it also shows the lack of concern about the general needs of the Nubian people, as well as the more specific requirements of the folks of each one of the three sub-tribes.

2.2 THE RE-SETTLEMENT PROJECT AND HOUSING SCHEME.

The new home of the Nubians is located about 600 miles to the south east of Nubia (Fig. 2.2). Despite the great distance which separates it from Nubia, the Khashm el-Girba area is well connected to other parts of the country. It has good communication with Khartoum, Port Sudan, the main port of the country, Kassala (the capital of the eastern region) and Atbara. Furthermore, it is located about 93 km away from Kassala – an important administrative centre since the 1930's. In addition to this, Khashm el-Girba is located only 125 km away from the border line with Ethiopia and connected to that country by a dirt road. Thus the new home was, unlike Nubia, well connected to various parts of the country (Fig. 2.2)

The area of Khashm el-Girba has a very fertile soil. Due to this, and the possibility of irrigation from the river Atbara, the Government was intending to develop this area. After the choice of the site for re-settling the Nubians a large scale agro-
industrial project was implemented in order to support the people, as well as to serve national economic objectives. To irrigate the agricultural land there, which amounts to about 1,000 sq. km., a dam was built on the river Atbara with a storage capacity of 1.3 billion cub. m. of water. In addition to irrigation, this dam is also used to generate electric power for the sugar factory built there, as well as for domestic use in the re-settlement scheme. (6)

The agricultural project referred to above covers an area of about 50 km x 20 km and extends along both sides of the main irrigation canal fed from the reservoir of the newly built dam. The re-settlement villages were also located out along this canal, but were evenly distributed throughout the whole area occupied by the agricultural project. The villages were separated from each other by a distance of about 5 km and the major town of New Halfa was located in their midst. In terms of regional planning, the re-settlement scheme was orderly and very uniform (Fig. 2.3). In this respect it was in contrast to the linear, but disconnected, pattern of the village layout in Nubia.

The uniform regional planning and spatial organization of the re-settlement villages in relation to each other was partly determined by irrigation requirements. In response to this, these villages were laid out in a certain direction along the main canal. The regional planning and spatial organization was also governed by the planning of the agricultural project, and also the need to shorten the walking distance for the Nubian village dwellers who would cultivate this project. To satisfy this requirement, each
village had to be set in the middle of, or nearby, the fields granted to its inhabitants.

In addition to their uniform sizes, the re-settlement villages were also laid out in a similar way. The various neighbourhood units at each village were planned and built around a large open space (Fig. 2.4). This open space which measured about 6.8 acres, was earmarked for accommodating public facilities such as schools, clinics, police stations, mosques and shopping centres. The provision of the same amount of space for this central area in all the villages is due to the fact that such an area was planned to accommodate a standard set of public facilities most of which were to be built according to a prototype design. Some of these central facilities were also one of the reasons behind the uniform size of the population of the various villages. The re-settled Nubians had to be grouped into communities large enough to be served by a single-stream school, a dispensary and a small police station.

In addition to the large central area referred to above, secondary public open spaces were provided and evenly distributed throughout each village (Fig. 2.4). These open spaces which measured 4,000 sq. m. were planned to be developed as green areas and serve as playing ground for children. They were also intended for hosting the social occasions --- such as wedding parties and mourning ceremonies --- which would be organized by the households living around.

As part of the uniform planning of the re-settlement villages,
The width of roads varies from 20 to 10 metres. While the wider roads lead to the central area of public facilities, the narrow ones connect various parts of the neighbourhood units. The whole system of roads divide each village into several small community areas each one consisting of about 24 housing plots (Fig. 2.4). This adds to the regularity of the general planning of these villages. The location of the main roads in this place was meant to serve the central area of public facilities. In addition to the use for vehicular traffic, the secondary roads were also used as an extension of the houses. In a similar way to their custom in Nubia, the people here gather at the roadside in front of their house. This custom was carried over, specially in the villages of the Fadija and Kunuz, despite the fact that the construction of seating benches for this purpose was difficult in the re-settlement area. It was expensive to construct the benches of concrete and, due to the heavy rainfalls in the area, it was not practical to build them of mud, and thus concrete was necessary despite the expense.

The housing plots in the re-settlement villages are arranged in groups of four. The plots in each group are set back to back in a housing block (Fig. 2.5). Although some households included dependents at the time of the re-settlement, each housing plot was actually intended for accommodating an elementary family. Through the disposition of housing plots, the re-settlement authorities tried its best to house closely related families together in the same housing block.

The housing plot is rectangular in shape and measured 24 m. x
20 m with the longer dimension extending from the east to the west (Fig. 2.5). Regarding the percentage of land allocated in each village, for each one of the various residential land uses, the provision of space was in line with the official practice of the sixties. The housing plots comprised about 45% of the overall land, the public places and spaces about 35% and the roads about 20%.

The rooms of the re-settlement houses are clustered together and built along the eastern or western boundary wall. This layout creates a U-shaped open space around the built-up part of the housing plot (Fig. 2.5). The house is entered through a single gate located almost in the middle of the northern or southern boundary wall. The gate then leads to a small paved, and open, part of the main building of the house. The houses consist of four rooms: two living room/bedrooms, a kitchen and a store room. The rooms of the house were built around a verandah facing the backyard of the house. In addition to these rooms, at the corner of each housing plot was built a water-privy type toilet. In terms of their general layout, the houses of the re-settlement scheme did not match those left behind in Nubia. In contrast to the Nubian central courtyard types, these were formed of a courtyard surrounding a cluster of rooms (Fig. 2.5).

The layout of the built-up parts of the housing plots eases congestion within the housing blocks. It also increases the rate of air flow within the buildings. In addition, the large size of the windows makes the living conditions inside the house more comfortable by enhancing natural ventilation.

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The grouping of the rooms of the re-settlement houses in a cluster, and the location of this cluster along one of the side boundary walls, encourages the drainage of rainwater from the courtyard of the house to the surrounding roads. In addition to this, such a house design also serves economic purposes, by the reduction of the cost of construction by the sharing of walls between adjacent rooms. Substantial economic gains were also made during the preparatory stages of the re-settlement by adhering to a single design for the whole housing scheme. This cut down design fees, as well as the time spent on the design process. As a result of this policy the three Nubian sub-tribes were accommodated in the same house type.

2.3. THE RE-SETTLEMENT EXPERIENCE: A SUMMARY AND CONCLUSIONS.

The intentions announced by the government (dealt with in detail in Appendix B), and the actions taken by it and the policy makers and practitioners in the housing sector, revealed the basic line of thinking underlying official policy in this sector. It also demonstrated major characteristics of official settlement and housing practice at various levels of dwelling environment.

This re-settlement experience has thrown light on the official policy at the highest level of the provision of dwelling space, namely that which concerns the choice of an alternative home for a whole tribal group. The review in the previous part of this chapter revealed that the decision about the site of the new home for the
Nubians was mainly based on economic criteria. Khashm el-Girba was chosen because of its high economic potential; the fertility of its soil. Also the possibility of irrigation and of power generation were considered important requirements for a large scale agro-industrial development.

By selecting this site, and disregarding the others preferred by the Nubians, the official policy makers have showed a lack of concern for the social, cultural, psychological and spiritual needs of this tribal group. This is demonstrated by re-settling these people 600 miles away from the Nile and its palm groves. The profound importance of environmental factors and landscape on the life of the people in Nubia is described in detail in Appendix A. By not settling the tribespeople in Wadi el Khawi near Nubia, and detaching them far away from their homeland, the policy makers deprived the Nubians from a major source of security during the initial period of adjustment to the re-settlement environment.

The lack of concern of the policy makers about the social and cultural needs of the Nubians is also indicated by not settling them near socially related and culturally similar groups who had lived beside them along the Nile for many centuries. Furthermore, this is shown by re-settling the peaceful Nubians on a site which would lead to their exposure to aggressive tribes who were neither socially related nor of a similar culture. The conflict with these nomadic tribes must have been predictable - since in the whole region during dry season there are very limited water and pasture sources other than those available in the re-settlement agricultural project.
The experience of the re-settlement of the Nubians has revealed that the decision of choosing a new home for a group whose life is strongly attached to the man-made and natural environment of their homeland can be a complex process. The failure of the government to satisfy the social and cultural needs of the people with regard to this decision may be explained by the lack of specialists able to understand such needs and deal with them within the limited time allowed for the preparation for the re-settlement process. The experience shows also that the people who were to be re-located may disagree basically about the site of the re-settlement due to differences in the personal interests of the various groups forming these people.

As part of the uniform planning of the re-settlement villages, the three Nubian sub-tribes were allocated similar amounts of public and private space. This indicated the lack of understanding and concern about the socio-cultural characteristics and special needs of these sub-tribes. The review included in Appendix (A) reveals how the social and cultural life of the Kunuz in Nubia was associated mainly with public places and space. It may be argued that the re-settlement of such groups would diminish their social communal life focused as it was around shrines that were left back in Nubia. But the fact that most of these shrines were built in response to dreams, meant that the people might continue to build them in the re-settlement villages and use them there as centres for their social, cultural and recreational life. In line with the lifestyle of the Kunuz in Nubia, their houses were small in size in comparison to the Fadija and Mahas. The houses of the two latter
groups were large because their social life and activities took place within the individual houses rather than in public places. These two groups differed from the former one in that the social life in their Nubian villages was family, rather than, community centred.

The re-settled houses, with their cluster of rooms surrounded by open spaces, were in contrast to the central courtyard types used in Nubia and which resembled the fortresses of the ancient Egyptians. The layout of the new houses served environmental and public health purposes, as well as being cost effective. However, as regards to protecting the privacy of the family living there, it was not as efficient as the traditional house type. For the Nubians, who were conservative by nature, and whose social life (especially the Fadija and Mahas) was family centred, this was considered an important requirement. The deep concern of the re-settled people about this is shown in their complaint about eavesdropping.\(^{(9)}\)

The layout of the re-settled houses reflects a lack of concern for the specific social and cultural needs of the Nubian sub-tribes. Their rigid design did not take into consideration the characteristic ways in which each of these sub-tribes managed to accommodate the extended family, protect women and yet satisfy requirements of hospitality towards guests. The neglect of these spatial arrangements made in satisfaction of very important social, cultural and religious requirements, cannot be justified by the expected changes in the socio-economic circumstances in the re-settlement area. It was unlikely that the large proportion of the
Nubians who migrated outside Nubia for work would immediately leave their jobs and move with their families to the new area.

The experience of the re-settlement of the Nubians sheds considerable light on the approach of official policy makers towards settling traditional societies. The village planning and house design in the re-settlement area was a response to official policies such as the building regulations and those concerning the allocation of both private and public space. Despite attempts to satisfy also the social and cultural needs of the inhabitants, these were dealt with in too general a way. This was accomplished by allocating, organizing and developing space in such a way that ensures the establishment of officially recognized places and institutions such as public open spaces and social clubs. In this respect the policy makers did not take into account the fact that the social and cultural life of the Nubian sub-tribes were substantially supported by such places like the bridal quarter of the Fadija, the roadside benches of the Kunuz and the twin courtyards of the Mahas house.

This analysis of the Nubian re-settlement has revealed important aspects of the application of official policies at various levels and components of dwelling space. The fact that it had dealt with the Nubian people allowed us to examine the reaction of official policy makers towards a traditional society. Yet, despite all this, such experience cannot be taken as a complete account of the impact of current dwelling space policies on Sudanese traditional societies. A long period of time has elapsed since the re-settlement of the Nubians. Moreover, this tribe was considered a
marginal one; as these people were half Egyptian and half Sudanese. Their unique historical experience and distinct cultural heritage was not shared with most of the other Sudanese tribes. Accordingly, in order to examine the impact of current policies of Sudanese traditional societies we must extend our investigation to include examining a recent application of these policies on a wider sector of the Sudanese tribes. As a first step the next chapter examines the indigenous settlement patterns and house types of a cross-section of Sudanese traditional people.

NOTES AND REFERENCES

3. Ibid., p.7.
6. DAFALLA, op. cit., p. 98.

7. This is based on the personal observation of the author during a period of stay in the area in 1972.

8. This is based on a field study conducted by the author in the re-settlement area during 1980-1981.

9. This is based on the findings of non-structured interviews conducted by the author in the area.
Fig. 2.1. A map showing Old Nubia in the Sudan and Egypt and the location of the High Dam of Aswan.

Fig. 2.2. A MAP SHOWING THE MAJOR COMMUNICATION ROUTES IN THE SUDAN AND THE WELL CONNECTION OF KHASM EL GIRBA TO VARIOUS PARTS OF THE COUNTRY.

Fig. 2.3. THE REGIONAL PLANNING AND LAYOUT OF THE RE-SETTLEMENT VILLAGES IN THE NEW AREA.

KEY:
The boundaries of the agricultural project.
The re-settlement villages.

(Source: HINKEL, F.W., "Exodus from Nubia". Akademie-Verlag, Berlin, p.59.)
Fig. 2.4. THE GENERAL PLANNING AND LAYOUT OF A NUBIAN RE-SETTLEMENT VILLAGE.

KEY:
1- The central area of public facilities.
2- A secondary public open space.
3- A main road.
4- A secondary road.
5- A housing block.
6- A housing plot.

(Source: the author)
Fig. 2.5. THE PLAN AND ELEVATIONS OF THE HOUSE TYPE USED FOR RE-HOUSING THE NUBIANS.

(Source: HINKEL, F.W., "Exodus from Nubia". Akadmi-Verlag. p. 60.)
3.1. INTRODUCTION.

The area of the Sudan, the largest country in Africa, measures slightly less than one million square miles, and its location falls between latitudes 4 and 22 North and longitudes 23 and 37 East (Fig. 3.1.). Its location and large scale population migrations have contributed to the remarkable cultural diversity characteristic of its people. Regarding those migrations, that of the Moslem Arabs, has been well documented and have had a far reaching effect. This is mainly attributed to the influence of the religion, language, and other socio-cultural aspects brought by the migrants. The Sudan had also been a target of another large scale population migration by the Sudanic tribes of central Africa. The interaction of those two major migrations with the Hamitic race, which inhabited the Nile and the Eastern Desert, (1) and the negroid race, which inhabited the central parts of the Sudan, (2) through many centuries has to a great extent contributed in the ethnic and tribal mosaic which populates the country at the present time (Fig 1.6).

The first big wave of the Arabs started to converge towards the Sudan during the fourteenth century A.D. In this pursuit they followed three main routes: across the Red Sea, through Nubia and the Eastern Desert, and as part of a detour through some North
African countries. (3) The impact of the Arab migration on the Nubians in the extreme north is evident in the formation of their three ethnolinguistic groups. (4) Yet, in spite of this the influence of the Arabs is not considered significant in Nubia; the topography and geography of the area did not attract them in large numbers, and the Nubian social system and household type helped to absorb those who settled into the local culture. (5) Ecological circumstances and social systems similar to those of Nubia and the Nubians diminished the influence of the Arabs amongst the Beja people of the Eastern Sudan. (6) Yet in spite of this, this limited role led to the segmentation of those people during the sixteenth century A.D. into about five tribal units. (7)

The Eastern region also received the last massive Arab migration to the Sudan with the arrival of the Rashaidaa tribe about a hundred years ago. (8) By avoiding intermarriages with other tribes they succeeded, to a great extent, in preserving the purity of their Arabic origin. Although some Arabic tribes settled in the Northern and Eastern regions, they were mostly attracted by the Savanah belt which comprises the central, south eastern, and south western parts. Massive migrations to those areas ended up by the settlement of several tribes along that belt; including the Kababish, Shukriya, Baggara, Rufaa Elhoi, Khwahla. (9)

The settlement of the Arab tribes in the Savanah belt brought them in contact with other negroid people who previously inhabited the area. Due to the involvement of the Arabs at that time in the slave trade many of those peoples fled their territories. The Fur,
Ingessena, and Nuba sought refuge in the mountains while the Dinka retreated southwards to their present location in the swampy parts of the White Nile. (10) Thus, the cultures of these tribes were, to a great extent, shielded from the influence of the Arabs and Islam, and all of them with the exception of the Fur, now are animists and practice and have many customs and norms which are considered strange by the standards of the tribes inhabiting northern and central Sudan. Yet, in spite of the fleeing of the large numbers of those negroid people, many of them were not able to avoid interaction with the Arabs and were assimilated through both slavery and concubinage which is permitted by the Islamic religion. (11) Through this assimilation some of the Arab tribes – such as the Baggara and the Rezeigat – lost the purity of their Arab blood.

The Sudan was also exposed to other large scale population migrations directed towards its south western part. These involved people belonging to the eastern Sudanic groups of African negroes (12) who entered the country in successive waves from the south and west. The last and most powerful wave of those migrants were the Azande tribe who entered the country about a hundred years ago. They conquered and assimilated many local populations as they proceeded to establish themselves as a major tribal entity in southern Sudan. Their advancement was halted by the European occupation of the country in the nineteenth century. (13) The migration of those Sudanic tribes, together with the invasion of the Hamitic race of the Ethiopian high lands, (14) complicated the ethnic set-up of the southern Sudan which was previously populated by a single ethno-linguistic group – the Nilotic people.
Those two major migrations together with many others of smaller scale generated the numerous and diversified tribes which populate the country at the present time (Fig. 1.6) Due to the different origins of those tribes their diversity is also matched and underlined by a similar one regarding religious belief, language, social system, etc. (15) The dwelling environment, being to a great extent a product of social and cultural characteristics, is by no means an exception of this diversity. This chapter is aimed at investigating the variety of Sudanese traditional settlement and housing environments and focusses mainly on spatial aspects of these environments.

The first part of the chapter examines a sample of six Sudanese tribes with the intention of identifying their practices and uses regarding dwelling space and the main objectives behind them. The second part draws a comparison between the practices along certain major dimensions and requirements of the social and cultural life of these tribes. The third part of the chapter concludes about traditional dwelling space practices in the Sudan.

3.2. THE TRADITIONAL SETTLEMENT TYPES AND HOUSE FORMS: AN EXAMINATION.

In this section an attempt is made to identify the general characteristics of Sudanese traditional environments, as well as the major motivating forces behind them. Only six Sudanese tribes will be used. The choice of the sample was made in such a way as to ensure a maximum degree of representation of the conditions in the Sudan.
The sample includes indigenous tribes (the Hadendowa Beja and Nuba), as well as those who have entered the Sudan about a hundred years ago (the Rashaidaa). In terms of ethnicity, it comprises the negro and negroid (the Dinka and Nuba), the Arabized (the Hadendowa Beja and Humr), and the pure Arabs (the Rashaidaa). Regarding religion, the sample includes the idolator and animists (the Dinka and Nuba), those who were Islamized a few centuries ago (the Hadendowa) and those for whom the Islamic religion occupies a central position in the culture and heritage (the Rashaidaa). Considering the economic system and lifestyle, the sample contains pastoral nomadic tribes (the Humr); pastoral cultivators - (the Hadendowa) and sedentary cultivators (the Nuba). Yet, the sample is not exhaustive with respect to the diversity of the traditional Sudanese societies and settlement types. But given the space limitation of the thesis it will have to be sufficient for our purposes here.

The data are drawn from several multi-disciplinary investigations. Those for the Hadendowa and Rashaidaa tribes were further supplemented by field studies which had been undertaken as part of the preparation for this thesis. The following examination of the six tribes is arranged according to the alphabetical order.

3.2.1. THE DINKA TRIBE.

The Dinka is one of the largest single tribes in the Sudan whose population exceeds one million. Their territory - 52,000 square kilometers of grassland and forests - forms an arc around the
swamps of the Upper Nile Basin in southern Sudan\(^{(16)}\) (Fig. 5). The origin of the Dinka, like the other Nilotic tribes, is obscure. In terms of ethnic characteristics, their negroid blood received admixtures from a Hamitic race of invaders who came from the highlands of Ethiopia.\(^{(17)}\) The Dinka lived in their territory in a state of relative isolation not only from the western world but also from most of Africa. The swamps which started to accumulate since the 1950's made navigation in the White Nile difficult and hence helped to preserve their local culture.\(^{(18)}\) Together with the Nilotic people they share a religious belief which is centred around a shadowy being – God. In everyday matters it is the spirits who are manifestations of that God, and that must be placated by offerings and sacrifices. The family shrine inside their houses and the community ones at the centre of their camps (Plate 3.1) are other objects of their religion.\(^{(19)}\)

The territory of the Dinka is shared by more than twenty sections of the tribe\(^{(20)}\) which are further divided into several clans.\(^{(21)}\) In a big camp, several clans may be represented and the number in a clan run to a hundred or more. In times of need the members of the same clan show great solidarity with each other despite their occasional disagreements.\(^{(22)}\) The complex rights and obligations of kinship are of crucial importance in the Dinka society. Without family a tribesman is nobody – utterly alone in the face of any crisis or danger.\(^{(23)}\) Through such social ties they have managed to adopt a communal approach towards the tasks of agriculture.\(^{(24)}\)
The centre of the Dinka house is marked by a hearth which lights the central courtyard where the men gather to smoke pipes and chat. The courtyard is surrounded by the huts of the household, and the whole house may be encircled by a fence built of thorny bushes or tree stems as a protection against wild animals (Plate 3.2). In some areas, in the Dinka territory, the huts are built of thatch conical roof supported on mud walls. In other areas, the huts are constructed of a thatch conical structure supported and built directly on the ground (Plate 3.3). The huts of the household are occupied by several co-wives of the household head. Each of the huts is occupied by one of the co-wives in which she lives, cooks and sleeps together with her small children. Yet, all the grown-up children of the co-wives sleep together in one hut (Plate 3.4). (25)

The social life inside the Dinka house and camp is strongly affected by their custom of polygamy, as well as by the nature of the relationship between several wives who share the same house or camp. It is quite common for wealthy men to marry several wives. Moreover, it is a custom of the tribe that after a man's death one of the brothers, sons, or any close kin may inherit his wife by marrying her. This becomes a crucial duty if the deceased man did not have a male offspring because the clans are traced in the male line; thus the remarriage of his wife extends the lineage which links the past with the future. In this manner the wives of a Dinka man might exceed thirty, if he has got enough cattle, and if he had been repeatedly the obvious choice to support his kinsmen's widows and to raise their children. (26)
Some co-wives may live together in the same household each one in her own hut. They usually live amicably but quarrels erupt from time to time. The older wives are expected to supervise the younger ones. They all - mothers and step-mothers - share the task of bringing up the children of the husband. When the man's wives live in more than one house he would stay in each house in turn. The wives visit each other's houses very often discussing the whole family affairs. (27)

Unlike most of the Muslim conservative societies the relationship between the young men and women of the Dinka does not impose constraints on the design of their houses. On the contrary their houses are expected to facilitate and nurture such relationships as a means of attaining a successful future marital life.

"Life for young people is friendly, open and very social. They meet with complete freedom at the dances in the camp and villages, and can follow their acquaintance (through house visits, Plate 3.5) ... Sexual relations are not disapproved of on moral basis, but pregnancy would interfere with a girl's marriage prospects. Spending the night together in the girl's hut - either alone or with friends, is an acceptable part of an intimate relationship ... The couple may (spend the whole night) talking in the heightened, poetic language of the Dinka." (28)

It is through those long sessions that several boyfriends of a girl compete in order to gain acceptance as a suitor. Gaining that acceptance does not mean that the suitor will ultimately be the future husband, a girl is likely to have several suitors. The final settlement of this competition is achieved through lengthy negotiations concerning the bride's wealth. Like many of the Dinka family affairs this happens in public and in an open atmosphere
which involves the residents of the camp, as well as any outsiders. A big tree in any convenient place in the camp or village often provides the setting for such negotiations (29) (Plate 3.6).

Immediately surrounding the houses of the Dinka lie the fields which belong to, and are tilled by its householders. Several paths connect the scattered houses with each other (30) (Plate 3.2). Yet, this connection is also maintained through other means: through the communal work in the same fields that separates the houses; and moreover, and more importantly, through the kinship and marriage ties and their ensuing obligations. Thus, beneath the physical dispersion of the Dinka camp lurks a high level of social cohesion which is considered crucial for their security and livelihood.

The role of the public places and activities in the camp of the Dinka is not diminished by the significance assigned to their house and family. Those places derive their importance from more than one aspect of the culture of the tribe. One example is their political system which organizes the chieftainship according to the places of residence rather than the whole tribe or its different clans. This system works through the village's or camp's tribunals which are constituted of its chiefs. It assembles and administers traditional law in a shady clearing at the centre of each of those settlements which serve as a courtroom (31) (Plates 3.6 and 3.7).

