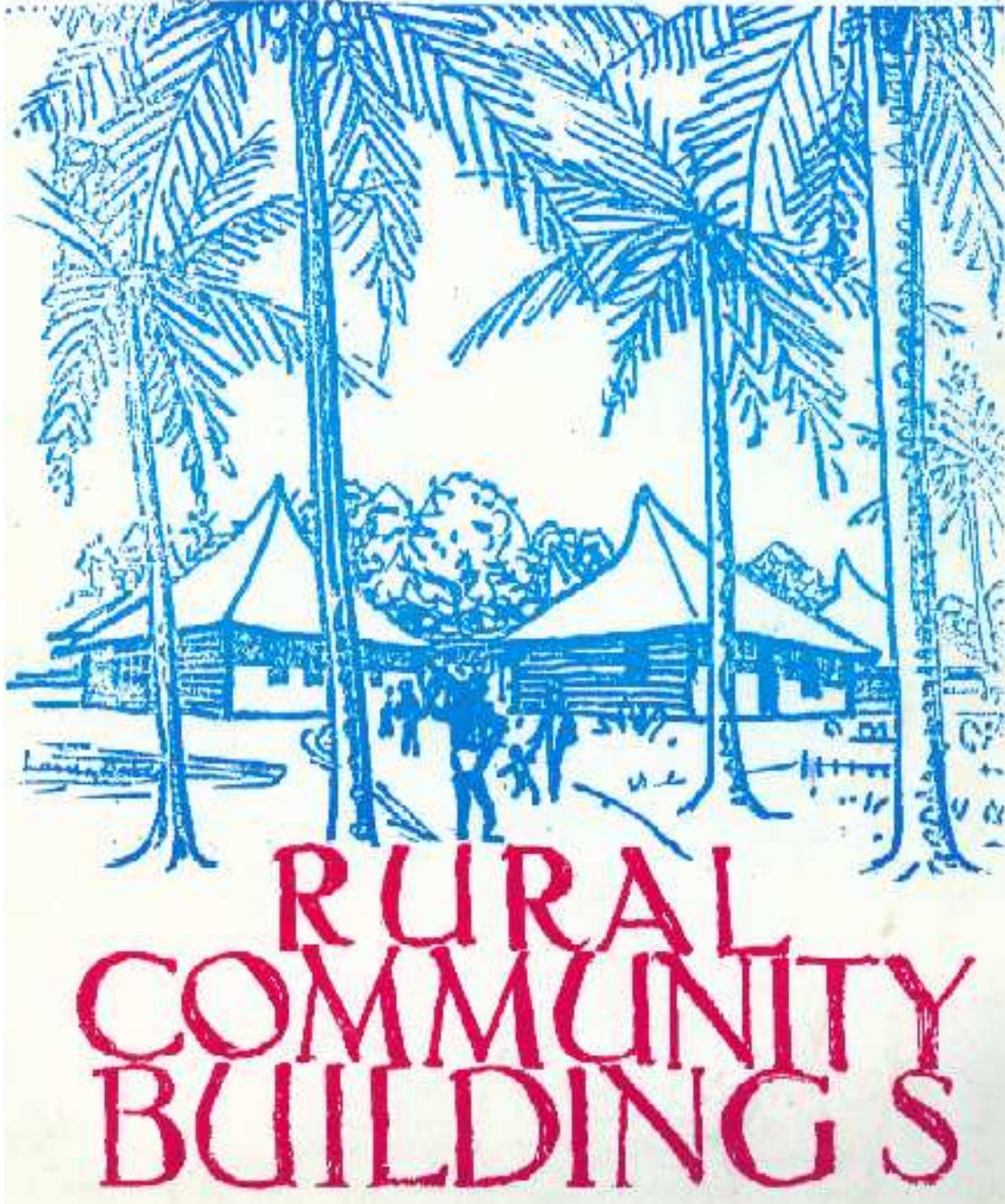


Laurie Baker's

COSTFORD



Hundreds of Community Buildings are being constructed every year both in urban and rural areas. Conventional systems are followed for the construction activities. The time has come to critically examine the total costs involved and to explore the possibilities of adopting alternative systems for construction of community buildings so as to optimise the resources. We, from the costford, have been trying for the past twelve years to convince the administrators, officials and public that cost and energy effective materials and techniques need only be used for the construction of Community Buildings. We have also demonstrated how the environment friendly materials and methods could be used for the construction of Anganwadis, Village Offices, Agro service Centres and other community Buildings. We are bringing out a book entitled "Community Buildings" written by Dr. Laurie Baker with the hope that this book will serve as a practical guide to all stake holders in the field. We are happy to release the book on the 80th birth day of our "Daddy" - Dr. Laurie Baker.

2 March 1997

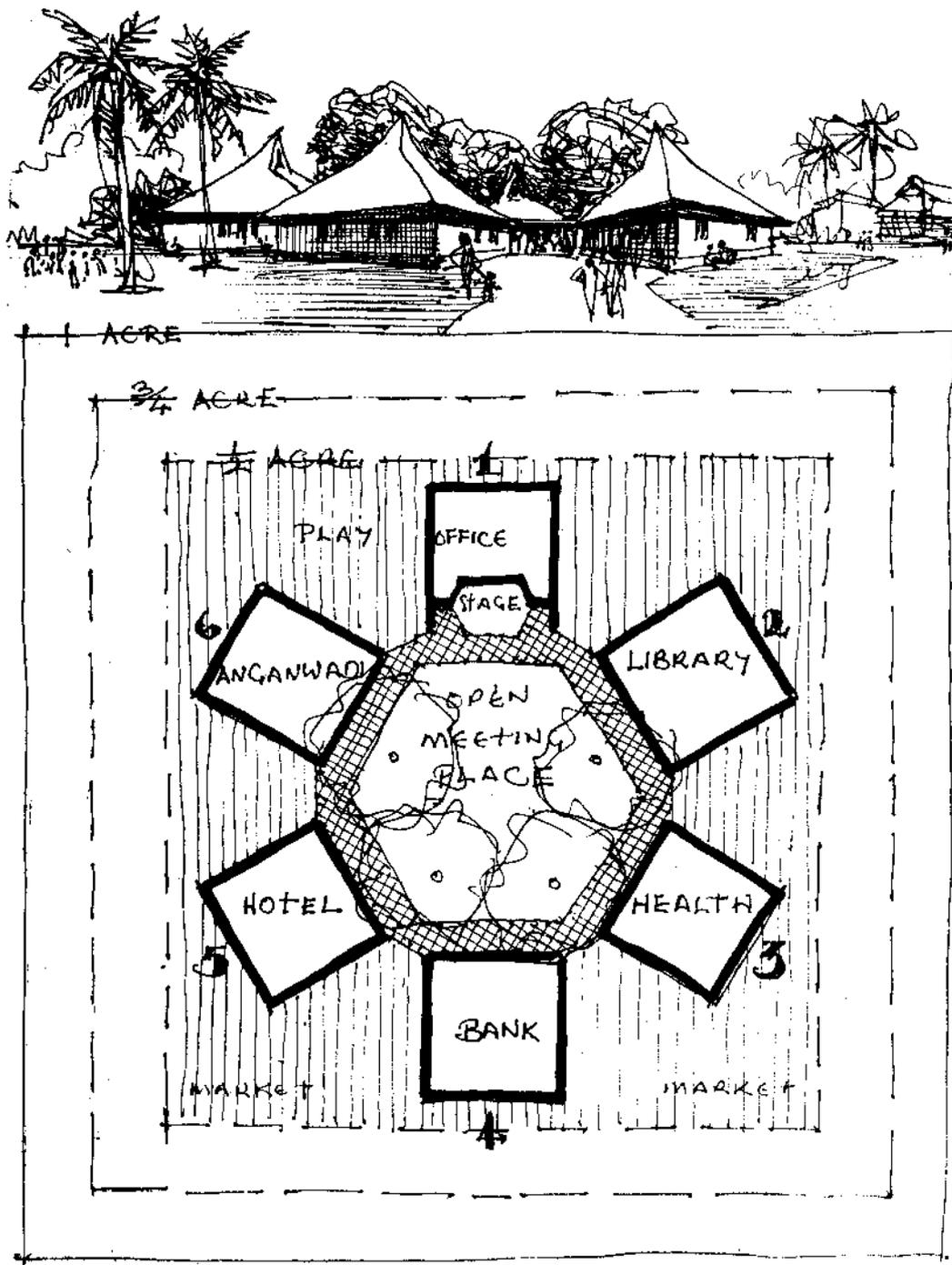
Director

Centre of Science and Technology for Rural Development (COSTFORD)

Common buildings for the use and convenience of villagers and scattered people in rural areas are usually put up at odd times and in odd places.

This collection of sketch plans is to show that if half acre of land can be set aside for such buildings and an overall, if small, Master plan can be made. The eventual building of such a complex will provide such amenities in one place and will also provide a suitable meeting place where gatherings of all sorts can take place.

These plans are not meant to be 'prototype designs' but are done to show that quite a lot of essential facilities can be provided in six structures – each about 9-m square or 30ft x 30ft. At current prices (May 1992) the whole complex could be built for approximately 10 lakhs Rs.



Scale 1:400
(1cm = 4 m)

This is an All Purposes building to serve the whole complete complex.

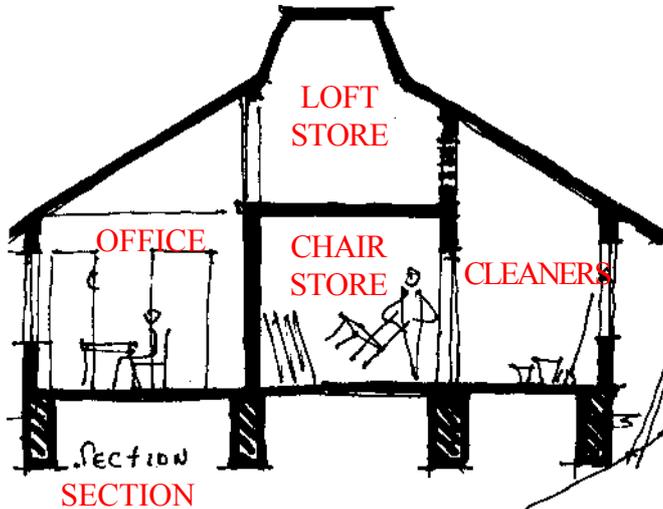
There is an office with its own store and lavatory.

There is a permanent stage facing the central courtyard.

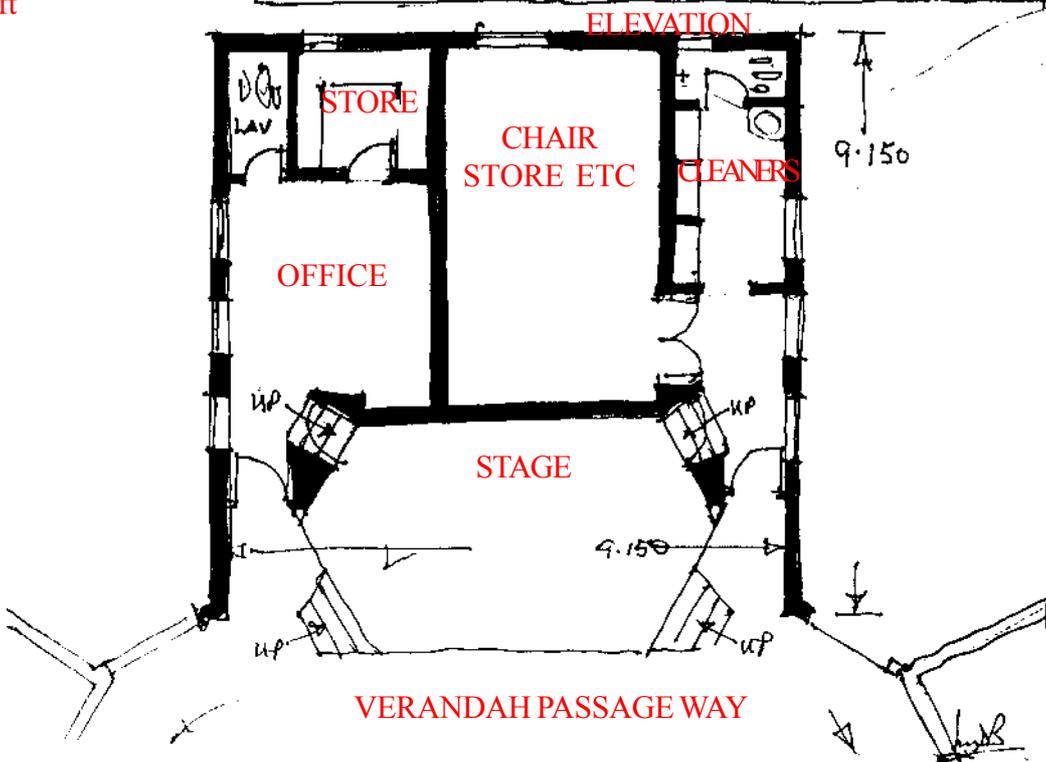
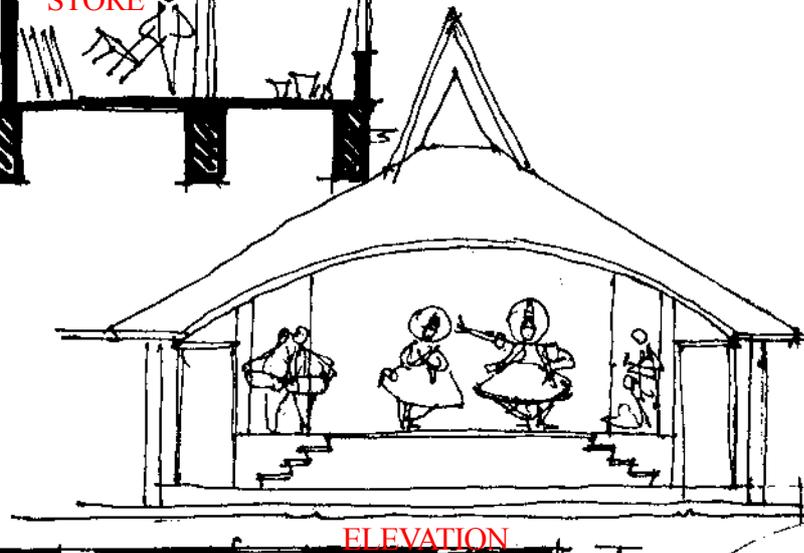
There is a room for cleaners and their equipment and a store for chairs, tables, pandal pieces etc.

