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The SanPlat System

Lowest Cost Environmental Sanitation
for Low Income Communities
based on experiences from
Mozambique, Malawi and Angola
by
Björn Brandberg



A MODERN LATRINE HAS A
SANPLAT
The simpler the better!

SBI Consulting International AB

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Responsibility

Given that local conditions will vary from place to place, the construction of latrines must always remain the responsibility of the builder. Neither the author nor SBI Consulting Int AB should be made responsible for any accidents or other damages consequent of the use of this publication.

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The SanPlat System

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EXECUTIVE SUMMARY

INTRODUCTION

Only about 40% of all families in Africa have or do use any kind of a toilet. About 70 - 80% of all disease in developing countries is caused by or aggravated by faecal born infections and faecal born diseases continues to be the number one killer disease. The population of the world is still growing faster than we manage to improve sanitary conditions. The number of people with inadequate sanitation is actually growing. There is an alarming need for a simpler approach.

THIS PAPER

This paper has been prepared to introduce a simple lowest cost sanitation system to decision makers concerned with health in developing countries. Additional material has been added to make it useful also to field personnel practically involved with latrine construction in low income areas.

The SanPlat (= Sanitation Platform) is a small locally prefabricated concrete slab designed for improvement of floor conditions around the drop-hole of the latrine. One of the great advantages with the system is that the SanPlat can be integrated in the floor of a traditional latrine, hence reducing or even excluding the need of on-site cement works in peripheral areas.

The SanPlat System should be seen as an alternative to the VIP-system. Though the two systems do combine very well where the VIP-system is appropriate, the SanPlat system has taken off where the VIP system has proven to be too expensive or too complicated.

The development work has been carried out in Mozambique and Malawi during the period 1979 to 1989 in cooperation with UNDP and The World Bank. It is presently being implemented also in Angola, Tanzania and Uganda. Its application to circumstances in other developing countries may require complementary studies.

Note: In Mozambique and Angola the SanPlat is called "A Laje da Latrina Melhorada" (= The Slab of the improved Pit Latrine). Due to variations in local building traditions the size and shapes have also varied. The dome shaped SanPlat has been used principally in Mozambique, while the smaller SanPlat (60x60 cm) is dominant in Malawi.

HEALTH FOR ALL - ALL FOR HEALTH: AN URGENT NEED

Faecal born diseases are the number one killer in Africa. About one third of all live born children in Malawi face death before the age of five. Due to the war situation the corresponding figure for Mozambique is not known, but is certainly even higher. Similar situations can be found in most developing countries where diarrheas and other faecal born diseases are known as the major cause of death among infants and children.

Within the ambition to achieve health for all by the year 2000, Malawi Government has set the goal of providing 80% of the population with improved sanitation facilities before the turn of the century. Through integrated implementation of the SanPlat System, all for health, this should be possible.

The programmes in Angola, Tanzania and Uganda are still young, but very promising.

MILLIONS OF IMPROVED LATRINES

Given the preliminary goal of 80% coverage, actual population growth and the target of one improved toilet per family, about 2 000 000 improved latrines need to be built in Malawi and 3 - 4 000 000 in Mozambique.

To achieve this a peak implementation rate of about 350 000 latrines per year is required (which is about 1 000 improved latrines per day in each one of the countries!!).

So far over 100 000 families (close to a million people) have been assisted. With continued interest from other ministries and donor agencies, it will be easy to increase the rate of implementation radically.

AT LOWEST COST EVER

The SanPlat System is probably the lowest cost system for improved sanitation in the world, of extreme interest for most developing countries where the population is using traditional unimproved pit-latrines.

The SanPlat System is characterized by a far reaching simplification of the technology allowing for a radical cutting of costs and simplified implementation within a framework of integrated interministerial cooperation.

That is: -

- **IMPROVEMENT OF TRADITIONAL LATRINES**
Traditional, existing or new, latrines are improved with a SanPlat (=Sanitation Platform), a small slab of concrete that radically improves hygiene, smell and fly control and provides complete child safety.

= **TWO DOLLARS**

The SanPlat can be produced locally for less than two US dollars cash input using simple moulds, local labour and only a fifth of a bag of cement, or less, per improved latrine.

= **BETTER LATRINES**

The training courses in improved sanitation also include guidelines on how to build latrines that are structurally safer and that will last longer, aiming at giving the latrine the same lifetime and status as the house and becoming an integrated part of the home, worth caring for.

= **INTEGRATED IMPLEMENTATION**

Field personnel from various ministries have participated in courses and are now training local labour and villagers (often women) on how to make SanPlats and to build improved latrines. Integrating implementation with other programmes has allowed us to cut also on the overhead costs. Through integrated implementation we have got extension workers for the programme all over the country.

Both Malawi and Mozambique have a large number of SanCentres (Sanitation Centres) from where the programme is being implemented, in urban as well as in rural areas.

In Mozambique the programme has advanced principally in the urban areas, while in Malawi the progress has been faster in the rural areas. The Angolan programme is urban (Lobito and Benguela), while the Ugandan and Tanzanian programmes focus rural areas.

In the two countries we are step by step building up a network of SanCentres, and eventually every family shall have its own improved latrine. The SanPlat System has made the ambition to provide health for all by the year 2000 come a good bit closer!

The assistance UNDP and the World Bank and many bilateral donors have provided has been important for the development and coordination of the programme.

The SanPlat System

Lowest Cost Environmental Sanitation
for Low Income Communities
based on experiences from
Mozambique, Malawi and Angola

INTRODUCTION

Only about 40% of all families in Africa have or do use any kind of a toilet. About 70 - 80% of all disease in developing countries is caused or aggravated by faecal born infections. The population of the world is growing faster than our rate of implementation of improved sanitation. We do need a sanitation system which is lowest cost and easy to implement.

About 33% of all live born children in Malawi face death before the age of five (From: (Malawi) National Health Plan 1986-1985). Diarrhoeas are also known as the number one cause of infant and child mortality in developing countries.
1)

"Human excreta are the principal vehicle for transmission and spread of a wide range of communicable diseases. Some of these diseases rank among the chief causes of sickness and death in societies where poverty and malnutrition are ubiquitous. Diarrhoeas, for instance, are together with malnutrition, respiratory diseases, and endemic malaria the main cause of death among small children and infants in developing countries. Cholera is accompanied by numerous deaths in all age groups, although it is children who suffer most fatalities. Other diseases such as hookworm infection and schistosomiasis, cause chronic debilitating conditions that impair the quality of life (however defined) and make the individuals more liable to die from superimposed acute infections." 2)

Against this background, it has been logical for us to concentrate our efforts on urgent and safe disposal of the dangerous faecal matter for the peri-urban and rural population as a complement to what other Ministries are doing in the fields of improved water supply, nutrition, immunization, health education etc.

1) Okun, D.A.: "The value of Water Supply and Sanitation in Development: An Assessment of Health Related Interventions" WASH Technical Report No. 43, 1987, p.6, Table No 3.

2) Feachem, Richard G. et al: Health Aspects of Excreta and Sullage Management -- A State-of-the-Art Review. World Bank, Washington D.C. 1980.

THE SANPLAT SYSTEM

THE SANPLAT

The SanPlat is a radical improvement of the conventional latrine slab, making any latrine meet the highest demands of both hygiene and child safety. It has also proved to be very efficient in the control of smell and flies. The SanPlat System is the system for lowest cost sanitation.

The SanPlat has proved itself to be more than "just" an improved latrine slab. Correctly implemented, it has turned out to give a momentum in the implementation of sanitation programmes. The very low cost combined with an attractive design and good management has made it a best-seller both in Malawi and in Mozambique.

The technology, the training programme and the project management system have been developed and field tested during a period of ten years with support from UNDP, the World Bank and other institutions. What we offer today is a complete programme for rapid implementation of improved low cost sanitation at the lowest cost ever.

THE SANPLAT SYSTEM IS SIMPLE

"The simpler the better" has been the motto in our development work "as long as we don't compromise with safety or people's health".

The SanPlat is a highly improved latrine slab. The improvements on the latrine slab are the ones that do improve hygiene and safety:

1. The SanPlat has elevated footrests with a defined position and shape, which help the user to find his right position even at night. A well studied design has essentially reduced the fouling of the squatting areas, especially in public and institutional latrines as the people now know where to place their feet.
2. The SanPlat has a drop hole shaped like a key hole, which is safe even for a very small child. It is big enough to use comfortably and small enough to be completely safe.
3. The SanPlat has a tight fitting lid. Tight enough to shut out the foul smell, thereby also making the toilet room pleasantly odourless and free from flies. For public places and institutions, latrines should be fitted with vent-pipes for smell and fly reduction and not have lids as the handle of the lid may cause hand to hand contamination.
4. The SanPlat is easy to clean with water and a brush. Smooth and correctly inclined surfaces make cleaning easy.

The SanPlat is easy to transport (35 kg) and easy to install. No special skill is required. Any layman can do it.

THE SANPLAT SYSTEM IS COMPLETE

The SanPlat System is more than just technology. The SanPlat System also includes an implementation strategy, a management system, a training programme and a promotional programme.

The implementation strategy is based on the "urban to rural approach" and the establishment of local SanCentres. The "urban to rural approach" may be a hard way, as it normally is easier to work in rural areas than in urban, but it pays off. People in rural areas are more willing to accept what has been developed in urban areas than vice versa.

Another important aspect in the implementation strategy is the integration of improved sanitation in ongoing development efforts, hence reducing the cost for project management to a minimum. The simplicity of the system makes it ideal for integration in other development programmes

THE SANPLAT SYSTEM IS LOWEST COST

The SanPlat System is probably the cheapest system for improved sanitation in the world. Affordability is a must, not only for the user but also for the implementing institution and a possible donor agency who wants to see as many families as possible benefiting from the aid investments.

A SanPlat can cost less than two US dollars. Using local labour and self help, cutting down on expensive material and integration sanitation with other development efforts have allowed us to beat most records.

VIP-latrines (Ventilated Improved Pit-latrines) built in Malawi and neighbouring countries (i.e. Zimbabwe) use up to 5 bags of cement. Using the SanPlat System we may reduce the cement consumption down to a fifth (!!) of a bag, or even less as the SanPlat System allows us to make up to 8 (eight!) SanPlats per bag. Only about half a kilogram of reinforcement is needed, principally to make a handle for the tight fitting lid. The rest of the material is local and provided by the builder. We believe the SanPlat System is close to unbeatable!

THE SANPLAT SYSTEM IS SUSTAINABLE

Latrines eventually do fill up, or cease to function for any other reason. In such a case the SanPlat can easily be removed and reinstalled in the new latrine. As it is only the SanPlat that has required external assistance, a new equally good latrine can therefore easily be built by the owner.

For new latrines additional SanPlats can be bought from the nearest SanCentre. Given the low cost and the low weight of the SanPlat this should not constitute any major obstacle.

THE TRAINING PROGRAMME

The training programme has been adapted to fit personnel from various ministries and levels. Apart from SanPlat making it includes technical guidelines aiming at extended possible time of use and protection of water sources:-

1. Construction of stable pits, and larger pit volumes.
2. Improved and elevated foundations to avoid damage by heavy rains.
3. Improved walls and roofs.
4. Better siting of latrines.

The training programme has three levels:-

1. Training at management level for decision makers.
2. Training at supervisory level for extension workers (SAN-MEN).
3. Training at grass root level for builder.

The management system has been adapted to local conditions. In the urban areas improved sanitation has been integrated in the general urban management of the cities. In the rural areas we have joined development programmes of different ministries. In all areas, however, management is focusing on the individual and on personal relation building, PPM. (=Personnel Management).

The promotion system is also based on the integrated approach. People already in the field shall know, appreciate and practice (KAP) the system they are implementing. Knowledge and enthusiasm have always been a key to success.

THE SANPLAT SYSTEM IS ADAPTABLE

A SanPlat can be made big or small depending on the local conditions. It can be integrated in the structural latrine slab of an exclusive Septic Tank Based Ventilated Improved Latrine (SVIP). It can be made as a separate element to safeguard the hygienic and child safety conditions of a traditionally built latrine. It can be used to improve malfunctioning VIP-latrines which due to unfortunate siting or construction have problems with smell and flies. The SanPlat System should include a solution for any site and any pocket.

THE SANPLAT SYSTEM GIVES MOMENTUM

In areas where we earlier had only 20 - 40 percent of the families using latrines we have reached figures up to 100 percent! Adapted to special needs and conditions the SanPlat System could drastically improve sanitation, even in areas where unfavorable conditions prevail.

THE SANPLAT SYSTEM IS INTEGRATED

Simplifying the technology has made implementation easy. The fact that it also has been so well received by the population has made it popular in different Ministries and among donors.

In Mozambique the National Institute of Physical Planning is implementing the programme through local building cooperatives, City Councils and Provincial Directorates of Construction in cooperation with the National Directorate of Water (Ministry of Construction) and the department of Environmental Hygiene (Ministry of Health) with financial support from UNDP, UNICEF and bilateral agencies.

In Malawi the programme is coordinated by the Ministry of Local Government, Technical Section, and implemented by a wide range of institutions, i.e. Local Authorities, Agricultural Development Divisions, Ministry of Health etc, where sanitation is seen as a small but important element in their day to day work in improving peoples' living conditions.

SANCENTRES

A SanCentre (= Sanitation Centre) is principally a place where you can receive technical assistance for self help construction of improved pit-latrines. (In the future we hope to be able to use the SanCentres also for health education.)

The SanCentres can be a permanent place where service is provided to the public on commercial basis, but it can also be a temporary structure where SanPlats are produced as part of a local campaign for latrine improvement.

In any case, the SanCentre is a place where SanPlats are produced and/or sold to the public.

Both in Malawi and Mozambique a large number of SanCentres operating from the north to the south of the country serving both urban and rural communities. Through expansion of the programme we are step by step building up a network of SanCentres. Eventually every family shall have its own improved latrine. In

COST AND FUNDING

Based on preliminary estimates the total value of the programme in Malawi is around 300 million Kwacha or 120 million USD. (160 MKW per latrine). The figure includes all costs including the estimated value of self help contribution in terms of collection of natural building material and assisted construction.

Though costs could be cut also on the implementation side through integration of the programme in the general responsibilities of various ministries, it is estimated that approximately 20% of the total value is needed in donor contribution, totalling at around 25 million USD distributed over 12 years with a top around the years 1994 - 95 with a necessary donor input of approximately 5 million dollars per year.

It must be anticipated that a programme of this size will require funds from various donors, with a possible donor coordination by the UNDP and or World Bank offices.

Corresponding estimates for Mozambique are presently not available, but should be of the same magnitude.

CONCLUSION

Malawi and Mozambique have chosen to develop and implement a system for improved sanitation (the SanPlat System) that is essentially simpler and more cost effective than the system we know from other developing countries.

The simplicity of the system combined with a very great acceptability on part of the population has made the system popular among various Ministries and among donors, hence paving the way for interministerial cooperation and implementation through integration within other project and programmes aiming towards the same goal:

HEALTH FOR ALL - ALL FOR HEALTH!

ACKNOWLEDGEMENTS

Many people and institutions have contributed to make the SanPlat programme a success. The development work started in 1979 at the National Directorate of Housing in cooperation with the National Directorate of Water and the National Directorate of Preventive Medicine with support from UNDP/HABITAT/WHO, Swedish SIDA and Canadian IDRC.

UNDP and The World Bank supported the URBAN LOW COST SANITATION PROJECT in Malawi, executed through the Department of Water, Ministry of Works. The present phase is executed through the Ministry of Local Government and many other institutions.

Support for continued implementation has been received from DANIDA (Denmark), the Dutch Government, FINIDA (Finland), GTZ (West Germany), SAH (Switzerland), UNICEF, UNHCR, USAID and USA for Africa (United States of America).

In Angola the programme has been carried out under the Benguela Provincial Directorate of Social Services with support from the World Bank

Swedish SIDA has supported construction of domeshaped SanPlats in Tanzania based on a manual in Swahili (a translation of the Mozambican version).

For the institutional support I am especially grateful to José Forjaz, who at the time was Secretary of State for Physical Planning, Mr M Phiri, Principal Secretary for Local Government, Malawi, Roberto Chavez (Angola) and Geoff Read (Malawi) of the World Bank.