John Ryle describes the Dinka Court and says that;

"The court is open to anybody, even strangers from outside those settlements. There are no advocates: the plaintiff, defendants, and witnesses speak for themselves and their testimony is loudly repeated by a spokesman so that everyone may hear." (32)
The wide range of issues delegated to the court grants it special significance. They vary from settlement of bride wealth to quarrels between wives, to cases of adultery, to more serious crimes of murder. The intervention of those tribunals in the private life of the inhabitants granted the court certain social dimension.

On the other hand, the religious belief system of the Dinka also contributed in lending the public places of their settlements special importance. This was manifest in the community shrines – a carved post used for hanging the offerings – which occupy the centre of each village and camp (Plate 3.8). The life in those public places is also enriched by certain aspects of the cultural system of the tribe; the highly popular, drinking and dancing parties which mobilize the whole community, at the beat of the tribal drums (Plates 3.9 to 3.10). Through those judiciary, religious, social, and recreational activities the public places of the Dinka settlements acquires significance which matches that of their individual houses.

3.2.2. THE HADENDOWA BEJA TRIBE.

The Hadendowa tribe is the biggest of the Beja group of tribes to whom it belongs. (34) The Beja, who inhabit the eastern region and the Red Sea coastal areas of the Sudan, is one of the major groups in the country. Although there is no historical certainty about the early history of the region, there are some indicators that they are the true autochthonous element of the Eastern Desert. There is an agreement that the Beja are a Hamitic stock of people who crossed
the Red Sea from Arabia at a very early date and settled in that edge of Africa between the Nile and the Sea. (35) In this respect their arrival in the region has been dated as early as 4000 B.C. This early arrival is supported by several archaeological and anthropological findings. (36)

Gradual interaction with other population stocks through a long period of time generated the various present groups of the Beja. Though there is no certainty about the history of the formation of the present Beja tribes the Hadendowa are said to be a descendant of a sherif who came directly from Arabia, settled in the town of Suakin, and married a Beja woman. This incident, which took place around the end of the fourteenth century A.D., marked the beginning of the formation of a small group; the nucleus of the Hadendowa tribe. (37)

The emergence of the tribe as an entity which occurred during the sixteenth century as they began to expand and absorb other tribes through intermarriage and conquests. As a result of this, they now occupy a substantial part of the eastern region of the Sudan which is inhabited by their thirteen major clans. Within the Hadendowa territory each clan is allocated a specific area in which they pursue their nomadic-pastoralist lifestyle and share the meagre available natural resources (Fig. 3.11). The organisation of the clans, which is based on a patrilinial structure, varies in depth between twelve and sixteen generations. (38) Inspite of the fact that the members of each clan are scattered in several territories across the country of the Hadendowa, yet still, in the political sense they
form a corporate group; all its members act together in case of any outside intrusion or fighting. (39) Each Hadendowa clan is further divided into a number of, what they call, diwabs; a big mobile residential unit and territorial group whose members live together in one camp or near each other within a certain territory. (40) Members of the same diwab, who share together the right of grazing and water resources on a specific territory, are of agnatic descent from one common ancestor after whom they are usually named. (41)

The camps, on which the various diwabs of each clan settle and move together, vary in size according to its location in the country of the Hadendowa. In the northern part of the Red Sea hills the camps are scattered groups of three or four tents pitched not very far from each other and away from other groups. The camps in the fertile southern part, where there is a fair supply of grass and water, are much bigger and the number of tents in them vary from twenty to seventy. (42) (Plates 3.11 and 3.12). Large or small, the camps of the Hadendowa are similar, in the sense that they consist of a number of residential units each of which constitute an independent household. A distance of up to 100 m. may separate the households of the same diwab, and the size of each one varies from one to ten tents. (43) (Plate 3.13).

Members of the same household may vary from two to three generations; an old man, his married daughters and their children, his unmarried sons, and some divorced or widowed female dependents. In this case the household is formed of a number of tents in each of which lives an elementary family. Yet, all the families and members
of the household together form an independent unit of production and consumption. They co-operatively shoulder the burden of herding and cultivation and share together the benefits of those two types of production.\(^{(44)}\) But, inspite of the strong family relationships and functional ties which connect the elementary families, the tents on which they live are not pitched very close to each other; a minimum distance of five or six meters is always maintained between adjacent tents. The distance becomes wider and the camp more dispersed during the rainy season, as the abundance of grazing grounds and water supply does not limit the movement of the household of the camp (Plate 3.14).

The physical dispersal of the Hadendowa camp is by no means an indicator of weak social links between its members, as there are more than one sign of their social cohesion. The public places of the camp stand as a clear evidence of social cohesion. One of these places is the guest tree; which serves as the reception room for all the households and tents of the diwabs.\(^{(45)}\) Under its shade, and in a location far from the households, (Fig. 3.2), all the guests of the camp are received and entertained during daytime. The responsibility of the hospitality towards the guest is not restricted to the household intended by the visit, as it is shared by the whole diwab. He is served by the available boys at the camp, and his meals are provided by the available food in the households of the camp. Regarding this it is important to mention that a tribesman who owns a big herd of cattle is considered the pride of his diwab, as his resources are always available for meeting such demands of hospitality.\(^{(46)}\)
The entertainment of guests at their appointed tree, is usually carried out by the elderly people of the camp; especially if the visit involves settlement of tribal disputes. Yet, the presence of the elderly people at such places during the day is also geared towards their accommodation, together with the guests, away from the households in order to ensure more privacy for the women of the camp. This requirement is very highly valued by the tribe and immensely affects both the design of its house and the planning of its settlements.

As an additional measure towards the facilitation of high levels of privacy for their women and girls, the Hadendowa provide special accommodation for all the young and unmarried men of the diwab. (47) This is a big shelter - a canopy made of thatch and sometimes surrounded by a fence and located far from the households and at the edge of the camp (Fig. 3.2 and Plate 3.15). The boys leave the tent of their parents, and move to it from the age of six or seven. They live in it together, organizing and shouldering the responsibilities of herding and up-keeping the cattle of the whole diwab. Meanwhile their visits to the households and to their mothers are made very brief, otherwise they will be scorned by their colleagues. They return to live amongst the households only when they get married; as the groom establishes his tent as part of the household of his father-in-law. Thus, the system of accommodation of the young men stands as an indicator for the high level of co-operation amongst the members of the diwab, their extreme sensitivity towards the privacy of their women, and their immense concern about the early initiation of their boys into manhood.

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Another public place of the camp plays a very important religious educational and social role in the life of the tribe; the Khalwa (Quranic school). All the boys of the diwab are enrolled in it from the very early age of four or five years. In it they are taught the basics of the Arabic language and the Islamic religion. But, equally important, they also undergo a process of disciplining and learn how to respect the elderly in the person of their master at the school. Thus, their enrolment in this school prepares them for the next stage in which they move from their households to the shelter at the edge of the camp. The doors of the school do not close each day after the dismissal of the classes, but stay open in order to provide sleeping accommodation for the guests of the diwab, clansmen, as well as members of other diwabs. Thus, with this the Quranic school acquires a further social dimension.

The Khalwa is located at the forefront of the camp near to the guest tree but far from the tents where women stay (Fig. 3.2 and Plate 3.16). It is cubic in form and constructed of woven straw roof and walls supported by tree stems and branches (Plates 3.17). Inside the Khalwa, the boys receive their lessons and sleep on straw mats spread on the floor (Plate 3.18). The male guests of the camp who stay overnight also sleep there. This gives the Khalwa more importance and social significance.

The focussing of the social life of the Hadendowa men and grown-up boys around the public places of the camp diminishes the role of the tents of individual families. The size and form of these tents also limits the number of persons who can be received inside
them. They are hemispherical in shape and their diameter varies from 3.5 m. to 4.5 m. (Plate 3.19 and Fig. 3.3). Almost half of the interior space of the tent is occupied by the bed. The front half of the tent is used by the woman of the house who does her housework and receives visiting womenfolk on a straw mat spread on the ground (Figs. 3.3 and 3.4 and Plates 3.20 and 3.21). The area inside the tent which has enough headroom is very small. However, this is considered sufficient because the tent is regarded as the women's domain and no men are usually received or entertained there.

The tent walls and roof are made of straw mats which are fixed to bent tree branches supported on vertical tree stems (Plates 3. ., 3.23 and 3.24). The tent has a single low entrance usually not exceeding 60 or 70 cm. in height (Plate 3.25). It has no windows except for the gap between the bottom part of the straw mat walls and the ground – about 30 to 40 cm. high.

In principle, dwelling space in the Hadendowa nomadic lifestyle is organized in a similar way to that of the other nomadic Beja groups – the Amrar, Besharin and Beni Amir. The tents of these tribes is similar in shape, size and internal organization. All the tribes also accommodate their young and unmarried men and guests in public places rather than in the family tent. Furthermore, the public places of the camp are related in a similar way to its private places. This similarity can be explained by certain common cultural values and norms which control the social life of this tribe. The deep concern of the Beja people about protection of women and initiation of boys at an early age is one example. Their
suspicion about strangers, yet concern about offering hospitality to
guests is another example. (48)

3.2.3. THE HUMR TRIBE

The Humr tribe is one of several tribes of the Western Sudan
referred to as the Baggara — cattle owners and herders in colloqial
Sudanese Arabic. Although there is agreement about the Arabic origin
of the Baggara, opinions differ about whether they come from Egypt
or Tunisia prior to their arrival in western Sudan. (49) Also there
is no certainty about the date of their arrival in the Savanah and
Lake Chad belt, but they seemed to have settled many centuries ago
in the region. (50) The Arabic blood of the Baggara had been
subjected to certain modification during their residence in their
present habitat. Their continual mixing with their neighbouring
Nilotic tribes added some negroid blood. (51) This is encouraged
through the possibility of the assimilation and incorporation of
foreign elements as full members of the Baggara social systems. (52)
Such type of ethnic admixture is evident in the dark complexion of
the tribe. (53)

The Humr and the Zorog are the two main segments of the
Messiria Baggara tribe which arrived in its present territory in the
western part of the province of southern Kordofan slightly less than
two centuries ago. (54) The Humr is further divided and sub-divided
into several hierarchial social groups which are organized and
managed by certain tribal leadership. At a lower level in this
hierarchy is the surra — the Arabic for navel — a unit of their
lineages which is formed of a group of agnates tied together
through a distant common ancestor. The surra, and its extended families, provide the basis for the formation of any Humr camp. They call these extended families - of one, two, or three generations - 'iyal rail' - literally 'sons of man'; a reference here to the heads of the nucleus families residing side by side in the Humr camp. (55)

The economy of the Humr, many aspects of their life and their seasonal migration, centres around the cattle. For example, the size, and composition of their camp is mainly determined by the herding tasks. This is very crucial as such tasks are undertaken cooperatively and involves all the residents of the amp. (56) Yet, there is another aspect of their economical system which reflects on the constitution of their camps, as well as rules of residence; the inconsistent distribution of wealth amongst the tribe's men. Considered in terms of ownership of cattle, there are those with none at all, there are the majority who own a few heads, and there are those who own hundreds. (57) The imbalance of this vital kind of resource, and the response to cultural values and social obligations, has created certain household types and systems of co-residence as explained below. (58)

The camp of the Humr is composed of four main components: the arc of the tents, the inner area - inside the arc - where the livestock is kraaled, the tree under which the men and their guests sit in the day time, and the darra (shelter) and hearth where the young and unmarried men and guests sleep (59) (Fig. 3.5). The arc of the tents is inhabited by a surra, consisting of several extended families, each one living in a number of adjacent tents and
occupying a segment of that arc. All the tents in the camp are owned by women; married, divorced, or widowed. (60) The tent of a married man belongs to his wife. He sleeps and keeps his belongings in it but he eats his meals under the men's tree or beside the camp's hearth. The sons are permitted to stay and sleep with their mother inside the tent until they reach the age of six, when they start to sleep outside or with the bachelors around the camp's hearth. A daughter sleeps inside the tent with her mother until she marries. The husband with grown-up daughters no longer uses his tent regularly and he has to send them to the tents of some relatives if he wants to spend the night with his wife in it. (61)

The tents of the divorced and widowed women, which is pitched with the extended family to whom she is most strongly related and besides the tent of the closest married male, are also considered a focus of social life. As in this case a bachelor brother who is looking after such a woman treats her tent as if it were his, except that he seldom sleeps in it. The tents of those women also acquires a special significance due to the system of co-maintenance adopted by this tribe. According to the system an impoverished man who has no cattle or household to live on may rely upon the household of one of those women who might be, herself, a dependant of another man. Through this, the social role of these households increase as they become open to people who are not part of the elementary family residing in it. (62) Considering all these factors together, the households of the widowed and divorced woman become an integral part of the Humr society.
The guest tree has a very important function for the camp to the extent that the availability of a big shady tree is considered a major determining factor for its site, which is set about a hundred yards away from it. It is referred to by them as the tree of the community and plays a significant social, cultural and religious role in their life. At it, the men of the camp, married and bachelors, spend their day and entertain the guests of the camp (Plate 3.26). Through the visits of those guests members of the surra residing together in the camp meet other members of their lineage and tribe at large. The entertainment and feeding of those guests is the responsibility of the whole camp, as each household sends its food to be eaten by the men and their guests together. In this way the burden of hospitality is shared by all the members of the surra and many are spared the embarrassment of the failure in meeting the obligations towards their guests.

The guest's tree acquires a special religious importance for the Moslem Humr. It provides the setting for the daily collective prayers which are performed by the men and boys of the camp. The importance of the shaded area under the tree does not reside only in the high religious regard of collective prayers over those performed individually, but also because of its role in the initiation of young boys into the Islamic religion through the observation of such rites. This explains the overall role performed by such public places of the camp in the transmission of the culture of the tribe manifest in the values of hospitality, solidarity, equality and modesty.
Another public place of the camp of the Humr that performs a similar significant role in the transmission of their culture; which is the camp's darra and hearth. Its role is a continuation to that of the men's tree. The men, their guests and the boys move to it after sunset where they perform the early evening prayers and have their evening meal. Then the married men leave as they retire to their tents. The bachelors and boys stay the night there entertaining the guests of the camp. The mixing of the boys with those guests strengthen the social ties between the various surras and lineages of the tribe scattered across the Humr territory. The recital of the tribe's legends, folk tales, songs and quizzes around the camp hearth facilitates the transmission of the Humr culture to the younger generations. Thus, in addition to its role in providing more privacy for the women staying in the tents, the accommodation of young and unmarried men and guests in the darra also achieves important social and cultural objectives.

The tent of the Humr is hemispherical in shape and small in size (Plate 3.27). Its diameter varies from 350 to 300 cm. and the maximum headroom inside it does not exceed 220 cm. (Fig. 3.6). Despite the limited space provided inside the tent, its size is considered sufficient because it is used mainly by women and small children. Moreover, the accommodation of the men of the camp and their guests at public places far away from the tents during daytime provide more privacy for women and thus allow them to use the shaded area around their tents.

The tent is built of a material made of woven tree bark. This
material is then laid on a structural frame made of curved tree branches supported on vertical tree stems. The top of the tent is covered with pieces of cloth which are stitched to the tent material (Plate 3.27). This cloth helps to drain rainwater towards the sides of the tent. The pores in the tree bark woven material and the gap left between the sides of the tent and the ground enhances ventilation inside the tent.

The Humr tent has a single low entrance which does not exceed 70 cm. in height. The tent is divided into two main parts. The tent has no windows except the gap between the sides of the tent and the ground which extends to about 30 cm. Above ground level (Plate 3.27). The tent is divided into two main parts. In the part nearest to the entrance the woman of the house does her housework and receives visiting womenfolk. The innermost part of the tent is occupied by a big bed in which the couple sleep with their small children (Fig. 3.6). The location of the bed, considered together with the position and level of the entrance and other openings in the tent, reflect the deep concern about the privacy of the couple living there.

3.2.4. THE KABABISH TRIBE

The Kababish are a number of small tribal groups some of them pastoral nomads and the others sedentary cultivators. Most of the pastorals, with whom we deal with here, inhabit the arid belt of land in the north part of the province of Kordofan. Their territory lies roughly between latitudes 14 and 16 North and longitudes 21 and 24 East (Fig. 3.1). The first arrival of the Kababish Arab clan in
the Sudan at a location to the north east of their present territory is reported to have taken place towards the end of the eighteenth century. Alliances with the Turco-Egyptian and Anglo-Egyptian occupation administrations through the eighteenth and first half of the nineteenth centuries established them as a big tribal power in the western part of the country. (64)

Alliances with the occupation administrations also affected the socio-political organization of the Kababish tribes. In this respect Talal Assad states that prior to the first occupation of the Sudan, in the eighteenth and nineteenth centuries that name referred to;

"a loose configuration of tribes of diverse origins ... There were no clear-cut boundary which marked off a given set of tribes as belonging permanently to 'the Kababish'; groups appear to have joined and left the configuration at different periods, and migrated from one locality to another". (65)

The first, Turco-Egyptian, occupation brought with it unity to the tribe under a single paramount leader who enjoyed its recognition and support. During the second Anglo-Egyptian, occupation the local administration was regularized under a single family; whose powers were further intensified through the elimination of the powers of the clan chiefs. (66) Assad says that this process was also facilitated through the encouragement of the Anglo-Egyptian administration "to the adoption of a flexible pastoral system, with greater opportunities for independent movement by individual households or small groups of households." (67) This flexible political system was compatible with the ownership and control over vital natural resources in the Kababish territory, as at that time
neither the water points nor grazing grounds were owned by individuals or clans. (68)

The spatial organization and social life in the Kababish summer camps is a clear manifestation of their socio-political system. Typically, it consists of the following components; (a) a well-field; (b) permanent buildings consisting of shops and occasionally a dispensary and school; (c) households encampment scattered around the well-field at varying distances; (d) the area grazed by the animals watered at the well-field (69) (Fig. 3.7). The camp is inhabited by several families from more than one clan. The number of the tents in it varies from a dozen to more than a hundred, and is scattered around the central well-field at distances ranging from half a mile to as much as ten miles. The tents are pitched either singly or in fairly discrete straggling clusters. (70)

The Kababish camp should not be understood in the common form known amongst the majority of the Sudanese tribes; as a comparatively stable unit of households moving and settling together and organising economic and political activities jointly. This notion does not apply to the Kababish camp. Although the clusters of its tents usually comprise members of the same clan, no corporate interest holds them together – except where two or more tents form one household. The various households are bound to one another by a number of interlocking ties of kinship, affinity and friendship. Each household is by definition autonomous, yet due to shortage of labour contiguous households may co-operate in herding. But this does not mean that all herding associations are between contiguous
households, as close relationship and friendship plays a great role in encouraging spatial proximity. (71)

Various other factors also affect the spatial relationships between households within the same camp. Varying conditions, from season to another, affect herding strategy and thus sometimes leads to the spatial separation of even closely co-operating households. Accordingly, the households of a camp in any given year do not necessarily represent fundamental social groupings, and it is extremely unlikely that they remain clustered in the same pattern from one season to the next. (72)

The ideal for a Kababish man and woman is to set up their own independant household and be its head and mistress. It is possible in principle, for them to attain this ideal if they have sufficient animals and the right age of sons and daughters; as grazing land and watering are free and available for every member of the tribe. The household head who does not have the sufficient human and animal resources, and who can not hire herders, must co-operate with other households. A newly married man usually receives animals from his father in order to satisfy the needs of his new household. If he needs assistance for herding his animals he will continue to herd with his father or elder brothers. But this co-operation does not include the domestic arrangements as these are dealt with for each household separately. (73)

Assad says that for the Kababish;

"the household is the basic unit within which productive
activity co-ordinated and consumption are provided. It is both an economic enterprise and a domestic grouping. Its members are bound together by co-residence and commensality and by the organisational leadership of the household head ... In this sense it is by definition an autonomous social unit although it can be described as independant only when it is self-sufficient with respect to both household capital and household labour."(74)

In normal cases, the Kababish household is constituted of a single tent inhabited by a man, his wife and their unmarried children. More tents may be added to the household as a female dependant, aged parents and some servants join it. A single male agnate - who divorced his wife or survived her death - may join the household by living in the tent of his mother, sister, or daughter until he remarries. For them a household head must always have a close kinswoman if he does not have a wife in whose tent he resides.(75) The marriage of a daughter also adds one more tent, and the bride may continue to live with her parents for several years - the length of this period mainly depends on the capacity of the groom to establish his own household.(76)

The elementary household may be composed of three major components: (a) the main tent of the household in which lives the man, his wife, and their unmarried children; (b) the cooking-fire enclosure which is located a few feet in front of and to the right of the main tent; (c) the bridal tent which is erected right in front of the main tent of the bride's mother; (d) the servants shelter which is located behind the main tent of the household. The spot where the tent is pitched is known as dar - an Arabic word for house. This includes the area a little beyond the tent pegs, the part of the cooking fire, and any surrounding trees used for

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suspending the water skin container and any other artifacts of the household. If the household is constituted of more than one tent, the area, occupied by all the tents forms a single dar. (77) (Fig. 3.8)

The Kababish tent is of a rectangular plan but is roofed by a double pitched roof. Its length varies from 450 to 400 cm. and its width from 350 to 300 cm. The maximum headroom inside it is about 380 cm. and the minimum is about 180 cm. The pitched roof extends for about a meter beyond the front and back walls of the tent (Fig. 3.9 and Plate 3.28). The Kababish weave the material of their tent from camel's and goat's wool. This material is supported by vertical members made of tree stems, as well as suspension ropes.

The Kababish tent is more spacious than those of other tribes such as the Hadendowa and Humr. Due to this, it is considered suitable to serve the purposes for which it is set up; as it is supposed to accommodate all members of the elementary family, as well as the guests of the household. To serve these purposes, the tribes people extend the interior space of the tent to the areas located at its front and back which are shaded by the projecting roof.

The tent is the focus of the life of the Kababish, as it is the centre of rest and subsistence. At night all husband, wife, and small children sleep inside it in one bed. Sons, as they approach puberty, sleep outside near the entrance of the tent. Men and women of the family consume food separately. During the day men generally
eat inside the tent unless there is a shaded area in the immediate vicinity, in the evenings they normally eat outside beside the fire. Women always eat in the privacy of the tent as it is considered grossly shameful for a woman to be seen eating or drinking by a man who is not a close kinsman. (78)

Like many other Sudanese societies, the offering of food for the Kababish is associated with the highly valued requirement of hospitality towards guests. Among them the only proper place for such hospitality is one's dar, and its fulfilment brings the household and its head great honour. Denying food, even to a loiterer, is regarded as a shameful act. Yet, they consider it unacceptable to eat in other people's dars frequently without invitation. As "for them the man's own dar is the place in which he seeks food and drink and where it is his privilege to offer hospitality to anyone who calls"; thus a household head borrows if necessary, in order to accomplish these ends. (79)

The focussing of the social life of the Kababish within the boundaries of their houses, in response to important cultural norms and values, diminishes the social significance of the public places in their camps. The well centre is a clear example of this. Despite the fact that it brings together large numbers of the inhabitants (Plate 3.2A.), yet it does not play any social role in their life. The shops which occupy part of their camp is also another example. Unlike those in the settlements of tribes such as the Shukria (in reference here to Tamboul market), they do not have any social or cultural significance (Plate 3.30).
3.2.5. THE SOUTH EASTERN NUBA TRIBE

The Nuba group of tribes, to whom the south eastern ones belong, is composed of a hundred or more tribes. They inhabit the Nuba mountains, several scattered granite hills covering about 7,720 square kilometres of the southern parts of the province of south Kordofan (Fig. 3.1). They were believed to be part of a stock of negroid people who inhabited the central parts of the Sudan many centuries ago. Fearful from the ravages of slaving posed by the Arabs during their invasion of the country in the seventeenth century A.D. they fled the area to the mountains. Evidence from oral traditions document their habitation of the mountains prior to the movement of the Baggara into the area in the eighteenth century A.D. Yet evidence drawn from stone tools, genealogies, and linguistic sources indicates that they had been in their present location for more than 200 years.

The South-Eastern Nuba were given this name by ethnologists due to their habitation in that particular location in the country of the Nuba tribes (Fig. 3.1). They consider themselves related to one another and distinct from the rest of the Nuba tribes along the language and some other cultural aspects. In terms of the overall social organization, they are segmented into several clans and each clan is further broken down into many sections. While members of clans might be physically dispersed in different settlements, those of the same clan section maintain more residential integrity. Yet inspite of this clearly segmented social structure, the political system of the South-Eastern Nuba
is characterised by lack of well-articulated leadership they are without heads of chiefs. As a result of this the elders of each of those clans and clan sections, collectively take the responsibility of the administration of their social groups (87) as they pursue their sedentary lifestyle and occupations of agriculture and animal husbandry in that remote part of the country.