There is also storage space up in the loft.

BLOCK 1
OFFICE
STAGE
STORES
CLEANERS
ETC.



Scale 1:100
(1cm = 1 m)
Plinth area
83.72 m²
900 sq ft

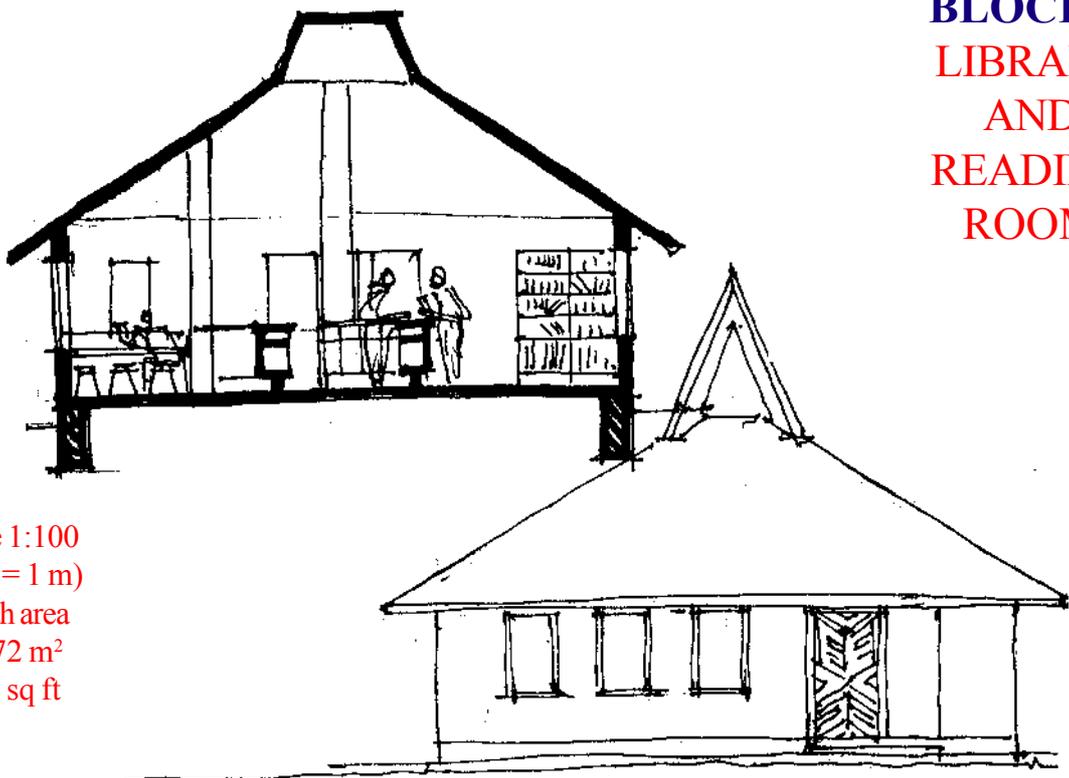


In Kerala a library and Reading Room is not only a luxury but an important centre for promoting various development schemes as well as a place where books, magazines and Newspapers of all sorts can be used by the villagers.

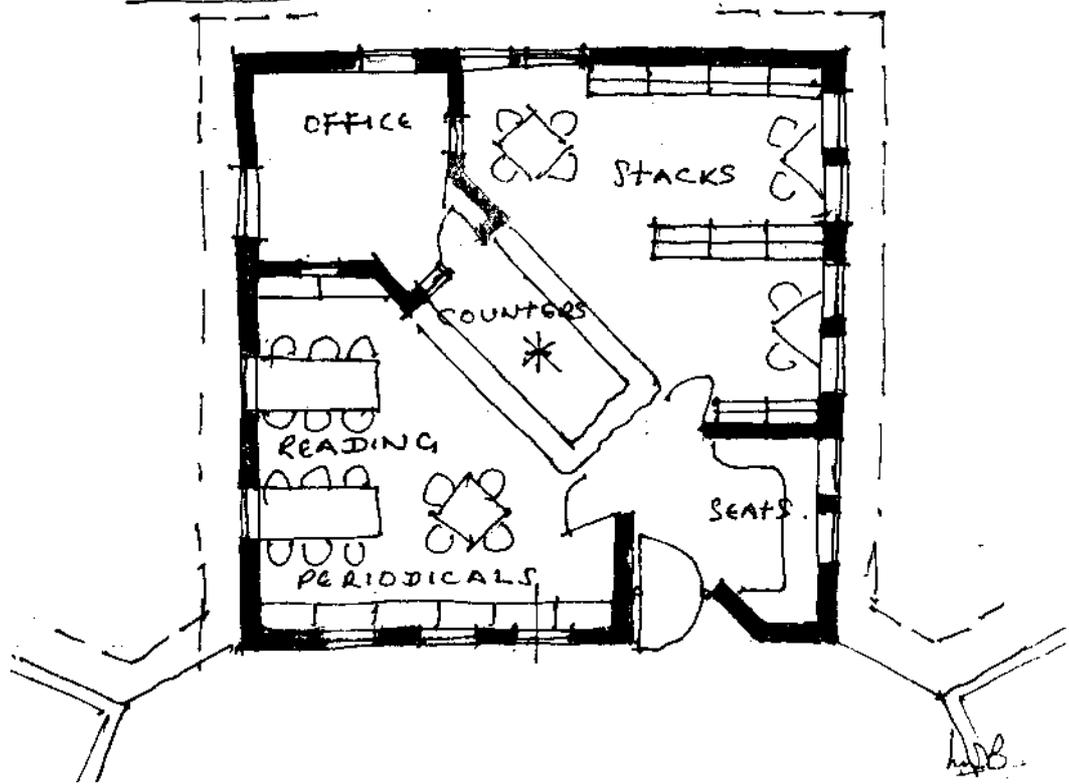
Not incorporated in this plan, but it could easily be done, is a room for keeping Media equipment – such as a Projector, a V.C.R. tapes, slides etc.

It should also be the storage and distribution centre for posters and other forms of demonstration concerning development and improvement of devises, tools, 'plants' and so on.

BLOCK 2
LIBRARY
AND
READING
ROOM



Scale 1:100
(1cm = 1 m)
Plinth area
83.72 m²
900 sq ft



At least the nucleus of a medical centre is needed in a village.

This plan gives a room and a lavatory for a doctor.

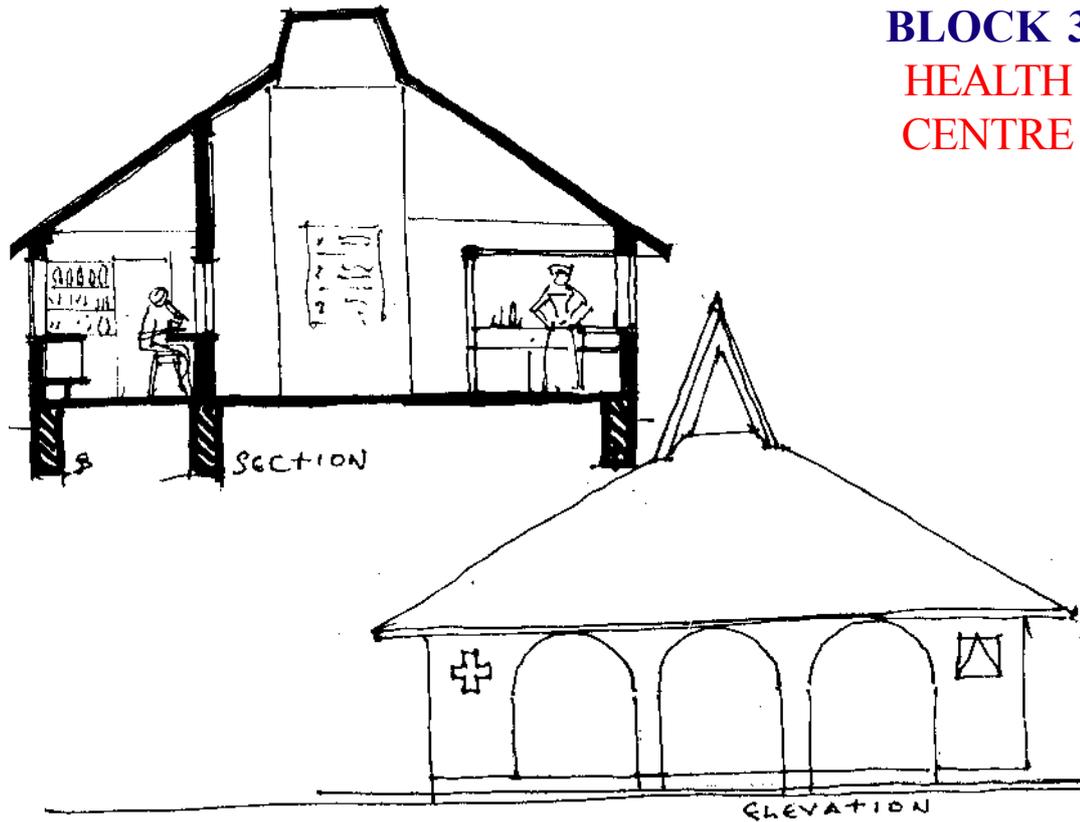
A room for a Nurse where she can keep records, prepare simple treatments etc.

Adjoining the Nurse and the Doctor are two spaces for treatments and minor surgical procedures.

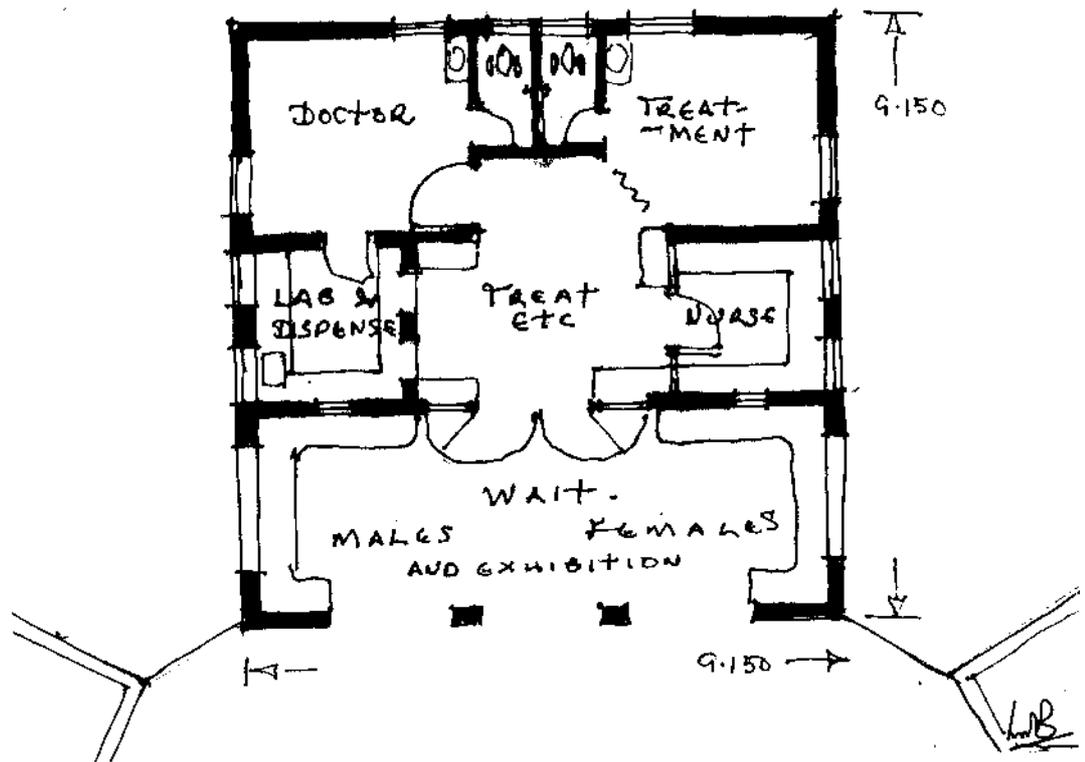
There is also a room where medicines are kept and simple mixtures etc dispensed and where ordinary lab tests can be done.