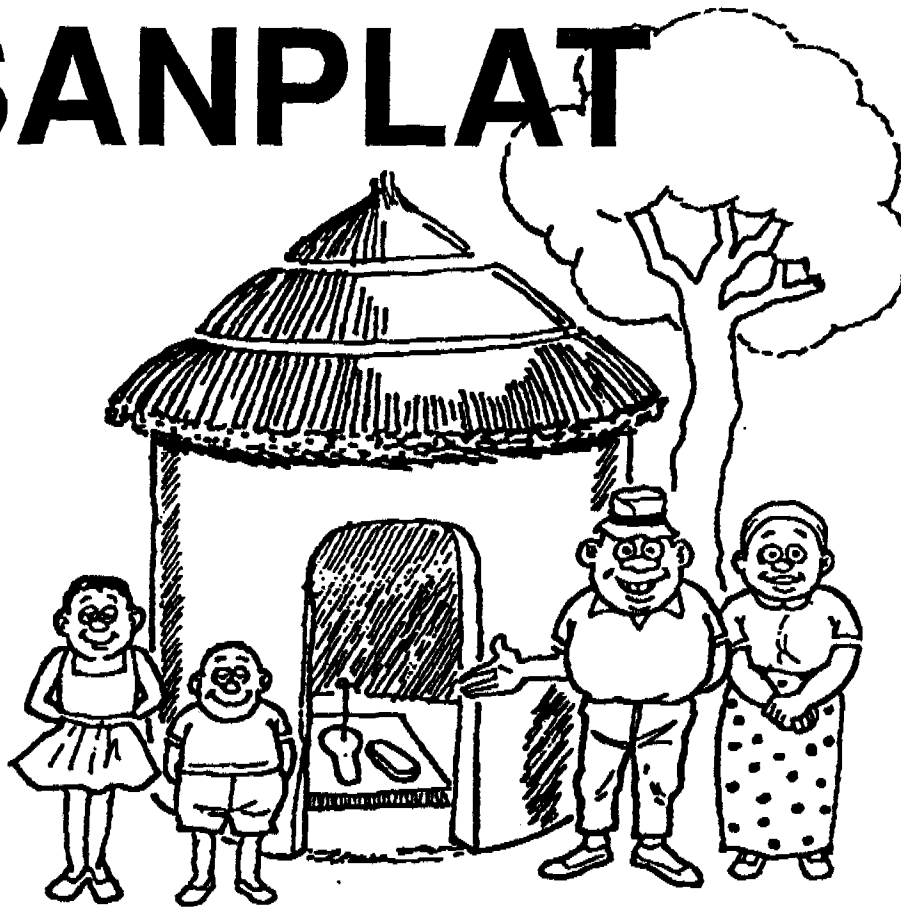
In the development of the technology and the implementation system the knowledge and support of Dr. Sandy Cairncross and Dr. Hayo Schmitt have been of especial importance for the programme.

I also want to mention my parents in Sweden who in a critical phase of the programme mobilized funds from private persons in my home town Trollhättan.

Björn Brandberg

**Building Engineer, Architect MSc
CONSULTING SANITATION ADVISER**

A MODERN LATRINE HAS A **SANPLAT**



HYGIENE IS HEALTH
The simpler the better!

The Improved latrine has:

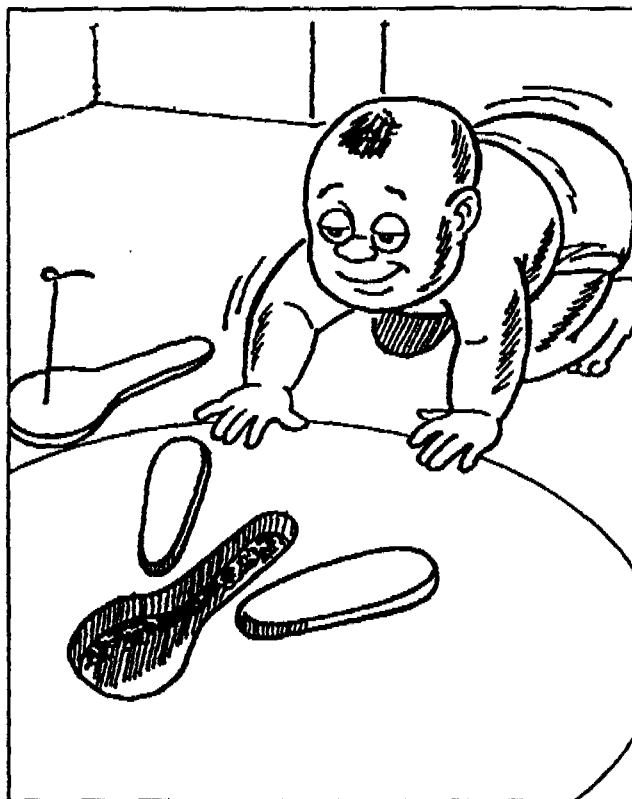
- *elevated footrests - which help the user to find the right position even at night;*
- *a key hole shaped drop hole - which due to the footrests has been reduced to minimum size, hence making it completely safe even for the smallest children;*
- *a tight fitting lid - which stops both smell and fly circulation, making possible latrine installation in the immediate vicinity of the house with no smell or fly inconvenience;*
- *ease of cleaning - due to the sloping surfaces and a smooth finish.*

For more information, please contact:

SBI Consulting Internaitonal AB

Österlänngatan 110, 461 35 Trollhättan, Sweden. Tel/Fax: +46 (0)520 159 89

A Latrina Melhorada



A LATRINA MAIS SEGURA
Já não há perigo, nem para os mais pequenos

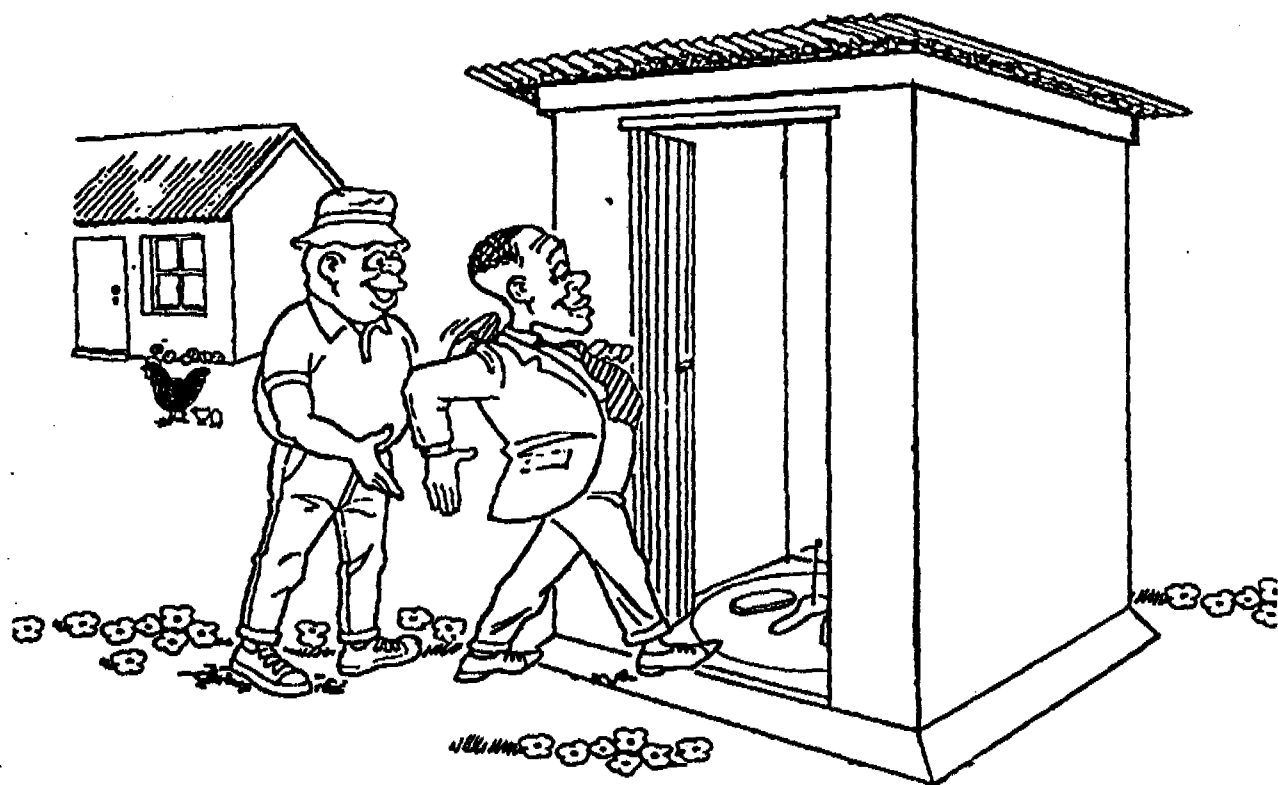
A Latrina Melhorada tem:

1. *Apoios para os pés para ajudar a pessoa a encontrar a posição correcta mesmo à noite.*
2. *Um buraco seguro com forma de buraco de fechadura. Seguro para as crianças e confortável de utilizar.*
3. *Uma tampa que fecha bem, impedindo as moscas, baratas e chetros de passarem.*
4. *Superfícies higiénicas. A latrina melhorada é fácil de limpar. É feita de cimento bem liso.*

Para mais informação, contacte com o pessoal do
Programa das Latrinas Melhoradas

Comissariado Provincial da Província de Benguela
Serviços Comunitários, Delegação Provincial de Saúde

A Latrina Melhorada



AS SUAS VISTAS VÃO ADORÁ-LA!
Sem cheiro • Sem moscas • Sem atrapalhão

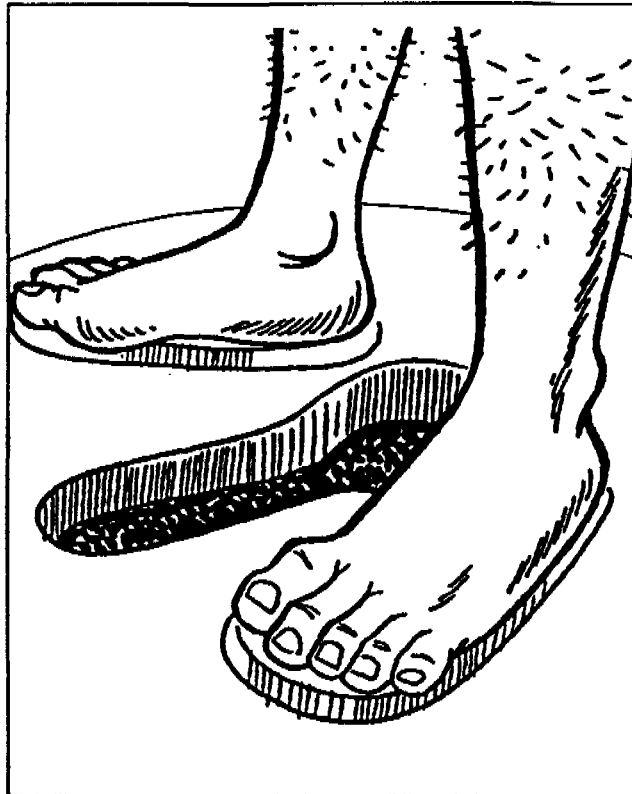
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Serviços Comunitários, Delegação Provincial de Saúde

A Latrina Melhorada



PARA QUEM NÃO GOSTA DE PISAR
Tente a latrina melhorada!

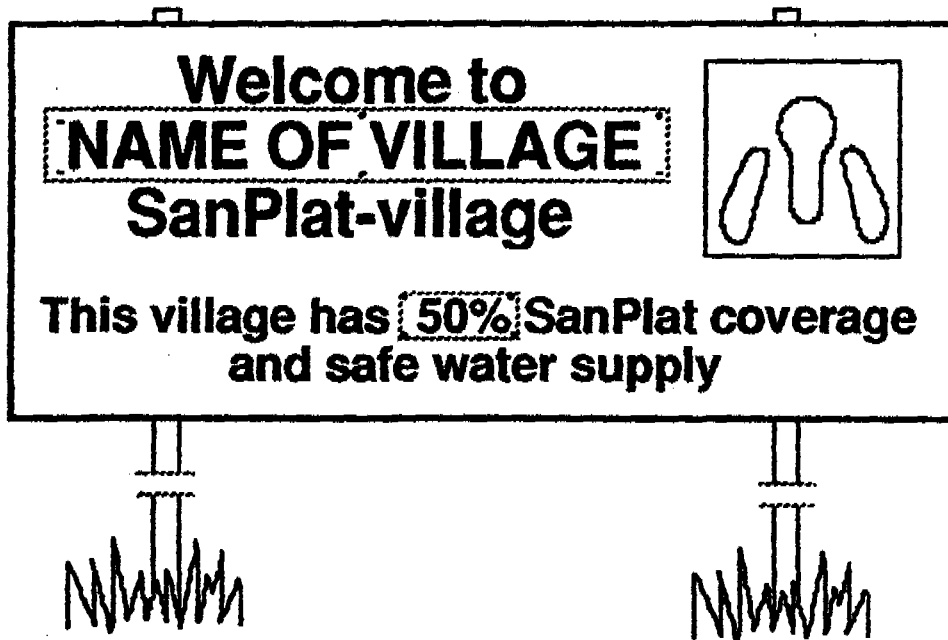
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- 1. Apoios para os pés para ajudar a pessoa a encontrar a posição correcta mesmo à noite.*
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Proposal for "SanPlat-village" sign-post



Sign-board printed with silk-screen on hard-board or water-proof plywood fixed to wooden frame 2x4 inch.

Blue sign-writing on white bottom.

To avoid fingerprints, paint should be "high gloss"

Nails should be galvanized with flat heads painted as board.

50% **60%** **70%** **80%** **90%** **100%**

"Stickers" of board for upgrading of sign-post manufactured the same way as big sign board. Stickers are fixed to board with galvanized full coil screws, if necessary against piece of wood on backside.

DRAFT

HOW TO MAKE A SAN PLAT



A MODERN LATRINE HAS A SAN PLAT

Installing a SAN PLAT in your latrine is the easiest and best way to make your latrine a nice place, pleasant to use for you, your family and your visitors. WHY, because the SAN PLAT:

1. Has a safe drop hole. Shaped like a key hole, the drop hole is both easy to use and safe for the smallest child.
2. Has elevated footrests which are easy and safe to use, even at night.
3. Has a tight fitting lid. If well placed the lid of the SAN PLAT stops flies, cockroaches and bad odours.
4. Is clean. The San Plat is made of smooth, strong cement which you can wash easily.
5. Is easy to make, easy to carry and easy to install.

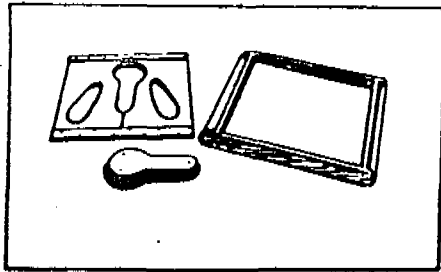
This pamphlet shows you how to make a SAN PLAT.

GOOD LUCK!



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SANITATION — BUILDING — IMPLEMENTATION



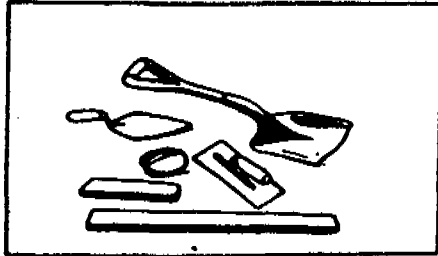
MOULDS AND MATERIALS

MOULDS

The San Plat Frame
 The Drop Hole Mould
 The Footrest Mould

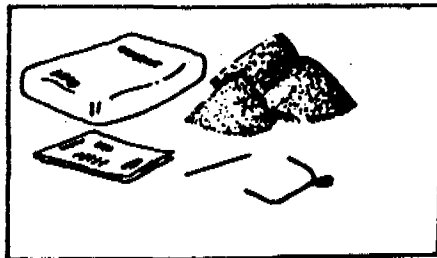
TOOLS

A masons trowel (not too big)
 A steel float (if possible)
 A shovel for mixing
 Two straight peaces of wood
 30cm and 80 cm long, and
 a string (2m)



MATERIALS

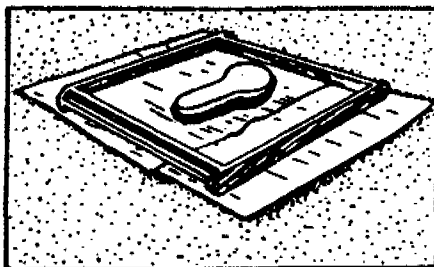
Cement
 Clean river sand
 small (10mm) hard stones
 Paper to put under the concrete
 Soft steel reinforcement bars, (two straight
 pieces 30 cm and one 75 cm formed into a
 handle for the lid)



You also need a hard and smooth surface to
 mix the concrete on.

MAKING THE PLATFORM

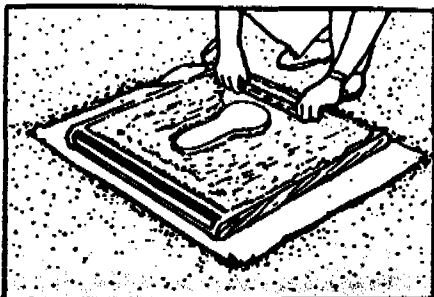
Make a flat area for the San Plat Frame on
 the ground using the longer piece of wood,
 and cover the ground with paper.



