

**STUDY OF COLONIAL ARCHITECTURE
IN
BANGLADESH**

GIFT

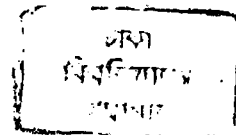
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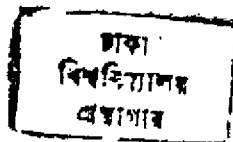


**A thesis submitted for the degree of
Doctor of Philosophy**

Department of Islamic History and Culture, Dhaka University, Bangladesh

July 1999.

384961



To my parents.

Ahasan Ullah Khan

Mehrun Nessa Khan

Certificate

This is to certify that the Thesis entailed 'Study of colonial architecture in Bangladesh' is an original work done by Prof. Faruque Ahmad Ullah Khan for the award of Doctor of Philosophy. The reference cited in it have duly been acknowledged. The style and contents of the thesis have been approved and recommended for submission for the award of Ph.D degree .

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Declaration

I hereby declare that the whole of the work now submitted as a thesis entitled 'Study of colonial architecture in Bangladesh' for the degree of Doctor of Philosophy' in the department of Islamic history and culture, Dhaka University, Dhaka-1000 is the results of my own investigations except where due acknowledgment has been given. The thesis has not been concurrently submitted in substance in part or whole anywhere for the degree.



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Faruque Ahmad Ullah Khan

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List of abbreviation

ABR	Assam Bengal Railway
ASB	Asiatic Society of Bangladesh
ASP	Asiatic Society of Pakistan
BADC	Bangladesh Agricultural Development Corporation
BS	Bangla <i>Sai</i>
BSS	Bangladesh Bureau of Statistics
BUET	Bangladesh University of Engineering and Technology
C.C	Cement concrete
C.O	Circle officer
CUS	Centre for Urban Studies
DJ	District Judge
DM	District Magistrate
DMSR	Dhaka-Mymensingh State Railway
DSP	Deputy Superintendant of Police
DPPF	Dhaka Past Present Future
DU	Dhaka University
EBR	East Bengal Railway
EIC	East India Company
GL	Ground Level
GOB	Government of Bangladesh
LC	Lime Concrete
LDC	Lower Division Clerk
NBR	North Bengal Railway
NILG	National Institute of Local Government
NIPA	National Institute of Public Administration
PL	Plinth level
PWD	Public Works Department
RCC	Reinforced cement concrete
Rs	Rupee
RU	Rajshahi University
SDO	Sub-Divisional Officer
SP	Superintendant of Police
UDC	Upper Division Clerk
UN	United Nations
VC	Vice Chancellor

Thesis abstract

Both the literature and field survey had been extensively done for the collection of information regarding the colonial houses. Substantial information was not found from the literature survey. Prime information was collected from the field survey.

A socio-cultural transformation noticed during the colonial period. This socio-cultural transformation had been gradual. The behavior and the cultural elements of the first and second societies were studied and the reference groups (in the first and second societies) for the cultural change identified. The degree of adoptability of these groups found favourable for the development of a new type of culture - 'the colonial third culture'. To fulfil the needs and aspirations of these people (of third culture) a definite style in house form 'The colonial third form' gradually developed in this country.

The whole society particularly the urban one underwent a changes in gradual manner. The elements of urbanization, its concept of growth, different types of towns and their components studied. Each components added to the urbanization associated with some types of houses, this increased the house stock

The houses built in the rural and urban areas are throughly investigated, the typology identified. The general conditions, their maintenance and the nature of occupancy of the houses are also investigated.

The components of the compounds and the houses are investigated and discussed. The activities in these components are also studied. The elements of the houses are found out. New types of building elements are used in the houses.

Design considerations, space organizations are investigated and a transformation in house form from traditional to urban, detached to enclosed, introvert to extrovert and bungalow, composite bungalows to consolidated bungalows found. These consolidated bungalows considered to be modern and the ultimate house form. These are found very few in number. The phases of transformation of house forms identified. The space organizations were new and were not found inconfirmary with

the traditional culture. These new space organizations of extrovert types conflict with the traditional values.

Different fronts regarding physical and climatic, front and back, male and female clean and unclean, inner and outer, served and services etc. studied.

Design principles regarding rigidity, circulation, linkage, orientation and house form etc. also studied. Logical arrangement of different activities, functions, culture and heritage are found to be the determinants of house form. A conscious participations among the owner, designer and builders in the design process is noticed. Continuation of heritage in some form is observed in house form.

The materials used and the technique of construction **thoroughly** examined. To achieve the new types of spaces and houseform, new materials particularly factory made **materials** found access to the construction of these houses. New systems of construction are observed. Experienced *silpins* (artisans) and supervisors were available. Institutions like PWD and railway engineers were engaged in the process of house construction.

Principles of facade treatments, ornamentation, elements of ornamentation regarding solid-viod relationship, balancy, proportion, scale, continuaty, order, contrast and unity, direction and movement, attention and dominance etc. and styles in ornamentation were also studied. Palladian, colonaded and archaded and plain facades are found in the houses. Ornamentation by built form, structural elements, decorative elements and surface treatment etc. are observed in the houses. Most of the houses found to be ornamented and decorated in some form or other.

The findings mentioned in the discussions are tested by randomly selected representative houses of all types and found confirmatory with the findings. The thesis is concluded with the epilogue in the hope that government and relevant authorities would come forward to conserve the magnificent houses for maintaining the heritage.

1. Introduction

One such part of the Englishman's domain, one of the greatest Empires ever, is today's Bangladesh(1). The Indian sub-continent, Bangladesh being perhaps its most fertile part, became an Empire when the title of Empress was bestowed on Queen Victoria in 1876, but the British had been the colonial rulers of a large part of India including Bangladesh, long before in 1757.

Colonization of Bangladesh and India, though gradual, was comprehensive in that the colonial masters took progressive control of every aspect of life in the sub-continent. The British firmly established the system of government, tax collection, education, communication, judiciary, manufacture, trade and commerce, development of municipality and local government, and even town planning and architecture, among other things.

For each type of control and development the colonists had to build the infrastructure and houses/housing. For security, they had to agglomerated the *shahebs* in the colonies in the urban areas. The establishment of the steamers and railways helped to develop the railway colonies in the station areas. The development of trading and commerce established the shop houses in the urban areas. The plantation of indigo in this country developed the indigo *kuthies* in the *moffossal* towns and even in the remote villages. The tea plantation demanded the construction of garden bungalows. The development of urban services by the colonists demanded the construction of *patties* (eg. *methor's patties*). The administrative hierarchy like division, range, district, sub-division, circle, *thana* etc, needed for the accommodation of divisional commissioners, D.Ms, S.D.Os and circle officers in the colonies. Thus the circuit houses for the circuit judges, *dak* bungalows for the government officials were built in many places. It is now about fifty two years since the British left this country, but many of the British legacy, particularly the building edifices remain in Bangladesh.

The architecture is primarily the product of the society, economy and culture. Socio-economic and cultural factors are considered as the determining forces of space organization and the form of architecture. Almost one hundred and ninety years

(1757-1947) of colonial rule in this country moulded the socio-cultural life of the country, the society as a whole underwent a major structural change and it left its impact in every sphere of life including townplanning and architecture. A new type of architecture developed and practiced in this country known as 'colonial architecture'.

The term 'colonial architecture' is considered as the architecture built during the colonial period by the colonists and locals or natives (2) of this country. This colonial architecture is the product of the fusion of the elements brought by the Europeans with the indigenous ones during the colonial period.

II. Thesis rationals.

The pattern and the form of architecture introduced and practiced in this country by the colonists were adopted by the elites, common people and by the government and non-government agencies. Their impact continued even after the end of the colonial period.

The colonial architecture has a special character in space organization, form, materials, structural system, technique employed, detailing, facade treatment, decoration and ornamentation etc. The colonial builders in most cases tried to add an element of grandiose to instil the feeling of awe in the minds of the native people. The houses made by the colonial authorities influenced the architecture both urban and rural in many ways.

The colonial builders had brought from Europe the architectural elements of Classical, Gothic, and Renaissance architecture. At the same time they skilfully adopted some elements and techniques of the indigenous, Hindu and Muslim architecture. Because of the mingling of the two cultures, the culture of the natives (first culture) and Europeans (second culture), a third culture developed in this country. Hence a new style and form in architecture (third form) developed and practiced in this country to satisfy the needs and aspiration of the people of the third culture.

A number of residential buildings (of many types, such as rural and urban houses, shop houses, government bungalows, zamindar houses *bagan baries*, railway quarters, *dak* bungalows and circuit houses, *kuthies*, *patties*, , garden houses etc.)

were built during this period. If these houses are studied in detail, the complex process of interaction between European and native (local) architectural elements may be revealed. This also shows the exchange of ideas between two great and different cultures.

The architectural consequences regarding space organization and form present problems in two different ways. One, is that of the makers and builders, their task of making the structure responding to the aspiration and needs of the people for whom the country, towns and the buildings exist, the other, for the historians, social scientists, planners and architects who may study the physical environment and identification for human, social and cultural realities in order to understand architecture properly.

No research or study has so far been done on the colonial architecture of Bangladesh. But local people and the builders have been consciously and uncsciously influenced by it.

They adopted the colonial architectural elements in the design and construction of their houses. More ever, the houses built during this period are now used either as schools, colleges, institutes, offices, shops, museums etc. or as residential purposes. Therefore, these buildings demand our attention.

A study of this nature is not merely of relevance to academicians but also of importance to policy-makers, overseas development agencies (3, ADB, UNDP, Ford foundation etc.) designers, planners, architects and other associated with the historical buildings in Bangladesh.

The country, which according to the UNs is one of the 'least developed' (4) will undoubtedly have to reuse the available old buildings ic, the colonial buildings to satisfy its various needs. As it is desired that the best use should be made of the limited resources available, it is pertinent that the approach to the reuse of existing buildings should be well- researched.

III Objectives of the research.

The aim of this study is to search for kind of development and building construction practiced during the colonial period in this country. The aim of the research gives rise to several questions. Added to these are other questions whose origin owes to an observation of house building situation in Bangladesh during the colonial period. This research will seek answer to the questions regarding the types of houses, components of houses, elements used in the houses, space organization, zoning, binary concept, materials, construction system facade treatment detailing, decoration and ornamentation etc.

The research will seek answer to these questions which are: whether the number of existing colonial houses are sufficient enough to provide the research information and to satisfy the field survey and observation.

Whether these are in a good physical conditions to be surveyed and to be preserve or they are in delapidated conditions or are already destroyed.

Are the houses satisfy the users and builders regarding the space organization?

What principles the colonial builders adopted to solve the binary concept ?

How the colonial builders arranged the internal and external spaces of their houses ?

What were the components of the houses and compounds ?

What building and finish materials they used in the houses ?

What were the construction system and technique they employed in their houses ?

What techniques they had developed and practiced to solve the environmental factors?

What are the present ownership pattern govt, semi-govt, private ?

How from the study of colonial houses could provide the professional knowledge to the decision makers, owners and the designers. Is there enough colonial characteristics component and elements in the houses ?

The research work of the type envisioned in this proposal have certain objectives to pursue. Followings are the objectives of the research work:

The study of colonial houses regarding principles of space organization, zoning and its binary concept, form, materials, structural system and technique employed, facade treatment, decoration and ornamentation etc.

IV. Scope of the study.

Since, a large number of public buildings of all categories and the residential buildings of different types were designed and built during the colonial period, it is not possible to study all the types of buildings in a limited time. It will be reasonable to limit the study on particular field. Hence, this study is limited to the different types of residential houses only. Different types of houses built in the colonial period were identified and included in this study.

The term 'colonial house' is considered as the houses built in the urban and rural areas during the colonial period (1757-1974) by the colonists and the local people of this country.

V. Research Methodology.

To achieve a clear understanding of the colonial situation, the society, the urban planning and architecture and to achieve the above mentioned objectives the detail study is made into a number of areas all over Bangladesh. The available publication and literature survey is made and the scholarly persons have been interviewed.

Not much is known about the colonial houses in Bangladesh from the publications and literature survey. To overcome this deficiency a field survey has been undertaken as a part of the study. A field investigation survey data collection sheets (appendix-6) are prepared to collect the informations. The study involves the investigations at the detail on the history, location, site, compound, security system, indoor and outdoor space organization, form, materials, zoning and binary concept, detailings, building components, building elements, construction system, circulation and linkage, facade treatment, decoration and ornamentation, present use and landscaping etc.

A number of case studies are undertaken of houses from different region of Bangladesh. This personal field study includes all types of houses built in the colonial period. The plans, sections and elevations of few railway bungalows and

houses are collected from the railway library, Chittagong and Kamalapur, Dhaka. The plans, sections and elevations of some government bungalows, houses, chummeries, *dak* bungalows and circuit houses are collected from the design circle of respective executive engineers offices. The designs of some bungalows of D.U. are found from the office of the university. engineer.

VI. Problems of research work.

Sufficient number of written materials and publications are not available on the socio-cultural background, history of urbanization and the colonial houses of Bangladesh. In absence of such written materials the researcher have to depends on the field survey, investigation and observation.

Some of the houses such as 'Nimntali *kuthi*' built by the EIC was demolished and only some protion of it (western gate) remained. Potu *babur* house at Alauddin road, Dhaka (present fire brigade office), urban house of Jagannath saha at Jagannath saha road, Lalbagh, Kajla *kuthi* and Motihar *kuthi*, Rajshahi, Monipur *rajbari* at Sylhet town, Kalash kati zamindar house (Rajeswar Rai Chowdhury), Kalashkati, Barisal, I.G. Prison bungalow, and bungalow no. 3, at D.U. campus, Huda house at Atomic energy campus, Dhaka, Bhawal *raj bari* at Imamganj, Dhaka, Sonali bank building at Bogra, shop house of Abdur Shahed at Nawabpur, Dhaka etc. are either completely or partially demolished. Many houses are found in delapidated condition (Balihar place, Kajla *kuthi*, Rajshahi).

Many housees are encroached and occupied (Sul suda, Mothur *babur* house at old Dhaka) by the unauthorised occupants. Therefore, some of these unauthorised occupants did not allow the researcher to survey, even to enter these houses.

In some of other cases, the present occupants even do not know the name of the original or the present owner of the house. In these cases the senior persons of the areas are interviewd.

Governor house at Dhaka was occupied by the Ministry of Defence till mid 1994 and the plans of the house could not be collected from any source. Recently these are collected.

The plan and design of some of the houses (Rup Narayan Rai, Simson road, Dhaka, circuit house, Jessore, *dak* bungalow, Satkhira, Bardawan house, Dhaka) are changed to satisfy the present needs. The original construction is either expanded or demolished. It is very difficult to find out the original design and the uses of the houses. In most cases plans of the houses are drawn from the datas and informations collected from field survey.

VII. Organization of the thesis.

The study is organised into eight main parts. The preamble of the thesis will discuss some of the research issues, while the rest of it is structured around two aspects. One, the back ground of the study (socio-cultural background, urbanization in Bangladesh), two, the main context of the study, the colonial houses in Bangladesh. These are contained in eight chapters that followed from the research outlined above.

Chapter-I establishes the socio-cultural background and this chapter is followed by the chapter-2 urbanization in Bangladesh.

The chapter-3 to chapter-7 formed the main context of the thesis, deal with the architecture (houses) during the colonial period. Chapter-3 deals with the typology of houses. Chapter-4 looks into study of components and elements of the houses. It is followed by chapter-5, principles of design and space organization. Materials, and construction system are discussed in the chapter-6. Facade treatment and ornamentation are discussed in chapter-7.

Each chapter is started with the introduction and then the contents of the chapter is discussed. The findings are presented at the end in the discussion.

All the findings discussed in each chapter are tested with the selected representative houses contained in the last chapter, chapter-8. The thesis is concluded in epilogue in this last chapter.

Several essential tables and illustrations are presented with the context in the respective chapters and essential appendixs are attached at the end of the thesis.

Expressing in English has been a problem, since, this research overstepped the known boundaries of design and drawings. There was always a discomfort regarding the

correctness of semantics and expressions. To overcome this shortcoming, the text is reinforced with drawings, sketches, and photographs. These are made self explanatory and run parallel to the written text.

Reference: Prologue

1. For basic information on Bangladesh, see Appendix-1
2. The term native was used by the colonists for the people of the land. Other terms used for it were Nigger, Indian etc.
3. Recently the Ford foundation is providing fund for the study of historical buildings of Dhaka city. The study is organised by the department of Architecture, BUET, Dhaka, where the author is one of the member of the study group. Architectural conservation, Bangladesh Asiatic Society of Bangladesh, Dhaka, 1993.
4. Rolt, F, Pills, Policies and Profits, London, 1985, P-1

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Chapter-1

SOCIO-CULTURAL BACKGROUND OF BANGLADESH

Chapter-1

SOCIO-CULTURAL BACKGROUND OF BANGLADESH

1.0 Introduction

The arrival of a large number of foreigners and the colonial system of administration moulded the socio-cultural life of the country; the society as a whole underwent a major structural change and it left its impact on the socio-cultural life of the country. As a result, a 'cultural transformation' took place involving a new type of culture, very different from the traditional and metropolitan (1.1) cultures. The design of the urban houses built during the colonial period acquired the European (or metropolitan) standards in some of the household activities which were till then to a large extent traditional. The ordinary day to day activities of the rural, urban and colonial household are examined in order to determine their design implication in the context of colonial houseform. Before going into details of the day to day activities of the colonial household, an understanding of the people, their habits and behavior, the family pattern etc, have to be studied. A clear understanding of the habits, behavioral pattern of the people and their cultural elements is essential for studying and understanding of the space organization of indigenous and colonial houses.

1.1 People

It was probably one thousand years before the birth of Christ that the Bang tribe of the Dravidian stock was pushed out of their original home by the Aryan expansionists. The Bang migrated towards the south-east and settled in the delta region of the Ganges and the Brahmaputra.

'Bangla' has been mentioned in Jaina books and in Vedas. The suffix 'al' is a sanskrit word meaning raised mounds and the Aryans used the word 'Bangal' to mean the territory where the 'Bang' tribe used to live on 'al' in the Vedic era (1.2)

The people of Bangladesh can be divided into several ethnic groups of which the heterogeneous group-Bangalee, is by far largest of all, being more than 97 percent of the total population. The rest of the population are either non tribals immigrant from Bihar, Uttar Pradesh, Gujrat of India or tribal- Chakmas, Garos, Santals, Tripuras,

Monghs, Kukis, Murangs and Technangys. They are living mainly in Chittagong hill tracts, Chittagong, Comilla (1.3) Sylhet (1.4) and Mymenshingh districts (1.5).

The geographic distribution of the colonial buildings is fairly confined to the alluvial delta of ganges, which explains the popularity of clay materials- the bricks and clay tiles. The colonial buildings are found in the plain areas where a typical and new culture developed in this period. This culture may be viewed as one of the most important manifestation of the European culture, mixed with the regional culture of this plain region (Fig.-1.2). Therefore, the culture of the minority communities are not considered here.

1.1.1 Adaptibility and formation of cultural identity

In ancient times, Bangladesh was the land of Hindus and Buddhists. The Muslim conquest of Bengal in the 13th and 14th centuries initiated a dynamic interaction between Hindus and Muslim (1.6). The Hindus and Muslim have been living in this country for about one thousand years. The interaction between these two cultures had been producing a rich and new types of literature, art and architecture. Later on the European came and intermingling of the three cultures developed a new cultural platform-colonial 'third culture'. The development of the third culture was possible, because the people were ready to receive and adapt some aspects of foreign culture. As a result of the intermingling of these three cultures, a new type of architecture developed and practiced during the colonial period to meet the needs and aspirations of the people of third culture.

1.2 Family

The family type only influences the private houses (rural, urban, shop houses etc.), it does not influence the house forms built by the various institutions. In the design of the houses for the institutions like PWD, Railway, Municipality etc, the number of family member, culture, religion etc, were not considered. The considering factors were the type, status and the origin of the occupant, ie, wheather he belonged to the member of the metropolitan culture or to the native culture. Usually, large bungalows (fig-8.29.2) were provided for the *bara shahebs* or the members belonged to the metropolitan culture. Spacious chummeries were constructed for the European

unmarried or the married who resided in this country (fig-8.27.1, 8.27.2). There was no such accomodation for the natives, Again, a small room (6'-6"X 10'-0") was provided for a *methors'* family of 3 to 6 members (fig-8.40.1) in the *methor's patti* or a single room quarter was provided for the family of a local railway person (fig-8.33.3). There were three basic types of family organization found in the colonial society.

1.2.1 Nuclear family

This family consisted of husband, wife and children. Sometimes parents of either husband or wife might form a part of the nuclear family. Usually, the members of the metropolitan culture preferred the nuclear family. The government, railway, garden and other autonomous organization's quarters and bungalows were designed for the this type of families.

1.2.2 Joint family

Joint family is the family where a number of families live together, sharing the common kitchen and services. The budget is common and the elder member of the family is considered as the head of the family. The majority of the local people, both Hindu and Muslim belonged to this type of family system and found in both rural and urban areas of Bangladesh Most of the zamindar families belong to this type of family.

1.2.3 Extended family

This type of family is composed of a number of families, having seperate kitchen and budget, but lived in the same compound (fig-8.1, 5.20). Usually, the extended families are very large consisting the cousins and second cousins and so on. The families lived in the Natore rajbari are the example of the extended family where a number of families, all relatives live together with sperate kitchen in the same compound.

Extented families were also found in the urban areas and hence many urban houses were designed to satisfy the need of these families such as Rebotimohan lodge at Sutrapur, Dhaka (fig.- 8.19.1). The polygamy was common among both the Muslim and Hindus. Lodging master for the children was attached to each type of families.

Lodging master was not always necessary, but it was considered as a status symbol and he was almost a part of the family. Relations and guests were more in the extended and joint family than in the nuclear family. All types of houses (rural, urban, zamindar etc,) were composed of three different categories of persons.

- a. The immediate family-husband, wife and children.
- b. Permanent relatives- house master, parent, brother, sister etc.
- c. Servants.

The reflection of this composition of family members is expressed in each type of the colonial house design.

With colonization and subsequent growth of urbanization, the concept of extended family gradually disappeared and the nuclear family began to emerge. The new comers (form the rural areas) in the urban areas, set up their home in the colonial towns and thereby the foundation of nuclear families were laid. Usually, the unmarried younger brothers and sisters lived with the elder brother and the married sons with the parents. This type of joint families was common throughout the colonial period. The members of the metropolitan socieity always liked the nuclear family and most of their family members including parents lived in the 'home' (1.7). The transformation from extended to joint and joint to nuclear family was gradual but very slow process. This process of transformation always depended on the status, location and time. This transformation of family types was reflected in the subsequent house design and construction.

1.3 Cultural elements

There are several elements in the composition of the culture of a socieity. The transformation of all these elements took place gradually during the colonial period. Again, all these elements found in the indigenous socieity were much different from the urban socieity. However, traditional influences were present in the colonial third culture socieity and seen in the way the domestic activities performed in the rural and urban socieities. The design of most of the colonial houses assumed European character in performing some of the household activities which are still, to a large extent traditional oriented. The cultural elements identified in the rural, urban and colonial socieities are: work, preparation of food and cooking, eating, leisure and

entertainment, washing and bathing, religious activities (puja, praying etc.), resting and sleeping, storing, carriage, privacy and purda etc. (fig-1.4-1.6).

1.3.1 Work

Unlike the traditional houses, in most of the urban houses in Dhaka (1.8), Chittagong and Rajshahi and in other *moffassal* towns, the work places were separated from rest of the household areas. In some of the urban houses, the particular professional like the physician and lawyer and others required a space or room for their professional activities. The public nature of the doctor's (fig-8.30.1) or lawyer's chambers required a suitable location in the houses. The *shankhai* traders require production area at the ground floor. They keep the whole ground floor open for production (fig-8.39.1) in the shop keeper's houses either the whole ground floor or front part of it is kept for the shop, store etc. purposes (fig-8.17-8.19).

The bungalow houses for the *shahebs*, particularly the *bara shahebs* had an office room or office space for his works (fig-8.25.1). In the chummeries, the common office spaces were provided for this purposes (fig-8.27.1). In the *kutties* (fig-8.36.1) or shop houses the work areas were carefully designed as the production, display or shop areas (fig-8.15.1) according to the nature of works or production.

1.3.2 Preparation of food and cooking

Ready made and prepared food, even the spices of various ingredients were not available in this country during the colonial period. It had to be manually prepared from raw form and spices were to be grounded on *pata* or *nora* (stone tablet) with the *sil* or *potah* (another piece of stone) sitting on the floor, (fig.- 1.4.1)

Vegetables, fish, chicken etc, collected from either the kitchen garden, pond or market, had to be prepared. The chicken was usually live and had to be slaughtered first and then to be dressed, cleaned and cut into pieces, mixed with other ingredients before cooking. The fish eaten by the Bangalee contained a lot of scales and very slippery. The process of cutting the fish involved, (fig-1.4.1) dipping it in ash and then it was cut on the *boti* (type of vertical blade) using both hands. Food preparation was a lengthy process and required quite a large space, equipment and water etc. Moreover, it generated the organic wastes. Extra space besides the kitchen

was required for this purpose. The Verendahs were very effective for this purpose. The kitchen, kitchen verendah and kitchen yard had to be cleaned out every day. Food preparation and cooking required various kind of utensils mostly of traditional origin, such as *boti*, *sil* and *pata*, *bati* and *patils*. Cooking itself was a lengthy process and generated a lot of smell and smoke. Because of the amount of oil used, there was a kind of greasy deposit on the kitchen walls and ceiling. Instead of the *boti*, the people of the third culture used the knives and prepared the fish, vegetables etc, on the preparation table. (fig-1.4.1).

Jute and rice straw, leaves and firewood etc, were used as fuel in rural areas, fire wood and wood dust in the urban areas, later on coal was introduced by the colonists in this country. Coal generated a lot of smoke in the kitchen. Hence, chimney was introduced in the kitchens of the urban, (fig-1.10.1) zamindar (fig-8.12.3), railway (fig-8.33.5), and government (fig-8.28.2) etc. houses.

The urban households having strong ties with the village home received rice or other grain from their rural homes, all these required a store space with the kitchen or in the house. (fig-5.9.1), Earthen kiln of either of permanent or movable nature was made in the kitchen or outside kitchen in the kitchen yard in the rural areas. The food was cooked sitting either on *pirhi* or *mura*, while food was prepared standing by the people of the colonial third cultural areas. (1.4.1) Therefore, the kitchen designed for the bungalows of the *bara shahebs* was different from the kitchen of the local people. The menu of the Bangalee and European are different which demand different ways of the preparation of food, cooking and serving on the table.

1.3.3 Eating

No fixed place was allocated for the eating in the traditional households. In Bangalee culture, eating was traditionally carried out while sitting or squatting on the floor with one's fingers (fig-1.4.2). A person might eat in the kitchen floor, verendah space or in the sleeping areas. In the traditional households the house wife was meant to eat after everybody else had finished. Servants, if resident in the house used to eat separately after everybody else had finished, usually the traditional way on the kitchen floor. Some of the rich people in the rural areas eat sitting on the *chowki*.

Eating pattern had undergone a substantial change in the urban context during the colonial period. The rich urban people preferred (fig-1.4.2) to eat on the *chowki* or on dining table. Special places were allocated in each house as the place for eating. Simultaneously traditional way of eating on the floor was practiced even in the urban areas. In spite of the 'modernization' of eating process, people continued to eat with their fingers instead of spoons, forks or knives. People of third culture usually took food on the table (fig-1.4.2) and chairs using the spoons, forks and knives. Pantry furniture, side table, preparation table etc, were the common furniture for this purpose.

Eating was also a form of entertainment specially during the festivals. Special foodstuff was distributed in *sal patas* (1.12) or sal leaves or in *sankies* (1.13) and served in the *uthan* or on the roof of the pucca houses. Parties were occasionally thrown in the bungalows of the people belonging to the third culture. Drawing room (1.15), dinning room, family space, verendahs, terraces and lawns etc, were used for this purposes.

1.3.4 Leisure and entertainment

The homely environment offered wider scope for leisurely activities and pastime at home during the colonial period. Group gossiping, (fig-1.4.3) gardening, bird rearing, pегion flying, kite flying, cock fight, bull fight viewing, drama performance etc, were the traditional way of entertainment and pastime. Gardening was a popular leisurely activity. This was however dependant on the availability of spaces in the house. Each house particularly the govt. bungalows, railway quarters and zamindar houses have enough spaces around the house for this purpose. Gardening was done on the spaces around the houses. Pot planting, as it practicing now a days, was not normally practiced during the colonial period. In some cases the pot planting is also seen.

One of the most popular way to spend leisure time was visiting friends and relatives. Society was close knit and people visited each other frequently and often without notice. (1.16).

Various entertainment such as gossiping, playing card, *daba* etc. were performed in the *baithak khana*, drawing, family, verendah etc. spaces in the houses. Drinking and other outdoor games were played in the clubs (eg. station club). The *bara* and *chota shahebs* sometime drink in the verendahs and terraces of the bungalows. Dancing (1.17) and *baijee nach* were viewed by the ordinary people in the *baijee baries* or in brothel. But the zamindars, big businessmen and *shahebs* etc. enjoyed it in some of the dancing hall of the zamindar houses (eg, Ahsan manjil, Ruplal house, Murapara house, Mymensingh rajbari etc.) A particular type of pleasure houses or *bagan baries* (eg. Rose garden, Dhaka. Prem kanon-Khulna, Bagan bari of Binoy Poddar at Sonargaon, *bagan bari* of Tapa, Rangpur etc.) were absolutely for pleasure purposes.

The outer house was usually allocated for the receiving guests. This '*baithak khana*' meaning meeting place could be considered equivalent to 'out house' in the ordinary urban house and 'drawing room' in the upper class society or in the bungalow houses. Usually the female guests were received in the family in the bed room, inner rooms of the house, verendah or even in the kitchen verendahs. The degree of privacy varies in consideration of the familiarity between host and the guests. (1.17)

For the younger group, playing was an important leisurely activity. *Uthans* were used in the traditional houses for this purposes. Courtyards and lawns in the urban house, or if not available in the small compound, the front roads of the *mohallas* (1.18) were used for this purpose. Playing of *daba* (chess), *pasha*, card etc, was popular and *roaks* (1.19) were extensively used for these purposes. Snake charming, monkeys' dance, cock fight, kite flying etc, were also enjoyed by the adults in the *uthans*, lawns or to nearby open spaces.

1.3.5 Washing and bathing

Washing of clothes were performed in the *pukurghat*, (1.20), *riverghat* (1.24), *indra* (1.22) areas etc, in the rural areas. Washing of clothes in the *pukurghats* was also popular in the urban areas too (fig-8.5.2, 5.9.1, 5.15.1, 5.16.1, 5.33.1). Tube well was not very popular at the early colonial period. Tube well was found in some of the urban, zamindar and government houses at the late colonial period. A decorated

steel tube well is seen in the Natore *rajbari* (fig-4.35.2). In the urban areas, baths were usually taken in the bath rooms in urban, railway, zamindar and government bungalow houses. But in the ordinary urban houses or in the *moffassal* areas baths were usually taken in the open or in semi covered enclosures. The preferred way of taking a bath was by pouring water over once head with a *mug* (pot of water) from a bucket. Water was stored in one or two buckets or pucca reservoirs constructed near by the bath rooms. Showers were not popular outside the large towns.

The *pukur ghat* or *indra* areas were enclosed by any kind of enclosures, eg, bamoboo mat, straw, leaves etc, for *purda* purposes. For privacy reason, *indras* were digged in the internal *uthan* in some of the urban (, fig-8.8.1, 8.9.1), zamindar (fig-4.17.2) and govt. bungalow (fig-4.17.1, 8.12.1). Pucca enclosure for privacy purpose was constructed around *pukurghat* in the Putia *rajbari* (1.23, fig-4.17.3). Dressing rooms are found in many zamindar houses, eg, Murapara zamindar house and Mymensingh *rajbari* (fig-4.16.5).

1.3.6 Religious activities

Worship is performed in the Hindu households in a particular place; *griha devota* or household gods and goddes and other *devotas* are placcd in a room/place secred to them. Besides this 'tulsi tala' was built in almost every Hindu houses (fig-4.18). *Mandap* (1.25) was built in the houses of the zamindars and affluent people. (fig- 8.20.5). Private mandirs were built in some of the Hindu houses (fig-4.9.1, 4.9.2, 4.9.4, 4.9.5, 4.9.6)

The muslim offer prayer on a rectangular 'jai namaj' or mat usually in a *namaj ghar*. It may be performed in any clean and well maintained places in the bed room, sitting room, verendah or any other places in the bed room, sitting room, verendah etc. *Masjid* was built in the household areas of the zamindars and affluent people (1.26 eg, Dhonbari zamindar house, Tangail and dewan bari, Savar fig-4.9.3). This prayer space has important design consideration while building houses.

The Christians have no ^{definites} space for the offering. They usually used to go to the church once in a week. Respective religious festivals were observed by all Hindu, Muslim and Christian families.

1.3.7 Resting and sleeping

Separate *ghars* or rooms are usually allocated for each couple for sleeping, in the Bangalee culture. It was common for the children up to the age of 8-12 years to sleep with their parents. There are no privacy restriction between parents and the children in the sleeping areas and it was preferred if they are close together.

Psychologically a mother feels safe and happy if she is able to observe her sleeping child. Moreover, bed room doors are hardly ever shut in Bangalee households. Therefore the bedrooms are found interconnected by doors where the bed rooms are arranged side by side around the courtyard (fig-8.2). The bedrooms interconnected by doors are found in all types of the houses-- rural (fig-8.5), urban, (fig-8.9.1) zamindar (fig-8.18.1, 8.20.2), dak bungalow (fig-8.24.2, 8.26.2) and circuit house (fig-8.38.3), *kuti bari* (Fig-8.36.1), *kachari bari* (fi-8.21.1) etc.

Ordinary rural people used to sleep on mat (*chati, hogla*) on the floor (1.4.4). Well to do persons sleep on *chowki* and *khat* (*palong*) (fig-1.4.4). The urban people used to sleep on *chowki* and *khat* or on *devan*. “*Mifal*” (1.27) was a special type of *palong* where there was some sort of storage space.

The rural people used the *pirhi, jal chowki, mura* and mat for resting. The urban people used the *mura, stool, takia* (fig-1.4.3) and chair for this purpose. The easy chairs and sofas were the usual drawing room furniture introduced by the colonial people. Hand *punkha* made of plam leaves, bamboo mat, cloths etc, were used during the summer season. Pulling *punkha* was a colonial device introduced and developed by the Europeans (fig-1.4.4). The *punkha* puller usually sit in the verendah in front of the bed rooms of the bungalows (fig-1.5).

1.3.8 Storage

Taking into the consideration of the nature of the commodity the storage spaces were made different. The bulk of the foodgrains was usually stored in the ‘*gola’ghar* in rural households. The food items, spices, *achars* (1.28) etc, are stored in the kitchen in ‘*sikkas*’ (1.29). The valuable items like clothes, jewellery etc, are usually kept locked in a wooden almirah steel *sinduk* (safe locker) or in *mifal*. In the urban houses

cup board was made for this purposes. This was always kept in the master bed room. Almirah, made of steel metal was not common at that time. As most urban families have roots in the villages, they got some food supply from their family farmlands. Some of the items were stored in the bed room usually in the space underneath the bed. Almirahs and cupboards were also made in the space underneath the bed. Almirahs and cupboards were also made in the bed room walls of the daktungalows and circuit houses (eg, Rajshahi and Jessore).

1.3.9 Carriage

In the rural areas of Bangladesh people move on foot. In the rainy season (*barshakal*), the rural people move from one place to another by boats and *velas* (1.30). Usually, the boats park at the front of the households in the canal, river, water bodies etc. The affluent people and zamindars kept personal *bazra* (1.31) for the movement. *Palki*, (1.32, fig-1.6.2), ox-cart (fig-1.6.1) horse cart (1.33 *ghorar gari*, fig-1.6.3) etc, were used for transportation. Outer *uthan*, outer *dewri* etc, were used for landing of these carriages. Portico in the urban houses was used for this purpose. Some times elephant was used by the zamindars for transportation purposes. Animal shed were built in the compound to rear them. *Rickshaw* (1.34) was introduced in the towns at the later part of the colonial period. The mode of transportation and the type of carriages influenced the design of the houses, particularly for landing and parking purposes. Cars (1.35) were used by the *nawab* family of Dhaka *raja* of Dinajpur and few other *bara shahebs* and garages were introduced in the government bungalows, urban, garden (fig-8.37.1) houses during the late colonial period.

1.3.10 Privacy and *parda*

Privacy is an universal term, the people of each culture have their own sense of privacy. The people of this country observe the *parda* which is clearly expressed in the binary concept of zoning in the household planning. In the space organization in the indigenous and colonial houses, the concept of privacy, *parda*, (1.36) male and female zoning etc, is clearly defined. *parda* system is equally important and followed by both Hindus and Muslim families.

1.4 Cultural transformation

The Banglalee soceity had underwent a social change during the colonial period. Each element of culture had been transformed from a traditional state to a new form 'colonial' in nature (table-1.1). The life style and habits of the people, hence the cultural elements- works, food preapARATION and eating, leisure and entertainment, washing and bathing, resting and sleeping, transportation and carriages- all these activities had underwent a change, transforming into a new expression and identity brought, invented and developed by the people of the third culture. This transformation had been gradually taking place from rural to urban and from urban to a mixed form of two cultures- Bangalee and European. The change in the life style, behavioral pattern and cultural elements encouraged the change in the socio-cultural sphere of the soceity.

For the transformation of cultural elements gradually a new type of culture developed which demanded a new type of space organization and house planning. As a result a new type of space organization of indoor and outdoor spaces started to be developed in all type of houses in the colonial period.

Table-1.1: Transformation of cultural elements

Sl. no.	Element	Traditional	Urban	Colonial
1.	Work	Inside <i>bari</i> or house in general	Working and house-holds areas are seperated in general except kutis, shop houses and the houses the professionals.	Working and house holds were seperated, except the office space for the <i>bara shahebs</i> and professionals
2.	Preparatti on food	In the kitchen, outside kitchen, and kitchen verendah	In the kitchen, and kitchen verendah	In the kitchen, in a seperate kitchen block.
3.	Cooking	On floor	On floor or raised platform	On raised platform
4.	Fuel	Straw, Leaves, Cow dung, wood.	Wood, Wood dust, Cow dung.	Wood and coal
	Eating	On mat, <i>patt</i> , on floor of the kitchen, verendahs bed room	On <i>chowki</i> and table in the verendahs and dining room etc.	On table in the dining room, family space and verendahs etc.

6.	Carriage	On foot, <i>palki</i> boat ox-cart	<i>Gorar gari</i> , ox-cart, Ruickshow	<i>Goirar Gari</i> , <i>Rickshow</i> , and motor car
7.	Leisure	Gossiping, story telling, listening song, <i>kirtan</i> , <i>jatra</i> boat race, cow and horse race etc. <i>Pan</i> and <i>hokka</i>	Gossiping, story telling, <i>baijee</i> dance, dirinking, listening of song, playing of card, <i>daba</i> , <i>pasha</i> , cock fight <i>pan</i> , <i>hokka</i> and cigarette, kite flying berd flying,	Gossiping in drawing room, club activity, playing of card, tennis, badminton, throughing party, <i>Pan</i> , <i>hokkah</i> Cigarette, and drinking, <i>baijee dance</i> , etc.
8.	Washing	In river <i>ghat</i> , <i>pukkar ghat</i> , <i>indra tala</i>	Semi enclosed, enclosed bathing areas, <i>indra tala</i>	Bath room
9.	Toileting	Seperate <i>kacha</i> lavatory far away from sleeping zone.	<i>Kacha</i> latrine, Service latrine	Service latrine and platform closet
10.	Praying	Prayer space, <i>Tulshi tala</i>	Prayer space, <i>pooja ghar</i> , <i>tulshi tala</i> ,	No prayer space
11.	Resting	On mat, <i>patti</i> , <i>pirhi jalchowki</i> , and <i>mura</i>	<i>Farash</i> , <i>Takia mura</i> chair, and sofa.	Chair and sofa
12.	Sleeping	On mat on the floor, <i>mifal</i> .	On the <i>chowki khat (palong)</i> . <i>Mifal</i>	On the <i>palong</i> and <i>devan</i> .
13.	Cooling devices	Hand <i>punkha</i>	Hand <i>punkha</i> , pulling <i>punkha</i> , electric fan.	Pulling <i>punkha</i> , electric fan.
14.	Storage	<i>Sikka</i> , <i>gorah</i> , <i>Sinduk</i>	Shelves, <i>Almirah</i> , <i>Wardrobe</i> , <i>Sinduk</i> .	<i>Almirah</i> , <i>Wardrobe</i>

1.5 Colonial 'third culture'

The physio-spatial urban form and its architecture having a particular characteristic were developed by a particular social group of people very different from the people of metropolitan and native or local socieity. Each of these cultures had their own distinctive value and belief, their own system of institutions, social structure and social stratifications. The colonial third culture was a culture developed in Bangladesh as a result of interactions of the people of metropolitan culture with the people of first culture and definitely was the product of colonialism (1.37). Diagramatic summery of the cultural elements influencing the development of colonial third form in house design is shown in (fig-1.7).

It is essential to have a clear conception of the section, the carriers of the second culture and the native or local elite section with which members of the second society came in contact. They were the native elite section-the recipient of the second culture. Though during the colonial period, the whole society of the country underwent a social change, but in reality all the people of the first culture did not come directly in contact with the people of the second or metropolitan society. They simply remained within the domain of their own culture in the rural areas. The culture of both societies changed because contact and interaction between the representatives of the cultures (1.38). There is a time dimension to consider, for clarity, the culture of both societies changed over the one hundred and ninety years contact between them.

Followings were the main reference groups in the first and second societies responsible for the development of colonial third culture and subsequently for the development of colonial urban development and its architecture of third form.

1.5.1 Group one : The first group consisted of the 'government elites' the Heaven born (the ruling classes), the senior most members of the government, Bengal civil services- judges, magistrates, civil surgeons, etc, and high ranking officers of the military services- the *bara shahebs*. The governor of the state, chief of the garrisons' army, judges of the courts, etc. were selectives and above the government elites. The members of this group belonged to the 'Heaven born' metropolitan origin and were determined formally by occupational rank and informally by the social origins (1.39). All of them from second souceities.

1.5.2 Group two: The second group consisted of large number of government officers including members of the various Bengal civil services, the gazetted officers, commissioned ranks of the army, the rajas and large zamindars of the country. All of them from first society.

1.5.3 Group three: The third group consisted of all other Europeans who were not gazetted officers. The largest number of these were from the commerce,

private businessmen, agent of metropolitan concern, planters, bankers, missioneries, school teachers, professionals, zamindars, non-commission rank of the army, local *chota shahabs* etc.

1.5.4 Group four: The fourth group consisted of 'non-officers' class represented by the ordinary European army, minor European shop keepers, clerks, persons performing various technical jobs in the government, railway, steamer way, municipalities, T & T, etc, organizations, superintendants, U.D.Cs, L.D.Cs, local middle class English knowing elites who liked the metropolitan life style (1.40).

Besides these, some minials type of employees such as *methors*, *malis*, *seweepers*, *bisties* etc were engaged to serve the *shahebs*, *babus* and elite of the societies. The first two groups, though by no means equal were yet admitted into one high class of the socieity; they all pertook of certain sacred rites, and they would appear to be that part of the community who were bound by no laws. Bangalee *maharajas*, *rajas* and big zamindars were almost only natives who mixed freely with the ruling community in Bangladesh (1.41).

Colour was a dominating factor in the colonial third culture. The colour of body, hair, eye etc, as well as the language (English 1.42) gave them a position in socieity as well as in the towns and 'the resultant form of stratification which emerged, was a principal characteristic of the colonial culture'(1.43). Money could not buy a place in the socieity for a wealthy native trader but the poorest white non-commissioned officer obtained invitation to the governor's party (1.44).

Like all cultures, the colonial third culture was centred round an institutional system which comprehends idealizational system, meanings and symbols, social structure, system of social relations and patterns of behavior. However, other aspects of this colonial third culture, such as particular social group, social and political ideologies, language, perception about the 'native' and aspect of lifestyle remained largely unique to the third culture's members throughout its existence in Bangladesh. There were a form of government, an organization for the construction and maintenance of

the buildings (PWD Railway engineer etc.), educational system, a type of family organization, trained people, economic institutions, language and technology, and a whole range of social belief, groupings and cultural aspects- including urban pattern and buildform (1.45), which will be discussed in the coming chapters. Before going into these chapters the urbanization in Bangladesh is discussed in the next chapter-2 as most of the colonial houses were built in urban context.

1.6 Discussion

This introductory chapter deals with the people and families including the cultural elements (work, preparation of food and cooking, eating, leisure and entertainment, washing, bathing, religious activities, resting and sleeping, storing, carriage, and privacy etc.) that influence the concept of planning and zoning, the internal and external space organization etc. The cultural transformation and colonial third culture, the reference groups of the first and second societies are also discussed. The appendix-1 and appendix-2 described the selected basic information on Bangladesh and the colonial terminology respectively.

It has been found that the land of Bangladesh is very old and majority of the people are homogeneous in character and live in the plain land. Therefore, most of the houses built during the colonial period are found in the plains.

The typical climate, the high annual rainfall and the diurnal variation in temperature (appendix-1) demands a particular type of dress and a particular type of architecture, space organization, shading devices permanent materials etc, in a way to protect it from the driving rain and heat etc, so thick walls and large windows were needed. For the ventilation and comfort the technique of pulling *punkha* (fig-1.4.4, 1.5) was developed during the colonial period.

Three types of families (nuclear, joint and extended) were identified. The numbers of the metropolitan culture preferred the nuclear family. The government, railway, garden and other autonomous organization's quarters and bungalows were designed for this type of families. Joint families were found in most of the rural and urban areas. Most of the rural and urban houses were designed for this type of families.

Extended families were found in the rural urban and zamindar families-Rebotimohan Lodge, Sutrapur, Dhaka. The Datta *bari* of Bogra town, Natore *rajbari*, Murapara zamindar etc, were the examples of such extended families.

The permanent relatives and the lodging masters were the very common persons attached with the families. Servants were found in each of the urban, government garden and zamindar etc. houses. The reflection of these categories of persons--guests, lodging masters, servants etc, was expressed in each type of the houses. The transformation from extended to joint and joint to nuclear family was gradual, but very slow process.

The adaptibility of the local people for foreign culture and its architecture was recognisable and it is found that the people were prone to receive selected elements of foreign culture and architecture.

Generally in the urban areas residential spaces are usually seperated from the office or work places. People of particular profession like physician, lawyer and the *bara shahebs* or high officials some times had an office room or extra room/space for their professional activities in the houses. The *kutties* and shop houses require the work areas for the purpose of production, display and sale of goods.

The nature of preparation of food and cooking demands a particular type of space, extra space and space organization/ arrangement in the kitchen. The climate of Bangladesh (appendix-1) demands the covered linkage of the kitchen, kitchen block with the main house unit seen in many urban zamindar and government bungalows (fig-4.25.2). This problem was solved in different ways in the urban, zamindar, government, garden etc. composite and consolidated bungalows.

Jute and rice straw, leaves and fire wood etc, were used as fuel in the rural areas, fire wood and wood dust in the urban areas, later on, coal was introduced by the colonists in this country. The Bangalee process of cooking and all these types of fuel generated a lot of smell and smoke, solution of this problem is found in the development of chimney in the urban, government, railway, *dak* bungalow and circuit etc. houses.

Various entertainments such as gossiping playing cards, *davas*, were performed in the houses in the *baithak khana*, drawing, family, verendah etc. places. Drinking and other outdoor games were played in the town club, station club, golf club etc. Dancing and *baijee mach* were viewed in the *baijee baries* by the ordinary people. The zamindars, rich businessmen and the *bara* and *chota shahebs* enjoyed it in the pleasure or *bagan baries*.

Washing and bathing were done in the *pukurghats* and *inrdra* areas for this purposes. Tube wells were introduced at the late colonial period. The concept of bathroom attached to the urban, railway and government bungalows *dak bungalow/circuit house*, *bagan baries* etc. , developed in this period. Water was carried by the *vestiwallas* (1.46) and servants to these bathrooms. Service latrines were introduced into some of the bungalows, *dak bungalows/circuit house*, *cummeries* etc. where cleaning facilities could be insured by the *mathors*.

Puja and prayer spaces were the important consideration while designing the Hindu houses. In the Hindu houses alcobs in the walls were designed for the placing an image of God and Goddess. *Mandaps* and *mandirs* were built in the house areas of zamindars and affluent people. *Tulsitala* was built in almost every Hindu houses.

The Muslim performed the prayer in any clean and well maintained place of the house. The wealthy Muslim had mosque in their house areas.

The Christian houses had no definite space for this purpose. A change in resting and sleeping habit was noticed among the people of the third culture. Easy chair, sofa and *devan* etc, were introduced by them.

The alcob, cup board and wardrobes are the storage furniture introduced in this country by the people of the third culture. The horse cart or *ticca gary (gorar gari)* was introduced in this country by the colonists. *Rickshaws* were also introduced in the towns at the late colonial period. A few cars were used by the zamindars and government high officials. Stables, garages and porticos were essential in the urban,

zamindar, *bagan bari*, circuit house, garden etc houses and government bungalows for landing and parking purposes.

Privacy and *parda* were strictly observed in the rural, urban, zamindar etc, houses-- reflection of which is found in the concept of zoning, space organization and security system. Boundary walls, particularly in the female zones were noticed in the houses.

The Bangalee society had underwent a gradual socio-cultural change during the colonial period. Each element of the traditional culture (table-1.1) had been transformed. The complex process of transformation of traditional culture under the impact of the colonial rule and the introduction of some European elements in it, produced a mixed culture. This intermingling of Bangalee and European cultural elements gave rise to a phenomenon which is known as 'colonial third culture'. This colonial third culture produced a particular type of architecture, builtform and spatial expression to satisfy the needs and aspiration of the people of colonial third culture.

The next chapter deals with the urbanization and the situation of different types of houses in the urban context.

Reference: Chapter-1

- 1.1 The culture of the country is termed as first culture (The culture of the local people or natives), while the culture of England and Europe is termed as the second (or metropolitan) culture.
- 1.2 Kamruddin Ahmed, A socio-political history of Bengal, opcit, P-VI, The word Bangalee comes from the word *Bangal* and live in the region of cultural Bengal.
- 1.3 Before 1960, Comilla district was known as Trippera.
- 1.4 Sylhet was known as Sreehatta during the colonial period.
- 1.5 There are no permanent structures found in the Chittagong hill tract (except the Rangamati *rajbari*), Sylhet hill region or in other part of the country, where the tribal people live. Therefore, the ethnic groups are not considered while discussing the people of the land.
- 1.6 George Michell, Brick temples of Bengal, opcit, P-4

- 1.7 By the term 'home' the colonists meant England, Europe, countries of the second culture.
- 1.8 Dhaka was written Dacca before 1982. It was the capital of the province of Bengal for several times. It was also the capital of Assam-Bengal for a short period (1905-1911).
- 1.9 Chittagong and Rajshahi were the other provincial towns of the country during the colonial period. See appendix-3.
- 1.10 The term *moffassal* was used by the members of the third culture and referred to the places outside large towns like Dhaka, Chittagong and Rajshahi. The district and Sub-divisional towns were also termed as *moffassal* towns during the colonial period. See appendix-2.
- 1.11 Usually the people of the metropolitan culture did not prepare food by their own hand. They used to maintain a large number of native servants for them.
- 1.12 *Sal patas* of sal leaves were used as plates in the festivals in the rural areas. Usually, the Hindu Bramins did not take food in other's plate. They used to take food on the leaves of *sal*, banana etc, trees.
- 1.13 *Sanki* is a type of burnt earthen plate used specially by the poors of the rural areas of Bangladesh.
- 1.14 Party is a colonial term used for the large gathering of similar type or group of people. It is also meant for a social occasion practiced by the people of third culture. See appendix-2.
- 1.15 The drawing room is a colonial term used for the *baithak khana* or sitting room. See appendix-2.
- 1.16 The term '*athiti*' (guest) meaning the visitor who does not follow the particular time to visit friends, relatives and others house.
- 1.17 Imamuddin, A.H. opcit, P-81.
- 1.18 *Mohalla* is the small neighbourhood in the urban areas which has an socio-cultural and physical identity from the surrounding localities.
- 1.19 *Roaks* are the raised platform and a sort of sitting element placed at the front of the entrance of a house (fig-8.8.3, 8.8.4). People used to gossip sitting on the *roaks*. This part '*roak*' of the houses are mentioned in many of the stories, nobles etc, of the famous writers like Syed Mustaba Ali, Sarat Chandra Chattapadaya , Rabindra Nath Tagore etc.
- 1.20 People used to take bath in the *pukurghats* in both the rural and urban areas. The *pukur ghats* were *kacha* in the ural areas and few horizontal logs were placed at the *ghats*. Male and female ghats were seperated. Usually, the female *ghats* were enclosed for *parda* purpose. These *pukurghats* and river *ghats* have got the importance while designing the houses.

- 1.21 For bathing river ghats were used. Usually, there was no formal *pucca ghats* at the river banks. *Riverghats* were *pucca* at the commercial areas which were used as landing *ghats* for the goods. These *riverghats* have the important design consideration in the urban design of the riverfronts.
- 1.22 *Indras* are the *pucca* well digged for the water to be used for drinking and domestic purposes. The radius of the *indras* varied from 2'-6" to 5'-0" depending upon the nature of the use. *Indras* are found in the rural and urban areas of all over Bangladesh.
- 1.23 Collectors of land revenue under the '*ijaradari*' system in the colonial period were also known eventually as *zamindars* and were even bestowed with titles such as '*Raja*' and '*Maharaja*' although they were not of princely origin. Usually the large *zamindar* houses were known as *rajbaries*. The famous *rajbaries* of this type are Joydevpur *rajbari*, Natore *rajbari*, Mymensingh *rajbari* and Dinajpur *rajbari* etc.
- 1.24 *Tulsi tala* is the yard of the *Tulsi* plant. *Tulsi* is a type of plant sacred to the Hindus. This sacred plant '*tulsi*' is placed on a permanent platform where the Hindu women pray every morning and evening.
- 1.25 *Mandapa* is a covered area where the ^{images of} Gods and Goddesses are placed. Usually, there is a covered (mostly by C.I. sheet) space where audience gathered. This type of *mandapas* were seen in the zamindar houses (eg, Murapara, Joydevpur, Muktagacha houses).
- 1.26 Nazimuddin Ahmed, Buildings of the *raj*, opcit, P-99.
- 1.27 *Mifals* are the special type of bed piece (*khat* and *palong*) where, there was some sort of storage space for the valuable ornaments, coins, *rupee* notes and other valuable articles, underneath the bed. People slept on the *mifal* for the security of the valuable articles stored in it.
- 1.28 *Achars* are the hot pickles prepared from olive, green mango, garlic, tamarind etc, stored in the pots and served with the food items.
- 1.29 *Sikkas* are the kind of storing devices made from thread, jute etc, and hang from the top.
- 1.30 *Velas* are the type of floating device used to cross the river, pond, water bodies etc. It is made from a bundle of logs, banana trees etc, to be used as a substitute of the boats. It is usually used by the poor people who can not afford the boats.
- 1.31 Rabindra Nath Tagore was the zamindar of Shajadpur, Sirajgonj and Silaidaha, Kustia estates. He stayed there from 1880 for over ten years. He kept the *palkies* and *bazras* for his movement. *Bazras* are the spacious boats where every facilities, sleeping, reading, cooking, toileting etc, were arranged comfortably in those.
- Dr. Nazimuddin Ahmed, Buildings of the *raj*, opcit, P-137.
- 1.32 *Palki* is a kind of wooden compartment, a type of rural carriage and transport carried by the bearers.

- 1.33 Horse cart (*Ghora gary*) or *Ticca gary* or horse carriage was introduced in Dhaka town by G.M.Shircore in 1856. Rafiqul Islam, *Dhakar katha*, P-108. There were 60 *ticca garies* in 1867, 300 by 1874 and 600 by 1889. There were several hackery carriage stand in Dhaka town.
Dr. Sharifuddin Ahmed, Dacca, Opcit, P-105, 200. In 1910s all the roads of Dhaka town were *Kacha*, ox or buffalo carts were the carriage. Horse driven wheeled carts were used in Dhaka town. In 1917-18 few busses were introduced in Dhaka and Chittagong towns. Wahidul Alam *Chattragameritihash* 1989, P-81.
- 1.34 *Rickshaw*, a three wheeled carriage, typical in this country were introduced in the towns at the late colonial period. It is pulled by the *rickshowalla*
- 1.35 First motor car was introduced in this country by *nawab* Salimullah in 1905. Rafiqul Islam, *Dhakar Katha*, P-108. The *maharaja* of Dinajpur also used the motor car.
- 1.36 The outsider maintained such decoram that they do not enter the inner house without sending notice. The *parda*, or the seclusion of women, was looked upon in the socieity as an aristocracy and a social decency. The appearance of women in public with bare faces and heads was regarded as dishonorable by both Muslim and Hindu of the time. The upper class people kept their women very much shut up. The Hindu and Muslim women in this country were confined within four walls of the house. They had to observe the *parda* and veil in their face outside the house. They live in seclusion.
Muhammad Abdur Rahim, social and cultural history of Bengal, opcit, P236-238.
- 1.37 A. D. King, Colonial urban development, opcit, P-59.
- 1.38 Ibid, P-59.
- 1.39 Ibid, P-60.
- 1.40 A.D.King, Colonial urban development, opcit, P-61.
- 1.41 J.Law, Indian snaphots. opcit, P-39-40.
- 1.42 Similar to the Persian (*Fersi*) during the Mughal time. Persian was the state language and the language of the elite people in the Mughal courts.
- 1.43 A.D.King, Colonial urban development, opcit, P-63.
- 1.44 Ibid, P-62.
- 1.45 Ibid, P-65.
- 1.46 *Vestiwallas* were the water carriers who carried the water from the river, tanks, *indras* and municipal water points to the urban households by the *vesties*. The *vesti* was a type of water skin. Sometimes water could be drawn through persian wheels
Dr. Sharfuddin Ahmed, Dacca, opcit, P-199.
- 1.47 *Methors* (Sweepers) were the low caste Hindu community, recruited from Cawnpore, Urriswa and Bihar to work in the conservancy department of the municipalities. In 1870s fifty *methors* and *methorantes* were recruited in the Dhaka and Chittagong municipalities to clear the roads, service latrines etc. (appendix-2)
Dr. Sharifuddin Ahmed, Dacca, opcit, P-195.

Fig-1.2 Bangladesh
Physiographic regions

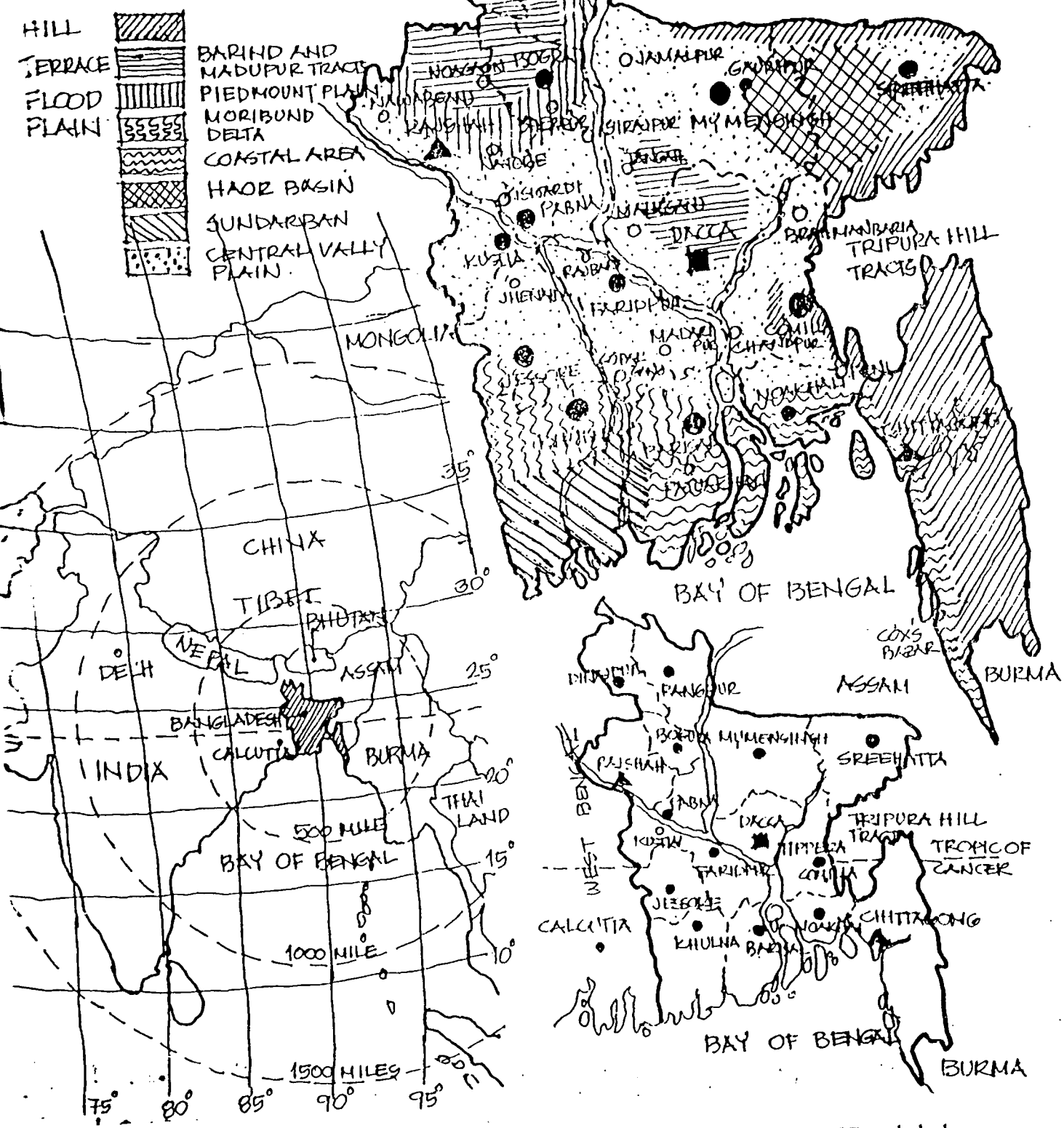


Fig-1.1 Location of Bangladesh, Regional Context

Fig-1.3 Political map of Bangladesh

Rural

Urban

Colonial

Dhaka University Institutional Repository

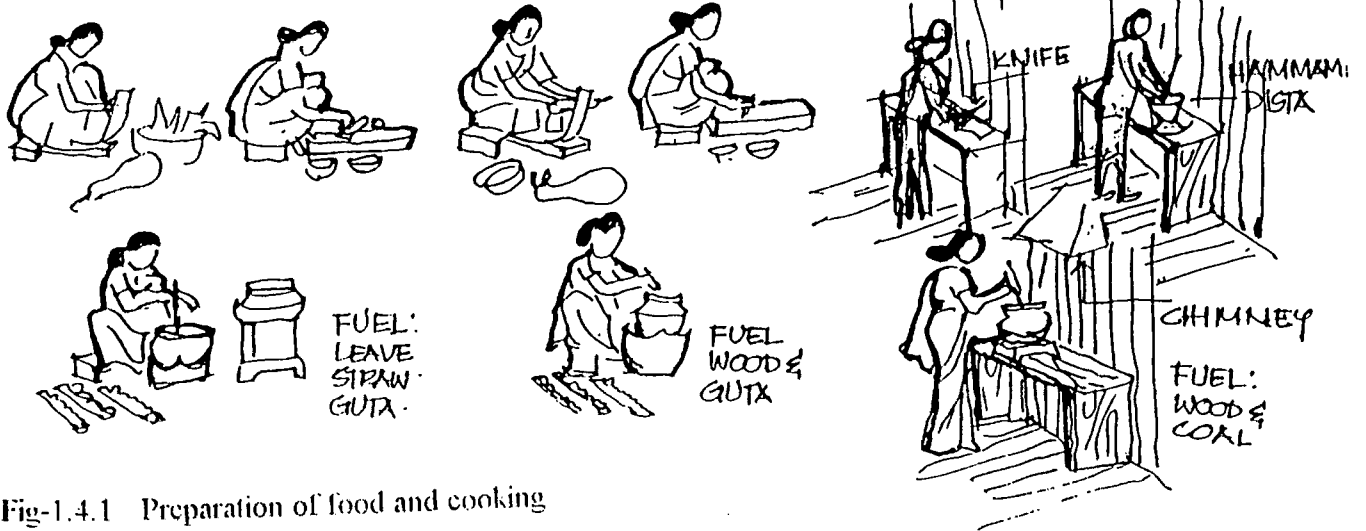


Fig-1.4.1 Preparation of food and cooking



Fig-1.4.2 Eating and dining

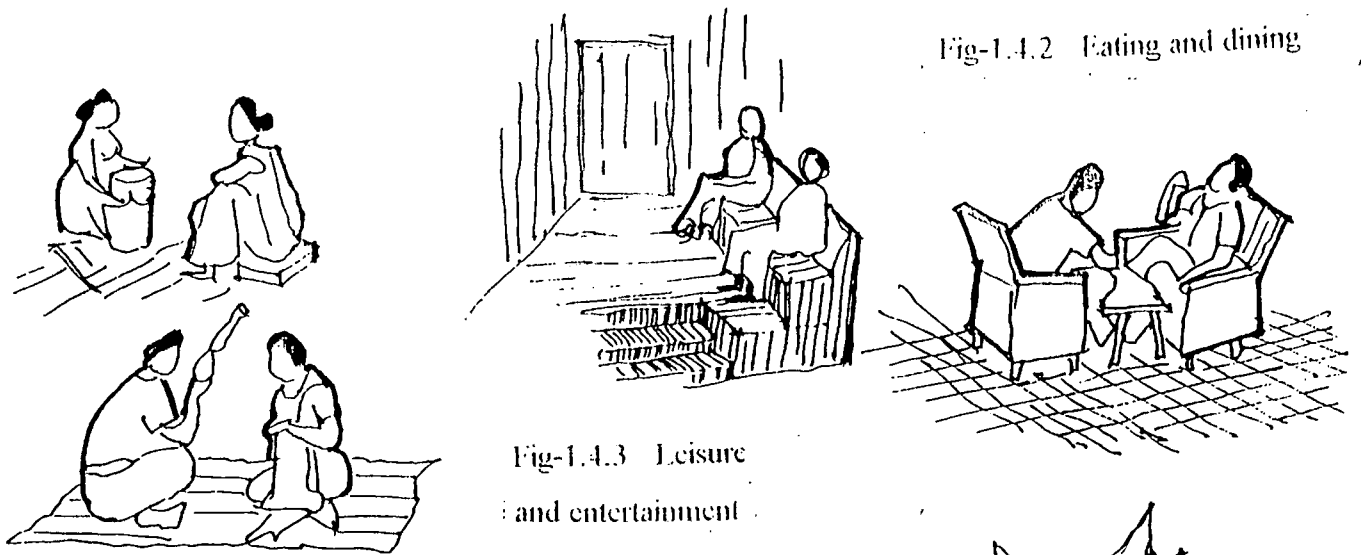


Fig-1.4.3 Leisure and entertainment

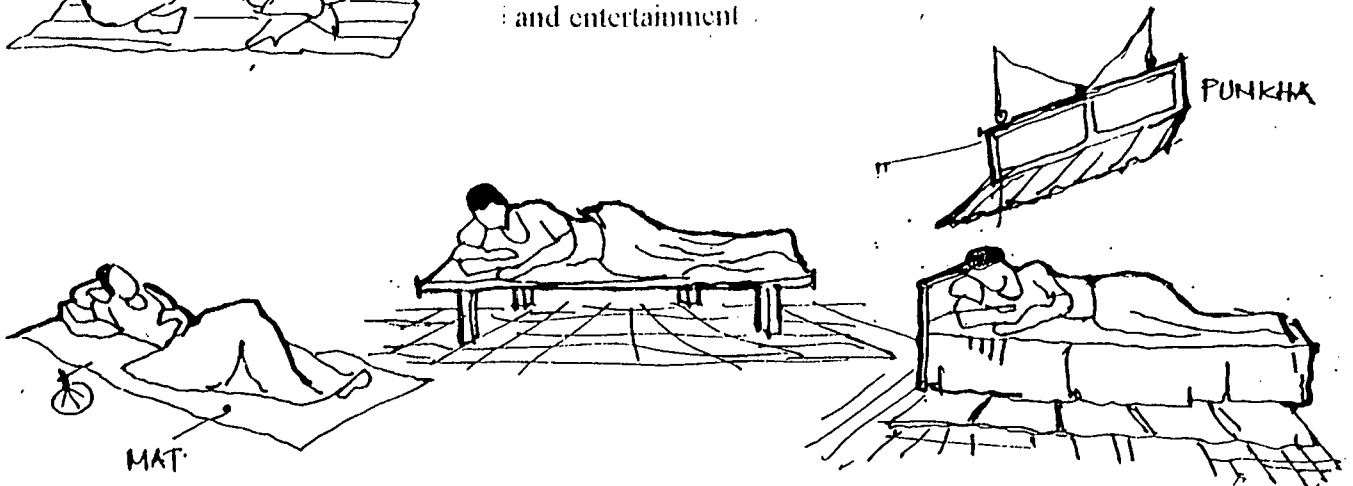


Fig-1.4.4 Sleeping



g-1.5 Colonial life style

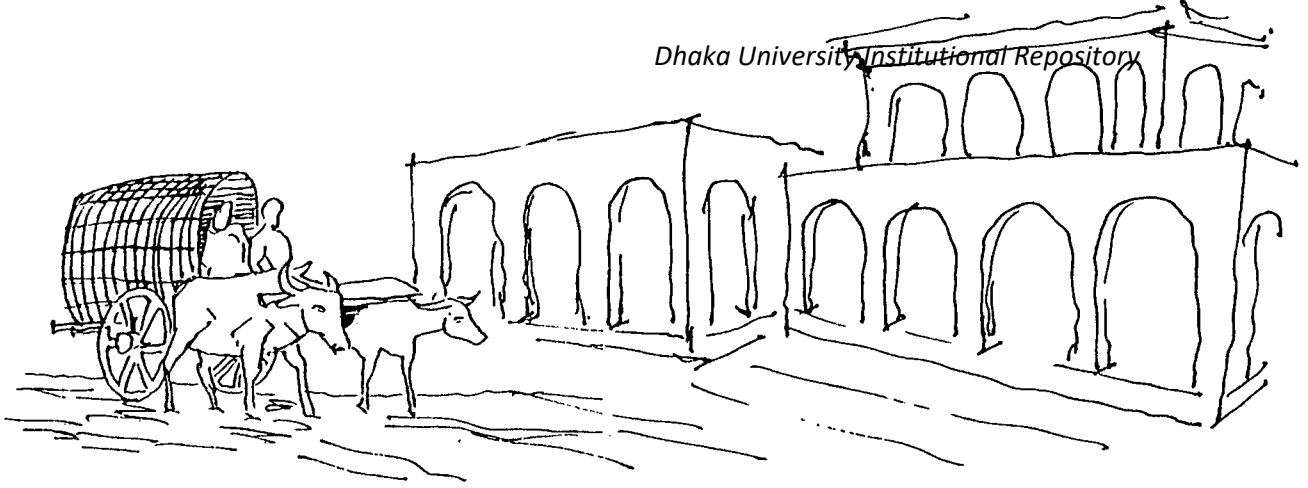


Fig-1.6.1 Ox cart

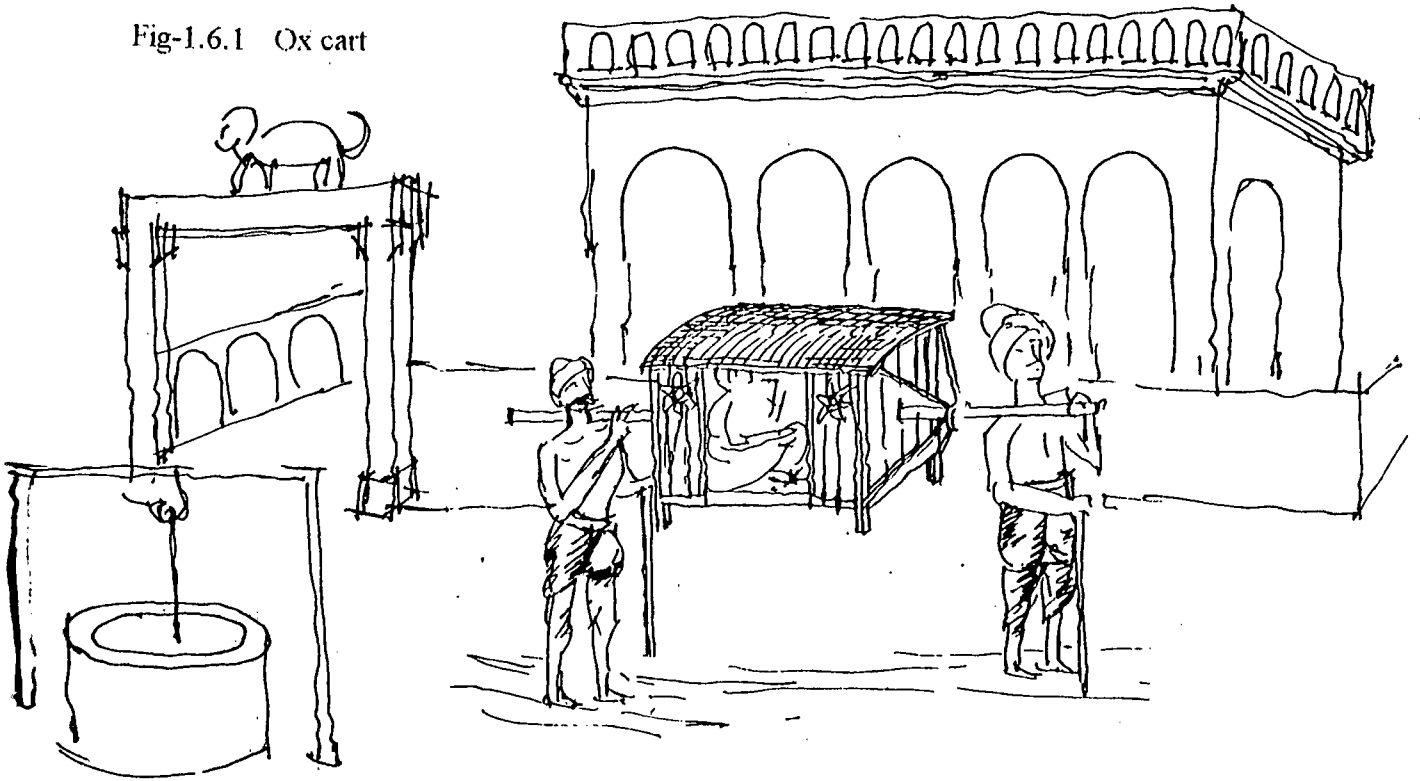


Fig-1.6.2 Pulkee

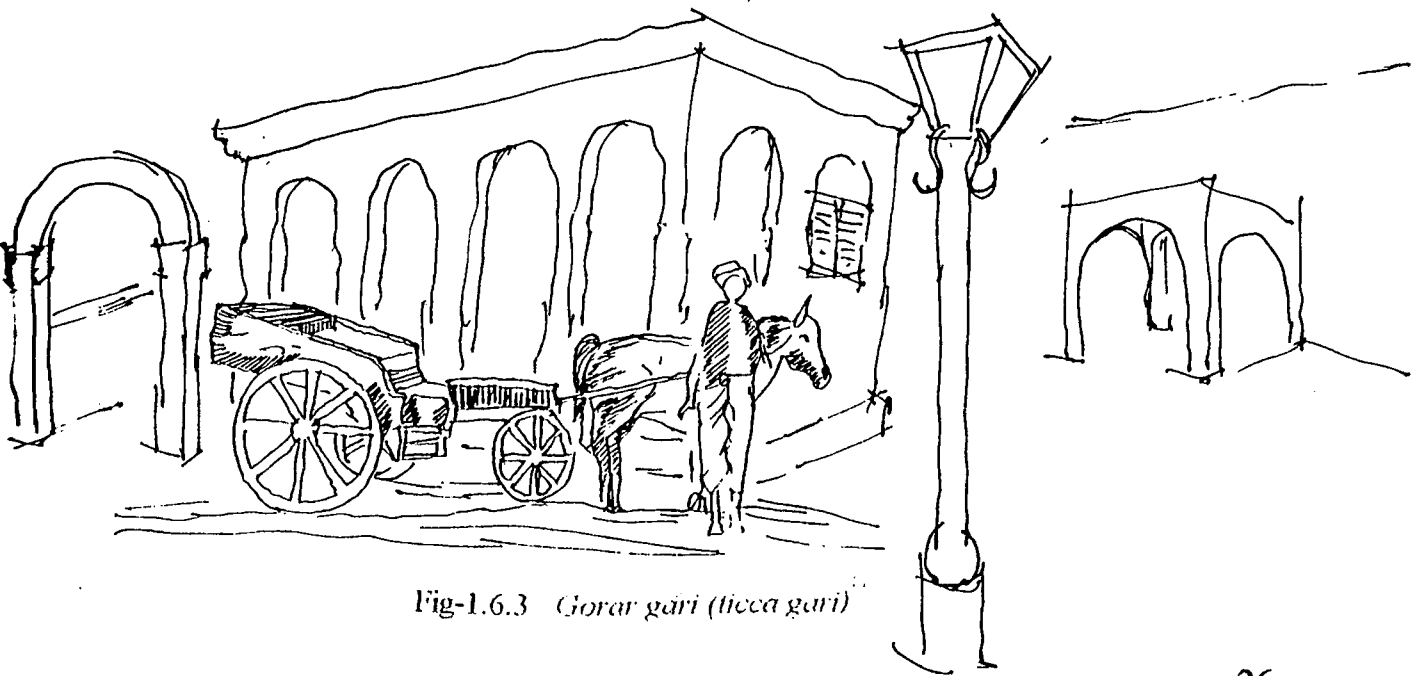


Fig-1.6.3 Gorar gari (tucca gari)

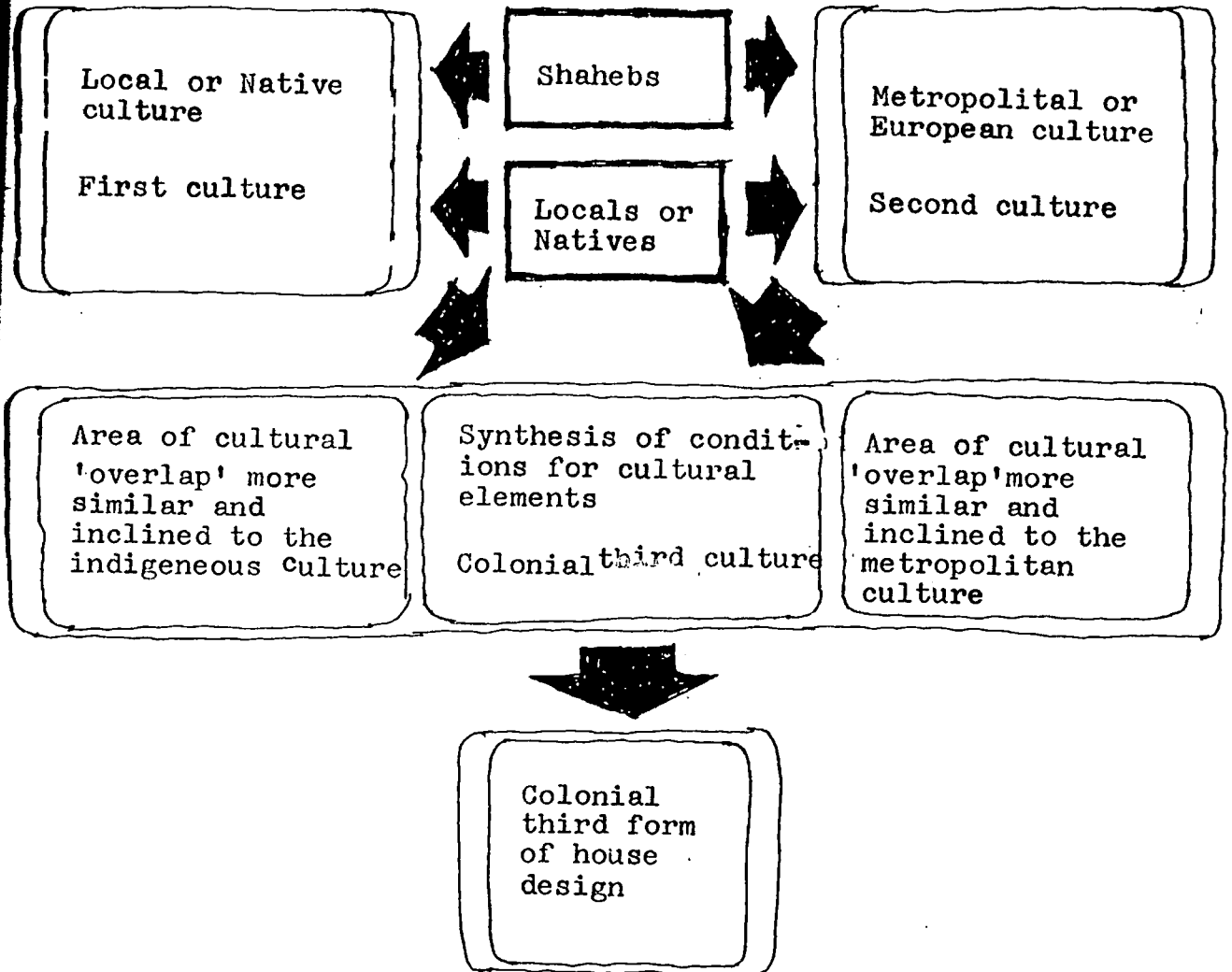


Fig 17 Diagrammatic summary of the cultural elements

Chapter-2

URBANIZATION IN BANGLADESH

Chapter-2

URBANIZATION IN BANGLADESH

2.0 Introduction

Urbanization in Bangladesh during the colonial period had been a gradual process of transformation of some portion of its area, from a basically rural settlement into an urban one in a concentrated manner (2.1). The urbanization process facilitates the growth and development of physical environment and its builtforms in the context of socio-cultural and economic conditions, micro and macro environment, tradition and foreign influences. It is in essence a change of its physical environment. Urbanization of the colonial period in Bangladesh might usually be seen as an economic and social process, the creation of a labour force for new kind of production and activities, the investment of capital and the development of new form of social organisation and behavior. It also helped to develop physical and spatial condition for building up a new type of urban settlement, builtform and new environment for architecture, colonial by nature.

During the colonial period the society of Bangladesh, particularly the urban one underwent a change in a gradual manner. This change in urbanization brought changes in the socio-cultural fields-- the life style and living pattern, which ultimately changed the physical environment and its architecture,. Again, the architecture in Bangladesh during this period, particularly the houses are influenced and shaped to some extent by the available services- *pucca* roads, electricity, water supply, sanitation etc. These urban services are again dependent on the nature and degree of urbanization. Therefore, socio-cultural changes, the process of urbanization and the architecture in that particular time are interrelated.

The objective of this chapter is not simply to describe the township that gradually grew and developed in Bangladesh during the colonial period, but an attempt has been made to study the human endeavour in search of urban expression and its houses within the existing circumstances and environment, and to see through these urban expression, the evolution of an urban style (urban houses, colonies and civil lines, *patties*, shop houses, *dak* bunlow, bungalow etc.) new in Bangladesh. The

colonial houses, their components and elements, space organization etc, will be studied in the next chapters in their various settings - rural, urban, civil lines and in colonies (eg. railway), satellite township, *kuti baries*, garden house, *dak bungalow patties* etc. In this regard, the study of the whole process of urbanization is essential. Therefore, this chapter includes the history of urbanization, classification of towns, elements of urbanization and concept of growth pattern, components of the towns, hierarchy of urban centres and overall discussion.

This chapter of urbanization is also important as the growth of urban areas include its residential areas. Hence increase of its house stock. Along with the introduction of each component to the existing one, it is clear that various type of houses were added to the township. The scope of such a study in comprehensive manner in Bangladesh is limited, because of the lack of sufficient written literature, information and maps.

2.1 History of urbanization

The urban centres in Bangladesh could be found in ancient times, though compared to the villages, urban communities were few. The rate of expansion and urbanization was slow. Various urban centres grew as capital town or trade centres and communication centres. All these urban centres had grown and developed to the point of having all the necessary physical traits to form a developed society. This development process was to some extent ^{very slow}/.The concept of building township and architecture in the east was quite different from that of west. The communication with the outside world, particularly with the west was limited. The arrival of the British to this country, opened the door of direct communication to the west, particularly to Europe. Thus, for the first time Bengal came into close contact with western culture, technology, education, urbanization, art and architecture.

The history of urbanization (2.2) and its growth can be distinguished into three different phases; (a) pre Muslim (b) Muslim and (c) colonial period. Bangladesh, along with other parts of Bengal (2.3) has a rich urban heritage which goes back to the 3rd, century B.C. The mention of Purnabardana, Mohisontosh etc. townships of north Bengal are found in ancient history. The famous town of Purnabardan (Mahasthanghar, 630 A.D) on the river Karatoya has been identified as the old

organised township (2.4). Pharpur or Kotalipara in Faridpur, Savar and Subarnagram in Dhaka were other pre-Muslim large township in the ancient Bengal (2.5). Mandaran (Feni) was a township during the Muslim sultanate period (2.6). These few old urban communities grew out of commercial, political and administrative necessity (2.7). The brief study of pre Mughal and Mughal township in Bangladesh is needed for the proper understanding the urbanization and its house building situation in the colonial period. But none of pre Mughal house exists at present. The pre Mughal township of Dhaka was very small and was limited to the part of the town which was surrounded by the Dulai *khal* to the north-east, the artificial canal on the north-west and the river Buriganga at the south (2.8, fig-2.1).

The *Tantis* and *Shankaris* are universally believed to be the oldest inhabitant of Dhaka. The localities comprising the Tantibazar, Shakari patti, Lakxmibazar, Sutrapur, Jaluanagar, Banianagar, Goalnagar, Sutrenagar, Kamarnagar, Patuatoly and Kumartuly formed the preMughal old Dhaka (2.9). The population was mainly Hindu and lived in 'mahallas' which were developed as working and residential communities, with homogeneous population (2.10). The pre-Mughal township of old Dhaka consisted of a naval establishment with a garrison (2.11), few market places and ghats. The total area grew as a commercial town. The fort during the preMughal period was located at the present jail which was on the outskirts of the main town and Padshahibazar (badshahibazar-chawk bazar) was the suburb of the preMughal township. The settlement was loose and rural in character. All the roads were *kacha* and *kacha* houses were built along the roads. The shop houses (2.12) are still found from that period.

Chatgaon at that time was a small port and trade centre visited by the Arabs, the pre Mughal town of Chatgaon (2.13) was limited to the fort (Andarqila) and its surrounding. Modern Bandal road served as a passage that connected the river bank with the main entrance into the fort (2.14).

The Mughal township of 'Jahangirnagar' developed around the old fort and extended towards the north and north west upto the mahalla 'Sujatpur' and mahalla 'Christian'. Jahangir nagar was developed as the linear type of settlement along the

river Buriganga and 'Meerpur' was the Shahbandar (2.15) of the township. No house of this period is found to exist, possibly because of the semi-pucca or *kacha* type of construction.

Chatgaon came under the Mughal rule during the time of Shaesta khan in 1666 and was renamed as 'Islamabad' (2.16). The Mughal township Islamabad till 1765 grew beyond the Andarqila. Between the qilla and the river Karnafulli had developed as populous township (2.17). Islamabad township comprised roughly the mahallas now under the jurisdiction of *Kotwali* and the *mahalla* Jamal khan, Ghat Forhadbag, Rahmatganj, Fidal khan bag etc, were included in the township (2.18). Most of the Mughal houses and buildings are found within the radius of one and half mile from Andarqila.

The pre Mughal Sreehatta town was along the river Surma and Dargahill was on the outskirts of the town.

The Mughal township of 'Jalalabad' grew along the bank of river Surma and it was further extended by filling the low land. The town was developed from the 'Nawab *talab*' (present Laldigi) to Sheikghat (2.19).

A number of township grew and developed in the Rajshahi area. Putia, Rampur-Boalia and Natore were the prominent urban areas during the Mughal period. The head quarter of Rajshahi district was at Natore until 1825, when it was transferred to Rampur -Boalia (2.20).

Rowshanabad (comilla) grew as an important urban centre of the *chakla* Rowshanabad. The Mughal township Rowshanabad comprised the mahallas Chawkbazar, Kaporipatti, Chati patti, Rajganj etc, (fig-2.5). Nasirnagar (present Brahmanbaria) was a business and trading centre of the north *chakla* Rowshanabad. The Mughal township of Nasirnagar comprised the mahallas Ananda bazar and Jagat bazar (fig-2.6). Out of total 36 urban centres that existed in Bengal at that time, only 9 (Dinajpur, Rangpur, Boalia, Kumarkhali, Bakerganj, Dhaka, Sreehatta Laxmipur and Chatgaon) belonged to Bangladesh (2.21). The location of Dhaka was favourable for both its growth and development as primate town in Mughal period,

making the whole Bangladesh as its hinterland. It had a road and river linkage with every townships developed in this country.

After the acquisition of Bengal, Chittagong first in 1761 and in 1765 the whole Bengal by the EIC (2.22), the decline of the urban areas of Dhaka, Chittagong, Boalia and other township set in. Though the company inherited an established infrastructure of trading, commerce and industry with developed urban activities, yet for security and administration purposes they established Calcutta as the capital of Bengal. With the transfer of capital of Eastern Bengal from Dhaka to Murshidabad during the time of Murshid Kuli Khan, decline of Dhaka set in. Gradually Calcutta became the administrative and commercial centre of Bengal. The territory now comprising Bangladesh belonged to the peripheral areas of this 'satellite primate' (Calcutta) of India during the early period of colonial rule (2.23). Bangladesh turned into a hinterland supplying raw materials to Calcutta. As a result the level of urbanization in East Bengal became stagnant and retrogressive. A number of district town including the main towns like Dhaka and Chittagong show a general decline in rates of growth (2.24). The number of urban population declined considerably. As a result, rate of construction of the houses also became stagnant and slow.

The rate of urbanization in Bangladesh throughout the colonial period particularly in the early period was very low. Using the census commission's definition of an urban area (P-108) the percentage of total population living in urban areas, percentage change in urban population and annual rates of growth (rural, urban and national) for the census years 1901-1941 (2.25) could be calculated, this reveals that the level of urbanization in Bangladesh as measured by percentage of total population living in urban areas increased from 2.25% in 1901 to 3.66% in 1941 (2.26). It is obvious that the level of urbanization was very low during the colonial period.

As a result of stagnation and decline in business and manufacturing, many local and European businessmen gave up the trade and invested their capital in real estate and buying of zamindaries (2.27). These merchant zamindars purchased large estates in different towns both for making houses and for land trading purposes. In course of

time, they again flourished in business in different urban areas. Thus the zamindar houses and shop houses began to be constructed.

In 1905 the British government created the province of Eastern Bengal and Assam, and made Dhaka as its capital. New infrastructural and urban services were developed for Dhaka, Chittagong and other *moffassat* towns. New administration emerged for the whole country with the new services-street light, sanitary and sewerage, conservancy, new roads and communication, new township (eg, Ramna, appendix-4, Wari) and new European fashion and taste for house building and its architecture.

The partition re-established Dhaka's eminence as a capital of Assam and East Bengal. As a capital of East Bengal and Assam, Dhaka regained its dignity and many of the government offices and residential bungalows and quarters were built in Dhaka and in every district and sub-divisional towns. Chittagong was developed as the second largest town all along the Mughal and colonial period. The construction of the infrastructure continued to till (2.28) the annulment of the partition. The capital shifted again from Dhaka to Calcutta. But for all practical purposes Dhaka was not abandoned. In 1921, the Dhaka University was established. Dhaka as a small and quiet town flourished centering round the university campus and along the bank of the Buriganga.

2.2 Classification of colonial towns

On the basis of geo-physical, nature of township, and economic activities, the towns of the colonial period could be divided into five-fold classification, which are: Semi-urban or country towns, administrative centres, communication centres, industrial, commercial and trading towns, and static or decaying towns.

2.2.1 Semi-urban or country town

Semi-urban or country town were generally small in size and served mainly as marketing centres for the adjoining areas. They have a rural character and outlook. Even those which had grown in the first few decade of 20th century had little urban

amenities or services. They served sometimes as centre of local administration. Most of the *thana* towns are the examples of such semi-urban or country towns. In most cases, these towns comprised a *bazar*, the *thana* area with few *pucca* houses, *pucca* or semi-*pucca* houses for the OC, SI ASI C.O, sub register head master of *guru* training school (2.29) and other officers and staffs. Traces of such colonial houses are not found now as most of the houses were either semi-*pucca* or *kaccha*.

Until 1940s Muktagacha and Satkhira had the town committees and Maulavibazar became the municipal town in 1930 (2.30). There are many examples of such townships-eg. Rajbari, Kurigram, Perojpur, Noagan, Meherpur etc, which were the sub-divisional towns at the late colonial period, but very small in size and had the town committees only. Bungalows for the OC, CO are found in the *thana* towns and *pucca* or semi *pucca* houses are constructed there for the accomodation of the govt. offices. *Dak* bungalow was constructed for the inspectors. *Methors patti* was constructed to serve the officials.

2.2.2 Administrative centres

Administrative centres were the towns of varying sizes of the divisional, district or sub-division. Some of these were old towns and with historic associations but quite a number were comparatively new. Sylhet, Jessore, Natore, Bogra, Dinajpur, Rangpur, Comilla and Mymensing are the examples of the former, while Rangamati, Sunamaganj, Tangail, Khulna, Nawabganj etc, are some of those towns which may be placed in the second category (2.31). Administrative hierarchy of towns is shown in the appendix-3.

2.2.3 Communication centres

Communication and transportation centres were those towns which had better communication facilities through road, river or rail transport and had thereby acquired other important functions. Parbatipur, Saidpur, Lalmonirhat, Sirajgonj, Santahar, Iswardi Chandpur, Barisal, Jhalkati and Bhairab bazar are examples of such towns. Barisal develops as both district head quarters and communication centre. The river *ghats* (*sadr ghat* and *otherghats*), steamer *ghat* or railway station were the main component of the town around which township developed. The

bazars shops, industries, colonies and residential areas developed around the station. Railway colonies and colonies for the steamer companies are seen in this type of townships.

2.2.4 Industrial and commercial town

Industrial and commercial towns in true sense were a few which owed their prosperity to industry. Narayanganj thrived on industry and had excellent river, road and railway facilities. Dhaka and Chittagong had grown into centres of manufacturing industry. The industries were scattered throughout the town and the houses for the workers and bungalows for the *bara and chota shahebs* were around the industries.

2.2.5 Static or decaying towns

These were the semi-urban centres which had their beginning in pre-colonial or early colonial period and later on remained static or declined slowly and sometimes few of them fell into ruins. The Sherpur (Bogra), Meherpur (Jessore), Kumarkhali (Kustia) and Gauripur (Mymensingh) had developed in the early colonial period, but shown only a small increase throughout the colonial period. Therefore they are considered as the static towns. Again, Bakergonj had developed as the growing and prosperous town in the pre-colonial period but gradually it fell into almost ruins and considered as declined town.

Besides these, another type of *pucca* and *semi-pucca* settlement Noapara on Khulna-Bagerhat road and town Sreepur in Satkhira, which were small in size, compact and similar to the urban agglomeration but without having any urban services except one or two paved road. Almost all the houses or many of them were *pucca* with the rural character in space organization.

2.3 Elements of urbanization.

The rate of urbanization during the whole colonial period was slow. The percentage of urban population was only 3.66 in 1941 (2.32). A number of factors contributed to the development of urbanization in the colonial period in Bangladesh. These are

security, development of economic activities, commerce, trade and industry, communication, establishment of municipalities and town committees, urban services, education, employment and rise of middle class society etc. The concept of growth of the urban areas were dependent on the above mentioned elements of urbanization. The growth of Dhaka and Chittagong were remarkable. Except Dhaka and Chittagong the growth of other *moffassal* towns was typical in nature and slow.

In the beginning of the colonial era, the Mughal system of administration and revenue collection was followed, and the *parganas*, *chaklas* etc, administrative division remained for the several years. A centralised administrative system was introduced during the beginning of 19th century under the Bengal 'District act of 1836', the districts were created. The creation of these districts seems to be the beginning of the development of district towns which were important for the urbanization. First the District Collectors (D.C), than District Magistrates (D.M) were placed in the control of these districts. Sub-divisions were administered by the Subdivisional officers (S.D.O) and the Circle officers (C.O) were appointed in each circle. In this way the administrative areas developed with urban facilities. The district towns consisting of offices of the D.M, S.P, Civil surgeon, Custom officer, Tax collector, D.E.O, District council etc, were built up in each district. An urban area of similar nature but smaller in size and organization began to be built up in each Sub-division. As a result civil line developed to accommodate the *bara* and *chota shahebs* and *bara* and *chota babues* and menials etc. in each district and subdivisional town.

In order to control and maintain the dominance over the local population and to maintain the law and order of the towns, the colonial authority established the *kotwali*, (2.33), police line and jail in each district (table-2.1) and sub-divisional towns. The *kotwali* maintained a large number of the *Jawans*, junior officers under the O.C. They were supervised by the *chota* and *bara shahebs* of the police department. Barracks for the *jawans*, quarters for the staffs and the bungalows for the *shahabs* were constructed in the police line. Several hundreds of the prisoners were in each district and sub-divisional jail which would be supervised and controlled by few hundred of the policemen, wardens and officers. These security elements- the

kotwali, police line, jail etc, required a large areas of their accommodation which helped the further expansion of the towns.

The colonial government maintained the armed forces to maintain their authority over the country. The urban manifestation of this phenomenon was expressed in a system of military 'cantonment' situated at the strategic points of the towns. Cantonments were set up in this country in Dhaka, Chittagong, Jessore and Comilla. Various *bazars* arose to supply the commodities to the cantonments. In this way Thatari bazar was established to supply the commodities to the Fulbaria cantonment at Dhaka in the 19th century. Bungalows for the officers and the barracks for the *jawans* were built in the cantonments (2.34).

In towns for trade and commerce the shops were developed along the road sides. Shop houses also developed along these roads. This was the typical scene in Dhaka, (fig-2.4) Chittagong and other moffassal district (fig-2.5) and subdivisional towns (fig-2.6).

Forstoring and preservation of the goods, large *golas* (godown) were developed along the banks of the rivers and *khals*. Various *ghats* were constructed for loading and unloading of goods. *Sadr ghat* was the common component of the colonial towns. *Hats* and *bazars* (2.35) were developed to buy and sell the commodities in each district and subdivisional towns. The rich merchants built the houses in the towns.

The introduction of railways and steamer services throughout the country in the mid and late 19th century, added a new dimension to the townscape. The steamer and rail stations were set up and many railway towns (eg, Laksham, Akaura etc,) were developed. The rail station had covered a considerable area in the town with a new type of station buildings, sheds, godowns, overhead water tank etc, and various types of railway colonies. Electric generators were introduced first by the Assan Bengal railway in the station areas and the electricity was supplied to the towns from these generator houses of the stations.

Postal service was introduced in this country in the late 18th century (2.36). Bangalow for the postmaster and quarter for the *babus* were sometime constructed in the post office area. After the creation of town committees, municipalities, and district boards in the middle of the 19th century, the urban areas gradually started to be developed with all the urban services like electricity, water supply, drainage, conservancy etc. The towns were well linked up by steamerways and railways. The Divisional commissioners (2.37), D.Cs, and S.D.Os were provided with local funds for the upkeep of local roads and services. 27 Municipalities were set at the beginning of 1930s and 43 municipal boards were set up at the end of colonial period in Bangladesh (2.38). The urban services were introduced in these municipal towns in phases in different periods. These amenities and services helped to expand and develop the towns.

There was no proper urban road system in the towns in Bangladesh during the colonial period. The roads were poorly surfaced and traffic was irregular. Even most of the roads were *kacha* in Dhaka town. The scene was similar in other divisional and district towns. The shop houses and urban houses were developed and faced right on these *kacha* and narrow roads. In 1910s all the roads were *Kacha*, ox or buffalo carts were the carriage, the '*dak*' (2.39) was carried by the horse cart. Horse driven wheeled carts were used by only well to do persons. In 1917-18, few buses were introduced in Dhaka and Chittagong (2.40).

Before the beginning of 20th century the town areas including Dhaka had been only dimly lit by kerosine lamps hanging from lamp posts (2.41) in the main streets of the towns. Electricity plant was installed at Dhaka (at Hatir pool) by the *nawab* family in 1901 (2.42).

For drinking, water was supplied from the *indra*, pond and river. Perhaps the most successful improvement in urban life was the installation of a modern water works. Water works were formally opened in Dhaka for the public in 1878 (2.43) and it was constructed by the donation of the Nawab family. In Chittagong, water from the falls was used for drinking. In 1915 the Dampara water works were established. In Jessore

pipe water supply line was installed in 1914 (2.44) and water works system was first established in Comilla town in 1923 (2.45). In the other small district and sub-divisional towns, and in the railway townships (Laksham, Akaura etc,) water was pumped and supplied from the reserved tanks. Watering of streets during the dry season was another urban service provided by the municipalities (2.46). *Bhistis* (2.47) using water skins were employed for this purpose.

By 1870s the sewer cleaning system was introduced by the municipalities in Dhaka and Chittagong. The introduction of this type of sewer services had changed the *kacha* toileting . By 1875, fifty *methors* and *methoranies* had been recruited from Cawnpure (2.48) who were accommodated nearby in the *methor's patti*. By 1870s and 1880 *methors* system for conservancy was introduced in the district and sub-divisional towns. Therefore, by 1880s the *methors patties* were constructed in most of the district and sub-divisional towns and even in the *thana* towns.

Most of the *moffassal* towns not only stood upon the river but were themselves criss-crossed by the minor *khals* and creeks. Dhaka was criss-crossed by Dulai *khal*. Although by the 19th century the Dulai *khal* was silting up, in the rainy season it gave the town an excellent network of internal waterways of strategic and commercial importance (2.49). In Chittagong several canals were flown from the hills to the Karnafully. Chaktai *khal* was the draingge *khal* in Chittagong town. (2.50). In most of the *moffassal* towns (eg, Brahmanbaria, Chandpur, Jessore, Barisal etc,) the *khals* were used as internal waterways.

Since 1830 government had been establishing charitable dispensaries throughout the country. By the end of 19th century almost all the district and sub-divisional towns had the *sadr* hospitals. The expansion of this health services in the towns provided the doctors in the district and sub-divisional hospitals and dispensaries, as well as in the private practices in the towns. The better health and clinical services of the hospitals and doctors attracted the rural patients to come in the towns. Bangalows and quarters were constructed for the doctors and *babues* in the hospital areas. The establishment of the schools started all over the country in 1830s (2.51).

The *zila* schools (2.52) the secondary schools and colleges (2.53) *Guru* training schools, the office of the DEOs etc, were established in the district towns. Many secondary schools were established privately in the subdivisional and thana towns. Separate hostels for the Hindus and Muslims were established in the district and sub-divisional towns. The missionary school, the *zila* and other schools, colleges and their residential accommodation in the hostels etc, attracted the rural youths and the teachers to come in the urban areas. This process helped the expansion of the towns. Bangalows for the head master/mistress, houses for the hostel superintendents and hostel staffs etc were constructed in the school campus.

The rapid development^{of}/commerce and trade attracted even the European, particularly the British to settle in the different *moffassal* towns. Qualitatively the most significant immigration to the towns was of the new English educated class, the product of the English school and college education which appeared from the late 19th century. Most of whom eventually settled in the different *moffassal* towns. They came to join local bar, to become teacher or journalists, to practise as physicians and to take up employment in government and private offices, in banking and other commercial organizations. The new English educated class soon carved out a prominent place in the urban society of Dhaka, Chittagong, Rajshahi and other *moffassal* towns. They form the middle and lower middle class group.

Gradually these English educated people became the leader in trade, commerce, employment, urban development activities. Along with the British settlers, the zamindars and a few local rich traders and bankers, controlled the economy. They helped in developing the towns and townships.

Like the civil lines for the government officers and staffs, the government felt to accommodate the elite group in a settlelite township with all urban services. Thus the settlelite township of Wari developed at Dhaka.

The urban infrastructure, facilities and amenities like town authority, health facilities, educational institutions, shopping and bazars, metalled roads, street lighting, water

supply, conservancy system, recreational facilities etc, which were essential for the urban development, eventually transformed the medieval town into developed one.

2.3.1 Concept of growth of the towns

The concept of growth is similar in all types (capital, divisional, district, sub-divisional etc,) of the towns. Most of the towns were semi-urban centres, small in size, loose in pattern and usually located on the bank of the rivers or *khals*, which had their beginning in the Mughal or early colonial period. Most of these towns consisted of few market places, few *ghats* and some *pucca*, *semi-pucca* and *kacha* houses. Gradually, the other urban functions, amenities and services were added to this existing townships and the towns were expanded. The components of the towns were added in different times and the spaces in between the components were eventually connected by the roads and stretched by the residential areas. Each time after the addition of each component or service, the topography of the town changed. Isolated *paras* and settlements were connected and gradually it transformed into a developed township,

2.4 Components of town

The essential components of the colonial townships were the old town, civil line, *thana (khowali)*, police line, jail, *chandmari*, collectorate, court, *hat*, *bazar*, shopping centre, townhall, municipality, public library, district board, 'zila school', school, post office, telegram office, *dak bungalow/ circuit house*, steamer/ railway station, power house, station club, *methor's patti*, *brothal*, *Jame-masjid*, *mandir*, church etc.

For the discussion on the components of colonial towns, three representative towns, one for the Divisional and capital, eg, Dhaka, (fig-2.4), one of the *moffassal* District town, eg, comilla (fig-2.5) and one for the Sub-divisional town, eg, Brahmanbaria (fig-2.6) are selected. Dhaka is selected to represent district, divisional and capital town respectively.

2.4.1 Old (Indigenous) town

Most of the colonial townships had an old part of the settlement. The old town of Dhaka comprises the part of the pre-Mughal and Mughal township (fig-2.1). the old Dhaka is limited to the part of the town which was surrounded by the *Dulai-khal* to

the north-east, Lalbagh to the west, *Mahallas* Sujatpur and Christian at the north and Buriganga at the south.

The old part of the Chittagong town was limited to the *mahallas* now under the jurisdiction of *Kotwali thana* and the *mahallas* Jamal khan, Ghat Forhadbagh, Rahmatganj, Fidal khan and Bandal upto the Karnafully river in the south.

The old part of the *moffassal* district town Comilla is limited within the *mahallas* Chawkbazar, Goal patti, Kaporja patti, Satipatti, Rajganj bazar, Mughaltoly etc, areas.

The old part of the *moffassal* sub-divisional town of Brahmanbaria consisted the *mahallas* Anada bazar and Jagot bazar with the surrounding mixed used areas.

The old town consists of congested settlement with *pucca*, *semi-pucca* and *kacha* construction. During the whole colonial period, the process of house construction had been continuing in this part of the town. The architecture of this part was typical and different from the new town developed during the later part of the colonial period. The road system is indigenous and informal and very narrow in width. The setback is minimum and sometimes the houses constructed on the boundary lines. the roadside settlement is very close and congested. Shop at the front of most houses is the characteristic of the areas (fig-2.3).

2.4.2 Civil line

The separation of the residential areas of British and local populations that characterised all the colonial towns (2.54) was particularly noticeable in the *moffassal* divisional, district and sub-divisional towns. Before the construction of the civil lines in 1900s to 1910s, the European, *shahebs* resided in the old towns (2.55). Civil lines were constructed in the new towns, away from the old towns (fig-2.4, 2.5, 2.6). In Dhaka, the civil lines were at Ramna and shahbag areas, where the bungalows for the *bara* and *chota shahebs* were built in the spacious compounds (appendix-4). Bungalows were also built for the local elites in the civil line, eg, Bardawan house (fig-5.2.8) was constructed for the *raja* of Bardawan, member of the council of the

governor of Bengal and Assam. Chummeries for the European were also built in the civil lines (fig-5.30, 8.27.1-8.27.5)

Some times all the bungalows for the *bara* and *chota shahebs* were built as a group at one place in the civil line, eg, Barisal civil line at Bund road. Again, sometimes bungalows for the *bara* and *chota shaheba* were scattered in different places, eg, the bungalows for the D.M, D.J, District engineer, collector, A.D.M, D.S.P, S.D.O etc. were scattered in different places of comilla town around the station club and police line (fig-2.5)

The civil line of the *moffassal* sub-divisional towns was very small. The civil line of Brahmanbaria town (fig-2.6) consists of only three bungalows for the S.D.O, Sub-divisional judge and police officer. The bungalows in the civil line were accommodated in the large compounds.

2.4.3 Cantonment

Cantonments were placed at the outer skirt of the four towns only eg, Dhaka, Chittagong, Jessore and Comilla. Cantonments covered the large areas in the outskirts of the towns. The Dhaka cantonment was at first at the pre-Mughal fort (present central jail); then it was shifted to Baigun bari and Puranapalton (meaning the old cantonment). After the first liberation war of 1857, the cantonment was shifted to Lalbagh fort. The bungalows constructed in the cantonment (2.56) were similar in design with the nungalows of civil lines.

2.4.4 Police line

Police line was located within the divisional, district and sub-divisional towns. It covers considerably large areas to accommodate the barracks for the *jawans*, officer's bungalows, parade ground, *chandmari*, hospital, school etc.

2.4.5 Kotwali

The location of the *Kotwali* is found always in the old part of the town. The houses for the O.C, second officer and the subinspectors (SI) and the barracks for the sepoys were provided within the *thana* compound.

2.4.6 Jail

Jails are found in each divisional, district and sub-divisional town. Jail is deliberately placed in the outskirts of the town. It covers a large area. The houses for the jailor, sub jailors, wardens etc, and the barracks for the sepoys are provided within the second boundaries of the jail.

2.4.7 Railway station

The location of the railway station was always at the outskirts of the towns. It covered a large area for the station, godowns and different types of bungalows and staff quarters. A large area in Fulbaria at Dhaka was covered by the railway workshops, sheds, godowns, platforms, colonies for the staffs and bungalows for the *shahebs*.

Table-2.1

Components of the Colonial District towns in 1947

Components	Comilla	Sylhet	Mymensingh	Faridpur	Barisal	Khulna	Jessore	Pubna	Bogra	Rangpur	Dinajpur
1. Old town	*	*	*	*	*	*	*	*	*	*	*
2. Civil line	*	*	*	*	*	*	*	*	*	*	*
3. Cantonment	*	*	*	*	*	*	*	*	*	*	*
4. Police line	*	*	*	*	*	*	*	*	*	*	*
5. Kotwali	*	*	*	*	*	*	*	*	*	*	*
6. Jail	*	*	*	*	*	*	*	*	*	*	*
7. Chandmari	*	*	*	*	*	*	*	*	*	*	*
8. Collectorate	*	*	*	*	*	*	*	*	*	*	*
9. Judge court	*	*	*	*	*	*	*	*	*	*	*
10. Municipality	*	*	*	*	*	*	*	*	*	*	*
11. District Board	*	*	*	*	*	*	*	*	*	*	*
12. Zila school	*	*	*	*	*	*	*	*	*	*	*
13. Post office	*	*	*	*	*	*	*	*	*	*	*
14. Telegram office	*	*	*	*	*	*	*	*	*	*	*
15. Hospital	*	*	*	*	*	*	*	*	*	*	*
16. Railway station	*	*	*	*	*	*	*	*	*	*	*

Components	Comilla	Sylhet	Mymensingh	Faridpur	Barisal	Khulna	Jessore	Pubna	Bogra	Rangpur	Dinajpur
17. Steamer station		*			*						
18. Power station	*	*	*	*	*	*	*	*	*	*	*
19. Station club	*	*	*	*	*	*	*	*	*	*	*
20. Hat	*	*	*	*	*	*	*	*	*	*	*
21. Bazar	*	*	*	*	*	*	*	*	*	*	*
22. Methors's patti	*	*	*	*	*	*	*	*	*	*	*
23. Brothal	*		*		*	*	*			*	*
24. Circuit house	*	*	*	*	*	*	*	*	*	*	*
25. Grave yard	*	*	*	*	*	*	*	*	*	*	*
26. Shasan	*	*	*	*	*	*	*	*	*	*	*
27. Edgah	*	*	*	*	*	*	*	*	*	*	*
28. Jame Masjid	*	*	*	*	*	*	*	*	*	*	*
29. Mandir	*	*	*	*	*	*	*	*	*	*	*
30. Church	*	*	*	*	*	*	*	*	*	*	*
31. Maidan/ Field	*	*	*	*	*	*	*	*	*	*	*

In Chittagong the railway station covered a large area of the town from the present railway station to the Pahartali including the hill areas of the town. The bungalows for the *bara* and *chota shahebs* were accommodated on the hill tops and the staff quarters were placed in the plains.

3.4.8 Zila school/college

The educational facilities, zila school, girl school, high school (missionary, jubilee, victoria, coronation etc.), and colleges occupied a large area in the colonial district and subdivisional towns. The zila schools were established in the district towns in the early 19th century. The secondary schools in the private level were also established in the sub-divisional and *thana* towns in the same time. The colleges were established in the late 19th and early 20th centuries in the district towns. Sometimes the bungalows of the head master/principial were provided within the school/college compound. In some of the zila schools the hostels were constructed within the campus, the bungalows / houses for the hostel supers and houses for the staff were also constructed.

3.4.9. Hospital

The hospital was always located along the good communication line so that it could be approached from all the surrounding areas. Sometimes the hospital employees like

doctors, nurses, and brothers whose services considered essential at any time were accommodated in the hospital compound. The civil surgeon and the senior doctors stayed in the civil line.

3.4.10 Power house

Power house was the typical component of the colonial towns. Power was supplied from the railway power house to the towns. It was located at or near the railway station. Considering the emergency, the power house employes were accommodated within the power house compound.

3.4.11 Collectorate

Collectorate in each town always covered a large area away from the civil line and residential area of the town.

3.4.12 Station club

The club for the European and *bara* and *chota shahebs* was located at each station (district and subdivisional towns) at a suitable distance from the collectorate and the civil lines.

3.4.13 Circuit house/ *dak* bungalow

There was a circuit house in each divisional and district town. Similar type of arrangement was provided in the *dak* bungalows in each Sub-divisional and thana towns. Khulna town has both the circuit house and *dak* bungalow. Circuit houses covered a large area in the towns (eg, Khulna, Jessore, Rajshahi, Chittagong etc). The care taker and the staffs like cook, butlar etc. were accommodated in the circuit house/*dak* bungalow compound.

3.4.14 *Methor's patti*

Methor's patties were always located at a safe distance from the civil lines, collectorate and from the new town.

3.4.15 Brothal

Brothal developed in the town areas during the colonial period. The location of the brothals were usually in the old towns, at a safe distance from the residential areas. Usually these were located at the dense market areas. People always maintain a safe distance from these red light areas while making their houses.

The components mentioned above were seen in each colonial divisional, district and subdivisional town. Besides these, other components shown in the tables-2, eg, *hat*, *bazar*, grave yard, *shasan*, *edgah*, *jami-masjids*, *mandirs*, church, maidan etc, were also found in the colonial towns.

2.5 Hierarchy of urban centres

Administratively, the country was divided into three divisional head quarters, eg, Dhaka, Chittagong and Rajshahi, Each division comprised few districts. Dhaka division comprised the district of Dhaka, Mymensingh, Faridpur and Barisal, Chittagong division comprised the districts of Chittagong, Noakhali, Comilla (Tippera) and Sylhet, and Rajshahi division comprised the districts of Rajshahi, Dinajpur, Rangpur, Bogra, Pubna, Jessore and Khulna (appendix-3). Dhaka town was the capital of Bengal from 1608 to 1638 and 1659 to 1717. Again, it was the capital of Assam-Bengal from 1905 to 1911. There were 15 district towns in 1940s in Bangladesh. Kustia was the part of Nadia district of Presidency division, and Chittagong hill tract was the part of the Chittagong district before 1947.

The administrative hierarchy of the towns of Bangladesh is shown in the table-2.2.

Table-2.2, Administrative hierarchy of the towns, type of township and the administrative officers

Sl.no.	Type	Type of township	Administrative officer
1.	Province	Provincial town	Governor
2.	Division	Divisional town	Divisional commissioner
3.	District	District town	District collector District magistrate
4.	Sub-division	Sub-division town	Sub-divisional officer (S.D.O)
5.	<i>Thana</i>	<i>Thana</i> town	Circle officer (C.O)

Each district was administered by the District collector in the early colonial period and then by the District magistrate (D.M). There were few sub-divisions (appendix-3) in each district, supervised by the sub-divisional officer (S.D.O). Each sub-division was divided into few *thanas* which were the lowest administrative units administered and controlled by the colonial authority. Circle officer was the administrative chief of each circle, and each circle comprised of one or two *thanas*.

The size of the towns did not always follow the hierarchial order. The Dhaka town covered 6.15 sq.miles, Comilla 5.2 sq. miles, Jessore 4.5 sq. miles, Brahmanbaria 5.5 sq.miles in 1864. Again, Bakerganj covered 6.0 sq.miles (in 1869) while Chittagong covered only 3.3 sq.miles in 1864 (2.57).

2.6 Discussion

A few urban centres in Bangladesh could be found long before the arrival of the British. The urbanization in the colonial urban settlement in Dhaka and Chittagong towns were the continuation of the prevailing pre Mughal and Mughal urbanization. The urbanization in the colonial period differed much from that of the Mughal and pre-Mughal periods. Most of the district and sub-divisional towns were the British creation.

The rate of urbanization during the whole colonial period was slow. The percentage of urban population was only 3.66 at the end of colonial period (1941) in Bangladesh.

Five types of urban centres or towns- semi-urban or country towns, administrative centres, communication centres, industrial and commercial towns and static or decaying towns were identified in the colonial period. Beside these another types of small towns having no urban facilities and services, are found in few places (Painam nagar, Kalashkati, town Sreepur and town Noapara). Large number of *pucca* houses, particularly zamindar houses are found in these semi towns.

A number of factors contributed to the development of urbanization in the colonial period. The control of colonial authority over the local population, security and the maintenance of law and order, the development of economic activities, commerce, trade and industry, communication, establishment of the municipalities and town committees, urban services, education, employment and the rise of middle class soceity etc, are identified as the elements of urbanization.

In the beginning of colonial era, the Mughal system of administration was followed and the *parganas* and the *chaklas* etc, administrative divisions remained for several years. A centralised administrative system was introduced during the begining of the

19th century under the Bengal district act of 1836. The divisions, district and sub-divisions were created which gave the direction for the development of the towns of different hierarchy (table-2.2). The regional or divisional towns (Chittagong and Rajshahi), districts and sub-divisional towns developed accordingly.

The concept of growth is similar in all types of the towns. Most of the towns were small in size, loose in settlement pattern and usually located at the bank of the rivers (fig-2.1, 2.4, 2.5, 2.6), which had their beginning in the Mughal or early colonial period. Gradually the urban functions, amenities and services were added to the existing township in phases and the towns expanded.

The town planning concept introduced during the colonial period and the zoning for the various components of the towns were very clear and recognisable. The essential components of the colonial townships were the old town, civil line, *thana (kotwali)*, police line, cantonment, jail, collectorate, court, *bazar* municipality, district board, *zila* school, missionary school, college, *dak* bungalow, circuit house, steamer/ railway station, colonies, *methor's patti*, post office and telegram office etc. Most of these authorities have their own residential accommodation-bungalows for *bare* and *chota shahebs* and quarters for the *bara* and *chota babus* and sheds for the employes within the respective compounds. The other components like *hat*, grave yard, *shasan*, *jame-masjid*, *mandirs (kali bari, sib bari, etc.)*, brothal etc, were placed in different areas of the towns.

The old part (the oldest core of the towns) was always inhabited by the local people. Sometimes, the *shahebs* lived in this part of the towns along the river banks. Many Europeans lived in the Wiseghat, Badamtally etc, areas in Dhaka. The road system was indigenous and informal. The roads were narrow in width. The roadside settlement was very close and congested. Shops at the front of most houses is the characteristic of the areas.

After the war of 1857, the civil lines for the government officers and staffs were constructed in the new parts of the colonial towns. The houses in the civil lines were semi-*pucca* and the walls and roofing materials were semi-permanent in nature at the

early stage. As a result, most of those houses are not exist now a day. The *pucca* bungalows found in most of the civil lines in Dhaka, Chittagong, Rajshahi and other *moffassal* district and subdivisional towns were constructed in the late 19th and early 20th century.

Cantonments were the part of colonial towns and a regular cantonment was set up in large towns like Dhaka, Chittagong, Jessore and Comilla towns. The bungalows were constructed for the commissioned officers. Non-commissioned officers stayed in the lines. The *sepoys* were accommodated in the barracks.

Every *moffassal* district town (table-2.1) and most of the sub-divisional towns had the police lines. The jail, police line, *kotwali* etc, covered a large area in the towns. The bungalows for the officers and quarters for the staffs and barracks for the *sepoys* were constructed within the compounds of the establishments. The *zila* school, missionary school, college, hospital etc, institutions covered the large areas in the colonial towns. These institutions also provided the residential accommodations for few of their officers and employees in the compounds.

The railway station was always at the outskirts of the town. It covered a large area for its establishment. The bungalows and colonies for the different categories of *shahebs* and employees respectively were constructed in the station areas.

Bazars were established in every town, nearby the cantonment to supply the commodities to the military or police establishments. *Hats* were established to procure the commodities for the ruling power. Every towns had the *hats* and *bazars*. The development of new technology and energy resource (electrical), urban services- eg, road building and bridges, water supply, drainage and conservancy, telecommunication, railway etc, turned the process of urbanization into a new era during the mid and late colonial period.

Canals and rivers were used for transportation. As a result linear type of urban settlement were seen (eg, Dhaka, Narayanganj, Rajshahi etc,) in many towns, either along the river banks or road sides.

Methor's patties were always located at safe distance from the civil line, collectorate and from new town.

Brothals were developed in each town to satisfy the urban requirement. People always maintained a safe distance from these red light areas.

Modern concept of satellite township (planned residential area) was developed at Wari in Dhaka town, first time in Bangladesh in 1885, where the regular grid iron road system was developed. The residential plots were arranged along the roads in a regular manner. Each house had a road frontage so that they have entry and service entry to the road (fig-2.7). The roads were wide and had the electricity.

Administratively the country was divided into three divisional head quarters and fifteen districts. The administrative hierarchy of the towns is shown in the table 2.2 and appendix-3 the different types of towns administered by the officers also shown in the table-2.2. The size of the towns did not always follow the hierarchical order.

Almost all the colonial towns had the mixed urban-rural character with the stretching of the paddy and jute fields within the towns. The settlements were dispersly located, having a mixed character of urban and rural scene. The *mahallas* were separated by the paddy fields, forestation and ditches etc. The *nalas* and *khals* were beside the roads; all these gave the characteristic of loose settlement pattern in the colonial towns, where the urban houses, civil lines, bungalows, shop-houses, *dak* bungalow/circuit house, *patties* and colonies developed during the colonial period, which will be discussed in the next chapter-3.

References: Chapter-2

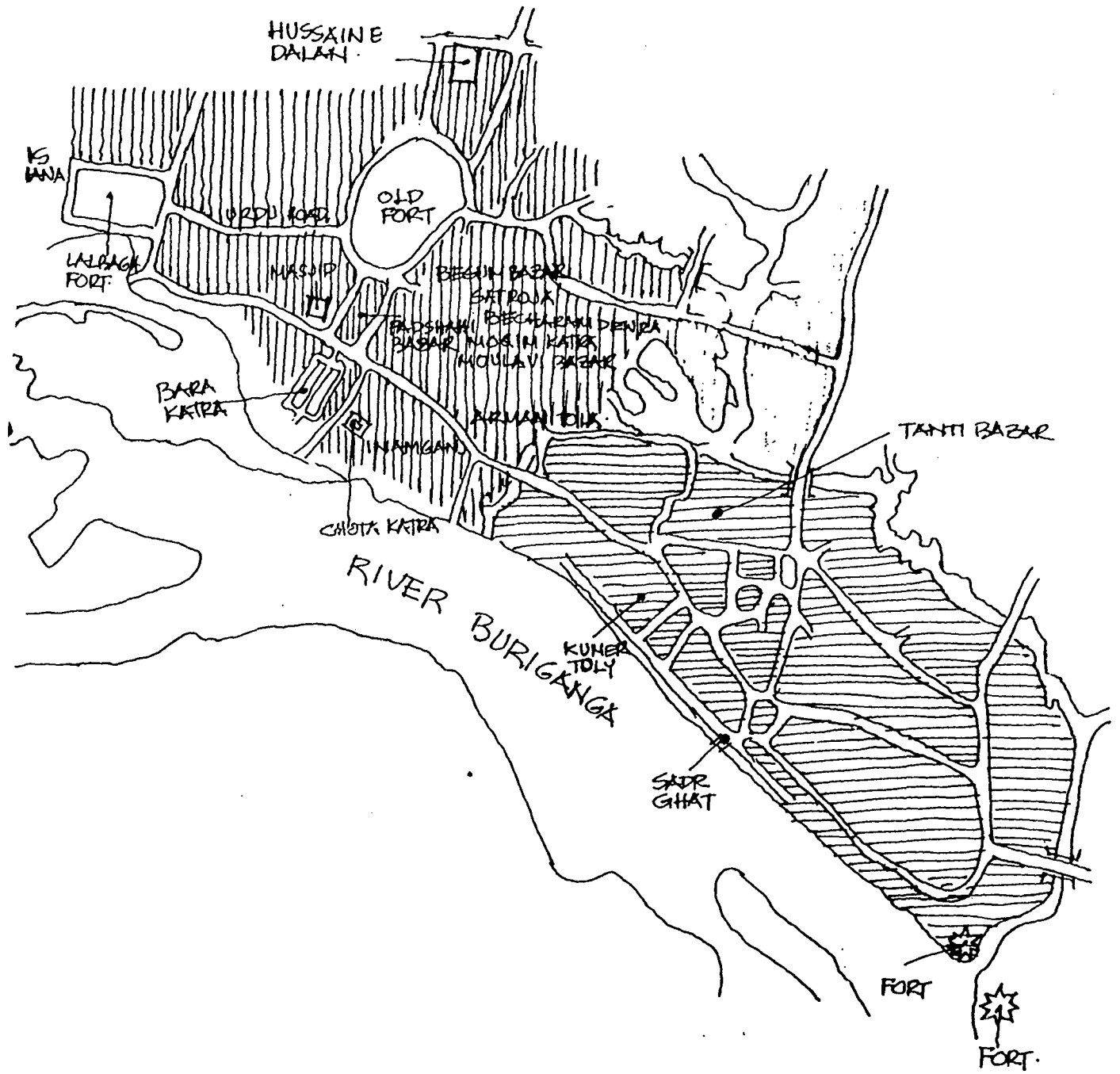
- 2.1 Ed. Sazzad Hossain, Collection of papers, Urban affairs, opcit, P-9
- 2.2 In order to define an urban area, we have employed the same definition as the one employed by the census authority. The census commission has defined an urban area as that which includes:
 - (a) Minicipality, civil lines, cantonment and any continuous collection of houses inhabited by not less than 5,000 persons.
 - (b) Areas having town committees.
 - (c) Concentration of population in a continuous collection of house where the community maintains public utilities such as roads, streets, lighting, water supply, conservancy etc.Emerys Jones, Towns and cities, opcit, P-11-16
- 2.3 The mention of Bengal is always considered the undivided Bengal.
- 2.4 Mohammad A. Mohit, History of urban growth and concentration in Dhaka:
An analysis of spatial organization of power and authority, Dhaka, Past, Present, Future, The ASB, 1991,P-617.
- 2.5 Ibid, P-617
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- 2.8 Abdul Karim, Dhaka, the Mughal Capital, Dhaka, P-24 and A.IH. Dani, Dhaka-
A record of its changing fortune, ASP, Dhaka, 1962, P-26
- 2.9 A.H. Dani, Opcit, P-26
- 2.10 The name of the 'mohallas' in old Dhaka (preMughal Dhaka) represented the type and occupation of the people who orriginated and inhabited in those mahallas. Followings are the names of the mahallas whose names are related to the professions:

Tabtibazar	- Bazar of the weavers
Shankari patti	- Street of the old shell cutters
Kasaitola	- Area of the butchers
Kumertoly	- Settlement of the potters
Jaulanagar	- Fishermen's village
Sutrepur of Sutarnagar	- Village of the carpenters
Kamarnagar	- Village of blacksmith
Banianagar	- Merchant's village
Goalnagar	- Village of the milkmen
Patuatoly	- Artisan village, worked on 'patu' cloth.
- 2.11 Abdul Karim, Dhaka, the Mughal capital, opcit, P-28.
- 2.12 The shop houses are generally situated by the side of the urban roads having either the shop or production area at the front and house of the shop keeper at the back or shop and production area at the ground and residential accommodation at the top.

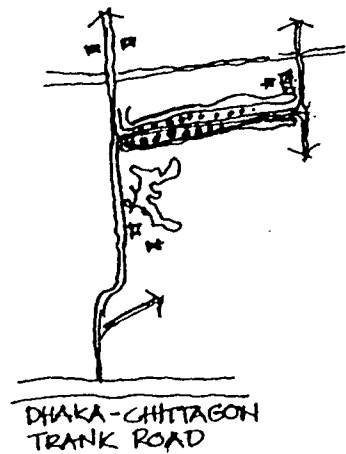
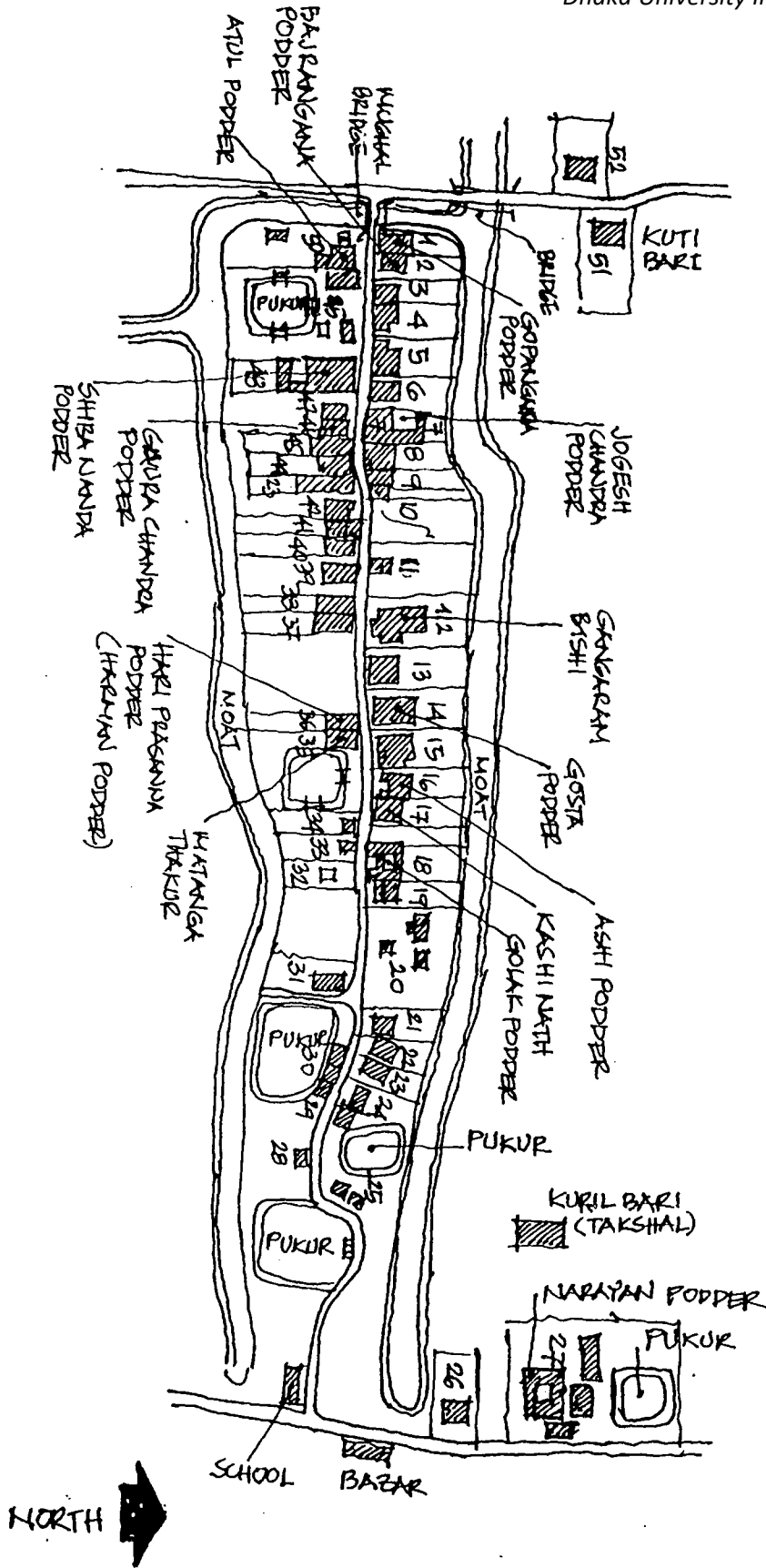
- 2.13 During the preMughal period, Chittagong was ruled first by the Sultans of Hussain Shahi dynasty (1338-1538), then by the Afgan rulers (1539-1574). Chittagong was under the Arakanese kingdom from 1580 to 1660. Dr. Sunit Bhushan Qunungo, A history of Chittagong, Vol. 1, Signet Library, Chittagong, 1988.
- 2.14 Dr. Sunit Bhushan Qunungo, opcit, P-636.
- 2.15 A Karim, Dhaka, the Mughal capital, opcit, P-38 and 63.
Professor Karim, has not however mentioned the source in his book. S.M. Taifoor, on the evidence of James Taylor, states that *Shahbandar* was the chief port town of the *Pathans* and the Mughals in Dhaka district and it was situated on the opposite of Narayanganj beyond Lakhya river. It is not possible to give its exact location, there might be more than one *Shahbandar* at Dhaka, which employed the *Banias, Dalals, Paikers, Mutsuddis* etc. and developed as a commercial township.
S.M. Taifoor, Glimpes of old Dhaka, opcit, P-47 and James Taylor, A sketch of the topography and statistices of Dhaka, opcit, P-99-100.
- 2.16 Dr, Sunit Bhushan Qunungo, opcit, P-359.
- 2.17 Calcutta review, Jan-March, 1938,P-22.
- 2.18 Dr. Sunit Bhushan Qunungo, opcit, P-673.
- 2.19 Fazlur Rahman, *Sylhetar mati, Sylhetar manosh*, Mawlavi bazar, 1991, P-169.
Sylhet was famous for its shipbuilding, and metal and faundry works. According to Fazlur Rahman '*Kali jam jam*' and '*Jahan kosha*' canons were built by Janardan Karmakar of Patehgaon during the time of Sahaesta khan,
Fazlur Rahman, opcit, P-176.
- 2.20 District Gazetteers, Rajshahi, opcit .
- 2.21 Mohammad A.Mohit, opcit, P-618.
- 2.22 Haroon Er Rashid, Geography of Bangladesh, University press limited Dhaka, 1977, P-176, and S.M. Taifoor, opcit, P-249.
- 2.23 Mohammad A. Mohit, opcit, P-620.
- 2.24 Moonis Reza, India : Urbanization and national development, Urbanization and regional development, M.Honjo (ed), Singapore, Maruzen Asia Pvt. Ltd. 1981, P-76, Mahammad A. Mohit, opcit, P-620.
- 2.25 Before the year 1901 no census report for the urban areas are available in detail to formulate the annual rate of population growth.
- 2.26 Home affair division, Ministry of Home and Kashmir affairs, Karachi, Census of Pakistan, Vol-2, 1961, BSS. Ministry of Planning. Govt. of Bangladesh, 1974, Rafiqul Huda Chowdhury, CUS, Urbanization in Bangladesh, P-4.
- 2.27 Sharafuddin Ahmad, Dhaka, Curzon press, U.K, P-91.
- 2.28 Ratan Lal Chakrabarty, Role of Dhaka after the annulment of partition, DPPF, opcit, P-225, Shirin Aktar, on the selection of Dhaka as the capital of Eastern Bengal and Assam, 1905-1911, DPFF, opcit, P-183.

- 2.29 *Guro* training schools were established during the late colonial period even in the *thana* level at some places.
- 2.30 District Gazettiers, *opcit*.
- 2.31 Nafis Ahmad, *A new economic geography of Bangladesh*, Dhaka, 1988.
- 2.32 Rafiqul Huda Chowdhury, *Urbanization in Bangladesh*, CUS, D.U, 1980, P-4.
- 2.33 *Kotwali* was the office of the *kotwali (Thanadar)*, the Security Inspector of the town in the Mughal and pre-Mughal period. The colonists followed the same system of police administration. One O.C (officer in charge) was responsible for each police station. The main police station of the town is called the *kotwali*. There was three P.S in Dhaka. Sharifuddin, Dhaka, *opcit*, P-41.
- 2.34 Permission was not granted from the Defence authority to survey the bungalows, houses and barracks of the cantonments.
- 2.35 *Hat* is an occasional *bazar* which sits once or twice in a week. It is not a regular market.
- 2.36 Rafiqul Islam, *Dhakar Katha*, 1610-1910, Ahmed publishing house, Dhaka, 1882, P-113
- 2.37 By the regulation 1 of 1829, a system of Divisional commissioners was created and in 1829, the Dhaka became the head quarters of the Commissioner. There were three divisions-Dhaka, Chittagong and Rajshahi in Bangladesh.
- 2.38 Md. Faizullah, *Development of local government in Bangladesh*, NILG, Dhaka, 1978, P-13.
- 2.39 *Dak* is the system of carrying the postal goods either carried by the runnes on foot or by the house carts.
- 2.40 Wahidul Alam, *Chattagramer Itihash*, Chittagong, 1989, P-81.
- 2.41 At the beging the wooden lamp post were seen, after that decorated precant cast iran posts were seen in the streets.
- 2.42 Nazia Khanam, *Provision of civic amenities in Dhaka (1921-47)*, DPPF, P-253, By 1947, Dhaka town had 1070 oil lamps and 1370 electric light.
- 2.43 Rafiqul Islam, *opcit*, P-135 and Shariffuddin, *opcit*, P-203.
- 2.44 Md. Jainal Abedin, *our cities and towns*, NIPA, Dhaka, 1970, P-67.
- 2.45 District Gazatters, Comilla.
- 2.46 Shariffuddin Ahmed, Dhaka, *opcit*, P-199.
- 2.47 Water carrying by *bistrwalas* was the Mughal and preMughal system introduced in this country by the Muslims.
- 2.48 *Ibid*, P-195.

- 2.49 Dulai *khal* was digged by Islam khan connecting the river Dulai and Buriganga. This khal was from Pakurtali (Babu bazar) to Lakya river. This was the drainage khal and used for boat services from Chadnighat through this khal. Rafiquel Islam, opcit, P-71.
- 2.50 Wahidul Islam, opcit, P-73.
- 2.51 Sharifuddin Ahmed, opcit, P-47.
- 2.52 Zila school was the government school at the district level in the colonial period.
- 2.53 Coronation school, Victoria schools and colleges etc were established by the colonists.
- 2.54 Norman Evenson, The Indian metropolis, opcit, P-2.
- 2.55 The colonists sometimes used the word 'native town' for the indigenous or old town. They used the word 'native' derogatively. (Appendix-2)
- 2.56 The bungulows in the cantonments could not be surveyed as permission from the Ministry of Defence was not found. It is noticed that the military houses were similar to the goverment bungalow built by the PWD engineers.
- 2.57 District gazatters and Jainal Abedin, Our cities and towns, opcit, appendix-IV.



Map showing pre-Mughal and Mughal Dhaka



2.2.1 Location of Painam Nagar,
Sonargaon, Dhaka.

Fig-2.2 Map of Painam Nagar



Fig-2.3.1 Kaporipatti, Natore



Fig-2.3.2 Islampur road, Dhaka

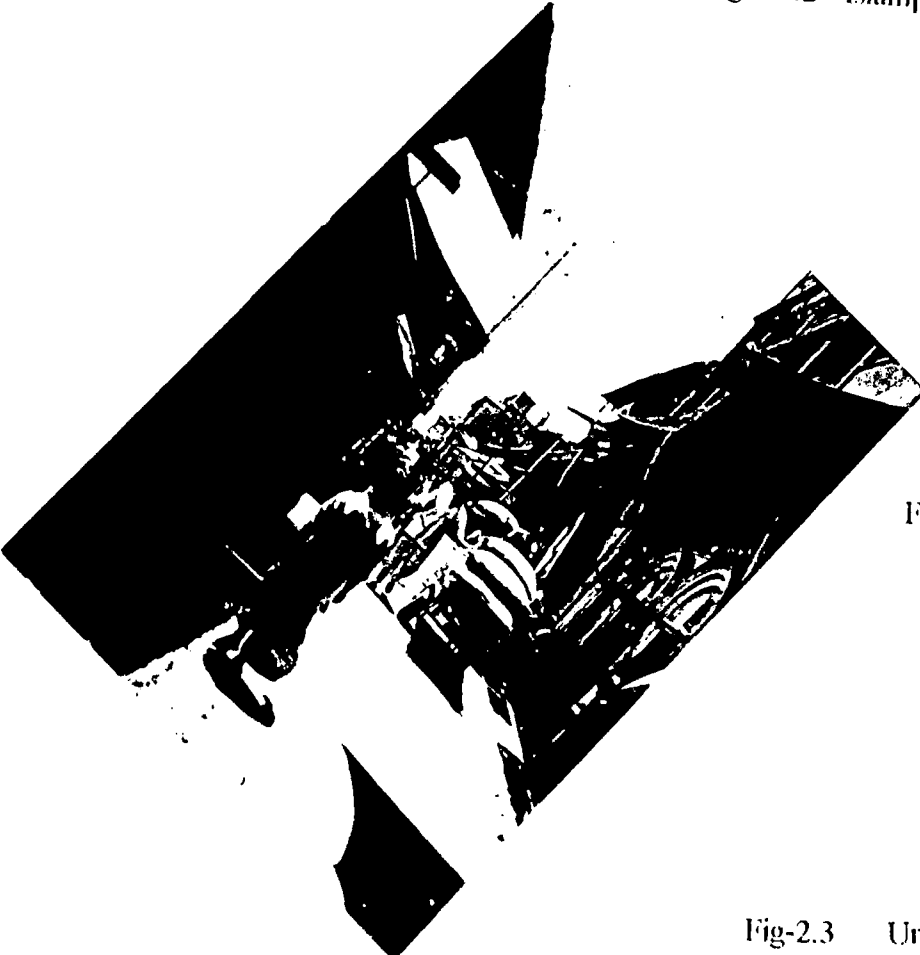


Fig-2.3.3 Puranbazar street, Chandpur

Fig-244 Colonial Dhaka 1930s

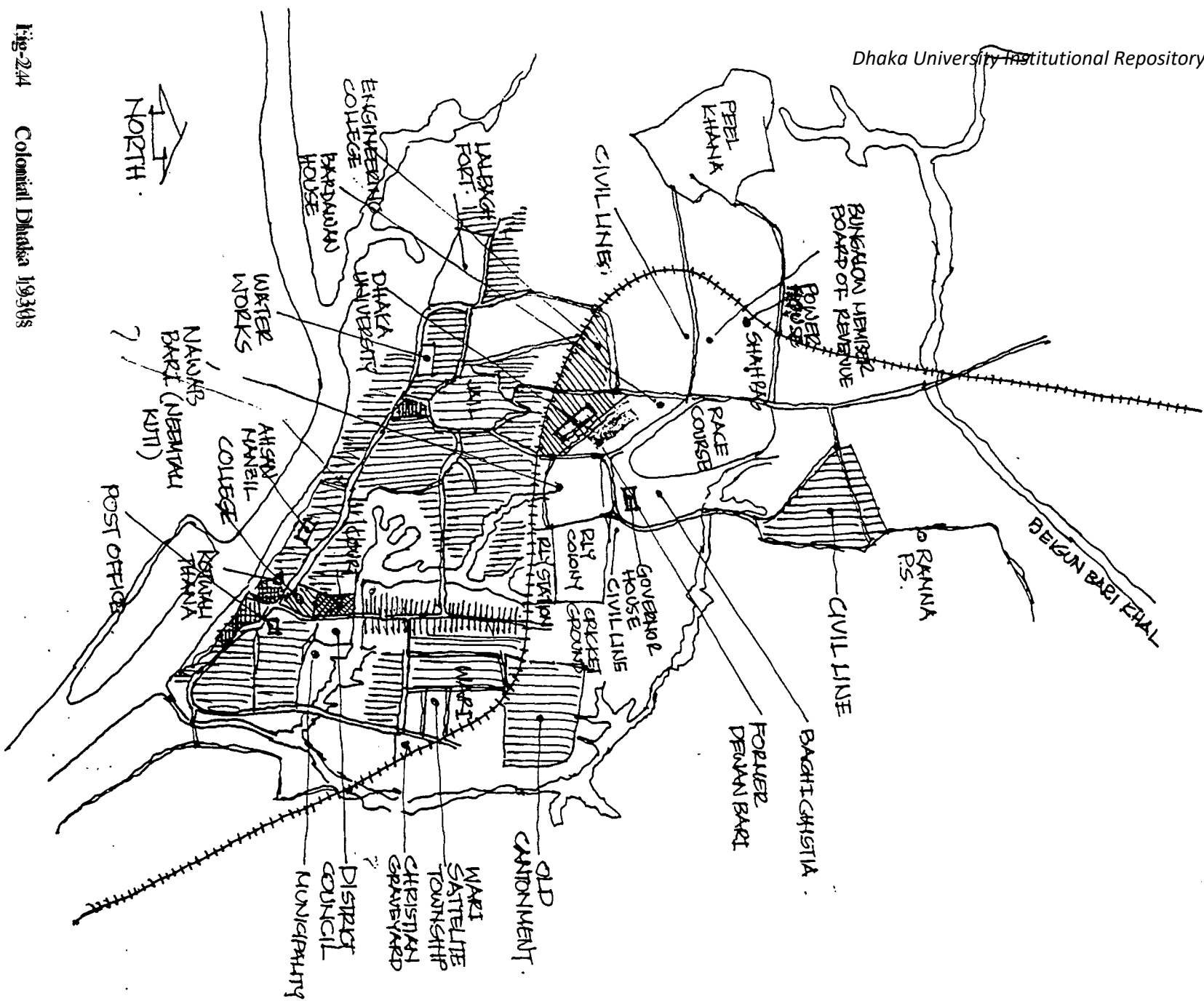
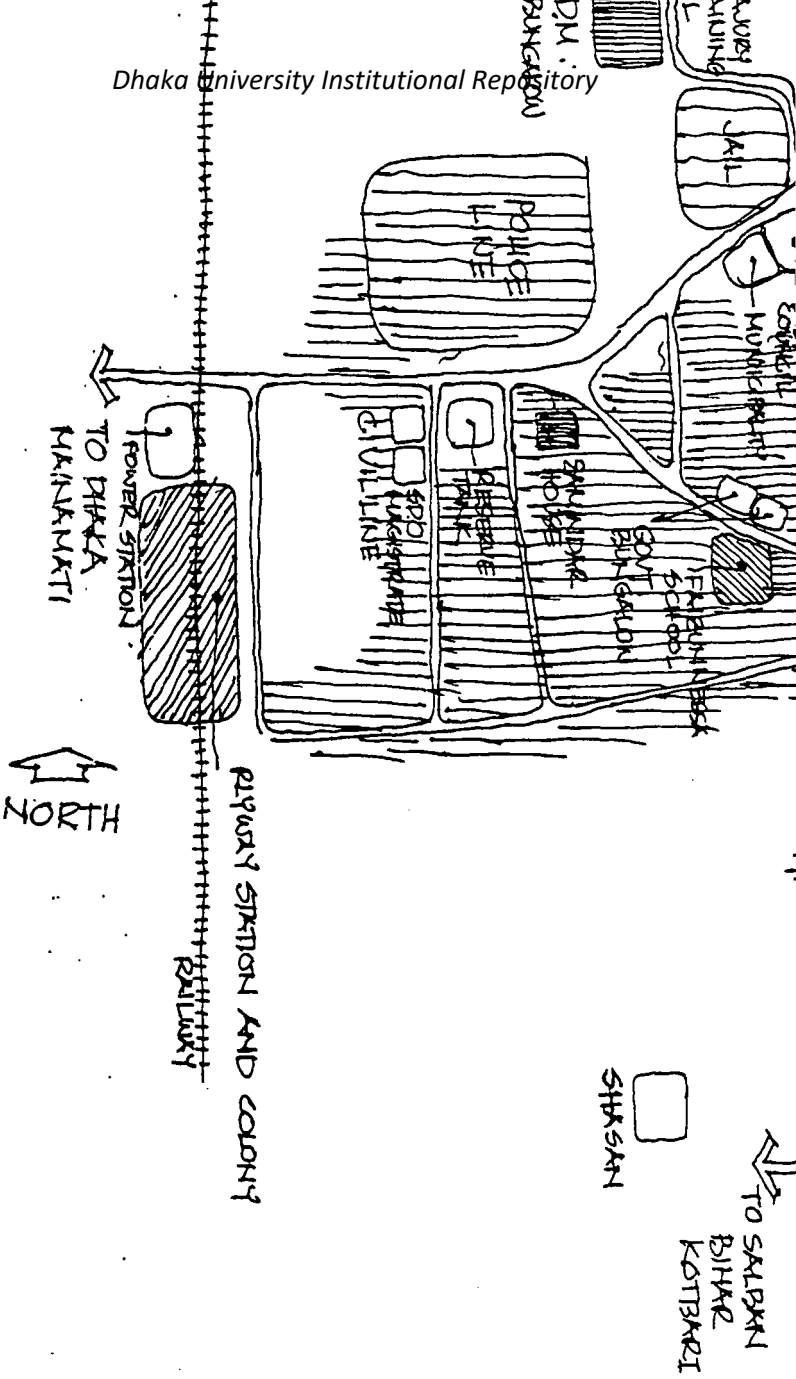


Fig-2.5

District town Comilla 1940s



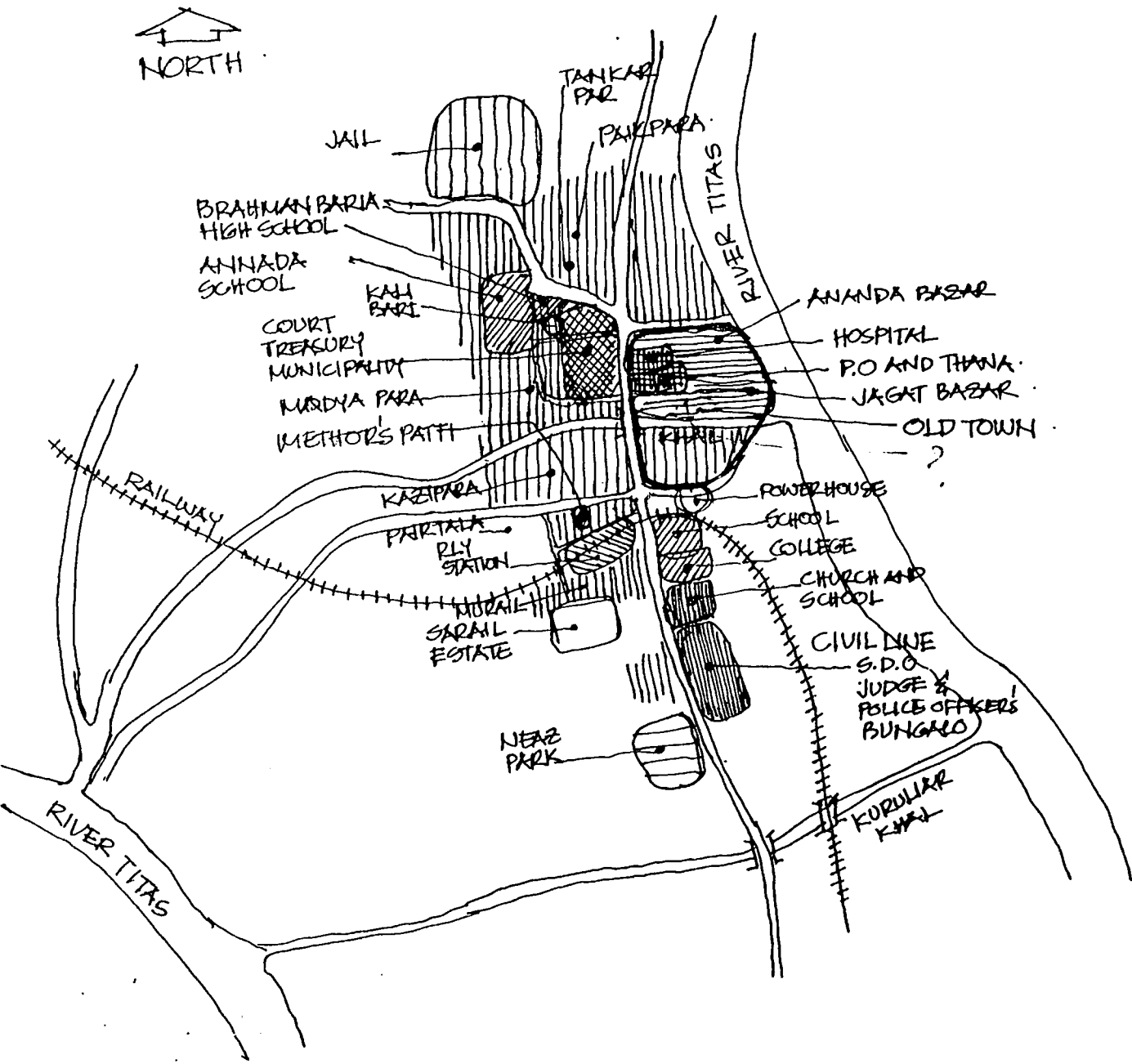


Fig-2.6 Sub divisional town Brahmanbaria 1940s

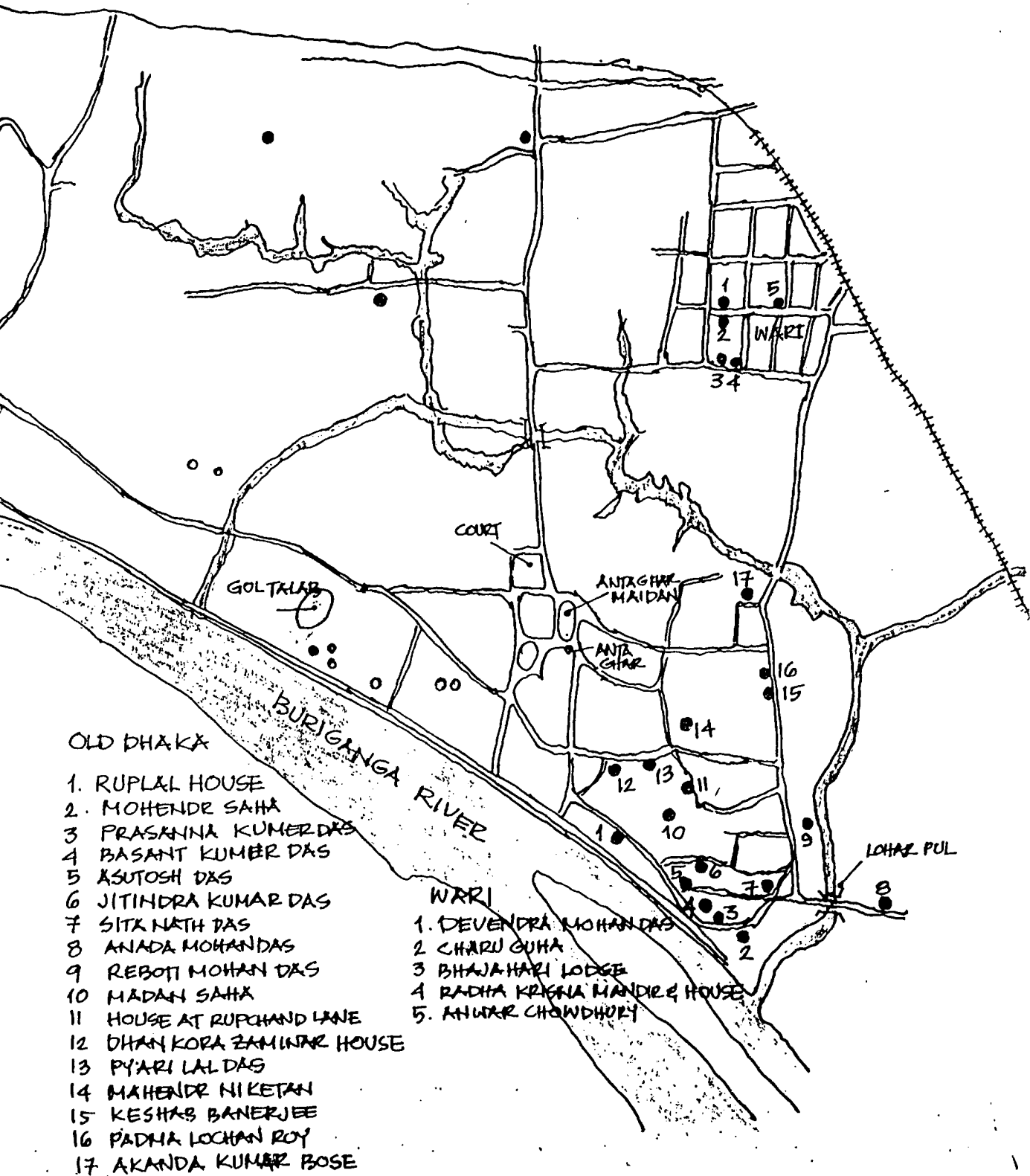


Fig-2.7 Map showing the zamindar houses at old town

Chapter-3

TYOLOGY OF COLONIAL HOUSES

Chapter-3

TYPOLOGY OF COLONIAL HOUSES

3.0 Introduction

The previous chapters deal with the culture, and urbanization in Bangladesh which will be helpful for the understanding of various types of colonial houses in both rural and urban setting. This chapter is organised to introduce various types of the houses built and developed in the colonial period. This chapter deals with the typology, identification of the types of the houses, history, development, general condition and maintenance of the houses.

3.1 Types of the houses

It is found from the field survey that several types of houses (table-3.1) were built in the rural and urban areas of Bangladesh during the colonial period. On the basis of the status of the occupant/owner, location, nature of uses etc, the houses could be divided into the following thirteen major types: rural house, urban house, shop house, satellite township house, zamindar house, *kachari bari*, *bagan* (pleasure) *bari*, government bungalow/quarter railway bungalow/quarter, *kuti bari*, garden house, *dak* bungalow/circuit house and *patti* etc. In most of the cases, the difference between two types of houses is distinct, such as rural house and urban house, or *kuthi* and *dak* bungalow etc. Sometimes, it is difficult to draw a sharp difference between two types, eg, the urban house and the house in the satellite township, or government officer's bungalow and the railway officer's bungalow, or, railway officer's bungalow and the tea garden manager's bungalow etc.

3.1.1 Rural houses

The houses, here meant as rural *pucca* houses. Its counter part is the traditional *kacha baries*. The rural houses could broadly be categorised in two groups: one, the houses where the isolated *dalans* replaced the *ghars* of the baries (fig-5.2.1, 5.2.2, 8.1, 8.2) which are similar in planning and organization with the indigenous homestead (3.1). Sometimes, only one or two of the *ghars* are replaced by *dalan* (3.2, fig-5.4), two, the *pucca* houses similar to the urban houses (fig-8.4-8.6.3) built in the comparatively compact areas (fig-2.2) where these are organised side by

side facing a road (fig-5.3.1, 5.25.2). The organization of the houses seem to be an urban one without any urban facilities except road (3.3).

Traces of rural *pucca* houses of Mughal and pre-Mughal period is not found. All the rural *pucca* houses found in this period belong to the mid 19th or 20th century structures and colonial in nature.

Most of the houses are found moderately maintained and occupied by the decendants of the owners or present occupant had purchased the houses from the previous Hindu owners.

Rural houses are rarely abandoned or dismantled.

Table-3.1 Types of houses and their setting (location)

Sl. No.	Types of houses	Rural	Urban	Both rural and urban
1.	Rural house	*		
2.	Urban house		*	
3.	Shop house		*	
4.	Sattelite township house		*	
5.	Zamindar house			*
6.	<i>Kachari bari</i>			*
7.	<i>Bagan bari</i>		*	
8.	Government house		*	
9.	Railways house			*
10.	<i>Kuti bari</i>			*
11.	Garden house	*		
12.a	Dak bungalow			*
12.b	Circuit house		*	
13.a	Urban (professional) <i>patti</i>		*	
13.b	<i>Methor's patti</i>		*	

3.1.2 Urban houses

The houses built in the (old and new) towns are termed as urban houses. The colonial urban houses in its early stage was a modified version of the rural houseform (fig-5.5.1, 5.5.2) and the bungalows as the ultimate form in its subsequent development.

Urban houses could be categorised in four major groups. These are introvert courtyard type houses, (fig-5.5.2, 5.6) E,L,□,F,H (fig-5.7) etc, type houses, composite type bungalows (fig-5.8) and consolidated type bungalows (fig-5.13).

First, the introvert courtyard type houses are those houses where all the rooms are arranged around the courtyard. These courtyard type houses may be again, enclosed type or detached type (3.4). Detached type urban house (fig-5.5) is similar with the detached type rural house (fig-5.2.2). Only difference is the one of the block is two/three rooms deep. This seems to be the transition towards the urban form.

Sometimes, the introvert type houses are built covering the whole compound, keeping no space around (fig-5.6, 5.9). The urban streets in the old towns were narrow and the frontage of the houses was reduced (fig-5.9). The houses in the old towns or at the centre of the most of the *moffassal* towns were side by side and sometimes, the boundary wall between two houses was the common wall and usually no windows are placed on the outer walls or small windows are placed on the roads (3.5, fig-5.11,).

The second type of urban houses are the L,E,□,F,H, etc, type of houses (fig-5.7, 5.12) where the blocks are arranged around the two or three sides of the *uthan* keeping sufficient spaces around. These are considered incomplete courtyard type houses (3.6). Sometimes, the house blocks are placed in front, adjacent the road keeping open space at the rear (fig-5.10), or placing the house block at the rear wall, keeping the open space in front (3.7, fig-5.8, 5.18,).

The third type of urban houses are the particular type of residential buildings and the interior spaces were further modified to form one structure or house unit where the courtyard gradually disappeared from the residences. This scene is more pronounced in the bungalows (fig-5.8, 5.18, 8.8.1, 8.12.1) built in the late 19th and early 20th century (3.8). These are the composite type of bungalows similar to the govt. and railway, bungalows in small urban compounds, where the service blocks (*kacha* or *pucca*) are separated from the main blocks.

The fourth type of urban houses, the consolidated type of bungalows (fig-5.13, 8.10.1) were developed during the end of the colonial period at the late 19th and early 20th century by the elites of the third culture, where the living areas and the services were integrated into one mass (3.9). This was the ultimate houseform and considered as a modern form of house design.

Most of the urban houses are being used now as the residential purposes. Few of these houses (3.10), are found to be either partially or wholly destroyed for further construction (table-3.6).

3.1.3 Shop houses

The concept of shop houses in this country is very old. Shop houses started from Shah Saja's time. *Bara Katra* was used as *Sarai khana* and it had 22 shops for its income, though it was built for his residence at Dhaka, he never resided here (3.11). The concept of shop houses is similar with the concept of '*kuti*', where the ground floor is the production area (fig-8.36.1) and the upper floor is used for the residential purposes (fig-8.36.2). The colonial urban societies were a composite of mostly self-employed professional and craftsmen. Thus the shop houses were mostly built by the self employed professional and craftsmen including the businessmen.

The lower and middle income neighbourhoods were accommodating a growing number of trading and manufacturing industries (in most cases, the small industries) making a mixed and traditional flavoured environment every where during the colonial period in the old towns, as shown in table-3.2.

Table - 3.2: Shop houses and their location

Sl.no.	Town	Location
1.	Dhaka	Sadrghat to Chawk bazar, Court to Fulbaria, Sadrghat to Farashganj
2.	Chittagong	Dewan bazar to Chandanpura, Andar qila to Chawk bazar, Bandal to Firingi bazar and Sadrghat
3.	Sylhet	Bandar bazar
4.	Rajshahi	Shaheb bazar, Rani bazar
5.	Natore	Nicha bazar, Ucha bazar, Nimtala, Kaporia <i>patti</i> .

6. Bogra Satmatha, Nazrul Islam sarani, Gala patti, Temple street, Chandni bazar,
7. Jessore Daratanar *mour* to *Chowrasta*
8. Khulna Dak banglar *mour* to upper Jessore road Cemetery road.
9. Comilla Rajgonj to Chawk bazar, Rajgonj to Mughal toly, Monoharpur, Kandirpar
10. Brahmanbaria Jagat bazar, Mahadevpatti, Chati patti
11. Chandpur Puranbazar
12. Dinajpur Munshipara, Nimtala, Maldah patti, Bashunia patti, Churipatti, Garu *hatti* Bara bandar, Kali tala
13. Rangpur Station road

Two types of shop houses are identified. These are, one, the single storied houses with the road side front rooms as the shops (fig-5.15) and the houses at the rear of the plot (3.12). The other type of shop houses are the two storied structures where the shops are accommodated at the ground floor (fig-5.14, 5.16) and the upper floors are used as residential purposes (3.13, fig-5.14.2, 5.16.2).

Since, the road side land price is rapidly growing up, the shop houses are often demolished for new construction.

3.1.4 Sattelite township houses

The ideas of model township developed in the late colonial period, which made clear the social stratification. Sattelite township houses are the another type of urban houses which had developed during the end of 19th and early 20 century in Dhaka. The only one example of such township found throughout colonial period was the 'Wari' township (3.14). The development of such township area in Bangladesh, makes the transition from the semi-urban colonial town to the modern urban township.

Nevertheless, the only locality which was developed as a fully planned residential area was the *mahalla* of Wari. The *mouza* of Wari was a *khas mahal* (3.15) of about twenty seven acres. In 1835, the *khas* land in Wari let out (3.16). In 1839 the government decided to manage the whole area itself. The *jungals* were cleared, the land levelled and broad roads with proper drainages were constructed. The whole

area was divided into a grid iron system and of spacious plots, leased at an annual rent of six rupees per bigha, the lessee gave the undertaking to build a *pucca* house of substantial character within three years. The plan of the house was to be approved by the district collector, and the construction of any additional structures within the allotted plots was prohibited without his permission (3.17).

The plots were immediately taken up by senior government officials and professionals like doctors, lawyers, engineers and teachers etc, who built beautiful houses with landscaping and gardens at front and rear (fig-8.16.1-8.16.3, 5.17). All the houses are single and double storied bungalow type houses (3.18). The houses were also supplied with electricity and piped water with its broad metalled roads, well lit and drained. Wari eventually became a quality upper middle class area. The building codes were prepared and these were followed to control the house construction in the urban areas.

3.1.5 Zamindar houses

During the colonial period, the aristocratic feudal lords and the dignitaries, familiarly known as zamindars (3.19), who often held the courtesy titles of '*Raja*', '*Maharaja*' and '*Nawab*' (3.20), adopted the European culture and glamour of life -- dress, drink and horse riding etc. They also expressed the European house forms for their luxurious living.

The families like *raja* of Putia, Roy Chowdhury of Kalaskati, Natore *raj*, Dighapatia *raj*, Narail *raj*, Sahas of Baliati, Manikganj, Banerjees of Murapara, Bhawal *raj* (Joydevpur), Shankars of Toeta (Sivalaya), *Acharya* Chowdhuries of Mymensingh and Muktagacha, Roys of Dubalhatti, Chakrabarties of Balihar (Noagaon), Dinajpur *raj*, Roys of Tajhat, Mitras of Sitalai (Pubna), Roys of Taras (Pabna), *Nawabs* of Dhonbari, Dhaka (3.21), and Bogra, were the zamindars and '*Jaigirdars*', and built the palaces and houses in both rural and urban areas (table-3.3). The prominent zamindar house-- the '*Neemtali*' house was built by the EIC for the *Nawab nazim* Jasrat Khan in 1766. this '*Nawab bari*' is considered to be first colonial building after the arrival of British in Bangladesh (3.22).

Table-3.3: Zamindar houses by size and location

Sl.no.	Name of the house	Size			Location	
		Large	Medium	Small	Rural	Urban
1.	Mymensingh <i>rajbari</i>	*				*
2.	Joydevpur <i>rajbari</i>	*			*	
3.	Joydevpur <i>rajbari</i> at Dhaka	*				*
4.	Dinajpur <i>rajbari</i>	*				**
5.	Kalaskati palace (1) (Rajeswar Rai Chowdhury)	*			*	
6.	Tajhat palace	*				**
7.	Baliati palace, Manikganj	*			*	
8.	Teota palace, Sivalaya	*			*	
9.	Muktagacha <i>rajbari</i>	*			*	
10.	Gauripur palace	*				**
11.	Lahiri lodge, Gauripur	*				**
12.	Putia palace	*			*	
13.	Dighapatia <i>rajbari</i>	*				*
14.	Natore <i>rajbari</i>	*				*
15.	Tahirpur palace, Rajshahi	*			*	
16.	Dubalhati palace	*			*	
17.	Sitlai palace, Pabna	*				**
18.	Taras <i>rajbari</i> , Pubna	*				*
19.	Ahsan monzil	*				*
20.	Narail <i>rajbari</i> (2)	*				**
21.	<i>Nawab bari</i> , Bogra	*				*
22.	Murapara house	*			*	

1. Partly dismantled

2. Completely dismantled

** Suburban area

Table-3.4: Famous zamindar *baries*, name of the person constructed year of construction (3.23)

Sl.no.	Name of the zamindar <i>bari</i>	Name of the person constructed the <i>bari</i>	year of construction
1.	Baliati palace, Manikganj	Govindra Ram Saha	1750s
2.	Murapara palace	Ram Ratan Banerjee	1880s
3.	Joydevpur <i>rajbari</i>	Kaly Narayan	1838
4.	Toeta palace, Sivalaya	Joy Sankar, Charu Sankar, Karim Sankar, Deva Sankar Hema Sankar	1850s 1906 1914

(cont.)

Sl.no.	Name of the zamindar <i>bari</i>	Name of the person constructed the <i>bari</i>	year of construction
5.	Mymensingh rajbari (Sashi lodge)	Sashi Kanta Acharya Chowdhury of Muktagacha	1905
6.	Muktagacha rajbari	Jagot Kishore Achariya Ram Kishore Achariya Suija Kishore Acharaya	1750s
7.	Digapatia rajbari	Dayaram	1750s
8.	Notore rajbari Bara taraf Chota taraf	Vishwa Nath Sibnath	1810s 1810s
9.	Tahirpur palace Rebuilt	Raja Lakshmi Narayan	1750s 1897*
10.	Dinajpur rajbari	Maharaja Giridi Nath Roy	1897*
11.	Tajhat palace	Rebuilt by Maharaja Kumar Gopal Lal Roy	1900s
12.	Sitlai palace	Jogendra Nath Mitra	1900s
13.	Ahsan Monzil	Nawab Abdul Gani	1897*
14.	Ruplal house	Ruplal Das, Raghu Nath das	1850s
15.	Kalaskati zamindar house (Rajeswar Rai Chowdhury)	Jonaki Ballab Rai Chowdhury	1702

Many palases were destroyed by the devastation of earth quake of 1897 and some were rebuilt eventually.

The zamindar houses could be divided into large, medium and small in size and urban and rural in location (table-3.3). Again in consideration of spatial form and space organization, the zamindar houses could be categorised into three groups: one, the zamindar houses where the individual *dalans* are placed disparsely around the *uthans* (fig-4.11). Second the introvert courtyard type zamindar houses, where the blocks are compactly arranged around the *uthans*, (3.24, fig-8.18.1, 8.18.2). Third type represents the bungalow type houses keeping the open spaces all around the builtform. Sometimes, they take the shape of L, E, F, H etc, forms. (3.25, fig-5.19, 5.19.1, 5.19.2, 5.22, 5.22.1, 5.22.2).

Some of the zamindars, (*rajas, maharajas, and nawabs*) houses are very old. The putia *rajbari*, Dhonbari *nawab bari*, Natore *rajbari*, (fig-2.24-5.26) Dighapatia *rajbari*, Tahirpur *rajbari* and Kalaskati (Rajeswar Rai Chowdhury) zamindar *bari* etc *baries* seem to be built early in the colonial period (table-3.4). The Putia *rajbari*

During the middle of the 19th century, after the first independent movement (Sepoy mutiny in 1857), the civil lines for the servants of the British *raj* in Dhaka (fig-2.4) and in each *moffassal* town (fig-2.6) were created (3.32). The District collector, District magistrate, District judge, Civil surgeon, District jailor, Settlement officer, Police superintendent, District engineer etc, officials *bara chahebs* of the *raj* and other a few independent Europeans employed in mercantile business or owning landed estates were accommodated in this civil line. Here they lived, in the socially and physically segregated area which is inherent in the term, those members of the colonial third culture whose roles brought them into the closest contact with representative of the colonial society (3.33).

‘The District and Sub-division represented the lowest level of political and judicial and administrative authority under the control of the members of the colonial third culture’(3.34). ‘Below the district level was the sub-divisions, under the charge of an Assistant magistrate or Sub-divisional officer (SDO), the lowest rank in the colonial bureaucracy’ (3.35). Civil lines in a comparatively small in size were developed in this Sub-divisional towns (fig-2.6).The personnel from indigenous community or the local (native) officers (3.36) were physically removed (both in terms of works and residences) from those smallest socio-spatial unit of colonial society- the civil line. The local (native) officers, *chota shahebs*, *the babus*, (*bara babus* and *chota babus*) also sometimes resided outside these civil lines (3.37). This process of developing the civil lines and its infrastructure continued throughout the colonial period. Immediately before the time of first partition of Bengal in 1905, Dhaka had to accommodate a large number of provincial bureaucrats and officials by laying out the modern planned residential areas in Ramna (appendix-4), Sujatpur, Katgulla (3.38), Shahbag etc, areas, beyond the rail line. The roads were widened and a number of one and two storied bungalows were constructed by the PWD (3.39, fig-8.24.1-8.24.5).

The government houses built at Dhaka and in other moffassal towns could be broadly divided into three groups:

- a. bungalows for the *bara* and *chota shahebs*.
- b. bungalows for the *bara* and *chota babus*.
- c. chummeries for the unmarried officers and *babus*.

Each of these bungalow groups could be again, sub-divided into two or three types.

Large government mansions were built for the selected high officials of the government, eg- the governors' house (fig-5.27) at college road, Dhaka. Among this category, other large bungalow mansions were built in 1905 for the Executive counsellors of the governor general (*baralat*), *raja* of Bardawan (bardawan house, fig-5.28), Huda house for Nawab Shamsul Huda (3.40) and Hular house (3.41), beside the Bardawan house. The governor house was designed for the governor of East Bengal and Assam. Another large bungalow mansion at Shahbag (present V.C's residence at D.U. campus) was built for the Lieutenant-governor (*chotalat*) of Bengal (fig-8.29.1-8.29.4). The governor house was not liked by the governor and he was residing at the bungalow built for the Lt. governor (*chotalat*) (3.42).

The government *bara shahebs*-D.J,D.M.,D.I.G. (police andprison),Commissioner, Settlement officer,S.P., etc, were accommodated at Ramna, katgulla, and Shabag areas, During this time, the *moffassal* towns were also expanded to accommodate the government officials *bara* and *chota shahebs* Bungalows for the high officials-*bara* and *chota shahebs* in the *moffassal* Divisional, District and Sub-division towns, were built in the civil lines. Bungalows for the *bara* (U.D.Cs, *naibs kanongoes*, superintendants etc,) and *chota* (L.D.Cs, *peshkar*, *tahsildars* etc,) *babus* were also constructed in the or adjacent to the civil lines. These bungalows for the *bara* and *chota babus* were comparatively small in size.

Chummeries (fig-5.30.1-5.30.2, 8.27.1-8.27.5)) for the unmarried European officers and staffs were constructed in the civil lines at a safe distance from the other bungalows. In each *moffassal* district town, chammery was built in the civil line (fig-5.30). Houses were also built for the unmarried *babus* at the civil lines or adjacent to the civil lines.

After the establishment of D.U (3.43) in 1921, some of the government houses, particularly the bungalows built in the D.U. campus, press club etc, areas were occupied by the professors and staffs of D.U. (3.44). Professor Mohit Lal Majumdar lived in a bungalow where present press club is built and the chammery house (present CIRDAP building) was used as women hostet for some year for D.U. (3.45).

In Dhaka civil lines to accomodate the government houses were developed at Ramna, Katgulla and Shahbagh areas (appendex-4). At Barisal, Rajshahi, Sylhet, Khulna, and Bogra, the civil lines were at the river bank. These were built on the hills in Chittagong. In other *moffassal* towns like Jessore, Comilla (fig-2.5) and Brahmanbaria (fig-2.6), the civil lines were in the middle of the towns, quite seperated from the indigiuous (native) areas.

3.1.9 Railway houses.

The construction of railway, railway station and railway quarters in Bangladesh started first in Darsana and Jagoti line in 1862 (3.46). Eventually the Dhaka-Narayangonj and Dhaka-Mymensingh State Railway (DMSR) started functioning in 1885 (3.47). The Assam-Bengal Railway (ABR) started operation between Chittagong and Comilla in 1891-95 (3.48). Eventually whole Bangladesh was covered by railway by the begining of 20th century. The laying of railways was accompanied by the construction of railway bungalows and quarters for its officers and staffs respectively. The railway colonies were at a distance from the old town and sometimes had stood as a barrier between the old and new towns (fig-2.4, 2.6) (3.49). In Dhaka, Fulbaria railway colony stood as a barrier between the old town and the new civil line Ramna (3.50) In Chittagong, Bottali and Pahartally railway colonies were at the northern part of the town. In most of the other *moffassal* towns the railway colonies were situated at the outskirts of the town (3.51).

At the begining during the mid 19th century all the railway bungalows and quarters were built with bamboos and thatches. Gradually these temporary structures were

replaced by more permanent materials (3.52) like C.I. sheet, steel frame, brick, terra-cotta tiles and lime concrete etc.

Similar to the government prototype bungalows and quarters, the railway engineers (3.53) first developed a typical prototype houses in this country (fig-5.35.1-5.35.10). Houses of different categories covered different plinth areas according to the hierarchy of the status were grouped together in a place around the stations. The railway bungalows and quarters (3.54) are constructed in the Fulbaria (fig-8.32.1-8.32.4), and Tejgaon areas at Dhaka, and Bottali and Pahartally at Chittagong town. In other places the railway quarters were developed in and around the railway stations.

Railway quarters could be broadly categorised into three groups-

- a. bungalows for the the *bara* and *chota shahebs*.
- b. Staff quarters for the *bara* and *chota babus*..
- c. Sheds for the lower category staffs (sweepers, *Methors*, *darawans*, *coolies* etc,) and mineals.

The quarters built during the colonial period is now disappearing due to the new construction. Still these quarters are found at Pahartally and Bottali in Chittagong, Fulbaria and Tejgaon in Dhaka and in the railway colonies of Sylhet, Brahmanbaria, Khulna, Jessore, Natore and in many other railway stations.

3.1.10 *Kuthi baries*.

Indigo began to be planted in Bangladesh by the European from 1795. The manufacturing of Indigo continued for about one hundred years. First indigo factory, locally known as *kuthi* was established by (a France merchant) Louis Bonnaud in Rupdia in Jessore (3.55). Subsequently, the indigo *kuthis* were established at Mohammad Shahi, Barandi and Neelganj etc, places in Jessore, and Chowgacha and Daulatpur in Khulna districts. Gradually, this manufacturing business spread to other districts particularly in Dhaka and Rajshahi districts (3.56). Among the numerous European indigo *kuthies* erected throughout the country in the later part of the 18th century till 1860s (3.57), about 152 indigo *kuthies* were in Rajshahi region (3.58), in Rajshahi, Khulna and Jessore districts alone, more than 400 such factories were in operation during the last century and there were

about 16 indigo merchants in Dhaka town in 1840s (3.59). The building presently occupied by the Bulbul academy at Wiseghat, Dhaka, was one of those *kuthies* (fig-5.48). After 1860 (3.60), these *kuthies* were used as silk manufacturing *kuthies*, still these are known as *neel kuthi*. One of the *neel kuthi* is also found in the Painamnagar, Sonargaon.

Two types of *kuthi baries* are found in Bangladesh. One, two storied buildings where the ground floors were used as manufacturing, production, processing, storing etc. (fig-8.36.1, 5.36.1) purposes; and the upper floors were used as residential purposes (3.61, fig-8.36.1-8.36.5) and two, one story factory buildings which were used for the manufacturing, production, processing and storing etc, purposes. The residential buildings were at ^adistance within the compound (3.62).

3.1.11 Garden houses.

Garden houses were constructed in the tea gardens of Chittagong, Chittagong hill tract, Brahmanbaria and Sylhet districts. Usually the managers (fig-8.37.1-8.37.3), assistant managers (fig-5.37), engineers and high officials lived in the garden bungalows. Other employees lived in the ordinary quarters. The *kulies* (*coolies*) and other lower category workers (3.63) were accommodated in the labour colonies or sheds.

The tea estates are scattered over such a wide area that there is a variety of terrain and so with the garden and garden houses. In some places the gardens are planted entirely on *tillahs* (hillocks), other on level ground (3.64).

The tea plantation attracted a considerable number of Europeans to Sylhet and Chittagong in the past. The number of European planters in 1903 was 143 in Sylhet. The first garden was opened in Sylhet at Malnichara (fig-8.37, 5.37) in 1857 (3.65). The tea garden houses in most of the cases were built with thatch, tiles, C.I. sheets (fig- 8.37.1, 8.37.2, 8.37.3) etc, semi-*pucca* construction due to the low bearing capacity of the soil of the hillocks. The managers, assistant managers, etc, in many cases the Europeans *Shahebs* (3.66) lived in the semi-*pucca* bungalows.