A space for waiting is also a place where health care posters and classes can be held.

BLOCK 3 HEALTH CENTRE



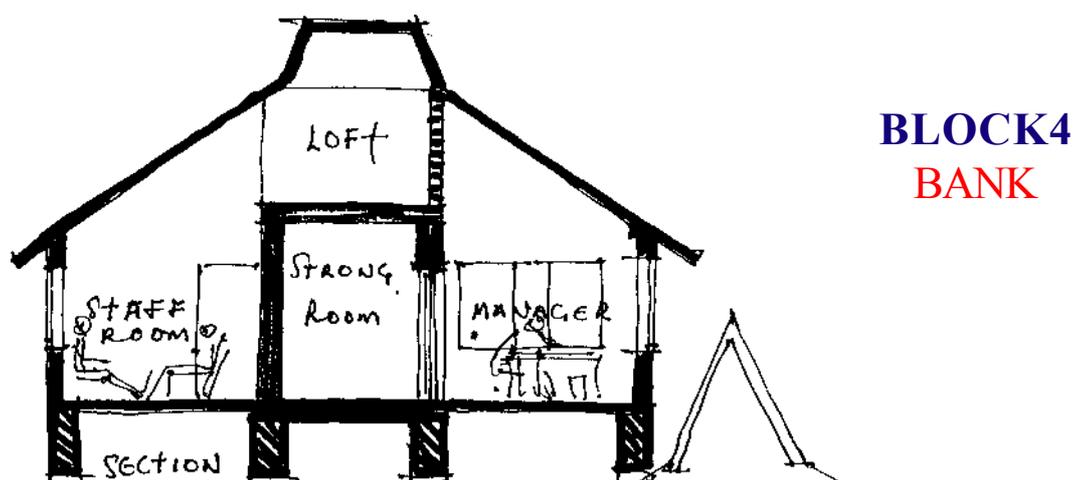
Scale 1:100
(1cm = 1 m)
Plinth area
83.72 m²
900 sq ft



These days there is not only the need for an ordinary Bank for the use of farmers and villagers but there are now various special banks connected with rural activities and industries, also concerned with Housing, Plantations, Cottage industries and so on.

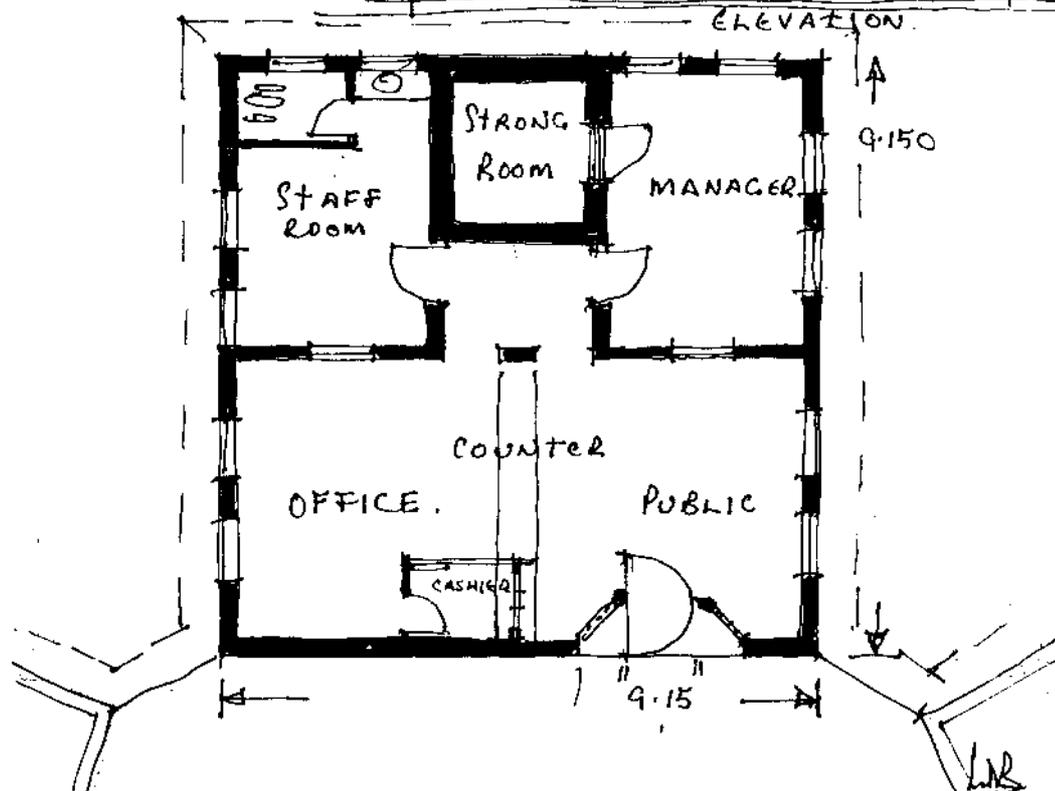
This plan has a large room divided by a counter. Discussions, classes, explanations etc can be held here.

There is a Manager's room, a staff room and a Strong / Safe Room.



BLOCK4
BANK

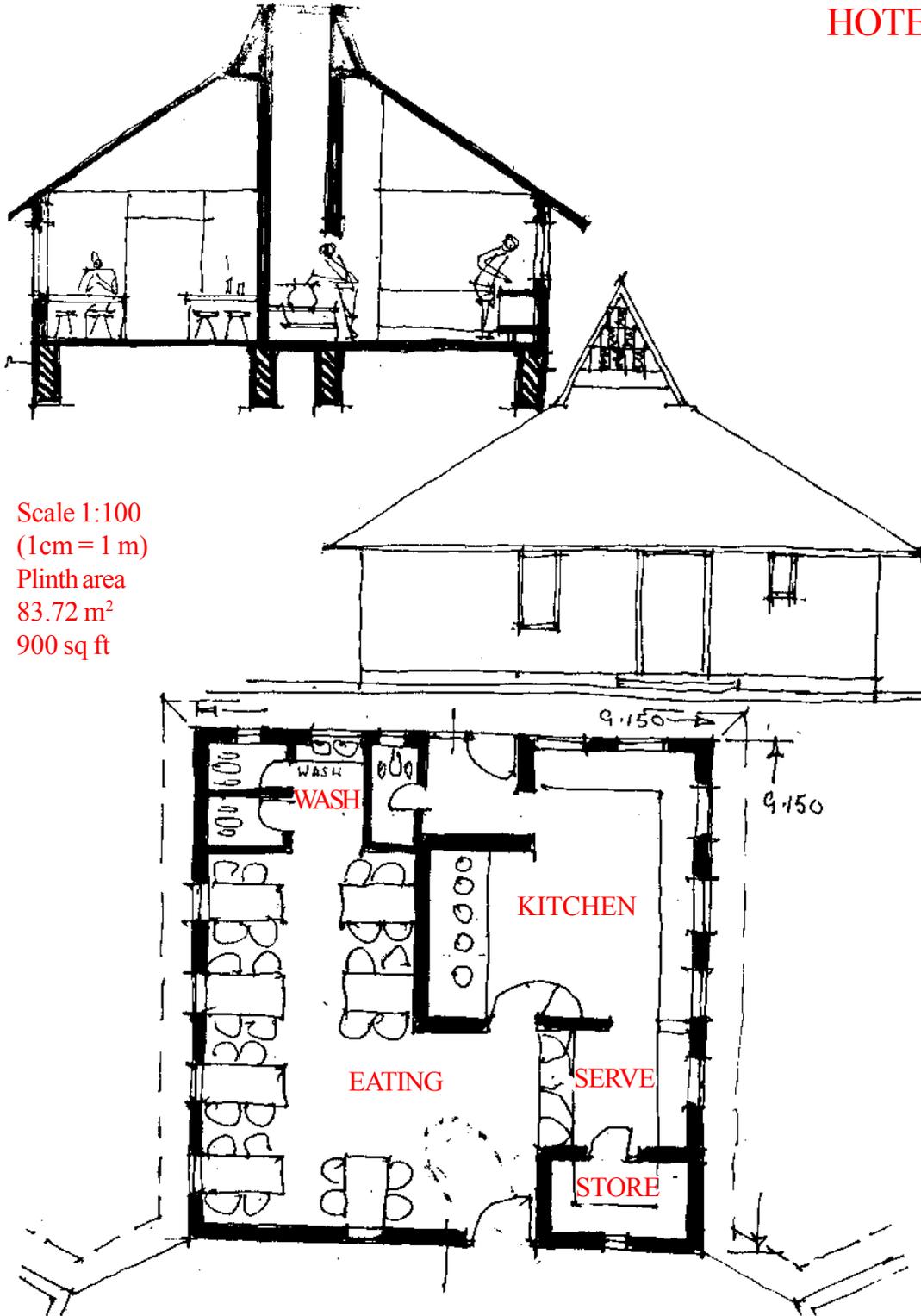
Scale 1:100
(1cm = 1 m)
Plinth area
83.72 m²
900 sq ft



Rural people often have to come long distances, often by walking, to do business at these various village offices.

There is also inevitable waiting, so a properly run, clean 'safe' hotel for food etc is a necessity. Also for functioning, festivals, fairs a 'proper' hotel is a great asset.

BLOCK 5 HOTEL



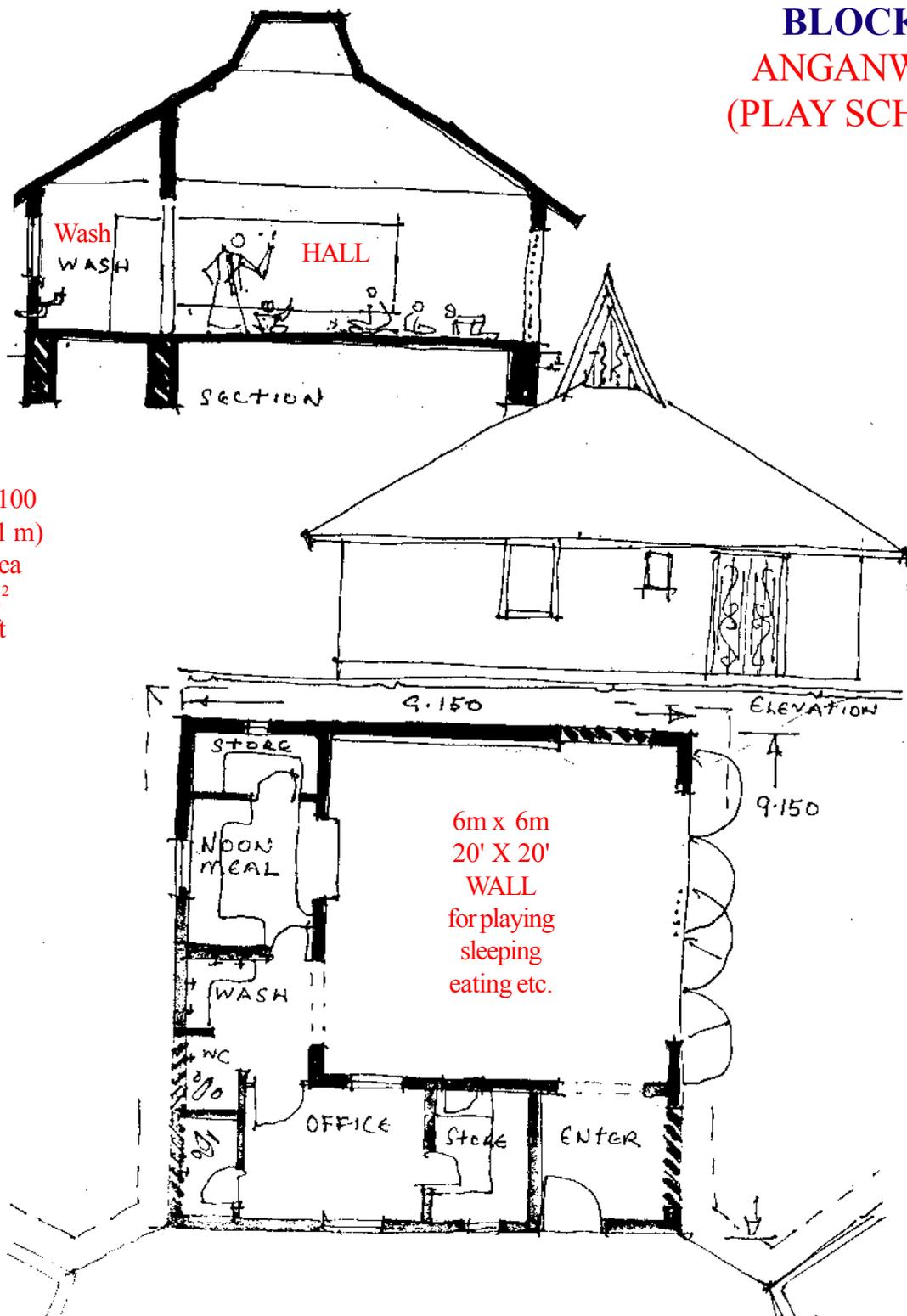
Scale 1:100
(1cm = 1 m)
Plinth area
83.72 m²
900 sq ft

An Anganwadi (playschool) has become a village necessity.