The remoteness of the territory of the South-Eastern Nuba and its relative inaccessibility facilitated the preservation of their local culture which is unmatched, in many aspects, by any other Sudanese sub-cultures. (88) The most unique and salient aspect of their culture is the nudity, which they complement with the distinct art of body and face painting and oil annointment. (89) Among the South-Eastern Nuba both the young women and men go naked (Plates 3.31 to 3.32) until their bodies are no more lean and beautiful, when they are expected to dress. (90) In this respect the Nuba consider the beauty and health of the body as a highly valued gift and great honour that deserves to be displayed. But this custom and type of art has also other meanings and functions in the tribe's social, cultural, religious, and recreational activities. For example, they play an integral role in their unique love festivals and erotic dancing and knife wrestling parties which are held in public places of the neighbourhood of each clan's section (91) (Plates 3.33 to 3.34).

The love festivals of the Nuba stand, together with their custom of nudity, as a clear indicator of the open relationship between the opposite sexes (Plates 3.33 to 3.34) and the lack of
inhibition about sexual matters among them. During these festivals the young women, some of whom are married, perform a ritual dance at the end of which they, publicly, announce their future lovers (Plate 3.35). Another part of the festival involves the inspection of the virginity of the grown-up girls by the old women of the neighbourhood at the presence of the whole community of the clan's section. These love festivals, together with the wrestling parties, mark and coincide with the initiation of the tribe's girls and boys through the various age groups and social life stages. (92)

The public places in the village neighbourhoods also provide the setting for the religious activities of the clan's section which inhabits that part of the village. As part of their animistic religious beliefs witch doctors of each clan's section communicate with the spirits from special public places in each neighbourhood. Thus, this adds to the significance of the public spaces of the Nuba villages; the usual setting of the love festivals and wrestling competitions and rehearsals.

The villages of the South-Eastern Nuba, which are separated from each other by a few kilometres, are comparatively small in size and its population ranges from 1000 to 500 persons. (93) Their high hilly sites (Plates 3.36) are in keeping with a Nuba habit and in response to defence requirements. In terms of their appearance and general planning they are quite compact. (94) Each village is divided into distinct sections, each one of these is independent of the other and is inhabited by men from the same clan's section. In spite of the absence of physical boundaries between the different sections
The social ones regulate the use of the villages. For example, children are not allowed to cross the boundaries between the village sections until they reach the age of maturity. During social occasions and gatherings they congregate and eat together in a public open space inside their village section. (95)

The life of the adults is also centred around their village section, even for the purpose of performing tribal, cultural and recreational activities, such as dancing and the various types of ceremonies. Each village section has a large hut with low walls which is used for the performance of the dances and the ceremonies peculiar to each clan section. Thus the Nuba villages, in spite of their small size and compactness, are clearly divided into identified sections. This division is carried over right across the public places which are distributed in such a way that each village section has its own facilities. (96)

Part of the system of residence of the South-Eastern Nuba stands as another indicator of the free relationship between their young men and women; the herding camp located at the end of their villages and next to the cattle house. Nuba boys and girls leave their parent's house at the age of six or seven to join the camp in which they live side by side sharing the herding responsibility until they get married. Segregation in the life of the camp is not based on sex criterion, but rather on a social one. Similar to the divisions of their villages, members of each clan's section reside in a separate part. (97)
During their residence in the herding camp the boys and girls of each section of the tribe spend the stage of adolescence together without supervision from their families. Yet, the relationship between these young people is not just a kinship one. Some of them, according to the Nuba marriage system, are betrothed to each other during their residence in the camp. The betrothal stage – or the bride-service period – may extend from six to eight years as the groom provides special services to the family of the bride. (98) This stage is terminated by the conception of the bride. On finalisation of the marriage the couple move from the herding camp to live in the house of the father or any suitable patriclan. (99) Thus, in this way the camp acquires a social dimension besides the economical one.

Other aspects of the marriage system and marital relationship amongst the South-Eastern Nuba are reflected in the type of residence of their houses, as well as, its size. Handsome young Nuba men marry several wives, and the number he can marry is limited only by his economical ability. Yet, a survey conducted on the tribe in 1967 revealed that no man had more than three wives at once, although he might have married several ones serially. It also revealed that each woman has had many husbands. These are clear indicators of the fragility of the marriage and marital relationship amongst the tribe. Adultery is considered a sin, by their tribal law, yet abduction of wives is permissible and even common. Former husbands are compensated by payment of cattle for such types of abduction but few of them pursue the matter further. (100)

The instability of marital relationship explains the
transcience in the composition and membership of their household. It could also be accounted for their elementary family type of household, as the fleeting and temporary nature of the relationship between co-wives does not encourage development of extended family. Their house type could be considered a response to those social factors. Although it is built around a central courtyard, it is small in size; as it does not include accommodation for the young women and men. It is ideally constituted of four rooms linked together by a short boundary wall, and opening onto a central compound (Fig. 3.10).

The four rooms are used: two for sleeping, one for cooking, and one for storage. The extra sleeping room is usually used for temporary accommodation of newly married sons for a short post marriage period. But, ideally, the house accommodates an elementary family. (101)

The S.E. Nuba hut is cylindrical in shape and roofed by a conical shaped roof. Its internal dimension varies from 220 cm to 250 cm. Its internal height up to the lower part of the conical roof is about 220 cm. (Fig 3.11). The walls of the hut, which are built on the hill sides, are constructed of stone plastered internally and externally by mud. The roof is built of thatch. The small size of the hut may be partly explained by the fact, in response to important social values the grown-up children are not accommodated there.

Most of the daily social life of the Nuba takes place outside
their houses under a canopy at the public open spaces located at the neighbourhood of each clan's section. Whichever social interaction happens within the boundaries of the house takes place in the central compound. Their tiny huts, with their tight and raised entrances, are not well equipped for such kinds of interaction (Plate no. 3.37); as it is usually restricted to the man or woman of the house and their small child/children. In this context it is important to mention that the relative exclusion of the young women and men from the house is not only restricted to the overnight staying. For example, they are not permitted to eat from the same container with their elders, nor to sit on the same sleeping racks. Such restrictions diminish the functional and social role of the house and increase that of the public and communal residential ones - like the herding camp.

3.2.6. THE RASHAIDAA TRIBE

The Rashaidaa are one of the smallest tribes of the Sudan which migrated to it slightly more than a hundred years ago from the Arabian Peninsula. Although opinions differ about their exact origin in that peninsula there is agreement concerning their Arabic ancestry; a major source of pride for that tribe. After crossing the Red Sea, the tribe, settled in the eastern region of the Sudan where each of its three main branches dwelled in a separate territory and continued to pursue its previous nomadic life and camel rearing occupation (Fig 3.1). Elapse of decades and intermingling with other Sudanese tribes had barely changed their time honoured Bedouin customs and values. These customs and values
are given expression in more than one aspect of the nomadic dwelling environment of the tribe.

The Rashaidaa weave the cloth of their tent from camel's and goat's wool. This cloth is supported by three rows of vertical supports (made of tree branches) and held in place by several suspension ropes (Fig 3.12 and Plate 3.38). The length of the internal space inside the tent varies from 400 to 300 cm. and the width is about 300 cm. The rows of vertical supports divide the tent into four parts. In the two central parts, which are higher than those at the ends, live all members of the elementary family. The household head, his wife and their grown-up and small children live, cook, eat and sleep there. They also receive and entertain their guests in the same tent. The two parts located at the ends are used, one for keeping small animals and firewood and the other, for storing baggage and food rations (106) (Fig. 3.13).

The fact that the Rashaidaa marry at an early age spares the parents the embarrassment of sleeping in the same tent with their teenage off-spring. Yet, the tribespeople find great satisfaction in sacrificing their privacy for a guest who might share the same tent with them for a night or two. In this case the two middle parts of the tent is divided by a curtain in order to accommodate the guest in a separate section from the family (Plate 3.39). The high regard for hospitality to guests, which is an important Bedouin value, is indicated by the fact that the housewife is obliged to receive and entertain guests even during the absence of her husband. The high regard for this value is also evident in the competition which the
arrival of a guest generates amongst the households living in the camp. The honour of his receiving is settled by measuring the distance between the place in which he tittered his camel and the households of the camp. The nearest household to that place receives and accommodates him for the first night. However, neighbouring households are also welcome to entertain him there. (107)

The tents of individual elementary families are grouped together to form an extended family household. This is made in response to important social, cultural and religious needs. Polygamy is very common among the Rashaidaa and the tribespeople prefer to keep their co-wives together in one place. Each one of the co-wives has her own tent. The tents of the co-wives are set up side by side forming a row. (Plate 3.40). This is made in response to an important requirement of the Islamic religion which demands equality in the treatment of co-wives. (108) The row of tents is extended further as, in response to an important social value the tent of a newly married woman is set up beside that of her mother until she gives birth to her first child. (109) This allows the mother to supervise, train and help her daughter during the initial period of her marital life.

The tents of the married men are set up at the edges of, or around, the tents of their father. This is made in response to an important cultural value which demands that the sons should encircle and protect their father. (110) Accordingly, the tents of the father, his co-wives and those of his sons form a cluster and an identified social unit. This unit carries the name of the father and its members are referred to as his people. (111) The social cohesion of
this unit is given physical manifestation in the clustering and proximity of the tents of the extended family household, as well as the relative detachment of these tents from those of other extended families living nearby (Plate 3.41).

The relationship between members of the extended family household is characterized by high levels of co-operation. This is reflected in the way they organize cultivation and herding tasks.\(^{112}\) It is evident also in the responsibility of all those members towards rearing the children of the extended family and taking care of, and supervising, the wives of the men who migrate for work abroad. In addition to the proximity of the tents of the household, the latter two tasks were made possible also because the Rashaidaa tent is flexible and its sides can be lifted to allow supervision of the family living there (Plate 3.42).

During the rainy season when water and pasture are in abundance the nomadic Rashaidaa scatter throughout their territory. Due to this a single extended family may form a camp. (Plate 3.41) The tents of the father and his married sons are pitched near to each other according to the spatial relationship referred to above. This relationship allows the father to oversee and manage the affairs of the camp. It also permits other kinds of co-operation between members of the extended family such as those referred to above.

During the dry season the Rashaidaa have to cluster in big groups around the limited water and pasture sources. The size of the camp may reach up to forty households (extended families). Each camp
is administered by a senior man who manages its affairs in times of peace by organizing the use of water points with neighbouring camps— as well as times of war and conflict with these camps. The importance of the role of the senior man is indicated by the location of his household, as it is set-up in the centre of the camp (113) (Fig 3.14).

Despite the fact that the households of the camps are relatively separated from each other by about fifteen meters, those closely related to the senior man are located near to, and around, his household (Fig. 3.14). This spatial relationship is very important because the men of these households should protect the senior man and give him unconditional support. This strengthens his position and allows him to manage the affairs of the camp in a firm way. In return, the senior man gives special consideration to his close relatives camping nearby and helps them manage their own affairs. However, his relationship is not very strong with distantly related households located at the peripheries of the camp. Yet, despite this, when military action has to be taken against non-camp people these households should make all their resources at the disposal of the senior man in order to allow him to defend the camp. In general terms, we can conclude that the spatial organization of the camp reflects the socio-political system controlling the life and affairs of its inhabitants (Fig. 3.15).

The membership of the dry season camp may vary from one season to another. This is because the membership is not based only on the social relationship connecting the camping households to the senior man of such a camp. When deciding which camp to join, the household
head gives special consideration to the management capability of the senior of the camp. This means that he may leave a camp administered by a close relative and join another one headed by a distantly related person who is of high management capability. (114) Regarding the variation in their camp membership, the Rashaidaa are very much like the Kababish. They are also unlike the Hadendowa and Humr. This demographic aspect shows that the social relations within the Rashaidaa lineages are not as strong as those within the extended family. This is indicated also by the relative stability in the membership of each one of the extended families as they move from one camp to another.

The weakness of the social ties within the lineages of the tribe is evident also in the insignificance of the public places in the camp, which, in the case of other tribes, such as the Hadendowa, Dinka and Nuba, play important role and provide the setting for community management, child rearing and guests entertainment. In the Rashaidaa camp, such roles and activities are considered the responsibility of the extended family and certain recognized persons and take place within individual households.

3.3. TRADITIONAL DWELLING SPACE PRACTICES: A COMPARISON.

The examination of the dwelling environments of the six tribes reveals the different manners in which space is organized throughout the various environmental components and levels. It reveals also the disparity of the cultural and social needs which affect provision and organization of space for these environments. Yet, in spite of
the differences there emerges an agreement about some common broad social and cultural objectives which guide the norms and standards controlling the development of dwelling environment with regards to all these tribes. All the tribes show concern and provide accommodation for certain basic family and social demands. Some examples of these are: child rearing and up-bringing of young women and men; receiving and entertainment of guests; and performance of communal and social activities. Most of the tribes of the sample show concern and provide accommodation for co-wives and extended family. This does not cover all the common objectives amongst the six tribes under consideration here, but it constitutes some useful dimensions for the comparison of their practices with respect to dwelling space.

3.3.1. THE ACCOMMODATION OF YOUNG MEN AND WOMEN.

The accommodation of young men and women is strongly connected to certain aspects of the social and cultural systems of traditional societies such as child rearing, segregation of and protection of girls and women. Accordingly, this is considered an important matter for these societies. The manner in which the Sudanese tribes accommodate young men and women vary. This can be explained by the different, and sometimes contradictory, strategies which they follow to ensure achieving the objectives mentioned above. Such variation is remarkably reflected in the organization of dwelling space.

The Hadendowa in the east and Humr in the west represent the extreme in the deep concern about segregating the sexes and the
early initiation of the boys into manhood. To achieve both objectives, the two tribes accommodate their young men in communal places located far away from the households of their parents such as the Khalwa and shelters of the Hadendowa and darra of the Humr. This provides more privacy for the young women and ensures their up-bringing in appropriate circumstances. On the other hand, the detachment of the boys from their mother at an early age prepares them to be courageous and responsible men. Their accommodation in these communal places facilitates also their socialization and acculturation as they interact there with the old and experienced men of the community and other tribesmen who visit the camp.

In addition to the wide separation of the opposite sexes, the Hadendowa and Humr also take other measures to ensure the protection of women and child rearing. This is achieved by the careful screening of the tents in which the women and girls stay. The deep concern about this is indicated by the location of the tent openings at a low level below that of the line of sight.

The Kababish and Rashaidaa are not keen about separating young men from women. Their strategy to maintain privacy and ensure protection of women is also different from those adopted by the Hadendowa and Humr. The laxity of the Rashaidaa about the free mixing of young men and women is evident in the close proximity of the tents in which they live together with their parents. Such proximity, together with the openness of the tent, is an important requirement for facilitating women protection and child rearing. This spatial arrangement allows members of the extended family
living together to monitor, direct and protect the women and young people of the household. Thus, to achieve these objectives, the Rashaidaa accommodate opposite sexes as near as possible to each other and in a place where they can be supervised by their families. As the community of the camp is not considered responsible for child-rearing, young people are not accommodated in communal places.

Child rearing and protection of women in the Kababish camp is also considered the responsibility of members of the extended family household. The fact that such households usually includes three generations facilitates this. The parents of the household head living in a shelter behind his tent contribute substantially towards these objectives. On the other hand, the newly married daughter of the household head, accommodated in a tent in front of that of her parents, receives advice from her mother and is protected by other members of the household. The relative detachment of the household from those nearby, considered together with the changing membership of the camp, shows that child rearing and protection of women is considered mainly the responsibility of members of the extended family.

The Dinka and Nuba of the south and south-eastern Sudan, represent the other extreme in terms of the free relationship between the opposite sexes and the lack of inhibition about sexual matters. Interaction between the unmarried young men and women is encouraged as an important stage towards a successful marriage. For the Dinka, this takes place within the house and involves several suitors. The situation is different for the Nuba, as the
accommodation of both sexes of this age group is located outside the house in the herding camp. Thus such interaction and pre-marital relationship occurs as part of the camp's life and is crowned by conception of the girl and finalisation of the marriage. For both tribes the dance parties at the public open spaces of the settlements are very important for the social life of the young people.

It is clear that several tribes in the Sudan accommodate their young people in different ways due to divergent opinions and strategies regarding aspects such as child rearing and protection of women. The variation is also because these tasks are entrusted with different social institutions. While for some tribes it is the responsibility of individual families, for other tribes it is entrusted with certain social institutions or the whole settlement or village community. Such variation reflects remarkably on the provision, planning and design of dwelling space.

3.3.2. THE ENTERTAINMENT AND ACCOMMODATION OF GUESTS.

Reception and entertainment of guests amongst the tribes of the Sudan happens in different ways and places and in response to varying social norms and cultural values. The Hadendowa Beja and Humr tribes satisfy this social commitment in a similar way. They receive and entertain the guest during the day under a big shady tree located far from the households of the camp and specially prepared for this purpose. The guest spends the night either around the camp's hearth, in the Khalwa or in the young men's shelter.
During the guests stay in the camp his reception, entertainment and feeding is considered the responsibility of the whole community of the camp. This spares the needy tribesmen the embarrassment of meeting such obligation. It is also an expression of the solidarity between the households living there. Moreover, the system of the accommodation of the guest among these two tribes, could also be linked to their great concern about the privacy of their women, as well as the rearing of their young men in which the interaction with visiting tribesmen plays a central role. The high place of the guest with regards to the Humr is indicated by the fact that the availability of a big shady tree under which he is received is a major determining factor in the choice of the camp site.

The guest occupies a similar high position among the Rashaidaa tribe. His reception and entertainment is a very special honour which the households of the camp compete in order to attain. In this respect the Rashaidaa differs from the Beja and Humr as the entertainment of the guest for them is undertaken and takes place within the boundaries of individual households. The spaciousness of the Rashaidaa tent permits this type of hospitality, and with slight modification provides overnight staying accommodation for the guests.

The Rashaidaa household is obliged to receive guests even during the absence of its male head. Yet, the honour of entertaining the guest is not restricted to a single household as he rotates and sojorns with other households during his stay in the camp. Thus, in this way the commitment of hospitality is shared by the whole camp,
but in an individual serialised manner rather than a collective one, like the Hadendowa and Humr tribes. The system of accommodation of the guests amongst the Rashaidaa could be linked to some of their salient social characteristics and cultural values; such as their individuality, the prominent role of their women in the society, their indifference towards segregation of women, and most importantly their Bedouin style generosity.

The Kababish tribe has many similarities with the Rashaidaa, with regards to the reception and entertainment of guests. For them one's household is the right place for the fulfilment of such obligation, and generosity in this case brings honour to it. Although it is considered shameful among them to wait in somebody's household in order to have a meal it is also shameful to deny a guest that meal. On the contrary the host is supposed to press his guest to stay. The Kababish man prefers to borrow in order to provide enough food in his household to feed the guest.\(^{(114)}\) Such attitudes and values, together with its associated practice of generosity, could be linked to the high degree of independence of their households, as well as the weak social ties amongst them due to the inexistence of a system of clanship within the social organisation of the tribe.

In conclusion, it is clear that the Sudanese tribes accommodate their guests in different ways. This can be attributed to the varying manners in which these tribes are segmented in terms of various social units i.e. clans, lineages and extended families. It can be attributed also to the different social values and norms
regarding aspects such as protection of woman and child rearing. The variable ways of accommodating guests is one of the main reasons behind the variety in the planning and design of Sudanese traditional dwelling environments.

3.3.3. THE ACCOMODATION OF SOCIAL INSTITUTIONS AND CULTURAL ACTIVITIES.

The emphasis of communal life and the role of social institutions vary amongst the tribes of the Sudan from recreational to educational, to legal, to religious aspects. Moreover, the significance of each of these institutions varies also from one tribe to another. For example, the Quranic school plays a central religious, educational, and social role for the Hadendowa tribe. It introduces the children to the Arabic language and Islamic religion. It also contributes substantially in disciplining children at an early age. In addition, this school plays also an important social role. As it is used as a guest house for all camp community. It brings the children of the camp in contact with visiting tribesmen. Due to all this, it occupies a prominent place in the communal, social and cultural life of the tribe.

The Quranic school rarely exist in the nomadic camps of the Rashaidaa who were Islamised many centuries before the Hadendowa. This is because the children of the tribe receive their first lessons in the Islamic religion and Arabic language (115) from their fathers, and are disciplined by members of their extended family. It is also because guests are accommodated in individual households and
not in public places like those of the Quranic school. Furthermore, it is because the tribespeople do not perform the prayers collectively, which is one of the reasons behind establishing this school. (116)

With respect to religion, both the Dinka and Nuba tribes are animistic peoples who believe in spirits and their supreme power. As part of this belief system they build shrines at which they present offerings to please the spirits. Besides the private shrines at their houses, the Dinka have communal ones which take form of an old tree located the centre of each settlement. In this respect, the system of the Nuba resembles that of the Dinka but with a very important difference; each clan section in the Nuba village has its own communal shrine which is installed in a compound inside its neighbourhood. The distribution of the shrines in this manner is in line with the cultural norms of the tribe which requires that the communal and social activities of each clan should be performed in the part of the village which it inhabits. Due to this, each clan of the tribe ensures some level of privacy during the love festivals which form an important part of these communal activities.

The public places in the Hadendowa settlements acquire special importance due to the fact that they consider the households as an exclusively women's domain during daytime. As a result of this, the men have to spend the day loitering around in the Khalira or at the guest tree. The area at the guest tree is also the centre of more serious affairs; that is when it becomes the meeting place for the settlement of the disputes amongst members of the camp. In some
occasions, this judiciary role is extended to settling disputes between various clans of the tribe about grazing and watering. Thus, here, the guest tree functions as a court's chamber.

A public central place in the villages of the Dinka - a spacious shady clearing - plays a similar judiciary role to that of the Hadendowa's guest tree. However, the open court of the Dinka differs in certain significant ways from that of the Hadendowa. That of the Dinka serves the whole village with all its various clans. Accordingly, each village is served by a single central court. On the other hand, that of the Hadendowa is intended mainly to serve one lineage which live together in the camp. The open courts of the two tribes also differ in the categories of people permitted to attend and take part in their proceedings. While that of the Hadendowa is restricted only to those involved in the case and the elderly of the camp, the one of the Dinka is open to all the inhabitants of the village of both sexes who can take part in its proceeding if the need arises. This open nature of the Dinka court, besides the wide range of cases delegated to it, justifies its demand for a large open space at the centre of each village. On the other hand the closed nature of the Hadendowa court reflects on its spatial requirements; as it is neither central nor space demanding.

The settlement of disputes between members of the Rashaidaa camp, and those camps living nearby, does not take place in a public place in the camp. It is dealt with by the senior man of the camp inside his tent. The settlement of such matters in this private place, which is closely surrounded by the tents of the close
relatives of the senior man, is very important for his protection and the firmness of his management.

The examination of certain tribes reveals that their needs with regards to the communal and social land uses varies according to some cultural variations. The examination also reveals that the fact that some tribes use the same kind of public places, does not necessarily mean that their demand for public space for this purpose is similar, or that the planning of their settlement is identical. Due to cultural differences, similar kinds of communal activities may demand different space standards and overall planning patterns. Such variation reflects remarkably on the demand for both private and public space. It also affects the general planning of dwelling space.

3.3.4. THE ACCOMODATION OF THE EXTENDED FAMILY.

The extended family type of household is very common among the tribes of the Sudan. For some of them, like the Kababish and Nuba whose ideal is the elementary family, it is a transient stage in the life of the household and resort to it is mainly for economical reasons. Yet, for many tribes, the extended family is regarded as a major component and institution of the socio-cultural system. Its vital and supportive role is evident in both the economical and cultural life of those traditional societies.

Regarding the Nubians and Rashaidaa, the extended family household plays an important role in supporting the economy by
facilitating migration of men for work abroad. For the Humr, the role of this household is of a dual, socio-economic nature. The incorporation of a needy kinsman in such a household ensures him maintenance and provides the household of a widowed or divorced woman with a male head. The significant role of extended family in the cultural life is evident in the case of two indigenous Sudanese tribes; the Beja and Nubians. Its contribution, together with their maternal family system, is considered substantial in the conservation of their culture as the children of a non-tribesman who marries from them are brought up within the extended family household.