3.1.12 *Dak* bungalows/ Circuit houses.

Dak bungalows and circuit houses provide the temporary accommodation for the European officials and civilions similar with the traditional '*dharmasala*' or Mughal '*sarai*' After the creation of divisions in 1829 the posts of Divisional commissioner were created. Before that it was the Commissioner of revenue and circuit (3.68). From that purpose, circuit houses (fig-8.38.3, 8.38.6, 8.38.7) had constructed to accommodate the offices and the residential accommodation of commissioner of revenue and circuit. 'However, judges on circuit were already provided at this date (1820s) with a bungalow for a 'circuit house' in each of the minor stations' (5.69). All the circuit houses were built during the years 1780s to 1810s (3.70) and *dak* bungalows were built from the early 19th century (3.71).

There were two types of such accommodation, one, the circuit houses which were built in the divisional and district towns, eg, Dhaka, Chittagong, Rajshahi, (fig-8.38.3) Jessore (fig-5.38), Khulna, Sylhet etc, two, the *dak* bungalows (fig-8.38.1, 8.38.2, 8.38.4, 8.38.5) in the sub-divisional and *thana* towns or in other statigically important places, eg, Satkhira (fig-5.39), Manda (fig-8.38.2) (Noagaon), Nabinagar (3.72, Brahmanbaria).

These *dak* bungalows/circuit houses were permanently staffed by two or more Bangalee servants (3.73).

3.1.13 *patties*

patties were the typical type of accommodations for people of similar professional people (eg, sweepers, *methors* etc,) or ethnic groups, (eg, Shakharees) where the rooms arranged side by side sharing the common walls and facilities.

Two types of *patties* were identified during the colonial period, one *methor's patties* (fig-8.40.1-8.40.5, 5.40), sweeper's *patties* built by the Municipality, autonomous body and others organizations. Two, the ethnic or professional groups like to live together in an area, eg, Shakharee patti (fig-8.39.1-8.39.3, 5.41), Dhaka.

The sewer cleaning by the *methors* was introduced in this country in 1875 (3.74). As they were lower caste people, all of them were housed in an area known as *methors' patti* or aweeper's colony. This type of *patties* were common in each colonial towns and these *patties* were considered as a common component in every *moffassal* towns (fig-2.6). Each of the *methor's* family was accommodated in a single room (fig-8.40.1, 5.40) with the facilities of rearing the bulls, hogs etc, and parking for their special type of bull driven cart and to accommodate the piggery.

The railway authority also maintained the *methors patti* in each railway colony in the *moffassal* towns (fig-5.40). The Chittagong port authority also constructed such type of *patties* at the port area.

Shakharees patti (3.75) at Dhaka is a settlement of the 'Shakharees' or a community of craftsmen specialised in making conch shell ornaments. Most of the inhabitants of this area belong to a specific caste of the Hindu religion and practiced till today the traditional craftsmanship handed down to them over generation. *Shakharee patti* has its significance in more than one way. Culturally the area houses a specific ethnic group, socio-economically it provides trade and morphological characteristics that is typical to the area (3.76).

In total the *Shakharee patti* has 126 houses (fig-5.41) along the 600 feet long narrow road which connects Islampur road with Nawabpur road. At that time the land price was very higher in *Shakharee patti* and Tantibazar in comparison with other places of Dhaka town (3.77). It was their custom and rule that they were ousted from their society if they resided outside *Shakharee patti* (3.78). Therefore, they were compelled to stay at one place and as a result the plots were subdivided and formed long and narrow in shape, forming the *patti* in character. The number of *Shakharees* were 500 in 1840s (3.79)

3.2 General condition of the houses.

Almost all the houses (out of four hundred various types of houses surveyed) are found to be used in some form or other (tables-3.7 and 3.8). It is found that many houses built in the colonial period are now completely demolished (table-3.6). Some houses are found partially demolished or in dilapidated condition. Few one found in

good conditions are in use for official or educational purposes, eg, Joydevpur *raj bari* and Murapura house.

3.2.1 Nature of occupancy of the houses.

All the rural houses found to be privately owned and scattered throughout the country are used for residential purposes. The houses in the Painam village are found unused and occupied by unauthorised poor because the original owners migrated to India. These houses are declared the enemy property. Most of the urban houses are found to be used for residential purposes. Most of the *bagan baries* (table-3.8), the government, railway, garden, satellite township houses, *patties* etc. are being used now for residential purposes. The *dak* bungalows and circuit houses are used for the same purposes. It is observed that about 95% of the zamindars were Hindus. The houses destroyed (table-3.6) were the properties either of the Hindus or the Europeans. Most of the zamindar houses are used now as school, college or government offices.

Most of the *Kachari baries* are used either as the residential purposes or for official uses (3.80). The *kuti baries* are used for other purposes (3.81). the *methors patties* almost remained the same. The shop houses are still used as shop houses just in the same area as in colonial time. The *bagan baries* are presently used as residential house, bank, library and office etc. purposes (table-3.8). The present use of the different types of houses shown in the table-3.5.

Table-3.5 : Present use of different types of houses

Sl. no.	Type of house	Present use
1.	Rural house	Residential occupied by unauthorised poor
2.	Urban house	Residential
3.	Shop house	Shop house
4.	Sattelite township house	Residential
5.	Zamindar house	Residential, School, College, Govt. office etc.
6.	<i>Kachari bari</i>	Residential, office
7.	<i>Bagan bari</i>	Office
8.	Government house	Residential, office
9.	Railway house	Railway house
10.	<i>Kuti bari</i>	School, Club, office, etc.

(Cont)

Sl. no.	Type of house	Present use
11.	Garden house	Garden house
12.	Dak bungalow and Circuit house	Dak bungalow and Circuit house, rest house
13.a	Shankari <i>patti</i>	Shankari <i>patti</i>
13.b	<i>Methor's patti</i>	<i>Sweeper's patti</i>

3.2.2 Maintenance of the houses.

The houses used for the residential purposes are found to be well maintained. But the urban houses taken as lease from the government is not properly maintained. The government occupied houses in the civil lines or in the other places of the towns are maintained by the PWD. The dak bungalows and the circuit houses are also maintained by the PWD, District council, D.Cs. etc. The shop houses are found well maintained and are still used for the same purposes. The railway bungalows and quarters are maintained by the railway authority. These are well maintained quarters. The houses at shankhari *patti* are used as shop houses and maintained by individual owners. The *methors patties* are still maintained by the municipalities, railway or other similar authorities.'

Table-3.6: General conditions of some remarkable houses

Sl. no.	Name of the house	Type of the house	Completely dismantled	Partially dismantled	Dilapidated condition
1.	Neemtali house, Dhaka	Zamindar		*	
2.	Balihar palace, Noagaon	Zamindar	*		
3.	Kalashkali palace (Rajeswar Rai Chowdhury)	Zamindar		*	
4.	Rotu babu and Ratu Babur bari at Alauddin road, Dhaka	Urban hous	*		
5.	Monipu rajbari, Sylhet town	Zamindar	*		
6.	Hular house, Sujatpur, Dhaka Town	Govt. house	*		
7.	Bangalows at press club, (prof. Satten Bose)	Govt. house (2)	*		
8.	Tahirpur palace, Rajshahi	Zamindar			*
9.	Huda house, Sujatpur, Dhaka town	Govt house	*		
10.	Bungalow no. 7 and 8 Sujatpur, Dhaka town	Govt. house	*		

Sl. no.	Name of the house	Type of the house	Completely dismantled	(cont)	
				Partially dismantled	Dilapidated condition
11.	Mohendra Gosh, Ahsan Ahmed road, Khulna town	Zamindar		*	
12.	Satkhira zamindar house at Jessore (D.C. bungalow)	Zamindar			*
13.	Jagan Nath Sahas house, Lalbagh, Dhaka town	Urban house	*		
14.	Robin Gosh and Khitish Gosh, Town Noapara, Bagerhat	Zamindar		*	
15.	Israt Mahal, Shahbagh, Dhaka	<i>Bagan bari</i> (3)	*		
16.	Banuban Chandra Mitra Ahsan Ahmed road, Khula town zamindar				*
17.	Hati companir <i>bari</i> , Nazir Ahmed road, Chittagong	Urban house	*		
18.	Nabinagar <i>dak</i> bungalow	<i>Dak</i> bungalow	*		
19.	Zamindar house (Sonali bank building, Bogra	Zamindar	*		
20.	Narail <i>raj bari</i> , Narail	Zamindar	*		
21.	Chammery at Barisal	Govt. house	*		
22.	House of Jahan Ara textile painam Nagar, Sonargaon	Rural house			*
23.	Tripura <i>raj Kachari bari</i> , Rajgonj Comilla	<i>Kachari bari</i>	*		
24.	Rabindra Nath Tagore's <i>Kachari bari</i> Shahjadpur, Pabna	<i>Kachari bari</i>		*	
25.	Kajla kuti, Kajla, Rajshahi	<i>Kuti bari</i>			*
26.	Molihar Kutu, R.U. Campus, Rajshahi	<i>Kuti bari</i>	*		
27.	<i>Kuti bari</i> at Painam Nagar, Sonargaon	<i>Kuti bari</i>			*
28.	Tholla zamindar bari, Muradnagar Comilla	Zamindar	*		
29.	Krishna Nagar <i>Zamindar bari</i> Nabinagar, Brahmanbaria	Zamindar			*
30.	Bungalow of Charles Dawes, Ramna	Urban house	*		
31.	<i>Bagan bari</i> of Arathoon, Sujatpur, Dhaka	<i>Bagan bari</i>	*		
32.	Bungalow of Judge John Francis Griffith (1840)	Urban house	*		
33.	House of Babu Akhil Niyogi, Ramna	Urban house	*		
34.	House of Asraf Ali, Babupura, Dhaka	Urban house (9)	*		
35.	Kather babur bari, Baniajury bazar Manikganj	Zamindar	*		
36.	Dinajpur raj bari	Zamindar			*
37.	Rani Sankal zamindar bari Churi patti, Dinajpur	Zamindar		*	
38.	Devi Singh house, Dinajpur	Zamindar	*		
39.	Kanchan Lodge, Gasli para, Dinajpur zamindar		*		
40.	Gol Kutu of Kishori bibi Bahadur bazar, Dinajpur	zamindar	*		

Table-3.7: Present use of zamindar *baries*

<u>Sl. no.</u>	<u>Name of the houses</u>	<u>Type of Use</u>	<u>Remark</u>
	Tajhat palace (1)	Court	High court division of Supreme court
2	Mymensingh <i>rajbari</i>	College	Women T.T.C
3	Natore <i>rajbari</i>	Court, school	
4	Dighapatia <i>rajbari</i>	<i>Ganobhaban</i>	
5	Murapara house	College	
6	Joydevpur <i>rajbari</i>	Court	
7	Joydevpur <i>rajbari</i> at Dhaka	Commercial and residential	
8	Alisan manzil	Museum	
9	Putia palace	College	
10	Ruplal house	Bazar, residential	
11	Ranir kuti, Comilla	Rest house	
12	Muktagacha palace	Collage, co-operative office	
13	Gauripur palace	Govt. office	<i>Thana</i> H.Q. building
14	Taras <i>rajbari</i> , Pubna	Govt. office	
15	Sutrapur (Reboti Mohan Das) palace	Govt. residential, Fire brigade	staff quarter
16	Batila palace, Manikganj	Orphanage	
17	Pubail zamindar house	Orphanage	
18	Kalashkati (Rajeswar Rai) zamindar house	Residential	
19	Sitanath Das, Walter rd. Dhaka	Residential	
20	Profulla Bara, Nimtala, Dinajpur	Bank	Sonali Bank
21	Mohendra Gosh, Khulna town	School	Primary school
22	Sailan Gosh, Khulna town	Clinic	
23	Bhusan Chandra Mitra, Khulna town	College	Law college
24	Houssamia zamindar house	Residential	
25	Dinajpur <i>rajbari</i>	Orphanage	
26	Jagan <i>babur bari</i> , Rail bazar, Dinajpur	Scout office	

1. Presently the high is shifted and the house remains vacant.
2. Previously, this house was occupied by Dinajpur trading bank.

Table-3.8: Present usage of *bagan bari*

<u>Sl.no.</u>	<u>Name of the bagan bari</u>	<u>Type of use</u>	<u>Remark</u>
1.	Rose garden, Dhaka	Residential	Previously used as Bengal studio
2.	Prem kanon, Khulna	Resort house in the park	
3.	Bangan <i>bari</i> , Tipu Sultan rd, Dhaka	Residential	
4.	Bangan <i>bari</i> , Sher-e-Bangla mohila college, Dhaka	Library	Library of the college
5.	Alam Shaheb natch ghar, Faridpur	Residential	
6.	Bangan <i>bari</i> , of Basanta Kumar	Bank	
7.	Bagan bari of zamindar of Tapa Rangpur	Office	DEO's office

3.3 Discussion.

Sufficient number of colonial houses are available for survey. It is found that several types of houses (Table-3.1) were built in the rural and urban areas of Bangladesh. Thirteen different types of colonial houses are being identified.

Two types of rural houses, one, houses where the isolated *dalans* replaced the *ghars* of the *baries* which are similar in planning and organization with the indigenous homestead, and two, the *pucca* houses similar to the urban houses build side by side without having any urban facilities.

The colonial urban houses in its early stage was a modified version of the rural houseform and the bungalows as the ultimate form in its subsequent development. Four types -- introvert courtyard type houses, □ E,L,,F,H etc, type houses, composite type bungalows and consolidated bungalow types urban houses were found in the urban areas.

Two types of shop houses, one, the single storied houses with the road side front room as shop, store etc. and residential houses at the back, two, two storied shop houses where the shops and store are at the ground floor and the residential houses at the upper floor. These are found in the old parts of the towns.

Sattelite township houses are another type of urban houses found at Wari, Dhaka. This is the only example of such sattelite township found in Bangladesh during the colonial period. The whole area was divided into a grid iron system and the spacious plots were leased to the senior government officials, professionals, doctors, lawyers, teachers etc, who built beautiful houses with landscaping and gardens at front and back.

It is found that building codes were prepared at that time to control the house construction in the urban areas particularly in the sattelite township at Wari. The plans and designs of the houses had to be approved prior to the construction

It is found that 95% of the zamindars were Hindus and they built zamindar houses of various sizes (large, medium and small) in both urban and rural areas (table-3.3).

The zamindar houses had been constructed all over Bangladesh throughout the colonial period (table-3.4)

Each zamindar had the *kachari* either with their own house or a separate house used for accommodating the *kachari* works.

Some of the zamindar, businessmen and well to do persons had the *bagan baries* in the town . They spent much time in these *bagan baries* for pleasure purposes. Though the *raj baries* and zamindar houses are found both in rural and urban areas (table-3.33), the *bagan baries* were constructed only in the urban areas (Table-3.8). Besides this most of the large zamindar houses had the dance hall.

In the early colonial time the company officers lived in the old towns with the local (native) people. They liked to live in the bungalow type thatched houses. After the sepoy mutiny in 1857, all the thatch roofed houses were replaced by tiled roofed or *pucca* houses. The planned civil lines developed in a particular area of the towns and all the government officers were accommodated in these civil lines. This process of bungalow building is remarkably noticed from 1905 which continued till the end of the colonial period.

Three types of bungalows are found in this period-- these are bungalows for the *bara* and *chota shahebs*, bungalows for the *bara* and *chota babus* and chammerys for the unmarried officers and *babus*. Besides these, large mansions were constructed at Ramna, Sutrapur and mahalls-e-chistia. After the establishment of D.U. in 1921, some of the bungalows in Sujatpur, Shahbagh and mahalls-e-chistia were occupied by the professors and officers of D.U.

Railway colonies consisting the bungalows for the station master, assistant station master, Head booking clerk etc, *bara babus* and quarters for the *chota babus* (tali clerk, booking clerk, parcel clerk etc,), sheds for the lower grade staffs and *patties* for the sweepers and *methors* etc, were found in each railway station Bungalows for the *bara* and *chota shahebs* were found in large junctions and stations like Pahartally in Chittagong, Fulbaria in Dhaka and Rajshahi etc stations.

The bamboo and thatch bungalows were constructed in the early colonial period in 1890s. Gradually, the permanent bungalows with bricks were constructed by the railway engineers.

It is found that drawings were prepared by the railway engineering department before the execution of the houses. The drawings prepared for the railway colonies of DMSR is also found in the building registers (3.82) in railway buildings at Kamalapur, Dhaka and Pahartali, Chittagong.

The railway bungalows and quarters built in the colonial period is now disappearing and replacing gradually by the new construction.

Drawings were also prepared by the PWD engineers before the construction of the govt bungalows and quarters. Large important mansions like governor's house, Lt. governor's bungalows, bungalows for the counsellors etc were prepared by the architects from home.

The indigo *kuties* were built in this country from 1790s to 1860s. Most of these *kuties* were constructed in Dhaka, Faridpur, Jessore, Khulna and Rajshahi districts.

Two types of *kuties* were constructed, firstly, two storied *kuties* where the ground floors were used as manufacturing, production, processing storing etc, purposes and the upper floors were used for residential purposes; secondly, one storied factory buildings for manufacturing, production, processing, storing etc, purposes, and the residential accommodations were at a distance in the same compound .

The garden houses were constructed in the hill regions of Chittagong and Sylhet districts. The first garden houses was constructed at Malnichara, Sylhet in 1857. Garden houses were constructed both on *tillahs* and level ground. Most of the garden houses are still using as the same proposes.

Many European planters were attracted in plantation and lived in the gardens. The garden houses in most of the cases were built with thatch, bamboo, reeds etc, semi-*pucca* construction due to the low bearing capacity of the soil.

Circuit houses were built in the early colonial period (1780 to 1810s) at the divisional and district towns for the judges on circuit, commissioners of revenue and circuit, and other high company officials in the divisional and districts towns. Dak bungalows were built at the subdivisinal, thana and at other strategically important places. Most of these circuit/ *dak* bungalows are using for the same purposes.

Two types of *patties* were identified in the colonial period, one, the sweeper's, *methors'* etc, *patties* constructed by the Municipality and other authonomous organizations. The *methor's patties* constructed in each colonial town is now eventually dismantling. The colonial *methor's patties* are very rarely exist now a days in the towns. Two, the *patties* developed by the people of the ethnic groups where the houses or rooms were arranged side by side sharing the common walls.

Almost all the houses surveyed are being used in some form or other. The houses found in partial or completely destroyed conditions belonged either to the absentee zamindars or to the government occupied as enemy properties.

The rural, urban, zamindar and shop houses are privately maintained and the conditions are found satisfactory. The zamindar houses owned by the government as enemy properties are found less maintained. The government bungalows and quarters are maintaining by the PWD. The railway bungalow and quarters are maintained by the railway department.

The components of the different types of houses and the various building elements used in these houses will be discussed in the next chapter.

Reference: Chapter-3

- 3.1 Examples of such houses are *Ameen bari* at Baroipara, Ameen bazar, Saver (fig-8.1-8.3.3), Dhaka and *Dewan bari* (fig-5.2) at *Dewan bari*, Savar, Dhaka, where all the *ghars* are replaced by *dalan* blocks. The materials of the houses only changed, the concept of planning remains traditional.
- 3.2 One of such house is the *chakrabarty bari* (fig-5.4.1) at Kalashkati, Bakerganj, Barisal. Here only one two storied house is *pucca*, all other blocks remain C.I. sheets. In most cases one block of one story structure found as *pucca* house. Others are *kucha ghars*.
- 3.3 The houses of Shiba Nanda Poddar (fig-8.1-8.5) and Ashi Poddar (fig-5.3.1-5.3.2) at Painam, Sonargaon, Dhaka are the examples of such houses.
- 3.4 Examples of introvert type houses are houses of Alhaj Asaduzzaman, 105, K.P. Gosh street, Armanitola, Dhaka, Rup Narayan, Simson road, Dhaka (fig- 8.9.1, 8.9.2), Munshi bari, 5, Rajchandra Munshi Lane, Laxmi bazar, Dhaka (fig-5.12.1-5.12.4) etc. The house of Jagannath Saha (fig-5.6) is purely introvert type house where as the house of Gagon Saha (fig-5.5) is detached type introvert urban house.
- 3.5 Houses of Jagan Nath Saha, Lalbagh, Dhaka, Rangit Kumar Saha, 30 Pach bhai ghat lane, Laxmibazar, Dhaka, Nishi babu, 445, Stand road Majirghat, Chittagong, Lalkuti, Shaheb bazar, Rajshahi etc., all are examples of urban houses at congested areas in the old towns.
- 3.6 As for examples Tapash Kutir, Bholatank road, Jessore (fig-8.11), Anath Bhandhu Rishi, Aga Mosli Lane, Dhaka (fig-5.7) etc. These are incomplete courtyard types of houses.
- 3.7 Such houses are, houses of Hemakanta Bhattachariya, Ukilpara Noagaon (fig-8.8.1-8.8.4), Md. Naruddin, 440, Stand road, Majirghat, Chittagong, Milan Bhaban station road, Bhabmanbaria, Arnab Mirar maidan, Sylhet and Hati companir bari, 37, Nasir Ahmed chowdhury road, Chittagong. *Hati companir bari* is recently dismantled and a new commercial building is built on the site.
- 3.8 Houses of Khorasani, lower Jessore road, Khulna (fig-8.12.1), Raj Narayan Rai, Simson road (fig-5.8), Dhaka, Basiruddin, Ukil para Noagaon, Baitul Zaman, Railgate, Narayanganj, Md. Monsur, upper Jessore road, Khulna. are the examples of such houses.
- 3.9 Bungalow of Engr. Gulzar, 49/50, Hossain-I-dalan road, Dhaka and Dr. Baset, 7, Umesh Datta lane, Bakshibazar, Dhaka (fig-8.10.1) are the examples of consolidated bungalows. The numbers of such type of house are found minimum.
- 3.10 Such as, houses of Jagan Nath Saha, Lalbagh (fig-5.6) Milan bhabou station road, Brahmanbaria, Hati companir bari, Nazir Ahmed chowdhury road, Chittagong, etc.
- 3.11 F.B. Bradley Birth, Romance of an empire capital, translated by Rahimuddin Siddique, *Prashchar rahassha nagari*, Bangla academy, Dhaka, 1977, P-209.

- 3.12 Examples of such houses are shop houses of Gopal Mondal, Sarak bazar, Brahmanbaria, and Harish chandra pal, chati patti, Brahmanbaria.
- 3.13 Examples of such shop houses are Nagendra Mallick Mahdev, Mahadev patti Brahmanbaria (fig-8.15.1-8.15.4), Golam Mustapha, Rekabi bazar, Sylhet, Abdus Shahid, 165 Nawabpur road, Dhaka (fig-8.14.1-8.14.6. Banamali Das, Nicha bazar, Natore (fig-8.13.1- 8.13.6)
- 3.14 Patrick Geddes, Report on Dhaka city Planning Translated by Abdul Mohaimen, Dhaka *Nagor Unnoyan Pari Kalpana's*, Dhaka city museum 1990, P-16.
- 3.15 *Khashmahals* are the government properties, sometimes given lease to some one.
- 3.16 Dr. Sharifuddin, Dhaka, opcit, P-4.
- 3.17 Ibid, P-135.
- 3.18 The houses are Shajahane lodge Tipu Sultan road, house of Devendra Mohan Das (fig-5.17) 1, Nawab street, house of Anwar chowdhury (fig-8.16.1-8.16-3) Were street, Sanka Nidhi house Tipu Sultan Lane, Tipu Sultan road, house of Basanta Bose, 10, Hare street etc. are the examples of such houses.
- 3.19 Before the the British secured the 'Dewani' of Bengal in 1765, the system of land holding was known as 'Jaigirdar' system. The peasant usually paid third of the gross produce of his land as share of tax to the *jaigirdars*. The system was the legacy of the Mughal rule in Bengal. Murshed Kuli Khan divided the entire lands in Bengal into 13 'chaklas' (circles) and 25 areas were reserved as 'Khasa' land (crown-land). 13 *chaklas* were sub-divided into 13 tracks, which were allotted to the officers of the state as 'jaigir' in lieu of their pay, whilst the *khas*- lands (crown lands) were farmed out to 'jaigirdars' or contractors for the collection of land revenue. Later, Murshed Kuli Khan discouraged the *jaigirdari* system, eventually the system developed as 'zaminari' and were even vested with titles of as 'raja; maharaja and 'nawabs', although they were not of princely origin. Dr. Nazimuddin Ahmed, *Buildings of the raj*, opcit, P-71.
- 3.20 *Raja, Maharaja* etc were the titles given by the British raj to the Hindu zamindars and *Nawab* was the title given to the Muslim zamindars.
- 3.21 The *Nawab nazim* of Dhaka was the original nawab of Dhaka and the 'Neem tali' house was the original 'nawab bari'. Eventually the merchant nawab Abdul Gani built the Ahsan manzil which was known as 'rang-mahal' and it had been eventually also known as 'nawab bari' to the people of Dhaka city.
- 3.22 *Neemtali kuti* was built by Lieutenant Swinton in 1766. Prior to this the *naib nazims* used to live in *Bara katra* Abdul mohaimen, *Dhaka Nagor Unnoyan Parakalpa* P-14. The western gate of the *Kuti* now houses the office of the Asiatic Society of Bangladesh, while its 'Baradari' formed the central part of old Dhaka museum building Azinussan Haider, opcit, P-37.

Muntasir Mamun mentioned that *Neemtali kuti* was constructed in 1765. Muntasir Mamun, *Colonel Davidson jakon Dakai*, opcit, P-13

At the beginning, the nawab stayed in the old fort (present central jail, (fig-32), subsequently the shifted to *Bara katra*. It was under the direction of Lt. Swinton, that the Neemtali *kuti* was hastily built to accommodate the *nawab* family. The *kuti* completed in 1766 when the *nawab* family sifted there. (col. Davidsen jakon Dhakai, P-45)

Opposite the eastern gateway of the *kuti* the EIC posted a detachment of watch the activities of the *nawab*. This *kuti* consisted of number of separate buildings within a vast compound, most of which are now extinct. Charles D'Oyly, a famous painter and one time D.M. of Dhaka wrote in 1880, about Neemtali *kuti*, 'the (*naib nazim* Nusrat Jung) resides in Dhaka in a palace splendidly ornamented in oriental manners and his audience chamber is so much crowded with English prints and paintings that not an inch of wall could be seen' .

Mahmudul Hassan, Dhaka the city of mosque, opcit. Neemtali *kuti* was sold to several persons, they had broken almost all the houses. The only remaining part, Baradari house (old museum at Neemtali) was purchased by Maulavi Mainuddin or Maulavi Panir. It was again sold to Gopi Krishna Sen, then to Ruplal Das. then to government again (acquired by government). Later, 'Brahmins' founded their residential village 'Bidan palli' there. Lt. Sharifuddin Ahmed, Dhaka, opcit, P-133,

Muntasir Mamun, *Colonel Davidson Jakan Dhakai*, opcit, P-46,63

Neemtali *kuti* was known to the public as '*Nawabi dalan*'. Several buildings were at the site and a beautiful garden was around the *nawabi dalan*. There was a large pond in the *kuti* which was known as *nawabi dighi* (near F.H. hall). There is a *nawabi masjid* (still exist at the south side of the *kuti*. This *masjid* is presently renovated so unsympathetically that the character of the *masjid* is changed).

Muntasir Mamun, Colonel Davidson *jakon Dakai*, opcit-45

Sayid Aulad Hasan, Notes on the Antiquities of Dhaka, Dhaka, 1912, P-17, Syed Mohammad Taifur, opcit, P-233.

The apartments were arranged around the courtyard. Ibid, P-45

Later, Dhaka museum office was established at Neemtali *kuti* by Lord Carnicheal in 1913, Taifur, opcit, P-233.

Upon its imposing western gateway, the ASB is situated at present. In a portion of the 'Baradari' of the central building, the building is modified at present and D.U teachers are residing there. The *kuti* had a elaborate *hamam* system (Turkish bath). Its source of water came from the Kamalapore river (perhaps from Motijheel lakes) in the east. The canal was sufficiently wide and flowing in that deays.

Syed Mohd, Taifur, opcit, P-233-234.

3.23. Source:Dr. Nazimuddin Ahmed, Buildings of the raj, opcit.

Mohd. Muksudur Rahman, *Naturer Maharani Bhabani*, 1988, Rajshahi.
Sirajuddin Ahmad *Barisaler Itihash*, 1st part, Bakerganj zila parisad, Barisal, 1982.

- 3.24 Examples of such houses are Murapara house (fig-8.18.1), Reboti mohan Lodge, Dhaka, house of Mohendra Gosh, Ahsan Ahned road, Khulna.
- 3.25 The zamindar houses of Tajhat palace, Rangpur, Mymensingh rajbari and Ahsan manjil, Dhaka, are the examples of these houses.
- 3.26 *Baijees* were the singers and dancing girls bought for pleasure purposes from Laknow, Culcutta, Patna and Delhi etc, places.
- 3.27 The *bagan baries* absolutely built for pleasure purposes are Rose garden at K.M.Das lane, Dhaka, dance hall at Tipu Sultan road, Dhaka, *bagan bari* at (present Libraray, Sher-e-Bangala Mohila college), Lohar Pool, Dhaka, *bagan bari* at B.K. Das lane, Farashganj, Dhaka, Prem Kanan, Jorarail road, Khulna, Alam Shaheb's *natch ghar* at Goal chmot, Faridpur, bagum bari of zamindar of Tapa, Rangpur, Israt Mahal at Shahbagh, Dhaka. This Israt mahal was located at Shahbagh area and is completely destroyed at present.
Dr. Sharifuddin Ahmed, Dhaka, opcit, P-124-125.
- 3.28 Examples of such Zamindar houses having the dance hall in the house are Ruplal house, Farashgonj, Dhaka, Murapara house Rugganj, Dhaka and Mymensingh *rajbari*.
- 3.29 In the company, colonial even in Pakistan period, the employees of the company, the British *raj*, and Pakistan govt. were addressed as 'servant', eg, government servant company servant, railway servant etc. It had been continued till the Pakistani period.
- 3.30 In 1840s, the Commissioner of Dhaka lived in the Sadrghat area in a rental two storied house whose rent was Rs. 135 per month. The montly rent of other two storied large house was between Rs. 60 to 135 per month. Muntasir Mamun, Colonel Davidson *Jakon Dakai*, opcit, P-15.
- 3.31 In 1845, administration was seperated from judiciary and three posts-District magistrate (D.M), District judge (D.J), and District collector were created. In 1849, two posts-District judge and Diostrict magistrate were remained and they were accommodated in each district. *Dhakar katha*, opcit, P-147.
- 3.32 In 1929, the Divisions were created, Dhaka, Chittagong and Rajshahi towns were developed as divisional towns, the Districts were created in 1836 and the Sub-divisions were created between 1833 and 1843.
Muntasir Mamun, Colonel *Davison jakon Dhakai*, opcit, P-27-28.
District gagefters.
- 3.33 A.D. King, Colonial Urban Development, opcit, P-82,
- 3.34 *Ibid*, P-76.
- 3.35 *Ibid*, P-76, The deputies and assistants of the Collectorate, Magistracy, Judiciary, Police department etc, also lived in the civil lines. The joint magistrates and deputy police super, a sort of second in comand to the Magistracy, Collectorate, Judiciary, etc, dissignated as 'chota shaheb' were also lived in the civil lines. *Ibid*, P-82.

- 3.36 In 1828 Munsifs and in 1831 Sadr amins were selected from the locals (natives). According to the act of 1861, all the lower posts in government were selected from the locals (natives). *Dhakar katha*, opcit, P-147-148.
- 3.37 A.D. King, Colonial Urban Development, opcit, P-76.
- 3.38 Katgulla was the present Ramna park, Minto road, Bailey road, Hare road, etc, areas. Nafis Ahmad, Oriental Geógraphy, opcit, P-88.
- 3.49 PWD was established in India in 1854, Jan Morris, Stones of Empire, The buildings of the raj, P-20
The public buildings were managed, constructed and maintained by the Military Engineers. The PWD until 1859 was under the Military board, the whole country being divided into the Executive divisions under the military engineers. In 1859 a seperate PWD was established and from 1872, each district received its own District engineers.
Dr. Sharifuddin, Dhaka opcit, P-45.
- 3.40 *Nawab* Shamsul Huda was the member of the Executive counsellor of the Governor general of Bengal and he had a house (Gokarna zamindar house at Nasir nagar, Brahmanbaria). Huda house was converted to women's hostel, later to Rokeya hall, D.U. *Sreetimoy Dhaka*, opcit, P-20.
- 3.41 Hular house was burnt by the mob during the Agartala conspiracy case. It was situated beside the Bardawan house Mohammed Abdullah, Nawab Salimullah, Islamic Foundation, Dhaka.
opcit, P-100. Muntasir Mamun, *Sreetimoy Dhaka*, P-20
- 3.42 In 1854, Bangladesh was entrusted to the charge of the Lieutenant governor, in immediate subordinate to the Governor general. Dr. Nazimuddin Ahmed, Buildings of the raj, opcit, P-17.
- 3.43 40 to 50 large, medium and small government bungalows were occupied by the teachers, officers and staffs of D.U in Ramna and Shahbagh areas. The drawings of these houses are collected by the researcher from the office of the 'Steward' (present university engineer) D.U.
- 3.44 Muntasir Mamun, *Sreetimoy Dhaka*, opcit P-19
Letter published in '*Sangbad*, by Dr. Suraful Islam, April 1987.
- 3.45 Muntasir Mamon, *Sreetimoy Dhaka*, opcit, P-21
- 3.46 Nafis Ahmed, Oriental Geographer, 1963, P-90.
- 3.47 Dr. Shariffuddin, Dhaka, opcit, P-3, Dr. Nazimuddin Ahmed, Buildings of the raj, opcit, P-139.
- 3.48 Dr. Nazimuddin Ahmed, Building of the raj, opcit, P-139.
- 3.49 Examples of such case is the Brahmanbaria where railway station and railway quarters stood as a barrier between the old town and govt. colonies or bungalows.
- 3.50 Nafiz Ahmed, opcit, P-90.

- 3.51 Jan Morris, *Stones of Empire, The buildings of the raj*, opcit, P-134.
- 3.52 A.D. King, *Bungalow*, opcit, P-36.
- 3.53 The drawings of the railway houses are collected from the office of the Chief engineer, Railway, at Pahartally, Chittagong and Railway bhaban, Kamalapur, Dhaka. The drawings were developed by the railway engineers and these drawings are preserved in a systematic manner in the railway bhaban at Pahartally and Kamalapur, Dhaka.
- 3.54 Railway prototype houses are always popularly known as quarter. The bungalows for the *baba shahebs*, houses for the staffs and sheds for the ordinary lower class employees, all these houses are known as railway quarters.
- 3.55 Dr. Nazimuddin Ahmed, *Discover the monuments of Bangladesh*, opcit, P-216.
- 3.56 Ibid, P-217.
- 3.57 Dr. Nazimuddin, *Buildings for the raj*, opcit, P-126
- 3.58 Ibid, P-129.
- 3.59 Muntasir Mamun, *Colonel Davidson Jakhani Dhakai*, opcit, P-22.
- 3.60 *Neel* (indigo) revolution was held in 1859-60 and after that there was no indigo plantation in the country.
- Dr. Nazimuddin Ahmed, *Discover the monuments of Bangladesh*, opcit, P-216. Indigo planter and zamindar Josiah Patrick Wise had two kuthies, one is the *kuti* now occupied by Bulbul academy, at Wiseghat and the other is dismantled. Dr. Sharifuddin Ahmed, Dhaka, opcit, P-107-108.
- The indigo planter and zamindar E.K. Hume had a two storied *kuti* at Sadrghat, Dhaka, and indigo planter Glass had a kuthi at Sadrghat. Muntasir Mamun, *Purano Dhaka, ushsab o gharbari*, opcit, P-74.
- 3.61 The examples of first type are the *bara Kuthis*, Rajshahi town, Mollahati kuthi at Jessore and *Kuti bari* of Mr Wais at Wais ghat, Dhaka town. The *bara kuthi* at Rajshahi is presently using as the R.U. teachers club.
- 3.62 The *bara* and *chota* kuties at Sardah, Motihar at R.U. campus, Kajla *kuti* at kajla, Rajshahi town, etc, are the one storied structures and mainly used as indigo factory houses. The *bara* and *chota kuties* at Sharda were the Dutch '*Sadr*' establishment in 1830s. After the indigo revolution (1859-60), the site was used as the *kachery bari* of the Midnapur zamindar, after that it became the Police training academy.
- Dr. Nazimuddin Ahmed, *Buildings of the raj*, P-129.
- 3.63 Most of the tea garden workers of *kulies* were non-Bengali and from Urishya, Madras, Bihar etc, provinces.
- 3.64 District gazetter, Sylhet, P-137.
- 3.65 Ibid, P-137
- 3.66 A.D. King, *Bungalow*, opcit, P-42, District gazeteer, Sylhet, P-135.

- 3.68 Rafiqul Islam, *Dhakar Katha*, opcit, P-147.
- 3.69 A.D. King, Bungalow, P-36.
- 3.70 Ibid, P-36.
- 3.71 Ibid, P-44
- 3.72 District gazeter, Comilla, 1981, fig-16.
- 3.73 A.D. king, Bungalow, opcit, P-45
- 3.74 Dr. Sharifuddin, Dhaka, P-195.
- 3.75 Shakharees were the original inhabitants of Karnataka, South India, migrated to this region some 800 years ago and settled in Vikrampur, the second capital of the Senas, during the reign of Maharaja Ballal Sen (1158-1179) A.D) (col david son *Jakon Dhakai*, P-23). In the following period during the Mughal rule, Shakharees received the official patronage. They were brought to Dhaka, and allotted free land in the present Shakharee *patti* area.
Wahidul Alam and other, *Shakharee patti*, opcit, Protibesh, 1989, P-41-42.
Abdul Mohaimen, *Dhaka nagar unnayon parikalpana*, opcit, P-9.
- 3.76 Wahidul Alam, *Shakhari Patti*, opcit, P-39.
- 3.77 James Tailor, *Compai amolar Dhaka*, Dhaka, 1978, P-60-61. Col Davidson *Jakon, Dhakai*, P-24, Nasir Hossain, *Kingbodontir Dhaka opci*, P-117-118
- 3.78 Col, *Davidson Jakon Dhakai*, opcit, P-24.
- 3.79 Muntasir Mamun, Colonel Davidson *Jakon Dhakai*, opcit, P-25.
- 3.80 The *kachari bari* of Tripura *raj* at comilla is using as the residential purposes of the govt employee.
- 3.81 *Kuti baries* of *Bara kuti* is using as the club house of R.U and the *kuti bari* of Mir wais is using is *Bulbal lalita kala academy*, a school of performing art.
- 3.82 The registers for recording the buildings were maintained in various government and non-government departments like PWD, Railway, Municipalities etc. Building registers are found in the Railway bhabans at Kamalapur and Pahartali, Building registers are also maintained by the executive engineers and sub-divisional engineers of PWD.

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Chapter-4

COMPONENTS AND ELEMENTS OF COLONIAL HOUSES:

Chapter-4

COMPONENTS AND ELEMENTS OF COLONIAL HOUSES

4.0 Introduction

The different types of colonial houses discussed in the previous chapters will now be studied and discussed in detail with respect to their various aspects of the components of the houses—identification, location, number, area, size, shape, arrangement, activity analysis, use etc. This chapter deals with the various aspects of the components of the houses and compounds, and their various types of elements.

4.1 Components of the houses

During the beginning of the 20th century the colonial house form took the typical shape with definite colonial components like enclosed compound, large hall room, separate dining room, attached bath and toilet, spacious verandahs, balconies, colonade, archede etc. There were certain common components eg, bed room, drawing room, (4.1), dining room, kitchen, bath room verendah in every type of houses. Except those common components certain type of houses have the special components which were typical and colonial in nature, provided to satisfy the special requirements, eg, the attached bath room in urban houses, chumneries, government, garden and railway bungalows, *kachary block/ room*, *nach ghar*, hall room, large dining hall etc in the zamindar houses, shop and display areas in shop houses, production, processing and store in the *kuthbaries* etc. shown in Table-4.1.

Table-4.1: Special components in the houses

Sl. no.	Type of houses	Special components
1.	Rural house	Store room, <i>kacha</i> lavatory
2.	Urban house	<i>Baithak khana</i> ’ drawing room, dining room, attached bath room, attached kitchen
3.	Shop house	Store, display area
4.	Sattelite township house	Drawing, dining, attached bath room, attached kitchen
5.	Zamindar house	Portico, <i>kachary block/ room</i> , <i>nach ghar</i> , hall room, dining room, servant block
6.	<i>Kachari bari</i>	Record room store room, office (accommodation) for <i>naib</i> , <i>tahsildar</i> and <i>paiks</i> etc.
7.	<i>Bagan bari</i>	Portico, dance hall, guest rooms, store room, servant block

8.	Government bungalow	Portico, drawing, dining, office room, lamp room, service block, garage/ stable, attach bath room, attach toilet.
9a.	Railway bungalow	Drawing, dining, lamp room, service block, attach bath room
9b.	Railway quarters	Coal store' fuel store
10.	<i>Kuti bari</i>	Production, processing, store room
11.	Gardan house	Drawing, dining, service block attach bath room
12.	Circuit house/ dak bungalow	Lounge, dining, attach bath, service block
13.a	Urban <i>patti</i>	Production, display, store
13.b	<i>Methor's patti</i>	Animal rearing yard

4.1.1 Entry space (Lobby)

Usually the main entry to a house (or an unit or block of the house) is through the verendah. It was practiced in all types of houses. But in some of the proto-type government bungalows in the late 19th and early 20th centuries, a special type of intermediate space, entry space or lobby was developed (fig-5.21.1, 5.21.1, 5.27, 5.28, 5.33, 8.9.1, 8.17, 8.29.2). A hierarchy of entry spaces was maintained at the entry point of these houses with an order or hierarchy of portico, foyer, lobby and lounge (drawing room fig-4.1.1.) There might be more than one lobby in the houses. There were more than one lobby in the governor's house (fig-5.27). The lobbies were either square or rectangle. Exception is the circular lobby in Ahsan manzil (fig-5.21) and oval shape lobby in chummery, Barisal (fig-5.30.1). There was no entry space in some of the railway quarters (fig-5.35.3, 5.35.4), where entry doors were directly opened on the steps.

4.1.1.1 Main entry

The main entry to almost all types of houses was always from the front. There might be more than one entry in the houses, but the main entry to the houses was well emphasized by location, treatment, size and shape. Sometimes, the main entry was designed to go direct towards the upper floor (fig-5.21.1, 5.21.2, 5.22.1, 5.22.2), and *bara kuti* at Mollahati, Jessore (4.2). Sometimes, the main entries were emphasized by raising the entry height upto double/^{story:} (fig-8.19.1, 8.19.7, 4.21.2, 7.14.1.1). To emphasize the main entries sometimes double height columns are used in some of the

houses. These are for the direct influence of the renaissance Palladian facade treatment used in many houses (4.3).

4.1.1.2 Secondary entry

The big houses like large urban houses (fig-8.19.1), zamindar houses (fig-5.20.1, 5.20.4, 5.22.1, 8.22) government houses (fig-5.28, 5.29, 5.31.1, 5.32, 5.33, 5.34.1, 5.25.1, 5.26.2), chummeries (fig-5.30.1, 5.27.1) garden houses (fig- 5.37, 8.37.1) *dak* bungalow (fig-5.30.9, 8.38.2), circuit houses (fig-5.38, 8.30.8.3), *kuti baris* (fig- 5.36.2, 8.36.1), *bagan baris* (fig-5.26.2, 8.22.1), railway bungalows (fig-5.35.5, 5.35.7, 5.35.8, 5.35.9), quarters etc. and even the rural houses, had more than one entries. Sometimes, these entries (*khirkiduars*) were at the sides or back. Usually, these secondary entries were not emphasized as the main entries. The secondary entries were used for the female folks, servants etc, or for the emergency exit / entry purposes.

4.1.1.3 Service entry

The service entry is another type of secondary entry for the servants, their guests, cleaners/ *methors* etc, persons. In the urban areas, the service entries were provided for the *methors* (fig-5.12.1, 5.30.1) to clean the lavatories, bath room and toilets. Therefore, this service entry was always at the rear or from the sides, located at an unimportant place of the compound (fig-8.33.1). Service entries are generally found in the urban, government, zamindar, *dak* bungalow, circuit houses and garden houses.

4.1.2 Portico

A portico is an important and typical colonial feature found in the urban (fig-5.7, 5.8.2), zamindar (fig-4.5.2, 4.5.4, 5.20.1, 5.21.1, 5.22.1, 8.17, 8.19.1), government (fig-4.5.1, 4.5.3, 4.5.6, 5.28, 5.31.1, 5.33, 5.34, 8.25.1). chummery (fig-5.30.1, 8.27.1) *bagan bari* (fig-8.22.1, 8.23.1), *kuthi*(fig-5.48.2) and circuit (fig-5.38) etc houses. The role of modern transport such as hackery carriage (*gorar gari*) and motor cars etc, forced the addition of portico in the houses. Porticos were introduced largely in the houses after 1860s, when the hackery carriage (fig-1.6.3) became popular in this country (4.4). It was designed in the houses for two purposes, first, for giving the definition or sense of access to the house and secondly, to

accommodate the hackery carriages or motor cars. The portico was usually the scene of more cheerful gatherings. Here the master / mistress of the family ceremonially used to receive the guests. Various types of porticos are shown in different types of houses in the (fig-4.5).

The porticos were usually of rectangular shape and the sizes varies from type to type of houses. The average size of portico in urban houses was 12'-0"X22'-0". Large porticos are seen in the *raj baries*, eg, Joydevpur *rajbari* has the largest portico measuring 18'-0"X33'-0" (fig-8.20.2). The average size of the porticos in the bungalows of *bara shahebs* is 12'-0"X20'-0". The design of porticos is simple, the rectangular structures supported by the few columns and beams (fig-4.5.1, 4.5.6) or piers and arches (fig-4.5.1, 4.5.2, 4.5.3, 4.5.5).

4.1.3 Drawing room.

The word 'out house', a 'sitting room, (4.5) a parlour', a 'main' or 'living room', a 'lounge' etc, evoke reasonable clear picture for the drawing room. The function of drawing room of the colonial houses included many things and no one emerged as typical. Drawing room in colonial houses performed the functions of the modern living room and the traditional '*baithak khana*'. Essentially it was a room for relaxation, where every member can lounge comfortably. It was also used as a reception room, and for holding social functions. Sometime it was required to be used as a dining space on special occasions like marriage feasts or on holidays when a number of friends and relatives were invited to dinner. The location of drawing room was such that the drawing, dining and family space formed a large semi-private space to satisfy needs of a social gathering inside the house (fig-4.1.1, 5.29, 5.33, 8.25.1, 8.28.1).

Table - 4.2: Average size, shape and area of drawing room in different types of houses.

Sl. no.	Type of the house	Length in ft.	Width in ft.	Area in sft.	Shape
1.	Rural house	15'-6"	11'-0"	170	Rectangular
2.	Urban house	22'-0"	12'-8"	278	Rectangular square, hexagonal, semi-circular
3.	Sattelite township house	26'-4"	12'-4"	325	Rectangular

Sl. no.	Type of the house	Length in ft.	Width in ft.	Area in sft.	Shape
4.	Zamindar house	42'-4"	20'-3"	857	Rectangular
5.	Government house	23'-6"	17'-3"	405	Rectangular
6.	Railway bungalow	19'-3"	15'-9"	303	Rectangular
	Railway quarter	12'-6"	12'-3"	135	Rectangular
7.	Circuit house	23'-10"	18'-4"	436	Rectangular
8.	<i>Bagan bari</i>	22'-6"	14'-6"	326	Rectangular
9.	Garden house	22'-6"	20'-0"	450	Rectangular

Drawing rooms are not found in the *patti* and shop houses.

The relationship of the drawing room with other spaces is shown in the (fig-4.1.1)

Traditionally *baithak khana* was a separate structure and located at the outer court near the entry of the households. It was a new concept in this country to include the drawing room (out house, sitting room etc,) within the same building near the sleeping areas. Drawing room in the colonial houses located at the entry point and directly entered from the lobby (fig-5.2.8) or verendah (fig-8.28.1). The *punkha* puller always sat in the verendah for pulling the *punkha* (fig-1.5) in the drawing room.

As regard the position of the drawing room in government or railway bungalows, it was best situated on one side of the house with an entrance from the front verendah. Amongst Europeans, it was usually placed near the front door. It occupied a central place which, though convenient to the style of living of the Europeans (4.6) and the people of the third culture, causes inconvenience to local (native) families. It interfered with the free movement and action of ladies working in the adjoining rooms. Among Muslims, where privacy (*pardah*) was maintained strictly, the drawing room in a central position causes positive inconvenience (4.7).

Drawing room was the largest room in the colonial houses (fig- 5.2.8, 8.25.1). The area covered by the drawing room of the urban houses (average size, 12'-8"x 22'-0" area 278.5 sq. ft.) was larger than the size of a drawing room in a middle class family of present time (4.8). The average size of the drawing room for the *bara shahebs* was 405 sq.ft. (4.9 table 4.2) and it was 857 sq. ft. in the zamindar houses. The

drawing room of Tajhat palace is 1650 sq.ft. The zamindar houses had more than one drawing room. The average size, shape and area of drawing room in different types of houses are shown in the table-4.2. The shape of the drawing room is always rectangular in all types of houses, except the urban houses, where the drawing rooms are also found in square (Fig-5.12.1), pentagonal (fig-8.31.1), hexagonal (Asaduz Zaman, Armanitola, Dhaka,) etc.

Fire places are found in most of the drawing room of the bungalows of *the bara shahebs* (fig-4.37.3, 5.28, 5.29.2), chummeries (fig-5.30.1), garden houses (fig-5.37, 8.37.1), circuit houses (fig-8.38.3). 'One item introduced by the metropolitan society into this country was the fireplace whose function was largely symbolic; how often have I know people have a fireplace for the pleasure of seeing one and to make them think they were at home. Though infrequently used for its original purpose the mental piece provided a focal point for the display of culture object' (4.10).

4.1.4 Dining room

The provision of a formal dining room/space in the main house block outside the kitchen areas was a new concept in this country. In the traditional houses, people (male or female) used to have food either in the kitchen, kitchen verendah or in the rear verendah of the main house. This was common practice in the urban houses too. Sometimes a separate small room was constructed for the eating purposes.. In the urban dining room of the middle class Bangalee family, there were no dining table or chair, they used to eat on the floor or at best on the *chowki* (fig-1.4.2). The lower middle class people have even no dining room. Even dining room or space was not provided in the lower grade govt or railway employee's quarters.

In the colonial bungalows for the government servants, railway servants or in the urban houses for rich people and in *raj baries* or zamindar houses, separate, absolute and formal dining rooms were provided. It is very difficult to identify the dining room/space which was previously used for dining in the urban houses. But the dining rooms could easily be identified in the zamindar (fig-5.21.1, 5.22.1), government (fig-5.28, 5.29, 5.31.1), garden bungalow (fig-5.3.7, 8.3.7.1), chummeries (fig-

5.30.1), railway bungalows (fig- 5.35.5, 8.31.1), and in the circuit houses (fig- 5.38, 8.38.3).

The location of formal dining room was in a position in the house easily accessible from the drawing, family space, bed rooms and service (kitchen, pantry, servant room) areas. The rear verendah was used for informal daily family meals. The front hall, front and side verendahs were used for pastime areas as well as for informal drinking (tea).

The relationship of dining room with other spaces is shown in fig-4.1.2 .

Dining in the open air in front of the kitchen block was not uncommon in the traditional houses (4.11). Sometime, this was also practiced in the internal paved *uthans* or in the paved backyards of the bungalows.

In the zamindar, urban, government, garden railway bungalows, and circuit houses, shelves were constructed for storing of dining cutlaries. Drinking water was stored either at the corner of the dining room or at a corner of the kitchen or verendah.

Washing of hands before and after meals- for both men and women, was done in the backyard in the *pukur ghat, indra* etc. or such suitable places as may be convenient. The shape of the dining room was rectangular in each type of houses. The size of the dining rooms in the *raj baries* and zamindar houses is very large, eg, it is 1250 sft, in Ahsan manzil, 1000 sft, in Janana mahal, 740 sft, in Tahhat palace, 780 sft, in Murapara house etc, 525 sft, in Reboti Mohan lodge, while the average size was 260 sft in the urban houses, 320 sft, in government bungalows, 283 sft, in the railway bungalows, 369 sft, in circuit houses and 326 sft, in *bagan baries*.

4.1.5 Bed room

Bed rooms are the common components found in all types of houses. Bed rooms being the essential components of the rural households occupy a substantial area in the urban households too.

Table 4.3: Average size, shape of largest and second largest bed room in different types of houses

Sl.no	Type house	Size of largest bed room in ft.	Area in sft	Size of second largest bed room in ft.	Area in sft.	Shape
1.	Rural house	13'-3"x17'-0"	225.25	12'-5"x13'-0"	161.72	Rectangular
2.	Urban house	13'-4"x20'-2"	264.73	11'-10"x17'-9"	201.28	„
3.	Shop house	11'-6"x15'-2"	174.34	11'-0"x13'-0"	143.00	„
4.	Settelite township house	12'-4"x26'-4"	324.65	12'-0"x26'-4"	116.00	„
5.	Zamindar house	14'-9"x26'-6"	390.88	14'-5"x25'-0"	360.50	„
6.	<i>Kachari bari</i>	15'-6"x17'-9"	255.25	15'-0"x16'-9"	251.25	„
7.	<i>Bagan bari</i>	14'-0"x10'-9"	276.5	13'-0"x17'-10"	231.92	„
8.	Government house	16'-8"x23'-3"	387.35	14'-9"x18'-9"	276.56	„
9.a	Railway bungalow	15'-0"x17'-6"	262.5	15'-0"x17'-5"	261.30	„
9.b	Railway quarter	10'-8"x14'-6"	154.57	10'-9"x13'-3"	142.44	„
10.	<i>Kuti bari</i>	17'-6"x22'-6"	393.75	16'-0"x20'-0"	320.00	„
11.	Garden house	18'-0"x20'-0"	360.00	16'-0"x20'-0"	320.00	„
12.a	Rural <i>dak</i> bungalow	12'-0"x18'-0"	216.00	12'-0"x18'-0"	216.00	„
12.b	<i>Dak</i> bungalow	8'-0"x16'-0"	128.00	8'-0"x16'-0"	128.00	„
12.c	Circuit house	16'-0"x19'-2"	311.35	16'-3"x19'-2"	311.35	„
13.a	Urban <i>patti</i>	6'-0"x8'-0"	48.00	6'-0"x6'-3"	37.50	„
13.b	<i>Methor's patti</i>	7'-6"x10'-0"	75.00	Nil		

Bed rooms were the only components in the traditional *ghars*. Gradually, verendahs were included with the bed rooms. A horizontal separation of bed rooms or the sleeping areas from the other *ghars* is observed in the traditional households and bed rooms (*sayen ghars*, 4.12) were secluded. Bed rooms are strictly separated from other rooms to maintain *pardah*. This trends may be also observed in the courtyard type urban houses. Gradually other activity zones, such as sitting or drawing room, bath rooms etc, were included in the urban house block and in the bungalows. This was sometime for the shortage of compound space or due to the influence of the colonial third culture.

The size (table-4.3) and number of the bed room were proportionate to the covered areas of the houses. The number of rooms in the houses varied from a single room in the *methor's patties* (fig-8.40.1) and railway sheds (fig-8.33.2, 8.33.3) to 225 rooms in the Joydevpur *rajbari*, where many of these rooms were used as bed room. The Joydevpur *rajbari* is found as the largest house in Bangladesh (4.13).

Bed rooms are placed at the back of the houses in the ground floor in the single storied houses. But bed rooms are accommodated at the back and at the first floor in the double storied urban houses (fig-8.29.2), shop, satellite township houses, *bagan bari*, and government houses. Bed rooms are placed in the separate block in the *Kachari bari*, Tripura *raj*, Comilla (fig-8.21.1), at the upper floor, eg, Shahjadpur *kachari bari* (fig-5.33.3) and at the back of the houses in the *kachari bari* of Rajeswar Rai Chowdhury at Patuakhali (fig-5.24.2). The number of bed rooms is minimum in the *bagan baries*. Bed rooms were placed at the upper floor in the *kuthi baries* (fig- 5.36.3), as the ground floor were used for productions (fig-5.36.2) area. In the shop houses : : the bed rooms were placed at the upper floor or at the back of the compound as the lower floors or the front of the house was used for shop or display purposes. Bed rooms are placed at the two sides of the drawing and dining rooms in the *dak bungalows* (fig-5.39) and circuit houses (fig-5.38, 8.38.3).

Large bed rooms are found in the zamindar.*kuthi bari*, garden, satellite township and circuit houses (table-4.3). The shop houses, railway quarters and rural *dak bungalows* have comparatively small bed rooms. The urban *patties* and *methor's patties* have small bed room. Two largest and second largest (average) bed rooms are shown in the table-4.3. Again, the urban houses had the small bed rooms too, eg, houses of Nishi Kanta babu (bed room size: 5'-0"x10'-0" at 445, stand road, Chittagong fig-5.11.3), Jagan Nath Saha (bed room size: 5'-0"x8'-6") at Lalbagh, Dhaka (fig-5.6). Small rooms are also seen in some of the rural houses at Painam, Sonargaon (eg, bed room size: 5'-0"x9'-0", in the house of Shiba Nanda Poddar, fig-8.5).

4.1.6 Guest room

The out house or *baithak khana* is used for providing the guests in the rural and urban houses. The lodging master (4.14) also resided there. Guest room was formally designed in the bungalows of the *bara* and *chota shahebs*. Usually in the garden houses the bed room beside the drawing room at the ground floor was used for this purpose. In the urban houses of lower middle class family, there was not a definite guest room; any room was vacated or a room was shared for this purpose.

The guest room was located as far as possible, independent of other rooms except the drawing room into which it might open. Some times it had an independent access to general bath/ toilet unless a special toilet was attached to it. In the bungalows, it was sufficiently commodious to hold a bed, a writing desk, a chair and a devanport.

4.1.7 Hall room

The *rajbaries*, (fig-8.17) zamindar houses (fig-8.18.1, 8.19.2), mansions of high officials (fig-5.28, 5.29, 8.29.2), govt. bungalows (fig-8.26.2), the large urban houses (fig-5.8.2, 6.13.1, 8.9.1, 8.16.2), railway bungalows (fig-8.32.1) *Kuthi baris* (fig-8.36.2) have the hall rooms. These hall rooms are large in size and covered even 1000 sft, in some of the houses (table-4.4.1 and 4.4.2). The hall room of Tajhat palace is 1650 sft. The number of hall is more than one in many cases.

Table-4.4.1: Size and number of hall room in some of the selected zamindar houses

Sl.no.	Name of the house	Size in ft.	Area in sft.	No. of hall
1.	Ahsan manzil	24'-6"x50'-0"	1225	4
		24'-6"x50'-0"	1225	
		24'-6"x50'-0"	1225	
		20'-0"x50'-0"	1000	
	Janana mahal	20'-0"x50'-0"	1000	4
		16'-0"x41'-0"	656	
2.	Tajhat palace	30'-0"x55'-0"	1650	4
		20'-0"x37'-0"	740	
3.	Murapara palace	21'-0"x32'-0"	672	2

Sl.no.	Name of the house	Size in ft.	Area in sft.	No. of hall
4.	Reboti Mohan Das	15'-0"x25'-0"	375	4
		15'-0"x36'-0"	540	
		15'-0"x34'-0"	510	
		15'-0"x30'-0"	450	
5.	Mymensingh rajbari	22'-0"x44'-0"	968	3
		22'-0"x44'-0"	968	
		22'-0"x42'-0"	924	
6.	Ruplal house	22'-0"x35'-0"	770	4
		22'-0"x35'-0"	770	
		22'-0"x35'-0"	770	
		22'-0"x35'-0"	770	
7.	Bara taraf, Natore rajbari	19'-0"x38'-0"	722	1
	Chota taraf, Natore rajbari	18'-0"x37'-0"	666	1

Table-4.4.2: Size and number of hall room in some of the selected bungalows / drawing rooms of *bara shahebs*

Sl.no.	Name of the house	Size in ft.	Area in sft.	No. of hall
1.	Governor's house	33'-0"x43'-9"	1435	2
		33'-0"x43'-9"	1435	
2.	Lt. governor's bungalow	18'-0"x25'-0"	450	2
3.	Bardawan house	20'-0"x30'-0"	600	2
4.	Commissioner's bungalows, Chittagong	20'-0"x36'-0"	720	2
		20'-0"x36'-0"	720	
5.	Bungalow no. 2, Ramna colony	18'-0"x22'-0"	396	1
6.	District judge, Chittagong	20'-0"x24'-0"	480	1
7.	S.P. Dinajpur	14'-0"x18'-0"	252	1
8.	D.M. Rajshahi	19'-0"x24'-0"	456	1
9.	D.M. Sylhet	18'-0"x20'-0"	360	1
10.	Civil Surgeon, Khulna	16'-0"x20'-0"	320	1
11.	Railway bungalow, college street, Dhaka	15, 19'-0"x24'-0"	456	1

Hall room was seen as '*darbar hall*' in Ahsan manzil, These hall rooms were rectangle in shape (table-4.4.1) and were suitable for the social gathering, meeting and dining etc, purposes. Some selected hall / drawing rooms of the bungalows of *bara shahebs* and their sizes are shown in fig-4.4.2. In the ordinary houses the largest room was called the hall room(4.15).

4.1.8 Office room

The *bara* and, *chota shahebs* whose services required extra time to complete the duty, demanded an office space in the house. The houses of *bara shahebs*, like D.Ms (fig-8.25.1), D.Js (fig-5.33), civil surgeons (fig-8.30.1), S.Ps (fig-5.34.1), and professionals- *ukils*, doctors engineers, professors etc, had an office room in the house. Office rooms were also provided in the chummeries (fig-5.30.1, 8.27.1). Usually this office room was accommodated in the semi-public area with the hall, drawing room etc. The zamindar houses which had the *kachari* in the house or compound had an office room in the house, eg, Ahsan manzil had an office room (fig-5.21.1).

4.1.9 Stair case

Stair is an important feature of the multistoried houses for vertical communication between two floors. Usually one stair case was used in the small, rural, urban, government, railway etc, houses. Dog legged (4.16) or open newel stairs were used in the ordinary houses. Service stairs- circular (fig-8.25.1) or ladder type (fig-8.24.1) were used in the government and zamindar houses, various types of stairs were sometimes used in the same house in large houses (4.17). Fifteen stairs are used in the Joydevpur *rajbari* (fig-8.20.2), five stairs are used in Reboti mohan lodge, Sutrapur (fig-8.19.1) and four stairs are used in Murapara house (fig-8.18.1). Sometimes maximum allowable limit of steps was not followed and long single flight-internal (fig-8.5) and external (fig-4.6.3, 8.36.1) stairs were used in the houses. Such internal single flight stair leading to the roof terrace has 20 steps in the house of Shiba Nanda Poddar. Sometimes, uncovered stairs were used outside the houses (4.18, fig-4.6.3, 8.36.1). Spiral circular stair was used as service stair and found in many

houses (4.19, fig-5.30.1, 8.25.1,8.27.1,8.29.2, 8.30.1). Usually the stairs were spacious in the zamindar, government and large urban houses. In many cases, one of the stair case was leading to the roof terrace and pent house was provided for this purpose.

The width of the trades is more (average 12 inches) in the zamindar, government and large urban houses and the rise varied from 6 to 7 inches. The trade width is minimum in the ordinary urban houses, urban *patties*, and shop houses and it varies from 8 to 10 inches. The rise is more in these types of houses which varies from 7 to 12 inches.

4.1.10 Dressing room

The dressing room is another colonial addition to the houses in the colonial period. Traditional houses had no definite space for dressing. The ladies used the bed room, verendah, enclosed *pukurghat* etc, places for this purpose. Attached dressing room necessarily required to be in between the bed room and toilet is found in the zamindar, urban, government and railway bungalows. Besides the dressing room with the main house, changing and dressing rooms are also found at the *pukurghats* in many zamindar houses (2.20 fig-5.16.7).

The size of the dressing rooms depends upon the use intended for it whether purely for dressing or also for secondary purposes (eg, wardrobe, hobbies, boudoir etc.). The moderate size of the dressing room in the bungalows of the *bara shahebs* was such as it can accommodate the furniture like dressing table with mirror and stool/ chair, chest of drawer, wardrob, almirah etc. The sizes of the dressing rooms were 12'-3"x17'-0" in D.M bungalow at Comilla, 10'-0"x23'-2" in the bungalow of S.P Comilla, 10'-0"x18'-0" in the divisional commissioner bungalow, Chittagong (fig-5.29), 10'-0"x12'-0" and 12'-0"x16'-0" in the bungalow of settlement officer (presently divisional commissioner), Khulna, 9'-0"x10'-0" in the Chummery house, Dhaka and 9'-0"x13'-0" in the bungalow number 29 (fig-8.24.2), Ramna colony. The shape of the dressing room is always rectangular.

4.1.11 Bath room

Bathroom was the typical and important component of the bungalows and houses. Usually bathrooms were not found in the traditional houses and they (both male and female) used to take bath in the pond or river. Bathing took place in the separate structure outside in the rural (fig-8.1) and urban (fig-5.6) houses. Attached bath rooms, introduced by the colonists was a new concept in this country and found in the bungalows of *bara* and *chota shahebs*, *dak* bungalows (fig-5.38.2 5.39.3), circuit houses (fig-5.38, 5.38.3), zamindar houses (fig-5.31.5, 5.32) and railway bungalows (fig-5.46.1, 5.47.3)

An enclosed bathing space was designed in the railway quarters for the *babus* (fig-5.32.2, 8.33.1). Common bathing space was provided in the sheds for the *minials*.

Bathrooms were absolutely used for bathing and washing purposes in the early colonial period. A tub at the corner of the room was used as water reservoir. Later, the wooden platform basket type W.C was included in the bathrooms in the late colonial (in the early 20th century) period. Bathrooms were cleaned all the times by the *methoris*. Two doors in the bathrooms are found in the zamindar (eg, Dinajpur *raj bari*), government houses (fig-8.30.2), railway bungalows (fig-8.32.2), *dak* bungalows (fig-8.38.2), and circuit houses (fig-8.38.3). A spiral service stair (fig-8.25.1) or ladder (fig-8.24.1) was used for this purpose. Bathroom sizes varied from type to type of bungalows. Bathroom sizes are 9'-0"x9'-0" and 8'-0"x9'-0" in the bungalows of D.M Rajshahi (fig-5.25.1, 5.25.2) and Comilla respectively. It is 7'-0"x8'-0" in the bungalow no.-29 at Ramna colony, Dhaka. Bathroom size is 8'-0"x8'-0" in the railway bungalow at 15, college road, Dhaka (fig-8.31.1) and 6'-0"x7'-0" in the bungalow no. 66 at Fulbaria railway colony. The size of bath room is 8'-0"x8'-0" in the Manda *dak* bungalow, Noagaon (fig-8.38.2) and it is 9'-0"x10'-0" in the circuit house at Rajshahi (fig-8.38.3). The size of bath rooms is 17'-2"x19'-8" in Ahsan manzil (fig-5.21.2) which is more spacious than the drawing room in many urban houses.

5.1.12 Toilet and lavatory

Attach toilet is another important component introduced in this country by the European. Traditionally, lavatories were placed at the north-west farthest corner of the households. Usually the lavatories and toilets were placed at the opposite side of the approach road and it was always preferred to place the lavatories at the north-west corner at the lee ward side of the compound (fig-8.11). The lavatories remained (fig-8.1) a sort of pit system. Sometimes a soil canal developed (4.21, eg, Murapara house). The mout around the Painam village was used for this purpose too. The soil from all the open lavatories drained to this *khal* (fig-8.18.2). The urban lavatories were built on the pit at a possible safe distance from the houses. It is clearly observed that all the lavatories of pit type were built at the adjacent of the rear boundary walls (fig-5.12.1) in the *Shakari patti* which was built earlier in the colonial period. The attach toilets found in the *Shakari patti* were the later renovation. After the introduction of *methor* system during 1870s service type latrines developed in all types of towns. At the early colonial period the lavatories were at a safe distance from the house and the bath rooms were with the house block. Later basket type toilets were introduced after 1870s and these were cleaned by the *methors* at the late night. Sometimes the lavatories were raised 4'-0" to 5'-0", so that the soil pot could be removed and cleaned easily (fig-5.12, 5.15.1). Thus service entry (for *methors*) , service corridor (fig-8.27.2) and service stairs were added in the zamindar, urban, government, chummeries railway bungalows, *dak* bungalows, circuit etc houses. The double door toilets were designed in the bungalows of the *bara shahebs* (fig-8.25.2). Sometimes double storied lavatory block also seen in some of the zamindar (Murapara house, fig-4.7.3, Dinajpur *rajbari*, Mymensingh *rajbari*) houses. Usually dressing, bath, toilet and service stair etc, formed a service area and arranged side by side, maintaining an hierarchy of spaces shown in fig-4.1.3.

Various shapes in toilet design- square (fig-8.27.1), rectangular (fig-8.29.3), pentagon (fig-8.17, 8.25.1) etc, are found in the houses. The size of the attach toilets is comparatively large than the lavatories seperated from the main house block.

Strict privacy was always maintained in the lavatory, bath room and toilet areas in respect of sight and sound.

The sizes of the lavatories vary from type to type of the houses. The size of the lavatories were usually 3'-0"x3'-0" in the urban houses of Jagannath Saha, Dhaka (fig-5.9), 4'-6"x5'-0" in Hemakanta Bhattacharjee, Ukil para Noagaon, (fig-8.8.1) 4'-6"x9'-0" in Anath Bandhu Rishi, Aga Moshi lane, Dhaka, (fig-5.10). The size of the toilet is 9'-0"x9'-0" in the bungalow of D.M Rajshahi (fig-8.25.1).

4.1.13.1 Verendah

The concept of verendah is a semi-enclosed space created (in a single storey house) by the extension of the roof- down and outwards, and supported by pillars, or by an 'additional' structure incorporated on to the side of the houses. It is an essential feature of the colonial houses. Extensibly, its function was to keep the sun's heat off the walls; but the verendah had for long been one of the most important component, fulfilling all sorts of socio-economic functions.

In two particular ways it was essential to the purpose and significance of the houses. First, it was the one place the users of it had just for messing around on. "Everything was easy going about the verendah. Its furniture was meant for lounging. Its floor was covered, if covered at all, with the *mem shahib's* least valuable carpets, or with Chinese matting. Its picture and trophies were beloved rather than precious. Funny old chairs lay around about, bamboo couches, rocking chairs sometimes, or sofas with wide arms for the accommodation of glasses. Potted plants were everywhere, and here the little dogs of the household were indulged lying around on sofas or begging titbits at breakfast time (4.22)".

And secondly, "the verendah was the place where the British women, in particular, could feel some tentative personal contact with the alien world of India outside. Here *hawkers* and tradesmen might bring their wares, without actually entering the house proper. The watchmen sometimes slept upon the verendah; the tailor was often to be seen cross-legged there in the afternoon (4.23)".

In short, the verendah was a sort of bridge, it linked the rigid and conventional life of the European, the lost liberties of home; it linked the rose-petals of the drawing room with and during the fires (summer) of the land outside, and perhaps, too it tenuously joined the dreams of the Anglo-Indian, with the reality of their existence- for on the verendah sometimes, with a drink in one's hand or pipe in one's mouth (fig-1.5)

In addition to these, it served other purposes too. Firstly, in some of the houses, it served as entry and the purpose of waiting space for a stranger or a visitor before he is ushered into the reception, lobby or drawing room (fig-5.7). Secondly, it was used for keeping shoes, stick, umbrella, hat etc, directly as one enters the house. Thirdly, it served as a passage giving an independant access to other rooms of the houses (fig-8.2, 5.20.1), thus preserving their privacy. The fourth purpose was its use for sitting in the evening or by night after dinner, enjoying some light reading or post prandial talks with friends in a flow of cool breeze (fig-5.17). In the cottage of people of humble means, this is often the main sitting room (fig-8.33.2). The fifth, and the most important purpose served by a verendah is that it protect the walls of the house form being heated by exposure to the sun rays (fig-5.20.2, 5.21.2, 5.21.3, 5.22, 5.23, 5.31, 5.32). This is done in two ways: firstly by sheltering or screening the wall from the sun rays, and secondly, by offering to them a buffer or a sort of cushion of air which is a bad conductor of heat. Thus the air entering the rooms behind the verendah is first cooled down to a considerable extent before it enters the room (4.24).

Most of the verendahs in the houses are either colonaded (2.25, fig-8.38.6, 8.38.7), or archaded (2.26, fig-8.3.1, 8.8.2), type having the verendah all around the house combined with the need for all rooms to go through from front to back. Sometimes, a combination of both the colonade and archade system of verendahs are found in the same house(fig-8.20.4, 8.29.4). In the civil surgeon bungalow at Khulna, (fig-8.30.1) and the Lt. governor's bungalow at Dhaka (fig-8.29.4) the ground floor's verendahs are archaded and upper floor colonaded (fig-8.30.3, 8.30.4). The opposite, the upper floors archaded and ground floor colonaded, is seen in the bungalow no. 27, Ramna

govt. colony, Dhaka. Both the colonaded and archaded verendahs are seen in both floors in the Joydevpur *rajbari* (fig-8.20.4).

Sometimes the colonaded and archaded verendahs were low from the main house block for the one storied houses (4.27, fig-8.30.3, 8.30.4). In some of the houses, the upper portion of the arches or columns were screened with either wooden louvers (fig-4.28.14) or steel framed ornamental glazed works (fig-4.33.9) for the protection from rain or sun ray (4.28).

Increased awareness of the danger of mosquitos favoured the enclosed verendahs (eg, houses of Ramna colony or in the bungalows of *bara shahebs* in the *moffassal* towns), which might then be used, according to some, as an office, sitting or dining room; an enclosed verendah also reduced the extent to which roof eaves needed to be brought down (eg, Ranir kuti, Comilla).

Every employee of the colonial authorities should have a second room for the sake of health or recreation so that in the event of his not being well enough to go out he might not have to spend the whole of the day in one room. Even the lowest government and railway servants, in most cases, got a second room (fig-8.33.2) or space (shared with other, fig-8.34.1) at least in the form of common verendah.

Verendahs of various shapes-square, rectangular, linear, circular, hexagonal and other special types are seen in many houses.

Various types of verendahs such as verendahs at the both sides of the rooms/house block (fig-8.2, 8.20.3, 8.21.1, 5.8.2, 5.13.1, 8.18.1), verendahs at one side, where the rooms are arranged side by side (fig- 8.34.1, 8.2, 8.10.1, 8.15.1 and *dak* bungalow, Nabinagar, 4.29), Verendahs where the rooms are arranged at the three sides of the verendahs (fig- 8.26.2, 8.24.1, 8.25.1, 5.37, 5.26.2, 5.23.3), verendahs which are projected from the house blocks (fig-5.34.2, 8.8.1). Verendahs at one side, two side, three sides (fig-5.32) are found in many houses.

The size of the verendahs varies from house to house. The small size, 6'-0"x7'-0" (42 sft.) verendah is found in the *dak* bungalow, at Manda, Noagaon (fig-8.38.2), where as 10'-0" wide and 133'-0" long (1330 sft.) verendah is provided in Murpara

house (fig-8.18.1). The 5'-0" wide 274'-0" long (1550sf.) verendah is considered to be longest and the 8'-6" wide 270'-0" long (2295 sf.) verendah in the service block of Jaydevpur rajbari seems to be largest verendah found in Bangladesh (fig-8.20.2). In some of the zamindar houses the area of the verendahs is almost hundred percent of the other spaces (fig-5.22).

4.1.13.2 Balcony

Besides the verendahs, the balconies are also found in all types of houses. Various shapes-- circular (fig- 4.26.1, 5.18.2), square (fig-5.2.2), ractenglour (eg. houses of Hasan shaheb, 34/1 Jindabahr Ist lane, Mohendra Gosh, Ahsan Ahmed road, Khulna), long elongated balconies covering the whole facade are seen in some of the houses (fig-8.23.2). These balconies are both covered and uncovered. The width of balconies varied from 3'-0" to 4'-6".

4.1.13.3 Corridor

Corridor is another type of linkage, an important component found in some of the large houses (fig-5.6, 5.10). But small corridors are seen in many of the small houses too (fig-5.9.2). Large corridors are found in the large zamindar houses (4.30). The corridors are carefully avoided in some of the urban and satellite township houses (fig-5.17.1), zamindar houses (fig-5.20.1, 5.20.4, 5.20.1) *kuties* (fig-5.36) garden houses (fig-5.37) government houses (fig-5.28, 5.29, 5.31, 5.32, 5.33, 5.34), *kachari baries* (fig-5.23, 5.24), *bagan baries* (fig-5.26.2), railway bungalows (fig-5.35.5, 5.35.10), chumneries (fig-5.30) and circuit houses (fig-5.36). The corridors were also avoided in the large bungalow like government house, Dhaka (fig-5.27). Corridors within the houses were carefully avoided in these houses but linking corridors were used to connect two units of the houses (fig-5.12, 5.27). The corridors connecting the main blocks of the bungalows and service blocks are seen in many government houses (4.31). Sometimes corridors are seen in the form of bridges connecting two blocks of the houses (4.32, fig-5.12, 8.20.2)

4.1.14 Kitchen

The kitchen, kitchen store, fuel store, servant rooms etc were, sometimes grouped in an area known as service block (fig-4.8.6, 4.8.9). The kitchen including the washing,

preparation, cooking, servicing, pantry, kitchen store, fuel store, lamp room etc, found in the large zamindar, urban, govt (fig-8.29.1) and railway bungalows(fig-8.32.1), which were dominated by the servant and female folk. In other medium and small urban, government, railway etc, houses the kitchen is always a single room (fig-5.35, 8.33.1). In some of the railway quarter separate kitchen space was not provided. They used the verendah space for this purposes (fig-8.33.3). The service block including the kitchen are provided in a separate structure and placed at the rear of the houses (4.33). In doing so it was sometimes placed in the south of the houses (fig-8.24.1). But generally it was always preferred to place the kitchen block on the north and north-west part of the houses. "Even on a small quarter-acre compound, the kitchen, servant's quarters and stores (ie, service block) were to be built thirty feet away from the bungalow (4.34)". This "remains the noise and smell of cooking and servants chatter from the house and allows both buildings to get more light and air" (4.35).

In the late colonial period, from the beginning of 20th century, the kitchens- nearer to or attach with the main structures (fig-8.10.1, 5.13) found in some of the urban consolidated bungalows/houses. This type of consolidated houses were not found in the *moffassal* towns.

This kitchen unit was sometimes connected with the main block by a covered corridor in the government bungalows (fig-4.8.8). Sometimes this corridors were covered by net for safety purposes against mosquitoes and insects in the bungalows of the European *shahesbs*. In most cases the kitchen was designed in the native way of using the '*chulla*' for cooking and wood cowdung and coal (4.36) for the fuel purposes. The chimney, provided for exhausting the smoke and smell was the typical feature found in most of the government (fig-4.38.2), railway bungalows/quarters (fig-4.38.1), and zamindar houses (fig-4.38.3).

4.1.15 Servant room

Having servant as helping hand was a part of the custom in this society. Even the households of medium and lower status people had at least one (male or female) servant and he or she was accommodated in the house. The households of lower

class people or employees had no separate servant room. They stayed in the house and used to sleep in the verendah, kitchen etc, places. Servant's room (if any) was always with the kitchen in the households of the medium and lower status people. Servant's room was separately built in the households of upper soccity, in the zamindar, large urban, govt. (fig-4.8.6-4.8.9) and railway bungalows, garden, sattelite township (fig-8.16.2) houses, where a lot of helping hand (4.37) were engaged.

4.1.16 Store room/ box room

Generally, a store room was built for a 'place for every thing' in the middle class households (fig-8.16.2). But in the bungalows (fig-8.29.2) for the *shahebs*, zamindars (fig-8.18.1) or urban people of upper middle class, 'every thing' could be placed in its own place; therefore, several types of store rooms or spaces were built for particular purposes. Usually the European articles gathered or collected from the towns (from the shipment imported from Europe) were stored in the general store or box room for the next use for several days.

4.1.16.1 Kitchen store

A kitchen store was provided in urban, zamindar, government, railway and garden houses. It was built adjacent to the kitchen preferably with the service or kitchen block. The size of it varied with the type and size of the houses.

4.1.16.2 Pantry

The pantry as a separate store space for cooked and prepared food is a colonial component introduced by the European, located by the side of dining (eg, Murapara house fig-8.18.1 chummery at Barisal, fig-5.30.1, D.M. Sylhet, fig-8.28.1, D.J. Chittagong, fig-5.33), family and drawing room. This space was furnished with built in almirah, showcase, cupboard with glass shutters of sliding or shutter type.

4.1.16.3 Fuel store

Fuel for the kitchen or for the fire place (during the winter) was stored in a store room adjacent or near the kitchen. The size of this room depended upon the number of family member. Coal as a fuel used mostly by the railway bungalows and quarters was also stored here. It was always with the kitchen or service block.

4.1.16.4 Lamp room

Lamp room was another colonial component in the large bungalows (fig 8.29.2, 8.28.1), chummeries (fig-8.27.1) and zamindar houses etc, (eg, bungalows of civil surgeon, Chittagong, D.M. Sylhet, chummary at Dhaka). The hazakes, hericanes, sandaliars, torches etc, lighting articles were lit by the '*batiwalas*'. These articles including the ladders, kerosine pots, etc, were stored in a small room near the stair case.

4.1.17 Stable and garage

Stable was constructed in the compound during 1860s. In order to protect the houses from the smell and flies due to dung in the stable, and the tramping noise of the horses, the stable was logically built away from the house preferably at a corner and north at the back yard (fig-8.29.1). The zamindars who maintained the elephant, kept the animal yard at a distance. Even though the automobile replaced the horse-drawn coach during 1890s, in some cases (the number was too small for the native), still built their garages in the same corner. But as the motor garage was free from the nuisance of flies and smell and also from the noises of trampling etc, these were built at any side of the houses.

4.1.18 *Mandir/Masjid* and prayer spaces

There was no prayer room or space in the bungalows of the *shahabs*, government and railway houses as the *shahabs* had attended their weekly prayer in churches. Very few people could afford to devote a spacial room for this purpose, spacially in the houses of ordinary people. A '*pooja ghar*' or '*namaj ghar*' was specially allocated for this purpose in many houses. '*mandir*' or '*masjid*' were built in the houses of the zamindars (fig-8.18.2, 4.9.1, 4.9.2) or in the houses of affluent people (fig-5.2.2, 4.9.3).

Mandirs were found in the zamindar houses of Murapara Joydevpur, Teota, Dinajpur, Muktagacha, Sailan Gosh, town Noapara etc. Few *masjids* were found in the Muslim zamindar houses (eg, Dhonbari *nawab bari*) or houses of affluent people. The number of Muslim zamindar was few. The *mandir* or *masjid* was not too large in size as these were built for private uses of the family. Usually there is a

uthan in front of the *mandir* or *masjid* to accommodate the occasional gathering of the villagers.

A small room for the '*pooja*' was usually allocated in one of the corner of the Hindu houses for the elderly people, particularly for the ladies who spent more time in this room. These *pooja* rooms were slightly dark intending to increase the solemnity which was very much desirable for inducing concentration of mind. No particular room, rather usually a particular space was allocated for *namaj* in the bed room, verendah etc, spaces.

4.1.19 Pent house

Pent house (fig-4.10) was designed in most of the rural, urban, zamindar, shop and satellite township etc, houses to use the roof terrace. It is also found in the *kuti baries*. This pent house is not found in the government, railway bungalows and circuit houses where the compounds are large. The pent houses were designed in conformity with the total design of the houses. Usually the height of the pent houses varied from 8'-0" to 10'-0".

4.1.20 Dance hall (*Natch ghar*)

Dance hall is found in every pleasure house or *bagan bari* (fig-5.26.2, 8.22.2, 8.23.2) and in many of the zamindar houses (fig-5.19.2, 5.21.2, 8.18.1) and urban houses (fig- 5.18.2). This hall is the largest room in the *bagan baries* and all other rooms are arranged around this. The size of the room is shown in the table-4.5. Dance halls are also found in Ahsan manzil, Ruplal house, Mymensingh *rajbari*, Gauripur palace, Lahiri lodge, Puthia *rajbari*, Digha patia palace, Natore *rajbari*, Tahirpur palace, Dinajpur *rajbari*, Tajhat palace etc. There were the multiuse halls which could be easily converted into *natch ghar* when required.

These dance halls are always rectangular in size and the size varies from 246 sft. (fig- 8.23.2) to 1225 sft, (fig-5.21.2). The dance halls are placed at both ground and first floors (table-4.5). Some of the dance halls have the wooden floor (4,38 fig-5.19.2).

Table-4.5: Size and area of the dance hall in selected *bagan baries* and zamindar houses

Sl.no.	Name of the house	Size in ft.	Area in sft.	Location in floor
1.	Rose garden, Dhaka	26'-0" x 44'-0"	1144	1 st.
2.	Prem karon, Khulna	13'-0" x 20'-4"	246	1 st
3.	Dance hall of the zamindar of tapa, Rangpur	21'-6" x 27'-0"	580	Gr.
4.	Dance hall, Basanta Kumar, Dhaka	20'-0" x 35'-0"	700	Gr.
5.	Dance hall, Farashganj	25'-0" x 30'-0"	750	1 st.
6.	Alan Shahab's <i>natch ghar</i> Goal Chanot, Faridpur	18'-0" x 30'-0"	540	Gr.
7.	Ahasan Manzil, Dhaka	24'-4" x 50'-0"	1225	1 st.
8.	Murapera house	18'-0" x 42'-0"	750	Gr.
9.	Tajhat palace, Rangpur	20'-0" x 37'-0"	740	1st.
10.	Mymensingh <i>rajbari</i>	22'-0" x 44'-0"	968	Gr.
11.	Ruplal house	20'-0" x 35'-0"	700	1st.

4.1.21 Shop and manufacturing area

The shops in the shop houses are always located in front of the structure beside the roads. The shops covered the whole roadside (fig-4.14, 4.15). The shops were rectangular in shape and the size varied. The manufacturing in the *kuthi baries* were always in the ground floor (fig-5.36.2). Generally the plinth of the manufacturing areas were low (fig-8.36.1).

4.2 Components of the compound

The compound is a secure possession of the owner (*shaheb* or local) where cultural choices could be expressed in an environment over which there was considerable or total control of the owner (4.39). The compound is simply an extension of the bungalow's internal space, an outdoor space fulfilling a variety of social, political, cultural and psychological needs. A logical hierarchy of covered, semi-covered and uncovered spaces are created in and around the bungalows upto the boundaries of the compounds (fig-4.11.3).

The compound was an area of cultural territory, situated in (large urban areas like divisional towns-Dhaka, Chittagong Rajshahi other *moffassal* district and

sub-divisional towns or other towns indigenous culture, but not being of that culture (4.40, eg, Ramna colony, Dhaka, Appendix-4).

The following accounts give an insight into the compound environment, over the years- "The European station is laid out in large rectangles formed by wide roads... The European live in detached houses, each surrounded by walls enclosing large gardens, lawns, out offices... The handful of Europeans occupy four times the space of the city which contains tens of thousands of Hindoos and Mussulmen" (4.41). The colonial compound was situated in an isolated site (4.42, eg, Bogra, Dinajpur, Khulna, etc, towns). "Wherever possible elevated sites were chosen with facilities for drainage, healthiness of soil and access to water" (4.43).

The location of the compounds, away from the places of native settlements (fig-2.4, 2.5, 2.6) expressed the political and social relationship between the occupants of both. Spatial distance reflected the social distance. Therefore the bungalows and the quarters for the lower grade staffs were always at a distance from the bungalows of the *bara shahebs*.

The size of the compounds varied according to the type of the houses, the size of the zamindar compound (fig-4.11, 5.19.1, 8.17.1, 8.18.2) varied from few acres to 43 acres (table-4.6). The compound size for the *bara shahebs* varied from one acre to five acres (fig-4.11.3, 4.11.4, 4.11.5, 4.11.6). The size of the compound remained same for the railway *shahebs*. The railway compounds for the native employees varied from 342 sft. to 2810 sft. (table-4.7). The compounds of various types of houses are shown in (fig-4.11.1- 4.11.12).

Table-4.6: Area of the compound in the selected zamindar houses (4.43).

Sl. no.	Name of the house	Area in acre
1.	Baliati palace	20
2.	Murapara house	37(2)
3.	Mymensingh rajbari	9 (3)
4.	Muktagacha rajbari	10 (4)
5.	Joydevpur rajbari	15 (5)

Sl. no.	Name of the house	Area in acre
6.	Dighapatia <i>rajbari</i>	43 (6)
7.	Natore <i>rajbari</i>	37 (7)
8.	Reboti Mohan Lodge	1 (8)

Table-4.7: Court, area of the building, area of the compound in railway quarters

Sl. no.	Type of quarter	Size of court in ft.	Area of court in sft.	Area of building sft.	Area of compound in sft.
1.	Subordinate staff quarter sq, 37/21, bungalow type			2574	
2.	Omdoam staff quarter salary upto Rs. 400	30x27	810	2003	2810
3.	Chief clerk bungalow			1900	
4.	Subordinate staff quarter sq, 27/20, bungalow type			1518	
5.	Indian staff quarter	21x23	483	1078	1540
6.	Subordinate staff quarter sq, 117/3	21x19	399	1016	1476
7.	Subordinate staff quarter, 214/1	15x22	330	760	1096
8.	Subordinate staff quarter	9'-6" x 15'	143	760	924
9.	Standard-1 type quarter	13x25	325	552	877
10.	Subordinate staff quarter, sq, 211/5	8x15	120	344	467
11.	Indian staff quarter	7x7	49	242	324

In spite of its type (zamindar, urban, government, railway, *dak* bungalows and circuit houses etc.) the colonial compounds had the general and typical components such as house block, service block, approach/drive way, lawn, garden, terrace, enclosure-boundary wall/fencing, gate/gate house, service entry, animal shed, bird aviary, hobby areas, *pukur*, *indra*, *tulshi mancha* etc.

4.2.1 House and bungalow block

The proportion of house area to the compound area varied much in the various types of houses. The built area is 242 sft., in 324 sft. of compound in the railway quarter for the Indian staff (table-4.7). In some of the urban houses, the built area covered the whole site leaving no space around (fig-5.9, 5.11). The built form started from the boundary line all around (fig-8.9.1).

Sometimes house blocks are placed at the front side (on the boundary line), keeping the open space at the back (fig-5.10) or the house block is placed at one side of the compound keeping the open space at the other side (fig-5.13.1). the type of arrangements, keeping no space in one side or around are found mostly in the old parts of the towns. This type of arrangement covering the whole compound is also practiced in the shop houses (fig-5.14, 5.15). Again, houses of unexpectedly large in the large compounds (table-4.6) are found in some of the zamindar (4.44 fig-8.20.1) and government houses (fig-5.27).

The location of the house block in the compounds depends on many factors like, site conditions, privacy, relationship with the neighbours, views, environmental factors etc. The colonial builders located the house (rural and urban) blocks almost at the central position of the compounds, keeping sufficient spaces around the built forms. The various types of setting of the house blocks are shown in the (fig-4.11.1-4.11.12).

The setting of the house/ bungalow blocks in the compounds leaving sufficient spaces around are found in the rural, urban, zamindar, government, railway, settlement township, *kuthi* garden, *bagan baries*, *dak* bungalows and circuit houses, which satisfied the requirements of the third culture in this country. The house/ bungalow blocks were always dominatingⁱⁿ position, size, and builtform. The houses/ bungalow blocks were always visible from the approach roads.

4.2.2 Service block

The separation of the service block was also found in the traditional or urban courtyard type houses. The service blocks included the kitchen, store, fuel store, stables/ garages, servant quarters, maid quarters and local ladies specially kept for the *shahebs*. Sometimes this service block was one single structure (fig- 4.8.6, 5.13.1 8.16.2) or the kitchen, servant quarter, stables/ garages etc, were accommodated in separate structures (fig-4.11.2, 4.11.3, 4.11.4, 4.11.6, 8.29.1). Native dwellings and service blocks were always located at a safe distance from the bungalows built for the *shahebs* (4.45). Service blocks were always located at the rear side (4.46) of the compound preferably. In doing so, sometimes the service blocks were placed at the

south of the bungalows (fig-8.4, 8.29.1). Usually the colonial designers tried to place the service block at the leeward side (fig-8.10.1)

4.2.3 Gate and gate house

Usually each and every house had the gate. The large urban, government zamindar railway and circuit etc. houses had more than one entry gate. *Sinha darwarza* was common in the zamindar houses (fig-4.12.2.3). These entry gates were more or less decorated in every cases. The people who could not afford to decorate the gate, usually used two timber or G.I. posts for the definition of the entry. Usually iron grille shutters were used for the security as well as visual control (fig-4.12.27). The gates of the zamindar houses (fig-4.12, 4.12.2.1) or large government bungalows in most of the cases associated with a gate house, guarded by the *paiks*, *darwans*, and *chowkidars*. Decorated brick entry gate was common. These red bricks or white (washed) gate posts was important markers of entry(4.47) in most of the houses. Different types of gate and gate houses are shown in fig-4.12.1.1-4.12.2.9. A three storied gate and gate house (Neemtali gate) constructed in the Neemtali *nawab bari* (4.12-4.12.14)

4.2.4 Landscaping

The house block, service block, gate and gate houses were always associated with the landscaping elements like flower garden, pave yard, lawn, drive, enclosures, terraces, water bodies, *ghats*, *indras*, *tulshi mancha* etc. Each of the houses had the flower gardens. The terrace, drive, and hedges etc, were always associated with various types of flower beds. This was essential for religious activities of the Hindu households.

4.2.4.1 Paved yard

Uthans are seen in the rural, urban, zamindar, etc, types of houses. Some times these *uthans* are found paved (fig-4.13). Most of the urban courtyard type houses have the paved courtyards.

4.2.4.2 Lawn

Besides the internal courts in the courtyard types urban and zamindar house, external green spaces-- 'lawn' were located in the bungalow type urban (fig-8.10.1), government (fig-8.29.1), zamindar railway (fig-8.17.3, 8.17.4), satellite township houses (fig-4.23.3) *dak* bungalow (fig-8.38.1), circuit (fig-8.38.7), etc, houses. The colonial builders always tried to organize the total land area particularly the outdoor area of the compound for the best use by the occupants. They developed an integrated concept where the builtform and the open spaces in the form of lawns were developed simultaneously. Often lawn was a green space, an extension of a house block. These lawns might be located all around the compound, maintained by the native '*malies*'. Sufficient spaces were provided around the houses as a visual assurance for the occupants to know that they were safely located in their own cultural territory. These 'set back' (4.48) spaces were developed as lawn areas (4.49) The activities institutionalised as a major means of information exchange in the 'third culture', such as 'gossiping', 'morning coffee', the 'badminton' play, children's games, evening 'drinks' and 'garden' party as well as the 'reception' also took place there (4.50).

The green lawns against red brick bungalows in government (eg, Dinajpur and Khulna) and in some of the zamindar houses (fig-8.18.4, 8.18.6) had given a sense of contrast in colour.

4.2.4.3 Drive

Along the lines of approach to the compound is an extensional aspect of the compound (4.51). The colonists tried to build houses that restore to man, the life giving, life enhancing elements of nature, such as large and green lawns (fig-4.14, rows of trees (fig-4.14.3), long drive (fig-4.14.1), irregular walkways through the shaded green of the compound etc.

The spatial provision was made necessary by the transportation habits of the community of the upper class elite locals (natives) and the members of the third

culture, at first, in manual (*palka*) or animal propelled (*gharry*) carriage and subsequently in motor vehicles. Sufficient spaces on the compound had to be provided for storage, parking and maintenance purposes (stable, carriage house or garage) as well as a 'drive' (fig-4.14.3), the dimensions of which were determined by the speed, length and turning radii of the vehicle (4.52).

In most cases house blocks were provided on the elevated ground at the middle of the compounds for these to be seen specially when entering the drive (4.53)

Usually the drives were paved with brick, brick *khoa* and *surki* or concrete paving. This paved drives gave the direction towards the entry portico of the house block. There was an provision for turning the carriage in every bungalow type houses. The colonial builders designed the drives to make an impression of the builtform or compound attractive. In most cases the drive way was so aligned as to reveal the sculptural qualities not only the houseform, but also of the compound. In most cases the driveway did not split the compound, but it could maintain a harmonious relationship with all the parts of the landscaping elements. The driveways were short for ordinary urban and bungalow type houses but it was considerably long for the zamindar, government and circuit houses where the plot areas were large (4.54).

4.2.4.4 Enclosure

Enclosure was an important landscaping element by which the colonial builders used to give the definition to the territory of the compound. The degree and quality of enclosure were considered in relation to the functions of a given area. It was used for many reasons: to provide--a. the security to the compound, b. the privacy to the occupants, c. the direction of the movement etc.

Security was a prime consideration for the zamindars. Therefore, a sort of permanent security walls were provided around the houses (4.55). The native builders had used the high brick walls, sometimes they used the double or triple layers of walls for security, privacy and for the definition of different spaces-- public, semi public and private spaces. These boundary walls were made of brick (fig-4.15.3, 4.12.2.9) and

were decorated by using many techniques (fig-4.15.1, 4.15.2). The boundary walls were also used in the rural, urban, zamindar, dak bungalows and circuit etc, houses.

Enclosure for privacy need not be completely rigid. The colonists usually did not provide the permanent boundary around the compound (eg, D.M. Rajshahi, Comilla, bungalow no 35, 27 Ramna government colony), rather they used a sort of perforated boundary elements- a statically placed screen of hedges (4.56). The compound was defined by clear territorial marking (4.57), the boundary being demarcated by a low wall, hedge and high walls (fig-4.12.2.7). All over the Bangladesh fences appeared to exist for the purposes of marking boundaries than for any protection they afford against intruders (4.58). Sometimes grilled or iron fences boundaries were also used (fig-4.4.15.1, 4.15.2).

In absence of solid boundary walls and for the simple and rectangular configuration of house blocks, the bungalow outdoor spaces could not form a feeling of enclosed spaces, rather these were a sort of lost ground (eg, governor's house, Dhaka). By using the landscaping elements like, gate, entry house (governor's house), hedges, plantation etc. the colonial builders tried to create the interesting outdoor spaces.

4.2.4.5 Terrace

A raised terrace of concrete paving, brick soling on edges with wide joints for grass to grow on, was found suitable for more natural surrounding, eg, near the *uthans* or next to the verendahs. Neat dressed paving slabs or cemented paved terraces proved useful, close to the house as an outdoor sitting place or play ground for the children. A terrace, after all, was a connecting link between the house and outdoor life (of the people of the third culture) in the garden. Such type of terraces were seen in some of the zamindar (eg, Puthia *rajbari*) and urban houses (eg, Sattelite township house of Devendra Nath,). The terraces of Murapara house are very meaningful as they were located close to the bed room, dancing hall, and verendahs, and formed part of the verendah and living room etc, opening outside. Sometimes, roofs of the houses were used as roof terracing and roof gardens (4.59) in many houses (Murapara house, Prem kanon, Khulna).

4.2.4.6 Water body

At the early period of the colonial era, the European liked the river fronts of the (4.60) towns. The European 'settlement on the river banks was therefore common, (4.61). Most of the indigo and silk *kuties* were built along the river banks. All these were on the bank of natural water bodies. But most of the European at the later stage, avoided the excavation of tank for avoiding the water borne diseases and mosquitoes (4.62) which caused malaria). 'The site of the house should be high and dry, as far as possible from marshy land and the neighbourhood of a 'tank' or pond should be avoided' (4.63).

Pukur(fig-8.22.3, 8.23.4, 8.16, 8.16.5, 8.17.1, 8.18.2), *indra* (fig-9.17.1) and tube well (fig-4.17.2) etc, were used in the rural, urban, zamindar government, dak bungalows and circuit houses. Sometimes, small reflection pools were found in the houses of many European (4.64). and local elites. Sometimes, the moat around the house was dugged for security purposes. Security moats of such type was dugged around the Natore *rajbari* (fig-4.11.1) and Digapatia *rajbari* etc. The settlement of painam village in Sonargaon is also enclosed within a moat which was perhapos dugged as security moat of the settlement (4.65, fig-2.2).

4.2.4.6.1 *Pukur*

In many rural (fig-5.2, 8.1), urban, and zamindar houses (fig-8.17.1, 8.18.2) had few ponds, which were used for bathing purposes. Some of the ponds were used as reflection pool for the manificent houses. The height of the Murapara house and the distance between the house and the pond in front of it was so calculated that makes the full reflection of the front facade seen from the approach road (fig-8.18.4).

The pond in the rose garden was used as for pleasure boating (fig-8.22.3). The moat around the Natore *rajbari* (fig- 4.11.1) provided security and *parda* to its female occupants.

The ponds and the reflection pools were of different shape (fig-8.37.3). The rear pool of Mymensingh *rajbari* is in oval shape (fig-4.17.1, 8.16.5). These pools were

used for growing water lilies. The pool of Balda garden (4.66) was famous for growing water lilies and lotus.

The *pukurs* in the bungalows of European *shahebs* (in the government colonies eg, D.M. Rajshahi, Comilla, S.D.O, Brahmanbaria etc,) were not used for bathing purposes, as the European did not like to have bath in the *Pukurs*

4.2.4.6.2 *Pukur ghat*

Usually, the *pukurs* in the colony areas were the simple water bodies. But the *pukurs* in the rural, urban and zamindar etc, houses were used for bathing, washing, water supply etc, purposes. *Pukurs* in the houses of well to do persons in the rural areas, urban and zamindar houses had the *pucca ghats* (fig-4.16) where people spend sometimes for gossiping in the time of bathing, washing or filling their pitchers. The *pukur ghat* was considered the space for socialization. Usually the well to do persons had two *ghats*, one for males, other for the female folks. A permanent brick enclosure is found in the female *pukur ghat* in the Putia *rajbari* (fig-4.17.3)

4.2.4.6.3 *Indra*

Indras extensively used throughout the country by the European and locals. *Indras* were used in all types of houses. More than one *indras* were used in the houses of well to do persons (fig-8.9.1). *Indra tala* or *indra yard* is used in similar way as the *pukur ghat* where people take bathe, wash clothes, fill the pitchers and spend sometimes for gossiping. *Indras* were also used in the railway and government bungalows (fig-4.17.1).

“Two wells were preferable, one for the use of servants and native staffs, another for the exclusive use of the (European) resident” (4.67). “On the compound, the well should be screened from view by shrubs and trees planted around it. As native servants have continuously to be going to the well both for performing their ablutions there and for drawing water... There should be a pathway to it made for them exclusively, cut off entirely from the rest of the garden by means of a hedge. This is desirable not only for the purpose of keeping the garden... secluded but also for the safety of its produce” (4.68).

4.2.4.6.4 Tube well

Generally tube well was not popular during the colonial period in this country. Yet few tube wells were found in the urban and zamindar houses (fig-4.17.2). Gradually the tube wells had been replacing the indras in the urban, zamindar and government bungalows in the late colonial period in the 20th century.

4.2.5 Tulsi tala

Tulsi mancha is found in the Hindu households of all types similar to the traditional Hindu households. *Tulshi mancha* was also seen in the government bungalows occupied by the local Hindu officials. Sometimes the *tulsi mancha* was decorated in different forms (fig-4.18.2). *Tulshitala* was always at the female domain area of the house.

4.2.6 Animal shed

In the houses of the *shahebs* or zamindars 'fierce dogs' were kept along with *chowkidars* to keep watch over individual compounds (4.69). In some of the bungalows, dogs were reared to keep watch the gate, rather than *chowkidars*. The dogs of Sarail (Brahmanbaria) was famous for this purpose. These dogs and other domestic animals like cats, deers etc, were reared (eg, bungalow no-35, Ramna colony, Dhaka) at the back of the houses

4.2.7 Bird's aviary

Birds were also reared similar to the animals. Bird's aviary are also found in many houses and bungalows which were temporary in nature and were constructed in C.I. sheet, bamboo etc, materials, most of which are now disappeared. Few of these aviaries are still found in the bungalows of Ramna colony, Dhaka. A beautiful aviary (faery house) was constructed in the Premkanon, Khulna (fig-8.23.4)

4.3 Elements of houses

The house planning and design together with the details and profuse use of the elements made the houses beautiful and magnificent. The various types of elements--structural, environmental, decorative, functional etc, used in the houses helped to form a typical colonial house character. The elements used in the colonial houses of different types are shown in the table- 4.8.

Table-4.8: Elements of houses

Sl. no.	Type	House elements
1.	Structural	Orders (columns), wall, arch, lintel, vault, dome, beam, bracket
2.	Environmental	Shading device, drop
3.	Decorative	Base, capital, sill, projection, moulding, pediment, rusticated block, pinnacle, kiosk/ coupla
4.	Functional	Plinth, step, Alcove, Wardrobe, opening, door window, fire place, chimney, parapet, spout, ventilator, railing, balustrade, grill

4.3.1 Plinth

The plinth of the colonial houses was quite high and for the climatic and health reason the plinth was usually raised between one and two feet above the ground (4.70). Foundation, walls and floors might receive water percolating from adjacent ground which might rise through the walls and ground level floors. Therefore the plinths, sometimes, were raised high upto about 4'-0" from the ground (4.71, fig-4.19.2) Low height plinths were also common in the shop houses and *kuti baries*. There was almost no plinth in the *bara kuthi* Rajshahi (fig-8.36.4).

To avoid the penetration of dampness in the houses, series of brick vaults were used at the plinth level in the houses of southern and central regions (4.72, fig-4.19.3). This penetration of damp through the floors was avoided by practicing other technique- '*tahkhana*' in some of the zamindar houses in north Bengal, eg. Dinajpur *rajbari*. Again this problem is avoided by using the timber floors in some of the houses eg. bungalow of Lt. governor at Dhaka (4.73, fig-8.29.2). Generally plinths were decorated and introduction of few horizontal bands at the plinth was a common feature (fig-4.19.6, 4.20.6, 4.20.7, 4.20.8, 4.20.10) found in almost all types of houses. Sometimes the plinths are slightly projected (fig-4.20.9, 4.20.11).

4.3.2 Step

Generally two to three steps were designed to cover the plinth height of the houses. Steps were the medium for vertical communication. Sometimes, these steps are used

as gossiping and sitting space (fig-4.19.4-4.19.6, 4.20.1, 4.20.2, 8.8.2-8.8.4). Again, guests were received on the steps. The steps provided in the zamindar and government houses were 'used as a spatial device to express the occupant's status in relation to that of indigenous guests; if you were greeting a prince of a certain standing you had to go down to bottom of the steps outside to meet him. With one of less standing, you would greet him on the top steps and one of no standing you would probably greet while you stay in your study' (4.74). The steps were comparatively wide 12" to 15"/ 20" in width. Nosings were used in some of the houses

Ramp was not provided in the houses for general use. A ramp in the river *ghat* at Murapara house was designed for bathing of the elephants.

Usually, the steps are straight, but circular steps (fig-4.20.3) or special shape (fig-4.20.4, 4.20.5) are seen in some of the houses.

Roaks are the sitting place on the steps at the entry of the houses (fig-8.8.4, 4.20.2). Sitting and gossiping on the *roaks* is a common practice in this country. Different types of steps and *roaks* are shown in fig-4.19.1-4.19.6, 4.20.1-4.20.4,.

4.3.3 Column

Columns of various orders, doric, ionic, corinthian, tuscan and composite etc, were built in the houses for both structural (eg, Taras *rajbari*, Putia *rajbari*, Dinajpur *rajbari* etc) and decorative purposes (eg, rose garden, Dhaka, Sarder *bari*, Sonargaon, Baliati palace, Manikganj). The doric order of Greek columns began as tapered tree trunks, the function of the square 'abacus' and circular 'echinus' comprising the capital (fig-4.21.3) being to gather and transmit the load of the entablature to the column shaft (4.75); is found in many houses (fig-4.21.3). The circular shaft of doric column diminishing at the top stands either without base (fig-4.19.7, 4.21.1, 4.21.2) or with base (fig-4.21.3) rests directly on the floor. The doric columns are found both as plain (fig-4.21.3) and fluted in Mymensingh *rajbari* (fig-8.17.2) and Dinajpur *rajbari*.

The 'ionic order' is specially remarkable for its 'volute' or scroll capital (fig- 4.23.6) which like many other decorative motifs, many have been derived from the Egyptian lotus' (4.76) found in many columns used in colonial houses (fig-4.22.4) (eg, Dinajpur rajbari, house of Profulla Baral, Nimtalla, Dinajpur, Ahsan Manzil etc,) are taken directly from the Greek (4.77) and Aegean architecture. This volutes exhibit distinctly vegetable type (4.78). These ionic columns of long and shallow, plain and fluted shafts are found in many houses.

The 'corinthian order' (fig-4.23.1-4.23.3) used in many rural, urban, zamindar, government, *bagan* barics etc, houses did not evolve from a constructive basis like the doric or ionic (4.79), rather it is found as a decorative variant of the ionic, the difference lying almost entirely in the column capital. The 'tuscan order (fig-4.21.1) was found in the people of lower middle class (eg, house of T. Ali, 12, Topkhana road, Dhaka) as this is very simple type of column.

Generally 'henostyle' (fig-4.21.6) was followed, but other styles- 'distyle' (fig-8.20.4, 4.21.5), 'tristyle' (fig-4.23.2, *Barakuthi* Sardah), 'hexastyle' (eg., mandir of Teota palace, Sivalaya, Manikganj), 'Octastyle' (fig-4.21.7), 'dodecastyle' (fig-4.21.4) Muktagacha *rajbari* (etc,) are also common. The columns in large family *mandirs* are usually hexa, octa and dodeca styles in form. Double height column are found in many houses (4.80).

Factory made cast iron columns were also used as structural columns (4.81). Curved linings were done (fig-4.21.15, 4.21.9, 4.22.2) on the cast iron pillars. Sometimes wooden columns were used in the houses (4.82 fig- 4.21.11). The wooden columns were usually used in the verendahs. Sometimes, the orders were often used inconjunction with the piers (fig-4.21.10), walls (fig-4.21.19) and then lost their structural importance and became chiefly decorative. Usually the columns are circular, but other shapes- octagonal types (fig-4.21.8, eg, houses of Prasana Kumer, B.K. Das road, Dhaka, Ranir Kutir, Comilla Munshi bari, Laxmibazar, Dhaka etc,) are also found in some of the houses, engaged columns (fig-4.21.14) are also found (eg, house of Durga Das Adikary, Das engineerpara, Rangpur) in some of the houses.

4.3.3.1 Nonstructural (false) column

Sometimes nonstructural columns (4.83) were added either with the piers (fig-4.21.10), walls (fig-4.21.9), corner of the house (fig-4.22.5), or to the arches for decorative purposes. Irrespective of their types, the columns have a clear base, capital and shaft- either plain or fluted.

4.3.3.2 Capital

The distinctive features of doric capitals consists of the 'abacus' and 'echinus' (fig-4.22.3)). The abacus which forms the upper member of the capital, is a square slab, the echinus stops the vertical lines or the shafts (4.84. fig-4.21.16, 4.21.17)

The distinctive features of the ionic capital (fig-4.23.5, 4.23.6) is the ram's horn type 'volute'(fig-4.23.6) derived from the Egyptian lotus (4.85). The distinctive feature of corinthian capital which is much deeper than the ionic and in most cases decorated with floral elements specially with the acanthus (fig-4.23.1-4.23.3) of Greek and Roman leaves (4.86), though of variable height at first, settle down to a proportion of about 1 and 1/6 dia-meters high (4.87). This scientific ratio and proportion of capital with the diameters are not always maintained.

4.3.3.3 Base

The orders might not have any base (fig-4.21.1, 4.21.2) or the shafts have the bases (fig-4.22.3, 4.21.18) found are rectangular (fig-4.21.3), circular (fig-4.21.2), octagonal (eg, Ranir kuti, Comilla) etc, shapes befitted with the shape of the shafts and capitals. Sometimes, 'kalasha' shape bases are used in some of the shafts.

4.3.3.4 Pier

Piers (4.88) were used either for supporting the arches in the arcades (fig-8.29.4). or to support the beams (eg, bungalow, civil surgeon, Khulna fig-8.30.3). These piers were also applied to the walls between doors and windows. The piers were always heavy (fig-8.3.1) seem over designed. The plans and sections through the piers are shown in fig-4.24.

Sometime the column like piers are found in some of the houses (fig-4.24.4, 4.24.7). Like colums, the piers also have the bases (fig-4.24.2, 4.24.5) and the capitals (fig-4.24.3, 4.24.8, 4.24.9, 4.24.10).

4.3.4 Wall

The walls of the houses were always load bearing brick masonry walls. No stone masonry wall houses were found in this period. The walls were always load bearing for providing the arcades and colonade. The walls were massive and the thickness was 15" to 20", sometimes 30" walls are seen in some of the houses. 40" walls are also found in some of the older houses (eg, zamindar house of Rajeswar Rai Chowdhury, Kalaskati, Barisal). 10" brick walls were practiced by the railway engineers at the late colonial period, in the beginning of the 20th century.

Internal walls were also 15" to 20" thick. No walls of 5" thick are practiced in this period. Walls were usually coated with lime plaster inside and outside. Red brick unplastered surfaces were practiced in the railway houses (fig-8.32.3) and some of the government (eg, Ramna colony, Dhaka fig-8.24.3), circuit (eg, Khulna), zamindar (eg, Murapara house fig-8.18.6, Gagan Shah, Brahmanbaria) etc, houses (4.89).

4.3.4.1 Alcove

The thickness of the walls was helpful for providing the alcoves in the walls found in many houses (fig-4.25.1-4.25.3). These alcoves in the walls were used for keeping images, storing books and lamps. Alcoves were also provided in the verendahs, gatehouse (eg, gate of Jainta *rajbari*, Sylhet) and even in boundary walls (fig-4.25.4).

4.3.4.2 Wardrobe

Sometimes wardrobes were designed to fit in the walls and found in many houses (eg, houses of T.Ali, 35, Topkhana road, Dhaka, Prem kanon, fig-8.23.1, Khulna, Murapara house, etc,) for storing the clothes and other belongings. The size of the wardrobes varied from house to house. The front of the wardrobes was always closed with wooden shutter .

4.3.5 Arch

Arches were the new type of architectural elements extensively practiced in this period in all types of rural (fig-8.3.1-8.3.3), urban (fig-8.8.2-8.8.3), government (fig-8.24.5) railway bungalow (fig-8.32.3) *dak* bungalow (fig-8.38.4), satellite township (fig-8.16.6), and shop (fig-8.13.5) etc, houses. Most of these arches were semi-

circular (Roman) arches replacing the earlier two centered, four centered and gothic pointed arches, although the pointed arches are seen in some of the houses (fig-8.10.2, 8.13.5). The types of arches used in various types of houses are shown in (fig-4.26.1-4.26.12).

In most cases the arches are rested either on columns (fig-4.26.13) or on piers (fig-8.3.1) Again, sometimes arches are rested one side on columns and other side on piers or walls (fig-4.26.14). Sometimes brick flat arches are seen in some of the houses (fig-4.26.12).

4.3.5.1 False arch

Double arches one above the other were constructed in many houses (fig-6.1.6, 4.46.2), where the bottom one was the false and did not bear any loads.

4.3.6 Opening

The openings were tried to keep to a minimum span and followed the pattern of both arched (fig-8.17.4) and flat (fig-4.27.6) headed forms. The corridors were both arcaded (fig-8.3.1) and colonaded (fig-8.20.4). The flat headed openings are spanned either by lintels (fig-4.28.2) or by flat arches (fig-4.26.12).

4.3.6.1 Door

Doors of various sizes and shapes are found in this period. Door sizes varied from 3'-0"x6'-0" (eg, some of the old houses in Painam village, Sonargaon, Shakhripatti, Dhaka etc.) to 5'-0"x10'-0" (glazed door of circuit house Chittagong. The materials of the doors (door frames and shutters) were always timber and the number of the shutters were two. Sometimes four shutters folded doors are also found (fig-4.27.12) and *nawab bari*, Comilla) in some of the houses. Various types, such as, ordinary double shutters (fig-4.27.1), simple single planked (fig-4.27.2), battened, ledged, and braced (fig-4.27.3), panelled (fig-4.27.5), louvered, two divisioned, fig-4.27.4.2. three divisions, fig-4.27.4.1, four divisions, glazed (fig-4.27.9) etc, are found in the houses. Both wooden shuttered and glazed shuttered were used at a time in some of the houses, eg, *bagan baries* circuit houses, government houses, Ramna colony, zamindar houses etc. The doors were either arch headed (fig-4.28.1.1) or flat headed (fig-4.27.6). Sometimes, circular headed shutters are also found (fig-4.27.8).

Traciodal door is found in many houses (fig-4.27.1) which is peculiar in its type. The louvered doors (fig-4.27.4, 4.27.6, 4.27.10.2) were very popular. The door frames were decorated in the urban, zamindar, circuit and government houses. Decorated wood works in the door shutters are also found in some of the houses (eg. *bagan bari*, B.K. Das road, fig-7.52, houses of Shamsul Huda, Gokarna, fig-7.53, Mohendra Gosh, Khulna town, Abu Monsur, M.P. Khulna, etc), steel doors and windows are also seen in some of the houses (eg, house of Diren chowdhury, Gorera Thakurgoan).

4.3.6.1.1 False door

To balance the facades or to give the impression of symmetry, sometimes the false doors in the same design of other doors of the facade or of the room are provided in the walls (fig-4.28.6.1).

4.3.6.2 Window

The window openings were either flat headed (fig-4.28.2), supported by lintels, steel angles or flat arches or arched fig-4.28.1.2, 4.28.1.3). The window size varied from small size in the rural and urban houses (eg, 2'-0" x 3'-0" in the houses of Khan Bahadur Basiruddin, Ukilpara, Noagaon, in the booking clerk's quarter, Natore) to very large size french windows in the urban, zamindar, government and circuit etc, houses (fig-4.28.3.1.2). french windows with flat (fig-4.28.3.2) or semi-circular arch headed were the common feature for many houses. These French windows had either single large openings or these were divided at the middle into two or more by a horizontal member (eg, house of Devendra Mohan Das, 1, Nawab street, Dhaka).

Sash windows, placed almost flush with the outer face of the walls to protect it from the rain. The openings were surrounded by moulded architraves (fig-4.28.1.2) and frequently surmounted by small columns (4.90) (eg, house of Profulla Baral, Nimtala, Dinajpur). The 'bifurcated tracciodal' (4.91) type window (fig-4.28.5) was a typical feature found in many houses. Circular openings such as 'rose' (fig-4.28.4) and wheelwindows are seen in some of the houses (fig-8.24.4)

4.3.7 Sill

Two types of sills are seen in the colonial houses-- one, simple sills with no special treatments (fig-4.29.1) and the sills with special treatments (fig-4.29.6). These horizontal closures at the bottom of the window openings were always specially treated either by a horizontal lime concrete band (fig-4.29.5, 4.29.6, 4.28.1.3) or a decorated moulding (fig-4.28.1.2) found in many urban (fig-4.28.2), zamindar (fig-4.28.3.1.1) and government (fig-4.28.2) houses. A slope was always maintained outward in these sill bands for proper drainage. The sill height is commonly varied from 2'-6" to 3'-0". Sometimes the sill corners are cut at an angle to avoid the sharpness of the corners (fig-4.29.7).

4.3.8 Lintel

Most of the window openings in the colonial houses were covered by either segmented or other types of arches. Separate lintels were not used for small door and window openings. These were supported by the door and window frames (eg, house of Khorasani, Joessore road, Khulna). Sometimes the door and window openings were covered by using the timber and iron angles (fig-4.30.7-4.30.9). R.C.C lintels were not common.

4.3.9 Shading devices

Shading devices were designed for the houses built in the early colonial period in the mid 18th century. Sometimes small projections over the doors and windows were provided in most of the houses (fig-4.46.1). Openings of windows during the period of driving rain would admit rain and spray; while closing of windows would create intolerable conditions in the indoors. The conventional tilted louver blades in the window shutters (fig-4.28.2) were to some extent proved satisfactory. The continuous corridors and verendahs were perhaps the best traditional method of protecting the rain, wind, driving spray and sunray. Various types of shading devices on the windows made of various materials (lime concrete, fig-4.30.7, plain iron sheet, fig-4.30.8, wood, fig-4.30.9 etc.) were used in the houses. The depth of the projections varied from few inches to 2'-6" (fig-4.30.9, 4.30.8). Sometimes the lime concrete inclined shades were supported by the decorated brackets (fig-4.30.2).

4.3.10 Drop

Various types of drops were used to shelter the openings, verendahs and windows from the horizontal sun rays and driving rain. In order to provide additional sun protection in the verendahs, drops of various materials (wood, plain iron sheet, L.C. Lattice work etc,) were sometimes inserted between the columns (fig-4.31.2) or piers (fig-4.31.3) in the arcades. Drops of tinted glass in the upper portion of the arches were used in many houses (eg, Murapara house, house of Sita Nath, 4, Walter road, Dhaka). Various types of drops are shown in fig-4.31.1-4.31.3.

4.3.11 House corner

The corners of the houses were specially treated. The corners were comparatively heavy (fig-4.33.1-4.33.6), mouldings, projections, lines and bands (fig-4.33.7-4.33.9) etc, were made in the corners. Solid corners with horizontal bands were a typical detail found in many houses. Sometimes these corners were decorated. Again, sometimes circular false columns were added in the corners (eg. Rose garden, fig-4.22.1, house of Jatindra Kumaer Shah, Dhaka). The corners of the red face brick houses (eg, Ramna colony and railway houses) were also detailed with horizontally banded brick masonry (4.92, eg, bungalow no. 35, Ramna colony).

4.3.12 Railing

Railings of various types and various materials were used in the houses. These railings were both simple type comprising few wooden horizontal and vertical elements of wood (fig-4.34.1) to complicated precast iron railings (fig-4.34.5). The L.C. *jali* works are also found in the railings of some of the houses (fig-4.34.2). Most of the designs in the railings were carefully designed. The horizontal elements, vertical balusters, and the inclined members were so designed in the houses (eg, bungalows of D.M, Khulna, Circuit house, Chittagong, etc,) that the total composition of the railings was balanced. The hand rails were wooden (fig-4.35.3) in most of the houses. Beautiful and decorated machine made iron balusters were produced in this country during the period of industrial revolution (fig-4.34.5). The machine made railings were very thin. Sometimes the thick brickwall railing is also

seen in some of the houses (fig-4.35.1). The railing varies from 3'-0" to 3'-6" in height

4.3.13 Balustrade

Balustrades of various materials (wood, iron, L.C, brick masonry etc,) were used in the houses. Wooden balustrade was not used outside the houses. Balustrades of permanent materials (L.C, fig-4.6.3 and brick masonry, fig-4.35.1) were used outside the house. The newel posts, balusters and the hand rails of outside balustrades were always with permanent materials like iron, brick masonry, L.C, C.C, etc. The balustrades of wood (fig-4.6.2) and iron were used in the interior. Wooden decorated balustrades were used in some of the houses. Balustrade of the *Kuti bari* of Wais at Waisghat, Dhaka is considered the masterpiece in the field of wood craftsmanship in Bangladesh (fig-4.35.4). A typical colonial balustrade feature made of wood, L.C, burnt clay developed in this country was popularly used in many houses (4.93, fig-4.34.11.1, 4.40.1, 4.40.3). The balustrade height varied from 3'-0" to 3'-6".

4.3.14 Grille work

Very simple types of grilles were used in the houses. Only horizontal and vertical (fig-4.28.2) steel (either circular or square sections) reinforcement were used for this purpose. Sometimes diagonal wire meshes were used for security purposes. Wooden lattice works were also common and found in many houses for privacy reason.

4.3.15 Beam

Traditionally wooden beams were used in the houses. During the early part of colonial period timber beams were used in almost all the houses. Sometimes double timber beams were used to support the thick walls. After the industrial revolution (4.94) in England, the colonial builders used to work with the steel joist as beams in every types of houses (4.95). At that time attempt was made for replacing the traditional timber beams with iron (4.96). Even an ordinary man's house had one or more became an essential and worthy object of such (steel joist) element.

Towards the ends of the 19th century R.C.C appeared as alternative material (4.97) which was practiced in few houses in Bangladesh. The practice of R.C.C beam and slab is found in the north block of the house of Reboti Mohan lodge at Sutrapur,

Dhaka, which was possibly constructed in 1930s of this century. Cantilever beams in both wooden (house of Md. Hasan, 34/1, Jindabahr 1st, lane, Dhaka) and iron joists (eg, Prem Karon, Khulna) are found in many houses. Sometimes iron joists are covered by lime concrete (eg, *ghat* house, Painam nagar, Mymensingh *rajbari*)

4.2.16 Bracket

Brackets of various types and materials (steel fig-4.36.4, wood fig-4.36.1, lime concrete, cement concrete fig-4.36.2 etc.) were used in the houses. These were structural in most of the cases (fig-4.36.1), and sometimes brackets for decorative purpose were also used (fig-4.36.3) in the houses. A beautiful floral decorative bracket is designed to decorate the house of Prasanna Kumar Das at B.K Das road, Dhaka (fig-4.36.3).

4.3.17 Fire place

Fireplace introduced by the people of third culture into Bangladesh, whose function was largely symbolic. This gave them 'the pleasure of seeing one to make them think they were 'at home' (4.98), Though infrequently used for its original purpose, the 'mantle piece' provided a focal point for the display of third culture object. The third culture objects placed on the 'mantle piece' included silver candlesticks, ornamental plates, framed picture of the head of the state, etc, Fire places were used in the bungalows (fig-4.37.1) of high officials (D.M,D.J, C.S etc). circuit houses (fig-4.37.2), zamindar houses etc. It was always located in the drawing rooms.

4.3.18 Chimney

Fireplaces in the government, zamindar and circuit houses were always associated with small chimneys. Chimney was an essential feature in the colonial houses for the nature of fuel they used. Chimney was used in the urban, zamindar (fig-4.38.3), railway (fig-4.38.1, 4.38.4, 4.38.5, 4.38.6), government, satellite township and circuit houses. Various types, sizes and shapes of chimneys (fig-4.38.1-4.38.7) are found in the houses. Generally, the chimneys are placed above the kitchen. Sometimes the earthen vent chimneys (fig-4.38.6) were used in the railway quarters (Tejgaon, Sylhet etc). Sometimes the chimney shafts are carried up boldly above the roof (fig-4.38.1). The chimneys were always found covered and various detailings

were adopted to avoid the penetration of rain water. Sometimes large size chimney was designed on the kitchen block of the zamindar houses (fig-4.38.3).

4.3.19 Projection

Usually the house plans were not left simple both in horizontal and vertical surfaces. Projections at various levels-such as plinth (fig-4.20.6, 4.20.7), sill (fig-4.28.1.3), lintel (fig-4.28.2), floor (fig-4.39.2), parapet (fig-4.40.10), even in pent house (fig-4.10.2) were made. These projections at various levels were considerably prominent. Projections were also made around the doors (fig-4.27.1) and windows (fig-4.28.1.3).

4.3.20 Moulding

Mouldings were extensively used in all types of houses except the railway quarters. Mouldings were few in the railway quarters, but decoration was done by the brick projections at various levels (fig-4.39.2), even in the chimney stacks (fig-4.38.1). Though moulding was not new, and found in many Hindu, Pre-mughal and Mughal buildings in this country, the development of mouldings was a marked feature of this period. Mouldings had been to be a gradual change from the simple beginning (eg, Neemtali gate) to the complicated (4.99) of the subsequent late colonial period. Mouldings are bold and deeply undercut. These bold and deep mouldings begin to indicate the influence of great European renaissance movement. Mouldings were always made of lime mortar, sometimes *chunam* was used on the mouldings. Generally the large projections in the mouldings are reinforced with the iron networks.

4.3.21 Parapet

Parapets in the houses were always specially treated and detailed with various types of elements. Parapets of considerable height were always made above the periphery of the roof. Perforation and decoration in the parapets (fig-4.40.1-4.40.3, 4.40.8-4.40.10) were the typical feature in the houses. The parapet balustrade with typical balusters shown in fig-4.40.2 was common and found in many houses. The perforation made in the parapets had two reasons: firstly, for the ventilation of the roof spaces, and secondly, for security reason, the *paiks* and *barkandas* used the

arrows, spears etc, through these perforations in the zamindar and *kuthibaries*. The height of these parapets varied from : 3'-0" to 3'-6".

Besides the perforated and ornamental parapets, other types of parapets of red bricks (fig-4.39.1), projected mouldings (fig-4.40.10) etc, are found in the railway, government and other types of houses. The height of this type of parapets (fig-4.39.2) is comparatively low and varied from 6" to 1'-6". Sometimes the parapet designs in the houses are similar and same in the area/town. Usually these designs were achieved by following each other or following the parapet of an important building.

The 'art nouveau' (4.100) had some influence on the parapets of few houses built in the late 19th and early 20th century. The designers of these houses deliberately avoided the traditional elements (eg, orders) of the renaissance houses by glorifying the parapets with the curve lines following the art nouveau style, originating in Europe at the end of the 19th and early 20th century. The parapets of some houses shown in the fig-4.40.1 constructed between 1880s and 1920s are found similar to the parapet works of Antonio Gaudi (4.101).

4.3.22 Spout

Usually rain water from the roof, terrace, verendah, balcony, etc, was cleaned through the spouts. Various types of spouts (fig-4.40.5) of ceramic pipes, C.I. pipes etc, were used in the houses. These elements were in various ways; sometimes animal and human figures were also used for this purpose (eg, Murapara house). Some time a hole in the parapet at the roof level is kept for the drainage purposes (fig-4.41.2).

4.3.23 Pediment

Pediment is a colonial element directly borrowed from the western world. These pediments of various sizes and shapes were designed over the houses to emphasize the entrances (4.102) and the centrality of the house block. Both the triangular (fig-4.42.2) and segmented (eg, bungalow no. 19, Ramna colony, governors bungalow, Dhaka) pediments are seen. Sometimes, small pediments are design on the windows (fig-4.42.4). Sometimes these are used as the element of decorations-eg, small pediments, alternately triangular and segmental are found in the 'ghat house' at

Painam village. Again, pediments of various sizes are used in the houses (fig-4.42.1-4.42.3). The pediment of the Ruplal house is unproportionately large (fig-4.42.1) resembling the pediments of the Parthenon, Athens (4.103), and temple of Zeus, Olympia, whereas very small pediments are used in the Muktagacha *raj bari* (fig-4.42.3). Sometimes these pediments contained the beautiful ornaments (eg, Mymensingh *raj bari*).

4.3.24 Rusticated block

Rusticated masonry is another colonial element exploited strongly in this country. The variation in the form of the pediment was limited. Therefore, the pediments were gradually replaced by the rusticated masonries or blocks of various forms- floral (fig-4.43.1), decorated masonry (fig-4.43.3), swan neck (fig-4.43.2) etc. The rusticated blocks found them as the art of free expression (fig-4.43.1) with the beauty of design as the predominant idea and used in many types of houses. Sometimes grand floral rusticated block containing floral and sculptural elements are found in many houses. A large size floral and sculptural blocks are found on the 'dance hall', Tipu Sultan road, Dhaka and Dubalhati palace, Noagaon (4.104).

The pediments and rusticated blocks were so popular in this country in the colonial period that the Mughal 'audience hall' and *hammam* in Lalbagh fort were redesigned by the colonial authority, and the pediment and rusticated block were added to the original Mughal structure of the 17th century, of course, which were again replaced by its original form in 1980s (4.105), thus saved the heritage the form.

4.3.25 Dome

The colonial builders adopted the new type of colonial element- dome (4.106), and used in the large urban, zamindar (fig-4.41.1), *bagan bari* (fig-4.44.2-4.44.3), and government houses. The size of these domes were both large and small, as for example, the imposing large dome, somewhat out of proportion is carried on the one storied structure of the Gauripur *raj bari*, Mymensingh (4.107). Again sometimes, the domes are so small that it seems to be unproportionate (eg, dome on the house of *Nawab* Shamsul Huda, Gokarna) found in some of the houses. The large size domes were always hoisted upon a high cylindrical drum and sometimes these were

associated with series of corinthian columns (eg, Ahsan manzil 4.108, fig-4.44.6) and governor's house. The domes on the houses of Rose garden, Dhaka, Mohendra Gosh, Khulna, etc, have raised on a series of piers and corinthian columns. Sometimes, free standing columns are placed around the free standing high drum (fig-4.44.6). The dome on the Tajhat palace, Rangpur, was raised on a high drum pierced with a series of window openings (fig-4.44.1)). Some of the domes have the lantern on the domes (fig-4.44.7).

Various types of domes-- hemispherical (fig-4.44.2), pointed (fig-4.44.6), segmented (bungalow of D.J. Khulna), onion shape (fig-4.44.5) etc, are found in the houses. The domes on Ahsan manzil, Dhaka, (fig-4.44.6) and Nitin Chowdhury, Ganeshtala, Dinajpur, are pointed. Double dome, one above the other are found on the Ahsan manzil (fig-4.44.6). In most cases domes were not constructed scientifically using the pendentive. The domes were always decorated with the moulded cornices (fig-4.44.7). Some times domes were divided and decorated with vertical lines (fig-4.44.3). Four perforated circular openings are provided on the dome of Rose garden (fig-4.44.3). The domes of the Mymensingh *rajbari* decorated with small divisions similar to the fish scales. In most cases single dome was placed on the top of the house on the middle of the front block, exception is found in Mymensingh *rajbari* where two pairs of small domes were placed on the two entrances of the *rajbari*. The domes were always dominant for its location in the structures. Therefore, the domes became the topmost point of the silhouette and formed the climex. The domes did not placed against the structural background, rather they were placed against the horizon line in almost all the cases.

4.3.26 Vault

Curved cove and horizontal brick vaults are found in few houses (eg, houses of Rajeswar Rai Chowdhury, Kalashkati, fig-6.3.1, Satish Podder, Painam nagar) in Bangladesh. Barrel and tunnel vaults were found to be used in the small structures (eg, roof of the lavatory in the areas of Dhaka, Brahmanbaria, Noagaon etc,) in many areas of the country. Such type of barrel vaulted roof is seen on the raised entry space of the manager's bungalow, Ahsan manzil, Dhaka (fig-4.45).

Jack arch vaulted roof (fig-6.5.1) is common and practiced in many railway quarters in Bangladesh. The semi-circular (fig-4.19.3) and pointed vaulted floor are also common practice and found in many houses in Barisal, Khulna, Rangpur and Tangail areas.

4.3.27 Ventilator

All types of colonial houses were well-ventilated. Besides the sufficient number of openings, the various types (square fig-4.46.2, circular fig-4.46.1, cross fig-4.46.4, vented fig-4.46.3, etc.) of ventilators were provided in the rooms. Sometimes the sky lights were provided (eg, *bara* and *chota tarafs*, Natore *rajbari*) in the rooms. Sometimes these ventilators were secured by the decorated steel grilles (fig-4.46.2).

4.3.28 Kiosk/ Cupola

The cupolas/ kiosks were erected as a terminal structure, square, octagonal or rounded in plan, rising above the main roof, particularly at the corners or the terminating points of the zamindar (fig-4.47.3), urban (fig-4.47.2), *bagan bari* (fig-4.47.1), government and circuit houses (fig-4.47.4). These cupolas/kiosks were vivid in size, style and design. The concept of cupolas is mostly borrowed from the Mughal buildings around.

4.3.29 Pinnacle

The building elements pinnacles/turrets went together with the cupolas/ kiosks in some of the buildings. These are borrowed from both the western and as well as from the Mughal buildings. Pinnacles/ turrets were mostly used in the *masjids* in Muslim households (fig-4.9.3). The pinnacles are also found on the entry structure of the Dinajpur *rajbari*.

4.4 Discussion

Various types of components--such as common components and special components, and building elements are identified and discussed in this chapter.

Usually the main entry to a house is through the verendah. But in the late 19th century a hierarchial order is observed in the government ' bungalows.

More than one entry was found in the houses. The main entry was always from the road. The secondary entries were used for the female folks, servants etc. Service entries were developed in this period for cleaners, methors etc.

Porticos became popular in this country after the introduction of the hackery carriage in 1860s and used in most of the urban, zamindar, government, *bagan bari* and circuit houses.

Drawing room in the houses was similar to the '*baithak khana*' in the traditional houses. Drawing room was the largest room in the colonial houses.

The provision of formal dining room / space with the main house block outside the kitchen area was a new concept in this country. The location of the dining room was in a position in the house which was easily accessible from the drawing, family space bed rooms and service areas. The location of drawing, dining and family space was such that these formed a large semi-private space inside the house to satisfy the social gathering for the people of third culture.

Bed rooms are the common components found in all types of houses. The shape of the bed rooms was always rectangular in all cases. Large bed rooms are found in the zamindar, *kuthi bari*, garden, sattelite township and circuit houses. Shop houses, railway quarters and the rural *dak* bungalows have comparatively small bed rooms. The bed rooms in the railway sheds, *patties* etc. are found very small in size.

Guest room was formally designed in the bungalows of the *bara* and *chota shahebs*. In the urban houses of the lower middle class family, there was not a definite guest rooms; any room was vacated or a room was shared for this purposes.

The *rajbaries*, zamindar houses, mansions of high officials, large urban houses had the hall rooms. These hall rooms are large in size and covered even 1000 sq.ft. in some of the above mentioned houses.

The bungalows of the *bara* and *chota shahebs*, whose services required extra time to complete the duty, had an office room in the bungalow. Office room also found in the chummeries.

Usually one stair case was used in the small houses. Dog legged or open newal stairs were used in ordinary houses. Service stairs- circular or ladder type were found in the government and zamindar houses. Various types of stairs are sometimes found in the large houses. Sometimes uncovered stairs were used outside the houses.

Dressing room is an another addition of colonial component. Traditional houses had no definite space for dressing. Attached dressing room in between the bed room and toilet is found in the government, railway, zamindar and urban houses. Changing and dressing rooms are also found at the *pukurghats* in some of the zamindar houses.

Bathrooms were the typical and important component of the colonial bungalows and houses. Bathrooms were not found in the traditional houses. An enclosed bathing space was designed in the railway quarters.

Attached toilet is an component introduced in this country by the European. Traditionally lavatories were placed at a distance from the house unit. After the introduction of *methor's* system during 1870s, service type latrines developed in all types of towns .

Usually dressing, bath, toilet, and service stair etc, formed a service area and arranged side by side, maintaining an hierarchy of spaces.

The verendah-- an essential and important component was taken from the traditional houses and it had for long been considered one of the most important component, fulfilling all sort of socio-economic functions. Besides its social uses, the verendahs were used as (1) entry and the purpose of waiting space for a stranger visitor, (2) space for keeping shoes, stick, umbrella, hat, etc, (3) a passage giving an independent

access to other rooms, (4) use for sitting in the evening or by night after dinner for gossiping, Verendah is a common component found in each type of houses. Besides the verendahs, covered and uncovered balconies of various shapes were also found in the houses.

Corridor is another type of linking, an important component found in some of the large houses. The corridors connecting the main blocks of the bungalows and the service blocks are seen in many government bungalows. Sometimes corridors are seen in the form of bridges connecting two blocks of the houses.

The kitchen, kitchen store, fuel store, servant rooms etc, were, sometimes grouped in an area known as service block and found in large zamindar, urban, government and railway bungalows. In the late colonial period, from the beginning of 20th century, the kitchen- nearer to or attached with the main structures, were found in some of the houses.

No separate servant room is found in the traditional houses. Servants used to sleep in the verendah, kitchen etc, places. Servant's room was separately built in the households of upper society in the zamindar, large urban, government and railway bungalows.

The pantry as a separate store space for the cooked and prepared food is a colonial component introduced in this country by the European. This space was furnished with built-in furniture. Fuels were stored in a store room adjacent or near the kitchen and found in every type of large houses.

Lamp room is another colonial component found in large government bungalows, chummeries, zamindar, and circuit houses .

Stables were constructed during 1860s and found in the zamindar, large urban and government houses. In order to save the houses from the smell, flies and tramping noise of the horses, these were built away from the houses, preferably at a corner and north at the backyard. Later on, stables were replaced by the garages for motor cars of the *bara shahebs*.

Few people could afford to devote a special room for *pooja* or *namaj* purposes in the houses of ordinary people. *Mandir* or *masjid* were built in the houses of the affluent people or zamindars. A small room for the *poja* was usually allocated in one of the corner of the Hindu households. No particular room, rather usually a particular space was allocated for *namaj* in the bed room, verendah etc, spaces.

Pent house was found in all types of houses. Dance hall is found in every pleasure house and in many zamindar houses.

The shops in the shop houses are always located in front of the structure beside the roads. The manufacturing area in the *kuthibaries* were always in the ground floor.

In spite of its type, the colonial compounds had the general and typical components, such as house block, service block, driveway, lawn, terrace, enclosure, gate gatehouse, service entry, hobby areas, *pukur*, *indra*, etc.

A logical hierarchy of covered, semi-covered and uncovered spaces are created in and around the bungalows upto the boundaries of the compounds. The size of the various compounds in a house varied according to the type of the houses.

Different types of setting of the house blocks in the compound are found. The proportion of house area to the compound area varied much in the various types of houses. The setting of the house blocks in the compounds leaving sufficient spaces around are found in all types of houses, which satisfied the requirements of the third culture. Again, in some of the urban houses in large towns, it is found that the built area covering the whole site leaving no space around. The separation of service blocks is found in all types of houses and these blocks were always tried to locate at the rear side of the compound preferably on the leeward side.

Usually each and every colonial house had the gate. The large government and zamindar houses had the gate house.

The house blocks, service blocks, gates and gate houses were always associated with the landscaping elements like paved yard, lawn, drive, terrace, water bodies, ghats, etc.

Courtyard or *uthans* are seen in the rural, urban, zamindar, settalite township etc, houses. Sometimes these *uthans* are found paved. Most of the urban courtyard type houses have the paved courtyards .

Besides the internal courts, external green spaces- lawns were developed in the urban, government, zamindar, railway, sattelite township, dak bungalow and circuit houses. The colonial builders developed an integrated concept, where the builtforms and the open spaces in the form of lawns were developed simulteneously. The activities institutionalised as a major means of information exchange in the 'third culture', such as gossiping, morning coffee, evening drinks, garden party and reception etc, also took place there.

Drive ways are found in the large urban, zmaindar, government, railway and circuit houses. Usually the drive ways are short in the ordinary urban and bungalow type of houses, but it was considerably long in the zamindar, government and circuit houses, where the plot areas were large.

Enclosure was an important landscaping element by which the colonial builders used to give the definition to the territory of the compound. Security was a prime consideration for the zamindar houses. Therefore, a sort of permanent security walls were provided around the zamindar houses. Sometimes, double or triple layers of walls were constructed in these houses. The colonists did not provide the permanent bundary walls, rather they used a sort of perforated boundary elements- a statically placed screen of hedges or barbed wires around the bungalows. Sometimes raised terraces of concrete paving or brick soling, near the *uthans* or next to the verendahs are found in many houses. *Pukur* and *indras* are found in many houses. Sometimes small waterbodies were built as a reflection pool, and found in many urban and zamindar houses.

The *pukurs* were always associated with the *pukurghats*. *Indra* was also popular in this country and found in all types of houses. Sometimes two *indras* were constructed in the bungalows of the European, one for the exclusive use of the *shahebs* and other for the native servants.

Generally, tube-well was not popular during the colonial period, yet, few tube-wells were found in some of the urban and zamindar houses. *Tulshi mancha* is found in the Hindu households. It was always at the female domain area of the houses.

Dogs, cats, deers, and birds were reared in some of the houses.

Various types of house elements-- structural, environmental, decorative, functional, etc, were identified and it was found that these elements were helpful to form a typical colonial house character.

The plinth of the houses was quite high and raised between one to two feet above the ground. Again, low height plinths were common in the shop houses and *kuthibaries*

To avoid the penetration of dampness in the houses, series of brick vaults were used at the plinth level in some of the houses in southern, northern and central regions of the country.

Generally, two to three steps were provided to cover the plinth height of the houses. Roaks were very common at the entry of the houses. Sitting and gossiping on the roaks is a common practice in this country.

Columns of various orders-doric, ionic, corinthian, tuscan and composite etc, were built in the colonial houses for both structural and decorative purposes. Icnostyle columns were also used in the houses. Double height columns are found in many houses. Wooden columns and factory made cast iron columns are also found in many houses. Sometimes non-structural or false columns are found in many houses.

The capitals of the columns were found decorative in most of the cases. Acanthus was the popular motif of decoration of the capitals.

Bases of the columns were also decorated in many houses. Piers of various sizes and shapes were used to support the arches and found in almost every types of houses. These piers were also applied to the walls between the doors and the windows.

The walls of the houses were always load bearing and brick masonry walls. The walls were massive and the thickness was always more than 10 inches. At the late colonial

period 10 inches walls were used in the railway quarters. No wall of 5 inches thickness was practiced in this period.

Alcoves in the walls were provided in many houses.

Wardrobes were designed in the walls and found in many houses.

Arches of various types were designed in the houses. These arches were rested either on columns or on piers. Sometimes, false arches were designed in the houses.

The openings were tried to keep to a minimum span and followed the pattern of both arched and square headed forms. Doors of various sizes and shapes were used in the houses. Door sizes varied from 3'-0"x6'-0" to 5'-0"x10'-0". The materials of the frames and shutters were always timber. Sometimes, to balance the facades or to give the impression of symmetry, false doors in the same design of other doors of the facades or of the rooms, are provided in the walls.

The window openings were either flat headed, supported by lintels, steel angles or flat arches. Window size varied from small size in the rural and urban houses to large size french windows in the urban, zamindar, government and circuit houses. 'Tracioidal type window was a typical feature found in many houses .

Two types of sills- one, simple sills with no special treatments and two, the sills with special treatments (mouldings and projections) are seen in the houses. Most of the window openings in the houses were covered by either segmented or other types of arches .

No shading devices over the windows were designed in the early colonial period. Again, later on, various types of shading devices on the windows made of various materials were used in the houses.

Various types of drops were used to shelter the window and the verendahs from the horizontal sun rays and from the driving rains.

Corners of the houses were always specially treated. Corners were comparatively heavy-- mouldings, projections, lines and bands etc, were made in the corners. Solid

corners with horizontal bands was a typical detail found in many houses. Sometimes, the corners were decorated.

Railings of various types and various materials were used in the houses. Balustrades of various materials were used in the railings of the houses. Wooden balustrade was not used outside the houses.

Very simple type (with horizontal and vertical steel bars) grilles were used in the houses. Traditionally, wooden beams were used in the houses. After 1760s iron joists were used as beam throughout the country. R.C.C beams were used at the end of the colonial period in few houses.

Brackets of various materials and various shapes were used in the houses. These brackets were both structural and non-structural.

Fire place was introduced in this country by the colonists whose function was mostly symbolic. Fire places were used in the bungalows of *bara shahebs*, circuit and zamindar houses. Fireplace was always located in the drawing room.

Fireplaces were always associated with the chimneys. Besides this, chimneys of various shapes and sizes were placed above the kitchen of various types of houses.

Usually the plains (both horizontal and vertical) of the colonial houses were not left simple. Projections and mouldings are found at various levels. The mouldings are bold and deeply undercut.

Parapets in the colonial houses were always specially treated and detailed with various types of elements. Perforation and decoration in the parapets were the typical feature in the houses.

The influence of 'art nouveau' is found in the parapets of many houses. Usually rain water was cleaned through the spouts.

Pediment is a colonial element directly borrowed from the western world. Pediments of various sizes, shapes and proportions were used in many houses. Both types of triangular and round pediments are found in the large urban, zamindar and govt. houses.

Rusticated blocks of various sizes and shapes were also found on many houses. Sometimes, floral and decorated rusticated blocks were used on the houses.

Domes were rarely used on the ordinary houses. Domes of various sizes and shapes are found on some of the important houses. Domes were always built by bricks

Curved cove and horizontal vaults are found in few houses. Barrel and tunnel vaults were used on small structures like lavatory and found in many houses of the country.

All types of houses were well ventilated. Besides the sufficient number of openings, the various types of ventilators were provided in the rooms.

Kiosks and cupolas were erected as terminal structure and found in few houses .

Pinnacles were associated with the cupolas and found in few houses. Pinnacles were mostly used on the *masjids*.

The various components of the houses and compounds, and the elements used in the houses are discussed in this chapter. The organisation of the house will be discussed in the next chapter.

Reference: Chapter-4

- 4.1 Appendix-2, The drawing room was provided in the government houses for the *bara* and *chota shahebs*, chummeries, zamindar houses and large urban houses etc.
- 4.2 The Mollahati *bara kuti* is raised on one floor high substructure
Dr. Nazimuddin Ahmed, Buildings of the *raj*, opcit, P-127.
The four structures, Mollahati *bara kuti*, Dinajpur *raj bari*, Tajhat palace (fig-5.22.1, 5.22.2) Ahsan manzil (fig-5.21.1, 5.21.2) are built in similar ways to the Mughal *tahkhana*.
- 4.3 Double height columns are used in many houses in this country. Ruplal house, Reboti Mohan lodge, Putia *rajbari*, houses of Khan Bahadur Basimuddin, Noagoan (fig-4.21.2), Surendra Nath mitra, Noagoan (fig-7.8) have this type of columns.
- 4.4 Shircore first introduced a business firm who produced the 'ticca garry' or hackery carriage or 'gora gari' (horse cart). Porticos were designed to accommodate such *gora gari* in the houses. Shircore thus pioneered a transport revolution and his 'horse carriage' business became such a great success that his example was soon followed

by other Armenian and local businessmen; the *ticca garries* rapidly became the chief form of the public transport until these were replaced by bicycle-rickshaws and busses in the late 19th century. There were 60 ticca-garries for hire in Dhaka in 1867, 300 in 1874, 600 in 1889.

Dr. Sharifuddin Ahmed, Dhaka, *opcit*, P-104-105.

- 4.5 Drawing room is shown as 'sitting room' in the drawings of the railway quarters and in some of other houses.
- 4.6 R.S. Despande, *Modern ideal homes for India*, United book corporation, Poona, P-41.
- 4.7 *Ibid*, P-41.
- 4.8 12'-0"x14'-0" is generally considered the normal size of a drawing room in the middle class family house of present time.
- 4.9 All the measurements of areas are approximate.
- 4.10 A.D. King, *Colonial urban development*, *opcit*, P-147.
- 4.11 R.S. Despande, *opcit*, P-49.

Dining in the open air has its own charms and may be enjoyed at least few months in the winter or in some days of fair weather.
- 4.12 The Hindus consider the bed rooms as the secret place, as such they sometimes call the bed room as *mandir* the *sacred mandir*.
- 4.13 Considering the size of the house and the number of rooms Joydevpur *rajbari* is considered the largest house ever built in Bangladesh.
- 4.14 It was a common practice during the colonial period to keep the private tutor (master) for the children of the family and he was provided the food and lodging. He became one of the family member. Lodging master was not always necessary, it was the symbol of aristocracy in the colonial period.
- 4.15 Sometimes the drawing room was termed as hall room in the colonial period.
- 4.16 Halfturn dog legged stair was the popular type stair used in most of the houses. This dog legged two flight stair had all the components like steps, stringers, newel, landing, handrail, balusters etc.
- 4.17 4 number of stairs- dog legged, 4 flights, open newel, spiral etc type in Murapara house, 15 number of dog legged, open newel, 3 flights, 4 flights etc, stairs in Joydevpur *rajbari*. 9 number of stairs of dog-legged, bifurcated and spiral etc, types in governor's house were used.
- 4.18 Uncovered stairs used in the outside of the houses are found in zamindar houses of Hussain Haider, Charta, Comilla. Sarafat manzil, Chamdanpura, Chittagong, Mohendra Gosh, Ahsan Ahmed road, Khulna, *Natchghar* at lohar pool, Gandaria *Bara kuti*, Rajshahi etc.

- 4.19 The spiral service stair at the south eastern side of Ahsan manzil (*rang mahal*) was provided for the *methors* to clean the bath rooms at the first floor. This stair is removed recently at the time of renovation. Spiral stairs as service stairs used in many houses eg, Ahsan manzil, bungalow of D.M. Rajshahi Chummary at Dhaka .
- 4.20 The changing and dressing room at the *pukurghat* are found in the zamindar houses of Murapara house, Mymensing *rajbari*, Dinajpur *rajbari* etc.
- 4.21 The developed semi-urban settlement Murapara, Rupganj, Dhaka is surrounded by a canal locally known as '*ghu khal*' meaning sewerage canal. It is thought that the night soil from the Murapara house and other houses were drained through this *khal* towards the river Sitalakkha.
- 4.22 Jan Morris, *opcit*, P-45.
- 4.23 *Ibid*, P-45.
- 4.24 R.S. Deshpande, *Modern Ideal house for India*, *opcit*, P-37-38.
- 4.25 Examples of such colonaded verandahs are seen in the houses of Monsur Saheb, M.P. at Upper Jessore road, Khulna, Joydevpur *rajbari*, *kachari bari* of Rajesurar Rai Chowdhury, Patuakhali, Syed Shamsul Huda, at Gokarna, Nasirabad, Prahmanbaria etc.
- 4.26 Archaded verendahs are seen in the houses of Devendra Nath Ghosh, town Noapara, Muktagacha *rajbari*, Railway quarter no-66, Fulbaria railway colony, Dhaka etc.
- 4.27 Such low ceiling in the verendahs are seen in the railway bungalow no. 66, Fulbaria railway colony, *dak* bungalow Manda, Prasadpur, Noagaon, civil surgeon bungalow, Khulna.
- 4.28 Such details in the verendahs are seen in the houses of Sailan Gosh town Noapara, Ruplal house, Dhaka, and Ranir *kuti*, Comilla, circuit house, Khulna.
- 4.29 The *dak* bungalow at Nabinagar, Brahmanbaria, was demolished in 1980s during the research period. *Gazetter*, Comilla, fig- 16.
- 4.30 Large corridors are found in the zamindar houses of Ruplal house, Murapara house, house of Sita Nath Das, 4, Walter road, Dhaka, Mymensingh raj bari, Joydevpur *rajbari*.
- 4.31 Corridors connecting the bungalow and service blocks are seen in the bungalow of D.M. Khulna and D.M, Sylhet.
- 4.32 Bridge like corridors are seen in the houses of Joydevpur *rajbari*, Prasuna kumar Das, 45, B.K. Das road, Dhaka, Ray chandra Munshi, Laxmi bazar, Dhaka etc.
- 4.33 A,D, King, *colonial urban development*, P-125
- 4.34 *Ibid*, P-41.
- 4.35 A.T.C. Firninger, *A manual of gardening for Bengal and upper India*, *opcit*, P-18.
- 4.36 The use of coal was introduced first in this country by the railway personnel.

- 4.37 The number of servants were many and it included *darwan, chaprashi, boy, lightman, pankhawala, bistiwala, shahish, dobi, napit, dargi baburchi, jhee*, etc, for a district level government officer (D.J.D.M, etc.). The most modest British households employed half a dozen servants. Jan Morris, *Stones of empire, The buildings of the raj*, opcit, P-171.
- 4.38 Wooden floor is found in the dance halls of the *bagan bari* of the zamindar of Tapa at Rangpur, Ruplal house and in the dance hall at Loharpool, Dhaka, in the house of Lt. governor, Bardawan house etc.
- 4.39 A.D. King, *Colonial urban development*, opcit, P-34.
- 4.40 Ibid, P-150. The Ramna govt, colony was far away from the indiginous town, old Dhaka.
- 4.41 P-140, A.D. King, *Colonial urban development*, P-125 A.D.King, *Bungalow*, opcit, P-43.
- 4.42 A.D. King, *Colonial urban development*, opcit, P-130.
- 4.43 (1) Dr.. Nazimuddin Ahmed, *Buildings of the raj*, opcit, P-74.
 (2) Ibid, P-77. (5) Ibid, P-79 (8) Ibid, P-110
 (3) Ibid, P-87 (6) Ibid, P-102
 (4) Ibid, P-91. (7) Ibid, P-107.
- 4.44 The Joydevpur *rajbari* is found to be the largest zamindar house, covering ground floor area, 52,800 sft, and first floor area 45,800 sft of total 98.600 sft without the temporary structures around.
- 4.45 K.Platt, *The home and health in India and the tropical colonies*, opcit, P-21. A.D. King, *Colonial urban development*, opcit, P-131
- 4.46 A.D. King, *Colonial urban development*, opcit, P-125.
- 4.47 Ibid, P-144.
- 4.48 The 'set back' rules were first framed and practiced in 1876 in the construction of houses at Wari, Dhaka. 'The plan of the house was to be approved by the collector, and the construction of any additional buildings within the allotted plots was prohibited within his permission'.
 Dr. Sharifuddin Ahmed, *Dhaka opcit*, P-135.
- 4.49 A.D. King, *Colonial urban development*, opcit, P-132.
- 4.50 Ibid, P-138.
- 4.51 Simond. J. O. *Landscape Architecture*, opcit, P-47.
- 4.52 A.D. King, *Colonial urban development*, opcit, P-138.
- 4.53 Ibid, P-236.
- 4.54 Long driveways are seen in Murapara house, Natore *rajbari*, Governor's house, Bungalow no-35, Ramna etc.

- 4.55 High security walls are found in many zamindar houses-eg. Dinajpur rajbari, Putia rajbari, Murapara house, *Nawab bari*, Comilla etc.
- 4.56 Simon. J.O, Landscape architecture, opcit, P-106.
- 4.57 P.Martin, 'Concept of Human territoriality' in Ucko, opcit, P-426-445, A.D.King, Colonial urban development, opcit, P-144.
- 4.58 Trevelyan, G, 'Cawnpore', Macmillan. London, 1844, P-4, A.D. King, Colonial Urban development, P-144.
- 4.59 James Taylor, *Companir amolar Dhaka*, translated by Muntasir Mamun, 1978, P-58, Muntasir Mamun, Colonel Davidson *jakon Dhakai*, opcit, P-16.
- 4.60 At Dhaka, most of the European lived on the bank of river Buriganga. Besides this, the European colonies were developed along the river sides of Khulna, Bogra etc, towns.
- 4.61 A.D. King, Colonial urban development, opcit, P-131.
- 4.62 Malaria found the very common disease, through out the colonial period. Therefore mosquito net was used in the doors and windows in many zamindar, urban, govt. & railway bungalows, circuit and *dak* bungalows, garden houses etc.
- 4.63 Ibid, P-131.
- 4.64 Reflection pools are found in Governor's house, Diga patia rajbari, Ahsan manzil, Bhayahari lodge etc. houses. There was a reflection pool at the Sulthern lown of Ahsan manzil and at the entry point of Bhajahari lodge which are now filled up.
- 4.65 Dr. Nazimuddin Ahmed, Buildings of the raj, opcit, P-60.
- 4.66 The 'Balda garden' is a botanical garden at Wari, Dhaka, Planted and developed by the zamindars of Balda. It is famous for its collection of rare species of trees and plants. Presently, the garden is under the department of Botany, D.U.
- 4.67 A.D. King, Colonial urban development, opcit, P-141.
- 4.68 T.A.C. Finnerger, A manual of gardening for Bengal and upper India, Thakers and Spink, Calcutta, 1968, P-17, A.D. King, Colonial urban development, opcit, P-149.
- 4.69 A.D. King, Colonial urban development, opcit, P-121.
- 4.70 Ibid, P-151.
- 4.71 High plinth is seen many houses, examples of which are houses of Sailan Gosh, town Noapara, Khorasati, upper Jessore road, Khulna, Pishimar bari, Natore *rajbari*, Mymensing *rajbari*, etc.
- 4.72 Series of brick vaults in plinths are found in many houses such as houses of Sailam Gosh at town Noapara, houses at Kailarh Kati, santosh zamindar house etc.
- 4.73 Timber floors at the ground level keeping void spaces at the plinth are found in many houses such as bungalow of the member Board of Revenue, Governor's council, present bungalow of V.C.D.U. and *bagan bari* of the zamindar of Tapa, Rangpur.

- 4.74 C.Allen, Plain tales from the raj, Image of British India in the 20th century, andre Deutsch and Abritish Broadcasting Corporation, London, 1975, P-83.
- 4.75 Sir Banister Fletcher, A. History of architecture, University of London, 1967, P-108.
- 4.76 Ibid, P-125, 126, B.
- 4.77 Ibid, P-127.
- 4.78 Ibid, P-125.
- 4.79 Ibid, P-137.
- 4.80 Double height columns are found in many houses such as the houses of Putia *rajbari*, Rebotimohan lodge, Sutrapur, Dhaka, house of Surendra Nath, Ukilpara, Noagaon etc.
- 4.81 Factory made cast iron columns are seen in many houses like Goldsmith house at Painam village, Gagan Sahar, Paiksara, Brahmanbaria, etc.
- 4.82 Wooden columns are used in many houses such as houses of Nawab shamsul Huda, Gokarna, Brahmanbaria, *Natch ghar* of the zamindar of Tapa, Rangpur etc.
- 4.83 The non-structural columns used with the piers and walls are popularly termed in this country as 'false' column and found in many houses eg, bungalow of S.D.O. Brahmanbaria, dance hall of Prasana kumer at Farashganj, Dhaka etc.
- 4.84 Fletcher, opcit, P-111.
- 4.85 Ibid, P-125, 126,B.
- 4.86 Ibid, P-138.
- 4.87 Ibid, P-138-139.
- 4.88 Piers are the mass of (brick) masonry as distinct from a column, from which an arch springs. The term is sometimes given to a heavy masonry (brick in this country) pillar in colonial architecture.
- 4.89 Unplastered red buildings are also seen in this country in the Mughal and pre-Mughal period, eg, Galdi masjid, Sonargaon.
- 4.90 Similar type of windows were seen in Mereworth Castle, Kent (1722-5) and Palace of Palazzo Riccardi, Florance (1444-60), designed by Michelangelo (1475-1564), Fletcher, opcit, P-683.
- 4.91 The 'bifurcated tracodal' type window is an early renaissance building element, and similar type of window was found in the palace of 'Palazzo Vendramini', Venice (1481), Fletcher, opcit, P-731 and 734,F.
The bifurcated traceried windows, retaining mediaeval note, are typical of the early renaissance in venefice, and used in many houses (fig- 84.3). This bifurcated traceried type windows are found in many houses eg-Fayhat palace, Natore *rajbari* Sardar bari, sonargaon, Rupalal house, Reboti mohan lodge, Manager's bungalow, Ahsan Manzil etc.

- 4.92 Faruque A.U.Khan, Murapara house-A typical colonial zamindar house, Nibandamala, 1991, D.U. P-27 .
- 4.93 The typical colonial baluster (fig-99.5) used in the Navile's court, Trinity college, Cambridge (Fletcher, opcit, P-922) was used in many buildings in Calcutta. This type of balusters were used around the 'garer maidan' and created such an impact that it had been repeatedly used in somany houses in Calcutta as well as in many houses in Bangladesh eg. Tajhat palace, Bardawan house, Lt. governor's bungalow, bunngalow no-19, Ramna colonu, etc.
- 4.94 'In a figurative sense that the history of English civilization between 1760 and 1830 can be called the industrial revolution', Nikolus Pevsner, Pioneers of modern design, Penguin books, 1960, Fletcher, opcit, P-657. During the colonial period, Bangladsh (and whole India) became the market of the building components made by the British manufacturers. Readymade objects like, joist, purlin, spout, grilles and balustrade etc, items were manufactured in England. Later stage of colonial period, these were manufactured by the British companies at Calcutta and other places of India.
- 4.95 The rejected railway lines (joists) were used extensively as beams in the railway quarters in this country by the railway engineers.
- 4.96 Nikolus Pevsner, opcit, P-118.
- 4.97 Ibid, P-118.
- 4.98 A. D. King, Colonial urban development, opict, P-147.
- 4.99 Complicated mouldings are found in many houses, eg houses of Prasanna Kumar Das, Dhaka, Prafulla Baral, Dinajpur, Bara taraf, Natore *rajbari*.
- 4.100 Art nouveau is a decorative movement in European architecture helded in 1880s and flourishing strongly in the period 1893-1907. Its particular characteristice were a flowing and various naturalistic ornament and avoidance of historical architectural traits. The style went under other names in certain European countries: Le Modern style (France), Jugendstil (Germany and Austria) and Style liberty (Italy). Fletcher, opcit, P-1258.
- 4.101 Antoni Gaudi's works (eg, Sagrada Familia, Casa Batllo, and Casa Mila at Barcelona) are famous for curved lines detailings and use of non-traditional materials (eg, broken tiles of old cups). Nikolaus Pevsner, Pioneer of modern design, P-112-117.
- 4.102 Fletcher, opcit, P-725.
- 4.103 Fletcher, opcit, P-103.
- 4.104 Ibid, P-112-113.
- 4.105 The Aga Khan trust for culture, Architectural and urban conservation in the4 Islamic world, Vol.-1 Geneva, 1989, P-119.
- 4.106 Domes are found in the following important urban, zamindar, *bagan bari*, and government houses surveyed. Urban houses- Dance hall, Sankhanidi house, Tipu Sultan road, Dhaka, Nitin Chowdhury, Ganeshtala, Dinajpur. Zamindar houses-

Tajhat palace, Rangpur, Dubalhati palace, Noagaon, Gauripur palace, Mymensingh, Muktagacha palace, Mymensingh, Mymensingh *rajbari*, Ahsan manzil, Dhaka, Sittlai palace, Pabna town, Mohendra Gosh, Khulna town, Shamsul Huda house, Gokarna etc. Government house- D.J. Khulna, Governor's house, Dhaka, etc.

4.107 Dr. Nazimuddin Ahmed, Building of the *raj*, opcit, P-94.

4.108 Originally there was no dome on Ahsan manzil, Dhaka. Later on, dome was added at the middle on the building. Muntasir Mamun, Srectimoy Dhaka, opcit, P-8.

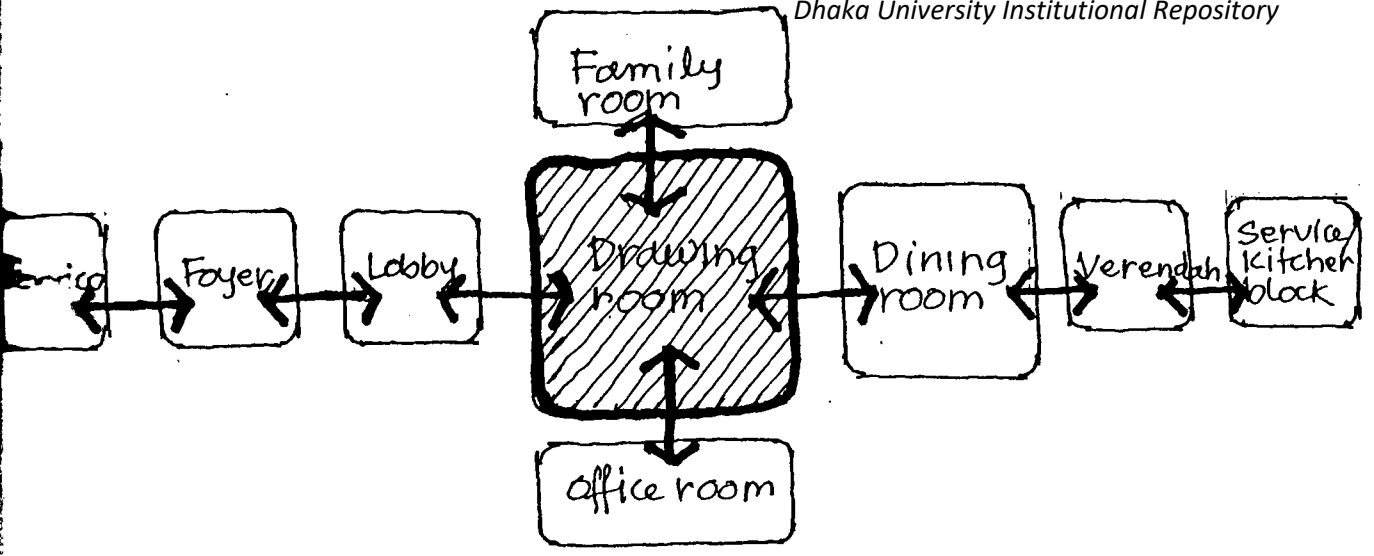


Fig-4.1.1 Relationship of drawing room with other spaces

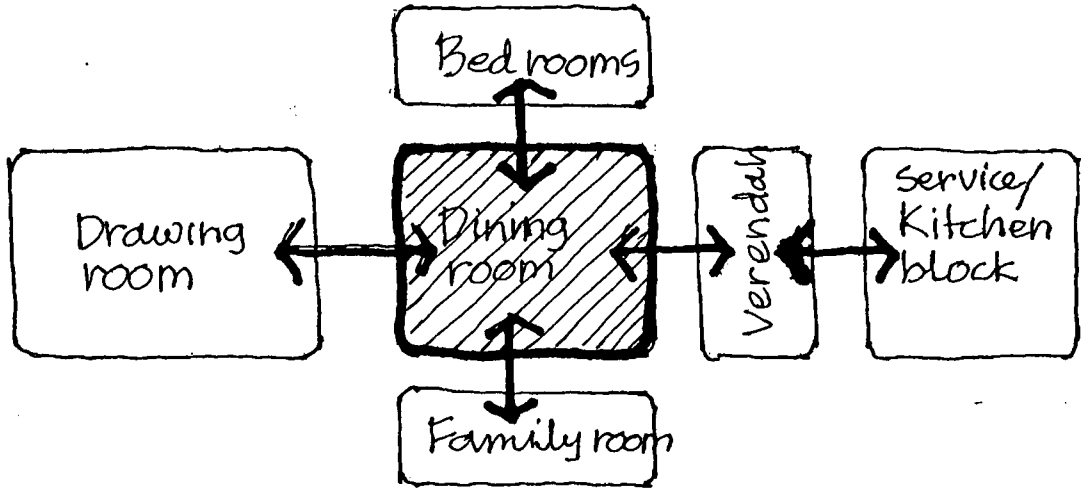


Fig-4.1.2 Relationship of dining room with other spaces.

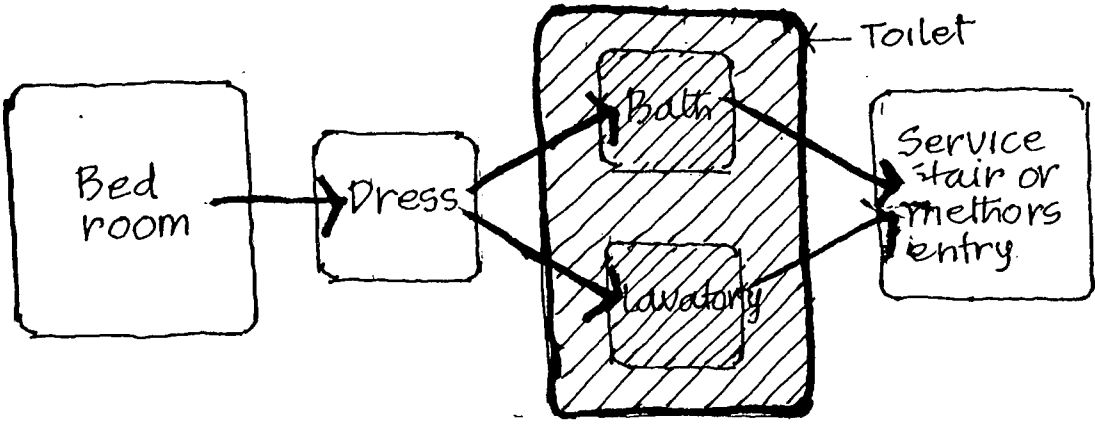


Fig-4.1.3 Bed room-toilet relationship



Fig-4.2.1 Main entry, Muktagacha rajbari

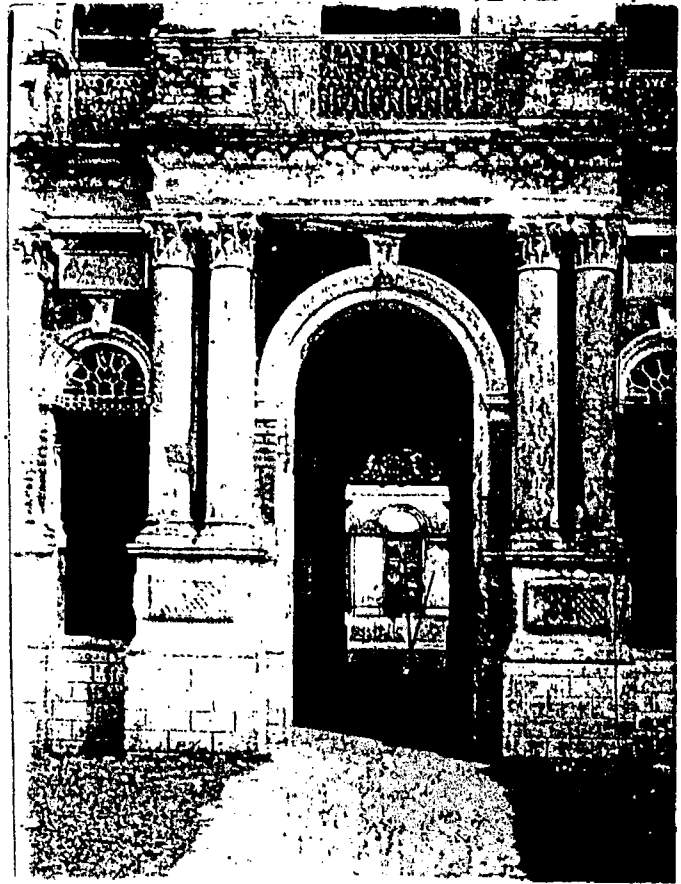


Fig-4.2.2 Main entry, Mura para house

Fig-4.2.3 Main entry, Mymensingh rajbari



Fig-4.2 Main entry, Zamindar houses



Fig-4.2.4.1 Main entry

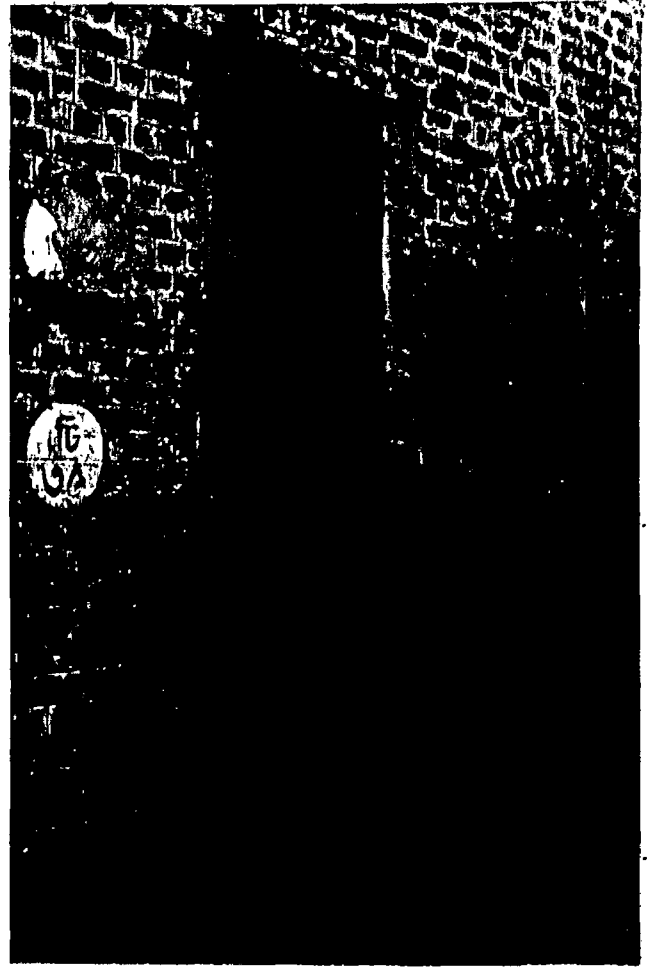


Fig-4.2.4.2 Door step, Railway quarter, Natore

house of Jagannath Saha, Lalbagh, Dhaka

3



Fig-4.2.4.3 Main entry and roak, Home of Hemakanta, Ukilpara, Noagaon



Fig-4.3.1 Secondary entry,
Bardawan house, Dhaka.



Fig-4.3.2 Secondary entry,
Bengalow of
the Lietenant Governor

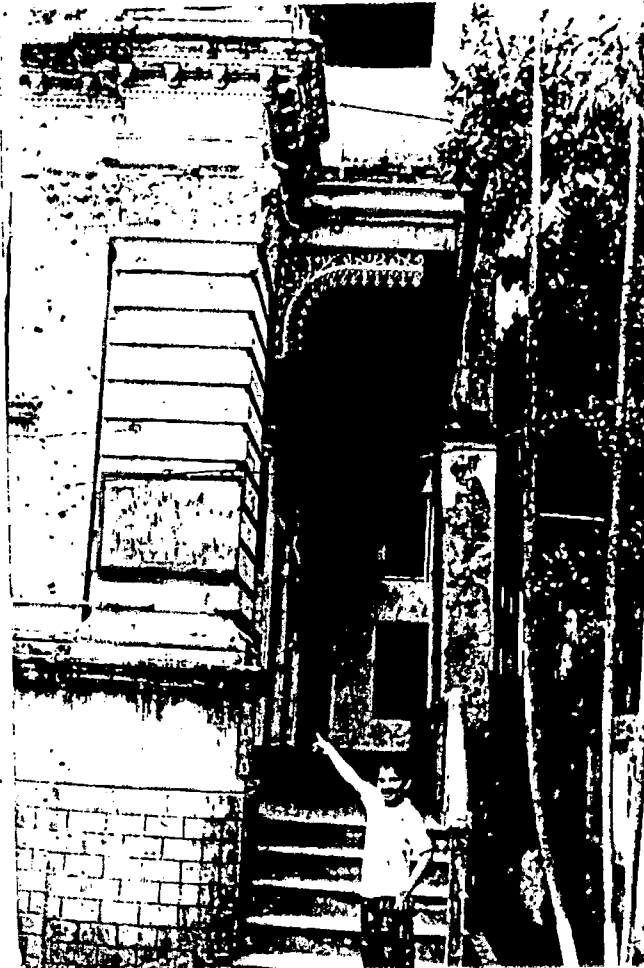


Fig-4.3.3 Secondary entry
house of
Ray Narayan Roy, Simson road,

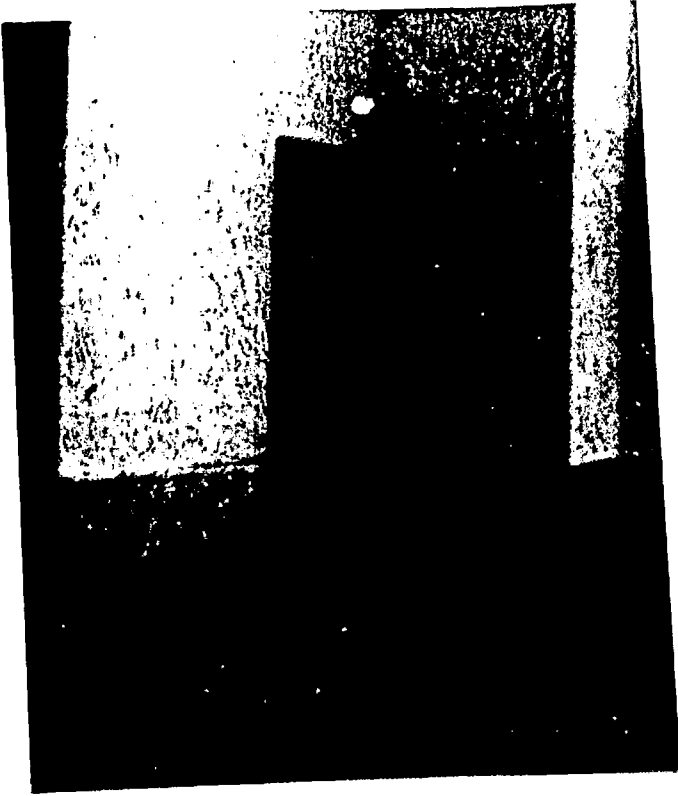


Fig-4.3.4 Secondary entry to the principals quarter Rajshahi college, Rajshahi



Fig-4.3.5 Secondary entry to the house no-27, Ramna Colony, Dhaka



Fig-4.3.6 Secondary entry, Railway quarter, Brahmanbaria

Fig- 4.4.1 Methors entry,
Railway quarter, Tejgaon station, Dhaka



Fig-4.4 Methors entry to the houses
, Bungalow no-35, Ramna Colony, Dhaka.

Fig-4.5.1 Portico in Bungalow no-3, D.U.



Fig-4.5.2 Portico in Muktagacha rajbari .