Put the drop hole mould exactly in the middle
 and check the position with the string.

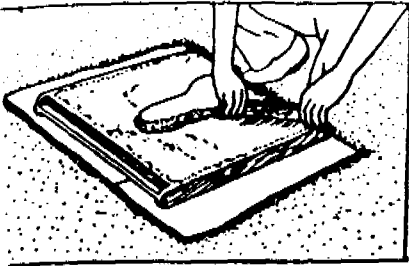
For each San Plat mix; 5 litres cement,
 7.5 litres river sand,
 7.5 litres stone.

When the dry mix is well blended, add water
 and continue mixing for 10 minutes.



Slowly fill the frame with concrete,
 continually compacting the concrete around
 the edge and up to the first level of the
 drop hole mould.

Cut a slight groove in front and behind the
 drop hole mould exactly in the middle of the
 concrete. Place the two straight 30 cm pieces
 of reinforcement in the middle of the
 concrete, and cover and compact well.



Compact the concrete with the 30 cm straight piece of wood, to achieve a smooth inclination from the frame to the first edge of the drop hole mould, and polish the surface with the steel float or the trowel.

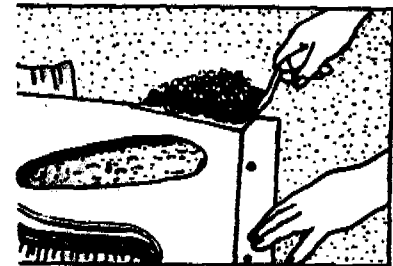
When the concrete is a bit hard, scratch the area of the footrests using the footrest mould as a template, and inscribe the San Plat as necessary.



MAKING OF FOOTRESTS

When the platform is hard enough you can make the footrests. Start by soaking the platform with water. Smear the scratched area with water and cement. Centre the footrest mould in relation to the drop hole, and fill the holes in the footrest mould up to the surface with stiff mortar, and finish off the surface with the trowel before you carefully remove the mould.

When the footrests are a bit stiff, you cut away surplus mortar and finish the edges.



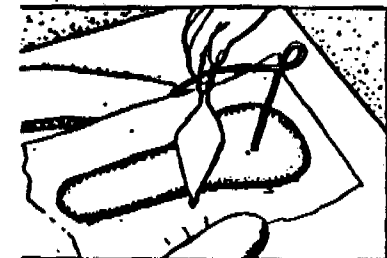
MAKING OF THE LID

Bend the handle to the required shape.

Put a piece of wet paper from a cement bag in the drop hole so that it conforms to the sides.

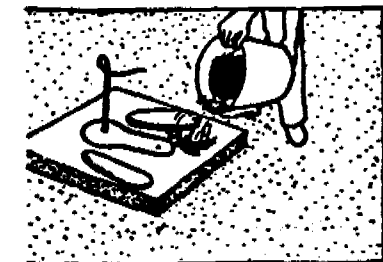
Fill the drop hole with mortar until it reaches slightly above the edge and shape the top surface with the trowel.

Cut a groove in the middle of the lid. Place the handle (75 cm reinforcement), supported with a stick and compact well before you finish the surface.



CURING

Now your SAN PLAT is ready, but to reach full strength the cement must be kept damp for at least one week, and it must NOT become dry at any time before that.



WELL DONE!

SAN PLAT STANDARDS

A SAN PLAT is controlled and tested according to the following standards:

GENERAL

A SAN PLAT shall have a general appearance showing good workmanship and shall promote cleanliness.

SURFACE

The surface of the SAN PLAT shall have an even slope towards the drophole and be as smooth as the inside of a stretched palm.

FOOTRESTS

The shape and position shall not vary more than 5 mm from approved design, and shall be flat. Smoothness as for "surface" (above).

DROPHOLE

The shape of the drophole shall follow the approved design and have a smooth and regular edge.

LID

The lid shall be cast in the hole of the actual SAN PLAT, and the lid should fit to within 2 mm of any adjoining point of the finished SAN PLAT to avoid the circulation of flies and odours. Smoothness as for "surface" (above).

HANDLE

The handle shall be of 6 mm round reinforcement bar 75 cm long and shall run from the center of the round part to within 5 cm of the opposite edge of the lid.

INSCRIPTIONS

Each SAN PLAT shall have its number of production (a running No. for each platform), the date and the initials of the maker. The lid shall carry the same number and the initials of the maker.

SECURITY

Each SAN PLAT should be test loaded with 3 people in the middle while supported by a half brick at each corner.

GOOD LUCK!

GOOD SAN PLAT MAKING

MINISTRY OF LOCAL GOVERNMENT - TECHNICAL SECTION 22-Jul 1989
 URBAN TECHNICAL SERVICES (MLW/86/015)

COST OF SAN PLAT
 BASED ON LILONGWE SITUATION JULY 1989

ITEM DESCRIPTION	QUANT	unit	RATE	AMOUNT	SUB TOT
------------------	-------	------	------	--------	---------

MATERIAL (incl transport to San Centre)

Cement.....	0.125	bag (50kg)	19.00	2.38	
Sand.....	30	kg.....	0.01	0.36	
Stone 10 mm.....	8	kg.....	0.06	0.48	
Reinf 6mm mild st	0.5	kg.....	2.00	1.00	
Material sub total per San Plat.....					4.215

LABOUR

Unskilled.....	0.25	man days..	1.50	0.38	
Labour, sub total per San Plat.....					0.375

MATERIAL AND LABOUR (per San Plat)..... 4.59

OVERHEAD

Say 20% of material and labour costs..... 0.92

TOTAL (Malawi Kwacha)..... 5.508

RATE OF EXCHANGE (MKW/USD)..... 2.78

TOTAL PER SAN PLAT (US Dollars)..... 1.98

SanPlat versus VIP

A Comparison between Two Low-Cost Sanitation Systems

by

Björn Brandberg

Discussion paper presented for the 17th WEDC Conference on
INFRASTRUCTURE, ENVIRONMENT, WATER AND SANITATION
in Nairobi, Kenya, 19-23 of August 1991

INTRODUCTION

An increasing number of people working with low cost sanitation have asked whether to promote VIP-latrines or SanPlat-latrines. Considering the great number of latrines that need to be built in developing countries the question is of great importance. This paper will consequently compare the two systems and draw a number of conclusions.



The SanPlat-system The simpler the better!

Invitation

Given that the author is the "inventor" of the SanPlat system, supporters of the VIP system are encouraged to take up the debate.

THE TWO SYSTEMS

The two systems do address the same problem: Safe disposal of fecal matter at the lowest cost and are designed for large scale improvement of hygiene and health in low income communities.

The main difference between the two systems are:

1. A screened vent-pipe or a tight fitting lid

The VIP-latrine has a screened vent-pipe (for

fly control), while SanPlat latrines have a tight fitting lid (for fly control) and well positioned elevated footrests (to help the user find the right position) for better hygiene.

2. Light or dark inside?

The VIP-latrine should be made dark to permit proper functioning of the ventpipe. The SanPlat latrine can be made light with openings in the walls. Light is important for proper hygiene. Dark latrines have a tendency to become dirty, and the user may fear to step in something very unpleasant. There is also a danger of snakes in dark latrines.

3. Moulds or not

Making the the SanPlat requires some imple moulds, while VIP latrines are usually built without any moulds. Building "free-hand" may give inappropriate dimensions. Building with moulds ensures exact dimensions automatically.

4. Handling of cement

The VIP system normally requires the handling of cement and reinforcement on the site, while the SanPlats are cast at a convenient location where there is less risk of destroying the cement because of inadequate storage, and non-professional application.

5. Costs

Sanplat latrines do not need ventpipes. This reduces the cost of the slab and often also of the foundations. Small SanPlats are used for upgrading traditional latrines to full SanPlat standard at almost no cost at all (around two dollars).

6. Simplicity

Vent-pipes make the building of latrines complicated. SanPlats can be installed by any layman without any training at all. Using the SanPlat-system you can easily integrate the latrine building programme into other projects, thus cutting overheads, and boosting nationwide implementation.

THE VENT-PIPE VERSES THE LID

The functioning of the vent-pipe. The VIP system has as a main principle that foul air from the pit should be evacuated through the vent-pipe. Wind passing over the top of the vent-pipe should cause an up-draught in the pipe leading to a down-draught through the drop hole and causing fresh air to enter into the toilet compartment through, for example, the entrance. The absence of smell in the toilet should lead to flies (led by the smell) being attracted to the top of the screened ventpipe and not to the compartment, which should become free from smell and free from flies.

For the VIP-system to function properly a number of rules for siting, orientation and construction of the latrine must be followed. If not, the air flow may be reversed, leading foul air to stream up through the drop hole into the toilet compartment which now becomes smelly and attracting the flies.

The SanPlat System needs no vent-pipe. Even if the lid is lost, or not replaced, there can not be any appreciable flow of bad smelling air up through the drop-hole.

Experiment no 1

Blow tobacco smoke into a bottle and try to get it out again. As there is only one hole, it is very difficult to get it out. Eventually the smoke will condense on the walls of the bottle, in the same way as the foul gasses in the pit will be absorbed by the building material and the soil of the pit-walls

Conclusion 1

Well built and well sited, the toilet room of the VIP-latrine should be free from smell and flies. If not, it may become very smelly and have many flies. If the lid is not replaced in a SanPlat latrine, some smell may come out of the drop-hole, but far less than from a poorly built VIP-latrine.

It is very easy to replace a SanPlat lid, but it may be impossible to move or reconstruct an incorrectly built VIP-latrine. (If nothing else helps, block the vent-pipe and install a SanPlat over the existing drop-hole.)

ENVIRONMENTAL POLLUTION

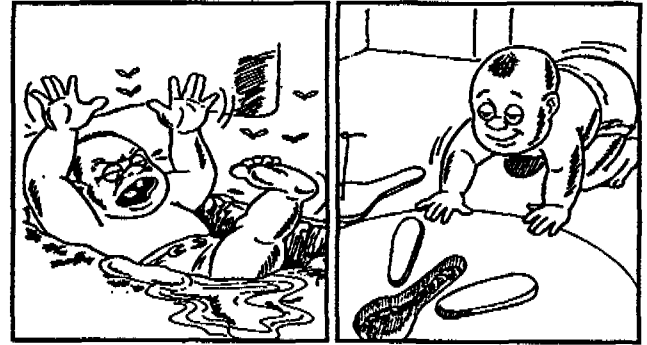
In a VIP latrine you should have a permanent flow of air through the pit, leading foul air into the environment. In a high density area with many VIP-latrines you may feel the smell in the whole area.

The VIP-latrine is recommended to be sited on the down-wind side of the house, so as not to cause inconvenience (smell) to the house owner. The smell may however cause inconvenience to the neighbour.

In an area with SanPlat latrines there is no smell at all.

Conclusion 2

The SanPlat-system protects the environment better from the smell of latrines.



Proper moulds is a guarantee for proper dimensions (and safety for babies)

LIGHT IN LATRINES

VIP latrines are often built with a labyrinth entrance to avoid that light falling on the drop-hole. (Doors are expensive and often left open and the door frame may be eaten by termites). It may take several minutes for your eyes to get used to the darkness, and many people have a fear of snakes in dark latrines, not to mention the risk of stepping in children's faeces.

Conclusion 3

A latrine which is pleasant to use, should have plenty of openings for light and air. It could be, if you use a SanPlat.

STRUCTURAL STABILITY

Correctly built, the vent pipe should have a minimum diameter of 15 cm (6 inches) if the inside of the pipe is smooth (i.e. plastic or asbestos cement). If made in brickwork it should be at least 25x25 cm (10x10 inches). The ventpipe should always be placed vertically above the pit. If not, the flow of air may be hampered and flies trying to leave the pit may return to freedom through the drop hole.

The weight of a brick-vent is considerable (approx 1,000 kg), requiring a reinforced concrete slab to support the load. In the case of the SanPlat latrine there is no load on the slab except for the people using it.

Conclusion 4

The weight and the cost of the slab for a VIP-latrine is more than for the SanPlat-latrine, with less risk of a soil collapse.

BUILDING COMPLICATIONS

Unless you do not want the vent-pipe to pass through the roof, with problems of roof-leakages, the vent pipe needs to be placed on the outside of the wall. Part of the slab consequently needs to be outside of the roofed structure, not receiving any protection of the roof. On the contrary, it often receives water running off the roof. To avoid the rainwater eroding the soil, which is supporting the VIP-slab, a proper foundation is generally required for areas where the soil is stable.

The SanPlat is protected by the roof, and does not need an extra foundation unless the soil is very weak.

Conclusion 5

The slab can be made simpler with the SanPlat system than with the VIP-system and there is normally less risk of soil collapse.

AVAILABILITY OF MOULDS AND SCREENING MATERIAL

VIP-latrines need to have screening material for the vent-pipe while moulds are required for SanPlat making.

The vent-pipes of the VIP-latrines need to be properly screened. Research carried out in Mozambique and Zimbabwe indicate that most commonly available screening materials are inappropriate as they corrode from the action of offensive gasses and from the sun. Birds looking for flies rapidly destroy corroded screening gauze. Fly mesh of stainless steel or aluminium is recommended as having an expected lifetime equal or superior to the expected life of the latrine. These materials are however not readily available in Africa and need to be imported.

The SanPlat-system requires moulds for the proper manufacture of the improved slabs. These moulds can be manufactured by a local carpenter. A wood-workshop with carpentry machines can produce the moulds if a large number is required. Drawings have been published by the Institute for Rural Development, INDER, (ex INPF) in Maputo, Mozambique. Drawings and moulds are also available through LCS Promotion in Sweden.

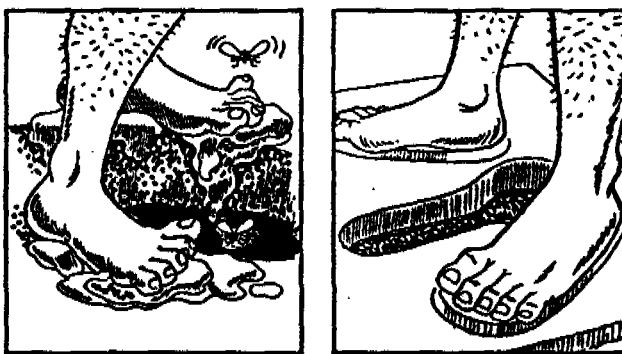
Conclusion 6

The two systems require some institutional support. A VIP-latrine building programme would require continued supply support of screening material while the SanPlat moulds can be

replicated locally once the first set has been made available. Some institutional support may therefore be required in both cases.

SUSTAINED FUNCTIONING

It has been found that vent-pipes frequently become blocked by spiders-webs, as spiders like to build their nets where flies are easily trapped. The spider web, however, impairs the required flow of air, and the open drop-hole of the VIP-latrines now becomes the only escape for smell and flies, and the VIP latrine in terms of functioning becomes a traditional unimproved latrine. Spiders webs can be removed by pouring a bucket of water through the vent-pipe. This does not, however, kill the spiders who will rebuild their webs



If you can't avoid stepping in it...
Try a SanPlat!

Moulds guarantee appropriate footrests

Experiment 2

Destroy a spider's web. You will be amazed to see that he will start rebuilding it in the same place almost immediately, and that it will be completed within a few hours.

Experiment 3

Try to inspect the vent-pipe of a VIP-latrine. You will find that it is almost impossible unless you measure the airflow. A villager would not discover the web inside the pipe.

Experiment 4

Ask for a ladder in a traditional African village. You would need it if you want to pour a bucket of water through the pipe. If you are very lucky you may find one. Very few VIP-owners would remember to clean out the vent pipe.

Lids for SanPlats may disappear. When this happens you can buy a new one at the nearest SanCentre, where you purchased or received the SanPlat. Disappearing lids are a problem only in urban areas. In rural areas the discipline of using the lids is quite impressive. If it does happen and there is no SanCenter to provide a new one a

wooden lid or a sheet metal one will do reasonably well. Where smell and flies is a problem (which is not often the case) people will take good care of their lids.

Conclusion 7

Comparing the risks of malfunctioning of the vent pipe and disappearing lids, it seems that the VIP system is more vulnerable than the SanPlat system

TRAINING

The SanPlat system has, as a basic philosophy, not to change more than absolutely necessary. You simply install the SanPlat over the old drop-hole and give the rest of the floor another smearing of soil or termite clay, possibly sprinkled with ashes. The individual households can build their own improved latrines with the knowledge they already have. Training efforts can be concentrated on, for example, health education.

It may take a some days to train builders to make good SanPlats. A good bricklayer learns it in a day or two, while people with no background learn to make them well in a week or two. Considering that the trained people may make SanPlats for hundreds of families, this is a very good training investment.