Besides a simple hall, a place for serving a noon meal, milk, etc is required. Store rooms are essential for keeping mats, toys etc, also for keeping small quantities of foodstuffs.

There is an office for the staff and washing and toilet facilities are essential.

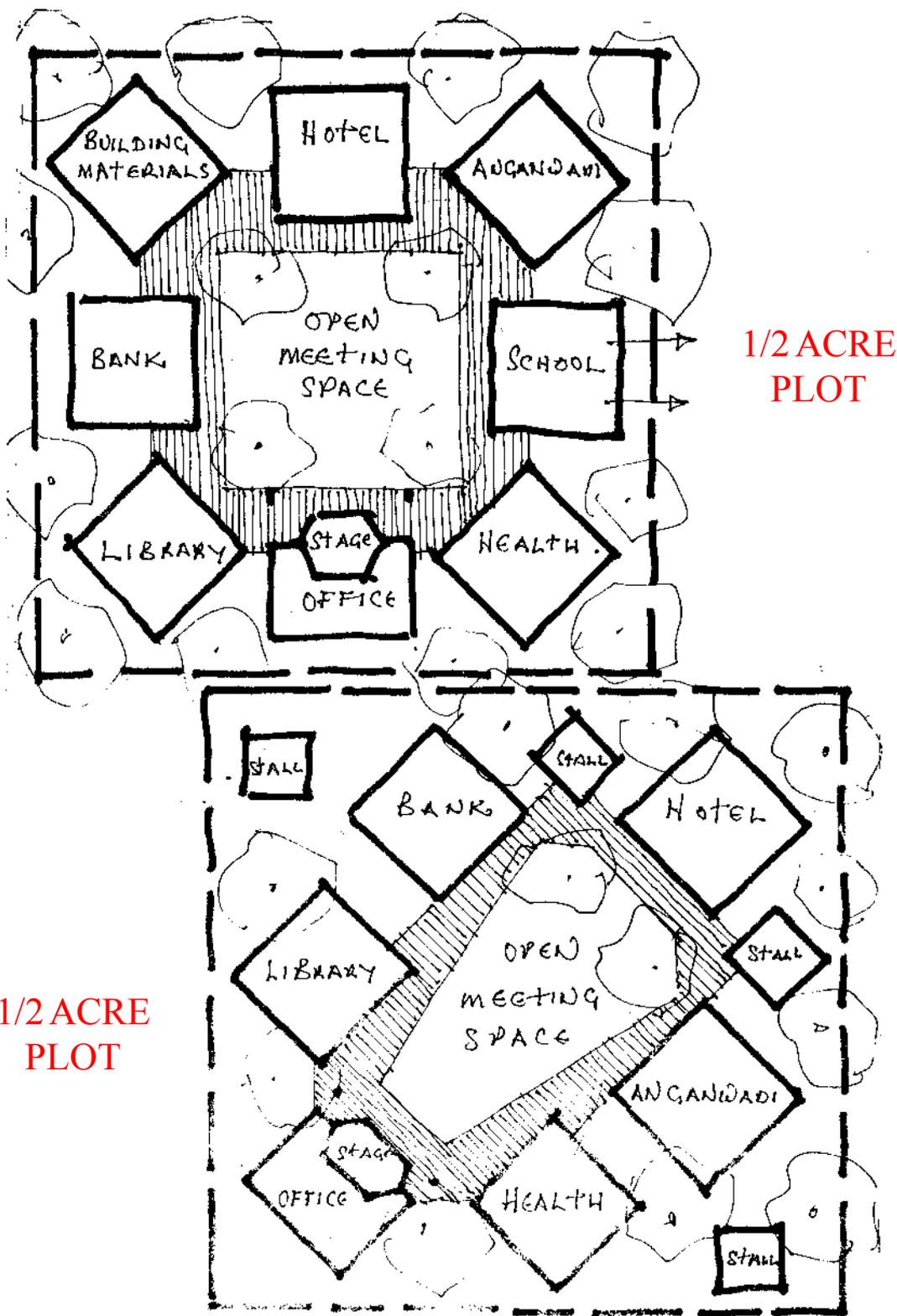
BLOCK 6
ANGANWADI
(PLAY SCHOOL)



Scale 1:100
(1cm = 1 m)
Plinth area
83.72 m²
900 sq ft

There is of course, no limit to the variety of site plan arrangements of the various buildings. The first site plan shown envisages six community buildings and is arranged in a hexagon pattern on a half an acre plot.

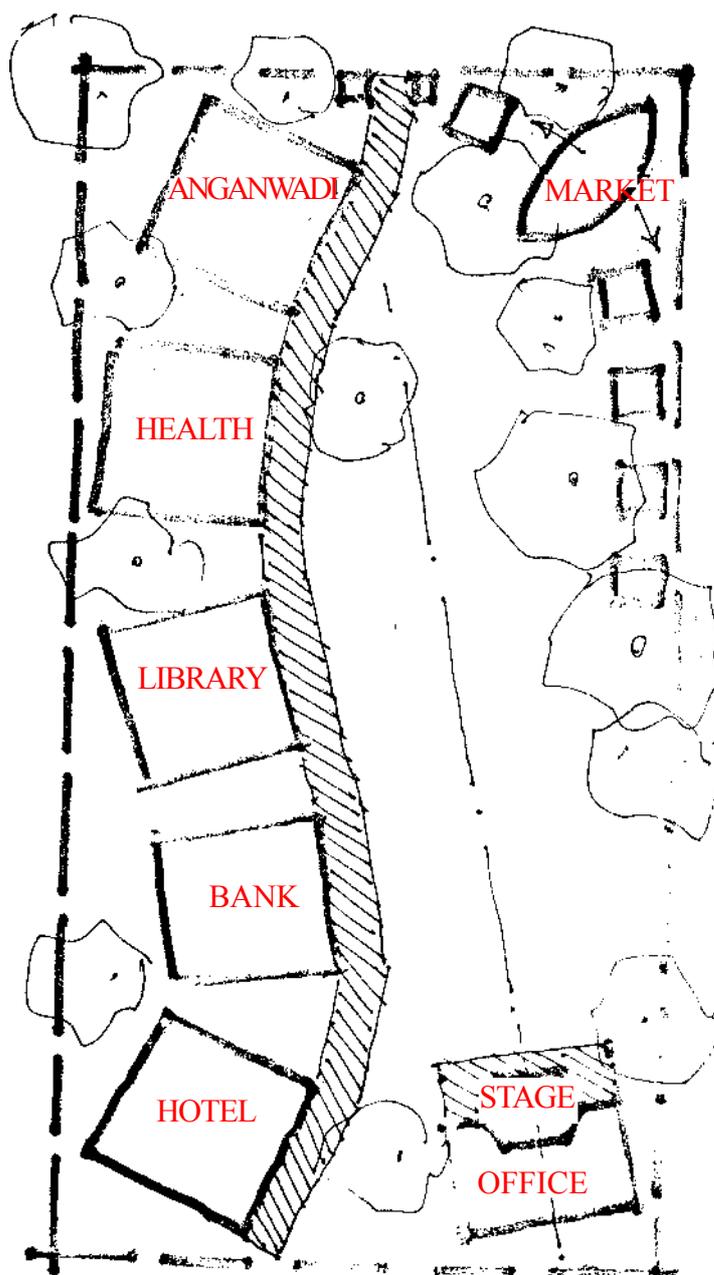
On the same plot it would be possible to have EIGHT community buildings. Suggested extra area small primary school and a centre where simple building materials and components can be demonstrated and bought.



Similarly, the site need not be a square, or an acre.

Here is an elongated site of about half an acre and on it are shown most of the buildings placed along one side of it. The stage faces the open space for meetings, and part of the land is available for small market stalls and Kiosks if required (and they can be either pukka or kuchha i.e. they could be permanent or temporary).

Almost any plot of any shape above one third of an acre in size can be used for these collections of village community buildings.



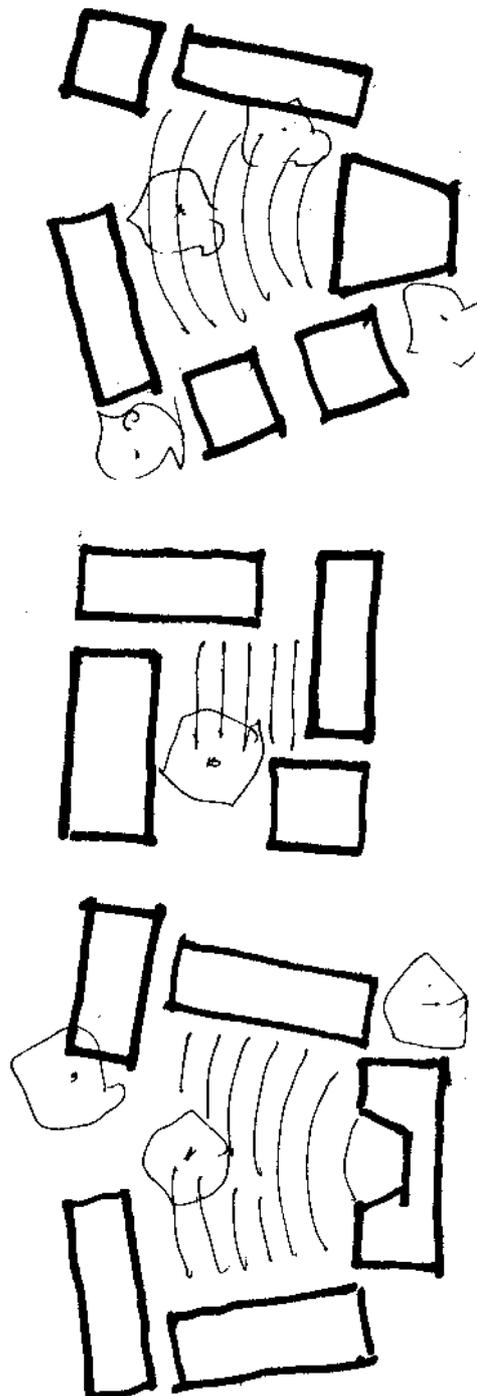
1/2 ACRE PLOT

But in actual fact very rarely will a neat square acre be available.

The arrangement of community buildings need not be symmetrical nor need all the units be of the same size or area or shape.

If possible, a court yard type of arrangement has a number of advantages over a row or line of buildings. For example in most places, for much of each year, meetings and festivals can take place out of doors – but security and a feeling of gathered unity can be easily obtained by a ring of units.

These sketches are merely to show such differences of arrangement of building units.

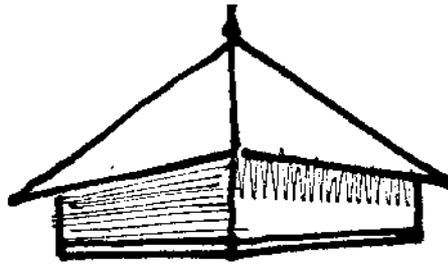


The plans shown here are contained within a square, 30-ft long and wide (900 sq ft.) There is no good reason why other shapes should not be used.