Fig-4.5.3 Portico in
Bardawan house, Dhaka

Fig-4.5 Porticos in different types of houses

Fig-4.5.4 Portico
Ranir kutir, Comilla

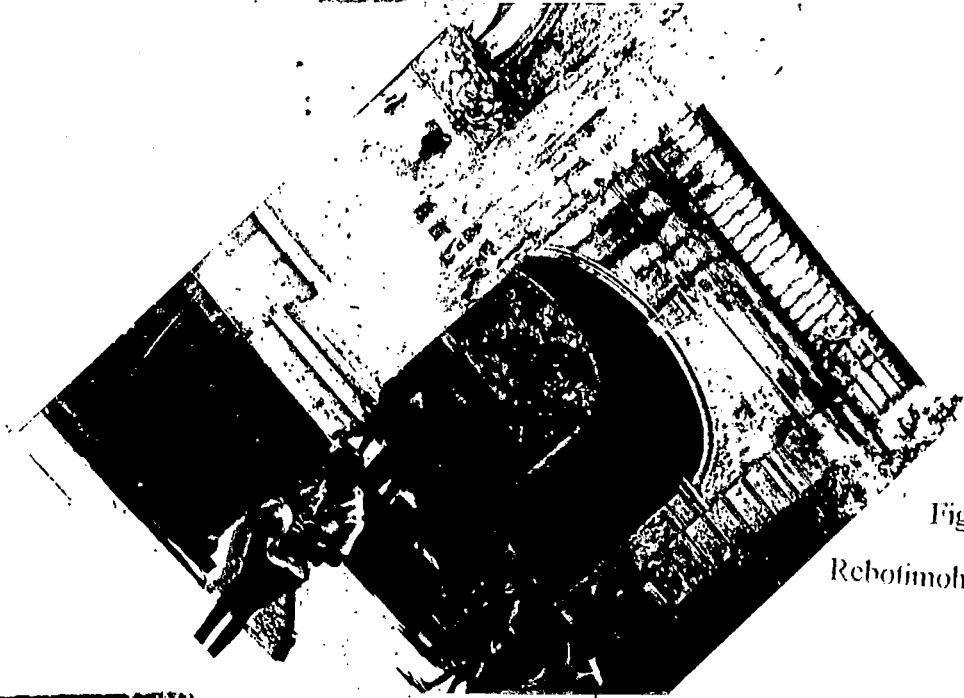
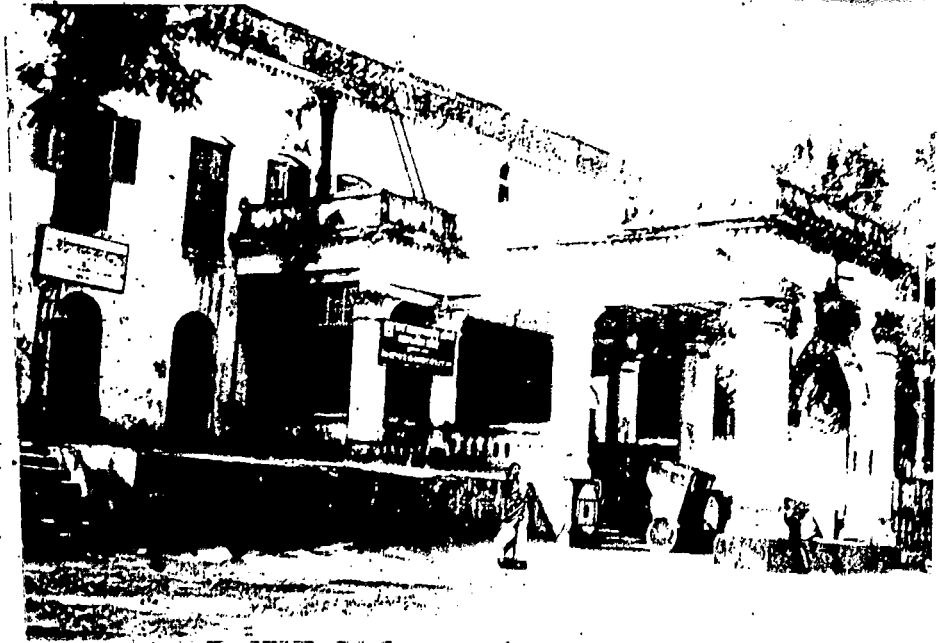


Fig-4.5.5 Portico
Rebotimohan Lodge, Sutrapur, Dhaka



Fig-4.5.6 Portico in Bungalow no-27,
Ramna colony, Dhaka

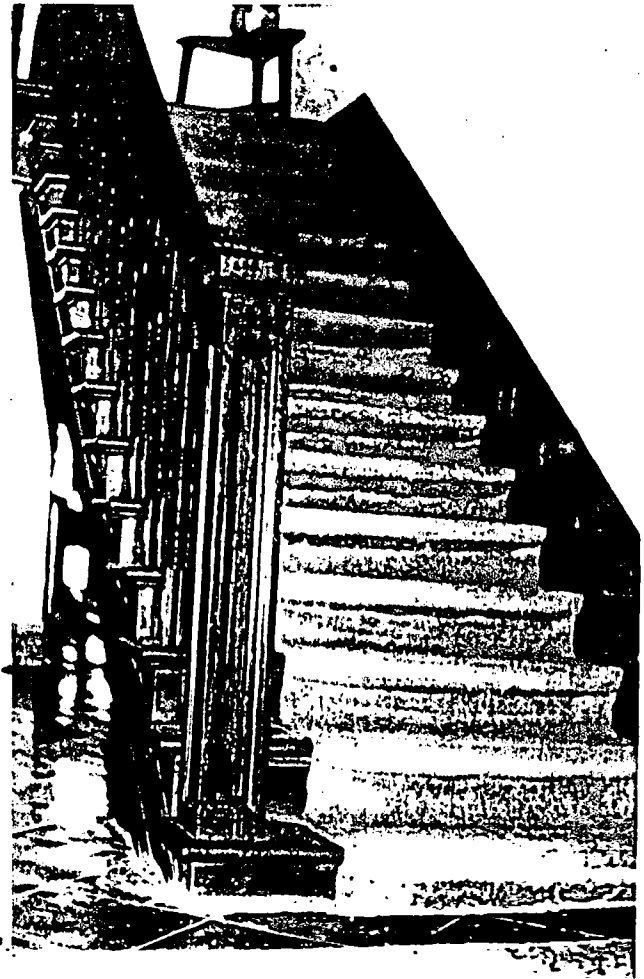
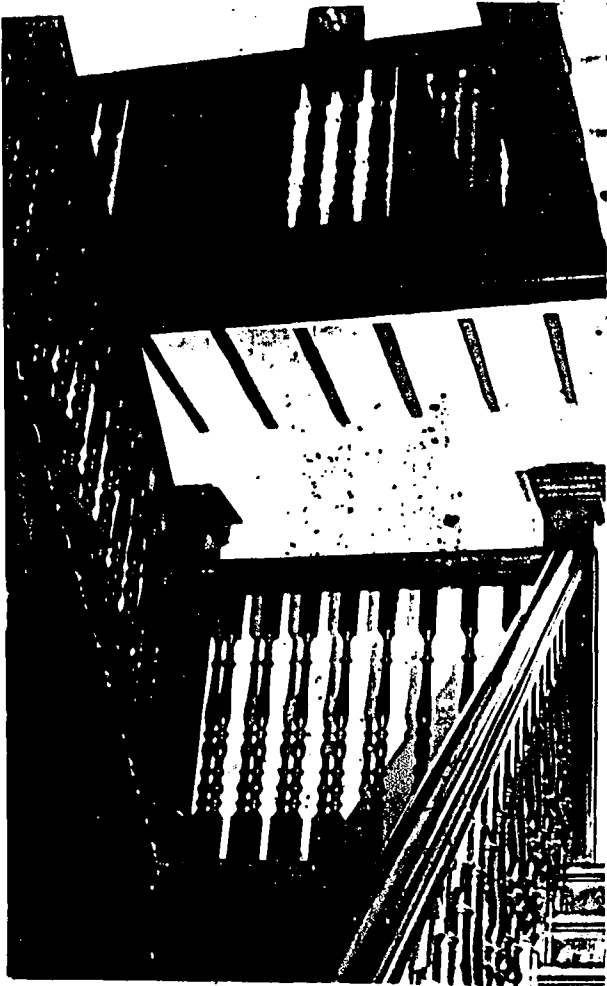


Fig-4.6.2 Stair case and Balustrade,
of Lt. Governor, Dhaka

Fig-4.6.1 Stairs, Newel post
and st flight in
Lt. Governor's bungalow, Dhaka



Fig-4.6.3 Open stair, Sarafat
Manzil,
Chandempura,
Chittagong.



Fig-4.7.1 Service lavatory,
booking clerk's railway quarter, Natore



Fig-4.7.2 Open lavatory, Dewanbari, Savar
No roof in the lavatory, open to sky. High plinth level.



Fig-4.7.3 Double storied lavatory,
Murapara houses
Approach by a open stair

4.8.1 Kitchen, service block,
bungalow of S.D.O Brahman barja
ventilator on the top
of the gable roof.

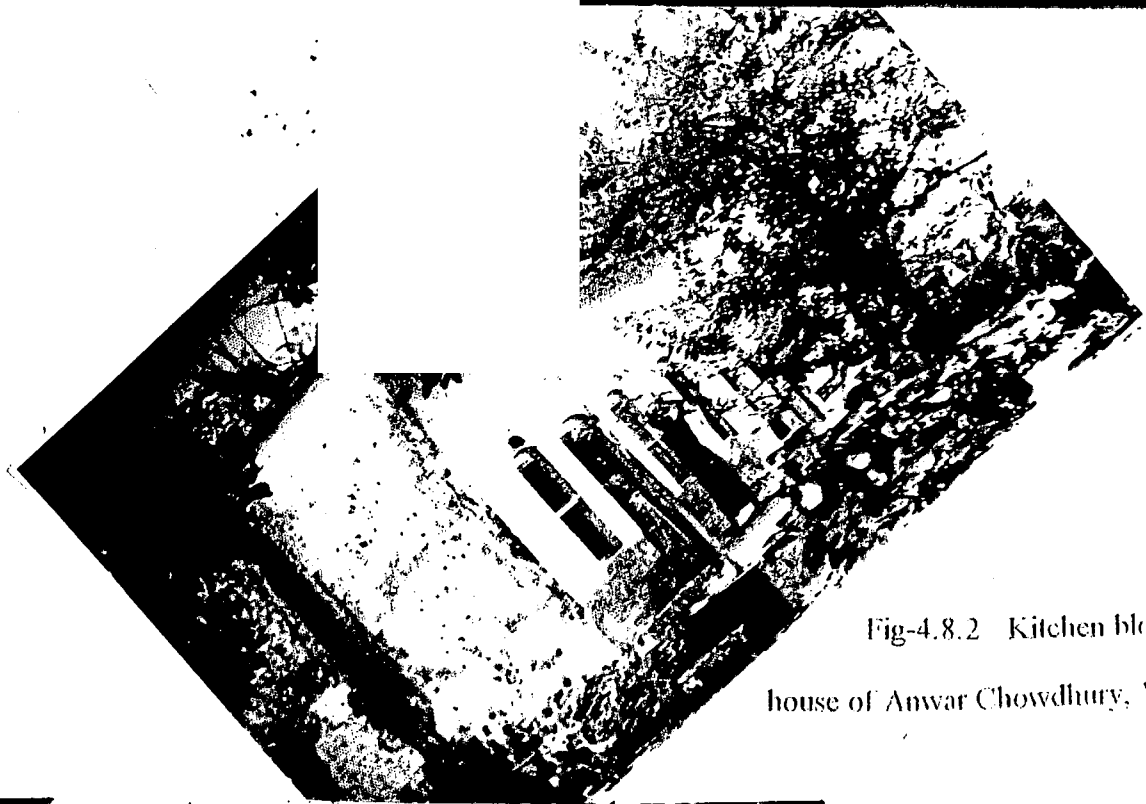


Fig-4.8.2 Kitchen block,
house of Anwar Chowdhury, Wari, Dhaka



Fig-4.8.3 Kitchen block,
Munsefs bungalow, Noagaon
*Ceramic tile roof
on wooden rafters.
Wooden columns.*

Fig-4.8.4 Stable.

1 Magistrate bungalow, Rajshahi

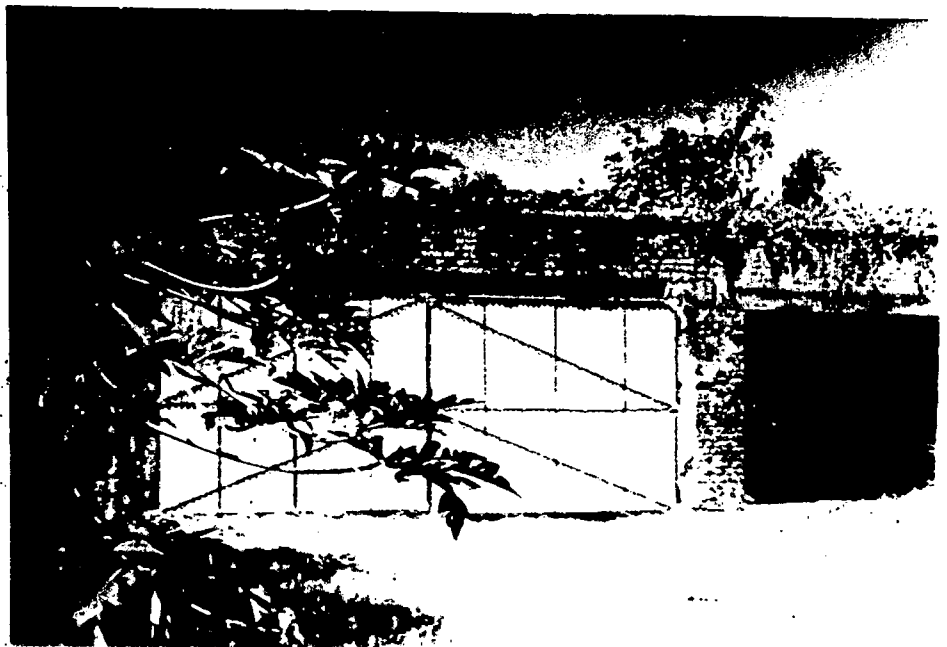


Fig-4.8.5 Stable. Garage.

servant quarter bungalow no: 35,

Ramma Colony.

C.I. Sheet roofing

Garage



Ceramic tiles
Wooden post

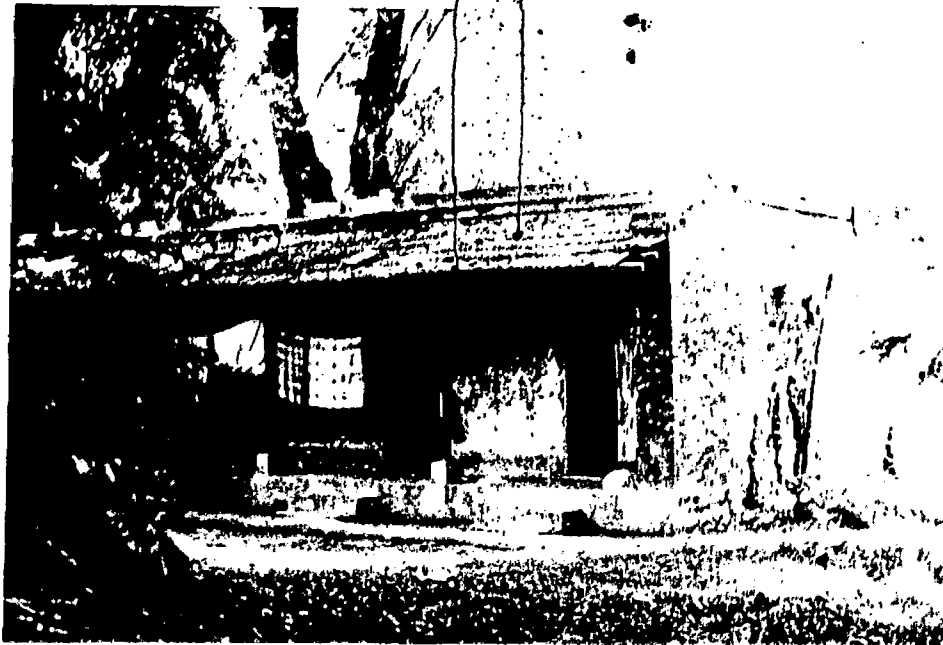


Fig-4.8.6 Servant quarter.

District Magistrate, Rajshahi

Fig-4.8.7 Serwattil block,
Principal quarters Rajshahi College,
Rajshahi

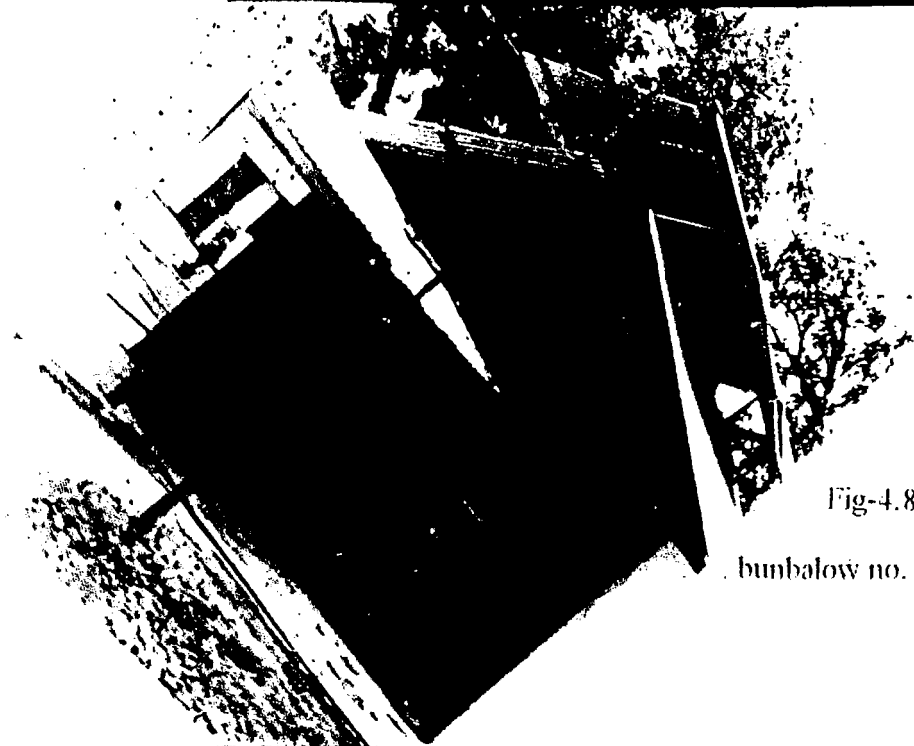


Fig-4.8.8 Kitchen block,
bungalow no. 27, Ramna, Dhaka



Fig-4.8.9 Service block, stable,
District Judge, Khatna

Fig-4.9.2 Mandir,
Kishkati zaminder house

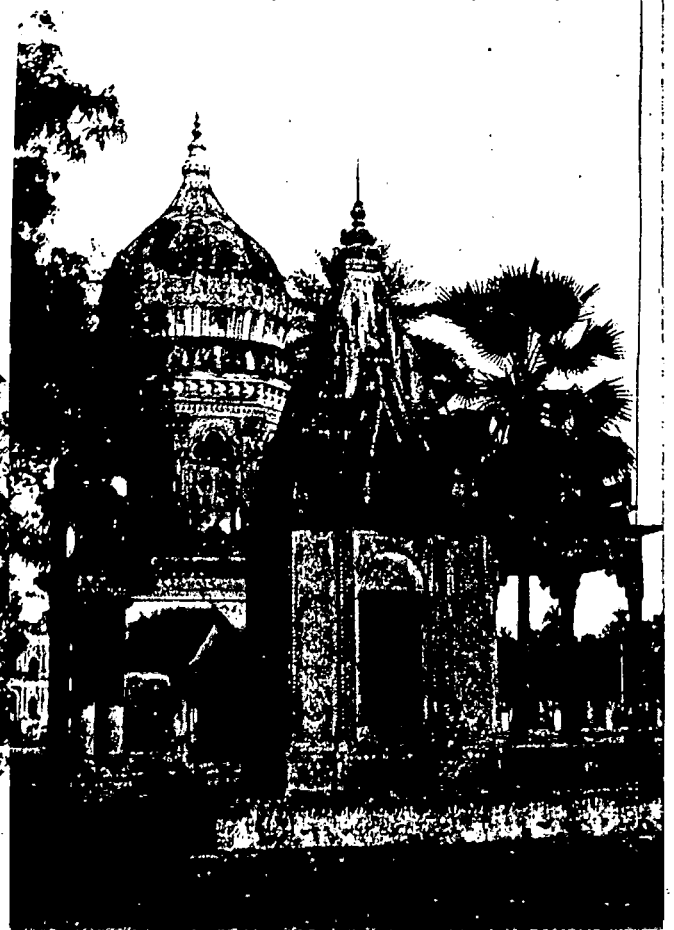
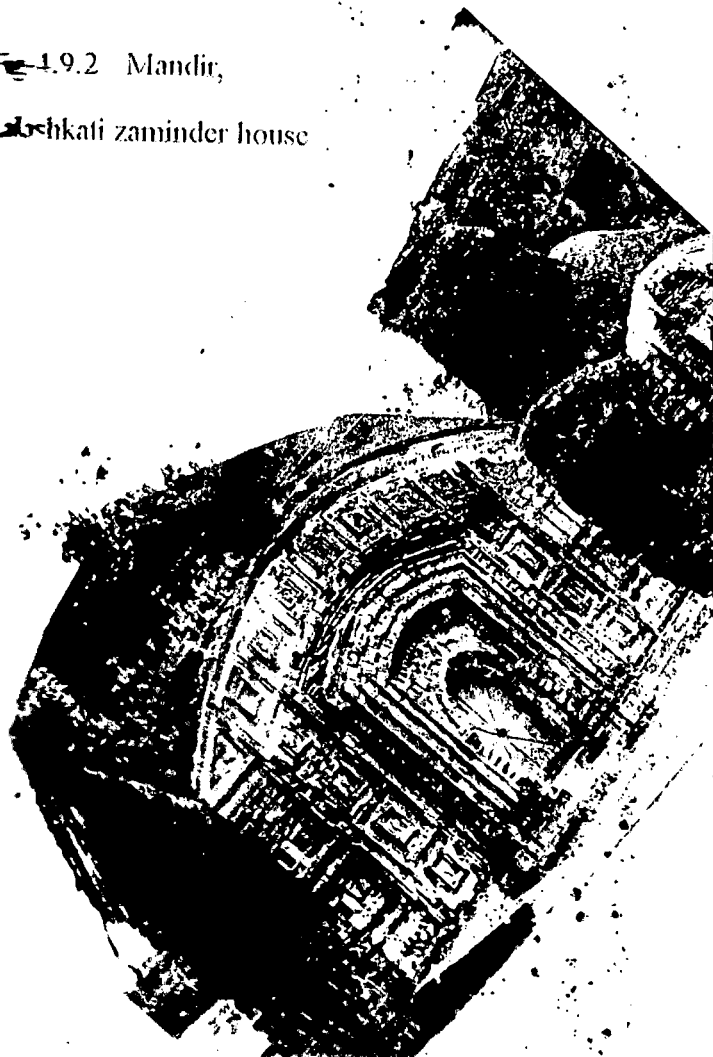


Fig-4.9.1 Mandir, Murapara house

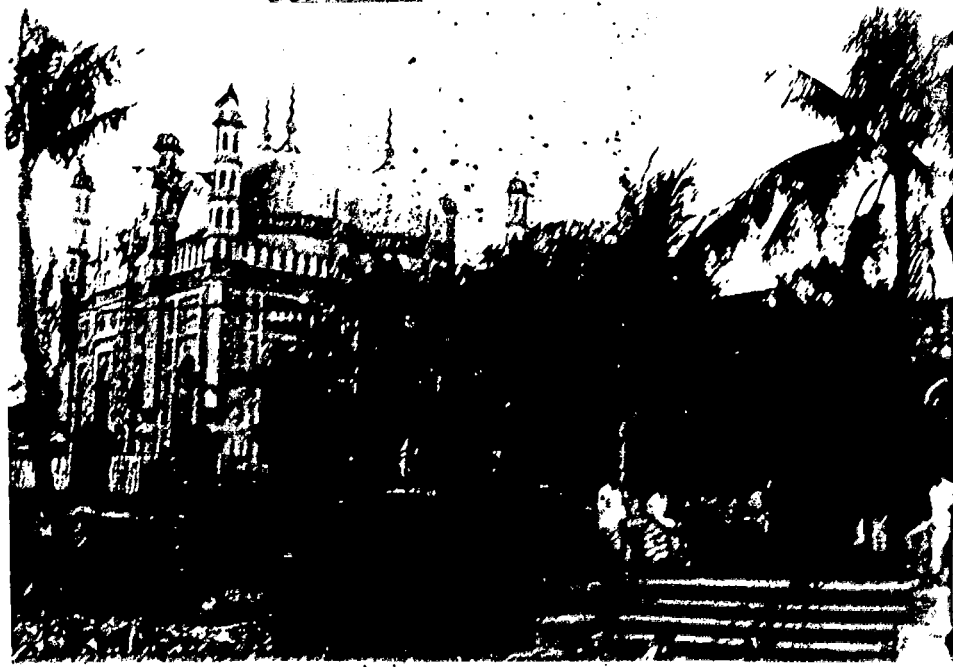


Fig-4.9.3 Masjid,
Devan bari, Savar, Dhaka.

Fig-4.9.4 Mandir

House of sailan Gosh, town Noapara

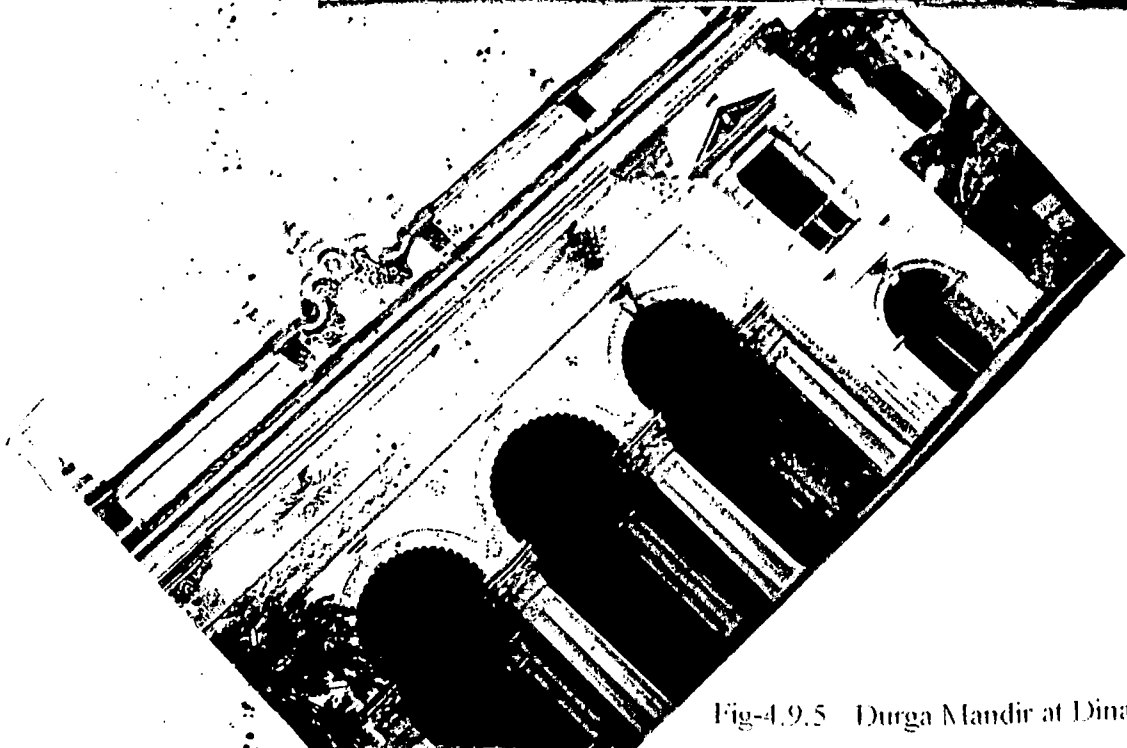
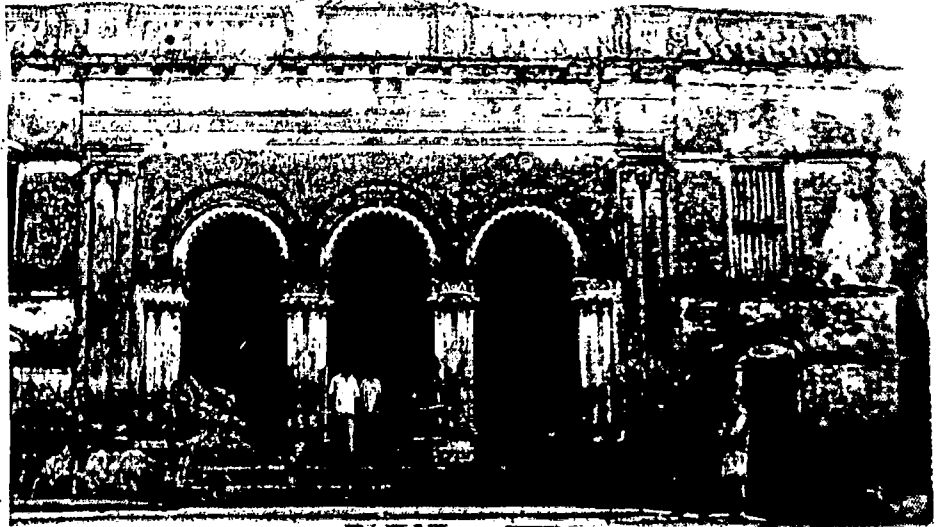


Fig-4.9.5 Durga Mandir at Dinajpur rajbari

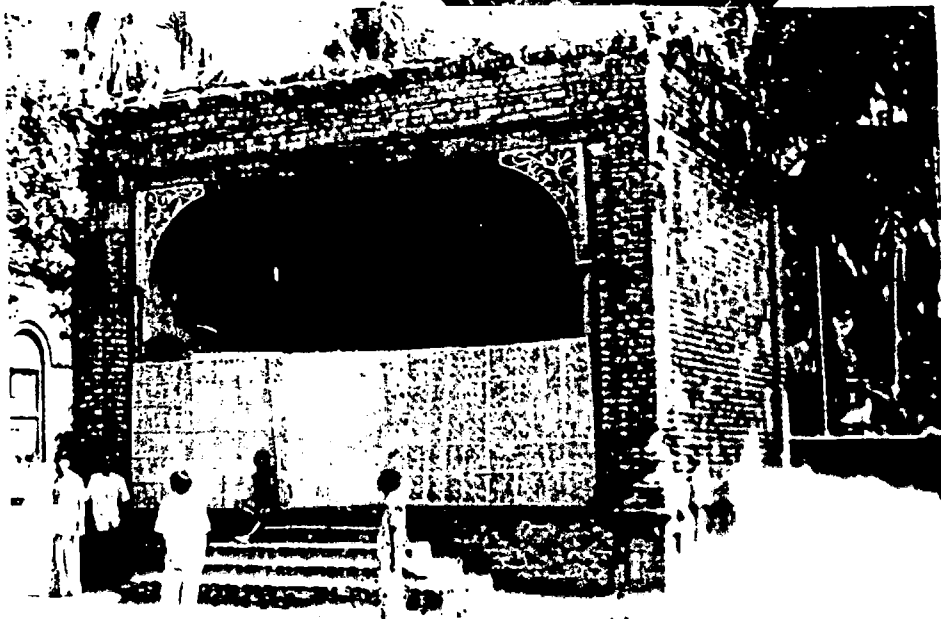


Fig-4.9.6 Mindir

House of Gaagan Saha, Brahmanba

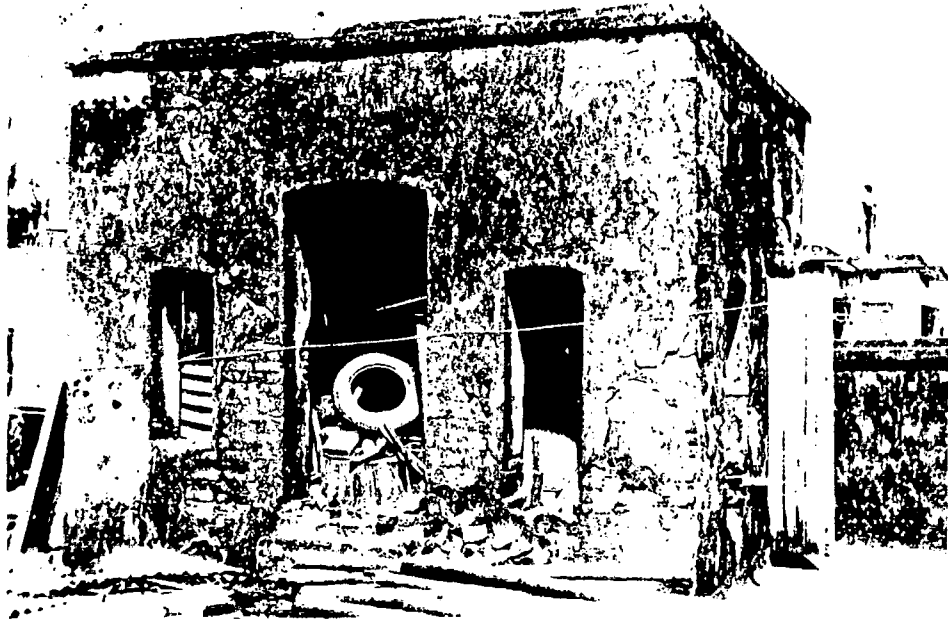


Fig-4.10.1 Pent house of Devendra Mohan Das,
1, Nawab Street, Wari, Dhaka



Fig-4.10.2 Pent house.
Bhajahari lodge, Tipu Sultan, Road, Dhaka

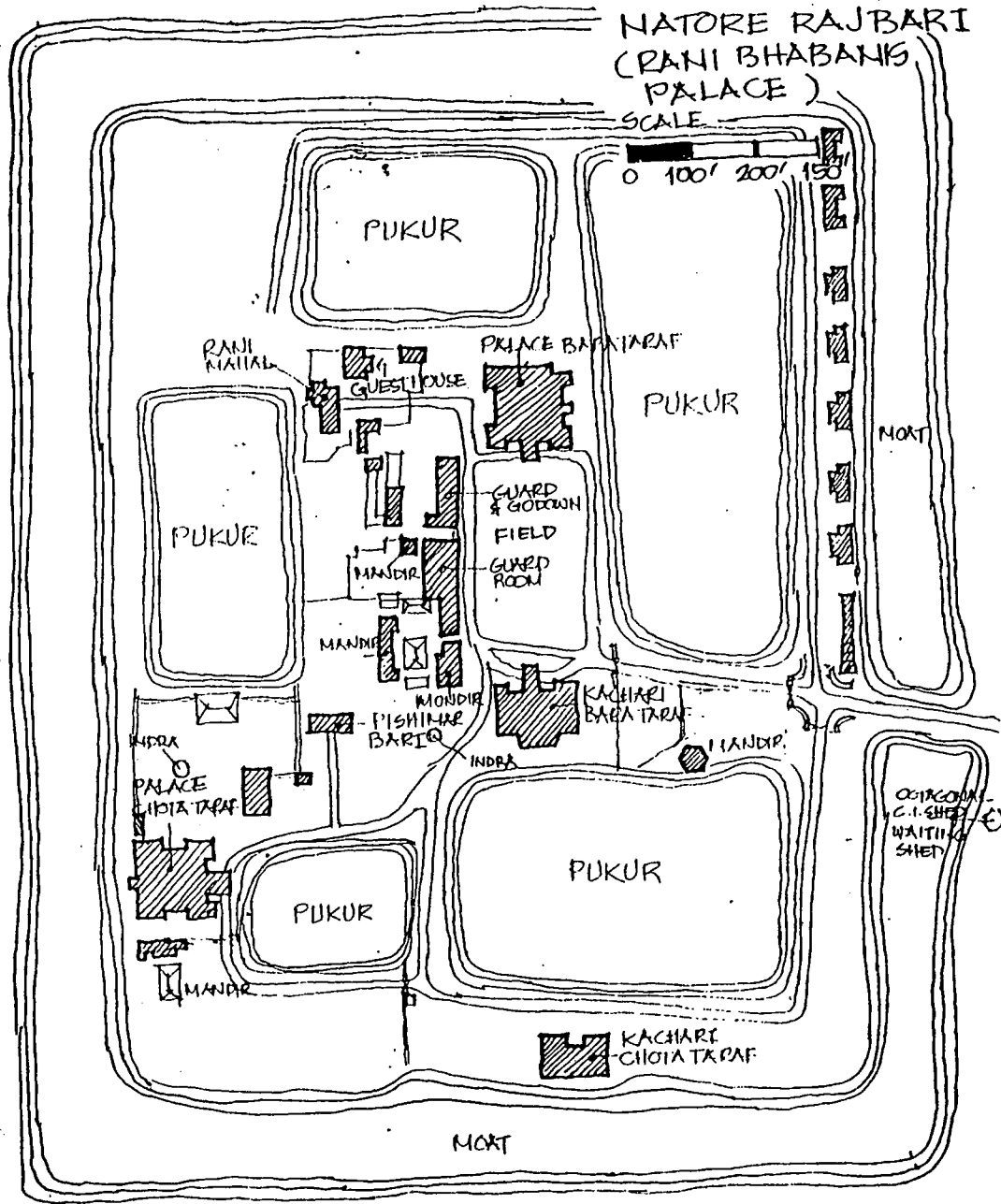


Fig-4.11.1 Compound plan, Natore rajbari



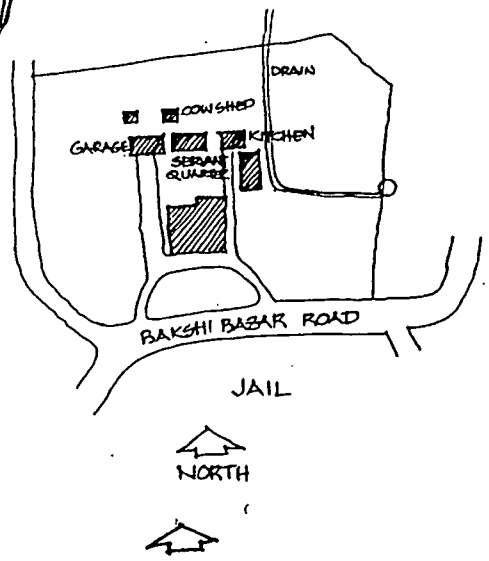
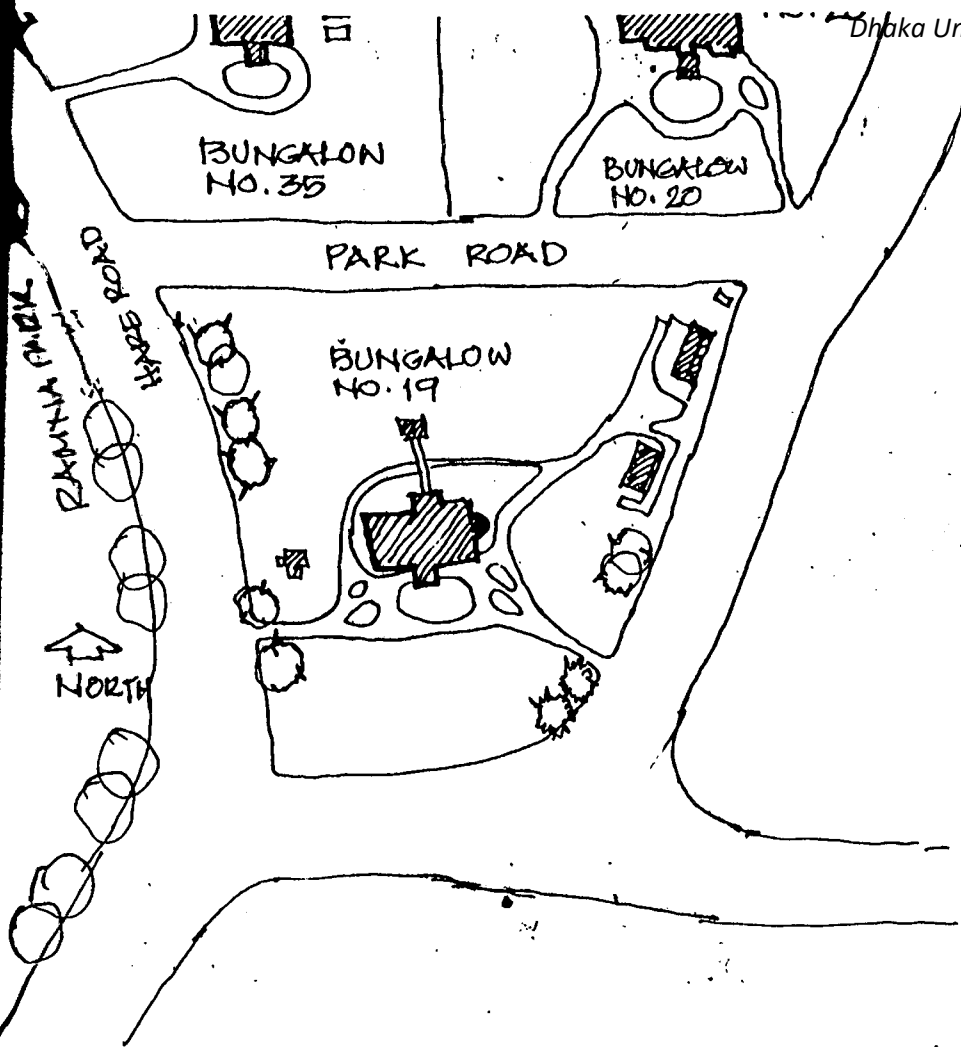


Fig-4.11.2 Compound plan
Bungalow of Deputy super of Jail,
Dhaka Jail

Fig-4.11.3 Compound plan,
Bungalow no-19.
Chief Justice's
Bungalow, Ramna
Colony, Dhaka

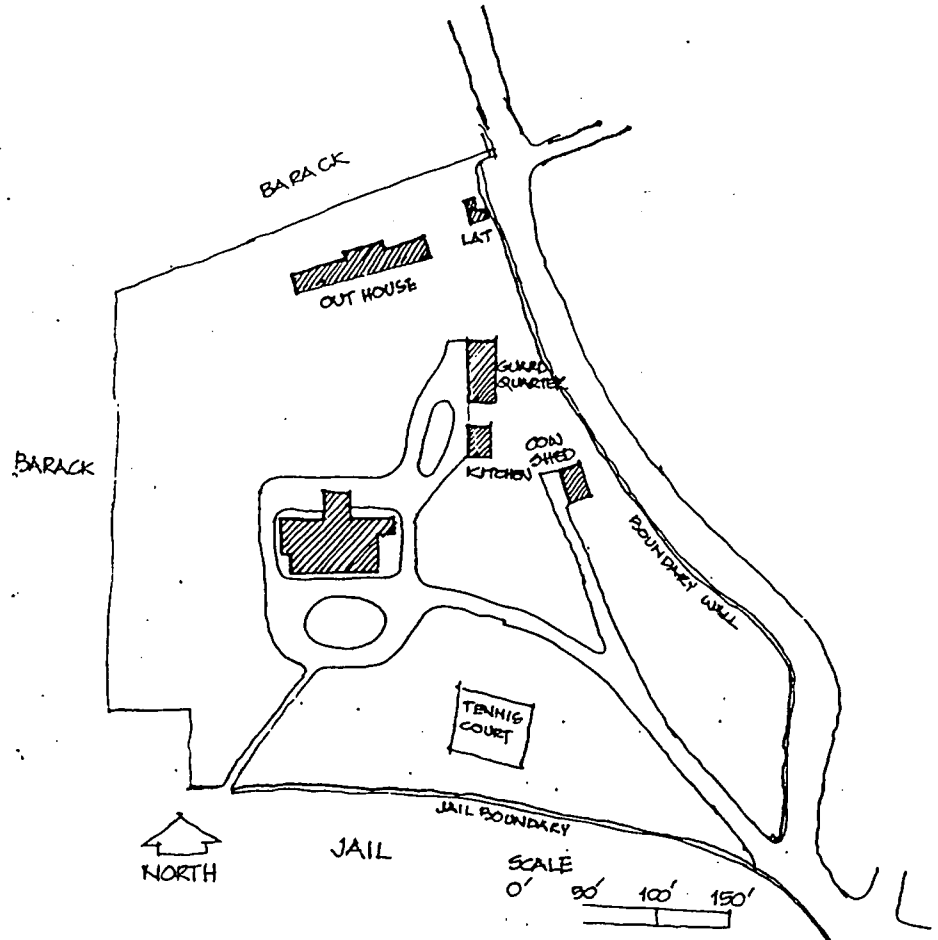
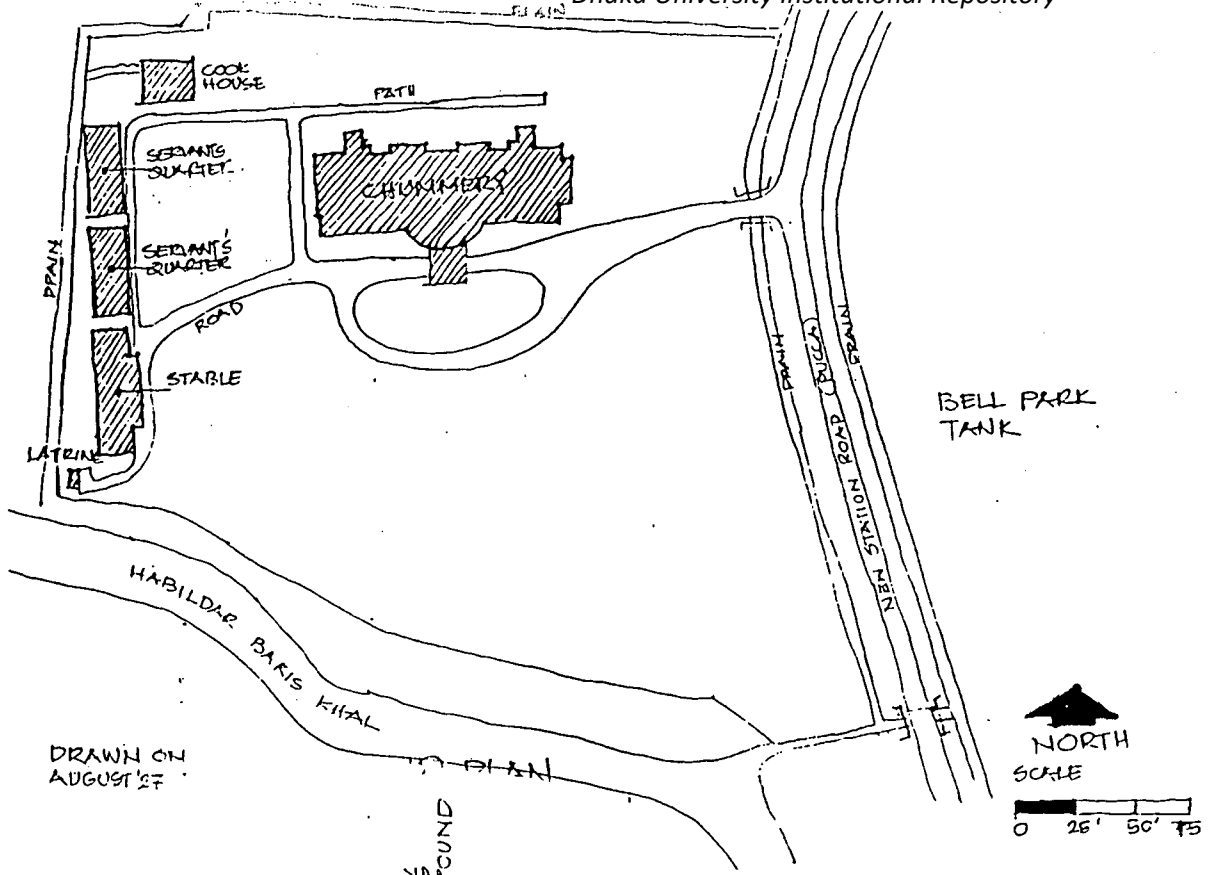


Fig-4.11.4 Compound plan,
District Jail, Barisal

Fig-4.11.5

Compound plan,
Masonry at Barisal



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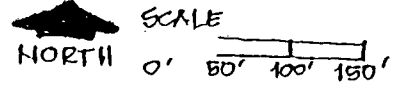
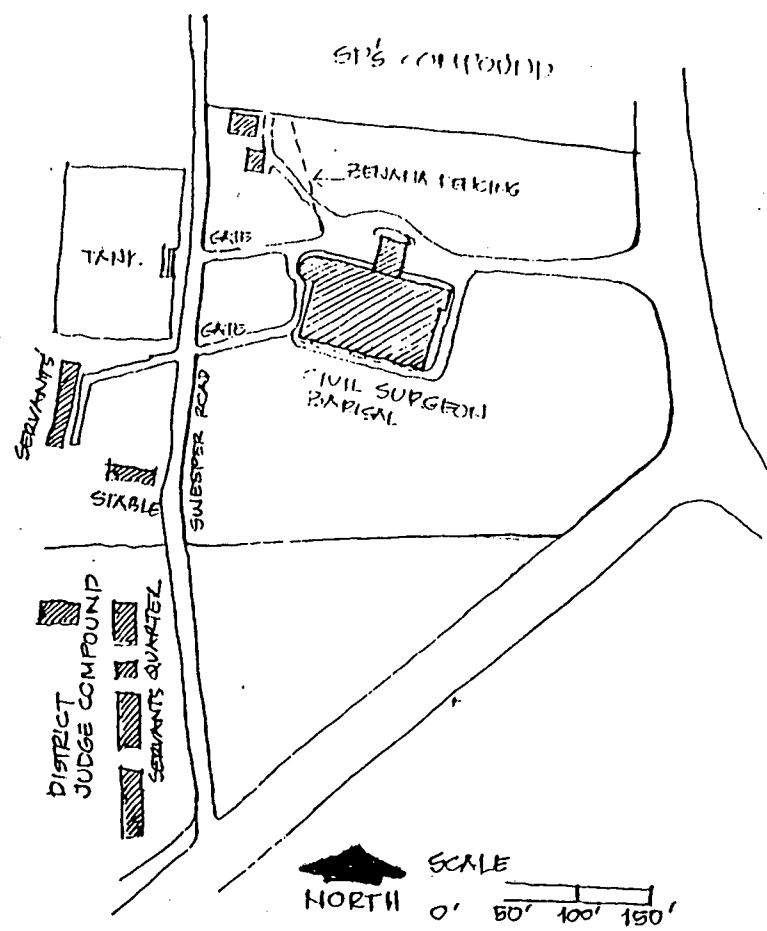
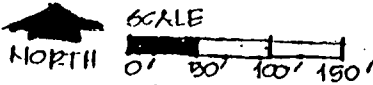
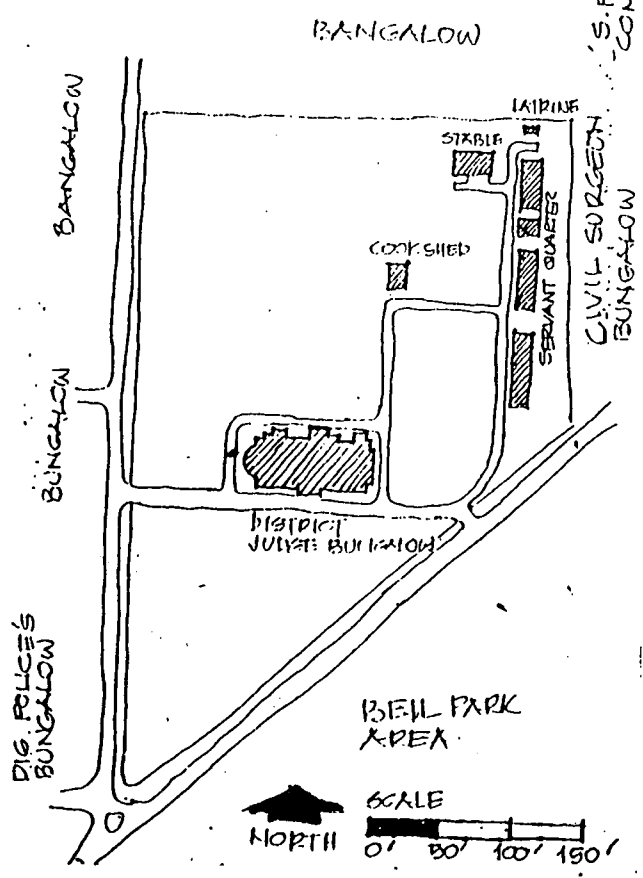
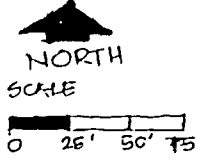


Fig-4.11.6 Compound plan, District Judge, Barisal

Fig-4.11.7 Compound plan, Civil Surgeon, Barisal.

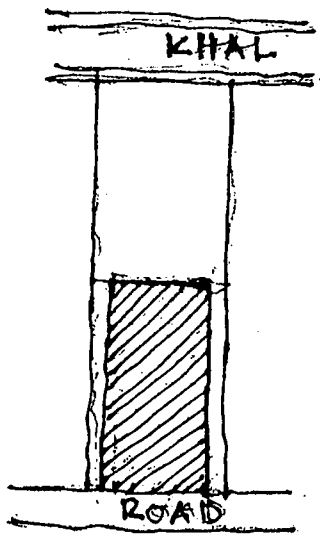


Fig-4.11.10 - Compound plan,

Poddar, Painam nagar, Sonargaon

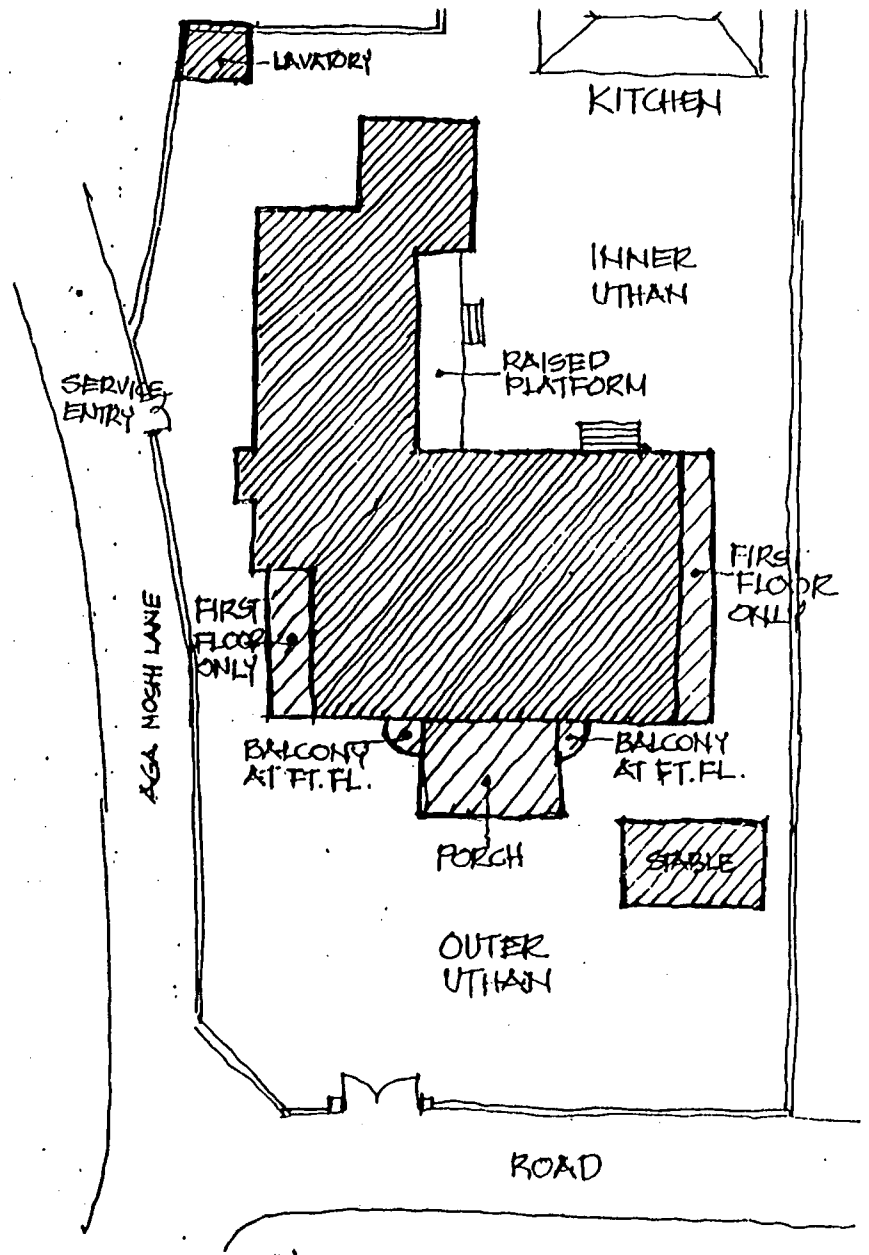


Fig-4.11.8 Compound plan,

Anath Bhandhu Rishi, Aga Moshi land, Dhaka.

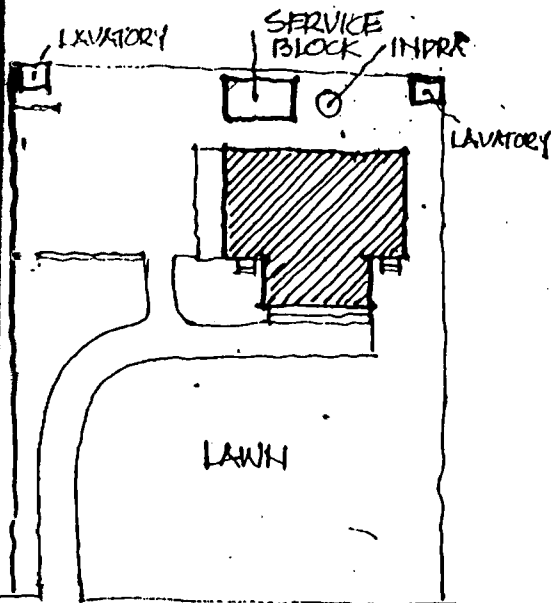
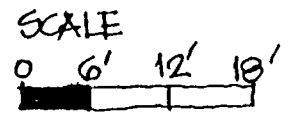


Fig-4.11.9 Compound plan,

Devendra Mohan Das, Nawab Street, Dhaka

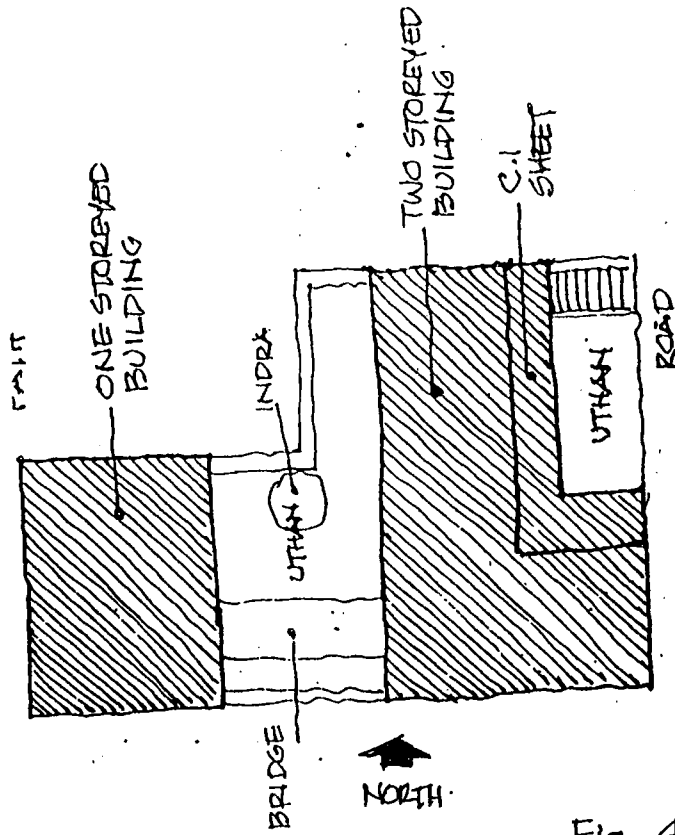


Fig-4.11.11 Compound plan,
Rajehandra Munshi Laxmibazar, Dhaka

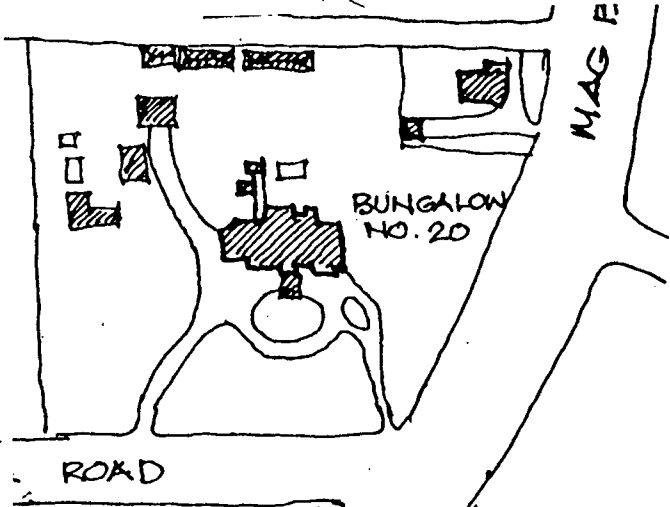


Fig. 4.11.14. COMPOUND PLAN
BUNGALOW NO. 20
RAMNA COLONY, DHAKA



Fig-4.11.12 Compound plan,
Narruddin Ahmed stand road, Chittagong.

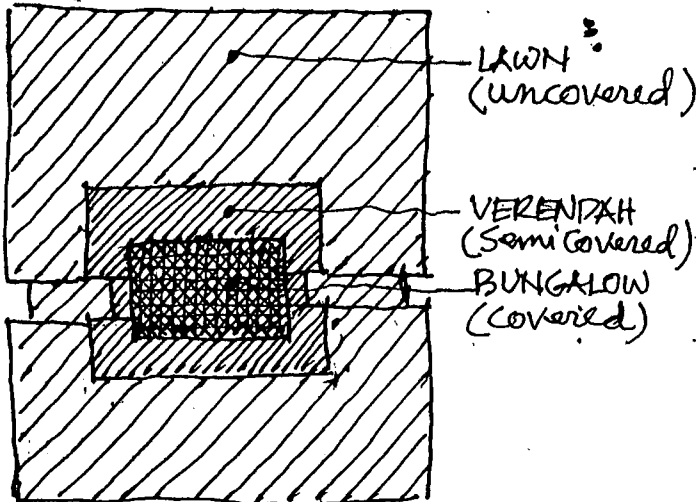
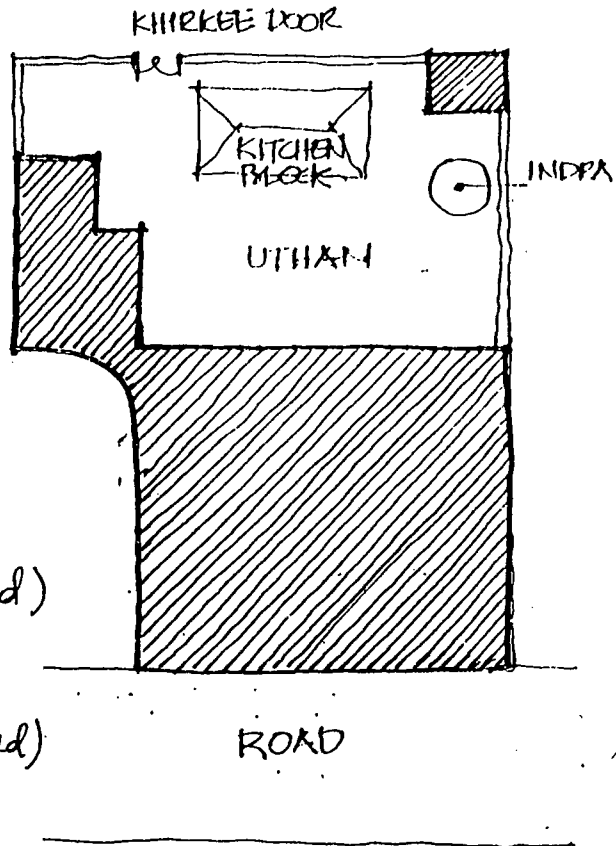


Fig. 4.11.13 The hierarchy of covered,
Semi-Covered and uncovered spaces

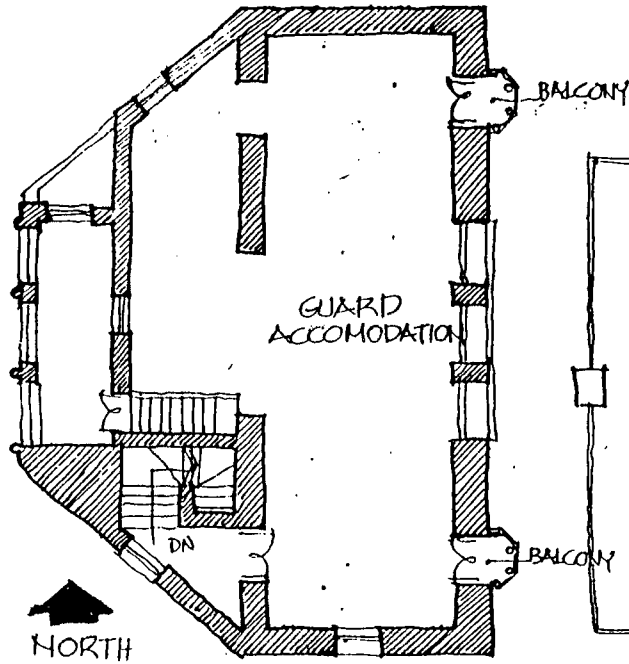


Fig-4.12.1.4 Second floor plan

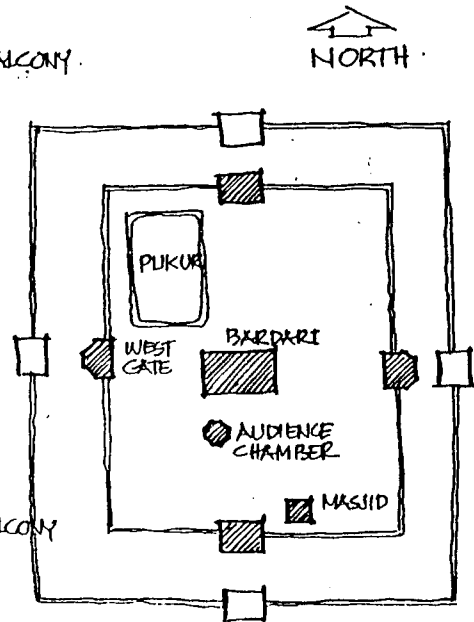


Fig-4.12.1.1 Gate house and compound plan.

Nawab bari, Dhaka

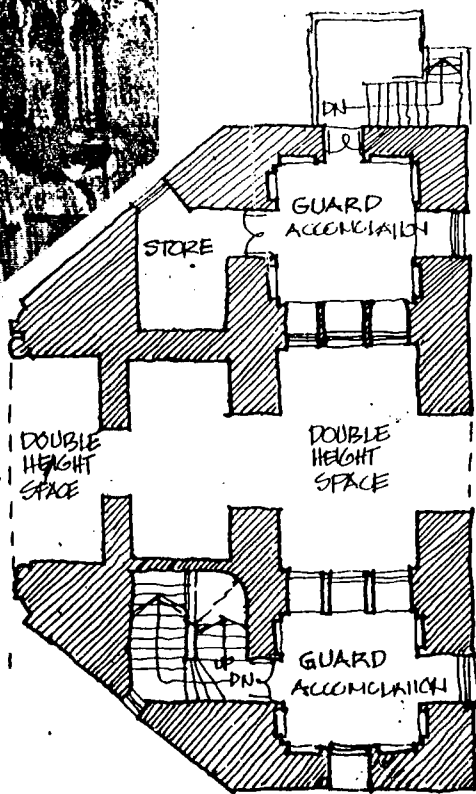
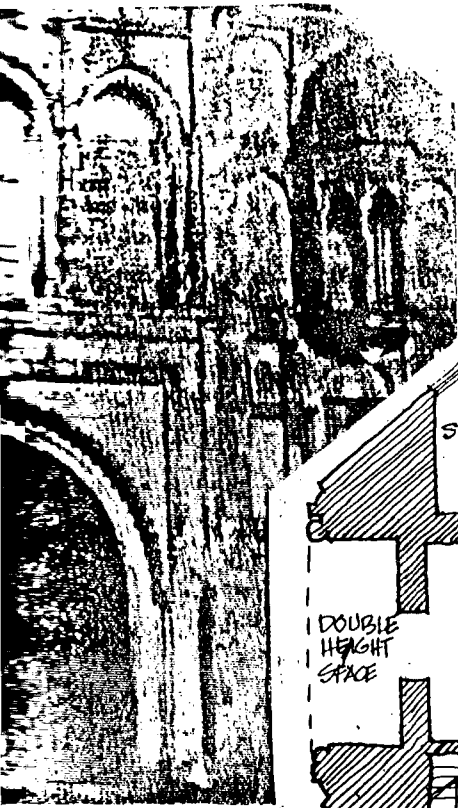


Fig-4.12.1.3 First floor plan, Neemtali gate

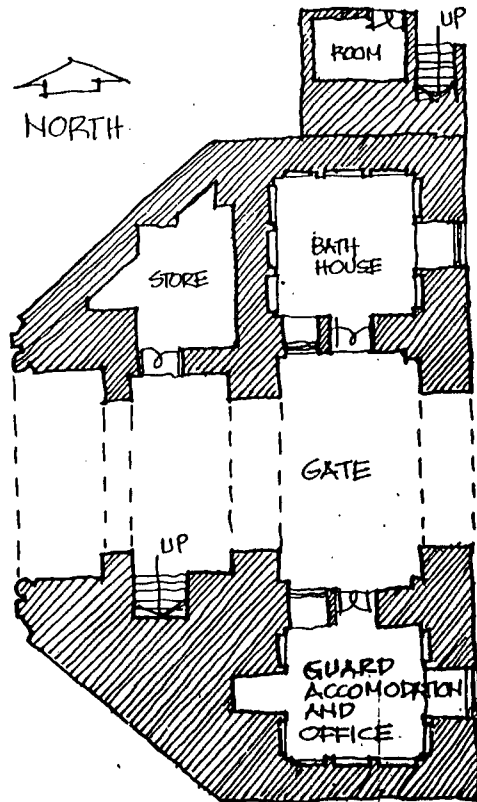


Fig-4.12.1.2 Ground floor plan, Neemtali gate

Fig 4.12.1.5
Neemtali
gate from
the bard
dauri



Fig-4.12.2.2 Entry and entry house to the Mandir.
Dinajpur rajbari



Fig-4.12.2.1 Main entry and
entry house of Dinajpur rajbari

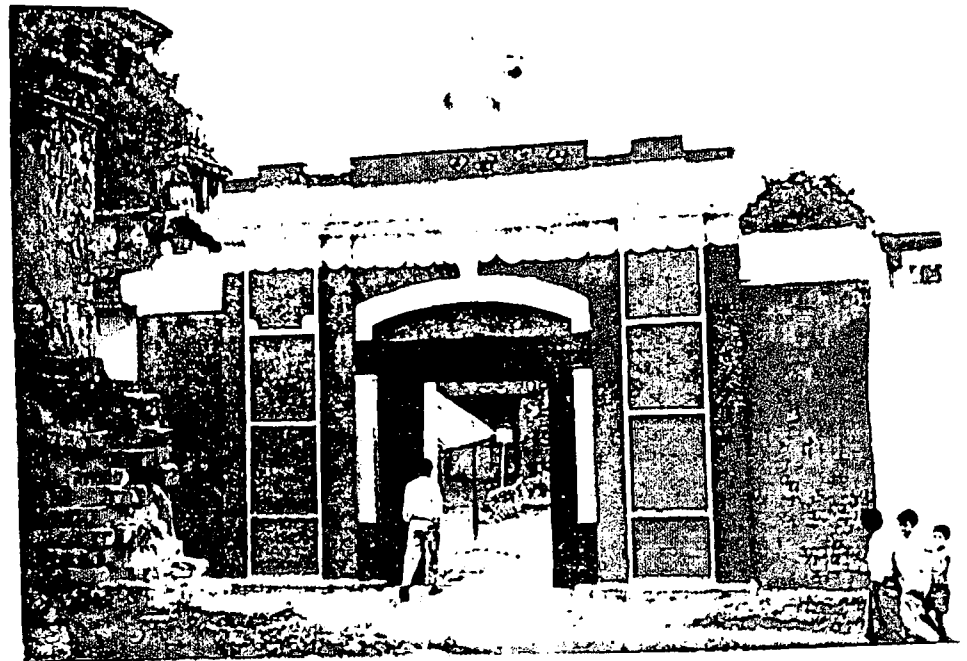


Fig-4.12.2.3 *Sinha darwaza* between the inner and outer house



Fig-4.12.2.4 Gate in the rural house
Mukul babur bari, Murapara, Dhaka.



Fig-4.12.2.5 Internal gateway, Dinajpur rajbari

Fig-4.12.2.6 Secondary gate at Monipur rajbari,
Sylhet town

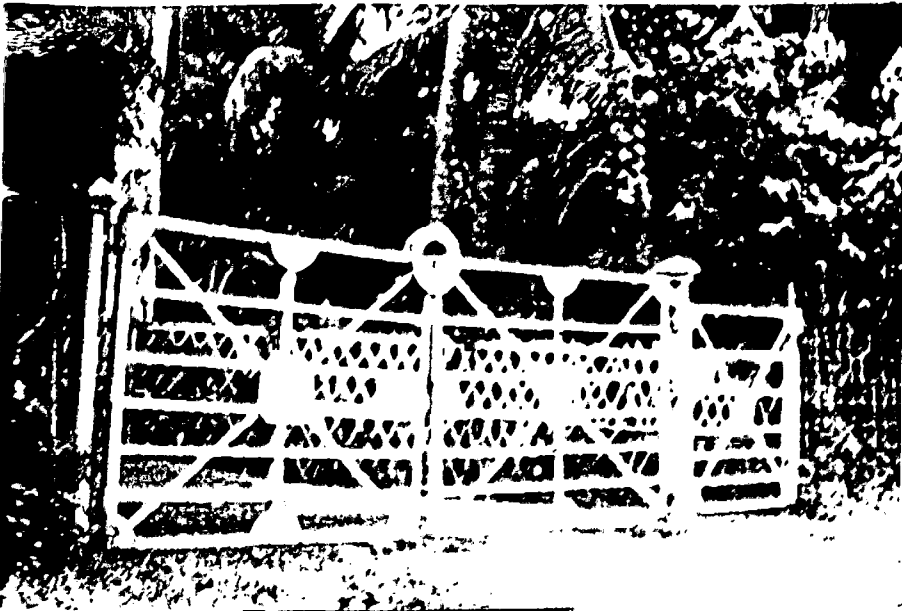


Fig-4.12.2.7 Gate in Railway quarter,
Pahattary, Chittagong

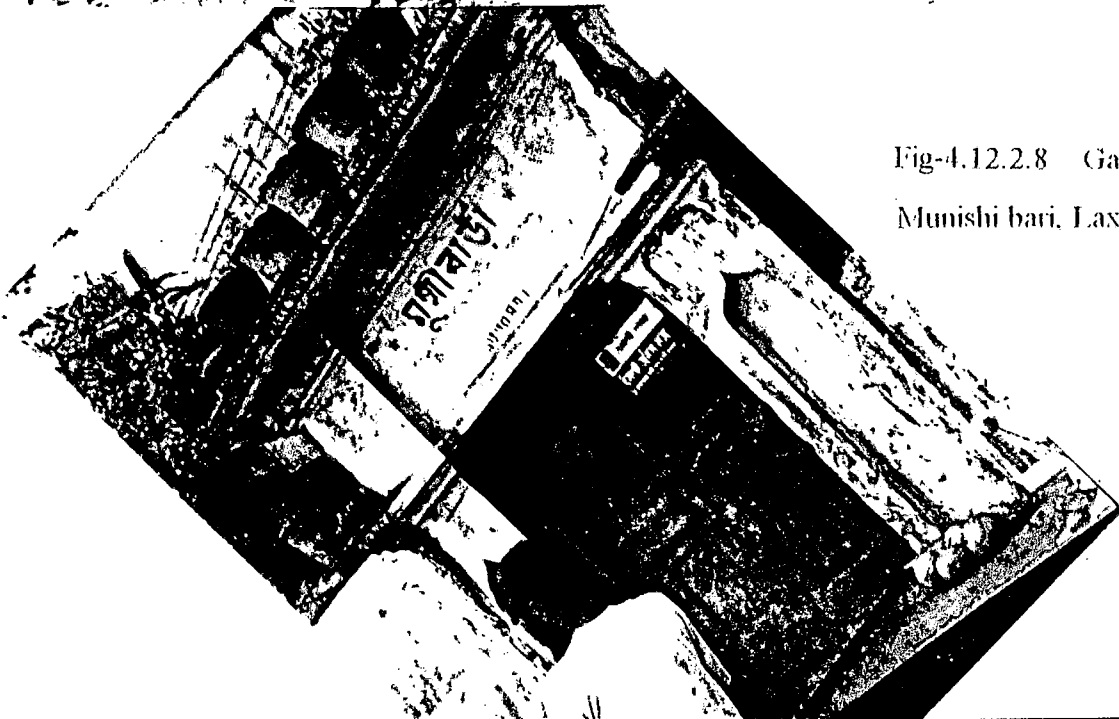


Fig-4.12.2.8 Gate in urban house,
Munishi bari, Laxmibazar, Dhaka

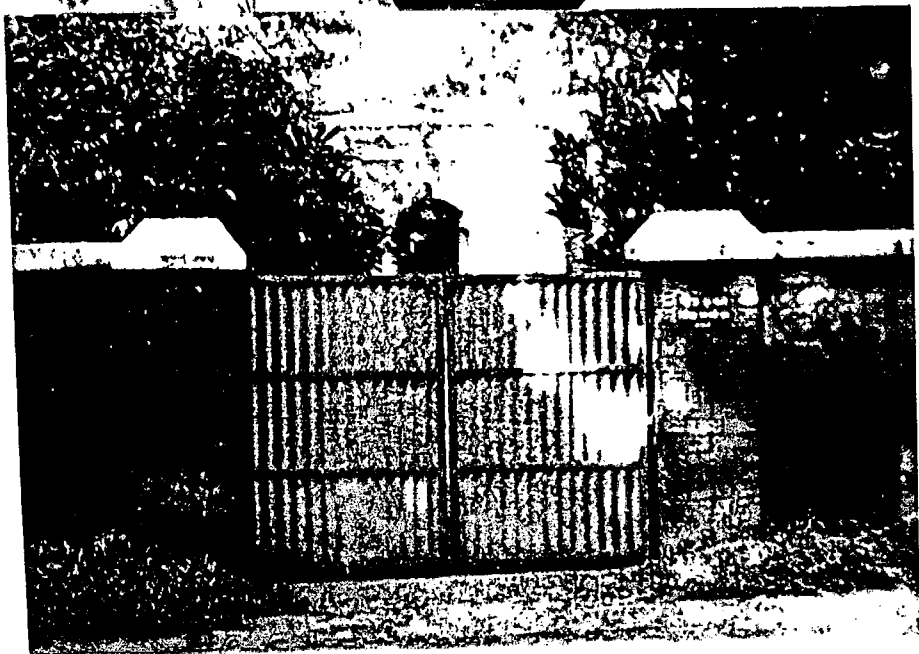


Fig-4.12.2.9 Gate in the bungalow of Munsef Noogaon



Fig-4.13.1 Inner Uthān in kalaskati zamindar house.

Rajeswar Rai Chowdhury

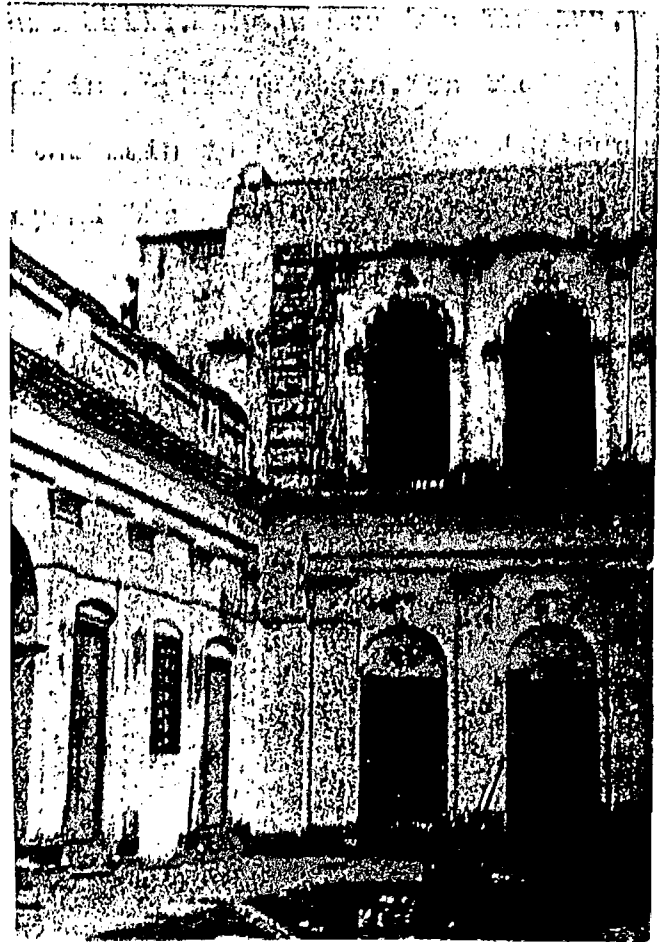


Fig-4.13.2 Inner uthān and raised terrace

Murapara house.

Fig-4.13.3 Paved uthān.

Muktāgacha rajbari





Fig-4.14.1 Drive, bungalow of District Magistrate Rajshahi

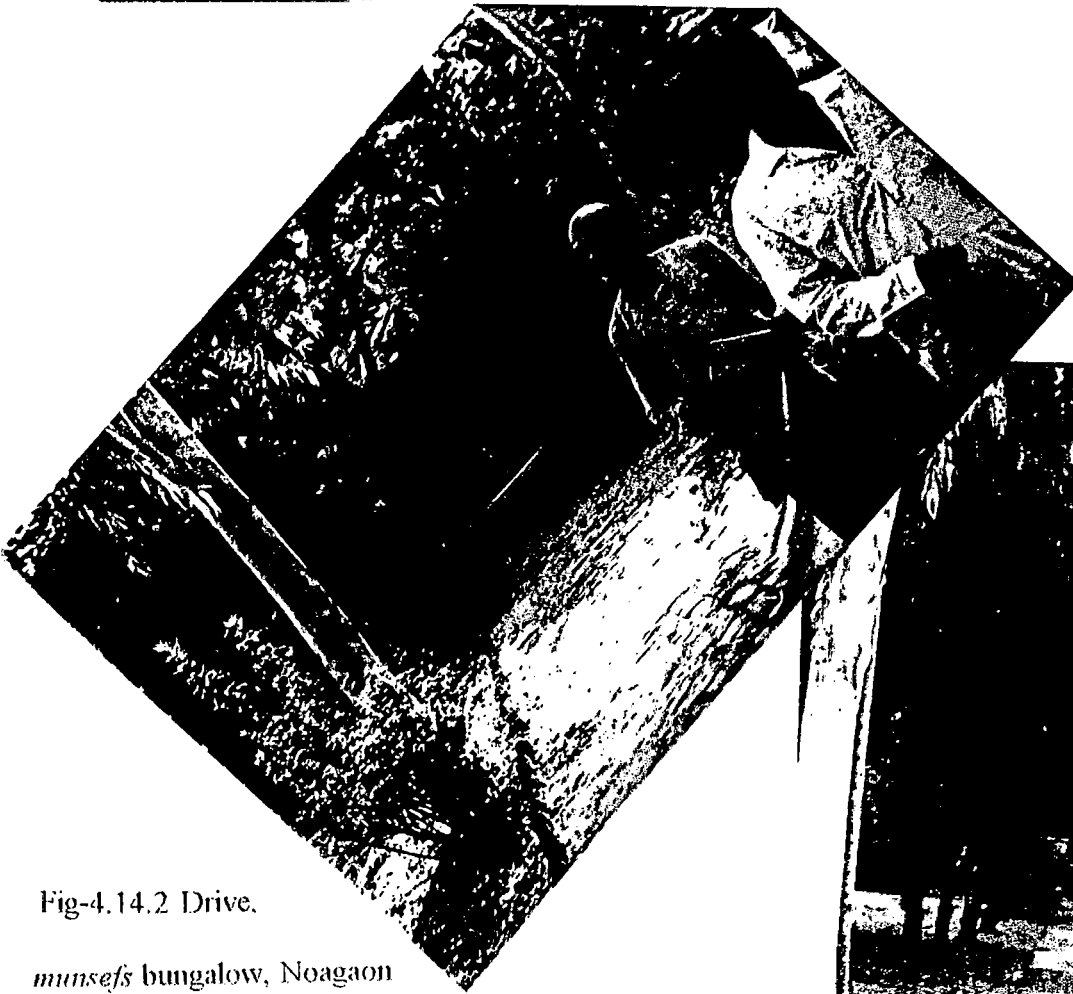


Fig-4.14.2 Drive, munsefs bungalow, Noagaon



Fig-4.14.3 Drive, bungalow no.-35, Ramna colony

Fig-4.15.1 Iron fence,
Kashi Nath house painam nagar,
Sonargaon

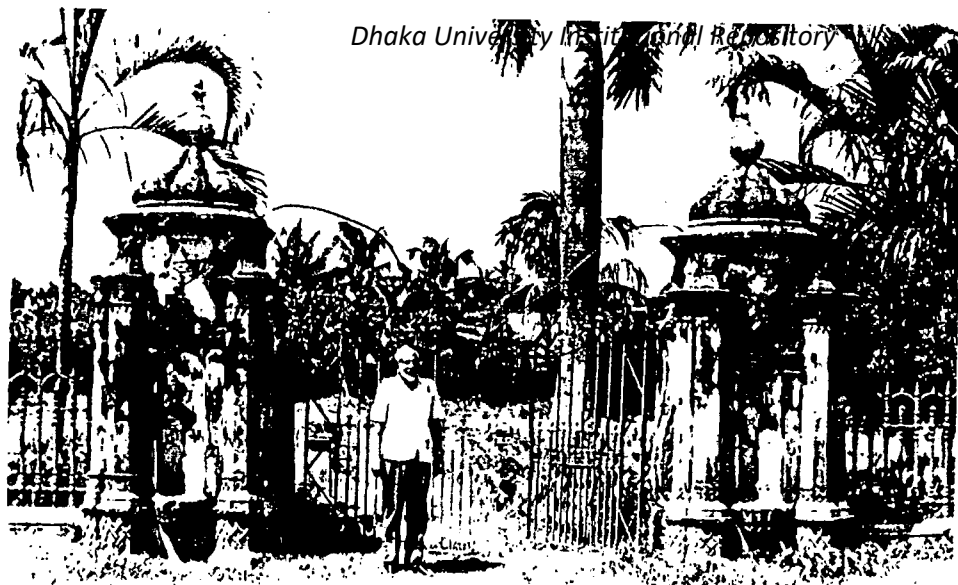


Fig-4.15.2 Grilled boundary,
house of Satish Poddar,
Painam nagar



Fig-4.15.3 Boundary wall,
Bhajahari Lodge, Dhaka.

Fig-4.16.2 *Pukur ghat, Dewan bari, Savar*

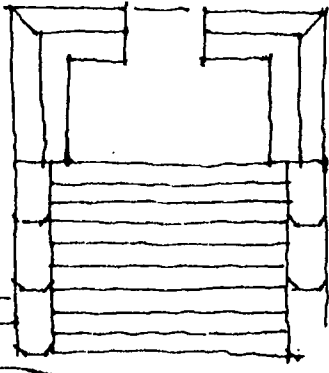


Fig-4.16.1 Plan, *Pukur ghat*
Dewan bari, Savar

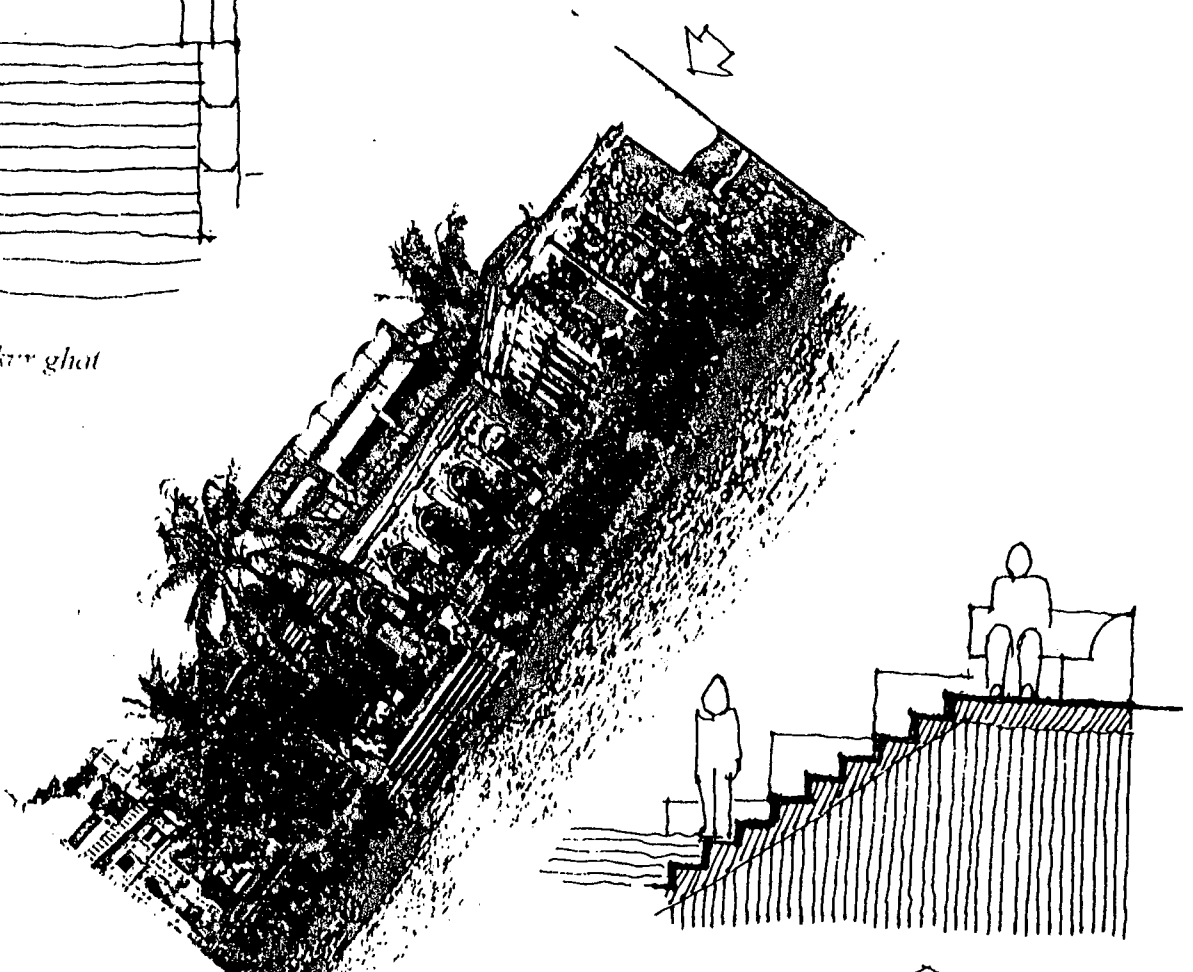


Fig-4.16.3 Section thru.
pukur ghat, Savar

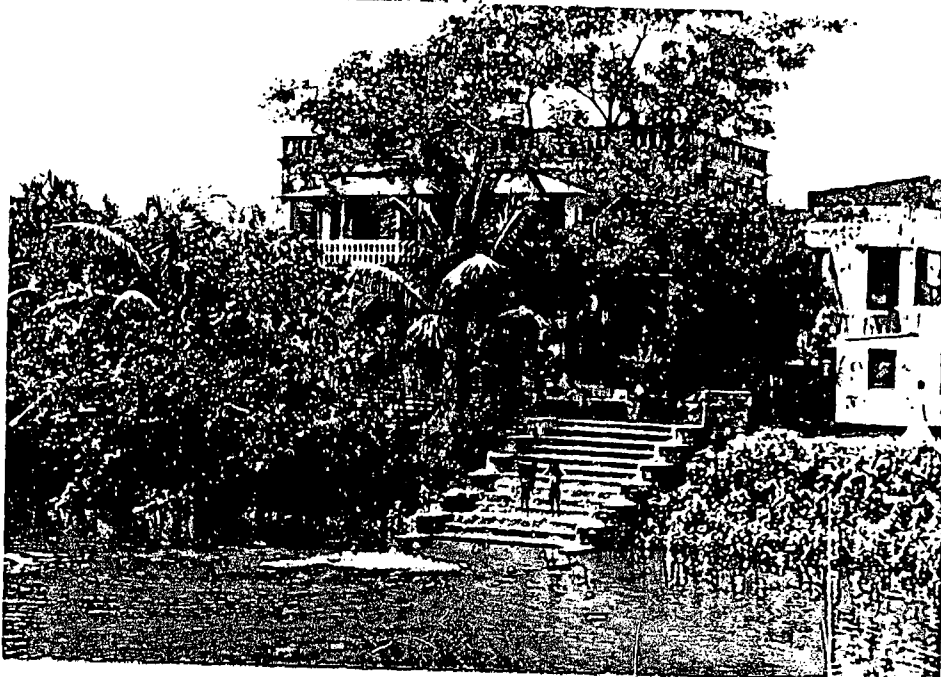


Fig-4.16.4 *Pukur ghat,*
Kungal Nath bagan bari,
Brahmanbaria

Fig-4.16.5.2 Bath room,
Mymensingh rajbari

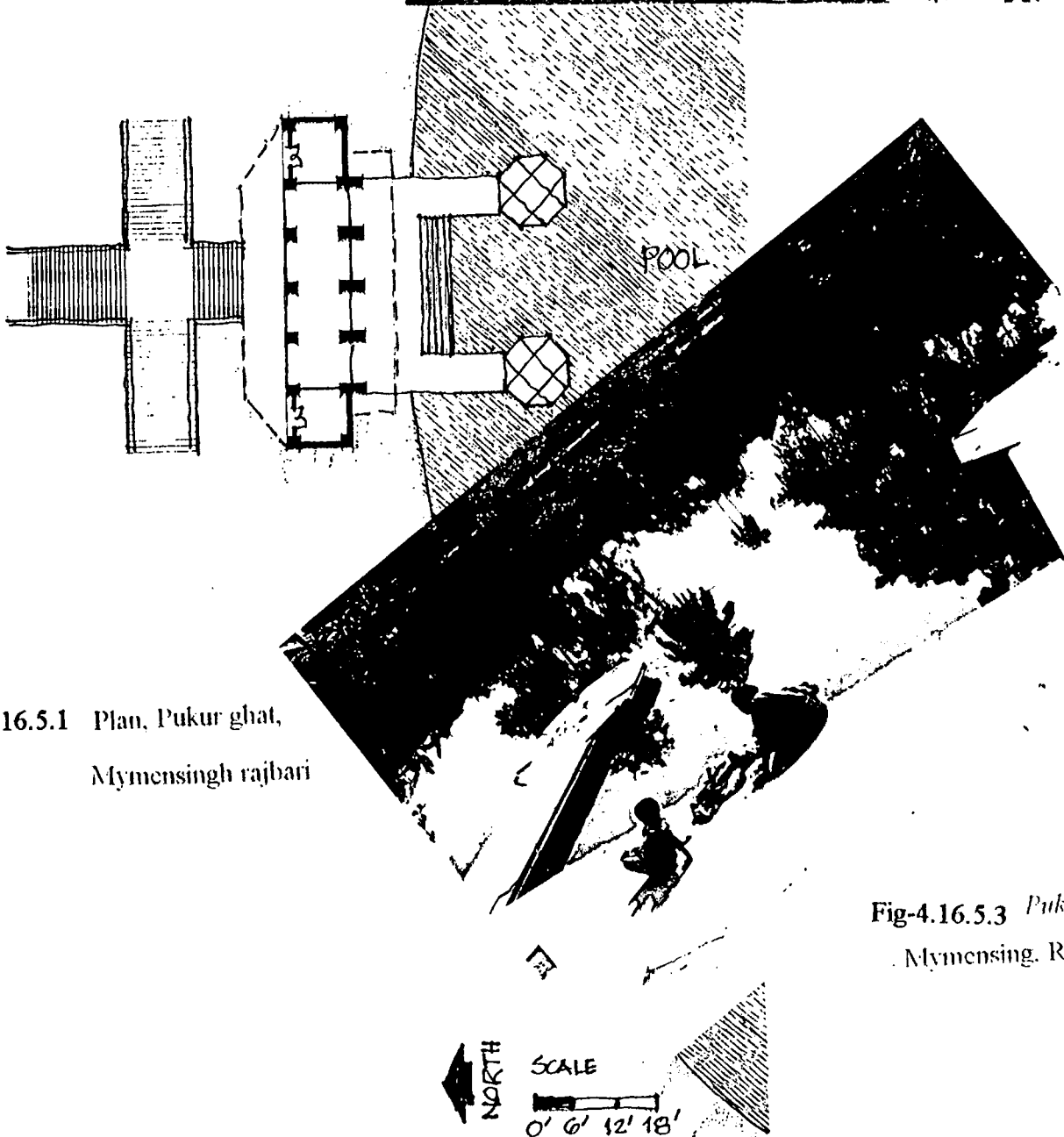
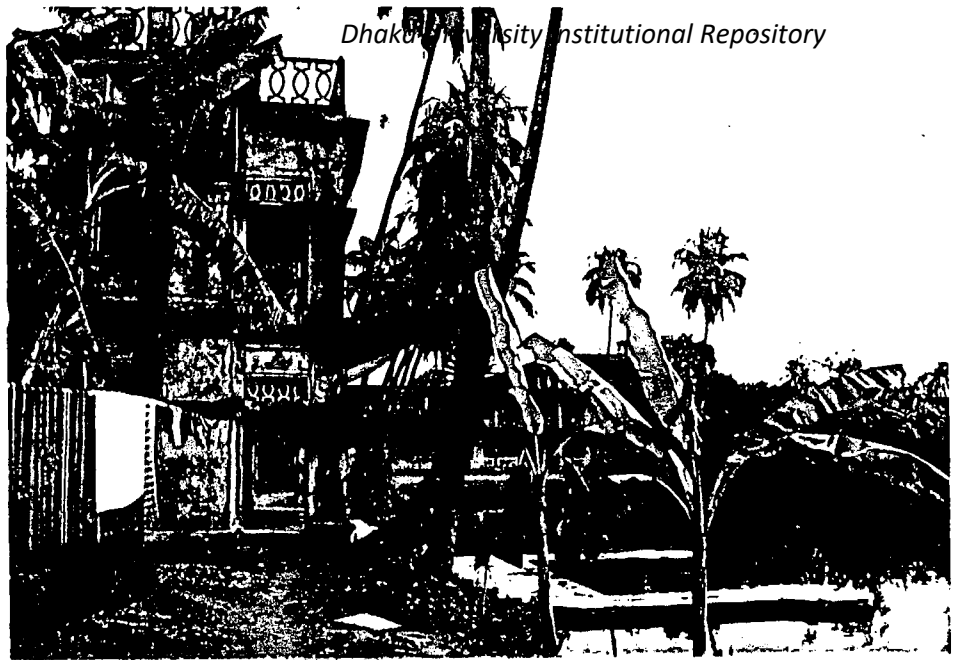


Fig-4.16.5.1 Plan, Pukur ghat,
Mymensingh rajbari

Fig-4.16.5.3 Pukur ghat,
Mymensing. Raj bari

Fig-4.17.1 *Indra*
in the Munsefs bungalow,
Noagaon



Fig-4.17.2 *Indra* and tubewell in Natore *rajbari*

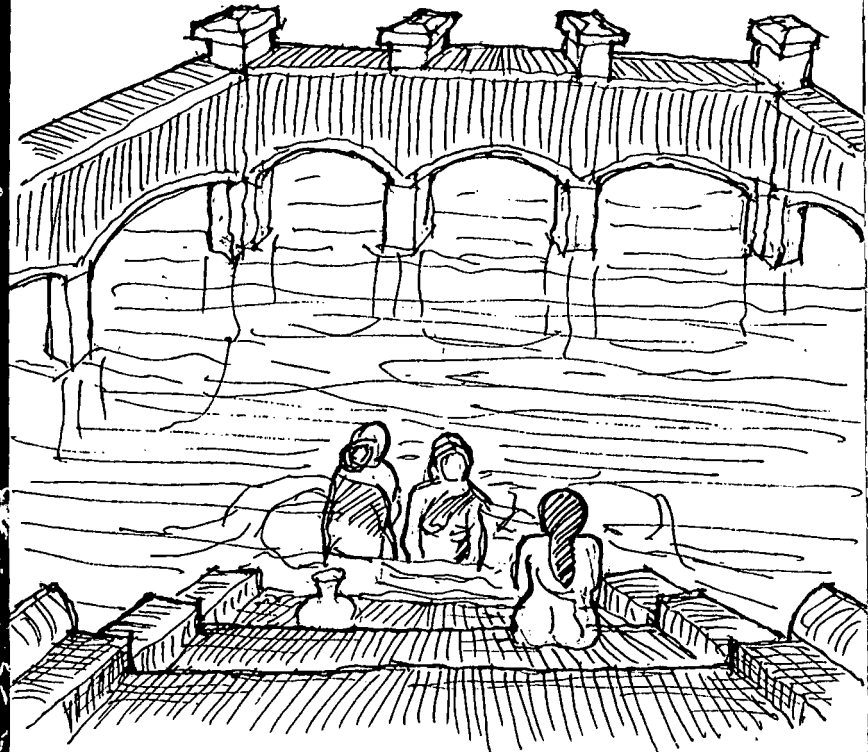


Fig-4.17.3 Brick enclosure in the Pukur ghat of Putia *rajbari*

The typical tulshi
mancha in the Hindu
households where the
Hindu women watered
the tulshi plant
every morning
and lit the pradip
(lamp) in the
evening

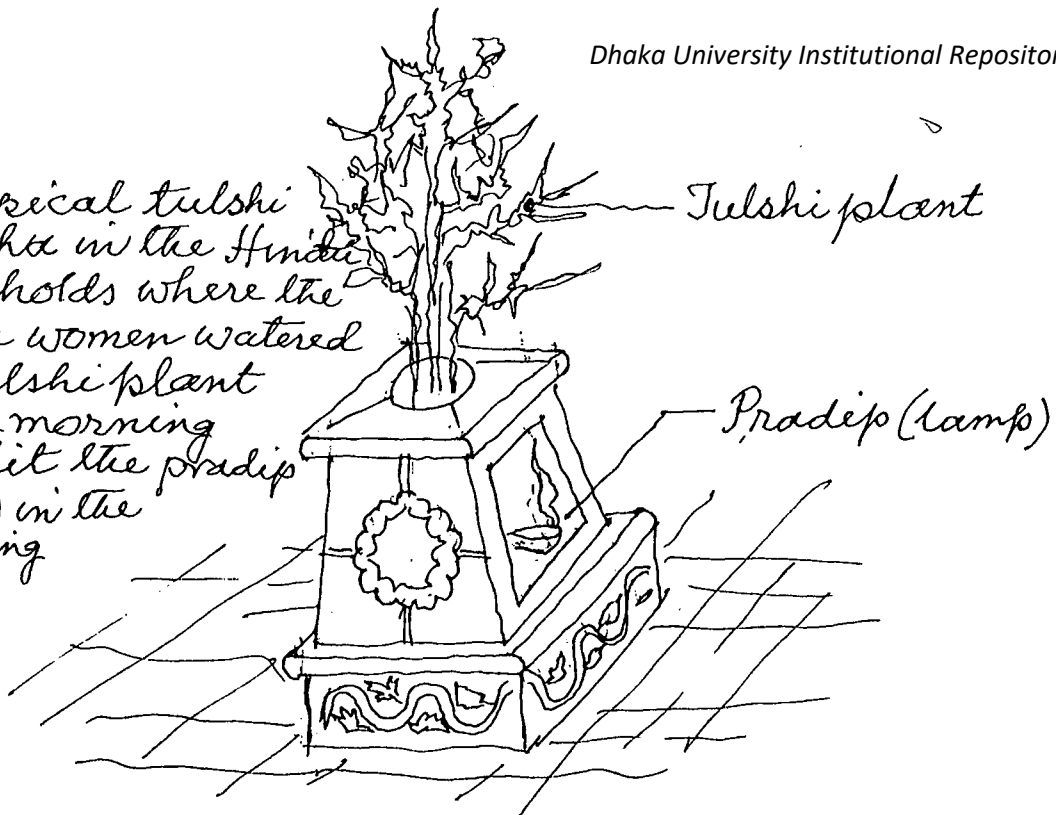


Fig-4.18.1 Typical tulshi mancha



Fig-4.18.2 Chini tukri decorated tulshi mancha.

Haipure zamindar house, Madavpur.

Brahmanbaria

Fig-4.19.1 Circular steps in the bungalow of J.I. Governor, Dhaka.
(Bungalow of the member Governor's Council)

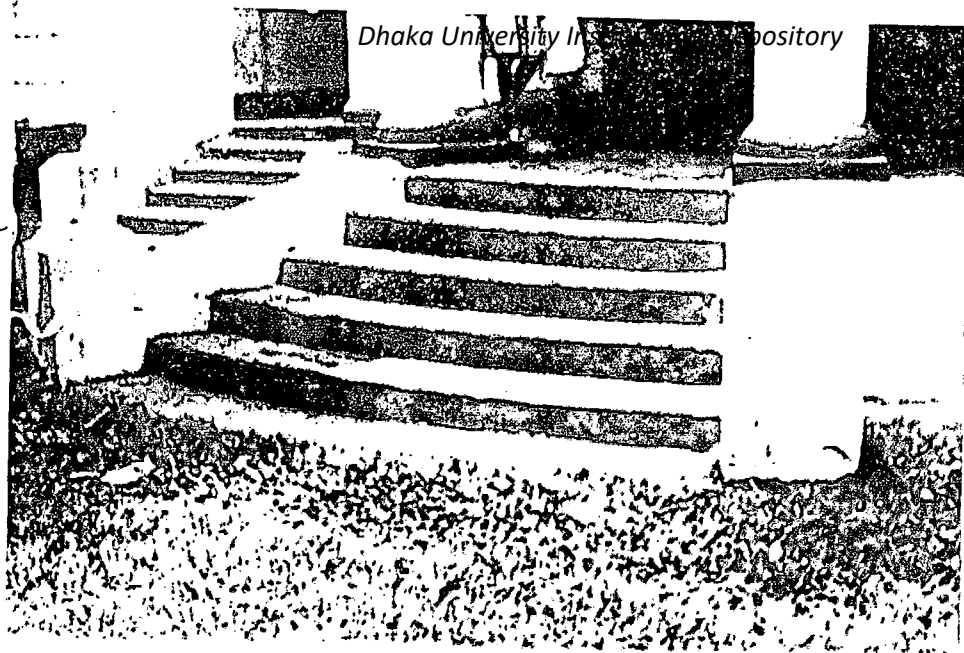


Fig-4.19.2 High plinth in the house of Sailen Gosh.
Noapara, Khulna

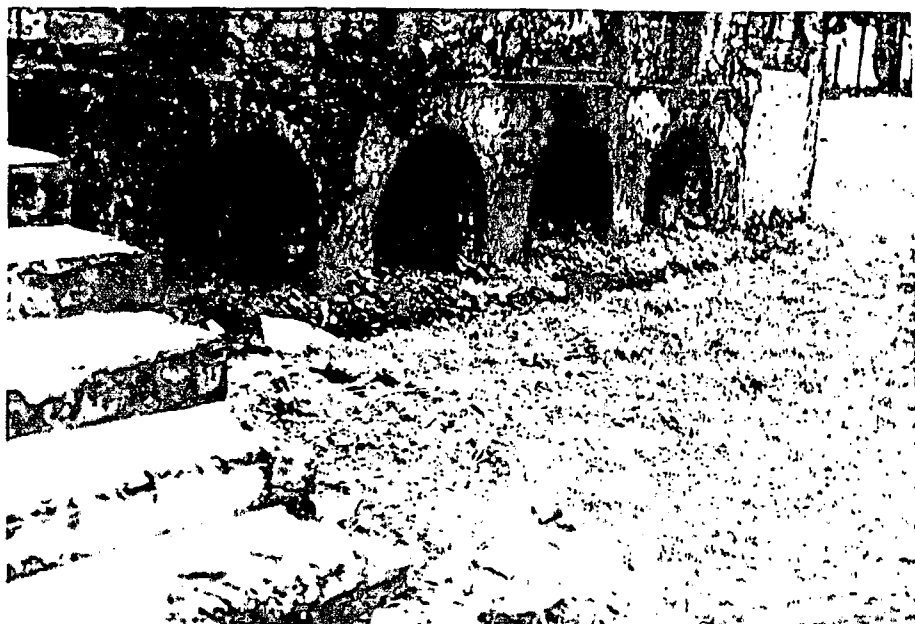


Fig-4.19.3 High plinth and brick vaults in the house of Sailan Gosh.
Noapara, Khulna



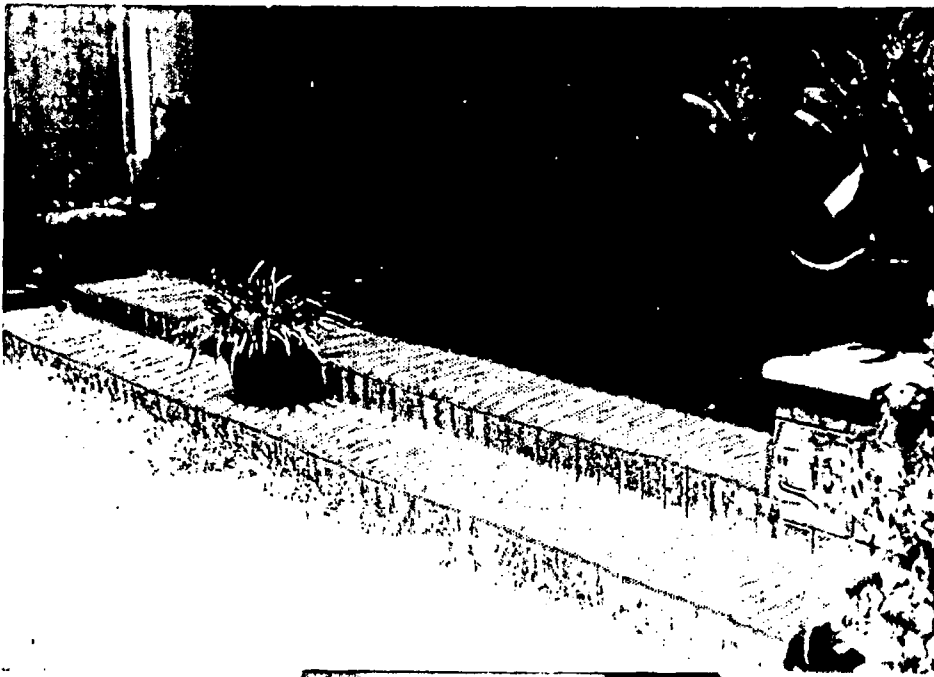


Fig-4.19.4 Long steps and roak.



Railway bungalow,
15, college road, Dhaka



Fig-4.19.5 Steps and roak



in bungalow no-32,
Ramna colony, Dhaka



Fig-4.19.6 Steps and roaks in different steps.

Bungalow no-35, Ramna colony, Dhaka

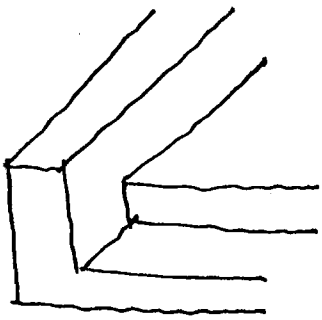


Fig-4.20.1 Roak in Railway bungalow
15, College street,
Dhaka.

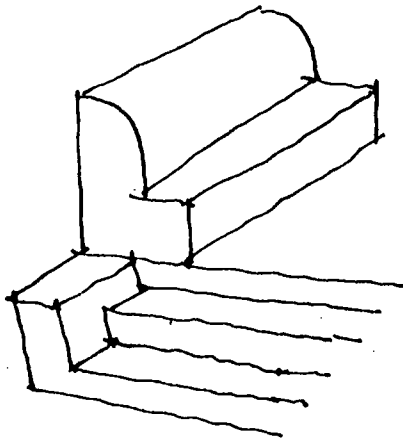


Fig-4.20.2 Roak in urban house

House of Hemakanta
Bhattacharjee, Ukilpara.
Hoagson.

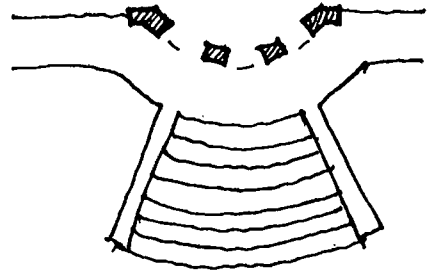


Fig-4.20.3 Special shape steps in rajbari
Wymensingh rajbari

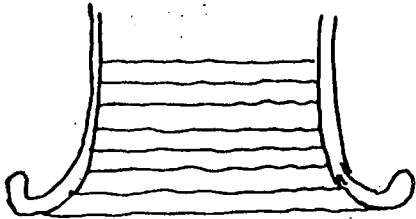


Fig-4.20.4 Special shape steps
in bagan bari
Rose garden, Dhaka

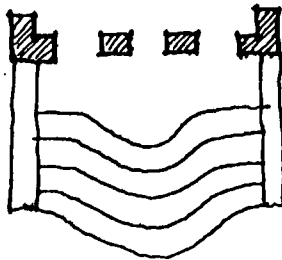


Fig-4.20.5 Special shape steps
in Dak-bungalow
Sattkhira

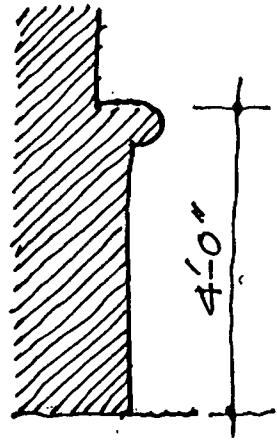


Fig-4.20.6 Section thru plinth-1
House of Khurasani,
Khulna.

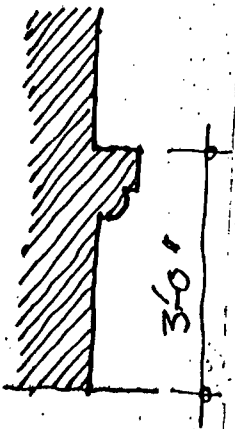


Fig-4.20.7 Section
thru plinth-2

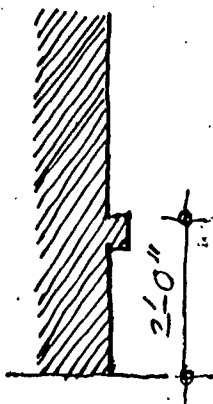


Fig-4.20.8 Section
thru plinth-3

Bungalow no-27
Ramona Colony,

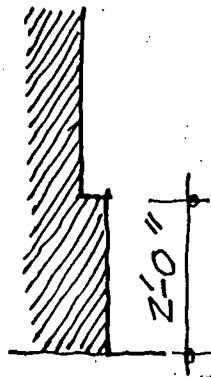


Fig-4.20.9 Section
thru plinth-4

Hati Companibar,
Chittagong.

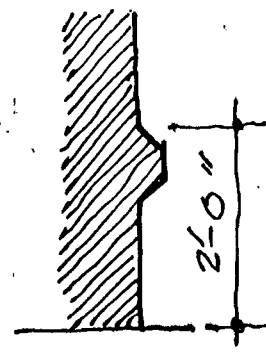


Fig-4.20.10 Section
thru plinth-5

House of Advocate
Surentra Nath,
Ukilpara

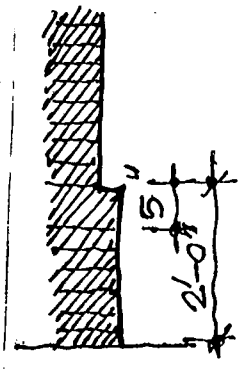


Fig-4.20.11 Section
thru plinth-6

Dressing
room,
Ramesh Pukur

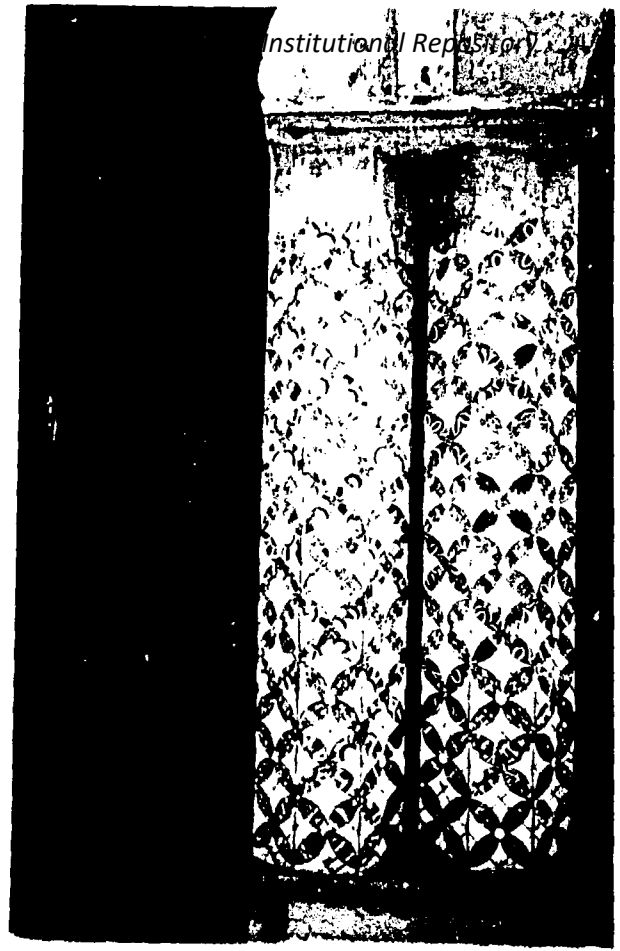
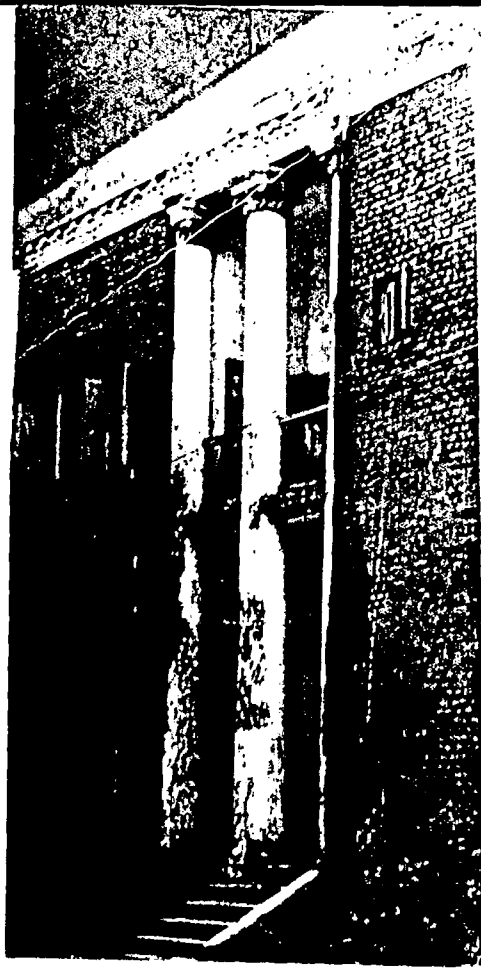


Fig-4.21.2 Double height heno style column, House of Khan Bahadur Basiruddin, Ukilpata Noagaon



Fig-4.21.1 Surface decorated octagonal do style column, House of Naruddin, Standard road, Chittagong

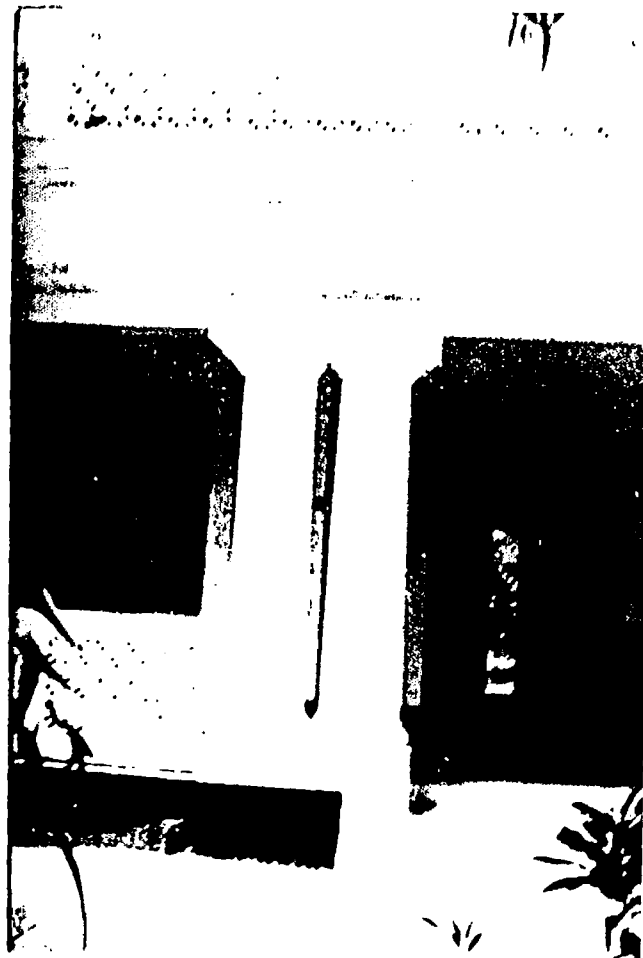


Fig-4.21.3 Doric type do style column, circuit house, Rajshahi

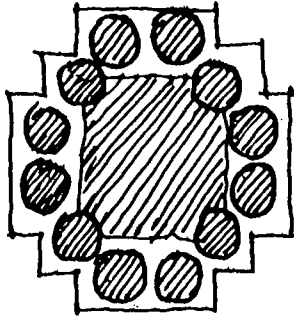


Fig-4.21.4 Plan, Dode castyle columns,
Family mandir,
Muktagacha and Joydevpur
rajbari

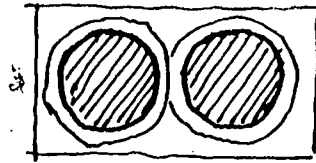


Fig-4.21.5 Plan of Distyle columns
circuit house, Rajshahi

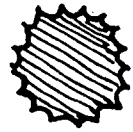


Fig-4.21.6 Plan
of Heno style fluted column
Ruplal house, Dhaka

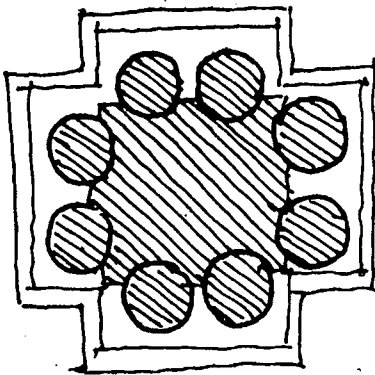


Fig-4.21.7 Plan of Octastyle plain column,
Family mandir, house of Sailan Gosh, town
Noapara

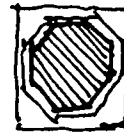


Fig-4.21.8 Plan,
Octagonal columns
Ranir Kuti,
Comilla.

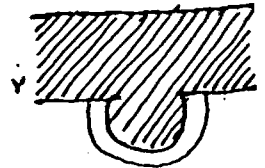


Fig-4.21.9 Plan,
False column in wall
House of Ashi
Poddar, Painam
nager, Sonargaon.

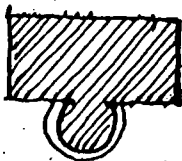


Fig-4.21.10 Plan,
False column with pier
Gauripur palace,



Fig-4.21.11 Plan, Timber column
House of Nural

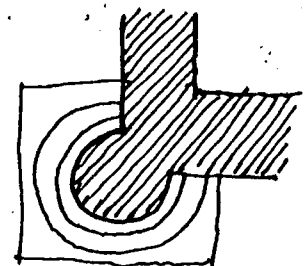


Fig-4.21.12 Plan,
False corner column



Fig-4.21.13 False rectangular column
Kashi Nath house,
Painam Nagar,
Sonargaon.

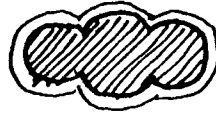


Fig-4.21.14 Plan, Engaged column
House of Durga Das
Adikari, Das Engineer
para, Rangpur.

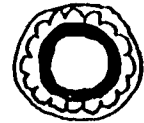


Fig-4.21.15 Plan, steel column
Goldsmith house
Painam Nagar,
Sonargaon.

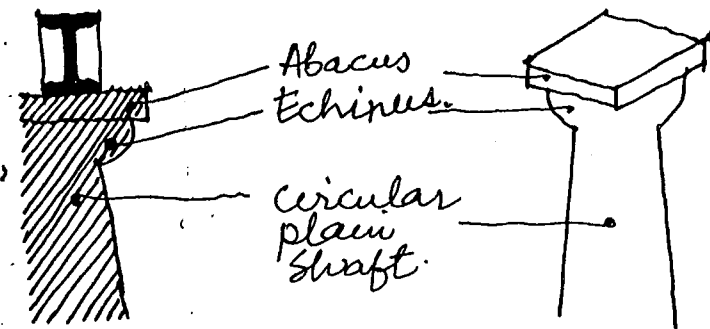


Fig-4.21.16 Section thru doric capital
Circuit house
Rayshahi

Fig-4.21.17 Perspective, doric capital
Circuit house
Rayshahi

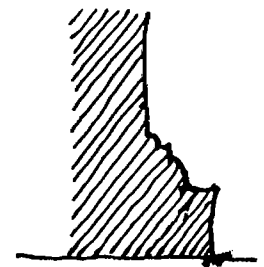
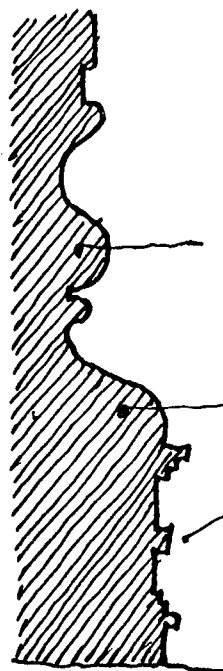


Fig-4.21.18 Section thru, doric column base
Circuit house
Rayshahi



Goldsmith house
Painam Nagar,
Sonargaon.



Slice of Cucumber

Moulding

Chain

Rose garden
Dhaka

Fig-4.21.19 Section thru

Fig-4.21.20 Section thru

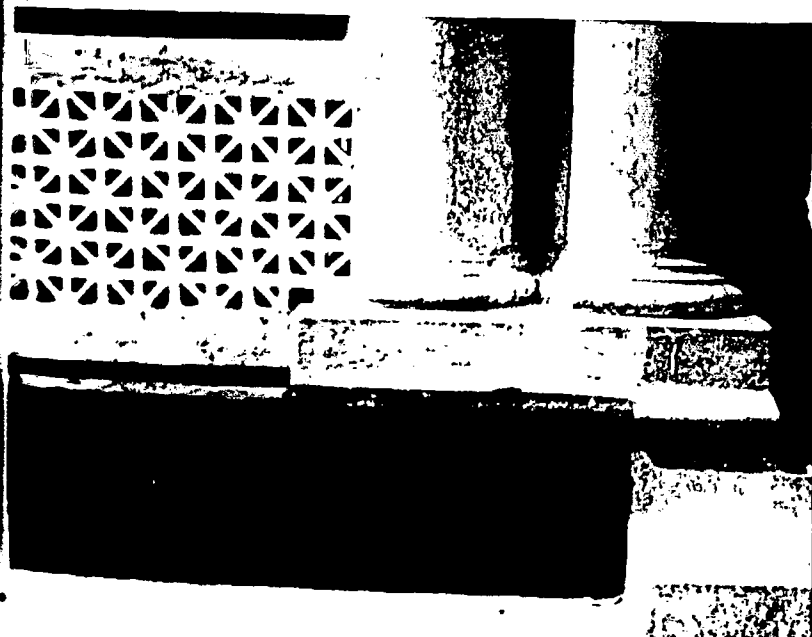


Fig-4.22.3 Column base, circuit house, Rajshahi

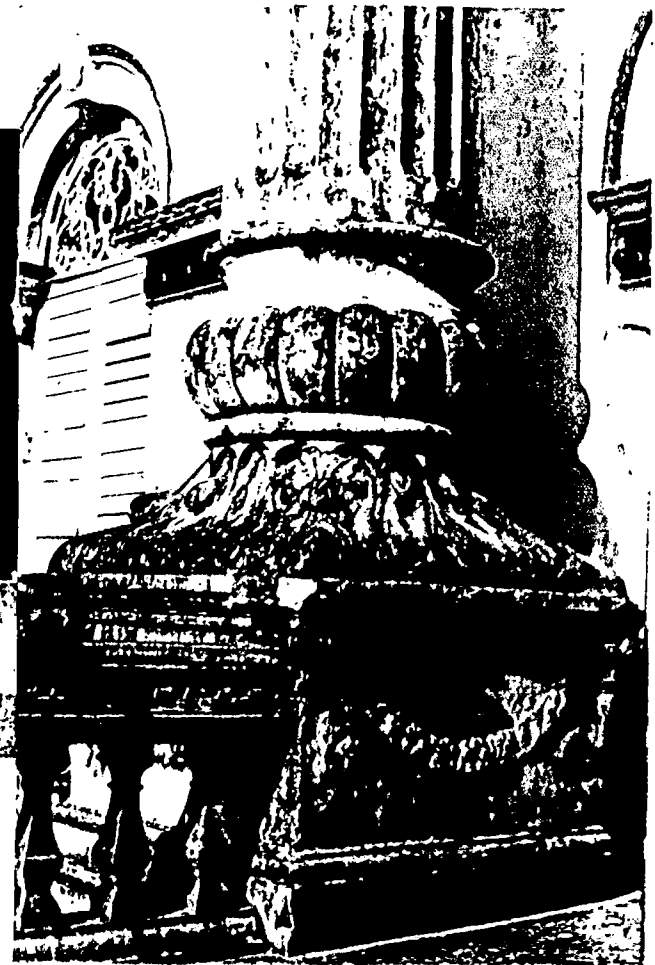


Fig-4.22.2 Cast iron column base,
Goldsmith house, Painani nagar

Fig-4.22.1 Column base, rose garden



Fig-4.22.4 Bases of Coctastyle columns,
Family mandir, house of
sailan Gosh, town

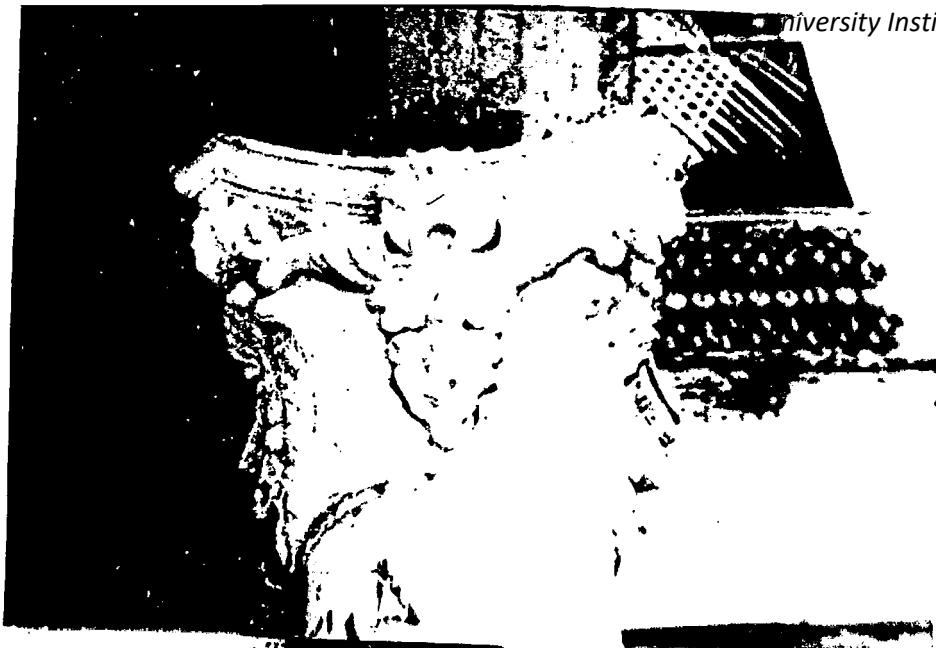


Fig-4.23.1 Capital on
Single column

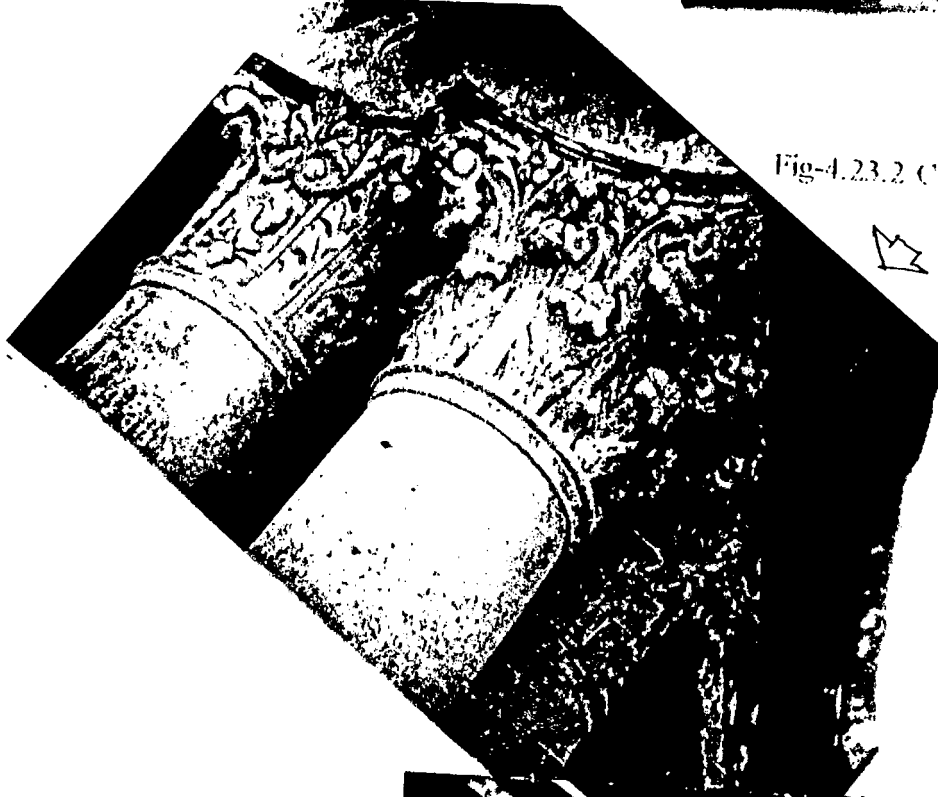


Fig-4.23.2 Capital on tripple corinthian columns



Fig-4.23.3 Capital on double columns



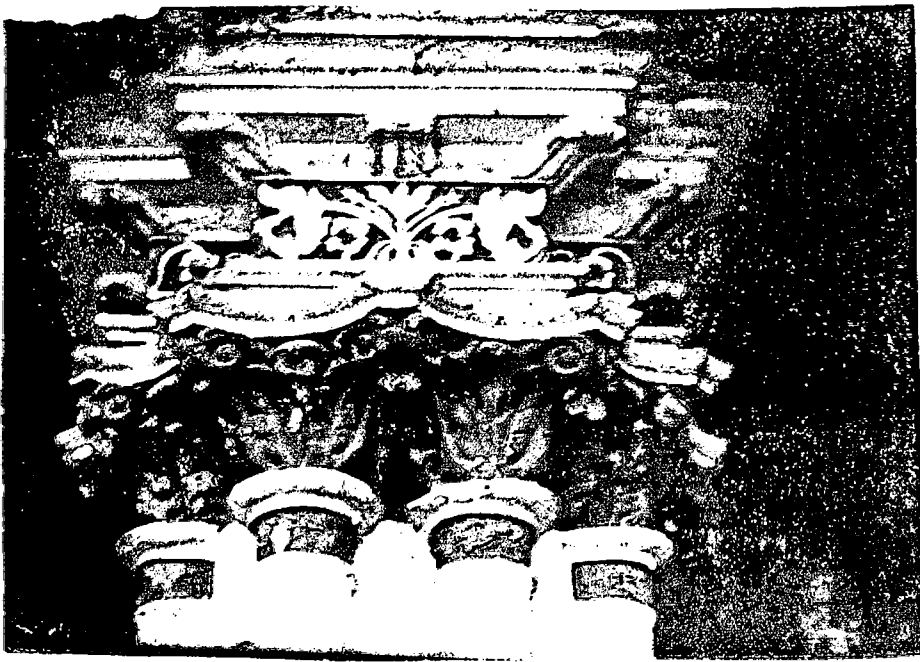


Fig-4.23.4 Capitals
of Octastyle columns

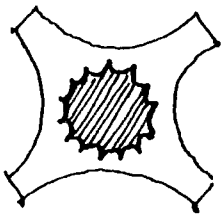


Fig-4.23.5 Plan of capital
(Looking up)
Dinajpur rajbari

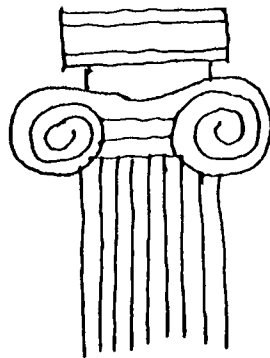


Fig-4.23.6 Section thru capital
Ionic Column,
Dinajpur rajbari

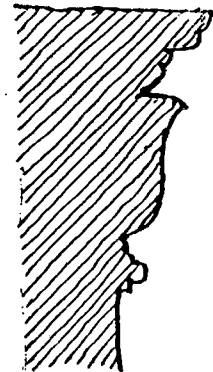


Fig-4.23.7 Section thru
corinthian capital

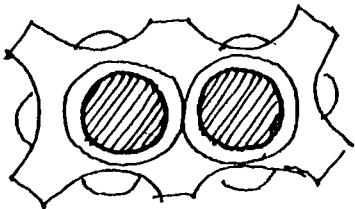


Fig-4.23.8 Plan, Distyle
corinthian column and capital

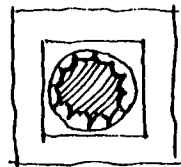


Fig-4.23.9 Plan capitals

Meymoussingh
rajbari

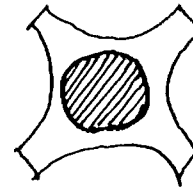


Fig-4.23.10 Plan Capitals

Ranerkuti, Comilla 200

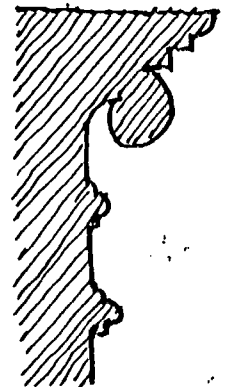


Fig-4.23.11 Section thru capital

House of Abu Monsur, M.P.
Upper Jessore road, Khulna

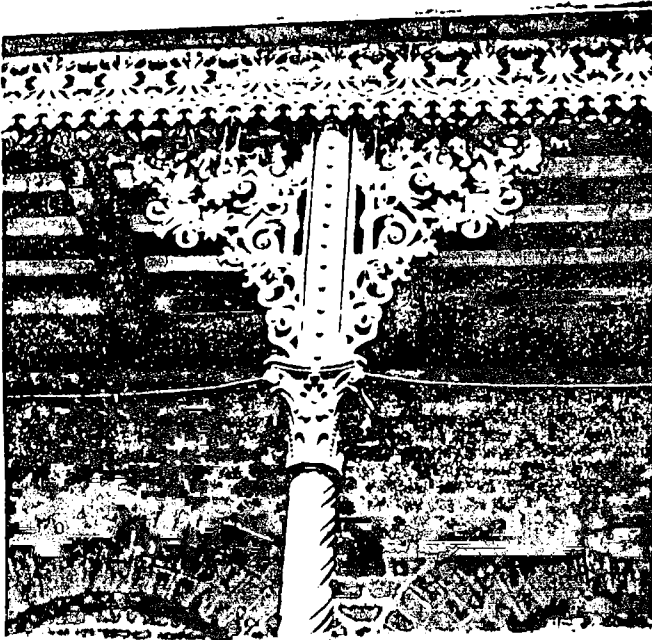
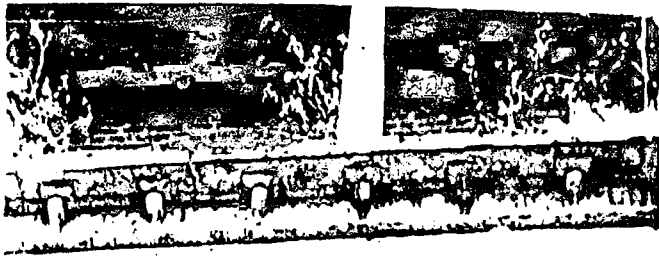


Fig-4.23.12 Capitals of cast iron steel column

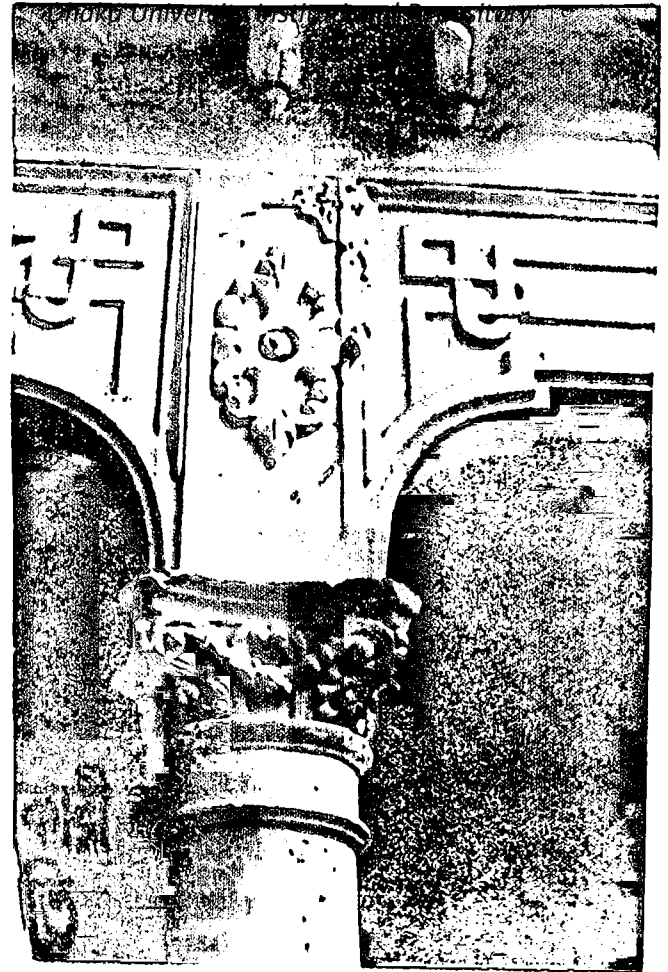


Fig-4.23.13 Capital spreaded in two direction

Fig-4.23.14 Cast iron capital .

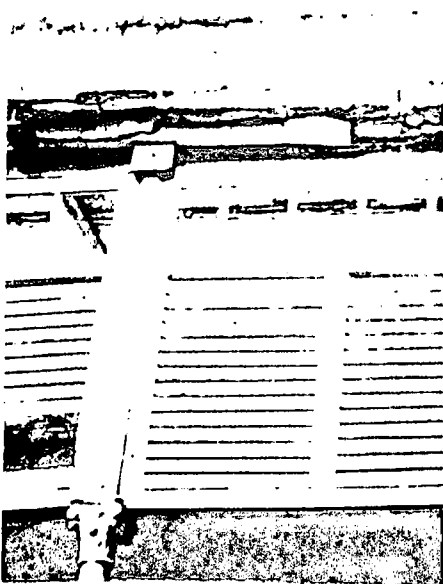


Fig-4.23.15 Section thru the distyle capital

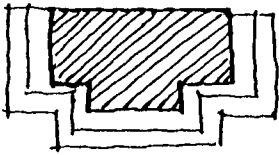


Fig-4.24.1 Plan, pier in the rural house

Ameenbari
Savar,

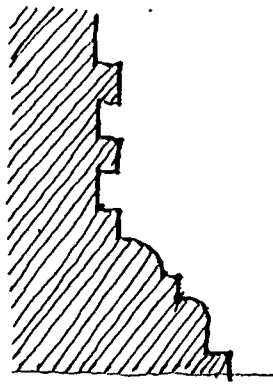


Fig-4.24.2 Section thru the pier base, rural house

Ameenbari, Savar.

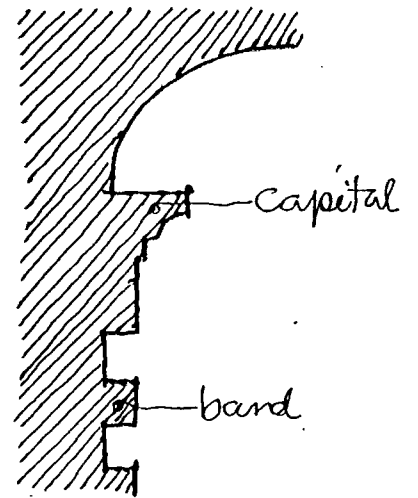


Fig-4.24.3 Section thru the capital of pier, rural house

Ameenbari, Savar

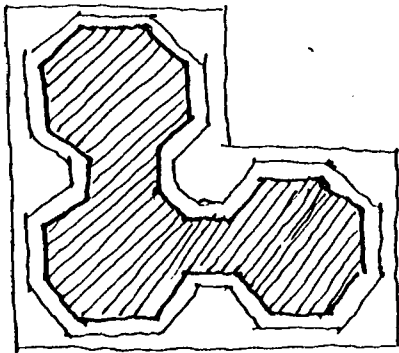


Fig-4.24.4 Plan, column like pier

Shop house of Banamali
Das, Nichabazar,
Natore



Fig-4.24.5 Section thru the

base of pier, shop house

Shop house of
Banamali Das
Nichabazar,
Natore

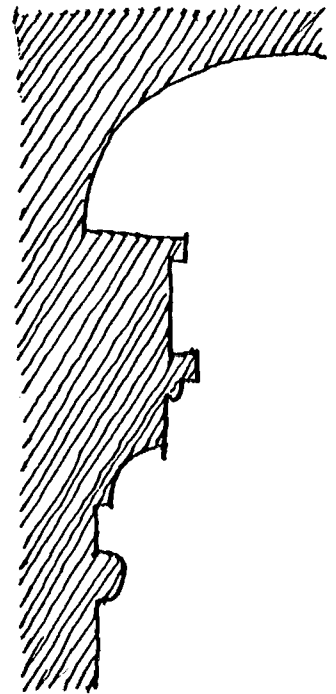


Fig-4.24.10 Section thru the capital,
government bungalow

Bungalow of the member
of Governor's Council
(Lt. Governor's house)



Fig-4.24.6 Massive piers, base and capital



Fig-4.24.7 Pier in shop house

*Banamali Das,
Nichabazar, Natore*



◀ *Bungalow of
Member, Governor's
Council, Dhaka.*

Fig-4.24.8 Pier capital in bungalow

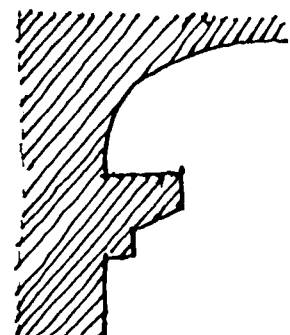


Fig-4.24.9 Section thru 203

the capital of pier

*Shophouse of
Banamali Das*

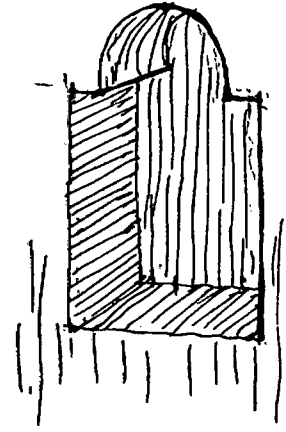
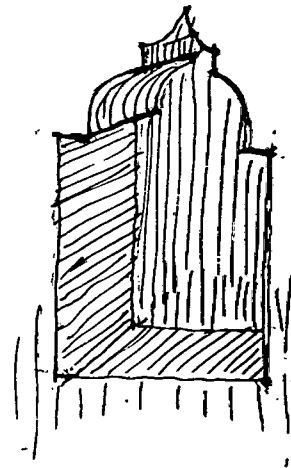
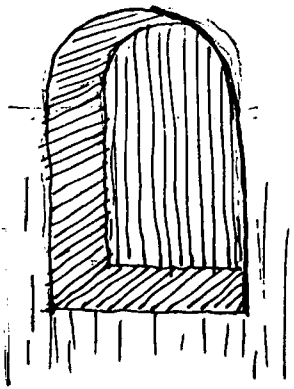


Fig-4.25.1 Alcove in shop house
of Manik Chand
Banmash at Churi
Palli, Dinajpur.

Fig-4.25.2 Alcove in dance
House of Prasanta
Kumar at Farashganj
Dhaka.

Fig-4.25.3 Alcove in dance hall
of the house of
B.K. Das, 4, Walter
road, Dhaka

Fig-4.25 Alcoves

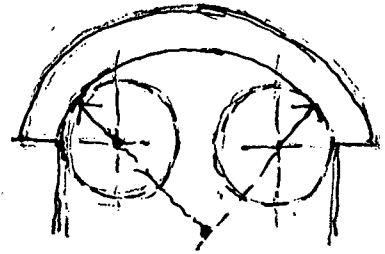
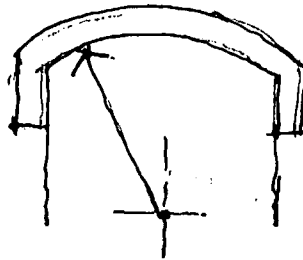
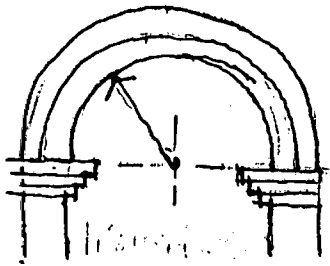


Fig-4.26.1 Semi circular arch

Fig-4.26.2 Segmented arch

Fig-4.26.3 Three centred arch

Semi circular arch
House of Anwar Chow-
dhury, 6, Wyre Street,
Dhaka.

Mymensingh
rajbare

House of Saikan
Gosh, Town Noapara
Bagerhat, Khulna

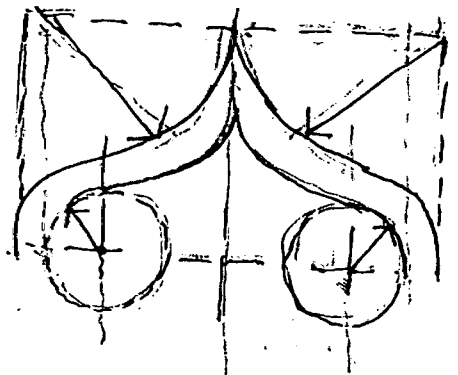
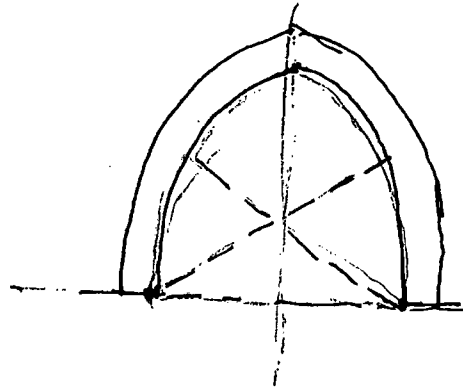
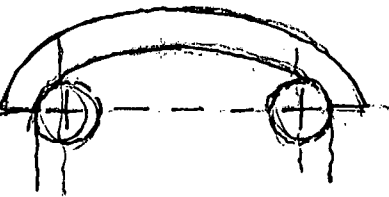


Fig-4.26.4 Depressed three centred arch

Fig-4.26.5 Equilateral pointed arch

Fig-4.26.6 Ogee arch

House of Surendra
Nath Gosh, Town
Noapara, Bagerhat
Khulna

Shop house of Bana-
male Das, Nicha
Bazar, Natore.

House of Surendra
Nath Gosh, Town
Noapara, Bagerhat



Fig-4.25.4 Alcoves in boundary wall

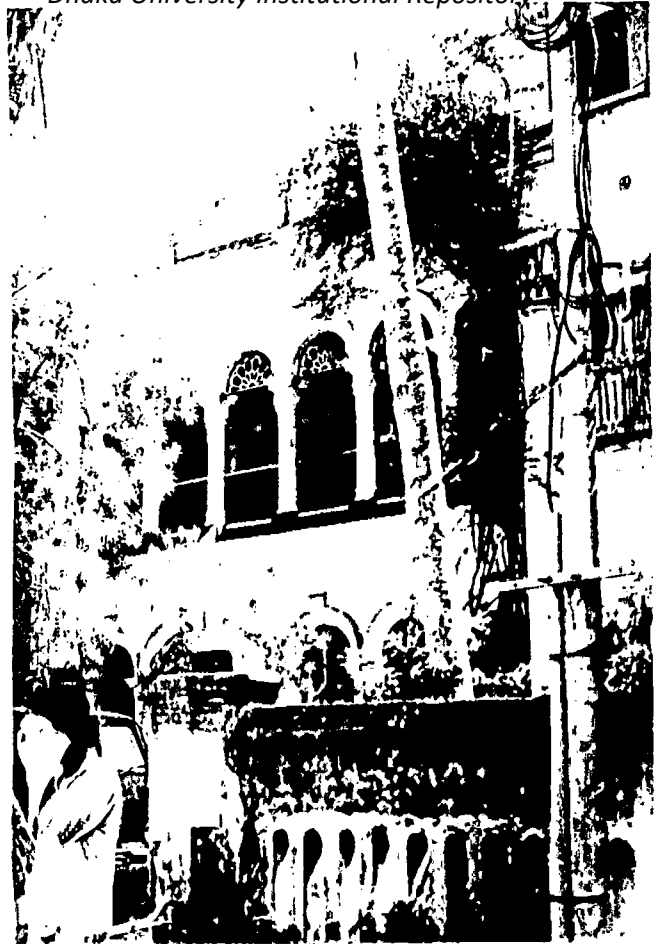


Fig-4.26.13 Semi circular arches rested on columns

Fig-4.26.14 Arches rested one side on column, other side on wall



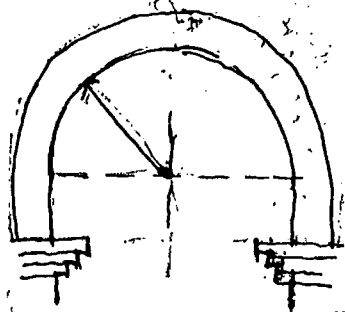


Fig-4.26.7 Semi circular stilted arch

Circuit house,
Dinapur.

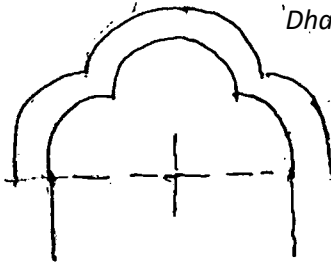


Fig-4.26.8 Round trefoil arch

Shop house of Nagendra
Mallick Mahadev,
Mahadev patti, Brahman-
baria

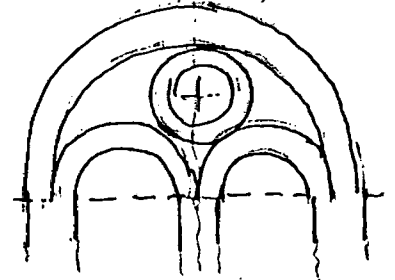


Fig-4.26.9 (Venetian arch)

Traciodal arch,
Murapara house,
Shaka

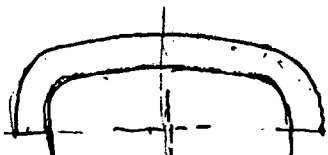


Fig-4.26.10 Prendo
three centred arch

Circuit house
Chittagong.

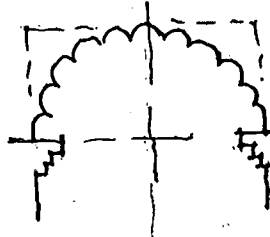


Fig-4.26.11 Multifoil arch

Muktagacha rajbari.



Fig-4.26.12 Flat arch

Joyderpur rajbari

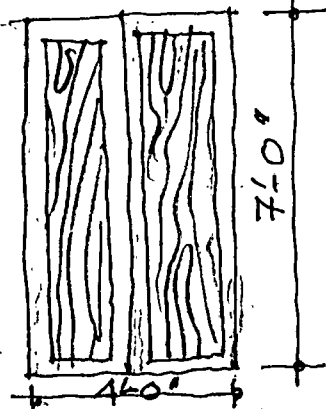


Fig-4.27.1 Ordinary
double shutters door

Bara kuti Rajshahi

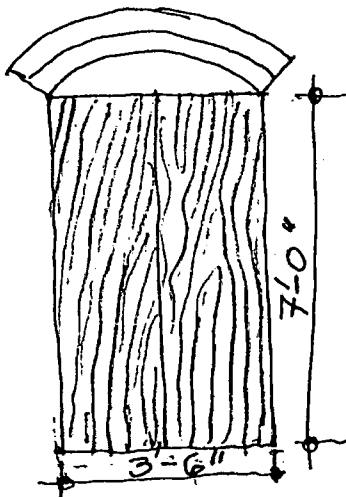


Fig-4.27.2 Ordinary single planked
double shutters door

Booking clerk's quarter,
Natore

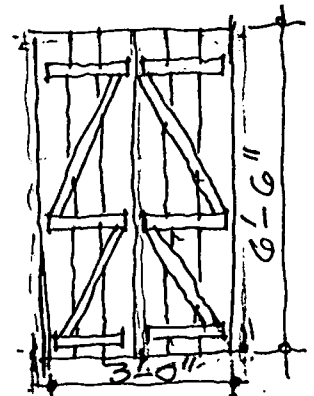


Fig-4.27.3 Battened, Ledged
and braced door

F-Type railway quarter
Tejgaon railway colony

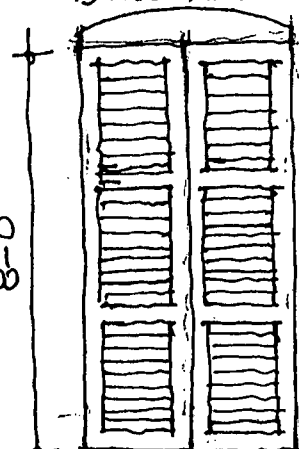
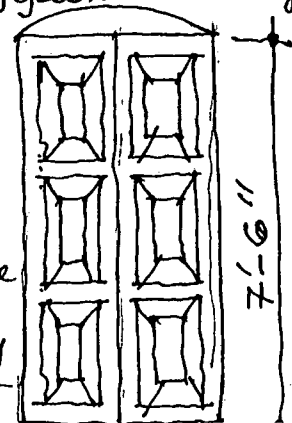


Fig-4.27.4.1 Louvered door
Tree division

Fig-4.27 Doors

Fig-4.27.5 Paneled door

Dance hall, house
of Prasanna
Kumar, Farashganj
Shaka, Hati



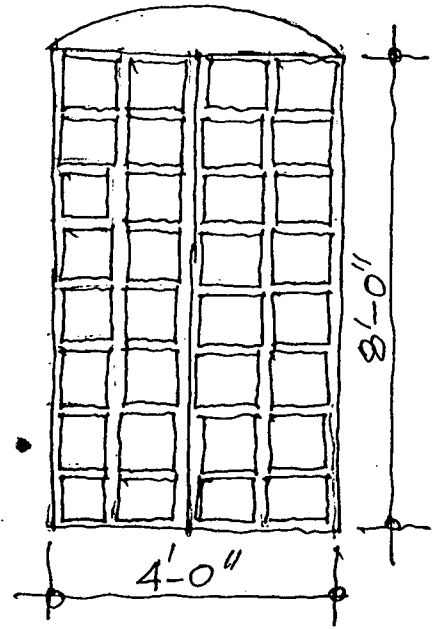
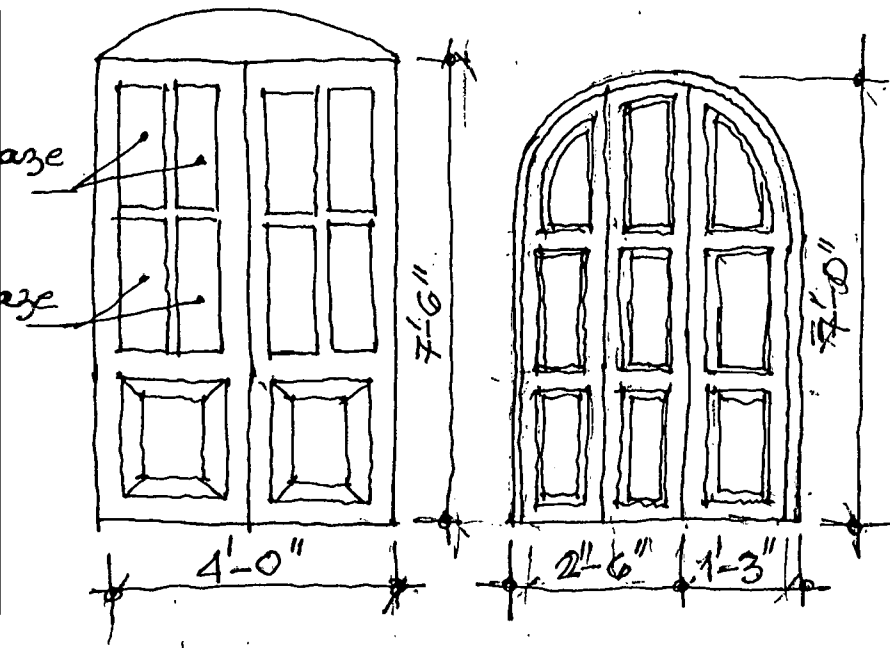


Fig-4.27.9 Glazed door

Dance hall of the bagan bari of Tapa, Rangpur.

Fig-4.27.7 Paneled and glazed door

Dance hall, Prasanna Kumer Das, Farashganj, Dhaka

Fig-4.27.8 Special type circular head paneled door

House of Prasanna Kumer Das, B.K. Das road, Dhaka.

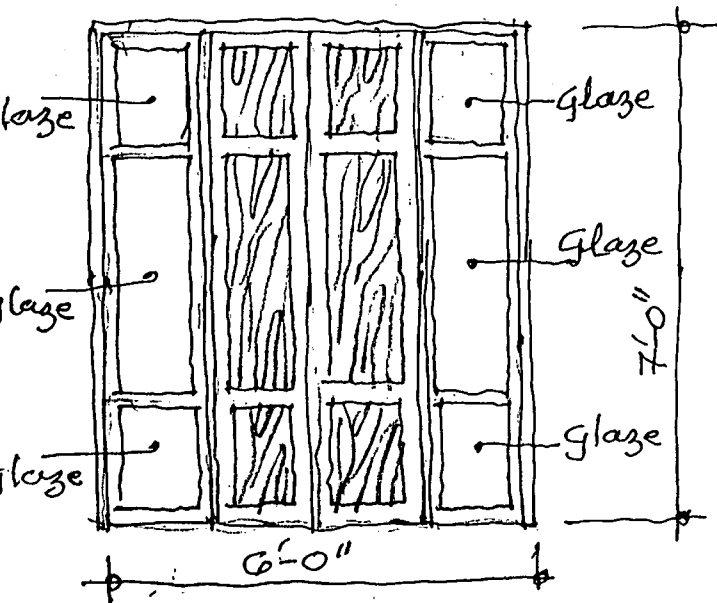


Fig-4.27.10.1 Large special type door

Tajhat palace, Rangpur.

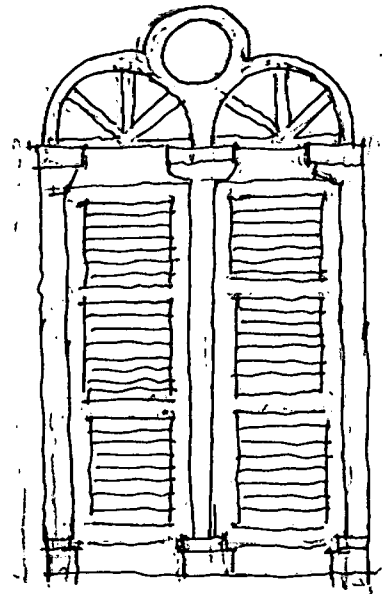


Fig-4.27.11. Traceodal door

Tajhat palace, Rangpur.

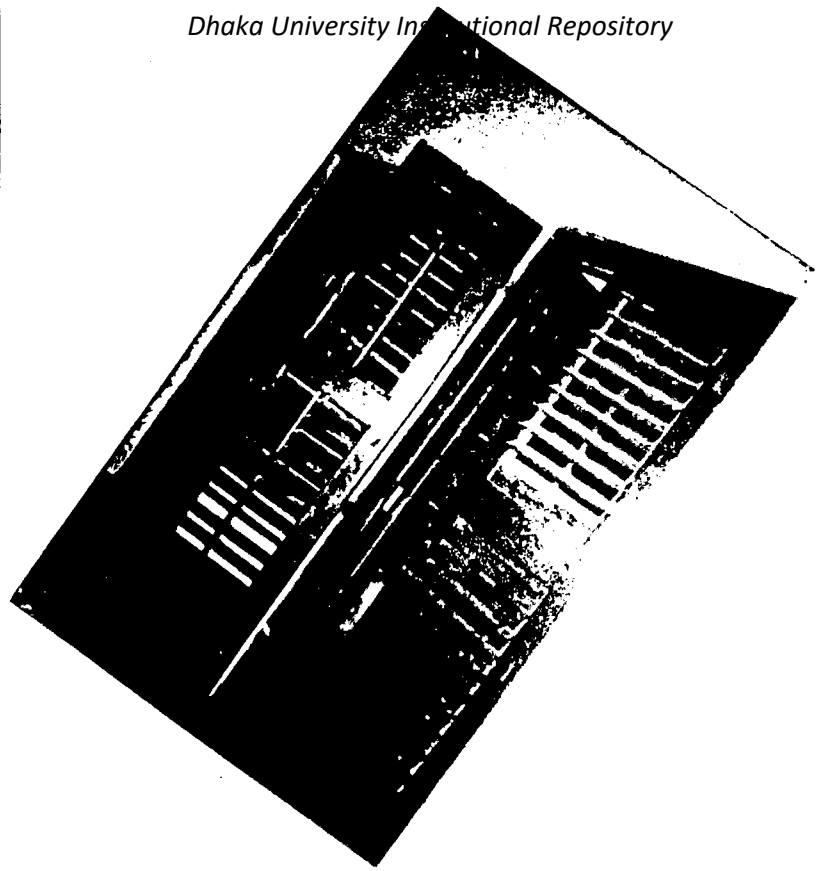


Fig-4.27.12 Four shutters panelled glazed door
Chotataraf, Natore rajbari,

Fig-4.27.4.2 Louvered door two division
House of Rupa Narayan Roy, Simson road, Dhaka

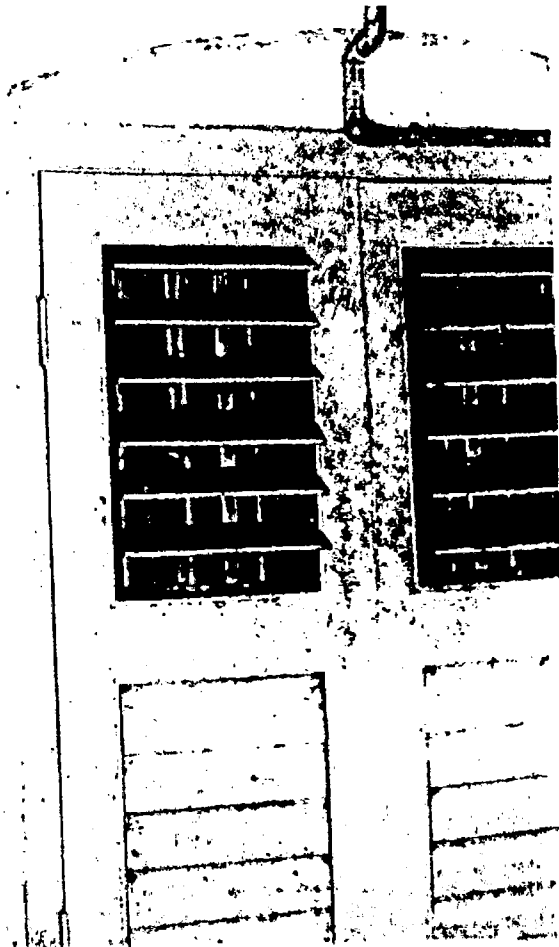
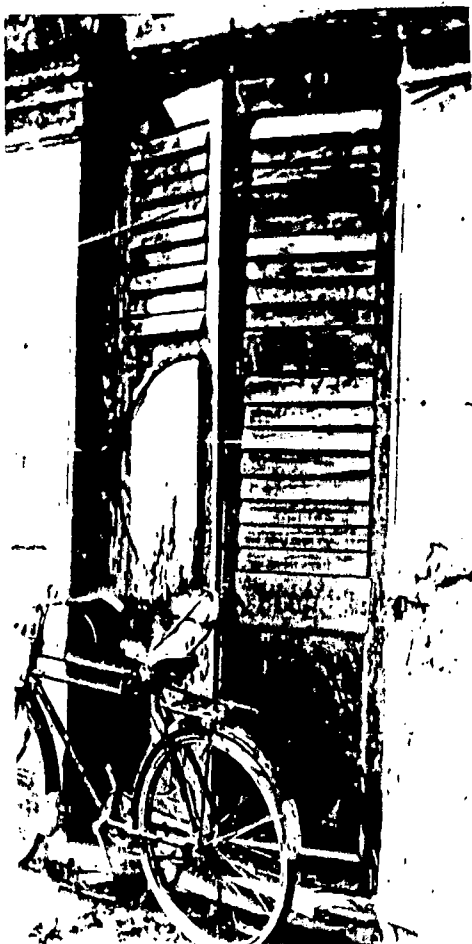


Fig-4.27.6 Louvered and paneled door

Fig-4.27.10.2 Large louvered door

Fig-4.28.1.1 Circular headed
 lowered type window
*Ruplal house
 Dhaka.*



Fig-4.28.3.1. Circular headed
 multiple glazed french window
Mymensingh rajbari



Fig-4.28.5. Tracioidal window
*Rebotimohan
 Lodge, Sutrapur.
 Dhaka.*

Fig-4.28.1 Circular headed window

Fig-4.28.3.2.1 Flat headed louvered
type french window

Ruplal house
Dhaka



Shop house of Banamali
Das, Natore.

Fig-4.28.3.2.2 Flat headed panelled type window



4.28.3.2.3
House of Rup Narayan,
Semson road, Dhaka



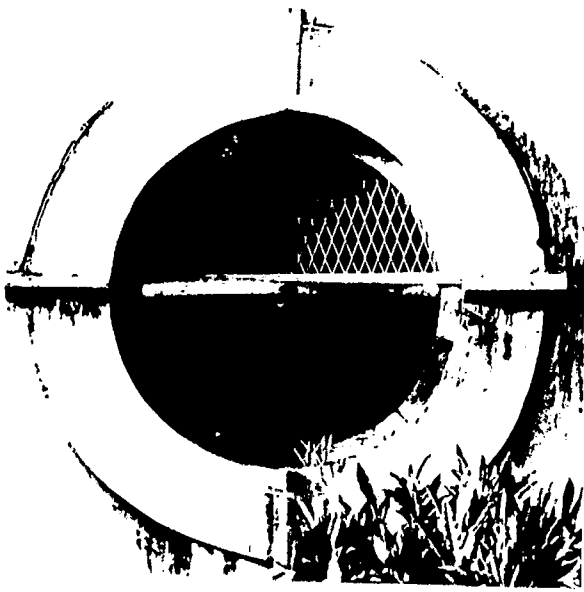


Fig-4.28.4 Rose window



Bungalow
D. M. Comilla

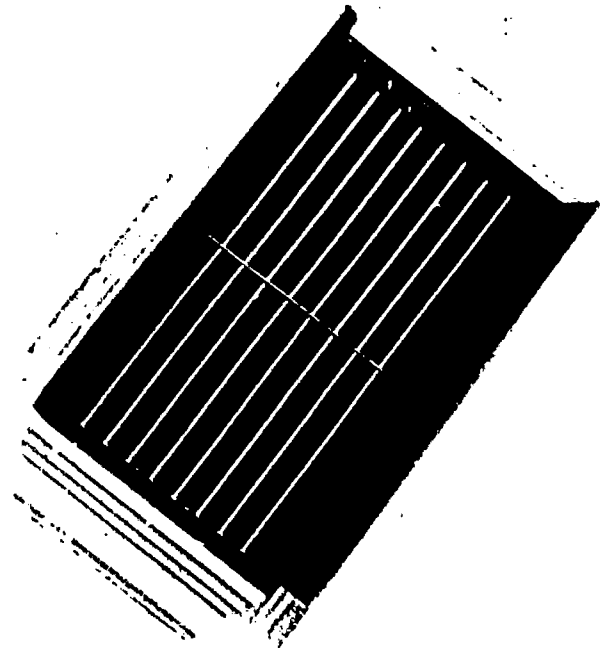


Fig-4.28.1.2 Circular headed windows
decorated in sill and lintel



Reboti mohau Das, Sutrapur
Dhaka



Fig-4.28.1.3 Circular headed window

Bungalow of the
Member of Governor's
Council, (Lt. Governor's
Bungalow,
Dhaka

Fig-4.28.1.3

Circular headed louvered
type window with projected sill
Rebotimohau Das



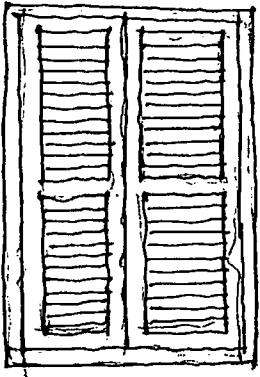


Fig-4.28.2.1 Flat headed louvered window

Sarafat manzil,
6, Chandaupura,
Chittagong.

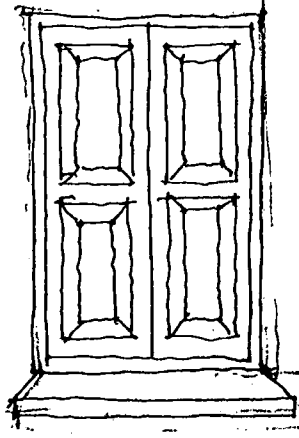


Fig-4.28.2.2 Flat headed paneled window

Hati Companionbari,
Nasir Ahmed Chowd-
hury road, Andarkilla
Chittagong.

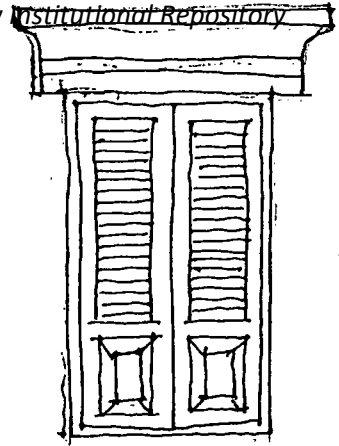


Fig-4.28.2.3 Flat headed panel and louvered window

House of Prafulla
Basal, Nimtalla,
Dinapur.

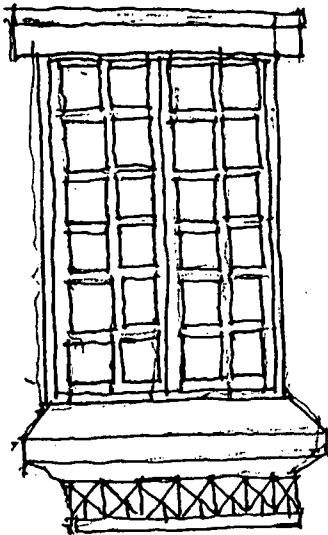


Fig-4.28.2.4 Flat headed glazed window

Ramis Kuti,
Comilla.

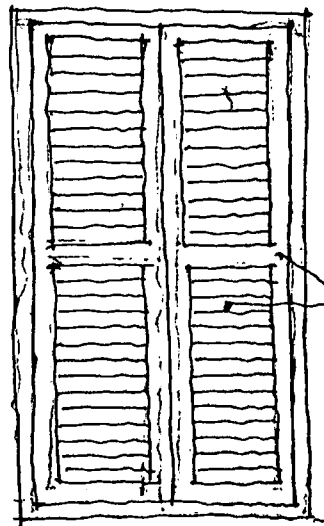


Fig-4.28.6 False door and window

Urban house,
4, Walter road,
Dhaka.

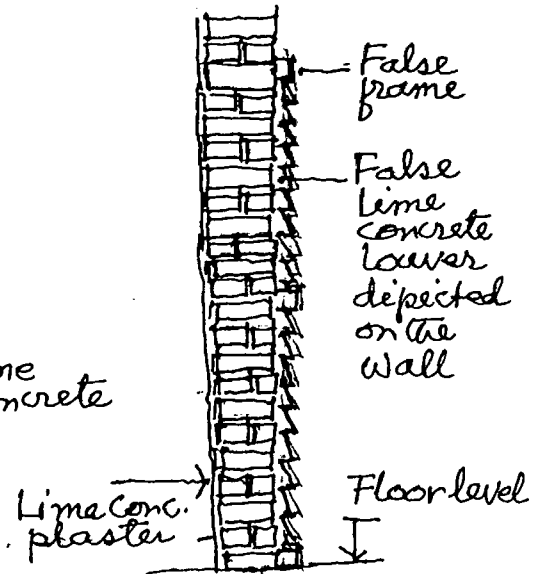


Fig-4.28.6.1 Section thru false door and window

Urban house,
4, Walter road
Dhaka

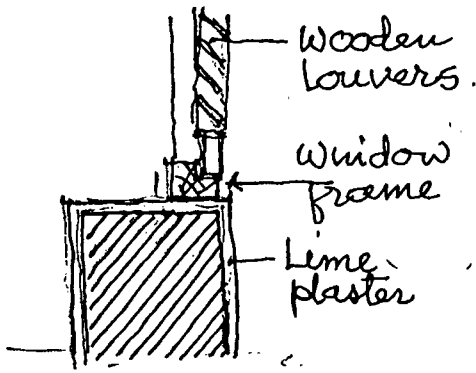


Fig-4.29.1 Sill detail-1

Muktajacha zamindar house, House of Devendra Mohan, 1, Nawab street, Wari Dhaka

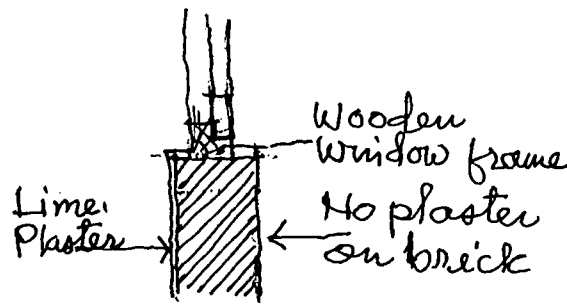


Fig-4.29.2 Sill detail-2

Railway quarter, Bungalow no. 35 Khulna, Chandpur Ramna Colony Dhaka

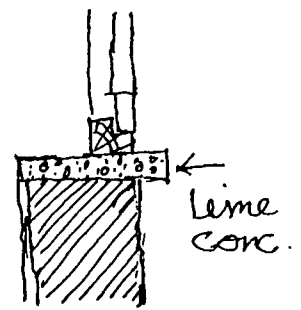


Fig-4.29.3 Sill detail-3

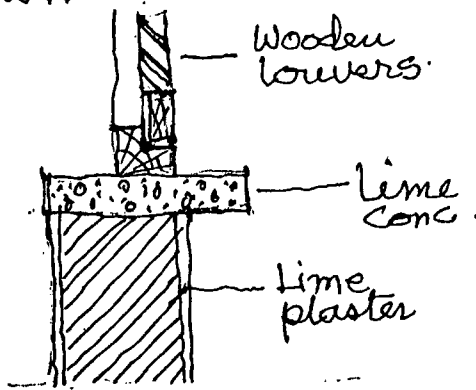


Fig-4.29.4 Sill detail-4

Houses of Reboti Mohan Das, Sutrapur, Ruplal Das, Circuit house Dinapur,

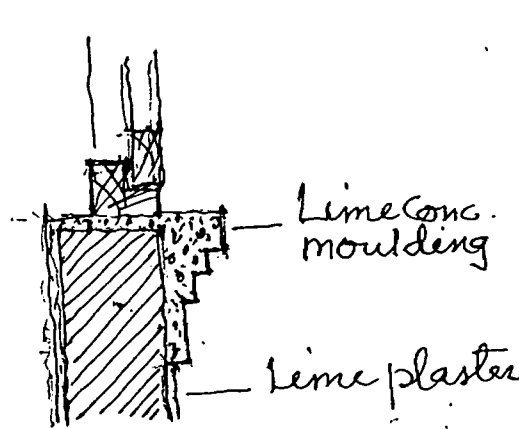


Fig-4.29.5 Sill detail-5

Lt. governor's bungalow, Dhaka

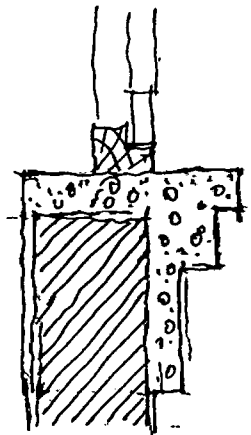


Fig-4.29.6 Sill detail-6

Ranir Kutir Comilla

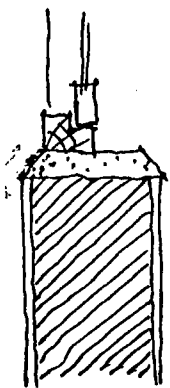


Fig. 4.29.7 Typical sill corner cut.



Fig-4.30.1 Wooden shading device
Nishi babur Dalam
Champar



Fig-4.30.3 Lime conc. shading
device in railway quarters
Brahmanbaria



Fig-4.30.2 Lime conc.
shading device with
bracket j

Bungalow of
member, Governor
council,
(H. governor's
bungalow)
Dhaka.