Compared to what most Africans normally build, VIP-latrines are complicated. With the absence of moulds, dimensions need to be remembered or taken from drawings and manuals. Most African building is made without any drawings. Their building dimensions refer rather to experience and common sense.

Zimbabwean experience of VIP-latrine building has been that it becomes too expensive to use contractors for the building of the latrines. The training programme has therefore focused on the individual families, who will build one latrine only. That is, training them to build a structure which is very much different from the houses they are used to building.

Conclusion 8

With the SanPlat system you have a better pay off from your training investments.

ADAPTABILITY

For the proper functioning of the vent-pipe a VIP-latrine should be relatively dark and it obviously needs to be roofed.

A considerable portion of African latrines have no roofs (e.g. southern Mozambique, and some lake shore areas in Malawi). Most Africans were used to carrying out their private needs in the privacy of the bush, and many older people still cannot accept the idea to defaecate in a house.

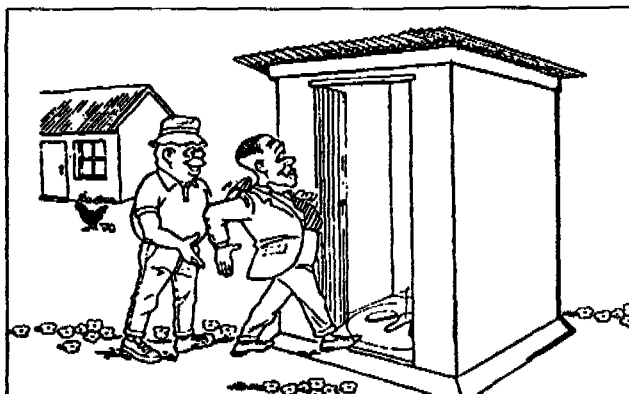
Conclusion 9

The SanPlat system is very much easier to adapt to the the traditional ways of building.

FINAL CONCLUSIONS

The main reasons to choose the SanPlat system may be the economy and the simplicity of the system but there are many more. Try it and compare!

-oOo-



A modern latrine has a
SANPLAT

No smell no flies, no embarrassment
Your visitors will love it!

ADDRESSES

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Rättaregården, Box 217
S-530 30 TUN
Sweden

Tel/Fax: +46-(0)510 80050 / 80213

Moulds, drawings, manuals and promotional material are available from:

LCS Promotion
Flo 1695 Levenskog
S-467.00 GRÅSTORP
Sweden

Tel: +46-(0)514 40058

Fax: +46-(0)514 40273

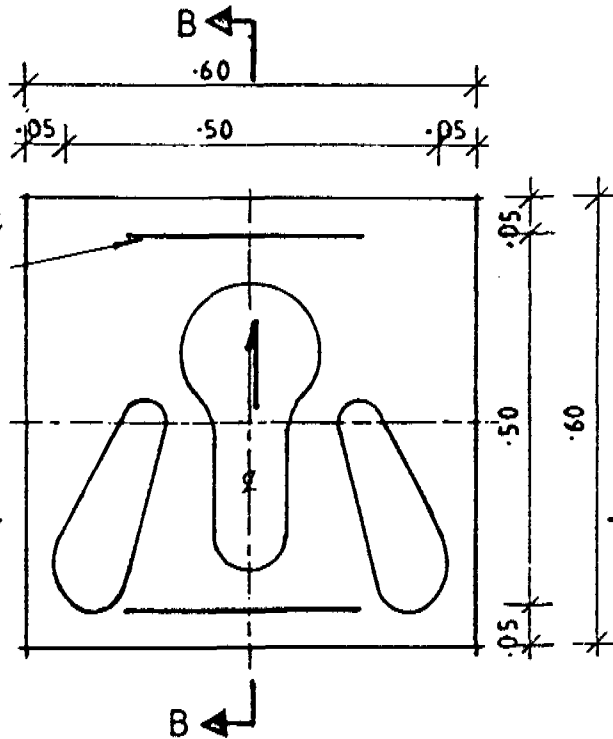
LCS Promotion is registered in Sweden as a non-profit company.

-oOo-

SANPLATS

Sanplat is an abbreviation for sanitation platform which is a small prefabricated concrete slab 60x60 cm in dimension designed to improve hygiene and safety in any latrine.

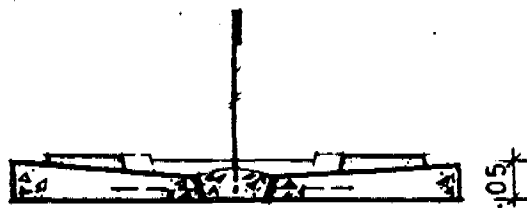
Plan



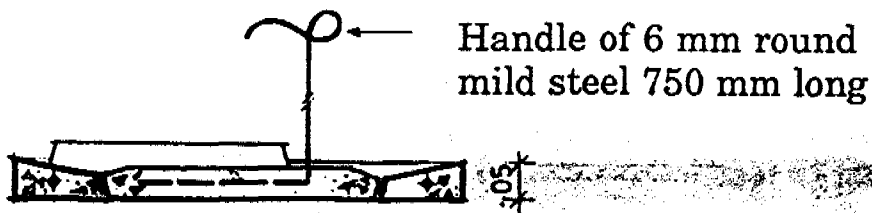
Reinforcement of round mild steel 6 mm
2 pcs 300mm each

The lid is made of the same concrete as the platform. To guarantee a perfect fitting it should be cast in the hole of the sanplat, that it belongs to.

Section AA

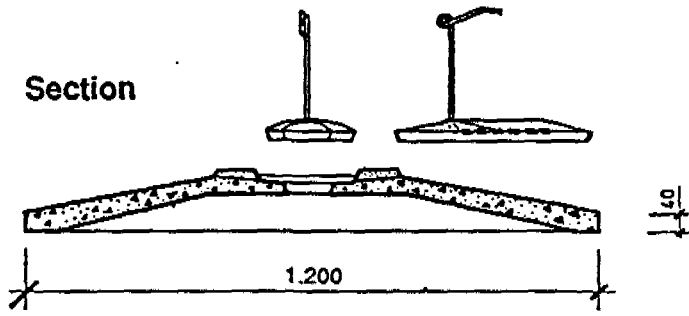


Section BB

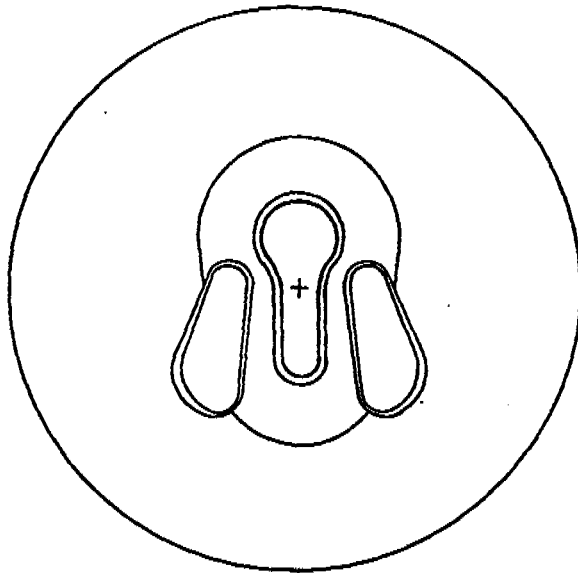


Handle of 6 mm round mild steel 750 mm long

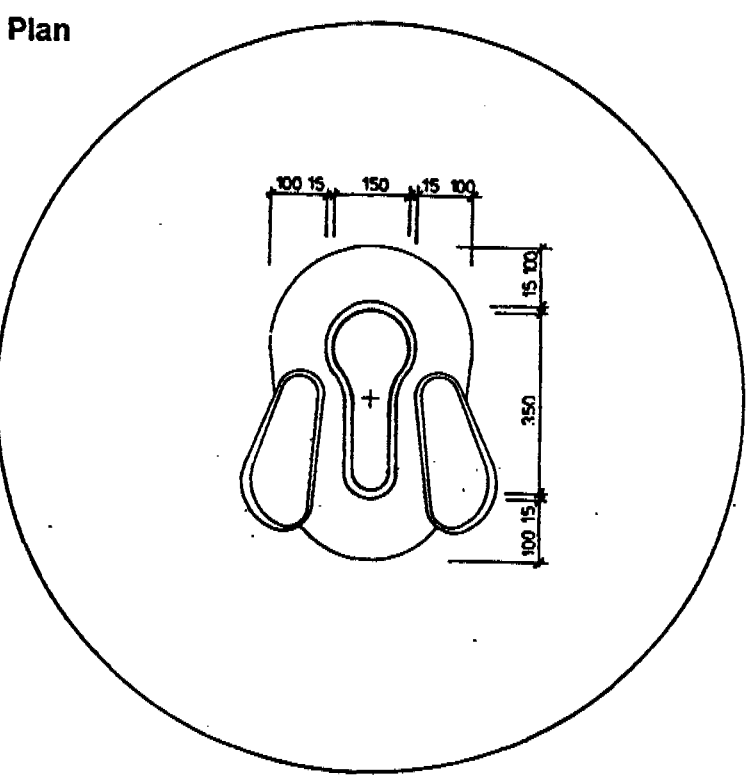
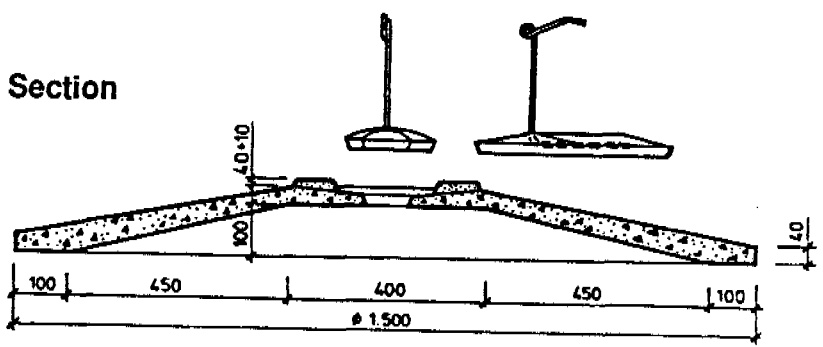
Domeshaped sanplat 1.2 m diameter



Plan



Domeshaped sanplat 1.5 m diameter



MOULDS FOR SANPLAT MAKING

Three moulds are required for making SanPlats:-

1. The SANPLAT FRAME;
2. The DROP-HOLE MOULD; and
3. The FOOT-REST MOULD.

For design and dimensions, please refer to drawings.

MATERIAL

The moulds can be made in various materials. A local well seasoned hard wood has been the most common choice.

As the same moulds will be used for making a large number of SanPlats and as cement, sand, stone and water will tear and wear it is advisable to be careful in the selection of the wood and to avoid the usage of the soft external (lighter) parts of the lumber.

WORKMANSHIP

All surfaces of the moulds should be plain and smooth, and well sandpapered.

Curved forms are best made on a spindle moulder (see picture), which can be adapted to the type of surface required. To avoid splintering of the wood the cutting edges of the moulder should be well sharpened, and the machine should work at high speed.

NOTE: The spindle moulder must only be operated by authorized personnel as accidents can be very serious and even fatal.

USE AND MAINTENANCE

Keep your moulds clean — always!

Cement is easy to remove with water and a brush when fresh, but very difficult to remove if left for a longer time.

Grease or motor oil is not recommended as it makes the moulds and your job dirty and unpleasant. Use water and a soft brush and remove the cement immediately. Never leave the your SanPlat with the moulds over the night

The SanPlat Frame

The San Plat frame is composed by six members of 20 mm planed wood. Please note that four of the members are tilted 5 mm why special attention has to be made when cutting end surfaces.

The members are normally joined with four inch nails (four in each corner). To avoid splitting of the wood pre-drilling with a 1 mm finer bit is recommended.

The Drop-Hole Mould

The Drop Hole Mould is made in two parts which are joined together with five 50 mm screws. The joining must be strong as it while making the SanPlats is recommended to beat on the top part of the mould with a hammer before taking the mould out of the stiff concrete.

It is advisable to make the moulds with very accurate dimensions (± 1 mm) as it then will be possible to replace lost lids with maintained good fitting for desired smell and fly control.

The two parts are best made on a spindle moulder using a guide, with the same external dimensions, made of 20 mm ply-wood, which is temporarily fixed to the piece being machined.

The Foot-Rest Mould

The Foot-Rest Mould can most easily be made in 8-10 mm water resistant ply-wood. Alternatively, and more commonly, planed hardwood (10 mm) is used. As a substantial width (300 mm) is required also the softer superficial parts of the lumber is accepted. The loft part of the wood must, however, not reach the foot-rests.

The inclined edges on the holes for the footrests can best be made on the spindle moulder, though you here may need a small diameter spindle.

Good Luck !

Bjorn Brandberg
CONSULTANT LOW-COST SANITATION

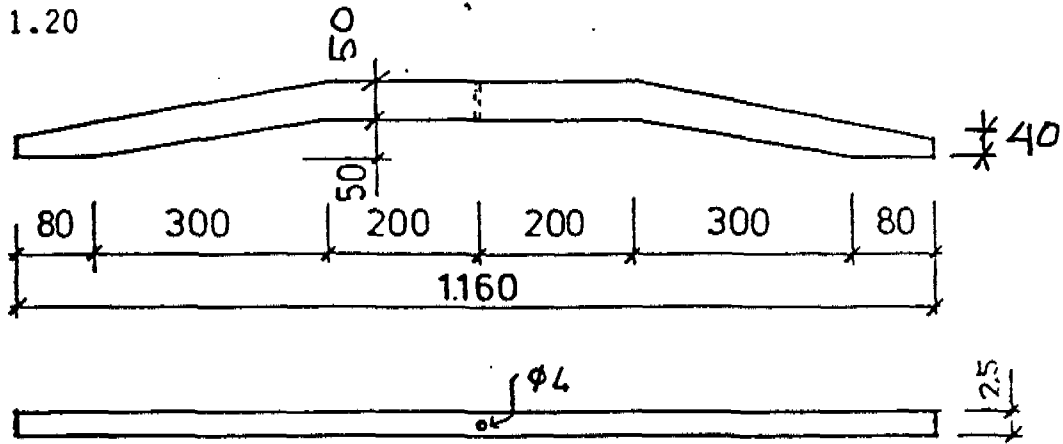
SBI International (Ltd.) AB
Osterlangatan 110
S 461 35 TROLLHATTAN
Sweden

MOLDE DE ARCO

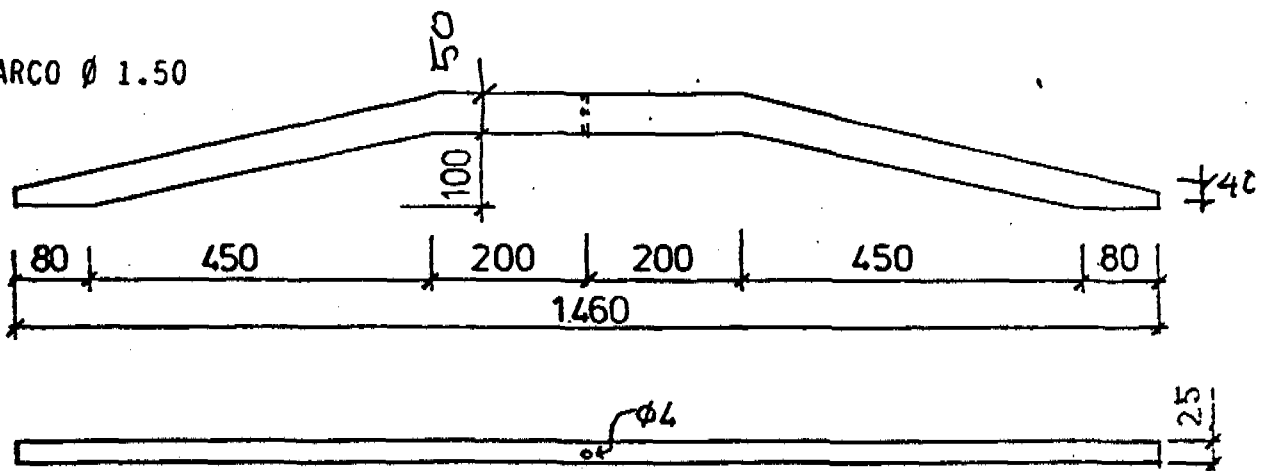
MEDIDAS EM MILÍMETROS

MATERIAL: De preferência madeira dura.

