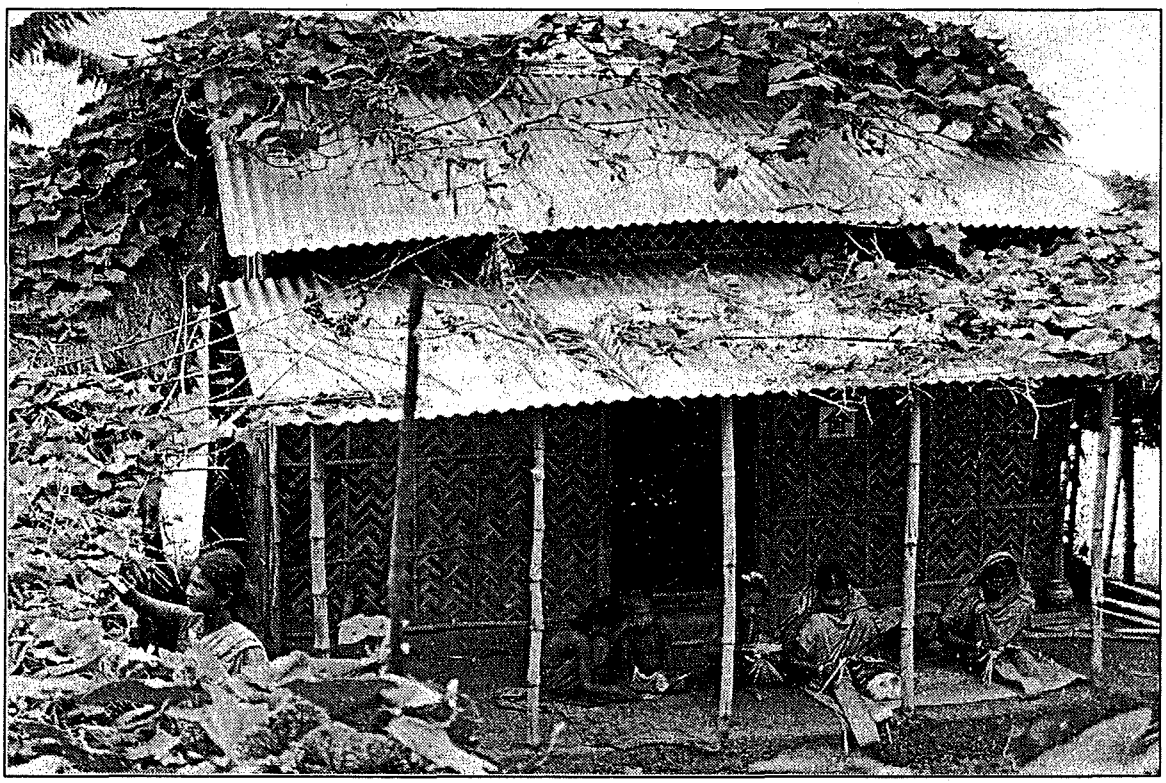
1989 Technical Review Summary
by *John Norton*

1066.BAN

Grameen Bank Housing Project

Dhaka, Bangladesh



Architect
Grameen Bank Engineering Section
Dhaka, Bangladesh

Client
Grameen Bank Members
Various location, Bangladesh

Completed
1984 ongoing

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I. Introduction

The GB Housing Loan Programme has developed out of the Grameen Bank project which was started in 1976 to raise the incomes and the standard of living of the most disadvantaged sections of the rural community in Bangladesh through providing access to credit. The Housing Loans are an extension of the same policy, and permit GB members to borrow sums worth between US$ 250 and US$ 600 to build a new house, which they can repay through the increased revenue made possible from earlier loans. The aim is for the loanee to achieve a basic durable and flood resistant structure with a waterproof and durable roof. On this basis, the GB member can develop the house to suit the local context and available additional resources. The GB requires that the roof be covered in corrugated iron sheeting supported by 4 reinforced concrete columns, manufactured by the bank. Housing loans began in 1984, and to date over 44,500 houses have been built by GB members. The repayment rate including 5% interest is close to 100%.

II. Context

a. *Historical Background*

Bangladesh has a population of approximately 78 million people. Of this population, about 85% live in the rural areas, and, significant in the context of the Grameen Bank activities, about 60% of the rural population are classified as landless. The landless have no agricultural land, and either own less than 0.5 of an acre, or have no land at all, the latter representing 11.5% of the rural population. In a country where the national per capita income is estimated at only US$ 140 per annum, the income levels of the landless rural population are considerably lower. Many of the people in this category are effectively destitute or near destitute.

The rural landless poor in Bangladesh are also amongst those who suffer most when floods and cyclones occur, in part due to the marginal conditions in which they live, raising their exposure to risk, and in part due to the frailty of their homes, directly related to their poverty and the common lack of land security.

Although the landless rural poor provide the bulk of the agricultural labour, they are not primarily engaged in farming activities. Taking both the women and the men together, a substantial part of their time is spent on a wide variety of non-agricultural activities such as weaving, mat making, small scale trading, rice husking, rearing a few goats or ducks, keeping pigeons, sewing, potting and so on. A full list of activities would be both long and diverse. Not all the time is used productively, but in many cases it is the lack of finance - and by extension the lack of material or the tools with which to be productive - which prevent the man or woman concerned from rising out of poverty.

The Grameen Bank Project - and this did not in its early days include a housing component - was started in 1976 in the village of Jobra, by Dr. M. Yunus, then Director of the Rural Economics Programme in the Department of Economics in Chittagong University . It set out to provide credit to the rural landless poor for income generating activities. The significance of this project was that the Grameen Bank project offered credit at a low interest rate (16%), without requiring collateral, to people living in rural areas. In the past these people had been debarred from obtaining credit from formal institutions due to lack of collateral, and had therefore been dependent on borrowing from the informal sector at exorbitant rates of interest. The GB Project opened the door to credit for people who were only able to repay through their own efforts, for the most part in non-agricultural activities. In effect, the real collateral from borrowers in the project was provided through the GB requirement that the future loanees organise themselves into a small Group - now set at five people. The Group provides collateral in the form of mutually exercised discipline and vigilance to ensure that loans by Group members are repaid on time - since if not it

is the Group that suffers. Nor at the start of a Group are loans granted immediately to all group members at the same time, thus ensuring peer group pressure within the group. The failure of one member of a GB group would lead to jeopardising the possibility of other group members of getting loans.

The Grameen Bank Project was transformed into an independent bank with the name "Grameen Bank" in 1983. The Government provided 60% of the initial paid up share capital while 40% was held by borrowers of the Bank. More recently this has been revised so that the Government's portion is set at 25% whilst the remaining 75% of share capital is subscribed by the borrowers of the Bank.

The structure of the bank and the conditions of membership are as follows. Any person whose family owns less than 0.5 acre of cultivable land, and the value of all the family assets together does not exceed the market value of one acre of medium quality land in the area is eligible to take loans from the GB for any income generating activity. There can only be one member per household. To get a loan, he or she must form a group of five people who are like minded and who have similar economic and social status. Each group elects its own chairman and secretary. The group must hold weekly meetings. Several groups in a village find a convenient day and time to hold their weekly meetings together, and this congregation is known as a "Centre", with an elected Centre Chief and Deputy Centre Chief. The Centre Chief conducts the weekly meetings and is responsible for the observance of all rules prescribed by the Bank. Between 2 and a maximum of ten groups can form a centre, with an average of 6 groups. 84% of Grameen Bank members are women, and this is supported by the GB belief that women are a potential and reliable economic force amongst the poor.

The members of the Bank have over the past decade evolved, through gatherings, a form of Manifesto called "The Sixteen Decisions", which are adhered to by all the groups, and in which much of the spirit and the thinking of the GB is embodied. They are included in Annexe 2 of this report. The third decision states "We shall not live in dilapidated houses. We shall repair our houses and work towards constructing new houses at the earliest".

Loans are given to individual members or to the group. Although there are lots of informal interlocking responsibilities, formally only the individual is responsible for her own loan. All general loans are for a one year period, and are paid back in weekly instalments, each instalment being 2% of the principal amount. The interest rate is 16%. Loan repayment instalments are received by the GB Branch Assistant who comes to the weekly meeting. In addition to paying back the loan, every group member deposits one Taka per week (A taka is the unit of Bangladesh currency; TK 30 = US$ 1) as a personal saving, which is accumulated in an account called the Group Fund Account. Over and above this saving, when a group member receives a loan an obligatory deduction is made of five percent of the loan amount, known as a "Group Tax", deposited also into the Group Fund Account in form of a fee for the benefits of membership of the Group. Members can then borrow from this fund on a basis decided at by the group.

In addition, a member pays weekly into an "Emergency Fund", set at a rate equivalent to one-fourth of the total interest that she is paying for her loan to the bank. This fund is basically an insurance fund against default, death, disability, accidents and disasters such as floods.

Except under special conditions, the maximum individual loan at one time is TK 5'000 (US$ 166), although proven borrowers can get more. The smallest loan on record is for TK 1.

Each centre is looked after by a GB Branch Assistant (BA). The BA identifies future bank clients, organises and motivates them, disburses loans, supervises the groups under his charge, ensures recovery of loans, keeps accounts and - importantly - is involved in a large number of extension activities helping the members of his Centres. Each BA has up to ten Centres to look after, which in turn consist of an average of six groups of five members - a total of 300 people to see each week. The BA will work out of the Branch Office which supervises and services some 60 centres

located in about 20 villages. Ten Branch Offices are supervised by one Area Office, covering roughly an area of 200 square miles, in turn supervised by a Zonal office. Each Zonal Office looks after an average of 8 Area Offices. Within the structure of the Bank, the Zonal offices have a high degree of autonomy to administer activities within the broad policy framework of the Bank. The entire affairs of the Bank are overseen by the Head Office based in Dhaka.

