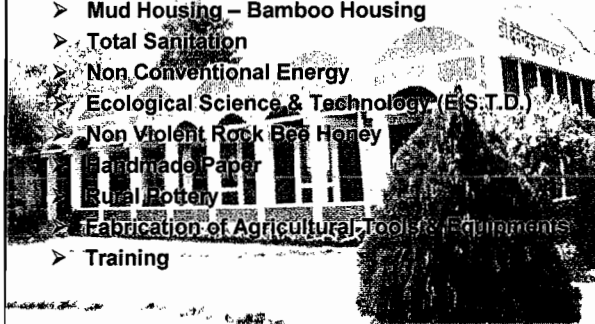


# Welcome to Centre of Science for Villages (CSV), Wardha Maharashtra

## CSV working on Research, Training & Demonstration on

- Mud Housing – Bamboo Housing
- Total Sanitation
- Non Conventional Energy
- Ecological Science & Technology (E.S.T.D.)
- Non Violent Rock Bee Honey
- Handmade Paper
- Rural Pottery
- Fabrication of Agricultural Tools & Equipments
- Training



### 1. Mud Housing

- Tile faced mud block technology
- Conical tiles arch roof
- Frameless door & windows
- Terracotta Flooring



### 2. Bamboo Housing



- Use of bamboo as a reinforced material in Columns & Walls
- Use of bamboo in making trusses & purling & battens
- Bamboo mat compressed corrugated sheet for roofing

### 2. Total Sanitation

- Human Waste Management
  - Construction of Leach Pit Toilets producing organic compost manure using flap seal pans.
  - Use of broken Glazed tiles to make handmade toilet pan.
  - Eco Sanitation where urine can be collect & can be used fresh urea.
- Agro waste Management
  - Vermi Compost, Nadep Compost, Agro waste Chulha (coal making and cooking).
- Animal Waste Management
  - Use of animal waste in Biogas plant gives organic manure & Gas as well.
- Waste Water Management
  - Providing soakage pit to trap waste water - Household or Community
  - Use of Waste Water In Kitchen Gardening
  - Spill Water Recycling units for Community Hand Pump and Open Well
- Water Purification
  - Water Filter for safe drinking water
- Rain Water Harvesting & Watershed management

### 3. Renewable Energy

- Agro Waste Chulha  
(Bio-residue Gasifier Stove)
- Biogas Construction & Electricity Generation
  - Red Clay Burner
- Solar Energy
  - Parabolic Solar Cooker
  - Box solar Cooker
  - Solar Lamp



### 4. Ecological Science & Technology Division (ESTD)

- Organic Farming
  - Herbal Pesticides, Manure Making
- Emitter Irrigation System
- Agro Products
  - Herbal Medicine,
  - Production of Gum & its Processing
  - Other food products like Ambadi Juice, Jam, Jelly, pickle etc.
- Spirulina (High Protein Blue Green Algae)
- Women Technology Project
  - Training to women in all above technologies.

### 5. Non Violent Rock Bee Honey

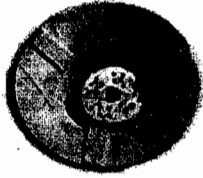
- Extracting pure honey without disturbing rock bee
- Protect the eggs of honey comb
- Stop Killing Honey bees
- Simple system to extracting the pure honey
- Training to Honey Hunters

### 6. Handmade Paper Unit

- Use of agro waste fibrous material
- Use of Cotton & Paper waste material
  - Making boards using banana stem fibers
  - Banana fiber board for making acoustic boards.
  - Bituminized Board for joints filling for concrete Bridges & Roads
  - Greeting, visiting cards.
  - Official Stationary like files, letter pad, envelopes etc. which are longer lasting & Strong
  - Handmade Carry bags for carrying weight from 100gm to 25kg
  - Decorative Papers & Board

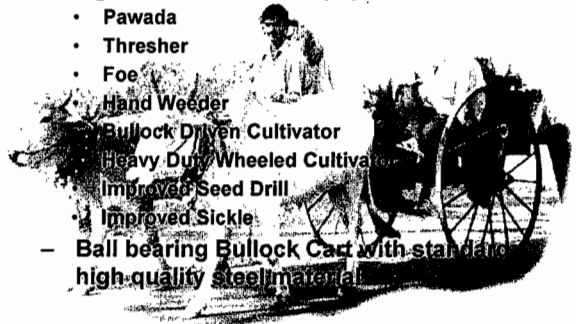
## 7. Rural Pottery

- Making of Sheetal Pots (Earthen Refrigerator)
- Red Clay Biogas Burner
- Making of Water Filter Pots to store purified water
- Terracotta tiles
- Decorative tiles



## 8. Fabrication Unit

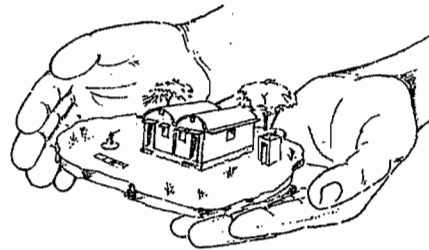
- Agricultural tools & Equipments
  - Pawada
  - Thresher
  - Foe
  - Hand Weeder
  - Bullock Driven Cultivator
  - Heavy Duty Wheeled Cultivator
  - Improved Seed Drill
  - Improved Sickle
- Ball bearing Bullock Cart with standard high-quality steel material