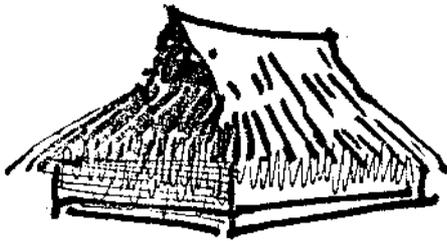
Similarly, the drawings show only one type of roof (a pyramid made of filler slab reinforced concrete) (30% less costly than orthodox R.C.C.)

These sketches show other shapes that can be used and they also indicate other materials. (Asbestos sheeting **MUST** be avoided – and on the whole galvanized iron sheeting is **THERMALLY** unacceptable.)

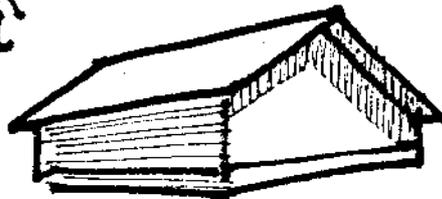
PYRAMIDICAL



PALM+THATCH



**SIMPLE SLOPING
+ 2 END GABLES**



STRAW+THATCH



**SLOPING WITH
4 GABLES**



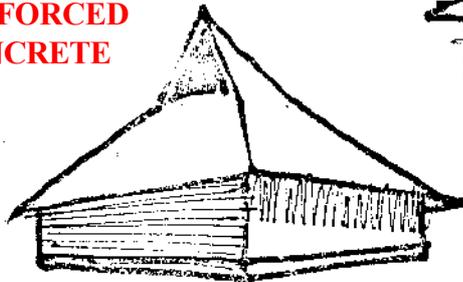
TILES



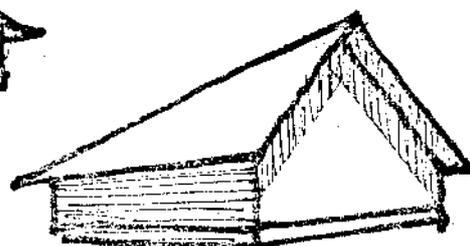
SIMPLE FLAT



**REINFORCED
CONCRETE**



**ONE GABLE
IRREGULAR
PYRAMID**



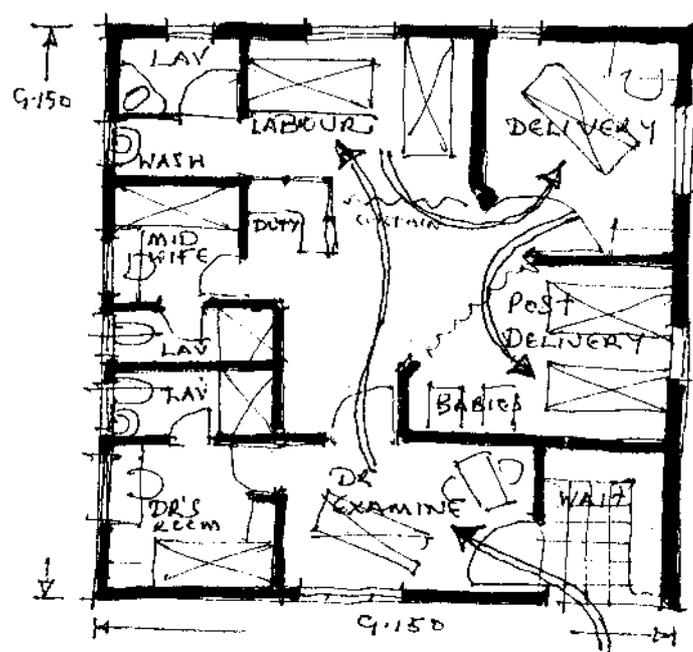
Obviously all communities will not need a set of six units, as shown in the previous sketch plans.

Two or three such units may be already in existence. Other units suggested may not be needed in one compound or in one village but may be the collective need of several small scattered communities. Whether they need all come together at one place, or perhaps be distributed around the area – one or two in different villages – is a matter for on the spot planning and decision.

The next section, therefore, shows a series of extra blocks or units which may, or may not be, individually good or valuable in one place, but useless in another. Or maybe one or other of the units shown in the following pages may be exchanged, or added to, the former arrangements of six or eight units on one site.

AN EXTRA BLOCK A MATERNITY UNIT

Scale 1:100
(1cm = 1 m)

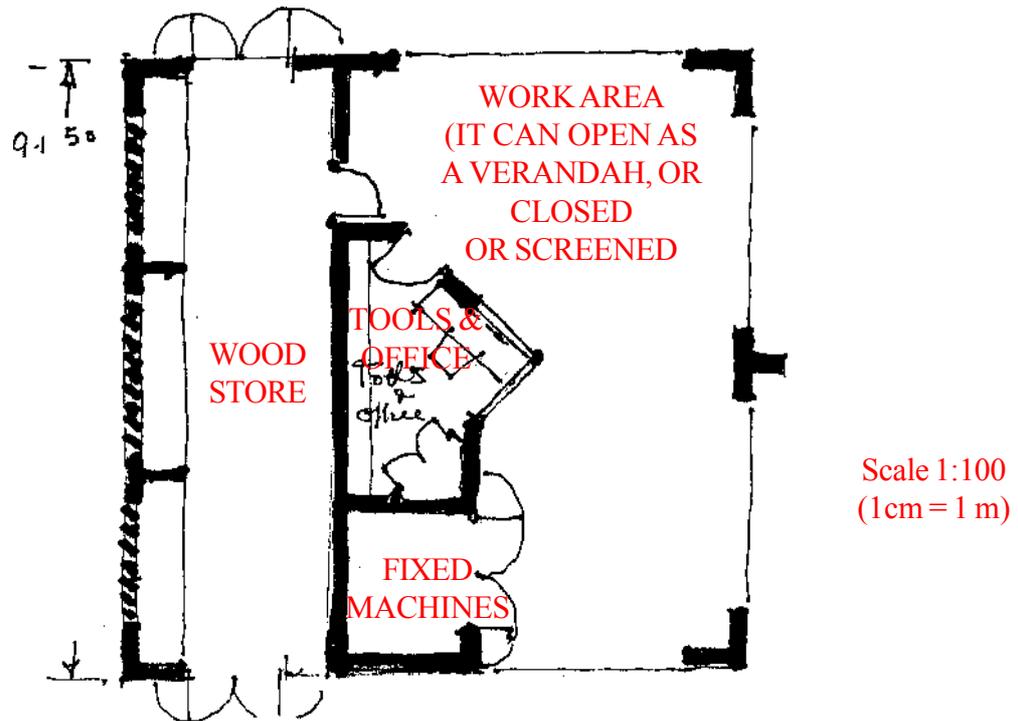


The majority of rural women still have their babies at home.

It is often late in the proceedings when they realize it is not going to be a normal delivery and that they need proper help.

The rectangular health centre may not be functioning all 24 hours of the day. So a centre where there will be a nurse or an experienced midwife, and to which a doctor can be called, would be a great boon. A compact well equipped small centre like this can be shared between several villages.

AN EXTRA BLOCK A CARPENTARY 'SHED'



Carpenters (or other craftsmen) can often work better in terms and if they have a community work shed there can be a common work space (it need not be closed with walls). In this plan there is a large wood store and there is an office cum tool store. If sewing or some other machine is available in can be housed in a room, one side of which can be completely opened up when the machine is in use.

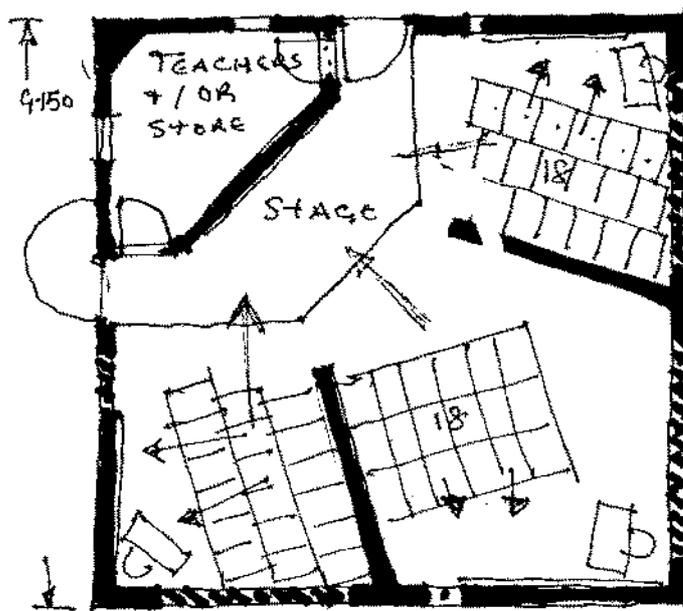
AN EXTRA BLOCK A WORKSHOP



Many small scale industries benefit from the availability of expensive machines.

It is often desirable to keep such machines in a safe building and craftsmen can come and make use of them, or even work together in the community workshop where a few machines are available.

AN EXTRA BLOCK A SCHOOL CUM VILLAGE HALL

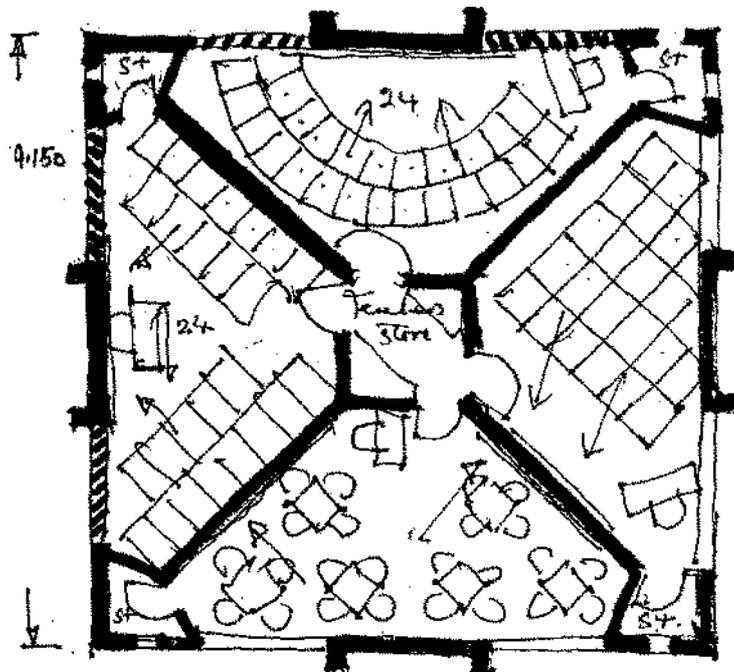


3 CLASSES OF 18 EACH

Here is a sample plan with three spaces for teaching. All open on to a “central” stage space behind which is a room for storage, or teachers, or as a “green room”.

Such a plan can serve many small community needs besides being a school for 6 to 7 hours a day.

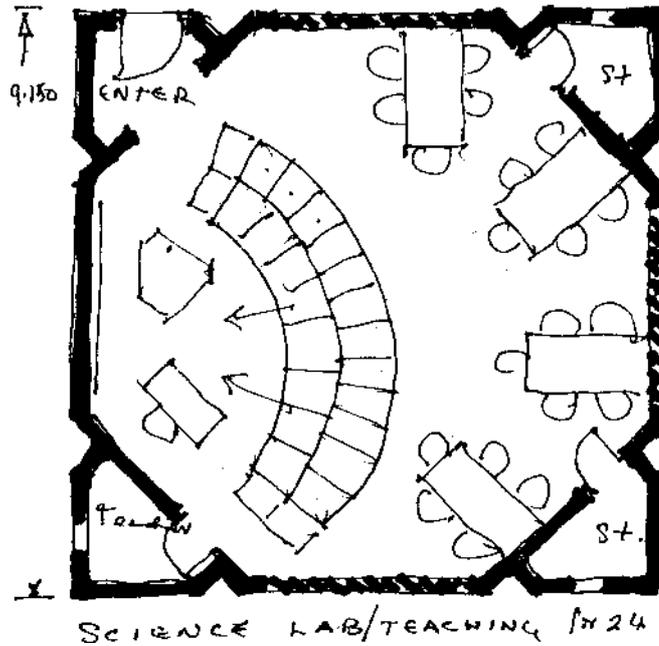
AN EXTRA BLOCK A SMALL SCHOOL



Scattered communities often do not have sufficient children to warrant the construction of a “full school”.

A simple plan like this can house about a hundred children. A variety of seating arrangements is shown on the plan the four “class” areas can either be enclosed with a grill or Jali, or they can be left open as verandahs. Equipment can be locked away in a central store.