Fig-4.30.4 Shading device
with wooden shingles and drop
Ruplal house,
Dhaka



Fig-4.30.5 Plain iron sheet
shading device
Kachari bari
Chota tura
Natore rajbari



Fig-4.30.6 Lime concrete
shades with brackets



House of Rup
Narayan, Semison
road, Dhaka

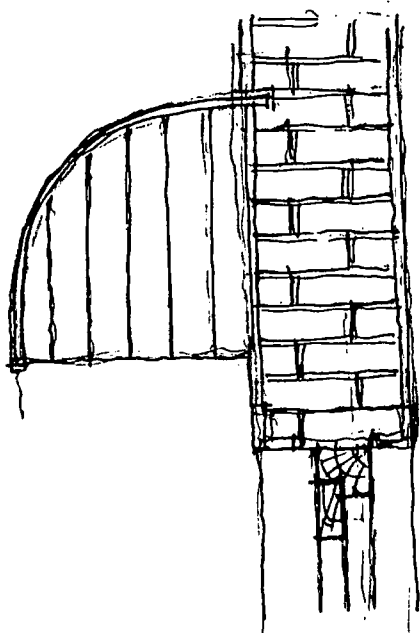


Fig-4.30.8 Section through

shading device of plain iron sheet

*Kachari bari, Chota taraf
Natore rajbari*

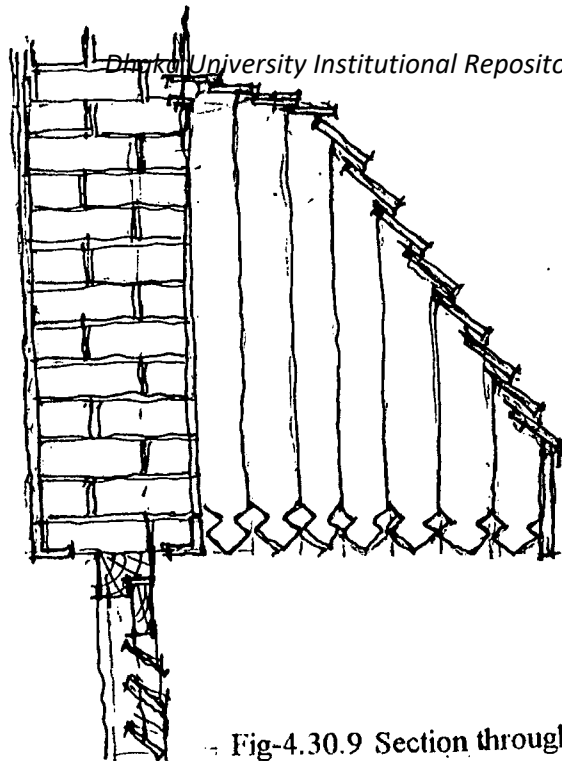


Fig-4.30.9 Section through

shading device of wooden shingles

Ruplal house, Dhaka

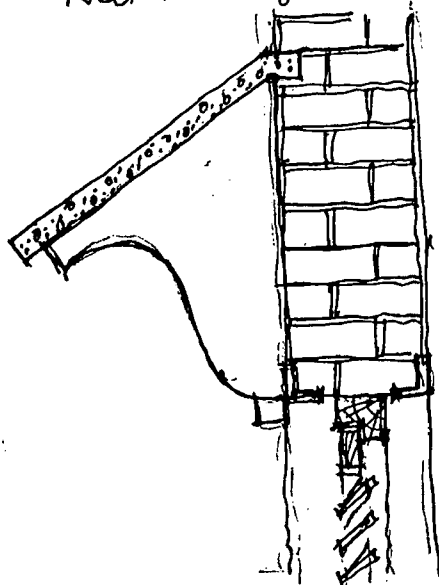


Fig-4.30.7 Sections thru

lime concrete shading devices

*Bungalow of
St. governor, Dhaka*

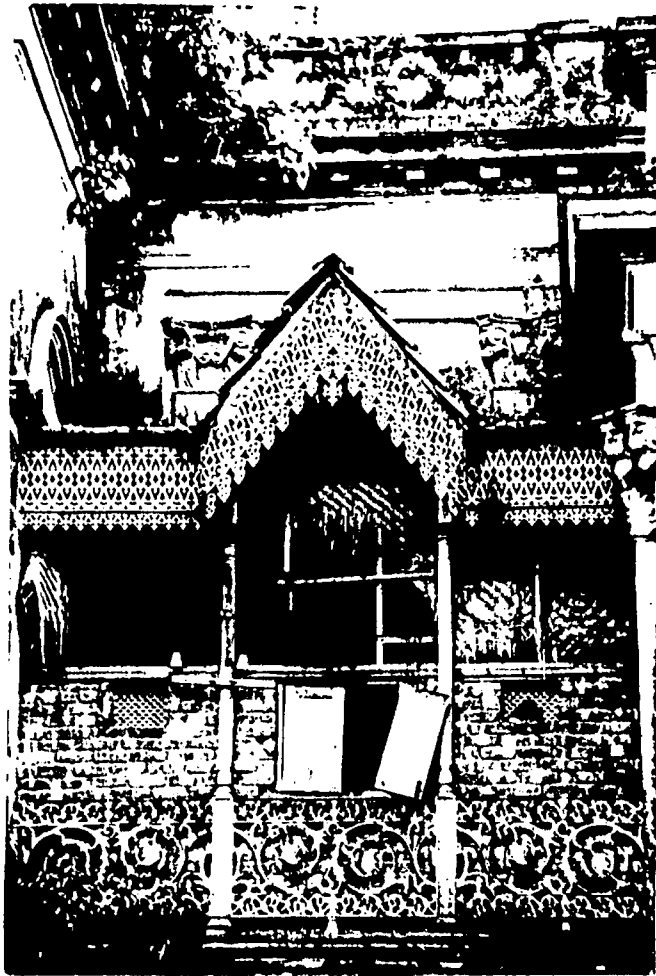


Fig-4.31.1 Decorated and perforated steel drop

↑
Rustal house
Dhaka

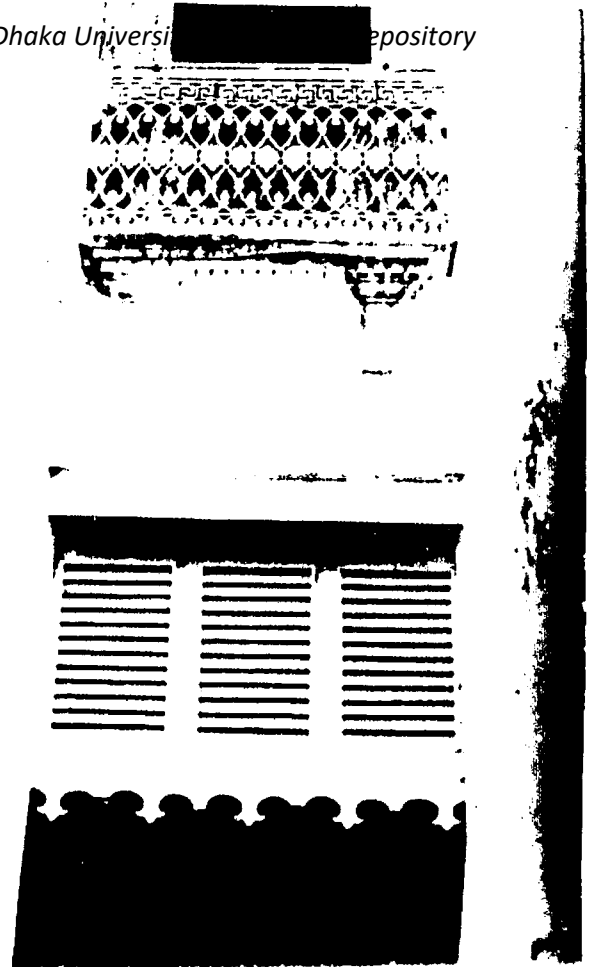


Fig-4.31.2 Wooden venetian blinds decorated drop

↑

House of Mohendra Gosh.
Ahsan Ahmed road
Khulna.



Fig-4.31.3 Wooden decorated drop

↑
Circuit-house
Khulna.



Fig-4.32.1 Steel lattice work

- House of Abu Mousur M.P.
Upper Jessore road,
Khulna

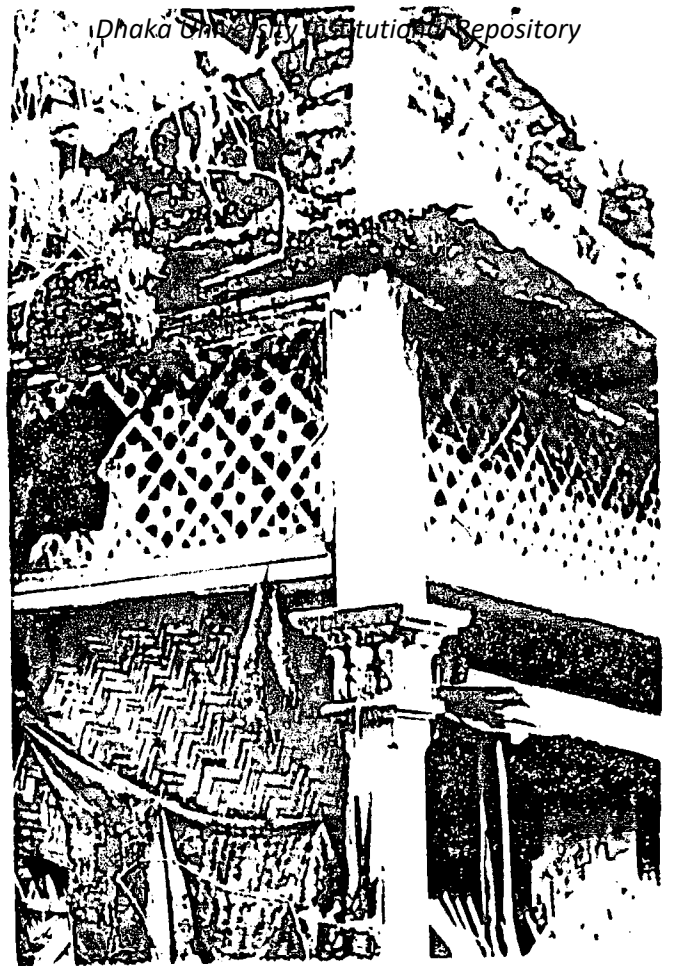


Fig-4.32.2 Cement concrete lattice work

Bhawal rajbari at
Dhaka

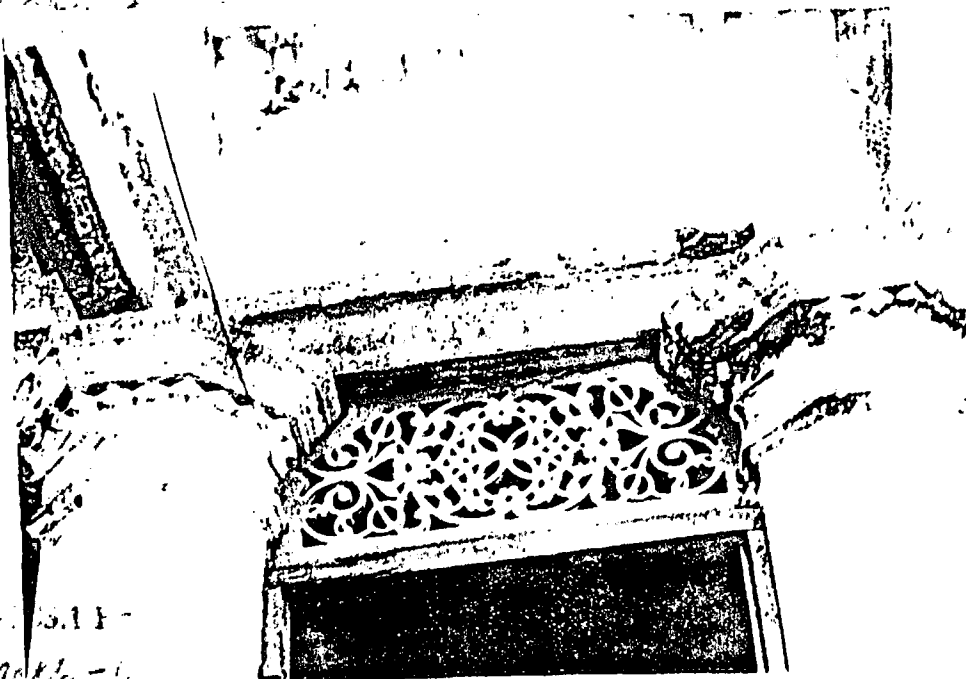


Fig-4.32.3 Wooden lattice

works drop

Ranikuti
Comilla

511-
511-1
511-2
511-3



Fig-4.33.4 House corner detail-4

South-east corner, Mathura Side, Manik Nath Lodge, Dhaka



Fig-4.33.5 House corner detail-5

North-west entry North-west corner Babur Bari, Dhaka

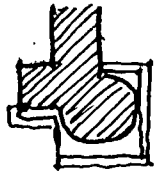


Fig-4.33.6 House corner detail-6

North-west corner Satindra Kumer Shah Lodge, Dhaka



Fig-4.33.2 House corner detail-2

South-east corner, Reboti Mohan lodge Sutrapur, Dhaka

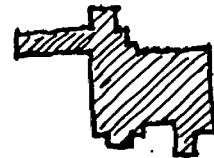


Fig-4.33.3 House corner detail-3

North-east corner Governor's house Dhaka

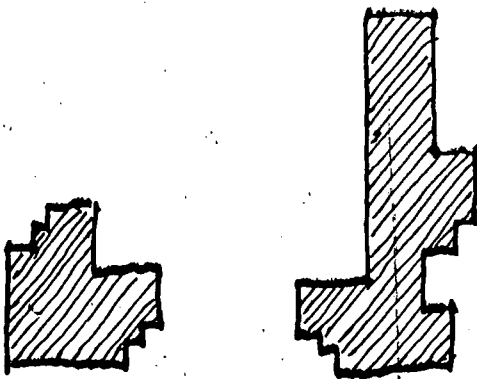


Fig-4.33.1 House corner detail-1

South-west corner. Ahsan Manzil

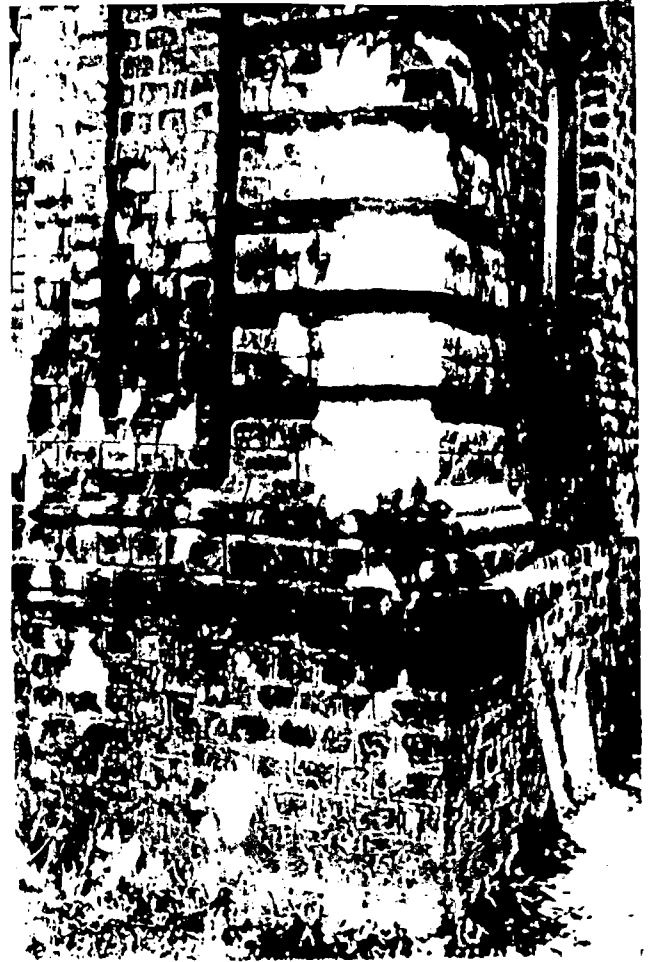


Fig-4.33.7 Plastered horizontal banded corner

Urban house of Raj Narayan Simson road, Dhaka



Fig-4.33.8 Horizontal banded corner on face brick masonry

Urban house of Gagan Saha Brahmanbaria

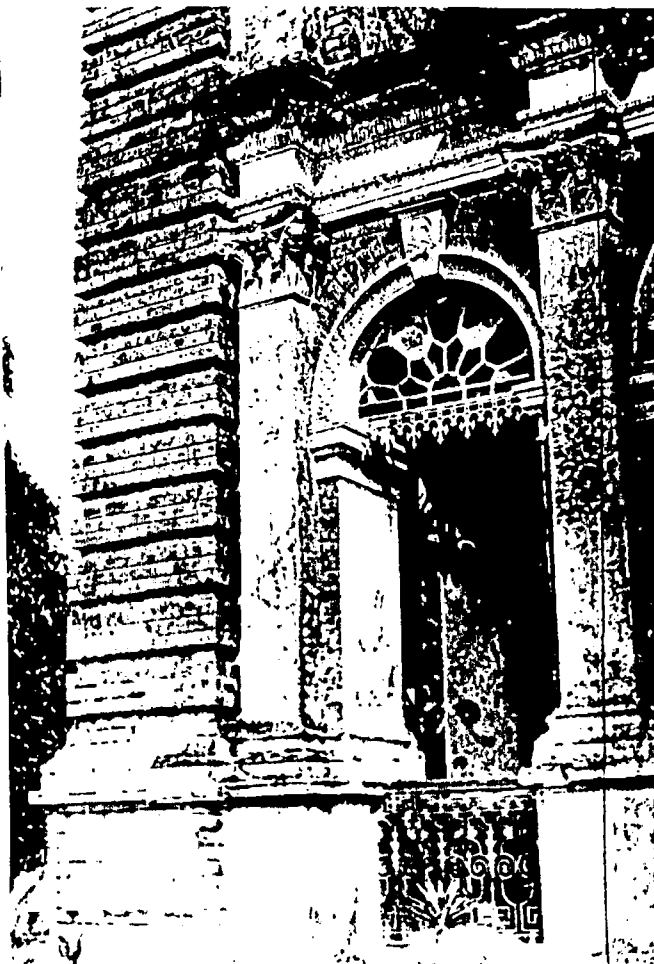


Fig-4.33.9 Horizontal banded corner in zamindar house

Murapara house





Fig-4.34.1 Wooden railing

House of Nuruddeen
Ahmed, Standroad
Chittagong.

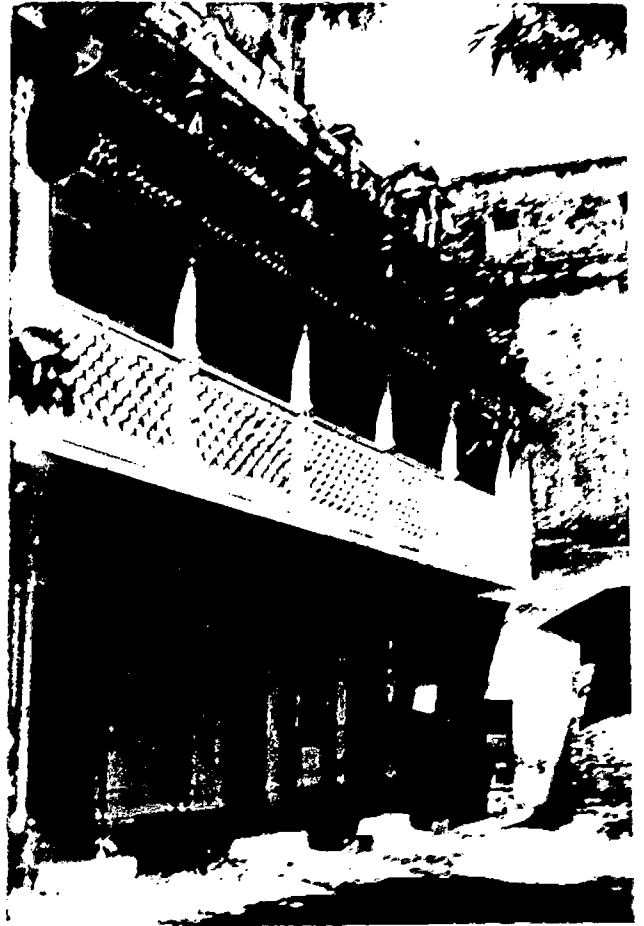


Fig-1.34.2 Lime concrete railing

Kashinath house
Painamnagar,
Sonargaon,

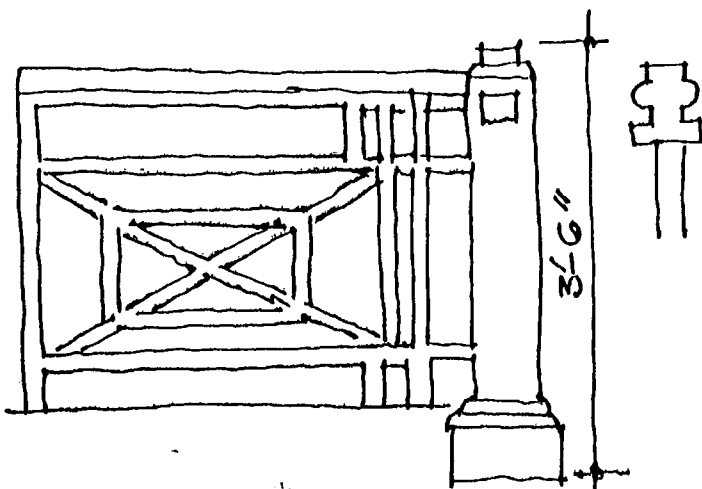


Fig-4.34.3 Elevation, wooden railing

Circuit house
Chittagong.

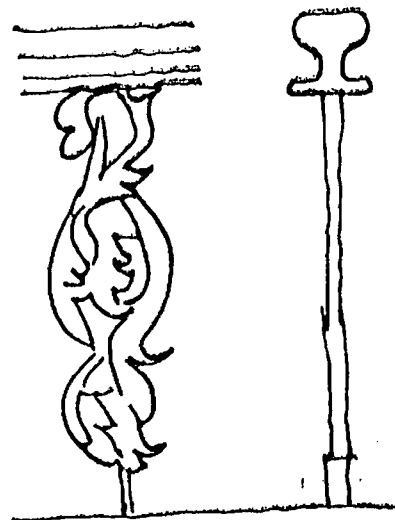


Fig-4.34.4 Elevation and section thru cast iron railing

House of Prassanna Kumar
B.K. Das road, Dhaka

Fig-4.34.5 Cast iron railing

House of Sailan
Gosh, Town
Noapara, Khulna

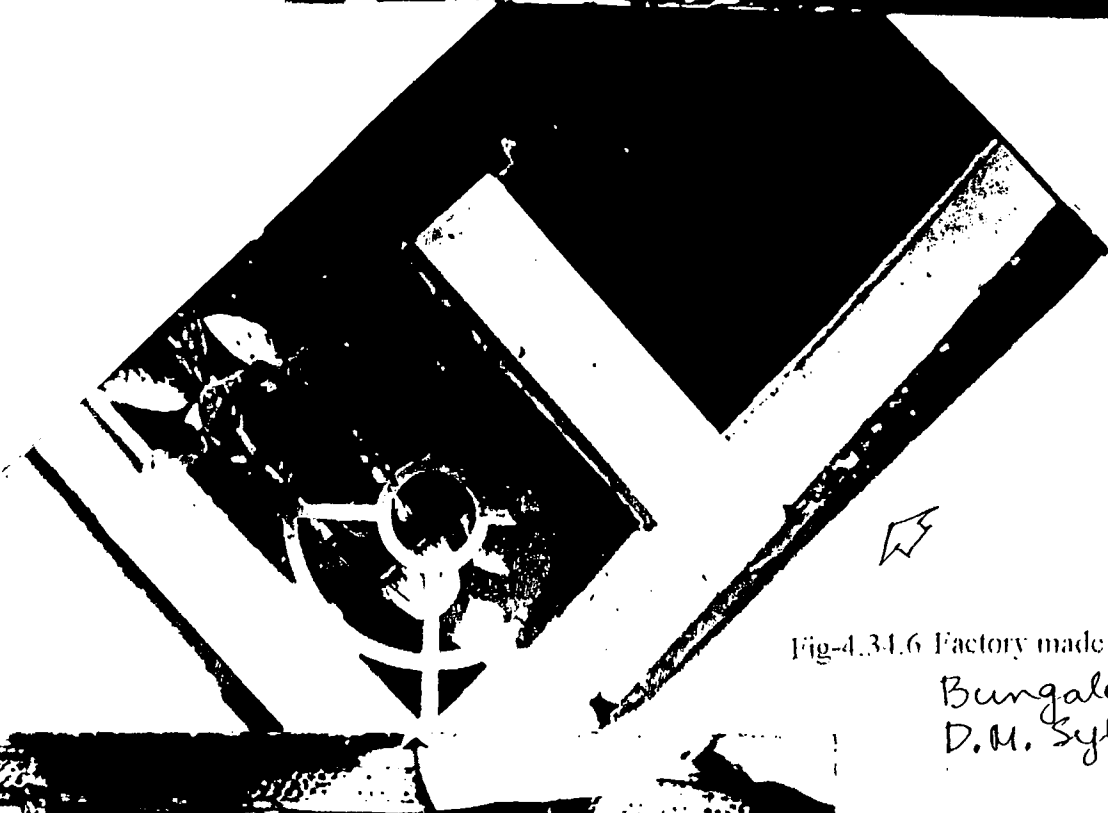


Fig-4.34.6 Factory made steel railing

Bungalow,
D.M. Sylhet.



Fig-1.34.7 Cement concrete railing

House of Mohend
Gosh, Ahsan
Ahmed road,
Khulna

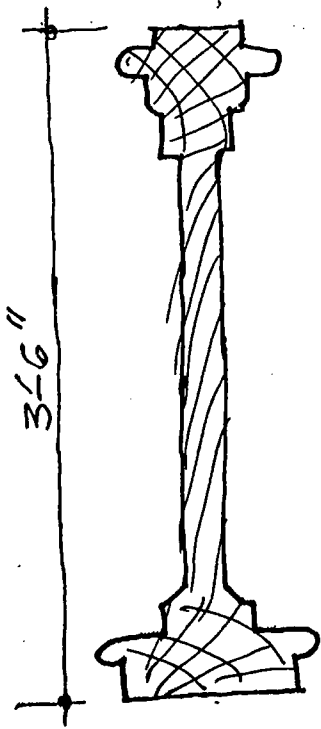


Fig-4.34.8.1 Vertical section thru, newel post
Bungalow of Lt. Governor
Dhaka

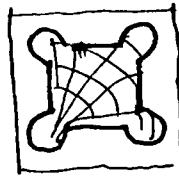


Fig-4.34.8.2 Horizontal section thru newel post
Bungalow of Lt Governor.
Dhaka

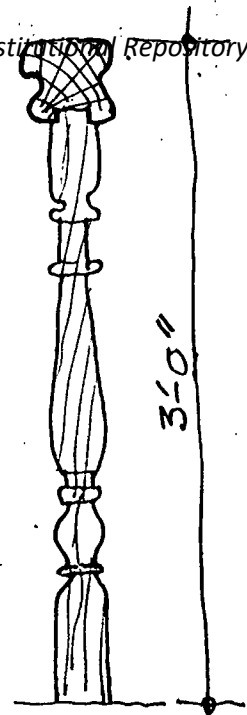


Fig-4.34.9.1 Section thru wooden baluster
Bungalow of Lt governor
Dhaka

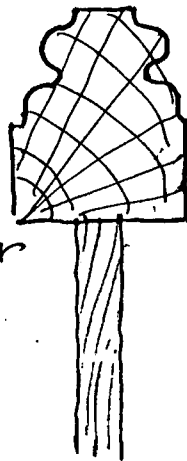


Fig-4.34.9.2 Section thru railing
Kuti bari of Wais
Wiseghat, Dhaka

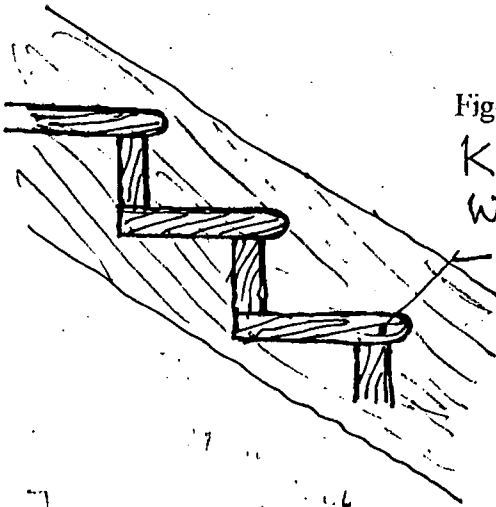


Fig-4.34.10 Section thru trade and riser

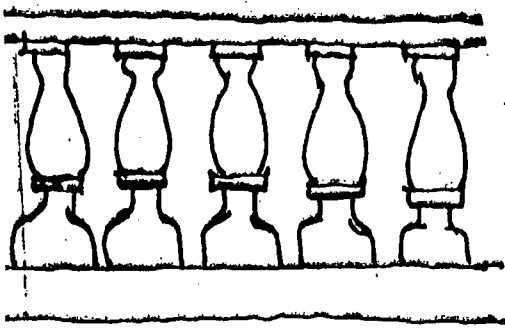


Fig-4.34.11.1 Elevation of railing
Tajhat place, Rangpur,
Bardawan house

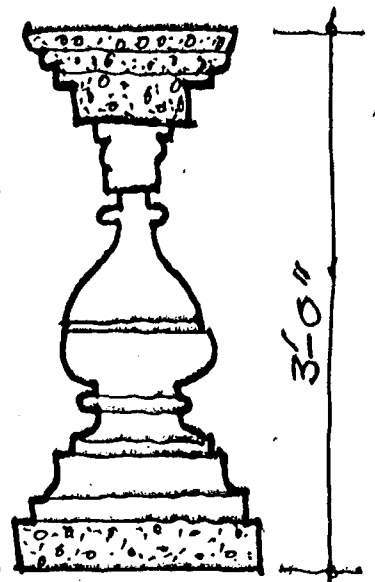


Fig-4.34.11.2 Section thru railing
Ground floor, Tajhat
palace, Rangpur

Fig-4.34.8 Elevation and sections thru the railings

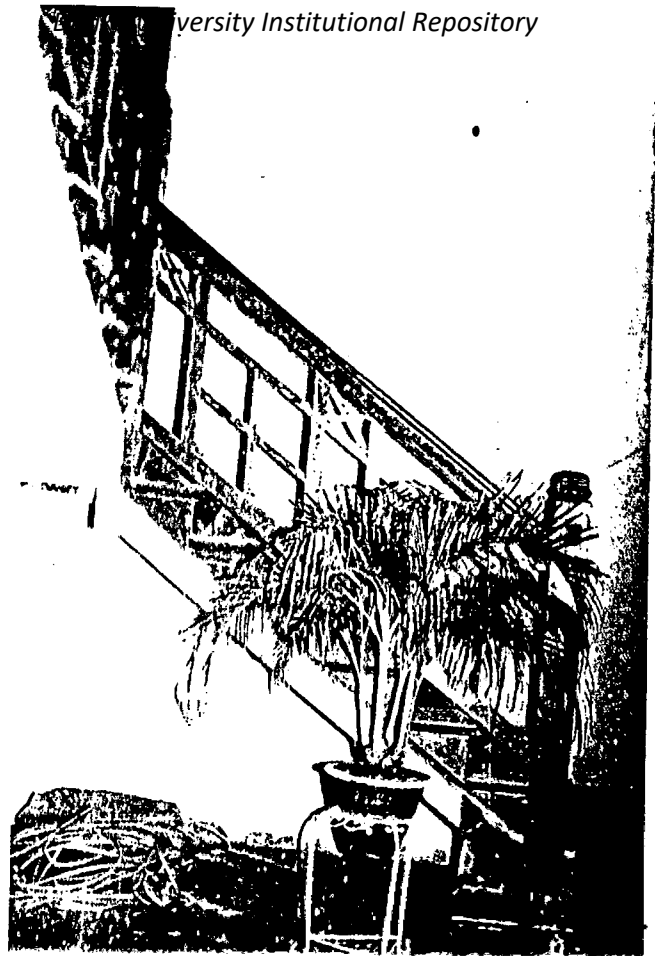


Fig-4.35.1 Brick railing

House in the Ahsan mansel compound. presently used as Tahsildar office.

Fig-4.35.2. Wooden balustrad

Bungalow D.M. Rajshahi

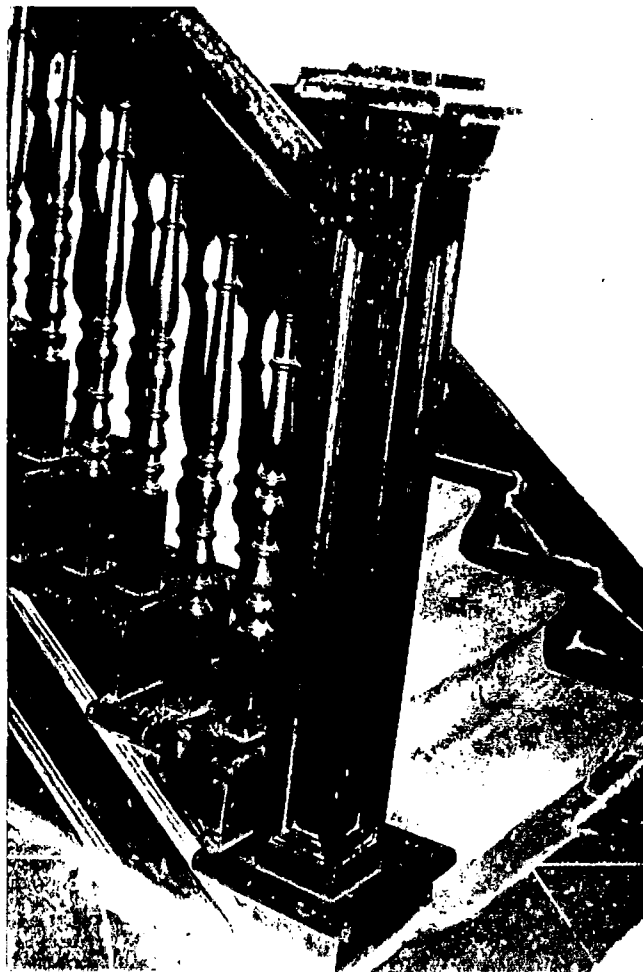


Fig-4.35.3 Wooden balustrad

Bungalow member, Governor's Council. (It. governor's bungalow) similar with Bardawan house.



Fig-4.35.5 Wooden railing
Hawar Shuba
Nanda Poddar
Painormagan



Rose garden
Shaha

Fig-4.35.6 Spiral iron railing

Fig-4.35.4 Decorated balustrade
Kutibon of
Mr. Wastaf
Wangkat
Shaha

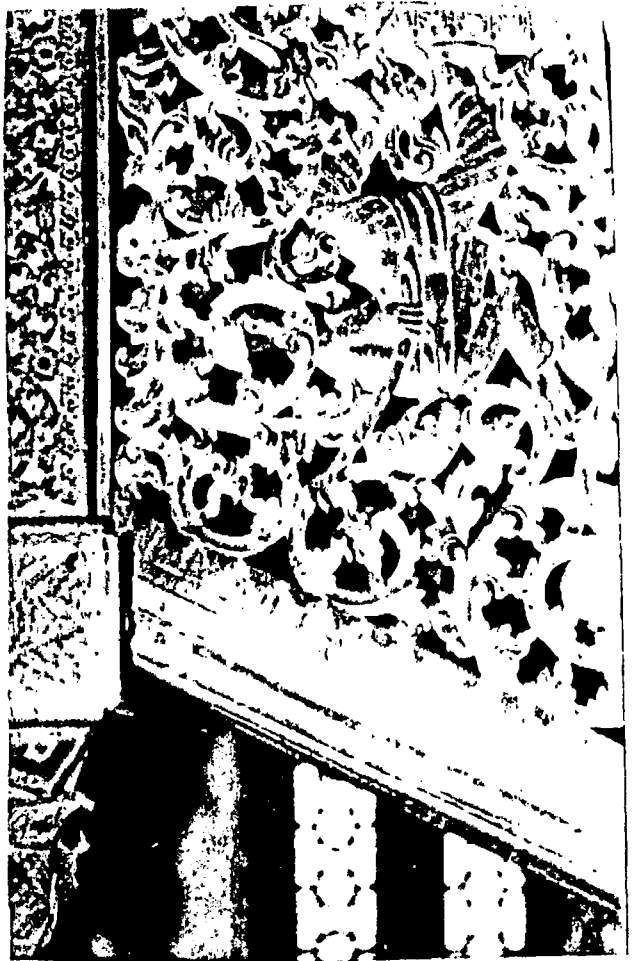




Fig-4.36.1 Wooden bracket



House of Anwar Chowdhury,
Wari, Dhaka

Fig-4.36.2 Cement conc. bracket



Family mandir,
House of Gagen Saha,
Brahmanbarai

Fig-4.36.3 Floral bracket



House of Prasanna
Kumer Das, B.K. Das
road, Farashganj,
Dhaka

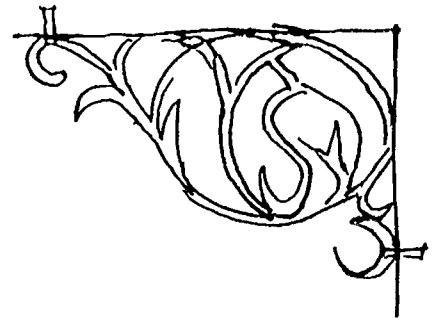


Fig-4.36.4 Decorated steel bracket

Rose garden
Dhaka

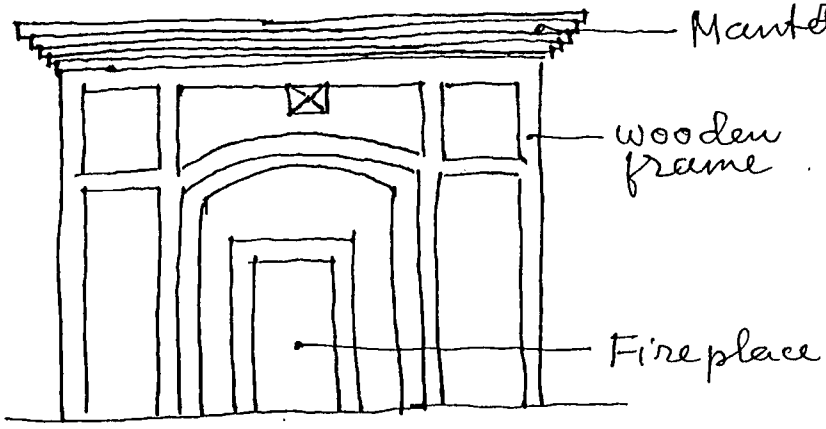


Fig-4.37.2 Fire place in circuit house
Chittagong.

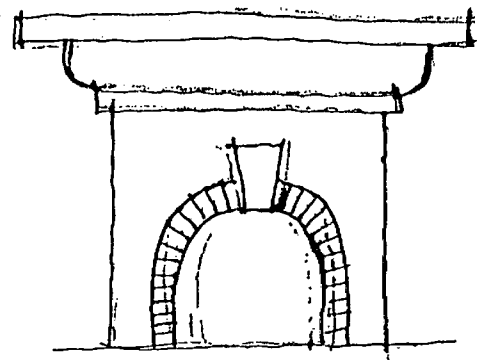
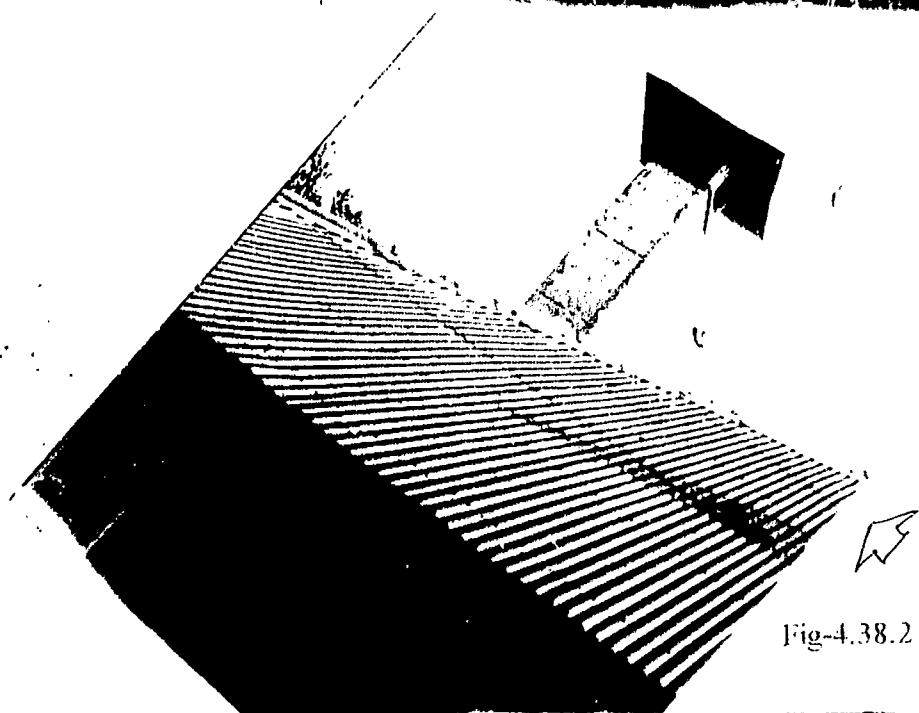


fig. 4.37.3.
Fireplace in Govt.
bungalow,
D.M. Rajshahi



Fig-4.37.1 Fire place in govt. bungalow
Bungalow of D.J.
Khulna.

Fig-4.38.1 Chimney
in railway quarter
Brahman
baria



Chimney is
constructed by
plain iron sheet
and angles.

Fig-4.38.2 Chimney in C.I sheet govt. bungalow
D. M. Bungalow
Sylhet.



Fig-4.38.3 Chimney
in zamindar house
Murapara
house.

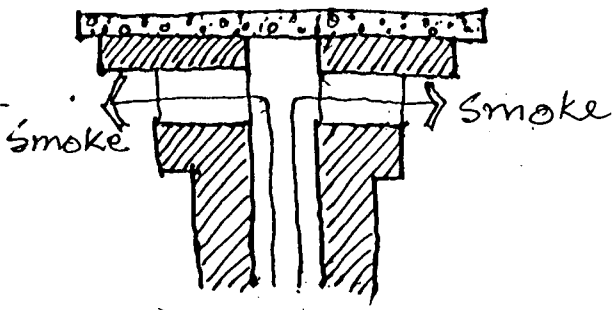


Fig-4.38.4 Section thru the chimney stack
in railway quarter
Brahmanbaria

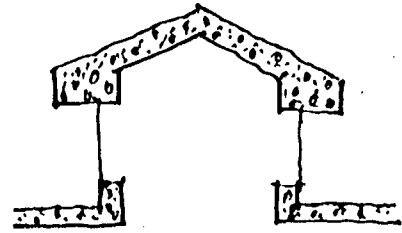


Fig-4.38.5 Section thru the chimney stack
in railway security shed
Khulna

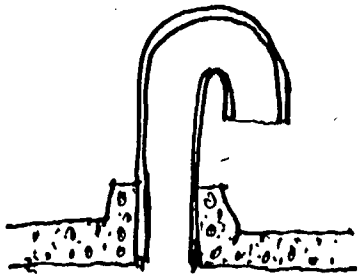


Fig-4.38.6 Earthen vent chimney
in railway quarter
Sylhet

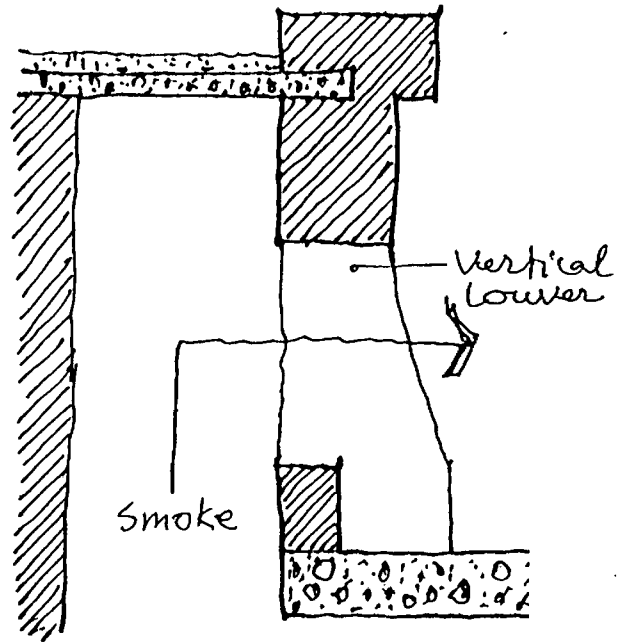


Fig-4.38.7 Section thru the chimney,
zamindar house
Murapara house

Fig-4.39.1 Brick projection in parapet

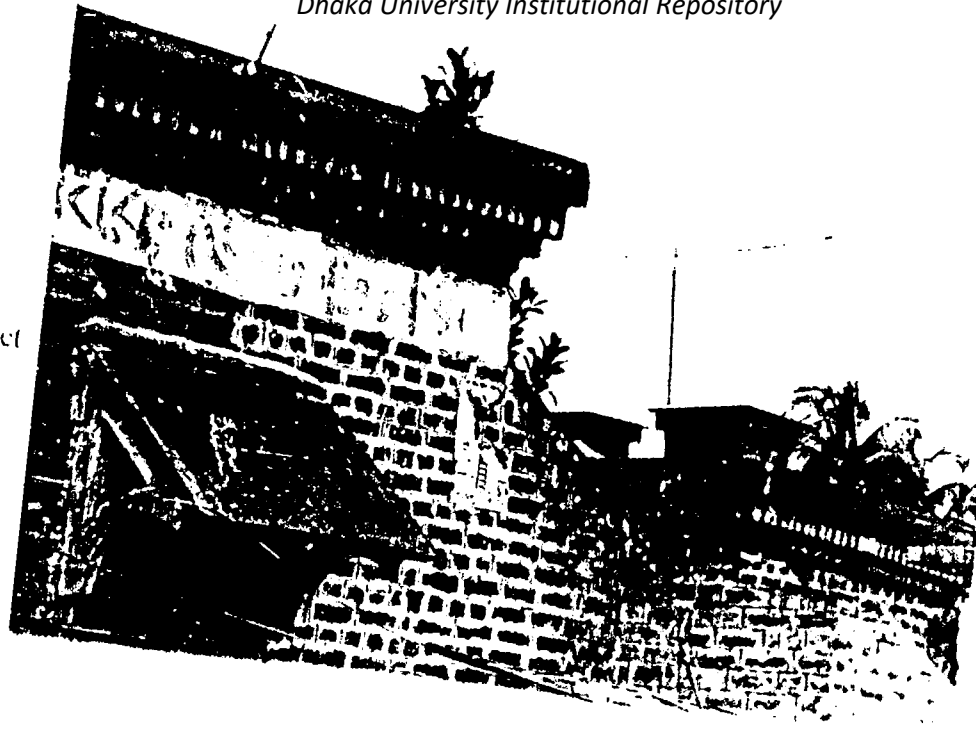


Fig-4.39.2 Moulded projection in govt. bungalow

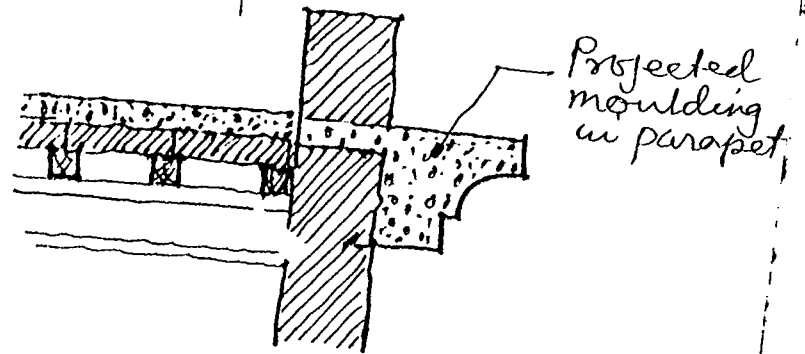
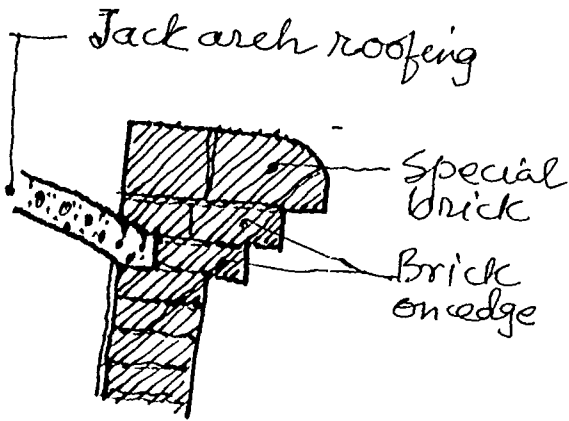


Fig-4.39.3 Section thru the projection

Fig-4.39.4 Moulded projection in parapet

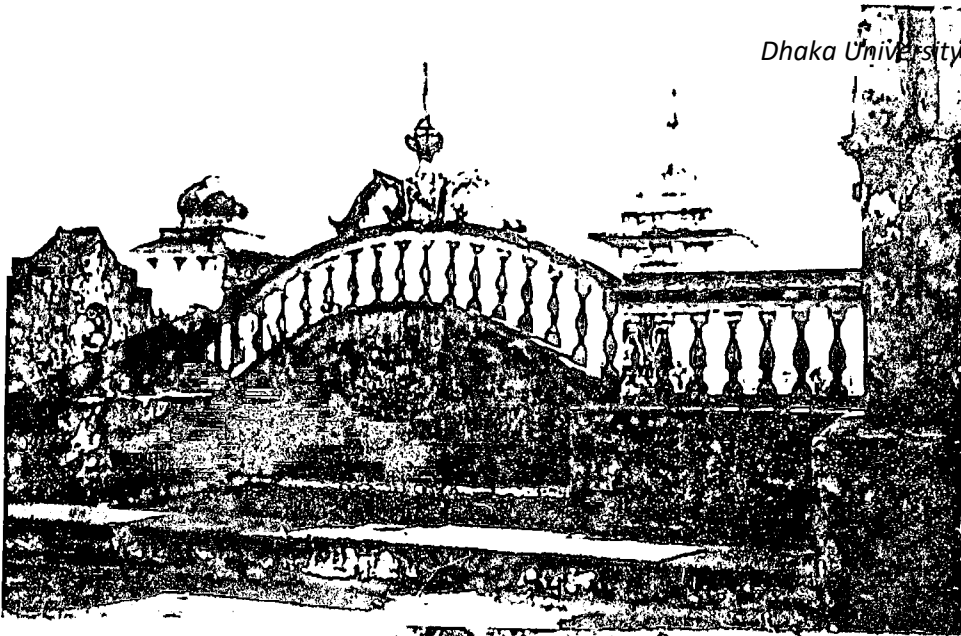


Fig-4.10.1 Parapet in *Rogan bar*
Rose garden
Dhaka

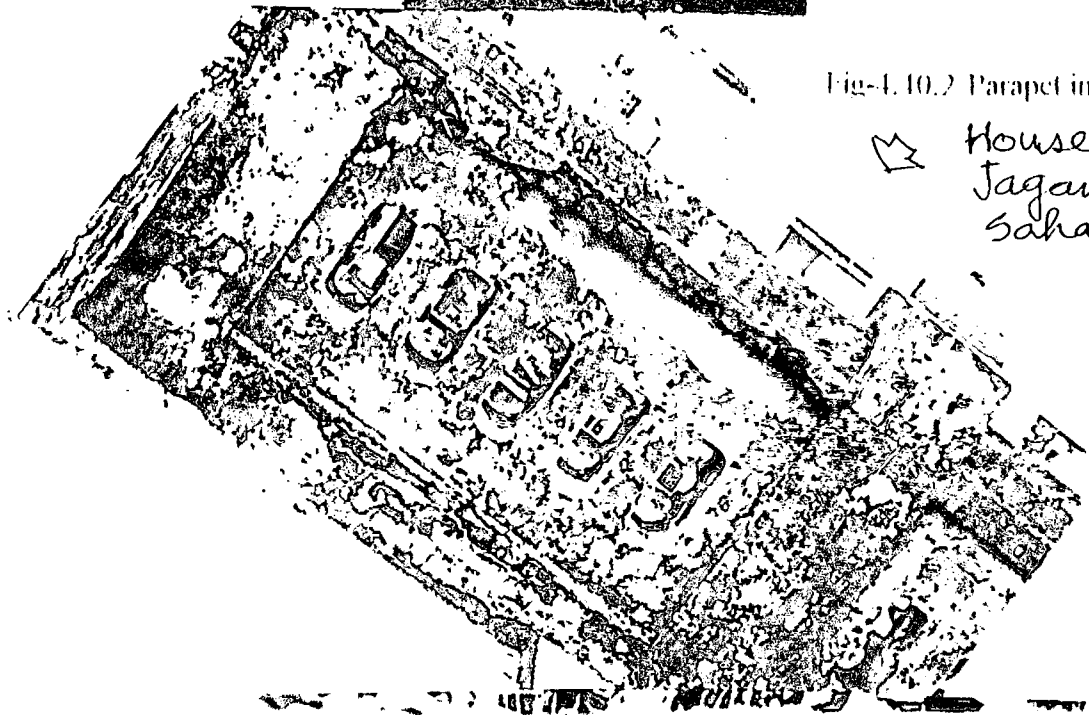


Fig-4.10.2 Parapet in urban house
House of
Jagannatho
Saha, Lalbagh
Dhaka

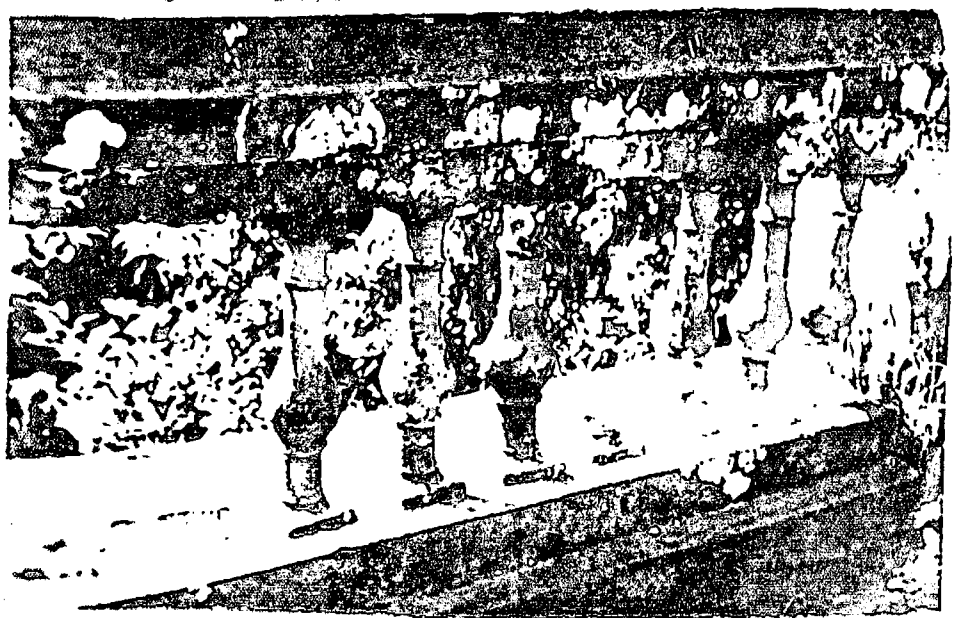


Fig-4.10.3 Parapet in rural house
House of Dinendra
Nath Gosh,
Town Noapara
Khulna.
Burn clay
Balustrade.

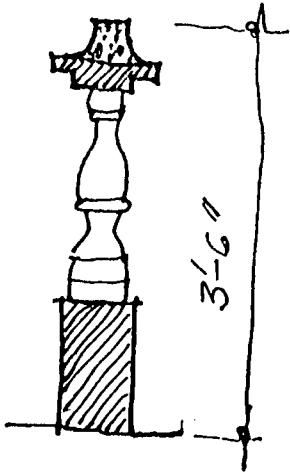


Fig-4.40.4 Section thru parapet, rose garden
Dhaka

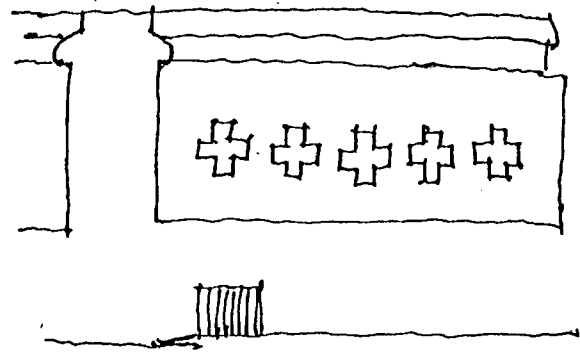


Fig-4.40.5 Elevation of parapet
satellite township house

House of Dorend
Mohamud, Nawab
Street, Wari.

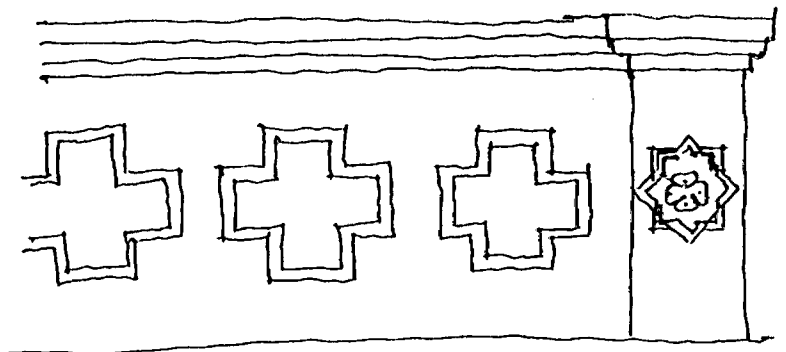


Fig-4.40.6 Parapet, Kachary bari

Tripura Raj,
Comilla

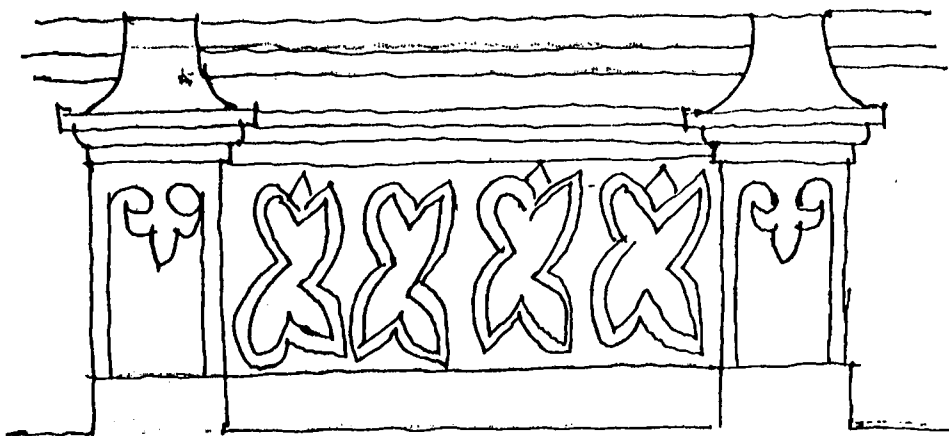


Fig-4.40.7 Parapet, shop house

Hati 'Companir bari'.
2, Nawab Serajudaula road,
Andarquilla, Chittagong.

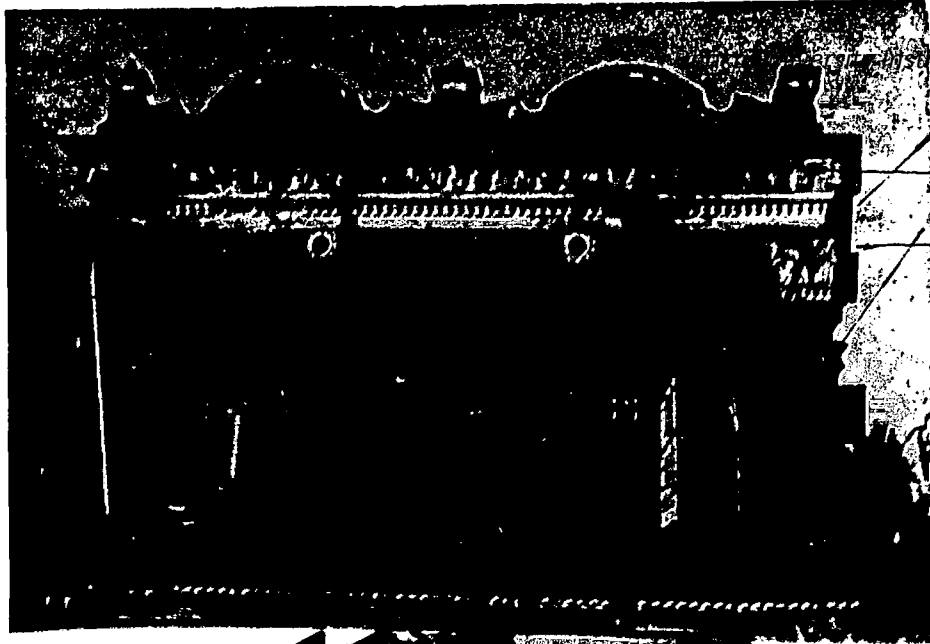


Fig-4.40.8 Curved parapet
in the houses

↳ Lal Kuti,
Shahab bazar,
Rajshahi
Foliated parapet

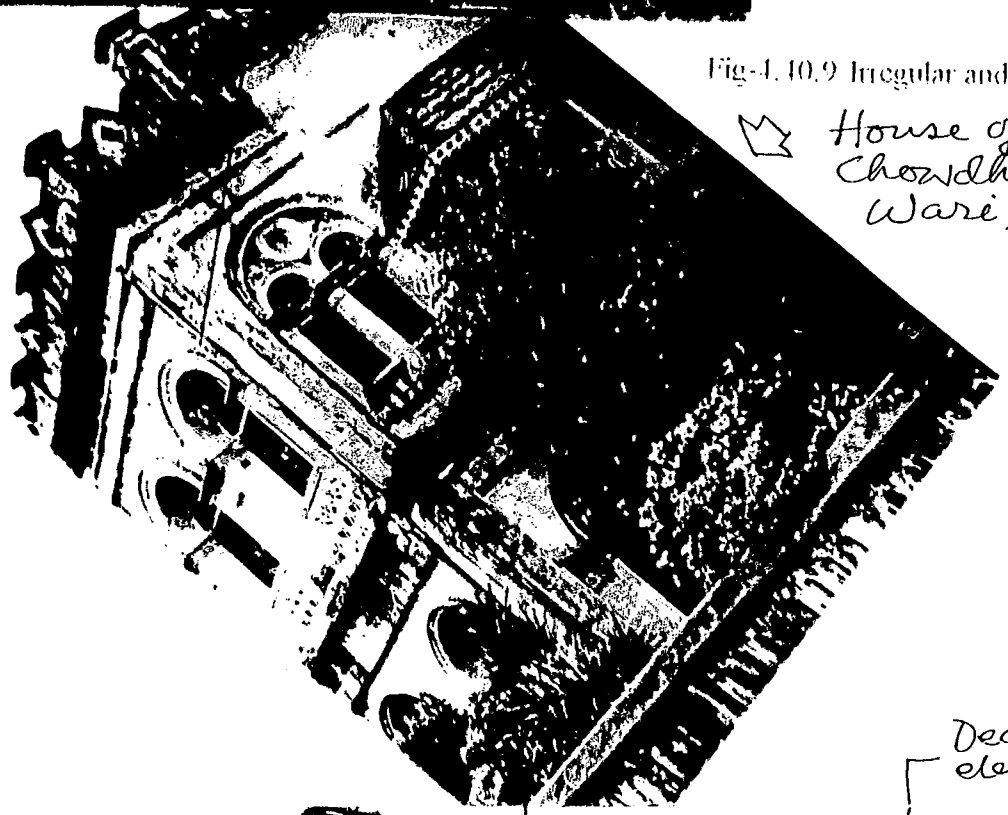


Fig-4.40.9 Irregular and broken parapet

↳ House of Anwar
Chowdhury,
Wari, Dhaka

Fig-4.40.10 Curved parapet
with floral detail

↳ House of Barister
Charu Datta,
2, Nausab street,
Wari, Dhaka

Decorated
element on
parapet

Perforated, curved,
floral detailed
parapet with
moulded roof
projection.



Fig-4.41.1 Earthen spout
in railway quarter
Brahmanbaria



Fig-1.11.2 Hole for drainage on roof
*Railway quarter
Teggaon.*

Fig-1.12.1 Small pediment
over window

*Horesey Profulla Banal,
Nimtala road,
Dinajpur.*

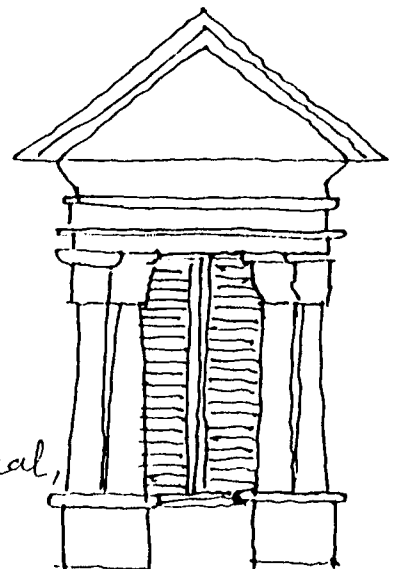


Fig-1.12.1 Unproportionately

large pediment
over Ruplal
house,
Dhaka

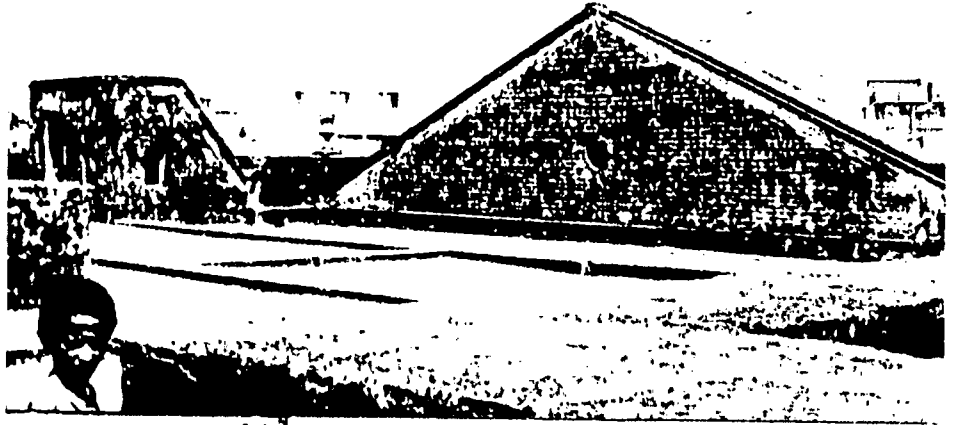


Fig-4.12.2 Well proportionate pediment

over entry
Barataraf
Natore rajbari

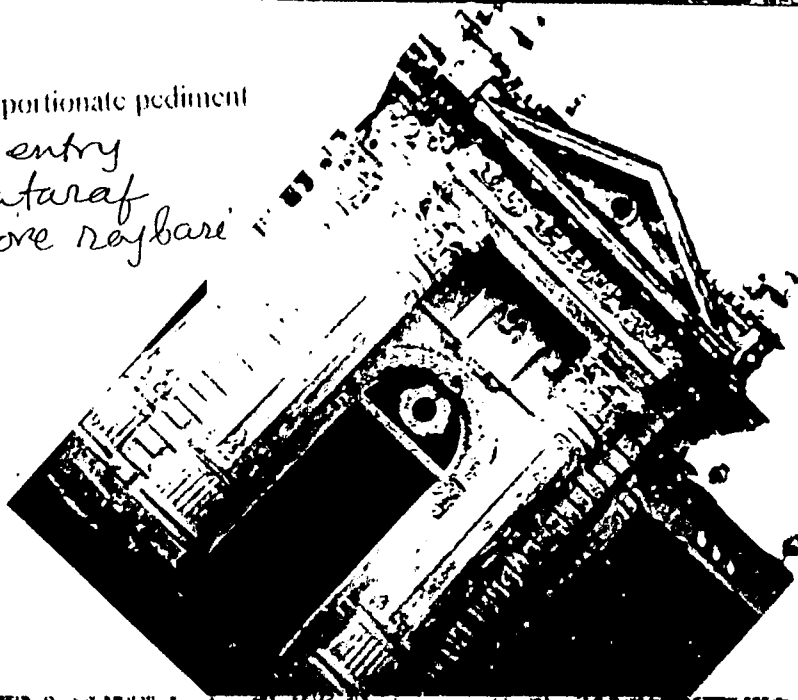


Fig-4.12.3 Unproportionately

small pediment
over a large
facade
Kunktagacha
Rajbari.

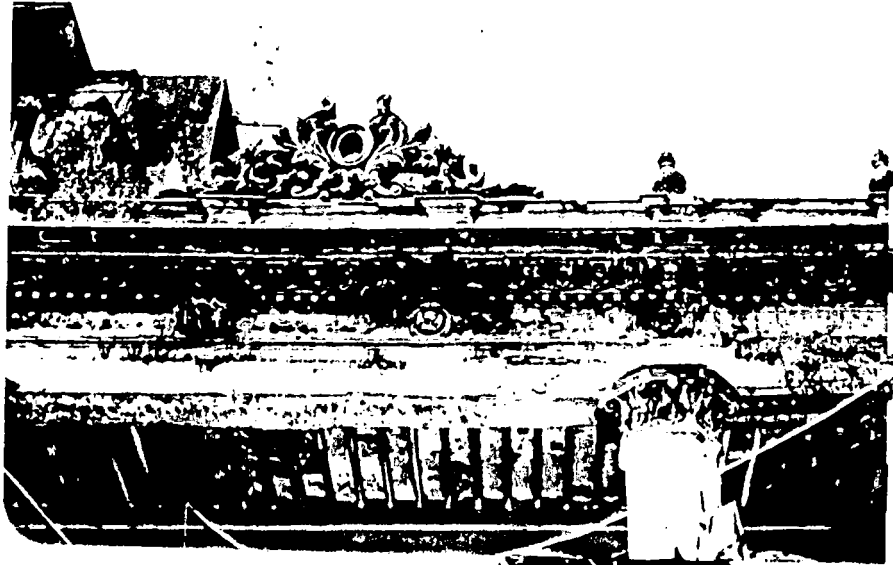


Fig-4.43.1 Floral rusticated block

on the house of
Prasanna Kumar
Das, B.K. Das road
Farashganj, Dhaka

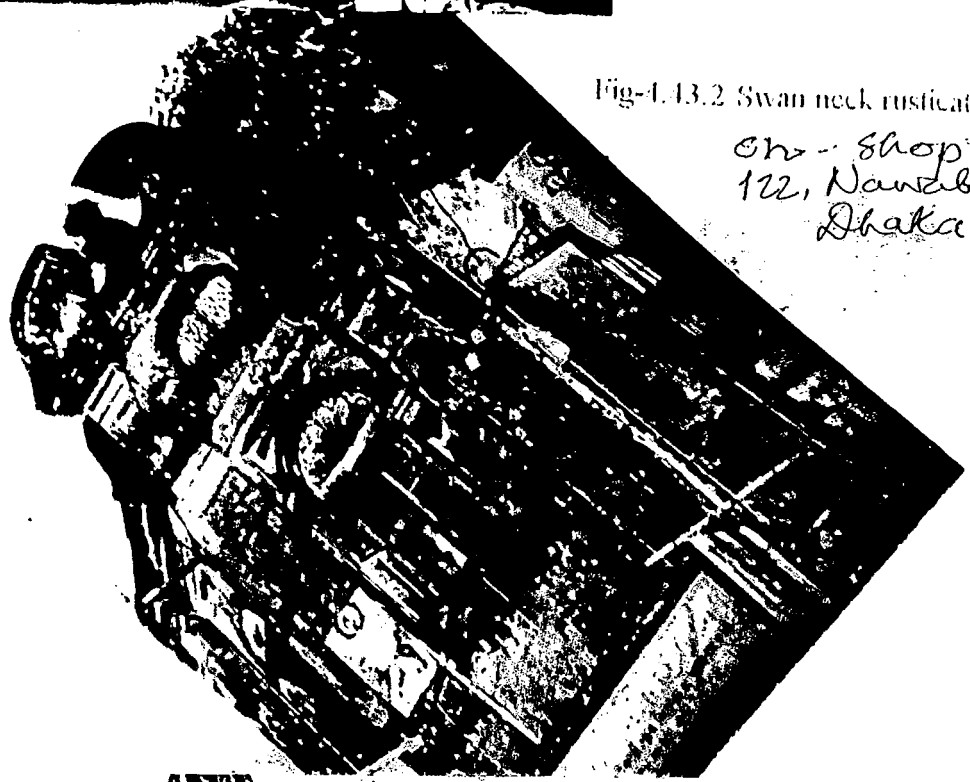


Fig-4.43.2 Swan neck rusticated block

on - shop-house,
122, Nandapur road
Dhaka

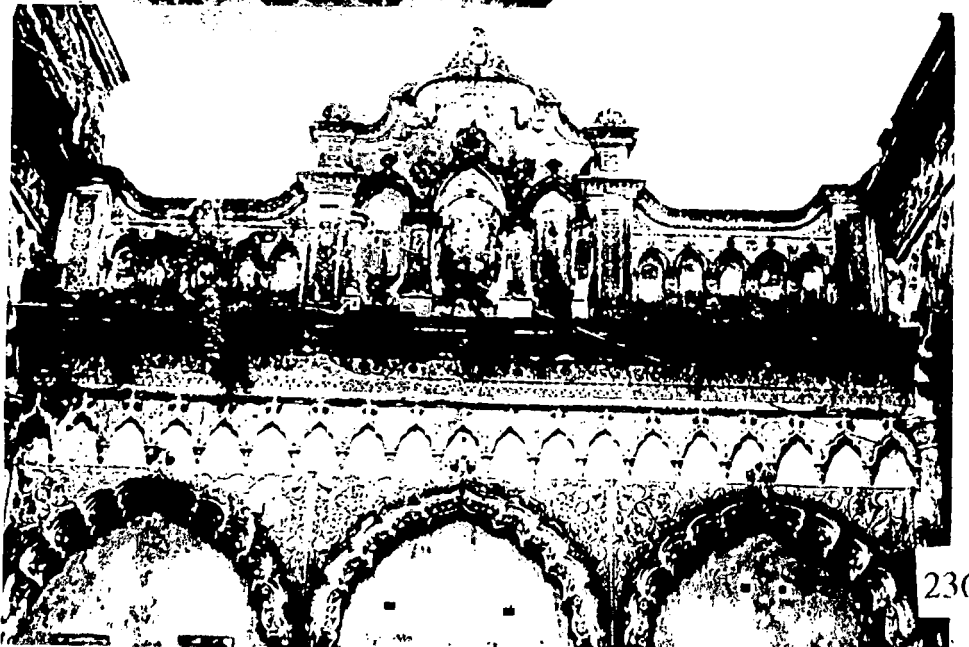


Fig-4.43.3 Decorated rusticated block

on Radha-
Krishna mandir,
Wari, Dhaka.

237

Rose garden
Shaka

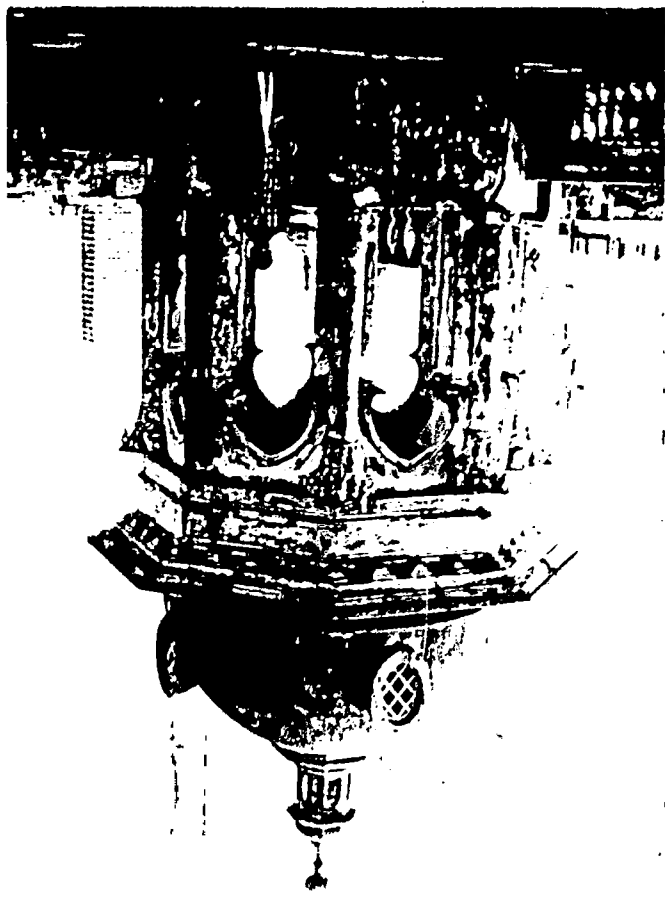


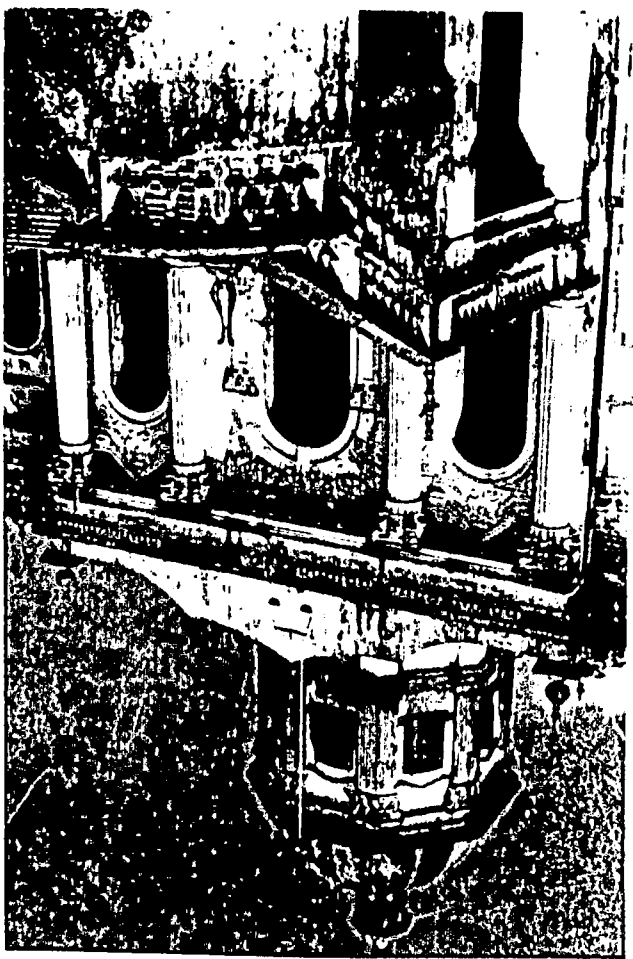
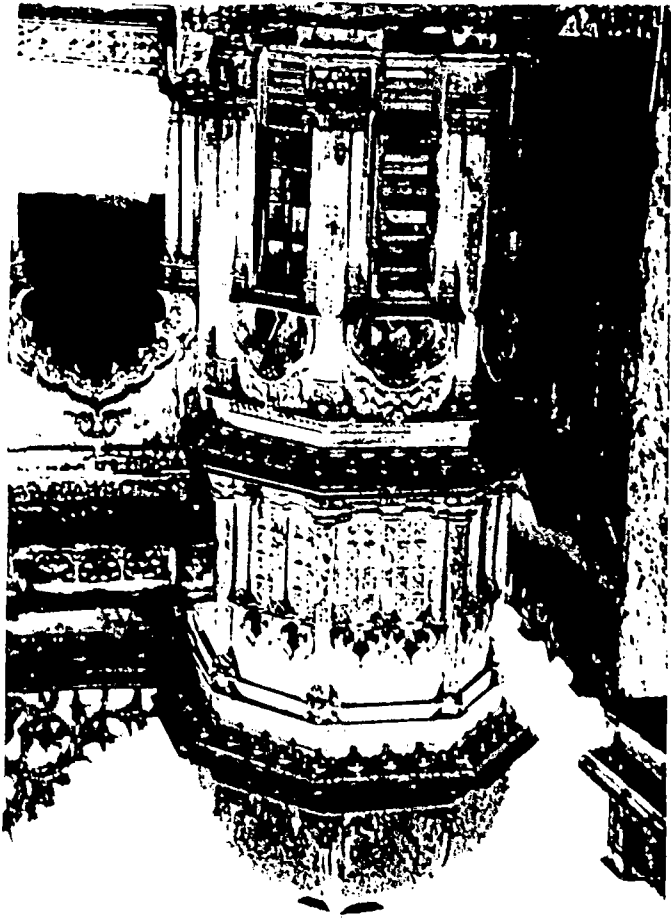
Fig-1.11.1 Dome on lawn

Divisions of dome
by vertical lines
Sumkato ko
Korona cakra
Plecter Panster
Spit, P-615

Sumkatala
Korona, Tipu
Sultan Road,
Shaka

Fig-1.11.2 Dome on dance hall

Taj Mahal palace,
Rangpur,
Fig-1.11.3 Domes on zaminar house



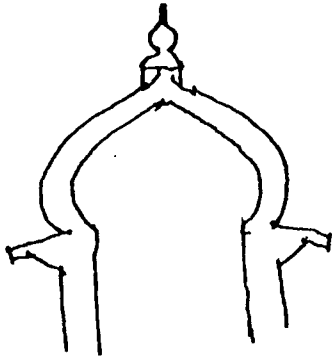


Fig-4.44.4 Onion shaped dome on zamindar house, Lahiri lodge, Gauripur, Mymensing



Fig-4.44.5 Onion Shape dome on zamindar house, Muktagacha raj bari

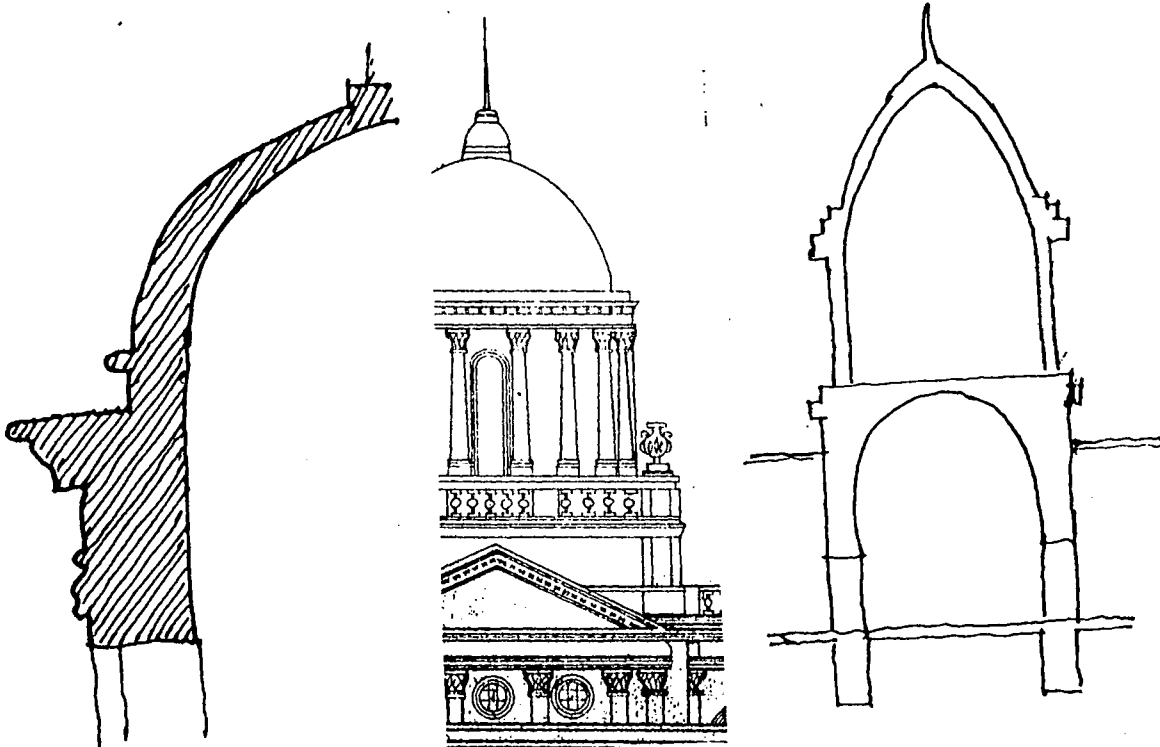


Fig-4.44.6 Section thru dome
Ahasan manzil, Dhaka

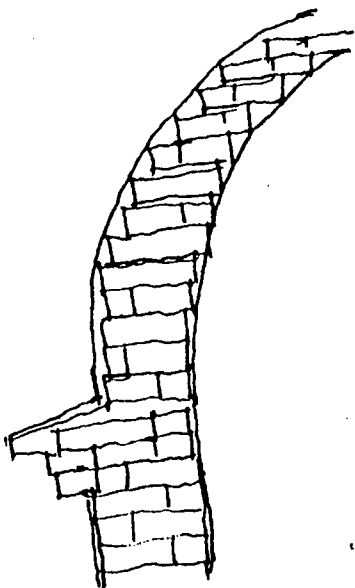


fig- 4.44.8.
Part of the elevation of
dome on the governor's
house, Dhaka.

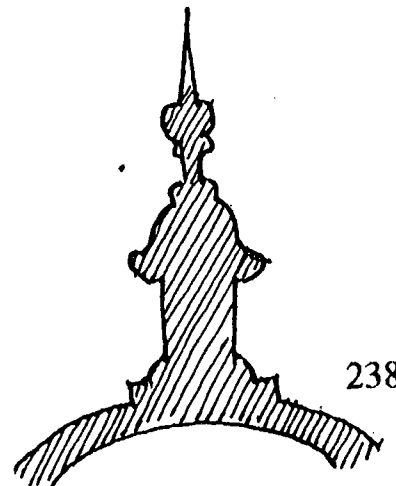


Fig-4.44.7 Detail sections of dome,
rose garden, Dhaka



Fig-4.45 Vault on the entry.

*Managers
house
Ahsanmanzil
Shaka*



Fig-4.46.1 Circular ventilator

*shop house of Hirish
Chandra Pal at Choti
Dilli*

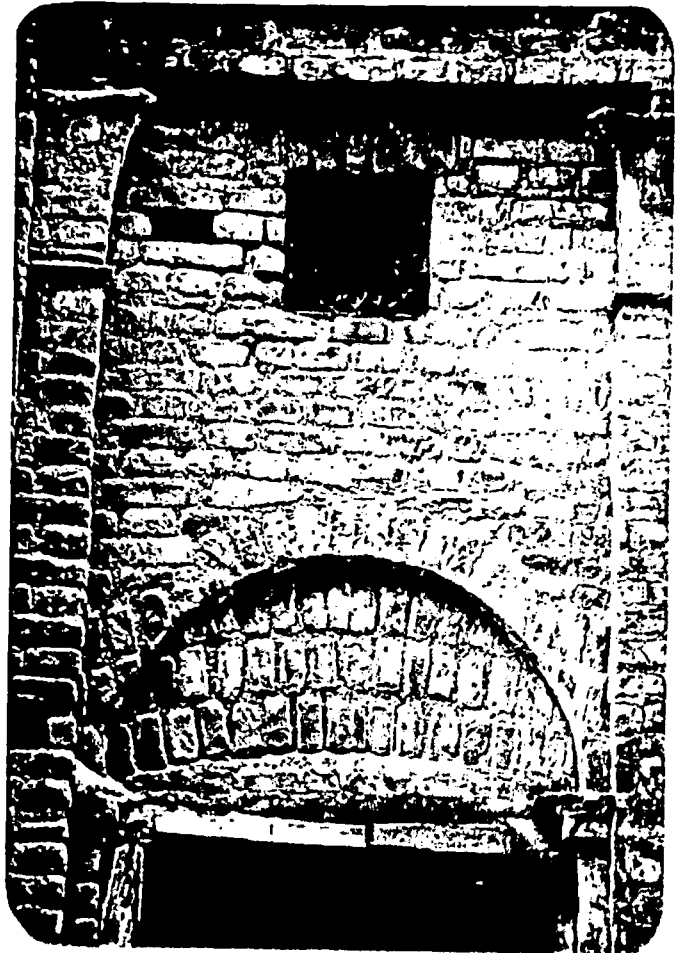


Fig-4.46.2 Square ventilator

*in the house of Jogesh
Chandra Poddar*

Fig-4.46.3 U. type built-in ventilator
on the railway
quarter, Tejgaon,
Dhaka

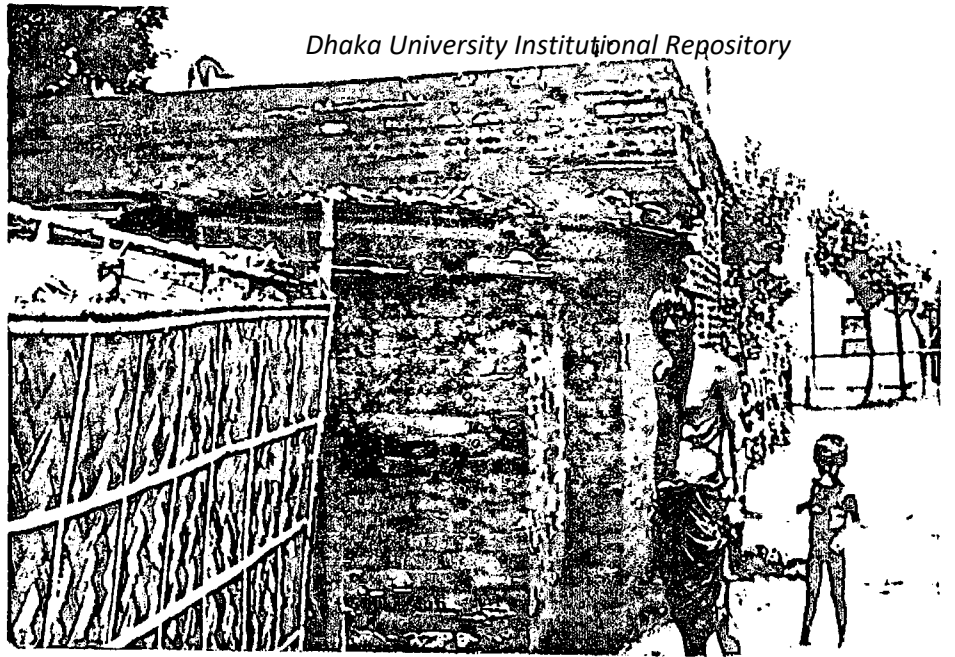


Fig-4.46.4 Cross ventilator
Railway quarter,
Tejgaon Dhaka

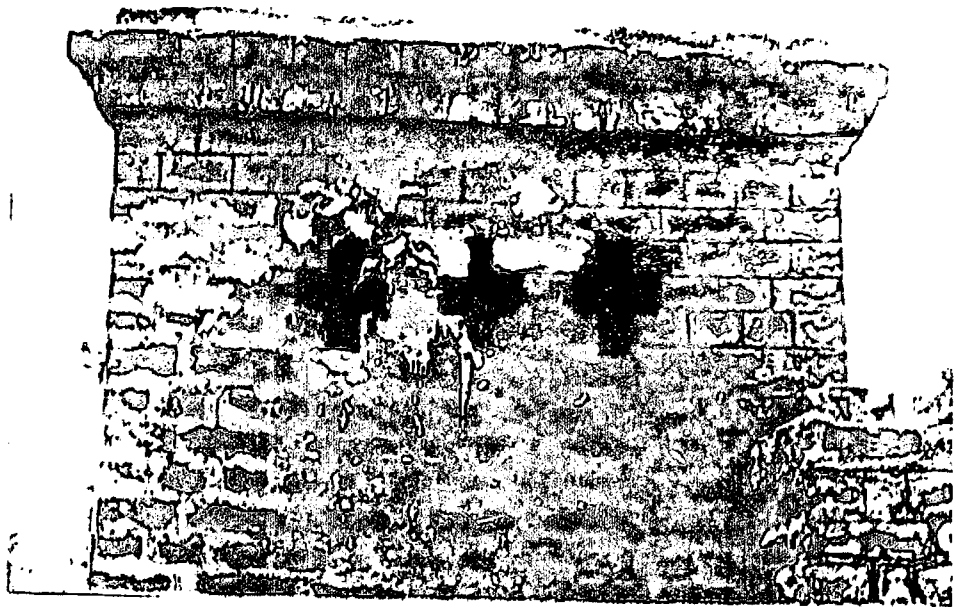


Fig-4.46.5 Circular ventilator
on traceodal
window, House of
Nawab Shamsul
Huda, Gokarna,
Brahmanbaria



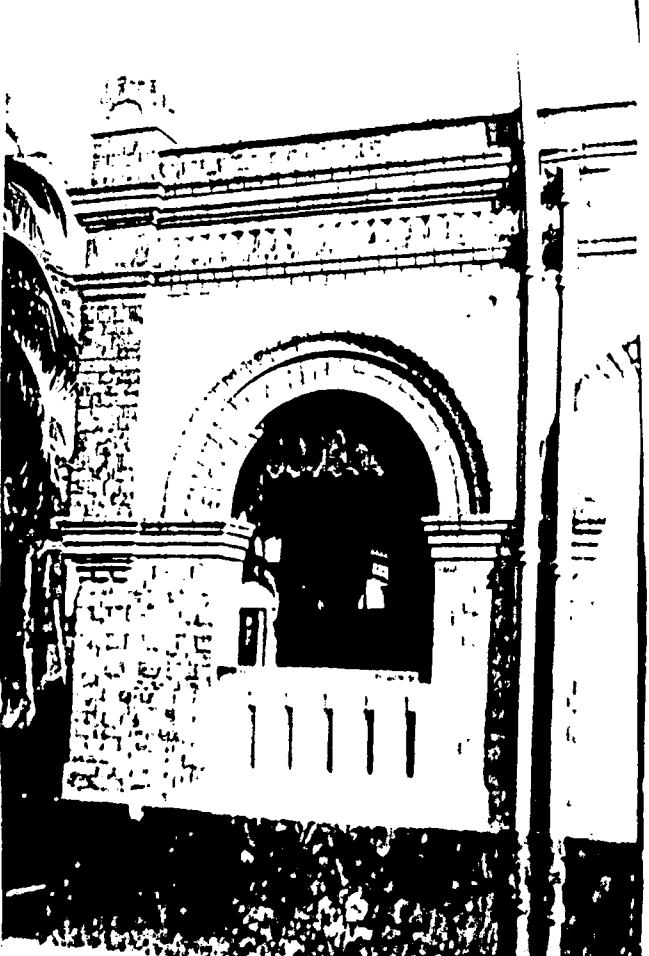
Fig-4.47.1 Kiosk on bagan bari
Rose garden, Dhaka



Fig-4.47.2 Kiosk on urban house
Jagannath Saha, Lalbagh

Fig-4.47.3 Kiosk on zamindar house
Murapara house

Fig-4.47.4 Cupola on circuit house
Khulna



Chapter-5

PRINCIPLES OF DESIGN AND SPACE ORGANIZATION:

Chapter-5

PRINCIPLES OF DESIGN AND SPACE ORGANIZATION

5.0 Introduction

The typology of the houses and the various aspects of the compounds and the elements of the houses are discussed in the chapters 3 and 4 respectively. This chapter 'Principles of design and space organization' forming the core chapter of the thesis, deals with the design consideration, space organization, zoning in builtform, design principles, houseform and discussion. The discussion is made and illustrated with the plans of the houses and compounds. The plans of the compounds in chapter-4 and the plans of the houses selected for the representative houses in the chapter-8 are also taken into consideration.

5.1 Design consideration

A house is a shelter and place for living safely and comfortably in a known environment. So a house should be designed, furnished and equipped to give them (the inhabitants) a sense of security and environment where all the households activities could be carried out. The households planning and design should begin with a clear and scientifically accurate realisation of the actual physical, socio-cultural and emotional needs of the occupants and should never in any phase of planning compromise in meeting them. This is also recognised that a house should be strong, safe and economical. The house should provide an environment (socio-cultural and physical) of maximum desirability for the occupants-- the house master (*karta, shaheb*), house lady (mistress, *ginni, memshaheb*), the childrens (*missi babas*), guests, servants etc, persons and this should be achieved harmoniously within the existing limitation of financial means of the owner.

Out of the thirteen types of houses discussed in chapter-3 four types of houses were institutional houses which were designed and built by the institutions like P.W.D. Railway, Municipality and District council etc. Therefore, besides these the other private houses, in many cases the cost of the house and the environment around were the prime considerations.

5.1.1 Economy and house design

Except for the construction of large mansions of the zamindars, government bungalows for the *bara* and *chota shahabs* etc, other rural, urban shop, satellite township, *patti* etc, houses, erected by the middle class people, the limiting resource was the money. The government, *clak bungalow/ circuit*, railway *methor's patties* etc, houses built by the government and various autonomous bodies, the scarcity of money influenced the architecture of the houses. The government and the various autonomous (Municipality, District council, Tea estate etc,) authorities did not want to spend much money for the construction of the houses. This shortage of money required the search for inexpensive (still beautiful and decorative to some extent) construction of the houses. It was more so with the less affluent (for rural, urban, shop houses for the middle class) persons too.

In order to make the houses inexpensive for both long term economy as well as immediate capital outlay, it was necessary to adopt the traditional construction technique together with the use of locally available materials and local labour. Since the labour was abundant in all areas, the construction of labour intensive technique of construction was followed which reduced the cost of the structure. Again, the use of machine made components used in the houses (eg, joist fig-6.3.5, 6.3.9), purlin, railing, (fig- 4.34.4, 4.34.6), column (fig-4.22.2) stair (fig-4.35.6), grilled boundary (fig-4.15.2) etc, saved the labour cost. The cheap and popular methods of brick load bearing walls were followed in 100% of houses and joist, purlin and ceramic tile (fig- 4.3.5, 4.4.6) were used in many houses in roof construction.

The total construction cost could be reduced through the reduction of initial (first) costs and maintenance (running) costs of the houses and these were considered while designing the houses.

5.1.1.1 Initial cost

There were some economics of architecture observed in the house design that were relatively independent of house activities. In order to achieve the reduction of initial costs, it would be necessary to use the simple geometry of envelope (fig-5.2.2, 5.4.3, 5.5.2, 5.11.2, 5.20.4, 5.32, 5.35.5, 5.35.10, 5.37, 5.40), simple and familiar materials

(eg. brick, wood etc.) simple construction technique (eg. load bearing wall) and efficient construction management. The geometric factors like minimum number of breaks and corners in floor and envelopes, minimum breaks in the silhouette of the roof line (fig-8.3.3, 8.6.1, 8.20.4, 8.26.3, 8.32.4, 8.33.4), etc generally did not affect the household activities but they minimise the construction cost of the houses.

The colonial designers considered the perimeter of a house. The outside walls cost more than inside partitions. These were heavier, more insulated, more complex, because they have to let in light, air and rain, and they need much better materials to withstand the weather. Therefore it seems reasonable to expect in one way that the colonial builders could cut down the cost of envelope by cut down the area of the outside walls. The economic building would be roughly as rectangular as possible (fig-8.2, 8.23.1, 8.32.2, 8.38.2), with minimum number of breaks and corners and it was found in many types of houses particularly in bungalow types of houses .

Similarly, every break in roof would add some extra construction cost. Therefore they adopted simplified flat roof type with minimum break in silhouette (fig-8.6.1, 8.15.4, 8.30.4, 8.32.4, 8.38.5) which prove more economical not only at the time of construction but throughout the life of the house.

Both the courtyard and bungalow type of houses were simple and rectangular in shape (fig-5.4.3, 5.5.2, 5.8.2). In courtyard type houses the individual blocks are simple and rectangular in plan (fig-8.2, 8.13.3) and the bungalows were almost square and rectangular (fig-8.29.3, 8.31.1, 8.32.1, 8.38.2). The outside walls always built in almost one material-- brick, in traditional way and the roof construction was typical, beam and purlin with ceramic block tiles (fig-6.3.5, 6.3.6) which minimised the construction cost.

The high ceilings (approx. 18 to 22) are found in the large urban, zamindar, circuit and government houses. Gradually the size of the rooms was reduced and the height became 11' to 12' in railway houses. The reduction in room height also minimised the initial cost.

5.1.1.2 Maintenance cost

The careful and logical selection of the building materials could save the initial cost as well as the frequency and cost of maintenance. The colonial builders used the minimum number of building and finish materials and these materials were always permanent.

In some cases they went for temporary materials like thatch/ *ekra* roof in the garden houses which required frequent changes. But they built the external envelopes in such a materials which were quite stable and permanent. The lime mortar on *ekra* or bamboo mat was proved to be a permanent materials for the years together in various areas in Sylhet region.

The bricks used extensively by the colonial builders could be manufactured locally (5.1) and plastered with lime mortar which was durable and need less maintenance. The wooden beam and purlin (fig-6.3.6) or steel joist and purlin (fig-6.3.5) etc. were also permanent materials which need less maintenance. The exposed brick construction (fig-8.24.3-8.24.5) developed by the PWD and railway engineers was proved to be permanent and maintenance cost was low.

5.1.2 Environment and house design

The function of a house is primarily to accommodate the various household activities. It protects all these household activities from the environmental exposure and provide physical, social and emotional environment to enhance the various residential working conditions. The interior and the exterior spaces of the houses are affected by the environmental variables like air temperature, air movement, solar radiation, rain, noise and lighting etc.

The interior condition could be controlled to a large extent either by artificial or by natural means. Since, the technology did not develop much during that time, people had to depend on the natural means. The possible and only alternative was the best use of the houses adopted to local conditions. Therefore, in planning and designing the houses, the colonial builders did not fight the forces of nature, rather they worked with nature and harmonize with and take advantage of all that nature has to offer in the way of providing the comfort to the users of the houses.

Bangladesh experiences the warm humid monsoon climate because of monsoon wind which affect the air temperature and humidity. The characteristic of this climate is hot air temperature accompanying by high relative humidity (Appendix-1) causing dampness during the summer and rainy seasons. The solution of this problem. was the high plinth (fig-4.19.1, 4.19:2, 4.19.6), vaulted plinth (fig-4.19.3), void in the floors (fig-8.29.2), thick wall (15" and above) envelope, maximum number and size of openings (doors and windows) etc. The true basic purpose of thick house envelope and large opening (eg. french window) is to neutralize the forces of nature, and to keep the condition of the interior spaces as to the comfort level as possible.

The house is continuously getting heat both from inside (from the occupant, fireplace, kitchen etc,) and outside environment (from solar radiation and warm air etc.). In order to maintain physical comfort in the house the excess heat must be dissipated to the adjoining environment (by convection, conduction and radiation) The air movement through the interior spaces and around the builtform. shading the spaces and structure, etc, could improve the indoor thermal comfort. Thus vital to indoor comfort, the building would have to be (provided large and maximum number of doors and windows) opened up to the prevailing wind to receive whatever air movement it has (5.2). Therefore most of the houses of every type have the maximum number of large openings (fig-8.2,8.8.1, 8.9.1, 8.10.1, 8.11, 8.12.1, 8.15.2, 8.16.2, 8.31.1, 8.38.3).

The house received maximum heat from the solar radiation. The solar radiation being diffused and reflected, the house experienced the heat directly from the solar radiation, diffuse radiation from the whole sky dome, reflected rays from the ground and other surfaces. The thick walls in the houses, thick L.C. terracing on the roofs and thick ground cover (grass and vegetation around, found in many houses of various types) were helpful to minimize the heat of the structures and interior spaces. Except the paved courtyards in few of the urban, shop, satellite township *patti* and zamindar houses, most of the houses had the thick ground cover around.

Since the air movement through the house demands the large openings in the windward and leeward sides, the doors, windows and the shading devices should be

large to cover all the openings (fig-4.30.1-4.30.9) from the sunrays as well as from the penetration of rain (5.3).

In the beginning of the colonial period, shading devices were not provided (eg, Neemtali gate), but the houses designed by PWD and railway at the end of 19th century and at the beginning of 20th century, sunshades of L.C (fig-4.30.2, 4.30.3, 4.30.7), C.I. sheeting (fig-4.30.5) and wooden shingles etc, were provided over the windows. The door and window size were large in many urban, zamindar, government, bungalow etc, houses and eventually french windows were the logical development found in many houses. The room height was always high to accommodate the *punkhas* (fig-1.5) and venetian wooden blinds and *tatties* (5.4) were accommodated in the windows (fig-4.28.1, 3.28.2.1). All these could relieved the interior spaces from the heat. Therefore, the verendahs around the internal *uthans* in the courtyard type houses (fig-5.5.2, 8.2, 8.5, 5.13.1) or verendahs all around in the bungalows (fig-5.18, 8.37, 5.26.2, 5.32) the lawns (fig- 8.29.1, 4.11.4, 4.11.7), vegetations, thick masonry walls (fig-5.8.2, 5.20.1, 5.17, 5.21.1, 5.23.3), high plinth (fig-5.19.1, 5.19.2, 4.20.6, 4.20.7), vaulted plinth (fig-4.20.3), thick L.C. terracing over roofs (fig-6.3.5, 6.3.6, 6.5.1),etc were favourable against the undesirable environmental variables which the colonial designers and builders handled and solved satisfactorily in most of the cases.

5.2 Space organization

The organization of the spaces (indoor and outdoor) in various types of houses (discussed in chapter-3) took a definite and typical form in the colonial period. The characteristics of organization of spaces differs in different types of houses. The way of organization of spaces in different types of houses is identified and how those spaces were used by the Europeans, natives, and the people of third culture are also investigated.

Though the chronological evolution of space organization in the colonial period is difficult to establish due to the limitation of available historical documents, but the changes in the socio-economic and cultural sphere suggest reasons for the preference of some type of space organization instead of others at different times. These

preferences for space organization were not uniform-- socio-economic and cultural background, technical limitation, and financial constraints etc, made certain choices which were most appropriate and obvious at certain period among certain group of people.

On the basis of design and organization of spaces, various types of houses could be categorised broadly into two groups-- introvert and extrovert houses.

5.2.1 Introvert houses

The existence of introvert type of houses can be found from the Indus valley civilization (3250-2750 B.C) to till today. Our traditional houseform belong to this introvert type refers to inward looking *uthan*, where the entire organization is derived in relation to the centre (the *uthan*). The rural (fig-5.2.1, 5.2.2, 8.1, 8.2, 5.4), urban (fig-8.8.1, 8.9.1, 5.5.1, 5.5.2), shop (fig-5.14.2), settlement township (fig-8.16.1, 8.16.2), zamindar (fig-8.18.1, 8.18.2), *patti* (fig-8.40.5), *kachari bari* (fig-5.24.1), railway (fig-5.35.1, 5.13.2, 5.35.7, 5.35.9, 8.33.1) etc, houses are found to be introvert type, and, they have considerable uniformities in form and organization of interior spaces around the *uthan*. The governor's house (fig-5.27) at college road, Dhaka is also introvert type. Introvert type *bagan bari* is not found in Bangladesh. The concept and the purpose of creation of this *uthan* varied from profession to profession and culture to culture. In the rural houses, sometime the *uthan* was used for economic purposes like threshing or drying of crop, in urban and railway quarters this *uthan* was used for gossiping, in shop houses it was used for loading and unloading of materials, in *kachari baries* it was for gathering of people (5.5) and in rural zamindar houses, it was for the *salish* and *panchayat* purposes (5.6).

The courtyard type houses were popular in urban areas for many reasons, it ensured privacy, it accommodated the economic activities and it offered micro-climatic condition appropriate to the domestic comfort. The houses with multiple *uthans* (fig-5.2, 5.5, 8.1, 8.18.1, 8.18.2) are also found in many houses. The introvert typology represented two distinct house forms-- detached houses and enclosed houses.

5.2.1.1 Detached houses

The detached houses were the modified version of rural traditional indigenous (fig-5.2, 5.4, 5.5.2, 8.1, 8.8.1) houses, with one difference that instead of several *ghars* (with single room) around the *uthans*, here, in the detached house type, several house units (blocks) were arranged (fig-5.2.1) around the *uthans*. This type of houses are found in rural (fig-5.2, 5.4, 8.1), urban (fig-5.5), *kachari hari* (fig-5.24.1) etc.

In the detached type houses, the house block consisting two or more rooms side by side in rows facing the *uthan* have one long verendah covering the whole block (fig-5.5.2). The width of these verendahs varied from 5/6 feet (fig-5.2.2) to 10/12 feet (fig-8.2). Sometimes the main block facing both the *uthans* (inner and outer, fig-8.2) have two verendahs facing both the *uthans*.

A combination of the single room with elongated block and enclosed house block having two or more rooms are found in some of the houses (fig-5.5.2, 8.5, 8.9.1). This shows the transformation of the detached houses towards the enclosed forms.

Each of the rooms are independantly entered from the verendahs and sometimes they are also interconnected by the internal doors. The entry to the houses were from one of the corners (fig-8.2, 5.2.2), sometimes through the main entry (through the *sinha darwaza*) gate. The entry to the outer blocks (*baithak khana*) was directly from the outer *uthan* (fig-8.2), but it was always from the verendah, covered or uncovered.

The bed rooms are arranged side by side in the house block (fig-5.2.2, 5.5.2, 8.2) which are directly and independantly approached from the verendahs and again, these are also interconnected.

The *baithak khana* is always at the outer part of the houses (fig-5.5.2). The *master shaheb's* room and the guest rooms were also at the outer part of the house. The kitchen, store etc, block and the animal sheds in many cases were either at the side (fig-5.2.1, 8.1) or at the rear of the house.

Usually the roofs are used for different purposes and these are approached by the formal stair case placed at the corner (fig-5.2.2). Sometimes open stairs are designed for this purpose.

The detached form of urban houses (fig-5.5) were perhaps unconscious process of transformation of rural 'baries' achieved through trial and error methods over the time. The urban persons having a strong bondage (5.6) with the rural homesteads usually built such type of houses.

5.2.1.2 Enclosed houses

The enclosed type of houses might be considered as the most appropriate transformation of rural detached type into the urban one, considering the factors like privacy, security and cultural heritage etc. This type of houses found in the urban (fig-5.6.1, 8.9.1), zamindar (fig-8.18.1, 8.18.2), shop (fig-8.14.2), urban *patti* (fig-5.41) etc, houses. These type of houses were single or multi storied (upto three storied) where the rooms were arranged around a single (fig-8.9.1) or multiple (fig-8.18.1) *uthans* and a continuous verendah or raised platform was provided (fig-5.6.1, 8.5, 8.18.1) inside to which all the rooms opened. Some times the *uthan* was so small that it only served as lightwell (fig-5.6.1,8.14.2).

This type of houses were suitable for extended families and also were suitable for vertical expansion. There followed a mutual adaptation between the houseform and pattern of living and between the way of life and houseform. For a considerable period of time it established itself as the most valid urban houseform, maintaining all the soci-cultural values.

In the enclosed type houses the space organisation follows a simple principle that the rooms are arranged around the *uthans*. The form of the houses took various shapes, rectangular with the single courtyard at the middle (fig-5.6.1). Other shape was 'L' type where the rooms were arranged at the two adjacent sides of a courtyard (fig-5.7, 8.11). ^{and other} \wedge type houses were also common where the rooms were arranged at the three sides of the *uthan*. The L,T,E \sqsubset and F etc are the partial and incomplete type of enclosed houses. These are also termed as semi-enclosed houses.

In these introvert type of enclosed houses usually the rooms are arranged around the *uthan* in single row (fig-5.7). In most cases the continuous verendahs are designed around the *uthans* (fig-5.6, 5.19.1, 8.5). Sometimes the blocks are arranged without any verendah (fig-8.9.1). Raised platforms and a combination of raised platforms and verendahs are also found in some of the houses (fig-8.18.1). Two verendahs at the either sides of the single row of rooms are found in many houses (fig-8.18.1).

Such types of single rooms blocks are well ventilated. The blocks having double verendahs (fig-8.18.1) are well ventilated and are well protected from rain and sunrays. In the enclosed houses, a central courtyard allowed the penetration of light and air; as the house was more than one stories high and these were closely clustered, the lower rooms were comparatively dark and cool. Activity in this courtyarded house was centripetal; movement was inwards, towards the courtyard (5.8). In some of the enclosed type houses the multiple of rooms are found side by side having a large depth of continuous rooms (fig-8.5). In this type of arrangement most of the rooms remain unventilated and dark.

Sometimes introvert enclosed houses are found covering the whole compound. Such type of houses are found in the old parts of the towns. Different types of entries are found in the enclosed types of houses -of which two types were popular, one, entry to the verendah, then, through a long passage to the internal courts (fig-5.6.1), two, entry through the portico and verendah to the hall room or *baithak khana* (fig-5.7)

Various types and number of stairs are found in the enclosed houses. The number and location of stair varies from house to house. The number of stair depends on the size of the house and varies from single stair (fig-5.7) to four in Murapara house (fig-8.18.1) and Jagan Nath Saha, Lalbagh (fig-5.6.1), five in Reboti Mohan Lodge, Sutrapur, Dhaka (fig- 8.19.1) and fifteen in Joydevpur rajbari. (fig- 8.20.2). The location of the stair varied from, at the middle between two blocks at the corner (fig- 5.7) to various position in the large houses (fig-8.18.1). Service stairs are always at the back (fig-8.6.1) or at the side of the houses. Circular stairs are used as service stair found in many houses (fig-5.6.1).

Porticos are used in many enclosed houses (fig-5.7). The location of these porticos is in the middle of most of the houses. Sometimes this is also placed at the side of the houses.

5.2.2 Extrovert houses

Extrovert type of house design was developed and adapted in the local context as a consequence of marked socio-economic and cultural changes under the influence of colonial rule that produce a new life style, living pattern, values in living, technology and services etc. This gave rise to a type of house design suitable for the 'third culture' people (5.9).

The development of civil lines, cantonment, satellite township etc, with wide straight road pattern the isolated bungalows within the spacious compound, inspired the native educated elites to follow colonial architectural model-- the 'bungalow'.

The form of the bungalows had the conformity with the local vernacular hut of Bengal (5.10). During the early years of the EIC rule, mostly in eighteenth century the bungalow, become the rural and subsequently suburban, 'model dwelling' for the European (5.11). The early colonial bungalows were *kacha* in nature and the bungalow form took the form of *chauryari* (5.12). "Europeans have made great improvements in this kind of building, have surrounded it with a gallery to exclude the heat, have introduced windows, have divided it into convenient apartments, and have suspended cloth ceiling to free them from the vermin that occupy the thatch" (5.13). "The European resident improving upon this, encloses the verendah by erecting either a mat or brick wall, and in the same way, throwing partitions across the corners, converts the verendah into little rooms for the convenience of himself or visitor friends. The roof was carried beyond these as before" (5.14). But after 1857 the roofs of the bungalows were increasingly tiled rather than thatched as a precaution against incendiarism (5.15). Later, the bungalows became *pucha* with flat roof covered with burnt clay and mortar (5.16, fig-6.3.3, 6.3.6)

The bungalow compound represented a totally different culture, life style, set of values and behaviors than those of either the first or second culture (5.17).

Bungalows are found in urban (fig-5.8, 5.18, 8.12.1), satellite township (fig-5.17), zamindar (fig-5.20.1, 5.20.4, 5.21, 5.22), *kachari* (fig-5.23, 8.21.1), *bagan bari* (fig-5.26, 8.22.1, 8.23.1), government (fig-5.28, 5.29, 5.31-5.34, 8.24.1, 8.25.1, 8.26.2, 8.28.1, 8.30.1), chummary (fig-5.30, 8.27.1), railway (fig-5.35, 5.35.10, 8.32.2), *kuthi* (fig-5.36), garden (fig-5.37, 8.37.1), *dak* bungalow (fig-5.39, 8.38.2) and circuit (fig-5.38, 8.38.3) etc, houses.

The bungalows are situated in one of the three areas: (1) a rural houses, garden manager's house (fig-8.37.1), rural zamindar house (fig-8.18.1) etc. often isolated or semi-isolated site, far removed from other members of third culture, (2) urban bungalows, *dak* bungalow, circuit house, urban zamindar house, etc. surrounded by other indigenous houses of local character (3) bungalows in the civil stations, satellite township and railway colonies.

These extrovert bungalows are outward looking and their components are a free relationship to one another. The activities in the bungalows is centrifugal outward on to the verendah and further onto the compound (5.18, fig-8.29.2).

5.2.2.1 Composite bungalows

Most of the bungalows were the composite type and were found in the urban (fig-5.8, 8.29.2), satellite township (fig-5.17), zamindar (fig-8.17), *kachari* (fig-8.21.1) *bagan bari* (fig-8.22.1), government (fig-8.24.1), chummary (fig-8.30), railway (fig-8.31.1, 8.32.1), *Kuthi* (fig-5.36), garden (fig-8.37.1), *dak* bungalow (fig-8.38.2) and circuit (fig-8.38.3) etc, houses. This type of houses were mainly developed and adapted by the government agencies (P.W.D. military board etc,) railway and elite people of third culture from 1850s to 1940s.

This composite type represents to a free standing, courtyard less, outward facing, one or two storied main house block having a number of detached service units at the side (fig-4.11.4-4.11.6) or backyard (fig-4.11.2, 4.11.3) of a large compound. This type of composite bungalows were preferred by the people of the third culture who liked a completely new western living patterns and enjoyed in full the services of the native people. This is clearly found in the space organization of such bungalows.

The concept of served and service spaces and the separation of these spaces is the characteristic of the composite bungalows and it is clearly pronounced in their space organisations. This type of bungalows were suitable for single families who maintained a number of servants (5.19).

The bungalows were usually rectangular in shape (fig-8.29.2) and were separated from the service blocks/ areas. The served areas were provided in the main bungalows which included the hall room, drawing room, dining room, office room, bed rooms, pantry, store, lamp room, etc.

The family members and the guest lived in the bungalow and the members of the servant groups were accommodated in the service blocks. A physical distance is always maintained between them (fig-8.29.1).

Similar to the location of the *uthan* which was important in the introvert type of houses, the location of drawing room is important in the bungalows. The drawing room was centrally located (fig-8.31.1) in one storied bungalows and this was always at the front part of the bungalows, next to the portico and entrance lobby. It was always at the ground floor in the two or three storied bungalows (fig-8.30.1, 8.31.1). The relationship of drawing room with other spaces in a bungalow is shown in fig-4.1.1). The location of drawing room was such that the drawing, dining, family space, verendah, lobby, lounge etc, formed a large semi-private space (fig-5.31.1, 8.29.2) to satisfy the social gathering of both male and female members of the third culture (5.20).

The bed rooms were placed all around the drawing and dining spaces in one storied bungalows (fig-8.28.1). In the two storied bungalows usually one room (used by the guest in most of the cases) was placed at the ground floor (fig-5.31.1, 8.29.2) and rest of the bed rooms were accommodated at the first floor (fig-5.31.2). The office room was always at the ground floor (fig-5.31.1) adjacent or near the drawing room (fig-5.34.1). The location of staircase was at a suitable place in the bungalows. In most cases the verendahs were continuous and placed all around (fig-5.32). Small verendahs with the rooms were also found in many bungalows (fig-5.30.1, 5.30.2).

5.2.2.2 Consolidated bungalows

Consolidated bungalows were the new type of bungalows, different from that of composite bungalows where the **integration** of living and service areas into a single mass was found. Consolidated type bungalows is now considered modern and appropriate to our contemporary urban context. These are found in the outskirts of old towns from where the new towns began, eg, at Bakshi bazar and Hossain-i-dalan etc. areas in Dhaka town from where the new town begins.

This type of bungalows were not practiced by the colonists or by PWD/military board, railway etc. This type of bungalows began to develop at the end of the colonial period by the elites of the third culture. The development of consolidated type was prompted by the improvements of domestic technology, plumbing, sanitation etc, and inspired by the novelty of the third culture.

The consolidated bungalows was considered as self contained units in multiple floors required all services to be integrated into the main unit of the bungalow (fig-5.13.1, 8.10.1). The arrangement of the drawing, dining, bed rooms and verandahs etc., remained similar with the composite bungalows. Only the service block- the kitchen, servant room, store room etc, were integrated with the main block. Bath rooms were arranged with the main bungalows but the lavatories were away from the bungalows. Hexagonal (fig-5.13.1, 8.10.1) form of rooms at the front of the house was popular in this type of bungalows and this form had been continuing till 1950s-1960s.

5.3 Zoning in builtform

The compartmentalization of houses according to use was emphasized in design during the colonial period. Sometimes there was no distinct lines of demarcation among the zones, most of the houses were separated into three distinct zones- formal, family and service (fig-5.6.1). These were usually defined by the organisation of horizontal spaces in the case of one story houses or they were separated by stories in the multi-storied houses. The formal part contained the out house, *kachery*, office room, drawing room, dining room/ space, guest room, *master shahib's* room etc. Bed rooms, children room, bath room, dressing room etc, were located in the family zone and the service zone was the domain of servants, service facilities (store,

stable/garage) and kitchen (fig-4.8.5, 4.8.9). In some of the houses (eg, Ruplal, fig-5.19.1, Mymensingh rajbari, fig-8.17) neither the pure introvert nor extrovert form of arrangement but a different mixed order of arrangement was found. In such cases, social organization of the family, values etc, was directly reflected in the space organisation or the space organisation represented a fusion of extrovert and introvert forms.

Domestic activities and spaces were associated with the culturally defined social codes and customs which found expression in the design and use of the houses, new in form in this country. Here some of the rules that govern the transformation, development, design and arrangement of different types of houses are discussed.

The social meaning of the relative position of activities and spaces were not constant, but it was transformed and developed gradually, and eventually took a stable form. The changed attitude towards life, change of living pattern and the role of women in household activities (5.21), change in technology etc, had influenced the space arrangement of the houses. The luxurious life of the *shahes*, *memshahes* and the educated and merchant class who followed the colonial lifestyle helped to develop the composite bungalows (fig-8.29.1, 8.29.2) where the served areas and the service blocks were separated in a large compound with temporary hedged boundaries. Again, the person of the indigenous culture with all the native values, life style, pattern of living, position of women and their participation in the household activities, participation of '*ginni maa's*' in cooking and *pujas*, gradual decrease of compound's size and permanent and strong brick walled boundaries etc, encouraged to bring the kitchen and service blocks to main block. Thus the consolidated (fig-5.13.1) bungalows developed. The development of plumbing, sanitation and urban conservancy system improved the physical quality of latrines and the distance between the latrine, bath room and the bungalow block decreased but could not effect the change in the conceptual image and attitude towards the latrine and bath room and their uses. The improved technology of '*punkha*' raised the house height of the houses of zamindar and the government high officials. The height of the houses of ordinary people and railway quarters for native staff remained comparatively low.

Again, the introduction of electricity in the late 19th century lowered down the ceiling height of the houses.

There were customary social systems for the classification of sets of activities and compounds. The binary pairs of front and back, outer and inner, male and female, clean and unclean, served and service activities and their association and demarcations characterised the space organisation of the houses. The boundaries made between different activities and spaces were not always expressed through physical form, the boundaries were also made through the intensity of use, maintenance, behavioral pattern and attitude towards different spaces.

5.3.1 Front and back

Front and back of a house related to both physical and climatic situations. Climatic front referred to the direction of summer wind, south and south-east in this country (fig-5.1). Natural ventilation was an essential requirement for comfortable living in the local context of hot humid climate. The physical front referred to the direction of access to the site. A site was considered ideal when these two fronts coincided. The term 'south facing house' indicated an important quality of an ideal house (5.22). In extrovert (composite and consolidated) bungalows these fronts had more relative significance than in introvert types. The introvert types being omnidirectional its front and back corresponded with the inside and outside of the house (fig-5.6.1, 8.9.1) and its environment was influenced by the micro-climate that developed around the *uthan* / courtyard.

In the shop houses, the production areas were at the front (fig-5.15) and at the ground level in the case of double storied houses (fig-5.16.1). and the residential part of the building were at the back (fig-5.16) or at the upper storey (fig-5.16.2).

The *kachary* rooms, guest rooms, recreational spaces such as dancing hall, religious spaces (*mandir*, *masjid*) etc, were located at the front of the zamindar houses. The bed room, services etc. were placed at the back of the houses (fig-8.18.1). In the railway quarters the sitting room, drawing room, etc were placed at the front and the kitchen, washing, store, bath and latrines etc. always were placed at the back (fig-5.35.1-5.35.4, 5.35.7, 8.32.1, 8.33.1). Two storied one unit railway bungalow is

also found where the drawing dining, kitchen etc. are placed at the ground floor and the bed rooms are accommodated at the ^{upper} floor (fig-5.35.6).

In the urban houses, the drawing room, office room *master shahib's* room, etc. were placed at the front where as the bed rooms, dining, services and kitchen blocks were placed at the back (fig-5.6.1).

In the *kachari* houses, the *kachari* rooms and offices were at the front or in one side in case of one story houses (fig-5.24, 8.21.2) and at the ground floor in case of the two storied houses (fig-5.23).

In the introvert type houses, the residential part is always at the back in case of one story houses (fig-8.2) and at the upper story in case of two story houses (fig-8.9.2).

In the extrovert bungalows the bungalow unit is always at the front and the service blocks are either at the back (fig-4.11.2, 4.11.3) or at one side of the bungalows (fig-4.11.6, 4.11.7).

5.3.2 Inner and outer

The distinction between the inner and outer houses was made on the basis of activities according to their functional and symbolic values. Spaces with symbolic values formed a part of the outer house and those with functional values remained in the inner houses. The outer house which was placed at the front, near the approach entry, might be referred as a colonade and archade (fig-5.5.2, 8.11), verendah (fig-5.6.1, 5.7, 5.10, 8.8.1, 8.12.1). Sometime it has large window towards the roads or society, through which the communication was being made with the rest of the world. Therefore, the *mandir*, *masjid* were part of the outer house (fig-5.2.2, 8.18.2), where as the *puja ghar*, *tulshi tala* or the *namaj ghar* etc. were placed at the inner house in most private part of the house.

Similarly, in the bungalows, the service blocks, stable, garage etc. formed the absolute inner part of the compound and always at the back (fig-8.26.2, 8.32.1). The bungalow proper formed the outer part of the compound. The porticoverendah, the hall, drawing room, and the dining etc. were formed the front part in case of one story bungalows (fig-8.26.2). The whole ground floor was considered front for the

two storied bungalows and the bed rooms at the upper story were considered as the inner part (fig-5.31.1, 5.31.2, 8.30.1, 8.30.2).

The distinction between the inner and outer house could be understood from their specific use and maintenance (fig-5.43, 5.44) from decoration, furnishing, furniture design and layout, facade treatment, decoration and ornamentation and also in manners and behavior in them. The decoration and ornamentation of the outer facade in Murapara house was much elaborately done than in the inner house (fig-8.18.4). A world of difference could be marked between kitchen and the drawing / *baithak khana* from rural to bungalow type houses in physical look, ornamentation, activity pattern as well as in behavioral aspects. Traditional taste and preferences (or native culture) found expression in the inner house while the acquired and followed European taste of metropolitan culture (second culture) and attitude found priority in the outer house. Sitting activity, for example, took place in drawing room in sofa, chair etc, or dining in the formal dining room in dining table and chairs but the dining of the family took place on floor on *chatai* or *satranjee*. In kitchen traditional *mora* and *pira* were preferred. They were not only functionally appropriate but also conceptually compatible. The distinction could also be observed in the intensity of use-- the well furnished (in European style) drawing room at the outer part was less used but highly maintained and decorated part as opposed to inner sitting room where family members used to sit either on floor, on *chatai*, *sital pati*, *jazim* etc, or on *mora* was highly used and less maintained part.

5.3.3 Male and female

The socio-cultural concept of domestic privacy made the separation of male and female zones in the houses (fig-8.7, 5.43, 5.44). Domestic privacy restriction applied more between the male and female than between family and non-family. Traditional custom was to receive the male and female guests in separate parts and never together as found in the bungalows. The conceptual image of male and female role in the house decided their respective spatial and temporal domain of influence.

Conceptually male persons were seen as strangers as far as house hold affairs were concerned in the native society. They were supposed to remain uninvolved or played

a passive role in the household activities.. In a house they might be regarded as mere consumers. However, the old (male) and children might share the inner part of the house in the female domain zone. Therefore, the male, with respect to house were outer part performers. In this respect the role of male and role of outer house coincided (fig-5.43, 5.44). Male zone in the house acted as a buffer or filler between the public outside and private inside. Again, the old persons of the family and the children also played as a buffer between the female and male of the house.

The female zone had all the opposing characteristics of male zone. This zone was conceived as the secret part of the house in the rural and urban houses. Socio-cultural rules and customs had confined female within the boundaries of the houses and the internal *uthans* were dominated by the female from child rearing, observing the children, play, cooking, providing '*sanda aroti*' and '*mangal dip*' etc, for establishing of social contact (fig-5.43). They were considered as the inner part performers and their domain in the house referred to the private living and activity areas. Thus female zone was highly protected from the outside by providing high boundary walls and this was considered as the honour of the house related to the degree of privacy and protections of its female members. They were kept as '*assurja sparsha*' (5.23) and therefore confirmed to the inner house.

Privacy the basis of male and female separation, was maintained in different ways other than physical separation. The threshold of privacy was also regulated by ways of dressing, bathing (fig-4.17.3) behavior pattern, time, zoning etc. Therefore, the boundary between male and female zone was flexible and varied according to time, period and occasion.

In the bungalows where the *memshahabs* used not to lived in *pardah*, the privacy from the subordinate servants was made by increasing the distance between the house and the service areas (fig-8.29.1, 4.11.4, 4.11.6).

5.3.4 Served and services

It was very difficult to segregate between served and service zone in the courtyard type rural and urban houses. Usually, the whole front zone was considered as served

area and the rear portion of the house was considered as service areas (fig-5.2.1, 8.1). The socio-cultural rules and customs had confined female and the servants to the service areas. In the bungalows the whole house unit was considered as served areas while the service areas were located at a corner or at the back of the bungalow (fig-8.29.1, 4.11.2-4.11.7).

Customarily the women were directly involved with the household activities (both in rural, urban and bungalow) so they had a close relationship with the servants for guiding and supervision. Therefore, the service areas were closely related with the served areas- the main house unit. In the final stage of colonial period, at the late 19th and beginning of 20th century, the *mam shahabs* did not take active role neither in the preparation of food nor in child rearing. The service block was supervised by the servant folks, which could be separated from the main block. Moreover, for the consideration of privacy the service blocks were segregated and placed at a distance from the main block.

5.3.5 Clean and unclean

In the colonial houses differentiation was also made between the spaces according to clean and dirty activities. Dirty areas were those where the functions of cleaning took place. It included latrine/ toilet, bath room, washing *indratala*, tubewell etc. areas. These components were clearly separated in the railway staff quarters where the latrines and washing areas were physically separated from the living zone (fig-5.35.1-5.35.4). In the consolidated bungalows at the later stage, the toilet and bath room were placed within the bungalow unit. The number of such of houses is very few.

The kitchen, kitchen verendah, store, fuel store, etc. also belonged to the dirty areas. Kitchen area was considered dirty as the cooked foods make it dirty with the waste materials. Moreover, kitchen areas in the bungalows were the servant domain areas. The servants came from comparatively lower social class having corresponding living habits which was also considered dirty. The clean area indicated rest of the activity areas in the bungalows.

In the dirty area, people took the freedom to keep things as they were without being conscious of their aesthetic or the physical quality. Therefore, these were the areas

that looked dirty but that did not always mean they were hygienically dirty. As for example, a kitchen was cleaned many more times than the drawing room, but the former was considered dirty and the latter clean. In fact, the clean and unclean operation was based on conceptual attitude towards the use and maintenance of different spaces. Traditionally, as well as in the composite bungalows (fig-4.11.6) they maintained some distance between them. In the composite type, the main block accommodated only the clean activities and rest of the dirty activities were grouped around the backyard in a separate structure. In the consolidated bungalows (fig-5.13) though the improvement of technology helped to bring the unclean and service areas closer with the clean areas in the main block, the traditional attitude towards the unclean areas remained unchanged. Nobody would mind if the uncleaned areas were being kept in a poor physical condition. A respective position of clean and unclean areas in the colonial house was still decided by the physical and climatic front and back as dictated by tradition. Usually, the dirty areas were located at the back of the houses in the leeward direction of the wind. A conflict usually occurred when these two fronts were in the opposite directions. In the bungalow no. 28 and 29 of Ramna colony (Appendix-4), the services were planned at the south, as because, the entry must be placed at the front from the north road (Minto road).

All these conceptions like front and back, outer and inner, male and female, served and services, clean and unclean etc, also applied to the space around the house and its entries and exits. The front yard was considered clean, male and outer part of the house. It served mostly visual purpose and had high symbolic value. The backyard referred all the dirty activities like cloth drying, animal rearing, kitchen gardening etc. The backyard had high use value but conceptually dirty, and inner part of the house.

5.4 Design principles

Design criteria of the colonial houses are the principles of judging the physical and residential environments of a particular type of house. In order to achieve the acceptable standard or residential occupation in the context of prevailing socio-economic and cultural condition of the colonial society, it established a relationship between the design of the house and the available resources. The criteria of individual

components are discussed in chapter-3 and the design principles regarding rigidity and flexibility, circulation and linkage, house form, determinant and modifiers of form etc, are to be discussed.

5.4.1 Rigidity and flexibility

The colonial architects and designers practiced 'exactitude' attitude while preparing the architectural programme and believed that the truth of domestic architecture was the exact expression of every function, a house becomes technically obsolete in time, it is to be replaced by more efficient one. The construction system using the load bearing walls also made the houses and bungalows rigid. Therefore the change in size of the rooms were almost impossible. Only qualitative change was possible (5.24).

The growth and expansion were possible in some of the courtyard and open ended corridor type houses. The courtyard type houses having the open ended corridor (fig-5.2.2, 5.5.2) were flexible to some degree to accommodate the change-- growth, expansion and improvement.

The form of the bungalows was ^{complete} and was so rigid that nothing could be added to the original structure (5.25, fig-8.29.2). On the other hand the planning of the indoor spaces in these bungalows (fig-8.29.2, 5.28, 8.28.1, 8.31.1, 5.29, 5.32-5.34) afforded a free flow of spaces particularly in most of the semi-private spaces, such as drawing, dining, verendah etc, spaces where a series of spacious doors were placed between the drawing and dining or dining and verendah etc, spaces which helped to develop a sort of fluidity of spaces in the bungalows. By providing the large openings the colonial designers could make inner spaces seemed to flow to the outside and fuse with immeasurable space of nature and thus developed the techniques to take advantage of the fluidity of some of the spaces. The hall room, drawing room, dining room, verendahs, entry, etc, spaces could be used as a continuous for throughing a party which was very common among the *shahes*, high officials, zamindars etc. members of third culture. The versatility of spaces (5.26) is seen in the drawing room of the *shahes*, *natch ghar* of the zamindar (fig-5.19.2), *kachary* room (fig-5.23.2, 5.24.2) or the dancing hall (fig-5.26.2) in the *bagan baries* etc, spaces could be extended to the adjacent room for occasional used. The sitting room, drawing room,

the verandahs all around could be temporarily converted to enjoy the dance and other recreational purposes as in the *bagan baries*.

Thus within the framework of rigid structural (load bearing) system the large openings around some room broke the rigidity and gave the feeling of fluidity and thus flexibility.

5.4.2 Circulation and linkage

In most of the courtyard type houses the bed and other rooms are arranged by the side of single loaded (fig-5.2.2) and double loaded (fig-5.6.1) corridors. Therefore the privacy of all these rooms are secured. A combination of single loaded and double loaded corridors are found in many houses (fig-8.5). The circulation did not hamper the privacy in these houses.

In bungalows the circulation is planned through the rooms. Therefore the privacy of some of the rooms- such as hall room, drawing, dining, family etc. spaces are not secured or considered and these spaces are formed some sort of semi-private spaces. These halls, drawing and dining etc. are designed as 'space' and other rooms were connected with these common spaces (fig-8.26.2, 8.28.1, 8.31.1).

In some of the bungalows of *bara shaheb*, the main bungalow block is linked with the service block by covered corridors (fig-4.8.8). This type of covered linkage or bridge is also seen in some of the urban and zamindar houses (fig-8.20.2).

5.4.3 Orientation of the houses

In considering the solar radiation the best arrangement would be to orientate the houses with the long axis in east-west direction. This may slightly conflict with the orientation of the prevailing wind. A compromise of both (fig-5.1) would be the best solution. It is found that most of the houses are east-west elongated facing the south-the direction (roughly) of prevailing wind.

5.4.4 House form

The basic form and pattern of houses were often derived from the rational arrangement of different household activities and functions, circulation, economy, privacy, values etc, satisfying all the aspiration and cultural heritage of the households. All these factors demand a definite house form. This house form is independent of structural system, building materials, local technology and environmental factors.

In broader sense, all types of houses developed took two different forms, two types of houses-- one, courtyard type (representing the introvert) satisfying the majority of local people and two, the bungalows (representing the extrovert) satisfying the European and the people of the third culture and were considered to be the popular or basic form of the houses.

5.4.4.1 Determinants of house form

The determinants of the house form might be the various considerations based on which the house forms were derived and these were considered the rational arrangement of different activities and functions, circulation, cultural elements, privacy and *parda*, social and cultural heritage satisfying the needs and aspiration of the people of third culture etc, which is independent of location of the houses, compound, size, profession of the owner, building materials, structural system, technology and the environmental variables etc.

5.4.4.2 Modifiers of houseform

Consideration of arrangement of different household activities and functions, zoning, circulation, socio-cultural heritage etc, determined the house form. The materials, technology, structural system etc, required to achieve this form in a given environment were best treated as modifying factors. These modifying factors did not change the basic form of the houses: it only changed the shape, size and the details of the houses. The position of particular component such as road, river or railway platform etc, might be used as the reference of setting the houses. Sometimes the houses might face east or west (and elongated north-south fig- 8.18.2, 8.21.1, 8.26.2, 8.32.1) for orienting the house towards the approach road. Sometime the configuration of the compound compelled the bungalow to be

oriented north-south elongated facing the east or west (fig-5.37). As for example, the asstt. manager's bungalow at Malnichara tea estate, Sylhet is to face the east for its peculiar configuration on hilltop.

In Murapara house (fig-8.18.2) the river **Sitalakkha** and the road along the river was the reference for facing the house towards west and here the site consideration got the preference over other factors.

In some of the railway colonies (eg, Tejgaon, Akhaura, Laksham etc) the railway quarters faced the east or west because of the consideration of the railway platform. Platforms was the reference of setting the railway quarters. In the shop houses the roads were the reference of setting the shop houses (fig-5.15). The north-south elongated plot for the shop house of Monmotha Nath Pal at Churi patti, Dinajpur compelled the structure to be long axis elongated north south.

Sometimes the natural calamity might change the roof shape or change the construction system. After the devastation of the severe earth quake at Sylhet in 1897, the light structure of 'hipped roof' (fig-8.37.2. 8.37.3) using the temporary materials (like bamboo, C.I. sheet, plastered wall on reeds such as *ekra* and bamboo mat etc,) was popular. Most of the urban, rural, government, circuit, garden etc, houses were built in that pattern (5.27).

The courtyard type houses have the openings to both the sides- towards the corridors and the opposite side of the corridors. This bilateral openings helped the uniform air movement which provided bilateral natural lighting into the room. In this respect the courtyard type houses were better in condition than the large bungalows where there were rooms at the middle (fig-5.29). The courtyard type houses required the colonade and archade all around the courtyard having one room depth rooms which made the houseform light and increased the openness within the built environment. This **openness** was required for the proper lighting and ventilation of the spaces in the houses and the verendahs required to control light and air movement in the interior spaces acted as modifiers. They did not change the basic forms of the houses.

5.5 Transformation of house form

Much variation was not observed between the rural and urban houses in the early colonial period. The rural *pucca* house (fig-5.2. 8.1) and urban house (fig-5.5) were more or less same in design and space organisation. The first colonial house which might be considered the construction of the 'Nimtal *kuthi*' (5.28. fig-4.12.1.1) in 1766 for Jasarat Khan by the EIC. The last major house built in 1905 by the colonial authority was the house of the Lieutenant- Governor of East Bengal and Assam (fig-8.29.1, 8.29.2). From the study of the different types of colonial houses built between these two houses and so many houses built up to the end of colonial era, it is found that the colonial houses in its early stage was a modified version of the rural houseform, and the consolidated bungalows as the ultimate form in its subsequent development. The transformation of traditional houseform to the present one took place in five stages shown in fig-5.45

The first stage of transformation started with the qualitative change of some of the houses. The traditional materials reed, straw, C.I. sheet etc. were replaced by more permanent material brick. As opposed to the traditional rural situation where each unit was a single roomed *ghar*, in the developed situation each could be a group of rooms (fig-5.2.2, 5.4.2) in the rural areas too. Sometimes, one of the unit was *pucca* and the rest of the structures were *kacha* and traditional in form (fig-5.4, 5.45.1).

The *pucca* houses were constructed with thick brick walls with few colonial elements and the roof became flat. Sometime, the houses were two storied.

In the process of transformation of houseform, the next (second) stage of development was the urban detached house units having a series of rooms with the verandahs facing the courts similar to the rural *pucca* houses. Only difference in these type of urban houses is that the front block was a bungalow type out house with multiple rooms of two / three rooms depth and the verandahs in both sides facing the *uthans* (fig-5.5.2, 5.45.2).

The third stage of development could be referred as the most appropriate transformation of detached type into the urban one where the pilleriation in the corners were disappeared from the houses and the houses took a regular introvert and enclose type courtyard houses (fig-5.6, 5.45.3) where the series of rooms are arranged side by side around a single or the multiple courtyards. This type of courtyard houses were stable in form and continued for years and found mainly in the urban, zamindar, \square , L , F , E.U types etc, are the incomplete form of courtyard type of houses.

The fourth stage of the evolution was the bungalow type extrovert in form where the internal courtyard gradually disappeared from the houses. The bungalows are located in the middle of the large compound where the lawns were around the bungalow blocks and the service blocks were segregated and located at a distance at the back or sides of the compounds (fig-4.11.4, 4.11.6, 8.29.1, 5.45.4). This composite bungalows continued to be built till the end of the colonial period.

The final stage, in the process of transformation, at the end of colonial period, the consolidated types of bungalows were developed by the elites of the third culture where the living areas ie, the bungalow block and the services were integrated into one mass (fig-5.13.1, 8.10.1, 5.45.5). This was the ultimate houseform and considered as a modern form of house design. This type of consolidated bungalows are few in number and found in the large urban areas.

5.6 Discussion

The core chapter principles of design and space organization deals with planning concept, design, design considerations and principles of space organizations of the houses.

Economy and environment found importance in design considerations. It has been found that the zamindar, urban, *baganbari*, bungalows for the *bara shahabs* etc, were costly in construction than the ordinary houses and the houses constructed by the government, railway, and other autonomous bodies. The government and various autonomous (municipality, District council, tea estates etc,) authorities did not want to spend much money for the construction of the houses. This shortage of

money required the search for inexpensive design and construction of the houses which leads to the development of simple form and design of the houses.

It has also been found that both courtyard type houses and bungalows were simple rectangular in shape. It is also seen that the high ceilings found in many houses were gradually reduced, which also saved the initial construction cost.

Temporary materials used in the houses were gradually replaced by more permanent materials and brick became popular building material which saved the maintenance cost of the houses.

The colonial designers considered the environmental variables in design to provide comfort in the interior and exterior spaces of the houses. In order to maintain the physical comfort in the interior spaces air movement through the spaces were maintained along with the shading devices developed which improve the thermal condition of the houses. Therefore, large number of doors and windows were opened up to the prevailing wind. Again, thick walls in the houses and thick L.C. terracing on the roof further saved the structures and interior spaces from the heating .

It is found that there are some characteristic of organization of spaces similar and common irrespective of their types. Again, the organization of spaces differs in each type of houses. It is observed that changes in the socio-economic and cultural sphere suggested reasons for the preference of some type of space organization instead of other types. These preferences for spaces organization were not uniform- - socio-economic and cultural background, technical limitation, and financial constraints etc, made certain choices which were most appropriate and obvious at certain period among certain group of people.

Different types of introvert-- such as detached and enclosed etc, houses and extrovert-- such as composite and consolidated etc, bungalows are described and their space organization are discussed. It is noticed that in both detached and enclosed types of houses, the space organization follows a simple principle that the rooms are arranged around either single or multiple *uthans*. These types of houses

are liked by and suitable for the extended families. This courtyard houses were popular for many reasons-- it ensured privacy and it offered micro-climatic conditions appropriate to the domestic comfort.

On the other hand the bungalow were liked by and suitable for the single families and by the Europeans and the people of third culture who could maintained a large number of servants. The space organization of these extrovert bungalows are discussed and found that similar to the location of the *uthan* which was centrally located, the drawing room is also functionally centrally located and all other rooms are arranged around it.

The consolidated bungalows were developed at the late 19th and early 20th century and liked by the local elites of third culture. The bipolar zoning concept for front and back, inner and outer, male and female, served and services, clean and unclean etc, are elaborately discussed. It is observed that most of the houses (introvert and extrovert) were separated into three distinct zones-- formal, family and services.

Front refers to both physical and climatic. The climatic front is always south and south-east and the physical front is always at the roadside or entry side of the houses.

The distinction between the inner and outer houses was made on the basis of activities according to their function, symbolic values, specific use, maintenance, form, decoration, furnishing etc. It is found that the spaces with symbolic values formed a part of outer house and those with functional values formed the inner house. The front part of the house is always maintained than the inner part of the houses. The front part is also comparatively decorated than inner houses. In the bungalows, the bungalow unit is always at the front than the services.

Strict privacy is maintained between the male and female zones in the houses. It is not so strictly maintained in the bungalows. The front part of the house was the male and the back part for those of the female. Served and service areas were not segregated in the courtyard and urban houses, usually the whole front zone was considered as served area and the rear part of the houses was the service zone. In

the bungalows the bungalow unit was considered as served area and the kitchen, servant room, garages etc located at the rear part of the compound were the service areas.

The clean and unclean operation in the houses based on conceptual attitude towards the use and maintenance of different spaces. The whole front part of the houses and the bungalow units are considered clean areas and the rear part of the compound, the service areas of the bungalows are considered unclean areas. Though in the consolidated bungalows the service areas are included together with the main bungalows, traditional attitude towards the unclean areas remained unchanged.

The design principles of rigidity and flexibility, circulation and linkage, house form - its determinant and modifiers etc, are discussed. It is found that the colonial architects and designers practiced the principles of exactitude concept. The design, construction system of load bearing walls made the houses rigid. The form of the bungalows was complete and was so rigid that nothing could be added with the original structures.

On the other hand the growth and expansion were possible in some of the courtyard and open ended corridor type houses. The planning of the indoor space in the bungalows afforded a free flow of spaces particularly in the semi-private spaces .

The introvert courtyard type houses provided the privacy and the corridors were both single loaded and double loaded. On the other hand circulation was from the corridors all around in the bungalows and it was through the room. Therefore, the privacy to some of the spaces-- eg, semi-private spaces could not be maintained. In some of the bungalows, the covered corridors are seen to link the main bungalow unit with the service blocks. The most of the houses are found to be elongated east-west facing the south- the direction of the prevailing wind. Again, few houses found elongated north-south too for site conditions.

It is observed that two definite forms-- the introvert courtyard types and the bungalow types house forms developed. Various considerations base on which the

house forms were derived were the rational arrangement of different activities and functions, circulation, cultural elements, privacy and *parda*, socio-cultural heritage, and the attitude towards the enjoyment of life and wealth etc. are considered the determinants for the house forms.

The materials, technology, structural system and environmental variables are considered the modifiers of the houseforms.

Five stages are identified for transformation of houses from the traditional form to the final stage of development:

Much variation was not observed between the rural and urban houses in the early colonial period. The rural *pucca* house and urban house were more or less same in design and space organization. The first stage of transformation had been started with the improvement of the materials. The traditional building materials were replaced by more permanent material brick. Other concept of organization remained same.

The second stage was conceptually same with the rural *pucca* house having the multiple detached units. Only the front block was a bungalow type out house with two rooms depth.

In the process, gradually the detached houses transformed into the courtyard type houses which proved to be most satisfactory for a long time.

The fourth stage was the evolution of new type of composite bungalows extrovert in design. The served and service blocks were physically segregated satisfying all the needs and aspiration of the people of the third culture. This type of bungalows continued to be built till the end of colonial period.

The final stage was the development of consolidated bungalows integrated both the living unit and service blocks together which opened a new era (considered to be modern) of house design. The space organization of the houses and their designs were considerably affected by the materials used and the system of construction which are discussed in the next chapter.

Reference: Chapter-5

- 5.1 The manufacture and burning of bricks in *pazawah* was introduced in this country by the colonists.
- 5.2 Koenigsberger, opcit, P-216.
- 5.3 Besides the shading devices over the windows, long corridors and verendahs were provided in front of the rooms around the *uthans* in courtyard type and other types of houses. Verendahs were designed all around in the bungalows in both cases the depth of the verendahs was large enough to save the interior openings from the sunray and rain.
- 5.4 The *tatties* was a cooling device that seems to have been in use among the colonists in 1760s. It consisted of a split bamboo frame placed in a door or window opening and filled with a screen woven of a grass fiber called *khuss-khuss*. A servant would keep the screen soaked with water, and as the breeze passed through, evaporation might cool the air as much as ten degree below the external temperature.
Norman Evenson, the Indian Metropolis, opcit, P-52.
- 5.5 In the *kachari baries* the *prajas* or subjects were used to gather and wait for paying the *khajana* or taxes.
- 5.6 In the colonial period, the minor social and judicial judgement was performed by the local *panchayet* or group of respectable enderly people (leaders) or local zamindar before the gathering in the houses of the zamindar and *talukdar* etc, people in the rural areas.
- 5.7 Most of the urban people had a strong bondage with the rural homestead they had either the relatives or the land in the rural areas from where the relatives frequently visited their urban houses and the crops were brought.
- 5.8 A.D. King, the bungalow, opcit, P-35.
- 5.9 The term third culture discused in the chapter-1 is also termed, sometimes, as 'Anglo-Indian' culture-- a culture liked by cross cultural people and the English educated natives who liked the European culture and the western way of living.
- 5.10 A. D. King the Bungalow, opcit, P-23.
- 5.11 Ibid, P-23
- 5.12 Ibid, P24
- 5.13 Ibid, P-25
- 5.14 Ibid, P-27
- 5.15 Ibid, P-36
- 5.16 Fancy Parker, Wonderings of a Pilgrim in search of the picturesque, Pelhem Richardson, London 1950.
- 5.17 A.D. King, Bungalow, opcit, P-35.
- 5.18 Ibid, P-35.

- 5.19 For the *bara shahebs* in the early 20th century, a staff of between ten and twenty servants was the norm'. The servant group included the *dhobi* (washerman), *mosal* (lampman), *bhisti* (water carrier), *Chokra* (cooks helper), *dharzi* (tailor), *methor* (sweeper), *Chuprasi* (bearer), *pankhavala or Cooli* (punkha puller), *mali* (gardener), *chowkidar* (guard), *baburchi* (kook) etc. A.D. King, Colonial Urban development, P-141.
- 5.20 In the typical Bangali soceity, the *baithak khana*, the counter part of the drawing room was only used (during colonial period) by the male member of the soceity.
- 5.21 The *shahebs* and *memshahebs* tried to follow the luxurious life of the *nawabs* and *begum shahebs*. They maintained a large number of servants. These servant and service blocks were isolated from the main bungalow.
- 5.22 *Khanar bachan* mentioned that '*Dhakkhin dauri gharer raja, purba duari tari praja, parchim duarir mukha sai, uttar duarir khajna nai*' meaning, the south facing house is the best; the east facing stood the second; west facing is the third and north facing is the worst.
- 5.23 The ladies in both the respectable Hindu and Muslim families maintained the *pardah* and they were never seen by the outsiders (even never seen by the sun).
- 5.24 After the liberation of Bangladesh in 1971, the Bardawan house was renovated to accommodate the 'Bangla academy'. The circular, verendah at the east is repeated at the west , all the access at the south except one, are closed, many modifications are done internally, The bungalow is extended one more floor vertically. The total planning, the facade etc. are changed and the proportion lost.
- 5.25 The bungalows fig-8.29.2, Lt. governor's bungalows and bungalow fig-5.28, bardawan house are similar in planning,. detailing, facade treatment and space organisation.
- 5.26 Similar spaces (eg, drawing, dining, verendah etc,) could be combined for the large gathering. These large spaces might have many uses such as occasional gathering, meeting, party etc.
- 5.27 After the earth quake of 1897, the government of Assam and Bengal appointed a joint commission comprising the members from India and Japan. The report submitted by them also suggested the temporary type of construction at Assam and Sylhet region.
- 5.28 *Nimitali kuthi* was built by Lieutenant Swinton in 1766. Prior to this the *naib nazims* used to live in *Bara katra*. The western gate of the *kuthi* now house the office of the Asiatic Soceity of Bangladesh, while its '*Baradari*' by the teachers of D.U. Azimussan Haider, Dhaka-the history and romance in place name, A Dhaka Municipality publication, 1967 P-37. Muntasir Mamun mentioned that *Nimitali kuthi* was constructed in 1765, Muntasir Mamun, Colonel Davidson *jakon Dhakai*, opcit, P-13.

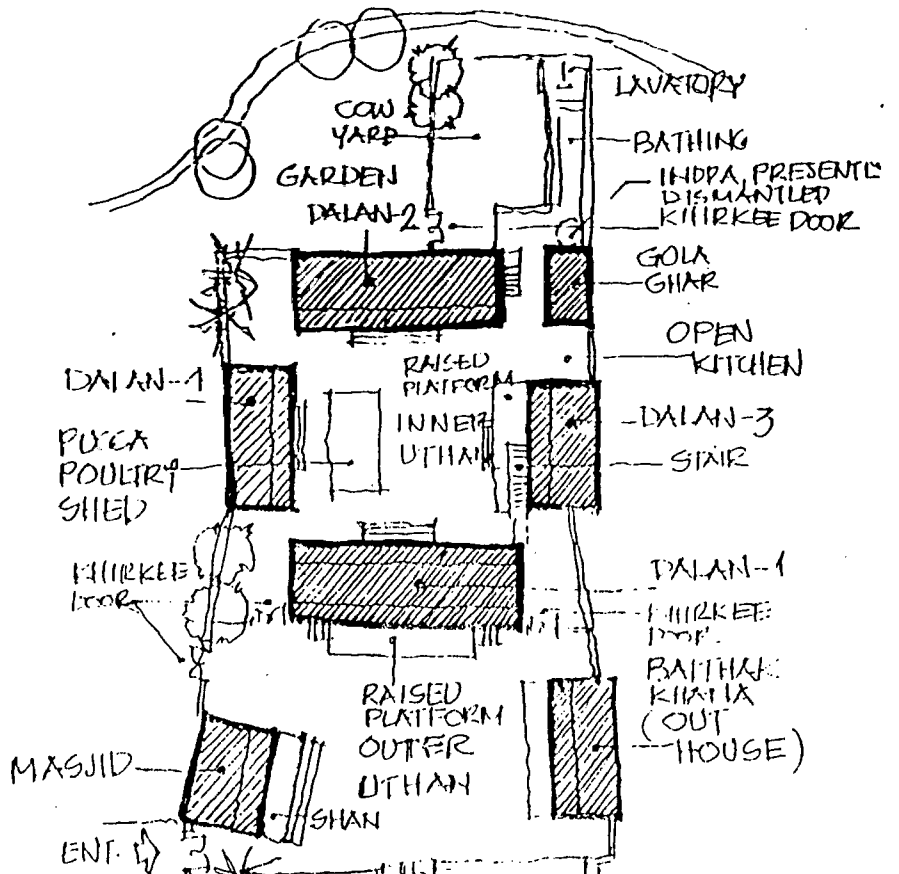


Fig-5.1 Preferable orientation of the houses

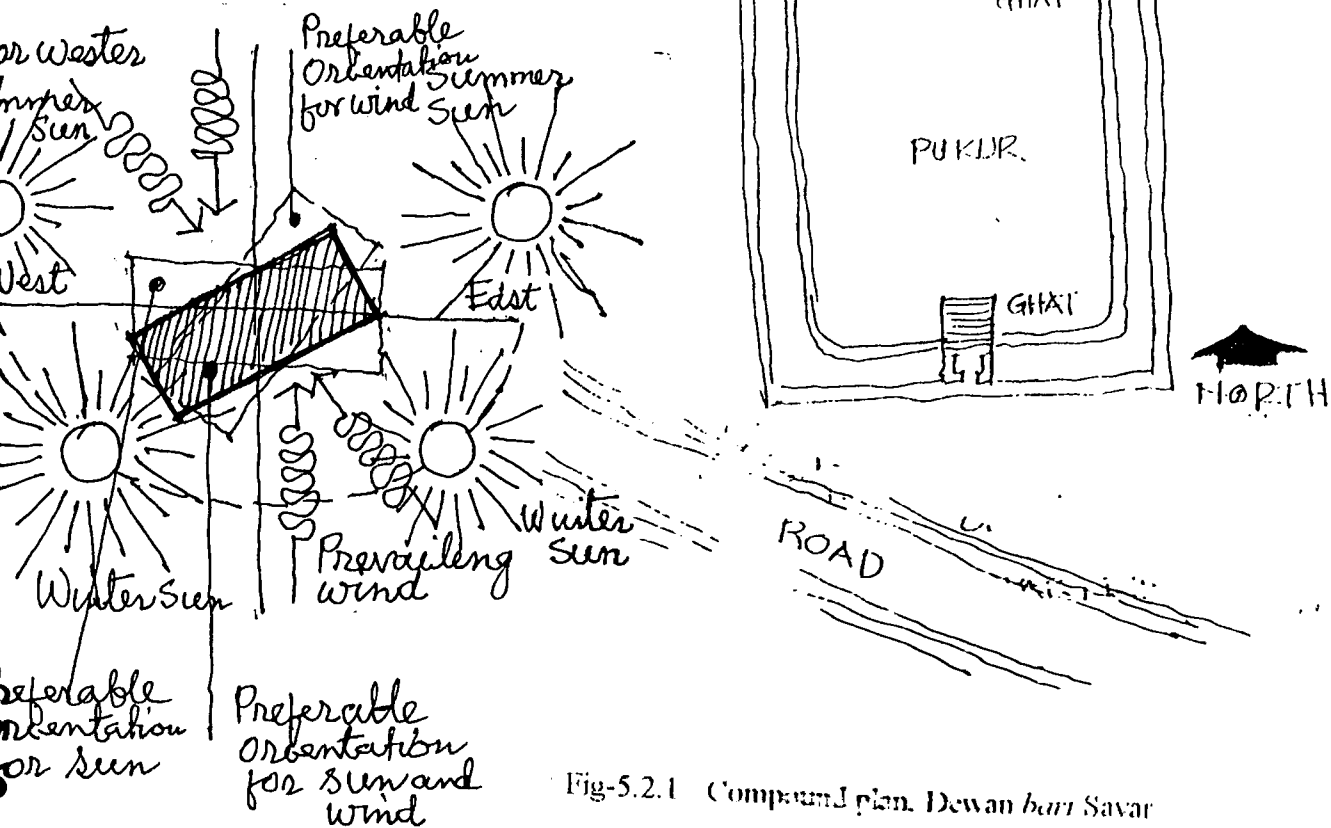
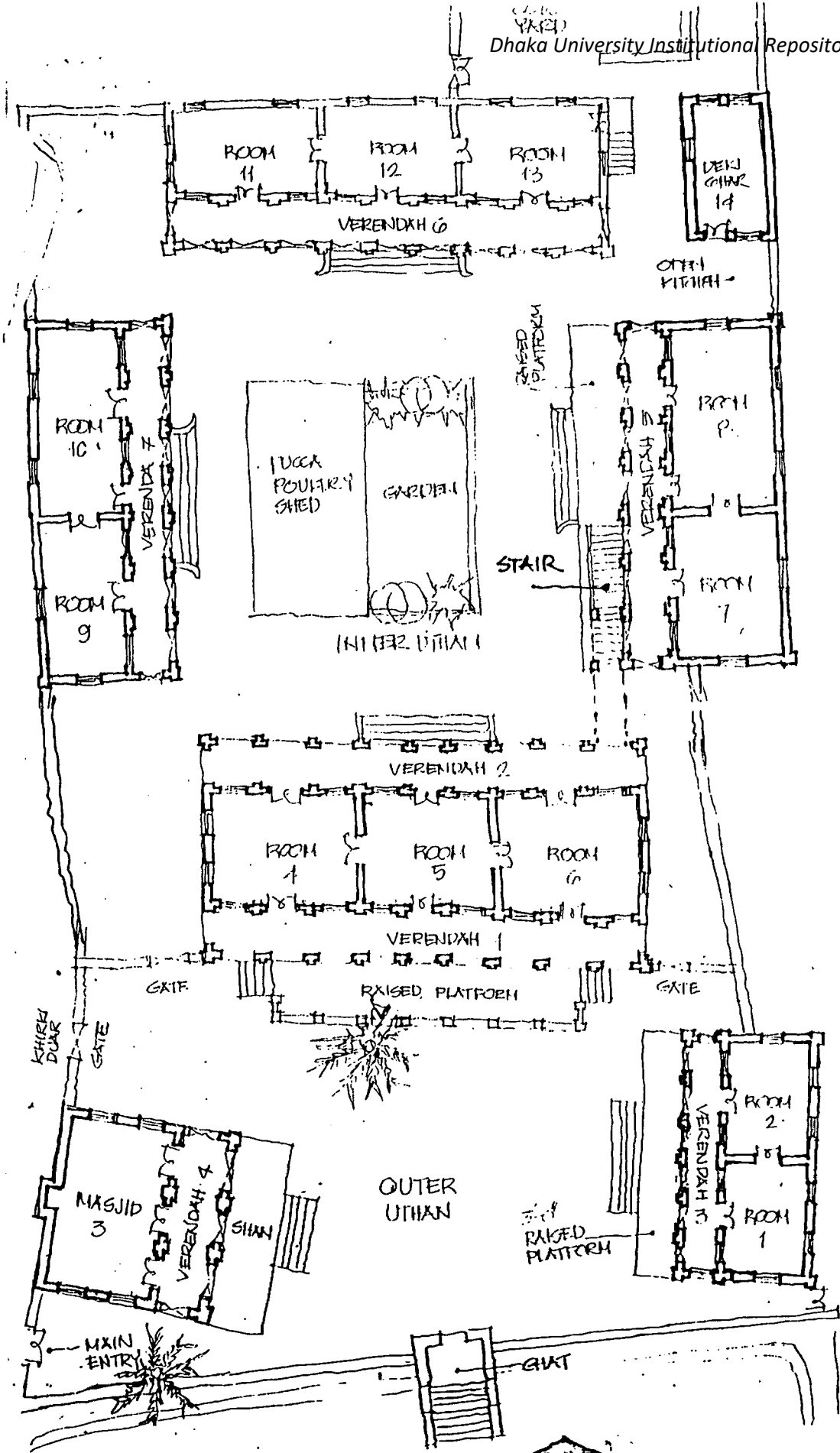


Fig-5.2.1 Compound plan, Dewan Bari Savar

Fig-5.2 Dewan Bari Savar



FUKOR

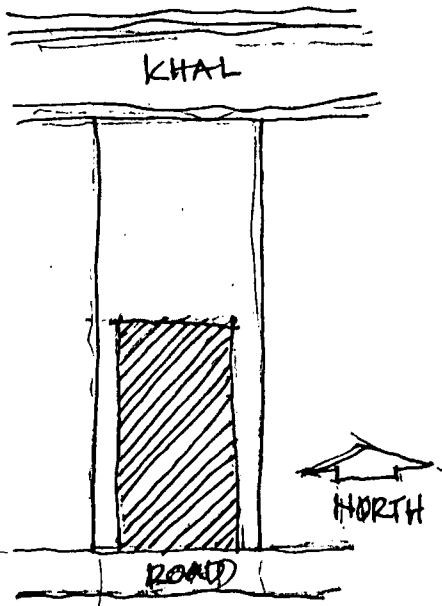


Fig-5.3.1 Compound plan,
Ashi Poddar painam nagar, Sonargaon

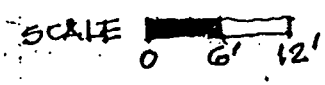
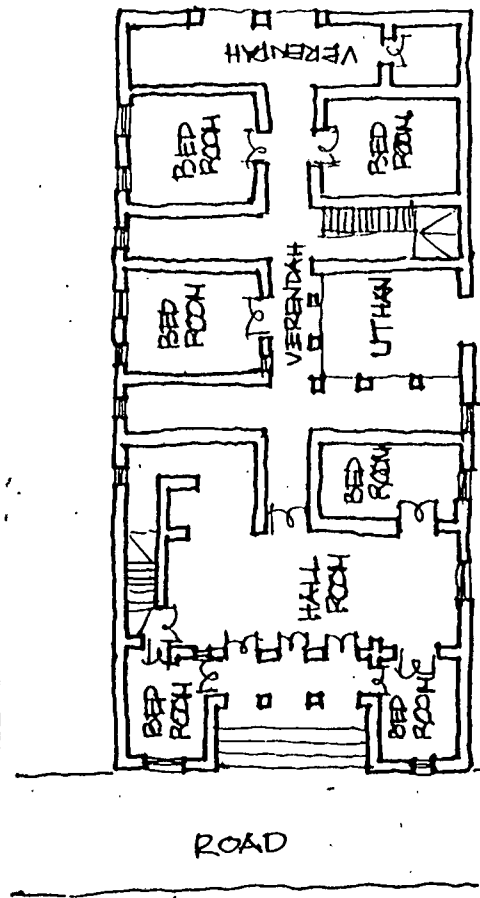


Fig-5.3.2 Ground floor plan,
Ashi Poddar painam nagar, Sonargaon

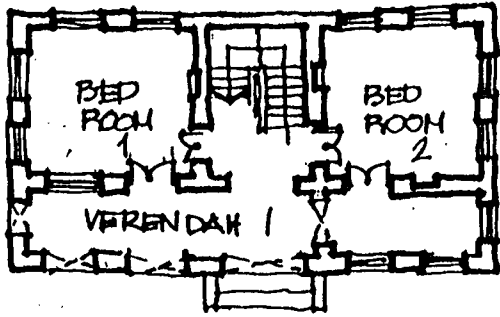


Fig-5.4.2 Ground floor plan,
Chakrabarty bari, Kalaskati, Barisal

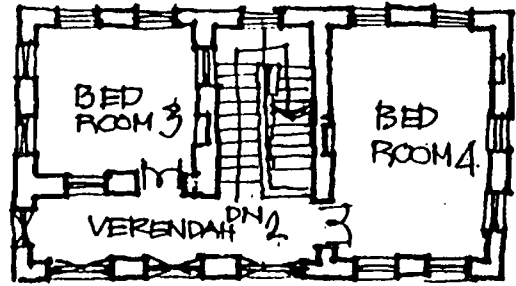


Fig-5.4.3 First floor plan,
Chakrabarty bari, Kalaskati, Barisal

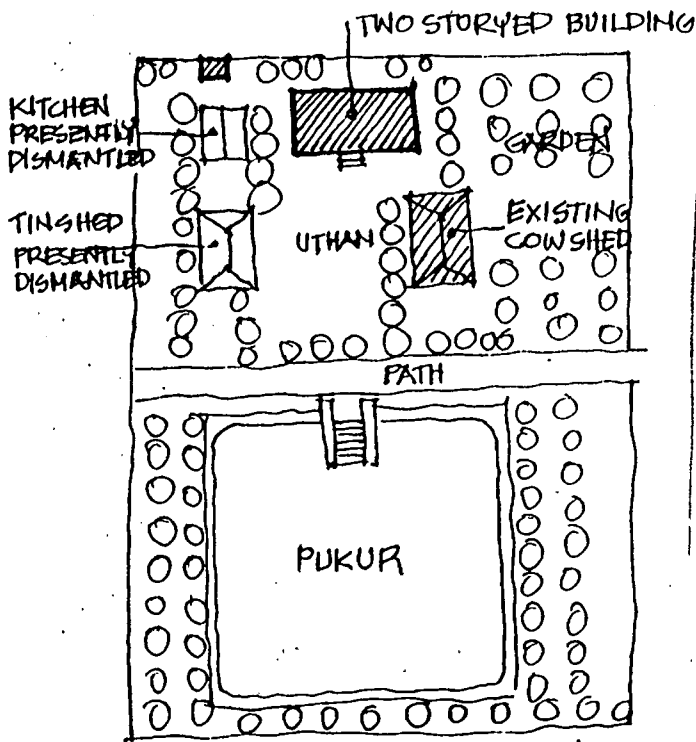


Fig-5.4.1 Compound plan,
Chakrabarty bari, Kalaskati, Barisal

fig-
COMPOUND PLAN
SCALE

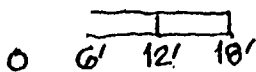


Fig-5.4 Chakrabarty bari, Kalaskati, Barisal

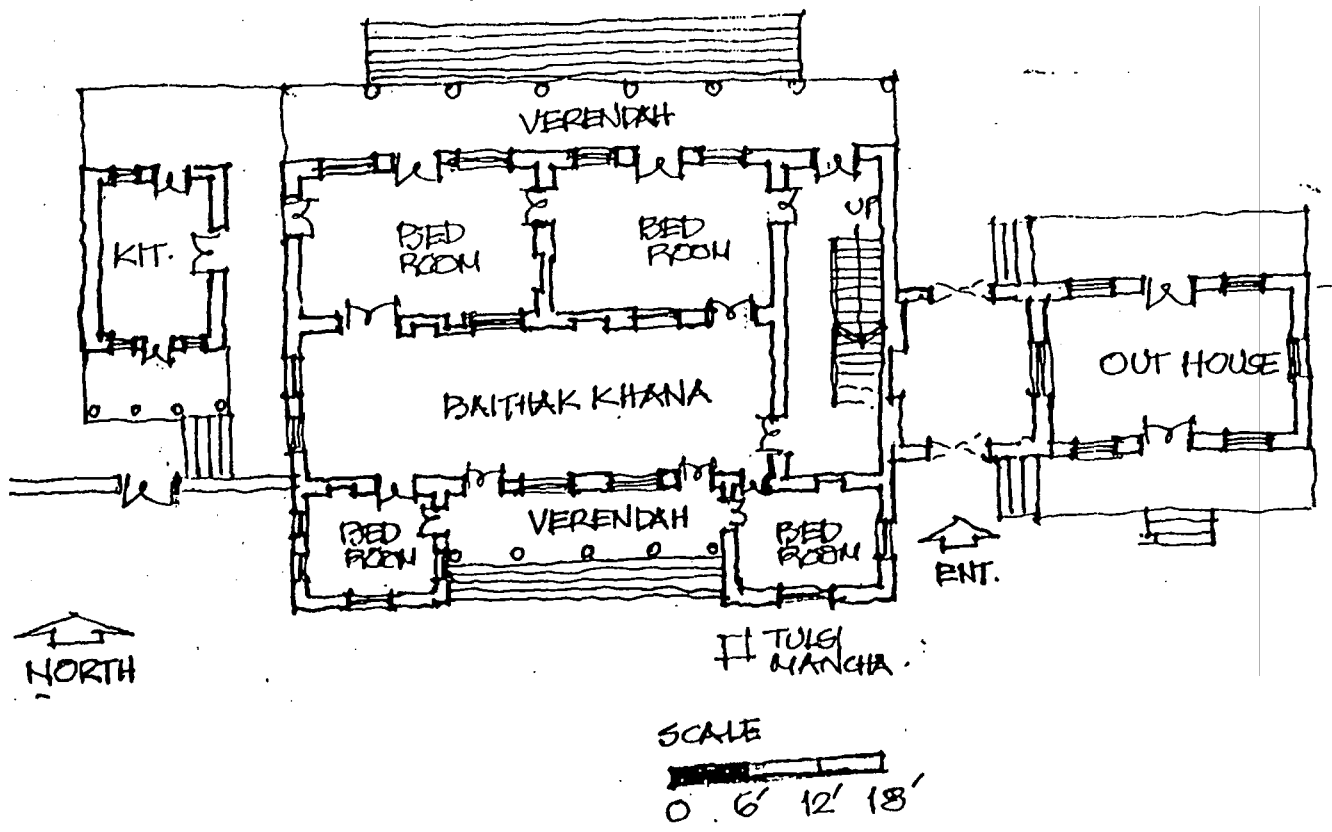
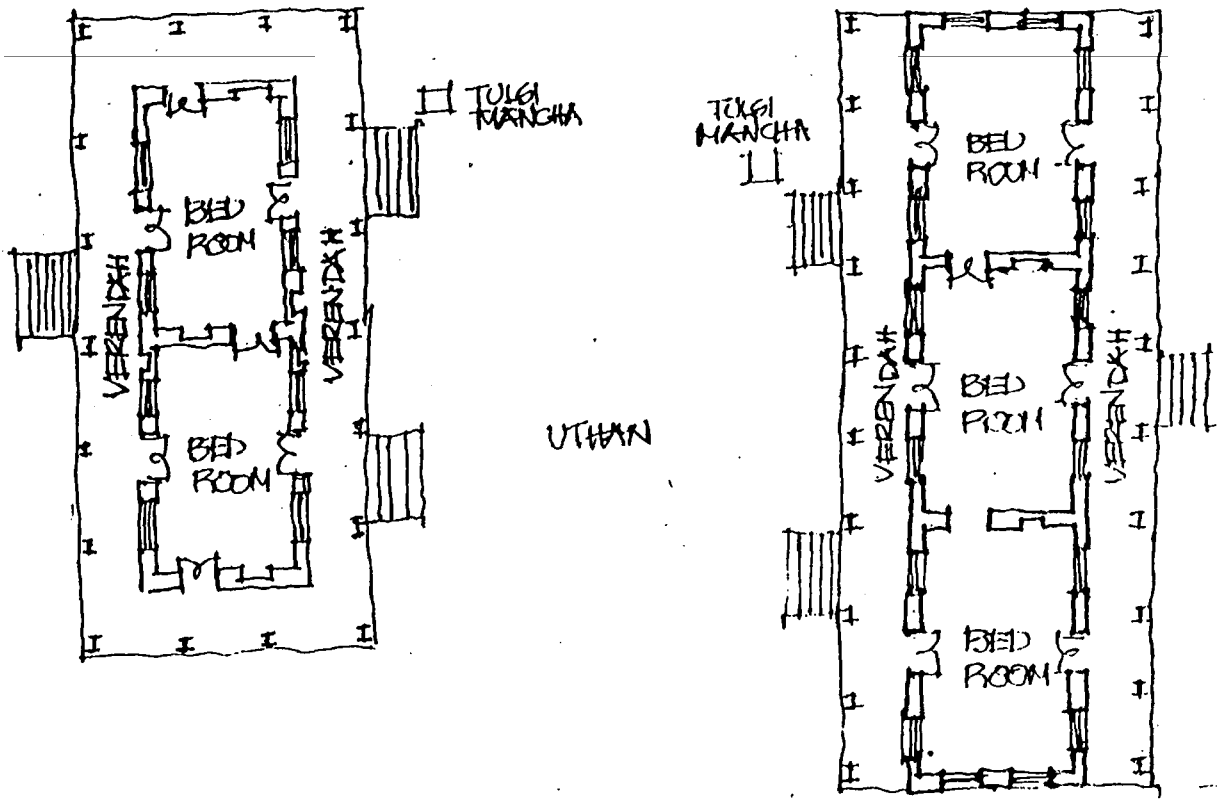


Fig 5.5.2 Ground floor plan house of Gagon Saha, Brahmanbaria

Fig 5.5 House of Gagon Saha, Brahmanbaria

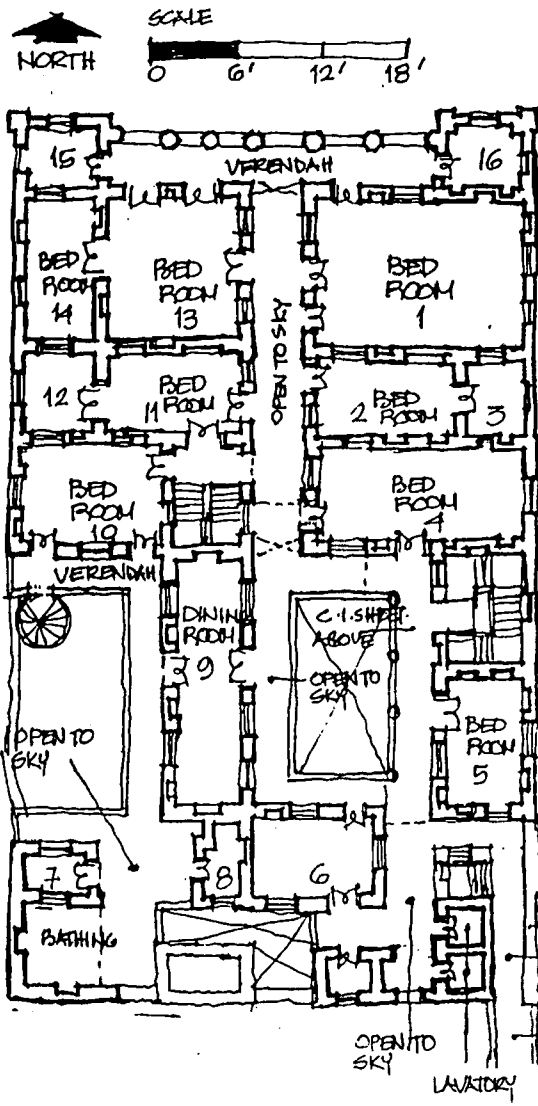


Fig-5.6.2 First floor plan,
house of Jagannath Saha, Lalbagh, Dhaka

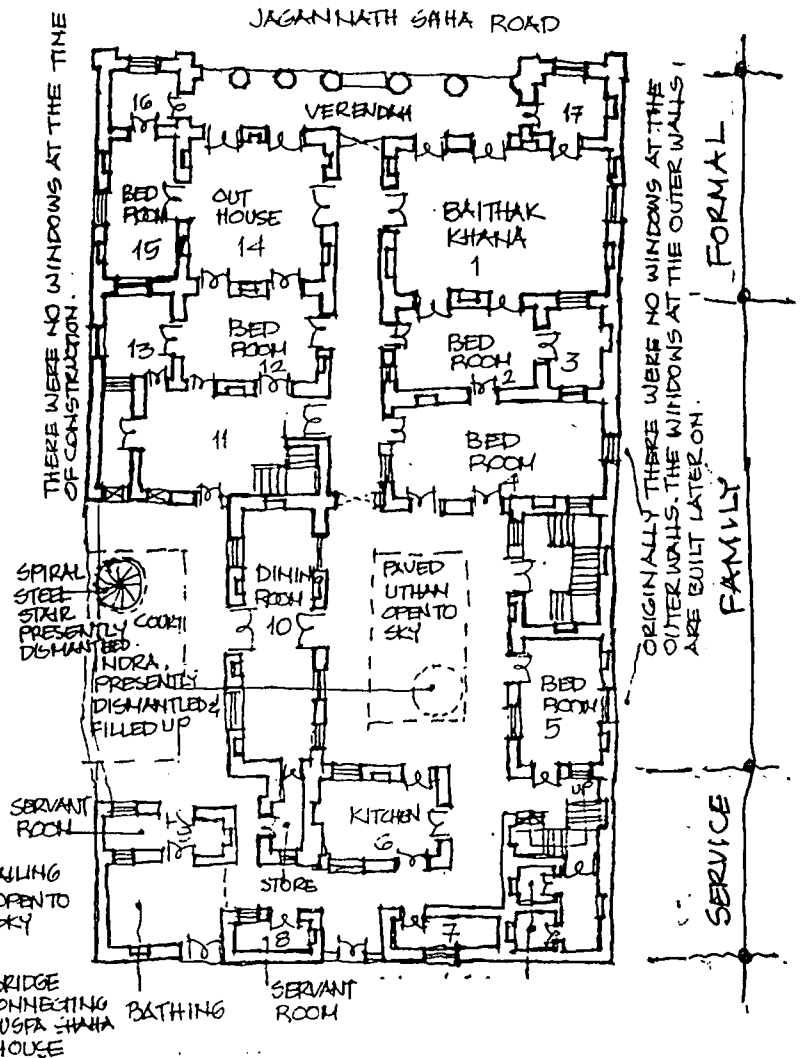


Fig-5.6.1 Ground floor plan,
house of Jagannath Saha, Lalbagh, Dhaka

Fig-5.6 House of Jagannath Saha, Lalbagh, Dhaka

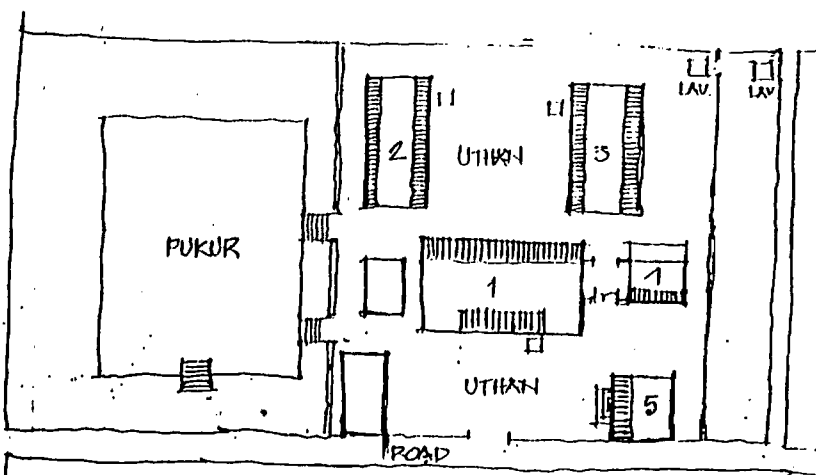


Fig-5.5.1 Compound plan,
house of Gagan Saha Brahman baria

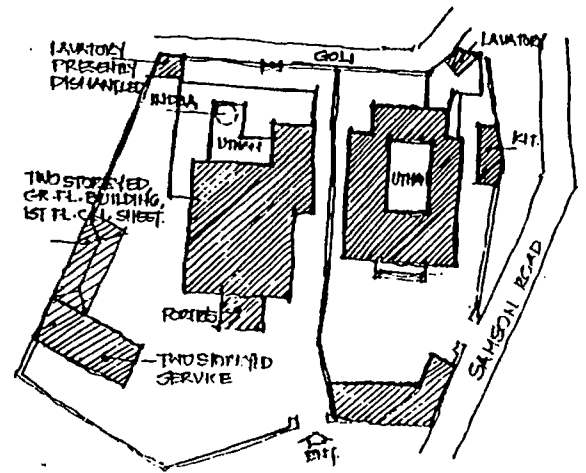
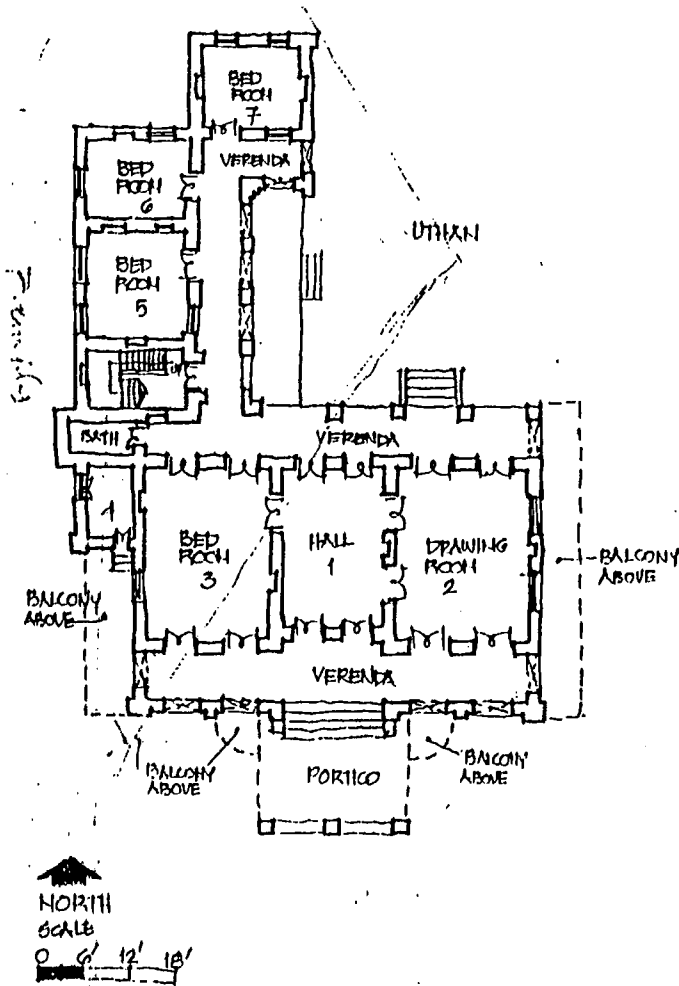


Fig-5.8.1 Compound plan,
house of Raj Narayan Roy,
Shamson road, Dhaka

Fig-5.7 House of Babu Anath Bundhu
Aga Moshi Lane, Dhaka.