## 9. Training

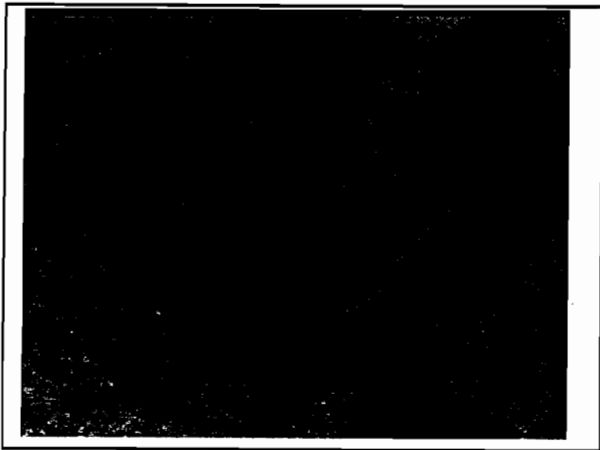
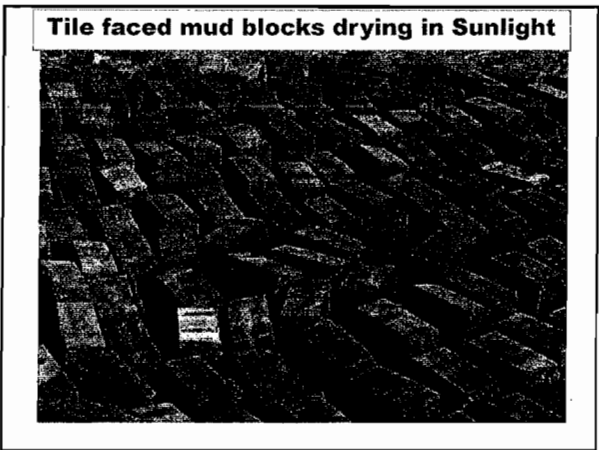
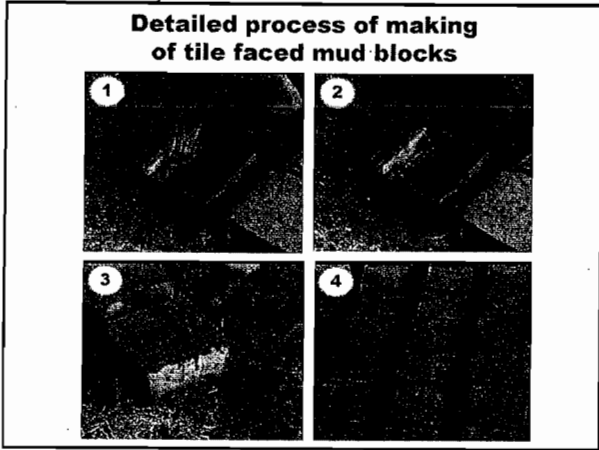
- CSV has a separate training campus
- Conducts training for NGOs, Govt. Officers,, Engineers, Architects, Artisans & Villagers in the following subjects...
  - Rural Housing & Sanitation
  - Bamboo Housing & products
  - Agro Products
  - Forest Resource Management
  - Herbal Medicine & Pesticides
  - Production of Spirulina
  - Village women in Cover Management
  - Handling Honey bee & extracting pure honey
  - Process of making hand made products
  - Agricultural Tools & Equipments
  - Pottery Products

## BUILDING DREAM IN MUD

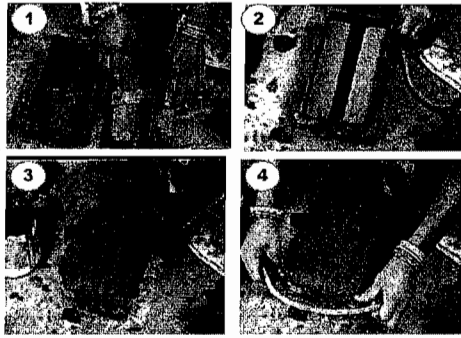


CSV, WARDHA



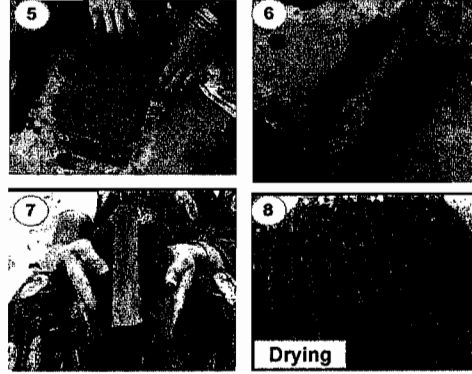


**MAKING OF FACED WALL TILES**



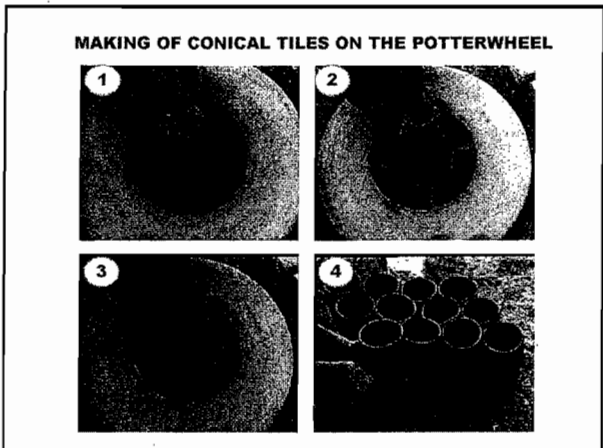
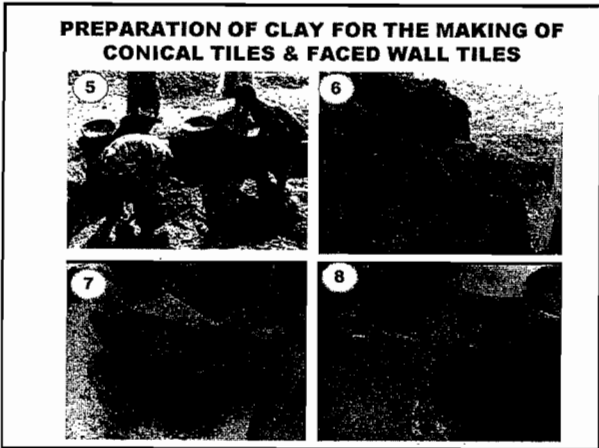
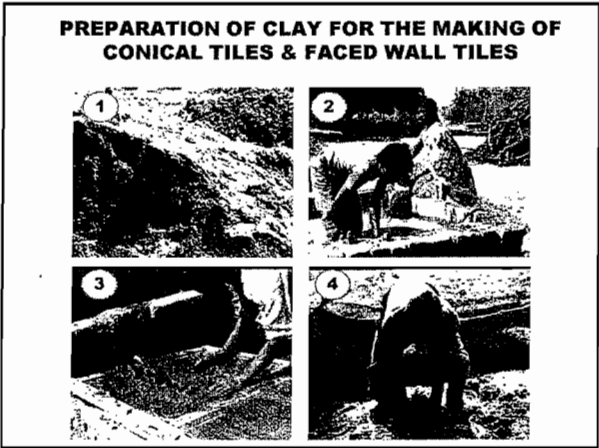
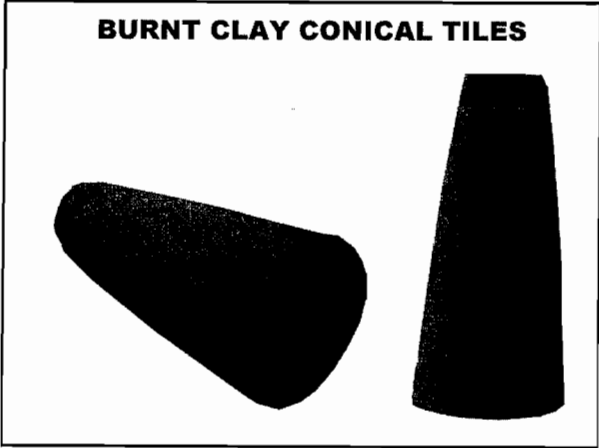
Women making faced clay tile using steel mould