Polygamy is an important factor behind the adoption of the extended family household. Yet it is also adopted by tribes among whom the men rarely marry more than one wife; such as the Beja and Nubians. For those tribes, the household is ideally made up of the father, his married daughters and their families. On the other hand, the households of the Nuba and Rashaidaa differ from those of the Beja and Nubians in two major aspects as they are both polygamous patrilineal societies. For the Rashaidaa the married sons of a man should not only reside with him in the same household, but should also physically encircle him. The composition and membership of this type of household is just one aspect of divergence between the types adopted by various Sudanese tribes. Another important aspect is the nature of the relationship between the elementary family living together as one household. Each one of these elementary families enjoys a great deal of independence and individuality in spite of the extreme physical proximity and the few barriers which separate
their tents. The spatial arrangement of the house in this manner is imperative for the caretaking and supervision of the family.

The household arrangement with regards to the Hadendowa tribe is contrary to that of the Rashaidaa. The tents of the elementary families are separated from each other by wide distance. This is not an indicator of social distance between these households, as they enjoy strong family ties and high level of co-operation. It is rather an indicator of the great concern of the Hadendowa about the privacy of their women even with regards to their very close kinsmen. This concern is also shared by the Humr, although the tents of the elementary families are set up closer to each other in their camps. Like the Hadendowa, the tribespeople control and regulate interaction between the opposite sexes of the extended family and the whole camp by using special communal places such as the guest tree and the young and unmarried men's shelter. It is through these that the Hadendowa and Humr manage to enjoy a great deal of cooperation between the elementary families living in their camp with very little sacrifice of the privacy of their women.

From all this it becomes clear that the agreement of many Sudanese tribes in adopting the extended family household type is by no means an agreement of a single house plan. Cultural factors operate and affect the composition of the household, as well as the relationship between the houses of the elementary families living there. The expression of all this is not only noticeable in the house types of those tribes, but also in the overall planning of their camps and villages.
As a result of the accommodation of the extended family, the house is usually composed of several huts or tents. In this case, cultural ideals often set up certain axis for the development of the house. As for those of the Humr and Rashaidaa the tents are pitched besides each other, forming an arc for the first tribe and a straight line for the second one. The axis of the Kababish extended family household run at right angles to those of the two above mentioned tribes; as the tents are pitched either infront of or behind each other. There are also religious and cultural values underlying the axis of house development. All these factors strongly affect the shape of the plot of land required for accommodating the extended family.

3.3.5. THE ACCOMMODATION OF CO-WIVES.

Many tribes in the Sudan permit marriage for several wives for religious or cultural reasons. In some cases, such as that of the Dinka tribe this is not only permissible but even obligatory. Moreover, polygamy for some tribes take another form; such as the Nuba among whom a woman cyclically marries many husbands. The effect of polygamy on house design differs from a tribe to another. This is evident in the diversity of the house layout of those adopting it. More than one variable are behind the variety in the house layouts. The number of wives a man is permitted, or obliged, to marry is an important variable. Equally important is the nature of the relationship between the co-wives, as well as the required conditions for their co-residence within the same house. As a response to these variables, the huts of the co-wives of the Dinka
men are located around the central courtyard in such a way that they can collectively serve the household. Moreover, the effect of the Dinka system of marriage goes beyond the limits of their individual houses. This is evident in the special social and family links between the various houses accommodating the large number of his co-wives living within the same camp.

The number of co-wives a Rashaidaa man can marry is limited by the Islamic religion to four. In response to another religious demand, which requires that a husband should treat his co-wives equally, their tents are set along a linear plan. This house layout is more compatible with the traditions and norms of the tribe; which grants each co-wife of a man a high degree of autonomy and independance. This kind of relationship between the co-wives renders the linear type of development as an appropriate one for the Rashaidaa tribe.

The effect of polygamy on the layout of the Nuba, the tribe who practice it in two different forms, is unlike that on those of the Dinka and Rashaidaa. In spite of their adoption to a central courtyard house type - a convenient one for the accommodation of co-wives within the same household - this house is inhabited by an elementary family. The co-wives of a Nuba man reside, each, in a separate house. This pattern of residence could be regarded as a reflection of the instability of marital life and fleeting nature of the family relationship between these co-wives.

It is clear from the review of the house types of these three
tribes that there is little agreement about the house layout even amongst Sudanese polygamous societies. The diversity of these layouts shows the strong importance of cultural values and social norms on regulating social relations between the co-wives of a man and consequently the spatial relationship between their houses.

3.3.6. THE TRADITIONAL SUDANESE POLICIES TOWARDS DWELLING SPACE:

CONCLUSIONS

It has become clear that the Sudanese tribes generally pursue different policies towards matters concerning organization of dwelling space due to disagreement in their cultural and social values which are associated with housing environment. The variety in traditional environments is clearly reflected in the varying space requirements, different residential land uses, i.e. private and public places. It is also shown in the different manner in which these land uses are related to each other. Both aspects are manifested at all levels of dwelling space, whether it be a single room in a house, an individual housing plot, or a whole neighbourhood.

Social norms and values determine the space requirement of the smallest type of dwelling space - a single tent or hut intended for the habitation of an elementary family. Exclusion, or inclusion of certain kinds of accommodation from that room - such as that required for the sleeping of young offspring, receiving of guests, and cooking - remarkably affects its size.
The size of a housing plot is similarly affected by these values and norms, as they play a major role in determining the size and number of elementary families who are allowed to live there. Their role in fixing the number of wives a man can marry, and the categories of relatives he is obliged to accommodate within his household, are but a few examples. Yet these values and norms also affect the size of the housing plot in another way, as they permit or prohibit the sharing of facilities by the families of the same household such as the kitchen, guest room and young men's and women's room.

Social values and norms affect the interaction between the huts and tents inhabited by various families living within the same housing plot. Demands for maximum cooperation, by some societies, necessitates the close proximity of these spaces. On the other hand, the requirement for high levels of privacy, by other societies, may demand the wide separation between private space used by each family. In both cases the demand of space for housing plots is affected.

Cultural ideals also affect the shape and proportion of housing plots by setting up certain axes for its development. This spatial requirement is more clear in the house types which accommodate the extended family. The Rashaidaa and Kababish house types illustrate the two main axis which the development of a house should follow. In response to this, the tents of the Rashaidaa are pitched beside each other. On the other hand, those of the Kababish are set up in front of, or at the back of, each other.
Public places play an extremely important and complex role in the cultural life of traditional societies, as they provide the setting for a diversified type of activities. Accordingly, they are immensely affected by cultural differences. This is evident in the fact that certain highly significant places for one cultural group may not exist at all in the housing areas of other groups. Thus, this variation is substantially reflected on the demand for public space.

Public places are regarded by certain cultural groups as an extension of the house, as they provide accommodation for the young men and women, unmarried men, and guests. Their role in such cases grants them special significance as this type of communal place is usually associated with high social objectives; such as early initiation of the boys into manhood and maintenance of high levels of privacy for women. The accommodation of these family and kins groups in this way reduces the demand of space for individual houses or tents. The planning of the camps and design of the tents of, both, the Hadendowa and Humr tribes is a clear example of this.

The effect of cultural variations on public places is not only restricted to the demand for public space, as it also extends to the layout and distribution of this space. Certain cultures demand the provision of the housing area of each section of the tribe with a separate set of public places. A clear example of this is the planning of the compact villages of the Nuba. Yet still, there are some types of public places which are distributed in an extremely different pattern. A good example of this is the big single public
open space located at the centre of the Dinka villages which accommodate, besides some other functions, their famous open court. The function of the court here is strongly linked to both the size and singularity of that open space. Thus, the replacement of this open space with smaller ones at several neighbourhoods will diminish the role of the court, at least, by restricting the number of its attendants. According to these examples it becomes evident that different cultures demand different patterns of distribution and layout of public places in housing areas.

The examination of the six tribes, in this chapter reveals the remarkable variation between them with respect to numerous characteristics pertaining to their social, cultural, religious, political, economical, and other tribal systems. Moreover, the examination also establishes the strong link between the requirements of those systems and dwelling space with regards to both its amount and layout. The primacy of investigating the specific needs of various cultures for dwelling space is because this space is strongly integrated with their traditional systems, i.e. social, religious. The complexity of the question pertaining to this kind of space, which is revealed in this chapter, is based on examining six tribes only. The extreme complexity of this problem with regard to the case of the whole Sudanese people could be measured by the vast number of socio-cultural groups inhabiting the country.

The assessment of official dwelling space policies can not be based only on examining Sudanese tribes as they pursue their
traditional lifestyles in rural areas. The official policies are aimed mainly to control development in urban areas. Accordingly, to assess them in an appropriate way, these tribes should be examined as they live in urban areas where planning and housing development is implemented and controlled by official practice. This task will be undertaken in the next chapter.

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Fig. 3.1. THE TERRITORIES OF THE HADENDOWA AND RASHAIDAA TRIBES IN THE EASTERN REGION OF THE COUNTRY.
(Source: YOUNG, W.C., "The Effect of Labour Migration on Relations of Exchange and Subordination among the Rashaidaa Bedouins").
Fig. 3.2. THE A'AMRAI FARIG - THE HADENDOWA NOMADIC CAMP WHICH WAS INVESTIGATED BY SALIH. (Not to scale).

KEY:

A Tents where elementary families live.

Shrubs.

Woods boundary.

Fig. 3.3. PLAN SHOWING THE LAYOUT OF THE FURNITURE AND BASIC DOMESTIC APPLIANCES INSIDE THE HADENDOWA TENT. (Not to scale).

KEY:
1- Tent entrance.
2- The floor mat where the women do their housework.
3- The bed side of the tent.
4- The bed side of the husband.
5- The bed side of the wife.

(Source: The author)

Fig. 3.4. LONGITUDINAL AND CROSS SECTIONS IN THE HADENDOWA TENT SHOWING THE USE OF INTERNAL SPACE AND AVAILABLE HEADROOM. (Not to scale).

KEY:
1- Daytime activities.
2- Sleeping part.
3- Right hand side of the tent.
4- Left hand side.
5- Entrance.
6- Openings underneath the tent walls.

(Source: The author)
Fig. 3.5. THE MAJOR COMPONENTS AND SPATIAL ORGANIZATION OF THE HUMR CAMP.

(Not to scale)

KEY:
1- The tent in which the elementary family lives.
2- The boundaries of the extended family household.
3- The daraa and hearth where young and unmarried men live.
4- The guest tree.

Fig. 3.6. THE TENT OF THE HUMR: PLAN

(Not to scale)

KEY:

1- The entrance.
2- The area in which the woman of the house sits on a floor mat during the colder times of the year to do her housework and entertain womenfolks.
3- The big bed where the husband and wife sleep with their small children.
4- The tent boundaries.

(Source: based on the reports of informers)
Fig. 3.7. THE MAJOR COMPONENTS AND SPATIAL ORGANIZATION OF THE KABABISH CAMP.  
(Not to scale)  

KEY:  
1- Well-field located in the bed of a seasonal stream.  
2- Permanent settlements of grass including shops and sometimes a small clinic.  
3- Tents.  
4- Boundaries of the grazing area earmarked for the camp.  

Fig. 3.8. THE KABABISH HOUSE (DAR): A BIRD'S EYE VIEW

(Not to scale)

KEY:

1- The tent of the household head elementary family.
2- The cooking fire enclosure.
3- The tent of the newly married daughter of the household head.
4- The shady tree under which the men sit and entertain their guests during the summer days.
5- The shelter of the servants or the parents of the household head.

(Source: ASAD, T., "The Kababish Arabs ...", op. cit., complemented by the reports of informers).
Fig. 3.9. THE TENT OF THE KABABISH: PLAN

(Not to scale)

KEY:

1- The floor mat on which the men of the house spend the day and entertain their guests during the cold parts of the year.
2- The big bed on which the household head, his wife and small children sleep.
3- The shaded area in front of the tent where the men sit and entertain their guests during summer time.

(Source: based on the reports of informers)
Fig. 3.10. THE S.E. NUBA HOUSE TYPE: PLAN AND SIDE VIEW
(Not to scale)

KEY:

1- The central courtyard.
2- The hut where the household head sleeps with his wife and his small children.
3- Kitchen.
4- Store.
5- Entrance hall.
6- Outdoor cooking area.
7- Entrance.
8- Paved walkway linking the house to those nearby.

Fig. 3.11. THE TYPE OF HUT USED BY THE S.E. NUBA: PLAN AND SECTION.
(Not to scale)
(Source: based on writings about the tribe and the reports of informers).
Fig. 3.12. THE STRUCTURAL SYSTEM SUPPORTING THE TENT OF THE RASHAIDAA: A SIDE VIEW

(Not to scale)

(Source: the author)

Fig. 3.13. A PLAN SHOWING THE SPATIAL ORGANIZATION INSIDE THE RASHAIDAA TENT. (Not to scale).

**KEY:**

1- The floor mat where the women cook and do their housework.
2- The bed where the couple sleep with their children.
3- The area where small animals and firewood are kept.
4- The area where baggage and food rations are stored.
5- The location of the stove.
6- The line of the dividing curtain which separates the guest quarter.
7- The line of the tent roof.
8- The line of the tent vertical supports.

(Source: The author)
Fig. 3.14. THE SPATIAL ORGANIZATION OF THE RASHAIDAA DRY SEASON CAMP. (Not to scale).

KEY:

C.C. The camp centre.

Boundaries of extended family households.

1- The first ring.

2- The second ring.

3- The third ring.

The tents of the senior man household.

The tents of the patriline of the senior.

The tents of the affines of the senior.

The tents of the distant relatives of the senior and camp members who are not related to him.

The tents of non-camp members.

Fig. 3.15. SHOWING THE NATURE OF THE SOCIAL RELATIONS LINKING THE VARIOUS CATEGORIES OF RESIDENTS IN THE RASHAIDAA DRY SEASON CAMP. (Not to scale).

KEY:
A- The domain of household of the senior man.
B- The domain of the patriline of the senior.
C- The domain of the affines of the senior.
D- The domain of the distant and non-relatives of the senior.
E- The domains of non-camp people.

Unconditional support.
Calculated relationship based on reciprocity.
Envy.
Emnity and competition.

(Source: YOUNG, W.C., "Heterodoxy and Reform Among the Rashaidaa Bedouins", op. cit.)
Plate 3.1. The community shrine of the Dinka is located at the centre of their settlement.


Plate 3.2. An aerial photograph of a Dinka settlement showing a house surrounded by the fields of the household.

(Source: RYLE, "Warriors of the White Nile ...", op. cit.)
Plate 3.3. In certain areas of the Dinka territory the tribespeople live in a hut constructed of a conical thatch structure supported directly on the ground.  
(Source: RYLE, op. cit.)

Plate 3.4. In the Dinka extended family household the children of all the co-wives sleep together in one hut.  
(Source: RYLE, op. cit.)
Plate 3.5. The Dinka family encourages their girls to meet their boyfriends and suitors inside the house.  
(Source: RYLE, op. cit.)

Plate 3.6. A clearance under a big shady tree in the centre of the Dinka settlement provides the setting for the discussion of, among other matters, the bride's wealth of the community girls.  
(Source: RYLE, op. cit.)
Plate 3.7. The Dinka settlement tribunal convenes in a shady clearance located in the centre of their village.

(Source: RYLE, op. cit.)

Plate 3.8. To please the spirits, the Dinka hang offerings at the community shrine located in the centre of their settlement.

(Source: RYLE, op. cit.)
Plate 3.9. In certain occasions, such as funerals, the Dinka organize dancing and drinking parties at their community shrine.

(Source: RYLE, op. cit.)

Plate 3.10. The dancing and drinking parties form an important part of the Dinka social occasions and community celebrations.

(Source: RYLE, op. cit.)
Plate 3.11. In the Gash Delta the Hadendowa camps are large in size and may be inhabited by up to seventy households.

(Source: the author)


(Source: the author)
Plate 3.13. The group of tents inhabited by the Hadendowa extended family are set up far away from those of other similar families in the camp.
(Source: the author)

Plate 3.14. The tents of the Hadendowa extended family are separated from each other by a minimum distance of five or six metres.
(Source: the author)
Plate 3.15. Hadendowa young and unmarried men at their shelter in a nomadic camp located at the outskirts of Kassala.

(Source: the author)

Plate 3.16. The Khalwa in the Hadendowa camp is located far away from the tents where the women stay.

(Source: the author)
Plate 3.17. The Hadendowa nomadic Khalwa is constructed of woven straw roof and walls supported on a structural frame made of tree stems and branches.

(Source: the author)

Plate 3.18. By furnishing the Khalwa with floor mats, the Hadendowa camp community provide a place for teaching the children and accommodating the camp guests.

(Source: the author)
Plate 3.19. The tent of the Hadendowa

(Source: the author)

Plate 3.20. The front part of the Hadendowa tent is covered by a floor mat on which the woman of the house does her housework and receives her womenfolks.

(Source: the author)
Plate 3.21. The rear part of the Hadendowa tent is occupied by a big raised bed on which the man of the house sleeps with his wife and very small children.

(Source: the author)

Plate 3.22. The structural frame on which the roof and walls of the Hadendowa tent is fixed is supported on vertical members made of tree stems.

(Source: the author)
Plate 3.23. The roof and walls of the Hadendowa tent, which are made of straw mats, are fixed to a frame of bent tree branches.

(Source: the author)

Plate 3.24. Hadendowa women covering the structural frame of the tent of their household with straw mats.

(Source: the author)
Plate 3.25. The entrance of the Hadendowa tent is located at a low level.

(Source: the author)

Plate 3.26. The availability of a big tree in the area is considered a determining factor for choosing the location of the Humr camp, as the guests of the camp are received and entertained under the shade of this tree.

Plate 3.27. The tent of the Humr.

(Source: CUNNISON, "Baggara Arabs ...", op. cit.)

Plate 3.28. The tent of the Kababish

Plate 3.29. Large number of the inhabitants of the Kababish camp meet at the well-fields centre.

(Source: ASAD, ibid)

Plate 3.30. The permanents shops is one of the major components of the Kababish camp.

(Source: ASAD, op. cit.)
Plate 3.31. Among the S.E. Nuba both young men and women go naked until their bodies are no more lean and beautiful.

(Source: RIEFENSTAHL, L., "People of Kau", Wm. Collins Sons & Co. Ltd., 1976)

Plate 3.32. Among the S.E. Nuba young men and women go naked until their bodies are no more lean and beautiful.

(Source: RIEFENSTAHL, ibid.)
Plate 3.33. The naked and anointed body of the girls adds a special dimension to the S.E. Nuba dancing parties and love festival.

(Source: RIEFENSTAHL, op. cit.)

Plate 3.34. The naked and painted body of the young men is of an important effect in the S.E. Nuba wrestling competitions.

(Source: RIEFENSTAHL, op. cit.)
Plate 3.35. As part of the S.E. Nuba love festival the women, both married and unmarried, publicly choose their future lovers.

(Source: RIEFENSTAHL, op. cit.)

Plate 3.36. The villages of the S.E. Nuba are built on hilly sites.

(Source: RIEFENSTAHL, op. cit.)
Plate 3.37. The S.E. Nuba hut is small in size, and has a tight raised entrance and this does not encourage interaction inside it.

(Source: RIEFENSTAHL, op. cit.)

Plate 3.38. The cloth of the Rashaidaa tent is held in position by a set of vertical supports and suspension ropes.

(Source: the author)
Plate 3.39. To accommodate the guest inside their tent, the Rashaidaa divide the tent by a curtain in order to create a separate guest quarter. (Source: the author)

Plate 3.40. The tents of the co-wives of the Rashaidaa man are set up side by side, forming a row. (Source: the author)
Plate 3.41. The tents of the co-wives of a Rashaidaa man and those of his married sons are set up close to each other forming a cluster.

(Source: the author)

Plate 3.42. The tent of a migrating Rashaidaa man is opened up to allow members of his extended family to supervise and protect his elementary family.

(Source: the author)
CHAPTER FOUR

THE IMPACT ON SUDANESE TRADITIONAL SOCIETIES OF THE CURRENT OFFICIAL DWELLING SPACE POLICIES: AN ASSESSMENT.

4.1. INTRODUCTION.

This chapter assesses the impact on traditional societies of official Sudanese dwelling space policies. The chapter is divided into two main parts. The first one analyses the effects of applying the rigid policies on a sample of various tribes which are examined in Chapter Two and Three. This is aimed at identifying the reasons behind the variation in suitability for those tribes of similarly planned housing areas. It also examines the various problems resulting from the variation in demand for space by those tribes at different levels of dwelling environment.

The second part of the chapter summarizes conclusions and proposes recommendations about the provision and organization of dwelling space. Conclusions are drawn about how the application of the policies creates various serious problems, and thus defeats many of the objectives towards which they are aimed. Conclusions are also drawn about the problematic philosophical viewpoint underlying official policies and practice. Recommendations are then made for an alternative approach towards dwelling space based upon a more appropriate philosophical position. This in turn leads to identifying an environmental model which is more suitable for addressing the cultural diversity of the Sudanese people. With these recommendations, the chapter paves the way for the following ones.

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which are dedicated to the exposition and testing of both the recommended philosophical approach and environmental model.

4.2. THE IMPACT OF THE OFFICIAL POLICY AND PRACTICE ON THE TRADITIONAL SUDANESE SOCIETIES: AN EXAMINATION.

Assessment of the official policy of dwelling space towards traditional societies, the main objective of this chapter, is undertaken through the identification of negative effects generated by the practice ensuing from this policy. Assessment here is primarily based on observing the impact of official practice on seven Sudanese tribal groups whose cultures, traditional settlement types and house forms, have already been investigated in Chapter Two and Three. The assessment is also based on the expected responses of those tribes towards the practice. Observation of the Hadandowa Beja and Rashaidaa tribes draws mainly on first hand experience while those pertaining to the other tribes are mostly based on second hand experience. Observation of the tribes focuses on their lifestyles in the several urban and suburban centres in which they live. The Dinka are observed in towns like Wau, Gogrial, Tonj and Awecriol; the Hadandowa in Kassala and Waggar; the Kababish in Sodari; the Nuba in Kadugly and Al Dallang; the Nubians in the major town of New Halfa, as well as, in their re-settlement villages; and the Rashaidaa in some of their housing areas in Kassala.

For convenience the model of an individual income class residential area (Fig. 1.4), which is cited by Ahmed as part of his investigation appraising the housing policy during the Ten Year
Development Plan 1960/70, (1) is used here for assessing the impact of several levels and aspects of the overall housing environment on traditional societies. Although the model was intended for a specific Development Plan and income class it could be considered in principle — as a hierarchy of residential areas served by a hierarchy of open spaces and public facilities — as representative of the practice at the present time. Assessment of the policy and practice here is based not only on this model but also on the planning of actual schemes implemented to accommodate groups from the tribes cited above.

Assessment of the policy through identification of the negative effects of the practice ensuing from it is undertaken at several levels of the overall housing environment. It starts with the high level of large scale housing projects which involve more than one of the different income class residential areas, and ends up with the relatively low level of the housing block and individual plots which constitute it. Throughout these levels, the negative effects of policy and practice are identified with regards to both public and private categories of space.

4.2.1. THE IMPACT OF THE PLANNING OF LARGE SCALE HOUSING PROJECTS WHICH CONSTITUTE DIFFERENT INCOME CLASS RESIDENTIAL AREAS.

Large scale housing projects which are composed of different income residential areas may accommodate socially related allottees in different areas if they are not consistant in their economic
status. This ensues from the policy of classification of housing land which is based on the income variable alone. This housing pattern is evident in many housing areas throughout the country. The main scheme of Banat in Kassala which accommodates Hadandowa, Rashaidaa and many tribes from the northern Sudan is one example. Housing schemes in Babanousa also accommodate dispersed households from Humr, Dinka, Nuba and many other tribes together. Awecriol in the southern part of the country also presents an example of this housing pattern, where households from the Dinka, other Nilotic and non-Nilotic southern tribes are accommodated together.

Separation of socially related households within different income class residential areas is usually aggravated by more than one factor. The policy regarding distribution of income class areas privileges the areas of high income groups with central locations leaving those of the low income groups at the peripheries. The horizontal and sprawling developments characteristic of the case of the Sudan increases the distance between the centre and the periphery of many urban and suburban centres. Inefficiency of public transportation adds a further dimension to the separation of socially related households accommodated in different areas of those centres.

Co-operation between socially related households, a common characteristic of traditional Sudanese societies, is usually sustained by various family and social institutions. For the Dinka and Rashaidaa it is sustained by the extended family, for the Humr by the lineage and for the Hadandowa and Nuba by the sub-clan.
Co-operation may also be sustained by other kinds of social institutions which operate in certain public places, i.e. the Quranic schools of the Hadandowa, Zawias of the Kunuz and the herding camps of Beja. The effective operation of the latter kinds of institutions requires the grouping together of socially related households and their provision with common public space. Dispersal of those households in different residential areas may diminish the role of such kinds of institutions, and curtail co-operation between the households.