Fig-5.8.2 Ground floor plan,
house of Raj Narayan Roy,
Shamson road, Dhaka

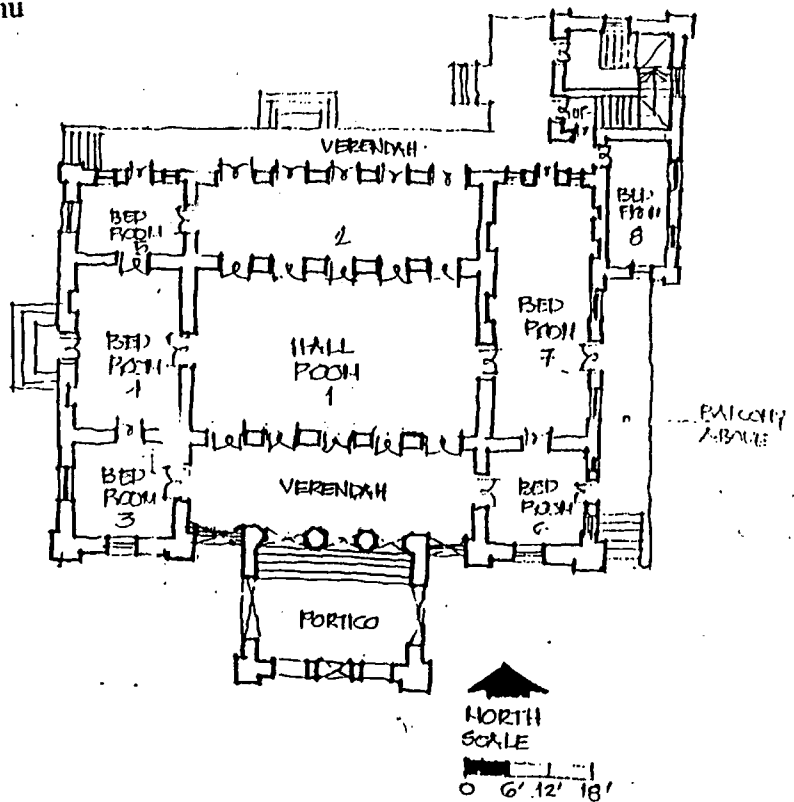


Fig-5.8 House of Raj Narayan Roy, Shamson road, Dhaka

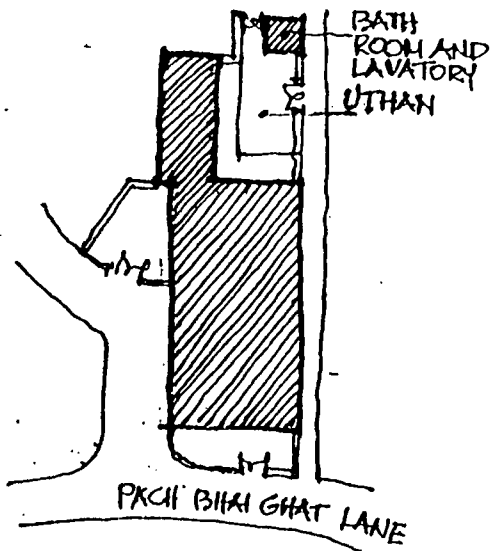


Fig-5.9.1 Compound plan,
house of Ranjit kumar saha
Pach Bhai ghat lane, Dhaka

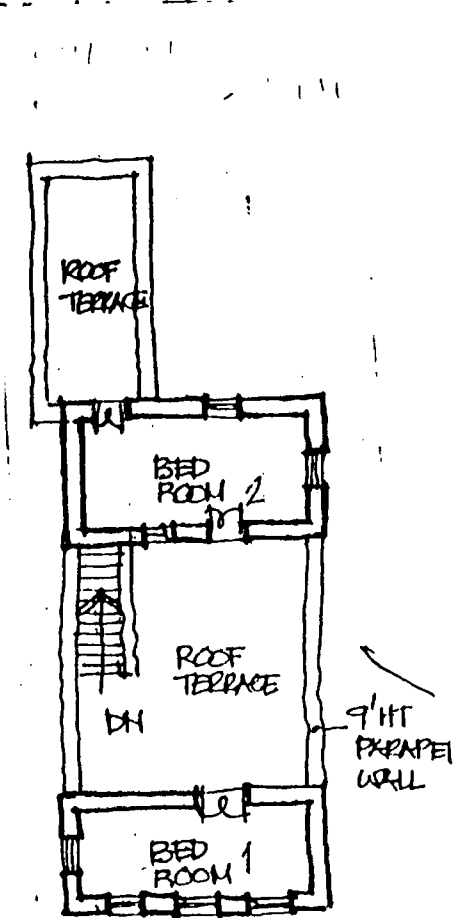
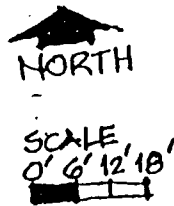


Fig-5.9.3 First floor plan,
house of Ranjit kumar saha Pach Bhai ghat lane, Dhaka

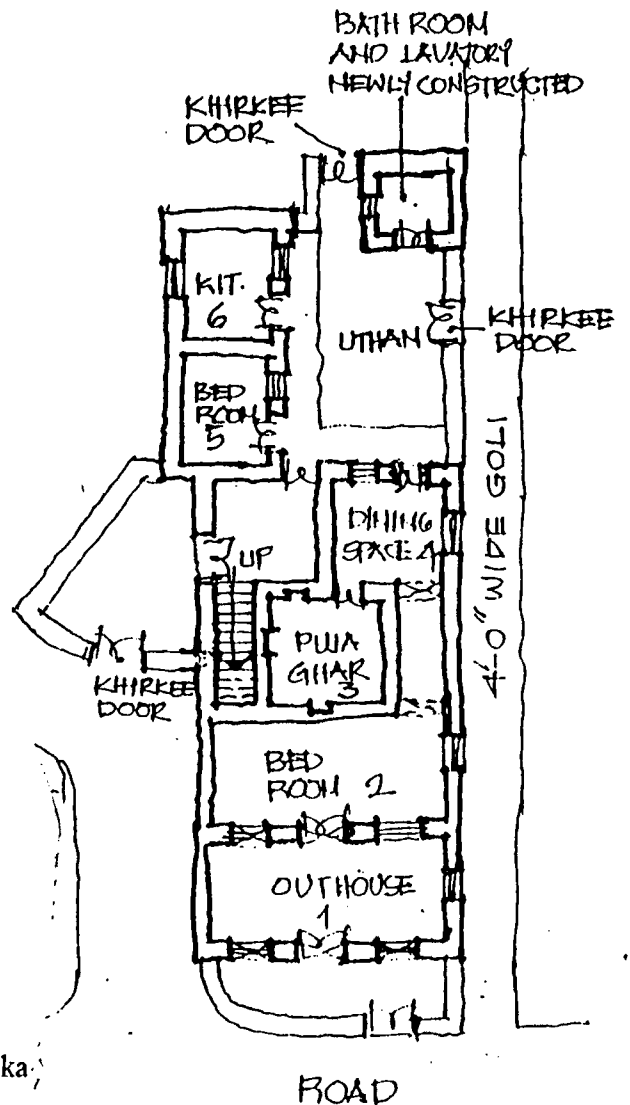
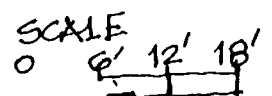


Fig-5.9.2 Ground floor plan,
house of Ranjit kumar saha
Pach Bhai ghat lane, Dhaka



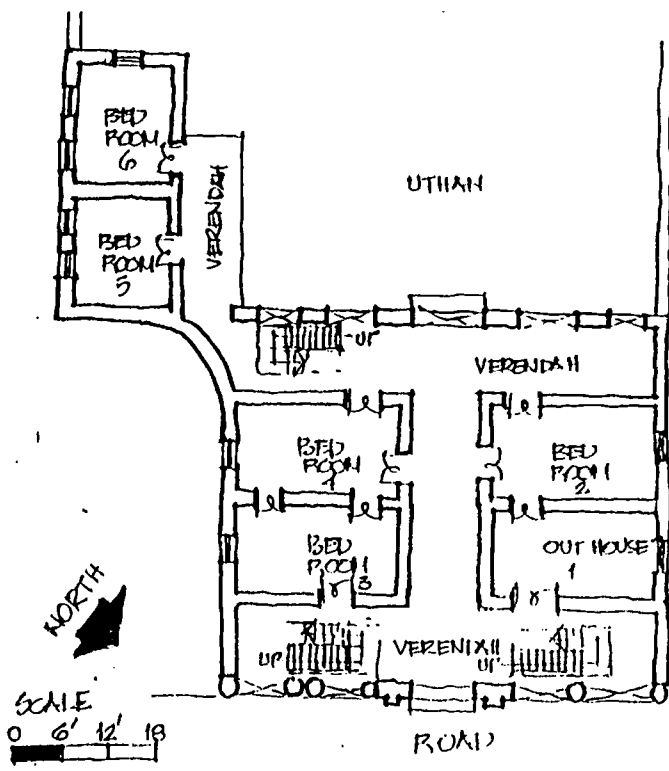


Fig-5.10 House of Nuruddin Ahmed
' 400, stand road, Chittagong '



Fig-5.11.3 First floor plan,
house of Nishi Kanta babu
445, stand road, Chittogong

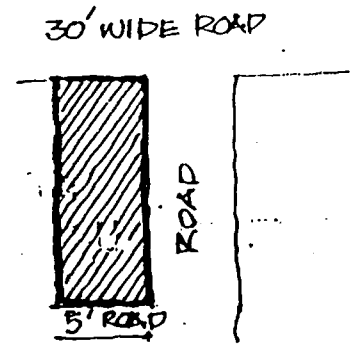


Fig-5.11.1 Compound plan,
house of Nishi Kanta babu
445, stand road, Chittogong

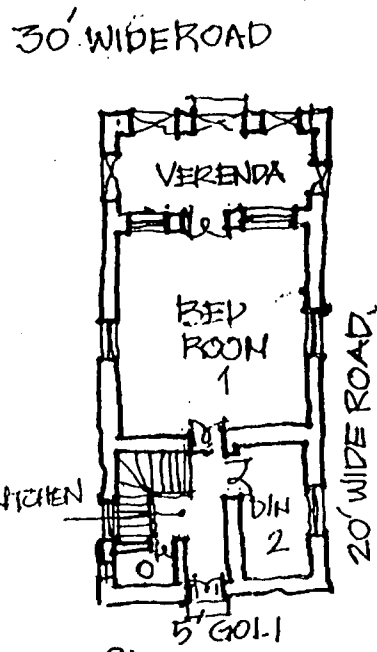


Fig-5.11.2 Ground floor plan
house of Nishi Kanta babu
445, stand road, Chittogong

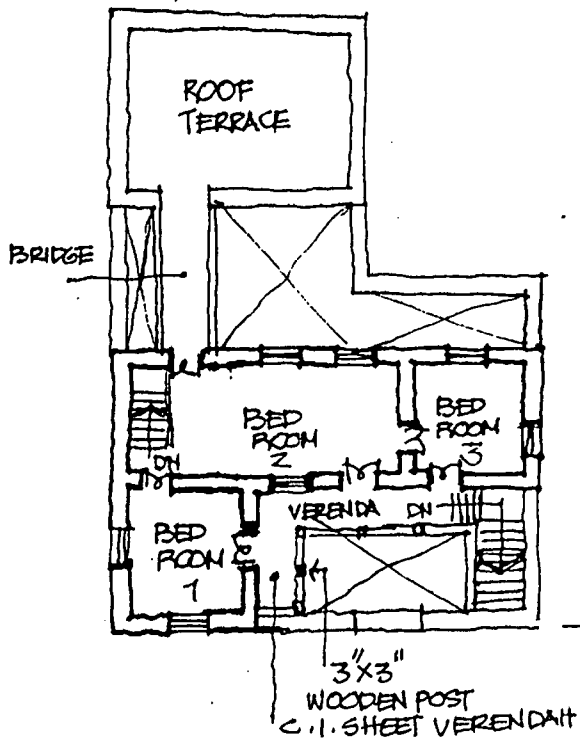


Fig-5.12.4 Third floor plan,
house of Raj Chandra Munshi Laxmi bazar,
Dhaka.

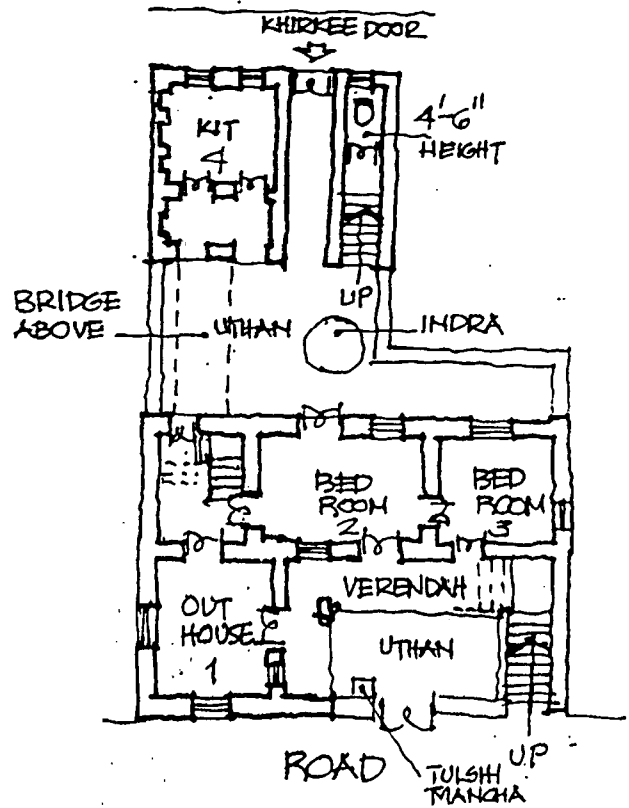


Fig-5.12.1 Ground floor plan,
house of Raj Chandra Munshi Laxmi bazar, Dhaka.

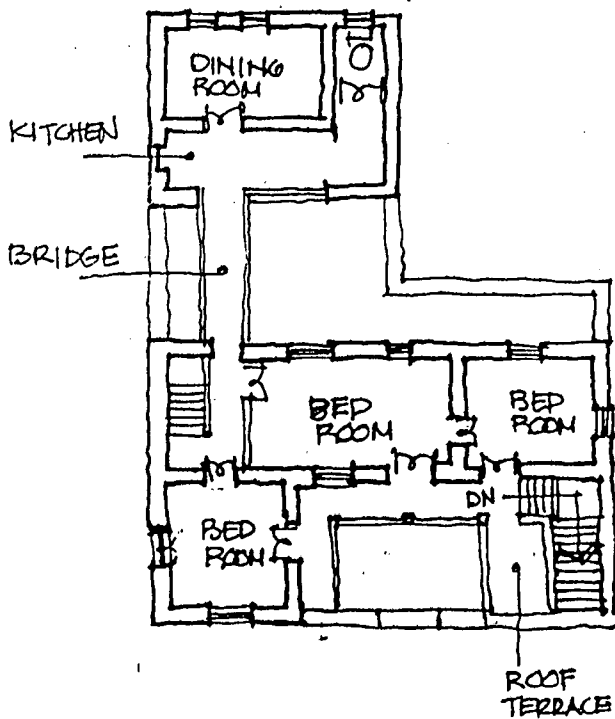


Fig-5.12.3 Second floor plan,

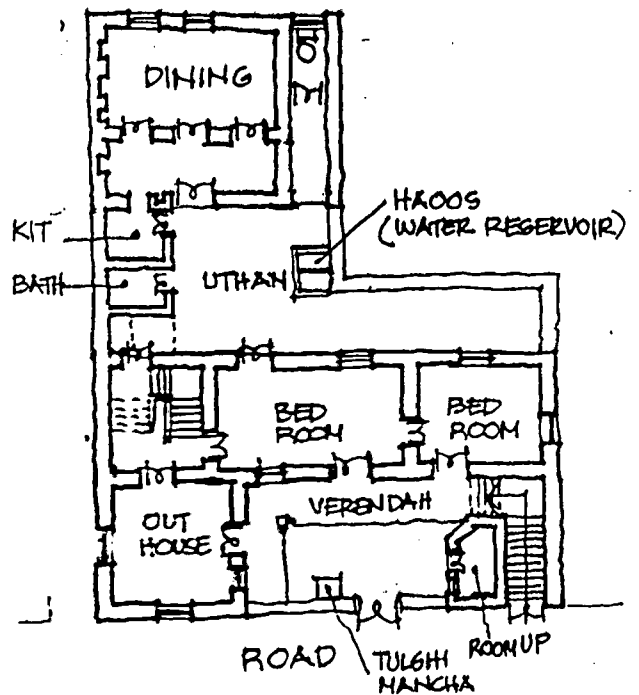
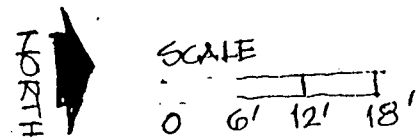


Fig-5.12.2 First floor plan,



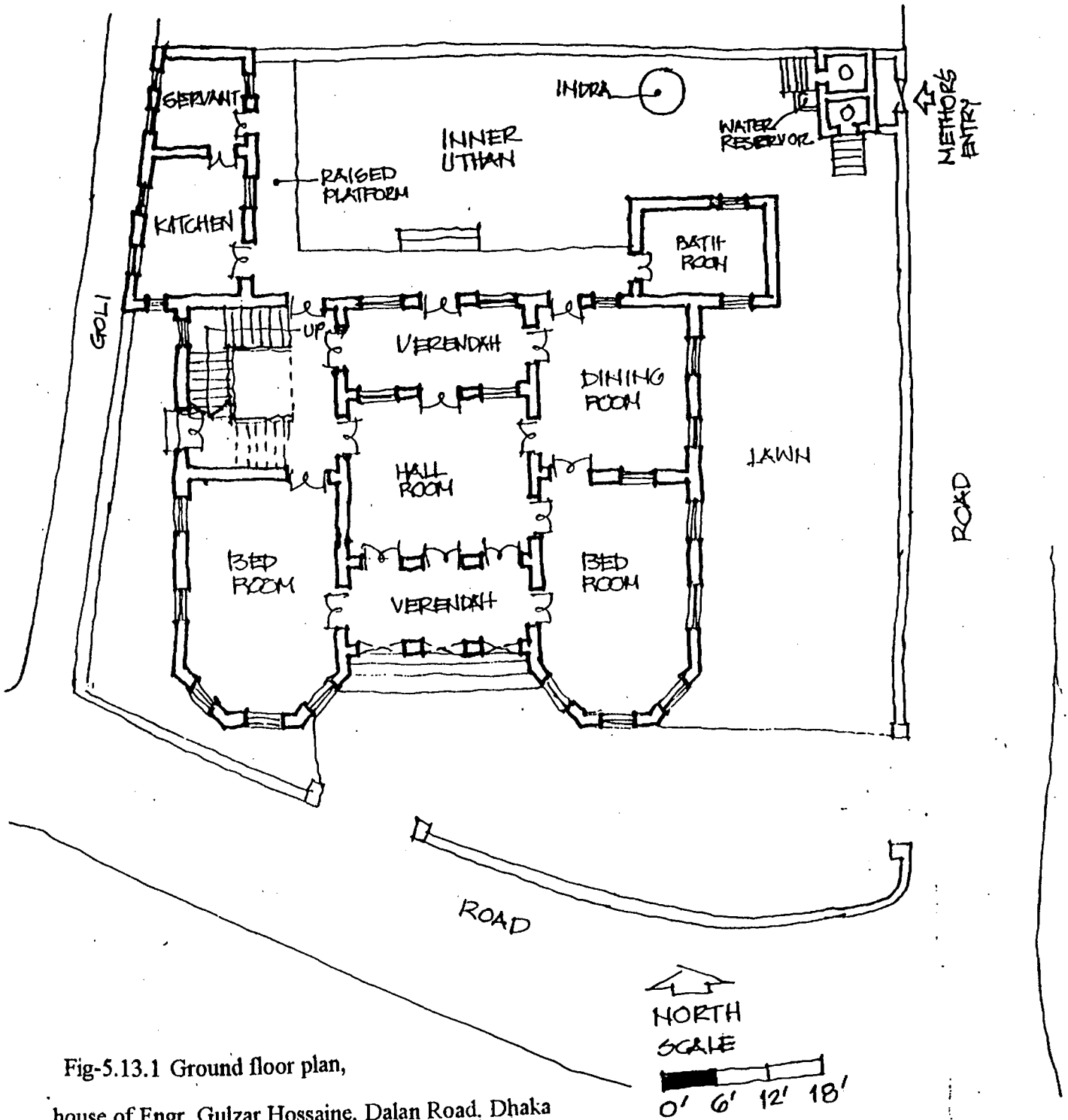


Fig-5.13.1 Ground floor plan,
house of Engr. Gulzar Hossaine, Dalan Road, Dhaka

Fig-5.13 House of Engr. Gulzar, Hossaine Dalan Road, Dhaka

Fig-5.13.2 First floor plan,
house of Eng. Gulzar
Hossaine Dalan Road, Dhaka

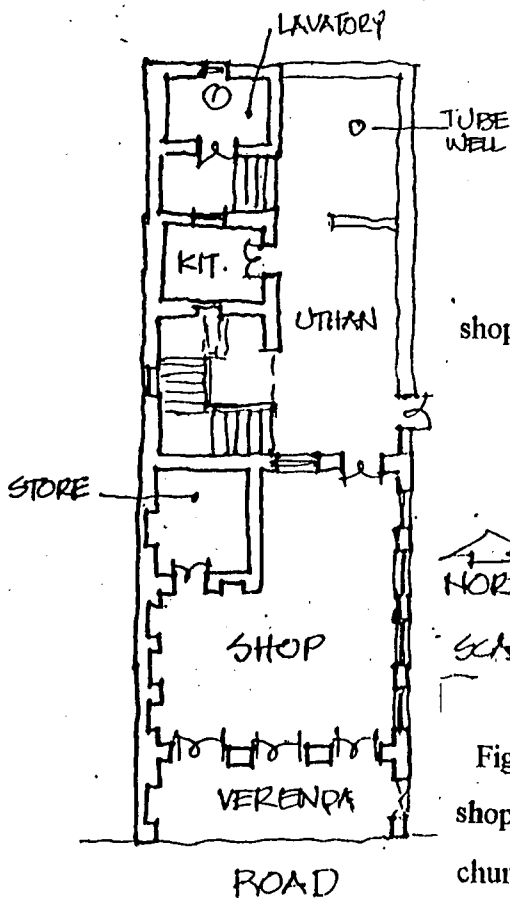
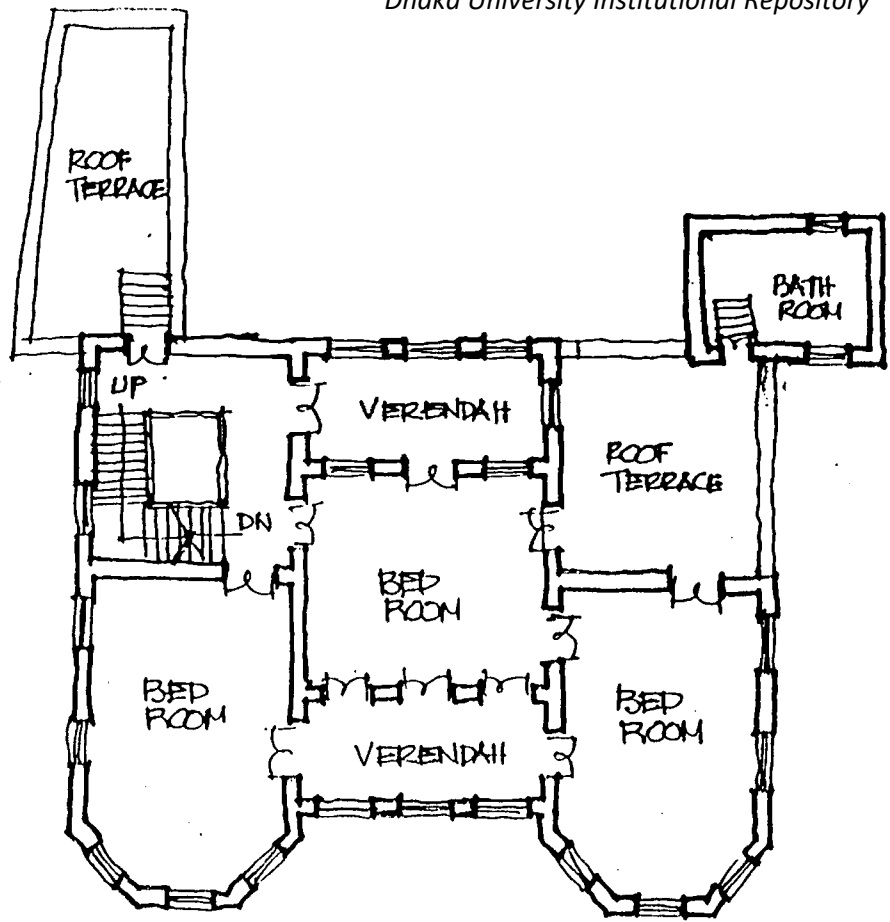
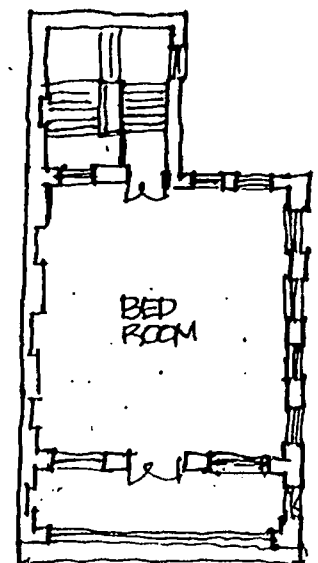
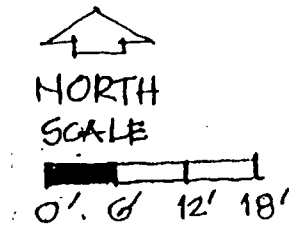


Fig-5.14.1 Ground floor plan,
shop house of Manik chandra Banmachs
churi patti, Dinajpur

Fig-5.14.2 First floor plan,
shop house of Manik chandra Banmachs
churi patti, Dinajpur



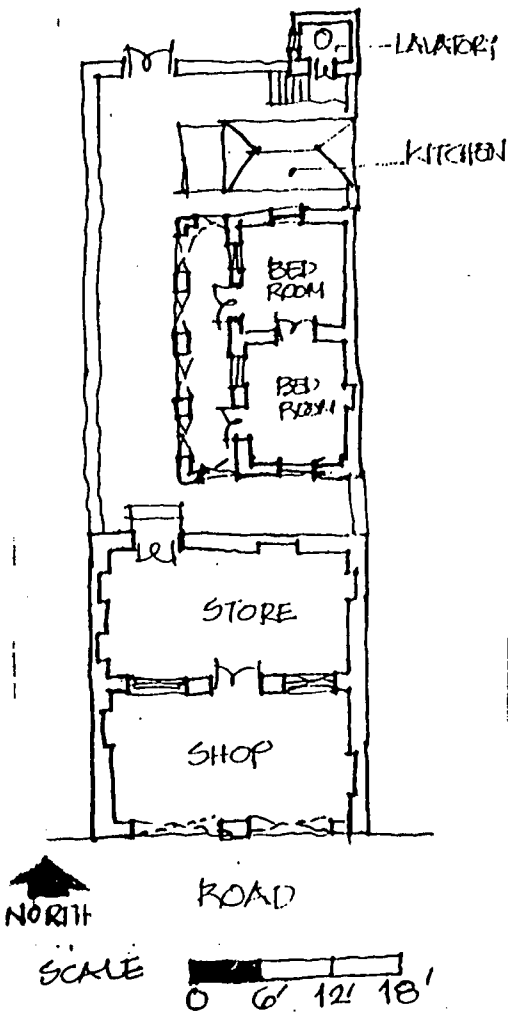


Fig-5.15 Shop house of Monmotha Nath pal, churi patti, Dinajpur

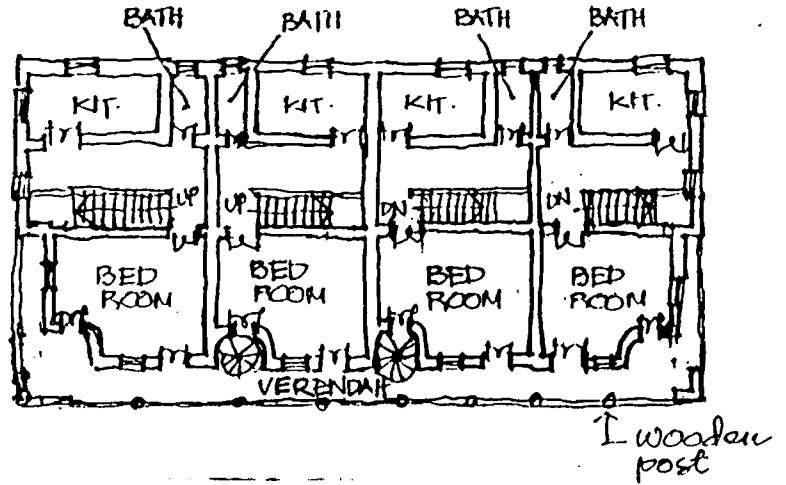


Fig-5.16.2 First floor plan, shop house, 6, Cemetery road, Khulna

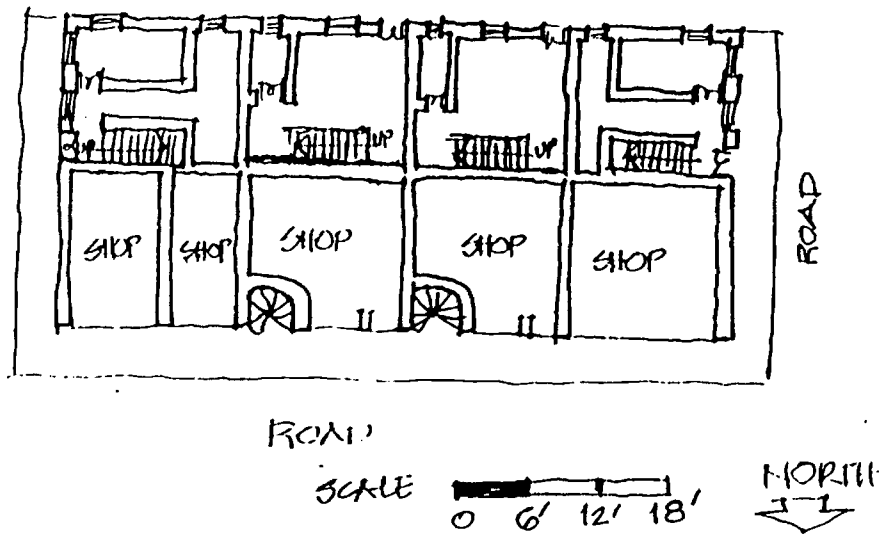


Fig-5.16.1 Ground floor plan, shop house, 6, Cemetery road, Khulna

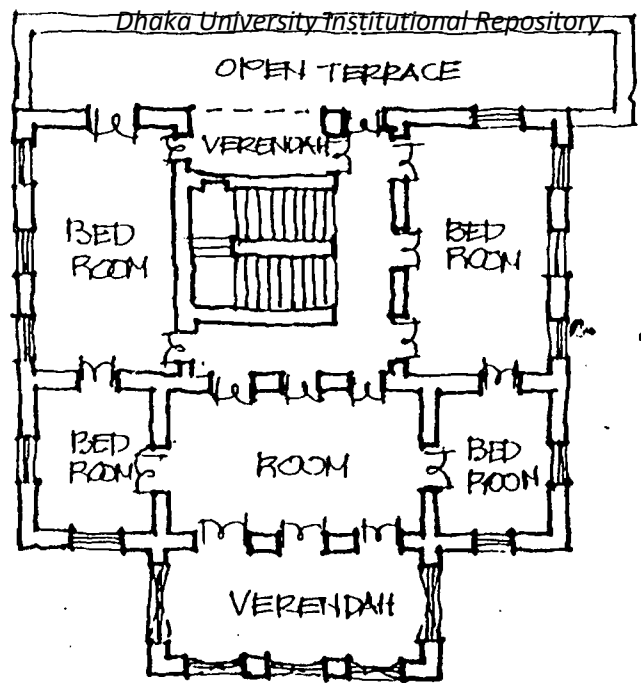


Fig-5.17.2 First floor plan,

bungalow of Debandra Mohan Das 1, Nawab street, Wari

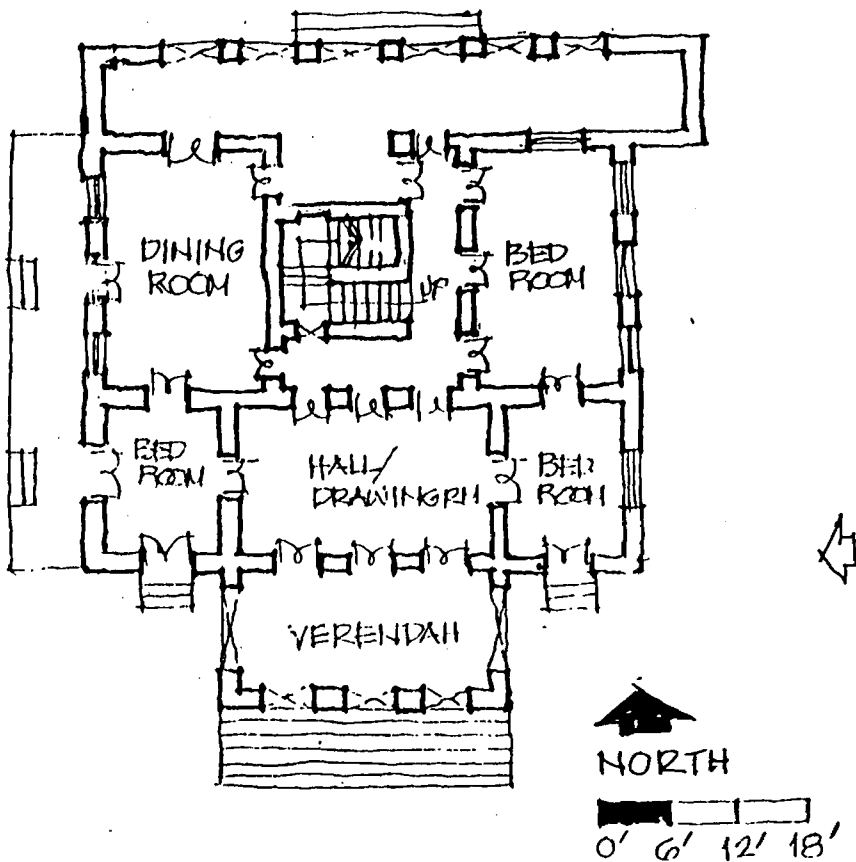


Fig-5.17.1 Ground floor plan,
bungalow of Debandra Mohan Das
1, Nawab street, Wari

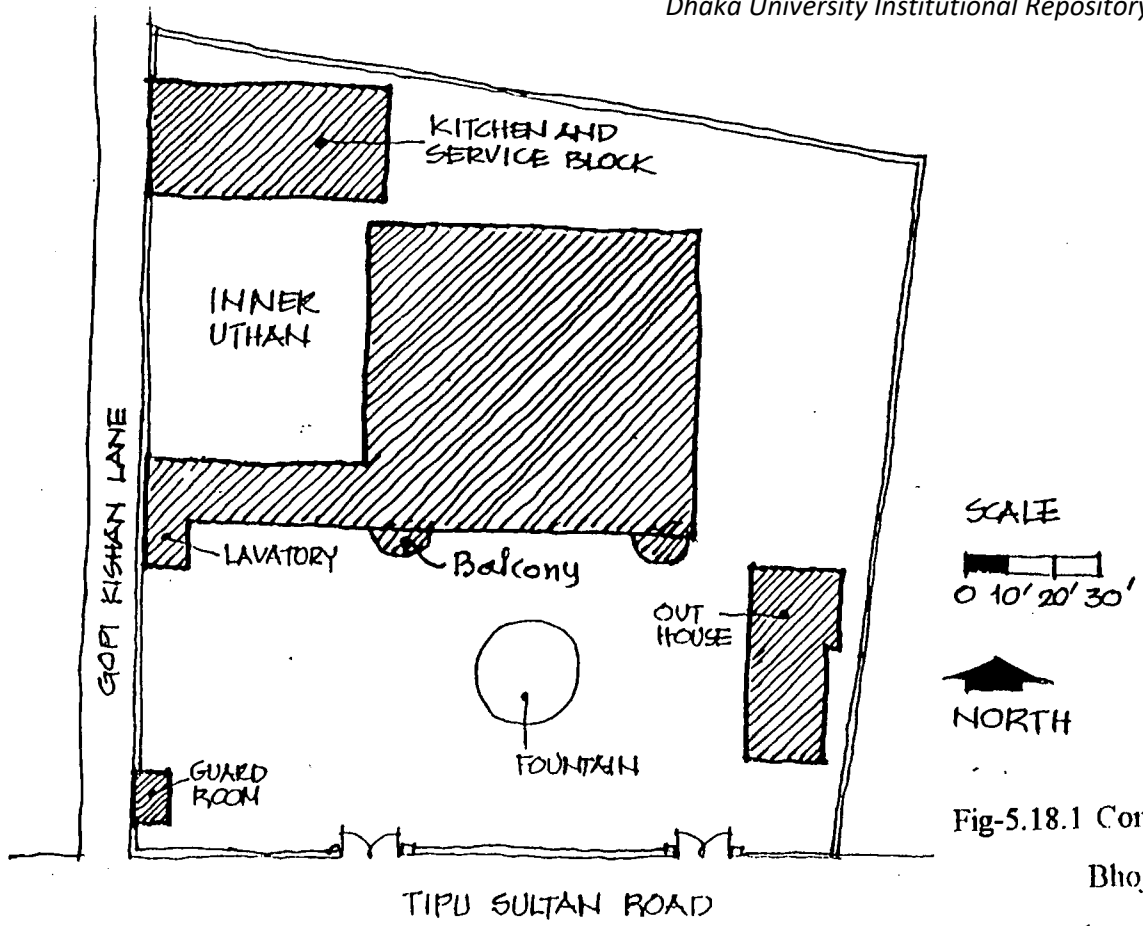


Fig-5.18.1 Compound plan, Bhojahari Lodge, Tipu Sultan road, Dhaka

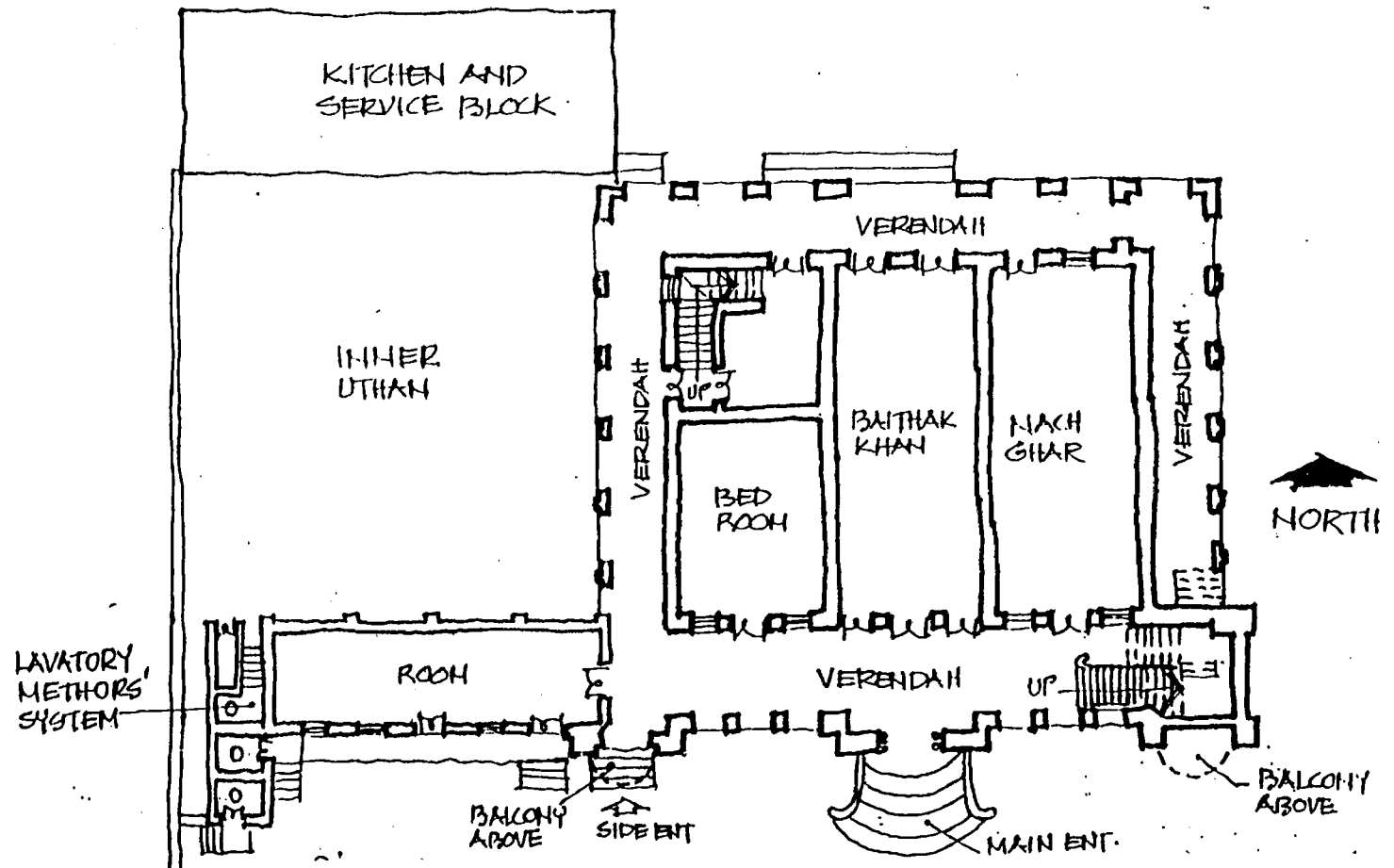


Fig-5.18.2 Ground floor plan, Bhojahari Lodge, Tipu Sultan road, Dhaka

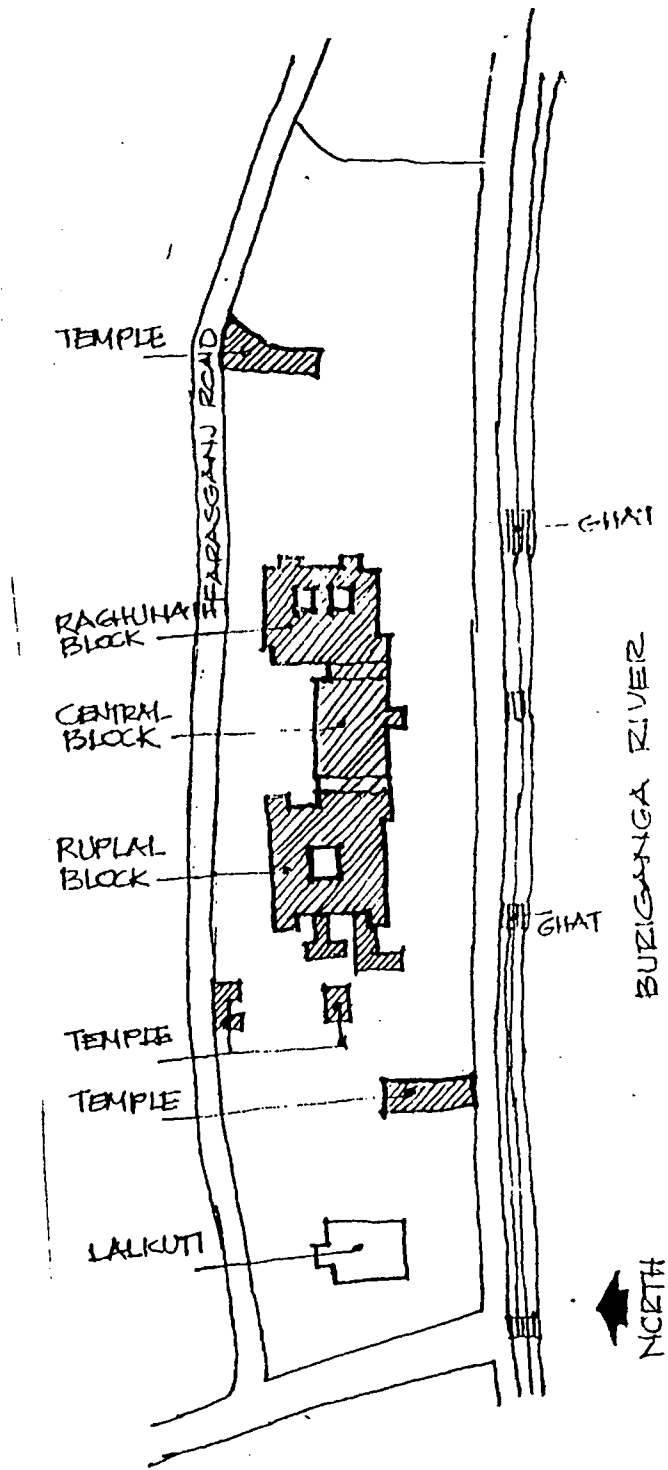


Fig-5.19.1 Compound plan, Ruplal house, Dhaka

Fig-5.19 Ruplal house, Dhaka

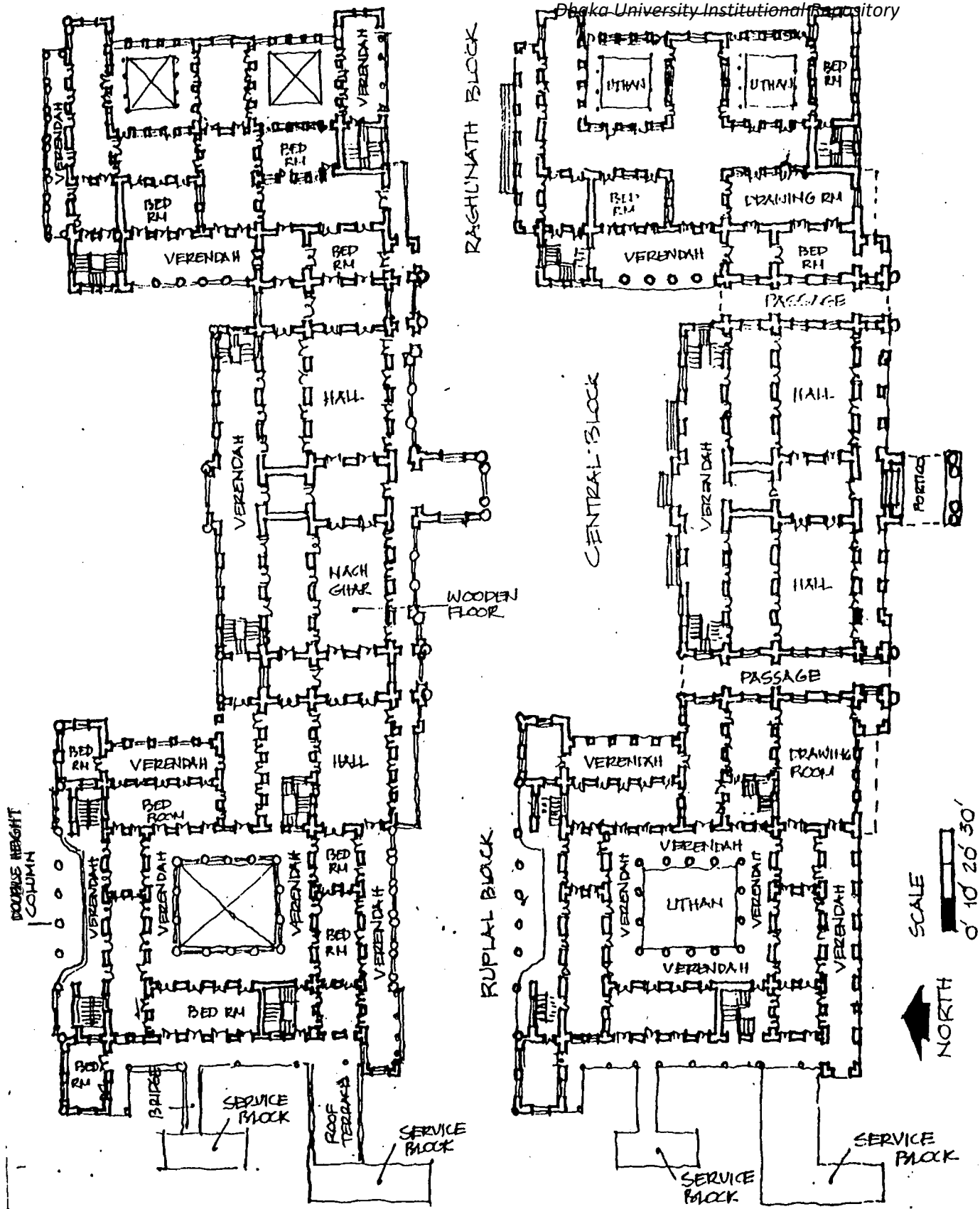


Fig-5.19.3 First floor plan, Ruplal house, Dhaka

Fig-5.19.2 Ground floor plan, Ruplal house, Dhaka

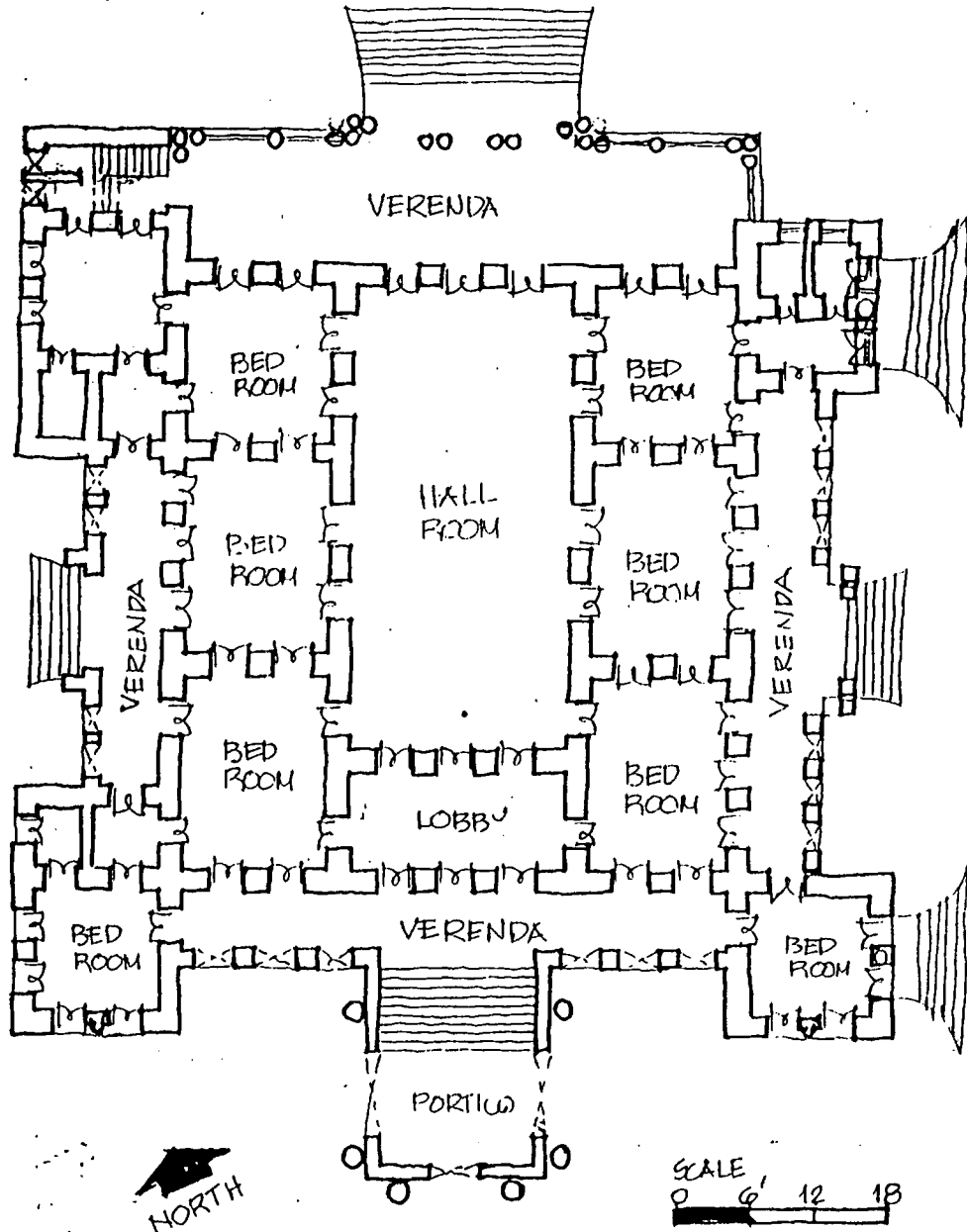


Fig-5.20.1 Bara Taraf,
Natore rajbari, Natore

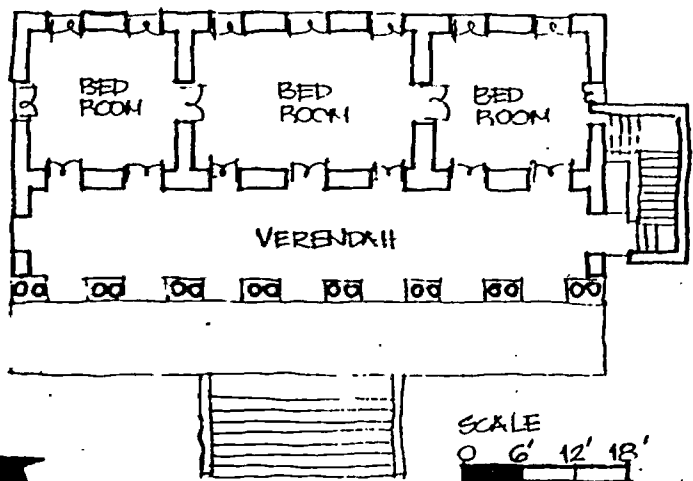


Fig-5.20.2 Pishmar bari,
Natore rajbari, Natore

Fig-5.20.3 Rani mahal and guest house,
Natore rajbari

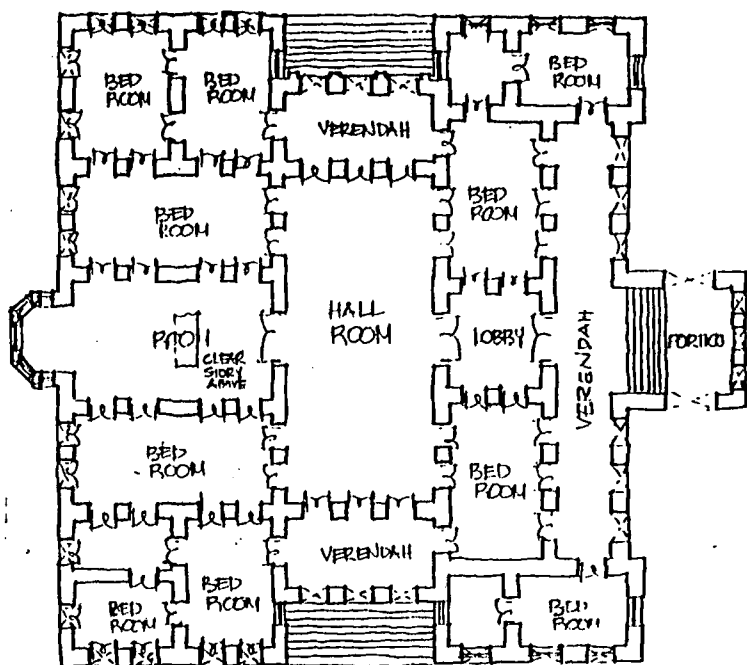
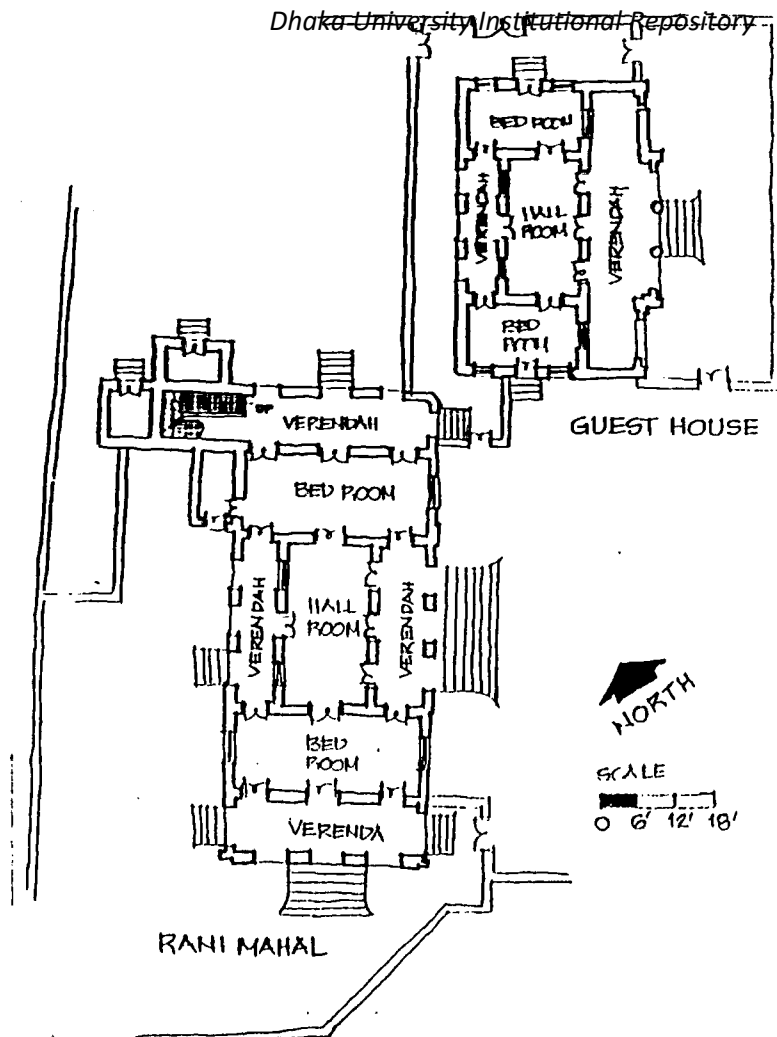


Fig-5.20.4 Chota taraf,
Natore rajbari . Natore

NORTH
SCALE
0 6' 12' 18'

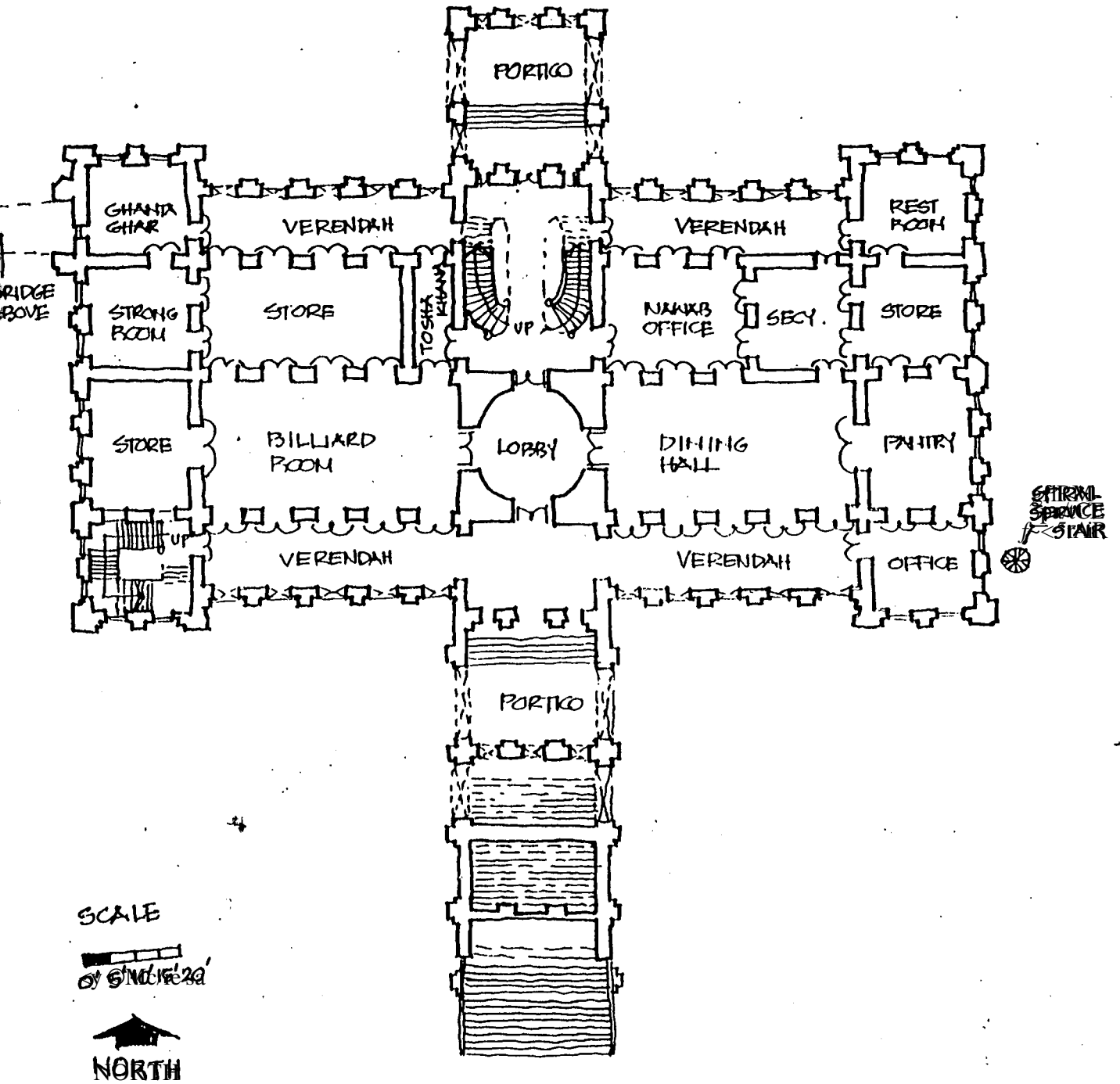


Fig-5.21.1 Ground floor plan, Ahsan manjil, Dhaka

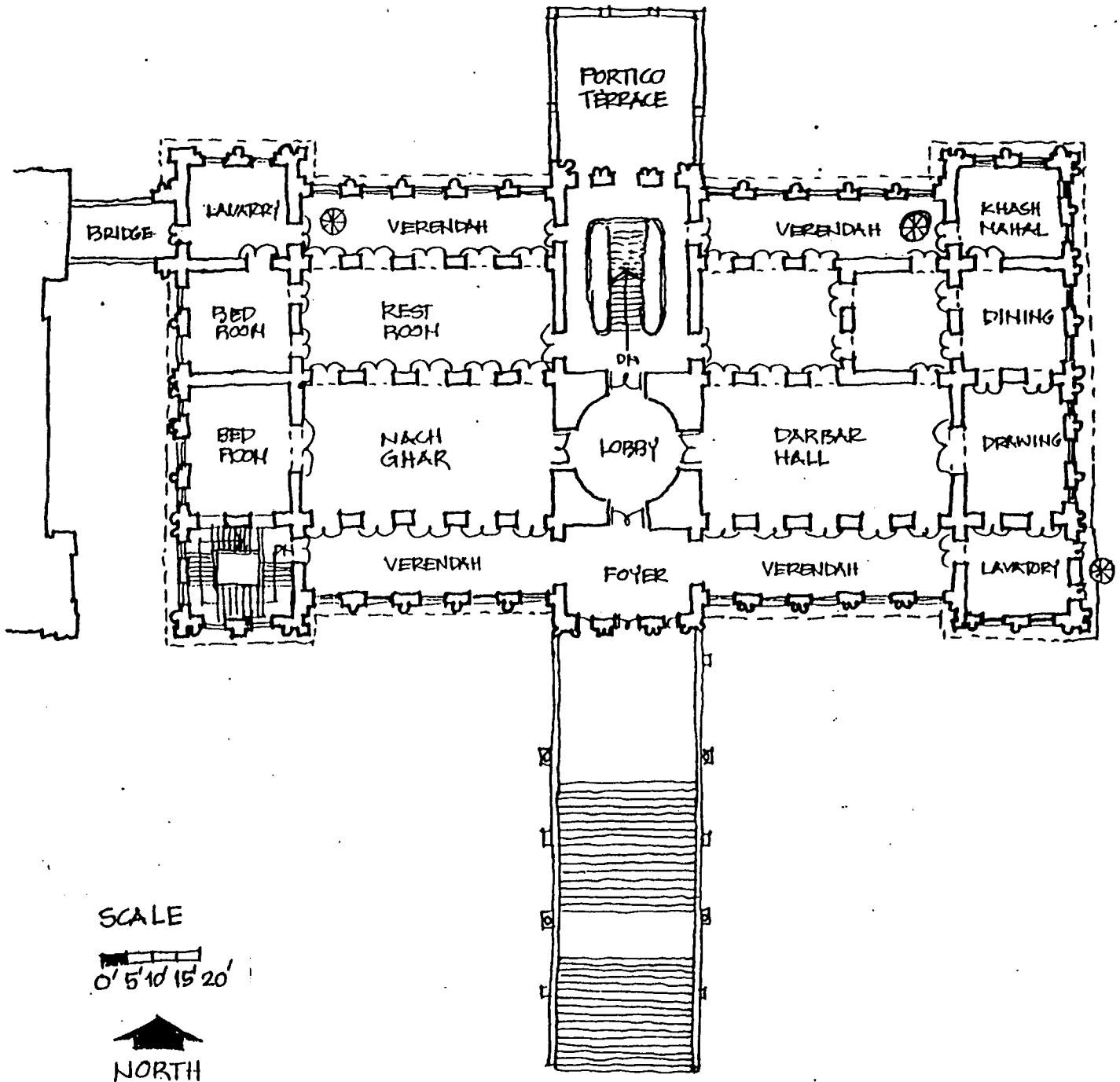


Fig-5.21.2 First floor plan, Ahsan manjil Dhaka

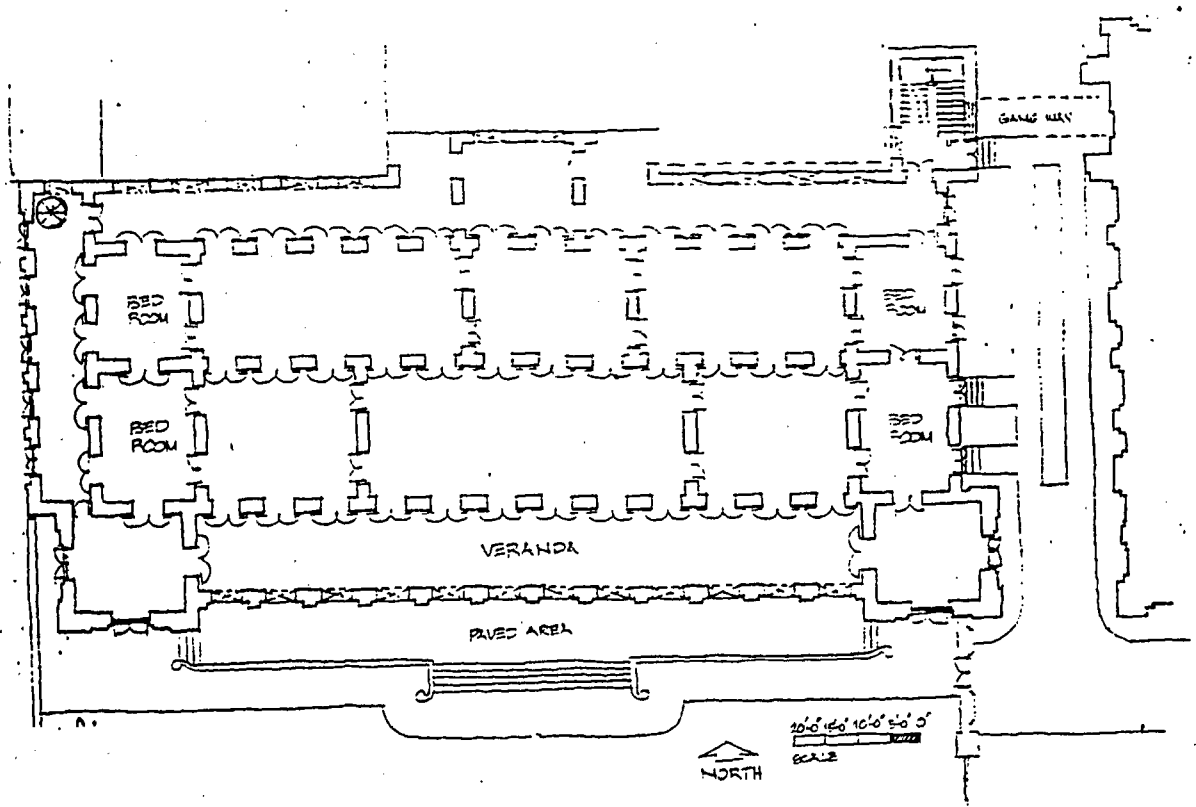


Fig-5.21.3 Ground floor plan, Jenana Mahal Ahsan manjil, Dhaka

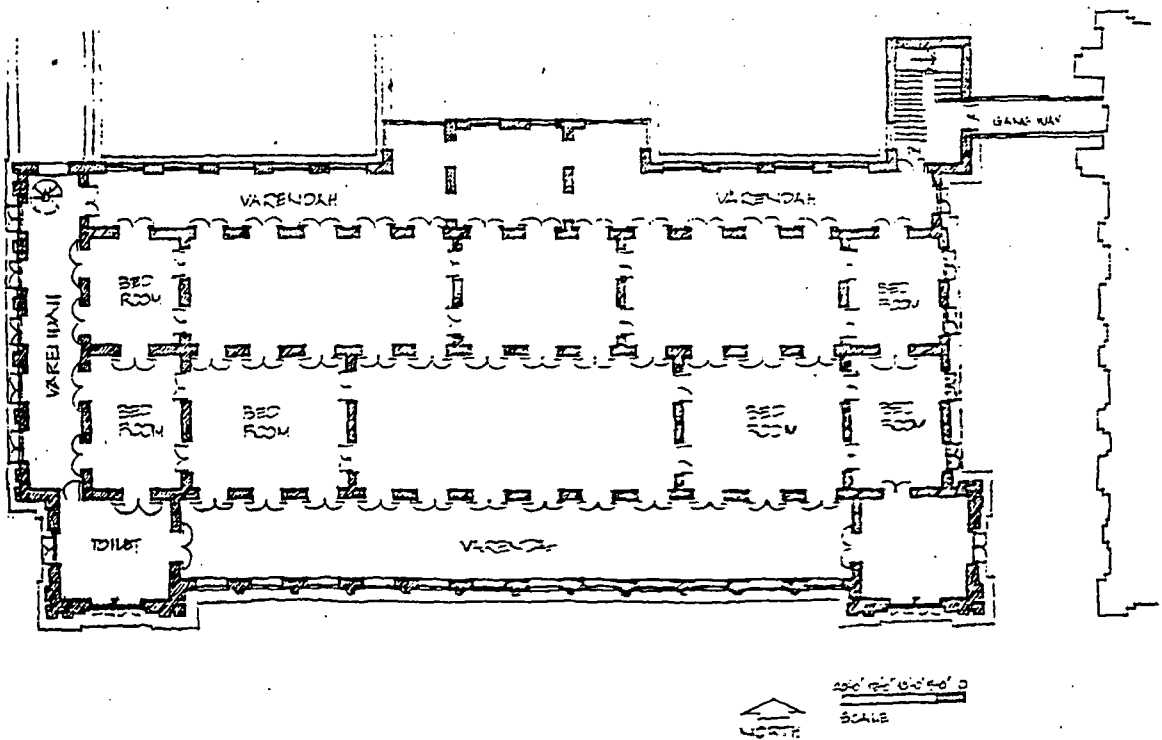


Fig- 5.21.4 First floor plan, Jenana Mahal Ahsan manjil, Dhaka

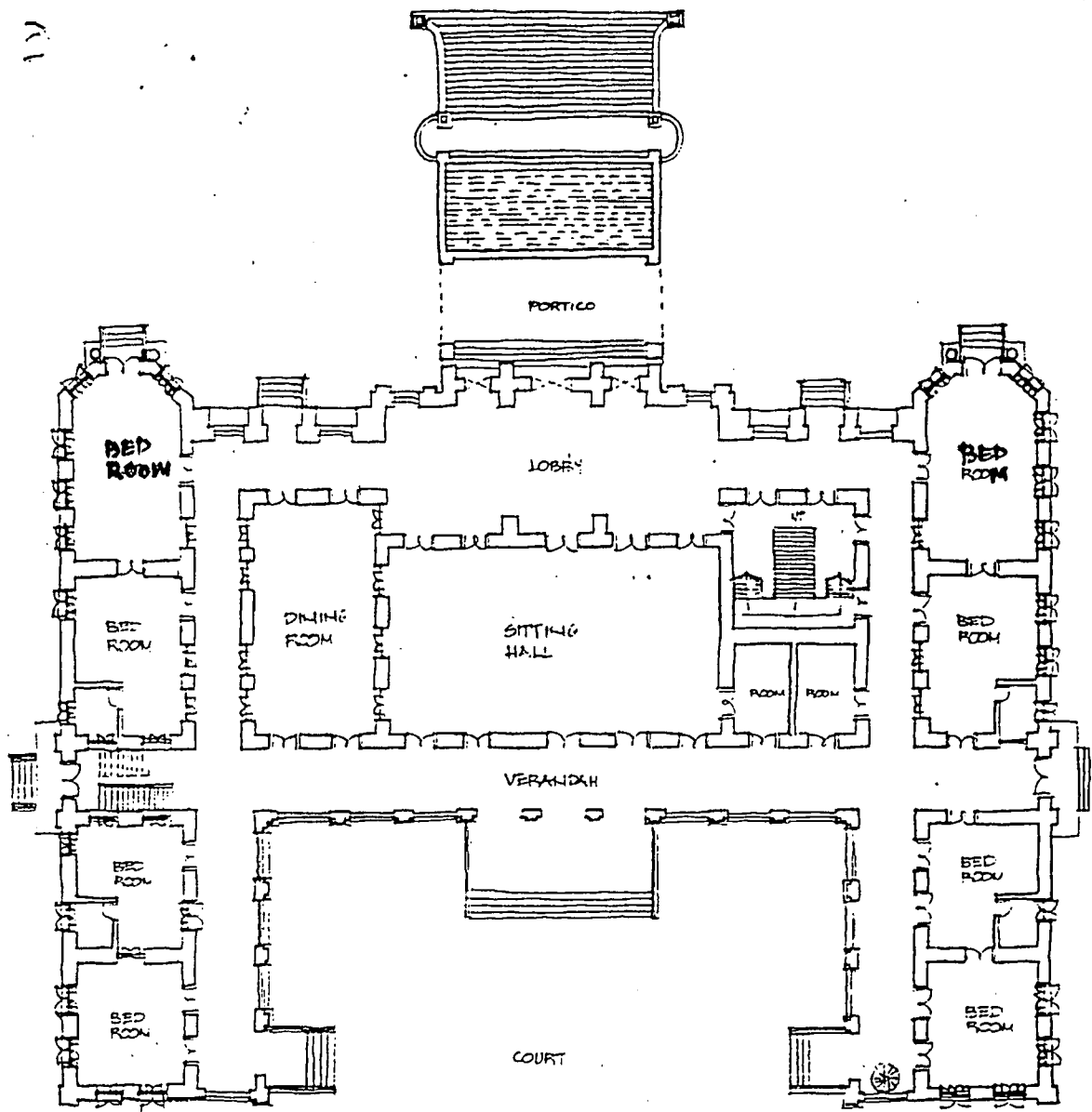


Fig-5.22.1 Ground floor plan Tajhat palace, Rangpur

Fig-5.22 Tajhat palace Rangpur

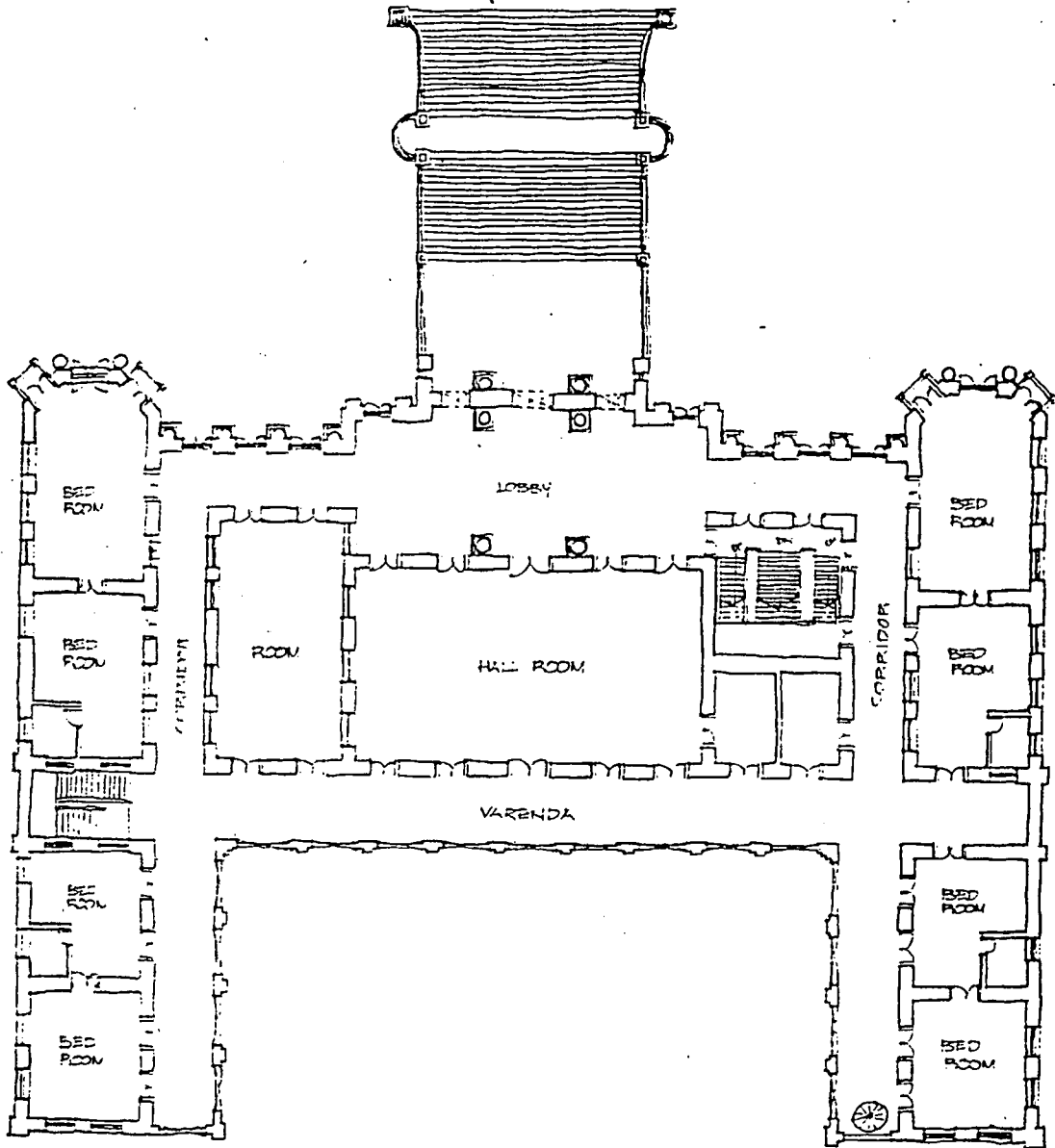


Fig-5.22.2 First floor plan, Tajhat palace Rangpur

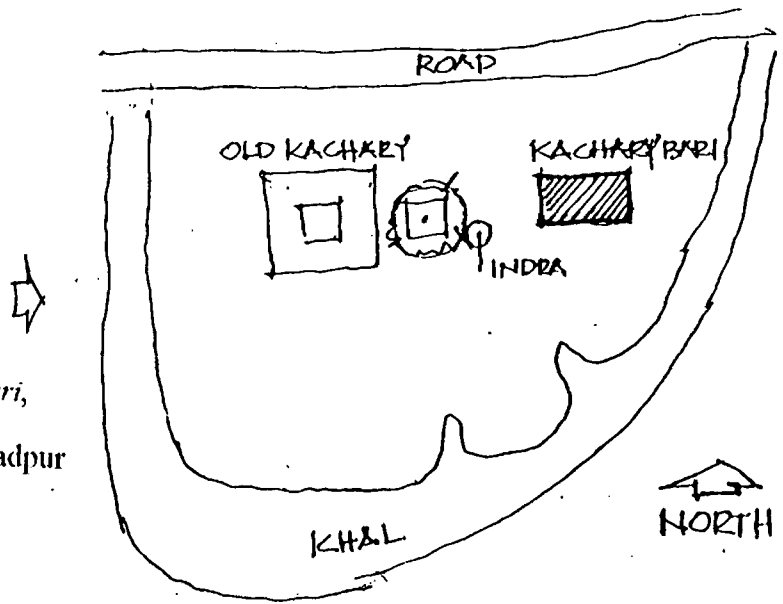


Fig-5.23.1 Compound plan, Kachari bari,
Rabindranath Thakur, Shajadpur

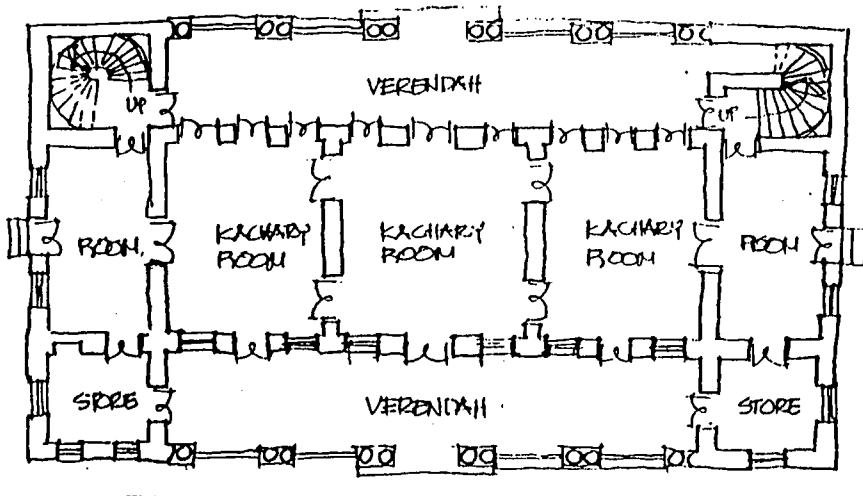
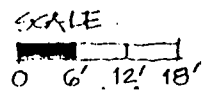
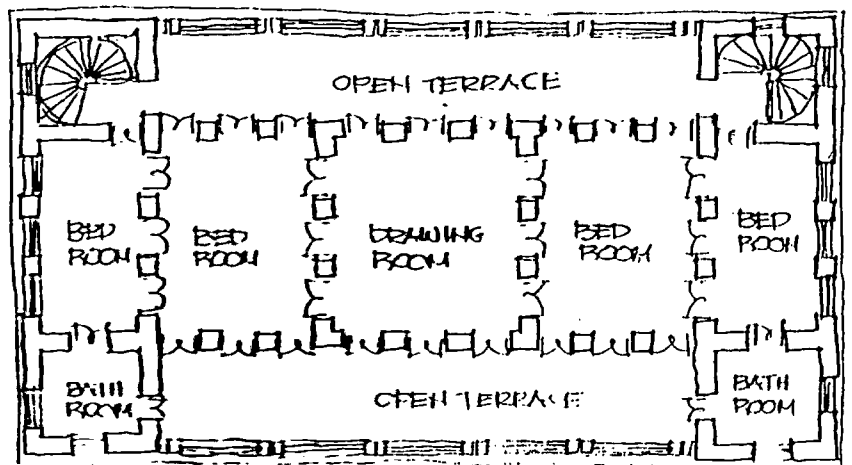


Fig-5.23.2 Ground floor plan, Kachari bari,
Rabindranath Thakur, Shajadpur

Fig-5.23.3 First floor plan, Kachari bari,
Rabindranath Thakur, Shajadpur



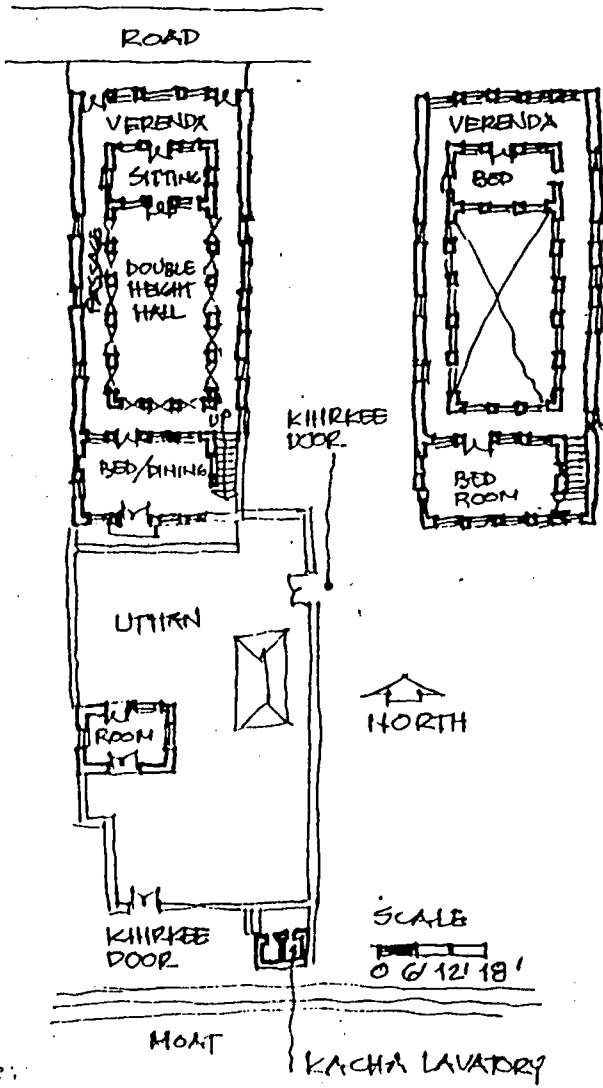


Fig-5.25.1 Ground floor plan, *Bagan bari*,
Binoy, Poddar, Painamnagar,
Sonargaon,

Fig-5.25.2 First floor plan, *Bagan bari*,
Binoy, Poddar, Painamnagar, Sonargaon, Dhaka

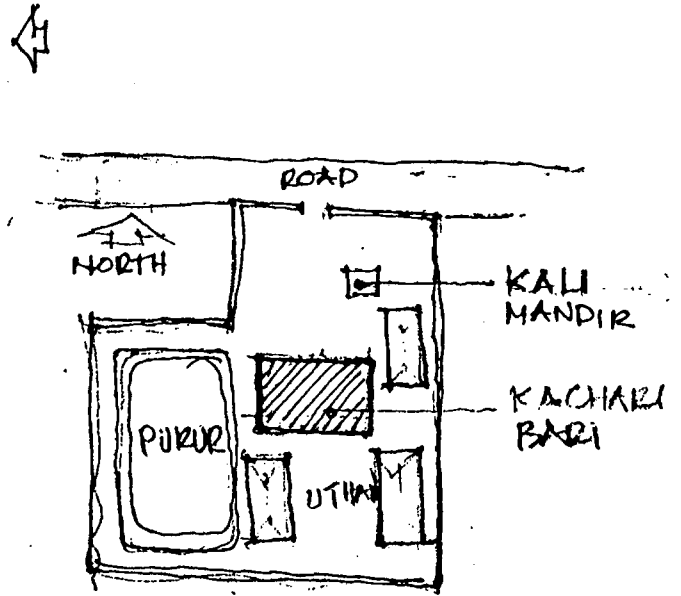


Fig-5.24.1 Compound plan,
Kachari bari
Rajeswar Rai Chowdhury
at Patuakhali

Fig-5.25 *Bagan bari*,
Binoy, Poddar,
Painamnagar,
Sonargaon, Dhaka

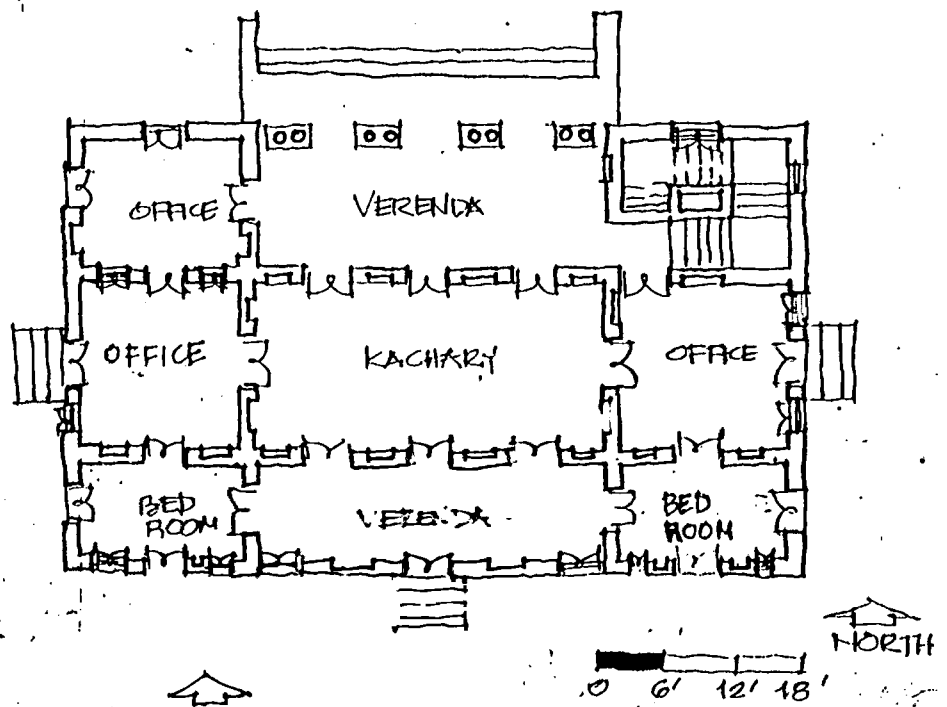


Fig-5.24 *Kachari bari*
Rajeswar Rai Chowdhury
at Patuakhali

Fig-5.24.2. Ground floor plan, *Kachari bari*
Rajeswar Rai Chowdhury at Patuakhali

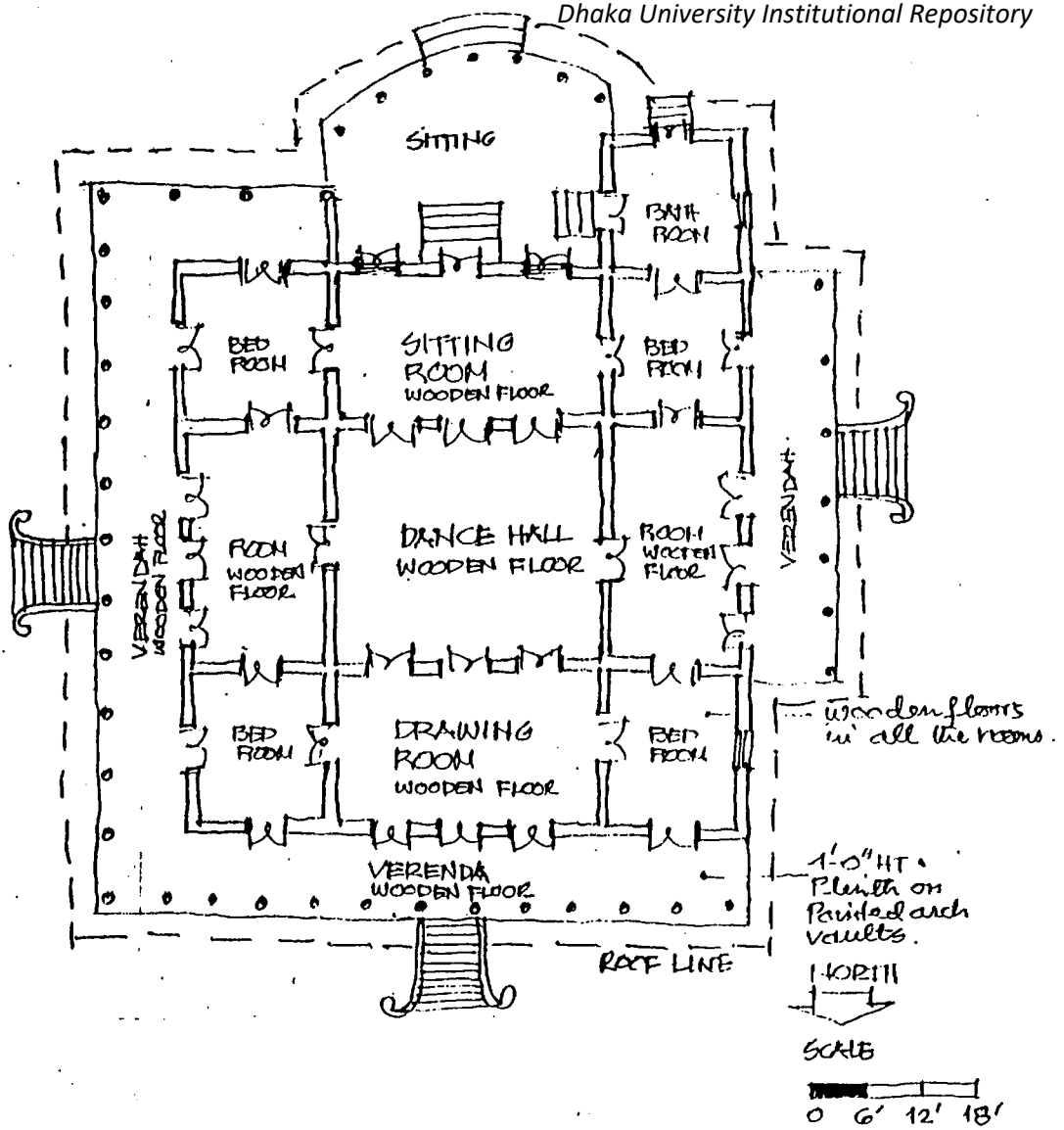


Fig-5.26.2 Ground floor plan, bagan bari, Zamindar of Tapa Rangpur

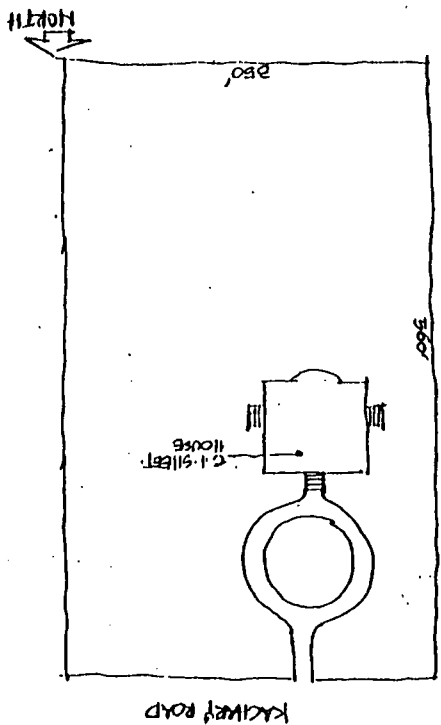


Fig-5.26.1 Compound plan, Bagan bari, Zamindar of Tapa Rangpur

Fig-5.26 Bagan bari, Zamindar of Tapa Rangpur

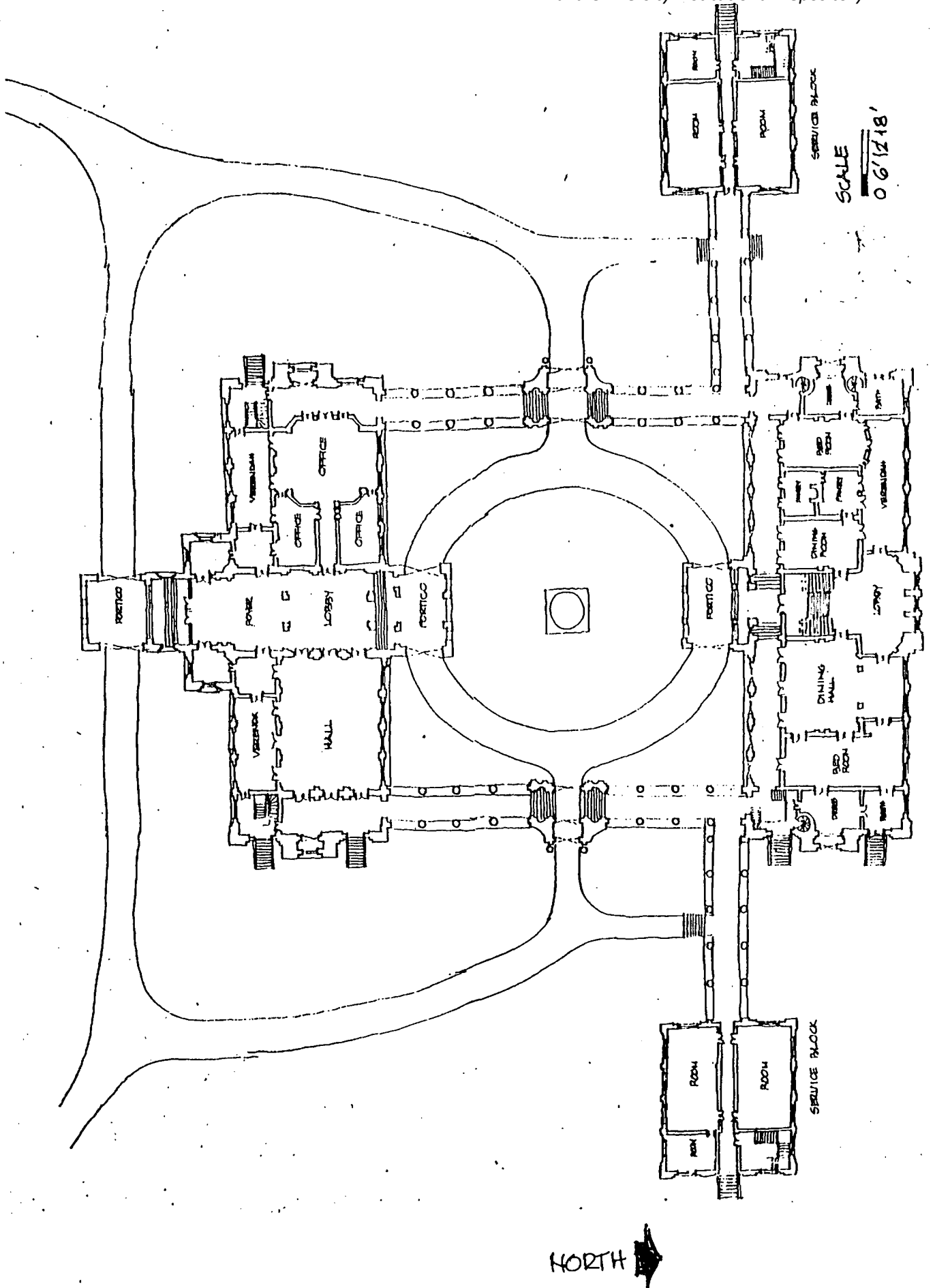


Fig-5.27 Ground floor plan, Governor's house, Dhaka

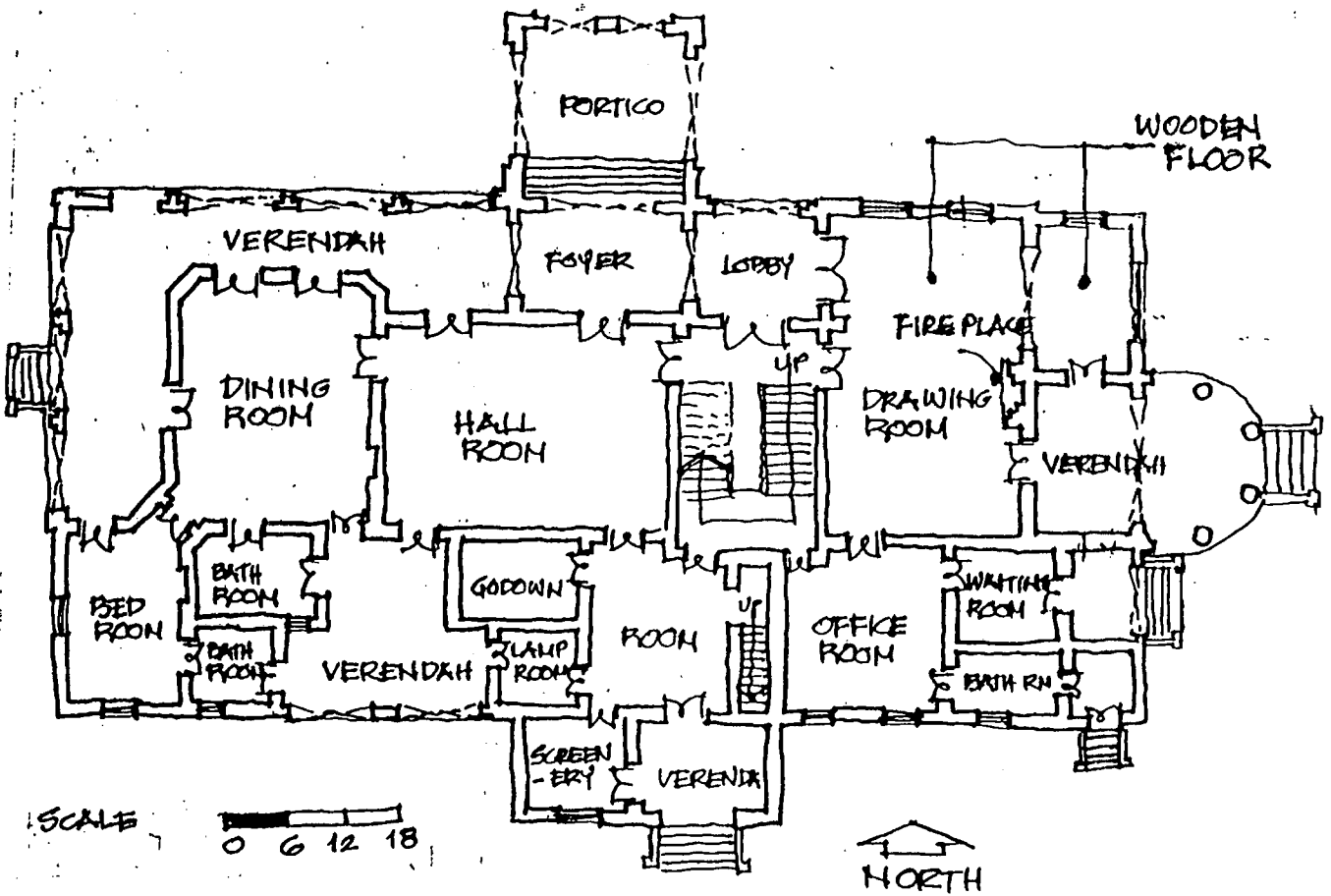


Fig-5.28 Ground floor plan, Bardawan house, Dhaka

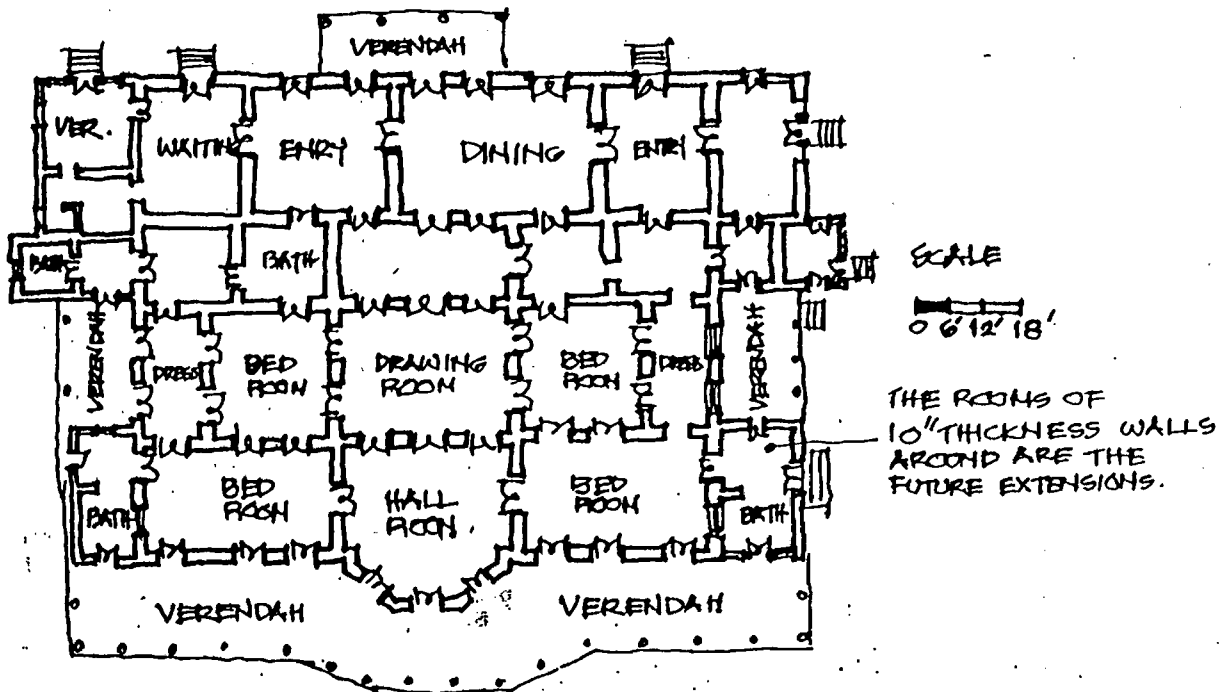


Fig-5.29 Ground floor plan, bungalow of Commissioner, Chittagong

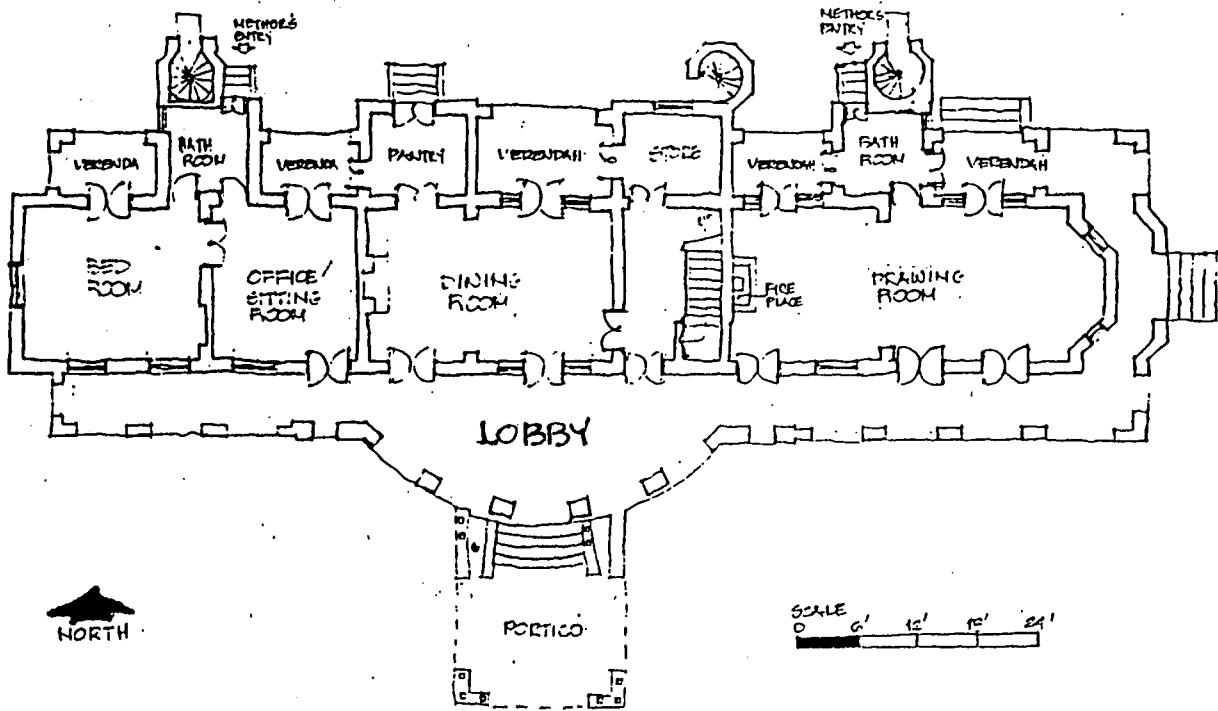


Fig-5.30.1 Ground floor plan, Chimmery, Barisal

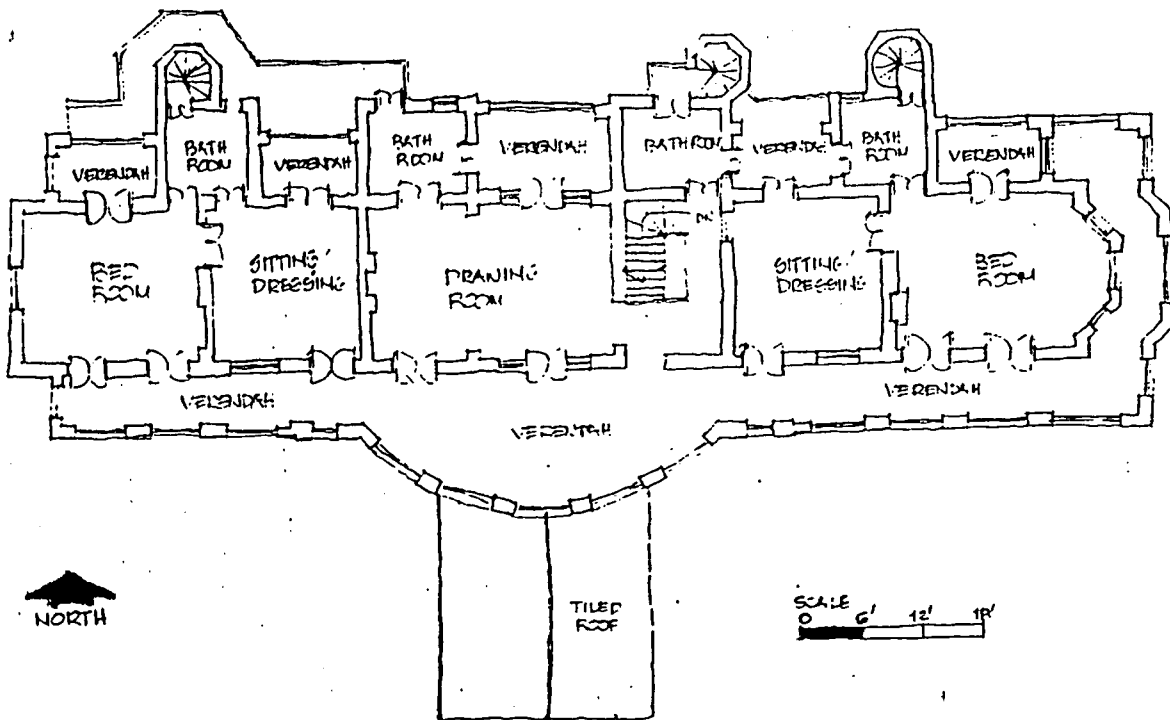


Fig-5.30.2 First floor plan, Chimmery, Barisal

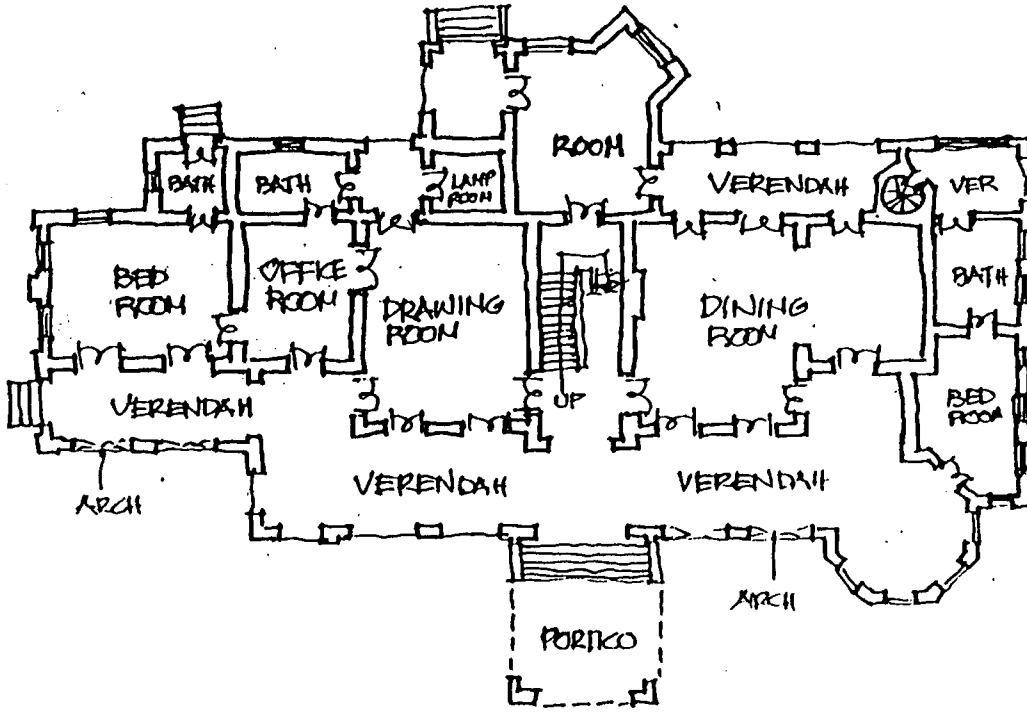


Fig-5.31.1 Ground floor plan, bungalow no-20, Ramna colony, Dhaka

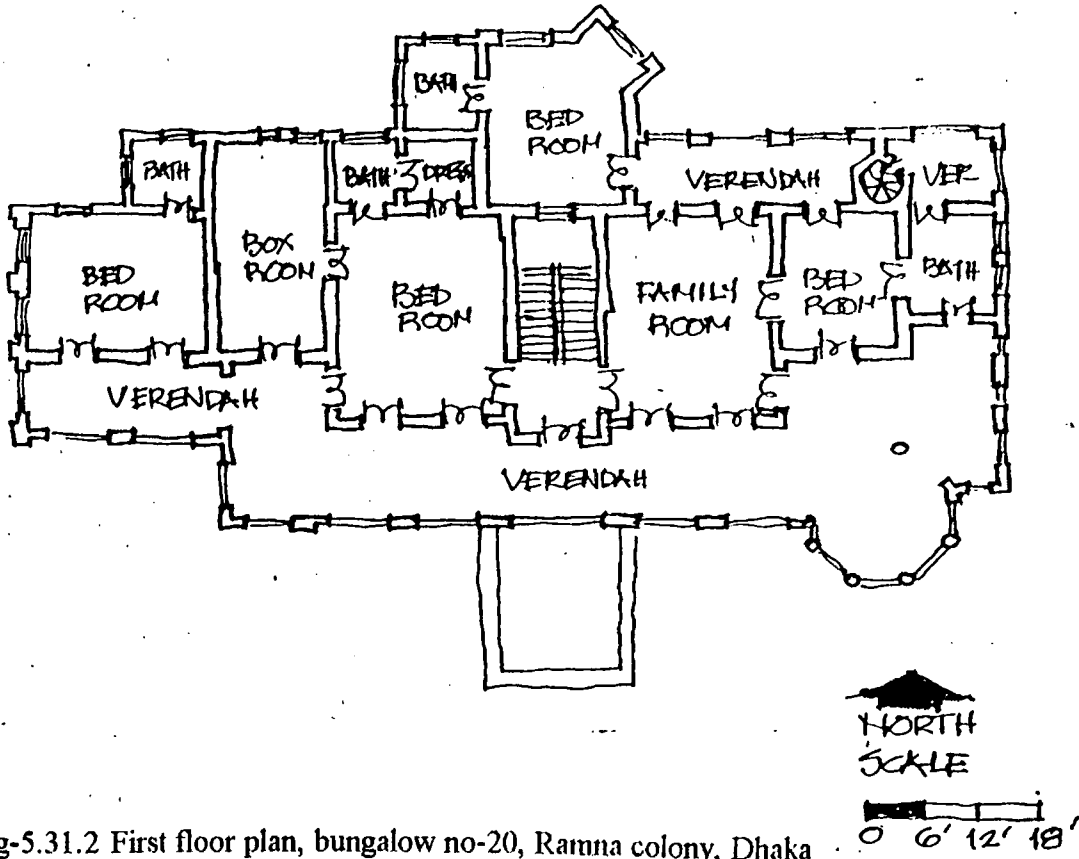


Fig-5.31.2 First floor plan, bungalow no-20, Ramna colony, Dhaka

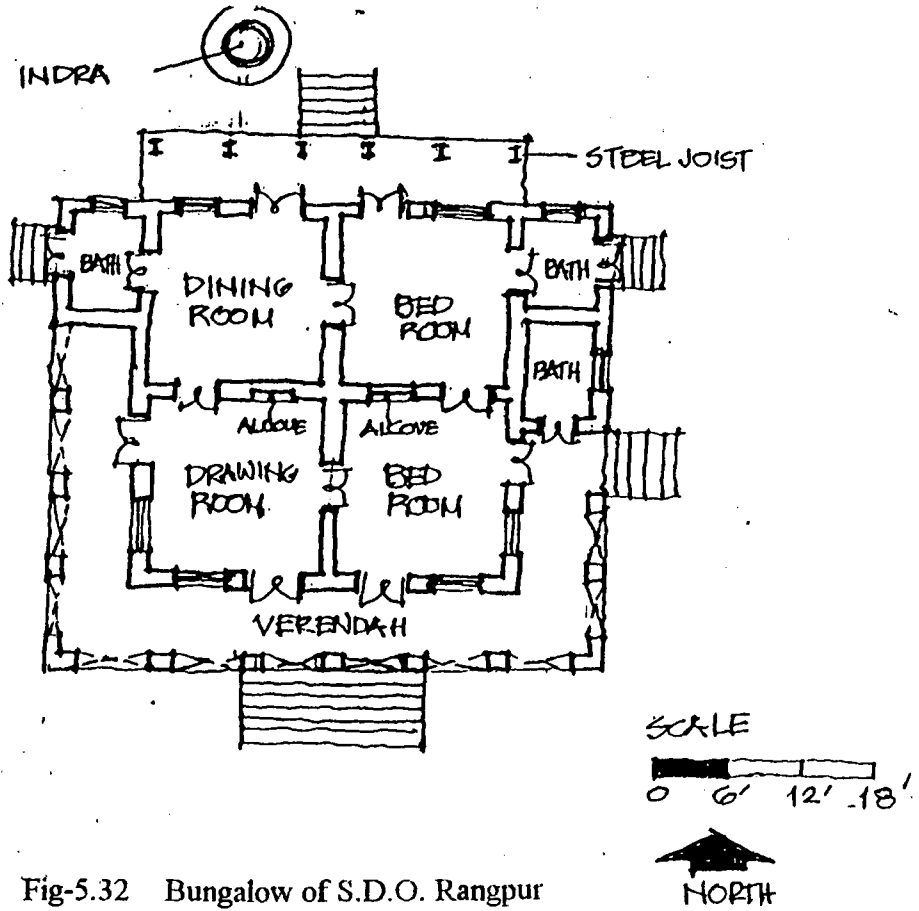


Fig-5.32 Bungalow of S.D.O. Rangpur

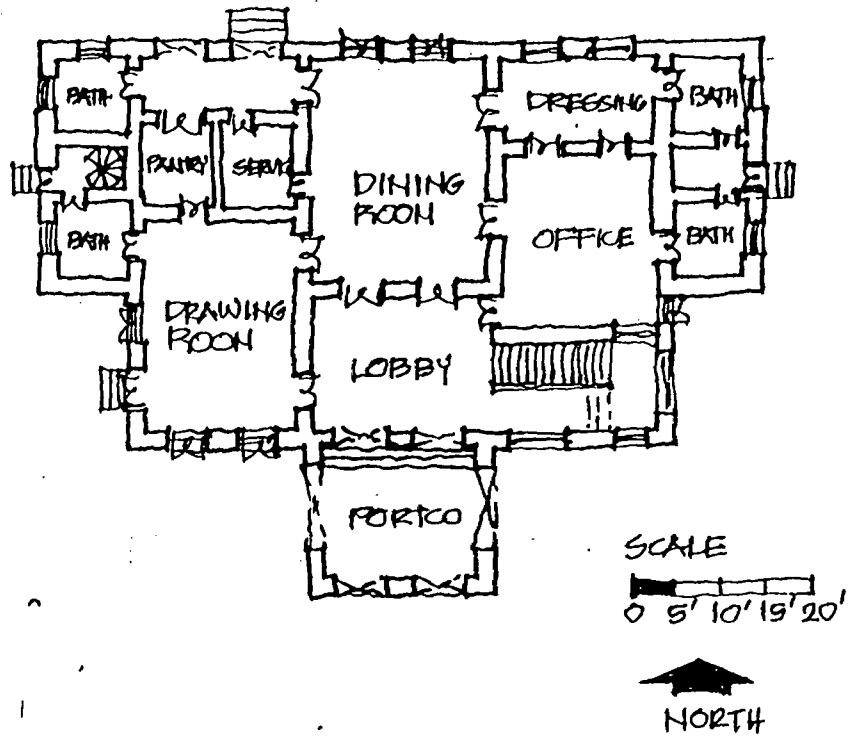


Fig-5.33 Bungalow of District Judge, Chittagong

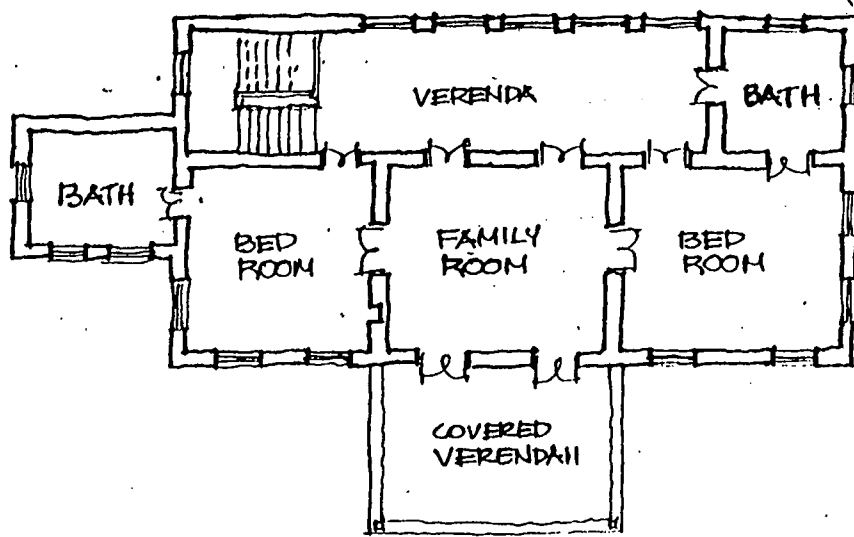


Fig-5.34.2 First floor plan, bungalow of S.P. Dinajpur

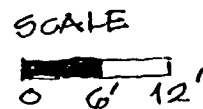
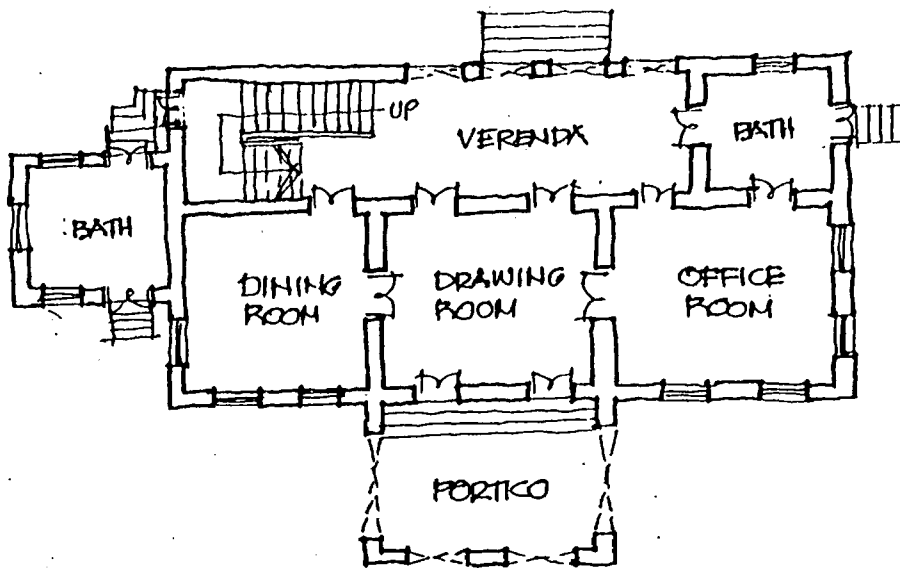


Fig-5.34.1 Ground floor plan, bungalow of S.P. Dinajpur

Fig-5.34 Bungalow of S.P. Dinajpur

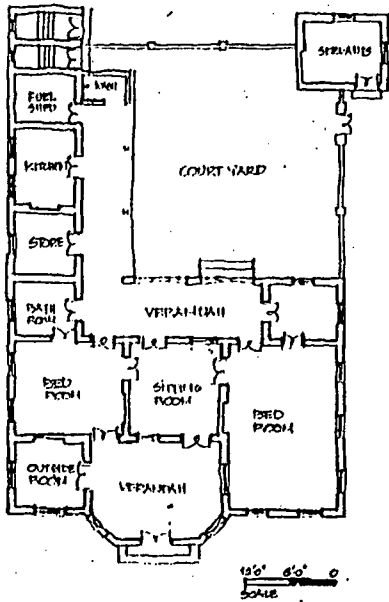
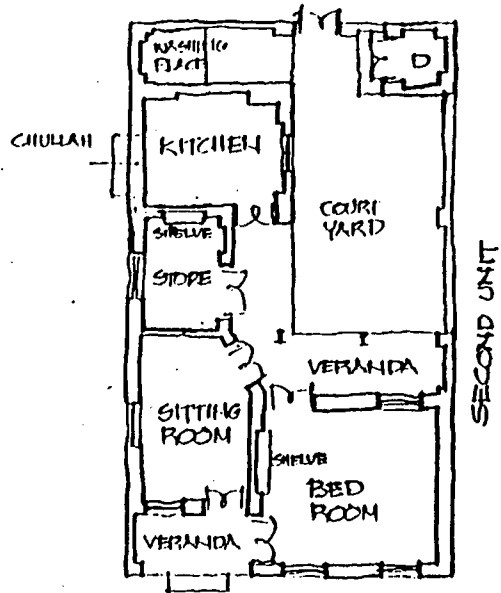


Fig-5.35.1 Railway quarter, type-1



SQ. 213/1
12'-0" 6'-0" 30" 0
SCALE

Fig-5.35.2 Railway quarter, type-2

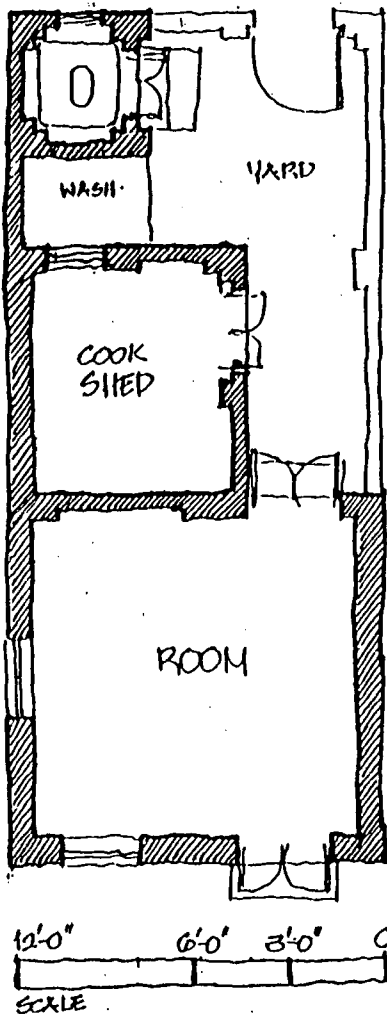


Fig-5.35.4 Railway quarter, type-4

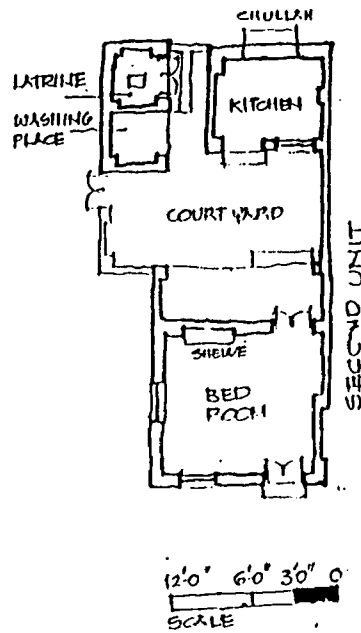


Fig-5.35.3 Railway quarter, type-3

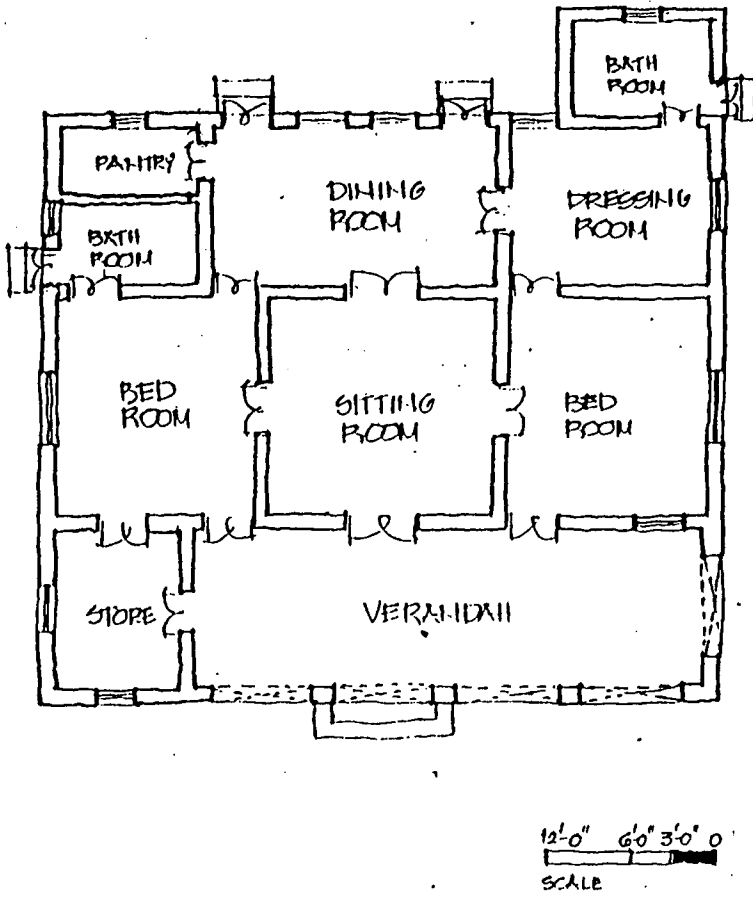


Fig-5.35.5 Railway bungalow, type-5

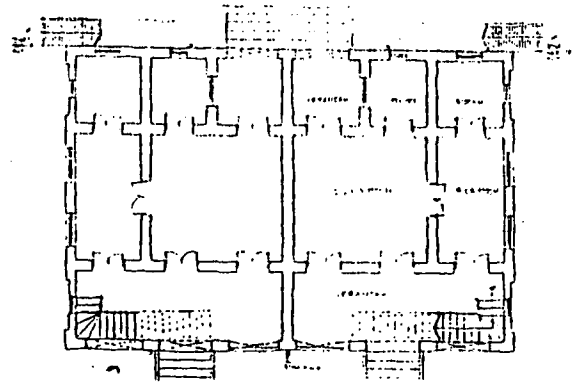


Fig-5.35.6.1 Ground floor plan, two storied one unit twin quarter

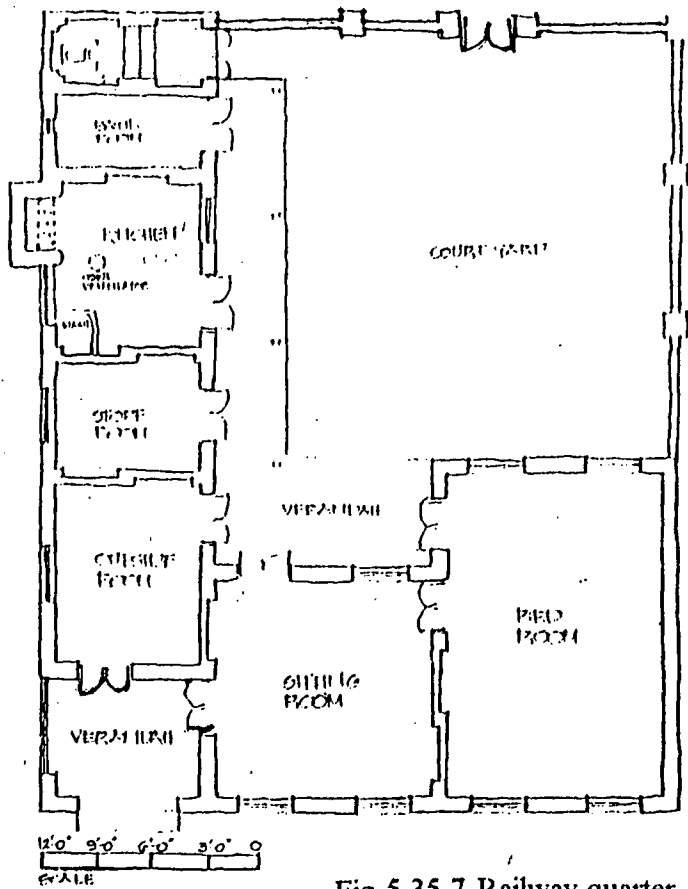


Fig-5.35.7 Railway quarter, type-6

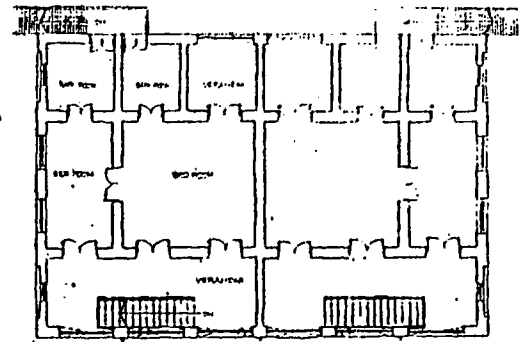
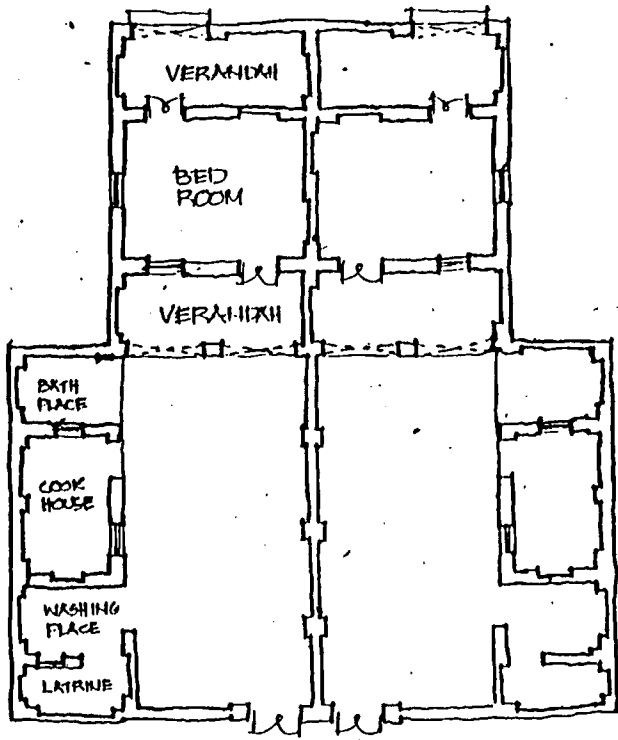


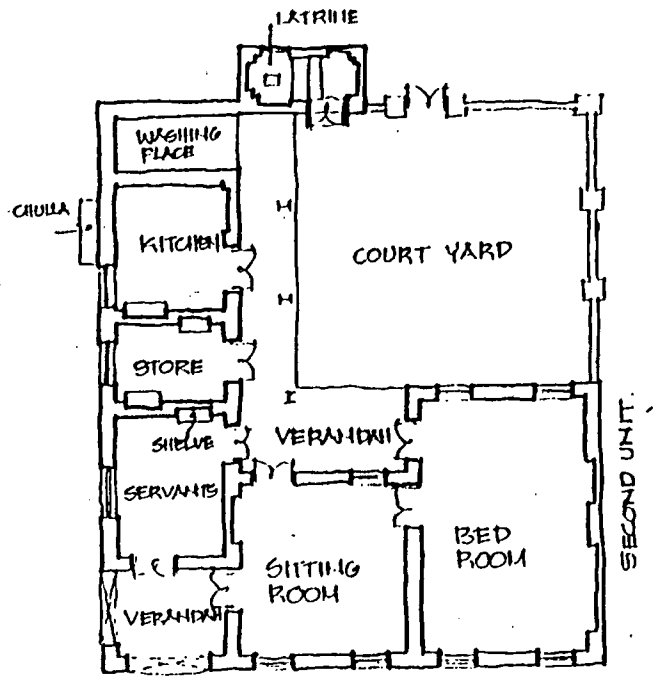
Fig-5.35.6.2 First floor plan, two storied one unit twin quarter

Fig-5.35.6 Two storied one unit twin quarter



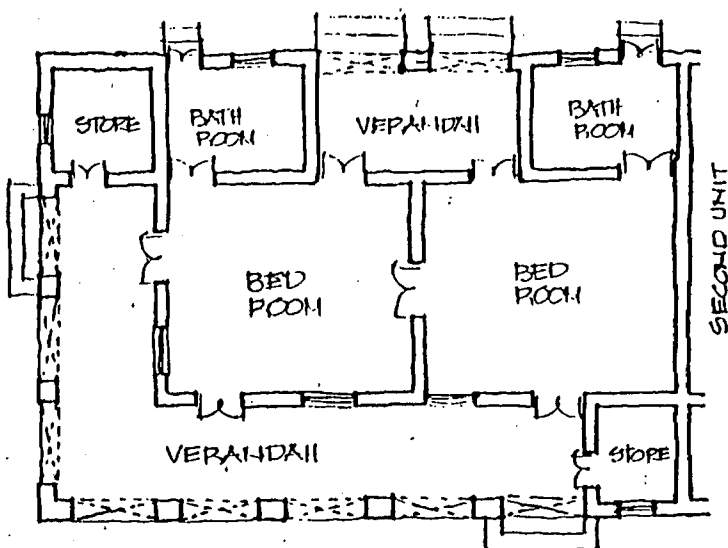
12'-0" 6'-0" 0
SCALE

Fig-5.35.8 Railway quarter, type-7



12'-0" 6'-0" 3'-0" 0
SCALE

Fig-5.35.9 Railway quarter, type-8



12'-0" 6'-0" 3'-0" 0
SCALE

Fig-5.35.10 Railway bungalow, type-10

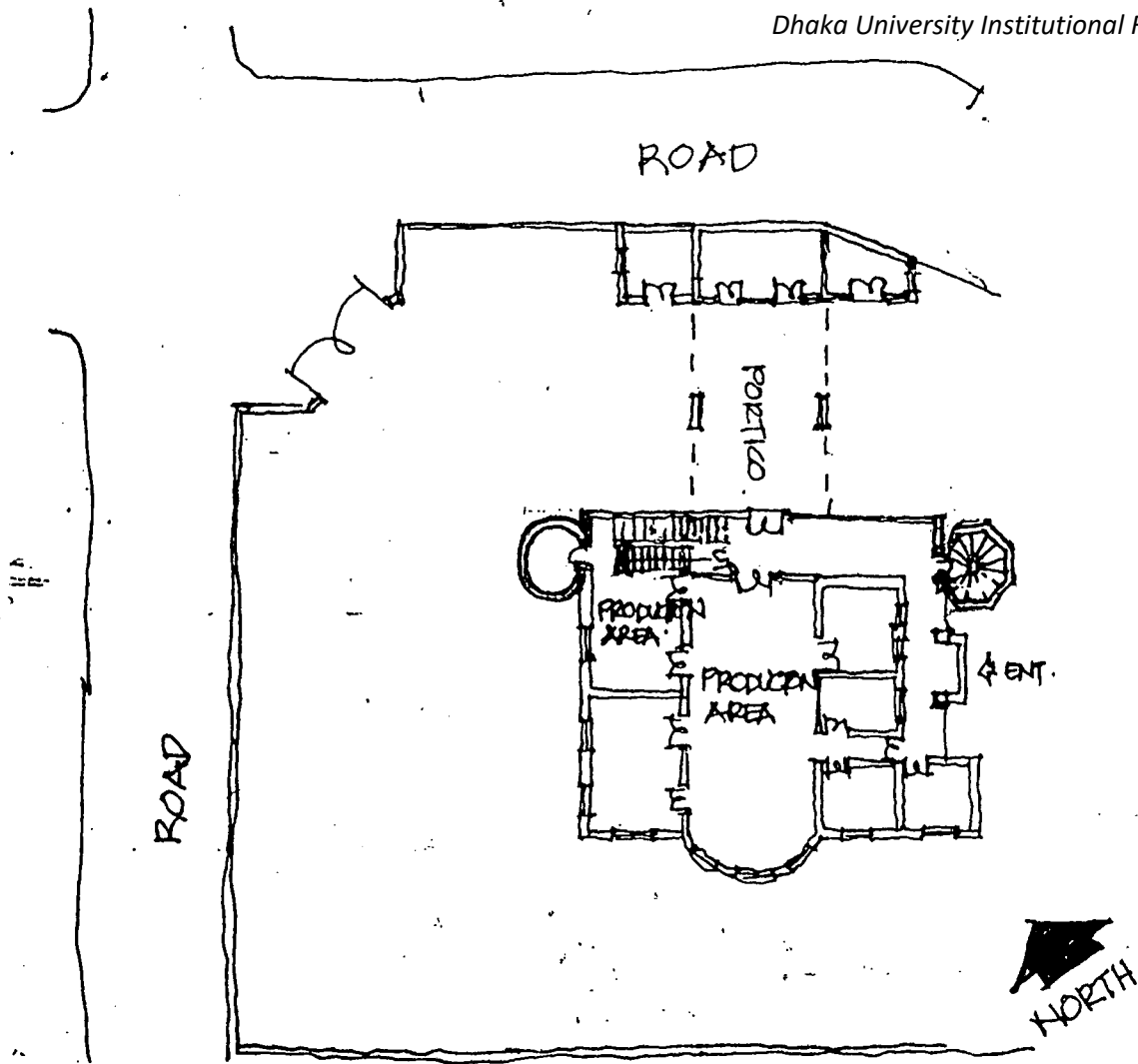


Fig-5.36.2 Ground floor plan,
kuthibari of Mr. Wais, Wiseghat, Dhaka

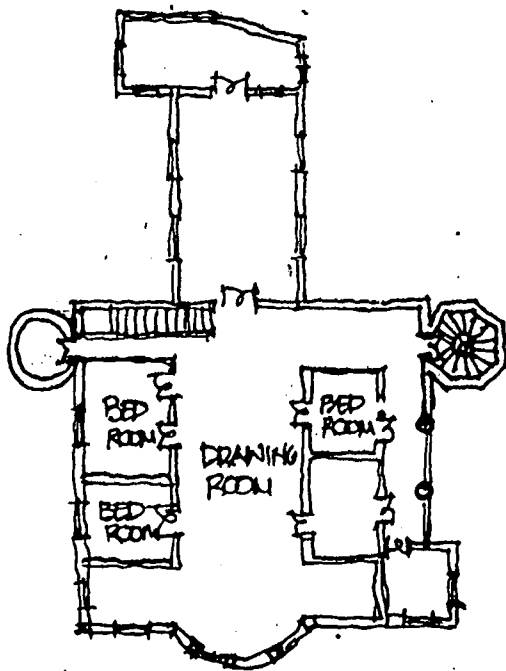


Fig-5.36.3 First floor plan,
kuthibari of Mr. Wais, Wiseghat, Dhaka

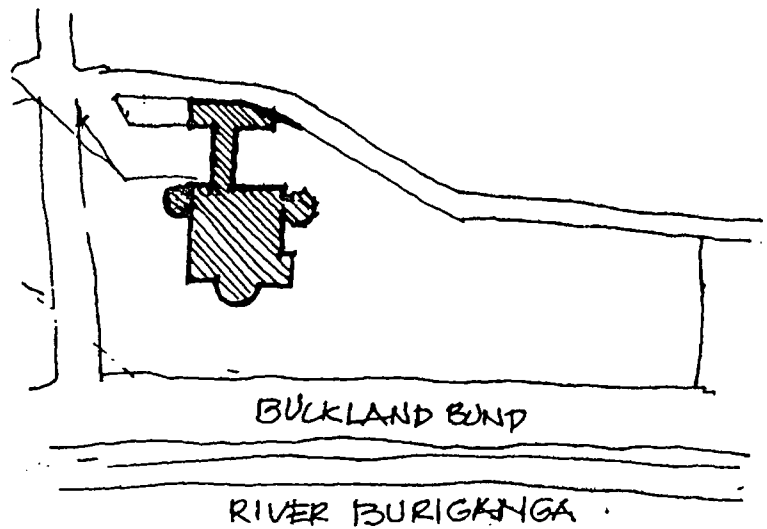


Fig-5.36.1 Compound plan,
Kuthibari of Mr. Wais, Wiseghat, Dhaka

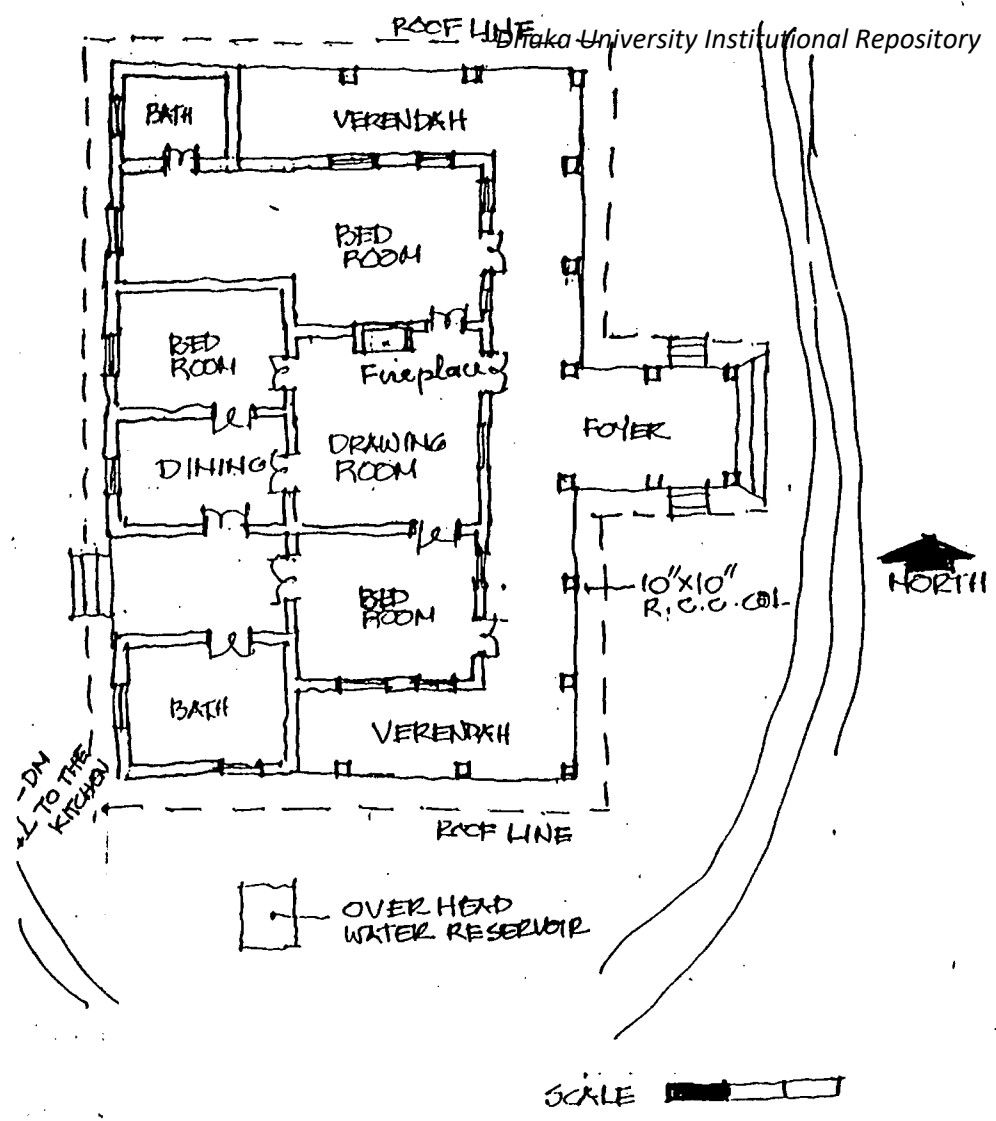


Fig-5.37 Asstt. Manager's bungalow, Malnichora tea estate, Sylhet

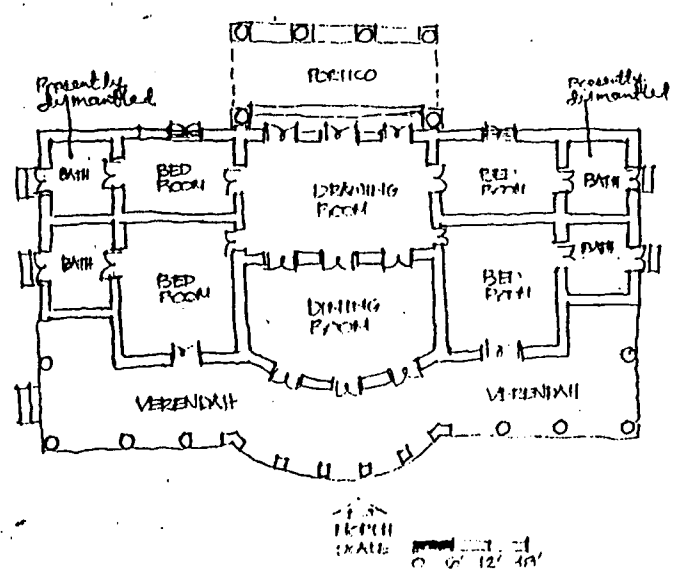


Fig-5.38 Ground floor plan, Jessore circuit house

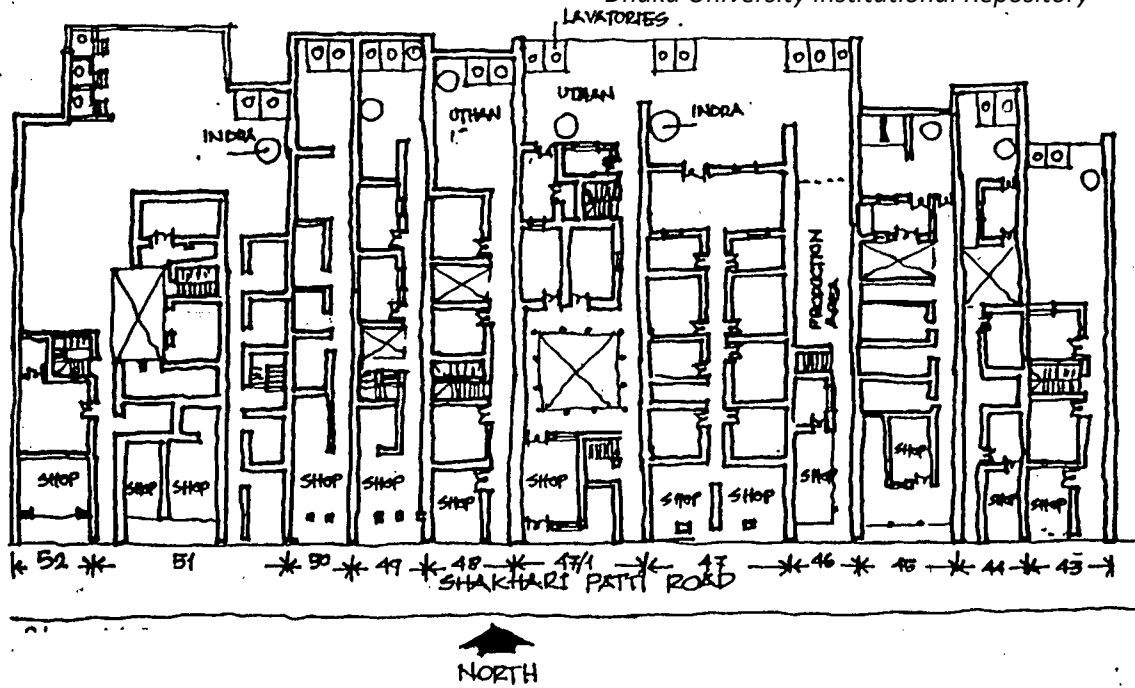


Fig-5.41 Shakhari patti, Dhaka

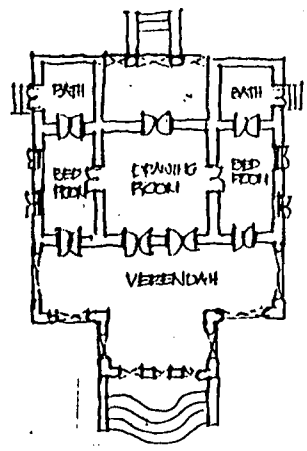


Fig-5.39 Ground floor plan, Satkhira Dakbungalow

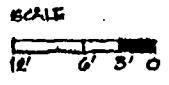
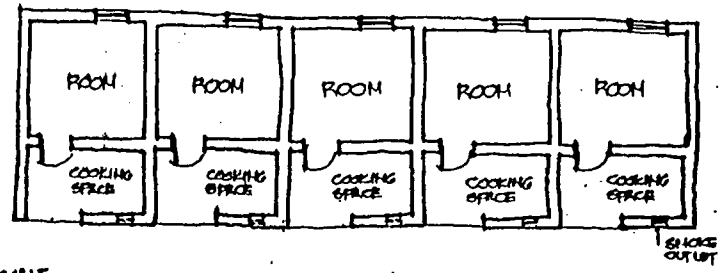
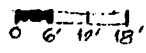


Fig-5.40 Methor's Patti at Chittagong

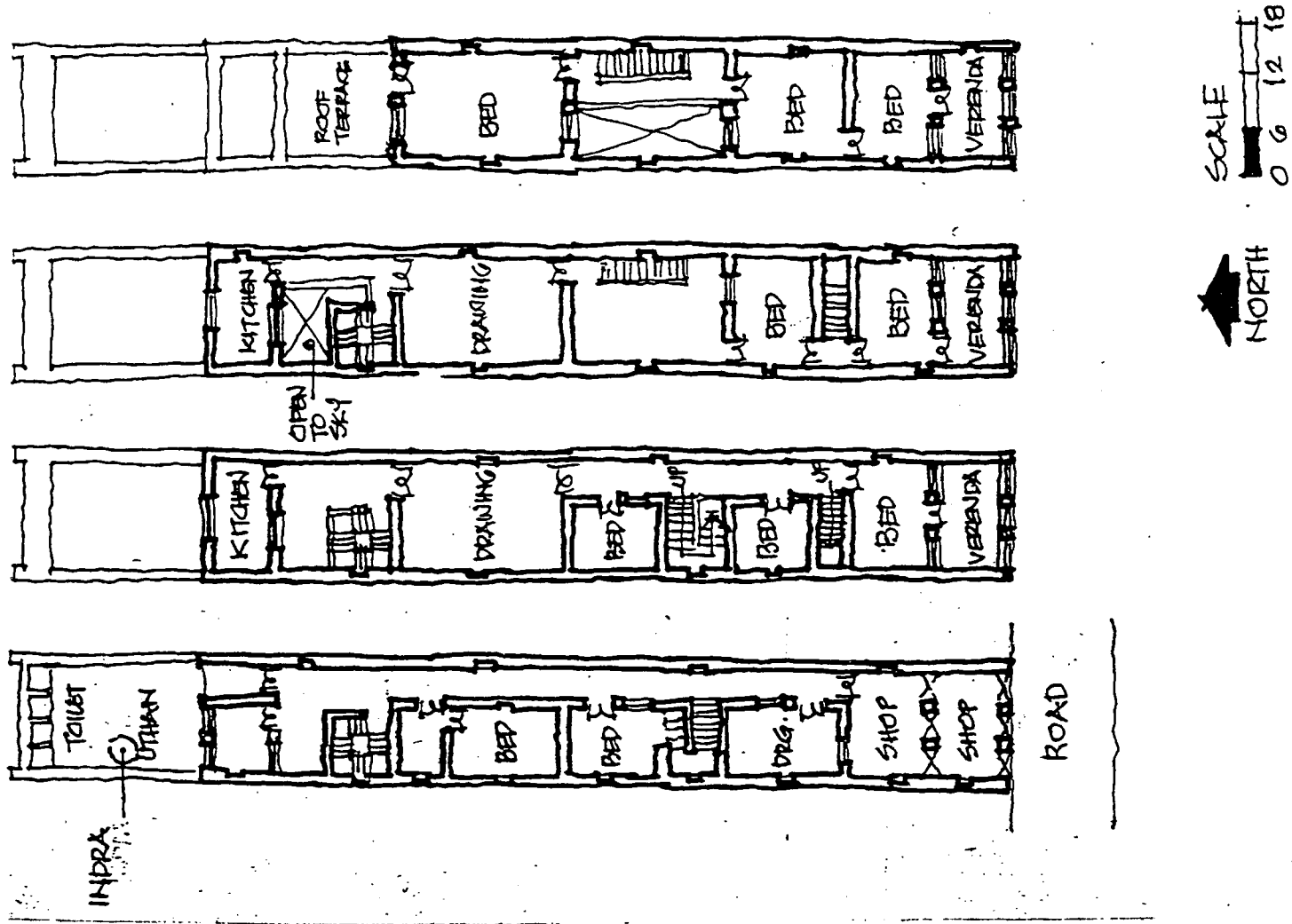


Fig-5.42 House no 32, Shankhari patti, Dhaka

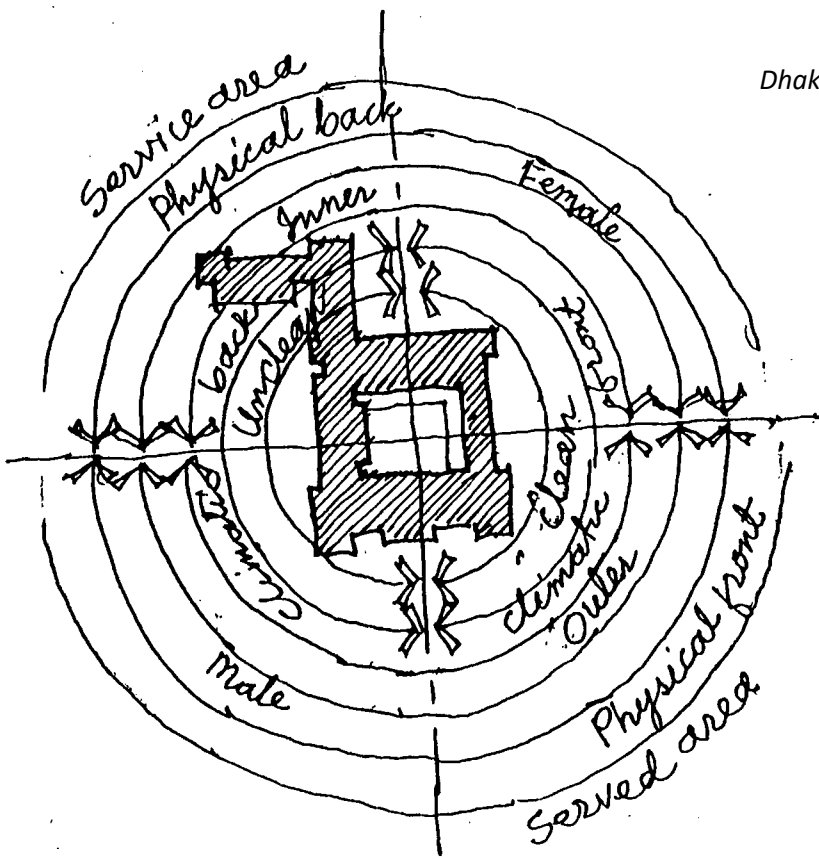
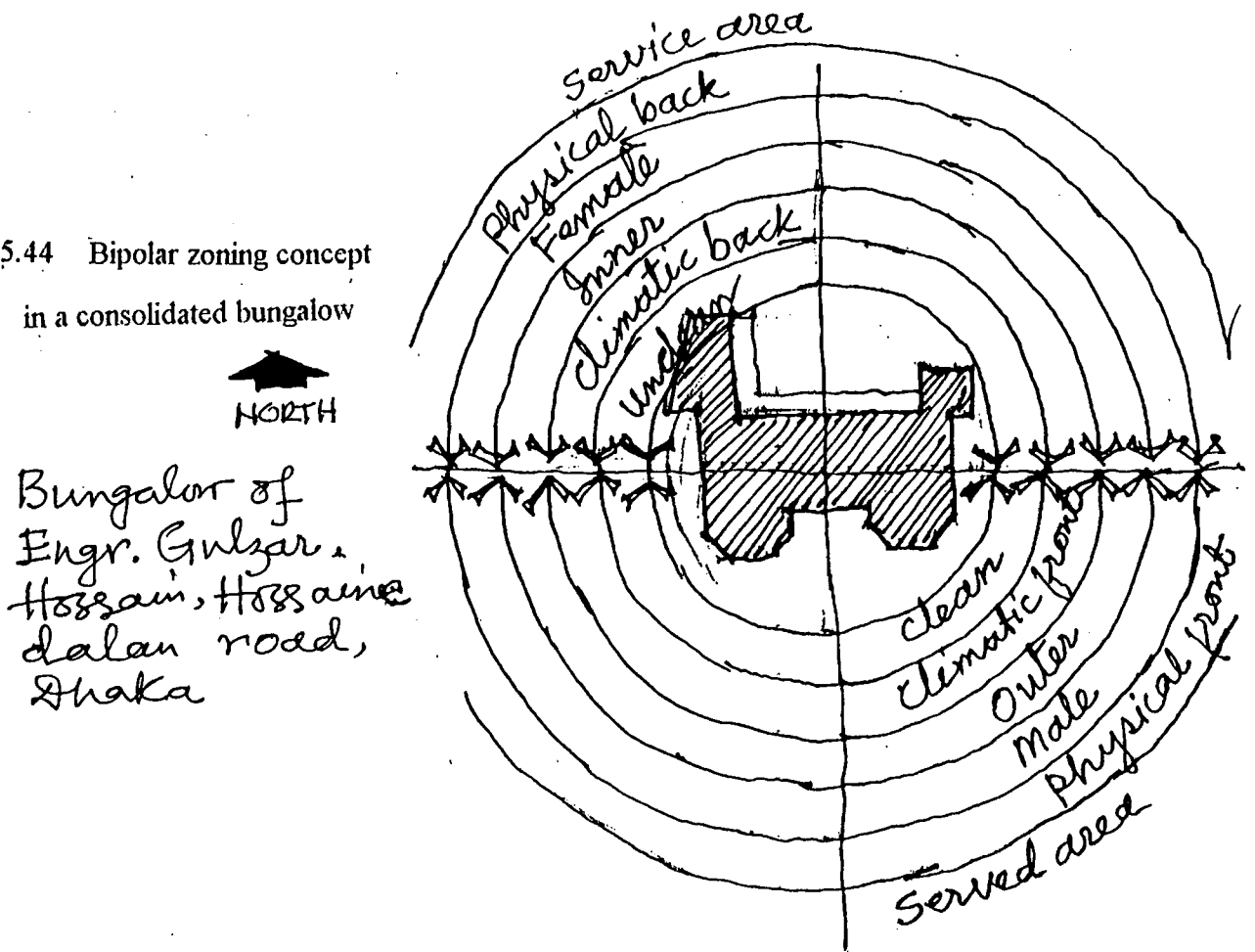
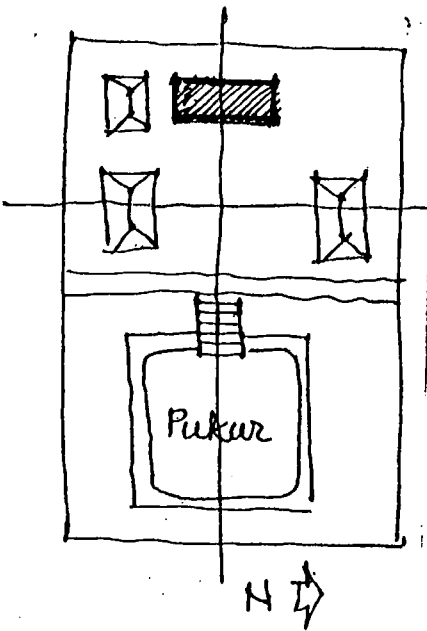


Fig-5.43 Bipolar zoning concept in a zamindar house-Murapara house

Fig-5.44 Bipolar zoning concept in a consolidated bungalow



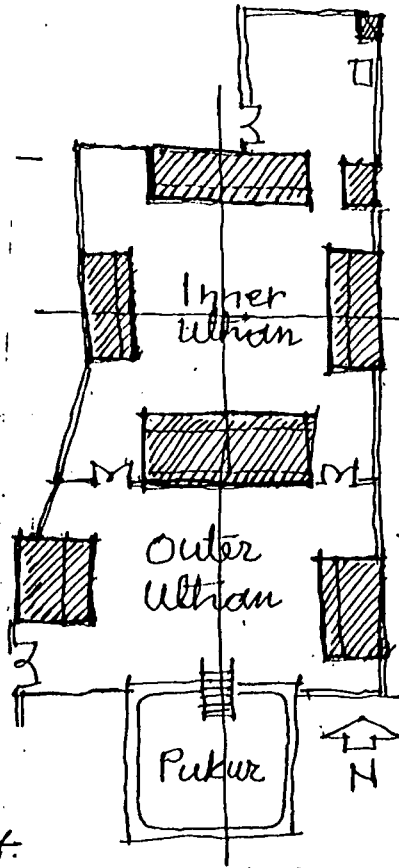
Bungalow of Engr. Gulzar, Hossain, Hossain dalan road, Dhaka



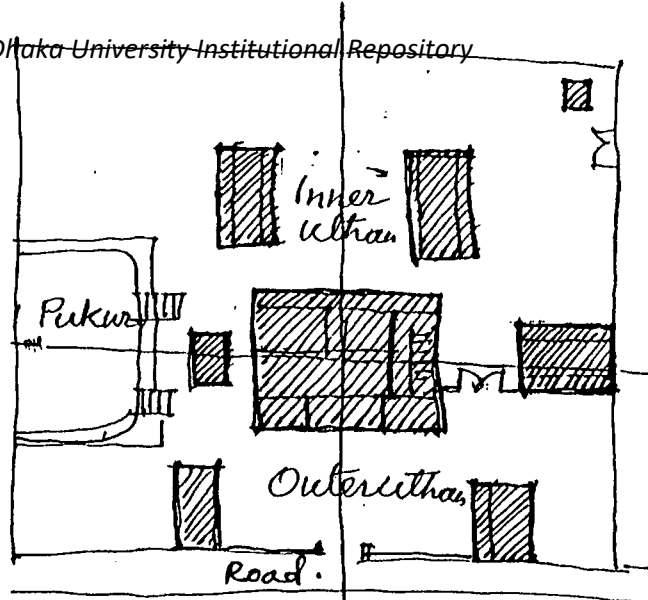
Chakrabarty bari, Kalashkati, Barisal. One pucca dalan, Rest of the ghars are similar to the rural single ghar unit.



Fig-5.45.1 Stage-1



Dewan bari, Ameen bazar Savar, Dhaka Detached house units P-267

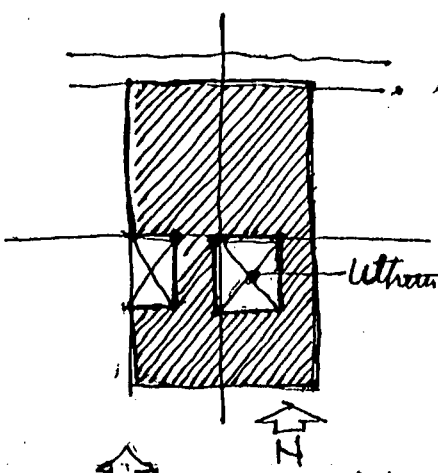
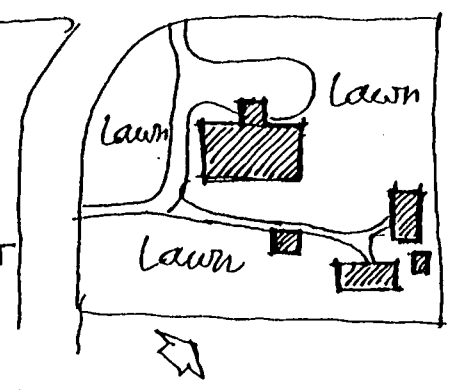


Urban, House of Gagan Saha, Brahmanbaria Detached house units with one bungalow type out house with multiple rooms of two/three rooms depth and two verandas in both sides

Fig-5.45.2 Stage-2

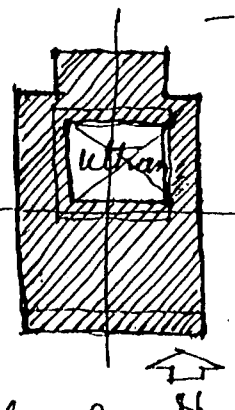
St. Governor's bungalow, Shahbagh-Nilkhet, Dhaka Composite bungalow

Fig-5.45.4 Stage-4



Urban house of Jagannath Saha, Lalbagh, Dhaka Enclosed courtyard type house

Fig-5.45.3 Stage-3



Urban house of Rup Narayan, Simson road, Dhaka

Fig-5.45.5 Stage-5 Consolidated Bungalow

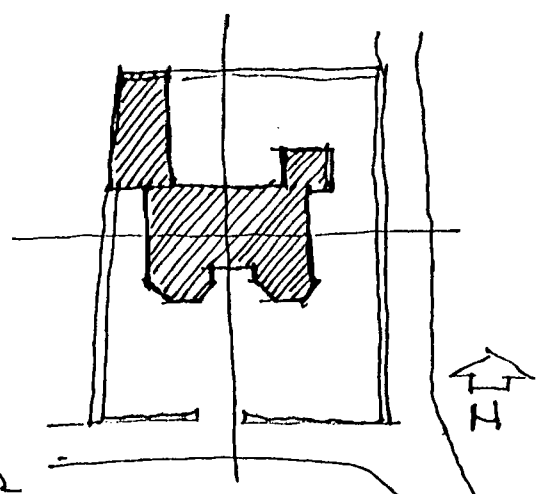


Fig-5.45 Transformation of house form

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Chapter-6

MATERIALS AND CONSTRUCTION SYSTEM

Chapter-6

MATERIALS AND CONSTRUCTION SYSTEM

6.0 Introduction

Although many components and elements of the houses were Mughal and European, their construction system was mainly dependent on local materials, techniques and craftsmanship (6.1). The study includes in this chapter-materials and construction system employed in the houses for the better understanding of the materials used and its construction system. This chapter deals with the various types of materials for the building, finish and ornamentation, their uses, and the system of construction. The construction of different house components and elements are also discussed.

6.1 Materials

During the early colonial period(6.2) the houses were built of temporary materials like wood, thatch, bamboo, reeds (6.3) etc. The PWD, railway (6.4) and military board (6.5) etc. departments had been constructing the semi-pucca houses for a long time for their employees. After the industrial revolution (1760-1830) during the last half of 18th century, C.I. sheet, C.A sheet, steel joist (fig-6.3.5, 4.21.16) angles (6.6, fig-6.8) flat bar (fig-6.3.4) readymade building components like steel columns (fig-4.21.19, 4.22.2, 4.21.15), stair (fig-4.35.6) railing (fig-4.34.4-4.35.6) bracket (fig-4.36.4), steel latic works (fig-4.32.1), steel drops with glazing (fig-4.33.9) etc. had been used in this country. Materials could be divided into three groups-a. building materias (table-6.1), b. finish materials (table-6.2), c. materials for ornamentation (table 6.3). Houses were constructed with very limited number of materials. The building materials used were brick, lime concrete, cement concrete, R.C.C, clay roof tiles, ceramic tiles etc. The materials used in the different components and elements are shown in (table-6.1)

Tablr-6.1 : Building materials

Sl. no.	Components/elements	Materials
1.	Foundation	Lime concrete, brick
2.	Wall	Brick
3.	Column	Brick, steel, timber
4.	Pier	Brick

(cont)

Sl. no.	Components/elements	Materials
5.	Floor	Brick, lime concrete, lime mortar, cement moter
6.	Arch	Brick
7.	Lintel	Brick, timber, steel angle, flat bar, joist
8.	Beam	Timber, joist
9.	Rafter	Timber, steel angle, flat bar
10.	Roof	brick, clay tiles, cernic tiles, lime
11.	Door and window frame	Timber
12.	Door/ window shutter	Wood, steel plain sheet
13.	Stair	Brick, timber, steel
14.	Parapet	Brick
15.	Dome/vault	Brick, lime concrete

Similar to the building materials, finish materials of limited varieties were used in the houses. Few materials eg, brick, timber, etc, were used both as building and finish materials, Brick, plaster (lime and cement), stone, timber, ceramic china clay tiles, were used as floor and wall finish materials. Timber, steel sheet (6.7) etc. were used as ceiling materials. Lime and *chunam* were used as colouring materials. Varieties of finish materials are shown in table-6.2.

Table-6.2: Finish materials

Sl. no.	Components/elements	Materials
1.	Floor	Neat lime finish, stone, timber, colour cement, red oxide, white cement
2.	Wall surface	Lime plaster, Exposed bricks, ceramic clay tiles
3.	Ceiling	Plaster, wood, steel
4.	Door and window shutter	Wood, glass
5.	Balustrade/railing	Lime concrete, brick masonry, wood, steel/iron

Ornamentation in the houses was done with very limited number materials. Lime mortar was primarily used for this purpose. Other materials were brick, mosaic, wood, steel, tinted galss etc, shown in table-6.3

Table-6.3: Materials for ornamentation

Sl. no.	Components/elements	Materials
1.	Wall surface	Plaster/mortar, lime concrete, brick, mosaic (<i>chini-tukri</i>) terrazzo, colouring ingredient
2.	Column base	Brick, lime concrete, lime mortar, steel, wood
3.	Capital	Brick, lime concrete, lime mortar steel, wood
4.	Pediment	Brick, plaster, mortar, lime concrete
5.	Rusticated block	Brick, lime mortar, lime concrete
6.	Moulding/projection	Lime concrete, lime mortar, XPM
7.	Band	Brick, lime mortar, lime concrete
8.	Bracket	Lime concrete, cement mortar, steel, wood
9.	Dentil	Brick, lime mortar
10.	Spout	Burn clay pipe, cast iron pipe, lime mortar lining
11.	Kiosk	Brick, lime concrete
12.	Drop	Wood, plain sheet, C.I. sheet, tinted glass, XPM
13.	Ceiling	Lime mortar, wooden plank

6.1.1 Brick

Building material most readily available in Bangladesh was brick. Brick was found as material of construction throughout the colonial period. Bricks were used throughout the period for foundation, wall, floor, stair and even in roofing and parapet. Bricks were hard and red in colour, usually burnt with timber logs in the early colonial period. Subsequently after the mid 19th century the use of coal in *pazawahs* (6.8) was introduced by the colonists. The coal burnt bricks found to be superior than timber burnt bricks.

Brick sizes vary from house to house and time to time and infact are useful means to asses (predict) the period. Simple rule is smaller the brick sizes, older the house. In general 6"x4"x1 1/2" size indicates early period (which are found in the old buildings of Sonargaon, fig-6.1.1 Natore *rajbari*, Putia *rajbari*, Kalaskati, Dinajpur *rajbari* etc.) 8"x4"x2" size indicates middle period (1857-1905) and 10"x5"x3" size (6.9) indicates late colonial period (1905-1947).

Besides the normal size bricks, special type bricks were also used in the houses. Circular bricks were used in the circular columns in many house (fig-6.1.2-6.1.5).

(eg, Murapara house fig-6.1.3, Kalaskati, town Sreepur, Painamnagar, Ruplal house, fig-6.1.4, manager's bungalow, Ahsan monzil. fig-6.1.2 Natore *rajbari*. fig-6.1.5).

Special types bricks were used in the bases, shafts, capitals, projections, sills, parapets, copings etc. Bricks are also used as the materials for ornamentation and used in the wall surfaces, columns, capital, pediments, rusticated blocks, bands, dentils etc.

6.1.2 Timber

Timber had been used in the houses in this country from the ancient time. Timber was used in the houses as building, finishing and ornamentation materials. Timber was used as posts (fig-4.21.11), beams (fig-6.3.10), rafters (fig-6.1.4), purlins, ceilings (fig-6.3.9), railings (fig-4.34.3, 3.34.8.1, 4.34.2, 4.34.9.1, 4.34.9.2), **balustrade** (fig-4.35.4), bracket (fig-4.36.1), drops (fig-3.31.3), **shading** device (fig-4.30.4, 4.30.9) etc, even in floors. Teak (segun), sal, kathal, mehgan, jarul etc, timbers were used in the house construction. In the early colonial period timbers were used in almost all the house components.

Timber was used as finish material in floors (6.10, fig-5.28, 8.29.2), ceilings (6.11, fig-6.3.9), sills (6.12), fireplaces (fig-4.37), stairs (fig-4.6.1, 4.6.2) drops (fig-4.31.2, 4.31.3) etc. Timber is also used as decorative materials in door and window shutters (fig-4.27, 4.28, 7.52, 7.53).

6.1.3 Iron and steel

Brick and timber together were used in the building industry for a long time until the mid 19th century. 'The people of this country have from time immemorial been constantly engaged in a search for things of lasting value, things of a permanent character, in contrast to those of ephemeral nature' (6.13).

After the industrial revolution the iron and steel had been using in the houses in this country. Steel post (fig-4.21.19, 4.22.2), joists (fig-6.3.5, 4.21.16) and flat bars (fig-6.3.4) etc, **ready-made** decorative building elements were imported from England. At the later stage these were manufactured at Calcutta. Iron grill materials for railings (fig-4.36.4, 4.34.6), drop (fig-4.31.1), etc. of beautiful design were available in the local market. Decorated iron ventilators (fig-4.46.2), window grills (fig-4.28), spouts, brackets (fig-4.36.4) etc, were also used in the houses. Readymade spiral stairs (fig-5.35.6) were used in many houses (6.14). The grill materials were generally wrought

iron and steel, usually varied in diameter from 1/2" to 5/2". Steel sheets were used as ceiling material (6.15). Iron gates were also found in the houses (fig-4.12.2.7). Joists were used in the railway quarters *methor patties* as posts (6.16, fig-8.40.4).

6.1.4 C.I. Sheet and C.A. sheet

C.I. sheet was introduced in this country by the colonists. After the industrial revolution C.I. sheet was commonly used all over the country. In buildings these were used on the verendah (fig-8.30.4), sheds (6.17), pent houses and in the corridors connection of the service blocks with the main bungalows (6.18). C.I. sheets were extensively used by the railway department for its sheds, staff quarters and bungalows (fig-8.31.2). In the Sylhet region (6.19), C.I. sheet was used for every types of houses-- govt (fig-8.28.2), autonomous, garden (fig-8.37.2, 8.37.3), bungalows and circuit houses etc. The *methor patties* were usually constructed by C.I. sheet (fig-8.40.2, 8.40.3, 8.40.6). C.I. sheet was also used in sunshades, and gates (fig-4.12.2.9). C.A. sheet was gradually became popular in this country after the second world war and was used by the govt, and autonomous bodies.

6.1.5 Lime concrete

Lime concrete was a popular cementing materials and used throughout the colonial period. Lime was manufactured in the large towns like Dhaka, Chittagong, Sylhet, Rajshahi etc. Aggregates were brick chips and *surki* (6.20). Stone aggregates were not used in lime concrete. Lime concrete was used in foundation base (fig-6.2.1), footing, floor, lintel, roof terracing (fig-6.3.3, 6.3.4, 6.5.1). Lime concrete piles were sometimes used in the railway quarters (fig-6.2.2). Lime concrete was used in making the projection and moulding.