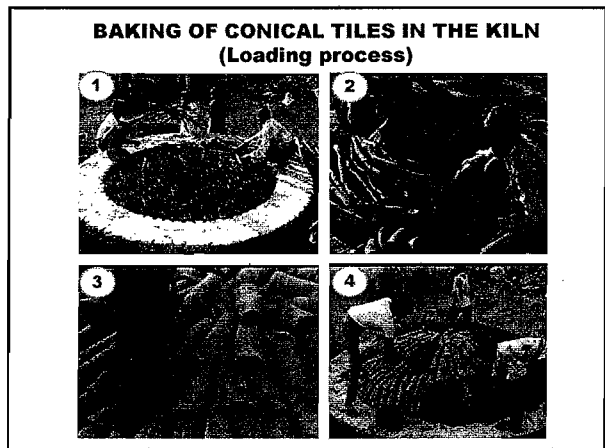
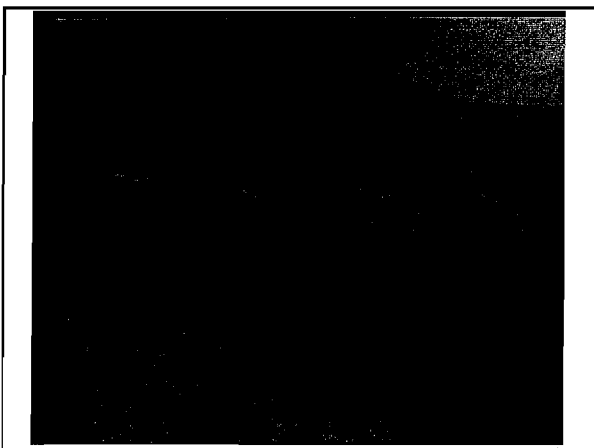
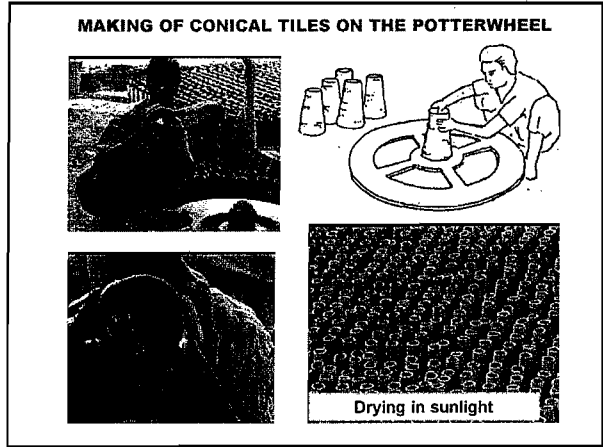
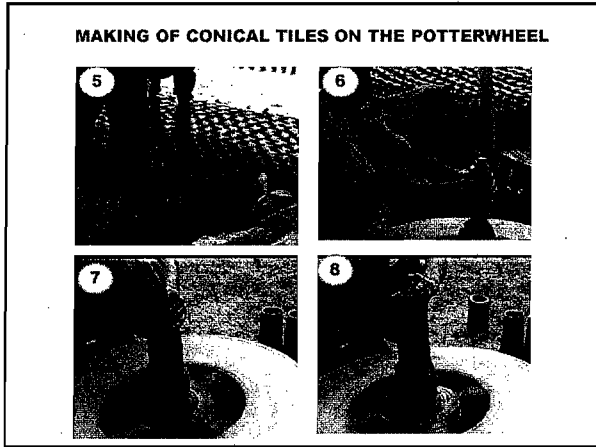
**MAKING OF FACED WALL TILES**



**STACK OF BURNT CLAY TILES**

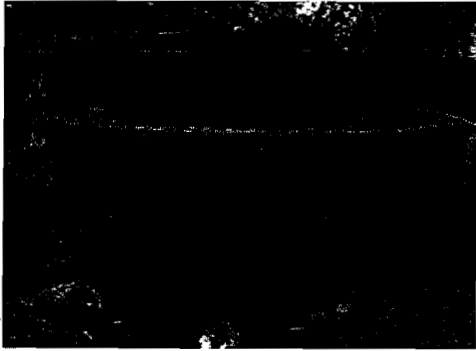




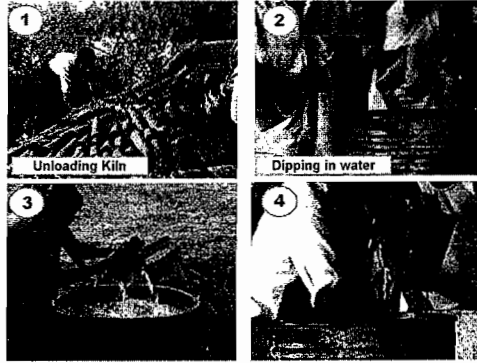




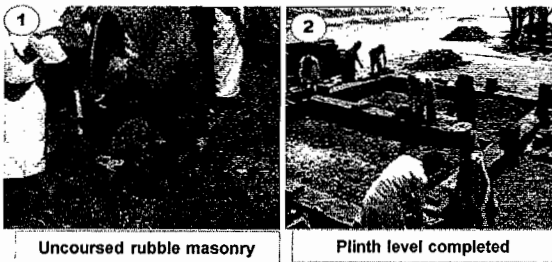
**BURNING OF TILES IN THE POTTERY KILN**



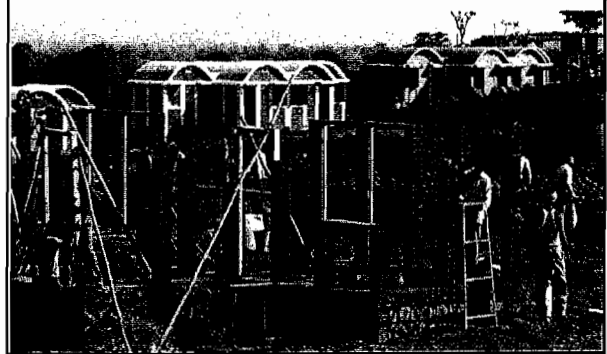
**BAKING OF CONICAL TILES IN THE KILN  
(Unloading process)**



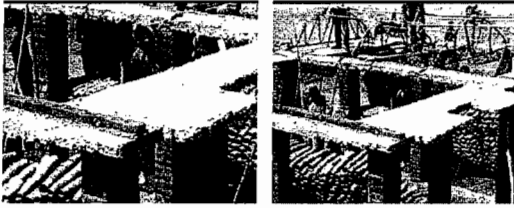
**DIFFERENT STAGES OF HOUSE CONSTRUCTION**