As of March 1989, the Grameen Bank has 535'70 members covering 11'793 villages in 9 zones of the country (See Annexe 1 for breakdown). There are 571 Branches in operation, looking after 21'612 centres. Of these centres, 18'831 are composed of female Group members, and only 2'781 of male Group members.

Excluding the Housing Loans, the GB has currently disbursed just over 4'013'536'000 Taka (US$ 133'784'533) with a recovery rate, as of June 1988, of 98.35%.

b. Local Architectural Character

The Grameen Bank Housing Loan programme covers a wide geographical area, stretching from the north to the south of the country, and thus covering a wide range of local environments and detailed architectural styles.

Architectural Form

The vast majority of dwellings traditionally occupied by the landless are single story one or two room buildings. Some of the earth wall buildings in the area just to the north of Dhaka give the appearance of having a shortened upper storey, formed by the above ceiling attic space which has low walls with openings in it. Full two storey houses occur in the towns, apart from a few exceptions.

A family occupies an individual building, several of which form a cluster round a yard or as part of a village. In all the settlements surveyed, the house has adjacent to it other shelters, often very simple, for specific functions - cooking, stables, and working areas where these activities do not take place either outdoors or in the house itself.

Inside the house, whether divided into two rooms or not, the space is used for many functions: sleeping, on a wide wooden or bamboo bed; clothes storage, usually hung on the wall; storage of valuables related to work, such as spinning wheels, materials, a sewing machine, and where the activity permits it, a space reserved for an income generating activity, such as sewing. Grain, wood, cooking pots, bottles and other valued objects are also kept in the house. In some houses surveyed a space is used to form a religious (or superstitious) altar.

The most typical form is a rectangular building with a pitched roof (35°-45°), which has either hipped or gable ends, influenced by regional characteristics and type of roof covering. The floor area varies considerably, with tiny houses measuring 2x3 m, and up to 4x7 m. Pre GB Housing Loan houses would seem to be smaller than those now built by people having taken a loan. All the houses surveyed were built up on earth platforms, and this platform has in many cases been raised following the higher than normal floods in 1988.

The disposition of windows varies greatly. Some houses have none, neither in a new GB loan house nor in the old. Commonly windows are found on the main facade of the house, beside the door, and at their smallest may consist of a 25x40 cm bamboo lattice open trellis in the wall, or be a more substantial opening, in the order of 40x60 cm, protected by an iron grille and closed from within by wooden shutters. The absence of windows is invariably combined with the use of bamboo or jute stick matting for the wall which lets in light. The house may have only one door, or two, more common where the inside is subdivided into two rooms. The doorway provides much of the required illumination. Doors are made of bamboo matting or wood. The bamboo door may be

suspended between bamboo guides and slide horizontally, in which case it is more often on the outside of the house, but hinged doors are most often opening inwards. Inside the house a ceiling level platform is a common feature, making use of the base of the roof truss, on which valuables are placed.

Materials

- *Light Weight Frame Construction*

A very large proportion of the landless poor in the centre of the country live in shelters built with a bamboo or wooden frame which supports a light wall, made out of bamboo matting, or jute sticks, which are plastered with mud on some façades, largely depending on orientation and circumstances. The roof is most often thatched, using grass, rice stems, and also bamboo matting and jute sticks.

Where the occupant has been able to afford it, the roof thatch is replaced with corrugated sheeting - and if possible, the walls too are replaced with corrugated sheeting. The bamboo frame is replaced when possible by a timber frame, but in some instances the overall structure does not achieve sufficient solidity to support the roof weight. These buildings are at high risk to termite attack, and the walls in particular have a short life span, often in the order of two years. For a very substantial part of Bangladesh, flooding is also a major factor in the durability and the quality of rural housing, and the frame housing is often found in the highest risk areas - the floods particularly damage material already weakened by termites, and this includes the structure.

The bamboo and jute stick walls are still the cheapest way of providing shelter, and they are still the most easily replaced wall (and roof) building material. In marginal areas where flooding and land erosion are a problem the frame and light weight covering are important factors in saving property, since this allows the occupant to remove his house to safer land during the floods - transportability can thus be considered as a criterion of the successful shelter for the totally landless.

Bamboo, the basic traditional material for framed building, is increasingly in short local supply. Following the 1988 floods, bamboo for reconstruction was being brought in from India, and thus it becomes for many a costly material as opposed to a cheap accessible material. On the other hand jute, which in the past has been a major export material, is now no longer in such demand on the international market, and is thus increasingly available as a cheap building material. It is used in a natural state to make mats, and has a very short durability. It is thus a poor substitute for bamboo. To reduce termite attack, the wall panel is often stopped 4 to 5 cms above the floor/platform.

The floor is most commonly of earth, maintained by frequent re-coating with a wash of liquid mud which produces a good and tidy finish. Cement floors are quite rare.

- *Massive Mud Qall Construction*

In areas where flooding has not been a common event, earth is commonly used for building massive walls, (rammed earth and cob) on top of which a thatched roof or a corrugated iron roof is placed.

These buildings are typical, for example, in the Rangpur area and immediately to the north of Dhaka. They last a long time when protected from water. Of note in the context of the GB Housing project, in 1988 many earth buildings were flooded in the exceptionally high flood. The walls were unable to resist standing in water and many houses collapsed. Their occupants have lost confidence in this type of wall construction and appear to have switched to one of

two alternatives - either to build a frame house with light weight walls, or to include columns in the corners of the earth walls to support the roof. The latter has been happening with Grameen Bank Housing Loans.

The floor is most commonly of earth, maintained by frequent recoating with a wash of liquid mud. Cement is quite rare for the floor.

- *Other Materials*

Fired bricks are used in rural housing in small quantities, typically at the base of frame walls. Reinforced concrete is rarely used traditionally in the landless poor's housing, although some examples of RC Columns were noted during the survey in houses not built with the assistance of a GB loan.

c. *Climatic Conditions*

The climate of Bangladesh is classified as tropical monsoon. There are regional differences, but overall conditions can be typified as being hot, dry bulb temperatures rising to 43°C, and remaining warm for most of the year, even though in some places night time temperatures drop to 7°C or 8°C. The rainfall is very high and falls mainly between April and November, during which period humidity is also high. Cyclonic storms are frequent mainly in the south of the country, particularly during the summer months when sea temperatures are highest. Flooding is an annual event, linked to the high rainfall, to tidal surges during storms, and to the increased run off from mountains notably to the north of Bangladesh, which over-fills the rivers running through the country.

d. *Immediate Context of the Site*

The GB Housing Loan Programme extends to many different places, and thus no specific site description is possible. All of the GB Housing Loan building construction takes place either in rural settlements, or isolated plots beside road embankments or in the fields. The following three descriptions of houses built with the help of a GB Housing Loan will give an impression of the context within which the project is taking place.

- Afiya Begum has been a GB member for 9 years, and took a house loan after her previous land was removed by flooding. Her present home consists of a one room 6x4 m house and a kitchen outbuilding, measuring 2x4 m. The two buildings are at right angles to each other and in the small courtyard formed in front of them is an open cooking area. The buildings stand on a mound of earth some 14x14 sq m (196 sq m) piled up steeply several metres above the paddy fields which surround three sides of the dwelling, and adjacent to the main Tangail - Dhaka road. On this land she also keeps goats, ducks, which bring her in an income, and she is about to build a latrine on the small site as well. She lives with her husband and three children. Since moving to this land, which she bought with a GB loan, from a local landowner, her house has again been damaged by flood and more of her small land removed.

- Kamala Begum lives with her husband in a new GB Loan house, in a small compound with three other households and their outhouses. She sews to earn her living using a sewing machine bought with a GB loan, and her husband rides a rickshaw cart which she bought him from her savings. He owned the 850 sq m on which they live and this has been transferred to her name, since she is the GB member. The site of the houses is high above the surrounding paddy fields, which they do not own, but there is quite a large open yard between the various buildings, and a big clump of trees at the same level to the westward side of the site. The land slopes quite gently down from this cluster to the fields below. They are about 50 m away from the Tangail - Dhaka road.

- Rahissa Begum has a two room 5x3 m house built with assistance from the GB Housing Loan. She lives in the densely clustered village of Habibpur, Munshiganj Upazila (District), and her house is next to the river bank on one side, but faces out to a small neighbourhood open area in the village on the other side. Next to her house she has a kitchen shelter, and there are other buildings at either end of her own. There is little room for expansion, but she wishes to get an additional portion of the potential housing loan to make her house bigger for her four sons and one daughter who live with her. She earns her income from two milk cows which she obtained with GB loans. The land itself was owned by her husband, who has transferred it legally to her.

e. Topography

Because the programme is spread across different areas of the country, no specific topographic details can be given. However, in the areas surveyed, the predominant factor in settlement and topography is the need to get onto land above flood level. This land is in short supply, and results in dense clusters of houses and work places, or in isolated mounds of earth amongst the fields on which one or two homes may be perched. The Chittagong area, which was not surveyed, is not subject to flooding, and land pressure is not so great.