AN EXTRA BLOCK A SCIENCE CENTRE

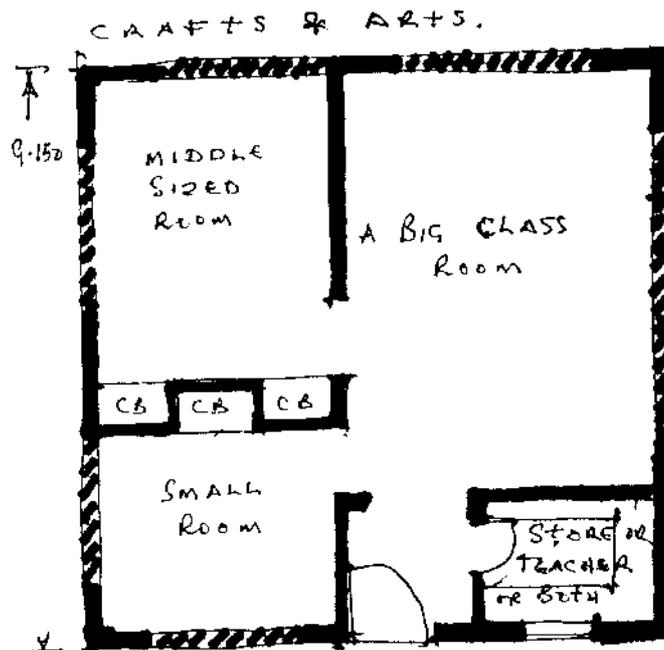


SCIENCE LAB / TEACHING FOR 24

Science needs to be taught not only to children but too their parents also.

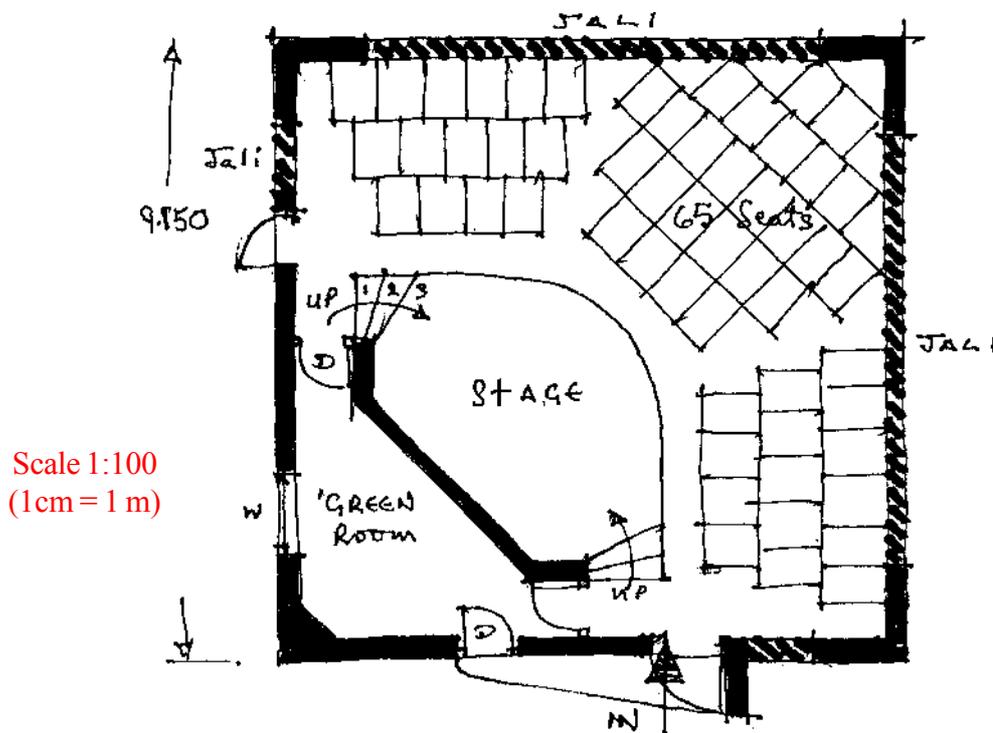
This hall can be multi purpose but it is shaped so that classes around a black board or experiments and demonstrations at work benches can be held. At the corners are small store or “stall” rooms for equipment etc. Obviously such a building can have many other uses in a scattered rural community or in an urban setting.

AN EXTRA BLOCK AN ARTS & CRAFTS CENTRE



In rural communities there are many small crafts to be found. Many are dying. A small crafts centre where developments and new ideas can be taught, and where people can pursue crafts and earn a living by so doing will always be useful. The main requirements are floor space – security and good light and ventilation and safe storage rooms or almirahs.

AN EXTRA BLOCK A SMALL AUDITORIUM



All the most village functions take place out of doors there are months of rain, snow, dust storms and so on and a small hall or auditorium would serve many purposes and be a very valuable public building.

This simple plan has a stage and a small room behind it. The Hall can seat comfortably 65 people on chairs – but 100 or 120 can be seated on the floor.

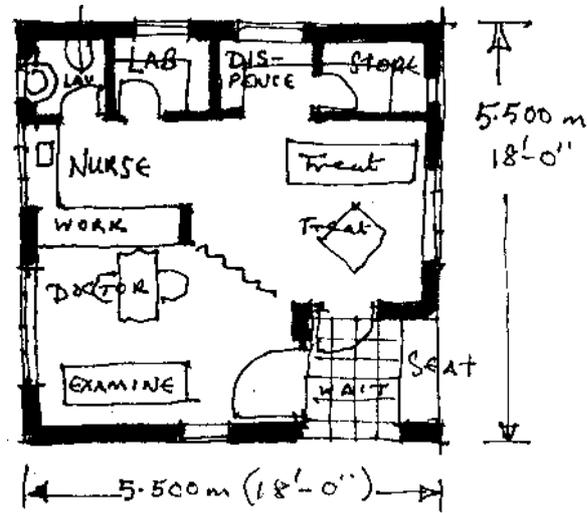
The next section is mainly to show that all the proceeding sketch plans are adaptable. The 30 ft x 30 ft square was used in order to demonstrate how various functions could be accommodated in one general shape – and partly to make estimating and costing easy. Whatever the function - it will cost.

It is, however, very probable that some of the units already exist or that an existing unit is not very usable – so a new, more functional plan is needed, but a lakh of rupees is not available so a smaller unit is required.

The following sketch plans are to show that smaller units can still provide essentials for many of the units.

The first one shows a reduction of the 30 ft x 30 ft square to an 18 ft x 18 ft square. Immediately it is seen that from 900 square feet we have come down to 324 sq ft! But the essential requirements are still available. The next plan shows that the square plan is not sacred and there is no objection to the use of a rectangular plan – and so on.

A HEALTH CENTRE



This plan is a mini-version of BLOCK 3, a Health Centre.

BLOCK 3 is 30 ft x 30 ft, that is 900 sq ft while the Health Centre is 18 ft x 18 ft i.e. 324 sq ft. Both plans contain the basic essentials, waiting, the Doctor, the Nurse, their work areas such as Laboratory, Dispensary, Toilet etc. A treatment room and a store.

BLOCK 3 will cost about One Lakh rupees while the small building only Forty Thousand. The differences are obvious – more waiting (and therefore more teaching and demonstration area) an extra toilet, and larger rooms.

The choice has to be made according to the need of each community (and these will vary considerably!) and of course to the funds available AND the availability of staff and whether a doctor (or nurse) is living nearby or only visits once or twice a week.

A BANK

This plan is a small version of the Bank plan, Block 4.

Block 4 Plan was 30' x 30' that is 900 sq ft.

This is rectangular plan 27 ft x 15 ft, that is 405 sq ft.

Here the staff does not have their own room, but probably “staff” maybe one or two persons anyway!

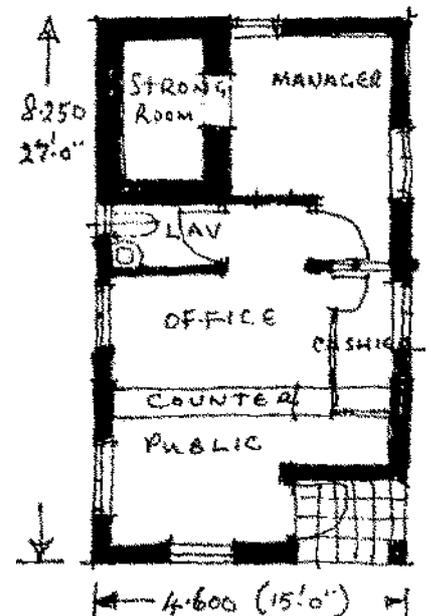
Otherwise the required spaces are the same in both plans.

One will cost nearly a lakh, and the other less than half a lakh.

The final choice of size, shape, contents and cost will depend entirely on the local community requirements.

Where there are complicated loan transactions to take place regularly probably much more office space will be required.

Or storage of local forms of wealth (a copper industry for example) could call for more safe storage facilities and security personnel etc.



If such buildings are to serve many thousands of communities throughout vast land we must make our own money and resources go a long way.

Target cannot be met by extravagant or unnecessary buildings.

Unnecessary architectural fashions, frills and finishes do not make good architecture. India has a wealth of beautiful, strong, natural local building material. Their special characteristics and textures should be shown in our buildings and we should all learn to abhor false and fancy finishes.

Planning of space must be economically and sensibly done.

Energy – energy intensive materials should be used sparingly and only when local and natural materials are not available or in short supply, or if the quality is too inferior for durable use. The country is short of energy. Let us not cause further shortage.

Do not build unless there is a real necessity. For a simple example in this community planning – a common lavatory and toilet block may be just as good, and less costly than individual toilets in each unit. Water pipes and waste pipes can all be less if a common toilet unit is built.

Windows are expensive. In many instances they can be replaced by Jalis. Doors and windows can often be frameless and save half the cost.

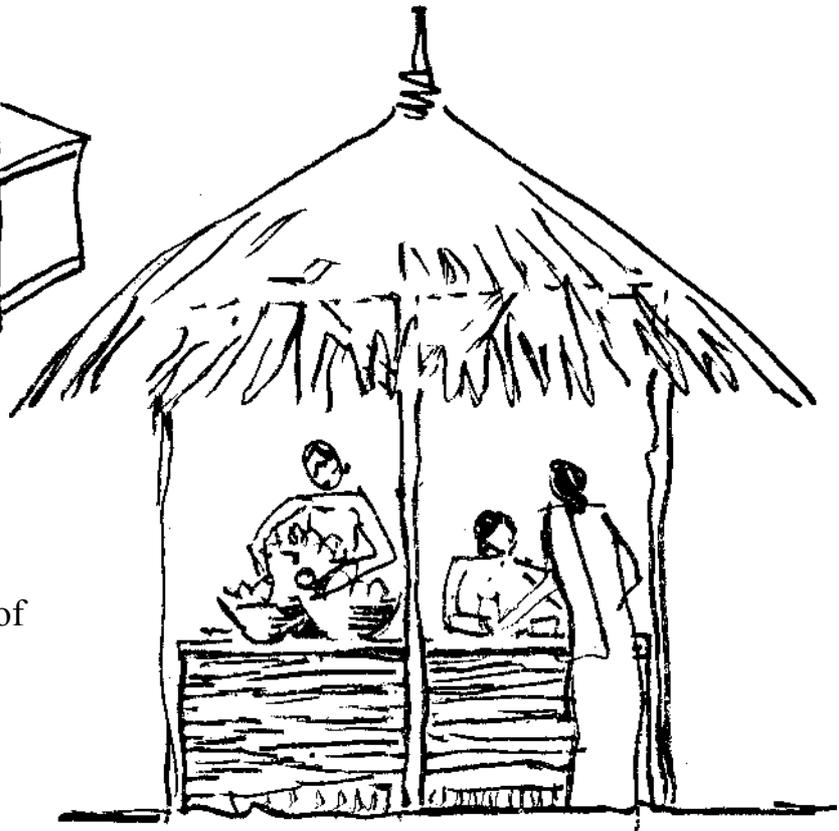
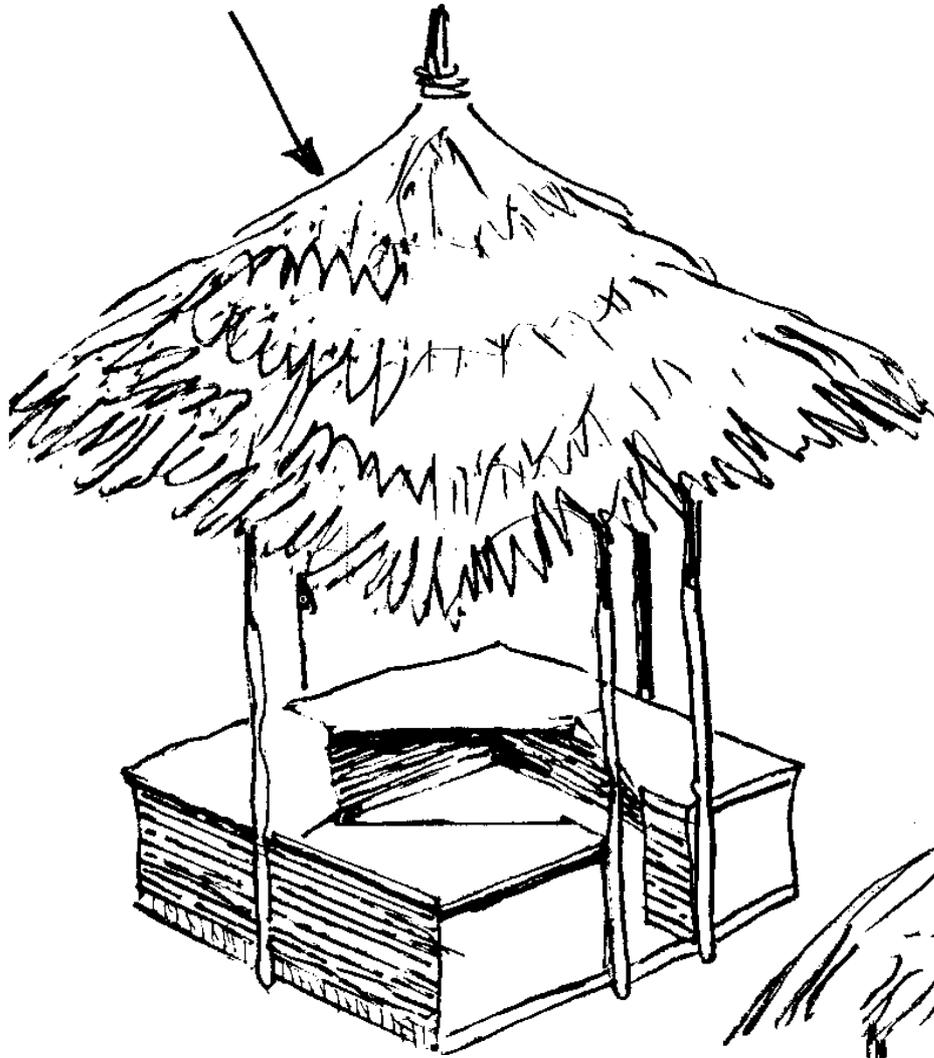
Money borrowed from abroad has to be paid back. Far better to help remove the cause and occasion for borrowing. Plan and build within our own means.