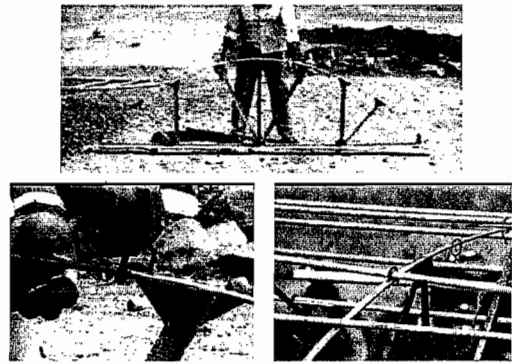
**BRICK PILLARS**



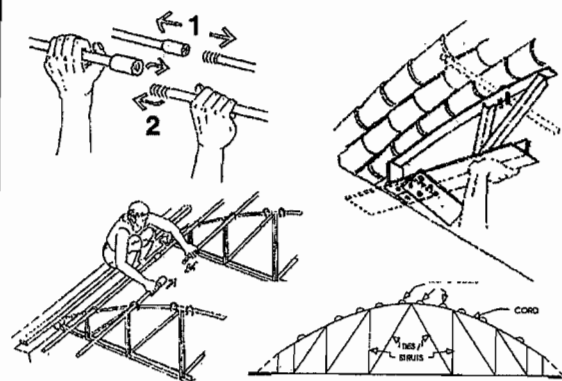
## LINTEL / CHAJJA



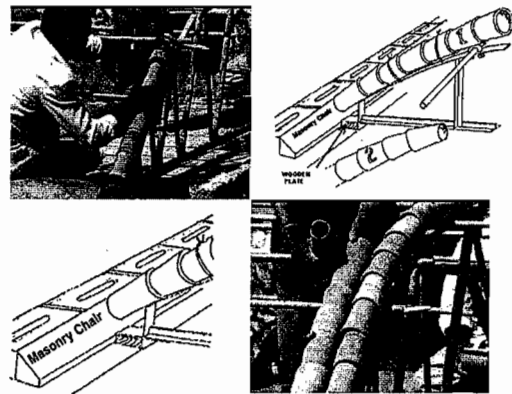
## CENTERING FOR CONICAL TILES ROOF



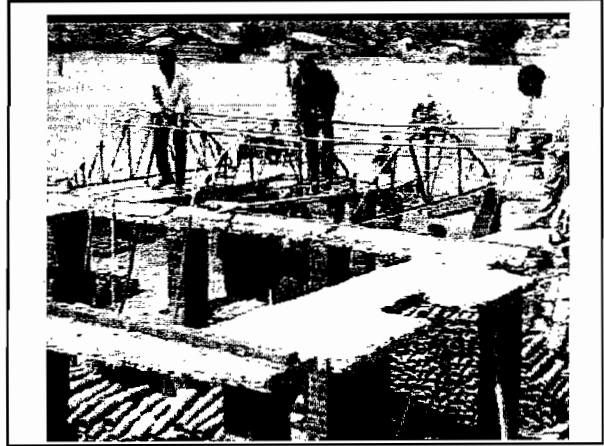
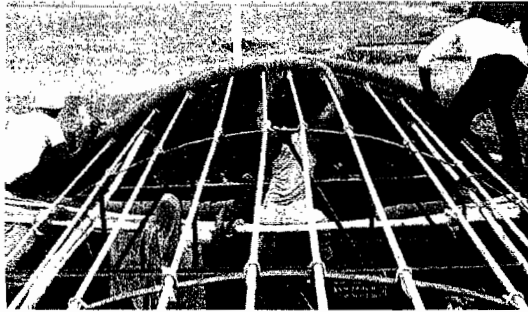
## DETAILS OF PARTS OF ROOF CENTERING



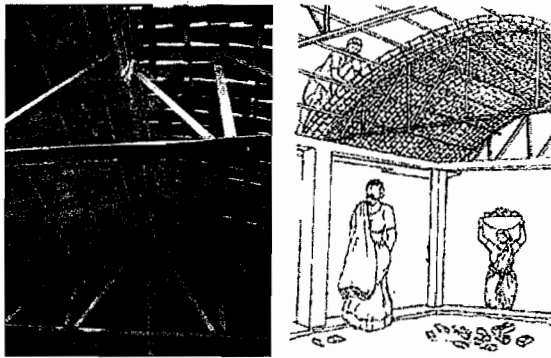
## FIXING OF CONICAL TILES OVER CENTERING



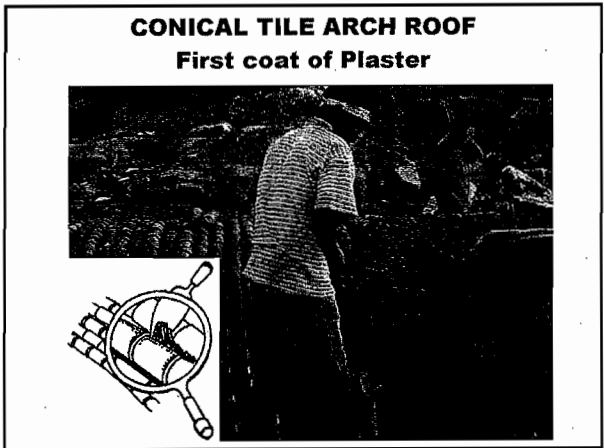
**LAYING OF CONICAL TILES BY  
INSERTING THEM IN TO EACH OTHER**



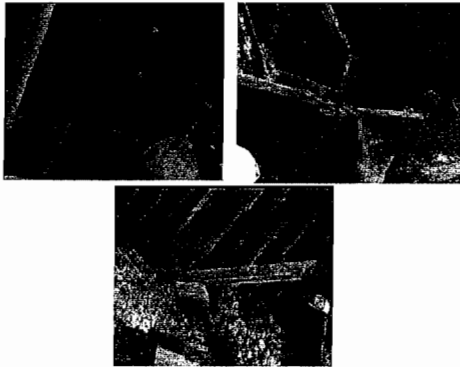
**CONICAL TILE ARCH ROOF INSIDE VIEW  
(Ready for plaster)**



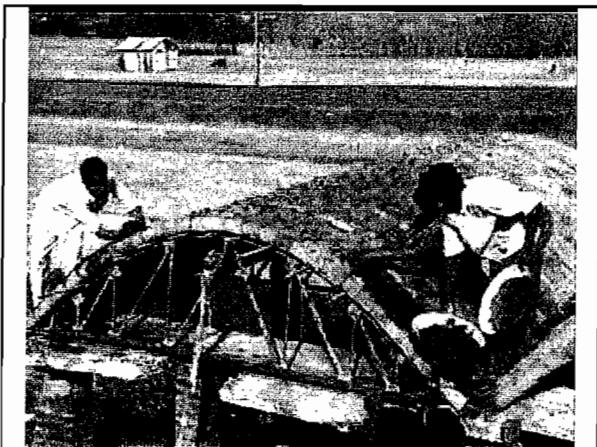
**CONICAL TILE ARCH ROOF  
First coat of Plaster**