III. Description

a. Conditions Giving Rise to the Formulation of the Programme

Amongst the landless rural poor of Bangladesh, the quality of much of the shelter has traditionally been extremely poor, in the degree to which protection from rain is achieved, in the house's capacity to withstand the effects of cyclones and flooding, and in the degree to which it provides security for belongings and a potential workplace for the occupants. The poor quality of the shelter has been linked to the higher incidence of some diseases, notably fever. Additionally, the low durability achieved with many of the common building materials used results for many households in a recurring annual or bi-annual expense, particularly resulting from damage caused by flooding and storms.

In 1983 the GB organised a National Workshop to allow GB workers to exchange their practical experiences and ideas. Through this gathering, it became clear that as the income generating capacity of GB borrowers improved, the demand for better housing was becoming the next biggest need to be tackled. The decision was subsequently made to start a Housing Loan Programme, not just as another item for which a general loan could be requested, but as a specific and important part of the GB operations.

From the beginning, improved income generation amongst the landless has been the stepping stone to achieving an improved house with the assistance of a loan.

b. General Objectives, Lending Policies and Procedures

The GB Housing Loan Programme(s) aims to make funds available for house building or rehabilitation to GB members. Because the sums involved are much larger than those available through the general loan programme, new lending policies and procedures have had to be set up.

The housing loans were originally aimed at GB members who had already maintained a regular payment schedule on normal loans, and adhered to all the conventions and rules of membership of the GB. Preference has always been given to those who are the most needy, and since the

floods in 1987 new criteria have been introduced to make it easier for the flood damage sufferers. The GB now has a two tier system of housing loans, the larger for amounts up to TK 18'000, called the "Standard Housing Loan", and a smaller loan up to TK 10'000 called the "Basic Housing Loan". Loans are repaid at a rate of TK 1'000 per year, so that someone taking a TK 15'000 housing loan will have a maximum of 15 years to pay it back in. The housing loan is charged at 5% interest, instead of the 16% interest charged for the regular and shorter term loans.

Housing loans are restricted to those Branches which have the following features:
- the Branch is at least two years old;
- the discipline of the Centre is excellent;
- the payment records of the loanees of the Branch are perfect;
- the Branch has demonstrated its skill and efficiency in official works and accounts.

The individual members and the Centre as a whole in an eligible Branch should also meet the following criteria:
- the Centre is at least two years old;
- the Centre has its own Centre house;
- the Centre's discipline is excellent;
- repayment records are perfect;
- the Centre is free from dowry (paid traditionally in marriage), (The GB are trying to eliminate dowry payments);
- The socio-economic programmes contained in GB's Sixteen Decisions are adopted and generally practiced.

The individual loanee must also meet certain criteria:
- he or she must be(as) a second time loanee;
- there must be a perfect record of past payments and strict compliance to GB's rules and regulations;
- he or she must have the land on which the house is to be built, in his or her own name. If not, GB can loan money to buy land.

Regarding the question of land ownership, in many cases it is the husband who owned the land whilst the wife is the GB borrower. The husband has to transfer the title deeds of the land to his wife. This transfer is not always achieved without some bitterness, as the roles of husband and wife are reversed.

Certain categories of GB members get preference for a housing loan:
- complete have-nots, the homeless, the totally landless;
- women having no earning male members in the family;
- female loanees (who will need to obtain or have the land in their names)
- the poorest and the most needy loanee in the Group or Centre;
- a Centre which is willing to set up a cluster of houses by purchasing land at a selected location shall be preferred to those Centres having individual and scattered sites.

The eligible loanee, before applying for the Housing Loan has to provide the following information:
- the estimated loan amount;
- how the money will be spent, item by item;
- the proposed type of house;
- the condition of the present house;
- land ownership;
- present source of income;
- possible repayment schedules.

As well, the applicant has to sign a pledge containing an unconditional promise to fulfil the following obligations:

- the repayment of loan instalments, including interest and the emergency fund on a weekly basis;
- compliance with conditions for withdrawal of the funds;
- completion of the construction within 15 days;
- use of the loan in accordance with items stated in the application;
- construction of a pit latrine;
- no transfer of ownership until the loan is repaid.

The Centre, with the signature of all its members, has to pledge that it will repay the liabilities upon failure by the loanee to continue the repayment partly or fully; to assist the loanee build the house; and to assist the loanee in a quick and regular repayment of the loan and to ensure the liquidation and re-scheduling of the loan liability keeping in mind the interests of the bank.

The loan request is initiated by the Centre, and once it has the recommendation of the Area Manager or Area Programme Officer, the Zonal Manager or Zonal Programme Officer approves. The loanee gets a special pass book, and there is a provision for making regular weekly payments as well as a lump sum at the end of the year if this has been agreed.

After the 1987 and 1988 floods, the relaxing of some of these criteria was deemed necessary by the GB so that the sufferers could resume their economic activity (frequently linked to having a home) and cope with the disaster. A new policy of post flood housing loans have now a revised set of criteria.

The worst affected member should get preference over others:

- the eligibility of loanees shall be those affected by the flood;
- among the affected the preference will be in order of the criteria listed previously;
- the maximum loan is TK 10'000 (raised in October 1988 from TK 8'000). This includes a provision for a latrine costing TK 500;
- the entire loan will be put into the loanees current account as soon as it is approved;
- the initial withdrawal from the account will be to buy 18 Corrugated Iron sheets as specified by the GB;
- once the CI Sheets are bought, the loanee will be advised to buy other relevant construction materials. In any case, however, TK 1'300 must be kept for the purchase of four concrete pillars;
- 5% of the total loan will have to be deposited in the Group Fund Account and used for the purchase of the sanitary latrine slab;
- the weekly loan instalment is TK 20 in the first year. Special approval is required by the Area Manager for larger payments; in the second and subsequent years a payment level is agreed with the loanees;
- payments start within four weeks after the construction of the house and its occupation;
- the loanee must have land on which to build. The Zonal Manager can relax this if it is thought necessary.

In addition to this procedure, the concerned Area Manager in consultation with the Zonal Manager decides which branches are affected in his area. The Branch Manager in consultation with the Area Manager decides which centres are affected within the Branch. The Group and Centre members play the vital role of selecting who is eligible for a housing loan. After receiving their recommendation, the concerned bank workers make out the draft loan proposal once they have ascertained the extent of the damage.

The Branch Manager finalises the loan proposal and sends it to the Zonal Manager. The entire process is completed in two weeks at the most, and the house usually built within four weeks of getting the loan, with the help of the group, the Centre and the GB.

In practice there is now greater flexibility concerning the time that must pass before one can apply for a Basic Housing Loan, but everybody begins by taking at least one loan for income generating activities, and in most cases several sequential loans, and thus they are sure that they are ready to take on the longer term Housing Loan responsibilities and repayments. The Standard Housing Loan over TK 10'000 and up to TK 18'000 , still requires the two year delay.

c. *Functional Requirements*

The aim of the building design and the Housing Loan which relates to it, is to provide a starter structure which ensures that there will be a waterproof and durable roof, supported by a durable structure capable of withstanding the effects of flooding. At the same time, as much as possible freedom has had to be left to the loanee in deciding how to fill in the walls, how to arrange the openings, and how high the platform on which the building stands (if any) should be. Thus the loanee can adapt the house to the local context and the available resources. The beneficiaries need to be able to build the house themselves, with little or no technical assistance nor special skills, as this is important not only in giving them the choice of what to do, but also in lowering the cost. The materials need to be easily transportable by boat, bullock cart or rickshaw cart.

d. *Building Data*

The GB propose a basic house, which can be modified and extended according to the resources at the owners disposal and the context in which he or she lives. The Basic House can be achieved with the Basic House Loan; a larger house can be achieved with the Standard House Loan, but the materials indicated by the GB remain the same, and are considered a starting point to which more can be added.

The basic house has a usable floor area of at least 20 sq m. The GB manufacture four reinforced concrete columns to each loanee, which are usually sunk upright into the ground to a depth of some 0.50 m at the four corners of the house. The additional necessary posts are provided by the loanee, and are of wood, bamboo or reinforced concrete, as he or she wishes and can afford. The loan allows for the obligatory purchase on the local open market of 18 CI sheets, measuring 2'438x0'820 m each, sufficient to cover the basic house with a simple pitched roof, which is supported on a wooden or bamboo roof frame, and which in turn rests on the RC columns and secondary wooden or bamboo posts.

Walls are filled in with the material chosen and provided by the loanee. Similarly, the loanee decides on the number and type of doors and windows. In general hinged doors and window shutters open inwards, because, according to GB staff, shutters and doors which open outwards would be exposed to the sun and the rain and therefore deteriorate faster than those which open inwards. The height of the plinth and the composition of the floor are left up to the loanee, although in visits to recent houses built with GB loans all the floors were earth.

The Grameen Bank has a plan for the building, and makes sure that at least the minimal amount of built area has been achieved. Every loanee is, however, responsible for the real design of the building: based on the basic required components - roof sheets and the four columns - and the requirement of a rectangular plan covering at least 20 sq m, no two houses visited were the same. The buildings adhere to the local architectural character, including roof form - hipped or gable ended - wall materials, form of openings, as well as in the smaller detailing. There is considerable scope for individual expression. The finished built area is also variable, and often in excess of the minimum - and surveys of the GB housing has shown that GB Housing Loan beneficiaries are living in larger houses than before. Even the position of the concrete columns varies, noted in one case visited being placed away from the corners, but supporting instead the roof truss.

Since mid 1988 the programme requires the loanee to build a latrine, using a latrine base with syphon and cement liners to the pit which are made by the GB production yards. The loanee gets these at the time of starting the house, but does not get advise on where to put the latrine relative to the house or other buildings and wells.