ARCO \varnothing 1.20



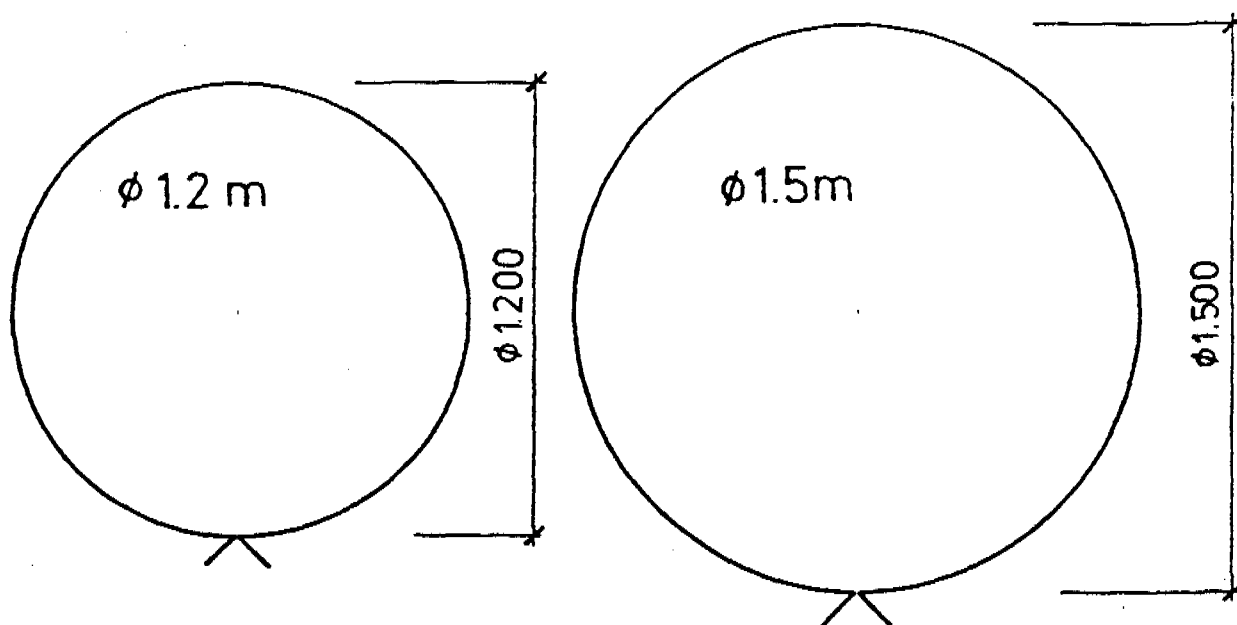
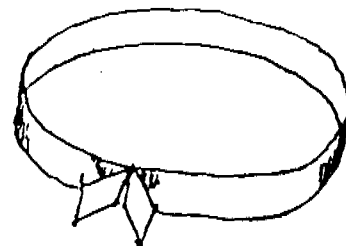
ARCO \varnothing 1.50



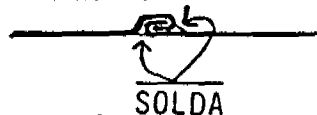
MOLDE DE CHAPA

MEDIDAS EM MILÍMETROS

MATERIAL: De preferência chapa de ferro de 1mm.



DOBRA DO LATOEIRO



NOTA: Para conseguir o comprimento necessário, a chapa geralmente precisa de ser acrescentada. Isso costuma ser feito como mostra a figura. (dobra do latoeiro).

Como a duração do molde depende geralmente das juntas, estas devem ser tão pequenas quanto possível, bem marteladas e, de preferência, soldadas com estanho.

MEDIDAS PARA A DOBRAGEM E CORTE DA CHAPA

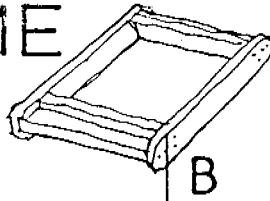
CHAPA DE ϕ 1,20m : Corte - 100x3.970 Dobragem - 100+3.770+100

CHAPA DE ϕ 1,50m : Corte - 100x4.910 Dobragem - 100+4.710+100

SANPLAT FRAME

DIMENSIONS IN MILLIMETERS

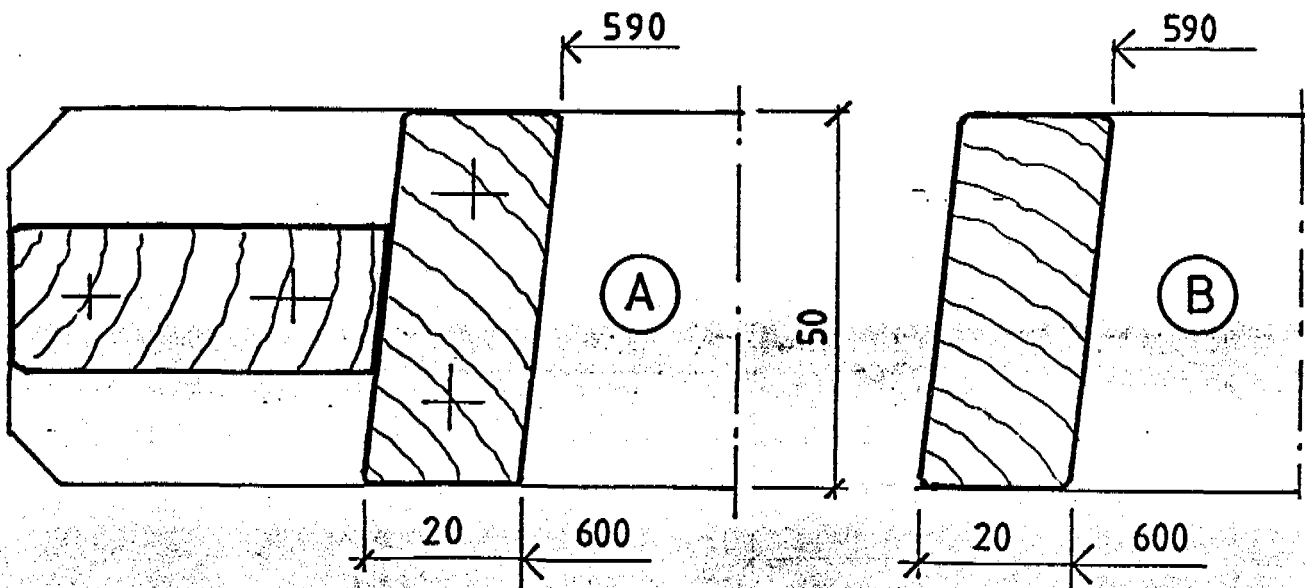
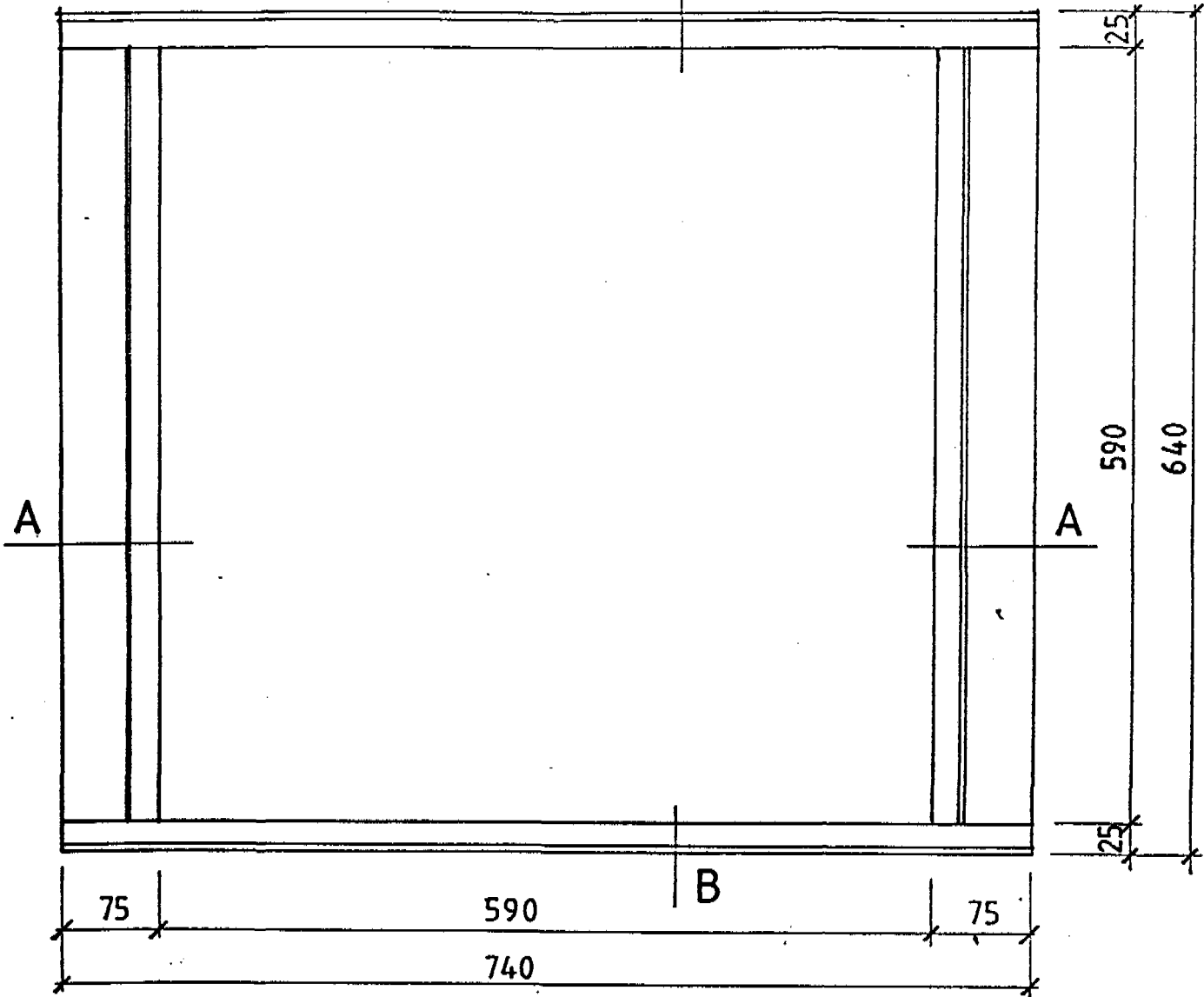
MATERIAL: HARD WOOD



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SANITATION - BUILDING - IMPLEMENTATION

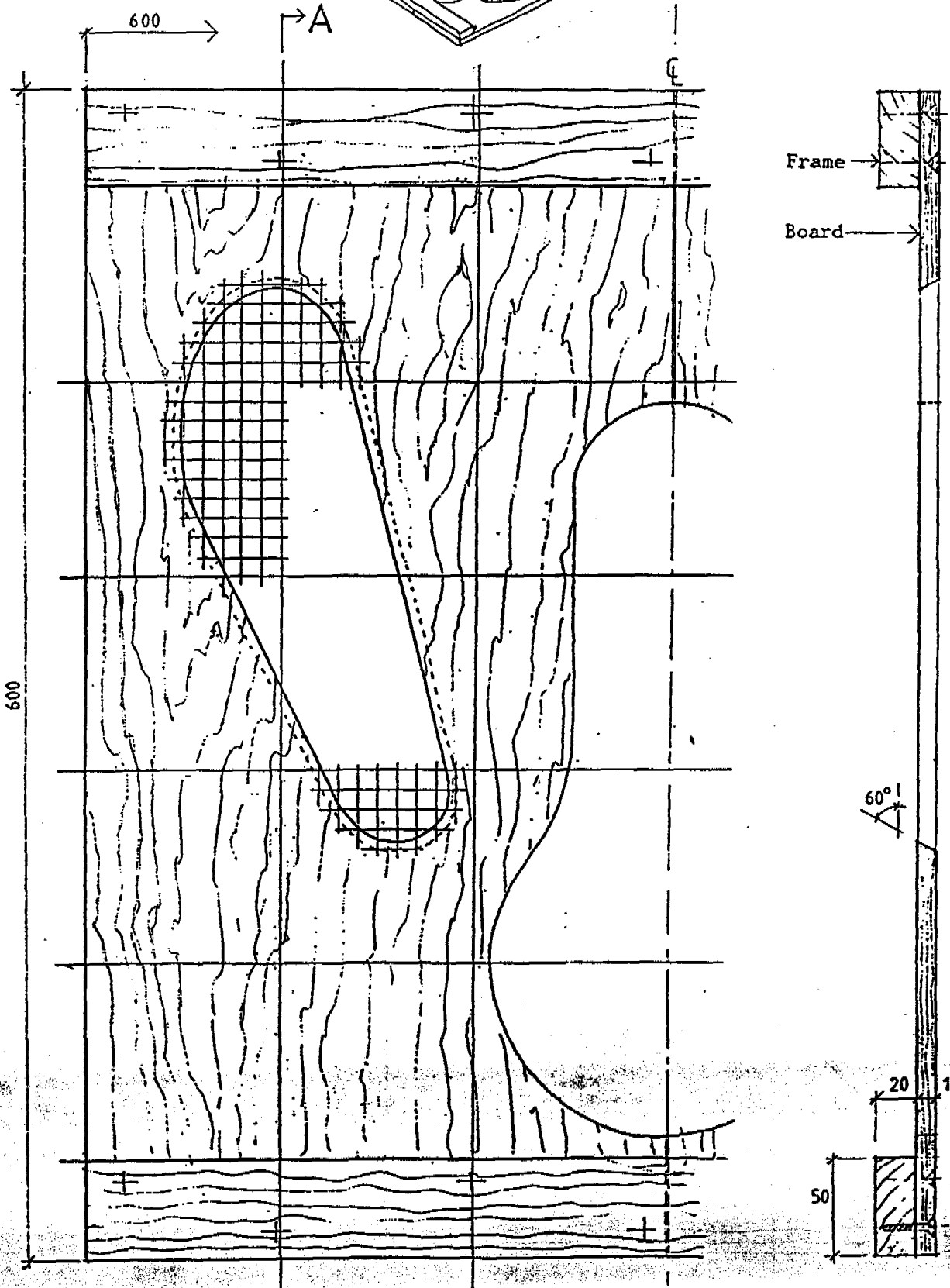
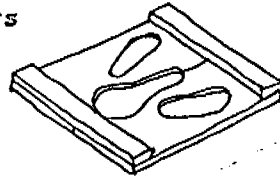
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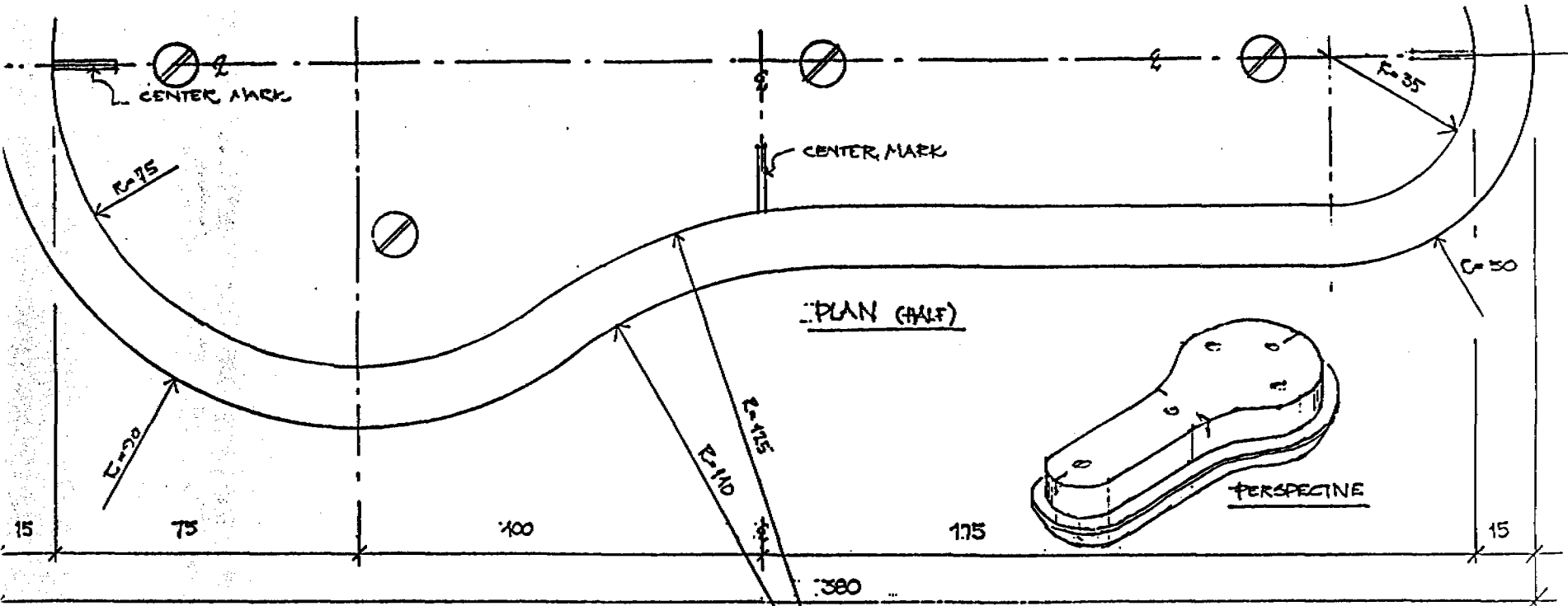