**REMOVING THE CENTERING AFTER  
PLASTERING**



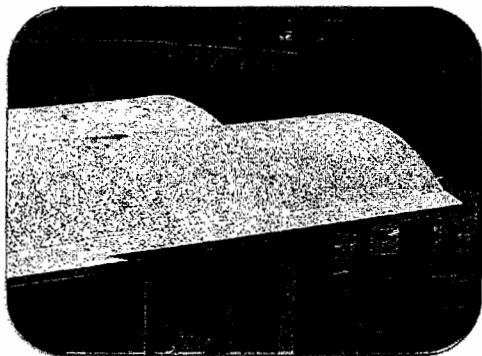
**CONICAL TILE ARCH ROOF**  
Second coat of Cement Plaster completed



**FIXING OF BROKEN CHINA TILES  
ON THE TOP OF ROOF**



**CHINA TILE MOSAIC COMPLETED**



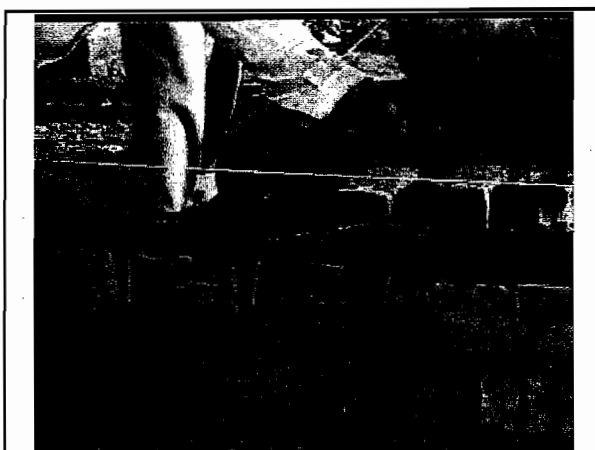
**TILE FACED MUD BLOCK  
WALL CONSTRUCTION**



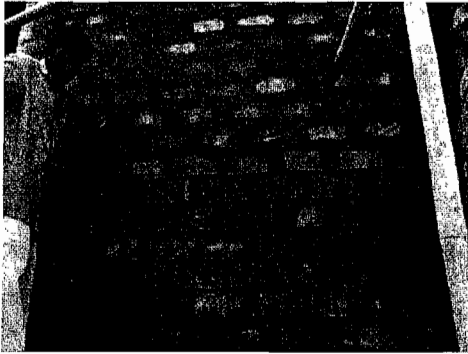
Outside View



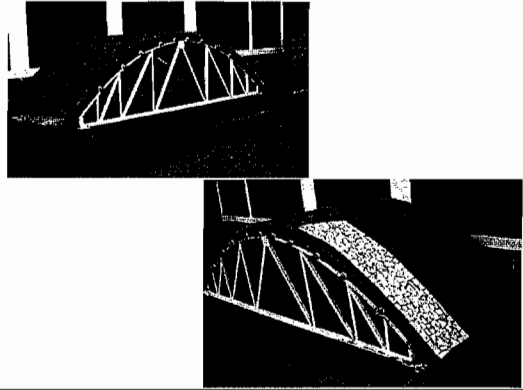
Inside View, Mud Plastering



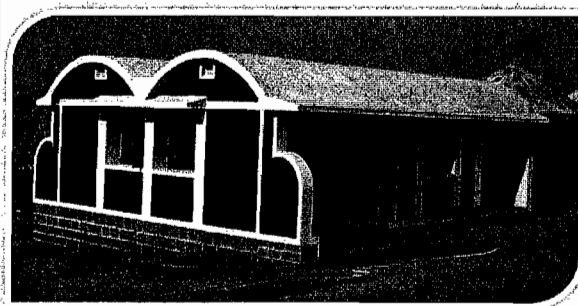
**TILE FACED MUD BLOCK  
CEMENT POINTING**



**CONICAL TILED ARCH ROOF DETAILS**



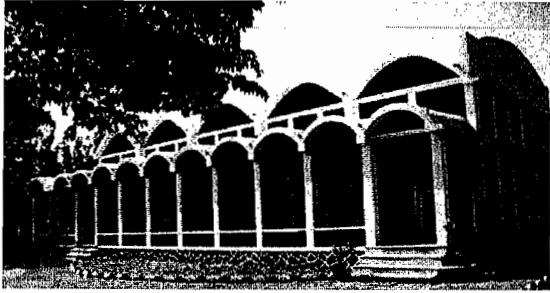
**CSV HOUSE AT HOUSING PARK - NIRD HYDERABAD**