The GB Housing Programme does not extend to influencing nor advising on siting, orientation, relationship with other buildings and with communal facilities. The GB is not involved with the construction of public facilities, provided normally through the Government or through the activities of other organisations. An exception to this is that the Centres are using savings to set up small schools for the younger children of members. This is usually taking place in the Centre building, and is linked to the working activities of the mothers.

The relationship with neighbouring buildings and families, and, within the house, the occupation of space by the parents and children, is left entirely to the loanee's family. In most cases the family has little or no chance of achieving any privacy.

e. Evolution of the Design Concepts

At the outset of the programme GB provided a loan for the construction of a house where the only constraint was to roof it with CI sheets. Thus early GB Housing Loan buildings have wooden supporting posts instead of RC columns. The introduction of the RC columns has been particularly a response to the need for a secure structure resistant to termite attack and in the event of flooding able to hold up the roof, on which, amongst other things, people could sit. The columns at the same time provide a secure attachment point for the walling materials and for supporting platforms for valuables. Thus less material is likely to be lost, and the house returned to use quickly. The performance of the RC Columns in the floods has been very good, and they are now widely seen as the basis for a solid house, and are taking on the same status of durability that the CI sheet already possessed.

GB are engaged in research to find alternative materials for different parts of the building, and have tried out, for example, stabilised blocks for the infill walls, with little success.

The concept of the buildings does allow for evolution and expression in the development of each building by the loanee family.

f. Structure, Materials and Technology

The Reinforced Concrete Columns and Latrine Kits.

These are manufactured at 34 different sites using moulds which can easily be moved to a different location according to the demands of the construction programme. The local Branch informs the production unit about how many columns and latrines are needed. The mason running the production unit receives a loan from the GB at 16% interest, to finance the production of the components, which are then collected by the loanee. The loanee arranges the transport - two can be transported by rickshaw van, and three men can carry one. Each column is 3.35 m long and 133x133 mm in cross section.

The production operates as an independent income generating unit. A mason and five labourers produce 29 columns per day, which sell at TK 325 each. The loanee of the production yard pays his workers. The columns are made with a mix of 2 parts cement: 4 parts sand: and parts brick chips. Each column has four 10 mm diameter bars and 13 links.

g. Origin of Technology and Materials

The concept and the design of the buildings originate in Bangladesh. Many of the materials provided by the loanee are local. However, although the corrugated sheeting is processed in Bangladesh, it is essentially an imported material. Cement comes from Bangladesh cement factories and also from Indonesia. Steel for reinforcing is milled in Bangladesh.

The GB have investigated organising the supply of CI Sheets, but for the time being this has proved unworkable. Instead, the loanee buys from the local market according to the quality specified by the GB, and this keeps money circulating within the local economy.

IV. Construction Schedule, Cost and Financial Performance

a. History of Project

The GB Housing Loan Programme started in October 1984 with a potential house loan of up to TK 15'000. There were 317 new housing loans in 1984, 1264 in 1985, and 461 in 1986. Following the floods in 1987 there was a sharp increase in borrowers, (21'366 in 1987 and 21'148 in 1988). This increase coincided with the introduction of a two tier house loan system, where the original housing loan amount was increased up to TK 18'000, and called the "Moderate Housing Loan" (MHL). A new "Small Housing Loan" was introduced for amounts up to TK 7'000. The SHL was renamed in early 1988 the "Basic Housing Loan" (BHL) and the sum available raised to TK 8'000. It has been raised again at the end of 1988 to TK 10'000. The BHL is taken nine times more often than the MHL. Within the limits of these loans, one is not obliged to take the maximum amount.

b. Total Costs, Repayment Rates and Main Sources of Finance

The Basic House Loan is for TK 10'000. This is repaid at 5% interest to the GB.
The basic cost breakdown of a house is as follows:

	TK
- RC pillars @ TK 325 each	1'300
- 2 bundles CI Sheets	5'000
- Sanitary Latrine	500
- Other materials including roof frame	3'200
Total	10'000

At the end of 1988, the GB had disbursed TK 337'582'618 to 44'556 borrowers at an average of TK 8'058 per head. The repayments are made weekly at a minimum rate of TK. If the loanee wishes, payments can be larger and the duration of payments reduced, but the maximum duration is fixed in the ratio of as many years as there are thousands of Taka borrowed - thus 18'000 repaid in 18 years. The repayment rate is running at close to 100%, in line with the current general GB repayment rate of 98.35%.

Although a great range now exists in incomes - largely depending how long the loanee has been a GB member, several families interviewed said that their weekly income for the household was in the range of TK 500 to TK 600, out of which 120 to 140 goes on loan repayments, and of which TK 40 per week is for the house.

Funding for the programme has primarily come from the Bangladesh Central Bank and from foreign donors, including the following sources: NORAID; SIDA; CIDA; GTZ; and IFAD.

c. *Comparative Costs*

The cost of some semi-permanent housing being provided by other agencies (as a gift) in post flood and cyclone rehabilitation programmes is in some cases as high or higher than the GB Basic House.

d. *Qualitative Analysis of Costs*

The average cost per square metre is TK 500 (US$ 16.6), including the cost of the latrine. Most people spend more, but also build a slightly larger floor area. Some houses visited which started with a GB Housing Loan have now risen to have a square metre value in the order of TK 2'000 - 2'500.

e. *Maintenance Costs*

Main maintenance costs are incurred in replacing jute or bamboo matting on walls, every two or three years if unprotected. The cost is not great.

V. Technical Assessment

a. *Functional Assessment*

The approach seems well balanced. The GB provides the funds for slightly more than they stipulate themselves - RC columns, CI sheets and the latrine - which gives some margin for finishing off the basic building. From discussion it would appear that people would - and do - go for the RC columns anyhow when finance permits, since they are becoming a proven element of the durable house. The CI roofing sheet has long been a desired element, linked with status and used as often as possible for the walls as well. The basic house also provides a good strong starting point for developing a better house, and it is significant that many loanees immediately put in an added amount of money from their own savings.

In making a technical assessment, one cannot dissociate the physical product and the provision of a loan from the fact that the GB has been providing general loans for the promotion of finance generating activities amongst GB borrowers. The Housing loan and its product is effective and operational because the loanees are already engaged in activities stimulated by a general GB loan which enables them to cope with the repayments for the house, and, in most cases, embellish it with the use of their savings.

b. *Climatic Performance*

The cooling of the interior of the houses is largely in the hands of the users - since they choose the infill wall materials and the position and number of windows and doors, and by extension, the degree to which the house has any form of insulation or cross ventilation. The use of the corrugated roofing raises temperatures, and many loanees add false ceilings.

Protection from rain is good, and for many households a significant improvement on traditional housing. When they can loanees add CI sheet walls as well.

Reduction of flood damage is reported to be significant - less money was spent by GB Home Loan house owners than by traditional house owners on repairing their house after the 1988 flood. This is however a very difficult aspect to assess - much of the damage comes from loss of land,

and loss of belongings. The RC columns do, however, provide a strong frame to the house provided major soil erosion does not take place. The RC columns can be removed from the ground - probably with some effort - and the house transported to safer land should serious erosion begin. In the 1988 floods, large numbers of people close to the main rivers were obliged to move with their entire houses and belongings.

c. Choice of Materials; Level of Technology

The level of technology is perfectly adapted to the users. All the materials are familiar, and no technical innovation is required. The difference is that for many it is the first time that they have been able to afford the GB recommended materials.

Nationally, using CI sheeting represents a drain on the economy, as does that proportion of cement which is imported, and the use of reinforcing bars. Examining the alternatives that could viably be proposed and accepted without much training or major promotion, suggests that the use of CI sheets and RC columns is for the time being the right approach. Although the GB network is such that it is well placed to promote innovative ideas, it is nevertheless unlikely that the popularity of the proposed house would be so great if it made use of unfamiliar materials which were not proven in the eyes of the user to be durable.

There is however reason for concern about the high consumption of bamboo and timber, since these are materials which are increasingly becoming scarce, notably for bamboo after annual flooding: whilst it is difficult in the short term to envisage replacing these materials for walls and the secondary structure, planting of new stands, notably for bamboo, should be encouraged.

d. Ageing and Maintenance Problems

The durability of the main components of the buildings must be seen in the context of the size of loan that has been taken and the related number of years that are needed to pay it off. The RC columns should last up to the maximum of 18 years possible with the largest loan; they present no value for money problem for the BHL house repaid in a shorter period. It is not so obvious that the CI sheeting will last 18 years in good condition, and the loan period of ten years would seem more realistic.

Despite the improvements achieved with the RC columns and the CI roof, wall building and the secondary columns are still of organic material, susceptible to termite attack and decay from dampness in warm conditions. This means that the walls of some houses will not necessarily be better than they were before, and need replacing as often. One family interviewed had used Aldrin (Poison) at the base of the bamboo posts in the new house to limit termite attack, and also proposed to coat the bamboo walls with liquid bitumen (quite a common technique in Bangladesh and provides protection from decay). Another house builder had wrapped the base of his posts in plastic. One example was seen where the owner had made short concrete columns stopping at floor level, with a metal plate protruding at the top to which the bamboo post was bolted.

VI. Users

a. Description of Those Who Use or Benefit from the Project

The rural landless (see Section II.*a.*) men and women of Bangladesh constitute the target group of the programme. There is a conscious policy of focusing on women amongst the landless, who are seen by the GB as representing the most disadvantaged group amongst the rural poor, as well as being effective fighters against poverty.