In the case of many traditional societies, co-operation between socially related households through certain communal institutions also involves very important processes of socialization and transmission of culture. The link between those processes and the co-operation between such households is demonstrated by the role of communal institutions like those operating in the public places cited in the previous paragraph. Curtailment of co-operation and reduction of the role of communal institutions may in this case impede the social life of the households associated with it.

Accommodation of socially related households in different residential areas may negatively affect their economy. This may ensue from the diminishing role of certain socio-economic communal institutions - such as the herding camps of the Hadandowa, Humr and Nuba - which have been referred to above. The significance of this role in the subsistence and economy of those tribes is evident in their life styles in towns like Kassala, Al Mugglad and Al Dallang.
Accommodation of socially related households in different residential areas may not create suitable circumstances for the development of communal residential facilities which are usually associated with public places like those of the Hadandowa and Nuba. Replacement of those facilities by individual ones at the housing plot will consume housing land and escalate the initial cost of housing areas. It will also increase the cost of individual houses.

The negative effects of accommodating socially related households in dispersed housing plots is dealt with in more detail as part of the examination of the lower levels of the housing environment in the following sections.

4.2.2. THE LEVEL OF THE GENERAL PLANNING OF OVERALL INDIVIDUAL INCOME CLASS RESIDENTIAL AREAS.

The negative effects which may be generated by the overall planning of individual income class areas, is discussed here with regards to the three patterns of ethnic constitution that may ensue from the planning, or re-planning, of those areas. The first pattern usually results from planning processes and leads to the accommodation of households belonging to the same ethnic group at dispersed housing plots. The second pattern usually ensues from re-planning processes and results in the accommodation of each of the several ethnic groups involved in the process together, at different parts of the residential area. The third pattern also ensues from re-planning processes and leads to the accommodation of a single ethnic group in the whole residential area.
a) The planning of residential areas which accommodate several ethnic groups at dispersed households.

Some of the negative effects which may ensue from dispersal of socially related households throughout the residential area have already been identified as part of the examination of the overall housing projects in the previous section (4.2.1.). Although the distance separating the households within the same area may not be very great, yet it can still curtail co-operation between the households. In this respect we cite an example from the social life of the Rashaidaa, among whom migration for work abroad by members of the extended family is organized on a rotational basis. According to this, the family of the migrant left behind is looked after by the remaining members of the extended family. Satisfaction of this obligation requires proximity, direct access and visual contact between the elementary families constituting the extended family household. A strong link between this spatial relationship and the social obligation is not only manifest in Rashaidaa nomadic camps, but also in many cases in their urban neighbourhoods, i.e. Mansoura and Mastura in Kassala (3) (Plates 4.7 to 4.3). Thus, dispersal of the households of this tribe throughout the residential area may disrupt their social life and curtail their economic activities by impeding migration which is considered a major pillar of their economy. (4)

Dispersal of closely related households throughout the residential area may also not permit them to have public open space in an appropriate way. This may consequently diminish the role of
some public places and socio-cultural institutions which operate at those open spaces, i.e. the Quranic schools of the Hadandowa Beja, the Zawias of the Mahas Nubians and the herding camps of the Nuba. The significant social, cultural, religious, educational and economical roles performed by those institutions are still evident in the urban lifestyle of the Hadandowa in Kassala (Plate 4.3), the Mahas in their re-settlement villages and the Nuba in Kadugly and Al Dallang. Thus, inability to accommodate ethnic groups such as these together around a public open space may negatively affect several aspects of their life.

The provision of secondary public open spaces indicates another negative aspect of the housing pattern which accommodates several ethnic groups at dispersed housing plots. An example of this is demonstrated by some housing schemes in Babanousa in which such open spaces are surrounded by households from the Dinka, Humr, Nuba and other tribes. The use of the open spaces, in this case for the accommodation of the social, cultural and religious activities of the community - which is one of the main objectives behind their provision - may be a complicated matter. This is partly due to the fact that the consumption of alcohol and the display of the naked body, which constitute basic elements of the religious and socio-cultural rites of the Dinka (Plates 4.4 to 4.5) and Nuba (Plates 3.34 to 3.35), are regarded as both anti-social and anti-religious by the Moslem Humr. Practice of the rites of the Nuba at the edges of some urban centres - like Omdurman (5) - as a means of avoiding such contradictions may not be appropriate, because some of these rites - specially the wrestling rehearsals - are usually associated
with the residential area of the sub-clan. (6)

b) The planning of residential areas which accommodate each of the several ethnic groups together at different parts of the area.

The expected negative effects of the planning of secondary public open spaces, with regards to this pattern of housing, is not dealt with in this section as it will be covered as part of the examination of the planning of small community areas and neighbourhood units.

In these residential areas which accommodate several ethnic groups together in the different parts constituting the area, the layout of the roads reflects little response to the ethnic characteristics of those areas. This is demonstrated by the New Halanga housing scheme in Kassala (Fig. 4.1) In the planning of this scheme the location of wide roads does not correspond to the social boundaries which separate the Beja groups from those who are of Nigerian origin. Wide roads are intended to ensure easy access to the central area of public facilities.

The typical general planning of Nubian re-settlement villages (Fig. 2.4) presents another example of the insensitivity of official practice towards the ethnic set-up of housing schemes. The layout of the roads of village 33, which accommodates at different parts groups from the three Nubian ethno-linguistic tribes, was made identical to that of the other villages each of which was aimed at housing groups from a single Nubian group. Provision of wide roads
in those three examples was primarily aimed at the satisfaction of functional and aesthetic objectives. To satisfy the former objective, the width of roads is chosen to ensure safe and easy access to the central area of public facilities. But this may result in the division of community areas inhabited by the same ethnic or social group – as is clear from the examples cited here. This may consequently lead to street accidents due to the expected frequent contacts between the people living across both sides of a busy road. In satisfaction of the aesthetic objective, the width of roads is employed in order to achieve a well-balanced and regular overall plan. The examples cited here demonstrate the satisfaction of such an objective at the expense of those pertaining to social requirements.

c) The planning of residential areas which accommodate a single ethnic group.

The negative effects of the practice, regarding the planning of residential areas which accommodate a single ethnic group mainly follow from the rigidity of the space standards of the large central area of public facilities. This is partly because this area is earmarked for a standard set of facilities – mostly government agencies. It is also attributed to the fact that the plot allocated for each facility is usually of a standard size because the facilities themselves are, in most cases, built according to a standard design. This is demonstrated by the space allocation in the central area of the schemes of the New Halanga (Fig. 4.1), Banat south (Fig. 4.2) and Mastura (Fig. 4.3) in Kassala.
The rigidity of space standards for these public facilities is not compatible with the variation in demand between Sudanese ethnic groups with regards to services which are provided at the central area - such as those pertaining to security, community administration, worship, shopping and recreation. Our assessment of the negative effects of the rigidity of the standards here will be pursued through the identification of the variation in demand between several ethnic groups for a specific set of public services.

The demand for space in the central area of a Dinka housing schemes may be increased by the requirement of a plot for their open court. Those courts operate at the present time and deal with a wide range of issues side by side with police stations and official court houses at several urban centres in the Dinka territory such as Wau, Gogrial and Tonj. Accommodation of the courts at the central area of public facilities is made necessary by their open nature and the fact that their jurisdiction extends to all the clans of the tribe who may inhabit the housing area. Due to this it is inappropriate to accommodate them at the secondary open spaces located at the community areas which may be inhabited by a single clan.

Convening of the traditional courts on a regular basis at the centre of the settlement - as in the case of the Dinka and the other Nilotic tribes - is not common among other Sudanese tribes. The courts of the Humr convene in the house of the chief of the settlement or any elderly respectable man, those of the Kababish in the settlement of the paramount chief of the tribe and those of the
The dancing parties of the Dinka may also increase their demand for space in the central area of public facilities, as the young people of all the clans inhabiting the settlement usually participate in them. In this respect those parties, which are considered of high social significance, are perceived as one of the means of promoting the most preferable matrimonial arrangement - which is the marriage between the different clans of the tribe. Unlike the case of the Dinka, in a Nuba settlement the central area of public facilities may not be the appropriate place for the accommodation of dancing parties because among this tribe they are associated with individual clans and usually take place at the open spaces located in their housing areas.

The settlement's shrine of the Dinka, which constitutes an important component of their system of divinities, may also increase their demand for space in the central area of public facilities. Its accommodation here is essential because it serves all the clans of the tribe who may inhabit the settlement. In this respect, the Dinka differ from the Nuba despite the close similarity between the religious beliefs of the two tribes. In the case of the Nuba, the settlement is usually served by the clan's shrines which are located in an enclosure in a public open space in the housing areas of each clan. Differences regarding the use and location of these public places of worship is evident in many urban centres in which those tribes live - such as Gogrial and Al Tonj in the Dinka territory and Kadugly and Al Dallang in the Nuba territory.
Demand of space for religious services in the central area of public facilities may also vary between Moslem tribes. It may be high for tribes like the Kunuz who practice popular Islam which centres around holy men and saints. The demand here is usually increased by the need for accommodating the shrines of the saints and the religious and social activities which revolve around them. Such practices are evident at the present time in New Halfa and many other Sudanese towns. But, on the other hand, demand for religious services in the central area may be very low for such tribes like the Rashaidaa among whom very few practice the collective prayers. This consequently diminishes their demand for Mosques as is evident now at their housing areas in Kassala.

Variation in demand for coffee houses may also affect the space requirement for the central area of public facilities. They are very popular among such tribes like the Kunuz and Mahas Nubians and the Hadandowa Beja as is evident from their lifestyles in the Nubian re-settlement villages and the Hadandowa neighbourhoods in Kassala. For the first two tribes, coffee houses are associated with smoking hubblebubble and locally grown tobacco and playing cards. For the third tribe it is linked to their ritualistic coffee drinking sessions. As most of the men and boys of the Hadandowa usually carry around with them their coffee making utensils, any shop verandah or shady tree in the market place may provide the setting for those sessions. For all those tribes popularity of the coffee houses could be linked to the custom of receiving guests at such places and thus securing high levels of privacy for the women at the houses. But for tribes who are not concerned about the
segregation of their women and who associate hospitality to the
guests with their household, demand for coffee houses may be very
low. This is indicated by the lifestyle of such tribes as the
Kababish and Rashaidaa and their low attendance at those public
places in towns like Sodari and Kassala.

Kindergartens and similar children's educational institutions
are usually allocated a plot in the central area of public
facilities. Demand for such institutions may also vary between
different Sudanese ethnic groups. If we consider the Quranic schools
- the counterpart of kindergartens and an important institution in
the life of Moslem rural societies - the demand for them is very
high in the Hadandowa and Beja housing areas in Kassala (Plate 4.1
and 4.2). Yet, the demand for the same kind of schools in the
Rashaidaa areas in the same town is very low despite subsidies from
some oil-rich states. The insignificance of the Quranic schools in
the life of the Rashaidaa is indicated by the fact that the few
which operate at their housing areas are located in the houses of
some pious men rather than in public places.

Adherence to rigid space standards for the central area of
public facilities, despite variations in demand for it between
different ethnic groups, is clearly indicated by the two housing
schemes of the New Halanga (Fig. 4.1) and Mastura (Fig. 4.3). This
may lead to overcrowding or under-utilization of the central area.
Overcrowding may curtail air movement and consequently endanger
public health. In addition, it may not permit accommodation of some
traditional community institutions and thus impede the social life
of the inhabitants. Under-utilization of the central area, on the other hand, may lead to unjustifiable sprawling of housing areas which consequently escalates the cost of the services component. It may also negatively affect the micro-climate of housing areas through the aggravation of the effect of direct solar radiation and sand storms. The importance of controlling those unwanted climatic effects is emphasized by the fact that most of the population of the Sudan live in the hot, dry and arid parts of the country as shown by Fig. 4.4.

4.2.3. THE LEVELS OF THE SMALLER COMMUNITY AREAS.

Examination and assessment of the planning at this level is based on the example shown in Fig. 1.4. which constitutes one of the environmental levels of the income class residential areas cited by Ahmed as representative of the practice during the Ten Year Plan 1960/70. (9) Although this level is not widely applied, yet it has sometimes been introduced specially for large scale schemes as an intermediate level between the overall housing area and the individual neighbourhood units.

The smaller community areas here are provided by a large central open area which is intended for the accommodation of a primary school and public open space. The space standards of those two land uses do not vary a lot from one residential area to another irrespective of the ethnic set-up of its inhabitants for reasons that have been previously stated in Chapter One and in the first part of this chapter.

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The rigidity of the space standards of plots earmarked for schools is demonstrated here by two housing schemes in Kassala: Mastura which was intended for housing the Rashaidaa, (Fig. 4.3), and New Halanga that was aimed at housing a predominantly Beja group (Fig. 4.1). The rigidity of the standards here is not compatible with the variable role and nature of traditional educational institutions in the life of these tribes. The highly important socio-cultural role of the Quranic schools of the Hadandowa is incomparable to the insignificant role of similar institutions for the Rashaidaa. (10) The Hadandowa Quranic school is used as a guest house and provides sleeping accommodation for the young and unmarried men; as such it secures a high level of privacy for the women in and around the houses. But the rigidity of the space standards for formal schools, considered together with the rigidity of the official roles assigned for them, may deprive the communities which they serve from vital social and cultural services - as indicated by the Hadandowa case here. Moreover, this may also increase the demand for space for housing plots, as in this case it has to provide accommodation for the young and unmarried men as well as the guests.

The socio-cultural significance of traditional institutions is also demonstrated by the Zawias of the Mahas which operate at present in their re-settlement villages. Besides its religious and educational role, the building of the Zawia is used as a guest house, social club and also provides partial accommodation for mourning and wedding occasions. The use of the Zawia during those occasions is very important because it facilitates the segregation
between the men and women who are normally restricted to the house of the family involved in the occasion - in compliance with certain Islamic religious requirements. Lack of consideration of the complex role of traditional educational institutions, through the adherence to standard plot sizes for schools, may deprive the Mahas of all those socio-cultural services.

The rigidity in the size of the public open space, provided together with the school in the central open area, is also incompatible with expected differences in demand for such a category of public space. For example, the demand is usually very high for the Nuba. If the small community area is inhabited by one of the Nuba sub-clans, most of their socio-cultural activities - dancing parties, wrestling rehearsals and other initiation ceremonies - are supposed to take place at this open space. Accommodation of those activities in the large area of public facilities located at the centre of the overall residential area may lead to violation of their traditional rules regarding the use of settlements; as members of some of the tribe's sub-clan may have to cross the community areas of other in order to reach the central area. As a consequence of all these socio-cultural activities and rules the demand for the public open space in this case is expected to be very high. It will be further increased because the wrestling and dancing parties of the Nuba are by their nature space consuming (Plates 3.34 and 3.35).

The Kunuz are another example of the ethnic groups among whom demand for the central open space of the smaller community areas may be high. If the area is inhabited by the same lineage, this open
space may accommodate their shrines together with all the religious, cultural, social and recreational activities which revolve around these shrines. The significance of the shrines here cannot be ruled out on the grounds that it is associated with burial sites in their traditional settlements because they may be erected in response to a dream or even by children. Moreover, the significance of the shrines cannot be underestimated in urban areas because this is at present evident in major towns like New Halfa. (11)

Judging by their cultural characteristics and lifestyles in urban centres - like Kassala and Sodari - we can infer that the space demand for the central public open space of the small community areas may not be high for tribes like the Rashaidaa and Kababish. The practice of Islam by both tribes does not entail erecting of shrines or celebrating Saints' days - the kinds of activities which usually occupy such open spaces. Moreover, with regards to both tribes, the social entities of the clans and sub-clans, (12) and the feeling of belonging to them, is either non-existent or very weak. This consequently diminishes the demand for space to accommodate the socio-cultural activities associated with such social groups which may inhabit the small community areas.

This comparison between the Hadandowa and the Kunuz, on the one hand, and the Kababish and Rashaidaa on the other, reveals the variation in the space requirement for the central public open spaces. Adherence of the official practice to rigid space standards for these open spaces, despite such variations, may either lead to their under-utilization or overcrowding. Both cases may consequently
endanger the whole residential area with environmental, public health, economical and social problems similar to those cited above in connection with the same levels of utilization of the central area of public facilities of the overall income class areas.

The expected negative effects ensuing from the rigidity of the layout of the roads and the lack of response to the social characteristics of the inhabitants has already been referred to as part of the examination of the overall income class areas. But regarding the roads inside the small community areas, there may be also a need to link their widths with social characteristics. For example in the case of the Nuba, it is essential to provide wide roads between the neighbourhood units accommodating their different sub-clans. They will here serve as potential cues to regulate the use of the overall housing area. Yet, this arrangement may not be suitable for a Dinka settlement, because in such a situation, and in satisfaction of an important objective, the general planning must be geared towards the integration of the various clans and sub-clans accommodated at different neighbourhoods in the area.

Despite the importance of linking the width of roads to the social characteristics of the inhabitants, the official policy and practice are now mainly geared towards the satisfaction of another limited set of objectives. One of the objectives is of an environmental nature as it deals with the relief of congestion inside housing areas. Another one is of a functional nature because it is concerned with the accommodation of the expected traffic. A third objective is of an aesthetic nature as it aims at achieving a regular well balanced overall planning.
The high concern of the policy and practice with achieving these functional and aesthetic objectives at the expense of those pertaining to the social characteristics of the inhabitants is illustrated by the layout of the roads in the housing schemes of the New Halanga (Fig. 4.1) and Mastura (Fig. 4.3) in Kassala. In both schemes the wide roads are mainly intended as feeder roads which serve the central area of public facilities. The ensuing general layout of the schemes, though very regular in geometrical terms, is incompatible with the ethnic set up of the inhabitants.

The lack of sensitivity of the policy and practice towards the important role of the layout of roads in creating the appropriate socio-spatial environment may negatively affect the life of the inhabitants in more than one way. It may confuse and complicate the use of the housing areas - as has been indicated by the case of the Nuba. It can aggravate friction between the branches of a tribe - in a similar way to what happened to the Baraasaa and Baratiehk Rashaidaa in Kassala. At the same time, dividing a community area inhabited by a closely related group with a wide busy road - as is indicated by the planning of the New Halanga - may weaken the social ties within the group. It may also cause street accidents due to the expected frequent contact between the people living at both sides of the road.

4.2.4. THE LEVEL OF THE NEIGHBOURHOOD UNITS.

The neighbourhood unit type shown here constitutes one of the environmental levels of the model cited by Ahmed and referred to
above. The capacity of the unit is 42 housing plots and the area of each plot is 300 sq. m. The area of the whole unit is approximately 8 acres and is served by a central public open space 2,400 m. sq. in area.

As with the two environmental levels examined above the neighbourhood units discussed here refer to the one cited by Ahmed in the model of the practice during the 1960/1970's (Fig. 1.4).

The central public open space of the neighbourhood unit may be overcrowded if it is used for housing a sub-clan from the Nuba tribe because it has to accommodate their dancing parties, wrestling rehearsals, together with the compound earmarked for religious rites. Moreover, the open space may also have to accommodate some residential facilities - i.e. their herding camps. As a consequence of this, an open space which measures around 240 sq. m. may have to accommodate the socio-cultural activities and residential facilities of a community of about forty two households. Overcrowding in this case will be further aggravated because of the types of activity performed in it which are by their nature space consuming.

The public open space located at the centre of the neighbourhood unit plays an important role in the life of some tribes in the urban areas in which they live. Due to its direct spatial relationship with the houses that surround it, it is most appropriate for the accommodation of the communal residential facilities as in this case it can serve and be served by those
houses more conveniently. Those facilities are exemplified by the Quranic schools of the Hadandowa Beja which operate at their housing areas in Kassala (Fig. 4.1 and Plate 4.7) and some other urban centres and the Zawias of the Mahas Nubians evident in their re-settlement villages in the New Halfa area.

The high concern of certain tribes – like the Hadandowa – about receiving the guests in the Quranic school rather than their house casts some doubt on the appropriateness of the central open space for the accommodation of those schools. Their accommodation here will bring in strangers to the centre of the neighbourhood; thus defeating one of the main objectives behind the adoption of those schools which is the security of high levels of privacy for their women in and around the houses. Evidence of the appropriateness of accommodating the Quranic schools at the edge of the neighbourhood can be drawn not only from the nomadic camps of the Hadandowa, but also from their lifestyle in urban neighbourhoods – such as Banat south in Kassala (Fig. 4.2 and Plate 4.7). Accommodation of the schools in such locations will be compatible with the important socio-economic role performed by the young men residing there. Their accommodation at the edge of the camp will bring them closer to the fields that they till and the pasture land in which they herd the animals.

The high significance and complex role which the Quranic school and Zawia play in the socio-cultural life of the Hadandowa and Mahas, has already been referred to in connection with examination of the importance and use of the central open space of
the smaller community areas. The significance of those open spaces for the Beja group of tribes is exemplified by cases from a neighbourhood in Banat east in Kassala inhabited by one Beja tribe - the Amarrar - in which that category of public space was not provided. To compensate for this, the Amarrar plant the middle of wide roads with shady trees, sweep them clean and use them as public open spaces in which the men spend the day and the guests are received and entertained (Plate 4.8).

Community participation in the sweeping and planting of trees in public space is also evident in the public open spaces in many Hadandowa neighbourhoods in Kassala and Waggar. Such tasks are usually performed by the boys of the neighbourhood who consider certain places located at those open spaces - for example - the Quranic schools - as an extension of their house. Sweeping and tree planting also extends to the spaces around corner shops which are regarded as important places of social intercourse.

Contrary to the case of the Hadandowa tribe, the Rashaidaa communities hardly participate in the development and maintenance of the public open spaces provided at the centre of their neighbourhoods (Plates 4.9 and 4.10). This response, which is manifest in some of their housing areas, like Mansoura and Mastura in Kassala, could be attributed to the fact that most of their social life takes place either inside their house or in the road in front of it (Plate 4.11). The Kababish also share this social phenomenon with the Rashaidaa. Thus, we can conclude that the allocation of large open spaces, that exceed the requirement of
those two tribes may not contribute to their development and maintenance. The communities, in this case, may not have enough motivation to generate communal participation, and the public funds are too slender to ensure the accomplishment of these tasks through the official institutions. Underdevelopment of those open spaces may consequently lead to certain economic and environmental problems previously cited in connection with similar cases of under-utilization of housing land.

The housing project of the New Deims of Khartoum presents an early example of the lack of sensitivity of the official practice towards the social characteristics of the inhabitants with regard to the provision of space for the central public open space of the neighbourhood units. In this project all the units, each of which is intended for housing a different ethnic group, were provided with the same size of open space (Fig. 1.3). A later example of the insensitivity of the practice is demonstrated by the scheme of Banat south which was implemented during the late seventies. Here the same size of open space which measures 120 sq. m. was allocated for the Hadandowa and Rashaidaa neighbourhood units (Fig. 4.5). The same size of open space is also provided for the Hadandowa – in the New Halanga – and the Rashaidaa – in Mastura (Fig. 4.6). Adherence to the same space standards here does not take into consideration the fact that the open space of the first tribe, unlike the second one, is expected to provide accommodation for the young men and the guests of the neighbourhood.

Adherence of the official practice to rigid standards in the
width of roads, is another indicator of the lack of sensitivity towards socio-cultural variations. Importance of the road side part of the house as a place of social intercourse is manifest in the seating benches which were built by the Nubians at such location in their re-settlement villages. It is also indicated by the wedding parties and feasts of the Kababish and Rashaidaa which usually take place in front of their house in their housing areas, in towns like Sodari and Kassala (Plate 4.11). Yet, if we consider other tribes - like the Hadandowa Beja - we find that they neither organize social occasions nor encourage social intercourse in front of their houses. Because of their high concern about the privacy of their women they usually accommodate all these kinds of social interaction at the public open space. But despite this variation between the Hadandowa and Rashaidaa, they were provided with the same width of roads as evident from the planning of the neighbourhoods of these two tribes in the Banat south scheme (Fig. 4.2).

Official policy and practice may negatively affect the life of socially related households who inhabit adjacent housing plots. This may ensue from the rigid building regulations which control development inside these plots. Such regulations, which require the allowance of certain clearances between the built-up part of the plot and its neighbours, as well as the erection of high boundary walls between adjacent plots may diminish co-operation between neighbouring households. The Rashaidaa are one of the tribes who may be negatively affected by such building regulations. Many examples from some of their housing areas in Kassala - Mastura and Mansura - indicate the importance of permitting direct access and visual

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contact between adjacent plots inhabited by households belonging to the same extended family. (Fig. 4.7 Plates 4.1 and 4.2). Imposition of the building regulation here, despite family ties, may impede the social life and curtail the economic activities of such extended families - as has been referred to previously in connection with this tribe.