MARKET STALLS

There is yet another group of community buildings to be considered – the ordinary stalls used at market places and along the roads leading to markets. Usually they are of temporary nature which is mainly in order and a good thing, but often the counter or the table top would be better if it were pucca (permanent) and constantly washable. And if this is possible then it is better that the substructure – i.e. that which supports the table and will inevitably get wet – also be pucca.

The following pages show how a very simple but efficient and effective building can be added to the community list of buildings essential requirements not only at very little cost but at easily recoverable cost.

MARKET STALL FOR 4 VENDORS

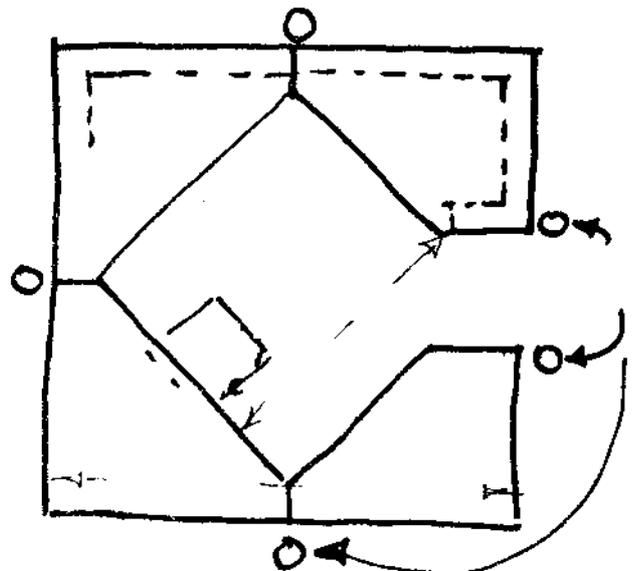


Materials required –

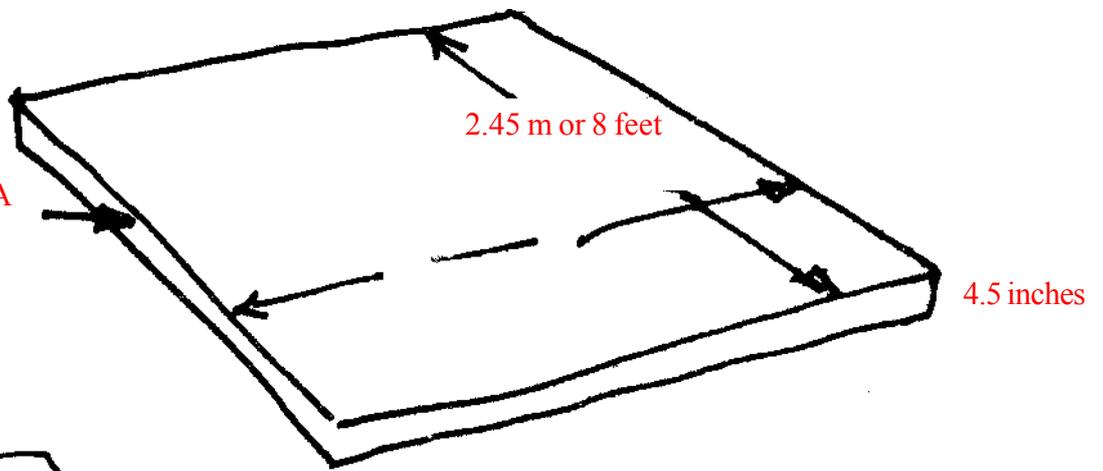
About 400 bricks, 7 casurina poles, one bag of cement, some sand, two rods of 6 mm steel, coir and hemp rope.

Total cost approximately Rs 1000/-
One vendor will pay Rs 4 per day. Four vendors in one hut will pay Rs 16/-
The cost will be recovered in about 60 days.

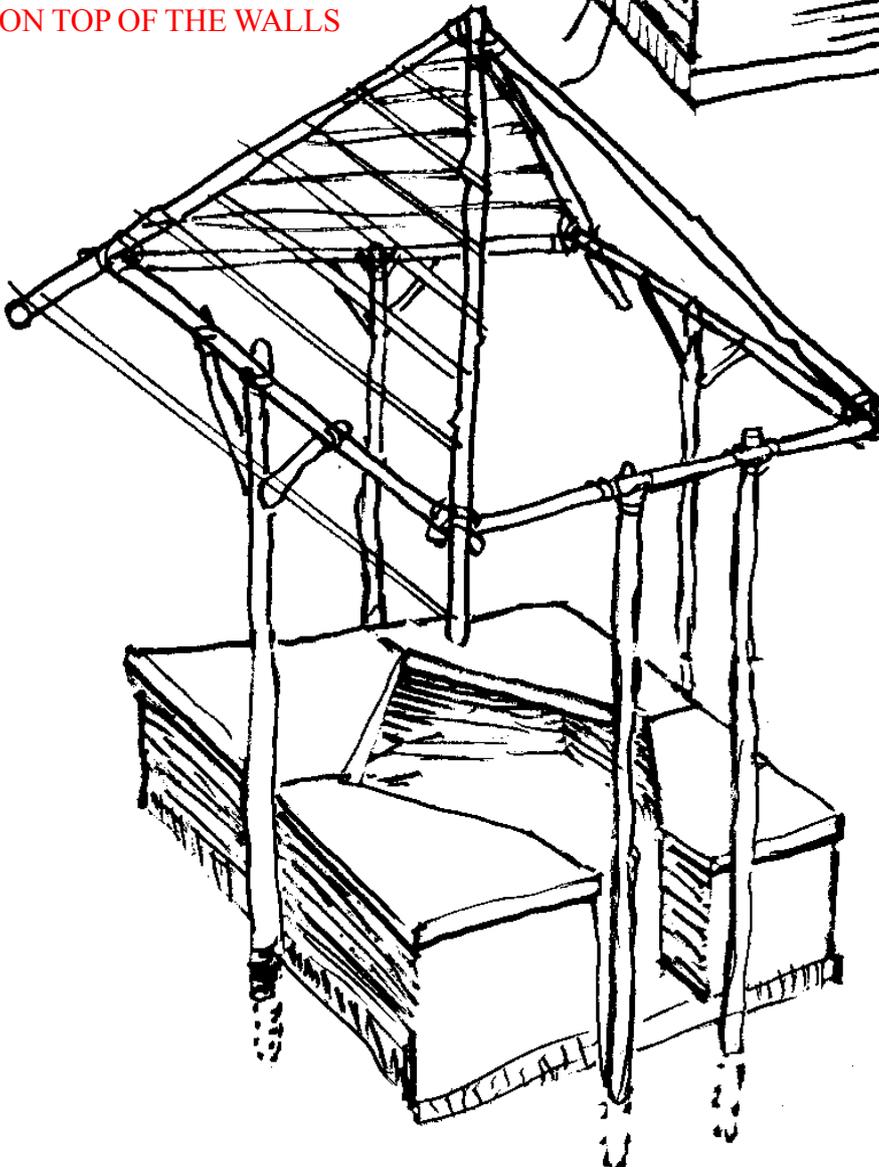
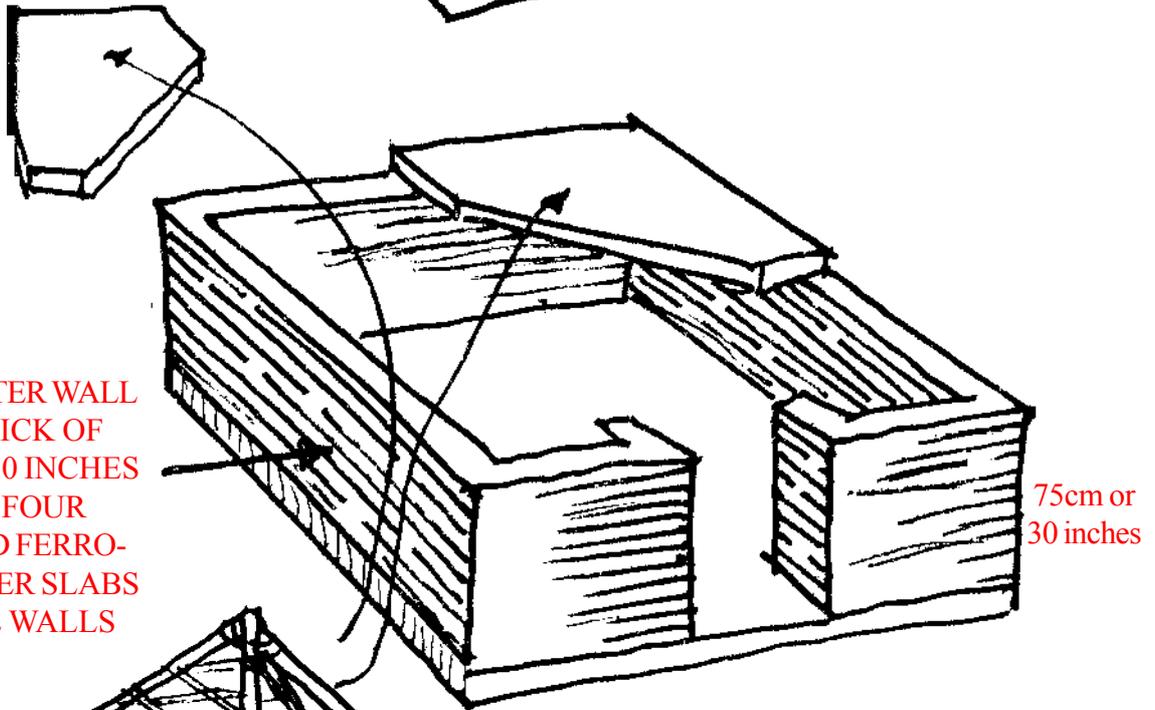
With such costs which can be quickly recovered it is nonsense to talk about durability or to worry about renewing the roof every year and so on.



RAM THE LEVEL
GROUND AND LAY A
SURFACE BED OF
CONCRETE OR
BRICKS OR STONE



BUILD A PERIMETER WALL
4.5 INCHES THICK OF
BURNT BRICKS 30 INCHES
HIGH. PLACE FOUR
PREFABRICATED FERRO-
CEMENT COUNTER SLABS
ON TOP OF THE WALLS



PUT UP A ROOF STRUCTURE
OF CASURINA POLES OR
BAMBOO.

CHAR THE ENDS OF THE
POLES BEFORE PLANTING
THEM IN THE GROUND.

THATCH WITH LOCAL
ROOFING MATERIAL OR
STRAW ETC.