6.1.6 Cement concrete

Though cement and cement concrete had been used in Europe since 1844 (6.21) it was first introduced in this country in the early 20th century. Cement mortar had been used in the railway houses in 1930s. Cement concrete is found in the houses of Reboti Mohan Das, Ruplal house and house of Joydevpur *raj* at Imamganj, Dhaka. White cement is used in the floors of Devendra Mohan at Wari (6.22). Though

cement concrete had been gradually used in a few houses of early 20th century, its use was not extensive and popular throughout the colonial period in Bangladesh.

6.1.7 R.C.C.

Reinforced Cement Concrete (R.C.C) was not popular throughout the colonial period. Its use was limited and found in few of the houses (6.23) at Dhaka in the early 20th century.

6.1.8 Terracota roof tiles

Terra-cota roof tiles are very old building materials for seating the roofs of the houses (fig-8.9.5). These were used in the inclined roofs with the timber framing. In the buildings, these were used in the inclined verendah sheds, corridors or in the service blocks.

6.1.9 Clay brick tiles

Clay brick tiles were used in the roofs in between the rafters and the lime concrete roof terracing (fig-6.3.3, 6.3.4) in the flat roofs of the houses. The flat roofs in the colonial houses were possible for this new materials. The colonists introduced this type of roofing system in this country which was extensively practiced by the local builders. The tile sizes varied from 6"x6" to 6"x12" and 12"x18". The thickness of the tiles varied from 1 1/2" to 2".

6.1.10 Mortar

Lime was extensively used as binding material in mortar and plaster. *surki* and sand were used as fine aggregates. Upto about 1920s, practically all mortar and plaster used as in the buildings were composed of lime and *surki*. Lime plaster in some form or other was the only finish material in this country for surface finished available until Aspdin patented portland cement in 1824 (6.24). Portland cement mortar was introduced in this country by the colonists in 1920s when it had been used in the limited houses. Various types of portland cement including coloured cement (white cement) was used in some of the houses.

A surface comparable to the stone of European classical prototype was obtainable through the use of a lime plaster made from sea shells, called '*chunam*'. It produced a lustrous sheen so diaphanous as to be likened to polished glass, providing an

effective substitute for marble (6.25). This plastering material *chunam* was imported from Madras and used with lime mortar as neat lime finishing to many houses of the country (6.26).

Lime mortar also was the prime material for ornamentation. Best quality of lime was used for this purpose. This lime mortar is used in multiple of layers. Some times this was reinforced with XPM (6.27). Lime mortar was used in lining, projection, moulding, banding, *jali* works etc, Sometimes *chunam* was also used as finishing coat on the decorative elements.

6.1.11 Stone

Stone was used in this country as a finish material. It was never used as structural or building material. Marble of different colours (white, black, grey etc,) were used on floors in the zamindars (6.28), urban (6.29), and prestigious government houses (6.30). The marble used on the floors were compact, crystalline in texture, fine grained and polished to a fine polish. The sculptures (6.31, fig-8.17.2) were made of marble. Besides marble, sandstones were used in some of the houses (6.32).

6.1.12 Ceramic glaze tile

Ceramic glaze tiles (China tiles) of different colours and designs were used in many houses (6.33). These were imported from England. These were used on the walls and floors. Tiles were also used on the entry steps in some of the zamindar houses (6.34).

6.1.13 Glass

Plain clear sheet glasses of different thickness (3mm, 5mm etc) were used in doors and windows from the early 19th century. Glasses were imported from England. Decorated glasses of floral pattern were also used in many houses. Tinted glasses were used in many houses for decorative and protective purposes. Tinted glasses of basic colours were used in many houses in the upper portion of the arches in the archades (6.35).

6.1.14 Terrazzo and mosaic

Terrazzo and mosaic had always played a vital role in the finish and decoration of floor and wall surfaces. Terrazzo works were found in some of the houses (6.36) from the beginning of 20th century. Another common feature found is the *chimitukri*

(6.37) decoration-- the colonial masons used a new materials for surface decoration.

(6.38). The *chinitukri* mosaic of ceramic tiles in walls finish is found in few houses of urban and rural areas. In most of the houses these are collected from broken china crockeries. The size of the pieces varied from 1/2" to 2". Sometimes new ceramic tiles were broken to get similar colour of tiles (6.39).

6.2 Honoest expression of materials

Sometimes materials were used in their original texture, colour etc. This type of fare face surface treatment was common and found in rural, urban, *dak* bungalow and circuit, railway and government etc, houses, where the brick surfaces remained exposed and unplastered with its original texture and colour (6.40, fig-8.24.3-8.24.5).

The wooden surfaces remained unpainted and found in some of the houses (6.41).

The outside walls of the houses were plastered by lime mortar and these would remained unpainted in most of the time in many houses. Sometimes '*chunam*' was mixed with the lime mortar in the floors and walls which remained uncoloured expressing the original colours of the materials (6.42).

6.3 Construction system

Since architecture is an integration of function, design and construction, it is true that the local technology and materials have a strong influence upon both the planning, organization, facade treatment and ornamentation of the houses. Construction system had been controlling element in house **builtform** and its architecture. The colonial builders always followed a known system of construction with limited materials. The system of construction of different components of the houses is shown in the table 6.4.

Table 6.4- Construction system of the components

Sl. no.	Component	Construction system
1.	Foundation	Stepped and spread foundation, small piling
2.	Exsterior wall	45"-55" to 15"-20" thick load bearing walls, Doric, ionic, corinthian and composite type of load bearing and non-load bearing decorative columns, wooden, cast iron and brick columns, piers
3.	Partition walls	Either 15" or 10" load bearing walls

Sl. no.	Component	Construction system	(cont)
4.	Floor	Brick soling and lime concrete flooring, wooden floor	
5.	Opening	Archade, colonade and lintel	
6.	Roof	Timber beam, rafter or iron joist, flat bar with clay brick tiles and lime concrete, lime roof terracing	
7.	Moulding and projection	Lime concrete, brick	

6.3.1 Foundation

Foundation practiced in the houses was always spread type and usually stepped in nature. Usually the spread wall foundation (fig-6.2.1) for the load bearing walls and spread footings were used for the columns, posts and piers of the houses. Stepped footing for the walls was used on the lime concrete foundation slab. In some of the railway houses where the bearing capacity of the soil was low, short piling of lime concrete was used (fig-6.2.2).

6.3.2 Wall

In 100% houses the walls are made of bricks and are load bearing. The frame structure was not found any where. The walls in the houses of early colonial period were very thick-- eg, the thickness of the walls were 55" and 40" in the Neemtali gate house and Kalash Kati zamindar house (Rajeswary Roy Chowdhury) respectively. Starting with the construction of 'Baro dauri' (6.43) and its gate house (fig-4.12.1-4.12.1.4), Kalash kati zamindar house (rajeswar Roy Chowdhury), Natore *rajbari* etc, houses which were built in the middle of the 18th century, a change had been noticed in the house construction system. The wall thickness had been gradually decreased upto 20" to 15" in different types of houses and ultimately it decreased upto 10" in the railway quarters built in the 1930s.

6.3.3 Bond

The bonds in the interior of the thick walls were almost rubble type (fig-6.1.3) in the houses in the early colonial period. Gradually a definite type of common and English bonds (fig-6.4.1, 6.4.2) developed and practiced in the walls of the houses. Herring bone, diagonal and zig-zag bonds were used in the floors.

6.3.4 Joint

Joints were usually thick, 1" to 1 1/4" in the houses constructed in the lime mortar. Gradually the thickness of the joints reduced 1 1/2"/1" to 3/4"/1/2" when the walls were constructed with cement mortar in the beginning of the 20th century. Usually recessed and flash joints were used in the houses. Sometimes bedded joints were also used in some of the railway quarters.

6.3.5 Column and pier

Columns and piers were usually constructed by bricks. Bricks of special types and circular bricks were used in the circular columns (fig-6.1.2-6.1.5). Column bases and capitals are mostly for decorative purposes and made of either bricks, lime concrete or mortar moulding. Wooden columns or posts were used in the verendahs, balconies (6.44) etc. Steel joists, angles, pipes etc, shape readymade columns also used in the houses. Readymade steel columns with decorative base (fig-4.22.2, 4.21.9) and capital (fig-4.23.12) were also found (6.45).

6.3.6 Plinth

The plinth of the houses was usually high and covered with sand. A prototype floor (fig-6.2.1) construction-- lime concrete on brick soling was practiced throughout the colonial period. In the areas in the southern and other districts where the penetration of damp is a problem, series of vaults were used at the plinth level (fig-6.2.3, 4.19.3). To avoid this problem of penetration of damp through the floor, another technique, keeping the void spaces in the floor is also practiced (6.46).

6.3.7 Opening

Usually the door openings were supported either by lintel, semicircular or segmented arches. Sometimes door were supported by flat arch (fig-6.5.2). Very small openings were simply supported by the door or window frames only. Lintel were supported by steel angles at the corners of the wall (fig-6.8). Segmented arches (fig-6.5.3) were supported by multi layer bricks on edges (fig-6.5.3). The circular openings for rose windows (fig-6.6) or **traciodal** openings (fig-6.1.2) or windows were circled by bricks on edges. Sometimes false arches are constructed to minimise the load on the lintel or segmented arch of the openings (6.47, fig-6.1.6, 6.5.3). The colonnades are

always spanned by the lintels or beams (fig-6.3.10, 6.7.1). Wooden beams (fig-6.7.1), steel joist (fig-6.3.11), double steel joists etc, are used for supporting the loads.

6.3.8 Roof

Four types of roof construction had been indentified to be adopted in the houses shown in the table 6.5.

Table 6.5- Types of roof construction

Sl. no.	Types	Examples
1.	Vaulted roof	House of Rajeswar Roy Chowdhury at Kalaskati (fig-6.3.1), Satish Poddar, Painam nagar, middle part of Neemtali house
2.1	Wooden beam and rafter	Rose garden (fig-6.3.7) Bhawal <i>rajbari</i> at Dhaka, Anwar Chowdhury, Wari, (fig-4.36.1)
2.2	Steel joist and wooden rafter	Houses of Shiba Nanda Poddar, Painam nagar, Ruplal house Gagan Shah, Paikpara, Brahmanbaria (fig-6.7).
2.3	Steel joist and steel flat bar	Bungalow of D.I, Khulna, Bardawan house, Dhaka. <i>kuthi bari</i> of Wais, Waisghat, Dhaka (fig-6.3.9), Bardawan house, Dhaka .
2.4	Steel joist and steel angle	<i>Dak</i> bungalow, Satkhira
3.	Jack arch	House no. 66, Phulbaria railway colony, Dhaka, Quarters of railway colony, Brahmanbaria (fig-6.5.1)
4.	R.C.C beam and slab	Reboti Mohan Lodge(north block), Sutrapur, Dhaka.

Mughal system of vaulted roof construction was followed in the houses of early colonial period in the second half of 18th century. Brick vaults are found in the houses in this period (6.48). At the beginning of 19th century the roofs were built with wooden beams and rafters (fig-4.36.1, 6.3.3, table-6.5). A change had been noticed in the roof construction at this time. The vaulted roofs or the wooden beam and rafter system had been gradually changed and steel joists and flat bars becoming more popular are found in many houses (fig-6.3.4). The building components such as iron posts, stairs, balustrades, railings, decorated clear story windows, ventilators, iron spouts etc, built by the British manufactures during the period of industrial

revolution in England replaced many traditional materials and components. These machine made new house components were also used by the local builders within the perimeter of local condition and they subsequently changed the facades of the houses. Jack arch (fig-6.5.1) roofing system was developed by the PWD and railway engineers in this country and was extensively used in the houses.

Vaulted roofs with steel framing and C.I. sheet seathing were practiced by the railway, PWD and **Municipal** engineers. *Methor's patties* (fig-8.40.3), railway labour sheds between the two stations etc, were constructed with this type of roofing. Vaults made of lime concrete were used in small span structures (6.49) eg. the roof of the lavatories. This type of vaulted lavatories were seen in many places in Bangladesh.

6.3.9 Stair

Stairs were constructed with various type of materials-brick, timber, steel etc. Solid brick masonry stair was used in some of the houses (6.50). Steel joist and flat bar are used in many stair flights (6.51) . Readymade circular steel stairs are also found in many houses (6.52).

6.4 Manpower employed in construction

The experienced *raj mistries* (masons) were in charge for the construction of private houses. Most of the zamindar and urban houses were designed by the professional designers, though they were not qualified architects. A Calcutta based architectural firm 'Martin and company' (6.53) was found to be the designers of many prominent houses in Bangladesh.

The mention of *shilpins* or architects as we call them today and the numerous artisans of old in the early texts confirms that qualified as professionals and man of a number of subsidiary vocations (*kamar, sutradar, ustagar, kamar*) were engaged in building construction. Besides this it seems that the owners had sufficient knowledge of supervising the houses. A reference of atleast of dozoon of *bichyas* or branches of knowledge mentioned that a normal *nagorika* or citizen was supposed to know in order to equip himself as such. Among the dozen *vidyas* that were mentioned include architecture and knowledge of floor tiling (6.54).

Few trained architects (eg, Martin and Company) found their way to the 18th century towns of Bangladesh and much houses designed by them were adopted from the pattern books (6.55).

In the beginning of the colonial era, during the 18th century, military engineers assumed charge of major government houses. Beginning in 1854, government houses were designed by the architects of PWD (6.56). Works of this department were placed under the control of military engineers and they involved the civil engineers in their staffs.

Construction was usually under the direction of a *mistree*, equivalent of a master builder. Building methods were governed by long tradition and hereditary caste, and in general, local *mistrees* seemed declined to be driven out of their own customs, and to try experiment (6.57).

6.5 Discussion

The houses in the colonial period followed the European renaissance and classical style through some of the components and elements were Mughal. Their construction was mainly dependant on local materials, technique and craftsmanship.

Although in the beginning of the colonial era, the houses were built of temporary materials like thatch, *ekra* bamboo, wood etc, eventually the railway department, military board and PWD etc, began to build the semi-pucca houses for their employees, After the industrial revolution, C.I. sheets, C.A. sheets, steel posts, angles, flat bars, ready made building components like steel stairs, railings, brackets etc, had been used in the houses .

Houses were constructed and finished with very limited number of materials. Bricks were found as major building materials throughout the colonial period. Besides the normal bricks of various sizes, special bricks were also used in various elements of the houses. The size of the bricks was small in early period, eventually large size were used in the later period .

Timbers of various types were used in the houses as the building, finish and material of construction throughout the period. Gradually timber posts and beams were

replaced by the readymade iron and steel elements and components like joists, flatbars and iron posts etc.

C.I. sheets and C.A. sheets are the colonial materials used in the walls and roofing. Clay roofing tiles in the form of clay brick roof tiles and terra cotta roof tiles were used as the seathing material of the roofs.

Lime concrete was a popular material and used throughout the colonial period. Brick chips were used as aggregates. Stone aggregates were not found in this period. Cement concrete was not popular throughout the colonial period. It was used only in few of the houses from the early 20th century. R.C.C was also not popular in this period. It began to be used from the early 20th century.

Lime was extensively used as binding material in mortar and plaster, Lime plaster in some form or other was the only finish material for surface finishing. Cement mortar and cement plaster was used in few houses from 1920s. Sometimes *chunam* was mixed to the floor and surface finishes. White cement flooring was found in some of the houses at the later stage.

Stone was always used as floor finish material and was never used as the building material. Stone flooring is found only in the zamindar, urban, and government houses. Marbles of various colours are used on the floors. Besides marble, sand stone is also found in some of the houses.

Ceramic China glaze tiles of various colour and pattern were used on the walls and floor surfaces. These ceramic tiles were imported from abroad. Plain clear sheet glasses were used in the doors and windows from the early 19th century. Tinted glasses of basic colours were used in the upper portion of the arches in the archades.

Limited varieties of materials were used as the materials of ornamentation. Lime mortar was the prime material of ornamentation. Terrazzo and mosaic were found in some of the houses from the beginning of the 20th century. *Chinitukri* mosaic decoration is found in some of the houses .

Honest expression of materials is noticed in many houses. Unplastered brick surfaces which were found in many buildings in the preMughal time also seen in many colonial houses (6.58). Wooden and lime plaster surfaces also remained **uncoloured** and found in many houses.

It is observed that the house construction took a definite shape in the colonial period. It is also found that the local technology and materials had a strong influence upon planning, organisation, facade treatment and ornamentation of the houses.

A temporary type of construction like thatch houses with wooden posts was found in the early period. Gradually this type of construction was replaced by permanent structures of load bearing walls. Spread type of foundation was always practiced. Spread foundations of brick masonry and lime mortar is found in 100% of the houses.

The thickness of the walls was always more than 10". Wall thickness was 55" to 40" in the early colonial period. The average thickness of the walls was 20" to 15" in most of the houses. From the beginning of 20th century the wall thickness decreased to 10" by the railway engineers in the railway quarters.

Rubble type of bond in brick masonry was practiced in the thick walls in the early colonial period. Common and English bonds were practiced throughout the period in 25" to 15" thick walls. Joints in brick masonry was 1" to 1½" thick.

Columns and piers were usually constructed by bricks. Bricks of special types and circular bricks were used in the circular columns. Wooden posts were used at the verendahs, balconies etc, places. Steel joists, angles, pipes readymade steel columns were also used in the houses.

Floor of the houses was always constructed with lime concrete. A prototype floor construction, lime concrete on brick soling was practiced throughout the period. Series of vaults were used in the southern and other districts at the plinth to protect the plinth from damp. Neat lime finishing was popular throughout the period. D.P.C was not used in the walls or floors.

Door and window openings were always supported either by segmented or round arches or by lintels. Sometimes openings were supported by flat arches. The practice of false arches to minimise the load on the arches was also found. The colonades were always supported by lintels and beams. Archades were supported by arches on piers. Traciodal and rose windows circled by bricks on edges are found in many houses.

Four types of roofing systems were found during this period-- the vaulted roof, beam, rafter/flat bar roof, jack arch roof and R.C.C roof slab. Brick vaulted roof construction was practiced in the early colonial period which was followed by the wooden beam and rafter system. Gradually, this wooden beam and rafter system was replaced by steel joists and flat bars. Jack arch system of roof construction was practiced by the railway and PWD engineers. R.C.C flat roofing was used in very few houses in the early 20th century.

Raj mistries were the master builders. The *mat* or the head *mistre* was experienced in house construction and supervised the entire works. The artisans, *mistries* or other *shilpins* such as *ustagars*, *sutradars kamars*, and *kumars* etc, were also engaged for their respective works. Some well to do *nagarika* or citizen also had sufficient knowledge for supervise the construction works.

This chapter is followed by chapter-7, facade treatment and ornamentation in the houses.

Reference : Chapter-6

- 6.1 Norman Evenson, The Indian Metropolis, opcit, P-48.
- 6.2 The period ruled by EIC from 1757 to 1857 is termed here as early colonial period.
- 6.3 In 1803, a young army officer, Henry Roberdeau wrote, 'the Englishman live in what are really stationary tents which have run ground on low brick platforms. They are bungalow, a ward I know not how to render unless by a cottage. These are always thatched with straw on the roof and the walls are sometimes of bricks and often of mats... To hide the slopping roof we put a kind of artificial ceiling made of white cloth.. There are curtain over the doorway to keepout the wind.. I have two bungalow's near to each other. in one I sleep and dress and in the other, sit and eat'.

S.Nelson, European architecture in India, 1780-1850, Faber, London, 1969, P-186, A.D King, Bungalow, P-28.

According to John Lock wood Kipling, founder of Bombay school of art, 'our early residents in India engaged in military, administrative or trading duties, lived a nomadic life for the greater part of the year in tents, and since there was nothing in the indigenous building of Bengal suited to their requirements'.

J.L. Kipling, The origin of bungalow, country life of America, vol-19, no-8, P308-310, A.D. King, bungalow, opcit, P-28.

The first thatched bungalow for S.D.O. Khulna was built at the north east corner of Mirjapur field. In 1845, the first permanent building was built for S.D.O. which is now occupied by D.C Khulna. Abul Kalam Shamsuddin, *Shahar Khulna, adiparba, Khulna shahitta majlish*, 1984, P-12.

- 6.4 Railway transportation was developed during the colonial period in Bangladesh by various companies like DMR, ABR, EBR, NBR etc. The bungalows and quarters were constructed in the railway colonies by the respective companies.
- 6.5 Before the establishment of PWD in 1854, the military engineers were responsible for the construction of the colonial government houses. PWD occasionally engaged consulting architects. 'Martine and company (Calcutta) was one of them who was engaged as consulting architect in several building in Bangladesh. Norman Evenson, *The Indian Metropolish opcit*, P-48.
- 6.6 Steel angles are used in the ceiling of Satkhira *dak* bungalow which is a new type of construction very rarely used in the houses.
- 6.7 Steel sheet is used in the ceiling of Rose garden, Dhaka, and painted.
- 6.8 *Pazawah* is a Uresyan term for burning the brick in a clamp. It is very slow process. Prof. G.J. Kulkarni, *A Text book of Engineering materials*, Ahmadabad book dept. 1965, P-80. The colonists introduced this system of burning bricks in *pazawah* in this country.
- 6.9 This 10"x5"x3" size includes one mortar joint.
- 6.10 Timber flooring is found in many government (bungalow of Lt. governor, governors house, Bardawan house etc), zamindar (Ruplal house), urban (Rupnarayan house), *bagan bari* (Zamindar of Tapa, Rangpur) etc, houses.
- 6.11 Wooden ceiling is used in many houses (eg., *chota taraf*, Natore *rajbari*) to reduce the height of the ceiling and to reduce the heat.
- 6.12 Sills in the houses were decorated with many materials. These were also finished, covered and decorated with wood (eg, bungalow of district magistrate, Rajshahi).
- 6.13 Kamala S. Dougerkery, *Interior decoration in India. opcit*, P-2.
- 6.14 Iron and steel spiral stairs were imported from England. The components of the spiral stairs were prefabricated and were assembled on the site. Sometimes these were used as service stairs (eg, Ahsan monzil, Rose garden, Dhaka).

- 6.15 The ceiling of the dance hall of Rose garden is finished with steel plain sheets framed in wooden planks and painted.
- 6.16 C.I. Sheet is Corrugated Iron sheet and C.A sheet is Corrugated Asbestos sheets. Asbestos cement, invented in 1889 and used for making sheets (A.D. King, Bungalow P-121) and exported to Bangladesh.
- 6.17 Previously the verenda sheds were covered by the clay roof tiles, subsequently these were replaced by the C.I. sheets.
- 6.18 The connecting corridors were always covered by the C.I. sheets in the colonial zamindar (eg. Joydevpur rajbari), government (eg. bungalow no. 35, Ranma colony, Dhaka) etc, houses.
- 6.19 C.I. sheet houses in various design and form is constructed in the Sylhet region. After the earth quake of 1888, the light construction with C.I. sheet is practiced in the region.
- 6.20 *Surki* meaning powder of brick is prepared by breaking and grinding of bricks. It is locally known as *surki* which is used in the preparation of lime concrete.
- 6.21 Caleb Hornbostel, Materials for Architecture, opcit, P-116 and 158.
- 6.22 White cement of high quality and glazing was used in the house of Devendra Mohan Das at Wari. It could be so glittered and shining that it seems marble in finish.
- 6.23 R.C.C. construction was found in the north block of Reboti Mohan Das. in pent house at second floor of Ruplal house and R.C.C. post of the house of Bhawal *raj* at Imamganj, Dhaka.
- 6.24 Caleb Hornbostel, opcit, P-116, 158.
- 6.25 Norman Evenson, The Indian Metropolis, opcit, P-51.
- 6.26 The use of *chunam* is seen in the Mughal buildings (eg. *Bara Katra*) of Bangladesh. The first use of *chunam* in colonial houses was the Neemtali gate. After that it had been used in many houses.
- 6.27 XPM is the Expanded material.
- 6.28 Marble was used on the floors in many zamindar houses of the country. It is used even in the zamindar houses of the remote rural areas (eg. zamindar houses of Kalaskati). Followings are the few examples where marbles were used on the floors- Murapara zamindar house, Mymensingh *rajbari*, Dinajpur *rajbari*, Natore *rajbari*, Ruplal house, Digaputia *rajbari*, Joydevpur *rajbari*, Putia *rajbari*, Bhawal *rajbari* at Imamganj, Dhaka.
- 6.29 Marble was also used in many urban and other types of houses. Followings are the few examples of such uses-- houses of Jagannath Saha, Lalbagh, Rup Narayan at Simson road, Rose garden, Devendra Mohan Das at Wari etc.
- 6.30 Marble was generously used on the floors of Governor's house at Dhaka. The entire flooring on the ground floor is of white marble except for the ball room which is of polish teak timber planks.
Dr. Nazimuddin, Buildings of the British *raj*, opcit, P-41.

- 6.31 Fine polished marble sculptures are found in Mymensingh *rajbari*, Digaputia *rajbari* etc, houses. Besides this, statues / images of different god and goddesses of black basalt are found in many house mandirs in many houses.
- 6.32 Sandstones are used in the verendahs, driveways and the steps of the grand staircase of Ahsan monzil which was imported from Jaipur in India. Shah Alam Zahiruddin, History of architectural conservation and Government initiative in Bangladesh, Architectural conservation, Bangladesh ASB, 1993, P-89.
- 6.33 Ceramic glaze tiles are used in the houses of Jagannath Saha, Lalbagh, Bhawal *rajbari* at Imamganj, Dhaka. Bara taraf, Natore, Mathura Nath Chakraborty at Dayagonj, Dhaka etc.
- 6.34 Ceramic tiles are used on the entry step of *Bara taraf*, Natore *rajbari*.
- 6.35 Tinted glasses of various colours are used in the upper portion of the arches in the archades of the houses of Murapara house, Rose garden, Nuruddin Ahmed, Chittagong etc.
- 6.36 Terrazzo works are found in the houses of Satish Poddar (Jahan Ara Textile) Painam nagar, Sonargaon, Sardar *bari*, Sonargaon, Balda Garden etc.
- 6.37 This term '*chinitukri*' mosaic does not mean the decorative terrazzo-- the mixture of white cement, grey cement, stone dust and marble, the mosaic here means the broken piece of ceramic tiles or ceramic ware.
- 6.38 Zainab F. Ali, Architecture and urban conservation in the Islamic world, opcit, P-157.
- 6.39 *Chinitukri* works are found in the houses of Dhonbari *nawab*, Tangail, Sardar *bari*, Sonargaon, Satish Poddar, Painam nagar, Sonargaon, Mahbubul haque, Majirhat, Chittagong and Balda garden etc.
- 6.40 Following are the few examples of such exposed and unplastered brick surfaces in the various types of the houses:
- | | |
|---------------------|--|
| Rural house | -- Romanath Gosh, town Noapara |
| Urban house | -- Khorasani, Jessore road, Khulna, Gagan Saha, Paikpara, Brahman baria, |
| Zamindar | -- Murapara house, Sita Nath Das, 4, Walter road, Dhaka |
| <i>Dak</i> bungalow | -- Satkhira, Khulna (District council) |
| Circuit house | -- Khulna |
| Government bungalow | -- Ramna colony, District magistrate and Executive Engineer, Rajshahi, bungalow no. 3, D.U. (presently demolished) |
- 6.41 The unpainted wooden surface is found in the railing and balustrades of the kuti *bari* of Wais at Waisghat, Dhaka and the wooden drops of *Ranir kuti* Comilla.
- 6.42 The use of chunam is found in many houses-eg. Nimali house. Ameen *bari*, Savar.
- 6.43 The Nematli house was also known as *baro dauiri* meaning the house having twelve gate ways or door ways.

- 6.44 Wooden columns were used in urban houses, eg, Rup Narayan Roy, Simson road Dhaka Pent house, Bhojahari Lodg,shop house, 165, Nawabpur road, Dhaka, *Premkanon*, Khulna Service blocks, S.D.O. Brahmanbaria Munsefs bungalow, Noagaon, The shop house at 165, Nawabpur road is presently dismantled in December 1995 for constructing a multi-storied hotel building.
- 6.45 Steel columns with decorative base and capital are found in many houses, eg, Gagan Saha, Paikpara, Brahmanbaria, house no 32, Shakhari patti, Dhaka. Anwar Chowdhury, Wari. Service block. D.C, Rajshahi.
- 6.46 Keeping the void spaces in the floor for avoiding the capillary action and dampness are found in the governor's house and bungalow of Lt. governor, Bardawan house, Dhaka etc. which are much similar to the Mughal construction system of '*tahkhana*' (raised platform) found in the Musa Khan's *masjid* at D.U campus and in Dinajpur *rajhari*.
- 6.47 The design of semi-circular arches over the segmented arches to minimise the loads over the openings are seen in many houses-eg, houses of Gagan Saha, Brahmanbaria, Murapara house etc.
- 6.48 Mughal type brick vaults with heavy and multi layers are found in the houses of zamindar Rajeswar Roy Chowdhury at Kalaskati, Barisal and Satish Poddar, Painamnagar, Sonargaon.
- 6.49 Small structures like roofs of the lavatories were constructed with the lime concrete vaults and found in many houses (eg, lavatory of Tapash Kutir, Jessore) in Jessore, Rajshahi. Noagaon, Dhaka, Brahmanbaria etc, regions.
- 6.50 Stair flights of solid brick masonry were found in many houses, eg, Shiba Nanda Poddar, Painamnagar, shop house, at 165, Nawabpur road, Dhaka, Chipa bari, Shakhari patti, Dhaka, Murapara house etc.
- 6.51 Flights were constructed steel joists and flat bars in many houses, eg, house of Gyano Chakraborty, Kalaskati, Barisal.
- 6.52 Each components of circular stairs such as trades, balustrades, railing, posts etc are individually made in the factory and assembled in the site. Such type of stairs are found in Rangmohal (Ahsan monzil), Rose garden, shop house, 6, Cemetery road, Khulna etc, houses.
- 6.53 K.M. Panikkar, A survey of Indian history, N.I.P, Bombay, 1947, P-43. Martin and Company, presently Martin and Burn, a Calcutta based architectural consulting firm had been practicing since the colonial period. Meer Mobashsher Ali and Faruque A.U. Khan, Early 20th century mansions of Dhaka city, contextual concepts, ASB. P-166
- 6.54 K.M. Panikar, opcit, P-5-6.

- 5.55 A number of books were written on bungalows and many of those contained the plans, elevations and photographs of which 'Bungalows and Country Residences'-written by R.A. Briggs is considered the first book on bungalow in England. A.D. King, Bungalows, P-96. The other books of such nature are G.S. Samson, 'Houses, Villas, Cottages, 1910, Bungalows for Britishers and American abroad', 1920. Ibid, P-117.
- 6.56 Norman Evenson, The Indian Metropolis, P-48.
- 6.57 Julius George Medley, India and Eastern Engineering, London, 1973, P-52-59.
- 6.58 Pre Mughal unplastered brick surfaces are (physically) quite different from the colonial one.

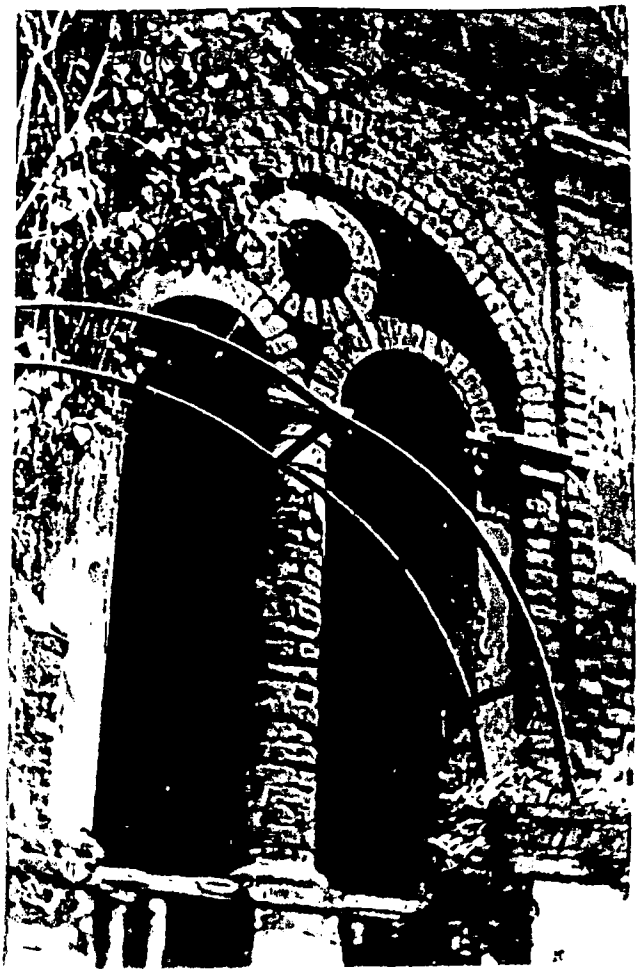
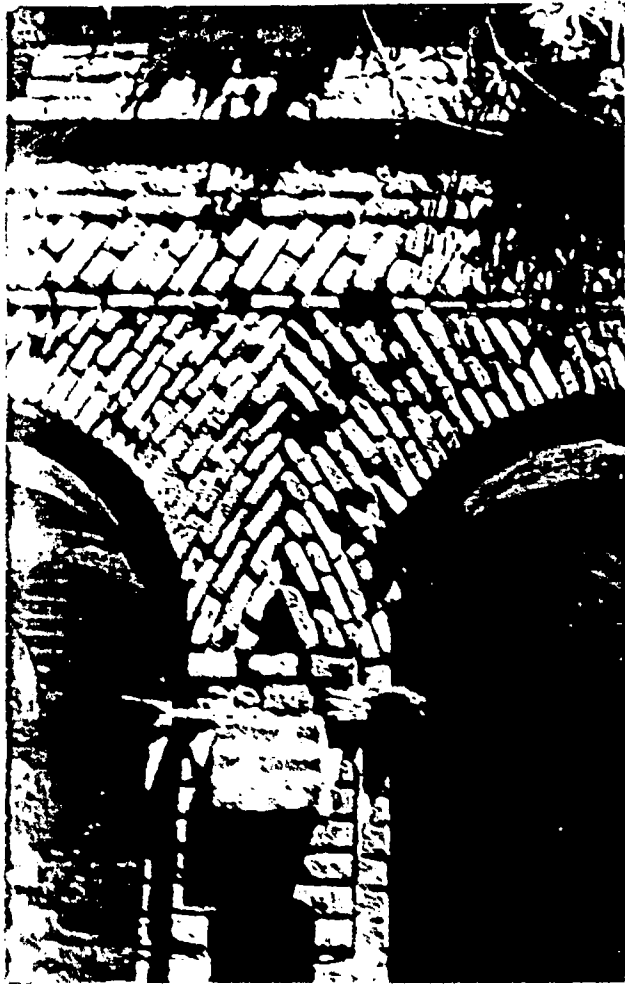


Fig-6.1.1 House of Jogesh Poddar
Painamnagar
Sonargaon
Dhaka.

Bricks of various sizes are used in the same house. Possibly these bricks are collected from the old buildings.

Special types and circular bricks are used in the columns and arches of Murapara house.

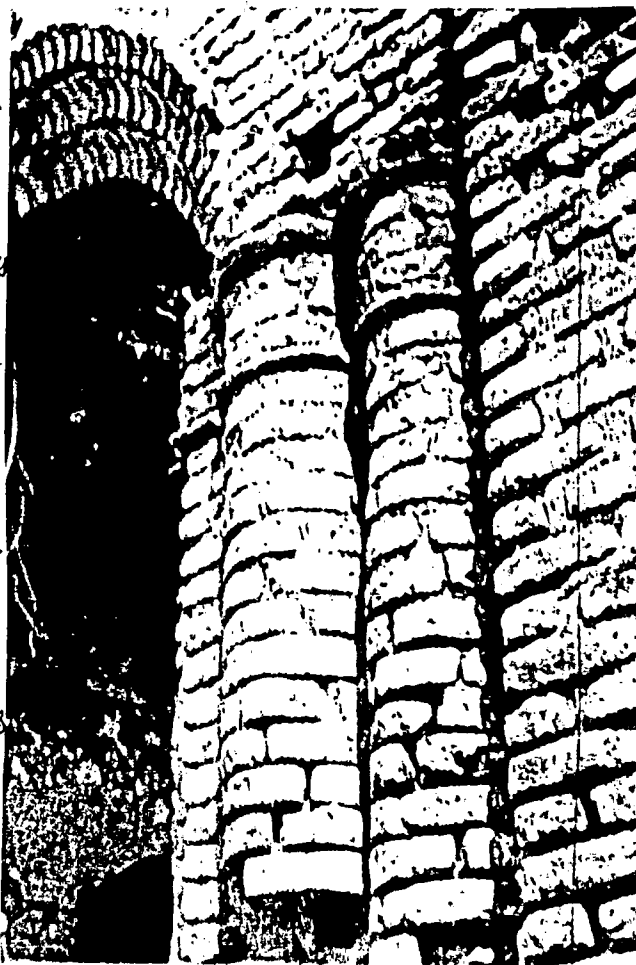


Fig-6.1.2 Managers house
Ahsan mauzil

Dhaka. Bricks of various types and various shapes are used in this house. Circular bricks are used in the circular column. (P-319).

Fig-6.1.3 Murapara house



Fig-6.1.4 Ruplal house

circular brick



Fig-6.1.5 Natore rajbari

Circular bricks of large size are used in the circular columns. Roman acanthus are used in the capitals.

Large size bricks are used in thick lime mortar. 1" to 1 1/2" thick plaster is used on the columns.



*False arch
Flat segmented arch.*

Fig-6.1.6 House of Gagan Saha, Brahmanbaria

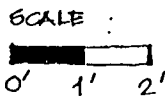
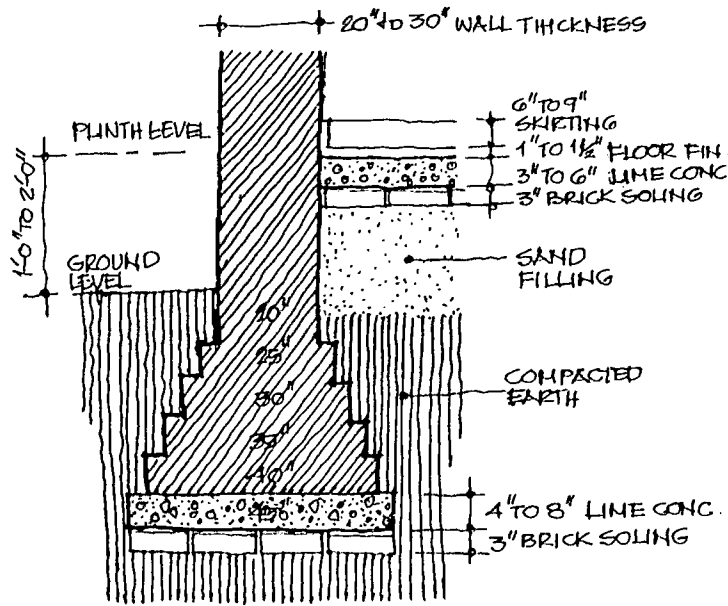


Fig-6.2.1 Spread foundation

Stepped spread wall foundation on lime concrete slab was used almost in each houses.

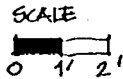
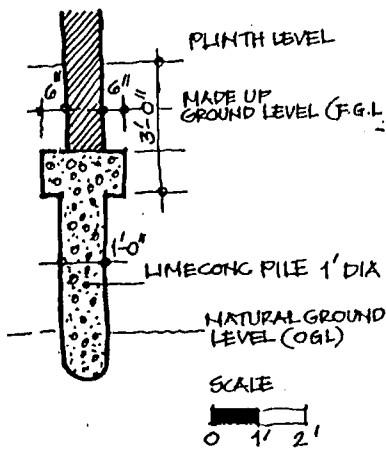


Fig-6.2.2 Small piles

Small piles are used in the railway quarters. These piles are made of Lime concrete. Sal bulla piles are also used in the railway houses.

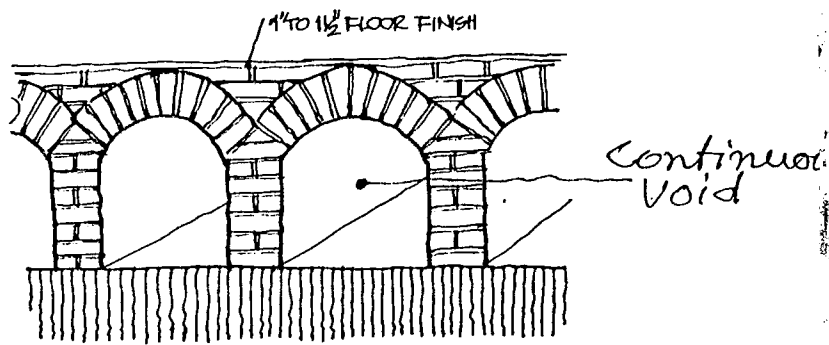
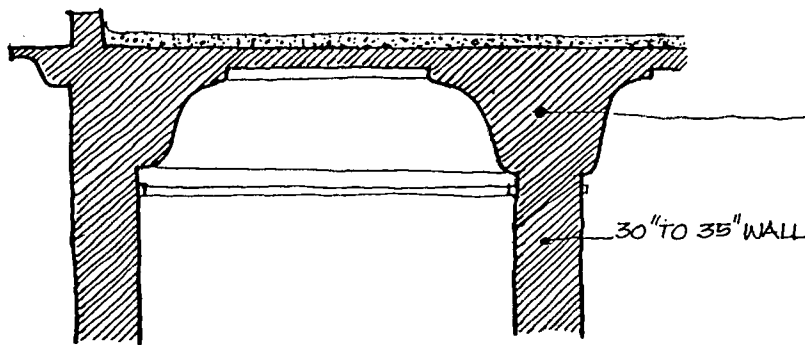


Fig-6.2.3 Brick vaults in plinth

Bricks vaults are used in the southern region of the country to protect the plinth from dampness. P-326.



The vaults are constructed by projecting the bricks. The vaults are finished by lime concrete. Chukum is applied on the surfaces.

Fig-6.3.1 Curved cove and horizontal vault

Section thru vaulted roof.
House of Rajeswar Roy Chowdhury,
Kalaskati, Barisal. P-327.

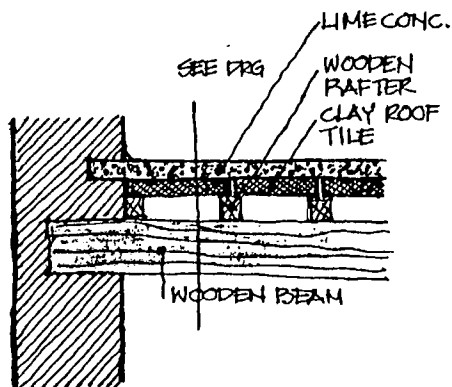


Fig-6.3.3 Roof section,

wooden beam and wooden rafter.

Typical roof section found in many houses. (eg. Bhawal rajbari at Dhaka P-327)

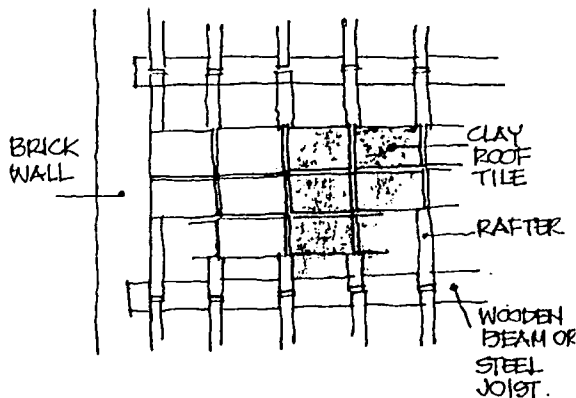


Fig-6.3.2 Plan of roof system

Typical roof plan showing the use of clay brick tiles on rafters.

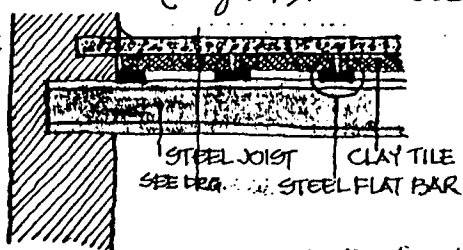


Fig-6.3.4 Roof section

steel joist and steel flat bars

Typical roof section found in many houses. eg, Bardawan house, Dhaka

Fig-6.3 Roof construction system

P-327.

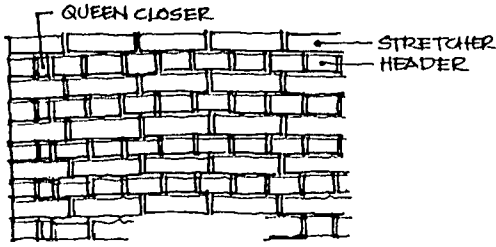


Fig-6.4.1 English bond

English bond is a popular bond used in many houses.

Fig-6.4 Bond

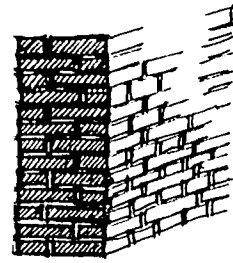


Fig-6.4.2 Cross section thru. a wall

15" thick typical cross section.

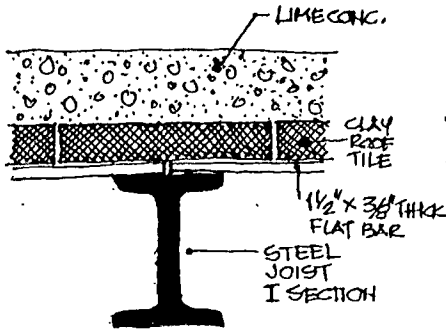


Fig-6.3.5 Roof system, steel joist

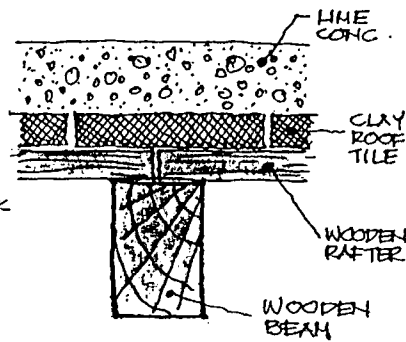


Fig-6.3.6 Roof system wooden beam

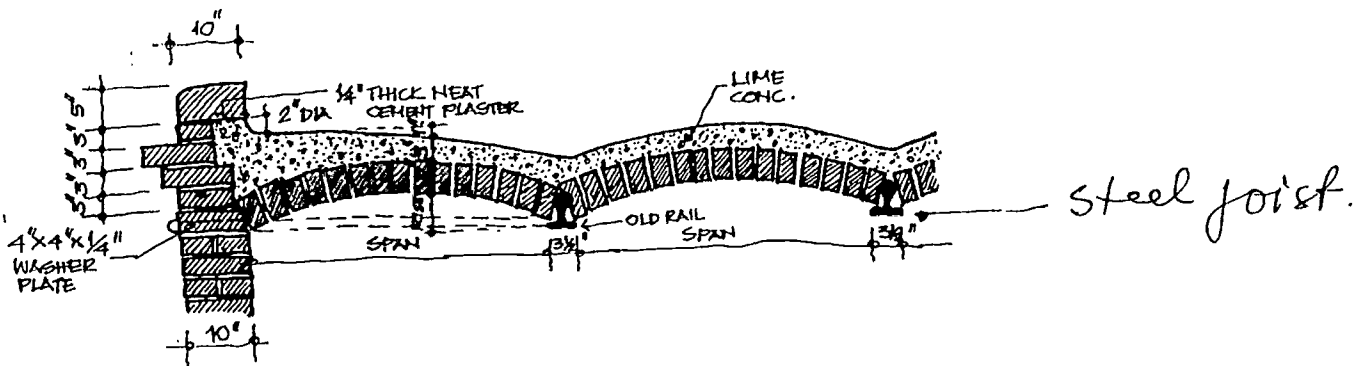


Fig-6.5.1 Detail section of jack arch

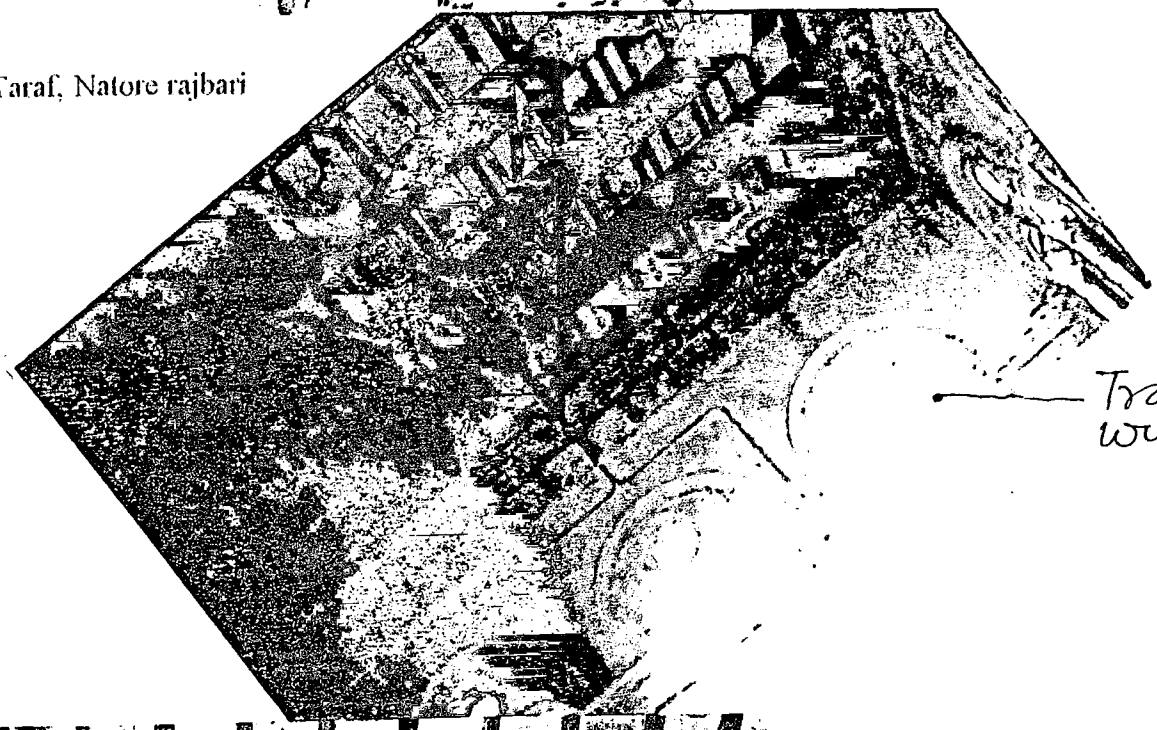
Fig-6.5 Arch

Typical cross section thru. jack arches found in many railway houses and the govt. houses built by P.W.D.



Projected moulding
in the room
corners.

Fig-6.3.7 Rose garden, Dhaka



Trapezoidal
window

Fig-6.3.8 Chata Taraf, Natore rajbari



Fig-6.3.9 Kuti bari.

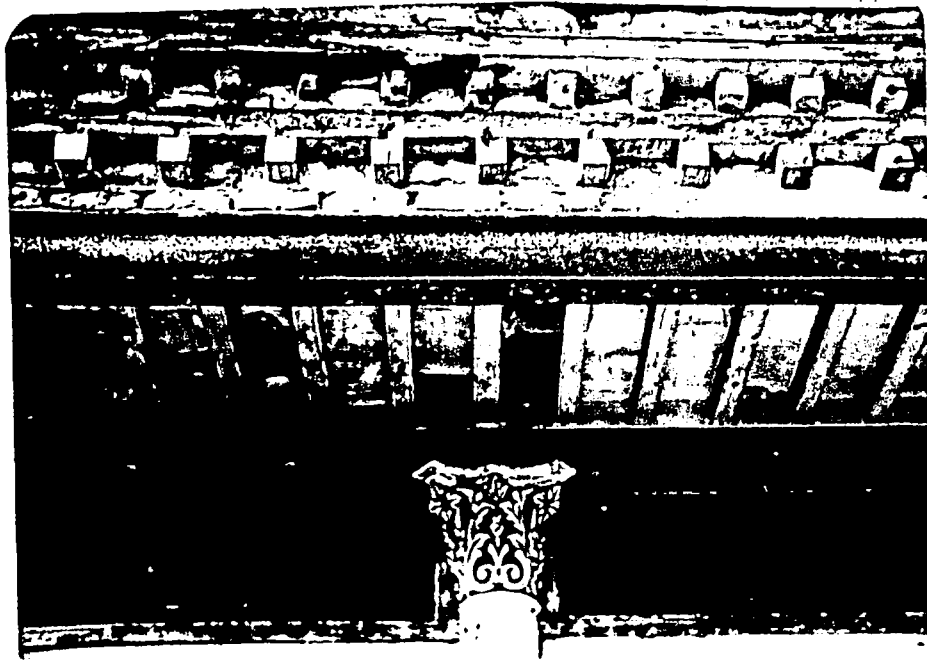
Waise ghat, Dhaka

Wooden planks
are used in the
roof construction
of Kuti bari of
Mr. Wai's at Wai's
ghat, Dhaka.



Fig-6.3.10. Construction system of colonnade

Bara kulthi, Natore rajbari,
Timber beam in the colonnade
Timbers are extensively used in the
old houses.



— dentils

Fig-6.3.11 Construction system of roof

House of Shiba Nanda Poddar
Timber joists are used in the roof

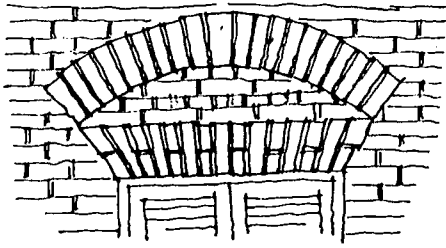


Fig-6.5.2 Flat and false arch

Flat arches used in the house of Kherasani at lower Jessore road, Kheulna.

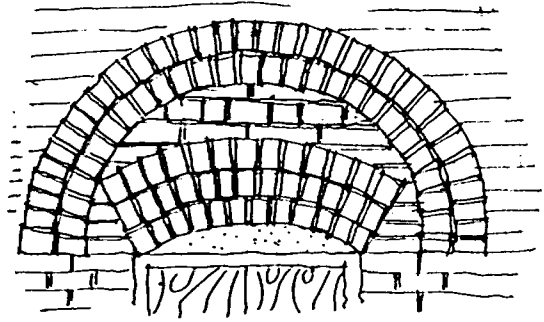


Fig-6.5.3 Segmented and false arch

House of Gagan Saha Brahman baria

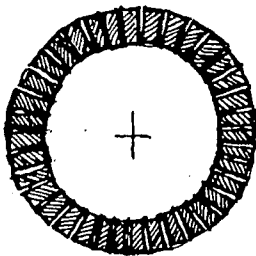


Fig-6.6 Circular opening

System of construction of rose window, found in many houses.

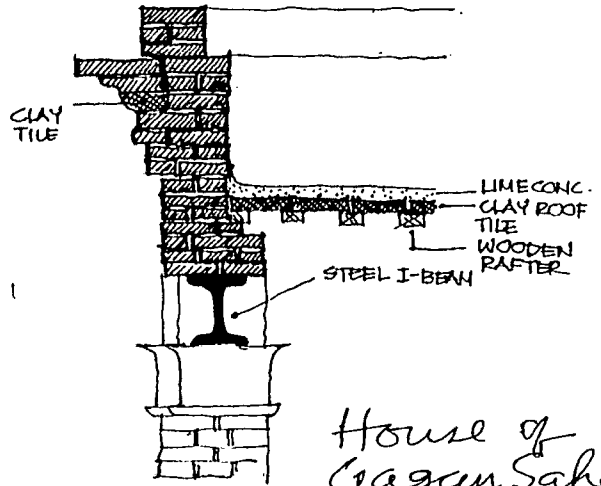


Fig-6.7 Wall section showing joist and parapet

House of Gagan Saha, Brahman baria

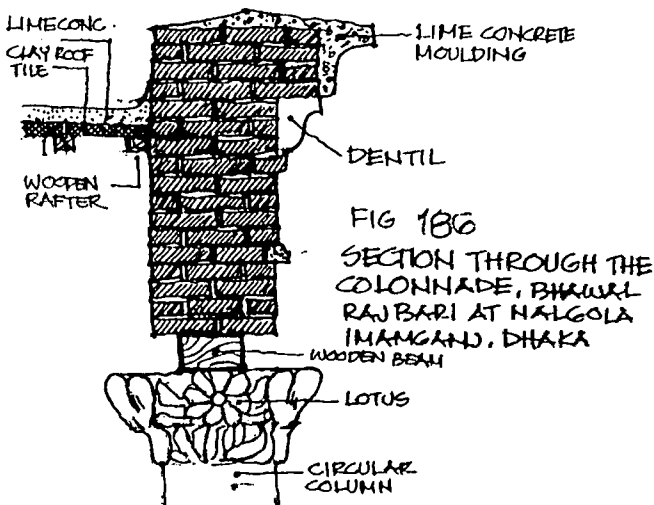


FIG 186 SECTION THROUGH THE COLONNADE, BHAWAL RAJBARI AT NALGOLA (MANGAL), DHAKA

Fig-6.7.1 Section thru colonnade

Bhawal Rajbari at Imamganj, Dhaka.

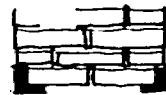
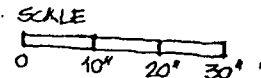


Fig-6.8 Section thru. Lintel

Steel angles are used in the corners of the Lintels.

Chapter-7

FACADE TREATMENT AND ORNAMENTATION

Chapter-7

FACADE TREATMENT AND ORNAMENTATION

7.0 Introduction

This chapter deals with some major aspects of colonial builtform--the facade treatment and ornamentation of the colonial houses. The way in which the visual design elements and their organization including ornamentation are ordered can best be considered in terms of the styles of facade treatment, principles of solid-void relationship, balancy, proportion, scale, continuity, order and similarity, contrast and unity, direction, movement, attention and dominance, and style in ornamentation, elements of ornamentation-- lines and band, projection, dentil, texture, *jaliwork* and wood **carving**, sculpture and colour etc.

7.1 Facade treatment

The facades of the various types of houses were carefully treated with various building elements (discussed in chapter-4) in conformities with culture, owner's aspiration, time and space. The desire for facade treatment in many ways was common in all types of houses irrespective of its onwer's profession and position in soccity.

7.1.1 Styles in facade treatment

The styles in facade treatment is essentially visual and has no necessary relationship, in many cases, to the space organizations and functions of the spaces and houses. The stylistic classification acknowledges that a house is not just a craft, rather it is a house form that reflects the philosophy, intellectual currents, hopes and aspiration of its time-- the owner's, the builder's and the designer's.

If we ignor the facade style of the Neemtali gate (7.1, fig-4.12.1) which represents the transitional period when one style (Mughal) was slowly transforming and blending into another (Colonial), the rest of the house facades could be identified into three types or styles. These are one, the palladian facades, two, the **colonaded**! or archaded facades and, three, the plain facades.

7.1.1.1 Palladian facades

The Palladian facades are seen in the large zamindar (fig-7.14.1.1, 8.19.7), urban (fig-7.8) houses and in bagan baries (7.2, fig-8.22.4, 8.22.5). Features of palladian facades were prevalent in the mid Georgian period including giant pilasters marking the double height giving the super scale were first seen in this country. Sometimes the giant pilasters marking the corners of the house (fig-8.22.5, 4.22.1, 8.22.1). In the palladian facades the central emphasis took the form of a central pavilion with the pediment. This style was borrowed by the colonial builders from the palladio.

The palladian facades (7.3, fig-8.17.2, 7.14.1) are in a class of their own and represent a climax of the Renaissance. The facades are so treated that the double height columns, few great features like large pediment (7.4), their economy of detail, the logical placement of the balcony, the organic separation of the vertical and the horizontal members (fig-7.14.1, 7.8), the compact filling of the walls and the creation of void spaces in them, the bold projection of the roof mass-all these gave these houses and palaces, the stamp of truly imperial and colonial grandeur. This idea of facade treatment was constantly imitated and varied all over Bangladesh by the builders with a colonial bias.

The colonial designers followed certain rules for facade treatment from which they never departed. They demand a hall in the central axis (fig-5.19.1, 8.19.1, 8.22.1) in front of which they placed few columns (3,4,6 etc), free standing double height sometime single height, comparatively large, over which a pediment (fig-7.2.1) is placed (7.5). The colonial designers always regarded (similar to the renaissance architects) symmetry as a theoretical requirement in design and they rigidly followed this rule in many houses (fig-7.14.1). The Mughal character which is so marked in the facade of the Necmtali gate disappeared completely in the later renaissance and palladian facade treatment. True palladian facades are not seen in the Government bungalows.

7.1.1.2 Colonaded and archaded facades

The most popular facade treatment of this time was the archaded (fig-7.1-7.3), colonaded (fig-7.11) of renaissance type found almost in each type of houses. Since

the beginning of the colonial period they are similar to some extent containing the typical features-- the arches (fig-7.2), orders (fig-7.11), piers (fig-7.3), drops (fig-7.30), domes (fig-7.10-7.12), pediments (fig-7.8), rusticated blocks (fig-7.21) etc.

These archaded or colonaded facades of houses of renaissance type found in most of the rural, urban, zamindar, *bagan bari*, *kachari bari*, government, railway, *dak* bungalow and circuit etc, houses where a series of arches or colonades in equal distance are arranged. The spans of openings were followed by a definite module (fig-7.10, 7.11). An interesting order was achieved in the facades by repetition of the openings (fig-7.2) which sometimes produced the monotony (fig-7.31) in the case of the large facades.

In the small facades, the facade planes were in a line (fig-7.1, 7.2, 7.3), but for the long facades, usually the facade plains were always broken by the features like portico (fig-7.10), entry (fig-7.14), balconies projections etc, which broke the monotony. In addition to these the variation in colour helped expressing the variation of depth.

A definite facade treatment is followed in some of the one storied houses, *dak* bungalow and circuit houses. They all belong to a similar class of which each side of the elevated hall with two or three low height rooms have been arranged on either sides (fig-8.38.6).

7.1.1.3 Plain facades

Besides the palladian and archaded or colonades facades of renaissance types another type, the 'plain facade' are also seen in many rural, urban, government, railway, garden, *patti* etc, houses. These facades are characterised by the brick masonry walls with the simple type openings placed directly on the flat brick masonry walls (fig-7.33, 7.24, 7.25, 8.33.5). The openings were rectangular with either round or segmented arches or flat arches/ or lintels. The facades are simple. The horizontal and vertical lines created by the openings, plinth, sill, lintels, floor slab, parapet etc, are balanced, Sometime foliated parapet with Art nouveau (7.6) detailings are found in some of the houses (fig-7.6).

Besides the above three types of facade treatment another type of facades found in some of the high ridge houses (7.7) where most of the facade constructed by wood, similar to the British manor houses (7.8). The multi-tiered roofing system is found in these houses where walls are framed by triangular elements of timber detailing (fig-7.19).

7.1.1.4 Front, side and rear facades

A marked difference is found in the treatment of front and other facades. Usually the front facades in all cases are carefully treated and richly decorated. The important features like dome, pediment, double height order, portico etc, are placed in the front facades (fig-8.18.4-8.18.6). In some of the houses the front facades are only arched, the other facades remain plain (fig-5.6.1, 7.36). But in the important zamindar, urban, government houses all the facade are equally treated. The side facades if not seen from the roads, remain simple. Usually the rear facades are plain.

7.1.2 Principles of facade treatment

The various principles of facade treatment are followed in designing the facades. The visual building elements could induce the experience and gave the pleasing shape of the house facades. The principles of facade treatment and the building elements are seen in relation to their surrounding, and these relationships determine the total effect in the facades.

7.1.2.1 Solid-void relationship

The facade treatment of the houses always belonged to the solid because all the houses were built with load bearing brick masonry walls and never in the skeleton system.

Sometime, the facade planes are not in a line (fig-5.8.2, 5.13.1, 5.18.2, 5.21.1), these are always broken by, portico, entry, corners, balconies, blocks, projection etc. Moreover the variation in texture, colour etc, helped in the expression in variation of depth. The solids and voids are always well balanced (fig-7.3, 7.11, 7.18).

The colonades or archades around, found in most of the rural (fig-5.22, 8.2), urban (fig-8.11, 8.12.1), zamindar (fig-8.17, 8.18.1, 8.20.2), kachary (fig-8.21.1), government (fig-8.29.3, 8.29.4, 8.30.1, 8.30.3, 8.30.4), railway (fig-8.32.1, 8.32.3)

houses make the facade void and light. The urban and railway houses comparatively had more solid facades.

7.1.2.2 Balancy

Balancy for the colonial houses may said to be a state of visual equilibrium derieved from the shape, size, colour, position etc, of the elements of the facades in the field of vision (7.9). In terms of balancy, the facades of the houses are symmetrically or assymmetrically balanced. The vertical and horizontal features were balanced in most of the cases, but the vertical lines to some extent was dominating in each houses (fig-7.10). The desire for symmetry was common in all types of houses (fig-7.3, 7.10, 7.11). The facades though ornamented and decorated in various ways were more formal, sometimes regimented, but readily perceptible and often less subtle than a finely balanced assymetrical composition. There was a common tendency towards balancing the builtform in symmetry in organising the spaces, shape and form. Most of the builtforms and facades were symmetrically balanced (7.10), hence they seemed to be static. Therefore these symmetrically balanced houses usually give a sense of stateliness, dignity and formality. Generally the effect is poised rather than dynamic, passive rather than active.

A form of centrality is achieved by placing the entry (fig-7.13, 7.14), double height entry (fig-7.8), portico (fig-7.10), padiment (fig-8.29.4), rusticated block (fig-4.43.1-4.43.3) etc, or placing similar types of elements of two sides of the centre (fig-7.14.1).

Attempts were made to break symmetrical balancy in some of the zamindar, urban and government houses in the Ramna colony and in other government colonies in various district and sub-division towns (7.11). In these houses the forms and the facades are not of the same visual weight balance being placed at unequal distances from the centre (fig-8.27.1, 8.27.3). Therefore the facades are more active and dynamic in treatment. Some of the houses found absolutely symmetrical when viewed frontally and assymetrical when viewed latterally (7.12)

7.1.2.3 Proportion

Most of the houses are well proportionate both in length of the facades and in height. A **reasonable** proportion is maintained among the components or parts to the whole when the facades are too large (fig-7.14.1, 7.14.2). The facades are broken into blocks, staggered so that it could be proportionate to its height. The colonial designers achieved the proper proportion by dividing the facades into reasonable divisions either by projecting (fig-8.19.2, 8.19.5, 8.17) few divisions from the line of vision or by recessing few of these.

The proportion could be maintained in the elements for their size, location etc. The tension generated in some of the houses by using the large size elements. The disproportionate pediment in facades might destroy the **total** unity and proportion (fig-4.42.1), Again, too small element (fig-4.42.3) is also could destroy the harmony of composition to some extent (7.13).

7.1.2.4 Scale

The sizing or scale of the spaces, elements and the facades was directly related to the human physical scale in most of the houses. In other words, the most of the facades were human, domestic and residential in scale. In some of the buildings where palladian facades or double height entry is designed, in which the scale seems to be public. In most of the cases these part of the houses were used as public or semi-public areas (7.14).

The raised steps (fig-7.10, 7.12), large dome over the roof (fig-7.10, 7.12), large pediment (fig-4.42.1, 4.14.2.1) etc, in some of the houses indicate an expected size relationship for the specific type of requirements (7.15). It would expect a certain quality of vastness and large scale. This type of treatment in design, a scale compared with human physical size may be large and yet may remain satisfactory within the acceptable range of the size. Sudden change of the size and form of elements (7.16) may be acceptable in order to create a 'surprise' emotional reaction (fig-8.27.5).

7.1.2.5 Continuity

A continuity or organized movement or rhythm is found in most of the colonnaded and archaded facades (fig-7.1). The continuity is **maintained** through the repetition of the elements (eg. by providing the arches fig-7.14.1, openings- fig-7.14.2.1 etc.). The clearcut rhythms are seen in these houses. The alternation (horizontally or vertically) is seen in some of the houses (fig-7.14.2.1). The phenomenon of progression is not noticed in any houses. But the repetition gives the sense of progression in perspective in many houses. The designers effectively and appropriately repeated the elements and very sensitively handled (fig-7.2, 7.10) the large facades with repetition which becomes progression of most perfect sort (7.17). In general the repetition is very successfully used in many houses.

7.1.2.6 Order (7.18) and similarity

An order or process and system were developed for the facade treatment of the houses. In the opening system, in the colonaded or archaded facades the horizontal lines are ended or terminated by a heavy corners and the vertical lines are terminated by the heavy roof projections (fig-7.10). Again, each floors are defined by the moulded projections (fig-7.11).

A definite order is followed throughout the opening system and found in most of the houses. As for example, if arches were used over the openings, these were also used both in the doors (fig-4.20) and over the windows (fig-4.28). Again, if lintels were used over the windows, the beams or flat arches were used in the verendah openings (fig-7.8). This order in the openings also found and maintained in the facades throughout the structural system of the palladian houses in this country (fig-7.8).

Order also noticed in the termination of the lines and in the parapet designs. If the centrality is emphasized by the dome the corners of the parapet were terminated by the cupolas (fig-7.10). The large pediment in the central entry point was followed by small pediment over the all side entries. Again, the large columns were followed by small columns in the facades, (7.19, fig- 4.28.1.1). These order and similarity are found in every types of houses.

7.1.2.7 Contrast and unity

In certain respect unity (oneness or wholeness) is the most important single design discipline found in most of the facades of the houses. Sometimes, contrast as definite character is also seen. Two different types of openings are seen in some of the railway bungalows and government bungalows (fig-7.21). Here the unity is lost and the contrast in openings made the facade composition weak and unbalanced.

The unity or the quality of oneness developed out of a strong concept or idea. The use of disproportionate elements might disrupt the unity and harmony in composition to some extent.

7.1.2.8 Direction and movement

The respective positions of the spaces, rooms, components and elements, blocks and their location give the direction in the built form (fig-8.18.1). The repetitive use of the columns, arches, piers etc, in the facades (fig-7.14.1) or the projection or recessing of the blocks (fig-8.17) help to create the direction towards some points.

7.1.2.9 Attention and dominance

Attention may be guided by lines, size of the elements, shape and colour etc. The ways in which colour seems to alter, the size of the element are often dramatic.

Attention may be focussed to one or few elements (fig- 4.43.1) or it may be equally divided in the entire facade treatment (7.20, fig-7.6, 4.14.9). Specific attention was created in a number of ways and these include the use of scale or size to **emphasize** an important aspects of design, such as horizontality (fig-8.3.1) or verticality (fig-7.8) in overall composition, the use of contrast, use of rhythm, use of distortion etc.

Apparent movement may be induced by using the directional element--eg, the continuous archades and colonades etc, (fig-7.14.1) or using the foliation in the parapet (fig-7.6). The movement of the lines found its end at the central entry (fig-7.14.1) or at the sides (fig-7.14.1) or domes, rusticated blocks etc, which was the climax of all movement of lines-- horizontal and vertical.

Dominance may be given to an element (dome, pediment, rusticated block etc.) by its elevated and central position within the facade (fig-7.8, 7.12). Sometimes, the entry gets dominance for its central position (fig-7.16) or for the double height (fig-7.8).

Some of the zamindar, urban etc, houses used the pediment (fig-7.14.2.1), rusticated block (fig-4.43.1, 4.43.3), dome (fig-8.22.5), etc, illustrated the classical arrangement with a dominating central position in which either decorative and ornamental feature is placed. The other features such as the colonnade, archade, arches, piers etc, became the subordinate elements- are related to the order of facade treatment.

Both subordination (of some features) and contrast were effective devices for emphasizing dominance of certain features in the colonial houses. Dominance or emphasis was also asserted in many ways-- in form, colour, direction, texture and position among the other elements. The dominating features like pediment, dome, rusticated block etc, formed the climax--end of all movement and direction. These elements were not placed against the structural background, rather they were placed against the horizon line (fig-7.10, 7.12) in almost all cases. Therefore these elements were always prominent in the facades and overall arrangement and composition. The perception of profile of such dominating elements depended on a sharp contrast between the mass of the element (object) and the background which was horizontal in most of the houses (fig-7.14.1).

7.2 Ornamentation

If the concept of facade treatment is properly understood, a peep into houses reveals that along with the facade treatment the aesthetic decoration and ornamentation were not neglected in any way in house design.

The mention of *shilpins* (7.21) or architects as we called them to day and numerous artisans were engaged under the master mason as a subsidiary vocations-- such as *ostaghar* for decorative civil works, *kamar* for iron works, *sutradar* for woodworks etc.

7.2.1 Styles in ornamentation

The concept of ornamentation and decoration includes both the structural and non structural decorative elements. The socio-economic aspect, life style, religion, aesthetic sense etc, influenced the decoration and ornamentation of the houses. Structural system and decorative art were considered complementary. The following four styles are identified in the ornamentation of the houses:-

7.2.1.1 Ornamentation by builtform

Other types of rooms than the conventional square or rectangular components (rooms) in some of the urban, zamindar, government, *kuti*, *kachari* etc, houses were for aesthetic considerations. The various non-conventional shapes of spaces such as, hexagonal **drawing** rooms in various bungalows (7.22, fig-5.13.1, 8.10.1) chummeries, (fig- 5.30.1), hexagonal bed rooms in zamindar houses, (fig-5.22.1), special shape bed rooms in govt bungalows (fig-5.31.1), semi-circular room or mass in *kachari bari* (fig-8.21.1) *rajbaries* (7.23) semi-circular lobby and oval shape office in large government houses (fig-5.27), semi-circular verendah in *rajbari* (fig- 8.17) chummery house (fig-5.30.1) semi-circular balcony in govt bungalows (fig-8.29.2, 5.31.2), zamindar houses (fig-4.12.1.4), urban and satellite township houses (fig-5.18.2), *bagan baries* (7.24, fig-8.22.2, 7.22), semi-circular entry in govt houses (fig-5.28), Octagonal **stair case in kuthi** ^{*baries*} (fig-8.36.2) and hexagonal service stairs are found in many govt. bungalows (fig-8.30.1) etc could be avoided and replaced by **simple** square or rectangular shape spaces. Still the colonial designers used to construct these in search of new form and for the decorative and aesthetic purposes.

The height of certain components were more than the adjacent rooms for not always functional purposes but for aesthetic reasons too, for breaking the parapet line to break the monotony (fig-8.30.3, 8.30.4).

7.2.1.2 Ornamentation by structural element

The structural elements include the columns, piers, arches, domes, vaults etc. The columns are the structural elements designed to bear the loads of the structure which could be simply a square or rectangular vertical elements. Still the colonial designer

designed the columns in many ways-- such as henostyle (fig-4.21.6). distyle (fig-4.21.5, 4.21.1, 4.21.3), tristyle (fig-8.21.1, 8.21.3), engaged (fig-4.21.14), octastyle (fig-4.21.7), dodeostyle (fig-4.21.4) etc. Columns of various orders (7.25) doric, ionic, corinthian, tuscan etc., are designed for aesthetic reason. The use of false columns (fig-4.21.9, 4.21.12) was purely for decorative purposes. The column base and the capital were sometimes designed to distribute the loads. The various shapes other than square and rectangle--such as circular, octagonal etc, were for deliberate enhancing of aesthetic. The base and capital in the columns abacus, echinus, volute, acanthus capital (7.26) fluted shaft etc, were the artistic expression of the designer's mind.

The use of capital is sometime structural, but the decorative part in the lower portion of corinthian columns is nonstructural and decorative. The corinthian columns having the capitals with Roman acanthus decoration found in many houses (fig-4.23.2, 4.23.4, 7.62.2). Sometimes the Roman acanthus are found even on the bases of the steel columns (fig-7.62.3). All these are the Greek, Roman and renaissance influence on the ornamentation of colonial houses.

Similar to the columns, the piers were not plain, rather these were ornamented with base, capital and banded shaft with recesses etc. (fig-8.3.1). In most of the cases, the openings were spanned by arches of various shape. It could be either covered by beam or by simple semi-circular arches. Still the colonial designers designed the various other types-- such as segmented, three centred, depressed three centred, equilateral, ogee, round, trifol, venitian, multifoil, flat etc., arches (fig-8.4.26). These arches are richly decorated with floral elements (fig-4.23). Sometimes the top of the arches were filled with decorative glazed and iron works (fig-33.9, 7.34). It was definitely for the decorative purposes.

The art of covering the spaces with dome is purely for decorative purposes. The various types of domes--hemispherical, pointed, segmented, onion etc, shape were used and these were further decorated with drum, pierced with series of window openings and supported by false columns etc, found in many houses

(fig-4.44.1-4.42.7). The use of moulding and lantern etc, in domes are also for decoration. Further these were decorated with lines, netted openings etc, (fig-4.44.3). Brick vaults used in some the houses are decorated with mouldings (7.27). The small vaults over lavatories are found many houses which are for decorative purposes.

7.2.1.3 Ornamentation by decorative element

Various good looking and pleasing building elements are used to ornate the houses. These elements are **sometime** functional or decorative. Cupola / kiosk (fig-4.47), pinnacles (fig-4.93), pediment fig-4.42, rusticated block (fig-4.43, plinth and floor projections etc, are for purely decorative purposes. Again, bracket (fig-4.36), spout (fig-4.41, rose window (fig-4.28.4), balustrade (fig-4.35.3, railing (fig-4.34, drop (fig-4.31, shading devices (fig-4.30 and parapet (fig-4.40 etc, are functional and also used to enhance the beauty of the houses.

The cupolas / kiosks are not functional but these are decorative elements used at the corners of parapets and roofs for terminating the vertical lines (fig-7.10, 7.12, 7.13, 7.55). Various linings, projections, mouldings etc. are found on the cupolas/kiosks.

The concept of the use of decorative element pinnacles is the gothic and Islamic influence and found in the *masjids* (fig-4.9.3). These pointed pinnacles, again decorated by horizontal divisions, projections etc.

The Greek, Roman and renaissance element-pediments are decorative elements. Both the traingular and the round pediments are not remained plain rather these are decorated with projections, mouldings etc. (fig-4.42.2). Sometimes circular holes are found in the pediments.

The rusticated blocks are the pure decorative elements found in many houses (fig-4.43).

The projections at plinth, floor and roof levels are not always functional. Sometimes these are used for aesthetic reasons.

The structural element brackets are primarily designed for supporting the cantilever portions of the slabs. Besides their structural and functional requirement the colonial

designers used the brackets in various forms (fig-4.36.1, 4.36.2, 4.36.4). Sometimes the brackets are so floral and decorative that they lost their original structural / functional purposes (fig-4.36.3).

Sometimes human and animal heads are designed in spouts (eg. Murapara house) which are purely for decorative purposes.

The main purpose of providing the openings (doors and windows) is to fulfil the environmental requirements or for visual communication, but the uses of rose window (fig-4.28.4, 8.24.4), **traciodal opening** (fig-4.28.5) or circular headed door (fig-4.27.8) are for decorative purposes.

Railing and balustrade are functional elements but the various horizontal and vertical members including the newal post (fig-4.34.3, 4.34.4, 4.34.5, 4.35.3, 4.35.4) railing (fig-4.34.4, 4.34.9.2, 4.34.11.2) etc. had been used in the houses for decorative purposes.

Drops and shading devices are provided in the houses to protect the structures from the environmental exposure, but the colonial designers used the various types of decorative drops (fig-4.31) and shading devices (fig-4.30.4) to fulfil their aesthetic needs and aspirations. Even the colonial designers used the various types of lattice work drops in the houses (fig-4.32).

The parapet is a functional element for a house but various types of decorative parapets (fig-7.6, 8.16.6) found in many houses.

7.2.1.4 Ornamentation by surface decoration:

The colonial designers and artisans exploited much for surface decoration in the houses. The surfaces of the houses were decorated by lines (straight, circular and geometrical), bands or floral decoration. The whole surfaces of the walls, sometimes, found decorated in the houses (fig-7.35, 7.36). The corner surfaces of the houses found decorated either by quoins (fig-7.7) or these surfaces are decorated with geometrical patterns (fig-7.35, 7.38, 7.68., 7.69). The corner detailings with quoins resemblance (7.28) the late Georgian British town houses (1760-1800) and is a renaissance influence.

Wall surfaces decorated with lines are found in many houses. *Jamdana* decorations in straight lines are found in some of the house surfaces (fig-7.70). Decoration of wall surfaces with necklace chain similar to the necklace chain found in the Partheon, Rome is also common (7.29, fig-7.67).

The floral decoration on wall surfaces included the various types of petals, creepers, roses (fig-7.64), lotus (fig-7.65), acanthus (fig-7.63, 7.66) etc. The Greek and Roman influence in choosing the subjects are found, but the way of presentation and expression is local.

Surfaces are also decorated with *chini-tukri* mosaic (fig-7.48).

Sometimes the wood surfaces, particularly the door shutters are decorated by carving with chain, lotus (fig-7.53) and floral decoration of petal, creeper, flower, bird (fig-7.52) etc.

7.2.1.5 Art **nouveau** and houses

The influence of art **nouveau** is found in some of the houses (fig-7.56). These houses resemble the **contrast** with the simple facades of the govt and railway houses. The influence of the works of architect Antoni Gaudi is found in some of the houses.

7.2.2 Elements of ornamentation

Various elements such as line and band, projection, dentil, tablet, texture, *jali* works and wood **carving** floral element, sculpture etc were used to decorate the houses. Besides these various colours are used for decoration of the wall surfaces.

7.2.2.1 Lines and bands

Horizontal and vertical bands (fig-7.9, 7.13, 7.36), lines (fig-7.48) flutes (fig-7.46) etc. are carved on the walls, corners, columns etc. surfaces to break the monotony of the surfaces. Horizontal bands on the corners is a characteristic feature and found in many houses (fig-8.3.1, 8.9.3, 8.17.3, 8.18.4, 7.9, 7.36). Vertical fluted lines are also common surface decoration and found in many houses (7.30, fig-8.22.5, 4.9.5). This horizontal band on the corners is also found in the brick surfaces too (fig-4.33.8). Besides the uses of bands the geometric patterns are also seen in the corners (fig-4.33.7, 4.33.9, 7.38).

7.2.2.2 Projections

The projections have already been described as elements of houses in chapter 4, it is also used as decorative element. These projections are used both as functional element as shading devices over the openings (fig-4.28.2, 4.28.1.2), again these are used at floor levels to define the floors (fig-7.11, 7.21), These projections are seen at the plinth, floor, (fig-7.2) and at roof levels (fig-7.9). Sometimes these projection are seen as a small projection in a simple form (fig-7.1), again these are also found in multi layer projections in a complicated way (fig-7.13) but in beautiful form.

7.2.2.3 Dentil

The Greek and renaissance elements dentils are the popular elements of decoration extensively used in the houses. Dentils of large and small, simple, decorative of various materials are seen in every type of houses (fig-4.40.8, 4.4.3.1, 4.44.2). Dentils are found both in mouldings and in brick in the houses. Floral dentils are also seen in some of the houses (fig-4.40.10).

7.2.2.4 Tablet

Various types of decorative tablets (fig-7.58) circular (fig-7.58.2, 7.58.6, 7.58.9, 7.58.10), square (fig-7.58.8) etc form are carried on the house surfaces. Tablets of various form, shape and size are extensively used in almost every type of houses (fig-7.58). These tablets are sometime geometrical (fig-7.58.1) and sometimes these are floral (fig-7.58.4, 7.58.5, 7.58.7, 7.58.11, 7.58.12). Different types of floral expression such as lotus (fig-7.58.4), bracket (fig-7.58.10), Roman acanthus (fig-7.58.8, 7.58.11, 7.58.12) and their various combinations (fig-7.58.9) are found in many houses. Roman stele head also found in some of the houses

Tablets are depicted on the various places of the wall surfaces and are placed on the important areas. The tablets are found to be depicted, on the plinths, door ways, arches, and even on the roof level (7.31) and parapets. Sometime, large elongated tablets are found (fig-7.59.1, 7.59.2) on the surfaces.

7.2.2.5 Texture

Textures of various materials such as mosaic and *chomitalakri* works are the popular types of surface decoration practiced in the houses. These textures are found on the

columns, (fig-7.48) door ways etc. places and even in landscaping elements (7.32). Every of the interior walls and ceiling of the mosque of Dhonbari *nawab bari* is covered profusely with mural decoration in *chinitukri* mosaic works, mostly using floral motifs (7.33) which resembles the *chinitukri* works of Antoni-Gaudi (7.34)

7.2.2.6 Jaliworks and wood carving

Lime mortar *jali* works (fig-4.34.2) and wood carving are used as medium of decoration in many houses. Wooden *jali* works is found in the verendahs of many houses (fig-7.50) wood carving decoration is also seen on many doors and windows (7.35, fig-7.52, 7.53), even carving is seen on the wooden drops and wooden ridge (7.36). Floral decoration *chakra* was the common tablet or decoration piece carved on the door (7.37). Sometimes floral pattern are painted on the doors. Besides the wooden *jali* works, brick *jali* works are found in many houses (fig-7.51)

The wood carving on the railings of the *kutibari* of Mr. Wais at Waisghat, Dhaka is an wonderful example of wood carving (fig-5.35.4).

7.2.2.7 Painting and mural

Abstract mural works are not found generally. Terracotta figures are found in some of the temple surfaces (7.38) Painting on the surfaces were not popular and it was found in few houses. The ceilings of the dance hall of Ruplal house, Farashganj Dhaka, and Rose garden at K.M. Das lane were painted with various colours. Colourful mural of floral patterns are found on the doorways (fig-7.44, 7.54, 7.61-7.63) and arch openings (fig-7.40-7.42, 7.45, 7.46, 7.48) Various floral motifs such as rose, lily, lotus, locket are found in mural works. Sometimes the capitals are decorated not with Greek or Roman acanthus but with a combination of flower, acanthus and ram horns etc. (fig-7.62.4). *Kalasa* and flower pot are also found in some of the mural expression. Decoration of the columns and wall surfaces with mural of necklace chain was also common and found in many houses (fig-7.67).

7.2.2.8 Sculpture

Sculpture of fine quality of human figures are placed on the gardens of many houses particularly in the *rajbaries* and zamindar houses (7.39). Human heads are found even on the arch openings (fig-7.41). Sometime human heads are also found in the

spout heads in some of the zamindar houses (7.40). The sculptures are of marbles and found the *rajbaries* and zamindar houses (7.41). The sculptures of Rose garden are made of lime concrete and white cement. Sculptures of animal figures are also seen in some of the houses (fig-7.46.1). Lions are seen on the *singha darwaza* (fig-4.12.2.3) of Dinajpur rajbari (7:42) and birds are found **depicted** on the parapet of the house of Sailam Gosh at town, Noapara, Khulna (fig-7.57).

The female form, though not exclusively used, was largely the subject matter of the sculptors art. He (sculptor), however, sometimes transcended human emotions with a spiritual touch.

7.2.2.9 Colour

Colour was used in the colonial houses for two purposes. one, for brightening the (interior and exterior) surfaces and, two, for decorating the surfaces. Usually, lime was used to make the surface white in the interiors and exteriors of the houses. It was common for any types of houses. Sometimes, *chinari* (7.43) was used to make the surfaces shiny and smooth. Red oxide (7.44) was used at the exterior in some of the houses.

Colour is a fascinating subject for surface decoration and it had the power of changing **drastically** the appearance of the composition of the surface decoration. The colour tradition in the surface decoration of the colonial houses in Bangladesh originated from bright mineral and vegetable colouring materials, indigo, vermilion, saffron, crimson, **yellow** ochre etc. All these colours indigo, vermilion saffron, **crimson**, red, and **black**, have dominating colour harmonies in the colonial houses of the country for centuries past.

A close study of the colour combination on many of the colonial houses reveals that greater stress is laid on the three basic (primary) colours yellow, red and blue and next on the combinations of pairs of colours, giving orange, green and purple, which are known as binary or secondary colours. All these six standard colours are used on the floral decorations in many houses. But these secondary and tertiary colours did not attain much popularity. Vegetable and mineral colours were more softer and were more popular than synthetic colours.

The artisan of Bangladesh 'law of back ground (7.45) where they had to bear this principle in mind to discriminate between the colours for larger and smaller surfaces. It was a well known and general principle of the colonial artisans that the larger the area the less should be the intensity of the colour chosen. Smaller areas can then have brighter colours with impunity' .

7.3 Discussion:

The facades in all types of houses were carefully treated with various building elements in conformity with culture, aspiration, time and space. The desire for facade treatment in many ways was common in all types of houses.

Three types of facades were identified in colonial houses, **these** are Palladian facades, colonaded and archaded facades and plain facades. The Palladean facades are seen in the large zamidar, urban and *bagan baries*. In the palladian facades the central emphasis took the form of a central pavilion with the pediment, the style borrowed by the colonial builders from the **Palladio**. The facades are so treated that the double height columns, few great features, the logical placement of the balcony, the organic seperation of vertical and the horizontal members, the creation of void spaces in the central location, the bold projection of the roof mass, all these gave the houses the stamp of truly imperial and colonial grandeur. This palladian facades are in a class of their own and represent a climax of the renaissance.

The most popular facade treatment of this time was the archaded and colonaded of renaissance style found almost each types of houses. The span of openings were followed by a definite module. An logical order was achieved in the facades by repetition of the openings which sometimes produced the **monotony** in the case of the large facades.

Besides the palladian and archaded or coloniaded facades with renaissance styles another type, the plain facade' are seen in many houses. These facades are characterised by the brick masonry walls with the simple type openings placed directly on the flat brick masonry walls.

A marked difference is found in the treatment of front and other facades. Usually the front facades in all cases are carefully treated and richly decorated.

The various principles of facade treatment are followed in designing the facades. The visual building elements could induce the experience and gave the pleasing shape of the house facades. The principles of facade treatment and the building elements are seen in relation to their surrounding, and their relationships determine the total effect in the facades. The facade decoration of the houses always belonged to the solid. Usually the facades plains are not in a line and found always broken by portico, entry, corners, balconies, projections etc. The solid and void are always well balanced.

There was a common tendency towards balancing the builtform in symmetry in organising the spaces, shape and form. Most of the builtforms and facades were symmetrically balanced. Some of the houses found absolutely symmetrical when viewed frontally, assymetrical when viewed laterally.

Most of the houses are well proportionate both in length of the facades and in height. The most of the facades were human, domestic and residential in scale. In some of the houses where palladian facades or double height in entry are designed seems to be public in scale.

A continuity or organized movement or rhythm is found in most of the colonaded and archaded facades. The continuity is maintained through the repetition of the elements. An order or system was developed for the facade treatment. In the opening systems, in the colonnaded or archaded facades the horizontal lines are ended or terminated by a heavy corners and vertical lines are terminated by the heavy roof projections. Again, each floors are defined by the moulded projections.

Unity or oneness is found in most of the facades of the houses. The repetitive use of the orders, arches, piers etc in the facades or the projection or recessing of the blocks help to create the direction towards some points. Attention may be focussed to one or few elements or it may be equally divided in the entire facade.

Dominance may be given to an element (dome, pediment, rusticated block etc.) by its elevated and central position within the facade. Sometimes, the entry gets dominance for its central position or for the double height. The study of the colonial houses reveals that along with the facade treatment the aesthetic decoration and ornamentation were not neglected in the houses.

The concept of ornamentation and decoration included both the structural and decorative elements. Structural system and decorative art were considered complementary to each other. **Four** types of ornamentations are identified. These are ornamentation by builtform, ornamentation by structural element, ornamentation by decorative element and ornamentation by surface decoration.

The various non conventional shape spaces were designed for decorative and aesthetic purposes. The colonial designers decorated the various orders, using the decorated base and capitals for deliberate enhancing of aesthetic. The capitals with Roman acanthus decoration are found popular in many houses.

The system of covering the spaces with dome is found to be purely decorative purposes. Various good looking and pleasing building elements are used to ornate the houses. These elements were sometimes functional, but most of the cases these were decorative.

Sometimes the surfaces of the houses were decorated with lines, bands, floral decoration, tablets etc. The corners were richly decorated either by quoins or by geometrical lines / figures found in many houses.

The influence of 'art nouveau' the use of curve lines and decoration are found in many houses. Many elements of ornamentation are identified and discussed. Horizontal and vertical bands, lines, quoins, flutes etc. are carved on the walls, corners, columns etc, surfaces to break the monotony of the surfaces.

Decorative projections are used both as functional element as shading devices over the openings, roofs, etc. and as decorative moulded projections at plinth, floor and roof levels to define the floors. Dentils of various types sizes and shapes, large and small are seen in many houses. These are purely for decorative purposes.

Tablets of various form, shape and size are extensively used in almost every type of houses. Both geometrical and floral tablets are used in different areas of the houses .

Usually the brick works are covered with lime plaster. Textures of various materials such as mosaic and *chinitukri* works are the popular types of surface decoration practiced in the houses.

Ceramic *jaliworks* and wood carving are used as medium of decoration in many houses. Abstract mural works are not found generally. Mural works of floral decoration with rose, lotus, bird, petal and creeper etc. are found in the doorways and on the surfaces of the openings. Painting on the surfaces were not popular and found in few houses.

Sculpture of female figures of fine quality marbles are placed on the gardens of many houses. Lion's figurers are found on the gate or entry of many houses.

Colour was used in the houses for two purposes, one, for brightening the interior and exterior surfaces and two, for decorating the surfaces. Usually Lime was used to make the surface white. Sometimes *chinari* was used to make the surface shiny and smooth. Red oxide was used to make the floor surface red.

The colonial builders gave greater stress in the use of the three basic or primary colours.

The next chapter deals with the representative houses of different types.

Reference : Chapter-7

- 7.1 The Neemtali *kuthiis* destroyed and presently the only surviving feature is the western gate. The facade style in Neemtali gate resembles the late Mughal style.
- 7.2 The facades of rose garden are another modified type of palladian facade although it has no double height free standing columns. But it has several false columns upto the roof of the upper floor.

- 7.3 The facade treatment of the houses of Ruplal, Dhaka, Putia *rajbari*, Rajshahi, Advocate Surendra Nath, Noagoan, Reboti Mohan, Dhaka, Mathura Nath Chakrabarty, Dhayaganj, Dhaka, Rose garden, Dhaka, Mohendra Gosh, Khulna, etc, are the best examples of the palladian facades in Bangladesh.
- 7.4 The large pediments used in the palladian facades, eg, ruplal house (fig-7.14.1.1), house of advocate Surendra Nath Mitra (fig-7.8), Ukil para, Noagaon, resemblance the **palladian** facade of Parthenon and other temples like **Posciden** Aphaia, Aegina, Zeus, Olympia etc.
- 7.5 Rudolf Wittkower, Architectural principles in the ages of Humanism. Academy edition, London, 1973, P-70.
- 7.6 The 'Art nouveau' (characterised by curved lines) style in facade treatment seen in the works of architect Antony Gaudi (1890s) are found in some of the houses in Bangladesh eg, houses of Lalkuti, Rajshahi Prafulla Kumar Das, B.K.Das road, Dhaka, Gauripur raj bari etc,
- 7.7 Eg, Chummery house, Dhaka, Circuit house, Chittagong, Gauripur zamindar house at Mymensingh town etc.
- 7.8 Dr. Nazimuddin, Buildings of the *Raj* opcit. P-134
The manor houses are distinctive type of dwellings evolved originally in England in the 14th century in which the central feature and characterised by highridgs gable roof covered in clay tiles, baywindows, oriel windows, gable, chimney stack and wooden panel walls etc.
- 7.9 Arg. Isaac, Approached to Architectural Design. opcit, P-22
- 7.10 Symmetrically balance is sometimes called the formal or passive balance and symmetrically balance is the type in which one-half of the object is the inner image of the other.
- 7.11 The PWD built bungalows of D.C, S.P, D.S, Magistrates etc, in the government colonies at Ramna in Dhaka and other district and sub-divisional towns are found assymetrical in composition.
- 7.12 The front (north) facae of Ruplal house is divided into three divisions and the middle division is projected to get break the unpro-portionate long length of the facades.
- 7.13 Tension is generated in the north facade of the Ruplal house for the disproportionate large size pediment and for too small size dome on the house of Nawab Shamsul Huda at Gokarna, Brahmanbaria.
- 7.14. The examples of these type of houses are Muktagacha rajbari, Murapara house, Putia rajbari, Governor house etc.
- 7.15 These type of treatment easily attract the eyes of the viewers and give a sense of superscale to the builtform.
- 7.16 The conical shape element over the Chummery house, Dhaka, flat dome over the bungalows of D.S, Khulna etc, created a surprise for the sudden change of form.
ARG. Isaac, opcit, P-104

- 7.17 Art today, opcit, P-367
- 7.18 Here order does not mean the column is architecture, rather it means a system or process developed in the facade treatment.
- 7.19. Double height columns, normal columns are seen in the Ruplal house. Again small columns at the sides of the doors and windows are also seen (fig-7.28.1.1, 4.28.5)
- 7.20 In the first case attention is focussed on one element, the rusticated block on the roof, again attention is given on the whole decorated parapet on the house.
- 7.21 K.M. Panikkar, A Survey of Indian history. opcit. P-43.
- 7.22 Urban bungalows of Dr. Baset at Umesh Datha Lane, Dhaka. Engr. Gulzar at Hossain-e-dalan road, Dhaka .
- 7.23 *Ranimahal* at Joydevpur *rajbari*. The rooms of this mahal is rectangular but it gives the look of semi circular mass.
- 7.24 The circular balcony is found in the rose garden (fig-8.22.2) and a combination of rectangular and semi-circular balcony is found in the *natch ghar* at B.K. Das road
- 7.25 Fletcher, Banister, opcit, P-972.
- 7.26 Acanthus - a plant whose leaves, conventionally treated, form the lower portions of the corinthian capital.
The acanthus leaf and scroll play an important part in Greek ornamentation. The leaf from which these were derived grows in the south of Europe in two varieties. The 'acanthus spinosus' preferred by the Greeks has pointed, narrow lobes, V-shape in section with deeply drilled giving a sharp, crisp shadow.
The 'acanthus mollis' preferred by the Romans has broad, blunt tips flat in section. The leaf was used principally in the corinthian capital.
Fletcher, Banister, opcit, P-138, 156, 162.A, 246.D.
- 7.27 Rajeswar Rai Chjowdhury, Kalaskati, Barisal.
- 7.28 Fairfax house, York, Doreen Yar wood, Architecture of England, B.T. Batsford Ltd, London 1963. P-335.
- 7.29 Fletcher, Banister, opcit, P-146.
- 7.30 Vertical lines are carved on the corners of the houses of Gangaram Bishi (fig-7.3.5). Painamnagar. rose garden (fig-8.22.5). *Durga mandir* (fig-4.9.5) of Dinajpur *rajbari*, *chota taraf*, Natore *rajbari* (fig-7.4.6).
- 7.31 Tablets are depicted on plinth of chota taraf of Natore *rajbari*, door ways of sardar bari sonargaon, arches of ghat house Painam nagar and on the roof level of ruplal houses.
- 7.32 Textures of *chini-tukri* mosaic works of various colours are extensively found in the *pukur ghat* of Balda garden.
- 7.33 Building of the british raj, opcit. -P-98.

- 7.34 *Chini-tukri* mosaic works surface decorations were found in many works of architect Antoni Gaudi
Facade of Casa-Mila Barcellona, 1905-10 is one of such works
- 7.35 Doors of the house of Mr. Monsur M.P. at upper Jessore Road, Khulna and Mohendra Gosh, Ahsan Ahmed road. Khulna.
- 7.36 Wooden curving is found on the ridge of the porch of the bungalow of District Judge, Khulna and on the drop of the the bungalow of District Judge and curcit houses, Khulna.
- 7.37 The *chakra* (wheel) as symbol of Vishnu and as *dharma* (wheel of the law) runs through history as a common motif for carving and decoration
- 7.38 Temples of Natore *rajbari* and Kalash Kati, Barisal.
- 7.39 As for examples, Digapatia *rajbari*, Mumensingh *rajbari* rose garden *bagan bari*
- 7.40 As for Murapara house
- 7.41 Mymensingh *rajbari* and Digapatia, *rajbari*.
- 7.42 Lion figures are found on the gates of Dinajpur *rajbari* and at the entry of Rangamati *rajbari*.
- 7.43 *Chinari* is an anhydrious powder made by burying the shells.
- 7.44 Red oxide is extensively used on the surfaces of Ramna colony, Dhaka.
- 7.45 Harriet and vetta Goldstein, Art in every day life, Bombay, 1968, P-185.

Fig-7.1 Archaded rural house

House of Rabin Gosh
and Khetish Gosh,
Town Noapara,
Khulna

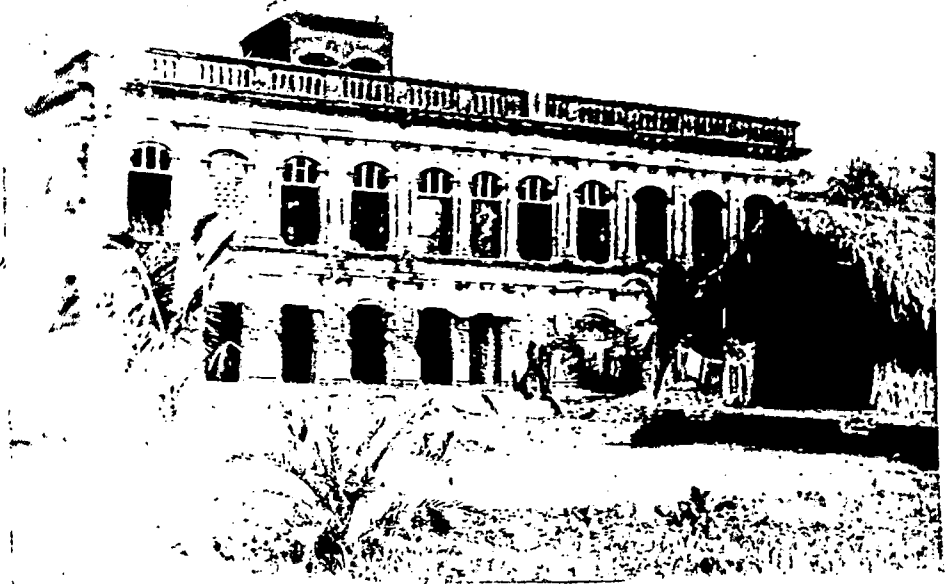


Fig-7.2 Archaded and decorated rural house

Kashi Nath Bhaban,
Painam nagar,
Sonargaon.

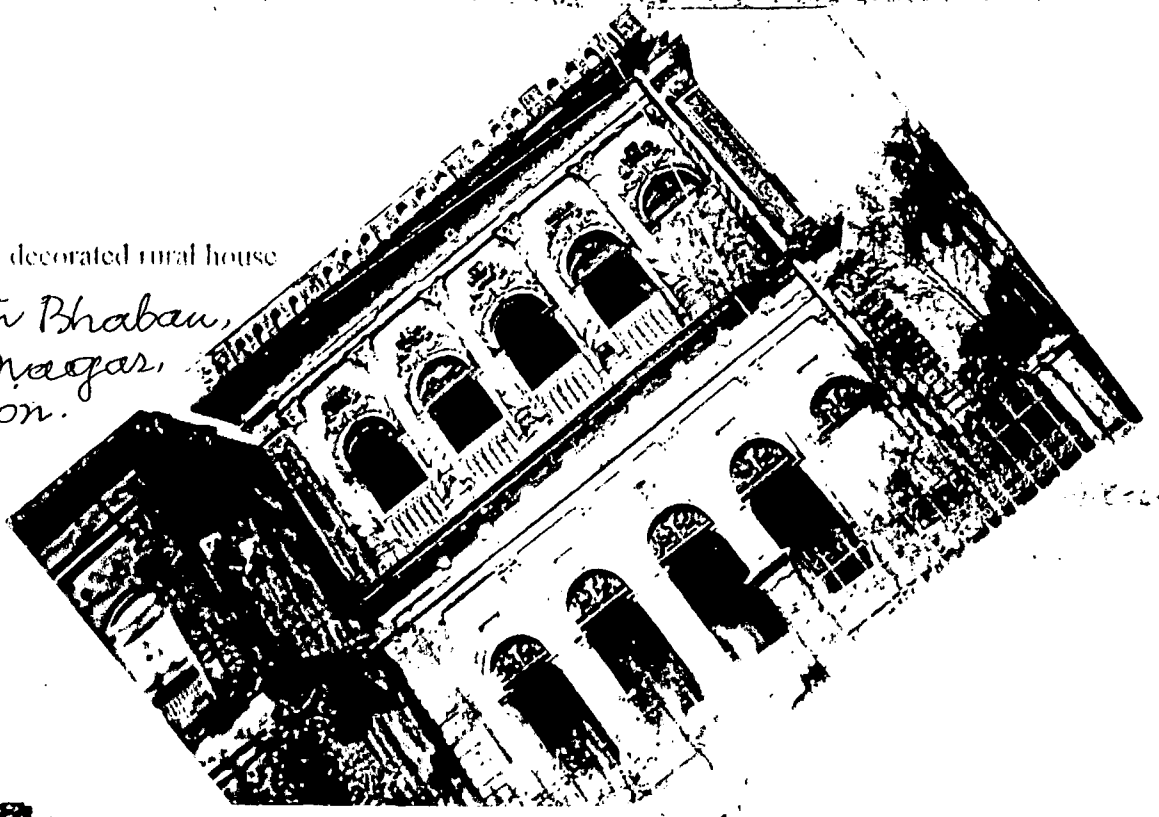


Fig-7.3 Archaded and decorated
bathal khana of rural house

Dewan Bari
Savar, Dhaka

Fig-7.4 Decorated facade of the house at satellite town.

House of Devendra Mohan, Nawab Street, Wari, Dhaka



Fig-7.5 Facade of urban house

House of Mona, Aga moshi lane, Dhaka

Fig-7.6 Lal kuti, shaheb bazar, Rajshahi

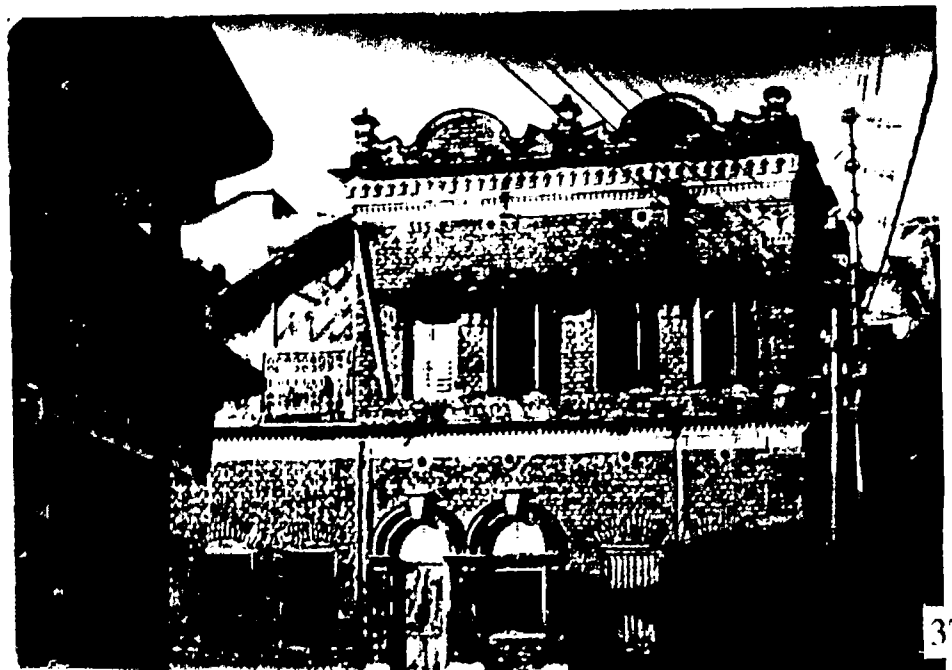


Fig-7.7 Decorated facade,
house of *Hati* company. Chittagong

Quoins used at the corners. Similar quoins are used in many houses, eg, house of Sailean Gosh, Lower Jessore road, Khulna.



Fig-7.8 Palladian facade

House of advocate Surendra Nath Mitra, Ukilpara Noagaon. Palladian facade which found in many zamindar and urban houses eg- Rebotimohan lodge, at Sutrapur, Dhaka.

Fig-7.9 Facade of govt. bungalow showing the horizontal bands

Bungalow of S.D.O. Brahmanbaria.



Fig-7.10 Decorated **arch**aded facade

Ahsan Manzil
(Rangmahal)
Dhaka.
Cupolas on the
corners of the
parapets.

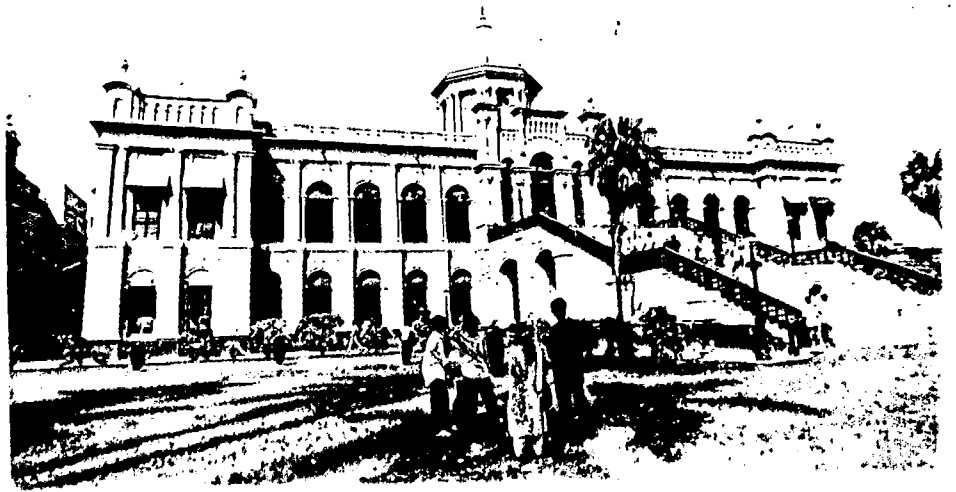


Fig-7.11 Colonnaded
decorated facade

Zamindar house
of Syed Shamsul
Huda, Gokarna,
Brahmanbaria

Fig-7.12 Decorated archaded facade

Tajhat palace,
Rangpur.



Fig-7.13

Decorated archaded facade
of Zaminder house

*Muktagacha
Rajbari*

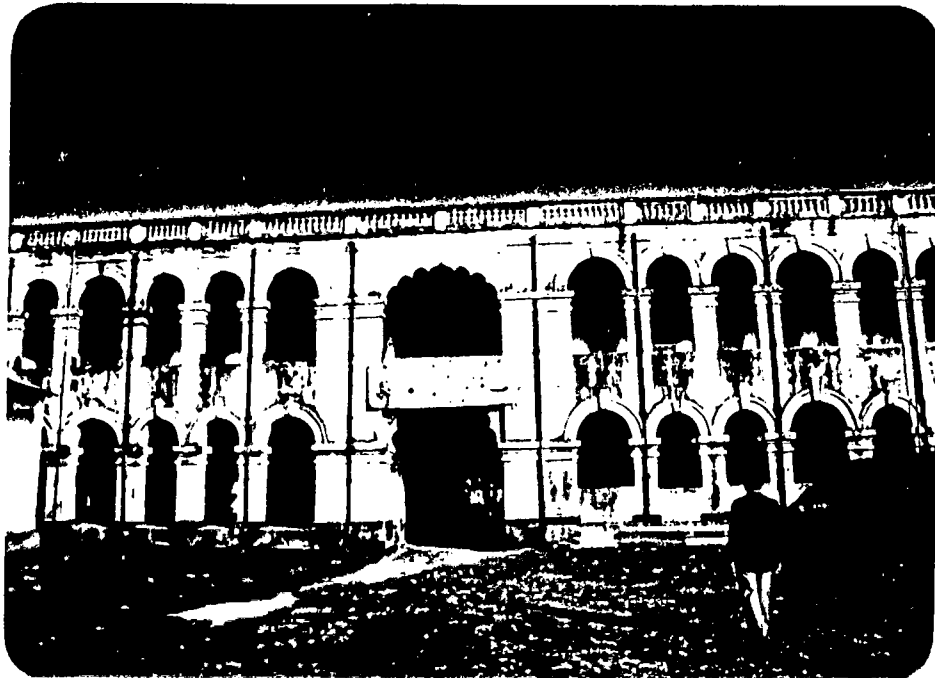
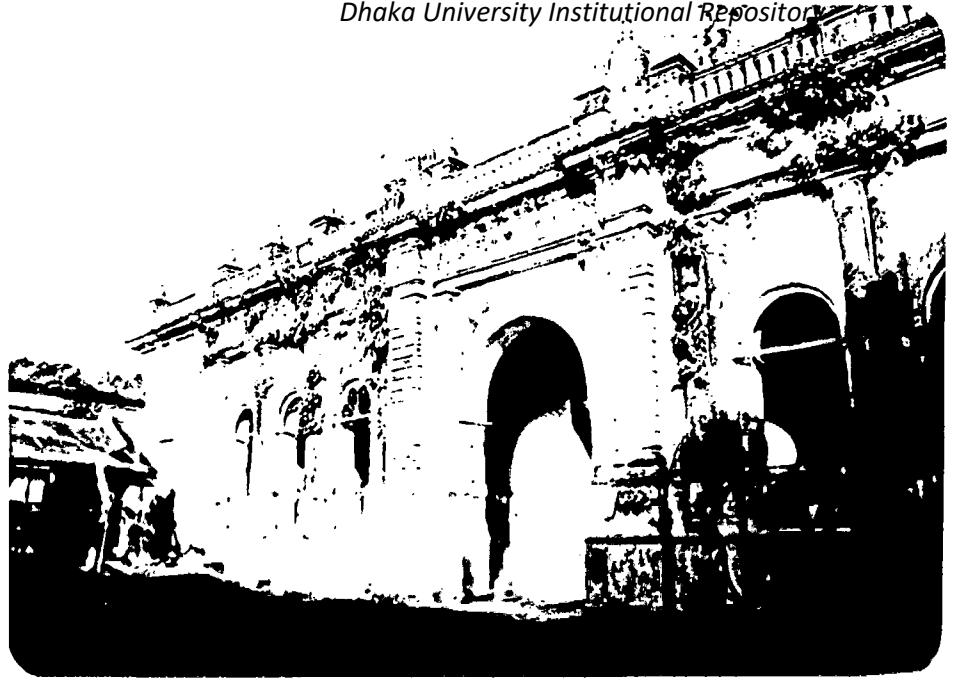


Fig-7.14

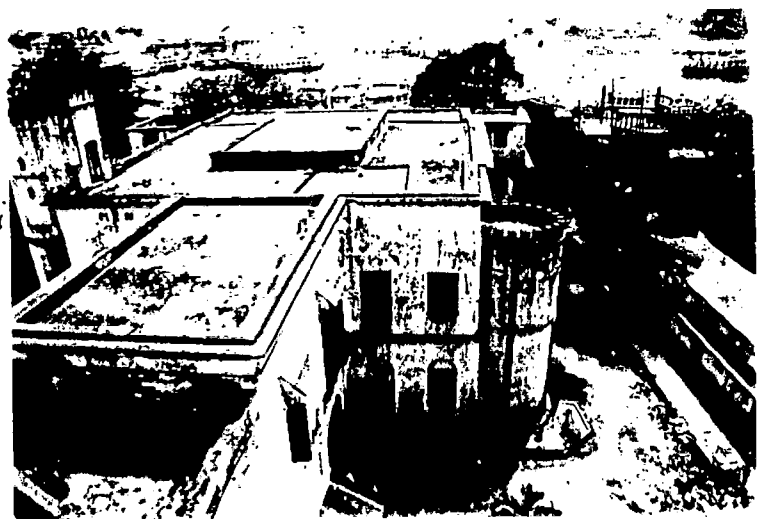
Decorated archaded facade
of zamindar house

*Muktagacha
rajbari*

Fig-7.15

Plain facade of kuthi

*Kuthi of Wais
at Wiseghat,
Dhaka*



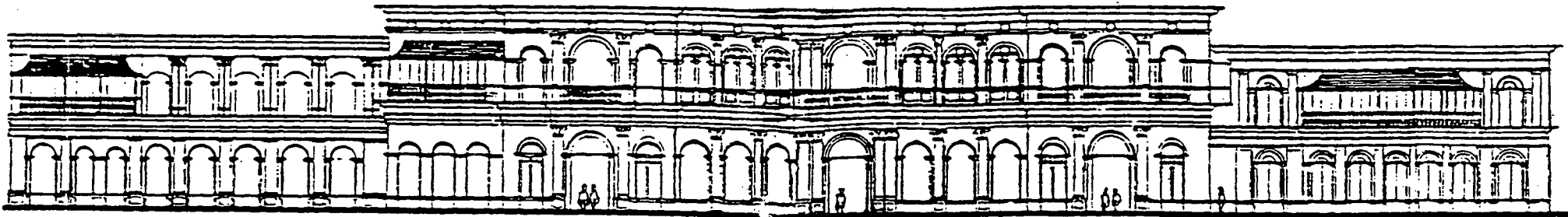


Fig-7.14.1.2 South elevation, Ruplal house

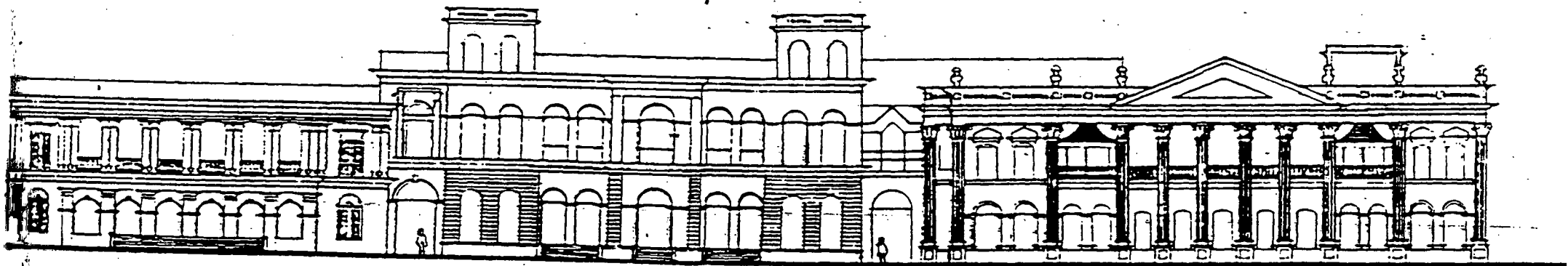
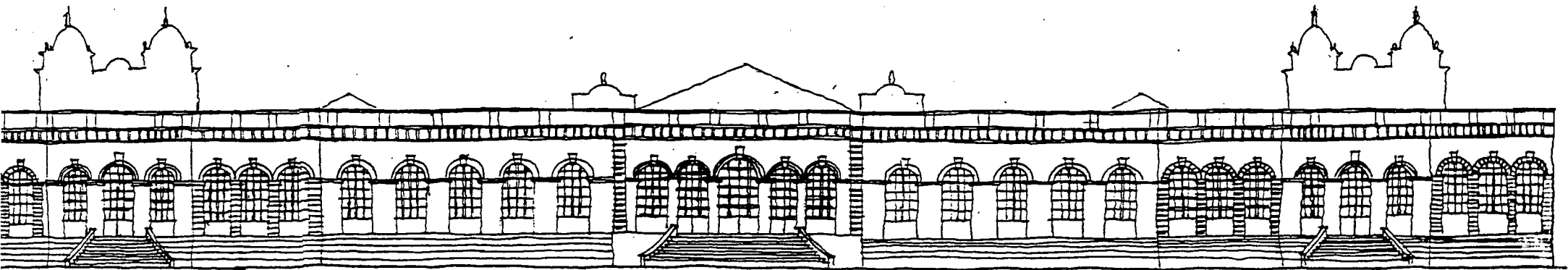


Fig-7.14.1.1 North elevation, Ruplal house

Fig-7.14.1 Combination of Archaded and collonaded elevations, Ruplal house.



4.2.2 South elevation, Mymensingh rajbari

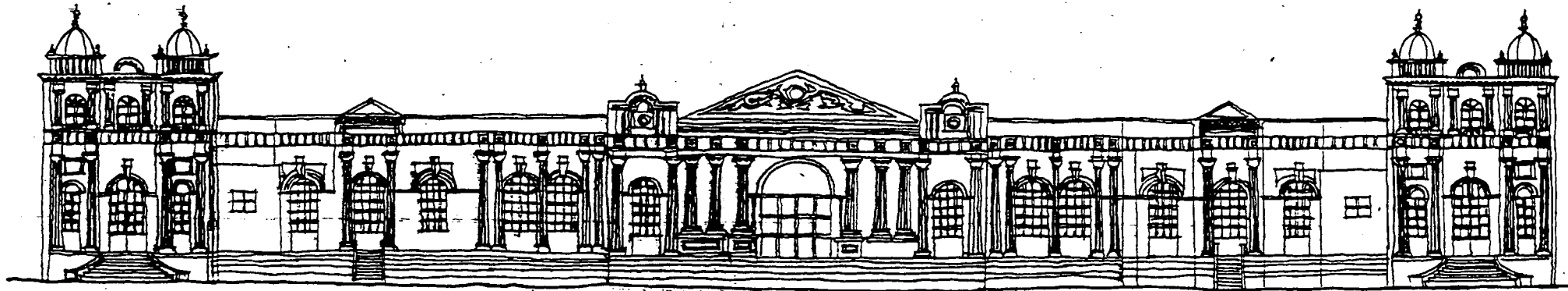


Fig-7.14.2.1 North elevation, Mymensingh rajbari

Fig-7.14.2 Elevations of Mymensingh rajbari

Fig-7.16 West facade of circuit house, Chittagong



Fig-7.17 South west facade of circuit house chittagong

Fig-7.18
Archaded facade of Nach ghar
Presently used
as Sher-e-Bangla
Mohila College,
Dhaka.





Fig-7.19
Facade of Chummary, Dhaka
North facade

Fig-7.20
Archaded facade of urban house
at Chittagong

*Urban house of
Nishi Kanta Babu
Stand road,
Chittagong.*

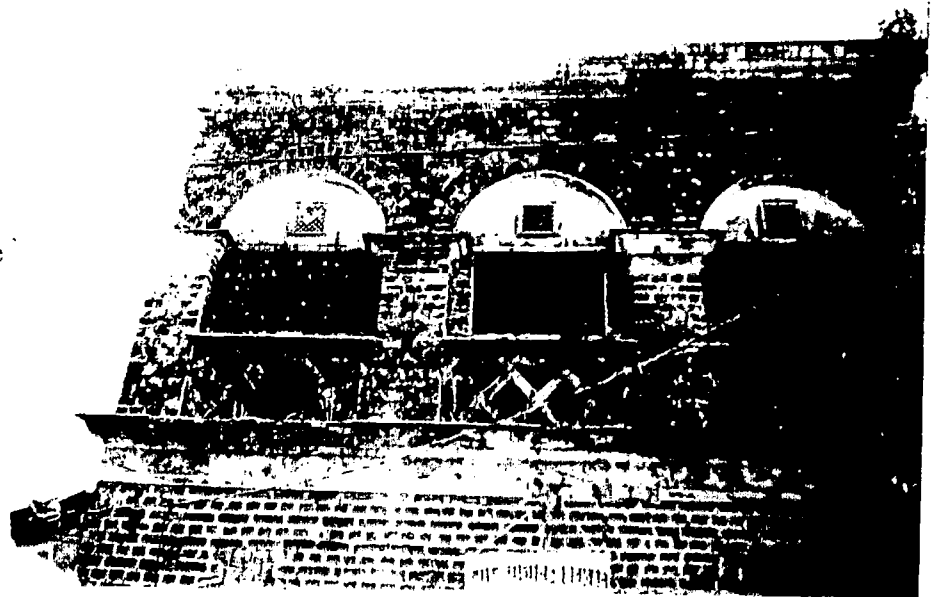


Fig-7.21
Facade of govt. bungalow,
Ramna colony Dhaka

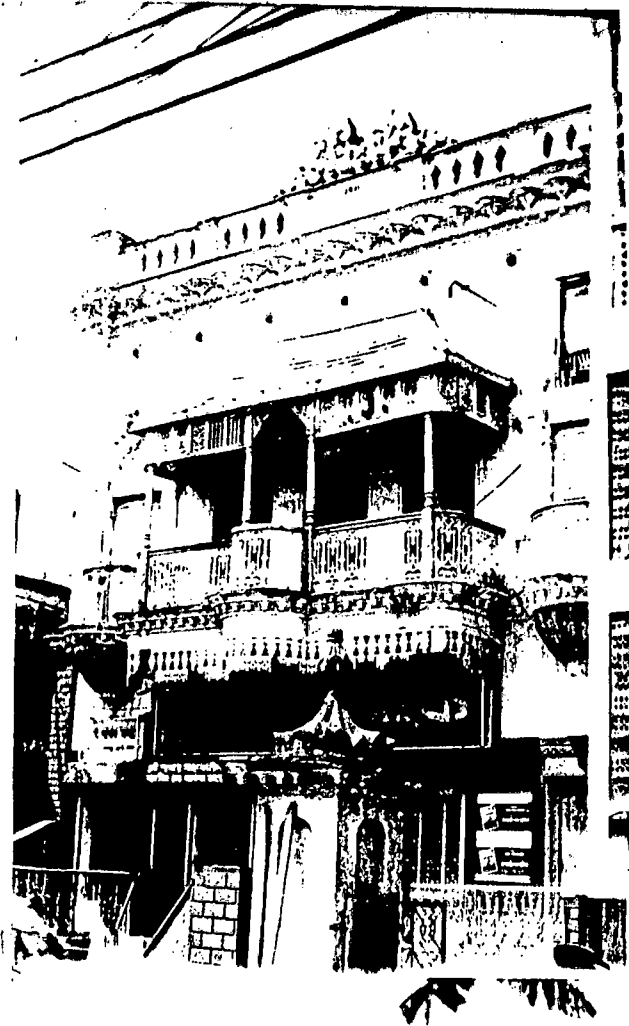


Fig-7.22

Decorated facade of *bagan bari*,

Farashganj, Dhaka

Bagan bari of Babu Basanta
Kumer Das.



Fig-7.23

Plain facade of c.i. sheet

bagan bari at Rangpur

Bagan bari, zamindar
of Tapa



Fig-7.24

Combination archaded on plain facade in

Railway quarter,

Khulna.

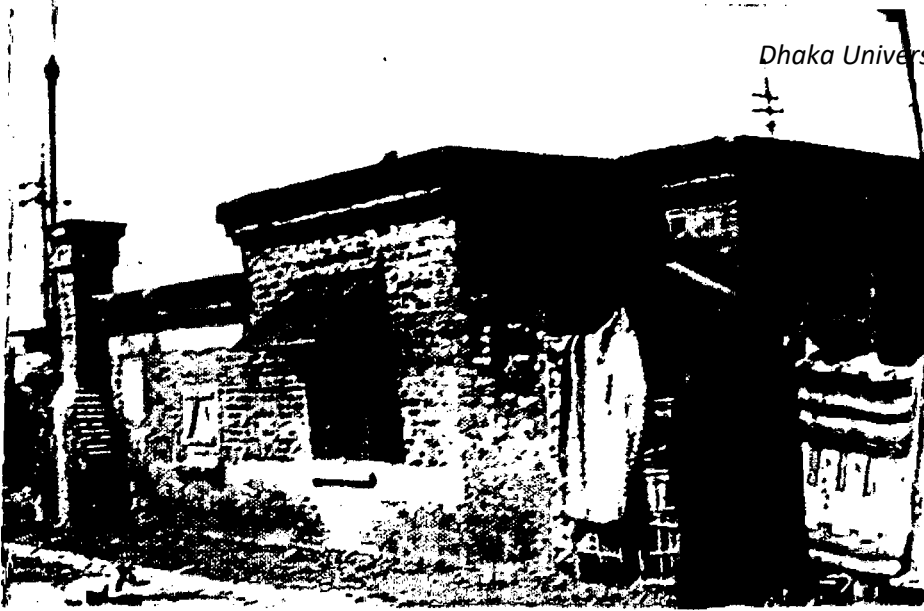


Fig-7.25

Plain facade in Railway quarter, Sylhet



Fig-7.26

Plain facade in Railway quarter,
Brahman baria

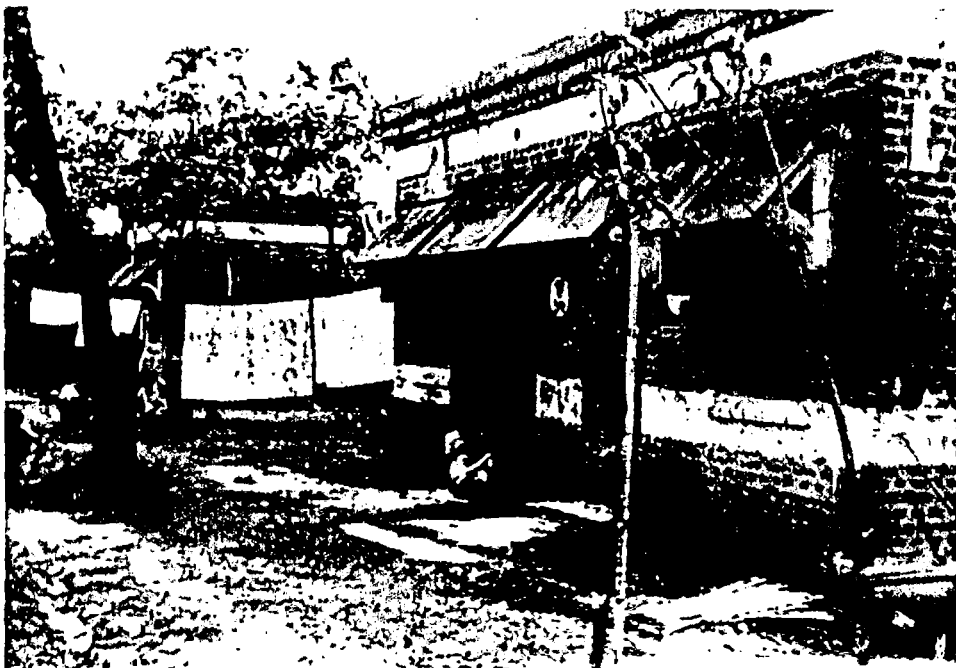
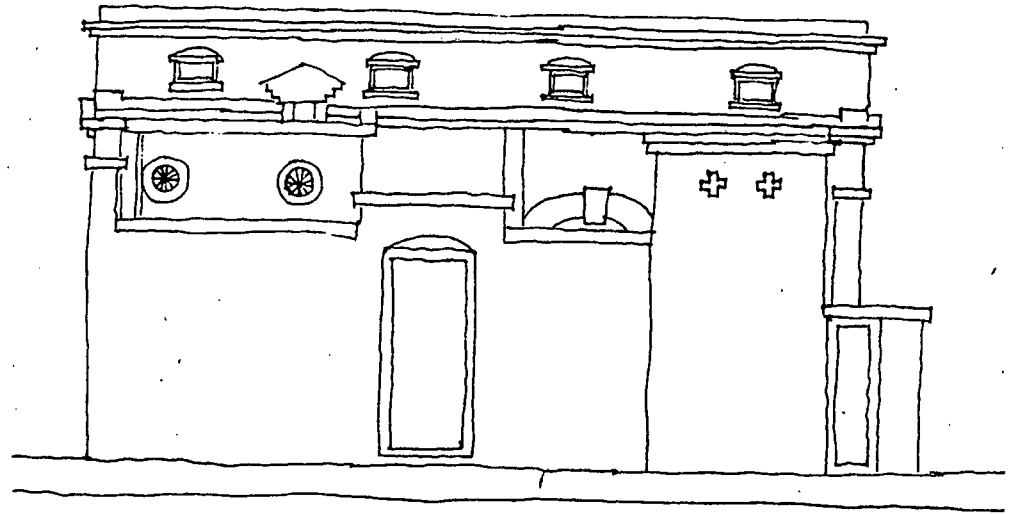


Fig-7.27

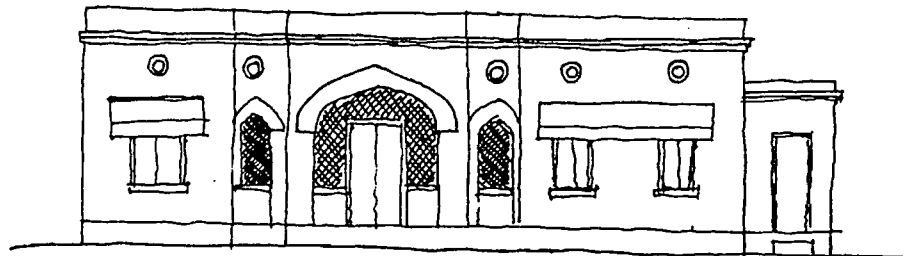
Plain facade in Railway quarter,
Brahman baria

Fig-7.28
Rear elevation, Typical facade
of railway quarter



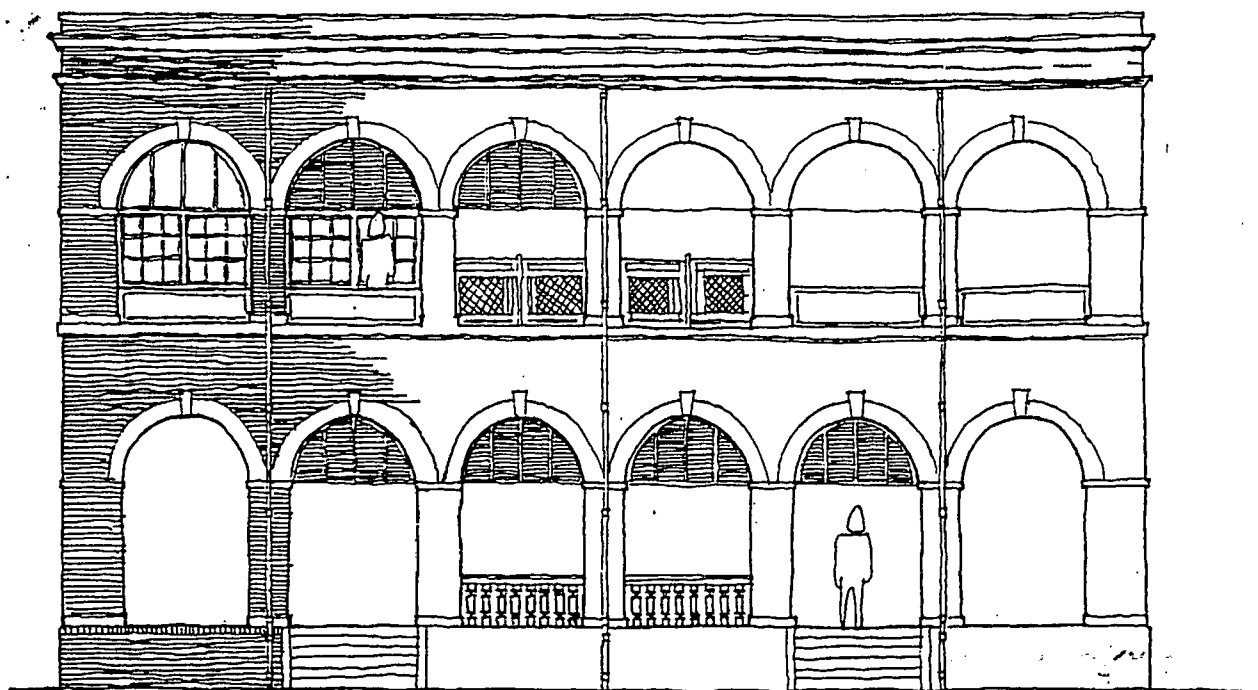
REAR ELEVATION

Fig-7.29
Front elevation, typical facade
of Railway bungalow



FRONT ELEVATION

Fig-7.30
Typical facade of double storied
one unit bungalow



FRONT ELEVATION
STANDARD ACCOMMODATION
SCALE 1 INCH = 4 FEET

Fig-7.31
Typical archaded facade
of circuit house, Khulna

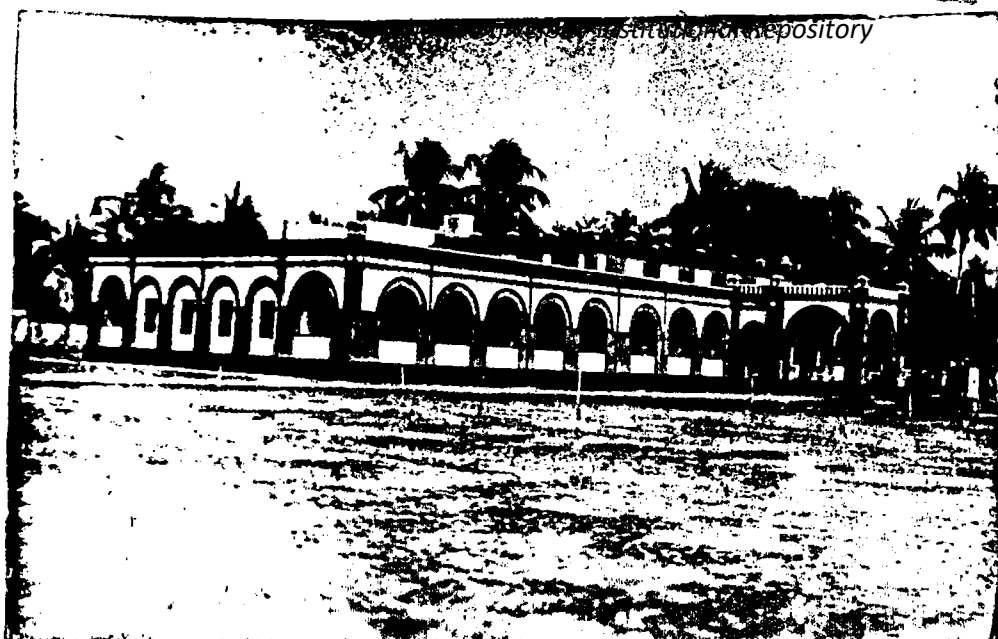


Fig-7.32
Facade of a shop house,
Brahman baria

*Shop-house
of Gopal
mondal*

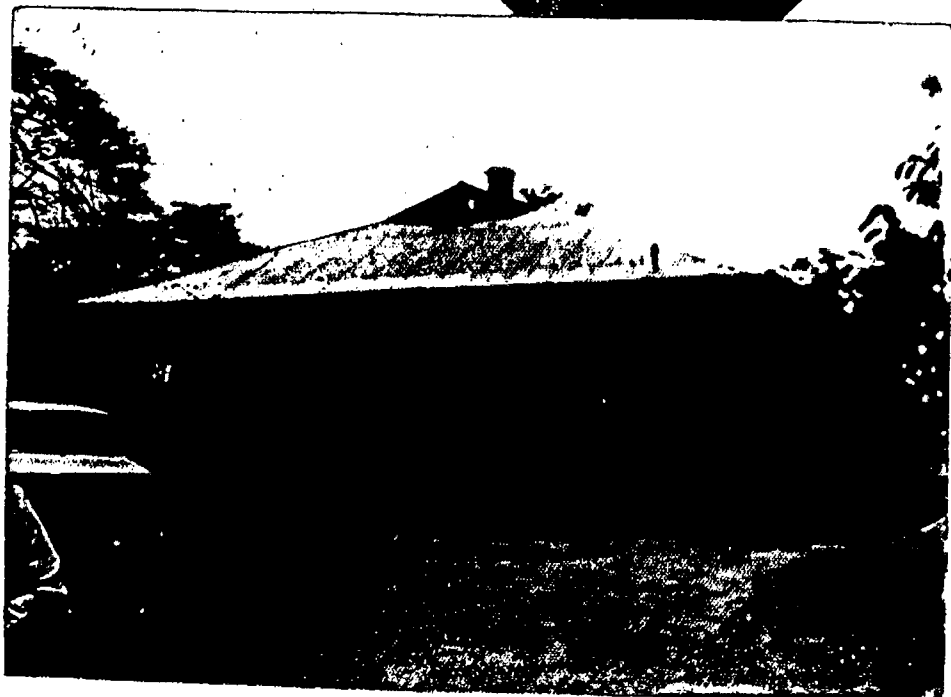
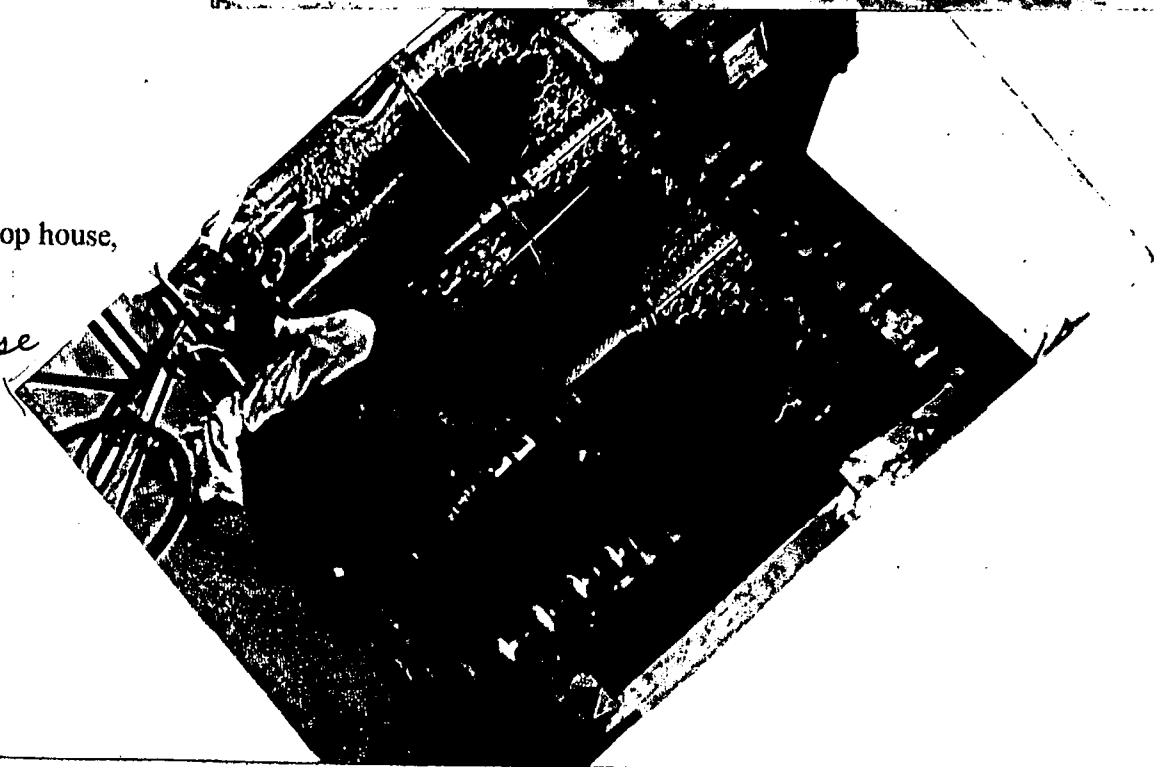


Fig-7.33
Plain facade of
a garden bungalow Sylhet

*Asstt manager's
bungalow,
Malni chara tea
garden, Sylhet.*

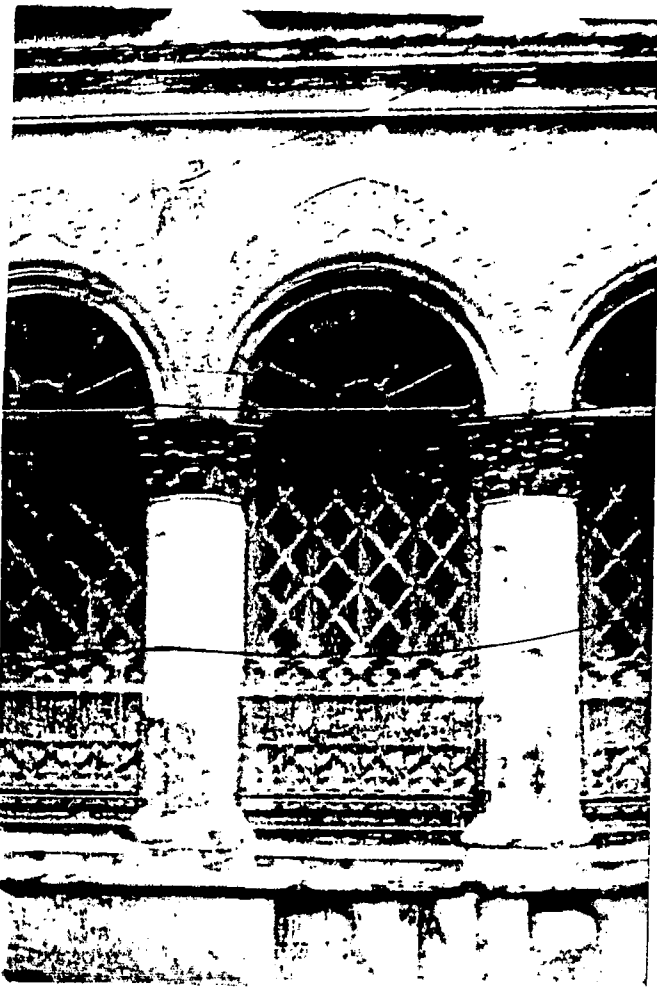


Fig-7.34

Decorated facade of urban house

House of Ananda
babu, Amanitola,
Dhaka.



Fig-7.35

Rich ornamentation on wall surface

House of Ganga-
ram Bishi at
Painamagar,
Sonargaon.



Fig-7.36

Rich ornamentation on wall surface

Urban house of
Jagannath Saha
at Jagannath
Saha road, Dhaka

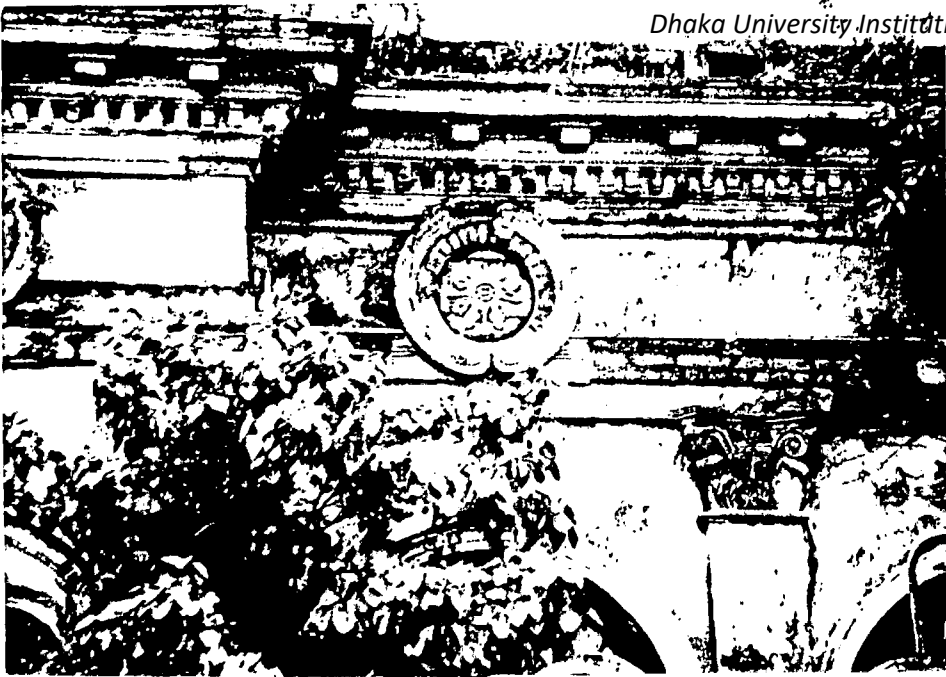


Fig-7.37

Decoration on wall surface
Ruplal house,
Dhaka

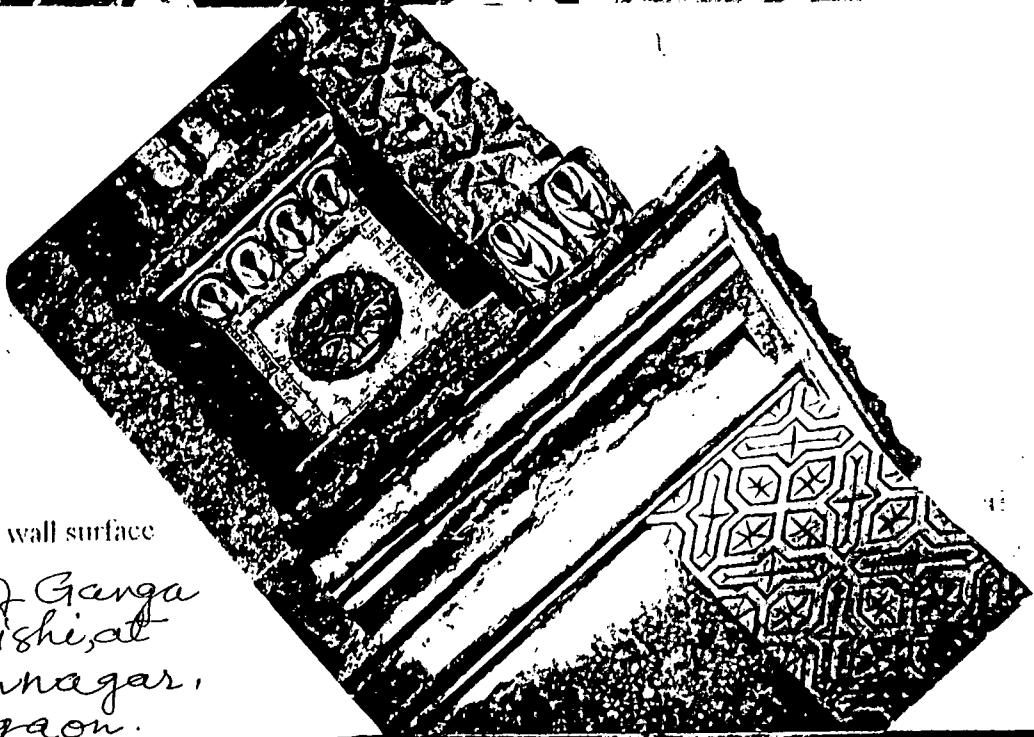


Fig-7.38

Decoration on wall surface

House of Ganga
Ram Bishoi at
Painamnagar,
Sonargaon.

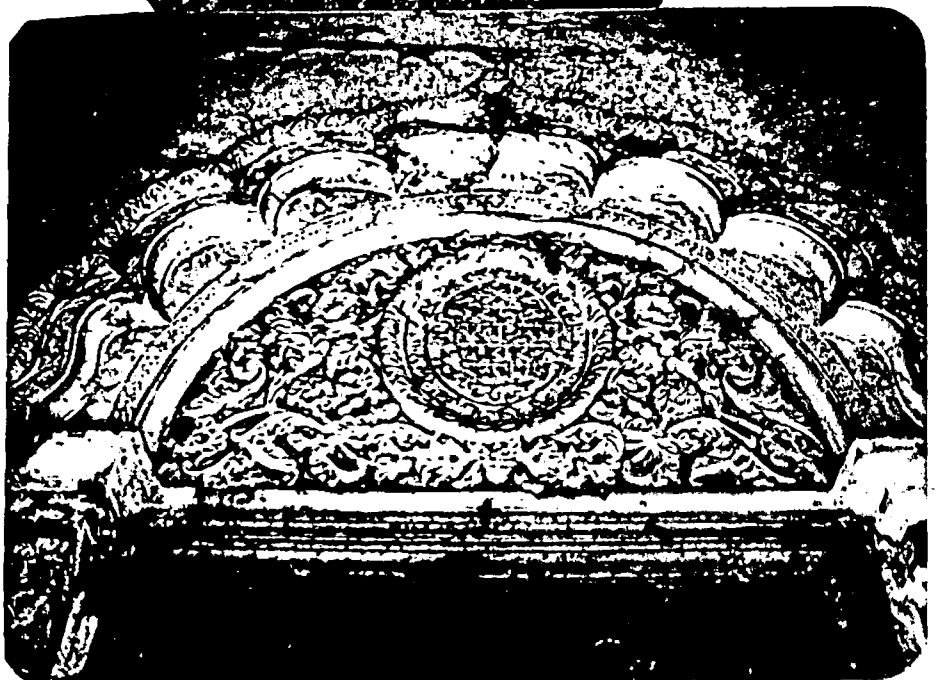


Fig-7.39

Decorated arch in rural house

Ghat house,
Painamnagar,
Sonargaon.

Fig-7.40

Decoration and ornamentation
over arch in *rajbari*

Chota taraf,
Natore, Rajbari,

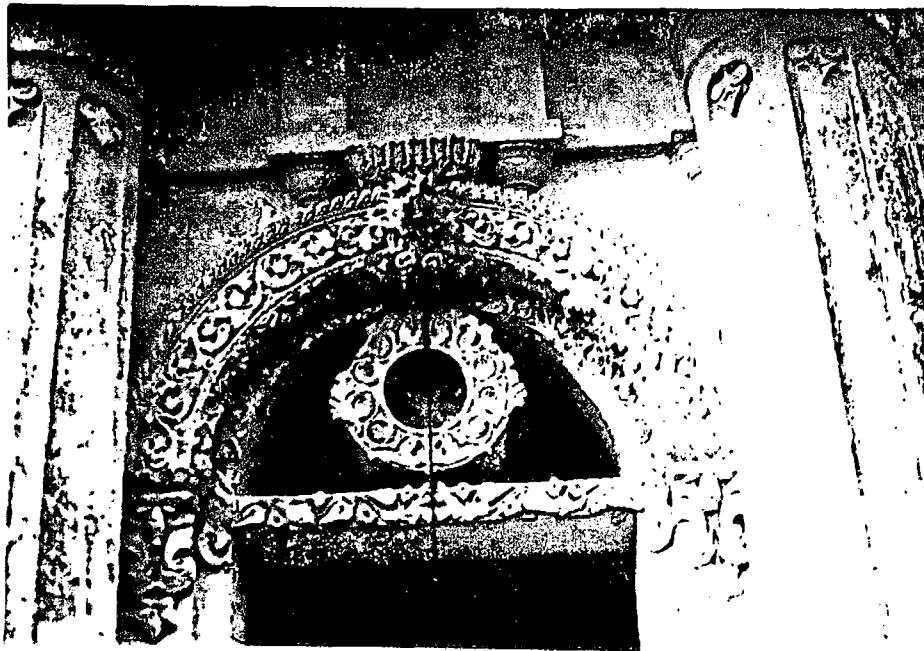


Fig-7.41

Decoration and ornamentation
over arch in *rajbari*

Barataraf, Natore
rajbari.

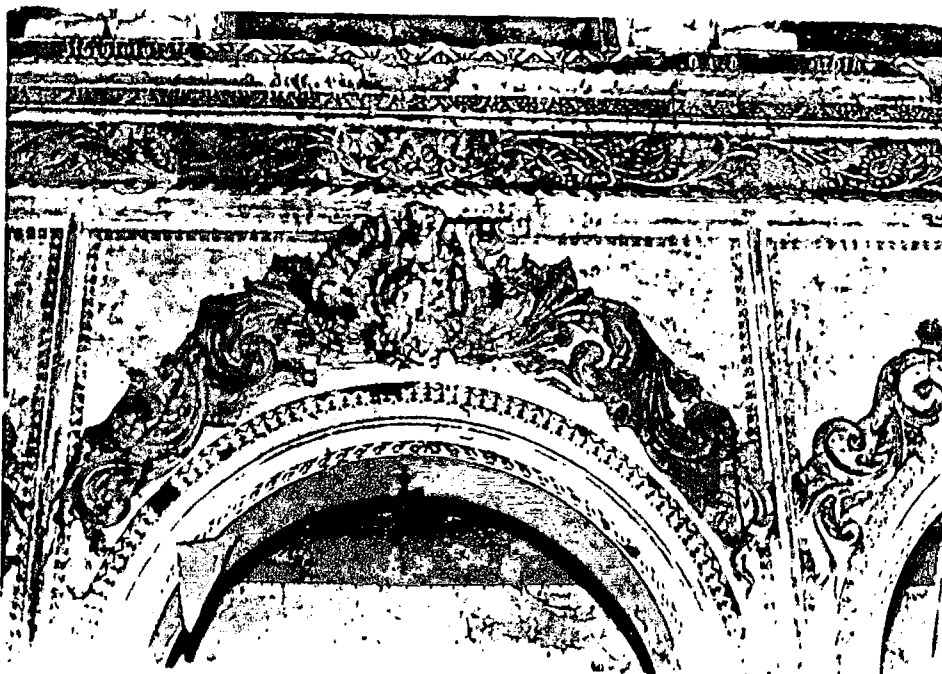


Fig-7.42

Decoration and ornamentation
over arch in rural house

House of Jogesh
Chandra Poddar,
Painamnagar,
Sonargaon.

Fig-7.43

Decoration and ornamentation
over arch in *baganbari*

*Rose garden,
Dhaka*

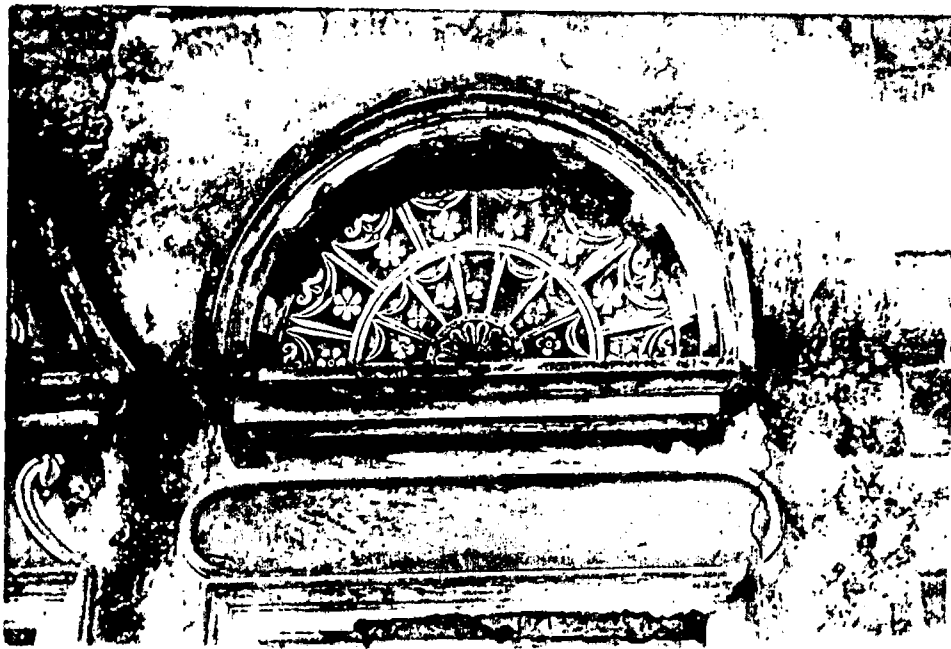


Fig-7.41

Decoration and ornamentation
over arch in rural house

*Ghat house,
Painam nagar,
Sonargaon.*



Fig-7.45

Decoration and ornamentation
over arch in *rajbari*

*Chota tarab,
Natore rajbari.*



Fig-7.46,

Ornamentation on wall surface

*Chota taraf,
Natore rajbari*

Fig-7.17

Ornamentation on wall surface
in Zamindar house

*Ruplal house
Dhaka*

Fig-7.48

Chinitukri decoration
on wall surface

*Sardar bari,
Sonargaon.*



Fig-7.49

Ornamentation on wall surface
of dance hall

Tipu Sultan road,
Dhaka



Fig-7.50

Wooden Jali work in railway bungalow

Railway bungalow no-66,
Fulbaria railway Colony,
Dhaka.



Fig-7.51

Brick jali work in railway quarter

Railway quarter, Natore



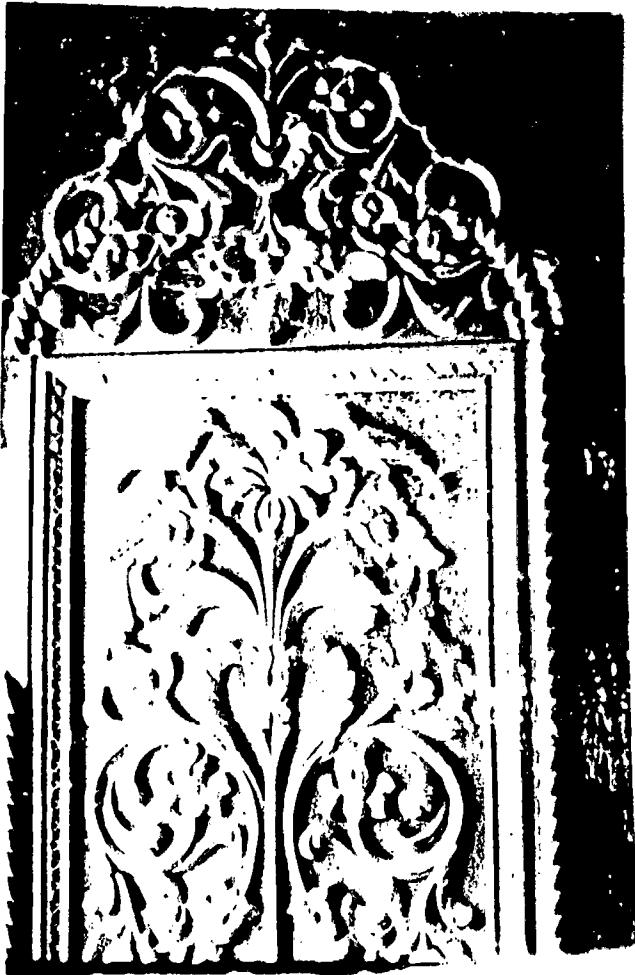


Fig-7.52

Decoration on wooden door

Bagan bari of Basanta babu,
B. K. Das road, Dhaka

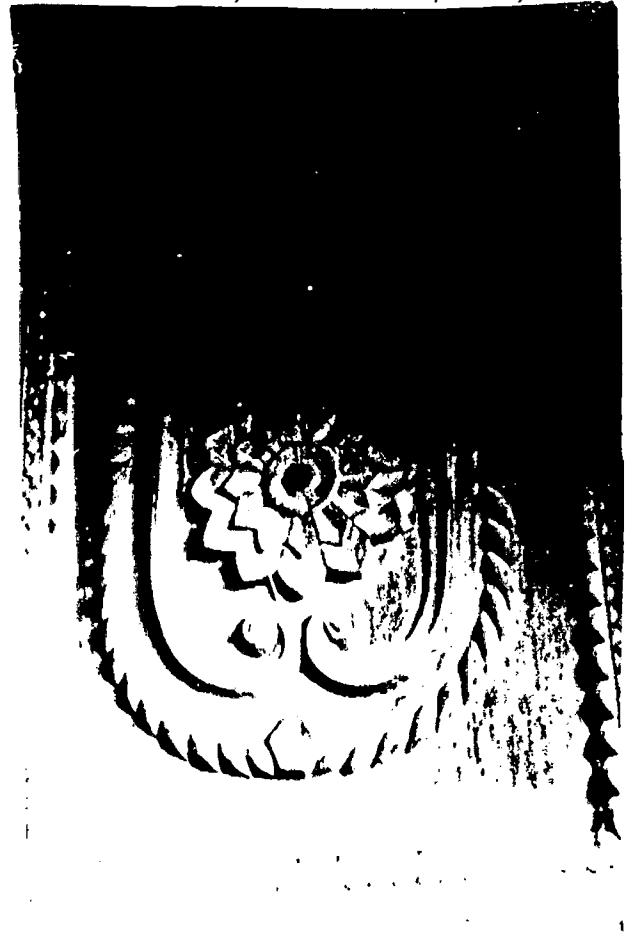


Fig-7.53

Decoration on door panel

Zamenidar house of Nawab
Shamsul Huda, Gokarna,
Brahmanbaria

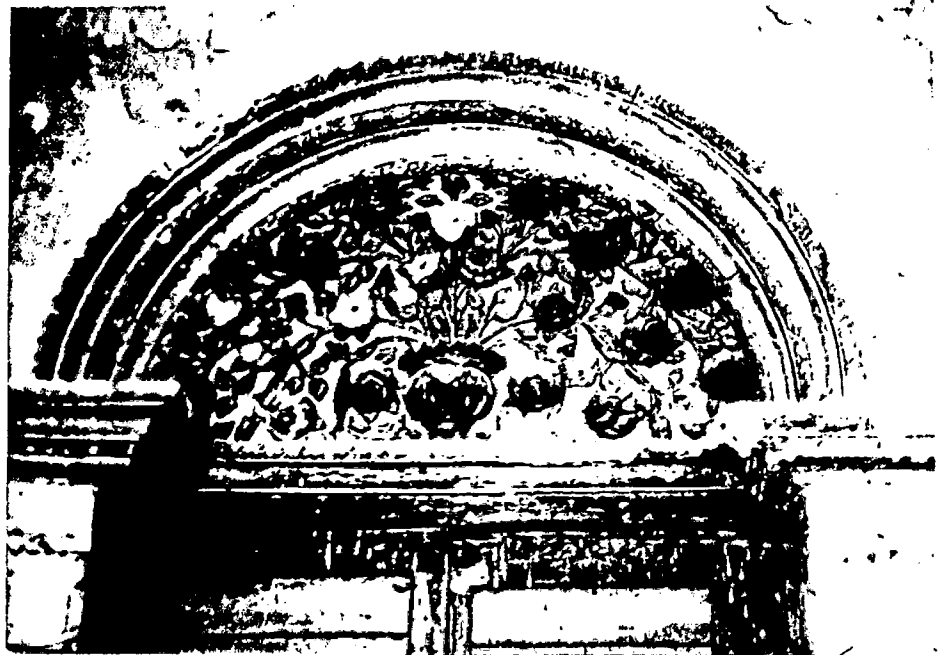


Fig-7.54

Decoration over door way

Bhawal rajbari
at Dhaka.



Fig-7.55

Decorated facade of Mandir

Radha-Krishna Mandir,
Tipu Sultan road, Dhaka



Fig-7.56

Decorated facade with curve lines

House of Prasanna Kumar Das,
B.K. Das road, Dhaka

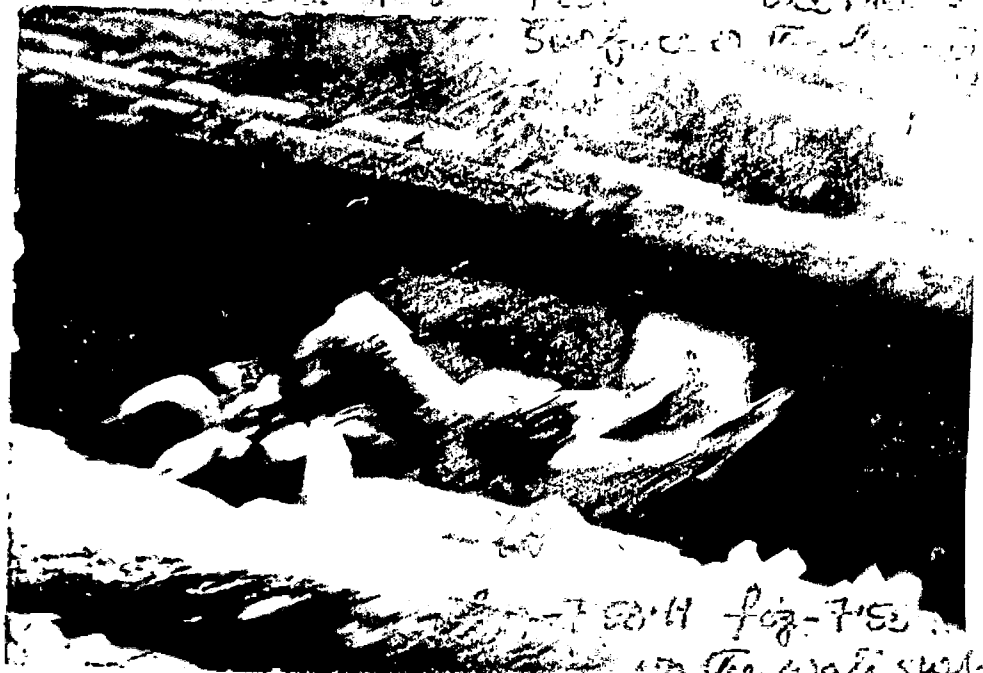


Fig-7.57

Decorated facade with bird figure in rural house

House of Sailan Gosh, Town
Naabara, Khulna

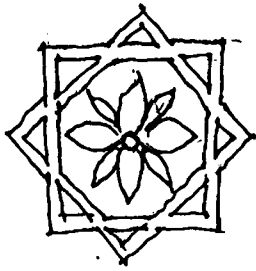


fig-7.58.1
Tablet on parapet,
shop house at 48,
Johnson road, Dhaka.

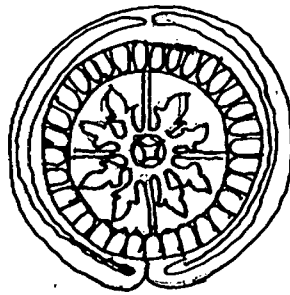


fig-7.58.2
Tablet on the wall
surface, Ruplal
house, Dhaka

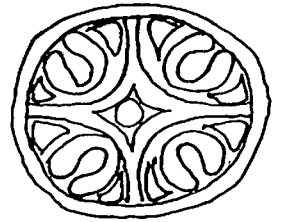


fig-7.58.3
Tablet on the wall
surface of the
house of Ganga
ram Bishhi,
Painamnagar,
Sonargaon.

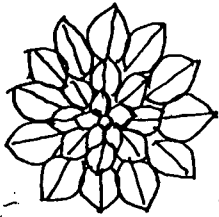


fig-7.58.4
Tablet at the front
facade of mandir
house, house of
Sailan Gosh,
Town Noapara,
Khulna.

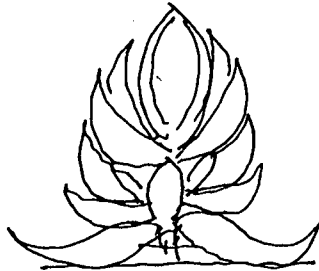


fig-7.58.5
Tablet like decorative
element used as
freestanding feature of
South facade of
Ahsan Manzil, Dhaka
similar to the State head
P-163, Fletcher.

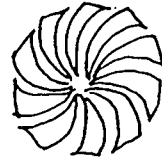


fig-7.58.6
Tablets on the mondi
surface of the house
of Devendra Nath
Guha, Town
Sreepur, Sattkira,

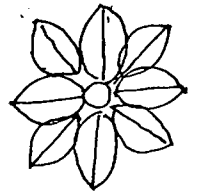


fig-7.58.7
Tablets on the mondi
surface of the house
of Devendra Nath
Guha, Town
Sreepur, Sattkira,

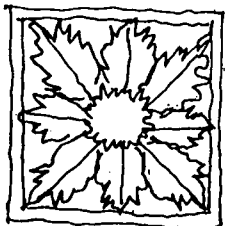


fig-7.58.8. Tablets on the northern wall surface
of the urban house of Jagannath Saha
Lalbagh
Dhaka.

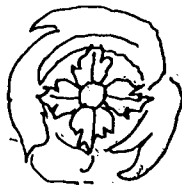
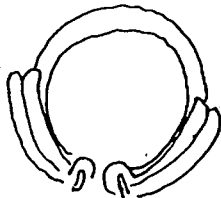


Fig-7.58



Various types of single tablets on wall surface



fig-7.58.11 Tablets on the wall surface
of the front facade of the
house of Ganga ram
Bishhi, Painamnagar,

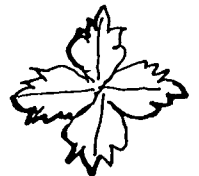


fig-7.58.12 Tablets on the wall surface
of the front facade of the
house of Ganga ram
Bishhi, Painamnagar,

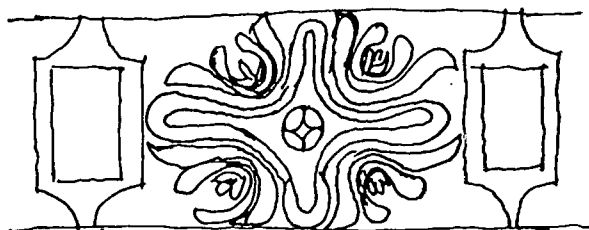


Fig-7.59.1 Long tablet on the parapet of the house of Sailem Gosh, Town Naapara, Khulna.
Large tablets on wall surface

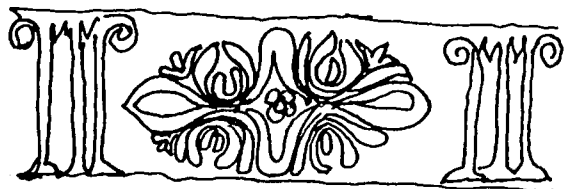


Fig-7.59.2 Long tablet on the parapet, house of Sailem Gosh, Town Naapara, Khulna.

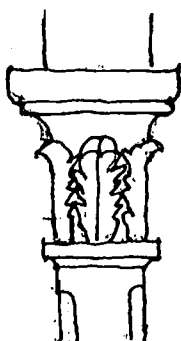


Fig-7.60.1 Roman acanthus on the R.C.C column of Bhawal rajbaria at Imamganj, Dhaka.



Fig-7.60.4 Roman Acanthus decoration on the cast iron column base, House of Gagan Saha Pralumar, Waria

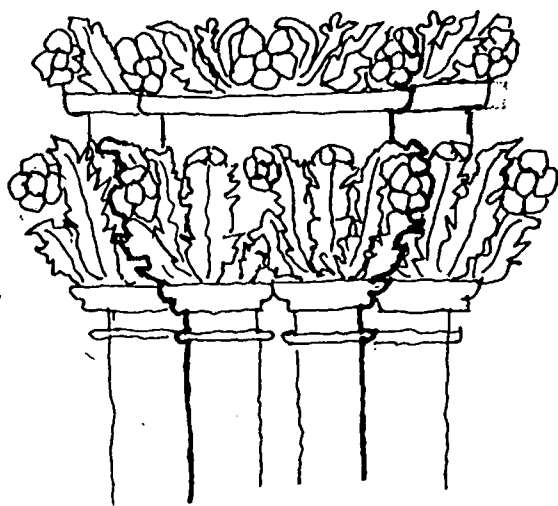
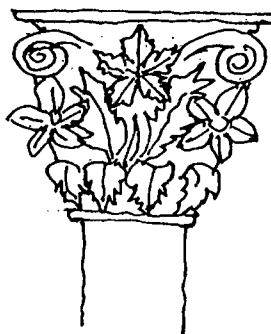


Fig-7.60.2 Acanthus decoration on the capital of clustered columns of the mandir of Sailem Gosh, Town Sreepur, Khulna.

Fig-7.60.3 Capital decoration with acanthus and flowers. House of Barister Churu Datta at Nawab Street, Wari Dhaka



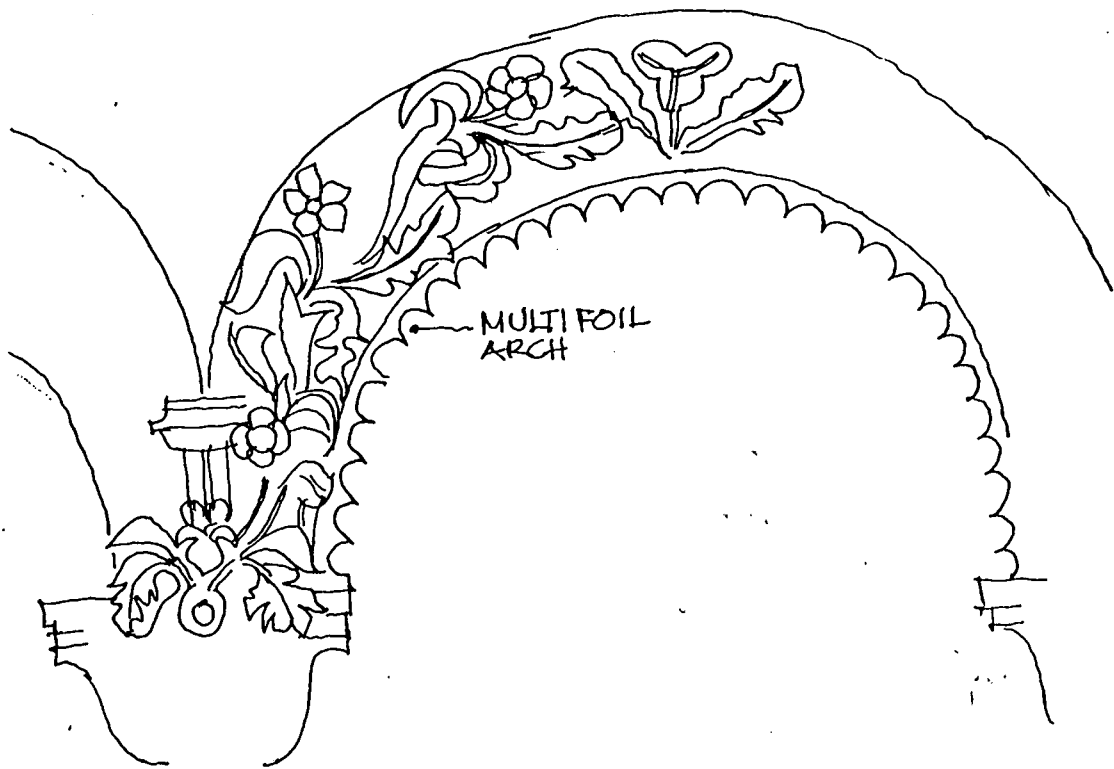


Fig-7.61

Floral decoration over arches of Mandir in rural house

House of Sailan Gosh, Town Noapara,
Khulna.

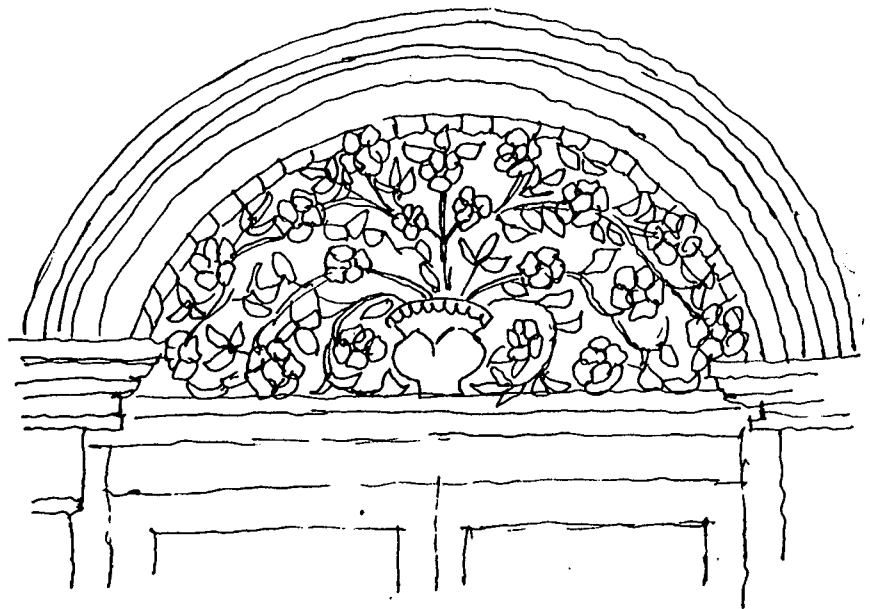


Fig-7.62

Floral decoration over door way of Zaminder house

Dhaka, Bangladesh.

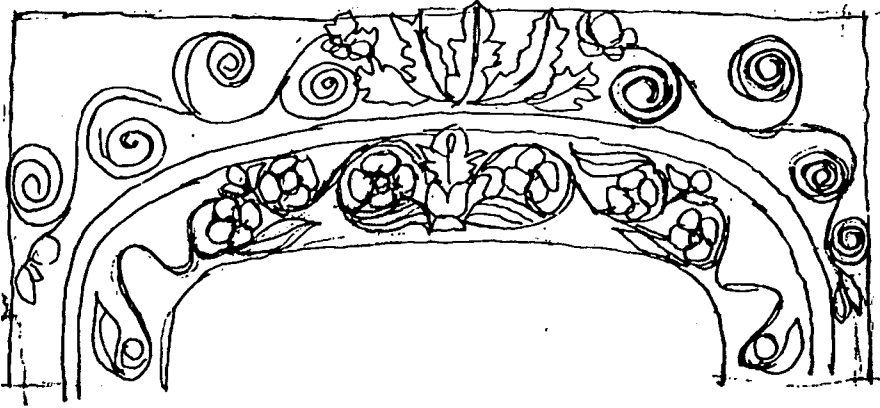


Fig-7.63

Floral decoration over archway of rural house

House of Sailan Gosh,
Town Noapara, Khulna

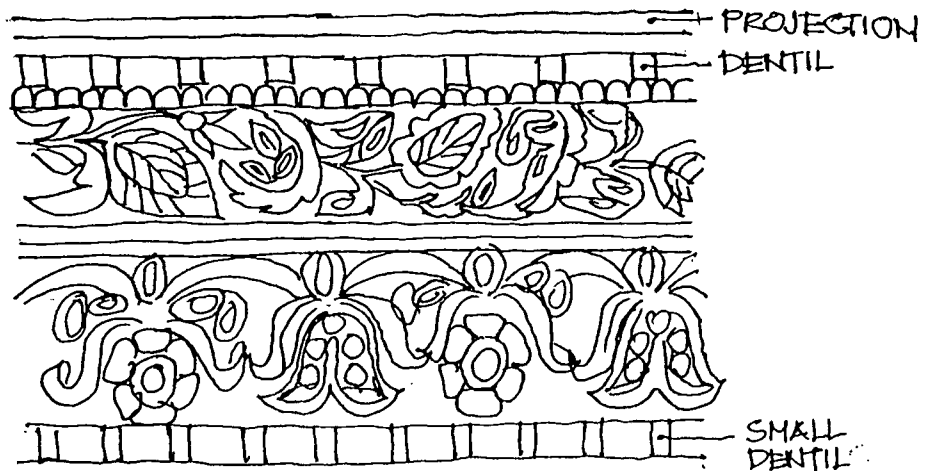


Fig-7.64

Floral decoration on wall surface

South facade of Joydevpur rajbari
at Dhaka.