The rigidity of space standards for the housing plots, considered together with that of the regulations controlling development, may not permit the accommodation of an extended family. But for many Sudanese tribes, norms regarding formation of such household type has always been linked to very important social obligations and values. Examples of this are: accommodation of co-wives within the same household - the Dinka, Homr and Rashaidaa; accommodation of newly married daughters within the household of the parents - the Kababish and Rashaidaa; accommodation of aged, divorced and widowed parents and female close kins - the Kababish and Rashidaa. Accommodation of the extended family within a single plot, to satisfy social obligations, may overcrowd it because it usually varies in size from 300 to 400 m. sq. This may consequently lead to public health problems.

Inability to accommodate the extended family within the same plot due to its size may generate other kinds of problems. It may curtail several forms of co-operation which take place between members of such households. Housework is one form of co-operation which is now evident as part of the urban lifestyle of many tribes like the Dinka, Homr and Rashaidaa. Co-operation in services like
taking care of children and old people is very vital due to the acute shortages in nurseries, old people's homes and similar official facilities. Co-operation in cooking and house cleaning is also very important, due to the reliance on manual work and unavailability of modern equipments which help with these tasks. Inability to accommodate the extended family in one plot may also curtail the economic activities of the household. Examples of this have already been referred to in connection with the examination of the negative effects of several aspects of the official planning.

Accommodation of the extended family in more than one plot may have other economic disadvantages. It may discourage its development through the co-ordinated efforts of members of the extended family. Accommodation of the extended family in this way may also increase the cost of developing individual plots, because it may not allow sharing of facilities, i.e. guest rooms, kitchens and bathrooms. This will consequently lead to the unjustifiable consumption of housing land and escalation of the initial cost of housing schemes.

Provision of more space than is required for housing plots may also generate several problems, specially among the groups who do not have the financial potential for developing these plots. This is demonstrated by many examples from the housing areas earmarked for the Beja in Kassala (Plates 4.12 and 4.13). The 400 sq. m. plots allocated for those areas are far beyond the financial capability and actual demand of the allottees. After the elapse of more than a decade, most of those plots are barely developed; a situation that is creating various problems characteristic of under-utilization.
and underdevelopment of housing land which have been previously identified.

Rigidity of the policy and practice towards housing plots is not restricted only to space standards, as it also affects shape. Many housing schemes which accommodate different ethnic groups were provided with plots of identical shape. The project of the New Deims of Khartoum (Plate 1.3) and the housing area of Banat south in Kassala (Fig. 4.2) are but a few examples. Yet, our review of the cultures and traditional house types of certain tribes in the two previous chapters, and the observation of their lifestyles in officially planned housing areas reveals that their requirement with regards to the shape of housing plot may vary.

Concerning the required shape of the housing plot, the main axis of development according to which most of the Rashaidaa houses are built in their housing areas in Kassala follow an east-west axis. Along this axis, the main building of the house forms a row of rooms which accommodate the head of the household, his co-wives, his parents and any of his newly married daughters (Fig. 4.7 and Plates 4.14 and 4.15). Most of the houses of the Kababish in towns like Sodari are built differently, along a north-south axis, with the guest shed in the forefront, followed by the tent of any newly married daughter, then the room of the head of the household and his wife, leaving the rear part of the plot for the parents of the household head and the servants (Fig. 4.8). The arrangement of the houses of the Hadandowa - in Kassala and other urban centres - is fairly similar to those of the Kababish, in the sense that the front
part of the plot, in most cases, is occupied by an open shed leaving
the rear part for the main building of the house — usually a room
and a verandah (Fig. 4.9 and Plates 4.12 and 4.13).

Despite the difference in the axis of development of the
Hadandowa and Rashaidaa house types cited above, groups from the two
tribes were provided with plots of identical shape in Banat south
scheme in Kassala (Fig. 4.2). Insensitivity of the official policy
and practice to the socio-cultural requirements which generate the
house design may drive the allottees of housing plots to break the
building regulation in order to attain the desirable house form
(Plates 4.1 and 4.2). The primacy of the socio-cultural requirements
is indicated by some examples from the Rashaidaa housing areas in
Kassala in which they were satisfied at the expense of basic
elements of physiological comfort, i.e. ventilation and shading
(Plates 4.16 and 4.17).

4.3. THE CURRENT OFFICIAL POLICY TOWARDS DWELLING
SPACE: CONCLUSIONS AND RECOMMENDATIONS.

4.3.1. THE OFFICIAL POLICY: THE ENSUING PROBLEMS AND
UNDERLYING PHILOSOPHICAL APPROACH.

The main objectives of the official policy towards dwelling
space were identified in Chapter One as environmental, public
health, economic, aesthetic and social ones. Satisfaction of those
objectives which is sought through the application of the housing
classification system, and the adherence to specific space standards
and shapes and the imposition of the building regulations is manifest in the practice ensuing from official policy. But, examination of the impact of this practice on traditional societies in the previous part of this chapter has revealed that the application of the policy may defeat many of the objectives towards which it was geared.

By adhering to rigid space standards, shapes and building regulations, despite their irrelevance to the requirements of traditional societies, the policy may lead to overcrowding or under-utilization of housing land. This may consequently generate serious environmental and public health problems through curtailment of air movement and aggravation of the effect of both direct solar radiation and sand storms.

Under-utilization of housing land, through the provision of higher space standards than is required, may also cause economic problems. It can lead to unjustifiable consumption of housing land and escalation of the cost of the services component of housing schemes. Provision of more public space than is required may not encourage popular participation in its maintenance and thus exhaust the slender public funds allocated for the housing sector. Provision of more private space than is required for housing plots may also escalate the cost of developing individual plots, e.g. through increasing the cost of building the boundary wall. Developing these plots through the co-ordinated efforts of socially related households may not be permitted, because the system of classification of housing land may disperse these households and
the building regulations in most cases do not allow amalgamation of adjacent plots.

By adhering to highly regular and uniform planning the policy and its practice may be in conformity with the requirements of the order of uniformity and regularity. Yet, this has been in many cases at the expense of the social order, as it has led to the accommodation of more than one social group in the same residential community area or the division of one social group into more than one area.

The social objectives of the policy are mainly achieved through provision of space for, and distribution of, certain facilities like social clubs, places of worship, coffee houses and public open spaces. But, due to variation in demand for such facilities between different ethnic groups, adherence to rigid standards and inflexible planning patterns may lead to overcrowding or under-utilization of public space. Provision of less public space than is required for groups whose social life is mostly associated with communal places may substantially impede this life. Moreover, rigid regulations regarding development of some parts of public space — such as public open spaces — which do not permit erection of communal residential facilities, may also impede the social life of certain ethnic groups to a considerable extent. This can also increase the cost of building individual houses, as certain categories of people — like young men and guests — may have to be accommodated within the houses. Regarding private space, provision of less space than is required for housing plots for groups whose
social life is mainly centred inside those plots may also impede their normal way of life.

It is clear that the policy is not geared towards satisfying the specific social and cultural needs of traditional societies but rather general ones. Thus, we can conclude that official policy in the Sudan is highly influenced and generated by positivistic thinking, with reference to that scientific method and philosophical programme which dominated the countries of the Western world during the second half of the seventeenth century and re-emerged in a modified form during the second half of the nineteenth century and the first decade of the twentieth. (7)

The positivistic programme gave rise to the highly influential doctrines of social positivism which seek to promote, through scientific investigation, a more just and unified social organization. (8) According to these doctrines, this is attainable through the elimination of the social organizations of the Middle Ages and the destruction of their theological and metaphysical doctrines. Such an accomplishment makes possible the re-organization of society by grounding it on a scientific basis. Auguste de Comte, a proponent of social positivism states in his law of the Three Stages that: man in the positive stage, refuses to seek ultimate causes of phenomena, but turns exclusively towards discovering their laws by observation and reasoning. (9)

It we consider the phenomenon of dwelling, our observation of the impact of official policy on traditional societies reveals that
their response towards it is still highly influenced by ultimate causes - cultural forces in this case. Variations between different societies in the use of similar forms of dwelling space, contrary to the convictions of the positivistic view and the presumptions of policy makers, also reveals that their response towards this space is not based on rational, scientific criteria alone.

The lack of response to the specific social and cultural requirements of the inhabitants may have its justification. Only a limited number of the numerous Sudanese ethnic and socio-cultural groups have been thoroughly investigated. Moreover, the studies in this field do not specifically examine dwelling environment, but rather deal with it as only one issue among many others. The shortcomings in these studies is aggravated by the fact that the training of the majority of the planners and architects does not equip them to deal with the socio-cultural dimension of the housing process. Those limitations, considered together with the benefits ensuing from using uniform and repetitive planning patterns, i.e. reduction of planning cost and fees and simplification of the setting out of housing schemes, could be regarded as some justifications for adhering to the current policy.

Assessment of the rigid official policy could be undertaken through weighing its limited benefits against the various serious public health, environmental, economic, social and cultural problems ensuing from it. The result of this weighing process, considered together with the recommendations of the National Housing Commission referred to in Chapter One, indicates and emphasizes the urgent need for replacing the current policy with a more appropriate one. This
necessarily demands the adoption of a more flexible approach towards dwelling space. But, such a pursuit should start by first abandoning the positivistic viewpoint, and adopting an alternative one which considers dwelling with all its social and cultural dimensions. This alternative philosophical approach is identified in the next section.

4.3.2. THE OFFICIAL POLICY: AN ALTERNATIVE PHILOSOPHICAL VIEWPOINT AND ENVIRONMENTAL APPROACH.

The feasibility of the phenomenological approach of Martin Heidegger as an appropriate starting point in an attempt to overcome the shortcomings of the current policy, is indicated by more than one aspect of his philosophy. Much of his thought, specially its later development, is particularly aimed at criticizing the theoretical and practical pursuits associated with the Industrial Revolution and the Modern Age of Technology. (10) In this respect, he asserts and reiterates that the world, and the things that constitute it, are annihilated by a response towards it which is based now on knowledge acquired through scientific methods alone. As a result of this, values and meanings which are not directly measurable through those methods are ignored. Heidegger's phenomenological thesis emphasizes that the specific values which integrate together a certain community of people should be the ultimate source of any policy, i.e. such as that pertaining to dwelling space for any community. (11) Thus, such a phenomenological approach could constitute an appropriate base for formulating an alternative policy which responds to the cultural diversity of the Sudan.
Heidegger has dealt with the problem of settlement and housing environment in more than one concept which were developed as part of his philosophy such as those investigating the nature of things (12) and that of the work of art. (13) He has also examined this problem in great depth in his explication of the nature of the relationship between human existence and the process of building. In this respect, Heidegger explains the manner in which this existence can be projected and realized in terms of a built form.

According to the formulation of Heidegger, the constitution of dwelling space should assemble the foursome - gods, men, sky and earth - in a single fold: in an integrated and unified manner. Expressed in more simple terms, the provision and organization of space should not be intended only to allow the inhabitants to secure their livelihood and cope with weather conditions. Equally important, this should also allow them to live together as an integrated community according to their specific cultural values. Accordingly, the satisfaction of economic needs, and those concerning requirements of physiological comfort, should be made in compliance with the specific social and cultural norms of the inhabitants. (14)

Considered in terms of the viewpoint of Heidegger, the standards of a policy which controls provision and organization of dwelling space should be derived from the specific social norms and cultural values of the people who were to be settled or housed. From this we can conclude that, by replacing the current policies by ones based on a phenomenological approach we may increase the chance of...
satisfying the social and cultural needs of traditional societies. This will consequently help to overcome, or at least to reduce, the problems ensuing from the positivistic approach.

Notwithstanding the relevance of the views of Heidegger to the problem of dwelling space, clearly he does not deal with this problem in a specific or direct way. His philosophical writings rather address several diverse, though connected, issues, i.e. history, language, truth, etc. To apply his relatively abstract concepts in an investigation of the problems of our everyday concrete dwelling space, necessarily demands the introduction of an intermediate model or concept dealing with this problem in a more direct way.

The concept of existential space, which was developed by Christian Norberg-Schulz, is an appropriate way for bridging the gap between the abstract concepts of Heidegger and the acute practical problems ensuing from the policy of dwelling space. This is indicated by more than one aspect of the theoretical and critical works of Norberg-Schulz. His concept of existential space is motivated by dissatisfaction with certain modern approaches towards architectural space, as well as that world-wide practice which is generated by them. (15) It establishes the relevance of this concept to our problem here which follows directly from adherence to those modern planning approaches and international styles of architecture. The link between the phenomenology of Heidegger and the concept of existential space is evident not only in the development of this concept, but also in other writings of Norberg-Schulz such as his
book "Genius Loci: Towards a Phenomenology of Architecture". (16) The significance of relating this concept to those of Heidegger resides in the fact that Norberg-Schulz focuses and elaborates on the structural content of dwelling space. In this way it complements the abstract concepts of Heidegger which concentrate on the meaning content of phenomena.

Norberg-Schulz emphasizes the primacy of social and cultural characteristics in the constitution of dwelling space through establishing a strong link between this space and the mental environmental image corresponding to it - existential space according to his terminology. Existential space is constructed during the early years of development and as part of the processes of socialization and acculturation. (17) In a similar way to its concrete counterpart - dwelling space - it has several levels: region, village, house, etc. Each of those levels is in turn constituted of several elements, i.e. districts within a region, quarters in a village, and rooms inside a house. (18) But dwelling space is not only incorporated in terms of these spatial constructs, as together with them are also integrated meanings and values which are transmitted during the processes of socialization and acculturation. (19) Integration of the meanings and values here is expressed through topological and morphological characteristics of the levels and elements of existential space.

The spatial relationships of existential space and the meanings and values embodied within them, considered in their totality express the ideal form of life of the community who share...
together this mental construct.\(^{(20)}\) In realising this form of life, the community strives to project and incarnate its existential space into concrete dwelling environments. This becomes the responsibility of the housing sector when the housing process is controlled by official institutions. In this case the housing policy should investigate the specific and basic characteristics of the existential space of each ethnic or socio-cultural group in order to draw the measures and standards of their dwelling space.\(^{(21)}\) This may thus facilitate satisfaction of the social and cultural characteristics of those groups, and consequently help to overcome the problems generated by an official policy and practice which is based on rigid uniformity.

The feasibility of using the concepts of Heidegger and Norberg-Schulz in addressing the practical problems of providing the appropriate forms of dwelling space is yet to be established. But testing these concepts requires first their examination in a more detailed way, and then their unification in a single comprehensive concept or approach. The following chapter is dedicated to these tasks.

REFERENCES

1. The Zawia is a public place characteristic of many urban and rural areas in northern and central Sudan. It is mainly used for teaching children the basics of the Islamic religion. But it is also used for other purposes, i.e. as a guest house, social club or for the partial accommodation or some social occasions.

3. This is based on the observation of the urban lifestyle of this tribe by the author.

4. The investigation undertaken by the author in urban housing areas shows that the migration of the men of a Rashaidaa extended family living together in the same area is still organized on a rotational basis in the same way as it happens in their nomadic lifestyle.

5. Here we refer to the Nuba dancing parties which are organized every Friday afternoon at the edge of Omdurman in a location not far from the tomb of Al Shiek Hamad El Neil.

6. This is based on informers reports about the social life of the Nuba in urban centres such as Al Dalang and Kadugly.


8. One example of this is the rural areas of Om Dowanban and its neighbouring villages which are considered suburbs of the capital Khartoum.


10. Quranic schools are almost not operating in Mansoura and Mastura despite the fact that they are subsidised by Arab rich states. The few which operate there are sponsored by some pious men and are opened in their houses.

11. In reference here to Sidi Ibrahim - one of the Kunuz Saints whose remains were transferred from Nubia and buried again in a shrine located in the central area of public facilities in New Halfa town. Many Nubians visit the shrine especially on Fridays and during religious celebrations.

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13. In reference to the fight which erupted between the Barrasa and Bratiekh branches of the Rashaidaa who lived together in the non-planned area in Kassala on which Mastura was built. As a consequence of this the Baratiehk were transferred to another area (in Mansoura) and the Barrasa were housed in the same location.

14. Positivism here refers to the term employed by Henri de Saint-Simon to designate a scientific method and its extension to the field of philosophy. The term was then adopted by Auguste de Comte and developed into a well established philosophical movement which dominated the countries of the Western world during the period from the middle nineteenth century till the first decades of the twentieth.

15. The movement of social positivism was developed in France through the work of Saint-Simon and other socialist writers like Charles Pierre Joseph Proudhon. For an account of the philosophical viewpoints generated by this movement refer to Edward, P. (1974) "Encylopedia of Philosophy", pp.415-419.


17. Heidegger discusses the threat posed by the culture of the modern age of technology on the life of the human being in several articles. Some of them are published in Heidegger "The

18. For elaboration on this thesis refer to the articles Heidegger entitled 'Poetically Man Dwells', 'The Thing', and 'The Origin of the Work of Art' in Heidegger, "Poetry, Language, Thought".

19. For elaboration on this concept refer to the article by Heidegger entitled 'The Thing' in "Poetry, Language, Thought", p.165-179.

20. For elaboration on this concept refer to the article by Heidegger entitled 'The Origin of the Work of Art' in "Poetry, Language, Thought", pp.

21. For elaboration on this refer to the article entitled 'Poetically Man Dwells', op. cit. pp.211.


26. Ibid. p.32.

27. Ibid. pp.34-36.

28. Ibid. p.37.
Fig. 4.1. The General Layout of the New Halanga Housing Scheme in Kassala which accommodates households from the Hadendowa Beja, as well as other groups of Nigerian origin. Implemented during the first half of the 1970's.

Capacity: 544 households. Area: approx. 77.8 acres.

Key:
1- Housing plot (area: 300 sq. m.)
2- Roads (of variable widths ranging from 20 to 7 m. wide)
3- Secondary public open spaces (area of each one 2,100 sq. m.)
4- Plot earmarked for mosque (area 2,100 sq. m.)
5- Plot earmarked for police station (1,500 sq. m.)
6- Plot earmarked for health centre (1,500 sq. m.)
7- Plot earmarked for social club (1,500 sq. m.)
8- Plot earmarked for kindergarten (1,500 sq. m.)
9- Plot earmarked for market place (8,600 sq. m.)
10- Plot school (7,700 sq. m.)
11- A shed used as an informal office of community administrating, as well as for receiving and entertaining the community guests.
12- Khalwa and the young and unmarried men shelter.
B.NH- Neighbourhood inhabited by Beja.
NH- Neighbourhood inhabited by groups of Nigerian origin.

(Source: District Department of Surveying, Kassala)
Fig. 4.2. THE GENERAL LAYOUT OF THE SOUTH BANAT HOUSING SCHEME WHICH ACCOMMODATES HOUSEHOLDS FROM THE RASHAIDA (IN THE AREA REFERRED AS MANSOURA), THE BEJA AND GROUPS FROM THE NORTHERN NILOTIC TRIBES (SHAIGIA AND JAALLEAN). IMPLEMENTED IN THE LATE 1970's.

CAPACITY: 640 HOUSING PLOTS. AREA APPROX. 110 ACRES.

KEY:
1- Housing plot (area 400 sq. m.)
2- Secondary public open space (area 1,200 sq. m.)
3- Plot earmarked for market place (area 8,100 sq. m.)
4- Plot earmarked for secondary school (area 4,000 sq. m.)
5- Plot earmarked for elementary school (area 1,600 sq. m.)
6- Plot earmarked for health centre (area 1,600 sq. m.)
7- Plot earmarked for mosque (1,600 sq. m.)
8- Plot earmarked for social club (1,600 sq. m.)
9- Plot earmarked for police station (1,600 sq. m.)
10- Thatch room used as an office for unofficial community administration and children education.
11- Young and unmarried men shelter.
12- Khalwa.
13- Corner shop around which the men of the neighbourhood meet and entertain their guests.

R.HH.- The part of the housing scheme accommodating Rashaidaa households.
B.HH.- The part accommodating Beja households.
N.N.HH.- The part accommodating Northern Nilotic tribes.

(Source: District Department of Surveying, Kassala)
Fig. 4.3. THE GENERAL LAYOUT OF MASTURA HOUSING SCHEME IN KASSALA WHICH ACCOMMODATES HOUSEHOLDS FROM THE RASHAIDAA TRIBE ONLY. IMPLEMENTED IN THE MID 1970's.

CAPACITY: 550 HOUSING PLOTS. AREA: APPROX. 83.4 ACRES.

KEY:

1- Housing plot (area 300 sq. m.)
2- Roads (of variable widths ranging from 20 to 10 m. wide)
3- Secondary public open space (area 2,100 sq. m.)
4- Government reserve (area 2.2 acres)
5- Market place (area 8,800 sq. m.)
6- Plot earmarked for mosque (2,100 sq. m.)
7- Plot earmarked for police station (area 1,500 sq. m.)
8- Plot earmarked for health centre (area 1,500 sq. m.)
9- Plot earmarked for social club (area 1,500 sq. m.)
10- Plot earmarked for kindergarten (area 1,500 sq. m.)
11- Plot earmarked for school (8,800 sq. m.)

(Source: District Department of Surveying, Kassala)
THE MAJOR CLIMATIC AND VEGETATION ZONES

I. DESERT.

Approximate Location: North of 17°N, but excluding the Red Sea area.
Annual Rainfall: Less than 2 inches (50 mm)
Types of Vegetation: In general there is no identified vegetation species, in this zone with the exception of some areas along the basins of three short seasonal streams which are covered by stunted shrubs and sparse growth of herbs and grass.

II. SEMI-DESERT ACACIA SCRUB AND SHORT GRASSLAND OF NORTH-CENTRAL SUDAN.

Approximate Location: 14°-17°N, and including the Red Sea area.
Annual Rainfall: 2-8 inches (50-200 mm)
Types of Vegetation: The vegetation in this zone is a varying mixture of grasses and herbs, either without any woody plants or more usually, with a variable scatter of scrub and bushes separated by bare areas. Annual and perennial grasses occur in about the same amount. The growing season is short because the rainy season extends for less than three months. In the years of low rainfall there is almost complete failure of annual plant growth. This is more common in the eastern parts of the country. During the dry season the ground is covered by yellow-brown, often spares, grasses, thorny bushes and trees with scanty foliage.

III. LOW WOODLAND SAVANNA OF CENTRAL SUDAN.

Approximate Location: North of 17°N, but excluding the Red Sea area.
Annual Rainfall: Less than 2 inches (50 mm)
Types of Vegetation: In general there is no identified vegetation species, in this zone with the exception of some areas along the basins of three short seasonal streams which are covered by stunted shrubs and sparse growth of herbs and grass.

IV. HIGH WOODLAND SAVANNA.

Approximate Location: 10°-17°N, but excluding the Red Sea area.
Annual Rainfall: 30-50 inches (750-1,250 mm)
Types of Vegetation: This zone receives frequent rainfall for six to nine months. During the long rainy season perennial grass grows up to the height of 5 feet (1.5 m) and trees put forth abundant foliage. But during dry season the available shrubs and small trees are thorny and characterized with sparse foliage. However towards the southern margin of this zone broad leaved trees and palms grow. In this vegetation zone, the verdure during the rainy season contrasts with the browns and yellows of the dry season. But the growth during the rainy season diminishes due to fires which are set by the inhabitants in order to clear areas for cultivation.

V. SWAMP GRASSLAND OF SOUTHERN SUDAN.

Approximate Location: 5°-10°N, but excluding Toposa area.
Annual Rainfall: 30-50 inches (750-1,250 mm)
Types of Vegetation: This zone is covered during rainy season by flood water which rises to about 3 to 6 feet (.9 to 1.8 m). Due to this grasses grow to heights exceeding 15 feet (4.5 m). When rain ceases the water disappears, except from low-lying areas. The dry brown grass in high areas may be fired by the inhabitants, leaving bare blackened earth. A short growth may reappear in such areas.


Fig. 4.4. THE SUDAN: ITS MAIN CLIMATIC AND VEGETATION ZONES, MEAN MONTHLY PRECIPITATION, MAXIMUM AND MINIMUM TEMPERATURES (IN EIGHTEEN REPRESENTATIVE STATIONS) AND DISTRIBUTION OF POPULATION.

DISTRIBUTION OF THE POPULATION IN THE VARIOUS REGIONS OF THE COUNTRY: The Northern Region: 1,083,024; the Eastern Region: 2,208,209; the Central Region: 4,012,543; Kordofan 3,093,294; Darfur: 3,093,294; Khartoum: 1,802,299; Equatoria: 1,406,181; Bahr El-Gazal: 2,265,510; Upper Nile: 1,599,605.