The vast majority of the users are self employed, and are able to participate in the GB Housing Loan programme because of the income they are now generating.

b. Response to Project

The response to the programme has been great. GB Housing Loan borrowers are increasing, and the GB plans to expand both the areas it serves and the number of loans that it can handle. The GB hopes to add a further US$ 22 million to the fund between now and 1992. The growth of the general loan activities and the GB Housing Loan are linked to the funds available (on the increase) and the capacity of the GB to train staff with the right attitudes to carry on the work in new and existing Branches, for which the GB does not foresee any problem. It is notable that in a country of high corruption, the GB appears to be immune, and its workers dedicated to the objectives of the Bank.

The reaction of the users is difficult to measure. The Bangladesh Institute of Development Studies have tried to assess the reactions of the GB Housing Loan house occupiers. From survey work in the Tangail, Dhaka and Rangpur Zones, on a sample of 116 House Loan borrowers, the occupiers rated the following things in order of importance as a result of occupying the new house:

- things are saved from damage caused by rain;
- things are saved from the hands of thieves;
- a decreased intensity of diseases;
- increase in the quality of work;
- increase in social dignity;
- capable of doing more as mental strength increases.

As significant, in the houses visited for the present survey, everyone had plans to go on adding to the house; many have already added four or five times the original investment on such things as better windows, a cemented floor, a roofed verandah, or additional rooms.

VII. Persons Involved

Identification of Key Project Personnel

They key people in the overall process are the Grameen Bank members themselves.

The development of the GB idea has been through the efforts of Dr. Muhammad Yunus, Managing Director of the Grameen Bank.

The architect responsible for the design of the Basic House is Ashraful Hassan, B. Sc. Engineering (Civil).

The programme would not have achieved so much without the work of the GB staff at all levels of the operation, who are too numerous to name, and who are therefore represented anonymously by the GB itself.

John Norton
Fumel, 9 May 1989

VIII. Project Significance

a. Achievement of Objectives

The GB Housing Loan Programme is ongoing, but the construction by GB members with the help of the loan of some 44'500 houses to date says a great deal about the success of the project relative to its objectives.

b. Relation to Cultural Context - Islamic Features

Two aspects are particularly significant. Firstly, the GB general loans and the GB Housing Loan are helping the landless to rise from poverty, and become a more secure and active force in the country. Secondly, the GB programme has actively favoured women. Increasing the independent income of women seems to have a strong impact on improving the welfare of the household. The women interviewed during the current survey were confident and appeared to take a more leading role than their husbands. It has certainly brought about a much greater degree of marital equality.

c. Impact on Local Environment

The impact on the local environment is quite strong. Where GB Housing Loan houses are being built, the physical environment is visibly better cared for, with a direct effect on the health and comfort of the users. The impact on social, cultural and economic conditions is more significant. The house is not only something that has become possible through the increased income of the landless, once achieved it also becomes a positive force in making the development of better conditions of life possible. The practical advantages (see Section VI*b.*, above) include better security, better protection from the rain, and for many, an essential place to work and keep equipment and materials, and thus contributes directly to improving the economy of the family. For many of the landless poor it becomes the hub of rural development . The house is also a basis and the expression of improved social status - just as the acquisition of a CI sheet roof has for a long time been regarded as a status symbol and mark of success. Linked to the effect of the GB general loans, perhaps the most significant impact is on the culture of Bangladesh, with the emergence amongst the landless of women as house and land owners (as well as in many cases the income generator for the family), where in the past they have frequently the most ill off and ill treated members of society.

d. Originality and Reproductability

The originality lies in the recognition that the landless poor can and do repay small affordable loans, through which they are able to achieve firstly a better income, and then a better house. The linkage of housing improvement to income generation is a central and important feature of the GB Housing Loan Programme. At the same time the recognition of women as a powerful force for poverty alleviation and the improvement of living conditions seems extremely significant.

The GB Housing Loan and its general activities has attracted much national and international attention. People are coming to Bangladesh for training, and the general approach is being currently tried out in the following countries: Malaysia, Philippines, Burkina Faso, Malawi, Sri Lanka, Bolivia, Colombia, Canada and USA.

The GB insist that the principles they have developed should not be changed during the first two years, after which modifications can be made.

Interest is now developing specifically on the GB Housing Loan programme, and within Bangladesh the UNDP are supporting efforts to test the reproduction of the idea within other organisations already working in the country. Kenya has expressed interest in trying out the approach. Running a general loan programme is a pre-requisite for offering housing loans, according to the GB model.

e. Influence

The programme should have an influence on low income housing programmes and policy in the Islamic world.

IX. Conclusion

a. Personal Appraisal

Bangladesh is quite special amongst less developed countries for the very large number of Non Government Organisations which are at work trying to alleviate, in particular, the problems and suffering of the rural landless poor. In the shelter sector, a large amount of the effort is channelled into relief operations, including the provision of houses - in most cases provided at no cost to the beneficiary, and in too many cases, the houses need to be replaced following the next year's flood or storm. The Grameen Bank manage to operate in similar conditions, but without the charity, and this seems important: the GB is managing to remobilise the efforts of the population to help themselves, which has in too many instances been eroded by external assistance. In effect, its activities restore self respect. In addition, the GB Basic House does genuinely seem to answer the most immediate needs of landless house builders. This would not however be possible without the ability of the people to pay - over time - and thus for the GB to revolve the funds and allow more people to benefit.

The programme, in the context of Bangladesh, places housing in its proper context, as part of a larger process of sustainable development, and one where sustained decent housing is not achievable unless the means and the will are available to maintain and improve the house based on a general improvement of household capacity.

It is thus surprising that there are not more organisations working along the same lines.

The Grameen Bank is not, however, alone in providing loans to the rural poor in Bangladesh for housing. BRAC (Bangladesh Rural Advancement Committee) also provide similar small loans, but based on a trial period of 6 months before the loan is allocated, during which the applicant has to save and demonstrate his ability to save - and thus repay. The amount equals 20 - 25 % of the loan amount. The repayment rate is closer to 90% and thus lower than the GB's repayment rate. The significant difference seems to be the weaker link between the promotion of income generation as a step towards taking on the responsibility of a house loan, and taking on the house loan itself. The house is less clearly a part of the larger process of sustainable development.

It would seem possible that the GB approach, or something similar, can be extended through a greater number of organisations to a larger proportion of the Bangladesh landless population.

These, however, are not the points which strike one when visiting the houses and the GB members in the countryside, and when talking to and watching the staff of the GB at work. The houses, whilst stronger, may still have walls which need frequent replacing, but it is clear that the new house provides a confident point of departure for a significantly more durable house. Amongst the GB members one is struck by the pride in what has been achieved and what can continue to be

achieved, and in a strong and expressed bond with the GB, not as a Bank, but as an organisation there to help and support, which is reciprocated in the behaviour and actions of the GB staff. One cannot help but be impressed, by the spirit as well as by the achievement.

b. *Proposed Apportionment of Credit and Prize Funds*

Should the GB Housing Loan Programme win an Award it would seem desirable to apply funds to the benefit of all the members taking on a GB Housing Loan in the future. Channelling Award prize funds directly into loans would have little impact. The search for material and technical solutions which could further improve the quality of rural housing would already seem one area worthy of support, and this would be welcomed by the GB. Furthermore, the dissemination and exchange of ideas - which in some instances already exist and are being used individually by GB members in their houses- as to how the less durable elements of the house could be protected, would seem worthy of support.

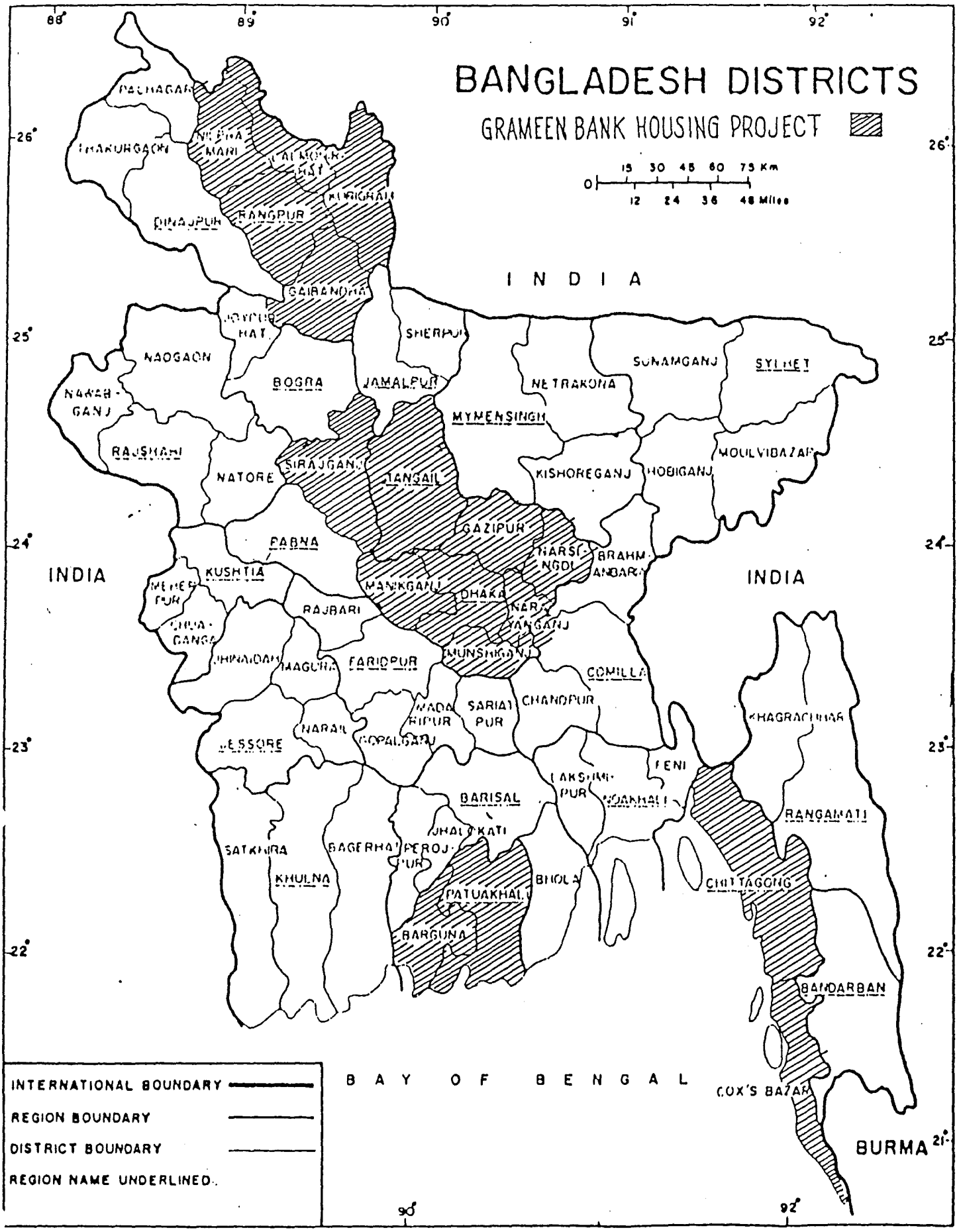
Major credit should go to the Members of the GB, and to the staff of the GB. Specific credit should go to Dr Muhammad Yunus as the founder of the GB. Additional credit should go to Ashraful Hassan and his colleagues in the Engineering Department, who developed the basic building design.