**Single Unit**



**DR.DEVENDRA KUMAR CONFERENCE HALL  
AT CSV CAMPUS**



**INTERIOR VIEW OF THE CONFERENCE HALL**

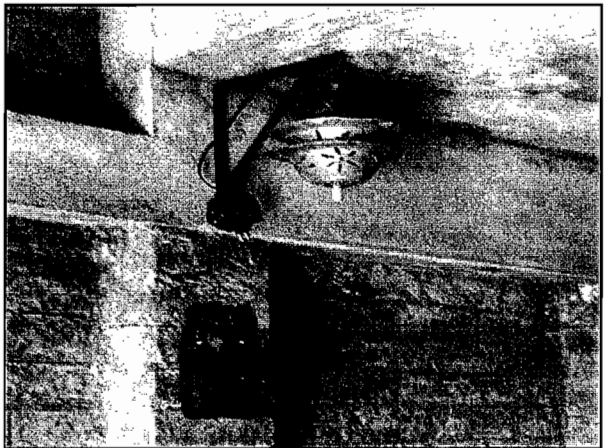
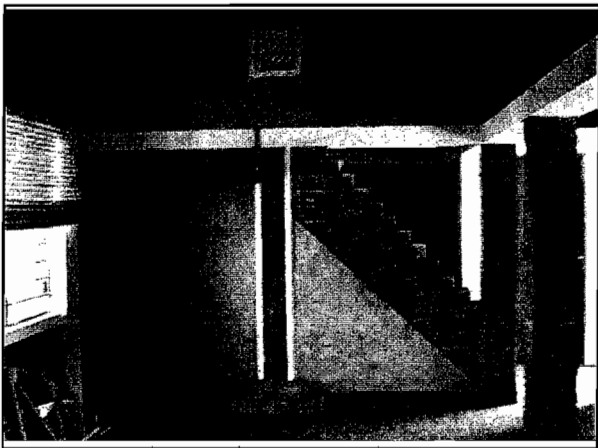
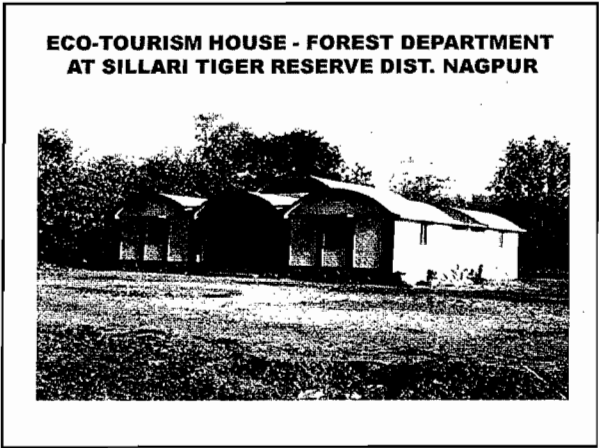
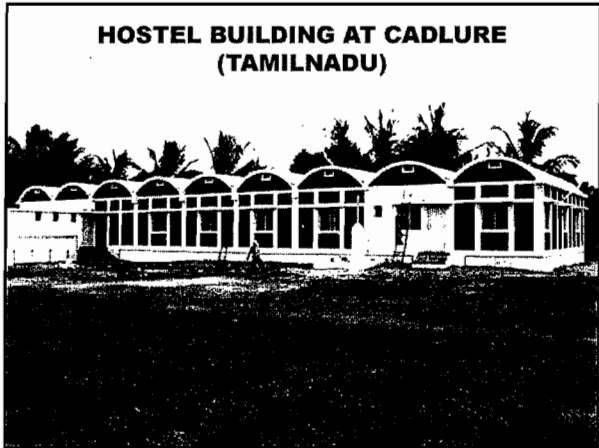


**RESIDENTIAL HOUSE AT VEDPURI ASHRAM  
BAZARGAON, DISTRICT - NAGPUR**

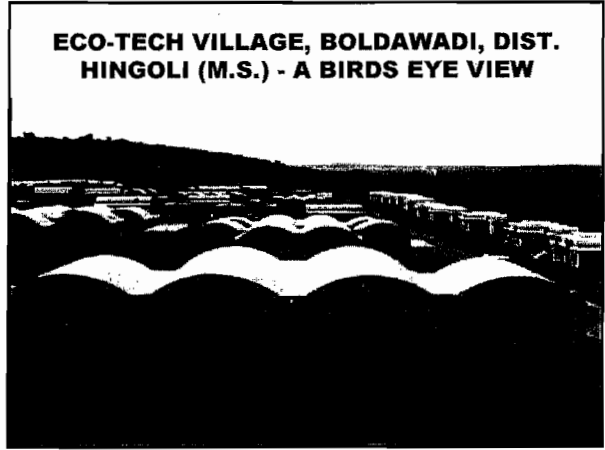


**COMMUNITY HOUSE IN INDIA SONG PROJECT  
AT KANHAPUR, DIST. - WARDHA**

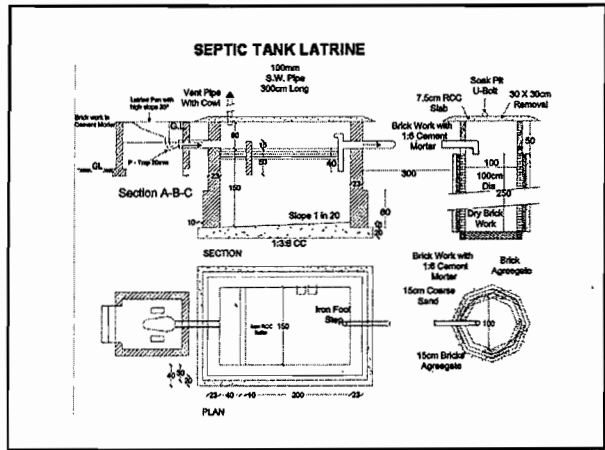




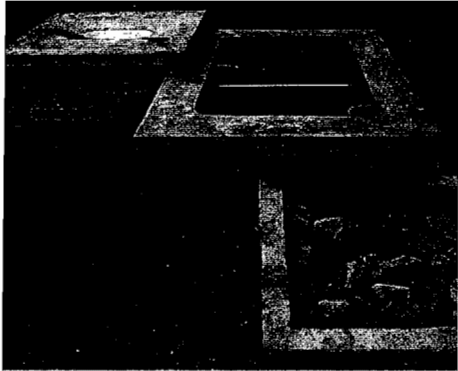




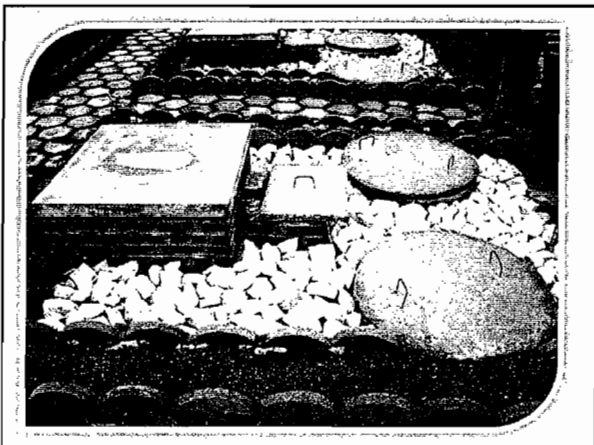
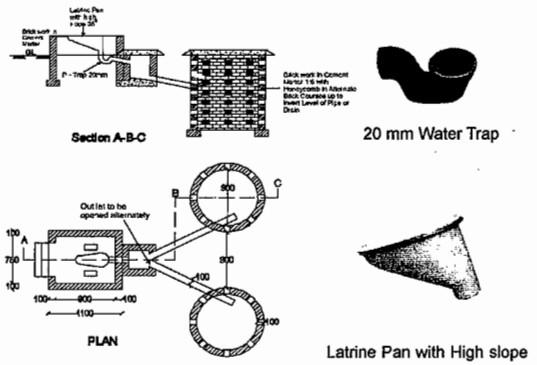
**Total Sanitation**