(Source: Population Census 1985, Department of Statistics, Republic of the Sudan).
Fig. 4.5. THE LAYOUT OF THE NEIGHBOURHOOD UNIT INHABITED BY GROUPS FROM THE BEJA, RASHAIDAA AND NORTHERN NILOTIC TRIBES IN THE SOUTH BANAT HOUSING SCHEME IN KASSALA.

CAPACITY: 40 HOUSING PLOTS. AREA: 2,100 SQ. M.

(Scale 1:2500)

KEY:

1- Housing plot (area 400 sq. m.)
2- Public open space (area 1,200 sq. m.)
3- Roads (varying from 10 to 7 m. wide)

(Source: District Department of Surveying, Kassala)

Fig. 4.6. THE LAYOUT OF THE NEIGHBOURHOOD ACCOMMODATING THE RASHAIDAA IN MASTURA AND THE BEJA IN THE NEW HALANGA.

CAPACITY: 60 HOUSING PLOTS. AREA: 2,550 SQ.M.

KEY:

1- Housing plot (area 300 sq. m.)
2- Public open space (area 2,100 sq. m.)
3- Roads (varying from 10 to 7 m.)

(Source: District Department of Surveying, Kassala)
Fig. 4.7. THE MOST COMMON HOUSE LAYOUT IN THE RASHAIDAA URBAN HOUSING AREAS.

(Not to scale)

(Source: the author)

Fig. 4.8. THE MOST COMMON HOUSE LAYOUT IN THE KABABISH URBAN HOUSING AREAS.

(Not to scale)

(Source: the author)
Fig. 4.9. THE MOST COMMON LAYOUT OF THE HOUSING PLOT IN THE HADENDOWA URBAN AREAS IN KASSALA.  
(Not to scale)
(Source: the author)

PLATES:

Plates 4.1. and 4.2. (on the next page) Amalgamation of adjacent plots is a common practice among the Rashaidaa living in urban areas. In addition, the tribespeople are also keen to open normal level windows onto neighbouring plots. Through these practices they allow direct access and visual contact between adjacent plots inhabited by members of the same extended family. Thus, and according to the norms of the tribe, they ensure high levels of co-operation within this family.  
(Source: the author)
Plate 4.3. The children of the neighbourhood unit gathering in front of the Khalwa built in a secondary public open space in the New Halanga.

(Source: the author)

Plate 4.4. A Dinka traditional priest performing religious rites.

Plate 4.5. Dancing, of both men and women, is an integral part of
the Dinka social and cultural activities.

(Source: RYLE, "The Warriors ...", op. cit.)

Plate 4.6. The wrestling and dancing parties of the S.E. Nuba are,
by nature, space demanding types of activities.

(Source: RIEFENSTAHL, L., "People of Kau". Wm. Collins Sons & Co.
Ltd., 1976)
Plate 4.7. A thatch room built by the Beja at the edge of their housing area in Banat south and near to the countryside is used for informal community administration and children education, as well as entertainment and accommodation of guests.

(Source: the author)

Plate 4.8. In their neighbourhood in Banat east, the Amrar Beja entertain their guests under a big shady tree planted in the middle of the road.

(Source: the author)
Plates 4.9. and 4.10. (Above) The low demand of the Rashaidaa for public space is indicated by the negligible community contribution in the development of public open spaces and the road sides.

(Source: the author)
Plate 4.11. Rashaidaa men dancing with sword during a wedding celebration which took place in the road in front of the house of the family organizing the occasion in Mansoura housing area (Banat South)

(Source: the author)
Plates 4.12. and 4.13. (Above) The low financial potential of the Beja allottees in Banat South and the New Halanga is one of the reasons behind the under-development of their housing plots.

(Source: the author)
Plates 4.14. and 4.15. (Above) If the shape and size of the housing plot permits, the Rashaidaa prefer to build the row of rooms accommodating their extended family along an east-west axis.

(Source: the author)
Plates 4.16. and 4.17. (Above) In their urban housing areas in Kassala, the Beja prefer to develop their housing plots along a north-south axis with the shed located in the forefront near the entrance and the main hut room of the house built towards the rear part.

(Source: the author)
CHAPTER FIVE

A PHENOMENOLOGICAL APPROACH TOWARDS THE PROBLEM OF DWELLING SPACE

5.1 INTRODUCTION

The previous chapter has identified the main problems ensuing from the current official policy towards dwelling space and the positivistic method of thinking which underlies it. As a first measure towards overcoming these problems, this chapter proposes a phenomenological approach as an alternative to the positivistic one, and attempts to develop a comprehensive formulation in order to deal with the problem of dwelling space in general terms.

Part One examines the meaning and nature of the process of building as understood through the philosophy of Martin Heidegger. This examination deals with his central thesis regarding the relationship between building and dwelling, which he explicates in terms of space through which man genuinely dwells in buildings and accomplishes his existence on earth. This part concludes by establishing the relevance of the formulation of Heidegger and its usefulness for dealing with our research problem. However, it is also concluded that space is dealt inadequately in this formulation and this leads to the consideration of another approach which, together with this one, deals with the concrete dimension of space in a more specific and detailed manner.
Part Two considers this concept of existential space as developed by Christian Norberg-Schulz strongly influenced by the philosophical views of Heidegger. This describes the relationship between dwelling, existence and space in terms of more specific and detailed existence and space in terms of specific, concrete and detailed spatial relations. The examination concentrates on the idea of the environmental image, how a person develops it, and how he projects it in terms of concrete environmental forms. As part of this, it also examines and describes the basic elements and levels of this image and their interaction with each other. This part ends by showing the relevance of the concept of existential space to our research problem.

Part Three attempts to amalgamate the formulation of Heidegger with the concepts of Norberg-Schulz into a single comprehensive approach which addresses both the semantic and structural components of dwelling space. This covers several levels of space, starting with the high level of geography and ending with the low one of the things that constitute important foci in the house. The validity of this approach and the feasibility of applying it practically are considered in later chapters.

5.2 THE CONCEPT OF BUILDING IN THE PHILOSOPHY OF MARTIN HEIDEGGER

The investigation of Heidegger into the relationship between dwelling and building does not aim to discover the architectural principles for generating rules for buildings, nor does it consider
building as an art or technique of construction. It is aimed at tracing the domain to which buildings, and all other objects, belong. Heidegger starts this investigation by enquiring about the meaning of dwelling and its relationship to building.\(^{(1)}\)

Heidegger says that we usually attain dwelling through building. Here dwelling indicates, and is reduced to, the concept of taking shelter in. If we regard our houses today, it may be that they provide better shelter because they are well planned, easy to keep; attractively cheap, and open to light, air, and sun. But do they cater for all the requirements of dwelling? What about other non-residential buildings? Do they not also serve dwelling purposes in one way or another? Thus we may conclude that dwelling presides over all buildings. Consequently we may also assume that all building is a means of achieving dwelling. But an assumption which regards building and dwelling as two separate and different activities, blocks the essential relationship between them, as indicated by the fact that to build is in itself dwelling. Then who furnishes the standards and measures for building in this case?\(^{(2)}\)

Heidegger points out that the meaning of the words (dwelling) and (building) in the Old German language casts light of the nature and essential relationship between these two concepts. **Bauen**, to build, means to dwell, but not dwelling in the sense of "an activity that man performs alongside many other activities, i.e. we work here and dwell there".\(^{(3)}\) Dwelling is not a passive mode of the human being, but rather the practice of his profession, the accomplishment of his business and his travels here and there. Thus to dwell is
used here in a deeper sense: the manner in which we as human beings are on earth. Building, bauen, as dwelling also means to preserve, nurture and cultivate and thus does not entail making anything. Accordingly both modes of building, as cultivating and as constructing and raising up of edifices, are composed within the genuine meaning of building as dwelling. (4)

Heidegger asserts that building as dwelling - "as being on earth" - is a habit adopted by man since his outset and reflects on his everyday experience. (5) "For this reason it recedes behind the manifold ways in which dwelling is accomplished, (6) "to the extent that those activities are later associated with the meaning of bauen, building. As a consequence of this, bauen in the sense of dwelling, falls into oblivion. This should not be considered as just a change in meaning of mere terms, because as a result dwelling is now "never thought of as the basic character of human being". (7)

Heidegger summarizes the meaning of the High German word, bauen, in three concepts: "that building is really dwelling; that dwelling is the manner in which mortals are on the the earth; and that building as dwelling unfolds into the building that cultivates growing things and the building that erects buildings." (8)

According to Heidegger, the meaning and use of the word building and dwelling in the Old English language also casts some light upon the nature of the relationship between those two concepts, which agrees to a great extent with the formulation of the High German language. Wunian in Gothic, like the old word bauen,
means to be brought to peace. Heidegger adds that peace, in this sense, means that which is preserved in its original nature. Thus, wunian, to dwell, here means to remain within the free sphere that preserves each thing in its own nature: Accordingly this preserving becomes the fundamental character of dwelling which "pervades its whole range". That range reveals itself as soon as we reflect that human being consists in dwelling and, indeed, dwelling in the sense of the stay of the mortals on the earth."

Heidegger emphasized that the stay of the mortals on the earth should be considered within its whole context. It takes place under the sky, remains before the divinities, and includes "belonging to men's being with one another. By a primal oneness the four - earth and sky, divinities and mortals - belong together in one." Heidegger adds that;

"earth is the serving bearer, blossoming and fruiting, spreading out in rock and water ... The sky is the vaulting path of the sun, the course of the changing moon, the wandering glitter of the stars, the year's seasons and their changes, the light and dusk of day, the gloom and glow of night, the clemency and unclemency of the weather, the drifting clouds and blue depth of the ether ... The divinities are the beckoning messengers of the godhead. Out of the holy sway of the godhead, the god appears in his presence or withdraws into his concealment ... The mortals are the human beings. They are called mortals because they can die. To die means to be capable of death as death. Only man dies, and indeed continually, as long as he remains on earth, under the sky, before the divinities." Heidegger says that when we think of any one of those four, we already think of the other three along with it, but we give no thought to the simple oneness of the four - or the fourfold.
Heidegger says that mortals dwell through preserving the fourfold in its essential being, its presencing. Mortals dwell by saving the earth and setting it free into its own nature and presencing. This cannot be attained through mastering or exploiting the earth. Mortals dwell by receiving the sky as sky. By leaving to the sun and the moon their journey, to the stars their courses, to the seasons their blessing and their inclemency, and by not turning night into day nor day into a harassed unrest. Mortals dwell by awaiting the divinities as divinities in hope that they hold up to them what is unhoped for. \(15\)

"They wait for intimations of their coming and do not mistake the signs of their absence. They do not make their gods for themselves and do not worship idols. In the very depth of misfortune they wait for the weal that has withdrawn ... Mortals dwell by initiating their own nature - by being capable of death as death - and by using and practicing this capacity, so that there may be a good death. To initiate mortals into the nature of death in no way means to make death, as empty Nothing, the goal. \(16\) Nor does it mean to darken dwelling by blindly staring towards the end." \(17\)

Heidegger adds that, in saving the earth, receiving the sky, awaiting the divinities, and initiating mortals, dwelling occurs through preservation of the fourfold. But how is this preservation accomplished? Can it be accomplished by mortals merely staying on earth, under the sky, before the divinities, and among mortals? No, because mortals dwell by staying with things. Thus dwelling, as preserving, is accomplished through saving the fourfold as mortals stay with things. But this staying with things, is not just attaching one thing to the foursome to make them five. \(18\)

"On the contrary: staying with things is the only way in which the fourfold stay within the fourfold, is accomplished at any time in simple unity. Dwelling preserves the fourfold by bringing the presencing of the fourfold into things. But things themselves secure the fourfold only when they"
themselves be in their presencing" (19) (in their own nature).

Mortals achieve this by nurturing the things that grow, and constructing things that do not grow. Yet cultivating and constructing here refer to building only in a narrower sense, as in a broad sense it entails securing the foursome in things — and it thus becomes dwelling. (20)

As part of his enquiry about the relationship between building and dwelling, Heidegger tries to examine this relationship in terms of the things which are constructed, and for this purpose he takes a bridge as an example. The bridge, by connecting the banks, brings to the stream both expanses of the landscape lying behind them. In this way, the bridge, gathers the earth as landscape around the stream and, attentively guides it through the meadows. The bridge piers, resting upright in the stream bed, allow the water to run its course. The waters may sweep quiet and gay, or shoot in torrential waves due to heavy rains and storms, but in all cases the bridge is ready to receive the weather and fickle nature of the sky. The bridge, as it lets the stream run its course, also grants the mortal access so that they may come and go from shore to shore. (21)

Heidegger adds that "bridges escort mortals in many ways: the city bridge connects the castle to the cathedral square; and those erected in the country bring wagons and horse teams to the villages (which surround them)." (22) In all these cases the bridge brings mortals together.

"Mortals on their way to the last bridge, whether they keep in mind its vaulting course or forget, strive to surmount all that is common and unsound in them in order to bring themselves before the haleness of the divinities." (23)
Thus through this, the bridge awaits the divinities. (24)

According to Heidegger "the bridge gathers to itself in its own way earth and sky, divinities and mortals" (25) and as the gathering of the fourfold we can call it a 'thing' understood here in the sense of the meaning of this work in the High German language. Considered as a thing, the bridge can not be at first just a bridge and then occasionally later gathers the fourfold; because this gathering capacity constitutes its thingly-character. (26)

Referring to the bridge as a thing of a special kind, Heidegger says that because it gathers the fourfold in a specific manner, its site should necessarily meet certain requirements. It is only a thing which is in itself a location - for gathering the fourfold in this case - that can specify the boundaries of a site. The location is not already there before the bridge, but it rather comes into existence by the virtue of the bridge. Heidegger adds that by choosing its site in response to the specific manner in which it gathers the fourfold, the bridge (27) "determines the localities and ways by which space is provided for." (28)

Heidegger points out that out of the things which, as locations, allow a site, he is concerned with those made through a process of building construction. As part of his enquiry about this process of building, he stresses such investigation must first begin by thinking about the nature of the things which of themselves require building as the process by which they are made. Through this thinking, things are revealed as locations that allow a site for the
fourfold, and this consequently determines the space required for building. From this it becomes clear that, the relation between location and space lies in the nature of these things as things, but so does the relation of the location to the man who lives there. (29)

Considering the bridge as a thing, Heidegger regards it as a location which allows space for admitting earth and heaven, divinities and mortals. The space allowed here is constituted of many places that may be near or far from the bridge. He adds that we can treat these places as mere positions between which there lies a measurable distance. But the space made up by those positions is of a peculiar constitution, and by treating it in an abstract way and as a pure manifold of three dimensions, we will reduce the bridge to a mere something that could be replaced by another thing or just a marker. (30)

Heidegger points out that the spaces which we go through in our daily life are provided for by locations; their nature and constitution is determined by things of the type of buildings. By closely investigating the relationship between locations and space, and that between spaces and space, Heidegger concludes that we can have a good insight about the relation of man and space. (31)

Considering the relation between man and space, Heidegger asserts that space is not located beside man, or in front of him. Space is neither an external object nor an internal experience. He adds that when we describe the relation between man and space we do not mean that there are men and over and above them space. When we say man, and here we mean "a being who exists in a human manner" -
that is, who dwells — we are already naming the stay within the fourfold among things. Heidegger emphasizes that even when we relate ourselves to those things that are not in our immediate reach, we do not just substitute them by mental representation, as we may be nearer to them, and what they allow space for, than someone who is actually using those things. Even when we turn inwards and "reflect on ourselves, we come back to ourselves from things without ever abandoning our stay among things". (32) From this we can conclude that spaces, and space as an all encompassing entity, "are always provided for already within the stay of mortals" (33) and for the sake of the dwelling of man. (34)

Referring back to his example of the bridge, Heidegger says that as a location it allows the simple fourfold of the foursome to enter into a site by virtue of the arrangement of its site into spaces; and thus admits the fourfold and installs them in a simple onefold. Through this process of "double space-making" (35) the location of the bridge shelters the fourfold. Things like such location shelters the life of mortals and houses them even if it is not intended for dwelling purposes in the narrower sense. (36)

Concluding his argument, Heidegger says that constructing such things, like bridges; can facilitate building in the sense of dwelling, because they provide locations through which spaces are founded and joined. But such building can achieve dwelling only if it derives the directives and standards, for the organization of those spaces, from the specific manner in which the fourfold stays the thing in a simple onefold. Through this, built things preserve the fourfold, but saving the earth, receiving the sky, awaiting the
divinities, and escorting mortals - and thus achieve dwelling in its fullest sense. (37)

INTERPRETATION AND CONCLUSIONS

The policy concerning dwelling space for any particular community should be generated from and respond to the specific circumstances which affect that community is; ecological; environmental, socio-cultural, and all similar circumstances which constitute the overall environment of such a community. In this respect it is essential that the policy should be geared towards satisfying both the earthly and spiritual requirements of the inhabitants.

The policy regulations and standards should aim at providing space, and permitting development, in such a way that enables the built environment to sustain ecological systems, withstand climatic and weathering conditions, meet spiritual requirements of the community, and support its social system. To facilitate satisfaction of such objectives, regulations and standards should aim to organize specific arrangement required by each community.

This formulation about the nature of building and its organic link to dwelling is very relevant to the problem of housing space, which were are discussing here, because this category of space is more attached to dwelling than any other category, for example education, business and industry. Yet, employing this formulation to address the research problem in a direct way, may not be
appropriate. The manner in which Heidegger deals with the nature of buildings is very abstract, and despite elucidation on their semantic dimension he does not elaborate enough about the concrete manifestation associated with those meanings. Moreover, dwelling environment is a very complex construct and cannot be demonstrated by a few examples like the bridge and a house at the Black Forest Farm. (38)

In order to gain more insights about the nature of building, insofar as it is considered as dwelling, we need to introduce another formulation which adopts a similar position to that of Heidegger, but elaborates on its structural and concrete dimension to a greater degree. The concept of existential space, developed by Christian Norberg-Schulz, is very appropriate for this purpose. This concept is strongly influenced by the philosophical position of Heidegger, in general terms, and his formulation about the nature of building, in special terms. (39) Through this concept, Norberg-Schulz, aims at employing space in order to describe human existence - man being in the world - which he represents by two components: abstract space schemata and the environmental elements in which they are grasped in concrete form. (40) The totality of those schemata makes up existential space which represents the ideal form of life of the community which shares this image. (41) Norberg-Schulz points out that this space is constituted of several elements and levels which correspond to those of the concrete environment. He adds that, man in his strive to incarnate existence and accomplish dwelling in its fullest sense, tries to project existential space in concrete form. (42) The nature and characteristics of this space, as
well as, its relationship to the philosophy of Heidegger, is examined in the following part of this chapter.

5.3 NORBERG-SCHULZ'S CONCEPT OF EXISTENTIAL SPACE

Norberg-Schulz considers the existence of man to be rooted in space. As part of this, man deals with "physical things, interacts with other people, and ... grasps the abstract realities, or meanings transmitted through the various languages created through the various languages created for the purpose of communication". (43) As most of this dealing, interaction, and grasping, takes place within a spatial framework, one may argue that space constitutes one aspect of man's orientation in the world. Norberg-Schulz argues that in order to facilitate this orientation, man must understand the spatial relations comprising his actions, and incorporate them in a space concept. (44)

Reflecting on philosophical theories of space, from the early times of the ancient Greek philosopher Parmenides to Descartes, Norberg-Schulz classifies these theories into two main streams. While the first one was centred around physical space—micro, everyday and macro—the second was concerned with mathematical space which was developed to describe various categories of physical space. (45) Eventually those two mainstreams laid the foundation for most of the current approaches of architectural space which may also be classified into two main classes or schools of thinking. The first one is based on Euclidean space and studies its grammar, and the second concentrates on developing a theory of architectural
space on the basis of perception psychology. Accordingly, Norberg-
Schulz concludes that current studies in this field "have either
tended to leave man out by discussing abstract geometry,"(46) or
involve him but reduce his relation to architectural space to single
sensations and impressions. "In both cases space as an existential
dimension, as a relation between man and his environment has been
forgotten."(47)

Norberg-Schulz comments that despite considering it in a
partial way, space has always been employed to interpret the nature
of architecture without a convincing argument about its meaning and
role in this context.(48) Norberg-Schulz considers Sigfried Giedion
an exception due to his substantial contribution to the
actualization of the concept of space, which he employed in order to
present the history of architecture.(49) Giedion also contributed
through his own space conception in which he managed, to some
extent, to overcome the naive realism of the current approaches. He
achieved this through acknowledging the role of the spatial image,
or concept, in qualitative variations in space perception; and he
thus draws the attention to the emotional dimension of this
process.(50) Concluding about the achievement of Giedion,
Norberg-Schulz says that despite his successful start he was not
able to develop a precise philosophical formulation.(51)

Norberg-Schulz points out that there are also other works
within the field of architectural theory which contributed towards a
more appropriate and comprehensive theory of architectural space. He
adds that the contribution of Dagobert Frey is manifest in
emphasizing that architectural space is not a function of immediate perceptual effects, because it has a structure which ought to be experienced as it expresses basic properties of human existence. (52) Norberg-Schulz comments that through such formulation, Frey succeeded in overcoming the limitation of the approaches based on perception psychology. (53) Norberg-Schulz points out that the formulation developed by Rudolf Schwarz is in line with that of Frey, as he also emphasizes the importance of considering the strong link between the fundamental structure of existence – being in the world – and the properties of architectural space. (54)

Norberg-Schulz refers to Kevin Lynch as one of those who contributed towards a better understanding of the nature of architectural space. According to Norberg-Schulz this was achieved through the formulation of the concept of environmental image (55) which Lynch defines as "a generalized mental picture of the exterior physical world". Lynch considers the development of the image, as a product of immediate sensations, as well as past experience, and he attributed its significance to its vital role in interpreting information and guiding action. (56) According to Norberg-Schulz, Lynch agrees with both Frey and Schwarz in attempting to interpret the environment in terms of relating it to the social life and existence of the people. (57) He adds that Lynch also agrees with them in attempting to identify the fundamental organization properties of space, such as the focal points, named regions and remembered routes. (58)

The concept of existential space, as formulated by Norberg-
Schulz, draws also on investigations developed outside the field of art and architectural theory. From the field of psychology, works of Jean Piaget on child psychology, were drawn on, in order to elucidate significance, nature and structure of environmental image— which corresponds to existential space. From the field of philosophy, fundamental studies on space, pursued by Gaston Bachelard, Otto Etriedrich Bollnow, Maurice Merleau-Ponty and Martin Heidegger, were also referred to establish the link between human existence and space. Regarding this link, Norberg-Schulz refers to the assertion of Merleau-Ponty that space is one of the structures which expresses our 'being in the world'.

According to Norberg-Schulz, Heidegger has contributed substantially towards clarifying the nature of the spatial dimension of human existence. In this respect he refers to Heidegger's assertion that we can not divorce man and space. He also refers to his effort to establish the relationship between space, dwelling and existence by arguing that: "spaces receive their being from places and not spaces", and that "man's relation to places and through places to spaces consists in dwelling". After presenting the point of view of Heidegger, Norberg-Schulz quotes the statement by which this modern Philosopher concludes his argument saying that "only when we are capable of dwelling can we build".

In reference to Bollnow, Norberg-Schulz states that Bollnow adopts similar ideas to those of Heidegger, which he manages to develop into a comprehensive theory of existential space. According to Norberg-Schulz, this theory is supported and draws on the ideas
of Graf Von Durckeim who states that:

"... the concrete space of developed man must be considered in its totality, including the important events experienced within it. For the particular quality of this space, its disposition and order reflect and express the subject that experiences it and dwells in it". (65)

As part of his review of the ideas of Bollnow, Norberg-Schulz refers to his examination of the concept of place and the general discussion about the 'spatiality' of human existence by which he ends the presentation of his theory.

The concept of existential space

Norberg-Schulz considers existential space as a relatively stable image of the environment which is developed gradually during the person's childhood. During this stage, the child mentally constructs the world as a system of similar incidents connected with particular places which develops into a comprehensive space totality and forms a necessary condition of man's orientation. The role of the image in orientation emanates from the nature of space perception. (66) This does not reside in, the more or less extended sensations, and the environmental image that mediates them. (67)

Norberg-Schulz adds that establishment of the organic link between space and human existence here lead us to the particular structure of this existence. It is comprised of two components, one abstract and the other concrete. The abstract component is represented by the more general topological and geometrical schemata constituting environmental image. The concrete component refers here
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to the grasping of those schemata in the form of environmental elements: landscape, townscape, buildings and physical things. (68)

Norberg-Schulz points out that space schemata, the abstract component of human existence, consists of a collection of separate parts, each entirely centred around a single activity. As the child develops, his space schemata also develops into a more structured whole, characterized by continuity and closure. (69) Through the organizational role of the schemata, the structure of human existence is transposed and mentally established in terms of centres or places, directions or paths and areas or domains. Centres are characterized by 'unity', directions by continuity, and areas by enclosure. In order to orient himself, man has to grasp those spatial characteristics and deal with those characteristics through topological schemes and geometrical ones which are supplemented, at a later stage of development, so as to serve particular purposes. (70) By identifying the basic elements and schemata of existential space Norberg-Schulz then deals with them in more detail as follows.