c. *Message of the Award*

The message most likely to be conveyed is that housing is a social process, and one where the architectural result may be of great simplicity. The Award would lend strength to the importance of 'social' programmes, and would be seen to support the belief that solutions to the housing problems of the poor can rarely be found in isolation from a broader effort to develop the capacities and resources of the concerned population. The Award would also give weight and publicity to the GB approach of extending credit without collateral to the very poor.

Although not everyone will be convinced of the potential of the GB approach, it is unlikely to raise any particular sensitivities.

John Norton
Fumel, 9 May 1989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DINAJPUR
GAIBANDHA
JOYPUR HAT
SHERPUR
NAOGAON
BOGRA
JAMALPUR
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NAWAB GANJ
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RAJSHAHI
SIRAJGANJ
TANGAIL
MOULVIBAZAR
NATORE
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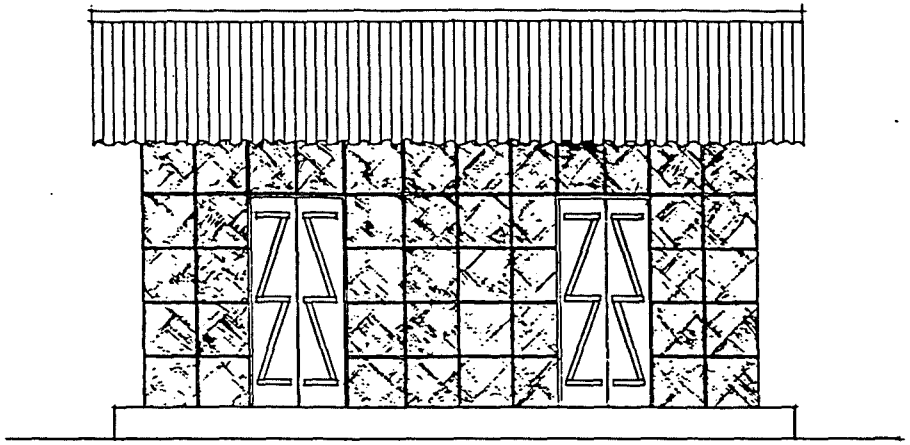

FRONT ELEVATION
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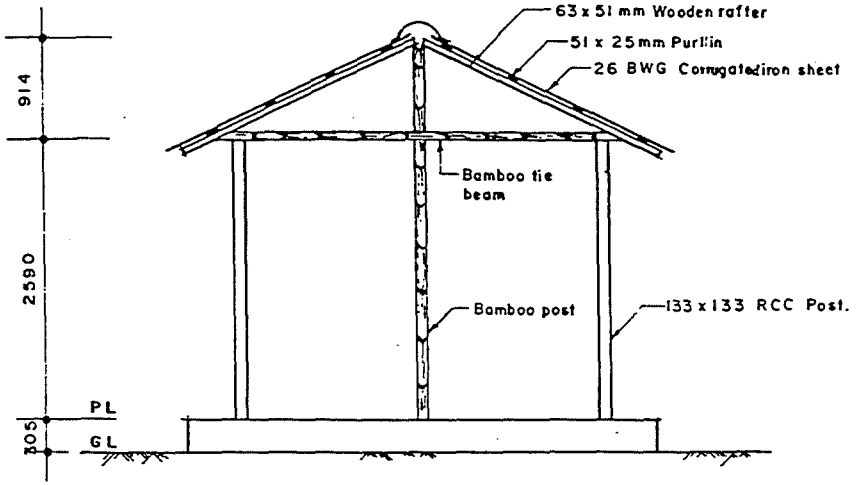

SECTION A-A
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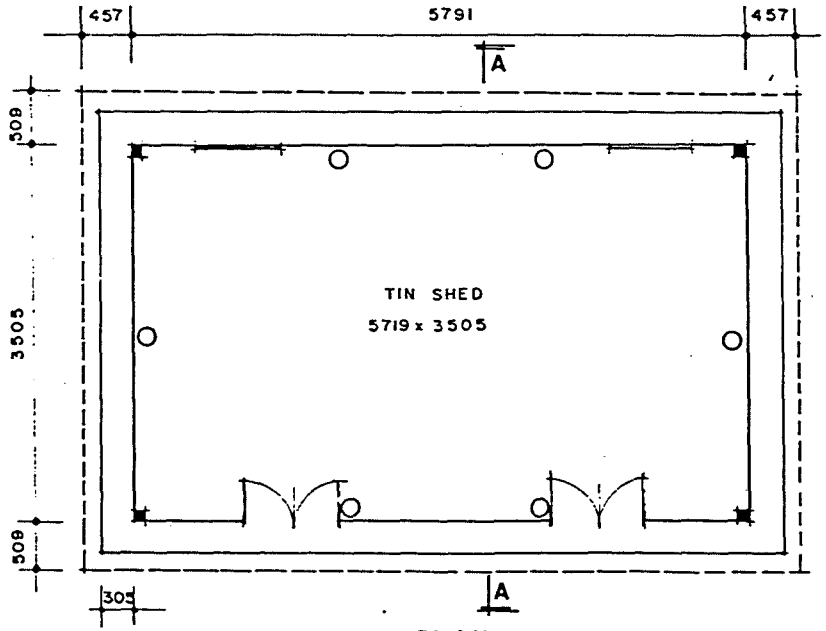
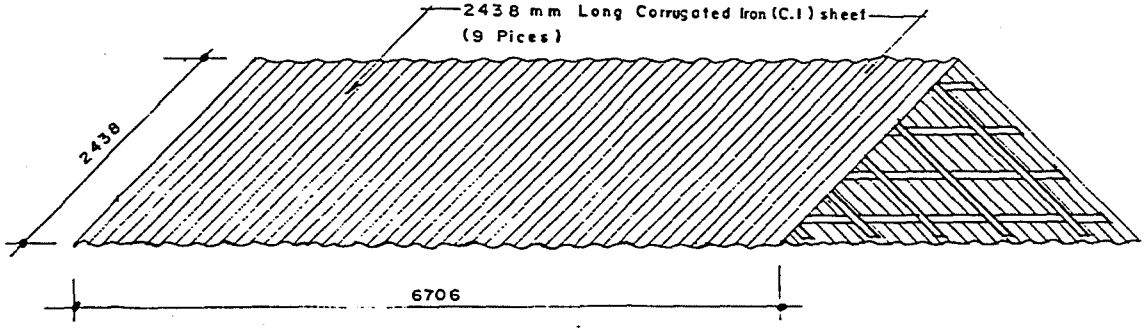
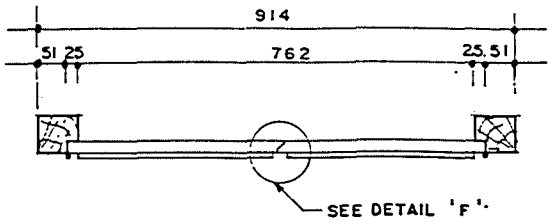


PLAN
SCALE 1:50



DESIGN BY ASRAFUL HASSAN
B.Sc. Engr. (CIVIL)



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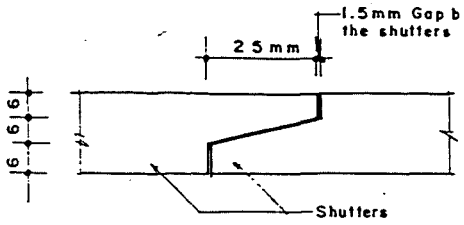
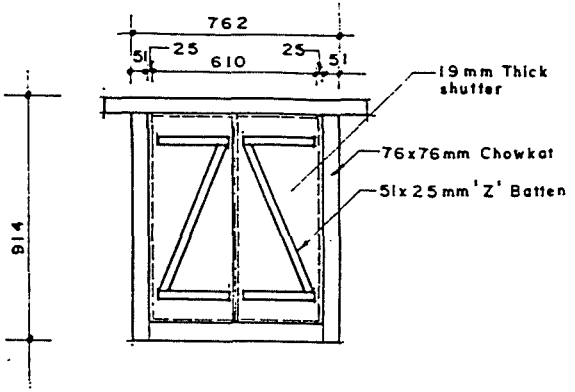