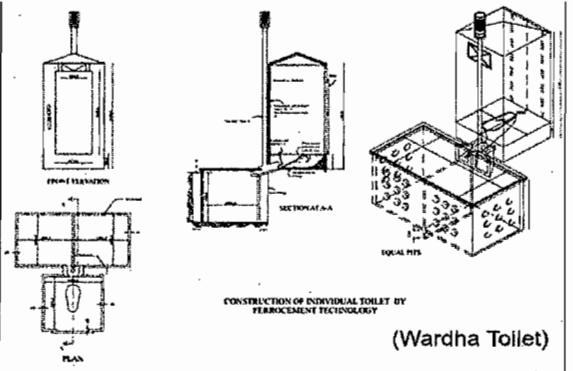
**SOAK PIT ATTACHED TO SEPTIC TANK**

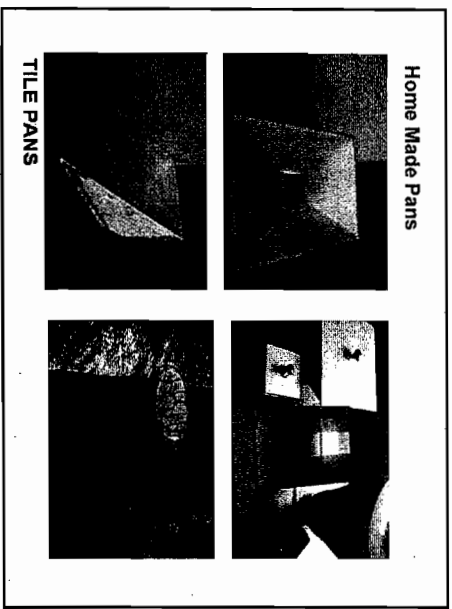
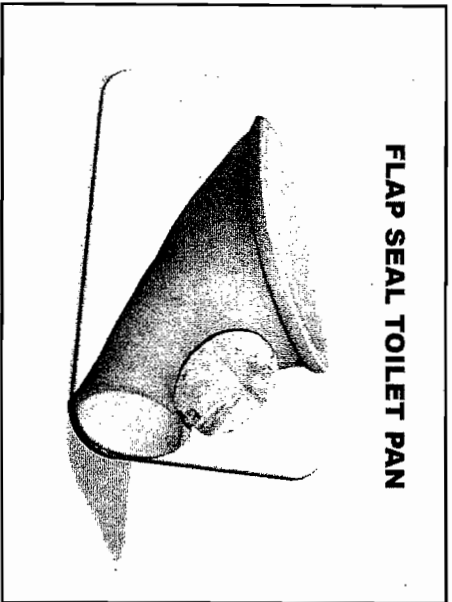
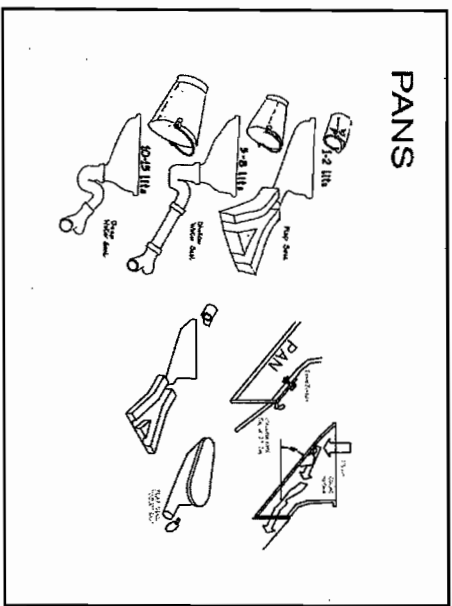
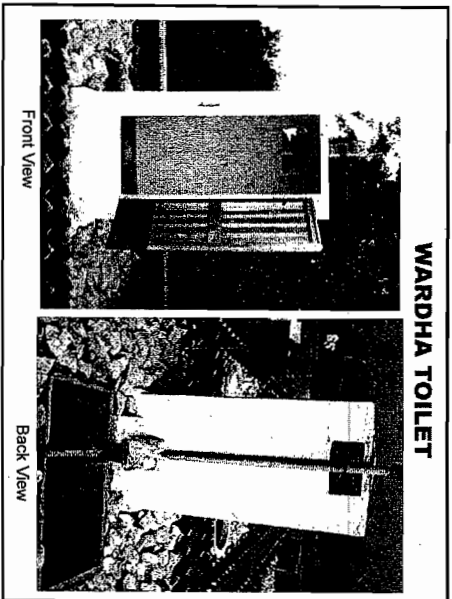


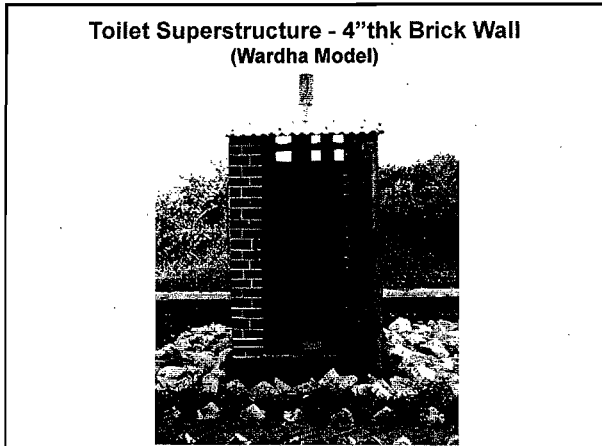
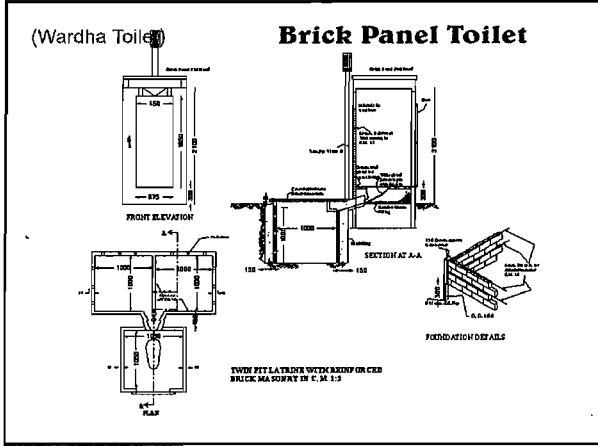
**TWO LEACH PIT TOILET**



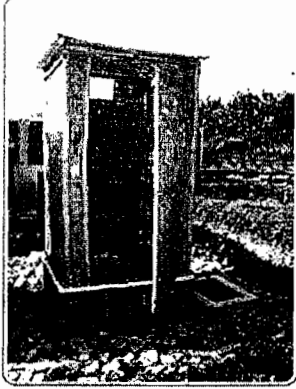
**FLAP SEAL PAN TO THE PIT MODEL (SKELETON VIEW)**