FOOT-REST MOULD

Dimensions in millimeters
Material: Hard wood

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SANITATION - BUILDING - IMPLEMENTATION
690925 *Hygiene Institute*

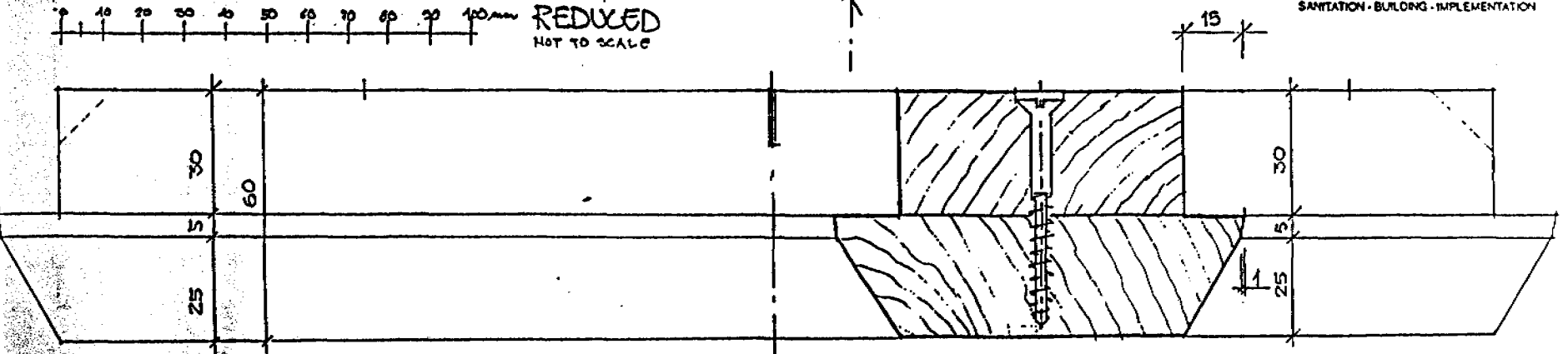




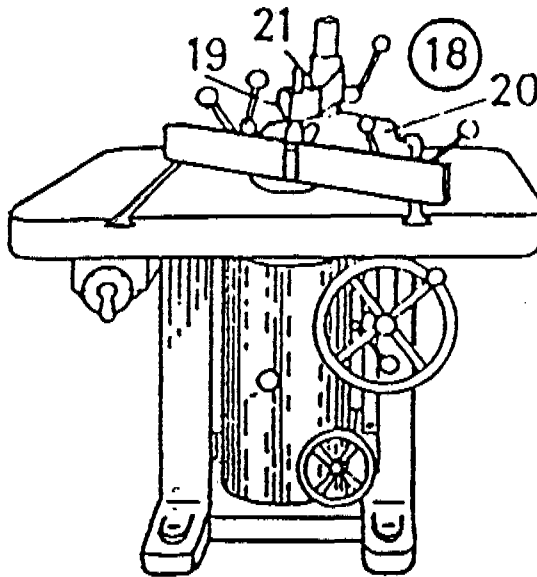
DROP-HOLE MOULD

0 10 20 30 40 50 60 70 80 90 100mm REDUCED
NOT TO SCALE

SBI INTERNATIONAL (PVT) LTD
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SANITATION - BUILDING - IMPLEMENTATION



SIDE-VIEW and CROSS-SECTION



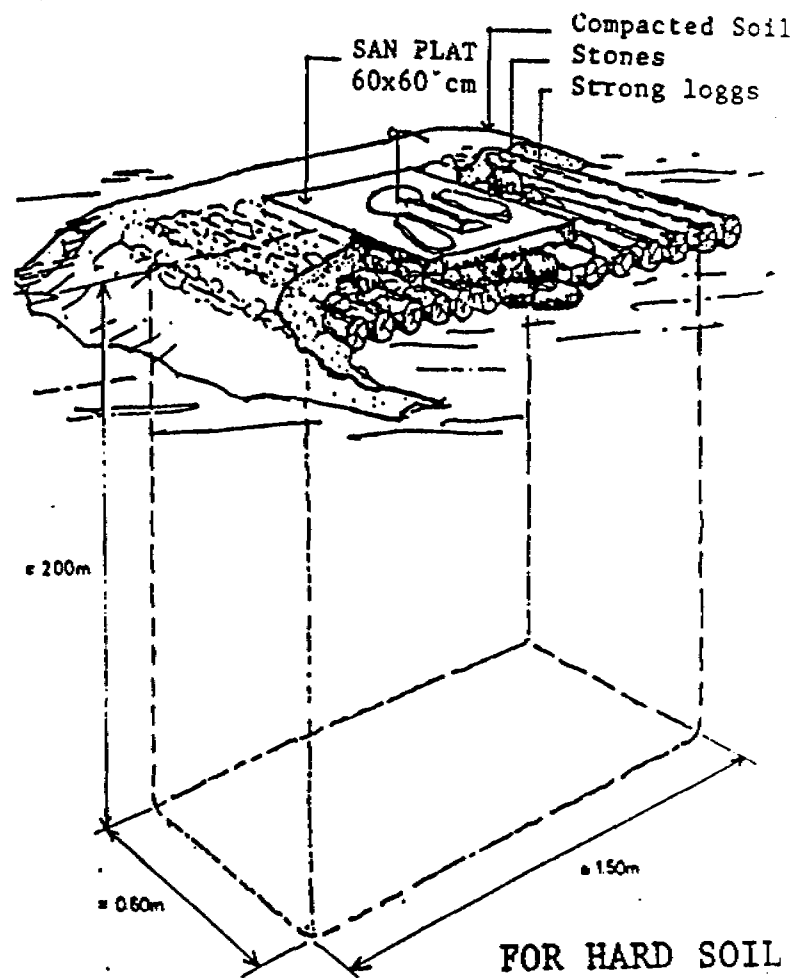
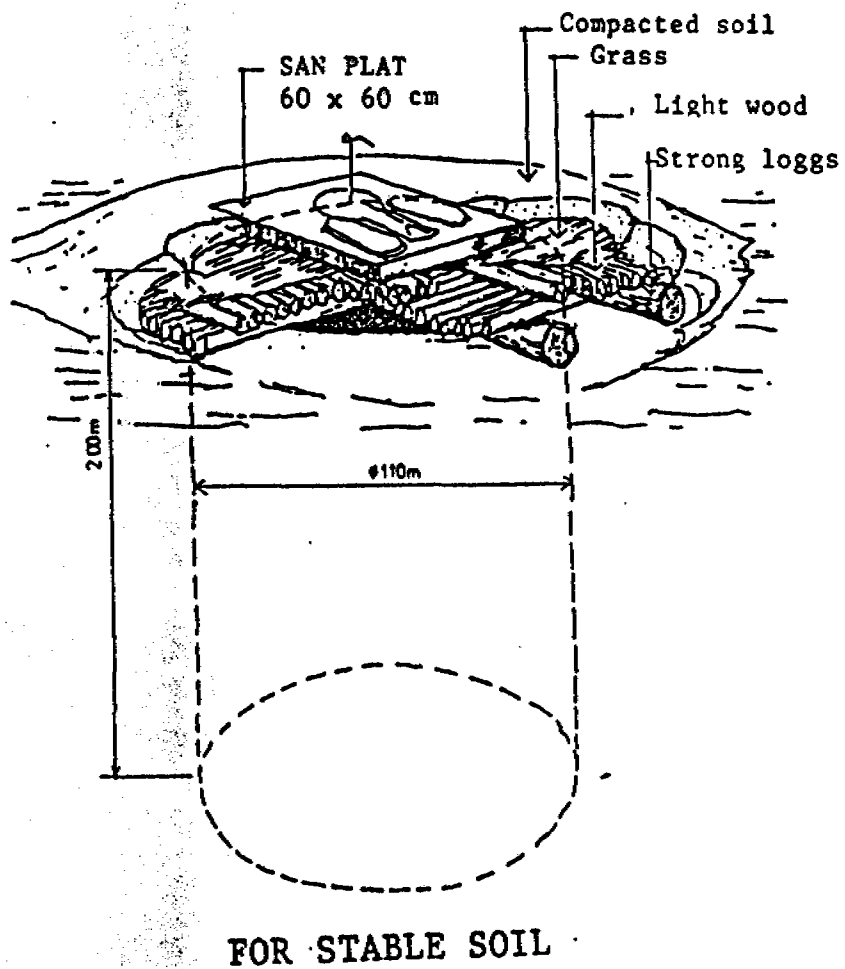
18 the spindle moulder (*Am. molder*):

19 the cutter spindle

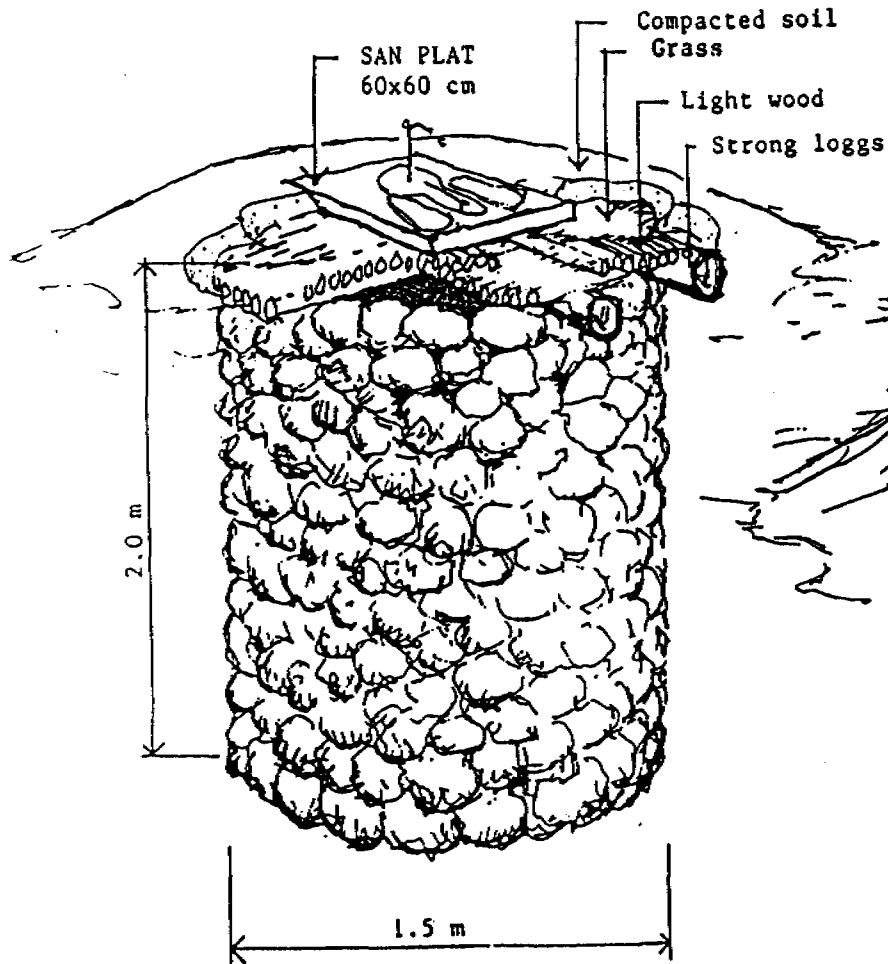
20 the fence

21 the top bearing;