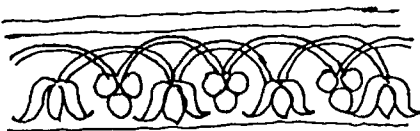


Fig-7.65

Floral decoration on wall surface

of Mander house of Sailan
Gosh, Town Noapara, Khulna

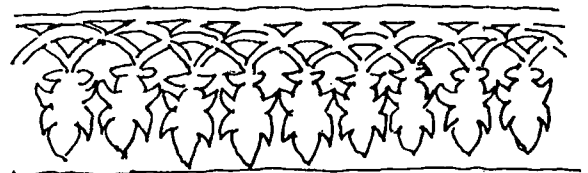


Fig-7.66

Floral decoration on wall surface

Urban house of Jagannath
Saha, Lalbagh, Dhaka

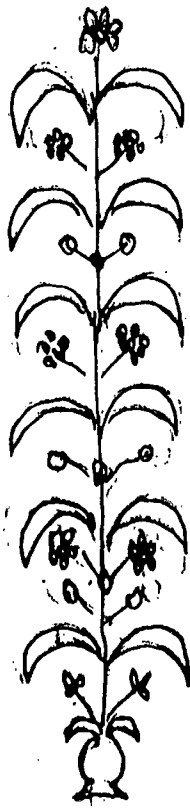


Fig-7.71. Floral chini tukri decoration on the columns of the family masjid of Dhonbari zamindar house, Tangail.



Fig-7.67 Decoration of wall surface with necklace chain

Rose garden, Dhaka similar to the necklace chain used by the Greek architects in the old buildings such as pantheon, Pantheon, Rome, Fletcher P-246

Fig-7.72 Floral chini tukri decoration on the wall surface of the family masjid of Dhonbari zamindar house, Tangail

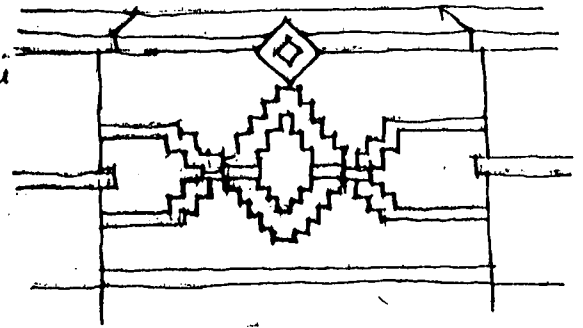


Fig-7.70 Jamdani decoration of brick work

Bungalow no-27 Ramna Colony Dhaka

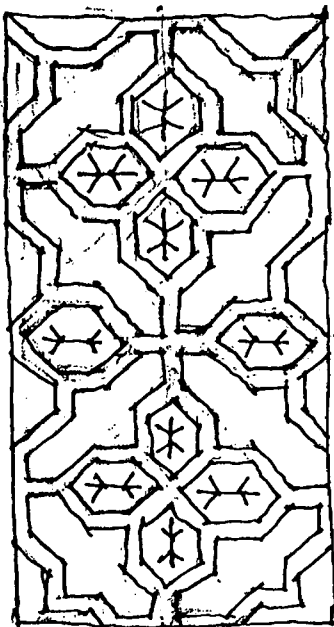


Fig-7.68 Geometrical pattern decoration in wall corner House of Ganganam Bishi Paikamragar.

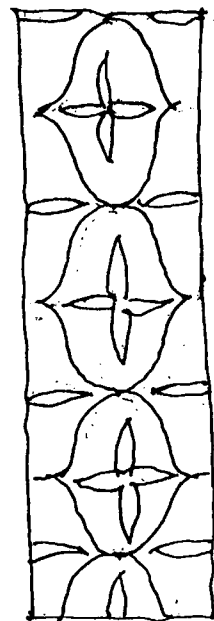


Fig-7.69 Decorative wall corner House of Ganganam Bishi, Paikamragar

Chapter-8

REPRESENTATIVE HOUSES:

Chapter-8

REPRESENTATIVE HOUSES**8.0 Introduction:**

Various types of houses, their components and elements, the space organization in and around the houses, the materials and construction systems, the facade treatment and Ornamentation etc. are discussed in the previous chapters. Various comments made in the study and discussions are now to be tested in the chapter-8, the representative houses.

This chapter discussed in detail the representative houses of each type mentioned in the previous chapters. Some of these representative houses were built by the affluent rural and urban people who had trade and business in the towns, but didn't, in most cases, belong to the third culture. Again, the houses built in the urban areas by zamindars, rich businessmen, professionals and high officials of the government and autonomous organizations and the bungalows / quarters built by the PWD, railway etc. authorities fulfilling the needs and aspiration of the occupants of these houses mentioned in the reference groups- two, three and four belong to the third culture.

The representative houses are selected random from the various survey sites, all over the country, on the basis of their appropriateness to the context and types.

The representative houses are described in relation to the plan, space organization, components and elements, materials and construction system, facade treatment and ornamentation.

8.1 Rural houses

The representative rural houses selected here are the Amcen bari (fig-8.1-8.3) at Begun bari, Ameen bazar, Savar, Dhaka and houses of Shiba Nanda Poddar (fig-8.4-8.6.3) at Painam nagar, Sonargaon, Dhaka.

8.1.1 Ameen bari

Ameen bari is an introvert and detached type rural house for two families (fig-8.1) where the isolated *dalans* replaced the *ghars* of the *baries* which are similar in

planning and organisation with the indigenous homestead. The *dalan* blocks are elongated comprising many rooms with verandah facing the *uthan* (fig-8.2). There are two *uthans*, The inner *uthan* for the female folks and the outer *uthan* for the males. The house planning shows the pilferages at the corners which give the identity for each block. The front *dalan* block has two verendahs at both north and south facing both the *uthans*. There are kitchen, one open lavatory and one *indra* for each family at east and west sides of the female zone. The males of both families used the *pucca ghats*. One *baithak khana* for each family is isolated from the main *dalan*. the house is entered by two gates from two sides (fig-8.3.2). The house is **symmetrical** in planning and space organization. The bipolar zoning of the house is shown in fig-8.7.1

The building material is mainly brick, the surfaces are plastered with lime plaster and the roof construction system is typical colonial of wooden beam and wooden rafter.

The front block is richly decorated (fig-8.3.1, 8.3.2) with the colonial elements like arches, piers, heavy corners, projected roof, tablets, dentils, horizontal and vertical lines etc. (fig-8.3.1). The inner side of the front block and the other blocks are comparatively less decorated (fig-8.3.3). Raised platforms are provided at the two sides of the front block and at the front side of the northern block

8.1.2 House of Shiba Nanda Poddar

The two storied house of Shiba Nanda Poddar is an introvert type rural house. The house is built from boundary wall to wall similar to the houses in the old towns. The plot is elongated north south. The frontage is much less in comparison with the length (fig-8.4). A series of rooms (fig-8.5) are arranged around the inner *uthan* and a narrow central corridor from where the middle rooms are approached remain dark all the time. The rooms are approached either from the verendahs arranged around the inner *uthan* or from the central narrow corridor. The C.I sheet shed kitchen is at the back of the house (fig-8.4). The bath room and the *indra* are at the back yard. The open lavatory is at the outskirts of the house at the back. This open lavatory has a similarity with the open lavatory of the Ameen *bari*, Ameen bazar,

Savar (fig-8.1) There are two stair cases in the house. One of these has a long one flight consisting twenty steps.

The building material is mainly brick and the brick surfaces are plastered. The construction system is *kari-barga* system. Ceramic tiles are used on the verendah around the inner uthan (fig-8.6.2)

The road side front facade is colorful and richly decorated with archade, dentils, projected lines at the plinth, floor level and at the parapet, circular ionic and **corinthian** foliated composite type columns with decorated base and **corinthian** capital. The top of the round arches are slightly projected with decorated key stone. The piers are horizontally deeply banded. Decorated parapet and wooden drops are used around the inner court. The inner parts of the house is simple with no decoration.

The convantional location of the bipolar zones are shown in fig-8.7.4. The house was previously used as the folk art museum (8.1).

8.2 Urban house

The selected representative urban houses are houses of Hemakaanta, Ukilpara, Noagaon, RupNarayan, Simson road, Dhaka, Dr. Basat, Umesh Dutta Lane, Bakshi bazar, Dhaka, Taposh kutir, Bhola tank road, Jessore, Khorasuni, lower Jessore road, Khulna.

8.2.1 House of Hemakanta

House of Hemakanta is a two storied composite type urban bungalow in a large compound. The front block is the residential building comprising the entrance lobby (verendah), drawing, guest bed room, long verendah, at the ground floor and the bed rooms at the upper floor. The service block comprises the dining room, kitchen and the verendah. The kitchen has a chimney. The house has both an *indra* and a tube well. The *tulshi mancha* is in front of the kitchen block (fig 8.8.1).

The house is surrounded by the boundary wall and has three *khirkee* doors. There are two seperate lavatories for the male and the female. The plinth is high. Roak is designed at the entrance (fig-8.8.4).

The building material is mainly brick, plastered with lime plaster.

The house is decorated with the arches, piers with bases and capitals, projections at the floor and roof levels (fig-8.8.2, 8.8.3).

8.8.2 House of Rup Narayan.

The house of Rup Narayan (8.2) is a two storied introvert courtyard type house at the Simson road. The house has an internal *uthan*. (fig-8.9.1, 8.9.2). The house is approached by a raised platform (fig-8.9.4). There is a long balcony at the front side of the house. There are two *indras* at the inner *uthan* and the lavatories are at the back of the house. The house is approached from all around by steps (fig-8.9.1).

The building material used is mainly brick, plastered by lime plaster. Ceramic tiles are used on the verendahs around the inner *uthan* at first floor and in front of the house. Wooden floor is used at the hall room at the first floor (fig-8.8.2, 8.9.5).

The front side of the house is more decorated than the other sides. The front part of the house is decorated with a conical roof on the verendah of first floor, projection at floor, and roof levels, brackets etc. The house has the rusticated block at the centre of the front parapet and cupolas at the corners of the parapet (fig-8.9.3)

8.2.3 House of Dr. Baset, Dhaka

The house of Dr. Baset is a two storied consolidated bungalow at Umesh Datta lane, Bakshi bazar Dhaka. The house stands at the centre of a walled compound keeping sufficient spaces all around. The front room is a hexagonal sitting room (fig-8.10.1). The main house block is a simple block comprising the *baithak khana* and two other bed rooms at the ground floor and three bed rooms at the first floor. There is a long verendah at the rear north side.

Previously the service block comprising kitchen and store was a separate structure. Later on another service block west to the previous one was built which made it a consolidated type of bungalow. There is only one toilet in each floor. Previously

there was a separate lavatory at the north east side of the compound which is presently demolished .

The building material is mainly brick plastered inside and outside.

Kari-barga system of room construction is used.

The house is decorated with pointed arches, projections, at floor and roof levels, projected shading devices with brackets, and decorated parapet. The pointed arches at the ground floor have the simple key stones (fig-8.10.2). The facades are simple but the front facade is comparatively more decorative than the rear facade.

8.2.4 Tapash Kutir, Bhola tank road, Jessore

Tapash kutir is a L-shape two storied semi-enclosed type bungalow around an inner *uthan*. The house entered through a rectangular verendah. There is another L-type verendah around the inner *uthan*. The bath rooms for male and female are attached with the main house block. (fig-8.11), but the lavatories for male and female are separated and placed at the north-west part of the boundary wall. The entry to the lavatories is made indirect by using the walls. The floor of bathroom is three steps lower than the main floor.

The building material is mainly brick and the construction system of the roof is *kari barga* system. The front part of the house is comparatively more decorative than the rear facade. The house is decorated with arches, piers, projections, decorative, parapets. There is a richly decorative rusticated block on the middle part of the front parapet.

8.2.5 House of Khorasani, Khulna

Khurasani house is a single story bungalow where the service block is separated from the main house block. To maintain the zoning such as front and rear, male and female etc. the service block and lavatory etc are placed in the rear at the south side which is against the environmental consideration. However the toilets for the main bed rooms are placed at the side of the house block (fig-8.12.1). A remarkable feature of the house is its semi-circular verendah. The two pinnacle like towers at

the front corners are the peculiar element found in this bungalow only. The house has an *indra* at the inner *uthan*.

Brick is the main building materials. Wooden posts are used at the rear verendah.

The construction system of the roof is *kari-barga* system. The front and the rear facades of the house are simple and moderately decorated.

The pinnacle like tower, circular verendah, wooden blind drops etc are the components and elements of the house (fig-8.12.2)

8.3 Shop houses.

The selected representative shop houses are the shop houses of Bana Mali Das at Nicha bazar, Natore, Abdus Shahid, 165, Nawabpur road, Dhaka and Nagendra Mallick Mahadev, at Mahadev Patti, Brahman baria.

8.3.1 Shop house of Banamali Das, Natore

The shop house of Banamali Das is situated at the junction of Dhaka road and Nicha bazar road at Natore (fig-8.13.1) The shop is at the ground floor (fig-8.13.2). and the house is at the first floor (fig-8.13.3). The house comprises the single bed room with verendah at the south and small washing and bathing space and a small kitchenet. The ^{kitchenet} is slightly elevated. The raised service lavatory is at the ground floor. A separate service entry for the *methors* is at the north of house.

The house has the beautiful facades around the building Both the **pointed** arches and round arches are provided on the openings (fig-8.13.4-8.13.6). Short column like piers with base and capital (fig-4.24.4, 4.24.7) are used for the arches at the first floor (fig-8.13.5). The flat segmented arches at the ground floor have the simple key stones. Circular ventilators are used all around the house. Projection at the floor and roof levels are provided to indentify the floors.

The major building material is the brick. The red brick surfaces remained as fare face.

The roof is constructed with *kari-barga* system.

8.3.2 Shop house of Abdus Shahid, Dhaka

The shop house of Abdus shahid is a two storied courtyard type structure with shops at the front of the house (8.3) and the storage spaces at the rear part of the house both at ground (fig-8.14.2). and first floor (fig-8.14.3). The kitchen is at the rear in a *kacha* structure. The whole house had only one raised lavatory at the rear. Drinking water was collected from the *Indra* There is a *uthan* at the middle of the house which is also used as light well, around which there are balconies at the first floor (fig-8.14.6). There is a long verendah at the front at first floor (fig-8.14.4, 8.14.5).

The main building material is brick. Thick lime plaster is used on the brick surfaces. Cast iron railings are used in the balconies. Cast iron post are used to support the inclined roof on the verendah (fig-8.14.4, 8.14.5, 8.14.6).

The house is constructed in load bearing walls. *kari-barga* system of construction is used for the roof.

The front facade is decorated with, steel post with brackets, projections, at the floor and roof levels etc. Dentils are used in the roof projections. The front parapet is perforated.

8.3.3 Shop house of Nagendra Mallick Mahadev. **Brahmanbaria**

The shop house of Nagendra Mallick Mahadev is a two storied house where the ground floor (fig-8.15.1) is used as sweetmeat shop and the upper floor is the residential quarter. The shop is approached from the road through a verendah. The sweetmeats are prepared in a large kitchen adjacent to the shop. In the first floor there is a large room and a verendah in front. There is an open terrace at the back of first floor from where people can go to the roof terrace by a ladder (fig-8.15.2).

The main building material is brick. C.I. sheets are used on the verendah (fig-8.15.3,8.15.4). Thick lime plaster is used on the brick surfaces.

The building is constructed with thick load bearing walls.

The facades of the house are very simple. The front facade is decorated with the trifoil arches. Perforated parapets of the brick are designed for the house.

8.4 Sattelite township houses.

The sattelite township house selected here is the house of Anwar Chowdhury at Wyre Street. Wari, Dhaka. The house was previously constructed by a Hindu merchand and was exchanged with Anwar Chowdhury for a house in Calcutta.

8.4.1 House of Anwar Chowdhury, Dhaka

The house is a two storied composite type bungalow with separate service block at the back and a lavatory at the farthest distance from the living block (fig-8.16.1). The compound is elongated and the bungalow is approached through a lawn at the front. The inner *uthan* is at the rear of the house.

The main living block comprises the sitting, drawing, dining and guest bed rooms at the ground (fig-8.16.2) and the bed rooms are at the upper floor (fig-8.16.3) along the verendah both at the ground and first floors at the south of the house. The service block comprising the servant room and the kitchen is at one side and the store and the bath rooms are at the other side of the inner *uthan*.

The main building material is brick. Lime plaster is used on the brick surfaces.

The house is built by load bearing walls. Wooden *karni-barga* system is used in the house construction. Beautiful wooden brackets are used in the house. Clay tiles are used on the front balcony of the house. (fig-8.16.4 and 8.16.6).

The facades of this composite type sattelite township bungalow are beautifully decorated with the archaded verendahs, projected balcony, **traciodal** openings, projected corners, projections at the floor and roof levels, perforated parapets, railings, wooden drops and wooden brackets (fig-4.36.1) etc.

8.5 Zamindar houses

The representative Zamindar houses selected here are Mymensingh *rajbari*, Murapara house, house of Reboti Mohan Das at **Sutrapur**, Dhaka and Joydevpur *Rajbari*.

8.5.1 Mymensingh *Rajbari*

Mymensingh *rajbari* is a single storied composite bungalow type symmetrical house placed against north-south main axis at the middle of a large compound (fig-8.17.1)

about nine acres of land on the bank of the river Bramaputra. There is a road all around the compound and the main entry is from the north through an large imposing semi-circular entry gate.

The frontage of the house is 220'-0" at the south. The house is fairly in good condition and at present it houses the Women teachers training college.

Built between 1905 and 1911, the palace originally was known as 'Sashi Lodge' according to the name of the builder, zamindar: Sashi Kanta Acharya Chowdhury of Muktagacha.

In between the *rajbari* and the gate way there is a large grassy lawn with an ornamental marble fountain (fig-8.17.2) containing a beautiful classical statue of a semi-nude nymph.

On entering the palace through the central portico there is a foyer leading into a large hall room (42'-0"x21'-0") with a timber floor, which was used originally as the ball room. Adjacent the hall room, there are two drawing rooms measuring 45'-0"x21'-0" (fig-8.17). Keeping the ball room, drawing rooms at the centre the other rooms, bed rooms etc are ^{arranged} in two blocks at the east and west. There is a beautifully decorated marble fountain in the corridor of the house. The corridor is widened to place the fountain inside the house.

The palace presents a symmetrical facade with three prominently projecting portico two on each end and one in the centre. Only the central portico supported on twelve elegant corinthian columns.

The main building material is brick plastered with lime.

The walls are load bearing walls. The roof is constructed with *kari-barga* system

The building elements used in this palace are high plinth corinthean columns, semi circular arches with projection and decorated key stone, large pediment, domes, projections at plinth and roof levels, perforated decorated parapets, kiosks etc. The triangular pediment (fig 8.17.2) bearing floral scrolls in plaster above the parapet. The elegant kiosks, the domes, cupolas etc supported on corinthian capitals, break

the skyline of the building at the corners. The rear of the palace on the east and west ends have projecting wings in the shape of an English "U" and beyond a large tank which is identified as the '*Jal-tungi*' or the ladies bathing pavilion. The oval shape pool behind the palace has a beautiful *ghat* (fig-4.16.5) with a bathing and dressing compartment.

8.5.2 Murapara house.

In a loop of the river Sitalakkha, 18 miles north east of Dhaka city on the Dhaka-Narsingdi road, at Rugganj stands this magnificent palace, set in a garden (fig-8.18.2). Though used to day as a degree college, at present the house is lonely and isolated. The Murapara house was built by *zamindar* Ramratan Banerjee in 1889 A.D. The building was further extended and new ponds were excavated in 1899 (8.4).

The Murapara house is a two storied building with its 158'-0" broad straight and symmetrical frontage, facing west across a fenced off tank, road and the river (fig-8.18.4-8.18.6). The overall plan (fig -8.18.1) of the house is simple. The whole house is divided into blocks longitudinal in plan, very similar to **Bangalee** house form. Here one huge rectangular building is built with courtyard in between. The building blocks are placed against strong axis around three *uthans*, following the binary concept regarding the outer and inner male and female, front and back, unclean and clean activities etc (8.5, fig-5.43). The house is situated at the middle of 37 acres of land (fig-8.18.2). the main western block is a public and out house facing a pond across a garden, designed to exhibit all the pomp and grandeur (fig-8.18.4-8.18.6). The plan of this main block is arranged with special regard to symmetry, produced by similarity of parts on either of central axis line. It has an imposing semi-circular arched entrance (fig-8.18.3) in the middle supported by the double corinthian columns and surmounted by a triangular pediment. Immediately behind this front block, there is an 63'-0"x65'-0" *uthan* with a flat roofed single storied *natmandir* on the north and single storied *nach ghar* at the south. The inner two storied *mahal* accommodates all the bed rooms

Brick is the main building material. The internal and external surfaces are plastered by lime and brick dust while some of external surfaces are kept unplastered. The general finish material of the floor is neat cement finish.

The house is built with load bearing walls. The roofs are constructed in *kari-barga* system.

The building elements used in this house are corinthian columns, pediment, arches, colonnade, projections, **cupolas**, turret, pinnacles, moulding etc. Columns of corinthian order appear decoratively in the front facade. Piers with decorative bases are medium in height. The capitals of the columns and the wall surfaces of the facades facing the courts are attractively embellished with diverse floral patterns in plaster works.

Openings are all curved and arched with semi-circular arches.

8.5.3 House of Reboti Mohan Das, Dhaka

Situated at the Reboti Mohan Das lane, on the Dulai *khal* in Sutrapur (fig-8.19.4). This house is a combination of two architecturally different styles, three storied buildings erected close together of which the one in the south (fig-8.19.1-8.19.7) seems to be much older. The building on the south (fig-8.19.7) has about 55'-0" frontage with an inset entrance portico, carried on three **corinthian** columns.

The other three storied block on its northern side is comparatively new (fig-8.19.5) and was erected by one of the relation of zaminder Reboti Mohan Das. It has a western frontage of about 70'-0".

Both of the houses were organised around the *uthans*. Both of the houses have the **outer**, middle and the rear *uthans*. (fig-8.19.4). Both the houses have *ghats* on the Dulai *khal*. The service lavatories are in the either sides of the houses and the service blocks are at the rear of the houses. There are fifty nine compartments in these houses.

Both the house complexes occupy an area of about an acre of land and are now used by the employees of the Fire service department as their residential quarters.

The main building material is the brick. The first trace of R.C.C slab of roof construction is found in the northern block.

The southern block is made of traditional *kari-barga* system of room construction where as the northern block looks like modern building with modern facade treatment. This house was built at the beginning of 20th century.

The front palladian facade of the southern block is decorated richly with colonial elements like double high corinthian columns, (traciodal windows, projected roof level. etc. (fig-8.19.7). The northern block is comparatively less decorative than the south block and looks modern. The projected rooms in two sides have the horizontally banded corners.

8.5.4 Joydevpur Rajbari

Joydevpur *rajbari* is the largest house in this region having about 185 compartments in the ground and first floors. This great zamindar house was built by zamindar Kali Narayan around in 1838. This **large** *rajbari*, occupying an area of about 15 acres of land (8.6) having the compartment organised around several *uthans* (fig-8.20.1). Behind the *ranimahar* is the east-west elongated service block connected by an iron bridge with the main block.

This *rajbari* is highly irregular in plan with its main axis from south to north measuring 400'-0" in length. Its double storied entrance portico on the south projects about 20'-0" beyond the main building and is supported on four pairs of round columns. The portico is backed by the front block known as *baro-dalan* reserved for the European guests.

Behind this *baro dalan* (fig-8.20.2) is a square *uthan* occupied by a *natmandir*, which is covered with a humped-back C.I. roof carried on a series of slender concrete pillars (fig-8.20.5).

Beyond the *nat mandir* and further to the north there is a north-south running block of residential apartments, accessible through a narrow corridor to the west. This two storied block is known as *ranimahar* or the *harem* of the *rajbari*. This

ranimahāl is a semi-circular projections on its southern side with a large airy circular verendāh, supported on a series of semi-circular arches (fig-8.20.4).

The main building material is brick plastered with lime plaster. The whole surfaces are painted white.

The house is constructed by load bearing walls and the roofs are constructed by the *kari-barga* system.

This *rajbari* is characterised by the colonial elements like distyle columns, round arches, projection at the floor and roof levels, the decorated parapets etc. Except the *natmandir* and family temples the other areas of this huge house is moderately decorated. The *natmandir* and family temples are richly decorated in the surfaces.

8.6 *Kachari bari*

The representative *kachari bari* selected here is the *kachari bari* of Tripura raj at Comilla town.

8.6.1 *Kacharibari* of Tripura raj, Comilla.

Kachari bari of Tripura raj is situated on the west bank of *Darma Sagar* of Comilla town. This house is a symmetrical building (fig-8.21.1) similar to the building largely designed in the 60s all over the country.

The main entry to the house is at the middle through a portico leading to the corridor which divides the whole building into two parts, one is the *kachari* block at the south and the other is the residential block for the *naibs*, *bakshies* etc. (fig-8.21.1). The major *Kachari* rooms and the bed rooms of the *kachari bari* are arranged side by side, and the verandhas are designed at both the sides of the rooms facing the front court and the rear court of the house. Tristyle columns (fig-8.21.3) are designed for the portico. Round arches are designed on the heavy piers with bases and capitals.

The major building material is brick plastered with lime plaster. The house surfaces are coloured with yellow colour.

The building elements are the tristyle **corinthian columns** semi circular arches on heavy piers (fig-8.21.2), projections at the roof level. decorative parapet etc.

8.7. *Bagan bari*

The representative pleasure houses or *bagan baries* selected here are the Rose garden at K.M. Das lane Dhaka and *Premkanon*, Boira, Khulna. These houses are not normal residential building, rather these are used absolutely for pleasure purposes.

8.7.1 Rose Garden, Dhaka

Rose garden is a two storied cross type composite bungalow purely designed for the *bagan bari* (Fig-8.22.1, 8.22.2). This pleasure house was built by zaminder Hrisikesh Das in the late 19th century at K.M. Das lane, Dhaka. The *bagan bari* is located in a large compound, facing west (fig-8.22.3). There is a medium size *pukur* at the middle of the compound where the reflection of the house is found. There is a fountain and a number of statues all around the compound. The portico is located at the back of the house where the *bajjees* and *eaars* (8.7) could be landed from the horse cart and could directly enter the *nach ghar* measuring approximately 30'-0"x42'-0" at the first floor by staircase (fig-8.22.1, 8.22.2). The entry to the *bagan bari*, the fountain, *pukur* and *pukur ghats*, the entry house and the portico etc. all are in an axis (fig-8.22.3). The drawing room dining room and the guest rooms are at the ground floor and the *nach ghar*, bed rooms are at the first floor. A semi-circular balcony projects from the first floor and is flanked by two smaller balconies on either sides. The roof terrace can be entered by a spiral staircase (fig-4.35.6).

The main building material is brick plastered with lime plaster.

The floor and roof are constructed by *kari-barga* system.

The *bagan bari* is richly decorated with colonial and renaissance elements like arches, balconies, dome, cupolas, small pediments, projections at floor and roof levels, perforated parapets and massive circular false columns at the corners. The balconies and roofs projections have the dentils (fig-8.22.4, 8.22.5).

8.7.2 Prem Kanan, Khulna.

The two storied *bagan bari* Prem Kanan is placed in the middle of a large garden (fig-8.23.4). Beside the house has a *pukur* with a *pucca ghat* at the rear side of the *bagan bari*.

The planning of *Prem Kanan* is simple having a stage, a covered space and a portico on columns at the ground floor (fig-8.23.1). and one bed room and a large hall at the first floor (fig-8.23.2). A two flight stair leading to the first and roof terrace. A continuous verendah is at the three sides in the first floor (fig-8.23.2). A visual relationship between the interior and exterior is maintained throughout. The whole garden and the *pukur* is viewed from ground, first and the roof terrace of the house.

The facades are simple (fig-8.23.3, 8.23.5) having semi-circular arches at the ground floor. The **cantilever** balconies are covered with C.I. sheet supported by timber columns are in three sides. Decorated steel drops are provided at the balconies. (Fig-3.23.3, 2.23.5). The **perforated** parapets of the house are decorated in brick flower beds (pots) and placed at the corners of the parapets.

8.8. Government houses

Various types of government houses selected from the different areas of the country. The size of these bangalows varies from the large Lt. governor's bangalow at provincial capital to the munsefs bangalow at sub-divisional *moffassel* town. The chummary at Dhaka is also included here.

8.8.1 Bungalow no-29, Ramna colony

This composite bungalow (8.8) was built for the *bara shahebs* of category two. Later on after the establishment of D.U. in 1921, it was occupied by the professors of D.U. eventually after 1947 it was again occupied by the govt. high officials. Bungalow no-29, is primarily a rectangular two storied composite type bungalow (fig-8.24.1, 8.24.2) situated in a large compound of Ramna colony (fig-8.24.6, appendix-4). The bipolar zoning in this house is very clear and these are vertically divided. All the semi public spaces like drawing, dining office room etc. are placed at the ground floor and the bed rooms, bath rooms, lavatories etc. are placed at the

top floor. Again all the drawing, dining office and bed rooms are placed on the front at the north and all the services, lavatories, baths, pantry etc are placed at the south which conflicts with the binary concept for climatic considerations (8.9). *Punkhas* were used in the house and these were operated from the verendahs. The height of the ceiling is about sixteen feet. The Kitchen was at a distance in the rear of the house.

A unique feature, the ladders were used for the services by the janitors and *methors*.

The house is red brick house and the facade treatment is very simple. Archaded verendahs are designed (fig-8.24.5) for the ground floor but the windows at the first floor is simple flat headed and rectangular (fig-8.24.3) A rose window is placed at the stair case. (fig-8.24.4). Radiating wooden mullions are designed for the rose window.

The main building material is the red brick. The surfaces of the brick walls remain unplastered which resemble the 'red house' of Bexley hearth (8.10). Such type of unplastered red brick surfaces are also found in the Mughal structure *Goaldi masjid*.

The bungalow is moderately decorated with the projections at floor and roof levels and parapet with dentils.

8.8.2 D.M. Bungalow, Rajshahi

The composite bungalow was designed for the *bara shaheb* It is located at the middle of a large compound. The planning of the D.M. Bungalow at Rajshahi is simple and rectangular. A portico is placed at the south east corner of the bungalow. The zoning concept in this bungalow is clear and is vertically divided. Similar to the space organisation in the bungalow no-29, at Ramna colony all the drawing, dining and office rooms are placed at the ground floor (fig-8.25.1) and all the bed rooms are placed at the upper floor (fig-8.25.2). A large family space is designed on the portico. All the rooms are internally connected by doors. All the lavatories are placed logically at the north. Two spiral service stair for the janitors

and *methors* are designed, each for two lavatories. All the services are at the back of the bungalow. The kitchen is a sperate structure at a distance from the main bungalow. The archaded verendahs are designed at the three sides at the ground floor. The openings at the ground floor are archaded and the openings at the upper floor are flatheaded. **Traciodal** openings are seen at the south facade of the bungalow. The windows at the upper floor are large and rectangular.

The main building material is the brick. The brick surfaces are plastered with lime plastered and coloured white.

The floor and roof are constructed with *kari-barga* system.

The bungalow is decorated all around. The corners of the rooms are massive and slightly projected and horigontally banded (fig-8.25.3-8.25.5). Moulded projections are found at the floor and roof levels. Rose window is also used at the east facade of this bungalow.

8.8.3 Munsef's bungalow, Noagoan

Munsef's bungalow at Noagoan is a simple and small one storied composit type bungalow in a small compound (fig-8.26.1) facing the east and the road. The bungalow is entered through the lawns by a paved road. The space organisations is similar to the traditional rural houses. The compound has two *uthans*, one at the front and the other is at the back. The main bungalow (fig-8.26.2) has five rooms and two archaded verendahs one at the front and other is at the back. There is a comparatively large hall at the middle of the bungalow. All the rooms are internally connected by doors. Seperate *tali* roofed structuics of guard, service and office etc. are placed around the front *uthan* and the *tali* roofed kitchen block is placed at the back. The service lavatory is at the north west corner apart from the main bungalow. An *indra* is at the north of the bungalow. The size of the windows is small (fig-8.26.3).

The main building material is **brick** plastered by lime plaster.

The roof of the bungalow is constructed by *kari-barga* system.

The facades are very simple. The verendahs are archaded and the windows are flat headed. The parapets are slightly projected and moulded.

8.8.4 Chummery, Dhaka

Chummery at Dhaka was built for the bechalar *shahebs*. This beautiful two storied structure have a series of bed rooms with long verendahs at the north and south. The gable roof (8.10) of the structure represents a striking change from the normal pretentions and heavily stylized dwellings of the period. The gable roofs, the wooden framed traingular sections below the gables resembling the English mediaeval farm and manor houses. The drawing, dining, office rooms, and a series of bed rooms and a portico are provided at the ground floor (fig-8.27.1). Drawing and dining rooms are also provided at the upper floor (fig-8.27.2).

The building materials are brick and wood. Originally ceramic tiles were used on the gable roofs.

The facades of the chummery are different from the other bungalows. The gable roofs (fig-8.27.3, 8.27.4, 8.27.5), the circular office rooms, with conical roof, the projected windows (fig-8.27.4), the wooden walls at the gables (fig-8.27.3) are used differently from other buildings.

8.8.5 D.M. Bungalow, Sylhet

D.M. Bungalow at Sylhet is a typical C.I. sheet (8.11) one storied composit type bungalow in a large compound like other *bara shaheb's* bungalow. It has the drawing, dining, office rooms and a number of bed rooms with attached dressing and bath rooms in the main blocks. The drawing, dining, office and the verendahs form the semi-private space. A deep and long verendahs are provided all around the bungalow. The drawing room has a chimney (fig-8.28.2). The C.I. sheet roof structure is gable of timber truss on steel joist. Seperate service entries are provided in the bath rooms for janitors and *methors*. The service block is a seperate structure away from the main bungalow.

8.8.6 Lt. governor's bungalow, Dhaka.

The two storied composite and extrovert type large Lt. governor's bungalow was built at the junction of fuller road and Nilkhet road in the Nilkhet-Shahbagh area in

the late 19th century (8.12). The bungalow block is placed at the middle of large compound (fig-8.29.1). The others blocks such as the kitchen, service block, laundry and the stable etc. are placed at a distance in the south east corner of the bungalow which conflicts the zoning concept of climatic considerations.

The bungalow form is basically a rectangular and bi-polar zones are clear and found both horizontally and vertically divided. The drawing room, hall room, dining room, office room, pantry, lamp room, screening godown and a guest room with a number of bath rooms are placed at the ground floor (fig-8.29.2) where as all the bed rooms and the hall, family, reading etc. are placed at the top floor. Again the drawing, dining and hall rooms are placed at the front in ground floor and all the baths, store, office, lamp room etc. are placed at the back. A deep and continuous verendah is placed at the north and west side at both the floors. Other verendahs are placed at the east and the south of the bungalow. Roof terraces are also used (fig-8.29.3) Seperate service entries and spiral stair cases are designed for the janitors and *methors*.

The main building material is brick plastered with lime plaster. White wash is applied on the plaster surfaces.

The method of the construction of floor and roof is *kar-barga* system. Steel joist and flat bars are used in the roof.

The facades of the bungalow are attractive. Archaded verendahs are designed at the ground floor where as the colonaded verendahs are designed for the upper floor (fig-8.29.4) A semi circular pediment similar to the semi circular pediments used on the northern facade of governor's house, Bardawan house, chief justice bungalow etc. is used on the portico and reading room. The parapets of the bungalow are well decorated and perforated. Cupolas are used on the corners of the parapets. The lime ^{concrete} shading devices (fig-4.30.6) are also decorated with brackets. Projections and mouldings are used at plinth, floors and roof levels. A beautiful timber stair case with decorated balustrades is provided in the bungalow (fig-4.35.8). A central chimney stack is connected from both drawing room at the

ground level and bed room at the upper level. It is also decorated by timber. The part of the floor of the drawing room at the ground floor is constructed with timber planks. A void is maintained at the bottom of this floor.

This bungalow is presently using as the V.Cs bungalow of D.U.

8.8.7 Civil surgeon bungalow. Khulna

Civil surgeon bungalow at Khulna is a two storied composite and extrovert type red bungalow placed at the middle of a large compound. The bungalow is simple rectangular form with the drawing, dining, pantry and the office room for the Civil surgeon forming the semi-public space at the ground level (fig-8.30.1) and the bed rooms with attach bath and lavalories at the upper floor (fig-8.30.2). From the bipolar zoning concept of view the bungalow is vertically divided. A long and deep verendah is placed at the south of the bungalow. The office room for the *bara* doctor *shabeb* has a separate entry from the side. The spiral service stairs are designed for the *methors*. The ground floor verendah is archaded where as *colonaded* verendah is designed for the upper floor. The height of the upper floor verendah is less than other rooms (fig-8.30.3, 8.30.4) C.I. sheets are used on the verendah of upper floor.

The main building material is brick. The brick surfaces are plastered with lime plaster and red oxide is used along with the plaster.

The bungalow is well decorated. The windows are covered with gabled shading devices. The sills of the windows are also nicely decorated and coloured white (fig-8.30.3). Projections are used at the floor and roof levels.

8.9 Railway quarters

Few types of railway bungalows and quarters are selected here. These are bungalow no-15 at college road, Dhaka, bungalow no-66, Fulbaria, booking clerk's bungalow at Natore, minial's quarter at Natore, security shed at Khulna and twin quarter at Khulna.

8.9.1 Railway bungalow, 15, College street, Dhaka

Railway bungalow at 15, College street, Dhaka is a one storied C.I. sheet composite and extrovert type bungalow for the railway *bara shaheb* (fig-18.31.1, 18.31.2). The main bungalow block is a square block with a deep verendah at the west. All the bed rooms are arranged around the large drawing and dining rooms. The bed rooms have the bath rooms and verendahs. The service blocks are seperately placed away from the main block.

The walls of the bungalow are constructed with the reeds paneled by timbers planks and plastered with lime mortar which is popularly used in many bungalows in this country.

8.9.2 Bungalow no-66 at Fulbaria railway colony, Dhaka

Railway bungalow no-66 is a single storied composite type bungalow for the railway *chota shaheb*. The bungalow is placed at the middle of a small compound (fig-8.32.1). The space organisation of the bungalow is very simple. The hall/drawing room is placed in between two bed rooms. An archaded verendah is placed at the front. The services, bath rooms etc. are placed at the other sides (fig-8.32.2). The plinth of the bungalow is high. The service block, kitchen, store etc. are placed away from the bungalow.

The main building material is brick and it remain expose outside. The inside is plastered with lime plaster.

The walls are thick and load bearing. *Kari-barga* system is used for roof construction.

The facades of the bungalow are very simple. Wooden latic *Jalies* are provided in the archaded opening of the verendah (fig-7.50, 8.32.3, 8.32.4). the verendah roof is at a lower height. The arches and the roof levels are projected with mouldings and coloured white.

8.9.3 Booking clerk's bungalow, Natore

Booking clerk's bungalow at Natore is a small one storied quarter for the railway *babu*. In total two rooms, one sitting room and one bed room. kitchen are organised

in a small compound (fig-8.33.1). A service lavalory is placed at the corner of the *uthan*. *Methor's* entry is provided at the back from the outside.

The facades are simple. unplastered, 1st class bricks are used as main construction material. There is no any kind of shading device over the doors and windows (fig-8.33.4, 8.33.5) The projection is made at the roof level. The kitchen has a chimney over the roof (fig-8.33.5)

8.9.4 Minial's quarter, Natore

Railway minial's quarters at Natore are designed as a joint quarters of six units having one room and a verendah in each unit. The verendahs are used as kitchenet space for the family. This verendah is used as the multiuse space for cooking, gossiping, eating, as well as for sleeping. A group of lavatories and bathing units (fig-8.33.7) are designed for the six families. Segmented arches are placed on the doors and windows Brick *jalties* are used in the verendahs (fig-7.51). In addition to the windows the bed rooms are further ventilated by the ventilator used on the roof (fig-8.33.3).

8.9.5 Security shed, Khulna

Railway security sheds at Khulna are designed as a single room in a series of six units. There is a long verendah in front of the rooms. Each security staff has a room and an individual kitchen room at a distance (fig-8.34.1). Each kitchen has a chiminay on the roof slab. The verendah is archaded.

8.9.6 Twin quarter, Khulna.

Twin railway quarters are designed as one story building having single bed room one kitchen and a bath and lavatory for each unit (8.35.1). Each family has a small paved *uthan* in a small compound.

The main building material is brick. The outside of the quarter is unplastered red brick. The roofs are slightly projected (8.35.2).

8.10. *Kuti bari*

One house is selected as the representative *kuthi bari* This ^{*kuthi bari*} was constructed by the Dutch silk traders in the early 19th century.

8.10.1 *Bara kuti*, Rajshahi

Two storied building was constructed for the indigo and silk trading house and industry. The ground floor is comparatively ill ventilated and used as godown, production area and sometime prison for the indigo planters (fig-8.36.1). The first floor was used as the office and residential purposes (fig-8.36.2). A godown block is constructed adjacent to the main block (fig-8.36.3) Besides the main stair at the south western side two other bastion like octagonal stairs cases leading to the 1st floor to the roof terrace (fig-8.36.4) were used during the time of crises for the European trades (8.13). Several cannons were placed on the roof when crisis occurred. Two deep and large colonaded verendahs are designed at the north and south side of the upper floor (fig-8.36.2). Circular columns are used in these verendahs. There is an open staircase at the western side which is used for quick exit from the upper floor. This building is presently used as the teacher's club for the R.U.

The main building material is brick. The thick walls are load bearing walls. The walls are plastered with thick lime plaster and painted white.

Roof is constructed with *kari-barga* system.

The facade treatment is very simple. Flat headed openings are provided. The roof is projected and moulded.

8.11 Garden house

One bungalow is selected here as representative garden house. This is typical tea garden bungalow is at the outskirts of Shlyet town.

8.11.1 Malnichara Garden house, Sylhet

Malnichara garden house is located on the eastern side of the Osmani airport road, Sylhet. Malnichara garden house is a one storied typical C.I sheet *chowchala* bungalow. The bungalow is located on the top of a hillock (fig-8.37.1, 8.37.2). The structure of the roof is of wooden truss supported by steel joists. The walls are constructed with 5 inches plastered brick walls. The main entry to the bungalow is

from the west. Verendahs are designed around the three sides of the bungalow. There is a sitting lobby in the south of the bungalow in front of which a pool is constructed (fig-8.37.3). The service blocks, the kitchen and servant room and the garage block are located at a distance north to the main bungalow.

8.12 **Dak** bungalow/ circuit house

One *dak* bungalow and a circuit house are selected as representative houses. A thana level *dak* bungalow is selected from Manda, Noagaon and district level circuit house is selected from Rajshahi town. Manda is typical thana approximately 12/15 miles away from Noagaon towards Rajshahi town.

8.12.1 **Dak** bungalow, Manda, Noagaon

The one storied *dak* bungalow is located at the middle of a medium size compound (fig-8.38.1). The *dak* bungalow is a small rectangular bungalow with two bed rooms with attach lavatory. There is an archaded verendah in front of the bed rooms. Each bed room has a separate private verendah in addition to the common verendah (fig-8.38.2). The service block, kitchen, servant room and lavatory for the minials are located away from the main bungalow. The water is supplied from the *Indra*.

The *dak* bungalow is constructed by brick. The outside is unplastered and the inside is plastered with lime plaster and painted white.

Kari-barga system is adopted for the roof construction.

The facades are simple. Round arches are used in the verendahs. There are no shading devices of any kind are used for the windows (fig-8.38.4, 8.38.5). The roof of the bungalow is projected beyond the walls.

8.12.2 Circuit house, Rajshahi

The circuit house is a one storied building placed at the middle of large compound. Presently another new circuit house block is built adjacent east to the present one. The front verendah is extended and connected with the new extension building. There are six bed rooms arranged around the hall room and dining room. (fig-8.38.3). The bath rooms are placed at the four corners of the buildings. Two continuous verendahs are placed at the front and rear sides of the building. Two

other private verendahs are placed at the two other sides of the buildings. Two pairs of double doric columns (fig-4.22.3) having the base and capital are designed for the front verendah and two single doric columns are at the rear verendah.

The building has been recently renovated. The bed rooms, hall and the dining rooms i.e the central part have 18'-0" height ceiling whereas the verendahs and the rooms around the hall, dining, bed rooms i.e central part have low ceiling. The central part is elevated, ventilators are used to ventilate them.

The main building material is brick. The surfaces are plastered with lime plaster.

Kari-barga system is adopted for roof construction.

The facades are simple. Projected mouldings are used on the openings, verendahs and at the roof levels. The building is completely white in colour.

8.13 *Patti*

Two representative *patti* houses are selected for this type. One of this type is from the *shakhari patti* Dhaka and the other is from *methor's patti* Nazira bazar, Dhaka.

8.13.1 House no. 92, Shakhari Patti, Dhaka.

The house no 92 is a 66'-0" long elongated four storied residential and commercial building having a 6'-0" narrow frontage. The whole ground floor is used as the production area for the *shankharies*. Three numbers of lavatories and bathing units are placed at the back of the ground floor which are used by all the members residing in the upper floors. All places of the house are congestedly used by the occupants. Verendahs are placed at the front and back of the house. Some terraces are left open on the roof (fig-8.39.1) Three **stair** cases are provided in the building.

The house is constructed by load bearing brick walls. The front facade is simple but **attractive**(fig-8.39.2, 8.39.3). Windows are flat headed. A small rusticated block is used on the front **parapet**. Projected mouldings are used in the floor and parapet levels.

8.13.2 *Methor's patti*, Nazira bazar, Dhaka

The representative house unit is selected here from the series of one room single storied house blocks (fig-8.40.5). The main structure of the block is constructed by steel truss on steel joist (fig-8.40.3, 8.40.4) Each of the room is about 6'-0" X 10'-0" with 5" walls all around (fig-8.40.1). Each room has one door and one small window. The window has no shading devices (fig-8.40.3). An arrangement is made on the roof for ventilating the rooms (fig-8.40.3). C.I. sheets are used in the roof construction. The floor is *pucca* with neat cement finishing. The lavatories are grouped in two places. *Indra* is used for household purposes.

8.14 Discussion and Epilogue

The various comments made and the findings found in the discussions in the chapters are tested by the selected representative houses described in the last chapter-8. This study has been undertaken as an attempt at a comprehensive and intensive investigation into conceptual, planning, space organizational, structural and decorative details of the colonial houses obtaining in Bangladesh. The house form and technical details are thoroughly studied here and the findings are methodically and systematically recorded both in words and figures in the dissertation. But the subject appears to be so vast that elaborate description of each individual house could not be attempted. Instead, the typology, the components of the houses and compounds, elements of the houses, planning concept, design considerations, types of space organizations, zoning, various fronts, design principles, transformation of house forms, materials used, construction system, facade treatment and ornamentation etc. as a whole are analysed with reference to the houses embodying them. It is seen that the comments made in the contexts and the findings mentioned in the discussions in various chapters are in conformity with the selected representative houses.

A house does not stand on its own in isolation. All the houses are erected in a certain socio-economic and cultural context. The political, socio-economic and cultural phenomena of the colonial period in Bangladesh are analysed in order to provide better and fuller understanding of the colonial architecture.

It is suggested that the organization of various spaces and components and elements selected to materialize the concept is a mental act before it is a physical one. The socio-economic and cultural atmosphere helped to achieve this. Representative houses of various types (taking a few from each type) are selected at random to show how the space organization, planning, zoning, binary concepts, design principles, the components, elements and their fenestration and ornamentations etc. discussed at length are practically applied in each type of houses.

Since the study is the first of its kind, all types and all aspects of colonial architecture could not be accommodated in one dissertation. At least three more dissertations may be produced on colonial architecture of Bangladesh—one on non-residential buildings, the second on zamindar houses and third one on decoration and ornamentation of the colonial buildings. It is expected that this dissertation will pave the way for future scholars to come forward to do this.

As it is evident, many of the structures described or mentioned in this study are in delapidated condition and gradually disappearing. They cry for the urgent attention, care and maintenance from the relevant authorities specially from the department of archaeology and of the government of Bangladesh.

It is also evident that the land price **escalation** in the urban areas putting pressure on the owner and constantly provoking them to go for further profitable building development projects. Thus some of them are also disappearing in the process. This must be stopped and an alternate solution should be found out for the salvage of the heritage and the magnificent buildings.

Reference: Chapter-8

- 8.1 Dr. Nazimuddin Ahmed, *opcit*, P-64
- 8.2 This house is presently using as the *kotwali thana*. The house was once owned by the zamindars of Murapara. Later on it was owned by the two brothers, Raj Narayan and Rup Narayan. Nazir Hossain, *kingbodontir* Dhaka, P-50.
- 8.3 The shop house had been using as the residential hoted, 'Central hotel'. The house was dismantled in 1997 and a high rise hotel and commercial building is recently constructed on the site.
- 8.4 Dr. Nazimuddin Ahmed, *opcit*, P-77
- 8.5 Prof. Faruque A.U. Khan, *Nibandamala, Uchchar Manab Bidhya Gabesona Kendra*. D.U. 1991, P-17.
- 8.6 Dr. Nazimuddin Ahmed, *opcit*, P-79
- 8.7 *Baijee* dance was usually enjoyed by the hosts with a number of caars (friends).
- 8.8 This house has been presently using as the official house for the leader of opposition.
- 8.9 This bungalow is presently modified and extended.
- 8.10 The roof of the chummery house at Dhaka resembling the roof of the red house, Bexley hearth, Kent. It has much similarity with other mediaeval farm and manor houses. Fletcher, Banister, *opcit*, P-464, 465, 469, 481.
- 8.11 It was common practice that the rural, urban, garden etc. houses were constructed in temporary materials like, thatch bamboo, reeds, ceramic tiles and C.I. sheets in the Sylhet region. It was due to the earth quake. The frequency of earth quake is high in this region.
- 8.12 The bungalow was originally built for the Lt. governor's of Bengal. The governor's house was built in the same time but he did not like the governor's bungalow, so the governor's stayed in this house for a long time
- 8.13 Dr. Nazimuddin Ahmed, *Building of the raj*, *opcit*, P-138.

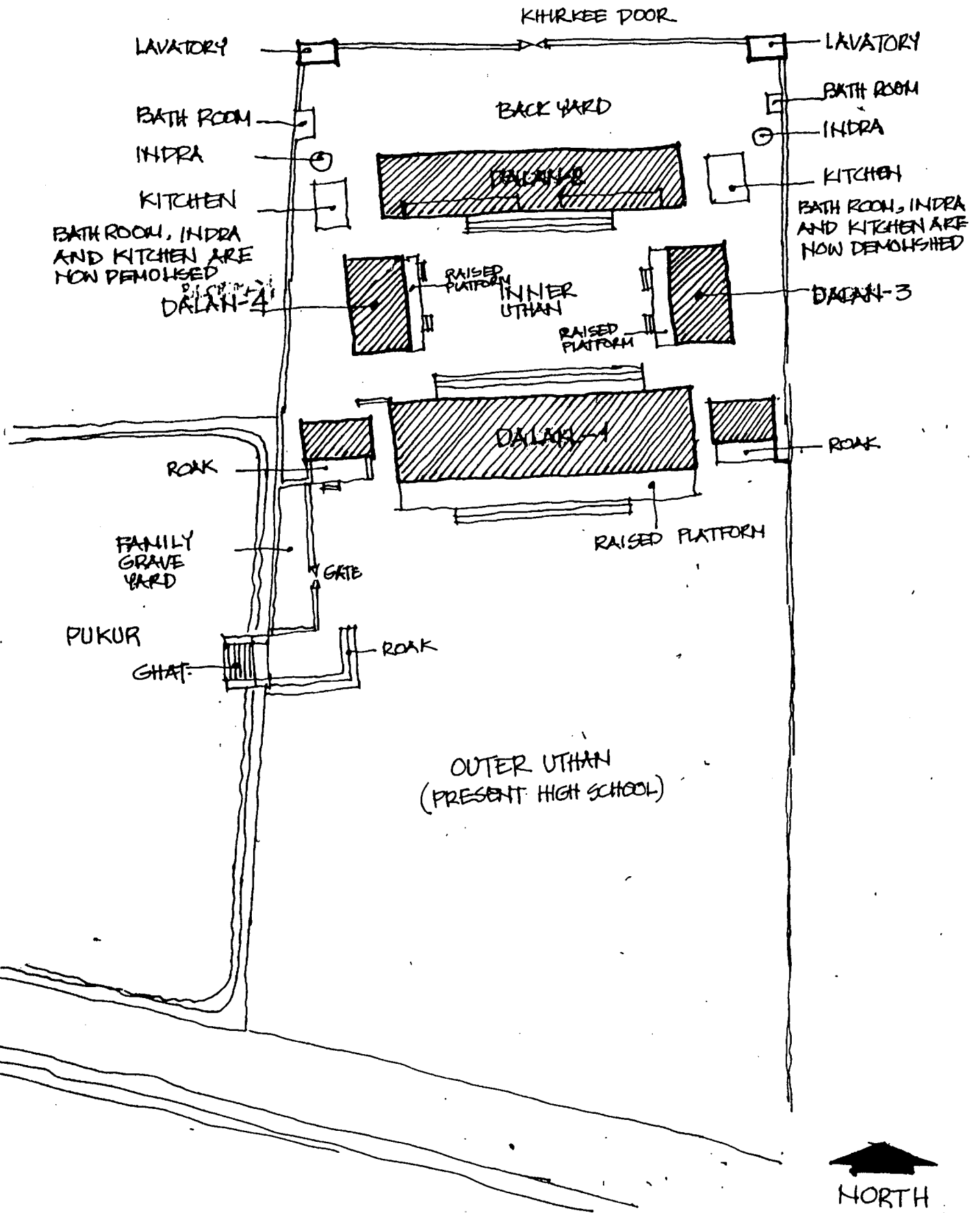


Fig-8.1 Compound plan, Ameen bari, Savar

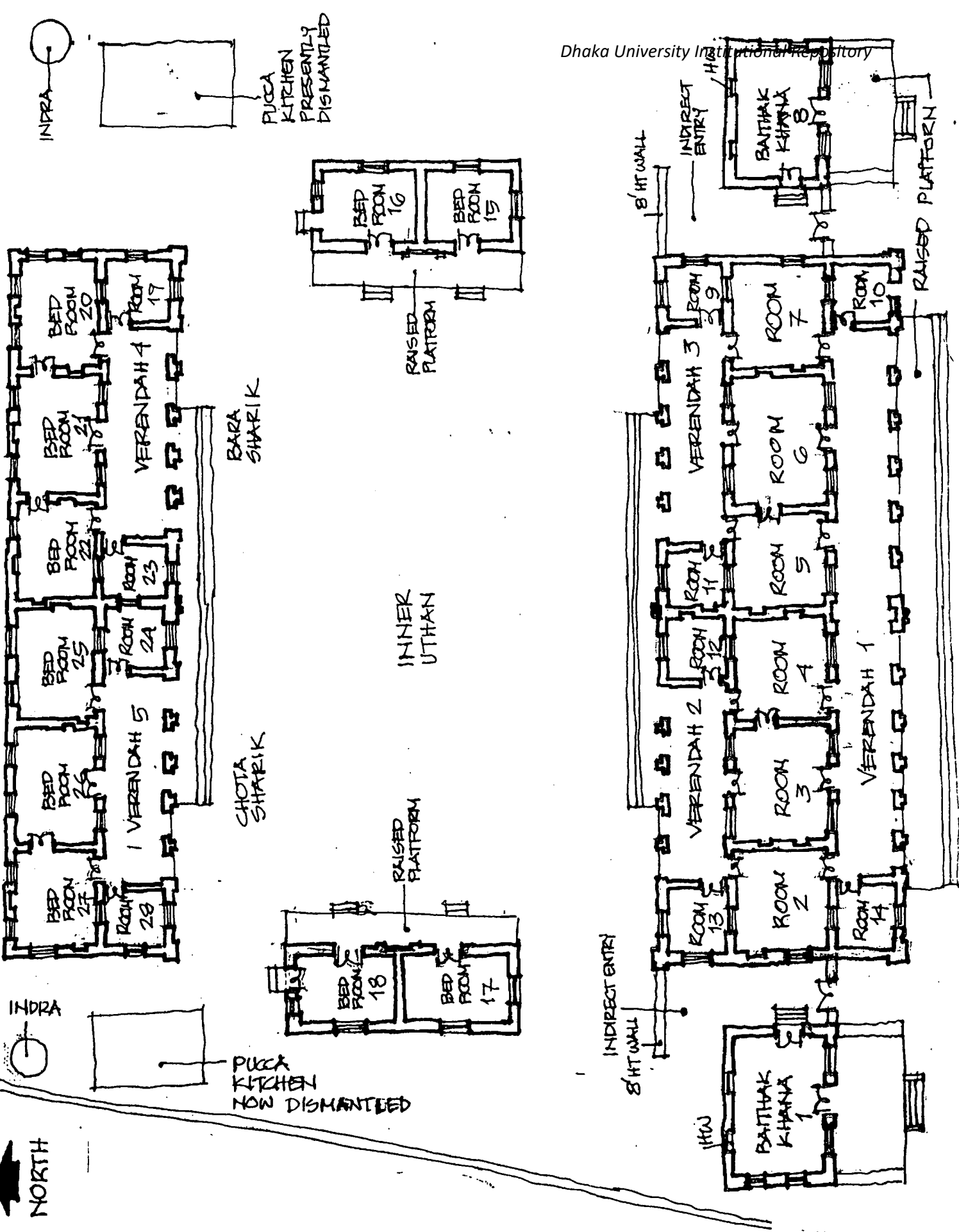


Fig-8.2 Ground floor plan, Ameen bari, Savar

Fig-8.3.1 South-east facade,
Ameen bari, Savar

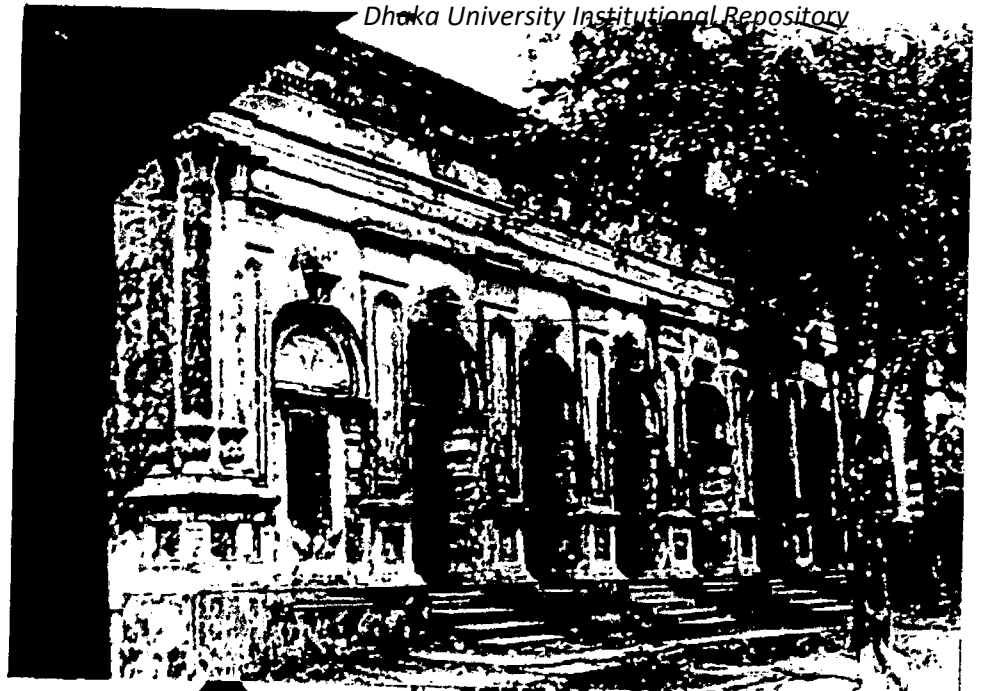


Fig-8.3.2 Khirkee door and
South-west corner of
Ameen bari, Savar

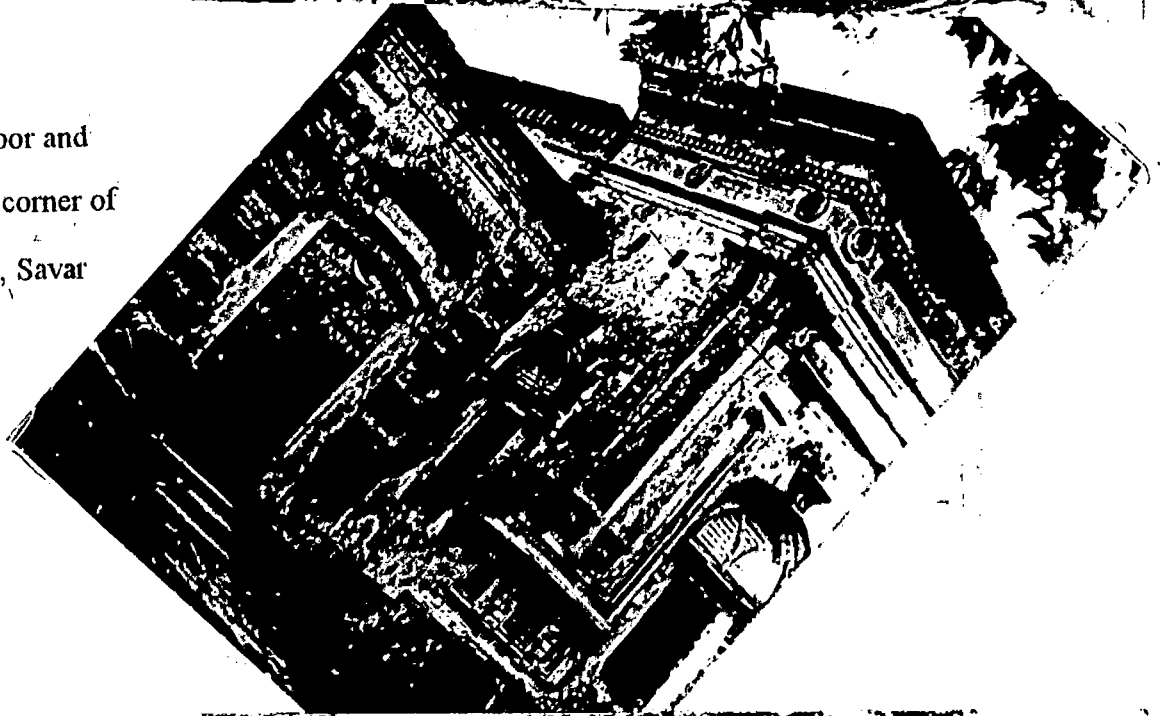


Fig-8.3.3 Interior Court of,
Ameen bari, Savar



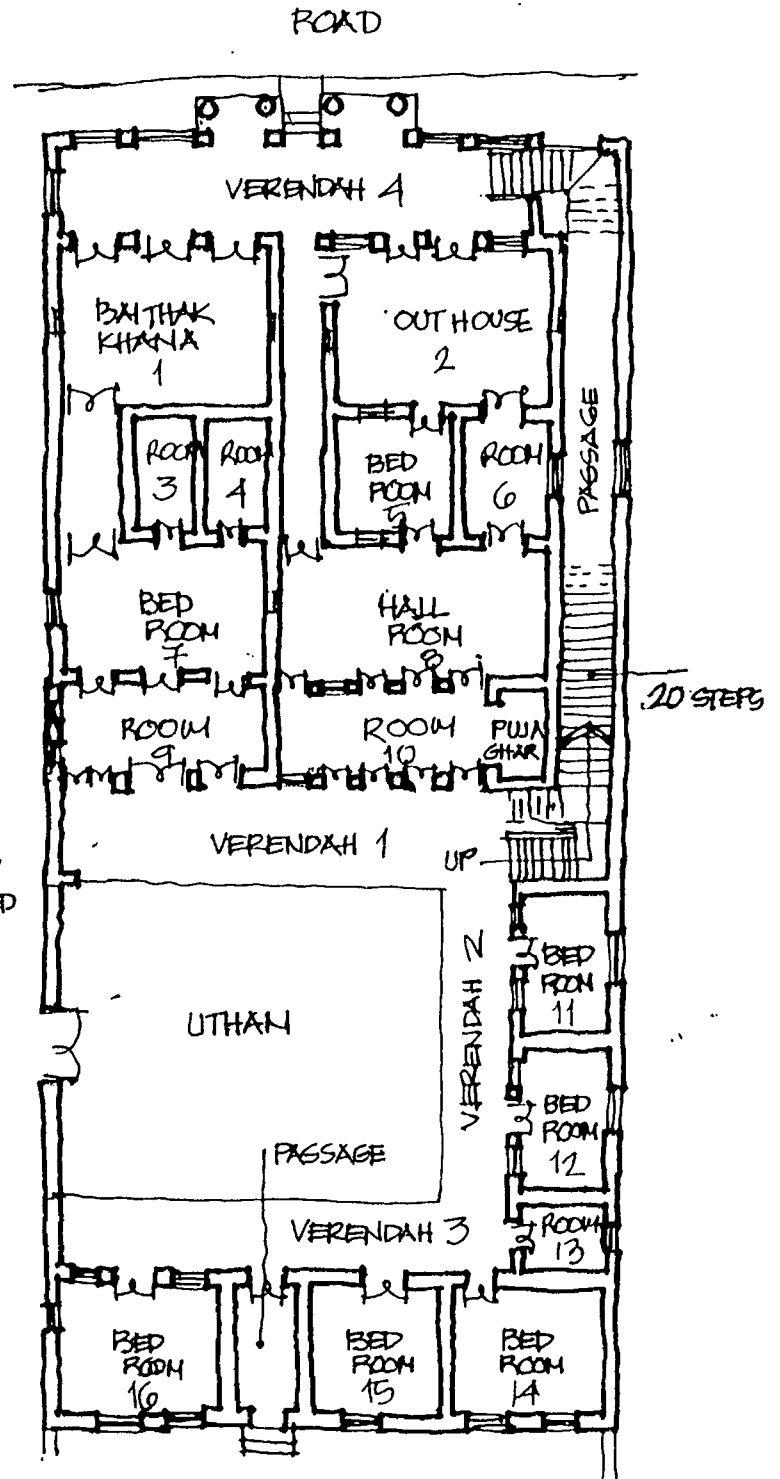
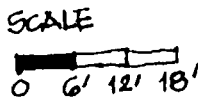
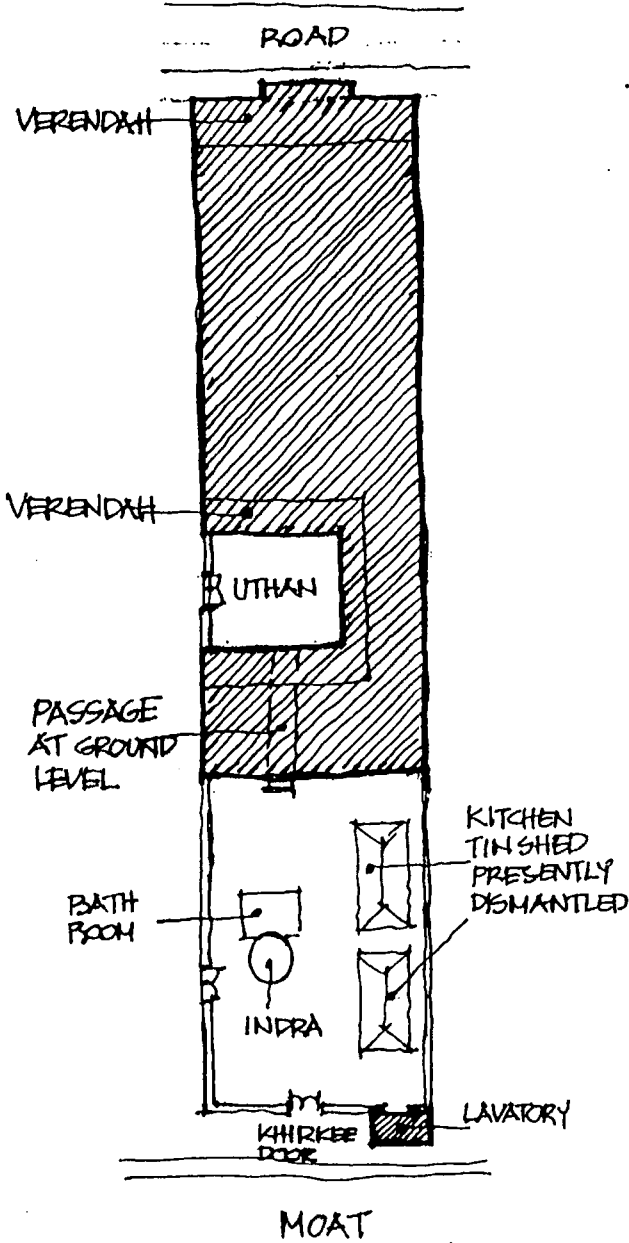
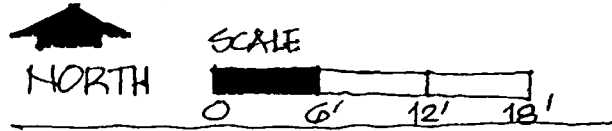


Fig-8.4 Compound plan,
house of Shiba Nanda Poddar,
Painamagar

Fig-8.5 Ground floor plan,
house of Shiba Nanda Poddar, Painamagar

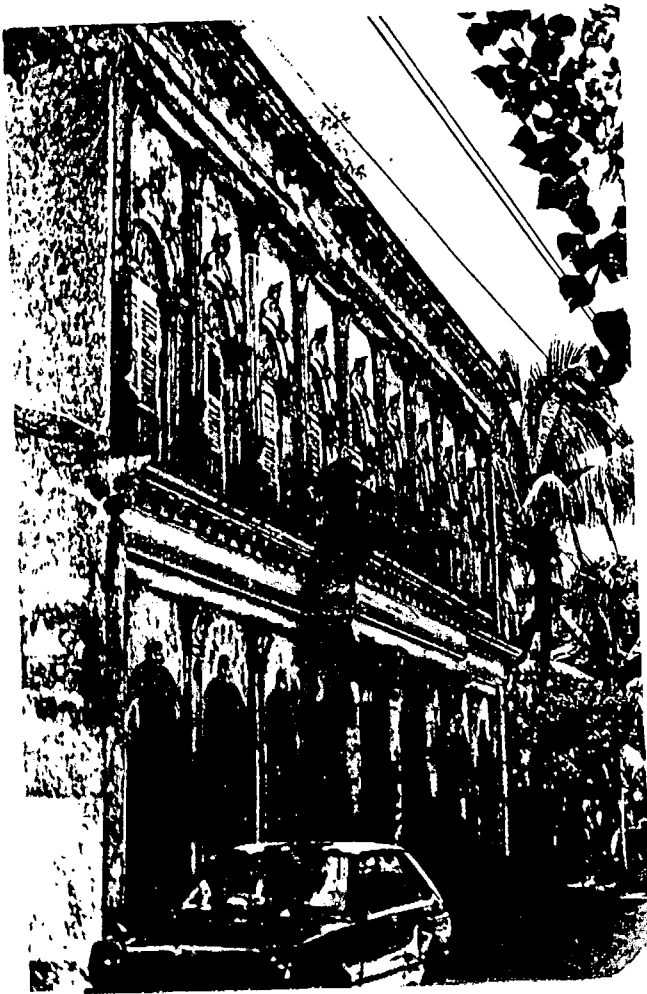


Fig-8.6.1 Road side facade from North east, house of Shiba Nanda Poddar, Painannagar



Fig-8.6.2 Inner court from South-east, house of Shiba Nanda Poddar, Painannagar

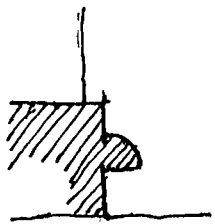


Fig-8.6.4 The low plinth with projection.



Fig-8.6.3 South facade, house of Shiba Nanda Poddar, Painannagar

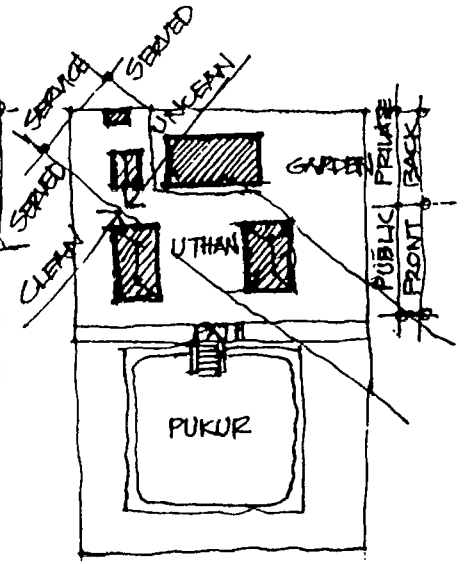
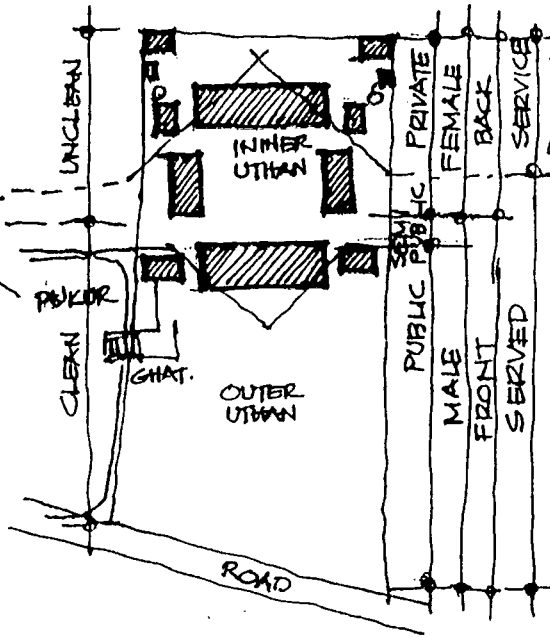
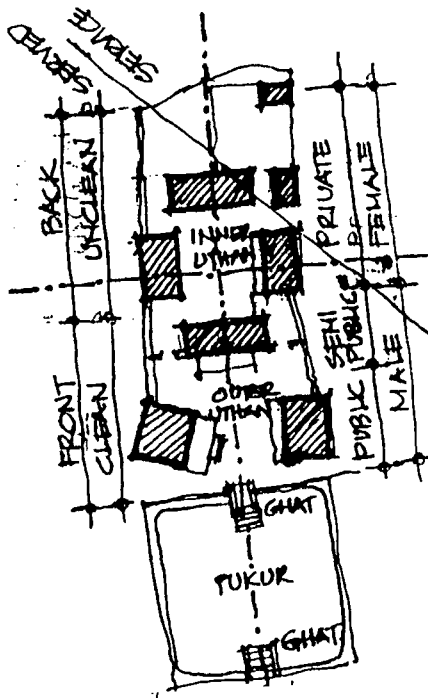


Fig. 8.7.1 Dewani bari
Ameen bazar
Savar, Dhaka

Fig. 8.7.2
Ameen bari
Ameen bazar
Savar, Dhaka

Fig. 8.7.3
Chakrabarty Bari
Kalash Kabi,
Barisal

Fig. 8.7.4
House of
Shiba Nanda
Poddar,
Painamnagar
Sonargaon
Dhaka

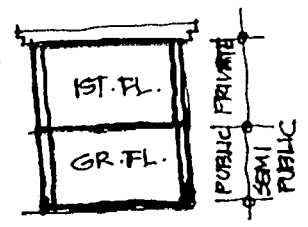
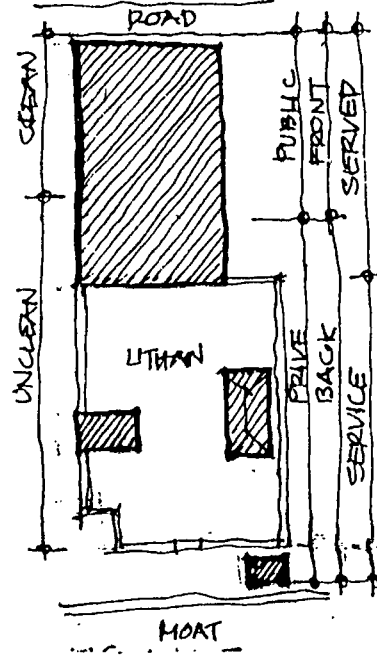
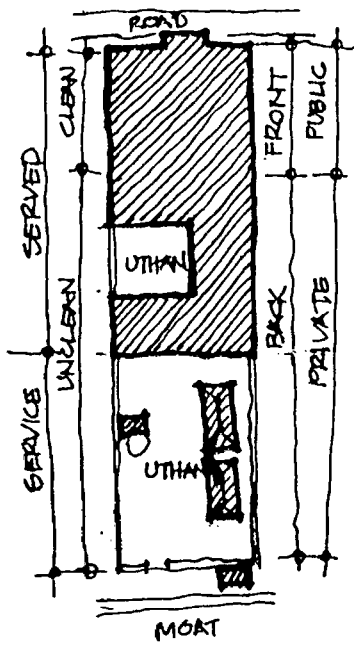


Fig-8.7.5

House of Binoy
Poddar, Painam-
nagar, Sonargaon
Dhaka



Fig-8.7 Conventional Location of Bipolar zones of Rural houses

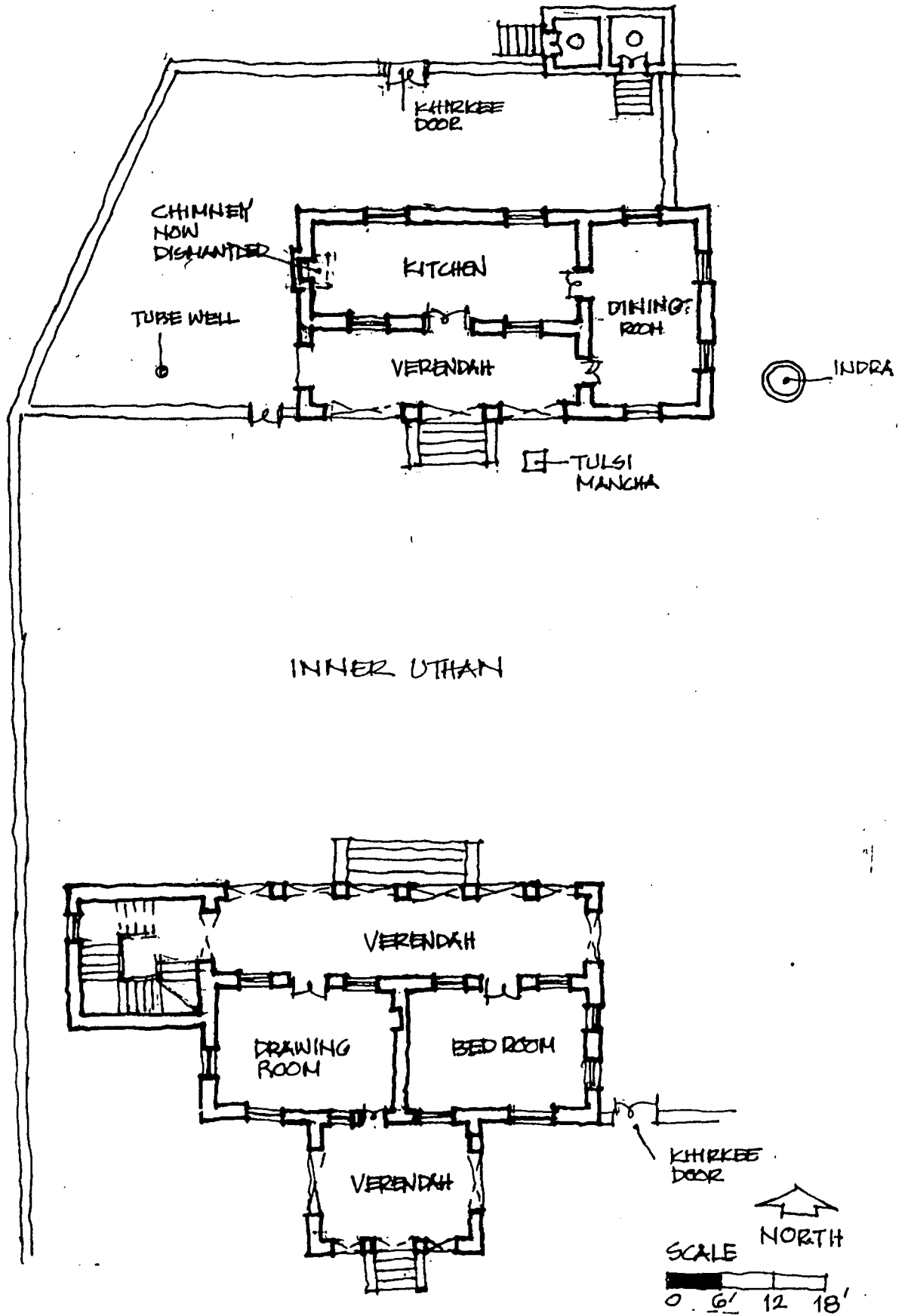


Fig-8.8.1 Ground floor plan house of Hemakanta at Ukil para Noagaon



Fig-8.8.2 Front facade, house of Hemakanta,
Ukil para Noagaon



Fig-8.8.3 Rear facade from Interior court,
house of Hemakanta, Ukil para Noagaon



Fig-8.8.4 Roak and entry to the house of Hemakanta, Ukil para Noagaon

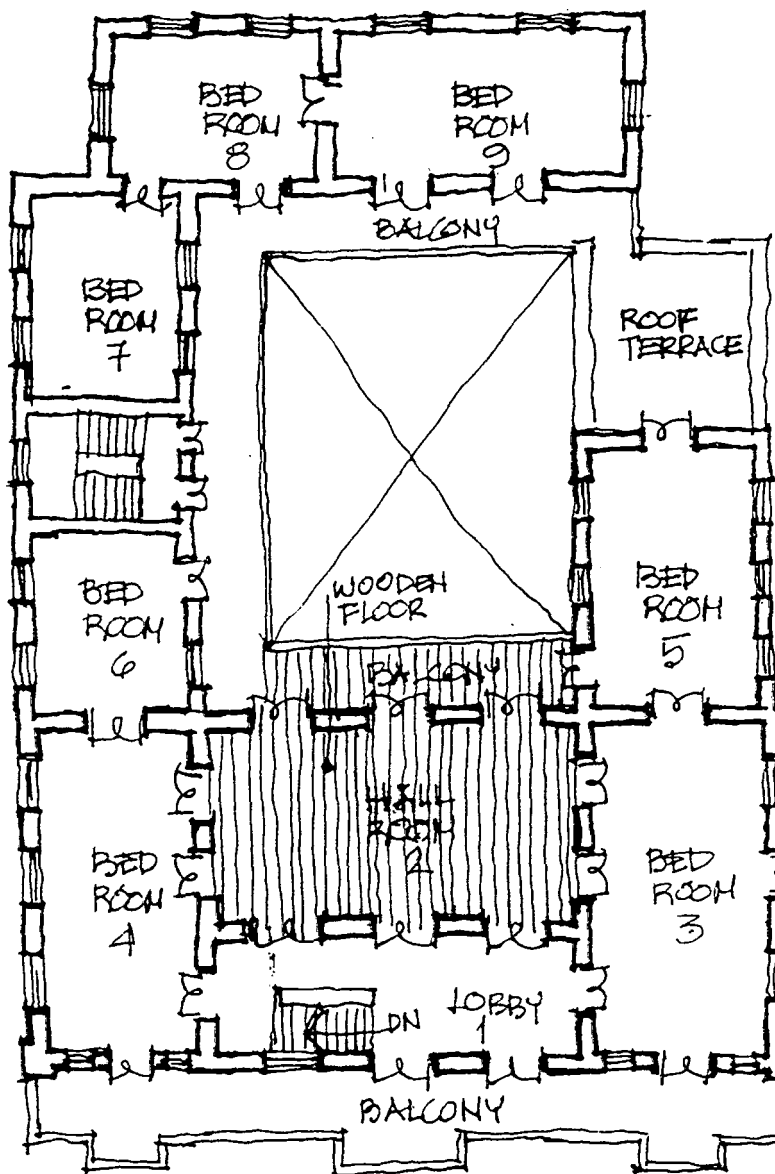


Fig-8.9.2 First floor plan, house of Rup Narayan.

Sirson road, Chittagong

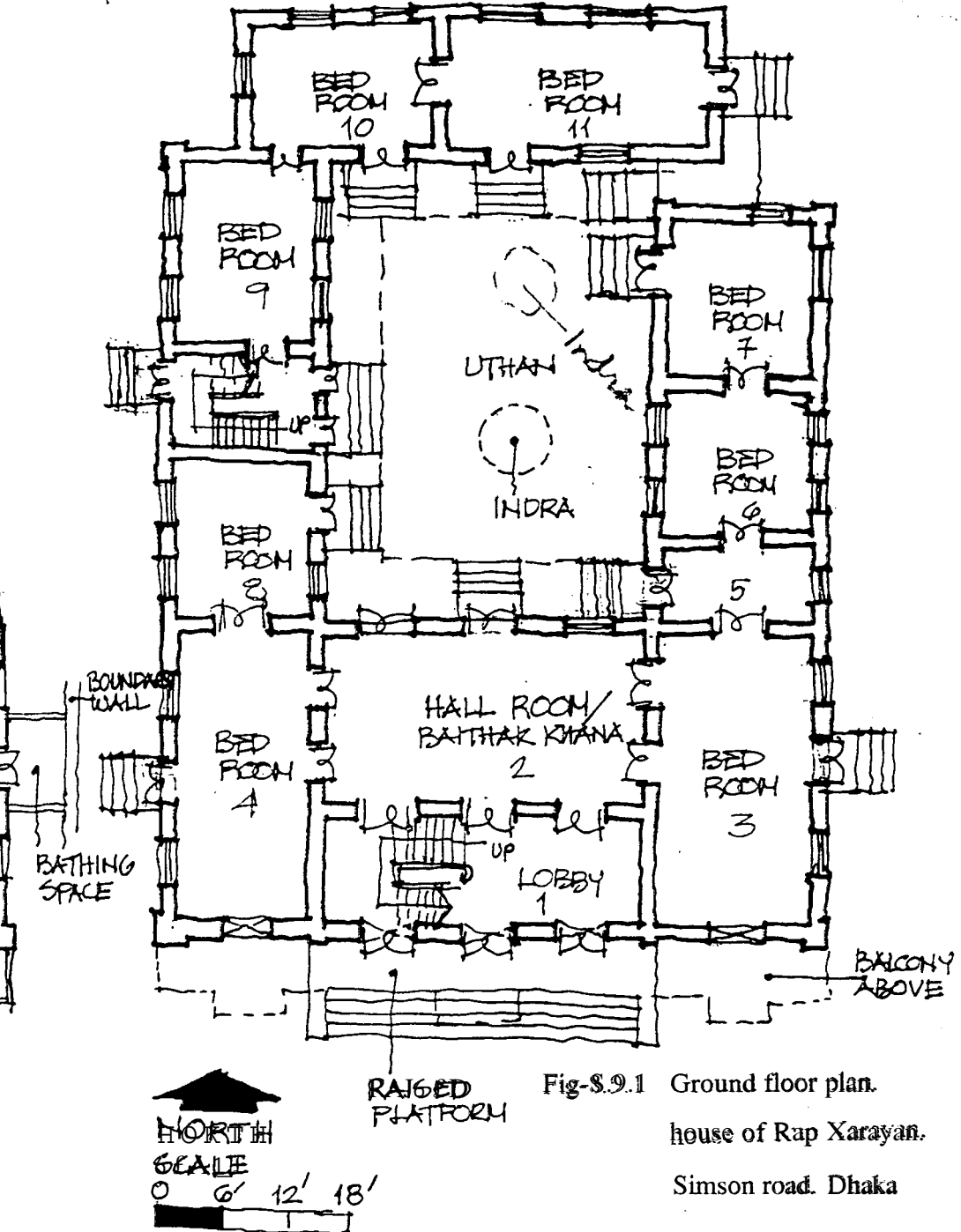


Fig-S.9.1 Ground floor plan.
house of Rap Xarayan.
Simson road. Dhaka



Fig-8.9.3 South facade, houses of Raj Narayan and Rup Narayan, Simson road, Dhaka



Fig-8.9.4 South facade, house of Rup Narayan

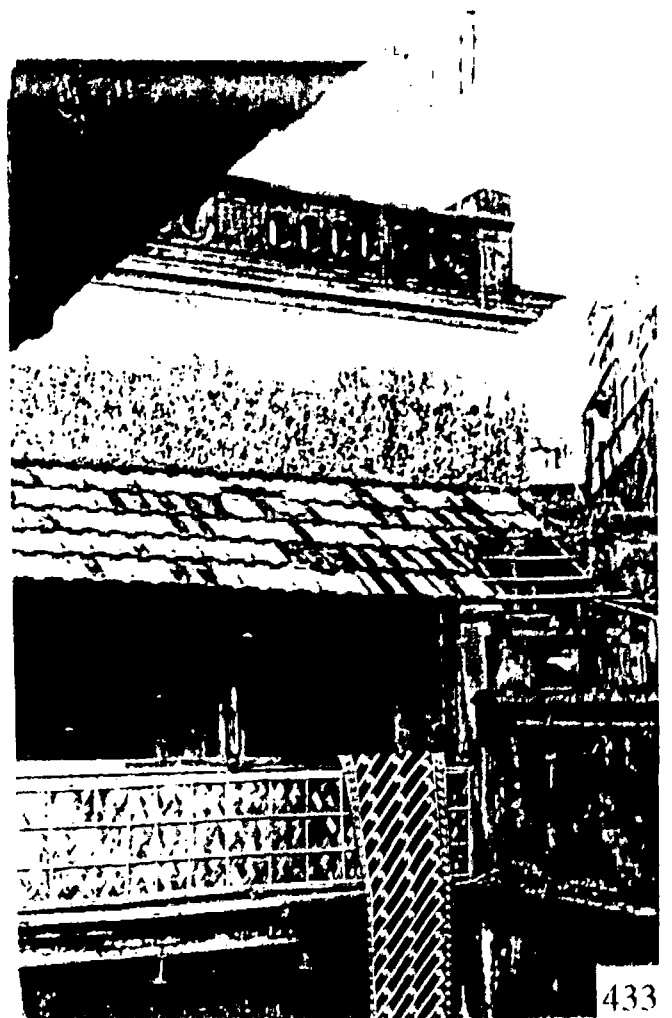


Fig-8.9.5 Internal court, house of Rup Narayan

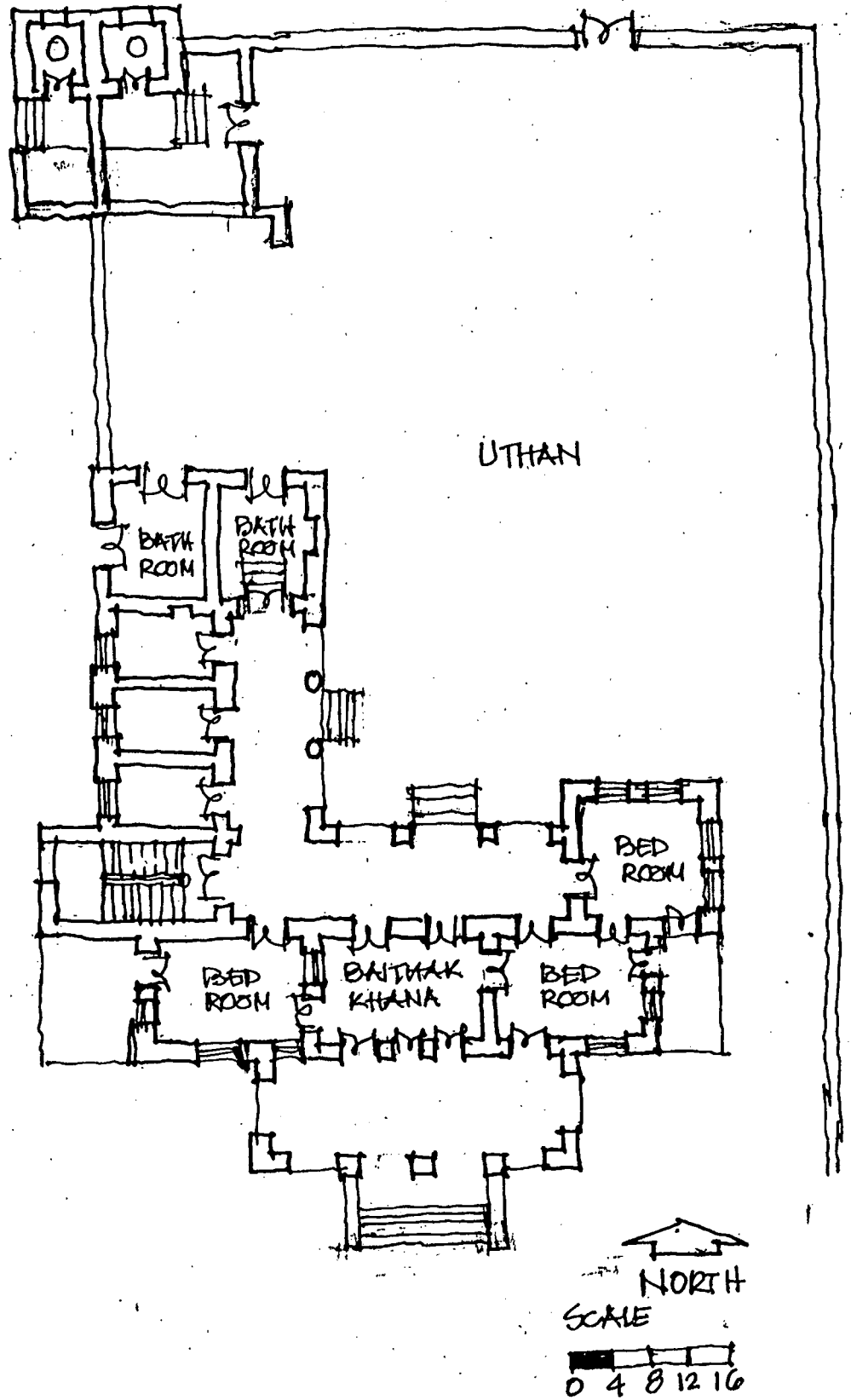
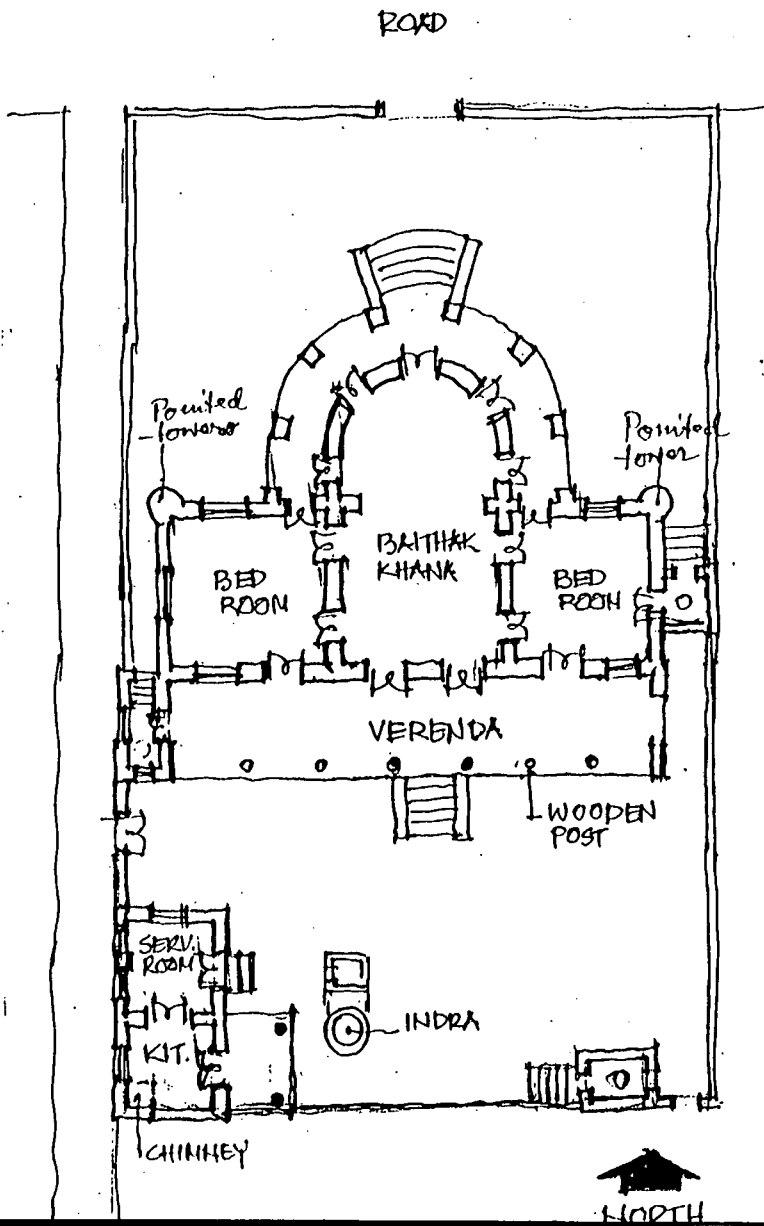


Fig-8.11. Ground floor plan, Tapash kuti,
Bhola tank road, Jessore.



Fig-8.12.2 Internal (south) facade from the court. house of Khorasani



SCALE

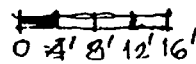


Fig-8.12.1 Ground floor plan, house of Khurasani,
Lower Jessore road, Khulna

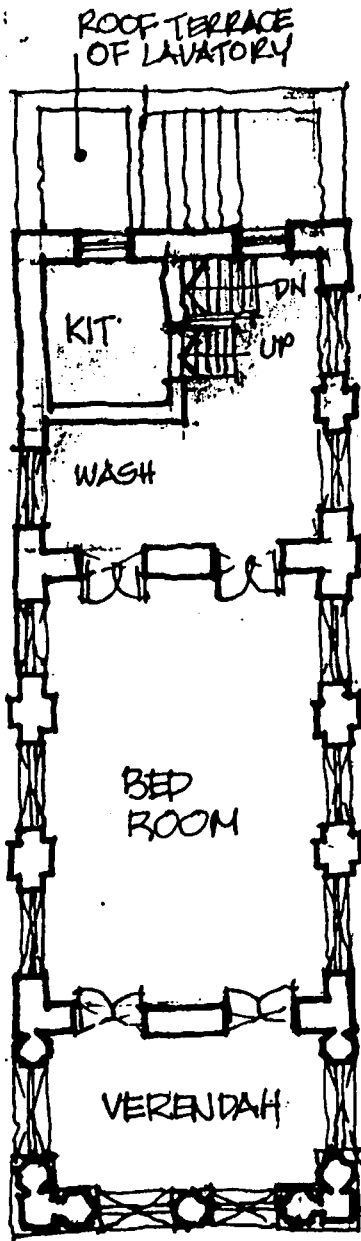


Fig-8.13.3 First floor plan, shop house
at Nicha Bazar, Natore

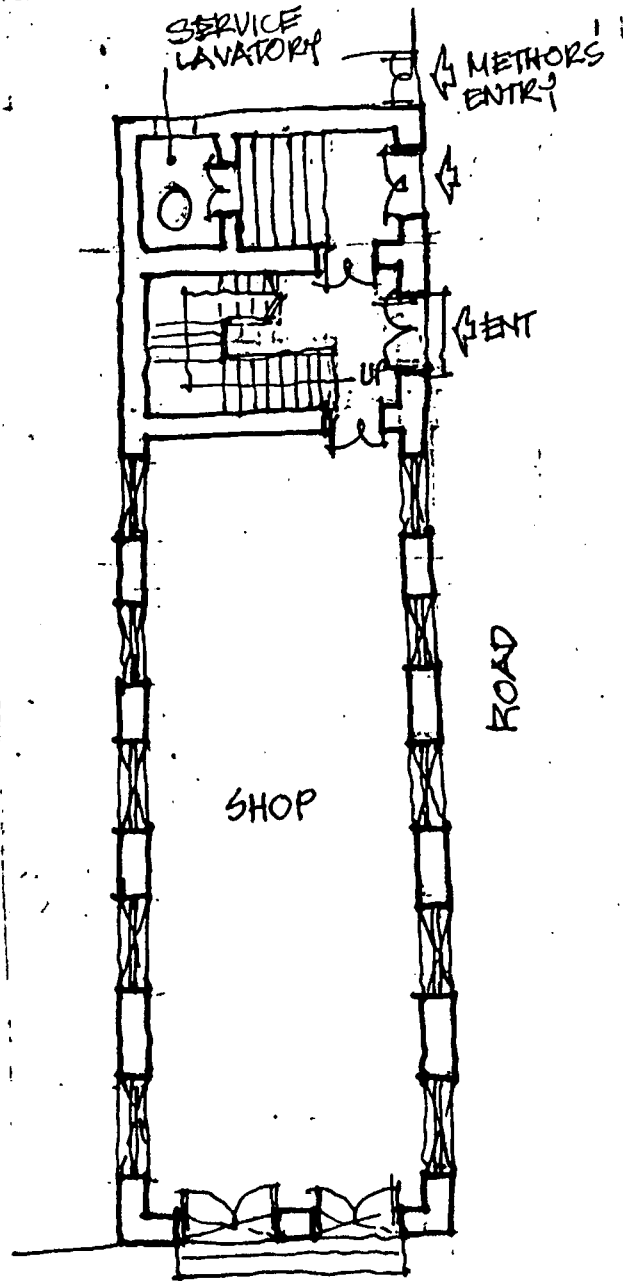


Fig-8.13.2 Ground floor plan, shop house
at Nicha bazar, Natore

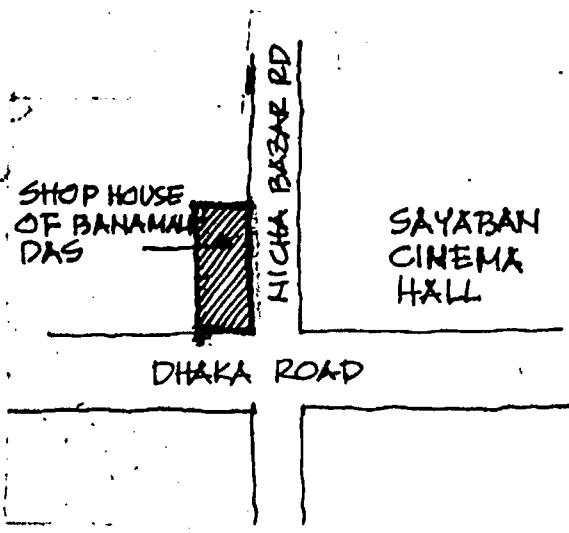


Fig-8.13.1 Site plan, shop house
Nicha bazar, Natore

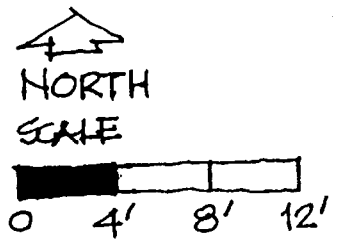




Fig-8.13.4 South-east facade of shop house,
Nicha Bazar, Natore

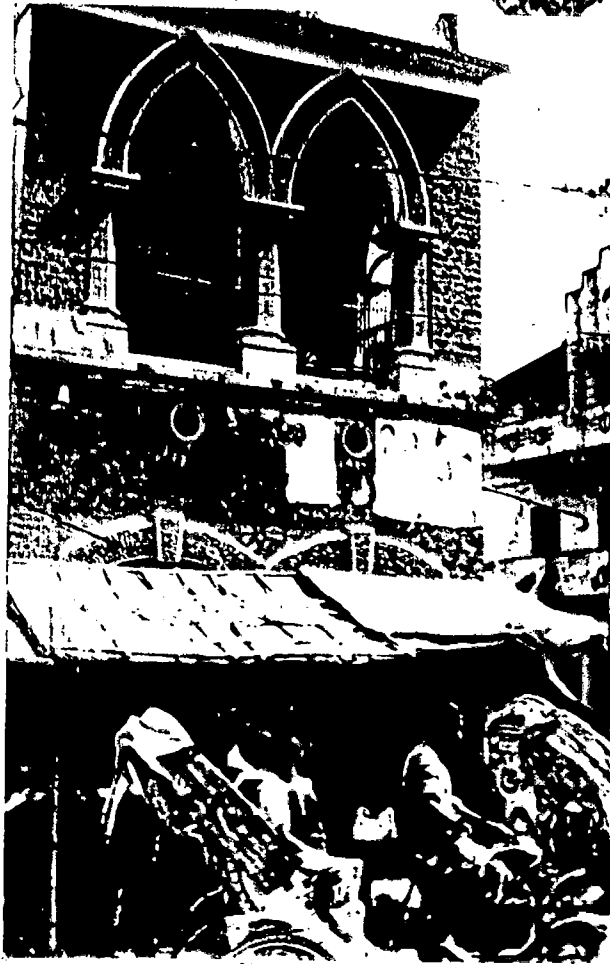
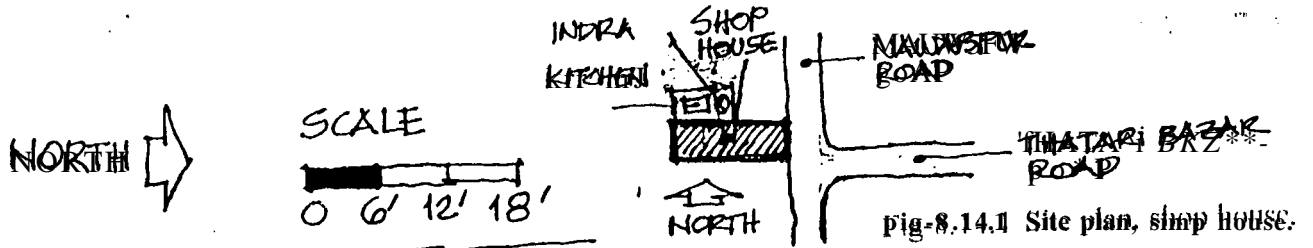


Fig-8.13.5 South facade of shop house,
Nicha bazar, Natore



Fig-8.13.6 East facade of shop house,
Nicha bazar, Natore



165 Nawalpur road, Dhaka.

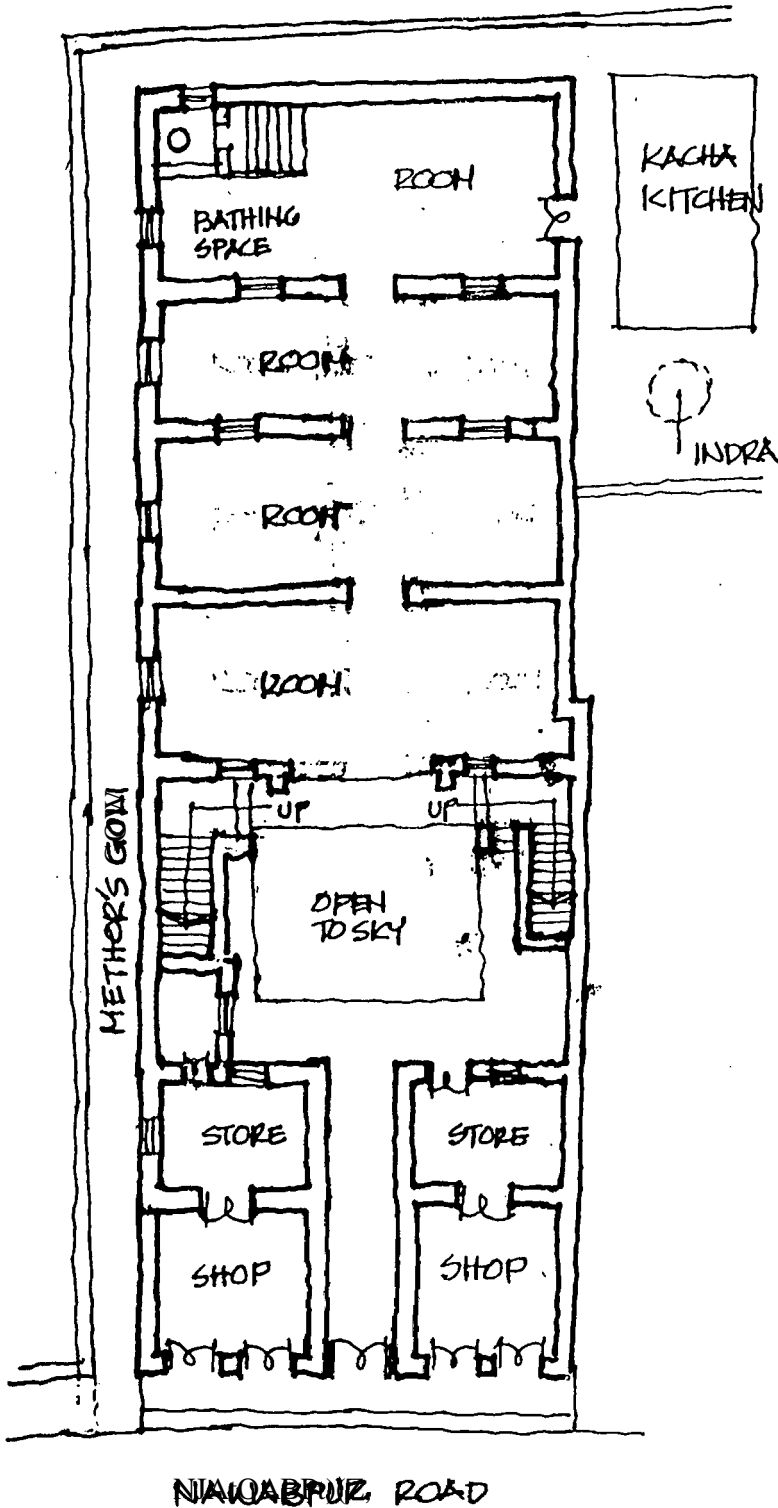


Fig-8.14.2 Ground floor plan, shop house,
165 Nawalpur road, Dhaka

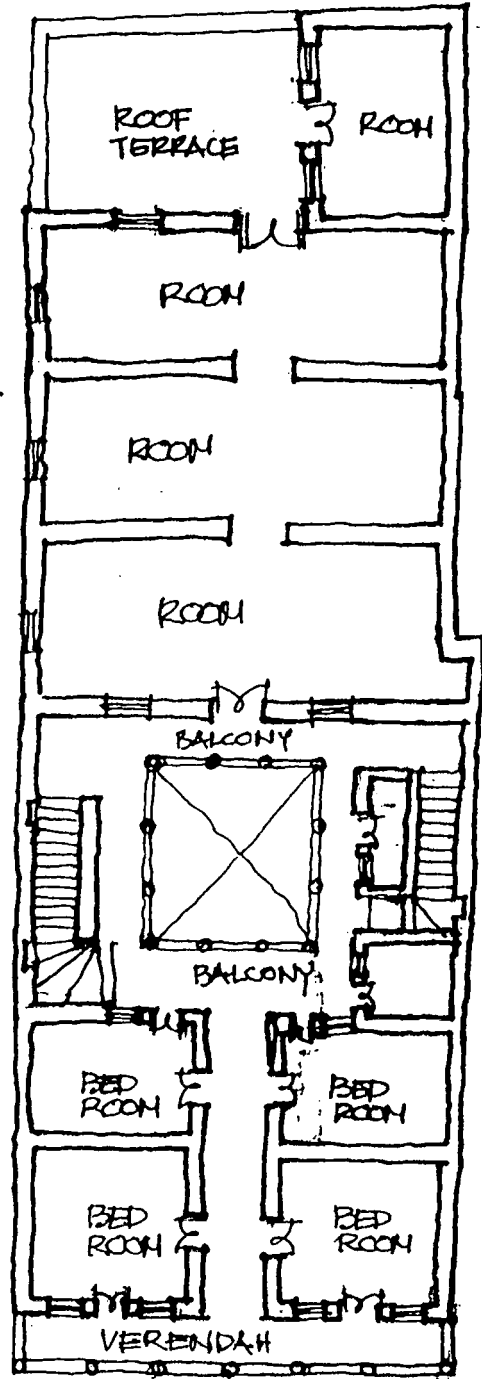


Fig-8.14.3 First floor plan, shop house,
165 Nawalpur road, Dhaka

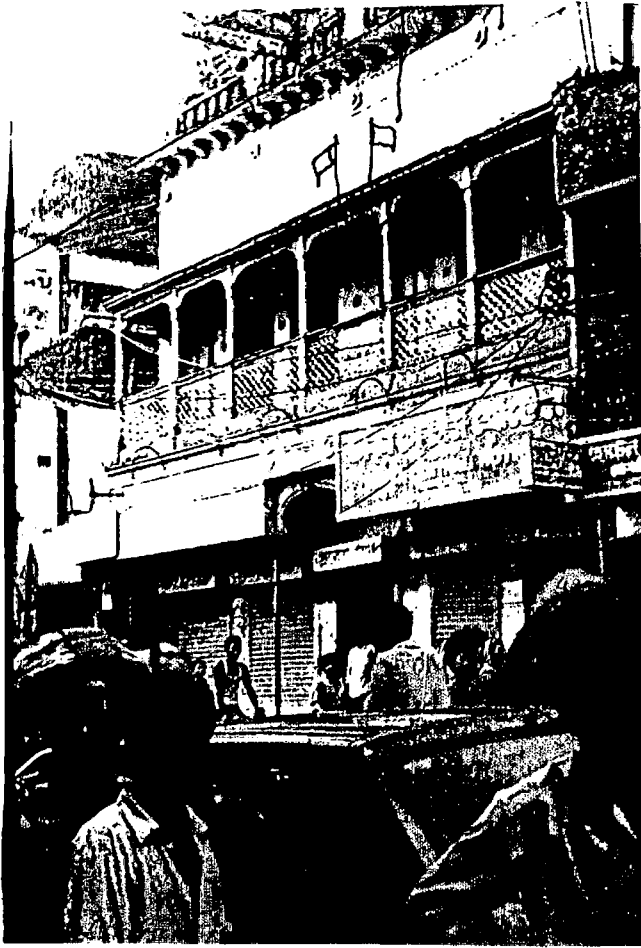


Fig-8.14.4 East facade of shop house

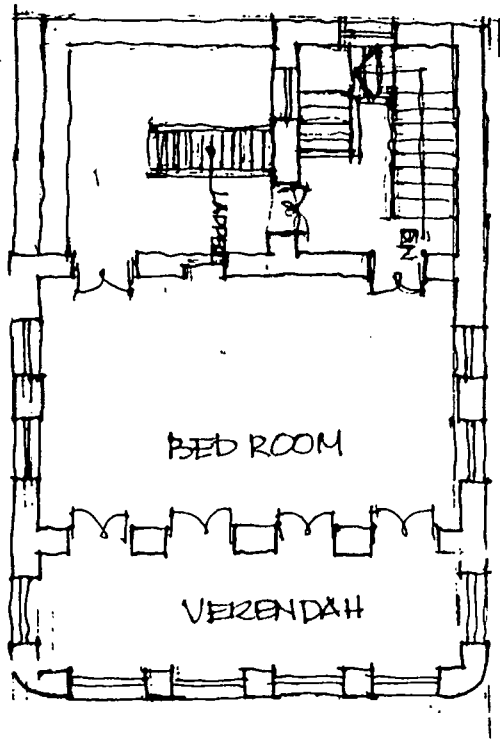
165 Nawabpur road, Dhaka

Fig-8.14.5 South-east facade of shop house at 165

Nawabpur road, Dhaka



Fig-8.14.6 Internal court of shop house. at 165 Nawabpur road, Dhaka



SCALE

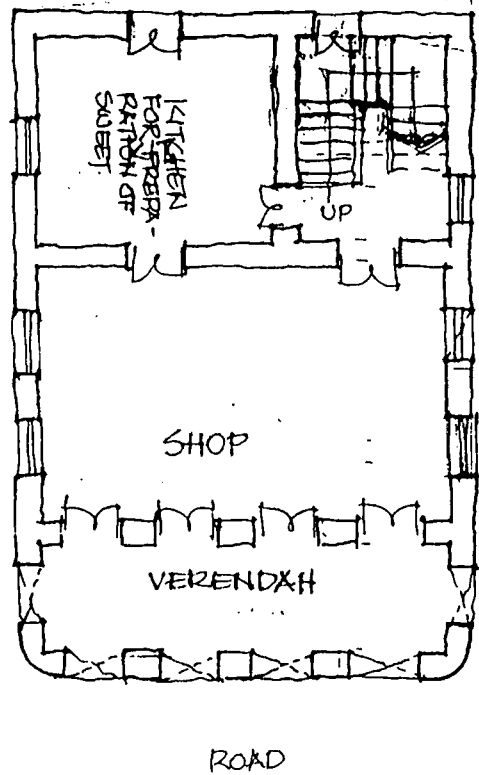
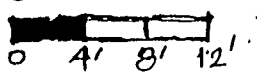


Fig-8.15.1 Ground floor plan of shop house of

Fig-8.15.2 First floor plan, of shop house of Nagendra Mallick

Nagendra Mallick at Mahadave patti.

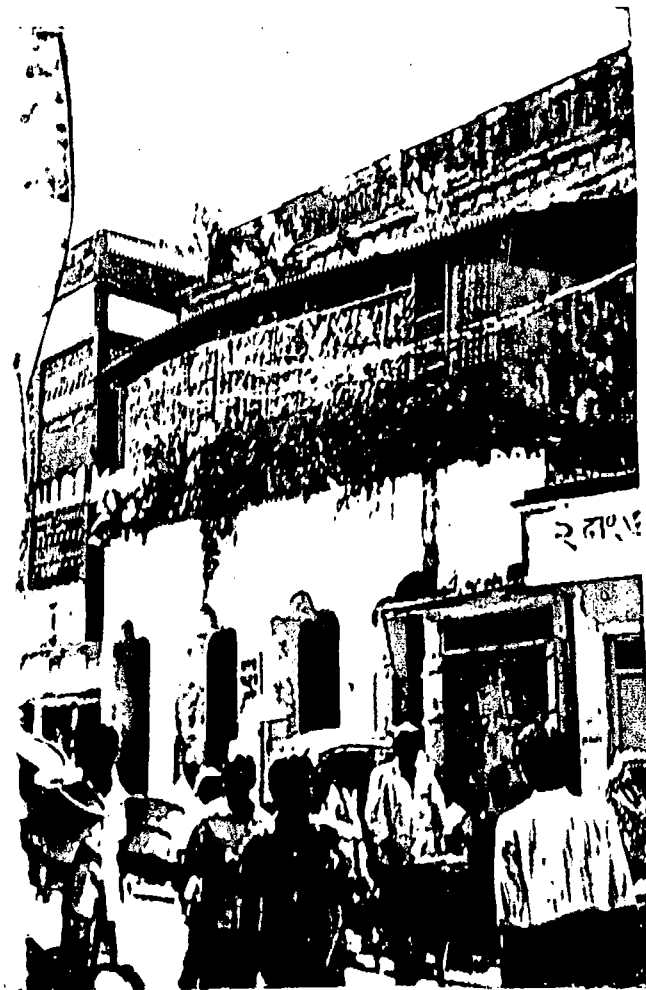


Fig-8.15.4 South facade of shop house



Fig-8.15.3 South-west facade of shop

house of Nagendra Mallick

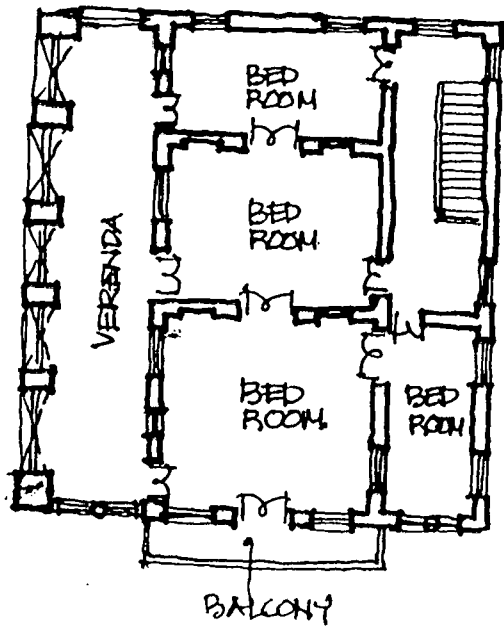


Fig-8.16.3 First floor plan,
house of Anwar Chowdhury, Wari, Dhaka

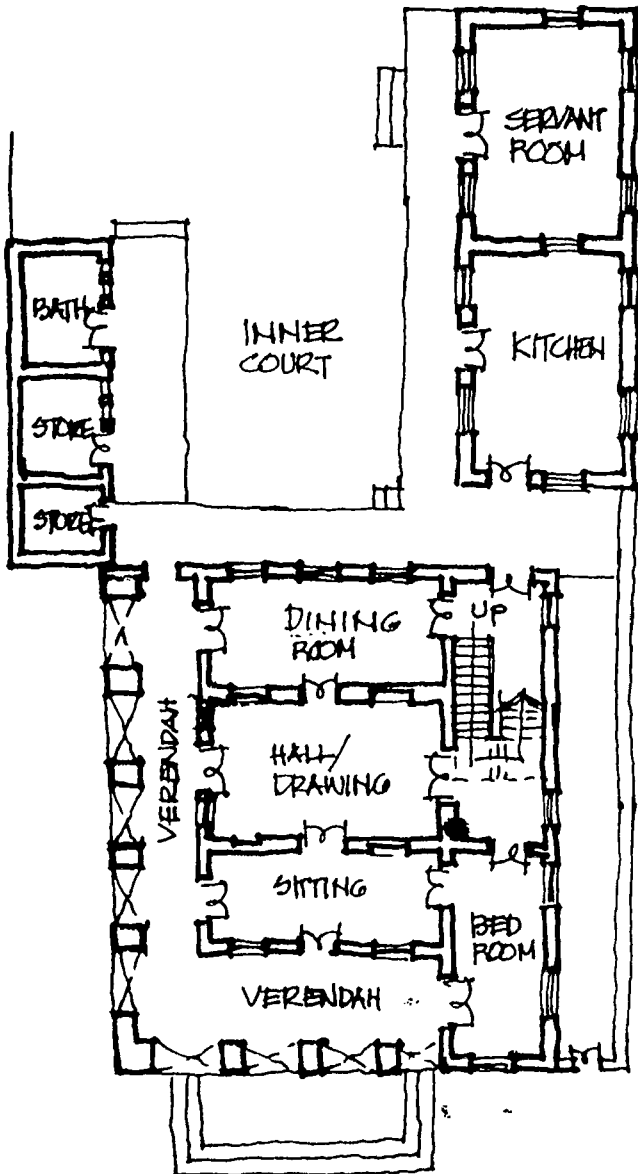


Fig-8.16.2 Ground floor plan,
house of Anwar Chowdhury, Wari, Dhaka

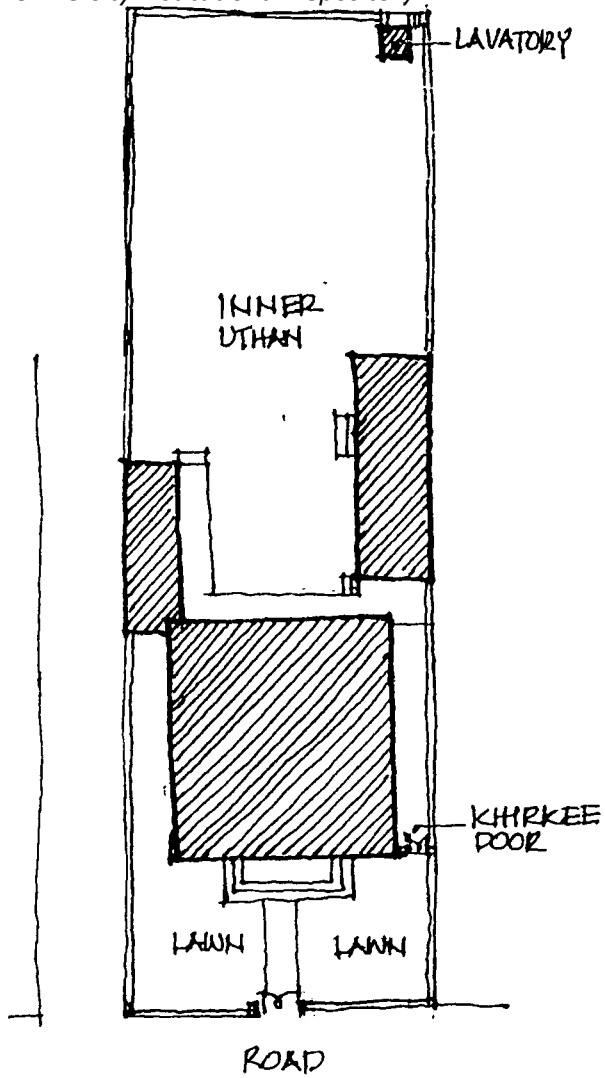
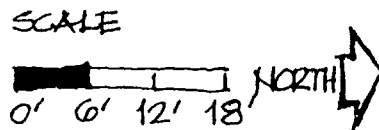


Fig-8.16.1 Compound plan,
house of Anwar Chowdhury,
Wari, Dhaka

Fig-8.16.4 North-east facade,
house of Anwar Chowdhury,
Wari, Dhaka

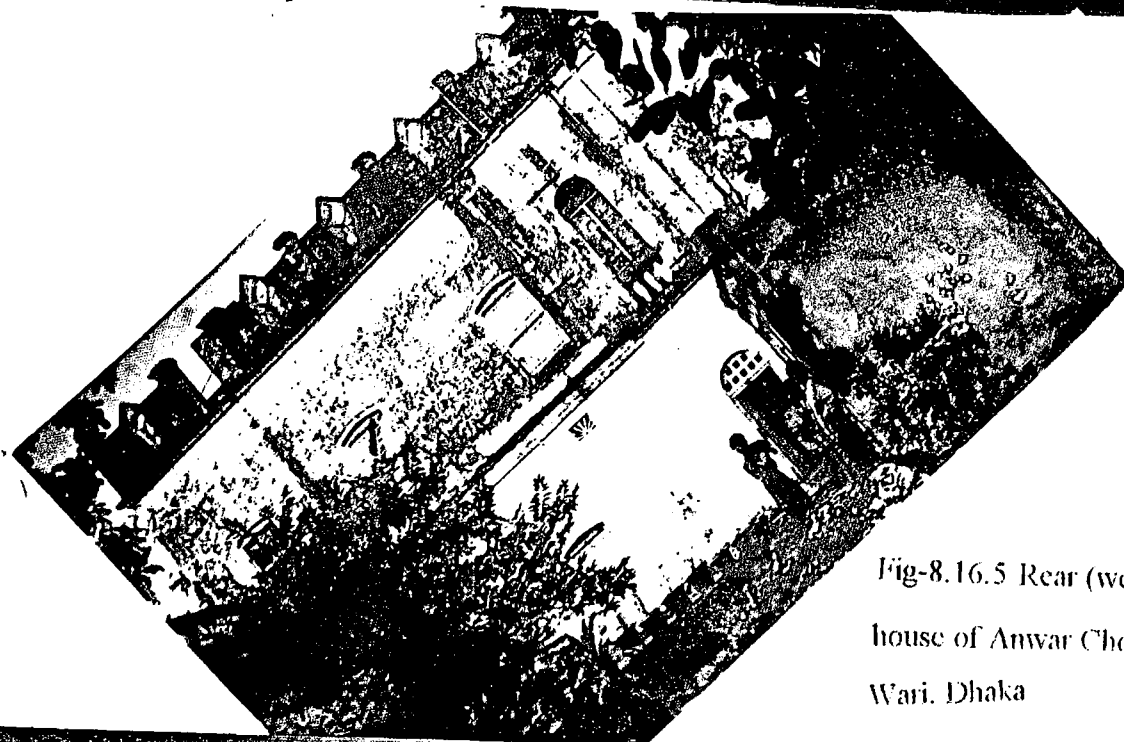
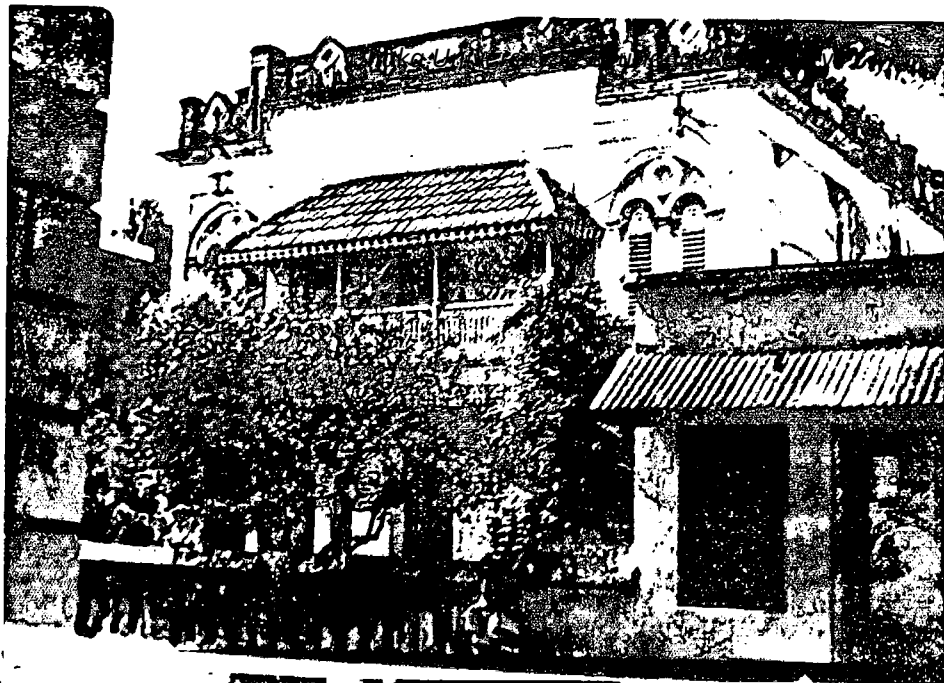


Fig-8.16.5 Rear (west) facade,
house of Anwar Chowdhury,
Wari, Dhaka

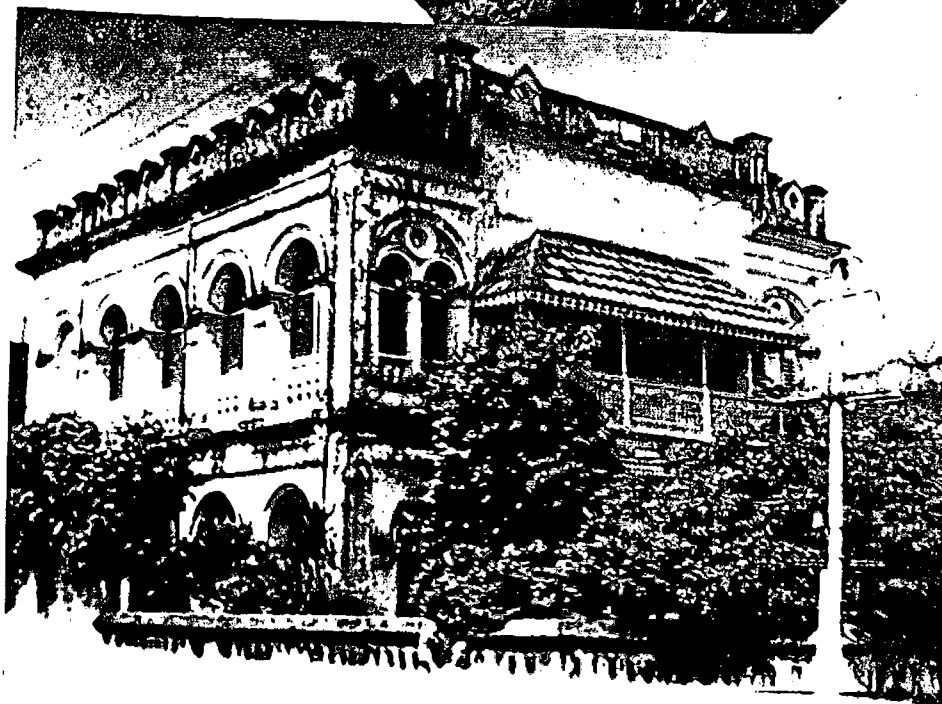


Fig-8.16.6 South-east facade,
house of Anwar Chowdhury,
Wari, Dhaka

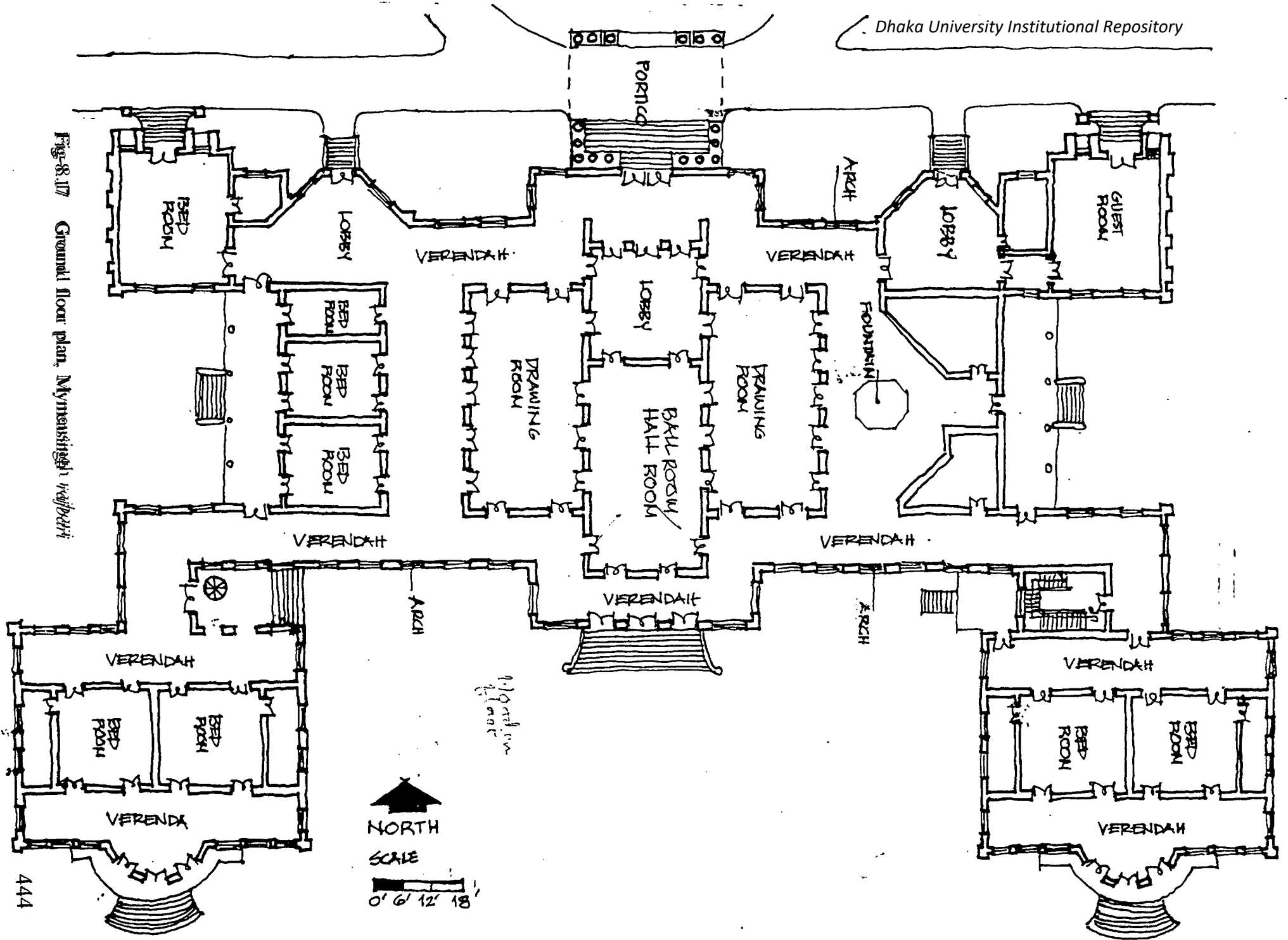
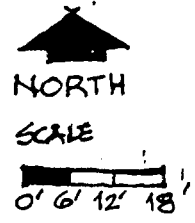


Fig. 8.117 Ground floor plan, Myyemsingh wajidat



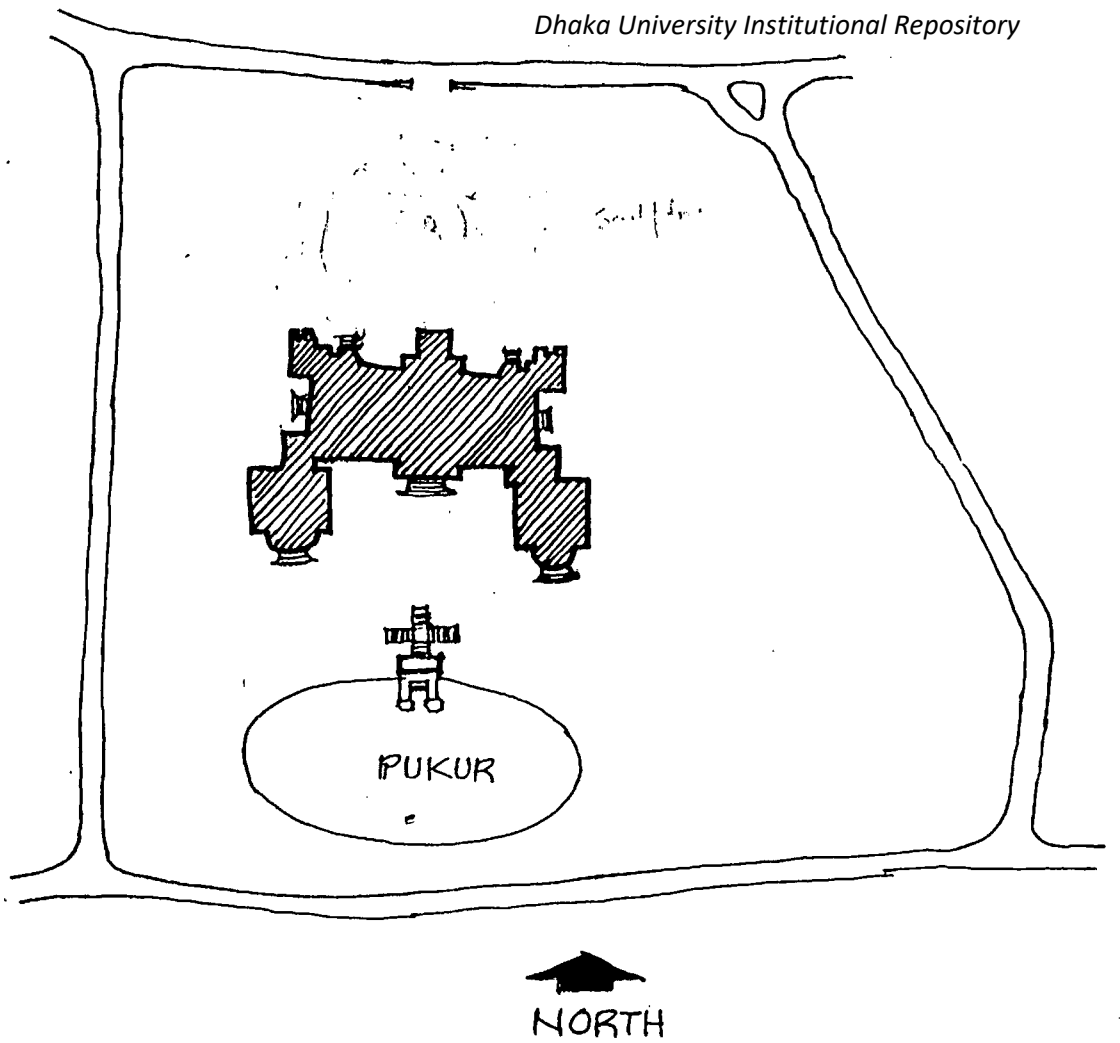


Fig-8.17.1 Compound plan, Mymensingh rajbari

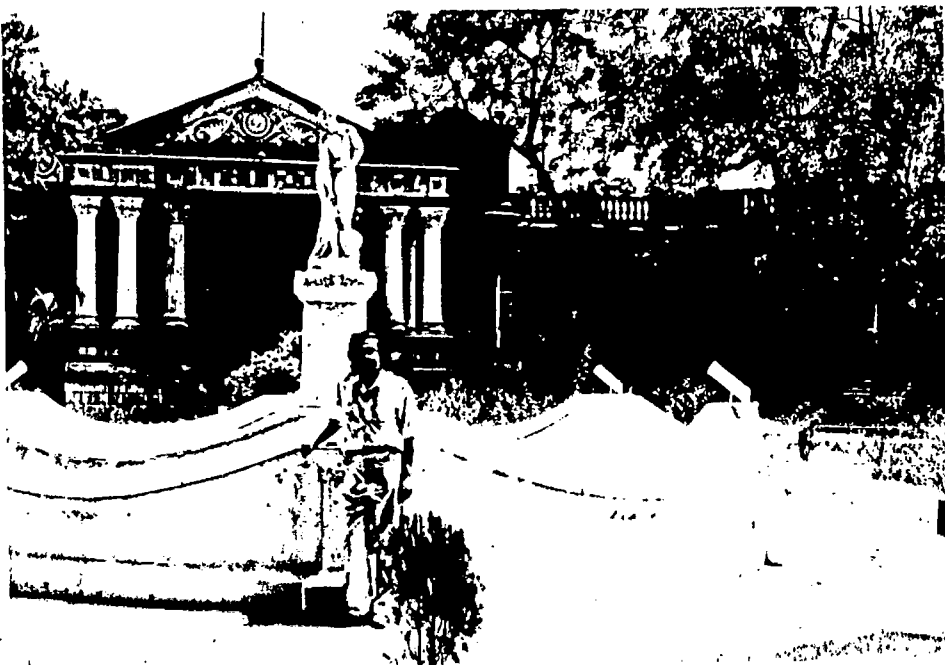


Fig-8.17.2 Front facade, Mymensingh rajbari

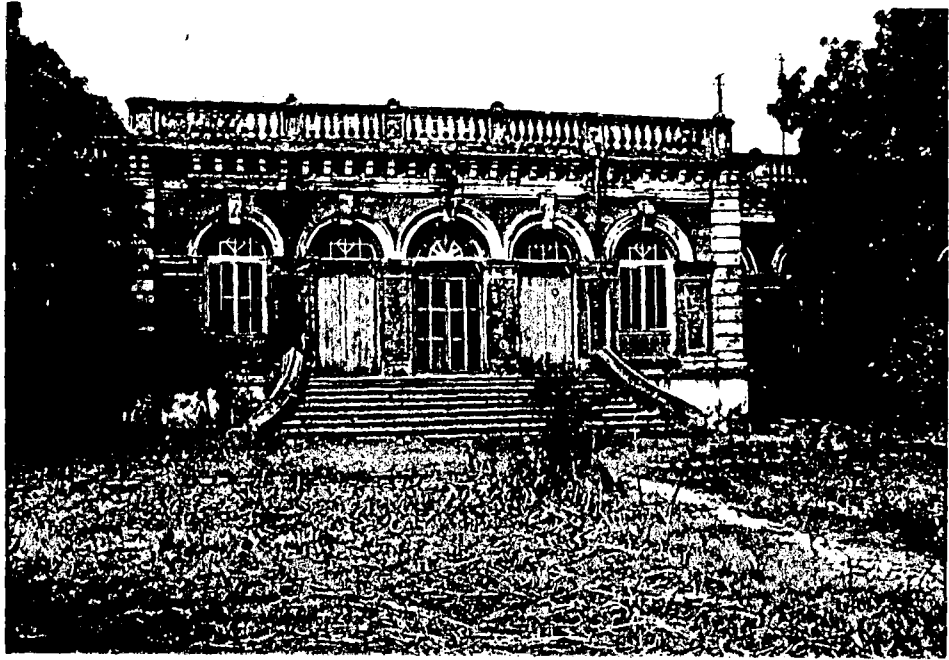


Fig-8.17.3 West facade, Mymensingh *rajbari*

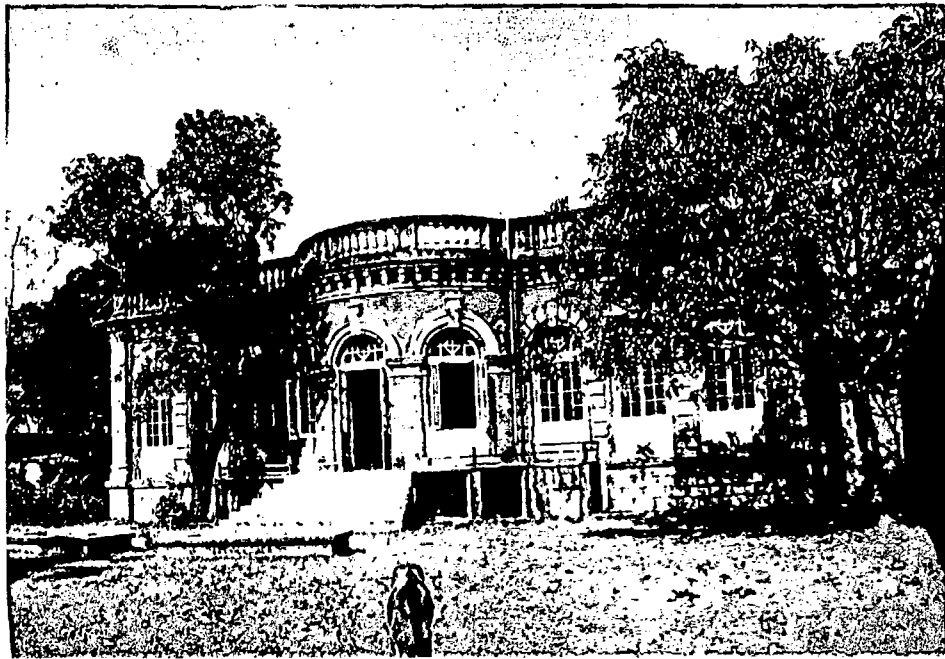


Fig-8.17.4 South facade, Mymensingh *rajbari*

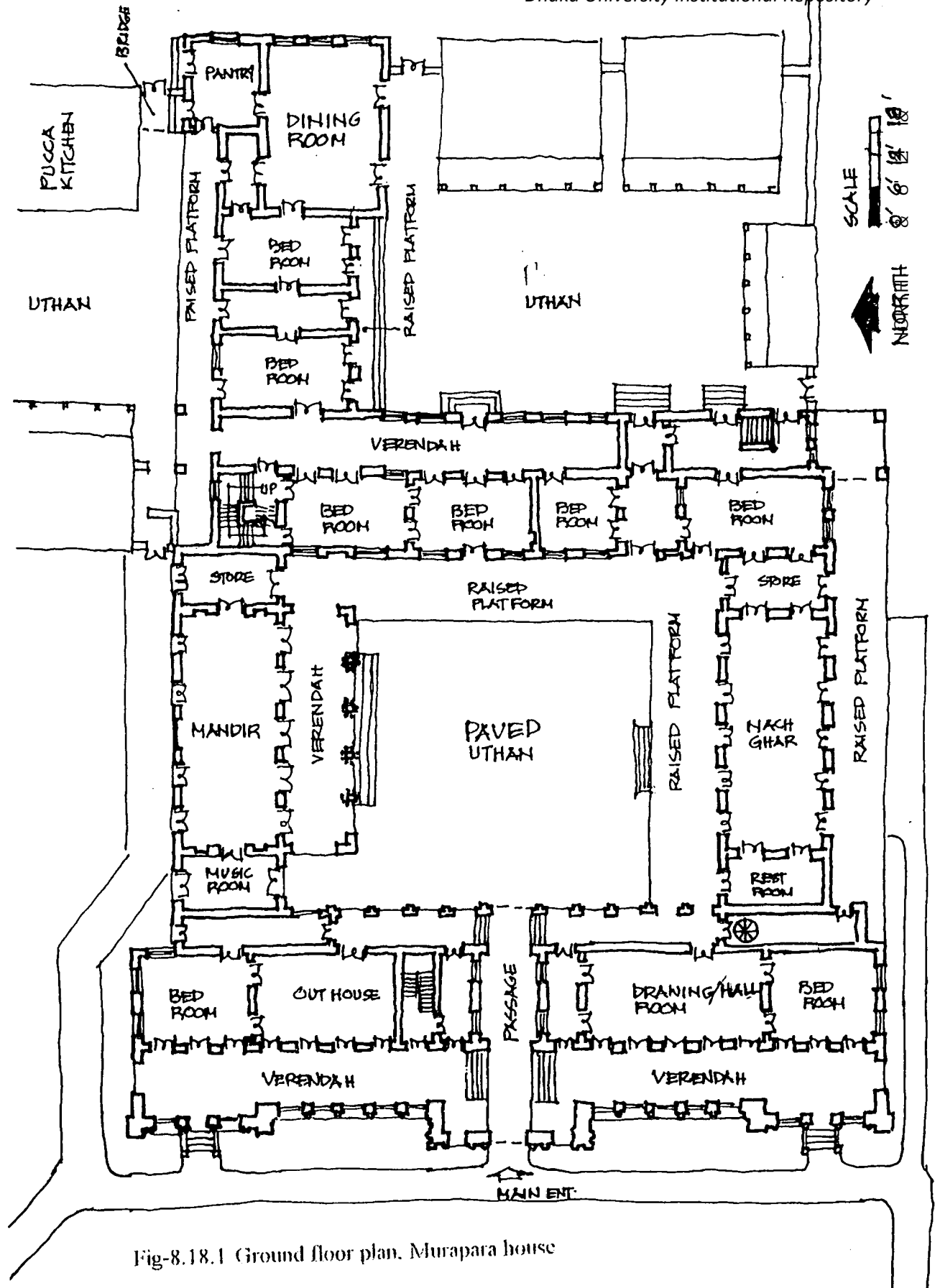


Fig-8.18.1 Ground floor plan, Murapara house

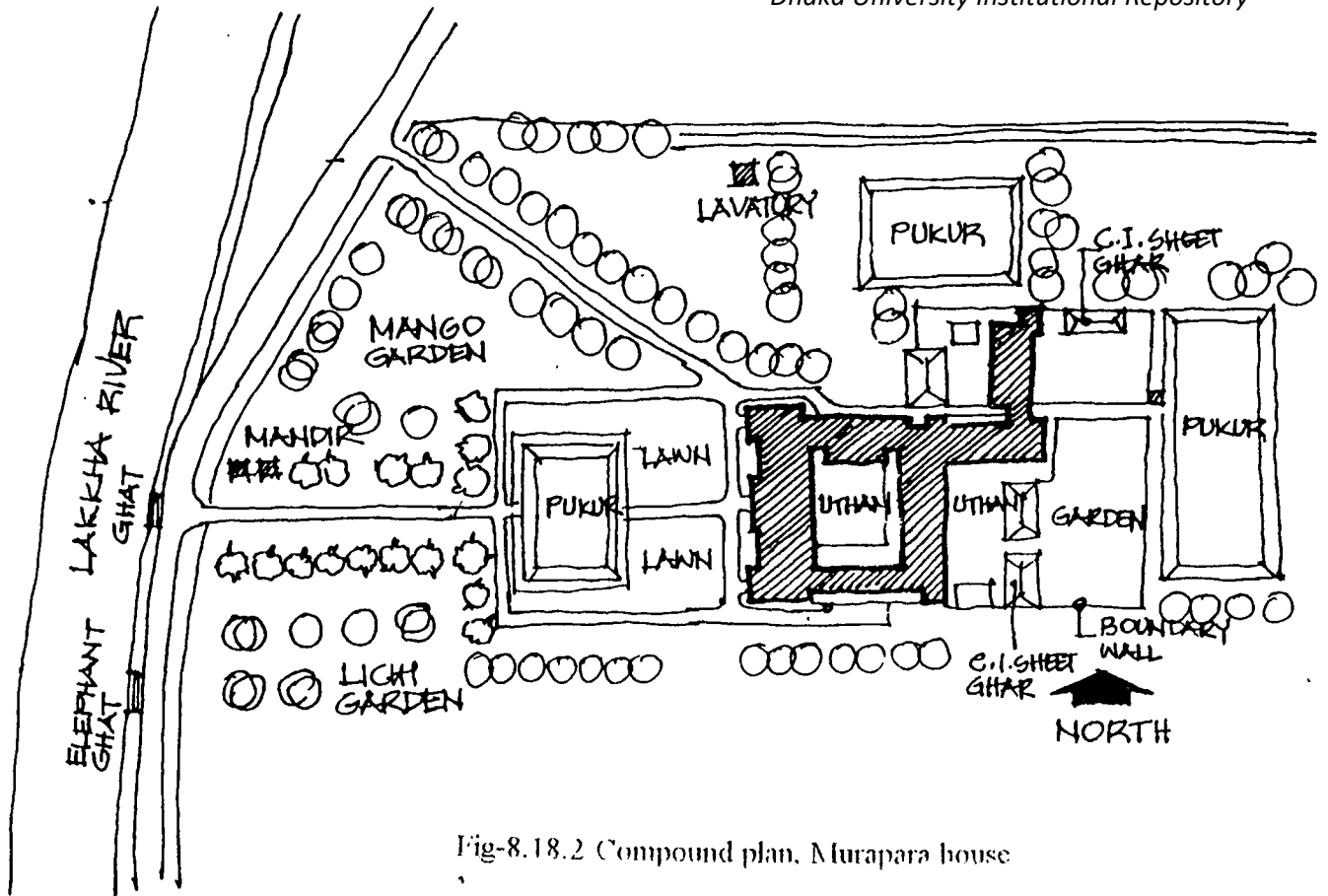


Fig-8.18.2 Compound plan, Murapara house

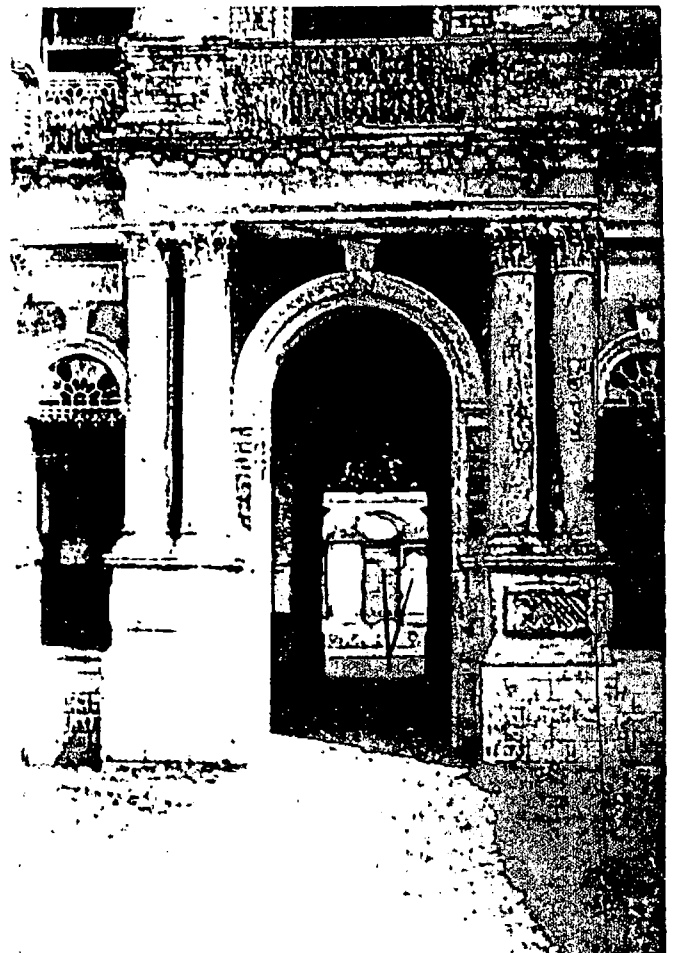


Fig-8.18.3 Entry Murapara house

Fig-8.18.4 North-east facade,
Murapara house

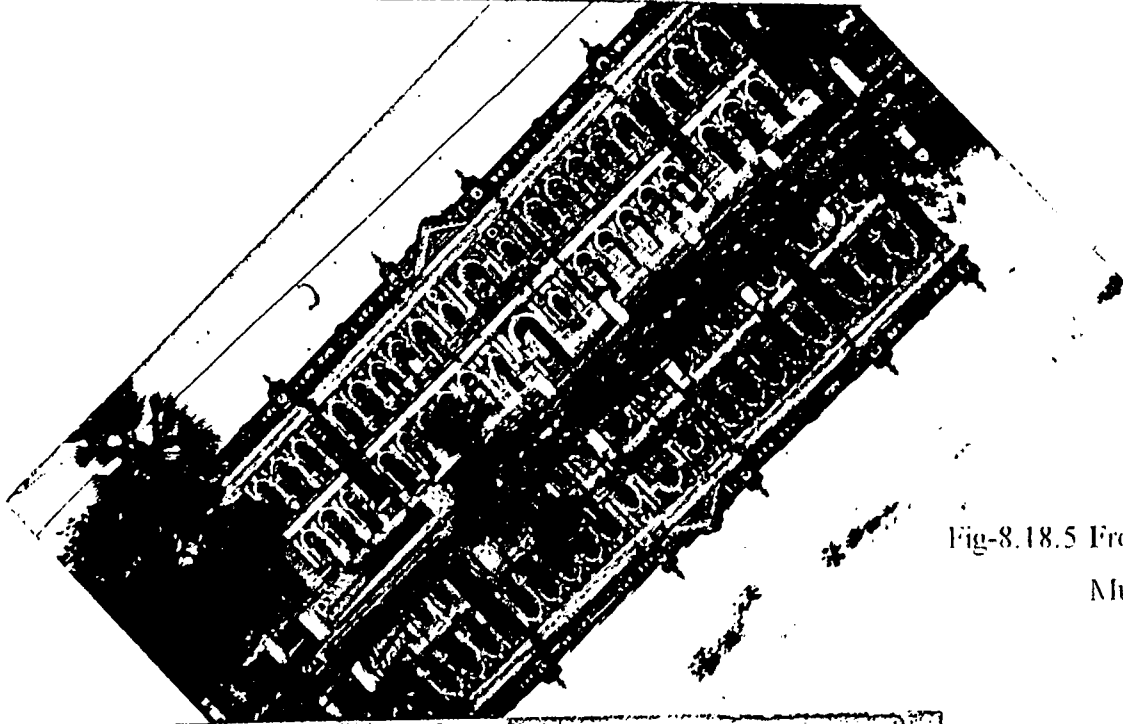
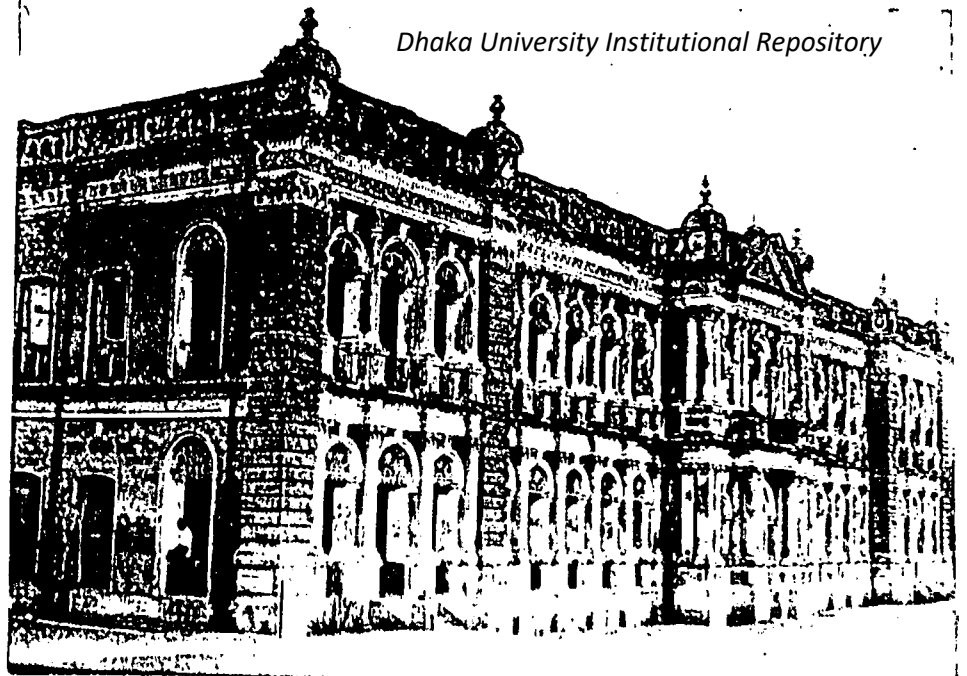


Fig-8.18.5 Front (north) facade,
Murapara house

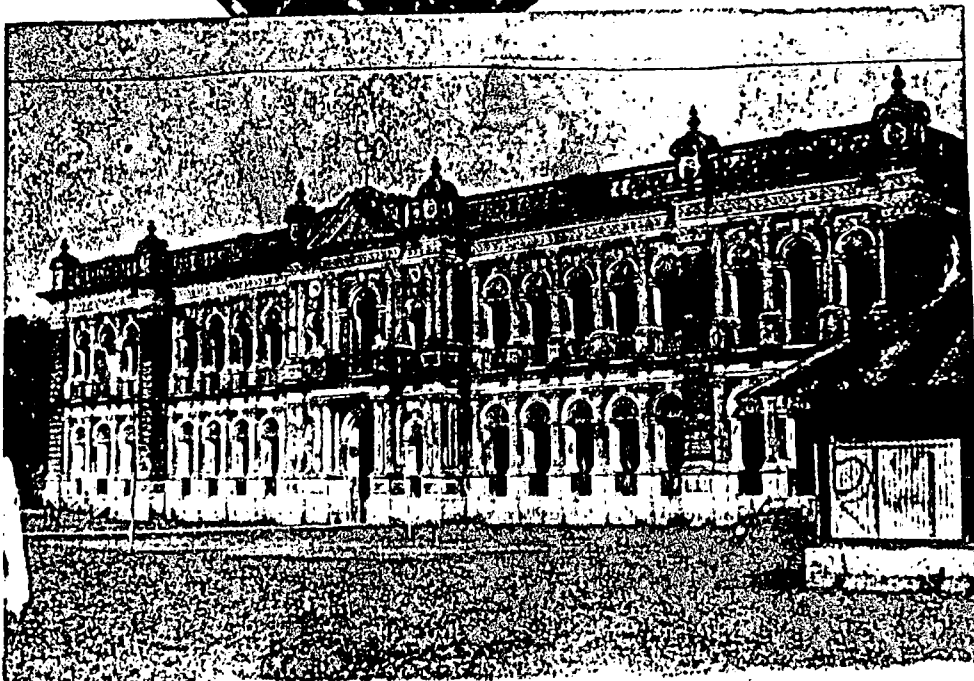
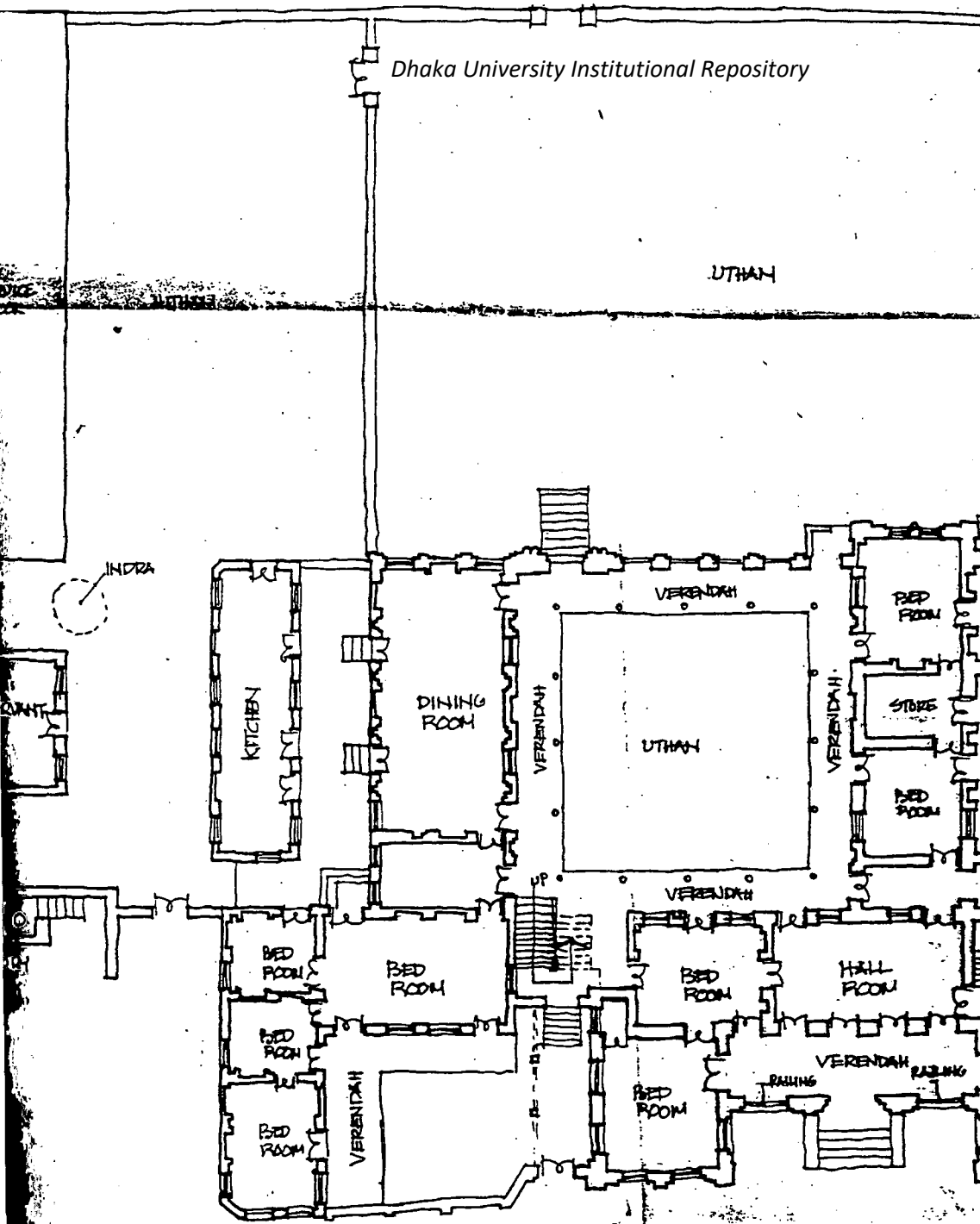
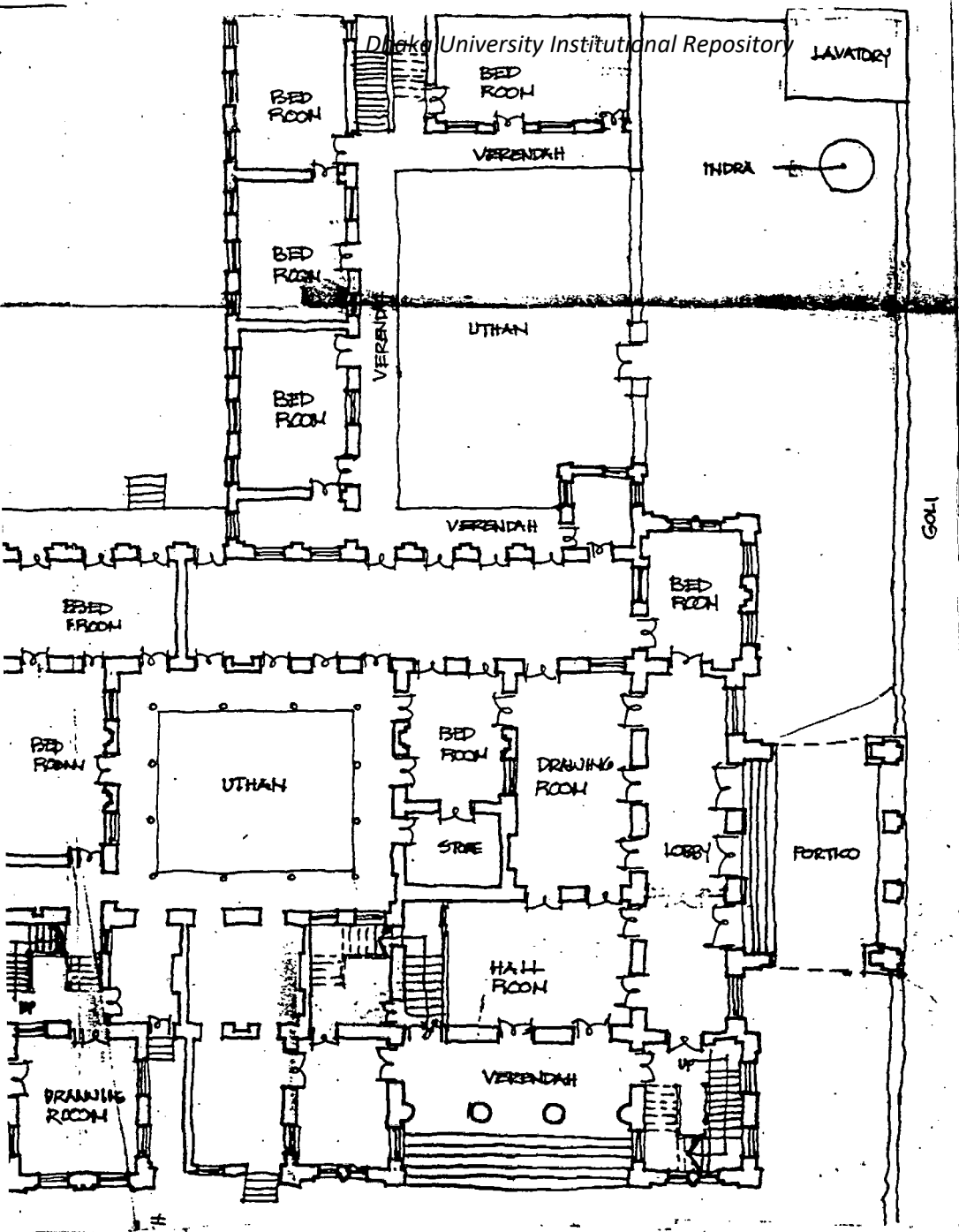


Fig-8.18.6 North-west facade
murapara house



9.1 Ground floor plan, Rebotimohan Lodge, sutrapur, Dhaka.



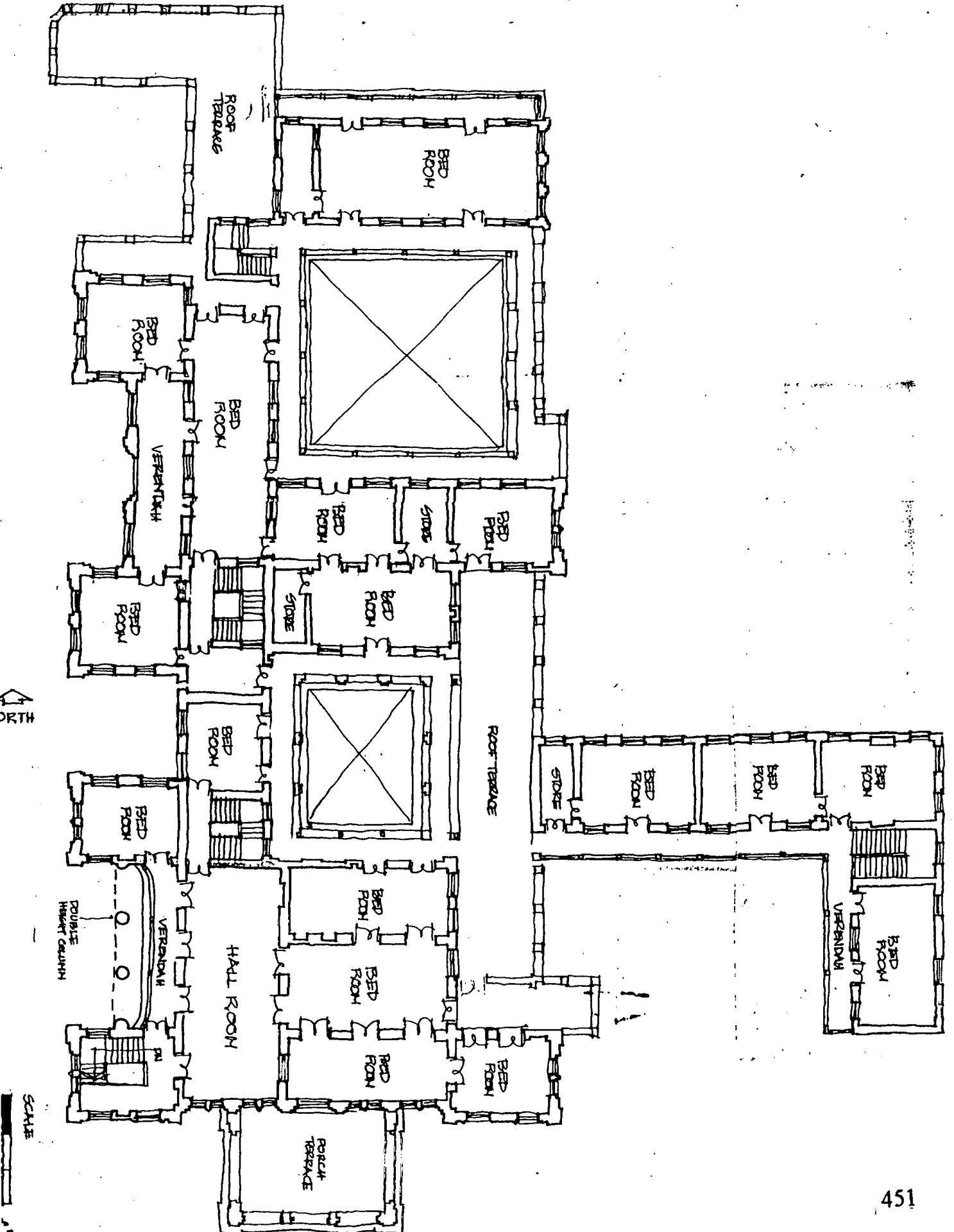


Fig-8.19.2 First floor plan, Reboti Mohan Lodge, sulrapur, Dhaka

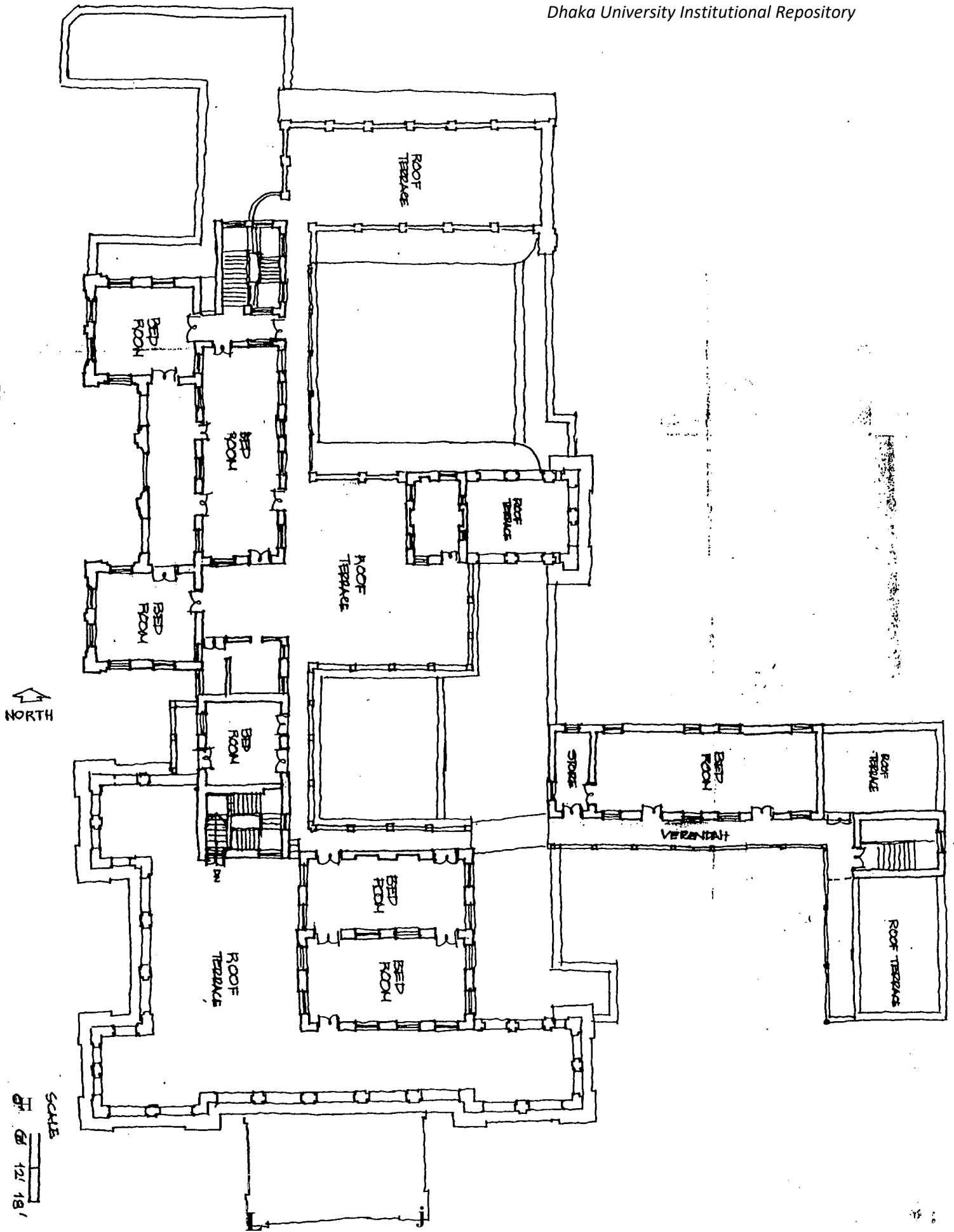


Fig. 8.19.3 Second floor plan, Rebolu Mohan Lodge, Sutrapur, Dhaka

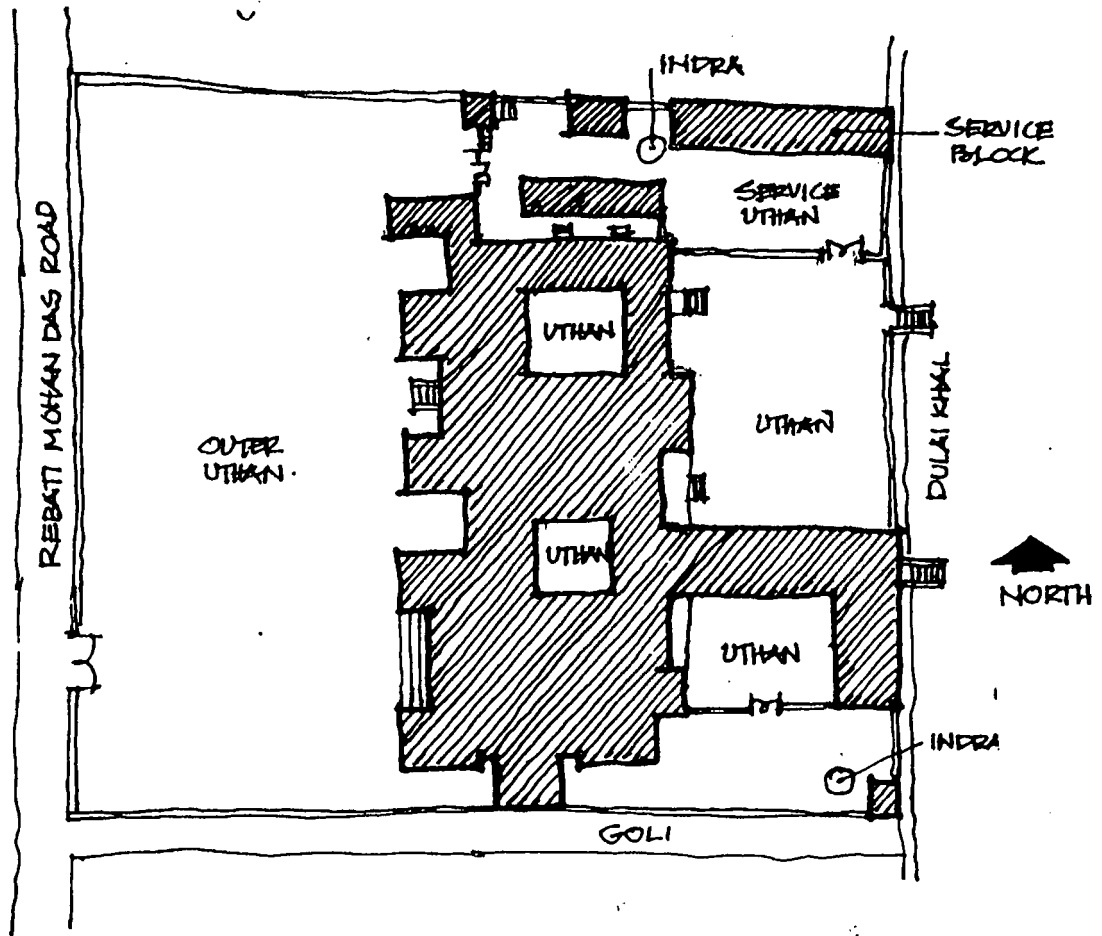


Fig-8.19.4 Compound plan. Reboti Mohan Lodge, Sutrapur, Dhaka



Fig-8.19.5 Front (west) facade, Northern block, Reboti mohan lodge,
Sutrapur, Dhaka



Fig-8.19.6 South east facade. Reboti Mohan lodge, Sutrapur, Dhaka



Fig-8.19.7 Front (west) facade. southern block, Reboti mohan lodge,
Sutrapur, Dhaka