DETAIL F-F



ELEVATION OF DOUBLE SHUTTER WINDOW
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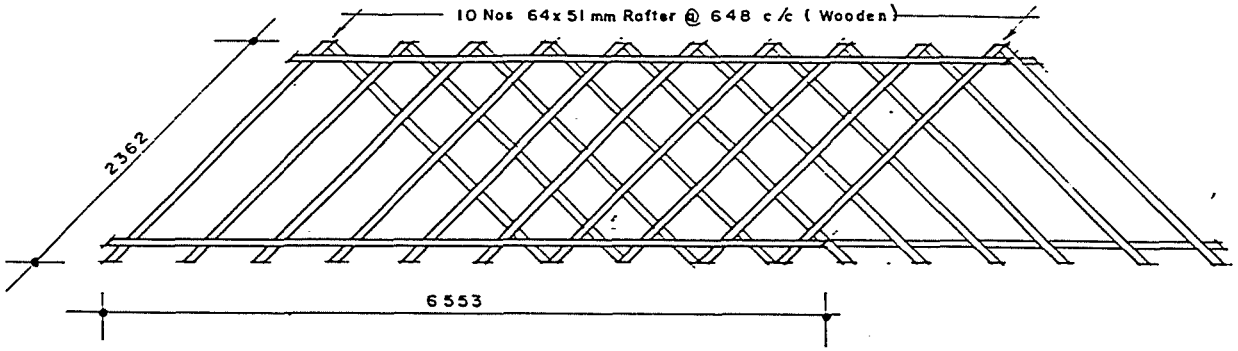

ROOF FRAME (RAFTAR)
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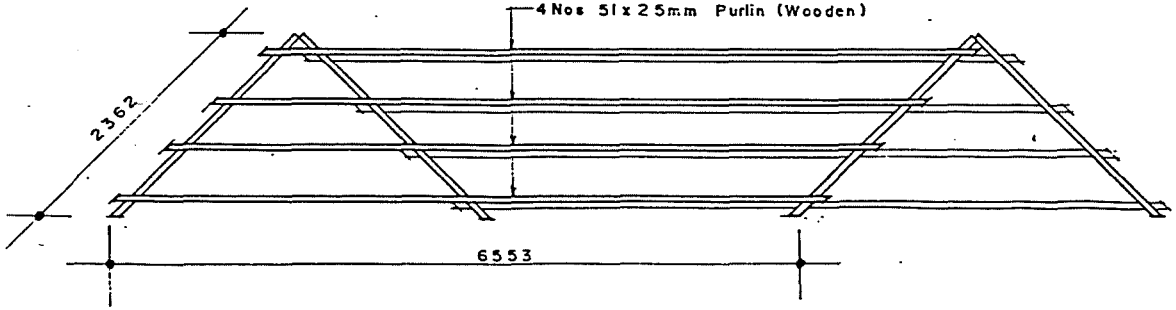

PARLIN ROOF FRAME
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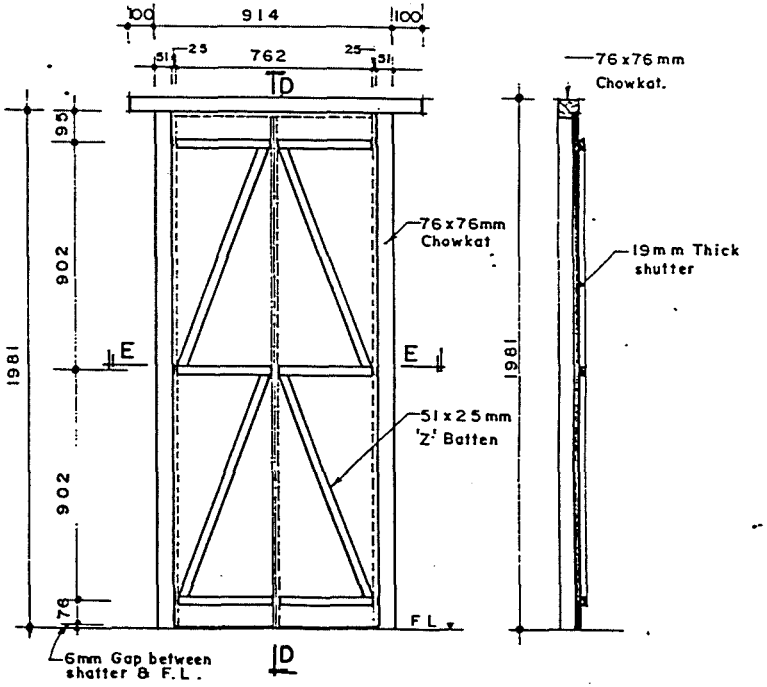

ELEVATION OF DOUBLE SHUTTER DOOR
SCALE 1:20

SEC. D-D
SCALE 1:20

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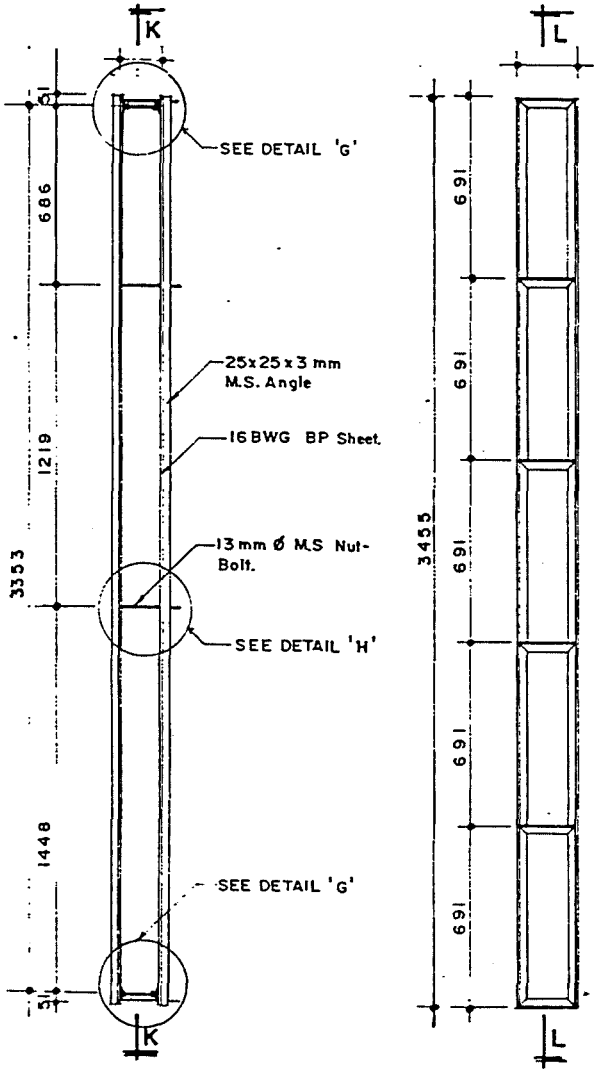
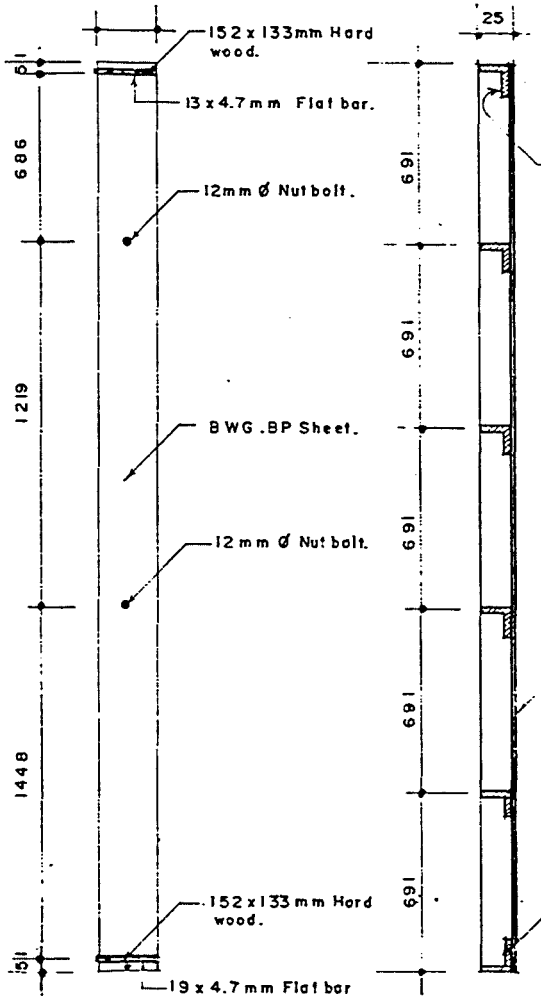
B.Sc. Engg. (CIVIL)