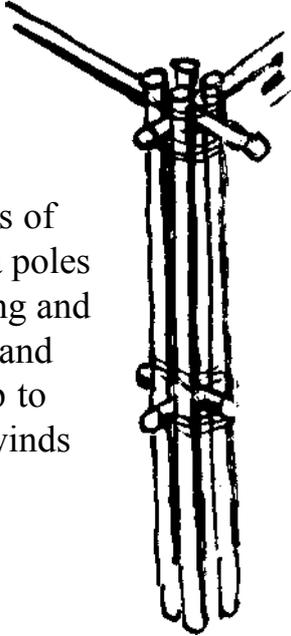


FLOOR AND COUNTER MUST BE
PUCCA AND CLEANABLE.
ROOF SHELTER CAN BE KUCCHA
(TEMPORARY)

THIS BASIC PLAN CAN OF COURSE
USE ALTERNATIVE MATERIALS.
THE POLES ETC COULD BE OF
ANGLE IRON OR PREFABRICATED
RE-ENFORCED CONCRETE POSTS.
THE ROOFING COULD BE OF TILES,
SHEETING, FERRO-CEMENT ETC.

Here is a **SHED FOR 7 VENDORS**

Columns of casurina poles are strong and durable and stand up to strong winds etc.

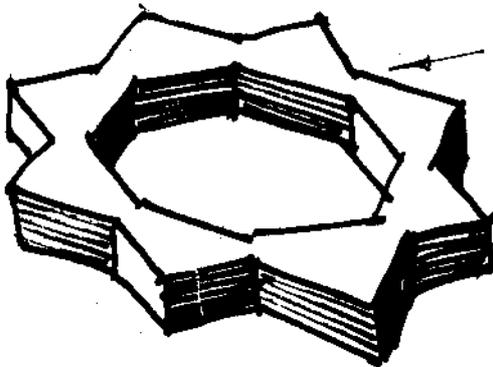
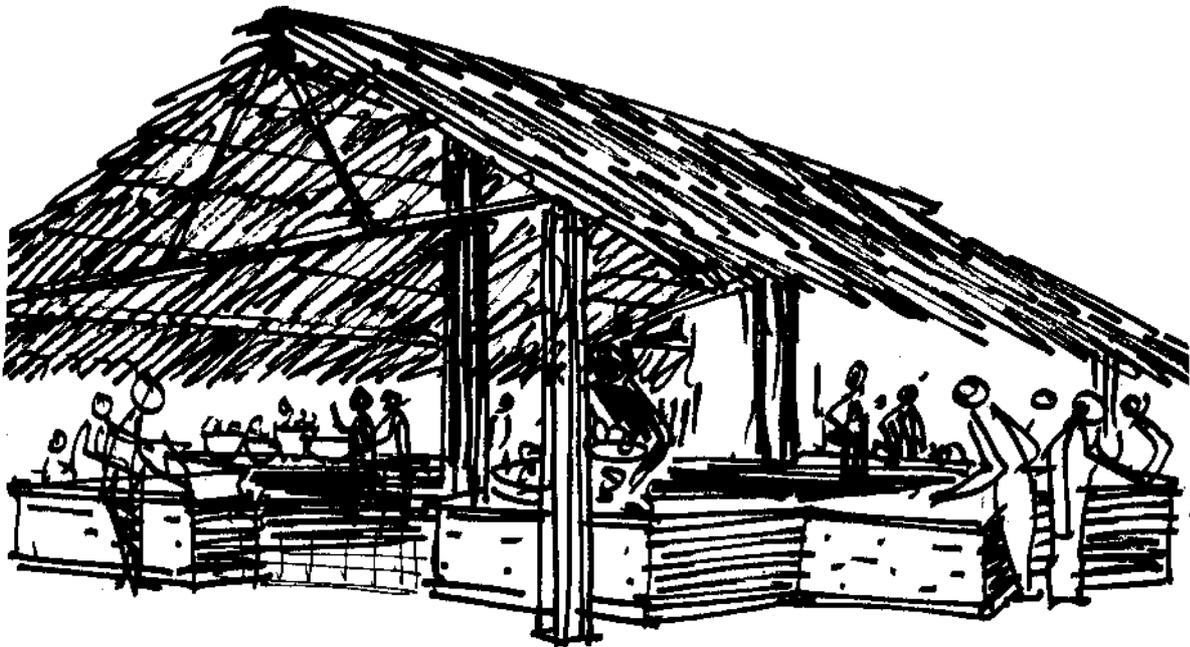


The main advantage of this design is that there is plenty of covered space for the vendors and for the customers.

It could be built for about Rs 3500/- to Rs 5000/-.

Daily rent from 7 vendors could be about Rs 50/-
The cost could be recovered in 100 days.

(Even if costs shoot up – the sort of market shed we are showing can be built in two weeks and the cost recovered in half a year)

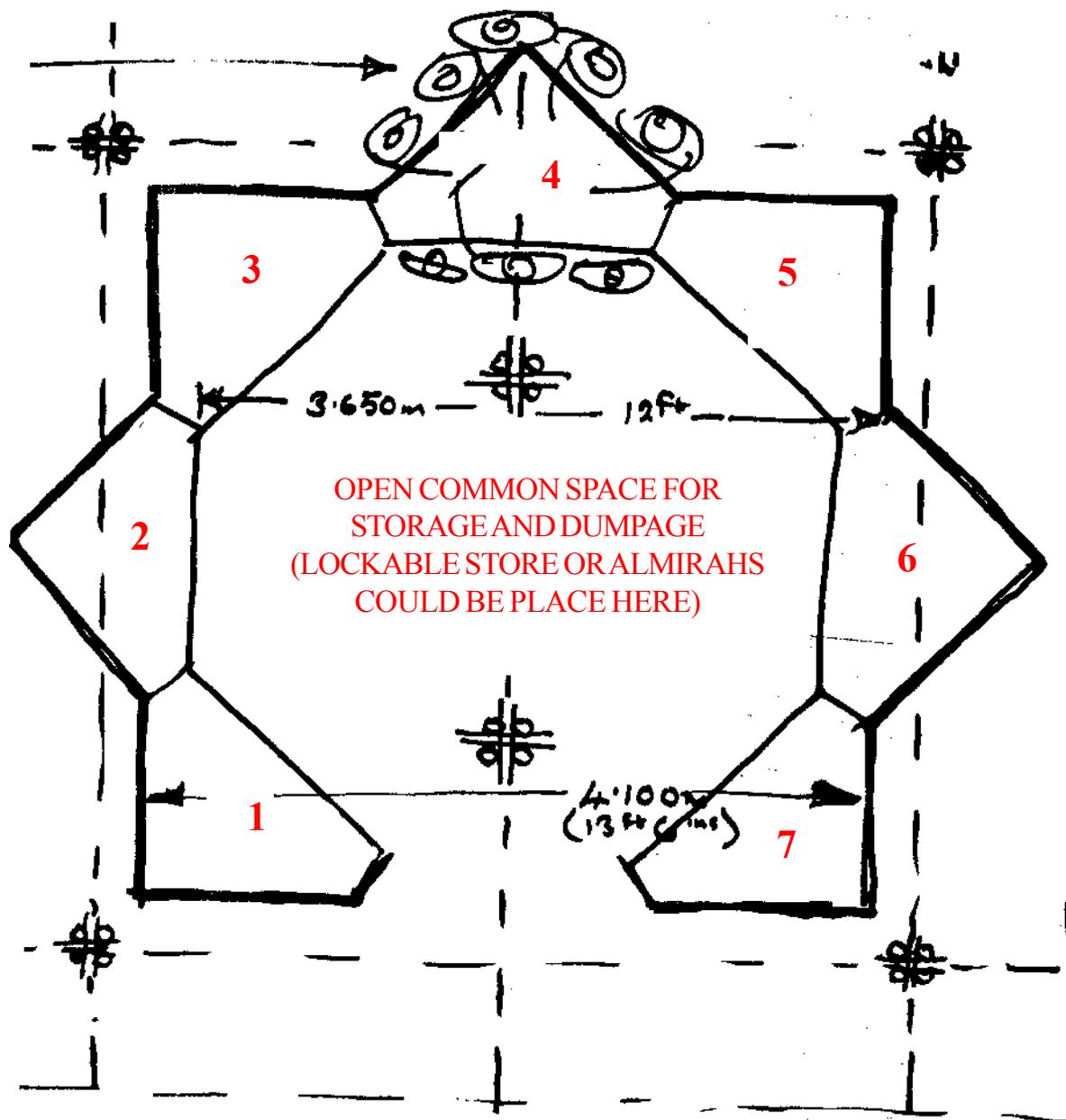


This is the basic shape of the counters so that many people can get close and see the items for sale.

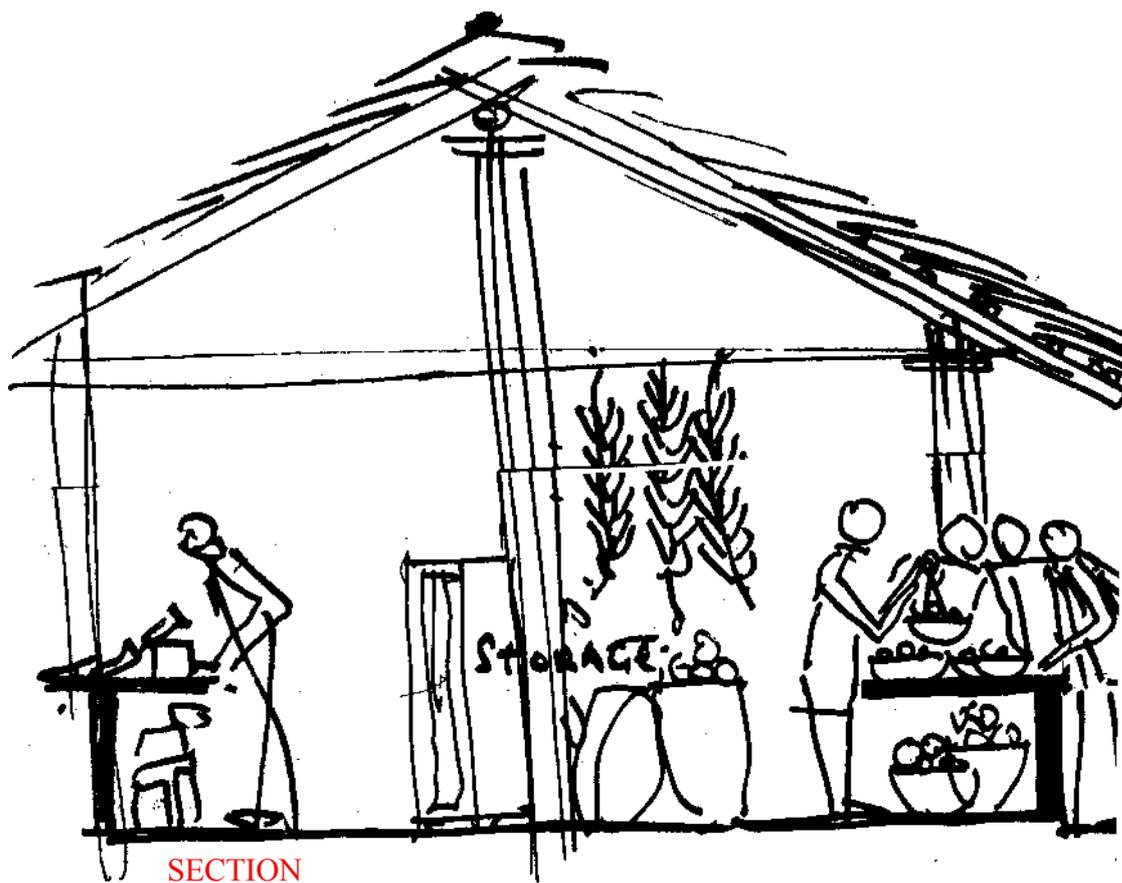
The construction shown here is of burnt brick, ferro-cement for counters etc. Casurina poles for roof support and local roofing material.

Obviously this is the minimum sort of structure and it could be made more durable by using R.C. posts, tiles, or sheeting and so on.

There is space – for 2 or 3 vendors on the inner side of each counter and 5 customers on the outer side of the counter.



PLAN FOR A 7 COUNTER SHED



SECTION

It must be stressed that the plans and ideas that have been illustrated are not meant to be prototypes to be followed meticulously.

Our India is a vast country and every state, religion and even district and panchayat has its own characteristic features and peculiarities. Simple, local, plentifully available materials should be used rather than try and impose a uniform PWD type of structure on everyone everywhere.

There are other community building requirements which have not been included in this small collection particularly there is a need for more suitable hygienic inexpensive non-deteriorating latrines and washing and bathing sheds. This is dealt with in a separate book by COSTFORD.

END