Fig-8.19.8 Interior facade, Reboti mohan lodge, Sutrapur, Dhaka



Fig-8.19.9 Interior facade and court,
Rebotimohan lodge, Sutrapur, Dhaka

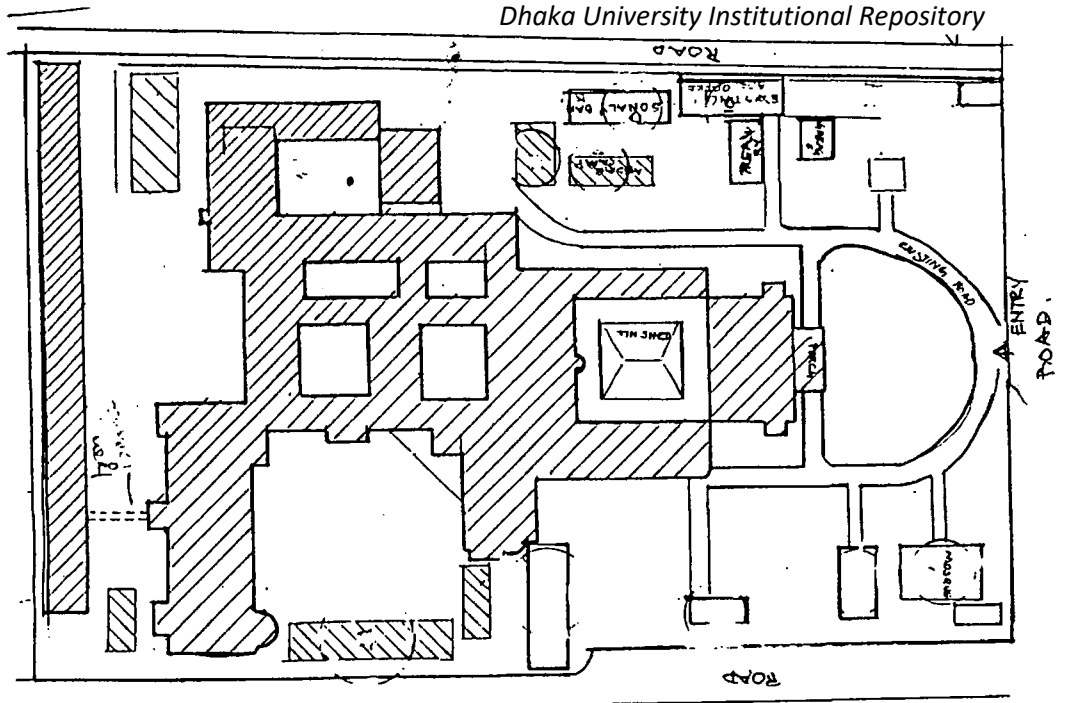


Fig-8.20.1 Compound plan, Joydevpur rajbari

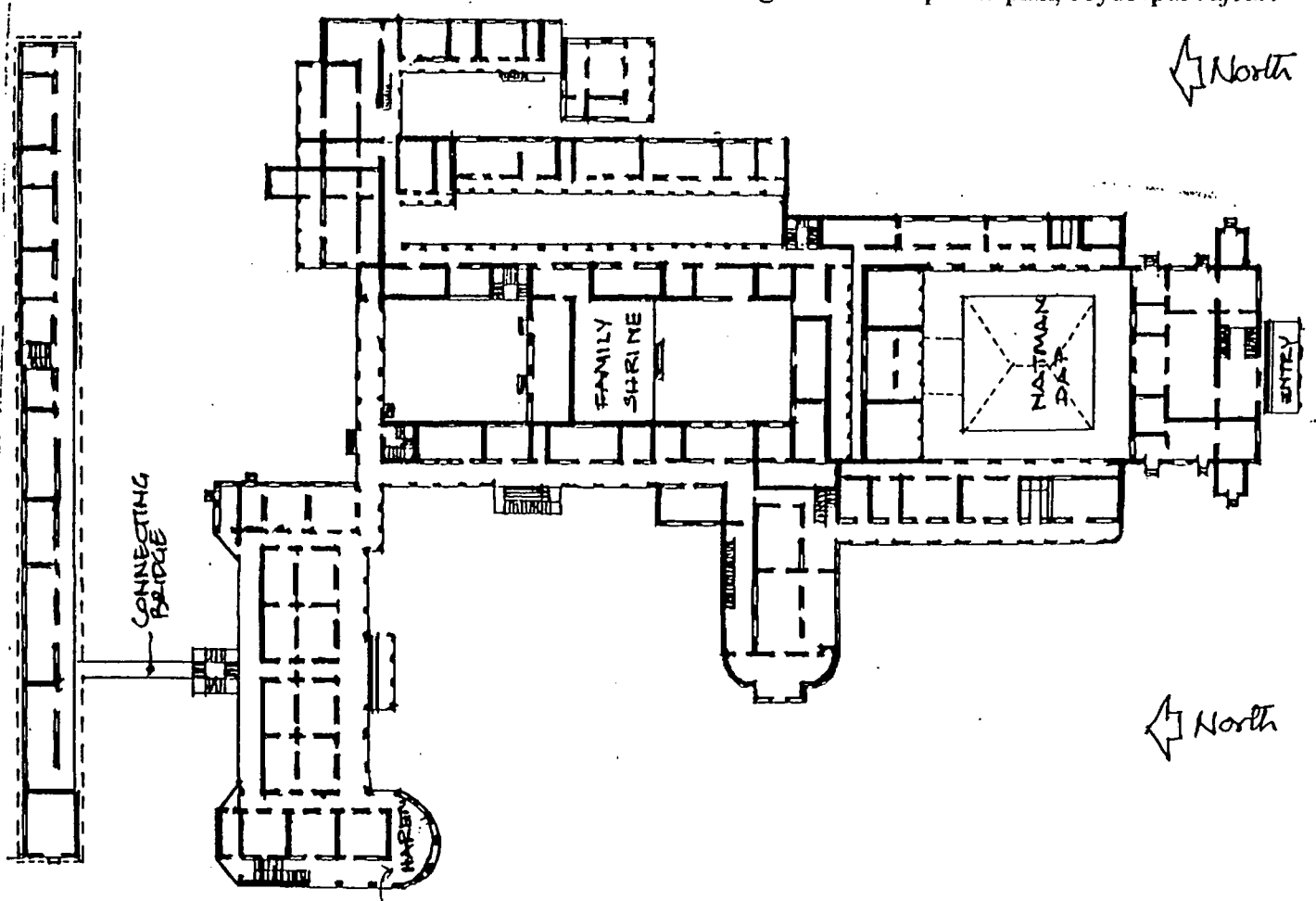


Fig-8.20.2 Ground floor plan, Joydevpur rajbari

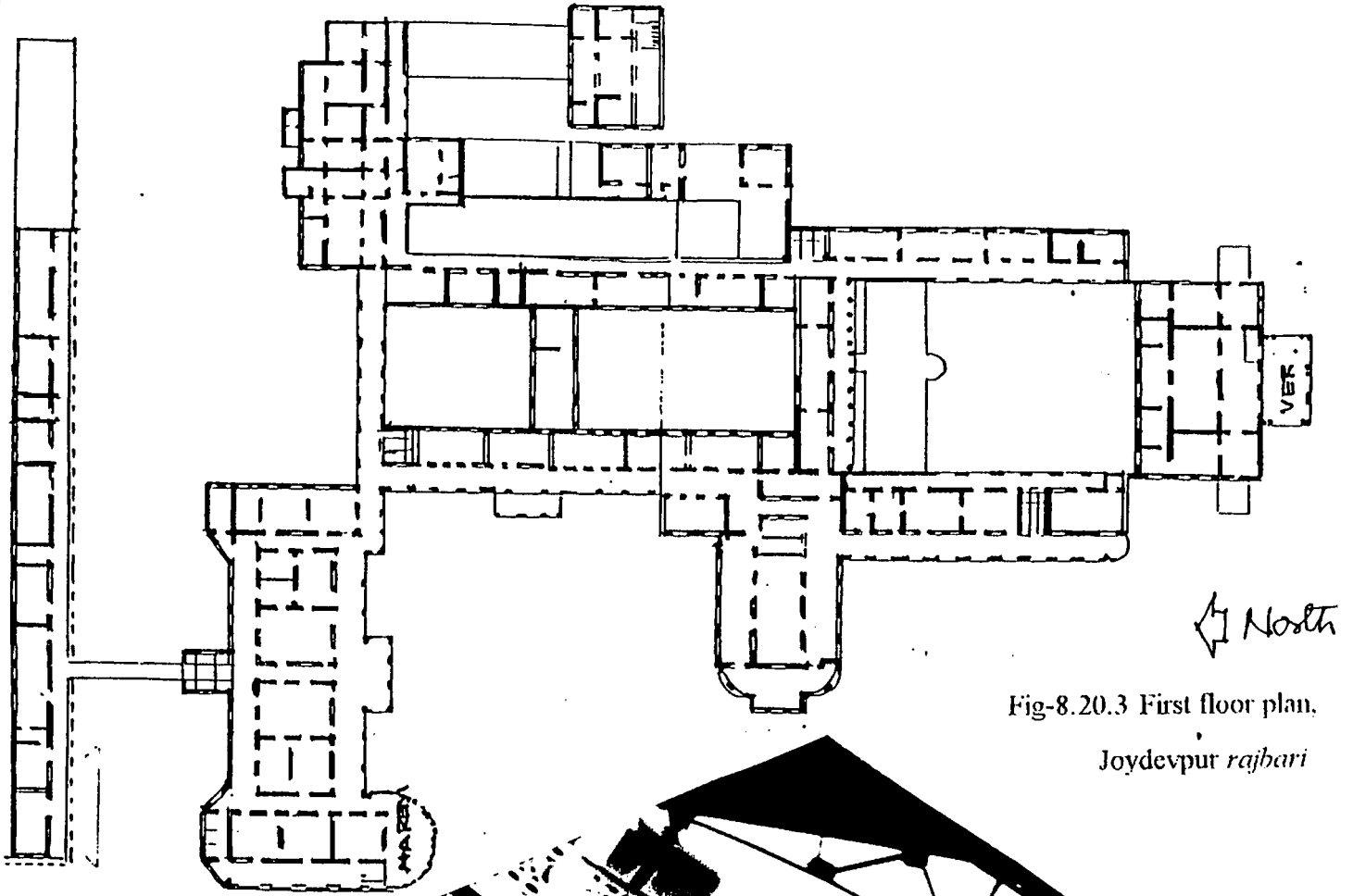


Fig-8.20.3 First floor plan,
Joydevpur rajbari

Fig-8.20.4 Rani Mahal,
Joydevpur rajbari

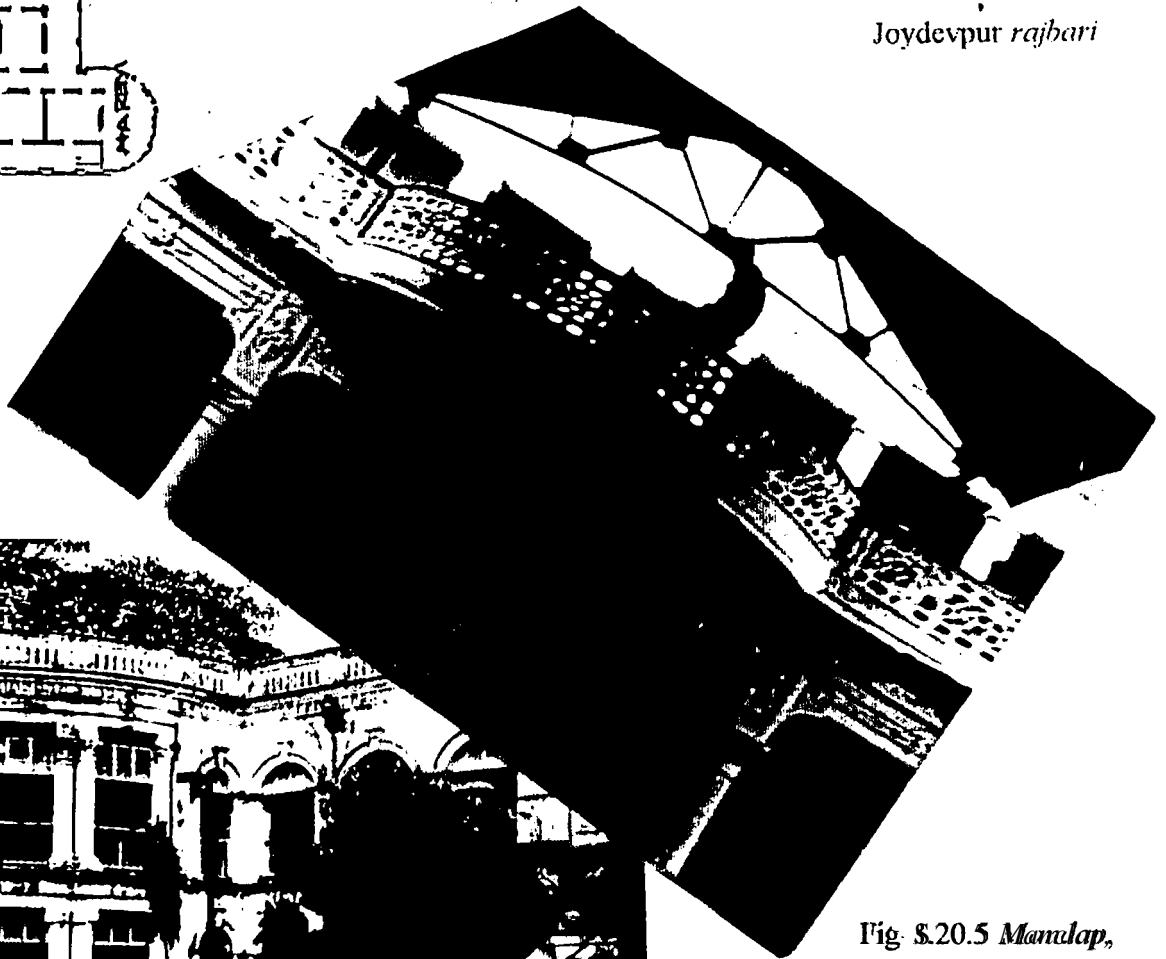


Fig. 8.20.5 Mamulap,
Joydevpur rajbari

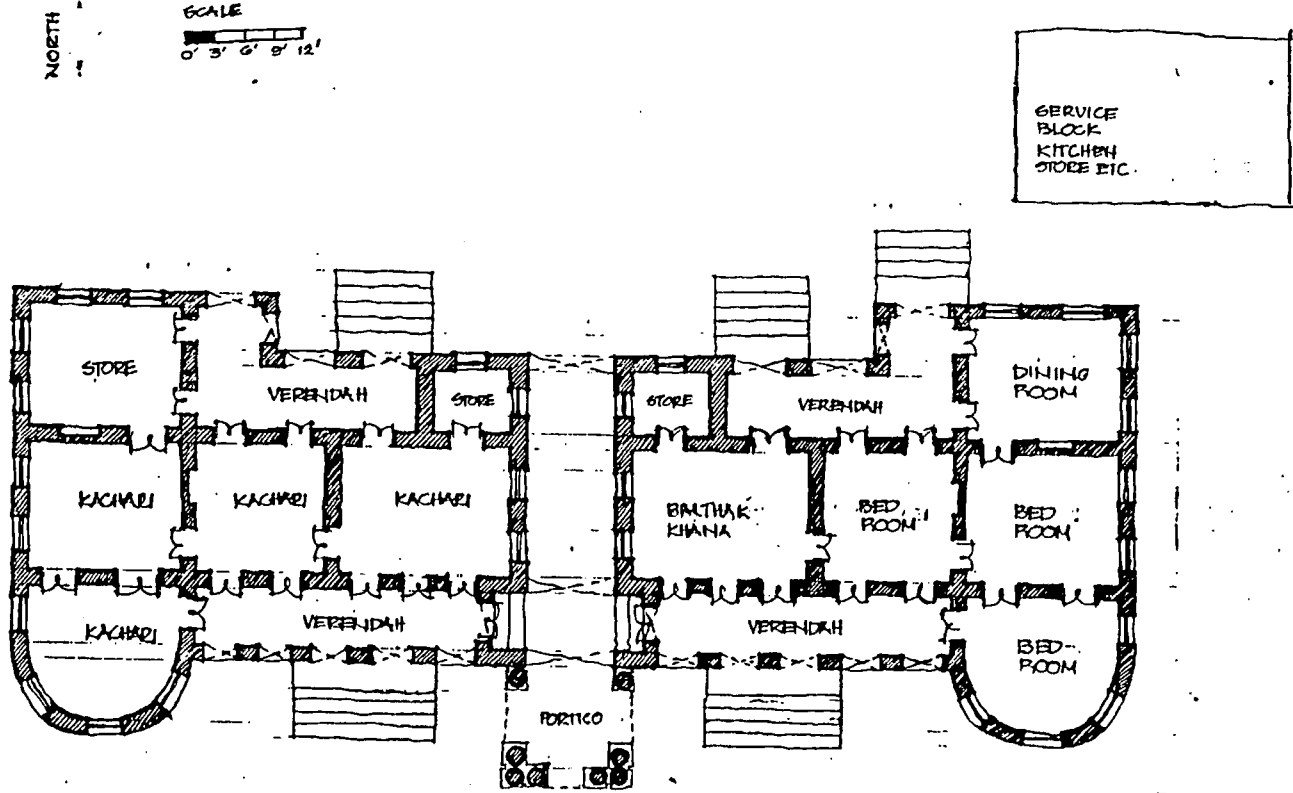


Fig-8.21.1 Ground floor plan, *Kachari bari*, Tripura Raj, Comilla

Fig-8.21.2 Front (east) facade,
Kachari bari, Tripura Raj, Comilla



Fig-8.21.3 Entry to the *Kachari bari*,
Tripura Raj, Comilla

Fig-8.22.1 Ground floor plan,
Rose garden, Dhaka

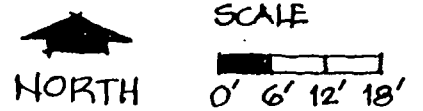
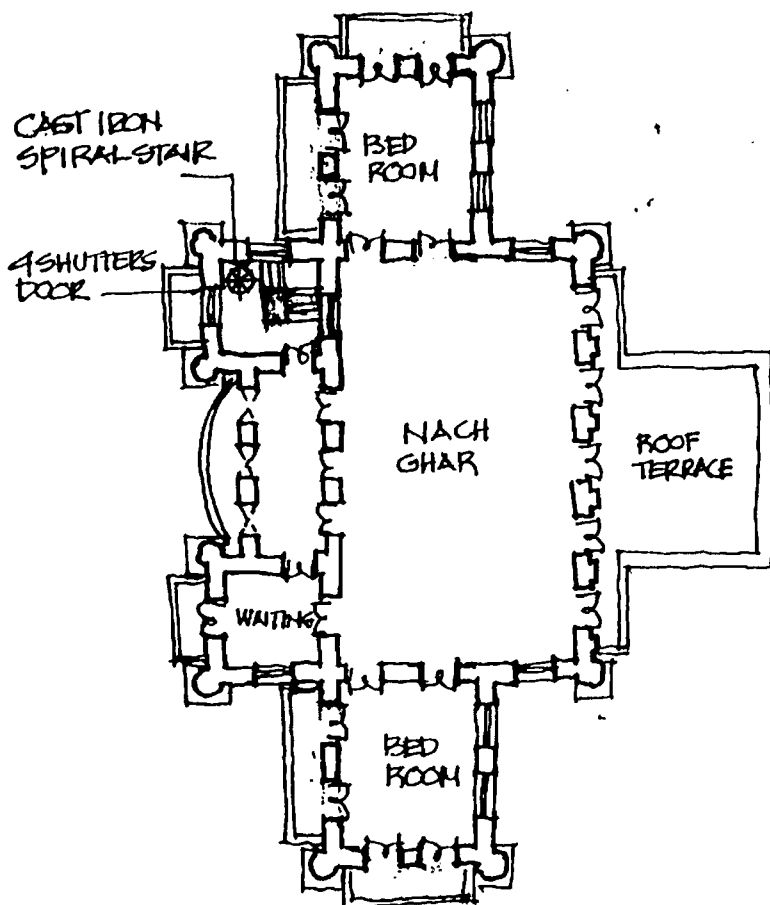
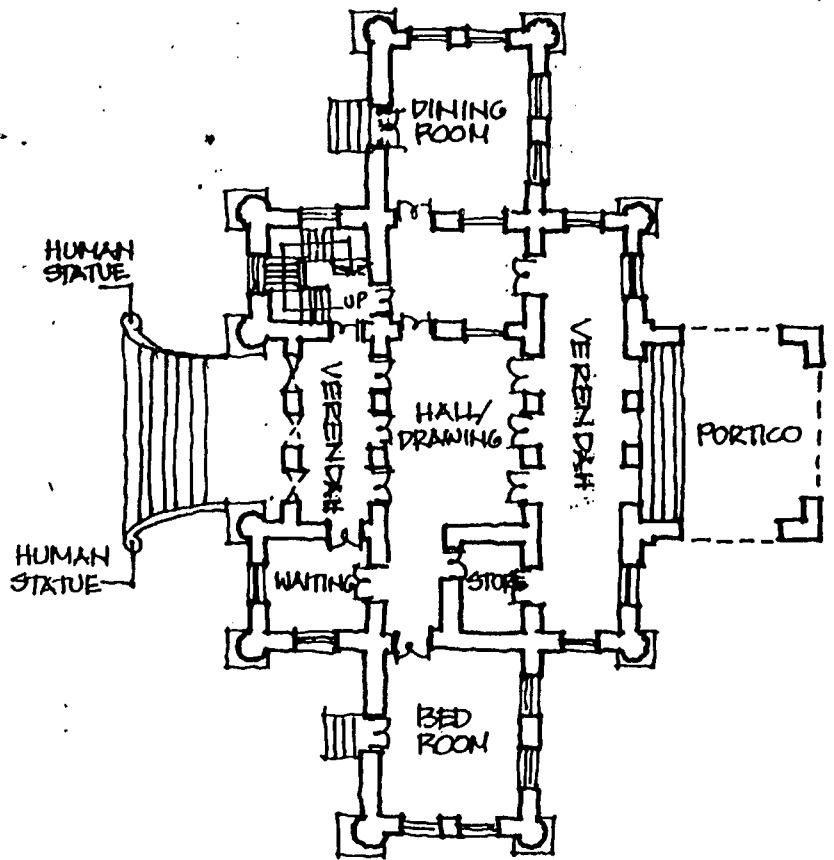


Fig-8.22.2 First floor plan,
Rose garden, Dhaka

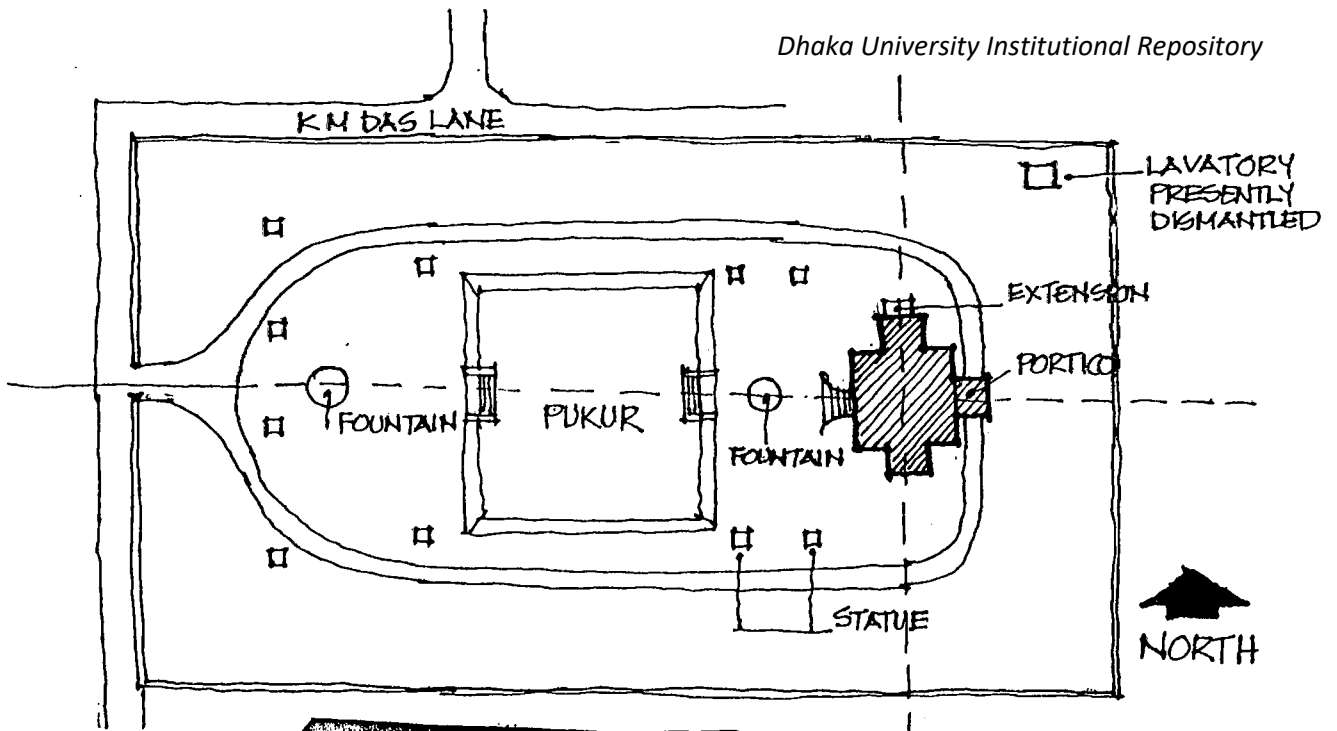


Fig-8.22.3 Compound plan,
Rose garden, Dhaka



Fig-8.22.4 North-west facade.
Rose garden, Dhaka



Fig-8.22.5 Front (west) facade.
Rose garden, Dhaka

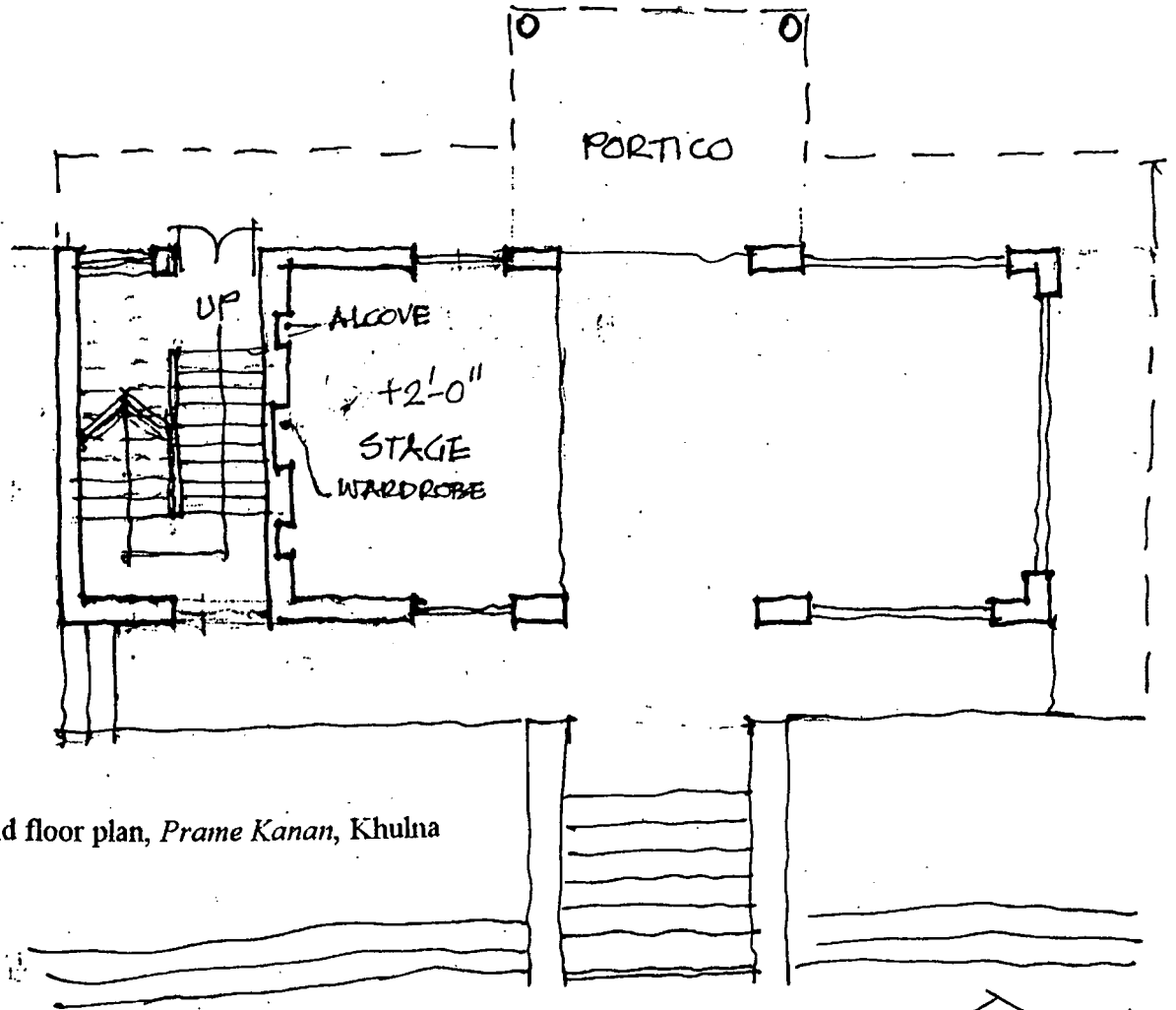


Fig-8.23.1 Ground floor plan, Prame Kanan, Khulna

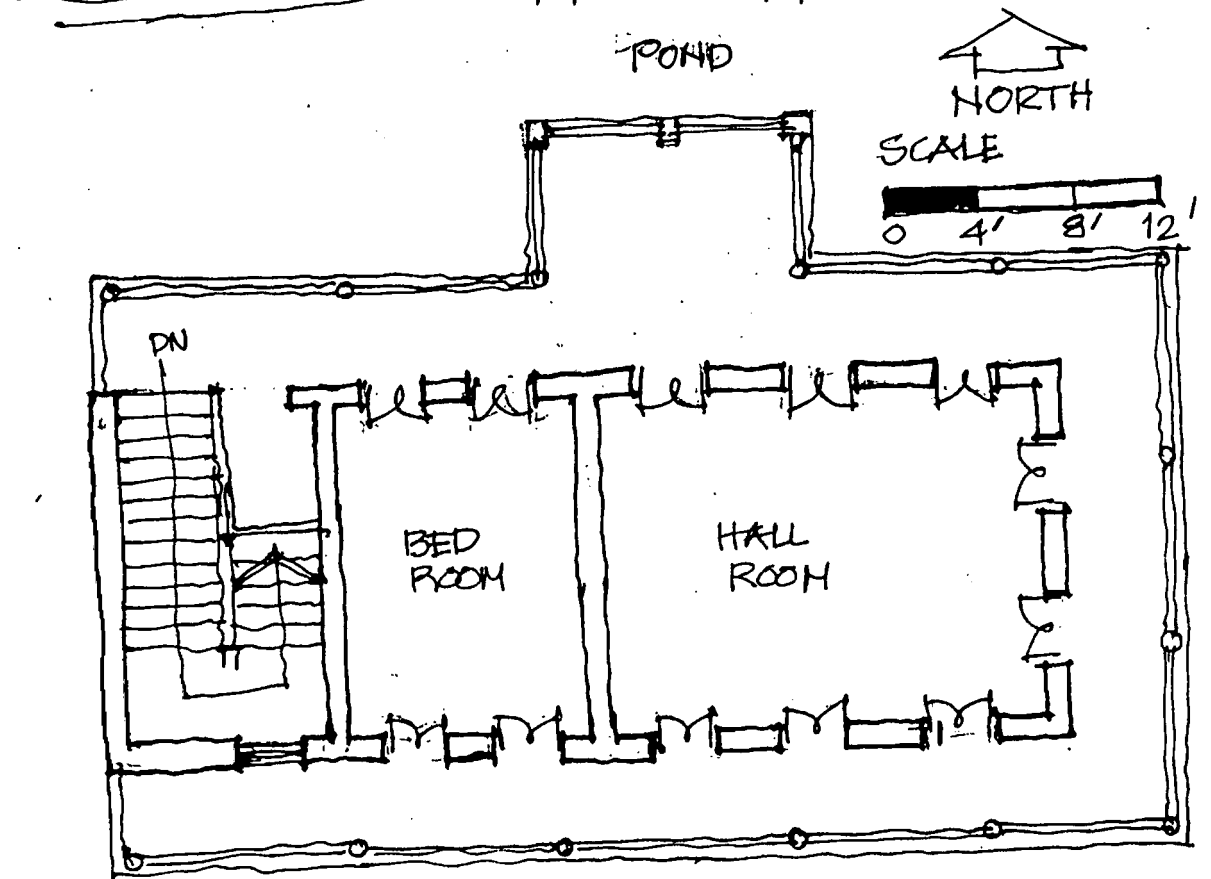


Fig-8.23.2 First floor plan, Prem Kanan, Khulna



Fig-8.23.3 South-east facade, *Prem kanon*, Khulna

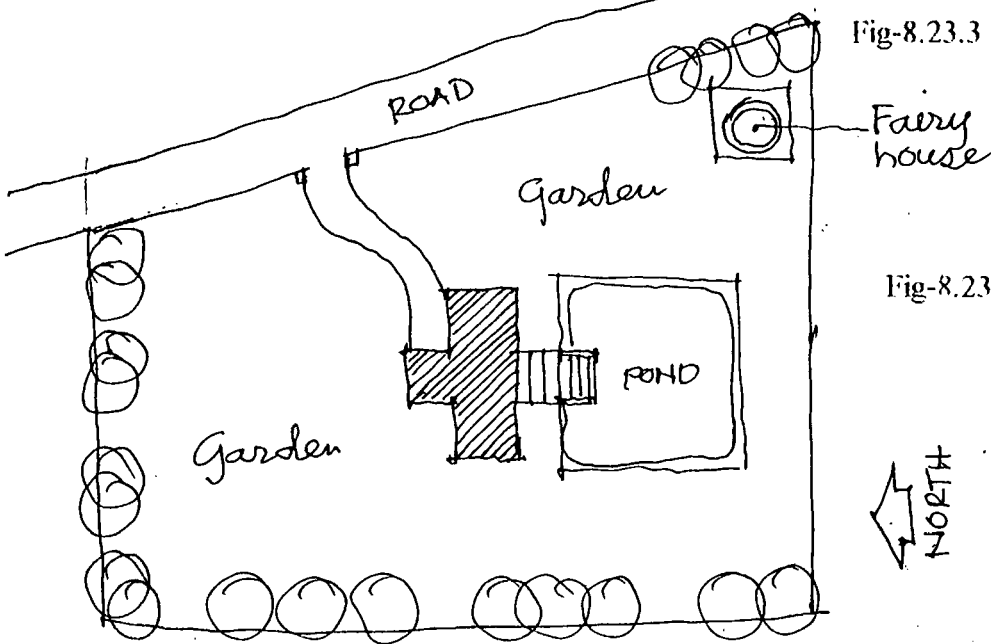


Fig-8.23.4 Compound plan,
Prem kanon, Khulna



Fig-8.23.5 East facade,
Prem kanon, Khulna

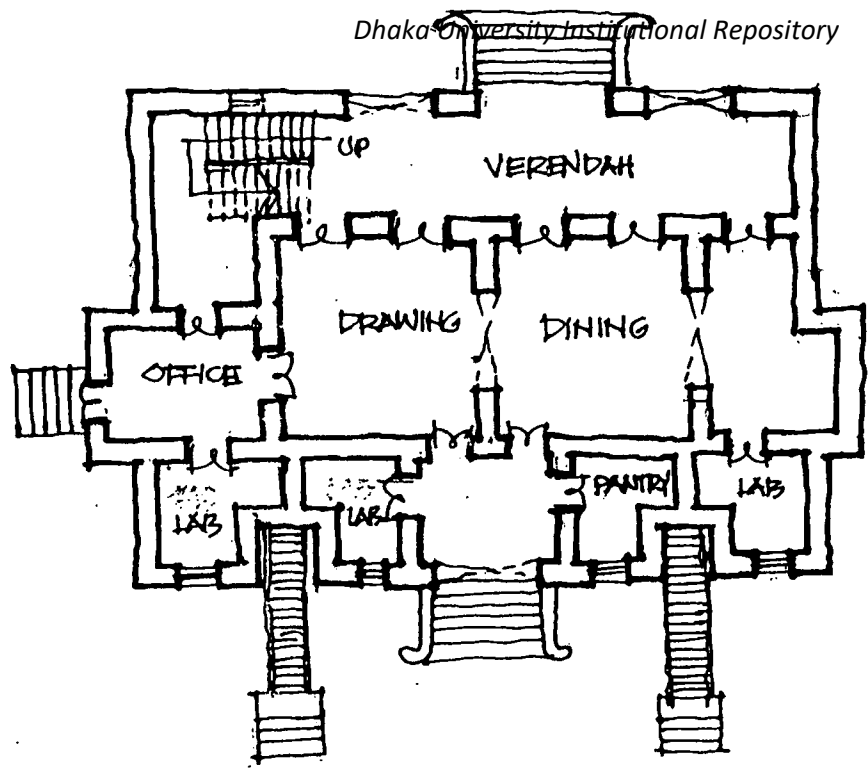


Fig-8.24.1 Ground floor plan, Bungalow no-29, Ramna colony, Dhaka

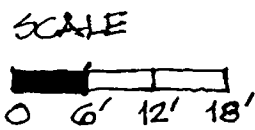
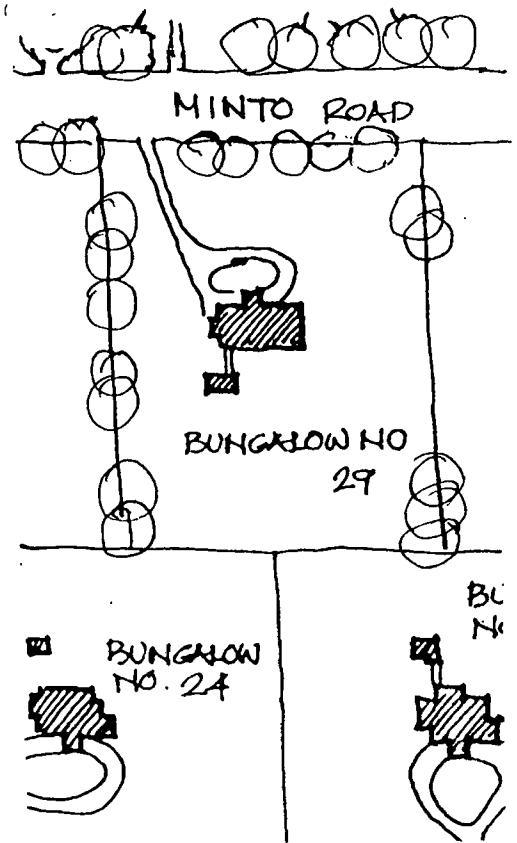
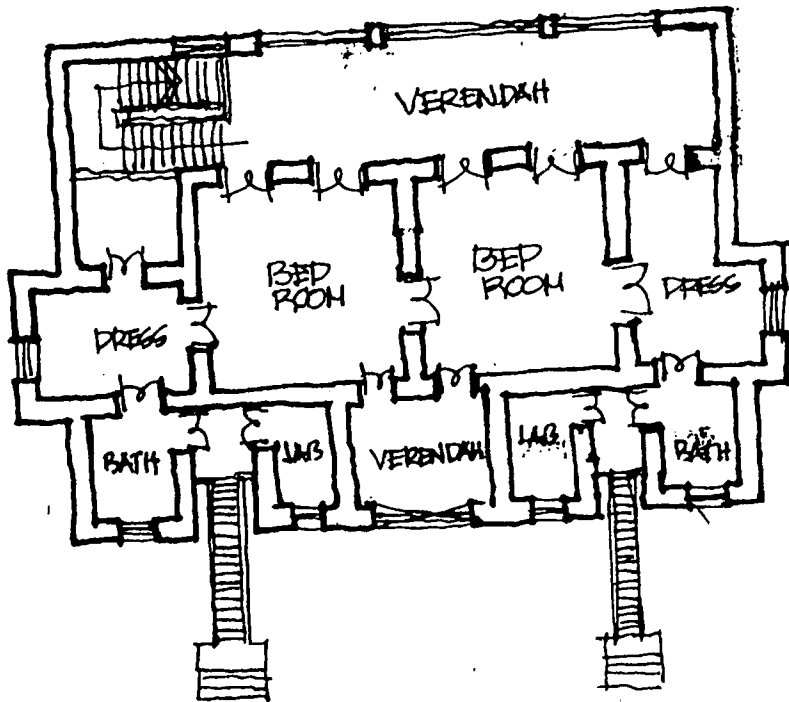


Fig-8.24.2 First floor plan, Bungalow no-29, Ramna colony, Dhaka

fig-8.24.6 463
COMPOUND PLAN
BUNGALOW NO. 29.
RAMNA COLONY, DHAKA

Fig-8.24.3 North-west facade,
bungalow no-29, Ramna colony,
Dhaka

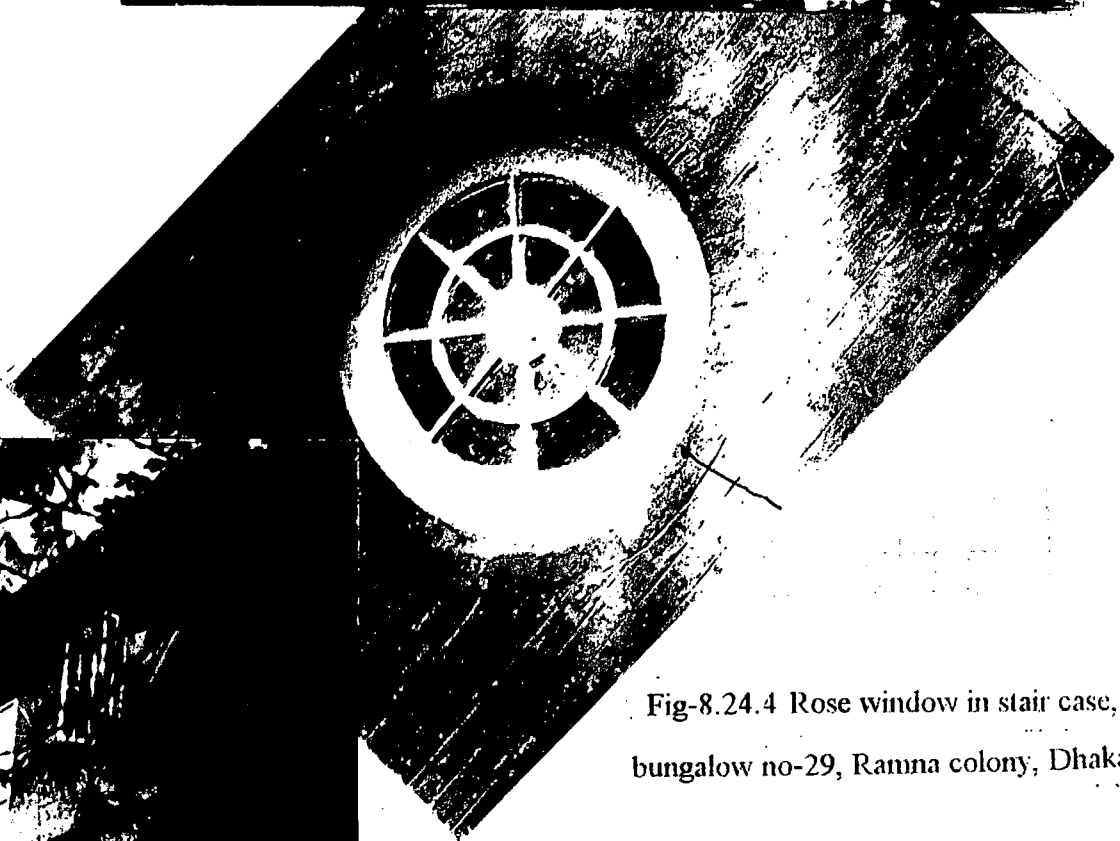


Fig-8.24.4 Rose window in stair case,
bungalow no-29, Ramna colony, Dhaka



Fig-8.24.5 North-west facade bungalow-29,
Ramna colony, Dhaka

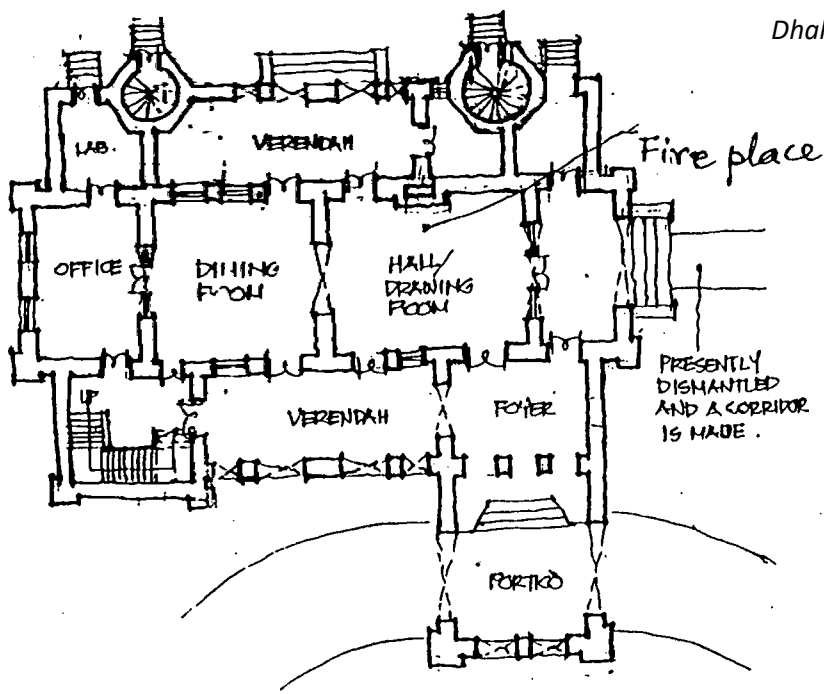


Fig-8.25.1 Ground floor plan, D.M. Bungalow, Rajshahi



Fig-8.25.3 Facade, D.M. bungalow, Rejshahi

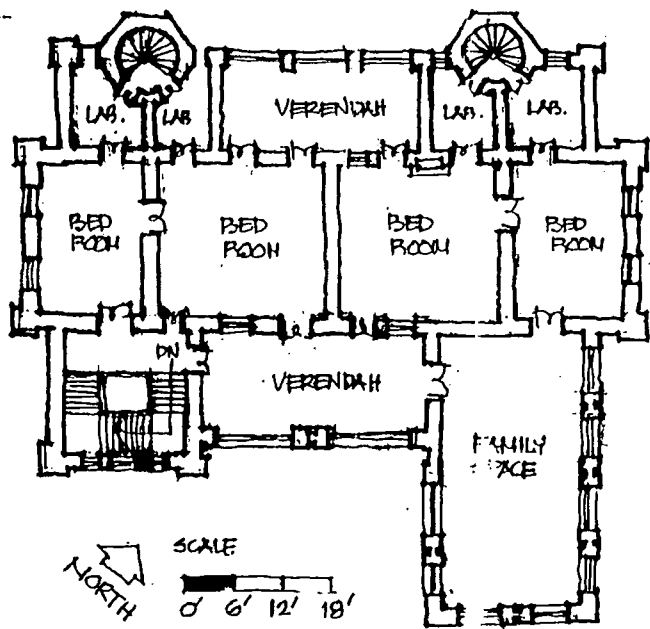


Fig-8.25.2 First floor plan, D.M. Bungalow, Rajshahi



Fig-8.25.: South-west facade, D.M. bungalow, Rajshahi



Fig-8.25.5 Front facade D.M. bungalow, Rajshahi

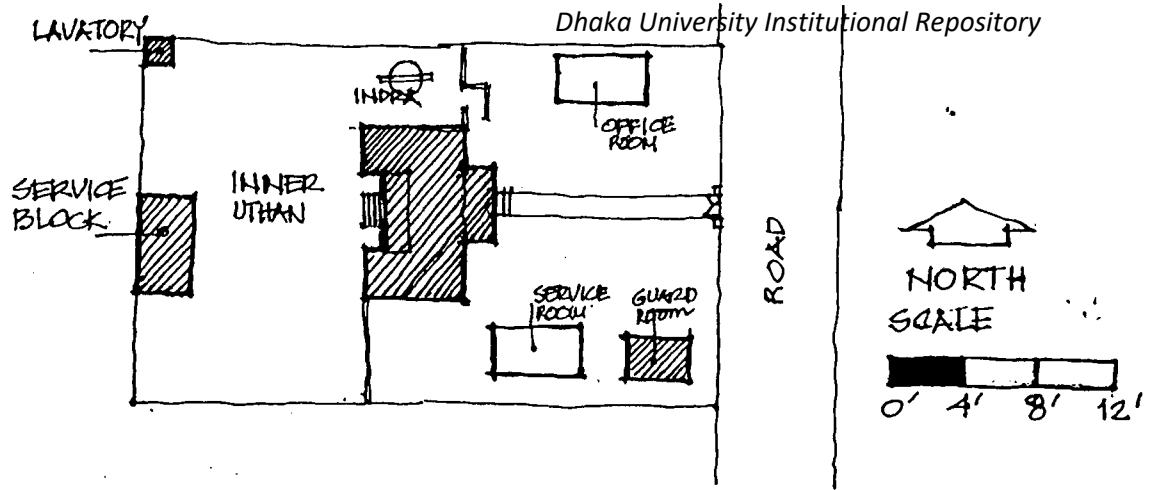


Fig-8.26.1 Compound plan, Munsefs, bungalow, Noagoan

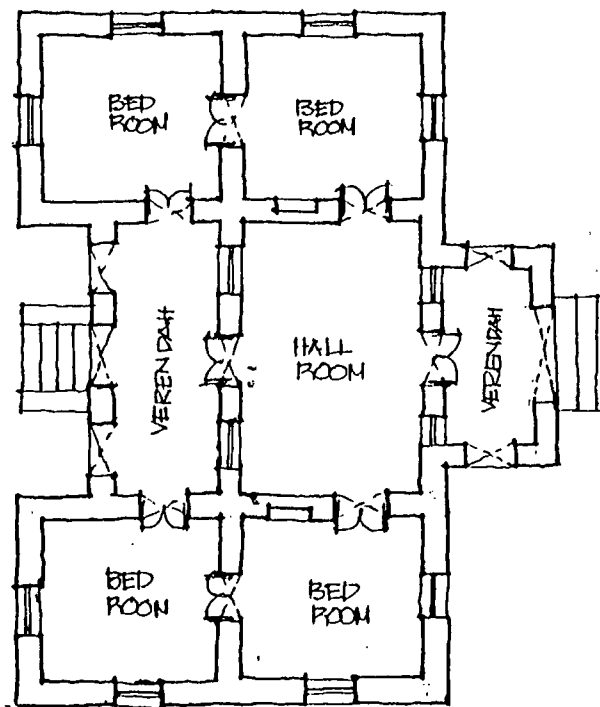


Fig-8.26.2 Ground floor plan,
Munsefs bungalow, Noagoan

Fig-8.26.3 Front facade,
Munsefs bungalow Noagoan



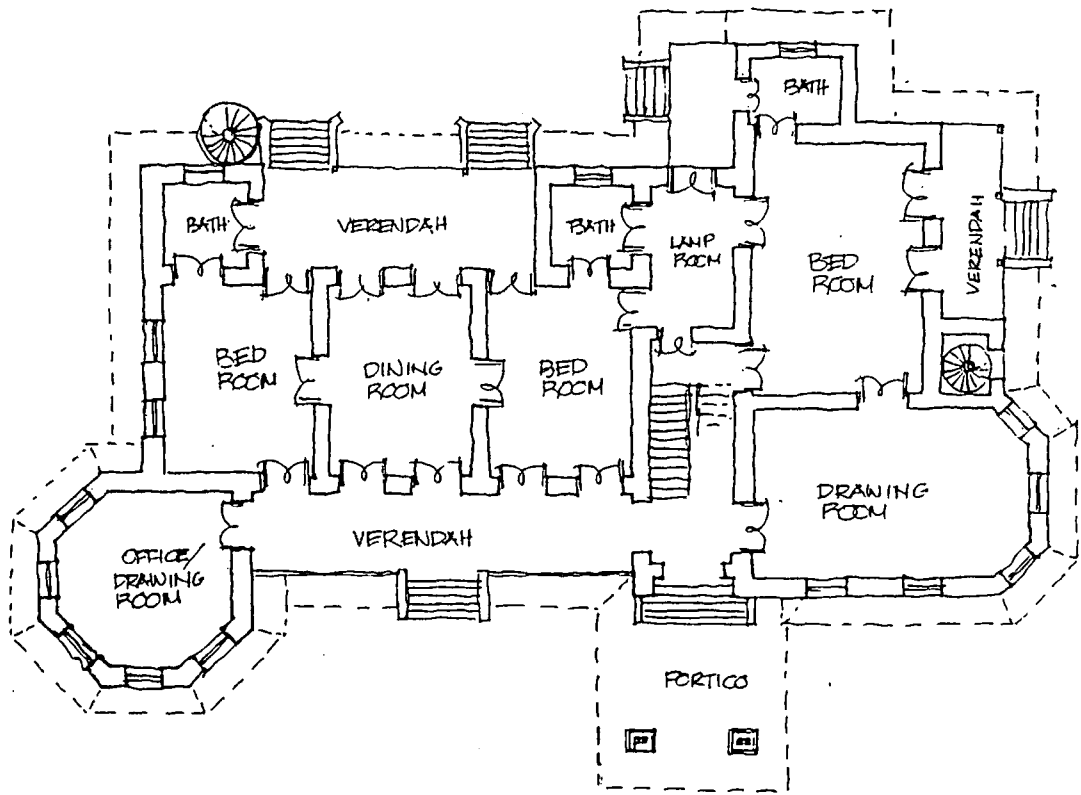


Fig-8.27.1 Ground floor plan, Chummary, Dhaka

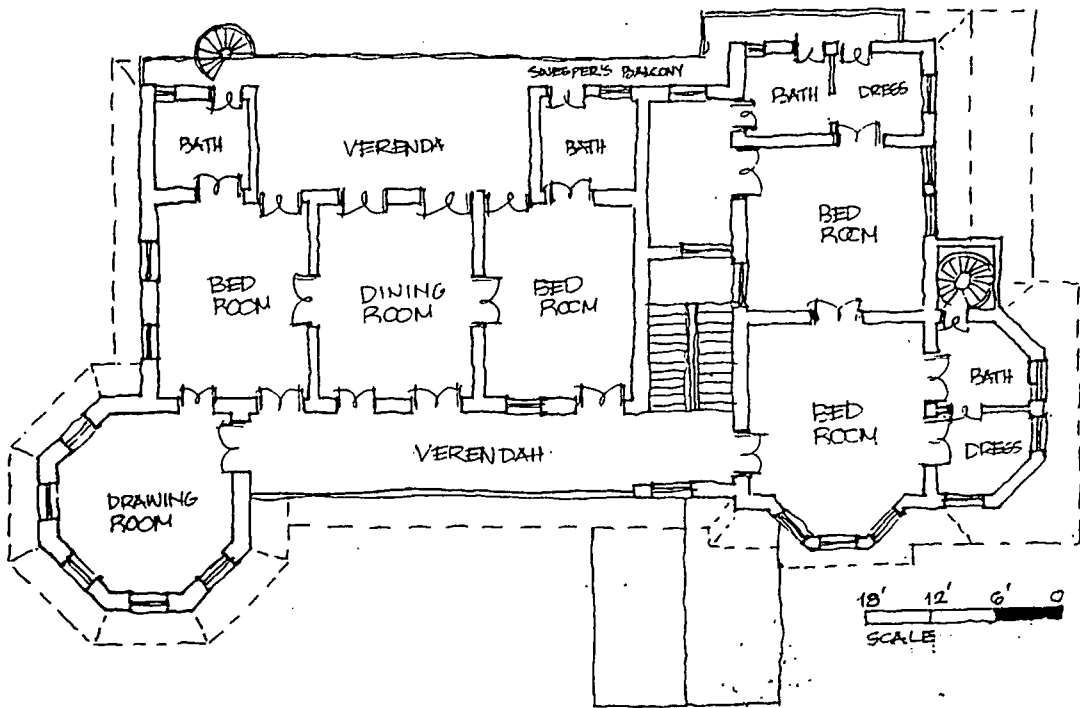


Fig-8.27.2 First floor plan, Chummary, Dhaka



Fig-8.27.3 North-west facade, Chummery, Dhaka



Fig-8.27.4 North facade, Chummery, Dhaka



Fig-8.27.5 North-east facade, Chummery, Dhaka

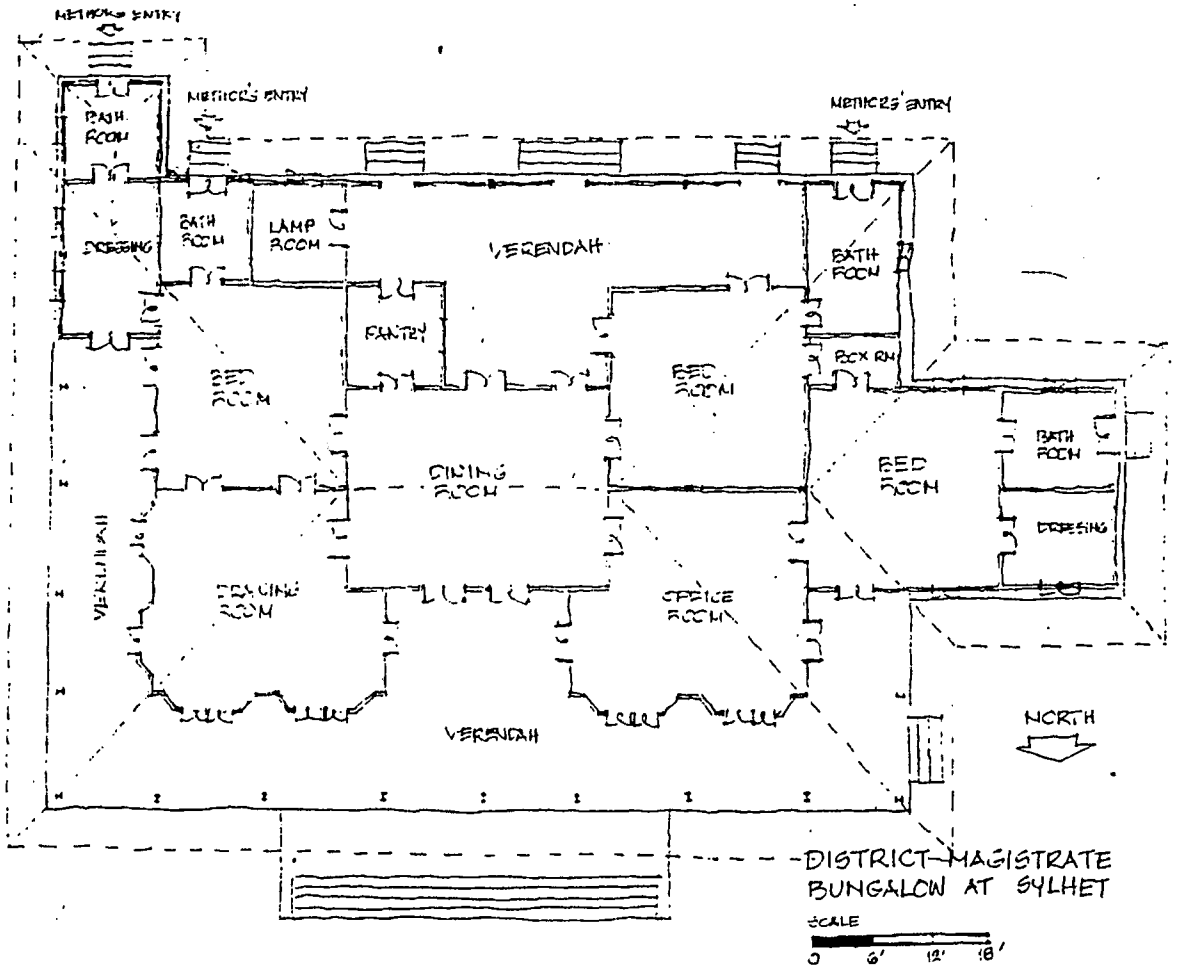


Fig-8.28.1 Ground floor plan, D.M. Bungalow, Sylhet



Fig-8.28.2 North west facade, D.M. bungalow, Sylhet

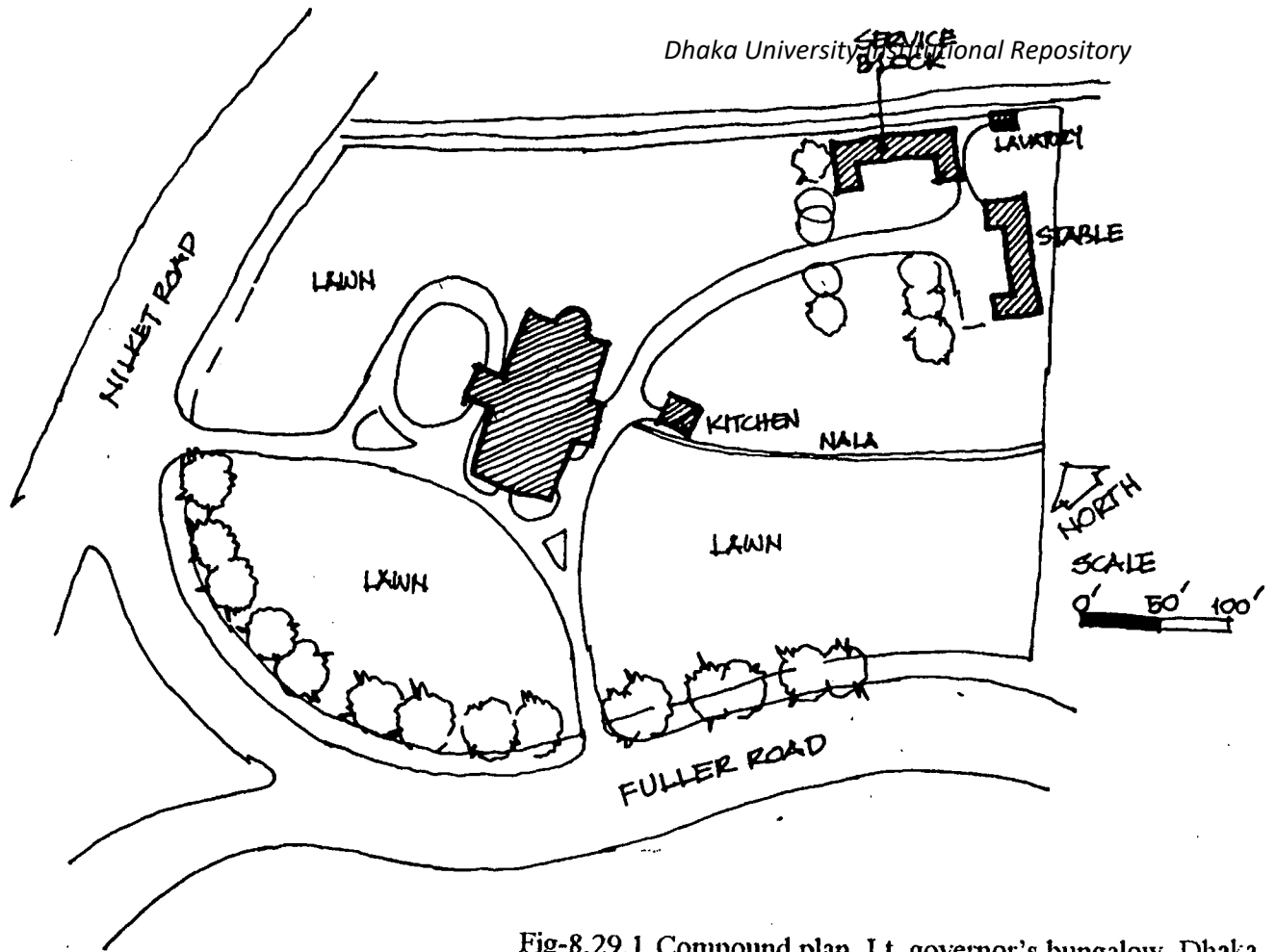


Fig-8.29.1 Compound plan, Lt. governor's bungalow, Dhaka

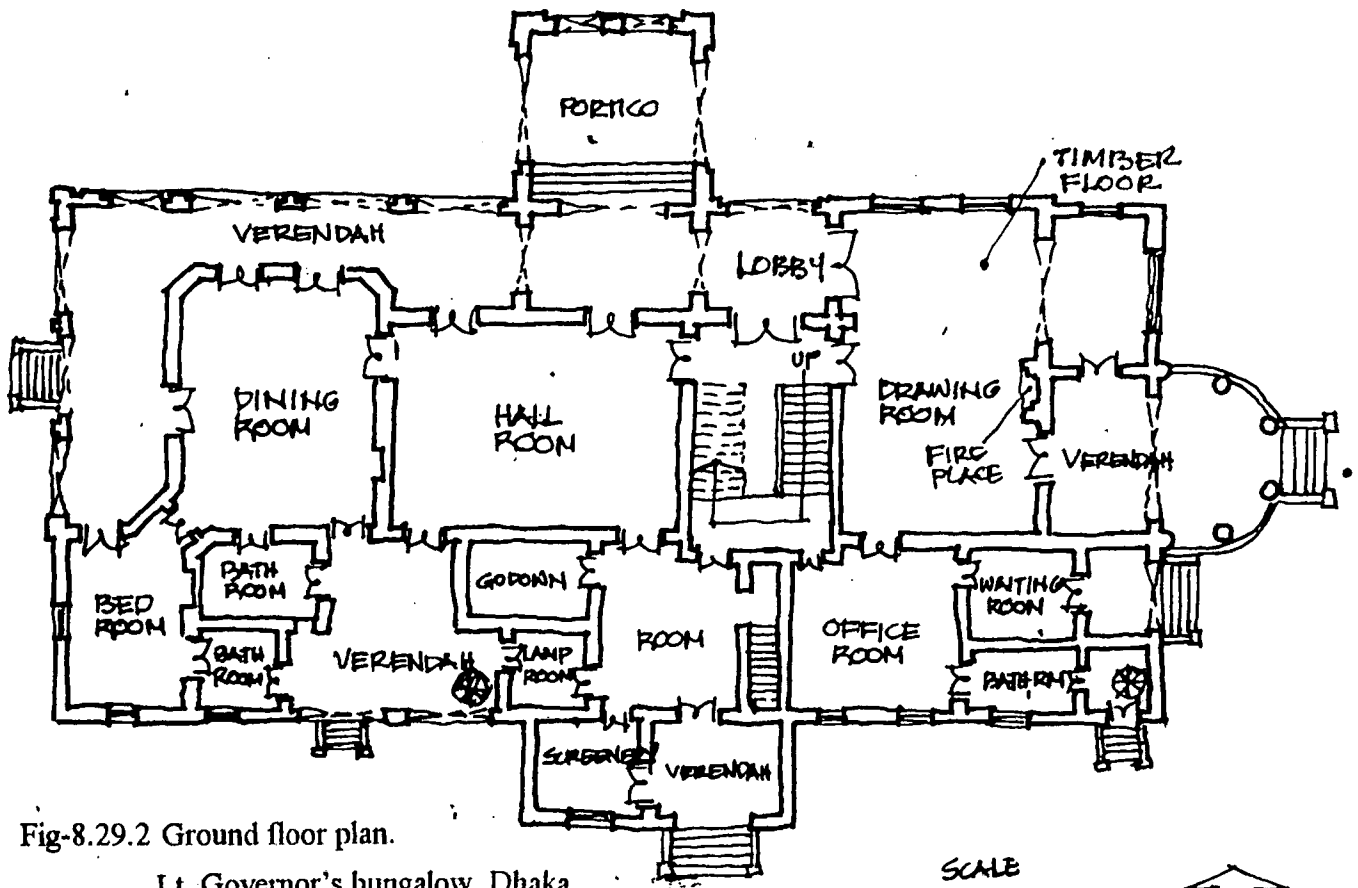
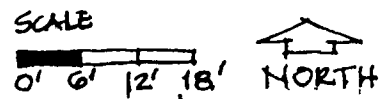


Fig-8.29.2 Ground floor plan.

Lt. Governor's bungalow, Dhaka



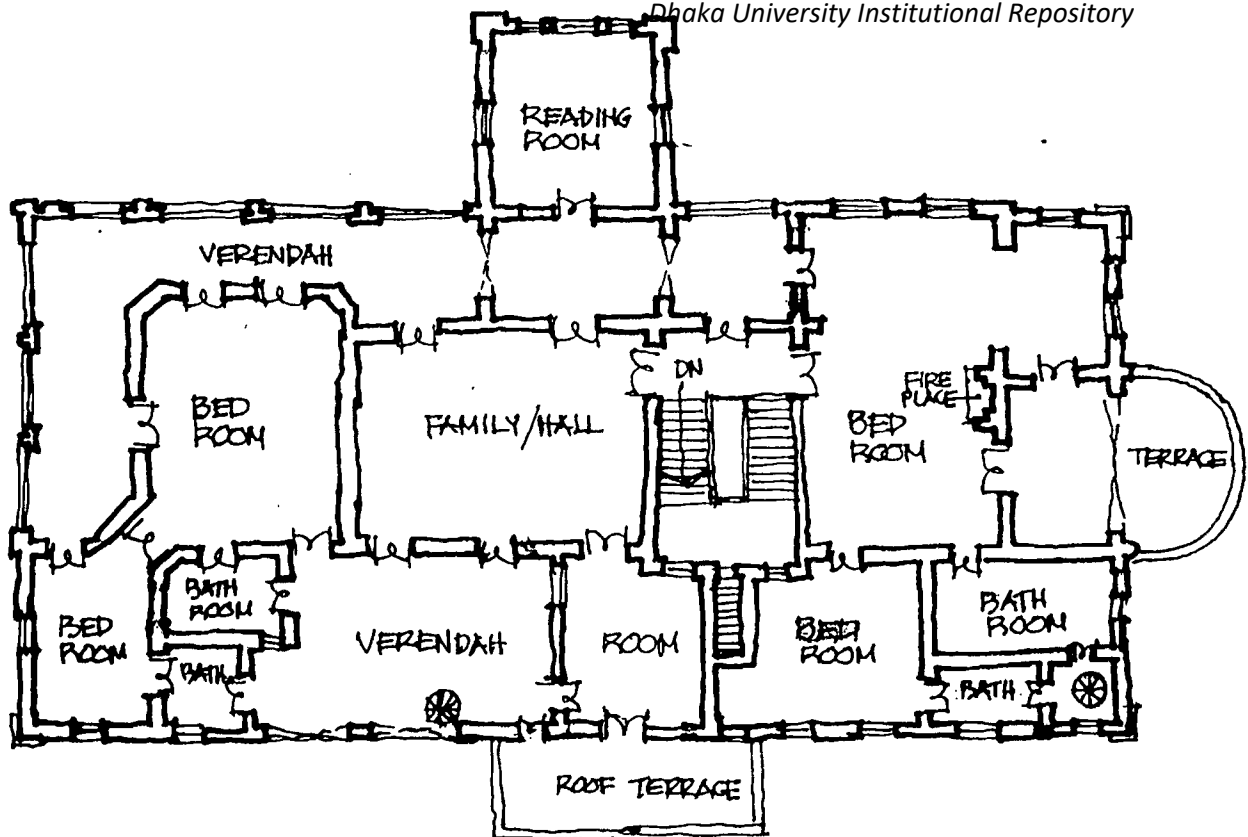


Fig-8.29.3 First floor plan. Lt. Governors' bungalow, Dhaka

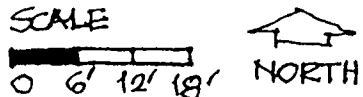


Fig-8.29.4 North-west facade, Lt. governors' bungalow, Dhaka

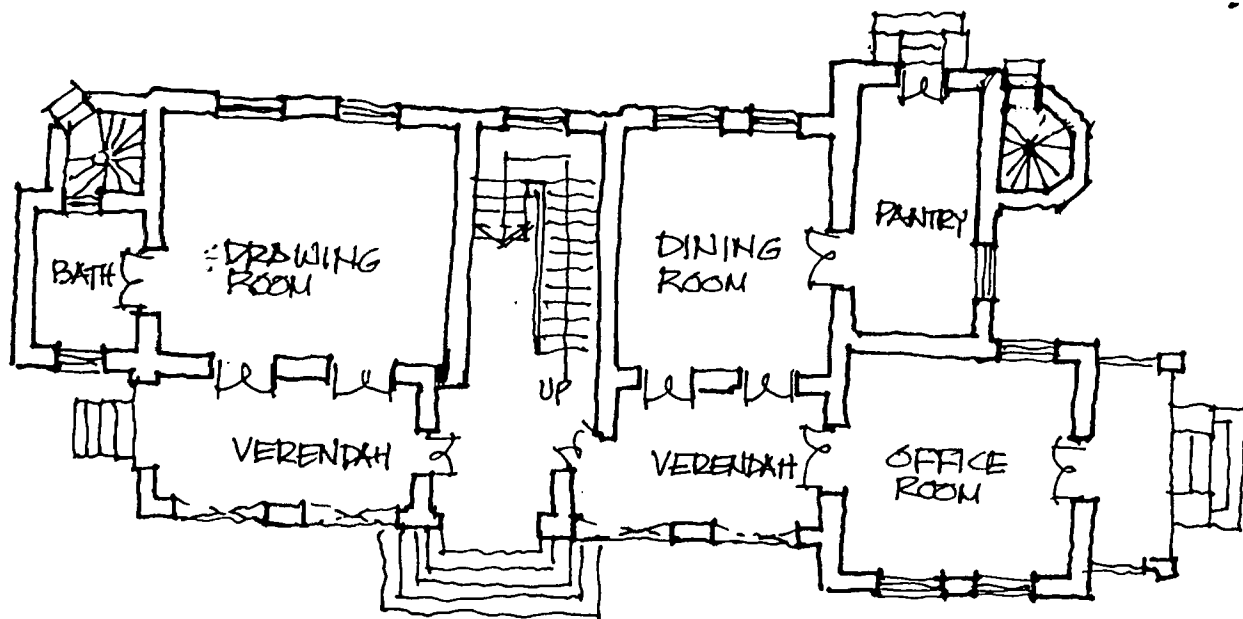


Fig-3.30.1 Ground floor plan, Civil surgeon bungalow, Khulna

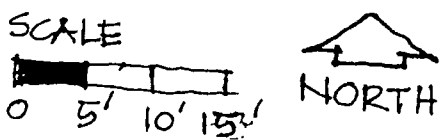
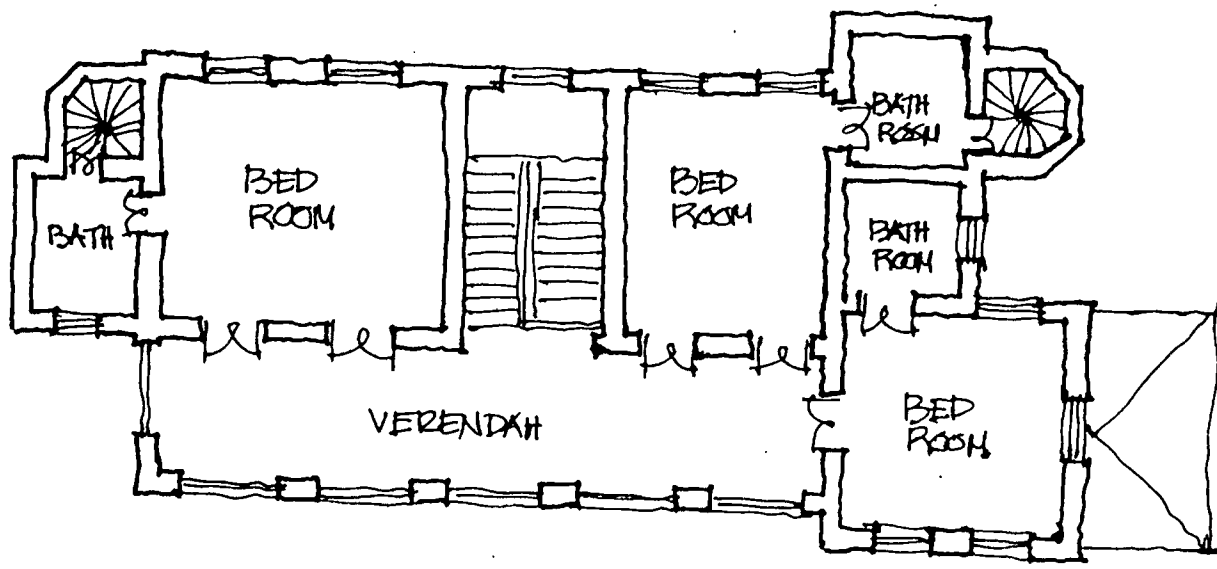


Fig-8.30.2 First floor plan, Civil surgeon bungalow, Khulna



Fig-8.30.3 South-east facade, Civil surgeon bungalow, Khulna



Fig-8.30.4 South-west facade, Civil surgeon bungalow, Khulna

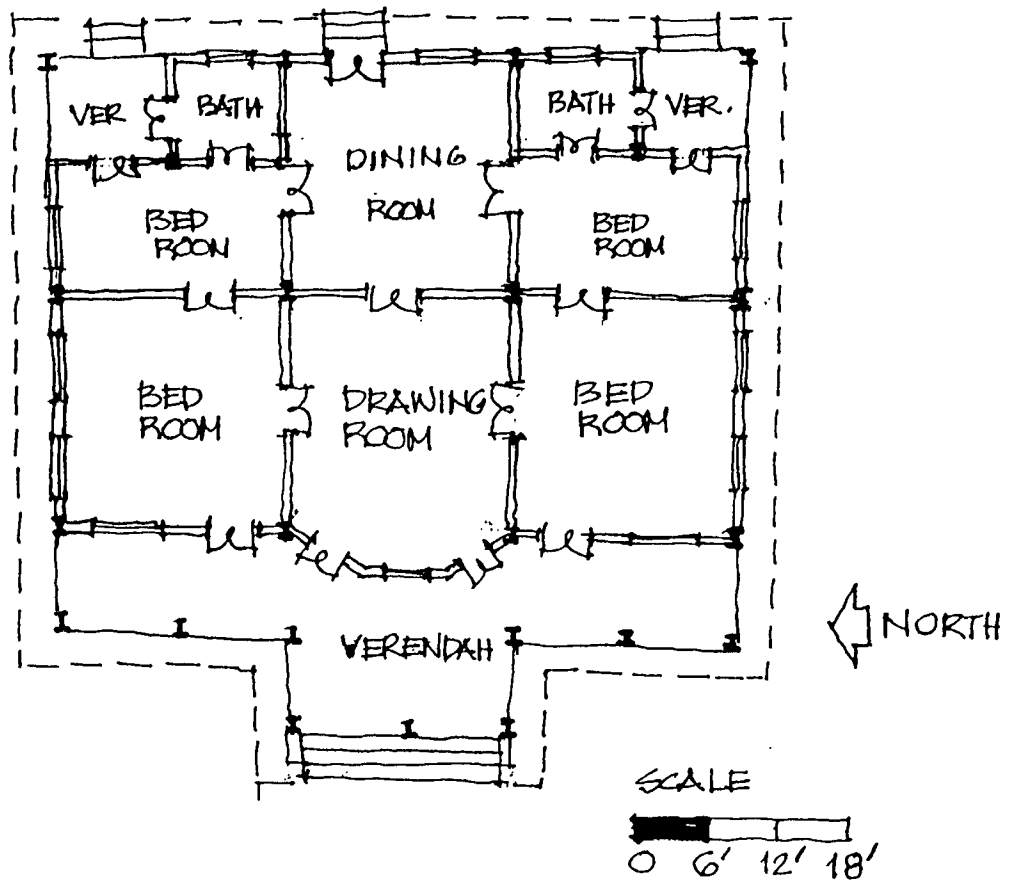


Fig-8.31.1 Ground floor plan, Railway bungalow, 15 college street, Dhaka



Fig-8.31.2 West facade, Railway bungalow, 15 college street, Dhaka

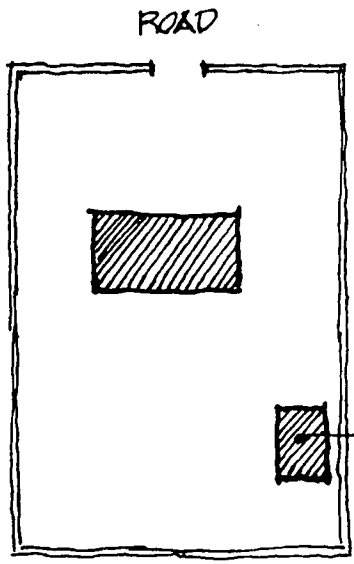
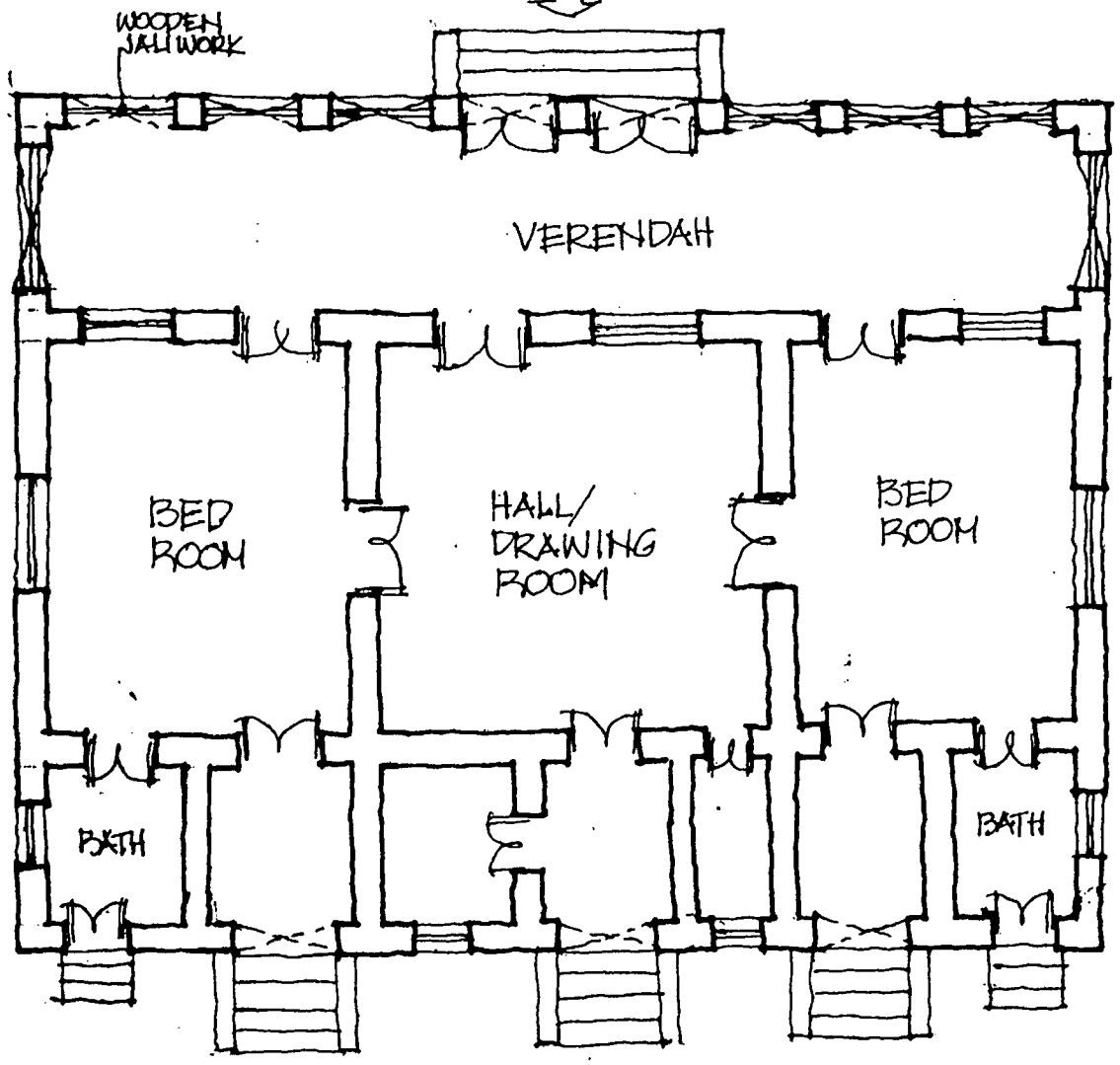


Fig-8.32.2 Ground floor plan, Railway bungalow no-66, Fulbaria railway colony, Dhaka

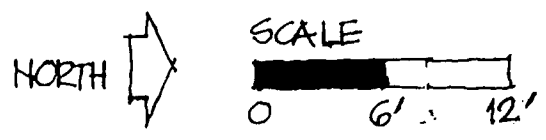


Fig-8.32.1 Compound plan, Railway bungalow no-66, Fulbaria railway colony, Dhaka



Fig-8.32.4 South-east facade, Railway bungalow no-66,
Fulbaria railway colony, Dhaka



Fig-8.32.3 North-west facade, Railway bungalow no-66,
Fulbaria railway colony, Dhaka

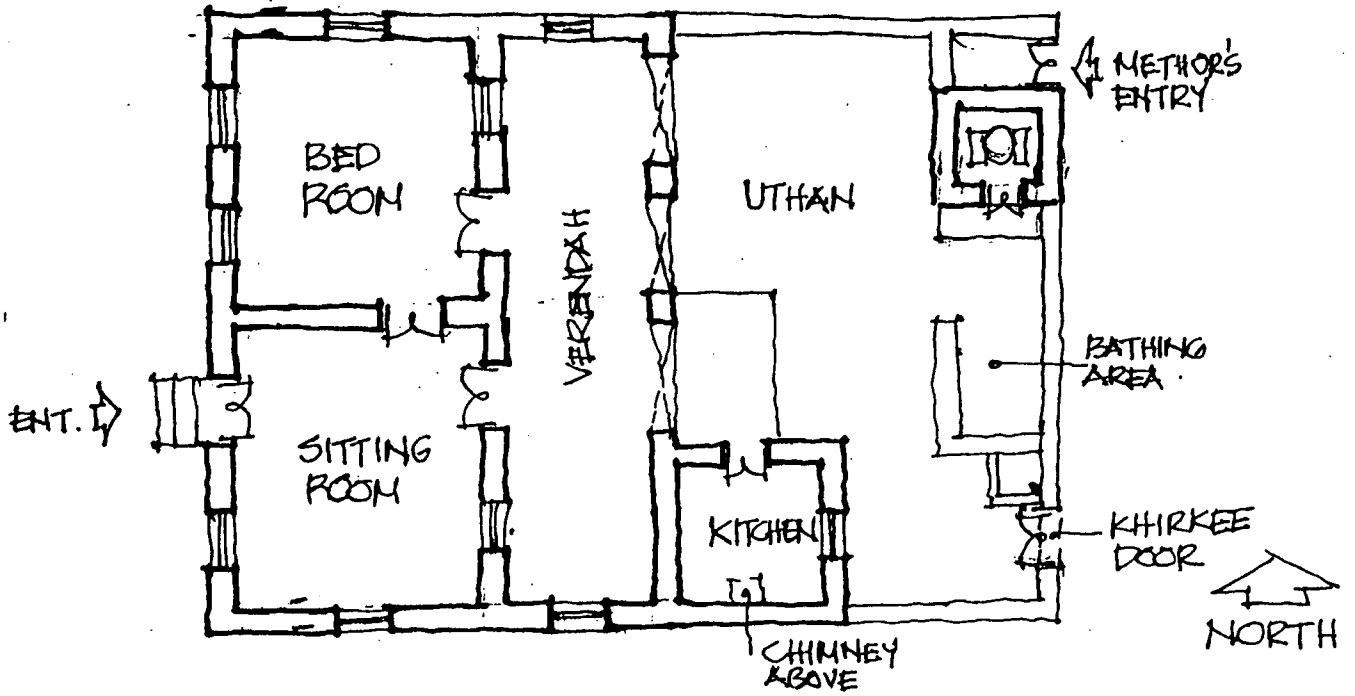


Fig-8.33.1 Ground floor plan, Booking clerks bungalow, Natore

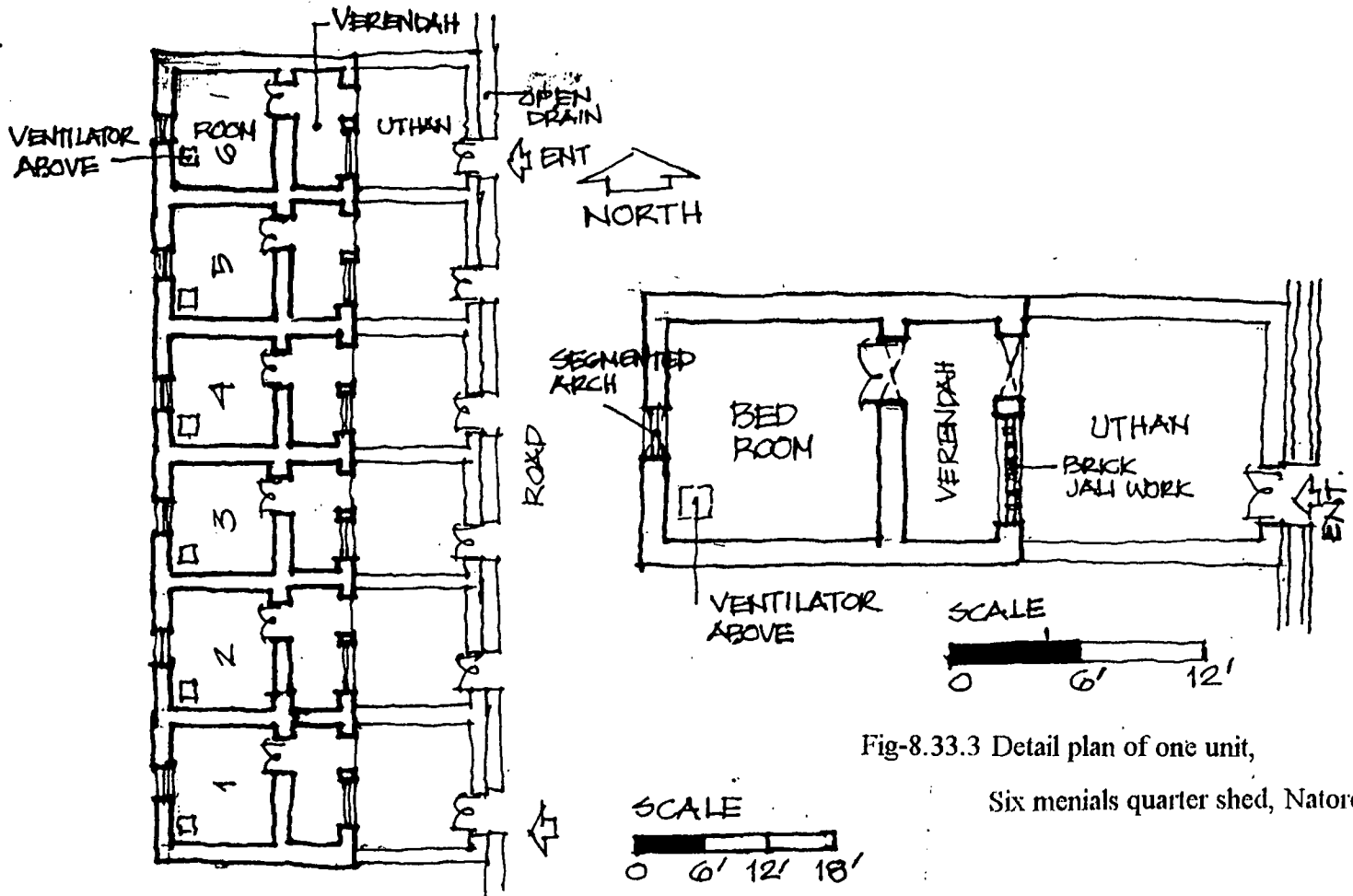


Fig-8.33.3 Detail plan of one unit,

Six menial quarter shed, Natore

Fig-8.33.2 Ground floor plan, Six menial quarter shed,

Natore



Fig-8.33.7 South-east facade,
Booking clerk's bungalow, Natore

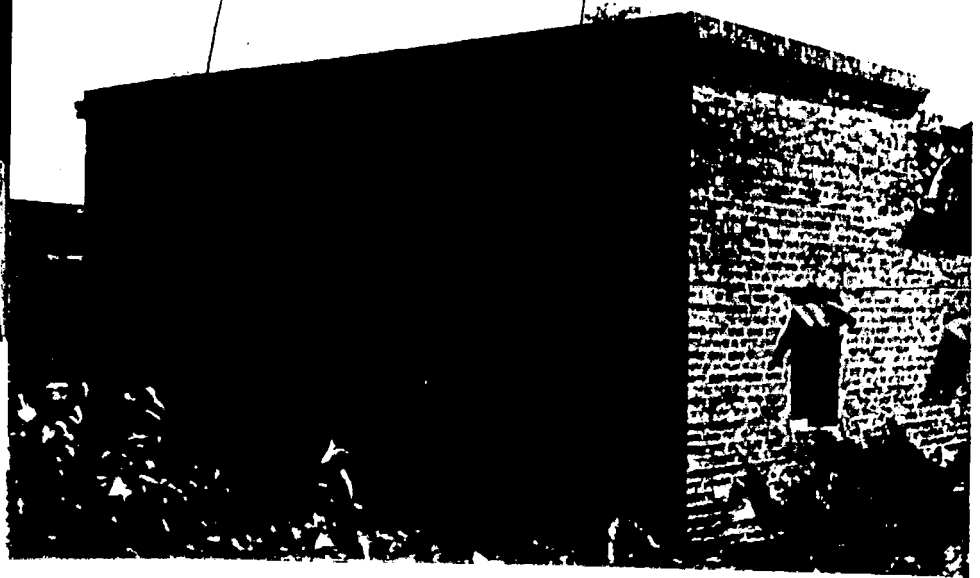



Fig-8.33.7 Front, 
Six menials quarter shed, Natore.

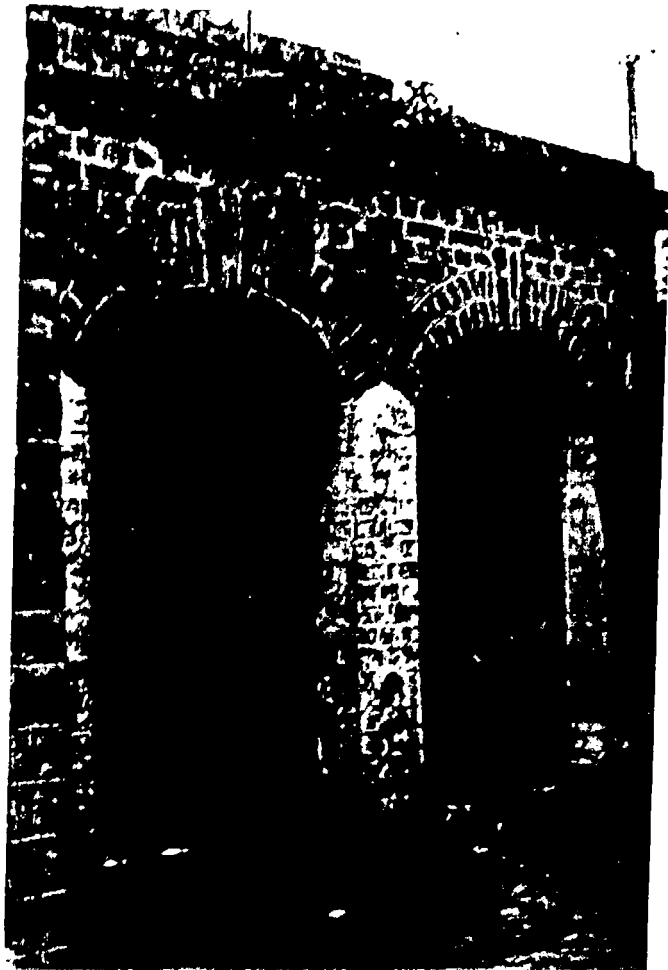


Fig-8.B.V.6 Interior verendah,
Booking clerks bungalow, Natore



Fig-X.33.5 South facade;
Booking clerks bungalow, Natoire

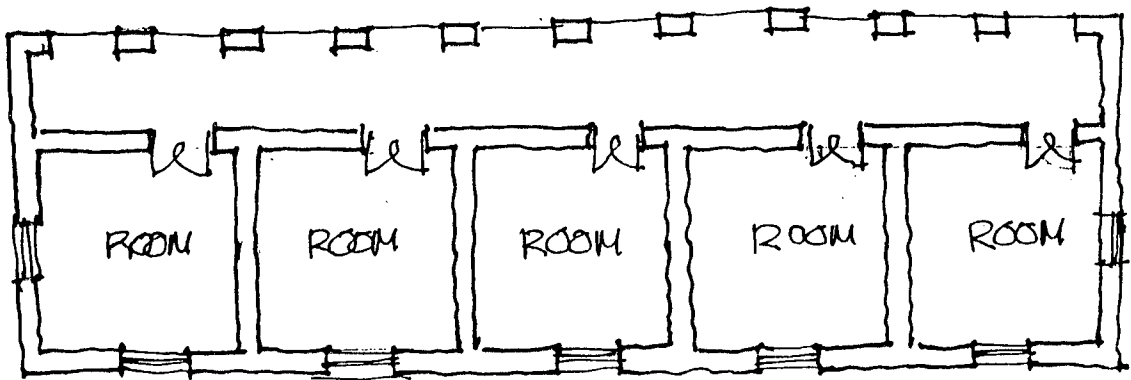
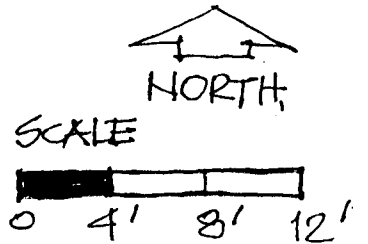
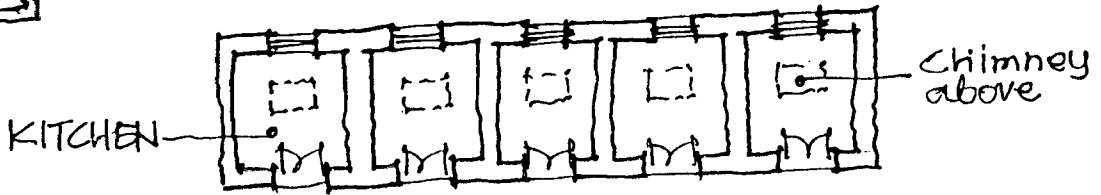
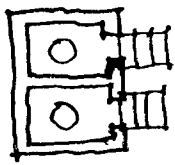


Fig-8.34.1 Railway Security shed Khulna

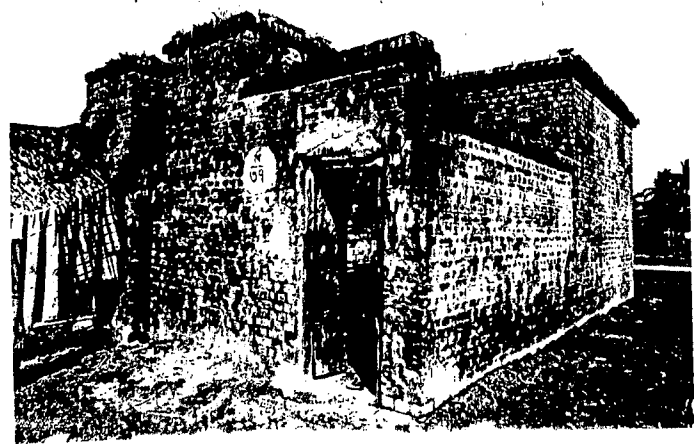
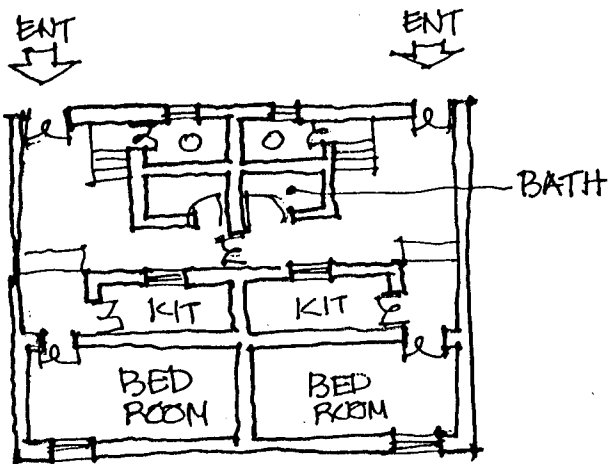


Fig-8.35.2 Twin Railway quarter, Khulna

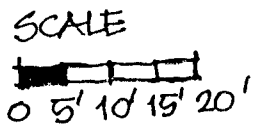


Fig-8.35.1 Ground floor plan,
Twin Railway quarter, Khulna

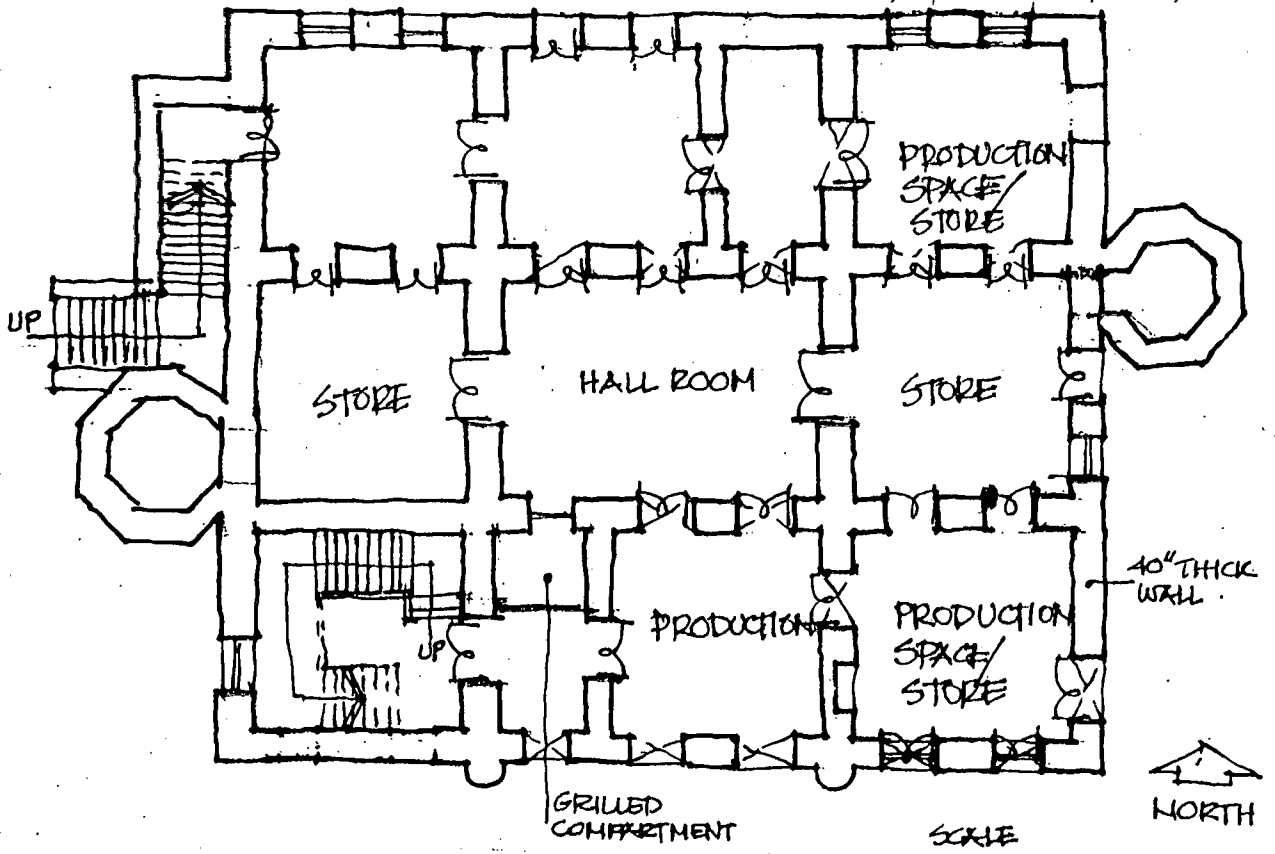


Fig-8.36.1 Ground floor plan, Bara kuti, Rajshahi

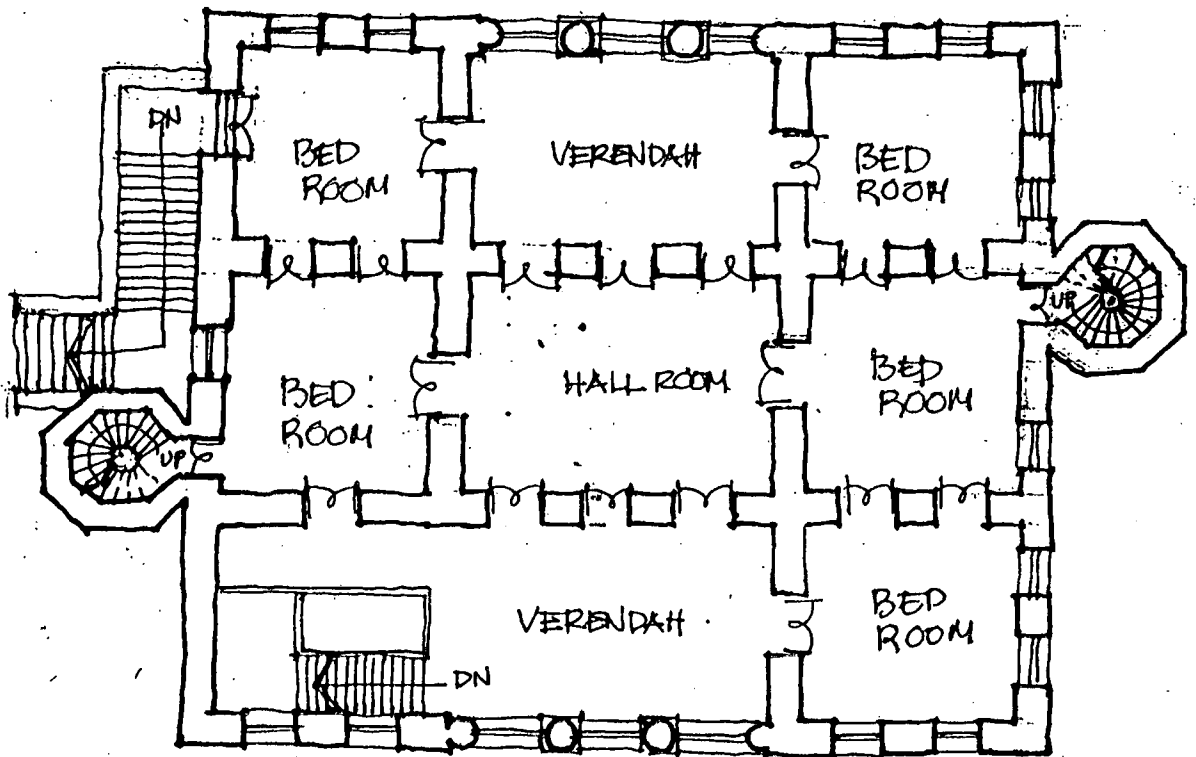
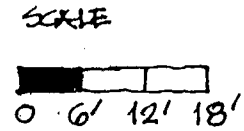


Fig-8.36.2 First floor plan, Bara kuti, Rajshahi

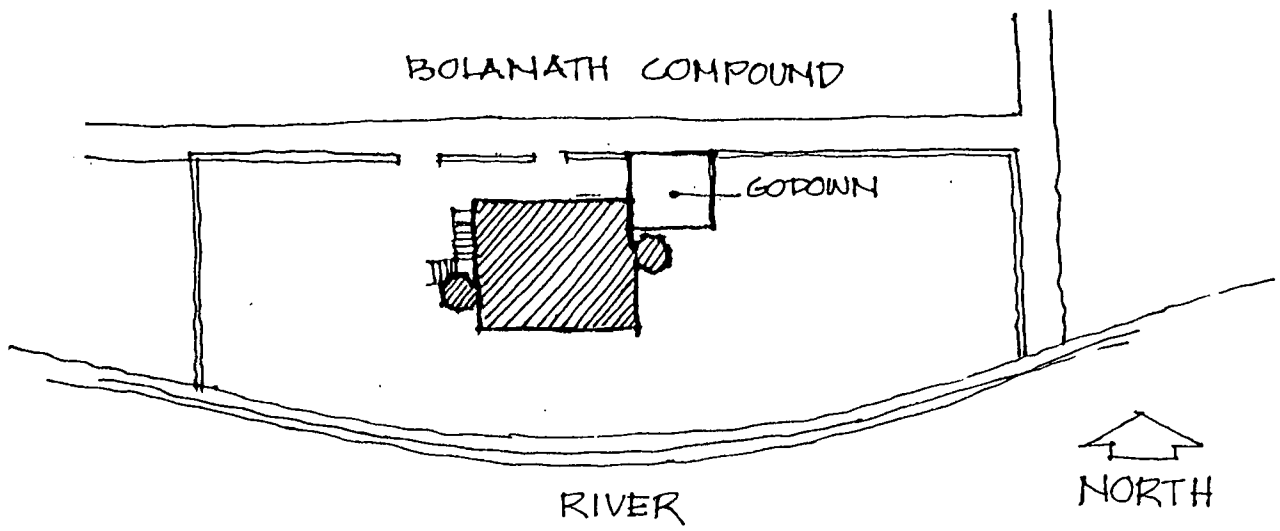


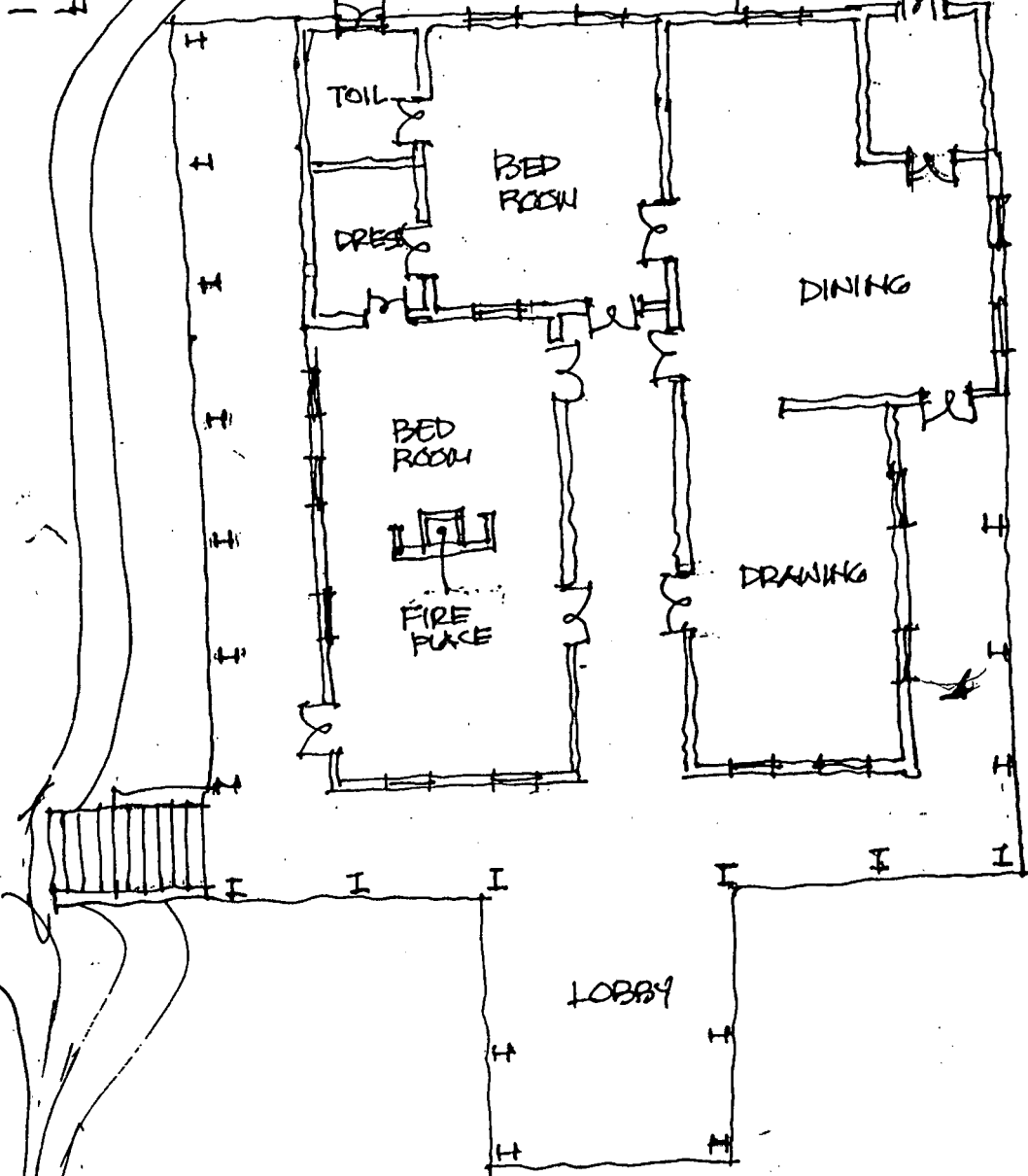
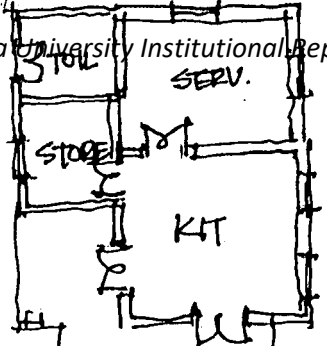
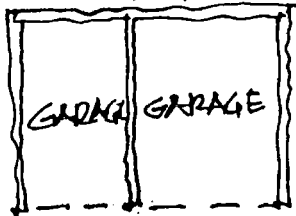
Fig-8.36.3 Compound plan, Bara kuti, Rajshahi



Fig-8.36.4 West facade bara kuti, Rajshahi



Fig-8.36.5 South-west facade Bara kuti, Rajshahi



SCALE

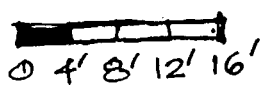


Fig-8.37.1 Floor plan, Malnichara garden house, Sylhet



Fig-8.37.2 West facade, Malnichara garden house, Sylhet



Fig-8.37.3 South facade, Malnichara garden house, Sylhet

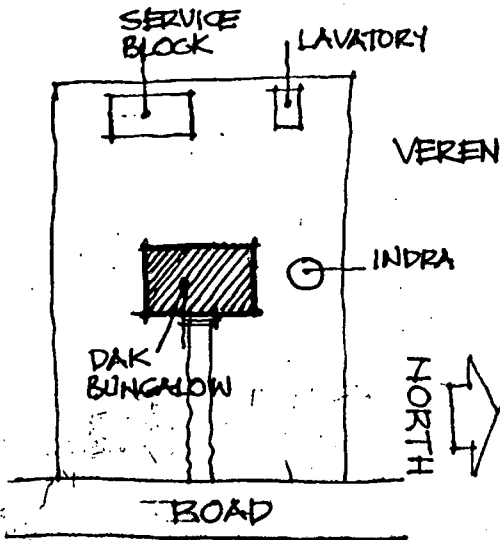


Fig-8.38.1 Compound plan,
Manda dak bungalow, Manda

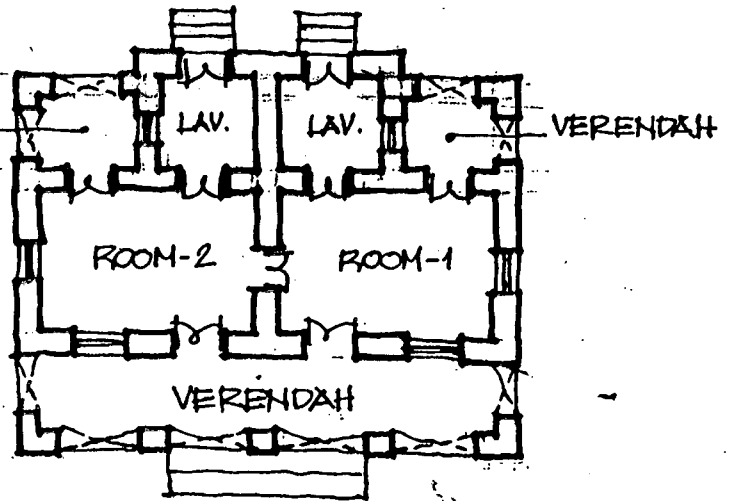


Fig-8.38.2 Ground floor plan,
Manda dak bungalow, Manda

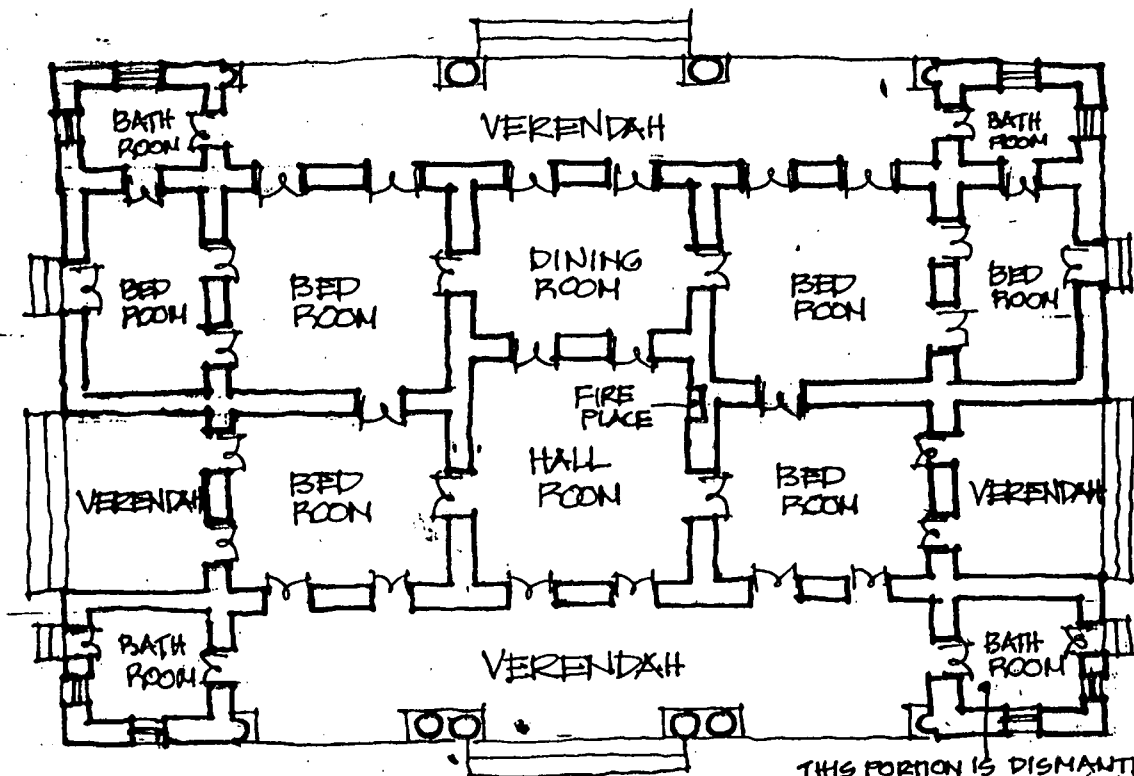


Fig-8.38.3 Ground floor plan, Circuit house, Rajshahi

SCALE

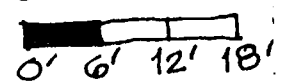




Fig-8.38.4 East facade Dak bungalow, Manda
Noagaon



Fig-8.38.5 North-east facade Dak bungalaow, Manda
Noagaon



Fig-8.38.6 South-west facade, Circuit house. Rajshahi



Fig-8.38.7 East facade, Circuit house, Rajshahi

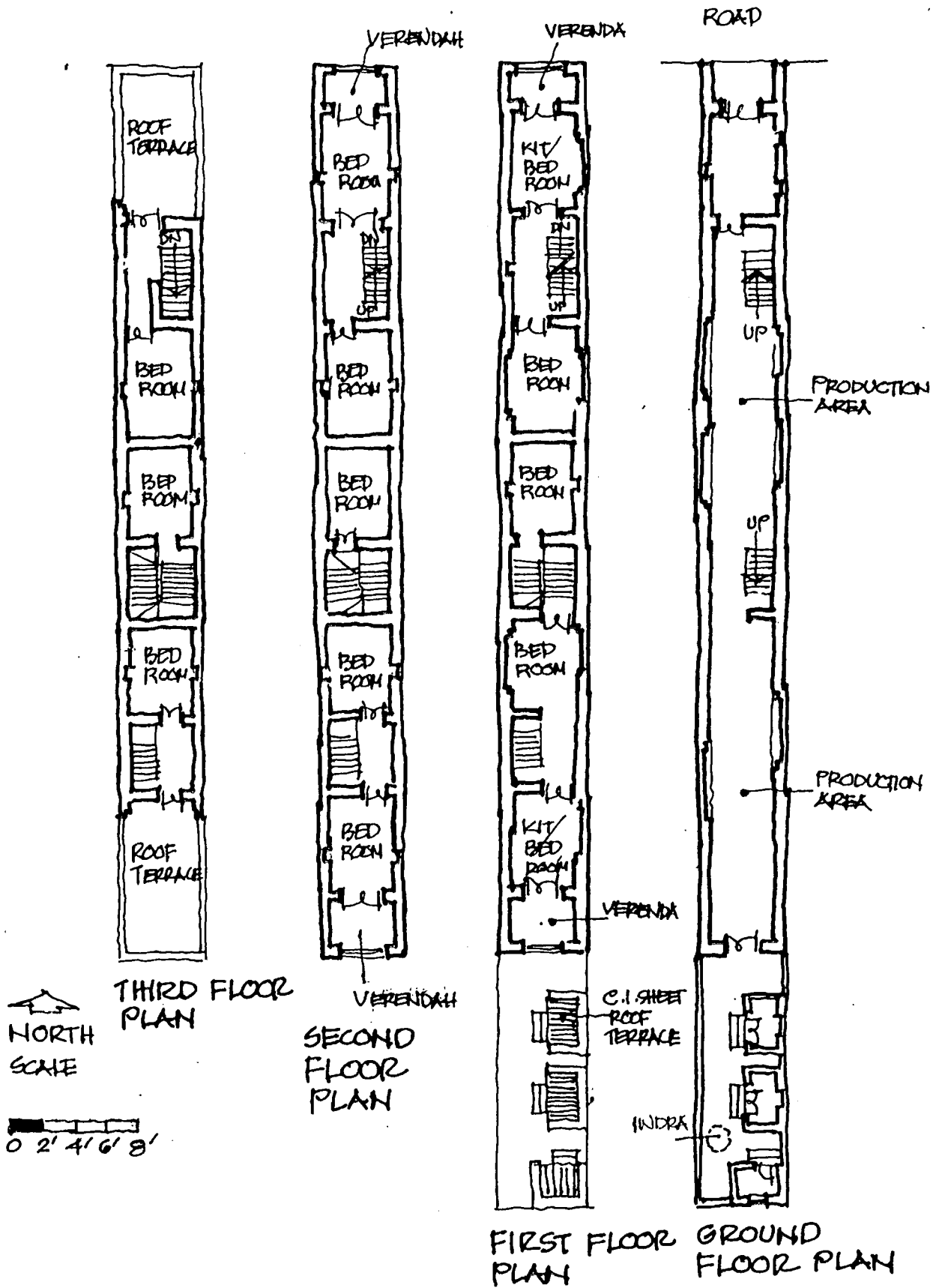


Fig-83.9.1 Floor plan, Chipa bari, 92 shankari patti, Dhaka

Fig-83:9.3 Entry to the *chipa bari*,
92 shankari patti, Dhaka

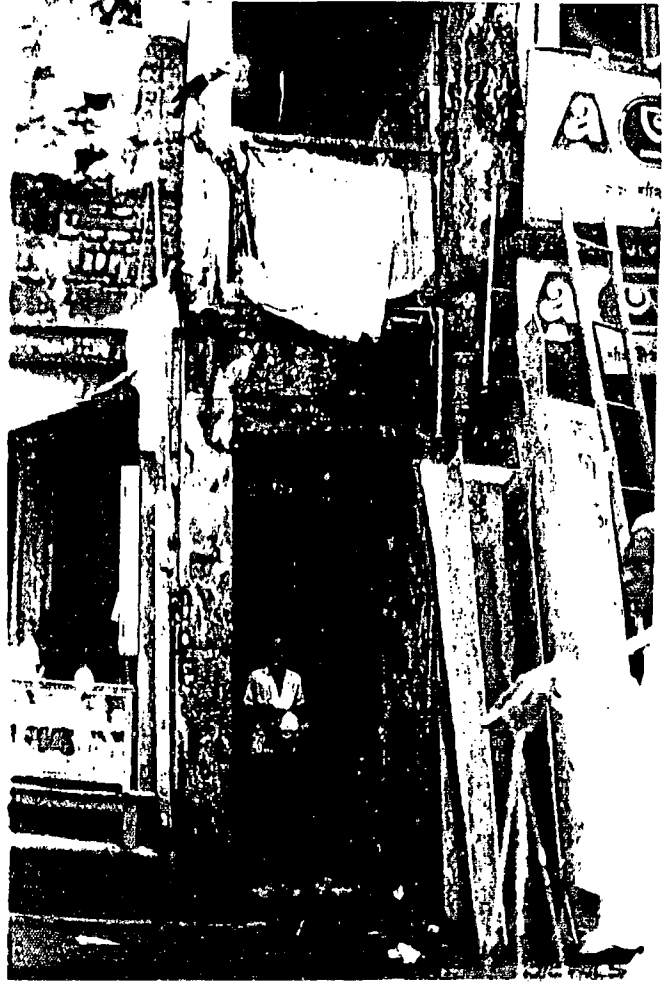


Fig-83:9.2 Front (north), facade
Chipabari, 92 shankari patti. Dhaka

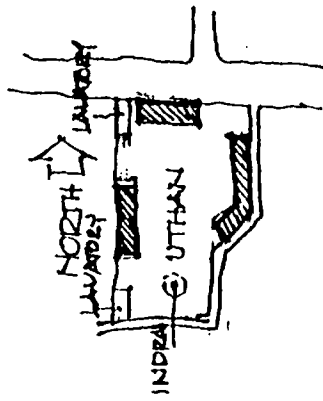


Fig-8.40.5 Compound plan,
Methor's patti,
Nazira bazar, Dhaka

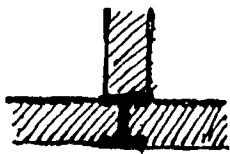
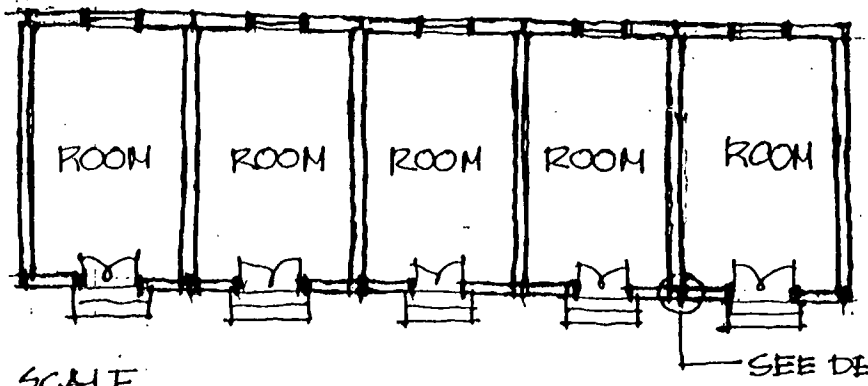


FIG
DETAIL

Fig-8.40.4 Wall detail, Methors patti,
Nazira bazar, Dhaka



SCALE
0 4' 8' 12'

Fig-8.40.1 Floor plan, Methor's patti,
Nazira bazar, Dhaka

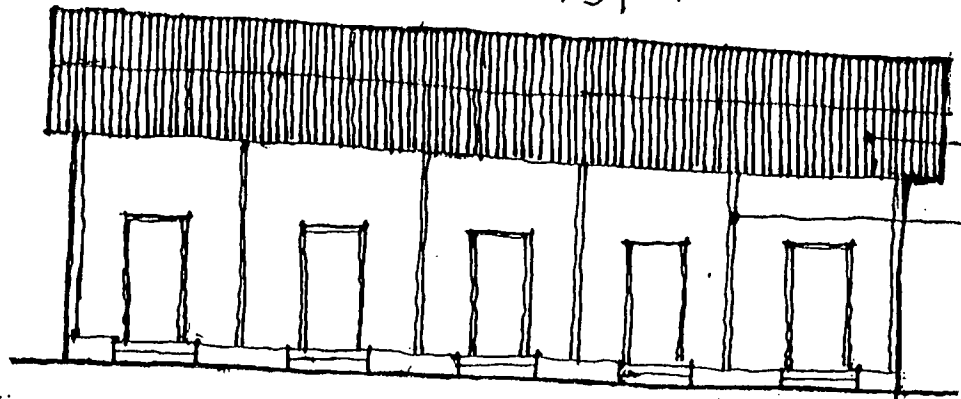


Fig-8.40.2 Front elevation, Methor's patti, Nazira bazar, Dhaka

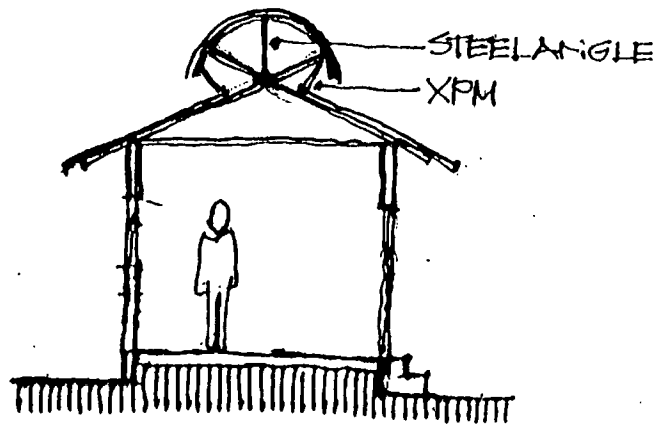


Fig-8.40.3 Cross section, Methor's patti,
Nazira bazar, Dhaka

Fig-8.40.6 Front facade, Methor's patti,
, Nazira bazar, Dhaka

APPENDICES

Appendix-1

SELECTED BASIC INFORMATION ON BANGLADESH DURING COLONIAL PERIOD

Location	: Between 20 34' and 26 38' north latitude and between 88 01' and 92 41' east longitude
Area	: 55,598 sq. miles
Religion	: 86.6% Muslim, 12.1% Hindu, 1.2% others
Currency	: Taka
Capital City	: Dhaka (written Dacca before 1882)
Administrative units	
Divisional towns	: Dhaka, Chittagong, Rajshahi,
District towns	: 21 (1947)
Bangladesh Time	: Bangladesh standard time (BST)+ 6 hours GMT
Main seasons	: <i>Grishyo</i> (summer) mid April to mid June <i>Barsha</i> (Rain season) mid June to Mid Aug. <i>Sharoth</i> (Late rainy and early Autumn) mid Aug. to Mid Oct. <i>Hemanta</i> (Autumn) mid Oct. to mid Feb. <i>Sheeth</i> (Winter) Mid Dec. to mid Feb.
Climate	: Sub tropical monsoon Winter temperature Av. max. 28.8 C, Av. min. 11.2 C Summer temperature Av. max. 34.5 C, Av. min. 20.9 C Rainfall Average: Western districts-47" (1194 mm) South-east, north-east-136" (3454 mm) Humidity: Highest (July) 99% Lowest (Dec.)36%
Natural calamities	: Subject to frequent floods, cyclones, tidal waves, cyclonic wind speed reaches 100 mph and more, particularly in coastal areas.
Principal rivers	: Padma, Maghna, Jamuna, Bralunaputra, 230 rivers and tributaries, covering 15,000 miles
Sea port	: Chittagong
Airport	: Dhaka, Chittagong, Jessore, Comilla, Saidpur, Cox's bazar, Shamsar nagar
Composition of land area	: Hill area 12, %(1) Modhupur and Barind Tracts 8% (2), River and tributaries 6% (3) Haor area 5%, Forest 9%(4). Cultivable land 60%

-
1. Hill areas include the hills of Chittagong hill tracts, Chittagong, Noakhali, Comilla, Sylhet and north Mymensingh district.
 2. Modhupur tract comprises part of Dhaka, Mymensingh and Tangail district and lies to the east of river Jamuna. The barind tract comprises parts of Rajshahi, Bogra, Rangpur and Dinajpur districts.
 3. BADC, Agriculture in Bangladesh, 1981, P-19-20
 4. Harun-er-Rashid, Geography of Bangladesh, opcit, P-31.

Appendix-2

COLONIAL TERMINOLOGY

The aim of this appendix-2 is firstly, to use language as a tool for the examination of the colonial culture, urbanisation and architecture; secondly, to examine language as one of the element in the colonial cultural fabric.

The colonial terminology, words and terms have been selected with the criteria in mind, first, practically all of the terms are still in current usage in Bangalee soceity; second, these terms are seen to be key terms in understanding the colonial culture, urbanisation and architecture(1).

The terms and words selected that used in the colonial third culture can be roughly grouped in one of the three categories:

Category-1 The terms originated in the metropolitan or second culture, eg, barracks, club

Category-2 The terms originated in the indiginous or first culture, eg, dak bungalow, bazar.

Category-3 The terms originated as hybrids, resulting from a combination between words from the metropolitan (second) and indigenious (first) culture or the terms were defused from the colonial third culture of other areas in the colonial territorial system (eg, from south-east Asia, specially Malaya), eg, compund.

1. Anglo-Indian - Mixed and half caste people of third culture (Eurasian),
2. *Bazar* -The origin of the term stem probably from persian or Arabic use; for third culture members, generally it represented a permanent market for street of shop (2).
3. *Bibi Shaheb* -Native wife of the *shaheb*, or the wife of a native *shaheb* who belong to the soceity of the colonial third culture.
4. Bungalow - A main dwelling unit in a compound, the term used by the members of the third culture. The term 'bungalow' was originally unique to the colonial third culture, The anglicised derivation was from Hindi and Marathi, 'bangla'. meaning 'of a belonging to Bengal'. The term was used to describe the house form common to the inhabitants of rural Bengal. The physical reality of the modern colonial bungalow was however, like the term used to describe it the result of modification by the colonial third culture. However, from being used to describe a house-type which originally belonged to Bengal, the term bungalow took on the meaning of a particular house type which belonged to the colonial community, becoming in the late 19th. century, the most usual class of house occupied by the Europeans in Bangladesh. (3)
5. Cantonment - Army camp, garrison town, military stations etc, place for the troops, a strong place in which troops are quartered and do duties for the security of the town (4). It contains barracks for the Europeans and huts, termed lines for the native sepoys-eg, Mainamati and Jessore cantonment.

6. Chummary - Provided the room and the common kitchen, the origin of the chummary lied in the elite university institutions of the metropolitan socieity where, in the 18th, and 19th, centuries a 'choum' was a 'friends sharing the same room' or a 'chamber fellow'. In the earlier days of colonial settlement, the practice of 'chummary' or sharing accommodation was an obvious solution for newly arrived 'shahebs' over time, this practice was institutionalised and 'bachelor chummeries' were constructed in larger towns, conforming both internally and externally to the norms of the third culture elite.
7. Chowk -For the members of the colonial third culture, this was'a place or wide street in the middle of the city', its origins as a market being clear in its derivation form the Sanskrit' *chatuska* 'meaning' the four ways' or crossing of streets at the centre of business (5). In every colonial town, there is a place or bazar known as chowk or chowk bazar
8. Civil station- -The smallest political, socio-spatial unit of the colonial third culture. A distinct socio-spatial unit developed and 'occupite by the civilion members of the colonial bureaucracy- judge, collector, magistrate, police-super, engineer, civil surgeon, teacher and missionary etc.
9. Circuit house -The temporary accommodation, similar to the 'dak bungalows'. At the early colonial stage. This circuit houses were built at the district and subdivision towns for the circuit judges.
10. Clerk -An assistant to the *chota shahebs* or superintendant. U.D.C and L.D.C indicated the status and hierarchy in the organisation.
11. Collector -Officer who collected revenue or who performed the financial role in the area.
12. Compound -A single dwelling was termed as a compound. In the metropolitan socieity, the ground area, if unbuilt on is termed as a 'plot' or if partially covered by a dwelling unit is known as a 'garden', in the English or North America, the relevant term for ground area is 'yard'.(6)
13. *Dalan* -The pucca building is known in this country as dalan. Sometimes it indicates the main house in the *bari* (7).
14. Dak bungalow -'*Seria*', 'a building for the accommodation of travellers with their pack animals, consisting of an enclosed yard with chambers around it' (8) a provision made for the members of the colonial third culture, and their temporary accommodation as they, or their kin from the metropolitan socieity, travelled around the country (9).
15. Division -There were three divisions in the colonial period in Bangladesh. The territory of the divisions were different from the present boundaries, eg, Sreehatta was within the province of Assam, and Kustia was under the APresidency Division.

16. District -There were 15 districts in Bangladesh at the end of colonial period in 1947.
17. Drive -The term originated by the 'vehicular elites', the members of the third culture, the link connecting the thoroughfare of the road in front or approached road to a bungalow and to the servant quarter, usually at the leeward side of the bungalow (10).
18. Drawing room -Similar to the local baithak khana and present living room. This was provided as sitting, living and gathering space in the houses
19. European -People from any country of Europe, white.
20. European club or Gymkhana club -A form of secular social organisation, stems from the mid 18th century; it was an association of persons.. formed mainly for social purposes and having a building appropriated for the exclusive use of the members and always open to them as a place of resort, or in some cases temporary residence.. its main feature is to provide a place of resort, social intercourse and intertainment(11). The word 'gymkhana' originated either from 'gend khana' from the hindi 'ball house' and meaning the racket-court common to most stations, or possibly 'gymkhana', from an abbreviated form of 'gymnasium' (12).
21. Home -England, Europe, countries of the second culture.
22. Judge -Officer who performed the judicial role in the colonial bureaucracy.
23. Kuli(coolie) -The term belonged to the language of the colonial third culture and the name given to a native hired lablurer or burden-carrier and was also used where these native men were employed as cheap labourers (13).
24. Lawn/Yard -Green paved areas around the bungalows.
25. Lines -Huts in the cantonment or police stations for the native sepoy.
26. Magistrate - Officer who performed the administrative role in the area.
27. Mall - Lower mall, higher mall, 'a sheltered walk or promenade 'which was generally boarded with trees (14), clearly indicated its social functions both as a centre of social interaction as well as for personal display. The term is related to the urban design, compound planning and landscaping.
28. *Methor* -A sweeper, used to engage for the cleaning of the latrines, lavatories and bath rooms. They were the municipal employed and were accommodated in a colony known as '*methor's* coloney' or '*methor's patti*.'
29. *Memshaheb* -A term indicated the wife of a *shaheb*, (white).
30. *Moffassal* -The term used by the members of 'third culture' and referred to the places out side large towns like Dhaka and Chittagong.

31. Native -Local people of Bangladesh, People of the first culture, black, brown. Original meaning derived from the Latin adjective, 'Nativas'-born, signified not only 'one of the original or usual inhabitant of the country as distinguished from strangers or foreigners', but also 'especially one belonging to a non-European and imperfectly civilised and savage race and was possibly equated with a 'colonial person, a black' (15).
32. Party -A social gathering, drawing room, dining room, dining space, family space, verendahs etc, in the interior of the house and lawn, terrace at the exterior within the compound were used for this purpose.
33. Portico/porch -Though belonging properly to the spatial requirement of the bungalows was also made necessary by the fact that the occupants were a vehicular borne elite. This is the front part of the house, usually low in height and here, carriages and cars waited, visitors received, peons and *chowkidars* guarded the interior territory and official messengers stood waiting for replies (16).
34. Province -Undivided Bengal, the cultural territory of Bangalee.
35. *Punkha* -A colonial method of house cooling. The instrument invented and developed by the members of 'third culture'. The height of the building was related to this element.
36. Quarter -The word originated in a military context, an authority structure which permitted the division of spatial areas and their allocation to various functions and social groups. A house in the colony.
37. *Sadr* -Main, Urban. The facing side of a brick is also called 'sadr' and opposite side as '*moffassal*' by the local measons of Rajshahi region.
38. *Shaheb* -A term of the colonial third culture used for the Europeans, and white people.
39. Station club -The term indicates the European club in a station, usually in the districts and sub division.
40. Sub-division Sub-division was a sub-district and there were 54 sub-divisions in Bangladesh in 1947.

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1. A.D. King, colonial urban development, opcit, P-71
 2. D.Me Master, 'The colonial district town in Uganda' in Beckisale, R.P. ed. 1970, P-330-331, A.D. King opcit, P-81
 3. Yule and Burnell, opcit, P-91
 4. J.H. Stocqueter, The military encyclopedia, W.H. Allen, London, 1853, Encyclopadia Britanica, 1929
 5. H.Yule and A.C. Burnell, opcit

6. J.A.H. Murry, *A new English dictionary on historical principles*, Clarendon press, Oxford, 1888, A.D. King, *Colonial urban development*, opcit, P89
7. Subrata Ghosh, *The Bengal home*, *Architecture-Design*, May-June, 1988, P-81.
8. H Yule and A.C. Burnell, *Hobson-Jobson, A glossary of colloquial anglo-Indian words and phrases*, John Murray, London, 1903.
9. A.D. King, *colonial urban development*, opcit, P-82.
10. *Oxford English dictionary*, 1910, and A.D. King, *Colonial urban development opcit*, P-91
11. A.D. King, *Colonial urban development*, opcit, P-87.
12. Yule and Burnell, opcit, A.D. King, opcit, P-87.
13. A.D. King *Colonial urban development*, opcit, P-84.
14. *Oxford English dictionary*, 1910, A.D. King, opcity, P-84.
15. *Oxford Dictionary*, 1903, A.D. King, opcit, P-81.
16. The term 'province' is of uncertain origin, but originated in Latin 'pro' (for) and 'vincere' (for conquer). Historically, it was associated with earlier, Roman colonial system, with meaning of 'a country or territory outside Italy under Roman domination and administered by a governor sent from Rome'. *Ibid*, P-75.

Appendix-3

ADMINISTRATIVE HIERARCHY OF COLONIAL TOWNS (1947)

Sl. no.	Division	District	Sub-division
1.	Dhaka	Dhaka	Sadar, Narayanganj, Munshiganj, Manikganj
2.	Dhaka	Mymensingh	Sadar, Netrokona, Jamalpur, Kishoreganj, Tangail
3.	Dhaka	Faridpur	Sadar, Goalanda (Rajbari), Madaripur, gopalganj
4.	Dhaka	Barisal	Sadar, Pirojpur, Bhola, Jhalkati, Patuakhali
5.	Chittagong	Chittagong	Sadar, Cox's bazar
6.	Chittagong	Chittagong hill tract(1)	Sadar (Rangamati), Ramgarh, Bandarban
7.	Chittagong	Noakhali (2)	Sadar, Feni
8.	Chittagong	Tripura	Sadar (Comilla), Brahmanbaria, Chandpur
9.	Chittagong	Sreehatta	Sadar (Sylhet), Habiganj, Sunamganj, Maulavibazar
10.	Rajshahi	Rajshahi	Sadar (Boalia), Natore Noagaon, Nawabganj
11.	Rajshahi	Dinajpur	Sadar, Thakurgaon
12.	Rajshahi	Rangpur	Sadar, Gaibanda, Kurigram, Nilphamari
13.	Rajshahi	Bogra	Sadar, Joypurhat
14.	Rajshahi	Pabna	Sadar, Serajganj
15.	Rajshahi	Jessore	Sadar, Jhenidah, Magura, Narail
16.	Rajshahi	Kustia (3)	Sadar (4) , Bagerhat, Satkhira

1. Chittagong hill tract was with Chittagong district before 1947.
2. Noakhali sadar district town was washed away in the river in colonial period, the district town was shifted to Sonapur in the early Pakistan period, and present district town Majjdee court was built later on.
3. Kustia was the part of Nadia district before 1947. Previously, there were 15 districts. Chittagong hill tract was seperated from Chittagong district and Kustia was seperated from Nadia district of Presidency division.
4. In many district towns, the sadar sub-divisions are divided into two-north and south.

Appendex-4

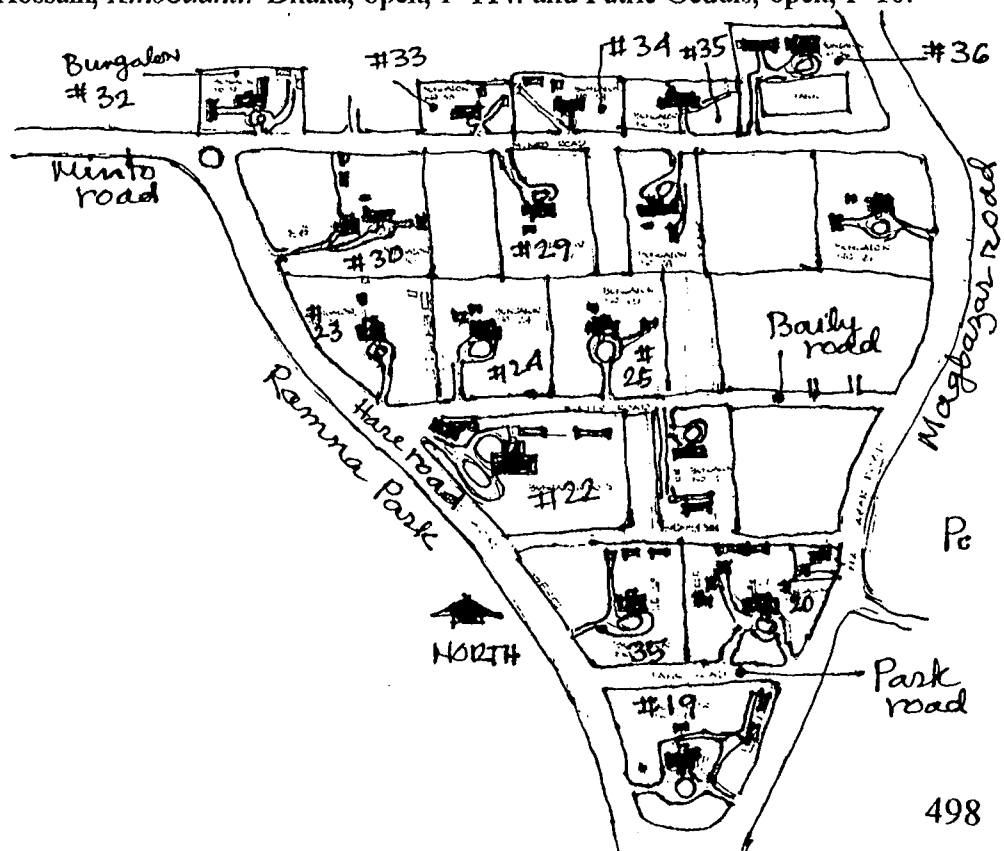
RAMNA (COLONY) CIVIL LINE

Ramna is a Persian ward meaning lawn. Ramna was named by the Mughal (1). A wave of development was noticed after the division of Bengal from 1905-1911. Two types of buildings were constructed in Ramna area in this time, one, the civil buildings such as curzon hall, engineering school (2), some of the buildings of science faculty of D.U., Engineering school hostel, (F.H. hall) Dhaka hall, Governors house, secretariate (part of DMCH), press building and ment physic dept of (3, BUET), etc, two, the bungalows at press club area, Ramna, Katgullah and Shahbagh and Sujatpur area (4). To construct the civil lines at Ramna areas, many trees and graves of the Mughal period were demolished (5). Ramna civil line was known as ramna civil station (6). Each of the bungalows at Ramna civil station were spacious, in a large compound.

The Ramna civil line was developed in and around the Minto road, Hare road, Magbazar road. The Park road and Baily road crossed this line. All the bungalows are composite and extrovert type having a few number of service blocks. All the bungalows are two storied and the designs are simple having few number of colonial elements.

The bungalows are constructed by fairface red bricks. The influence and similarity of the design of these bungalows are seen in the design of the buildings in the civil lines of the *moffassal* towns.

1. Muntasir Mamun, *Sreetimoy Dhaka*, opcit, P-10
2. Present BUET campus.
3. Old academic building of BUET. (Physics dept.) was the govt. press building and mint.
4. Sujatpur was between the Arts faculty to Bangla academy area. It was name after the Sujat Khan Chisti, brother of Islam Khan Chisti. Muntasir Mamun, *Sreetimoy Dhaka*, opcit, P-10, Patric Geddes, report on Dhaka city planning, translated by Abdul Mohaimen, opcit. P-17.
5. Nazir Hossain, *Kinbodantir Dhaka*, opcit, P-114. and Patric Geddis, opcit, P-18.



Appendex-5

LIST OF THE HOUSES SURVEYED

Zamindar houses in Bangladesh

Dhaka division

1. Ahsan manzil, Dhaka town
2. Ruplal house, Dhaka town
3. Neemtali Kuti, Nawab katra, Dhaka town.
4. Rebati Mohan Das, Sutrapur, Dhaka town
6. Mitra kuti (Science vila), Kaittooly, Dhaka town
7. Manik babu house, Hazaribagh, Dhaka town
8. Murapara palace, Dhaka
9. Baliati place, Manikganj
10. Toeta palace, Manikganj
11. Batela palace, Manikganj
12. Tukani paler bari, Rekabi bazar, Munshiganj
13. Sial Dey bari, Mirkadeem, Munshiganj
14. Charam Poddar bari, Nagar north Kasba, Munshiganj
15. Joydevpur *rajbari*, Joydevpur
16. Pobail zamindar house, Joydevpur
17. Mymenshingh *rajbari*, Mymensingh town
18. Gauripur estate house, Mymensingh town
19. Muktagacha, *rajbari*, Muktagacha, Mymensingh
20. Gauripur *rajbari*, Gauripur, Mymensingh
21. Lahiri lodge, Gauripur, Mymensingh
22. Sherpur zamindar house, Sherpur, Mymenshingh
23. Shayang Saha, Kotiathi, Kishoreganj
24. Radanath Saha house, Kishoreganj
25. Hiralal house, Kishoreganj
26. Gauripur zamindar house, Netrokona
27. Dhonbari palace, Dhonbari Tangail
28. Pakular zamindar bari, Pukula, Tangail
29. Delduar zamindar bari, Deldar, Tangail
30. Karatia zamindar bari, Tangail
31. Santosh zamindar house, Santosh, Tangail
32. Nagorepur zamindar bari, Nagorepur, Tangail
33. Mohua zamindar bari, Mohua, Tangail
34. Dalapara Chowdhury bari, Mohua, Alia, Tangail
35. Kalas kati zamindar house, Barisal
36. Kandap Narayan Rai, Madap Pasha, Babuganj, Barisal
37. Agarpur zamindar house, Babuganj, Barisal
38. Kirti Pasha zamindar house, Jalokati
39. Kulkati zamindar house, Nalchiti, Jhalokati
40. Sujabad zamindar house, Bakerganj, Barisal
41. 14 Rasir zamindar bari, 14 Rashi, Faridpur
42. Mohan miar bari, Kamalapur, Faridpur town

43. Romesh Nath house, Chawk bazar, Faridpur town
44. Sita Nath Das, 4, Walter road, Sutrapur, Dhaka town
45. Prassanna Kumar Das, 45, B.K. Das road, Farasganj, Dhaka town
46. Shampur zamindar bari, Bakerganj, Barisal
47. Ponabaila zamindar bari, Jhalokati
48. Jagadish Saha, Bagalpur, Savar, Dhaka
49. Rai bari (Nishi Kanta Rai), Tasora, Manikganj
50. Batela zamindar house (Panu Babu), Batela, Manikganj
51. Baniajuri zamindar house (Amar Kantha, Majemder), Manikganj
52. Jatger babu bari, Baniajury bazar, Manikganj

Chittagong division

1. Nazir mia Sadagar house, Pathargata, Chittagong town
2. Dobash bari, Firingi bazar, Chittagong town
3. Bakhtiar miar bari, Chandanpura, Chittagong town
4. Samacharan kabiraj bari, Firingi bazar, Chittagong town
5. Raj bari, Rajapur lane, Chittagong town
6. Mono Miajee zamindar house, Ilisia, Chokoria, Cox's bazar
7. Rajbari, Ukilpara, Feni Town
9. Ranir Kuti, Comilla town
10. Soagazi zamindar house
11. Tholla zamindar house, Muradnagar, Comilla
12. Hossamia Haidar zamindar house, Charta, Comilla town
13. Syed Shamsul Huda house, Gokarna, Nasir nagar, Brahmanbaria
14. Haripur zamindar bari, Madabpur, Nasirnagar, Brahmanbaria
15. Kamala kanta Rai bari, Jahapur, Muradnagar, Comilla
16. Gobindra Chandra Saha, Krishna nagar, Nabinagar, Brahmanbaria
17. Ramanath Rai Chowdhury, Krishnanagar, Nabinagar, Brahmanbaria
18. Barikandi zamindar house, Maniknagar, Nabinagar, Brahmanbaria
19. Ibrahimpur zamindar house, Nabinagar, Brahmanbaria
20. Rai bari, Bitghar, Nabinagar, Brahmanbaria
21. Rashu mia Shaheb zamindar house, Faridganj, Chandpur
22. Ananda babu house, Kandirpar, Brahmaanbaria
23. Gaur Govindra raj bari, Chowhatta, Sylhet town
24. Monipur raj bari, Shilhet town
25. Surja babu house, Morashi, Chunarughat, Habiganj
26. Khurish Chandra Pal (present Sonali bank, corporate branch) Monoharpur, Comilla
27. Raipur zamindar house, Gauripur, Comilla

Rajshahi division

1. Puthia palace, Puthia, Rajshahi
2. Natore rajbari, Natore town
3. Digapatia place, Natore town
4. Tahirpur place, Tahirpur, Rajshahi
5. Dubalhati place, Noagaon
6. Balihar place, Noagaon

7. Dinajpur rajbari, Dinajpur town
8. Tajhat place, Rangpur
9. Bardankot place, Bardankot, Rangpur
10. Dimla zamindar bari, Dimla, Rangpur
11. Kankina zamindar bari, Manthana, Rangpur
13. Pirganj zamindar house, Pirganj, Rangpur
14. Sillai place, Pabna town
15. Taras rajbari, Pabna town
16. Prafulla Baral, Nimtala, Dinajpur town
17. Senhati zamindar bari, Bairab riverghat, Khulna
18. Mohendra Gosh, Ahsan Ahmad road, Khulna town
19. Susanta Kumar Naandi, Lower jessore road, Khulna town
20. Romanath Gosh, Town Noapara, Bagerhat
21. Sailan Gosh, Town Noapara, Bagerhat
22. Sailan Gosh, Khulna town
23. Mahadevpur rajbari, Noapara, Bagerhat
24. Mohendra Gosh. Town Noapara, Bagerhat
25. Direndra Gosh, Town Noapara, Bagerhat
26. Rabin Gosh and Khitish Gosh, Town Noapara, Bagerhat
27. Kiran Das, Bagerhat
28. Pranab Das, Bagerhat
29. Nagerbari, Bagerhat
30. Devendranath Guha Barman, Town Sreepur, Satkhira
31. Baidhannath Sardar, Town Sreepur, Satkhira
32. Lakkhi Kanta Rai Chowdhury Town Sreepur, Satkhira
33. Ammalla Kumar Rai Chodhury, Town Sreepur, Satkhira
34. Kanak Kanta Rai Chowdhury, Town Sreepur, Satkhira
35. Bidhan Chandra Rai, Town Sreepur, Satkhira
36. Narail raj bari, Narail
37. Mohammad Ali house, Bogra town
38. Bandari house, Bogra town
39. Satani house, Bogra town
40. Satkhira zamindar house, Jessore Town
41. Khanjanpur zamindar house, Joypurhat
42. Mangalbari zamindar bari, Pachbibi, Joypurhat
43. Gopinathpur zamindar bari, Akkalpur, Joypurhat
44. Mokamtala zamindar house, Sonatala, Bogra
45. Naru Baddar house, Bolpur, Morrelegonj, Bagerhat
46. Nitish babu house, Banagram, Morrelegonj, Bagerhat
47. Ismail Hossain Sirajee house, court road, Sirajgonj
48. Jatin Chakraborty house, Kalibari, Sirajgonj
49. Jodob babur bari, Sirajgonj town
50. Hati kumur zamindar bari, Sirajgonj
51. Kumud babur bari, Sibnathpur, Sirajgonj

Chumary

1. Chummary, Barisal
2. Chummary, Dhaka

Rural houses

1. Dewan bari, Ameen bazar, Savar, Dhaka
2. Ameen bari, Ameen bazar, Savar, Dhaka
3. Gagan Chakrabarity, Kalashkati, Barisal
4. Shiba Nanda Poddar, Painam Nagar, Sonargaon
5. Kashinath Bhaban, Painam Nagar, Sonargaon
6. Sardar bari, Sonargaon
7. Ashi Poddar, Painam Nagar, Sonargaon
9. Jogesh Chandra Poddar, Painam Nagar, Sonargaon
10. Gosta Poddar, Painam Nagar, Sonargaon
11. Gauza Charan Poddar, Sonargaon
12. Hari Charan Poddar, Painam Nagar, Sonargaon
13. Matanga Thakurani, Painam Nagar, Sonargaon
14. Golak Poddar, Painam Nagar, Sonargaon
15. Narayan Poddar, Painam Nagar, Sonargaon
16. Gopal Gosh, Maniknagar, Nabinagar, Brahmanbaria
17. Mono Babur dalan, Nabinagar, Brahmanbaria
18. Naba Kishore *Daroga bari*, Rasulabad, Brahmanbaria
19. Neel Miar *bari*, Darikandi, Brahmanbaria
20. Sonatan Saha, Rupashdi, Brahmanbaria
21. Mukul Babur house, Murapara, Dhaka
22. Asu babur house, Bagaura, Nabinagar, Brahmanbaria
23. Sital doctor's house, Sreegar, Nabinagar, Brahmanbaria
24. Mr. Morrel's house, Morreliganj, Bagerhat
25. Michel Madusudan Datta, Sagardari, Jessore
26. Banik bari, Dulalpur, Homna, Comilla
27. Nannu Mia, North Sewta, Manikganj
28. Sarker bari, Ameen bazar, Savar
29. Sikdar bari, Rajkar, Babuganj, Barisal
30. Mohesh babur bari, Bitghar, Nabinagar, Brahmanbaria
31. Kalidas bari, Paikpara, Faridganj, Chandpur
32. Singh bari, Khajbia bazar, Faridganj, Chandpur
33. Talukdar bari, Telihara, Bogra Shadar, Bogra
34. Dammulla Sarkar bari, Brahmanpur, Melandar, Jamalpur
35. Elahir Munshir bari, Dubin, Raiganj, Sirajganj
36. Patwari *bari*, Laxmipur, Purshuram, Feni
37. Kabi Aalau House, Abdullahbad, Banga, Faridpur
38. Rahat Manzil, Bierahimpur, Kotwali, Sylhet
39. Alhaj Nurul Haq Munsil, Arepara, Gopalganj
40. President Ziaur Rahman's house, Bagbari, Gabtali, Bogra

41. Zamuruddin Sarder, Namusankabati, Chapai-Nawabganj
42. Satish Poddar bari, Painam nagar, Soargaon (house occupied by zahanara Textile)
43. Diren Chowdhury, Gorira, Thakurgaon

Urban house

1. Milan Bhaban, Station road, Brahmanbaria
2. Kangal Nath, Fulbaria, Brahmanbaria
3. Basiruddin, Ukilpara, Noagaon
4. Advocate Surendranath, Ukilpara, Noagaon
5. Lalkuti, Shaheb bazar, Rajshahi
6. Mrs. Shahbuddin, 3, Paribagh, Dhaka
7. Rup Narayan, Simson road, Dhaka
8. Raj Narayan Simson road, Dhaka
9. Nurruddin, Stand road, Majirghat, Chittagong
10. Nishikanta babu, Stand road, Majirghat, Chittagong
11. Raj Chandra Munshi, Laxmi bazar, Dhaka.
12. Ranjit Kumar Saha, Pach Bhaighat lane, Dhaka
13. Engr. Gulzar, Hossain-e-dalan road, Dhaka
14. Anath Bandhu Rishi, Aga Moshi lane, Dhaka
15. Dr. Baset, Umesh Datta lane, Bakshibazar, Dhaka.
16. Hemakanta Bhattacharjee, Ukilpara, Noagaon
17. Ziaul haque, Subid bazar, Sylhet
18. Arnab, Mirar Maidan, Sylhet
19. Rahman Manzil, 25, Harnath Gosh road, Lalbagh, Dhaka
20. Khan manzil (1939), 10, Joynag road, Dhaka
21. Afzalur Rahman, Imamganj dal, Dhaka
22. Sreefattally house, 28, Becharam Dewri, Dhaka
23. Md. Ameen 26 Becharam Dewri, Dhaka
24. Arch. Baktiar, 27, Umesh Datta road, Bakshibazar, Dhaka
25. Jerome D' Costa, 24, K.G. Gupta lane, Laxmi bazar, Dhaka
26. Puspa Saha, Jagannath Saha road, Lalbagh, Dhaka
27. Baitul Zaman, Railgate, Chassara, Narayanganj
28. Piyari Shankar's house, Bogra
29. Dutta bari, Bogra
30. Sanatan babu (Sonali bank), loan office, Bogra
31. Arif Raja's residence, Bogra
32. Khitish babu Jalaswaritala, Bogra
33. Nani Chakrabarty, Badurtala, Bogra
34. Mongal Sadu, Jheeltully, Faridpur
35. Romesh nath, Rothkhola, Faridpur
36. Tahsil office, 116, Sadr ghat, Chittagong
37. Syed Md. Furkan, 30, Satish babu lane, Pathargata, Chittagong
38. Weekly Prahar, 1, Satish babu lane, Chittagong
39. Ishaque Mia, S.R. Trading, 11, Bandal road, Bakshir hat, Chittagong
40. Shamsar Mia, Bandal road, Bakshir hat, Chittagong

41. Sarafat Manzil, 6, Chandanpura, Chittagong
42. Hazi Yusuf Gani Chowdhury (1934), Hati companir bari, 37, Nazir ahmed Chowdhury road, Chittagong
43. Samaj Sheba Kendra, 124, Momin road, Chittagong
44. Tapash Kutir, Bhola tank road, Jessore
45. Khorasani, Lower Jessore road, Khulna
46. Mohd. Hasan, Jindabazar, 1st lane, Dhaka
47. Mathura nath chakrabarty, Dayaganj, Dhaka
48. Jatindra kumar Saha, Farashganj, Dhaka
49. Alhaj Asaduzaman, 105, K.P. Gosh street, Armanitola, Dhaka.
50. Monsur, M.P, Upper Jessore road, Khulna
51. Bhusan Chandra Mitra, 26, Ahsan Ahmed road, Khulna
52. Bacchu shaheb's house 1, Abul Hasnath road, Dhaka
53. Shiraj shaheb's, 1, Nazimuddin road, Dhaka.
54. A. Rahman (office of the Asstt. director, BADC, Badurtala comilla)
55. Jagan Nath Saha, Jagan Nath Saha road, Lalbagh, Dhaka
56. Murad Hussain, 27, Shirish Das lane, Bangla bazar, Dhaka
57. Nilkanta Gosh, 10, Pari Das road, Banglabazar, Dhaka
58. Shankar Chandra Gosh, 11, Pari Das road, Dhaka
59. Kala Chand Saha, (bara bari) 20/1/2 Kali Charan Saha road, Faridabad, Dhaka
60. Sankanidhi house, Tipu sultan road, Dhaka
61. Gagan Saha, Paikpura, Brahmanbaria

Shop house

1. Golam Mostapha, Rekabi bazar, Sylhet
2. Banamali Das, Nicha bazar, Natore
3. 165, Nawabpur road, Dhaka
4. 6, Cemetery road, Khulna
5. Nagendra Mallick Mahadev, Mahadevpatti, Jagat bazar, Brahmanbaria
6. 36, Nitayaganj, Puranbazar, Chandpur
7. A. Rahman and Brother, Mughaltooly, Dhaka
8. Gopal Mondal, Sarak bazar, Brahmanbaria
9. Harish Chandra Pal, Chati patti, Brahmanbaria
10. Ahsan Ullah store, B.K. road, Khalghat, Nitaiganj, Narayangonj
11. Hagi Rashid, 191, B.K. road, Khalghat, Nitaiganj, Narayangonj
12. 6, Andar killa, Chittagong
13. Hati Company building 2, Nawab Sirajdaula sarak, Chittagong
14. 385, Nawab Sirajdaula sarak, Chittagong
15. Chittagong Urban Co-oprative soceity, 184, Andar killa
16. Nirod Lal Das, 44, B.K.Das road, Farasgonj, Dhaka town
17. 33, Rishi Kesh Das road, Dhaka town
18. 48, Johnson road, Dhaka town
19. 49, Johnson road, Dhaka town
20. Advocate Abul Kalam Azad, (Naziria press) Moghal tuly, Comilla
21. Zafar khan, Monoharpur house, Monoharpur, Comilla

Sattelite township houses, Wari, Dhaka

1. Bhajahari lodge, Tipu Sultan road
2. Devendra Mohan Das, 1, Nawab street
3. Anwar Chowdhury, 6, Wyre street,
4. Sanka Nidhi house, Tipu Sultan road
5. Wari Samaj Sheba Kendra, 30, Tipu Sultan road
6. Josna view, 26/2, Modan Basak lane, Tipu Sultan road
7. Maitri Shisu Uddan, 26, Tipu Sultan road
8. Mustaque Ahmed, 9, Hare road
9. AKM Shamir uddin, 24, Larmini street
10. Basanta bash (1331 B.S), 10, Hare street (Ajmal Huda Shamim)
11. M.A. Majid, 20, Wyre street
12. Monno Group of Industries, 9, Wyre street
13. Md. Rabiullah, 24, Tipu Sultan road
14. Satish Chandra Banerjee (Present Syeda Khadematul Mawla), 35 Rankin street

Kachari bari

1. Rabindranath Tagore's *Kachari bari*, Shahjadpur, Pabna
2. Rajeswar Rai Chowdhury's *Kachari bari*, Patuakhali town
3. Mohiramkul *Kachari bari*, Mehlandar, Jamalpur
4. Fulkucha *Kachari bari*, Mehlandar, Jamalpur
5. *Kachari bari* of Trippura raj, west bank of Dharma Sagar, Comilla

Bagan bari

1. Rose garden Dhaka town
2. Prem kanon, Jora railgate, Khulna town
3. *Bagan bari*, Tipu Sultan Road, Dhaka town
4. *Bagan bari*, prasanna Kumar, Farashganj, Dhaka town
5. Israt Mahal (dismantled), Shahbag, Dhaka town
6. Alam Shaheb's *Bagan bari*, Goalchamot, Faridpur town
7. *Bagan bari* of Basanta Kumar Das, 47, B.K. Das road, Dhaka town
8. *Bagan bari* of zamindar of Tapa, Kachari road, Rungpur

Government house

1. Governors' house, Dhaka
2. Bungalow of member, Governor's council, (Lt. governor's bungalow) Dhaka (V.C,D.U)
3. Bungalow no 3, D.U.
4. Bungalow no 24, D.U.
5. I.G. Prison, D.U (Now demolished)
6. PWD no 16, Univ. Bungalow no 1, D.U.
7. Bungalow no. 8, D.U.
8. Bungalow no. 26, D.U.
9. Bungalow no. 29, Ramna Govt. Colony, Dhaka

10. Bungalow no. 20, Ramna Govt. colony, Dhaka
11. Bungalow no 35, Ramna Govt. colony, Dhaka
12. Bungalow no 22, Hare road, Ramna Govt. Colony
13. Bungalow no. 27, Ramna Govt. Colony, Dhaka
14. Bungalow no. 15, N.C.R, Ramna Colony, Dhaka
15. Bungalow no. 21, N.C.R, Ramna Colony, Dhaka
16. D.M. Bungalow, Rajshahi
17. Principal's bungalow, Rajshahi College, Rajshahi
18. Munsef's bungalow, Ukilpara Noagaon
19. S.D.O Bungalow, Brahmanbaria
20. S.P. Bungalow, Brahmanbaria
21. D.M. Bungalow, Kalighat, Sylhet
22. S.P. Bungalow, Kalighat, Sylhet
23. D.J Bungalow, Chowhatta Sylhet
24. D.M. Bungalow, Khulna
25. Civil Surgeon's Bungalow, Khulna
26. Commissioner's bungalow, Khula (Register's bungalow)
27. D.M. Bungalow, Jessore
28. D.J, Bungalow, Chittagong
29. Commissioner's Bungalow, Chittagong
30. Civil Suergeon Bungalow, Chittagong
31. D.I.G. Police, Barisal
32. D.J, Barisal
33. Asstt. S.P. Barisal
34. Civil Surgeon, Barisal
35. S.P, Chittagong
36. Residence for unmarried clerks, Dhaka.
37. Staff quarter, Sadar hospital, Mirer Maidan, Sylhet.
38. Warden quarter, Dhaka Central Jail, Dhaka
39. S.D.O, Narayanganj
40. Bardawan house, Bungalow of member, Governor's council, Dhaka
41. D.M. Comilla
42. S.P. Comilla
43. D.S.P, Comilla
44. D.J, Comilla

Railway bungalow/quarter

1. Railway Security shed, Khulna
2. Railway Bungalow, 15, College road, Dhaka
3. Railway Bungalow no 66, Fulbaria Dhaka
4. Booking clerk's Bungalow, Natore
5. Six quarter's shed, Natore
6. Standard type quarter for Subordinate staff
7. Chief clerk's Bungalow, Pahartally, Chittagong, Drg-37, CE-43276
8. Store clerk's quarter, Dhaka station
9. Standard accommodation, Gr. and first floor

10. Quarter for Indian staff, Salary Rs. 140 to 190 per month
11. Standard type quarter for Subordinate staff, sq. 27/20
12. Quarter for Indian staff, drawing salary upto Rs. 30 per month
13. Subordinate staff quarter, sq, 177/3
14. Quarter for Subordinate staff, sq, 37/21
15. Quarter for Subordinate staff, sq, 211/15
16. Subordinate staff quarter, sq, 213/1
17. Standard type quarter for subordinate staff, sq, 214/1
18. 2-units standard-1 type quarters
19. Quarter for Indian staff, booking clerk's quarter
20. Staff quarter, Brahmanbaria
21. Staff quarter, Sylhet railway colony
22. Station master's quarter, Dhaka S C/87 no. 134, DMSR
23. D-type Bungalow, L/173, Chittagong
24. 5-units traffic members quarter
25. Bungalow no. L/3, Drg. Sq 35/36
26. A/9, Bungalow at Chittagong, Drg. sq. 37/27, AB Rly.
27. Combined running room at Dohazari (Semi-pucca), CE-46049, Drg, 22/42
28. Quarter T/34 at Chittagong, Drg-sq 27/24, AB Rly, CE-45142
29. DMSR, NC 6191, Subordinate staff quarter, Double storied, Drg, no-6/15
30. CE's Bungalow, AB Rly, CE, 45893, 21.1.1908
31. Bungalow A/5, BA Rly, Co. Ltd. sq. 53/E/9
32. Store clerk's quarter at Dhaka
33. Bungalow at Chittagong L-129, CE-45200, sq 35/27
34. L-31, Rly, Bungalow at Pahartully, Chittagong
35. L-38, Rly, Bungalow, Pahartully, Chittagong
36. Bungalow, L-1, ATSO (East), Pahartully, Chittagong

Kuthi bari

1. *Bara kuti*, Shaheb bazar, Rajshahi town
2. *Kutibari* of Mr. Waise waisght, Dhaka
3. *Bara Kutu*, Sardah, Rajshahi
4. *Chota kuti*, Sardah, Rajshahi
5. *Kajlakuti*, Rajshahi town
6. *Mollahati bara kuti*, Jessore
7. *Motihar kuti*, Rajshahi town
8. *Indigo kuti*, Modhupur, Jessore
9. *Kutibari*, Painamnagar, Sonargaon
10. *Sultangonj kuti*, Bogra town
11. *Malidali silk kuti*, Bogra town
12. *Ballipara neel kuti*, Jalapara, Banga, Faridpur

Garden house

1. Manager's house, Malnichara tea Estate, Sylhet
2. Asstt. Manager's house, Malnichara tea estate, Sylhet
3. Managers house, Lackatura tea estate, Sylhet

***Dak* Bungalow/Circuit house**

1. Rly. office and rest house at Double Mooring, Chittagong
2. *Dak* Bungalow, Manda , Noagaon
3. Circuit house, Rajshahi
4. Circuit house, Kalighat, Sylhet
5. Circuit house, Jessore
6. Circuit house, Khulna
7. *Dak* bungalow, Khulna
8. Circuit house, Chittagong
9. *Dak* Bungalow, Satkhira
10. Nabinagar *dak* Bungalow, Brahmanbaria
11. Satani guest house, Bogra
12. Faridpur Circuit house
13. Tetulia *dak* bungalow

Patti

1. House no 32, Thatari patti, Dhaka
2. House no 92, Chipa bari, Thatari patti, Dhaka
3. House no. 14, Thatari patti, Dhaka
4. House no. 123, Thatari patti, Dhaka
5. *Methor's patti*, Nazira bazar, Dhaka
6. *Methor's patti*, Brahman baria

Appendix-6

Study of colonial architecture in Bangladesh

Survey data collection sheet

Department of Islamic History and Culture

Dhaka University

General Information :

Date:

Time:

Name of the house :

Owner :

Profession :

Condition of the house :

Brief history :

Problem to study :

Type of the house :

Size of plot :

Shape:

Set back :

Frontage : E W N S Diagonal:

Planning:

Approach : From river: Road: No road:

Contact with neighbours:

No boundry walls:

Through main gate:

Through secondary gate:

No contact with neighbours:

Type of boundary wall:

Solid:	perforated:	Grilles:	Height:	Material
No double boundary wall	Double boundary wall	Height	Material	

Distance between the primary and secondary boundary walls

Other:

Entry to compounds:	Frontwise:	E	W	N	S
	Side wise:	E	W	N	S

No. of entry : No. of side entry:

Entry house : No entry house:

No. of entry house:

No. of gate: No gate:

No lighting system in the gate

Lighting system in the gate

Components of compound:

No. of house block

Single block, Multiple block

House plan	Square	Rectilinear
	Cros	Other

No of service block

Brief description of service block:

Kitchen	Kitchen store	Pantry	Location
Fuel store	Verendah	Maid room	Location
Servent room	Darwan room	Stuble	Location

Garage	Animal shed	Poultry shed	Location	
Other				
Landscaping:				
Landscaping element.				
Approach road	Width	Length	material	
No. of lawn	Size	Location	Ground cover	
Garden	Size	Location	Type	
No. of court/ <i>uthan</i>		Size	Shape	
Activities in the court/ <i>uthan</i>				
verandah around the court				
No, verandah around the court				
Perception of inner court from outside				
perceptible				
Not perceptible				
Relationship of court/ <i>uthan</i> with other spaces				
Water body	Nature	Location	Shape	
Reflection pool	Size	Location	Shape	
<i>Pukur</i>	Size	Location	Shape	No.
<i>Pukur ghat</i>	Size	Location	Shape	No.
<i>Indra</i>	Dia	Location		No.
Tube well		Location		No.
Fountain		Location	Shape	No.
Paved terrace	Size	Location	Shape	No.
Drive way	width	Length	Material	
Enclosure				
Other				

Components of the house block:

Portico	Size	Location	Shape	No.
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Entry to the house

Entry lobby

Baithakhana

Drawing room	Size	Location	Shape	No.
--------------	------	----------	-------	-----

Hall room

Family room

Dainig room

Pantry

Bed room

Guest room

Office room

Store room

Box room

Kitchen

Kitchen store

Dressing

Bath

Lavalory

Verendah

No verendah railing in ground floor

Verendah Railing in ground floor

Verendah Railing ht. in typical floor

Three side closed

Two side closed

Balcony	No. of balcony	Size of balcony	Shape
---------	----------------	-----------------	-------

Support of balcony.	Bracket	Simple cantilever		
	Corballed	Other		
Stair case	Location of staircase			
Trade width	Rise ht.			
Height of stair railing	Railing type			
Sketch of Balustrade	Solid	Perforated		
	Grilled	Other		
Section of handrail				
No landing				
Landing	No. of landing between two floor			
Width of landing	Length of flight			
No. nosing	Nosing	Material		
Type of stair				
Single flight stair	Width	Location	No. of Steps	
Double flight (normal) stair				
Quarter turn newel stair				
Circular stair				Diameter
Bifarcated stair				
Spiral stair				Diameter
Geometrical stair				Shape
Other				
No service stair				
Service stair			Location	Width
Type of use				
Closed stair				
Open to sky				
Prayer space/ <i>Mandir/ Masjid</i>				

Pent house	Size	Location	
<i>Nach ghar</i>			
<i>Kachari room</i>			
Shop			
Production area			
No. of story :	Single	Double	Triple
Space relation ship			
Drawing room with other rooms/Spaces			
Dining room with other rooms/ Spaces			
Bed room with other room/Spaces			
Toilet with other room/ Spaces			
Kitchen with other room/Spaces			
Use of roof	No. use of roof		
Roof garden			
Flower beds on roof			
Total no. of room	Total no. of Verendah		
Elements :			
Plinth:	Height	Special feature	

Step	Width		Roak	No.
Column	Type		Dia	No.
Base	Type			
Capital	Type			No.
Non structural column	Location		Size	No.
Pier	Size		Shape	
Alcove	Size		Shape	No.
Wardrobe	Size		Shape	No.
Archade	Location			
Col. to col. distance				
Pier to pier distance				
Colonnade	Location			
Col. to col. distance				
Both archade and colonaed	Location			
Arch.	Type	Span	Key stone	
Location	Span		Springing ht. of arch	
Ht. of curve(rise)				
False arch	Releaving arch			
Vertical distance between two arches				
Opening				
Door	Type	Size	Material	
window	Type	Size	Material	
Sill	Projection	ht.	Depth	
Lintel				
Shading devices	Type	Depth	Material	
Drop	Type	Depth	Material	
House corner	projected	plain		

Grille work					Material
Beam		Width		Depth	
Bracket		Shape	Location		Material
Fire place		Size	Location		
Chimney		Location		Material	
Projection		Location		Material	
Moulding		Location		Material	
Parapet		Height		Material	
Thickness of parapet wall					
Type of parapet wall.		Simple	Perforated		
		Sculptured	Moulded		Decorated
		Dalusteria			Other
Coping	Material		Sketch		
Spout	Location		Material	No.	
Pediment	Type		Shape	No.	Location
Rusticated block	Shape		Location		
Dome	Size		Shape	Location	No.
Diameter of drum			Ht. of drum		
Dome supported by solid drum wall					
Dome supported by columns					
No. of column					
Ht. of the dome curvature			Material of dome		
Pendentive type					
Sketch of dome					
Vault	Size	Shape	Location	No.	Material
Ventilator	Size	Shape	Location	No.	Material

Kiosk/cupola	Size	Shape	Location	No.	Material
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Pinnacle	Size	Shape	Height	No.	Material
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Organisations of spaces:

Covered area	Sft.
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Configuration of the house block

Broken plain

Straight plain

Parapet line	Brokens	Straight
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Space organization

Introvert	Extrovert
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Detached	Enclosed
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Complete enclosed	Partial enclosed
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Composite bungalow	Consolidated bungalow
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Building Composition.	Symetrical
	Assymetrical

Balancy in composition.	Balance
	Unbalance

Balancy.	Symetrically balance
	Assymetrically balance

Reason for unbalancy

Zoning between:	Clear	Not clear
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Front and back

Inner and Outer

Male and female

Served and servtces

Clean and unclean

Design principles

Rigid

Flexible

Orientation of the house:

Long axis east- west

Long axis north - south

Circulation of the building:

Covered

Uncovered

Single loaded corridor

length

Width

Facing

Double loaded corridor

Length

Width

Facing

Linkage. Rooms/ Spaces are linked

by corridor

by spaces

Corridor with colonade

Corridor with archade

Open ended corridor

Closed ended corridor

Shape of corridor. Straight

Curve

Zig-zag

Other

Function of corridor.

Walk way only

Other function

Type of function

Protection of corridor against rain and sun.

protected

Type

Not protected

Type of projection.

Projection

Material

Drop wall

Material

Other

Type of arch in corridor

Sketch

Hierarchy of spaces (from the entry)		
Change of design,		
Demolition of any part		
Expansion	Horizontal	vertical
Improvement	Qualitative	quantitative
Brief description		
Design module		
Horizontal		
Vertical		
Phases of construction		
Nature of growth pattern		
Building materials:		
Foundation		
Wall		
Column		
Pier		
Beam		
Lintel		
Floor		
Roof		
Parapet		
Stair slab		
Railing		
Balustrade		
Mortar		
Roof terracing		
D.P.C		

Finish materials:

Plaster

Floor finish

Toilet	Wall	Floor
--------	------	-------

Kitchen Floor	Wall	Floor
---------------	------	-------

Inside finish

Colour	Outside	Inside
	Natural colour of material	Natural colour of material
	Artificial colour	Artificial colour
	Single colour	Single colour
	Multi colour	Multi colour
	White wash	White wash
	Colour wash	Colour wash
	Other	Other

Construction systems:

Foundation

Wall	Thickness
------	-----------

Ground floor

Upper floor

Roof

Vault

Dome

Arch

Beam

Lintel

Column

Bond

Plinth **Height:**

Parapet

Railing **Bahustrade**

D.P.C **Thickness**

Void in plinth

Expansion Joint

Facade treatment :

Facade type: **Palladian**

Archaded

Collonaded

Plain

Combination of

Repetition of some treatment in different floor

Facade treatment change in each floor

Balance facade

Reason of unbalancy

Solid void relationship

More solid in facade

More void in facade

Proportionate facade

Scale: **Residential** **Public** **Semi- public**

Rythmn in facade

Order

Contrast

Unity

Direction

Movement

Attention

Dominance

Sky line. Straight

 Broken

 Sky line broken by

Height of the components

Plinth

Ground floor

First floor

Varendah

Other

Ornamentation:

Styles in Ornamentations

Ornamentation by builtform

Type (name) of built form

Ornamentation by decorative element

Type (name) of element

Ornamentation by surface decoration

Type	Location	Sketch
------	----------	--------

Elements of Ornamentation

Lines	Location
-------	----------

Bands	Location
-------	----------

projection	Location
------------	----------

Dentils	Location
---------	----------

Tablets	Location	Size
---------	----------	------

<i>Jaliwork</i>	Location
-----------------	----------

Carving	Location
---------	----------

Texture	Location	
Paints		
Mural	Location	Nature
Sculpture	Location	
Human	Male	Female
Animal		
Bird		
Abstract		
Other		
Colour.	Outside. Natural colour of material	
	Artificial colour	
	Single colour	
	Multicolour	
	Inside Natural colour of material	
	Artificial colour	
	Single colour	
	Multicolour	

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