PLAN

SIDE ELEVATION OF
SCALE 1:20



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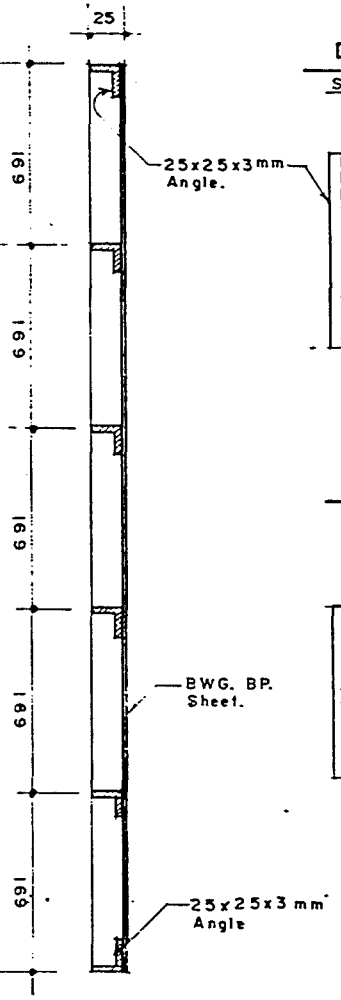

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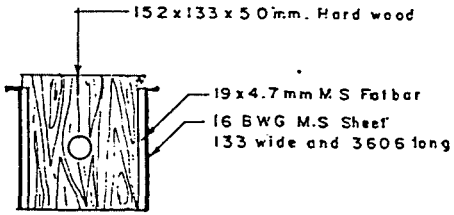

DETAIL— 'G'
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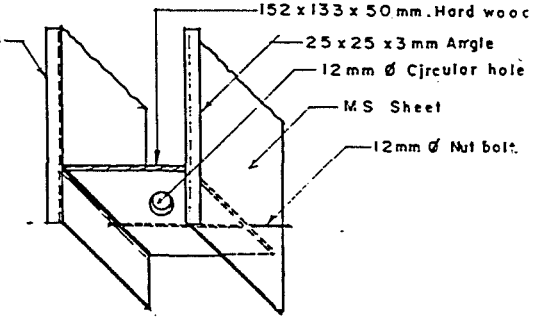

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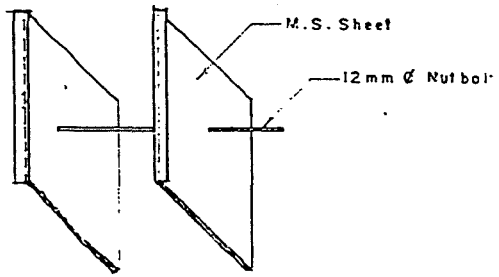

DETAIL — 'H'
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FORMA . FOR CUSTING R.C.C POST

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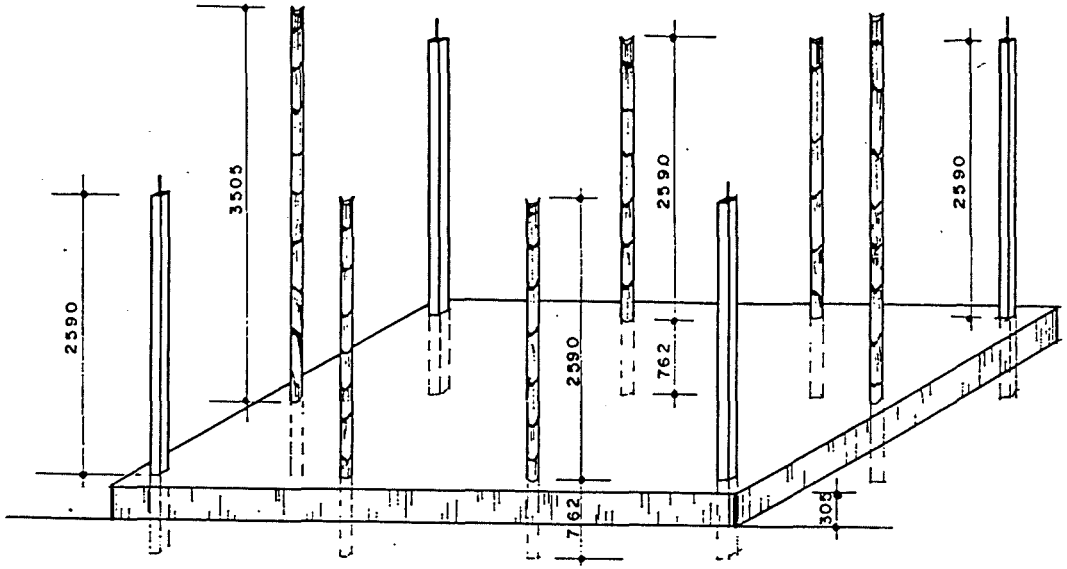
B.Sc. Engr. (CIVIL



POSITION OF POST
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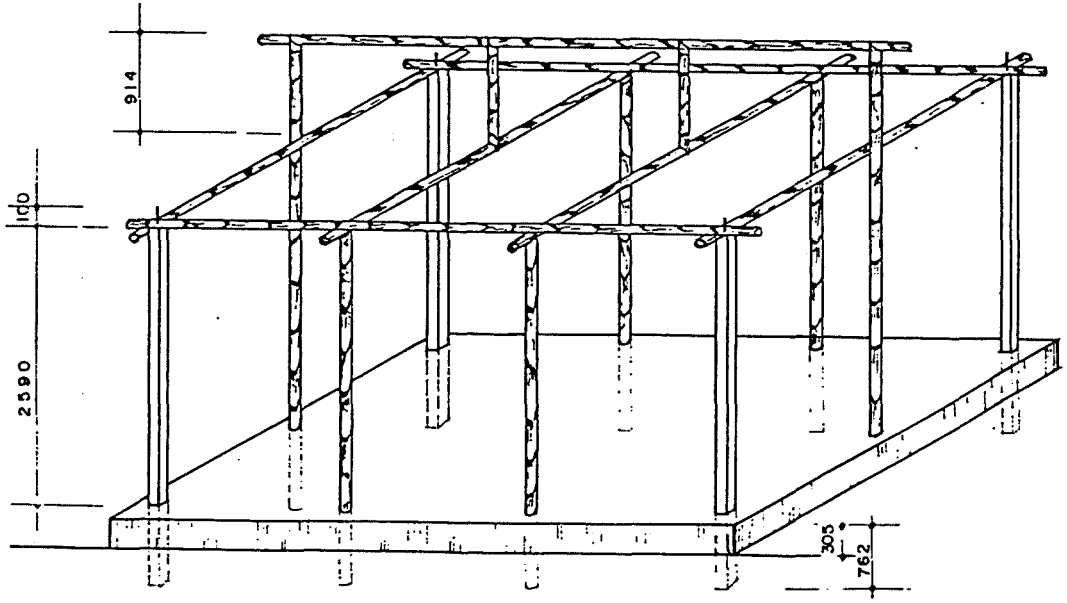

FRAME OF TIN SHED HOUSE
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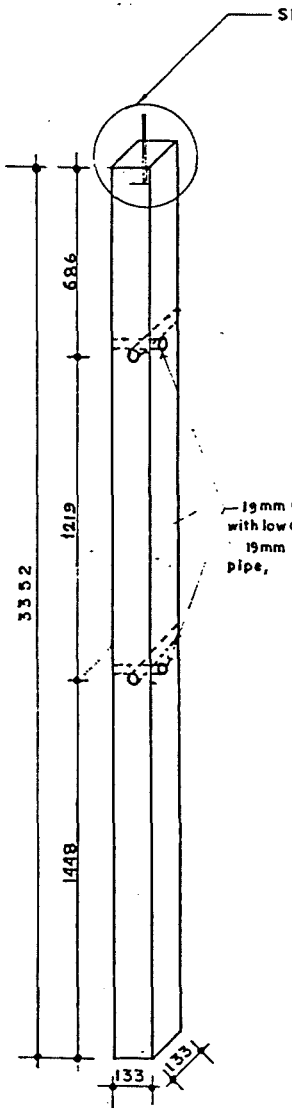

133x133 R.C.C.POST
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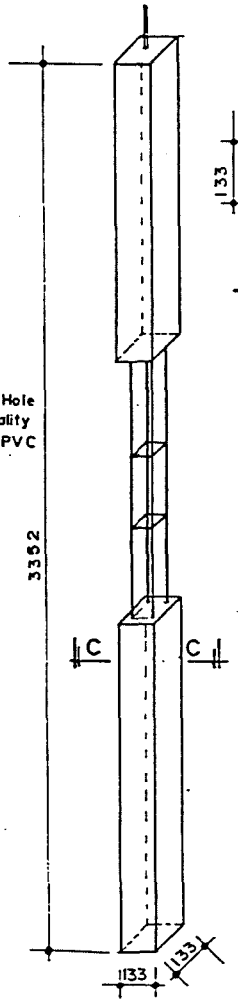

RE-BAR DETAIL OF R.C.C POST
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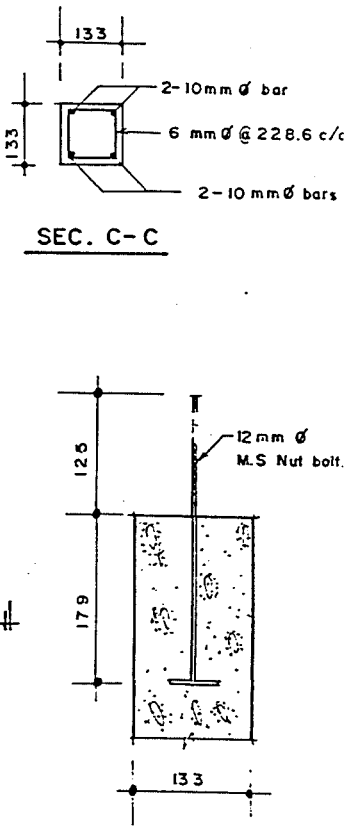

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B.Sc. Engr. (CIVIL)