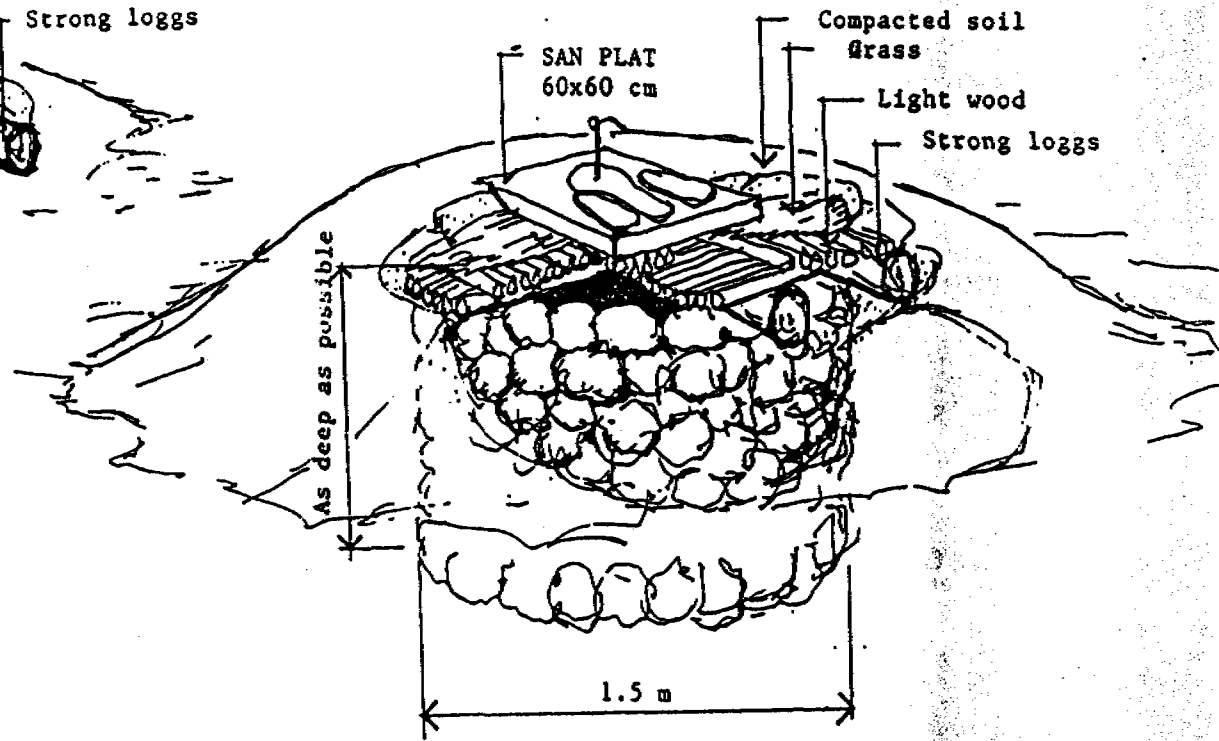
IMPROVED TRADITIONAL LATRINES



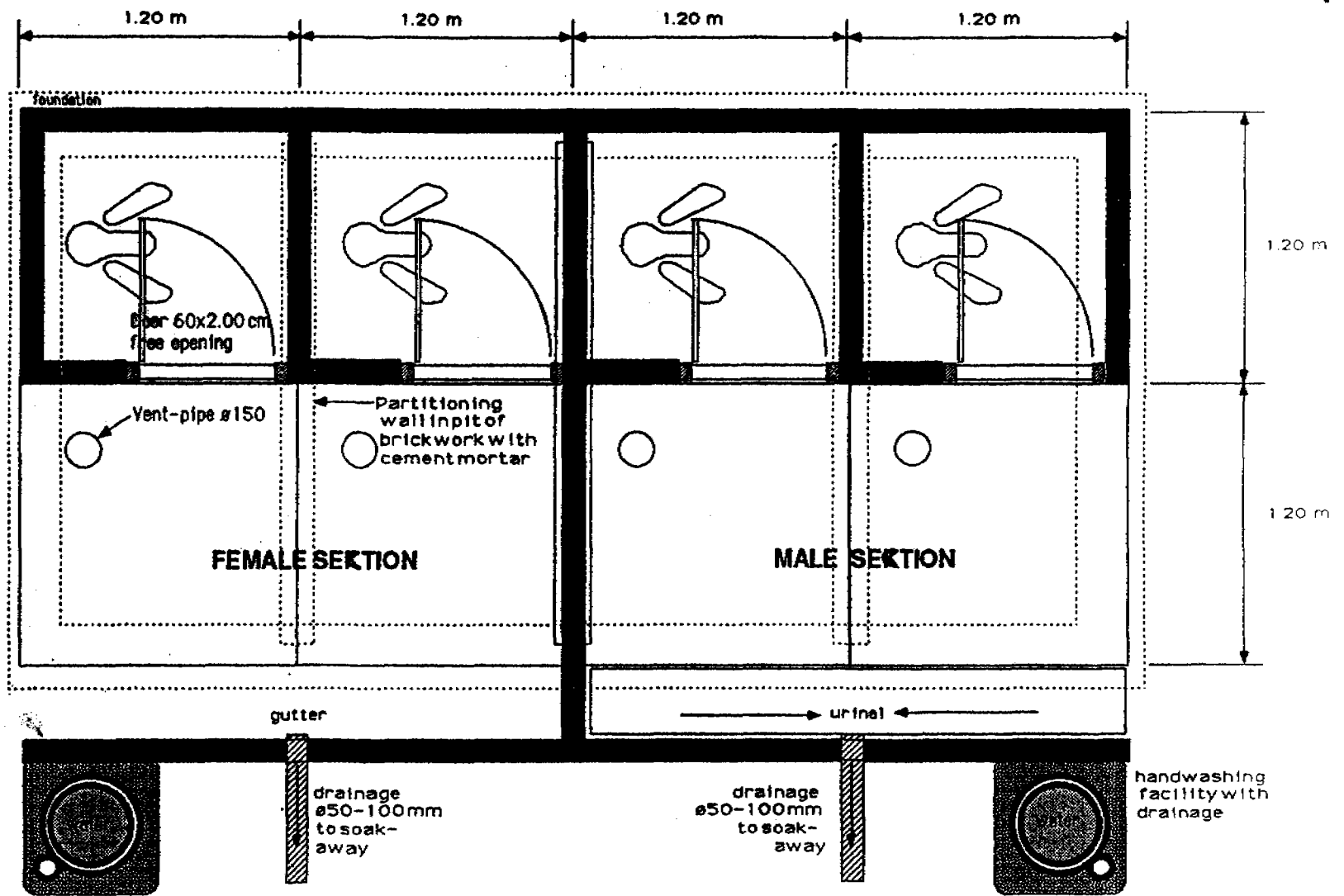
IMPROVED TRADITIONAL LATRINES



FOR UNSTABLE SOIL



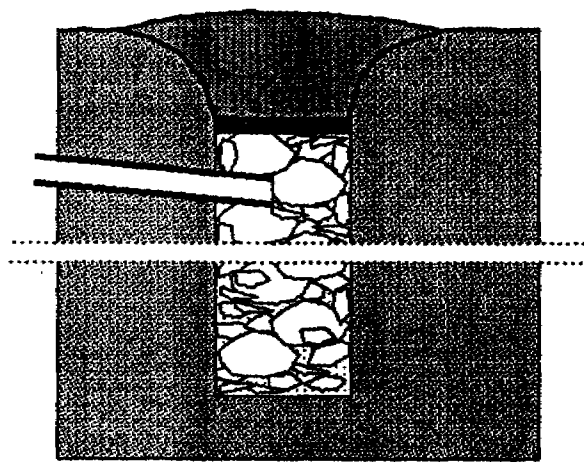
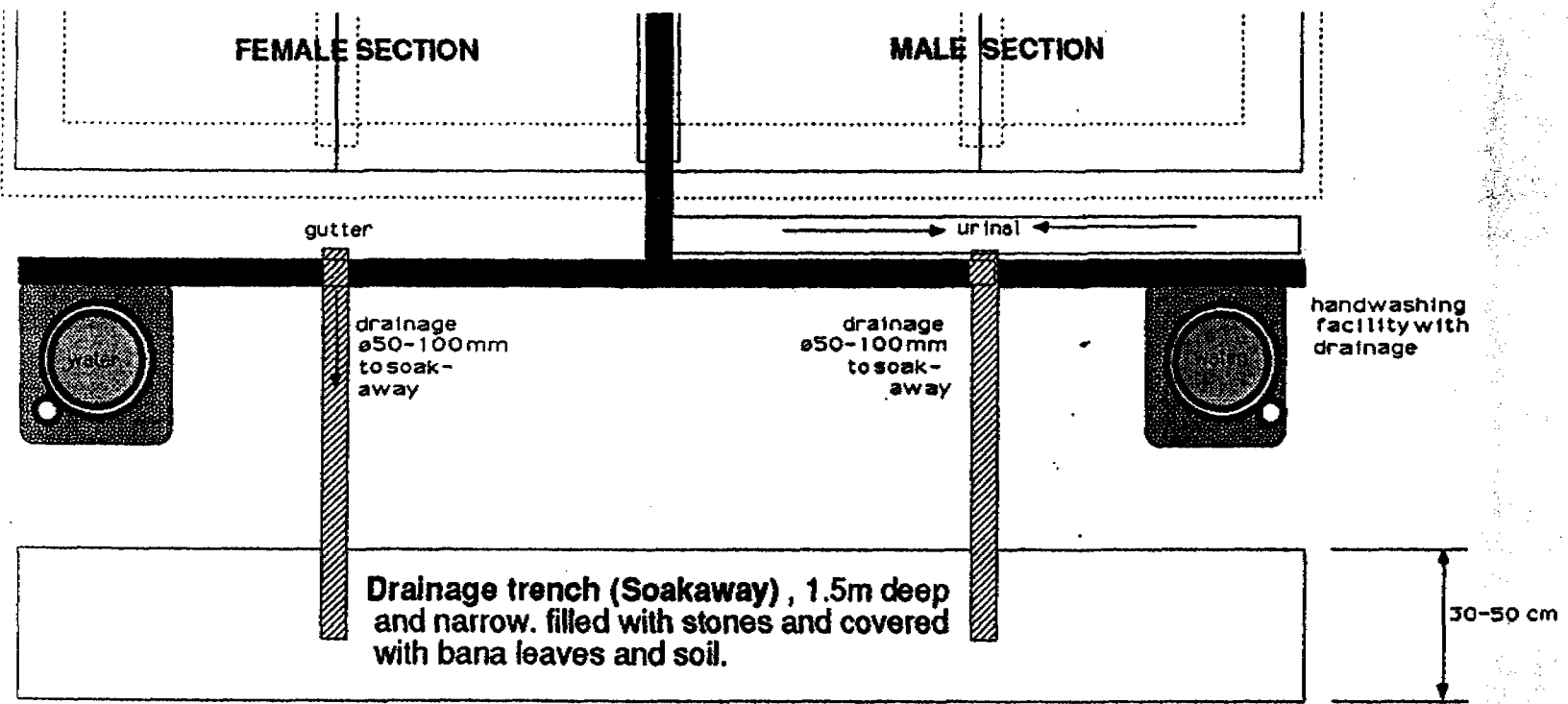
WHERE IT IS DIFFICULT TO DIG



RUWASA
 East Uganda Rural
 Water and Sanitation Project
 CBI/SBI
 Kampala Nov 1991

PROPOSAL FOR INSTITUTIONAL-LATRINE
Drawing shows principle
Number of compartments depend on number of users

© Copyright RUWASA, CBI and SBI



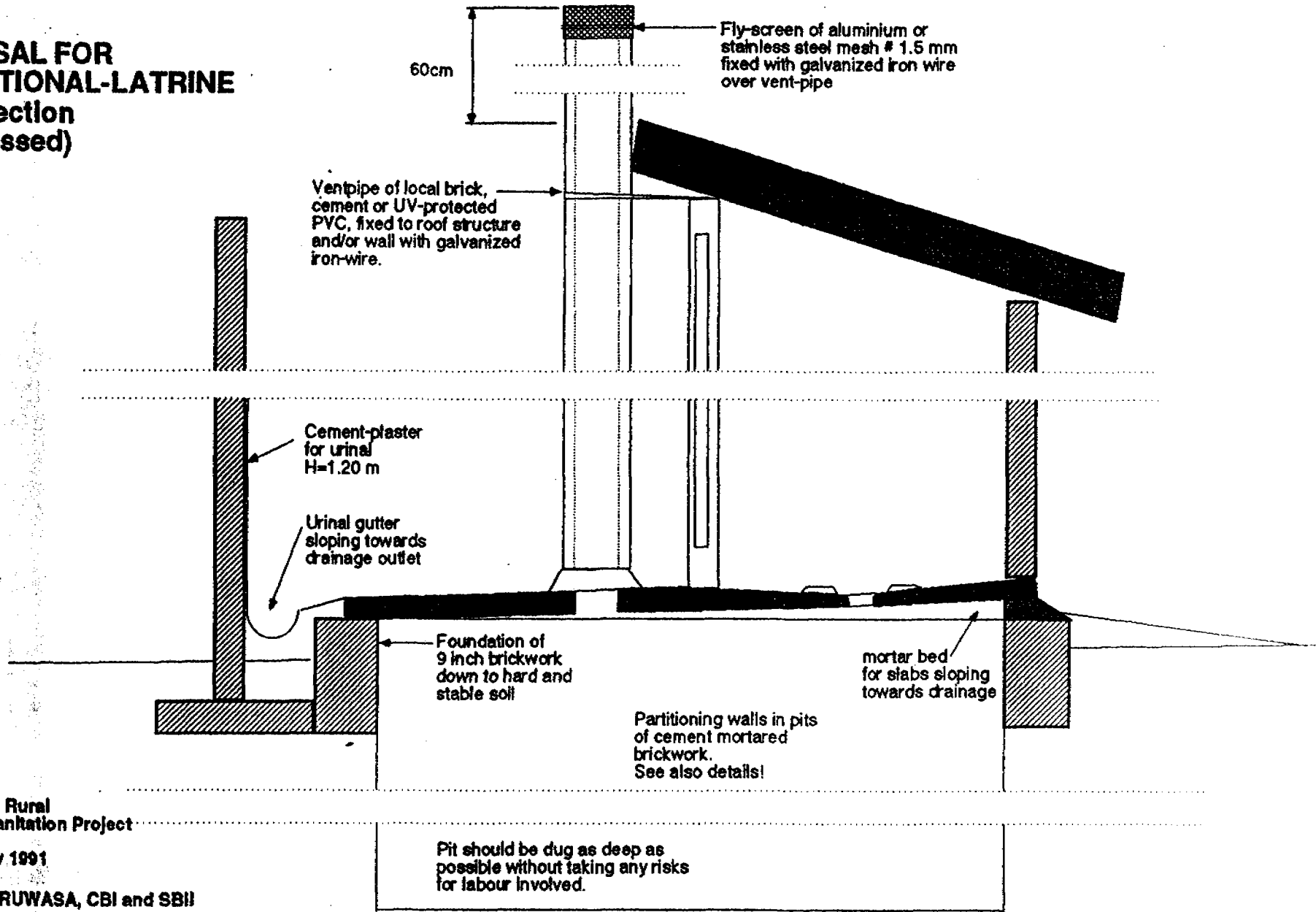
**Drainage trench
Cross section**

RUWASA
East Uganda Rural
Water and Sanitation Project
CBI/SBI
Kampala Nov 1991

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Plan and cross section**

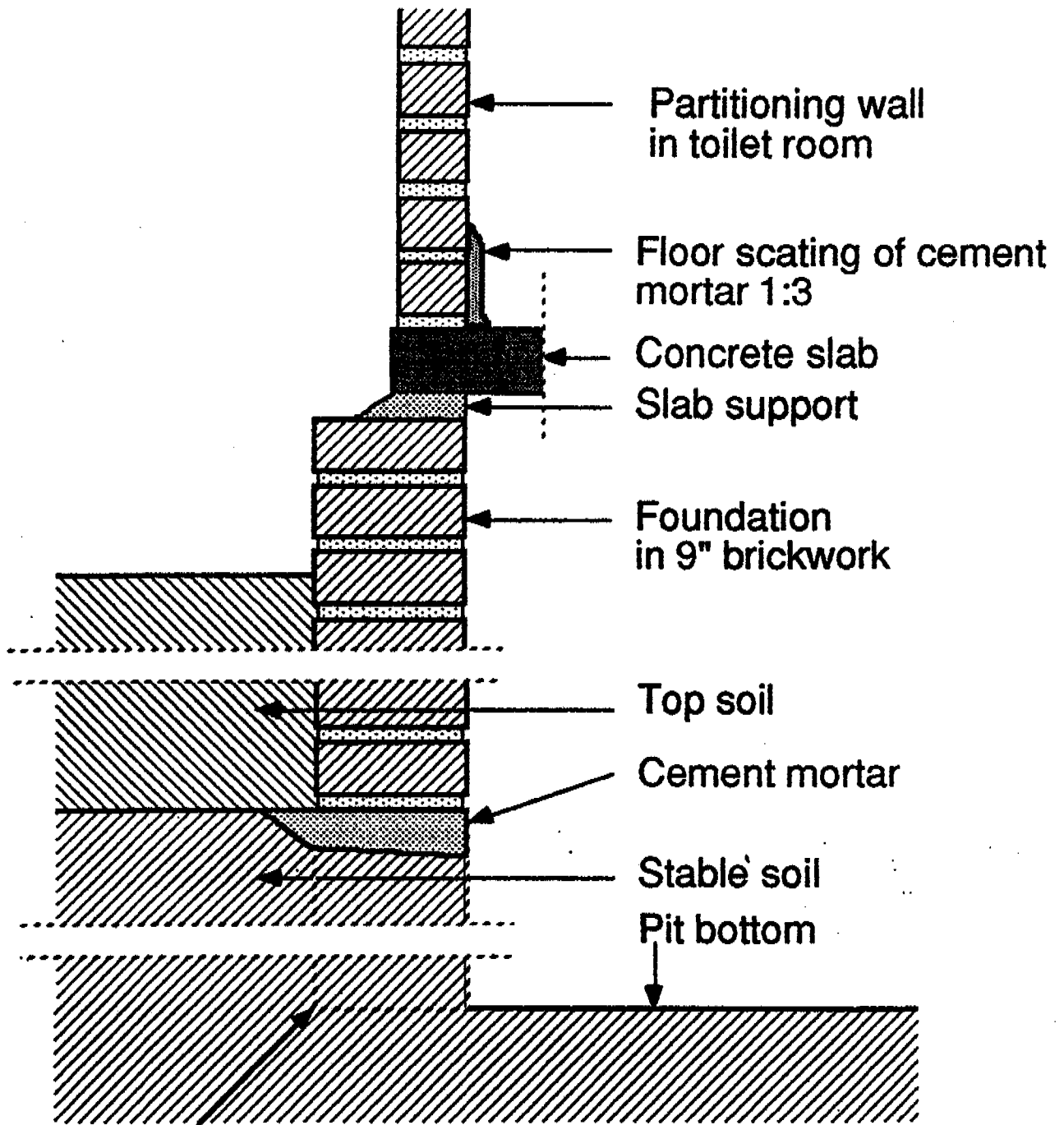
**PROPOSAL FOR
INSTITUTIONAL-LATRINE
Cross-section
(compressed)**



RUWASA
East Uganda Rural
Water and Sanitation Project
CBI/SBI
Kampala Nov 1991

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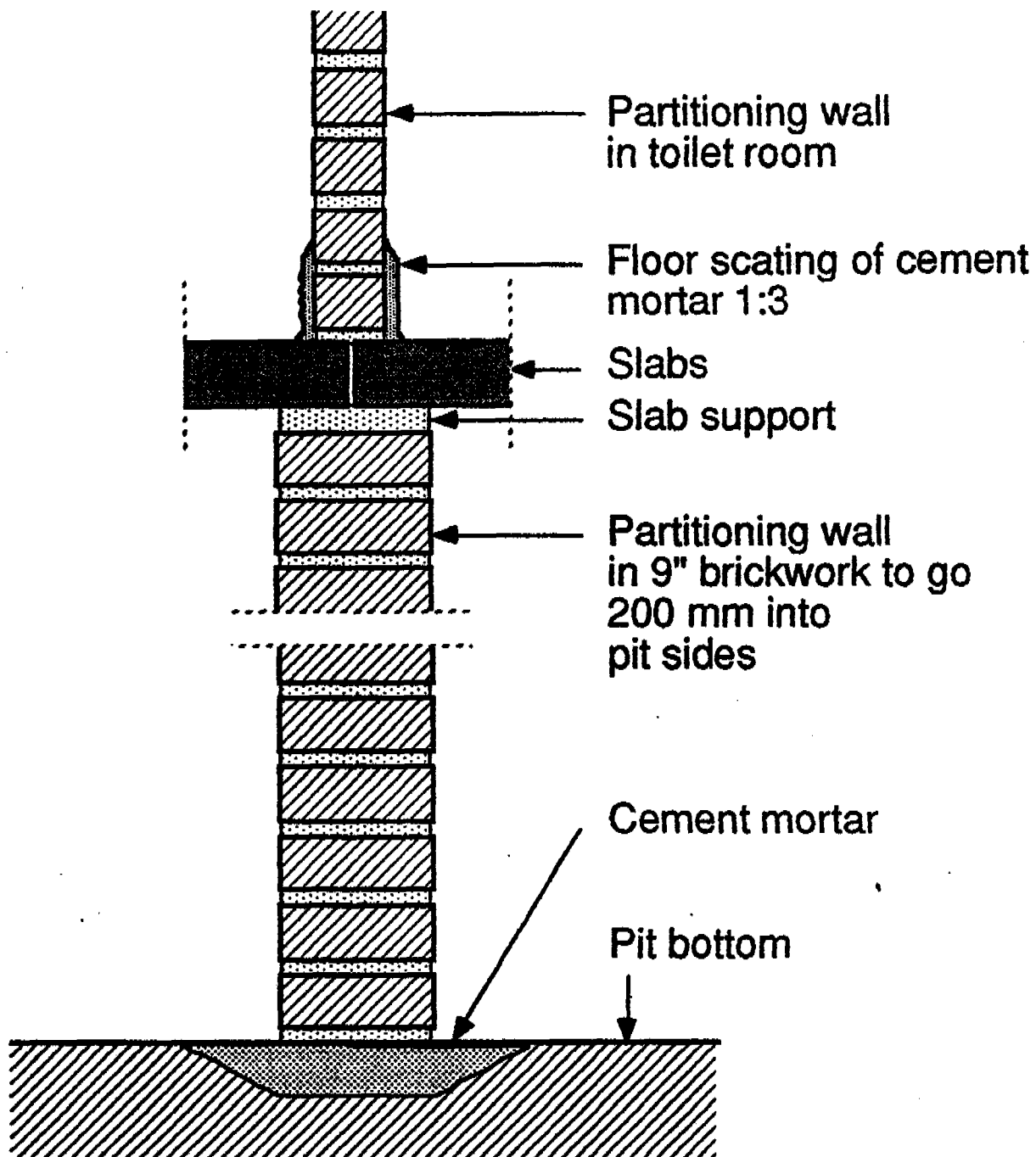
Details of foundations



Note

If in doubt about the strength and stability of the soil, do consult an experienced person. If still in doubt, continue the foundation brickwork down to the bottom of the pit.