Centre and place

Norberg-Schulz says that, during his early years, man relies only on spontaneous perception, thus his space is 'subjectively centred'. As his schemata develops gradually the notion of the centre is established as a means of general organization, and certain centres are 'externalized' as points of reference in the environment. (71)
Norberg-Schulz points out that the need for centres has been very strong since remote times, to the extent that reaching certain sacred centres developed by some ancient civilizations was considered an act of consecration and initiation. Consecration and initiation is also associated with return to home, because it has a closer and more concrete meaning and indicates the centre of our personal world.\(^{(72)}\)

From the early years of childhood, home grants man a sense of security, and represents to him what is known, in contrast to the unknown and frightful world around him.\(^{(73)}\) Although home, as a place is considered a personal one, yet it has a common character through which it brings members of the society together. Regarding adoption of a typical house type and its effect on the society adopting it, psychiatrist J. Zutt concludes that "in the common dwelling we have a maximum of spatial security".\(^{(74)}\)

Norberg-Schulz says that during the growth of a person, his actions become more differentiated and new centres, representing places of particular activities and social interaction, supplement that standing for his home. Actions of a person becomes meaningful only in relation to those specific places from which they also acquire special character. Multiplication of places and their incorporation into the existential space of a person liberates him from attachment to individual places.\(^{(75)}\)

In reference to centres and places, Norberg-Schulz says that they are characterized by specific size and formal structure which immensely reflect on actions that occur within their boundaries. The limited size of certain places, considered together with their
centralized form, heightens the effect of concentration and grants them a strong character. Generally, the existential dimension of places is made more concrete through topological characteristics of proximity, centralization and closure. (76)

Direction and path

Norberg-Schulz points out that, as each place in existential space essentially needs to communicate with other places, this space is also comprised of paths which connect the places located in it. Besides connecting places to each other, the path also orientates the place towards a specific direction. Path and direction, considered together, form another basic element of existential space. (77)

To support his argument, Norberg-Schulz says that significance of directions in relation to a place was recognized by Aristotle. According to his conception, the qualitative distinctions associated with locations - such as above and below, in front of and behind, right and left - are rooted in the constitution of human being and his relationship to gravitational field. (78)

Concerning basic directions related to places, Norberg-Schulz says that while the vertical axis has been associated with sacred dimension of space and surreal component of human existence, the horizontal usually represents concrete life of human being and his action in the world. Accordingly, the simplest model of existential space could be illustrated by a horizontal plane pierced by a
vertical axis. (Fig. 5.1.) On this plane a person, in fulfilment of certain important objectives, chooses and creates paths which grants his existential space a specific character. While some paths actually lead to specific places, others may just be an indicator of certain intentions. Certain paths of this second category, may constitute significant symbols of human existence. (79)

Norberg-Schulz states that directions of existential space are not determined by human beings alone, as nature also contains directions which influence this category of space. Since remote times the cardinal points had been an important factor in determining the structure of the world; with the east direction associated with life and the west with death. Certain theories formulate a comprehensive cosmology through combination of the cardinal points with the axis mundi, (80) and such cosmological systems were given manifestation in some ancient cities. (81)

Norberg-Schulz adds that, perceptually, and as a schema, any path is characterized by continuity, and is imagined as a linear succession of elements. Experience with those elements endows the path with a special character which adds to the tension generated by the point of departure and the goal that encompasses such a path. Yet a path may acquire high importance without having those qualifications; that is when it functions as an organizing axis for the elements accompanying it. (82)
Area and domain

Norberg-Schulz says that paths divide the person's environment into, more or less, well known areas which he refers to here as domains. The known domains, of our existential space, are surrounded by a relatively unknown world. To some extent the domains are also places, because they are defined by proximity and similarity of constituting elements. But the distinction between the two resides in the fact that domains may include areas to which we do not belong, and thus do not function as goals for us. Accordingly, domains could be defined as a relatively unstructured ground on which places and paths emerge as more conspicuous figures; and through this they unify extential space into a full coherent environmental image.\(83\)

In reference to domains, Norberg-Schulz states that due to their general properties they function as potential places in which the activities of a person happen. In order to take possession of the environment, such person mentally structures it into domains by means of paths and places.\(84\) In this respect, Muller cites the ancient symbolism which divides the world into domains, and considered this as an expression of a desire by man to imagine his world as an ordered cosmos within an unordered chaos.\(85\)

Elementary interaction

Norberg-Schulz considers places, paths and domains as the basic
schemata of orientation and constituent elements of existential space. Through their development space becomes a real dimension of human existence. The elements of this space may be combined in several ways, and the importance of each of them may vary from one group to another. For example, nomadic people give primary importance to domains while paths and places appear in a less precise and less developed manner. Thus any analysis of existential space ought to begin first by examining the relative importance of each category of those elements, before investigating elementary interaction. (86)

Norberg-Schulz states that through interaction of places with their surroundings a problem of inside and outside is generated, which is considered a fundamental aspect of existential space. For a person to be inside - the primary objective behind developing places - his place ought to satisfy certain formal requirements which reflect the personality of such a person. Geometrization plays a major role in satisfying those requirements. Moreover, as any place has to be entered, its inside and outside are, more or less strongly united, through an entrance. With the introduction of this element, the place acquires a sense of direction (Fig. 5.2). The entrance, and the transitional area between the inside and outside, expresses the relationship between the place and its environment; and this explains the symbolic significance of the door since remote times. (87)

In reference to places, Norberg-Schulz states that a place is related to several directions by a system of paths which often form
a star shape around it. Due to the fact that the paths are determined by related human activities, those paths are usually connected together to form an identified system which expresses the person's possibilities for movement and the range of his world. (88)

Norberg-Schulz points out that the system of paths, considered together with topographical conditions, divide our environmental image into domains of varying density. Denser and well known domains are experienced as shapes, while the less dense ones appear as a neutral ground. In this case the denser areas become places, although they may not have clear boundaries, whereas other areas remain as domains. Regarding this process, it is important to emphasize that human identification with the environment presupposes structuring it into areas of varying densities and creating more dense foci which serve as basic points of reference. (89)

Norberg-Schulz concludes about the elements of existential space and says that, environmental image is composed of a few basic elements which interact with each other in a characteristic way. Recalling the old concept of genius loci, (90) Norberg-Schulz says that it is recognized since remote times that, the specific character of the place accommodating a group of people determine the properties of the environmental image which they share together; and through this shared image the group experience a strong sense of attachment to their common place. The character of the place has proved, in many cases, strong enough to withstand political and cultural change. (91) Regarding the central role of environmental image in human existence, the expression of Heidegger may be
borrowed and an assert made that existential space symbolizes man's being in the world. (92)

The levels of existential space

As part of his examination of the interaction between the human being and the environment, Norberg-Schulz concludes that the elements of existential space appear on several levels within a hierarchy which extends from the highest levels of geography and landscape to the lower levels of furniture and yet smaller objects. Those levels are determined by the environment given, as well as, the constitution of the person experiencing it. The system of schemata developed in conjunction with each level, and considered together with the way they interact with each other, constitutes the structure of existential space. (93)

Norberg-Schulz states that the degree of schemata development at each level of existential space, varies from group to another. For example, schemata corresponding to urban level may be less developed among nomadic people. Moreover, the nature of schemata also varies from one level to another, and while the articulation of those mediating the house level is mostly based on geometry, those representing the higher urban levels are mainly expressed in terms of topological characteristics. (94)

The geographical level

In reference to the geographical level, Norberg-Schulz states
that it has cognitive character and is thought rather than lived, yet still it may influence the more directly and fully experienced environmental levels. The space at this level rarely serves as a model for replication, but despite this it grants identity to objects—such as a country or region—and thus serves political and cultural purposes. Places and paths of geographical space have an abstract character, but although they do not represent what is directly known they still constitute potential elements of existential space. Primarily, the content of this level consists of several domains. In order to describe the structure of geographical space in a more articulate manner, Peter Haggett employed the concepts of: network, node, surface and hierarchy.

The landscape level

According to Norberg-Schulz the level of landscape, generally, provides the ground on which the configurations of existential space develop. But despite its relationship and impact on human existence, this level has hardly been investigated. The coherent theory formulated by Rudolf Schwarz is the only attempt in this area. As part of his theory, Schwarz states that the schemata representing landscape level is generated by interaction of the person's activities with topography, vegetation and climate. Accordingly, there may be some differences in the schemata developed by people practicing different activities—such as miners—in comparison to farmers. 

Norberg-Schulz comments that despite the fact that it is
primarily considered as background, landscape has structural properties which may offer high potential for developing places, paths and domains; and thus may help satisfy human needs for identification, orientation and security. Appropriate planning of building components may be employed, together with landscape, in order to ensure satisfaction of those needs. Regarding employment of landscape for such purposes, definition of domains by means of natural elements, i.e. slopes, edges and variation in texture, strongly suggest that those elements are integrated as part of the environmental image of the person. (99)

The urban level

In reference to the urban level Norberg-Schulz states that, it is composed of structures which are mostly determined by the activities of the person and his interaction with man-made environment. The basic form at this level is what the people refer to as their place is conceived during the development of the person, as he discovers a structured whole which he shares with others. Through the shared feeling of this place, the people living in it acquire a sense of identity and security because such a place represent for them a safe and known part in the midst of an unknown world. Thus, the primary quality of the urban image resides in the embodiment of this single identifiable place which may be represented by a settlement. In order to satisfy the basic demands of identity and security, this place has to have a figural character that corresponds to the urban image of the people inhabiting it. (100)
Norberg-Schulz points out that the identity of a settlement in relation to its surroundings depends on the density of its constituting elements. Village patterns from different historical periods and several parts of the world, indicate that density satisfies a basic human need. Although density has been associated with defence requirement, it has also been a feature of settlement planning where defence was not required. Generally, we may assume that the need for density motivated by deeper feelings. (101)

Norberg-Schulz says that, besides the general place quality, the urban structure is also comprised by an interior organization which is described by Lynch in terms of the concept of the node, path and district. The description of Lynch goes beyond the visual effects of those elements, and explores their organic relationship to human existence. (102) The approach of Lynch here receives confirmation from Claude Levi-Strauss who, in reference to traditional societies, indicates that the environmental image is based on simple topological relations, which varies according to the position of the person in the social structure. Levi-Strauss adds that, the image-type of each one of those traditional societies correspond to the real planning pattern characteristic of its villages. (103)

Regarding urban and settlement environment, Norberg-Schulz stresses and emphasizes that large cities and settlements are not mediated by a single image, but rather a hierarchy of images corresponding to the several environmental levels composing those complex environments. (104)
To conclude about the relation between urban environment and its corresponding images, Norberg-Schulz refers to Lynch who emphasizes that planning and design of such environments should aim at projecting the images of its inhabitants in concrete form. To accomplish this, the districts of those environments must have a particular character, their paths ought to lead to identifiable goals, and their nodes should constitute distinct places that grant the inhabitants a sense of belonging. (105)

The house level

In reference to the private houses of our urban environment Norberg-Schulz says that, they bring us inside and give us a sense of being situated. But, besides private houses there are other houses which have a public character, in reference here to the cases in which people dwell also in public buildings. Thus, the concept of home is of a variable range, depending upon whether the social life of the group is family centred inside individual houses or community centred, thus extending to public places. In both cases, the environment expresses the fundamental function of dwelling. (106)

Norberg-Schulz states that, the house constitutes the central place of human existence, within its boundaries: the child is initiated into being, and the man identifies with himself and feels secure enough to depart and return. (107) In this respect, Gaston Bachelard describes the house as "one of the great integrative forces in man's life". (108)
Norberg-Schulz adds that the structure of the house is primarily similar to that of a place, but it has got an interior structure constituting of subordinate places and connecting paths. This structure is a concrete manifestation of the co-ordinated totality of activities and forms of life characteristic to each house. Through this form of life, which expresses man's being on earth, the house interacts with the surrounding environment.\(^{(109)}\)

Norberg-Schulz here refers to Heidegger who emphasizes that to be on earth also means to be under heaven and that the activities associated with the house are also orient towards the divinities.\(^{(110)}\) In this respect he also quotes Heidegger who says that "the house expresses the structure of dwelling, with all its physical and psychic aspects".\(^{(111)}\)

Norberg-Schulz states that the house "is imagined as a system of meaningful activities concretized as a space consisting of places with varying character."\(^{(112)}\) Thus the image here is constituted of "differentiated places which interact among themselves and with the environment in varying ways. Norberg-Schulz adds that, above all (the character of image) is determined by concrete 'things' such as the fireplace, the table and the bed."\(^{(113)}\)

The thing level

Norberg-Schulz says that the lowest level of existential space is that of the things, such as furniture and other artifacts. At this level we can no longer talk about places, paths and domains, as we deal here with things that interact with their surroundings.

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Because we are familiar with things, and deal with them in a very direct way, their forms are usually made with the maximum precision. \(114\)

Norberg-Schulz adds that we usually interact with things as they serve as foci in the house. The fire-place, the dining table and the bed are some foci around which our life revolve. The cupboards and chest of drawers are also things in the house which enrich our life through hiding and revealing, conserving and remembering. Interaction with such things constitute an important dimension of human existence; and is thus incorporated in existential space. \(115\)

The interaction of levels

According to Norberg-Schulz, the structured totality of the levels of existential space correspond to the structure of human existence through his relation with: physical objects, psychic objects, social objects, and cultural objects, which he encounters at several levels: the level of things, of house, of settlement and of landscape. Man encounters these objects at various levels of existential space. Through this, he searches for God in nature, meets his fellow men in the city, finds himself in the house and is assured of himself through grasping things. Thus, we may consider these levels as the properties of existential space. \(116\)

Norberg-Schulz stresses that it is important that the levels of existential space represent each other, and that the topological
relations of the higher level be expressed in terms of geometrical ones at the lower levels. This representation also takes the form of expression of cosomological systems in terms of concrete environmental forms, which indicates a tendency of man to represent unknown things in terms of known ones. Through this process of representation, man receives the environment and focuses it in concrete buildings and things. Norberg-Schulz concludes that we regard differentiation of existential space into various levels as a product of the attempts of man to take possession of his environment.  (117)

Norberg-Schulz states that "existential space can be described as a simultaneous totality where the levels interact to form a complex field. Through perception, parts of the field are experienced, but the general image exists independently of the individual situation.  (118) He points out and emphasizes that "this field is neither continuous nor uniform".  (119) Such field contains a system of centres, with one of them usually dominating the others. Some centres may be located inside each other, like a thing which is located inside a house or a city that falls within a region. As a result of this, Norberg-Schulz argues that the levels actually contain each other. He adds that on each level, the centres are related to each other by paths. Domains may also contain sub-domains which consist of places and paths. Norberg-Schulz concludes that generally "existential space consists of several overlapping and inter-penetrating systems which interact with each other." (120) (Fig 5.3).
Summary

According to Norberg-Schulz space is encoded in the mind of the person as part of his development through the processes of socialization, acculturation and interaction with the environment which he shares with his society. As a result of this, a spatial image or existential space is developed of basic elements—places, paths and domains—representing the activities and social life of the person. The character and meanings underlying this life are expressed by those elements, and their interaction with each other, in terms of certain spatial relations such as centralization, clusters, proximity and enclosure.

Norberg-Schulz states that, as social life usually takes place at several levels, existential space which represents it, is also organized into several levels. Those levels interact with each other in the same way as it happens in a concrete environment, i.e. when the house interacts with the housing area in which it is located. The specific way in which the elements interact within each level, and the various levels interact with each other within existential space, expresses the totality of the life and existence of a society. By sharing together this spatial image, members of such society enjoy a sense of identity and orientation.

Norberg-Schulz concludes that, as part of its orientation, and in order to maintain its identity, the society attempts to project its existential space in a concrete form and thus incarnate their
ideal form of life. This is achieved through organizing environmental elements, according to specific spatial relations, and at several environmental levels. In the cases in which development of dwelling space is controlled by official institutions, it is essential that the directives of official policy should be based on the specific characteristics of existential space of the society towards which the policy is aimed.

In his concept of existential space, Norberg-Schulz has managed to express the relationship between existence; dwelling and buildings in terms of clear spatial relations, detailed structural analysis and concrete environmental forms. In this respect he complements the formulation of Heidegger, which on the other hand, deals with the meaning content of this relationship in a deeper way. Thus, by integrating the concept of Norberg-Schulz with the formulation of Heidegger, we can develop a more comprehensive approach towards the problem of dwelling space. This is the task with which the following chapter will deal.

5.3. A PHENOMENOLOGICAL APPROACH TOWARDS THE PROBLEM OF DWELLING SPACE: A CONCLUSION

The development of a dwelling environment among traditional societies, aims to satisfy a manifold of diversified objectives in a simple integrated way. The constitution of every environmental component is directed towards: nurturing life on earth, withstanding climate, preserving spiritual values and supporting socio-cultural life. The constitution of environmental components satisfies these
objectives in a well balanced, unified and simple manner which characterizes each society and reflects its culture and existence on earth.

Satisfaction of those objectives is accomplished through provision and organization of space according to specific cultural rules, which consequently generate certain spatial characteristics and relations. The nature of those spatial characteristics is not consistent throughout the levels of dwelling space: it usually varies from one level to another. As a result of this, our description of a particular space considers each level separately, starting with the high geographical level and ending with the level of the house and the foci - things - that interact within it. Describing dwelling space in this hierarchial order entails considering the social group which constitute traditional societies, also in a hierarchial manner. For example, the whole tribe and its sections and clans is considered at the geographical level, the lineages at the level of the settlement or the neighbourhood, and the extended and elementary family at the level of the house.

Our concept of dwelling space here is formulated by describing the manner in which certain spatial relations and characteristics enable social groups, dwelling together at several environment levels, to nurture life on earth, withstand climate, preserve spiritual values and support socio-cultural life. Our description here starts with the high geographical level.
The geographical level

The geographical level usually accommodates the whole tribe, as well as, sections and clans of such a tribe. The territory of the tribe here is mentally conceptualized – in terms of places, paths and domains – rather than actually lived. Yet, despite its abstract nature and the fact that it is not replicated as a model, the concept of the territory has strong political and cultural effects, and immensely influences dwelling space at lower environmental levels.

The settlement level

The settlement level may be considered as a place which is composed of several sub-ordinate places, connected by paths and encompassed within domains. The components of this place, which are generated by the types of activities and social interaction of the group inhabiting it, is defined through building components in terms of closure and cluster.

A settlement could also be considered as an individual place. As such, it has to be entered and has to interact with its surroundings. Through this, spatial relations and directions – such as front and back – and axes are generated.

The internal organization of the settlement, in terms of places, paths and domains, considered together with its major
directions and main axes, is the basic spatial relation which determines the character of such settlement. As such, these basic components are all integrated in order to support the economic, social and cultural system of the inhabitants, as well as to allow such inhabitants withstand weather conditions.

The level of the landscape

Although landscape is regarded as a background against which element of built environment are set, yet it has got a structure which may enhance definition of places, paths and domains. Due to this, spatial potential could be employed in terms of the built environment, in such a way that suits the weather conditions and satisfies the economic, social and cultural needs of the inhabitants.

The level of the house

Judging by our examination of the Sudanese traditional house type, the level of the house here could be divided into two levels or categories; depending upon whether it accommodates an extended or elementary family. This differentiation is important, because while the house of the extended family is usually composed of several spaces, that of the elementary family may consist of a single space. In our description of the house level we consider both categories.

In both categories of houses, we have to consider first the range of the house. Among societies in which social life is mostly
centred around the family and takes place within the house, the house range usually extends to the whole area. This, consequently, affects the character of both the house and settlement, and increases the interaction between their levels.

The house type which accommodates extended families could be considered as a place consisting of ordinate places which are connected by paths and encompassed within domains. The combination of those components, in terms of proximity, centralization and closure, generates distinct internal organization and figural character which characterizes each one of the traditional societies. Moreover the house has to be entered and has to interact with its surroundings. In this, it acquires certain directions and, more or less, distinct axes. These spatial relations, considered together with those pertaining to its internal organization, constitute the overall character of this category of house.

The house type which accommodates elementary families, and usually consists of a single room, should be considered in a different way. In this case, we may consider it as a place. Considered as such, it usually has an optimum size and distinct formal character. As a place, it has to be entered and has to interact with its surroundings, and thus, such place may acquire distinct directions and clear axes. Besides its interaction which happens inside the house. Here we refer to the things - such as the bed and furniture used for dining - which are foci of the house and the social life which takes place within its boundaries. Interaction between those foci, and the house that encompass them, does affect
not only the internal organization of the house but also its size, form, directions and axes. In this way the house level interacts with the lower level of the thing in a similar way to its interaction with the higher level of the settlement.

The range of the house, its internal organization, figural character, optimum size, directions and axes are the main spatial relations that determine its character. Among traditional societies, these relations are employed to allow the inhabitants to cope with weather conditions, pursue economic activities and preserve their social and cultural values in an integrated manner which expresses how such society exists on earth.

The level of the thing

Things, like furniture, which form foci of social life within the house are made with a great degree of precision so that they can serve the purposes assigned to them in an appropriate way. Thus they must comply with specific forms, a factor that consequently affects space requirements for the house which accommodates them. But, besides this, things as they interact with the house affect its spatial relations in many other ways — as has been cited above.

The things that form foci in the house are manufactured according to specific dimensions. Through those dimensions, and their impact on spatial characteristics of the house, the things are employed to ensure satisfaction of the requirements of physiological comfort, as well as the economic, social and cultural needs of the inhabitants of such house.
The interaction and totality of the levels

The levels of dwelling space interact with each other. We have already cited the effect of the level of the geography on the lower levels, the integration of the landscape level in that of the settlement, and the interaction between that of the house with those of the settlement and the thing. Through such interaction dwelling space constitutes a comprehensive space totality which expresses the existence of the society on earth in its fullest sense.

The spatial relations of this space totality, together with the unified and unique manner in which they satisfy the four main objectives cited above, are incorporated in the environmental image of members who belong to the same society. This happens as a result of processes of socialization, acculturation and interaction with the same environment. Through this shared image, the society enjoys a sense of identity, security and orientation. As part of this orientation, the society is furnished with guidelines for the process of building which ensures dwelling.

To conclude our formulation about dwelling space, we believe it is essential that the policy regarding this space should draw its directives and standards from the culture of the specific society towards which it is aimed. This will not only preserve the identity and maintain the dignity of this society, but also serve other economical and environmental objectives. Through approach, we can address traditional societies in a better way, and help overcome the
social, economical and environmental problems arising from the current policy.

We can now draw some conclusions about our research problem regarding official policy towards dwelling space. Investigation into the characteristic manner in which each traditional group employ space in order to satisfy economic, environmental, spiritual and socio-cultural requirements in a simple integrated way, may provide basic vital information. Feedback from this investigation could then be used to formulate policy directives and standards for all levels of dwelling space intended for each traditional group. Through this we can ensure preservation of the identity and dignity of those societies. Moreover, we may also help to overcome several other economic, environmental and public health problems due to the current policy and its lack of consideration of the actual space requirements of those societies.

The feasibility of our concept and approach towards dwelling space and its policy is yet to be tested against Sudanese traditional societies and actual housing situations. This task, which is undertaken in the following chapters, is accomplished in two stages. The first stage is covered in Chapter Six and investigates those societies in their traditional lifestyle as part of which they exercise a maximum control over the development of their dwelling space. The second stage is dealt with in Chapter Seven, and examines the urban life styles of traditional societies as they live in housing areas planned, and partly controlled during its development, by official practice. Examination of those
societies leads to conclusions about the feasibility of the use of a phenomenological approach towards the planning and design of dwelling space.

NOTES AND REFERENCES

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FIGURES

Fig. 5.1. (Not to scale)
Source: NORBERG-SCHULZ, C. "Existence, Space and Architecture", p. 21

Fig. 5.2. (Not to scale)
Source: NORBERG-SCHULZ, C. "Existence, Space and Architecture", p. 25

Fig. 5.3. (Not to scale)
Source: NORBERG-SCHULZ, C. "Existence, Space and Architecture", p. 33