Details of brickwalls



HOW TO WORK WITH PEOPLE

**PRODUCTIVITY THROUGH
MAKING FRIENDS.**

MANUAL FOR SAN-CENTRE MANAGERS



- BY -

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FOREWORD

This manual has been prepared for training of managers of local sanitation centres (SanCentres) within the UNDP/World Bank supported projects URBAN LOW COST SANITATION DEMONSTRATION PROJECT (INT/81/047-Malawi) and URBAN TECHNICAL SERVICES (MLW/86/015)

Given the interest the manual has generated also outside Malawi the author should appreciate comments on the contents for its application also in other programmes dealing with the same problem, how to help people on the so called grass-root level to become good managers in their day-to-day contacts with people around them.

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The author

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INTRODUCTION

1.1 SAN CENTRE MANAGEMENT

With the introduction of improved sanitation in urban areas a number of sanitation centres (San Centres) have also been established in some of the low cost housing areas, so called Traditional Housing Areas.

The San Centre concept has today become a key element in the national strategy for the improvement of sanitation in urban low cost housing areas. The managers of the San Centres have consequently a key role to play in this work. This manual therefore addresses itself to the small but important group of San Centre Managers. It will probably also be of interest to other people in managerial positions.

As most San Centre Managers have never been in a managing position before, some of the advice given might seem elementary. It is, however, based on some of the latest books in the field of personnel management and is likely to be of use also for more experienced managers.

1.2 YOU - THE SAN CENTRE MANAGER

As manager of a San Centre, you have over all responsibility for the implementation of improved sanitation in the area where your centre is located. There is therefore nothing that can be excluded from your responsibility.

Three things are, however, special importance in your new role as manager:-

- (1) PEOPLE (Personnel Management)
- (2) PRODUCTION (Get the job done)
- (3) PAPERS (Keep your records)

This manual concentrates on the first element, PEOPLE, which is your most important resource.

2.

PERSONAL PERSONNEL MANAGEMENT

2.1 PEOPLE

Every professional uses tools in his job. For the manager the principal tool is people. As a manager you have to learn to work with your people. Some people have natural talent for this - lucky them! We others have to learn it step by step as any other job.

To be able to work with people, the first step is to have a look at ourselves and find out what sort of a person we should like to be.

2.2 WINNERS AND LOSERS

Some people are more successful than others. They seem to have the ability to grab the chance when it appears. They are winners. Other people are permanent losers. Why?

To a great extent it depends on our way of looking at ourself and the way we look at the people around us.

2.3 I AM GOOD

Supporting ourself is the first step. We have two voices inside ourselves. One of them says:-

- Its okay
- No Problem
- I can do it

The other voice says:-

- I don't like this
- It's difficult
- Somebody else should do this

People who listen to the positive voice have a tendency to become winners simply through believing in themselves, while others might have a tendency to become losers.

Conclusion: You must encourage yourself to become a positive person - a winner.

YOU ARE GOOD

The next piece of advise concerns our attitude towards other people.

There are people who try to gain self confidence by talking about other people in a negative way, as inferiors. Step by step they develop a negative attitude to people. This will affect their relationship with the people around them.

People with a winners attitude and good self confidence can afford to see the positive sides of other people and support them.

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+   I AM GOOD
+  YOU ARE GOOD
-----
= WE CAN DO IT

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This might seem to be a very rough simplification of the relationship between people. And of course, the subject is greater than that, but we must start somewhere. Build self confidence - Your own and others.

If you don't agree start looking for another job.

4 MINUTE RELATION BUILDING

As a manager, your main task is to help people to do a better job. We have already talked about the importance of supporting peoples self confidence. The following advise is based on European experience. Check for yourself how relevant it is here in your country.

It has been scientifically proved that the first four minutes when you meet a person are the most important. What you have achieved during these first four minutes is almost totally determines how the rest of your relationship will develop.

So, what should you do during these four minutes?

- (1) Smile (smile to show that you have a positive attitude to the person you meet).
- (2) Establish eye contact (look at people when you talk to them, if you don't feel that you might embarrass them).
- (3) Use the persons name (If you know it). We all like to hear our names. It makes us feel good. (I am good + You are good).

- (4) Pay undivided attention. During these four minutes the person you meeting is the only person that exist for you! What does he want from you? Is he happy? If not, why not?
- (5) Observe the persons posture and attention Why? A persons posture can tell you a lot about how a person feels. Is he tense or relaxed. Is he interested, or is his mind somewhere else.
- (6) Show that you respect and accept the person. Address the person the way that your tradition requires. If the person does not feel respected and accepted he might feel bad, and might feel that you are making him feel bad - and that can grow.
- (7) Show that you respect your colleagues and the organisation you work for. As a San Center Manager you represent an organisation. People are coming to you a a representative of your organisation. If you show disrespect people may loose confidence in the project.
- (8) Be calm and confident
- (9) Be gloomed, clean and tidy.

Try it, make it a habit, it will help you in your work with the people around you!

LEADERSHIP

When a leader is good, people say we did it ourselves.

As a competent manager you will soon discover that time is getting short. You will feel that you need more time to spend not only with your staff but also with planning and administration. To increase capacity you have to delegate tasks to your subordinate.

3.1 DEVELOPMENT LEVEL

Delegation assumes that your staff have a high level of competence, which is not always the case. Another factor is commitment. Roughly we can divide our staff into 5 different groups of development.

LEVEL	DEVELOPMENT
D0	Low competence and low commitment
D1	Low competence with high commitment
D2	Some competence but low commitment
D3	High competence but low commitment
D4	High competence and high commitment

Each one of these categories will require a difference style of leadership from you.

A person who not yet knows a job or a special task will require direction. He needs to be told how to do his job and to be supervised while doing it. A qualified staff member will be irritated with too many explanations and some body always checking on him.

A staff member can, however, be very qualified but uninterested in his job, or uninterested in a special task. Different levels of commitment or motivation will therefore also require different levels of supervision but now of a different character. It is important but difficult, to identify reasons for low motivation. What ever the reason might be it can, however, be compensated by a supportive leadership style.

We will talk more about different reasons for low motivation in the chapter "Psychology".

3.2 LEADERSHIP STYLE

The different combinations of competence and commitment will require different styles of leadership.

3.2.1 Directing leadership

For level D1, low competence and high commitment a directing leadership style is required. The fact that the staff member is highly committed to his task will motivate him to absorb all the guidance you can give, and his competence will develop rapidly.

3.2.2 Coaching leadership

The D2 level is more difficult. Some competence combined with low motivation often creates a difficult attitude to work, the staff member might think that supervision is not necessary as he "already knows his job" and will be irritated with somebody checking on him all the time.

As he already "knows his job" he might however be positive to discuss targets for his work. As he is not very competent the target should not be put too high and the agreed time for inspecting should not be too long. To defend his prestige of somebody who knows his job his commitment will rise and he will most probably work very much harder.

The shorter intervals between inspection will give many opportunities for evaluation and constructive criticism. As your staff member's commitment to his work is doubtful you must, however, be very careful of how you criticize. Give high attention to progress and give plenty of positive strokes for these.

3.2.4 Contracting Leadership

The competent but low motivated staff member (D3) has a similar profile as the previous (D2). His high competence, however, must be respected. If he feels that also his competence is doubted his motivation might fall even further.

"Contracting" is in this case a useful method. With contracting we mean that we discuss targets and set goals. If your staff member is aware of his competence he will set his targets high and go for it. Your leadership can therefore be limited to listening and supporting.

If your contracting is successful your staff member might develop to level D4: competent and committed. He might however need some motivation to rise his commitment not to fall down to the D3 level again.

3.2.5 Delegating Leadership

The competent and committed staff members will require very little from you as a manager. His work will advance without your interference and he will find his stimulants and motivation in what he is achieving through his work.

What you will need to discuss with your competent and committed staff member is only general guidelines, and if you don't give them, he may request them himself or even help you to elaborate them.

3.2.6 Low Competence and Low Commitment - DO

This is the problem case for any manager not able and not interested.

This staff member should be moved from his present tasks to something he is able to do. He then becomes a D2 ready for a coaching leadership style.

3.3 TASK SPECIFIC LEADERSHIP

We have now discussed different types of leadership styles related to different levels of competence and commitment.

One of your subordinates can, however, be good and interested in one field and bad and uncommitted in another field of his job.

The first and obvious rule is to try to give the right job to the right person. An incompetent builder might become a good promoter. A sleepy night guard might like to learn how to build.

3.4 PROMOTION OF STAFF

It is common and a good rule to promote successful and reliable people, so called peak performers. We shall remember, however, that promotion leads to new tasks in which the person might be less competent and eventually less interested.

A good builder does not always become a good foreman. He might become impatient with his less skilled builders, who as a result might lose their interest and motivation in their work.

The peak performer earlier a D4 : competent and committed who was able to work completely by himself is now D1 or D2, and will in his new position require a directive or a coaching leadership from you.

SUMMARY

The key to successful leadership should be as follows:-

You should not have the same leadership style with all your staff members. You should also try to vary your leadership style with the same person, your style of leadership should depend on his competence and commitment each different task. the style you choose should depend on the staff members task specific competence and commitment.

Be personal!

How people behave and react is by itself a complete science. We will only touch the subject on a few points which are of special importance for your work as a manager.

4.1 MOTIVATION

All of us have reasons for doing what we are doing. The reason is called motive. One of the psychologists who has looked into people's motivation is Maslow.

Maslow sees the motives as a hierarchy, or a staircase, of needs of different importance. Your basic motives are to satisfy needs as hunger and thirst. Only when these more basic needs are satisfied the person should be motivated to satisfy needs of a higher rank, i.e. security, social contacts and self esteem.

Self esteem through work (doing) is the most sophisticated or highest form of motivation. We find it among the peak performers (D2).

Imagine a good worker who suddenly has social problems with his wife or girlfriend. His motivation will immediately concentrate on this more basic need, rather than on his work. Consequently, such simple factors as hunger or thirst can cause drastic drops in the performance of a person's work.

The corresponding advice is that, you must try to be sensible to what your people have in their minds. Whether it is your task to interfere or not, might be difficult to judge, specially if the matter is "non of your concern". A personal relation to your people, however, will make their problems yours.

4.2 STROKES

Strokes are any kind of attention you can get from or give to another person. There are positive strokes, and there are negative strokes. And there can be absence of strokes.

Positive strokes are good news, things you like to hear while negative strokes are bad things that you do not like. Worse of all is zero strokes - to be ignored.

Strokes especially the positive ones are the most useful tools in your work as a manager. Pay attention to people. Even if you have no time to go into details in their tasks or problems. Use positive strokes to show attention. Be careful with negative strokes. And finally: Do not ignore anybody.

PACING

Some people go well together. They like to do things the same way. Other people just don't fit together at all. But also days and situations can be different. The phenomena is called pacing and is to a large extent based on non verbal communication. To pace a person is to follow him or her in body language, in speed, in rhythm in thinking and in talking. To pace a person is a very effective way to build up a situation of confidence. In the same way, shouting, interrupting, not answering or not paying attention is an effective way to create irritation and bad working relations.

We have already talked about the initial four minutes and relation building in a contact. Pacing should be the natural ingredient in all the steps. If you feel that the person you are dealing with is exited - follow him, or if he is sand or disappointed - try to keep the same speed, the same tone and pitch of your voice, body movements and position. He will appreciate it.

If the person you want to have a talk with is sitting - sit down. If he is standing - stand up, or ask him or ask him, in his way of talking, to sit down. Go through all the steps in the four minutes relation building, trying to pace the person as much as you can. Try to make it a habit to pace people they will not discover it, but they will appreciate it unconsciously.

STRESS

Stress is a normal and necessary reaction of the body to something that might concern us. The factors that are stressing us are called stressors, and it is these stressors that are motivating us in everything we do.

The bodys reaction to stress is greater production of adrenaline (a hormone produced in the kidneys), which among other things gives us shallower and quicker breathing, tenser muscles and sharpening of all senses. the body is prepared for action.

These normal and necessary symptoms disappear as soon as relevant action is taken, or that the reasons for our stress has disappeared.

When we normally talk about stress, we usually mean abnormal and prolonged stress, caused by a permanent stressors. This kind of prolonged stress can, and will cause negative effects, mentally as well as physically.

First, the stress if caused by an external factor will draw the attention from our work, we will be absent-minded and have difficulties to concentrate.

Prolonged and high levels of stress can also cause nervous problems, stomach disease (ulcer) alcoholism and reduce our resistance to other diseases.

The most effective way to reduce your stress is to identify the stressors and eliminate as many of them as possible. Those you cannot eliminate you should try to evaluate. Probably they do not deserve the price of your worries.

Imagine for example that you have a conflict with a colleague who might be back talking you. First you can assess how serious the back talking is, what he might say about you, and how serious consequences it might have. The next step might be to solve your problem with your colleague or decide just to ignore it.

(Note: Do not ignore your colleague! Ignore the problem!) Maybe technics mentioned in this manual, as strokes and pacing, can help you to sort out the situation without any drastic measures. If you are an honest and good person, he might even discover that by the time, and change his behavior.

4.5 CONFLICTS

There will always occur situations where people do not agree and where people become angry.

Aggression is very normal reaction to high levels of stress. Unfortunately high levels of stress might block circuits of logical and analytical thinking. The mind automatically focuses on the choice between fighting back or fleeing, which in our civilized life corresponds to aggression or submission.

4.6 ASSERTION

In most cases nor aggression nor submission is the best way to solve a problem. There is a better way to solve conflicts called assertion. This means that instead of shouting back (aggression) or giving up a position you consider correct (submission) you stand firm, just explaining calmly your arguments and your position.

By not being angry, your counterpart will have a good chance to calm himself down, and you can on better terms discuss your different points of view. Eventually one of you, or both, have to modify your position. This is now, however, done on reasons of understanding, which has nothing to do with submission.

CONCLUSION

As a manager you are very much dependent of having a good relation to your staff members. A positive attitude to your self and to people around you is the necessary base for success.

The first 4 minutes are the most important for relation building. Make sure to use these minutes as well as possible. What you haven't achieved in these 4 minutes is often very difficult to repair later.

A Person Leadership Style

Your leadership style depend on yourself. Be yourself. But remember that your staff members have different competence and different levels of commitment which varies not only from person to person but also from task to task and from day to day.

Try to assess competence and commitment and adapt your style of leadership to that.

Understanding

Psychology is the science that helps us to understand why and how people react in different ways.

Low motivation in working can be understood and also helped if you have a good personal relation to your staff members. It is only when your staff member is willing to tell you what is his problem, that you can help him.

Pacing, to adopt your self to another persons of being, is generally the best way to come on good terms with a person.

Stress is normal and positive. It keeps us going and doing well. Too much stress can however, be destructive, mentally as well as physically. Identifying and evaluating the reasons is normally the best way to get out of it.

Conflicts can lead to that people get angry. It can also lead to that people submit themselves, even if they think that they are right. A better way is "assertion", which means that you control your eventual anger, but also refuses to submit yourself. Instead you stand calm and firm. Solve the problems over facts rather than over strong feelings.

GOOD LUCK!

GOOD MANAGEMENT!

Take good care of your people.

B. BRANDBERG
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