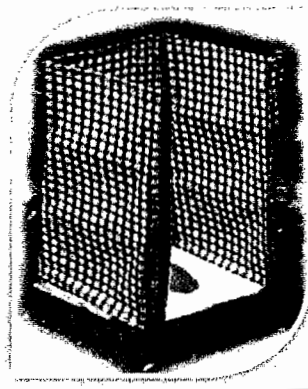




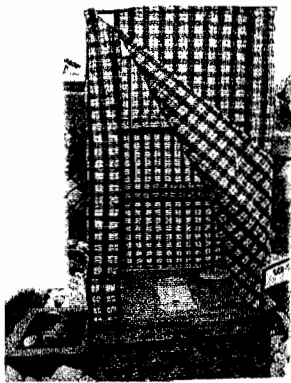
**Toilet Superstructure - Bamboo Mat**



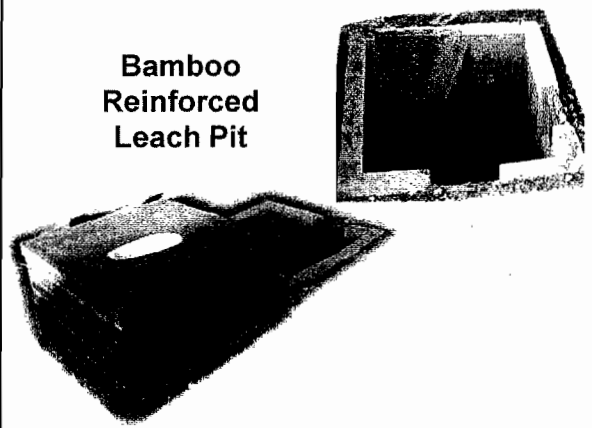
**Toilet Superstructure - Tarpaulin Sheet**

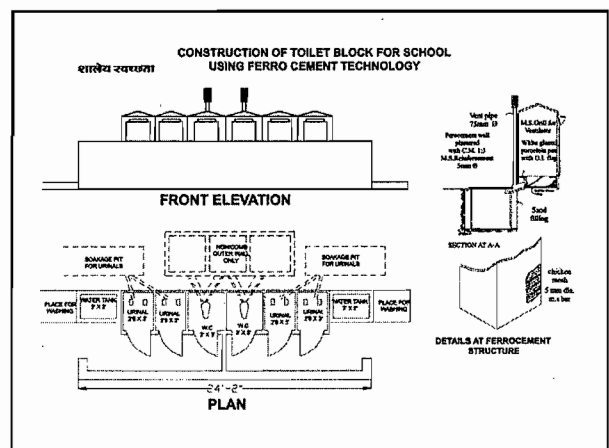
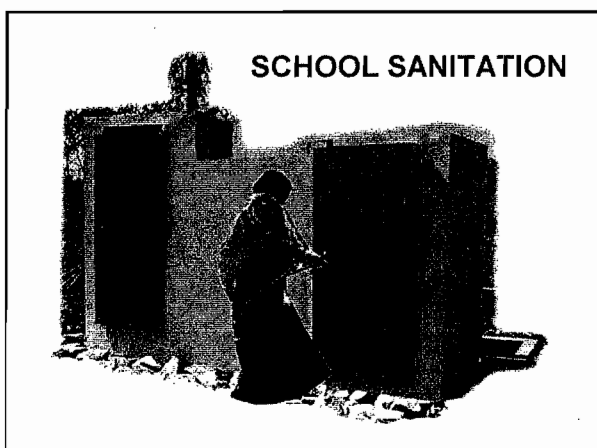
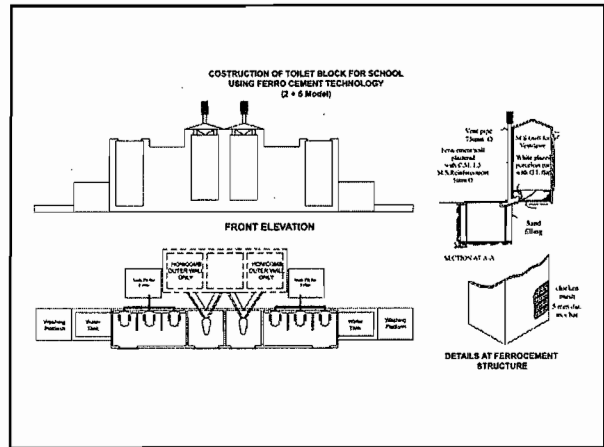
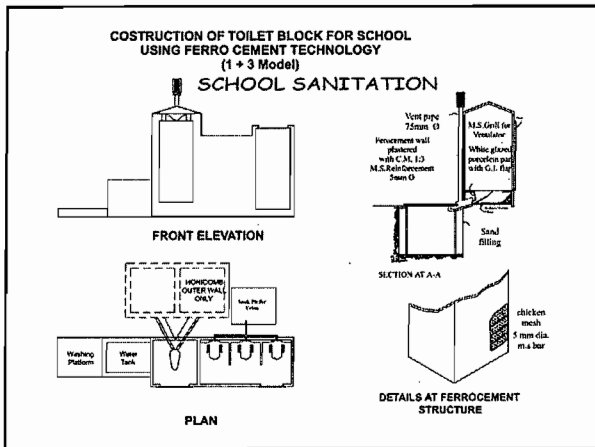


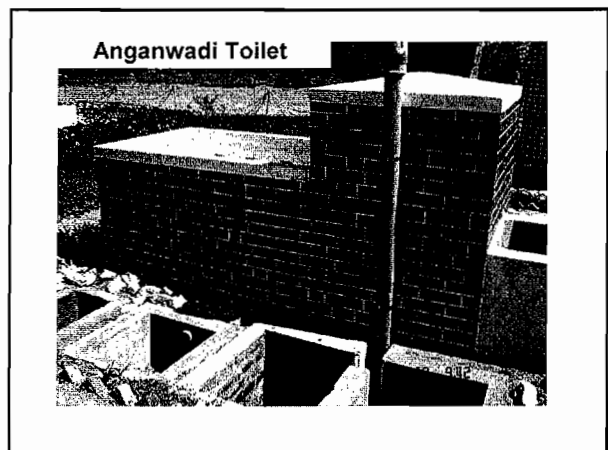
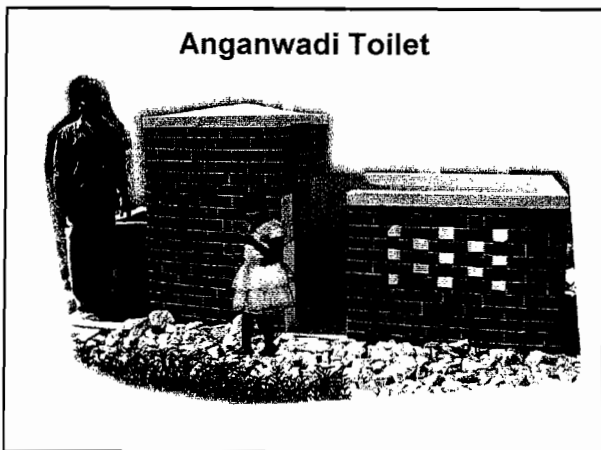
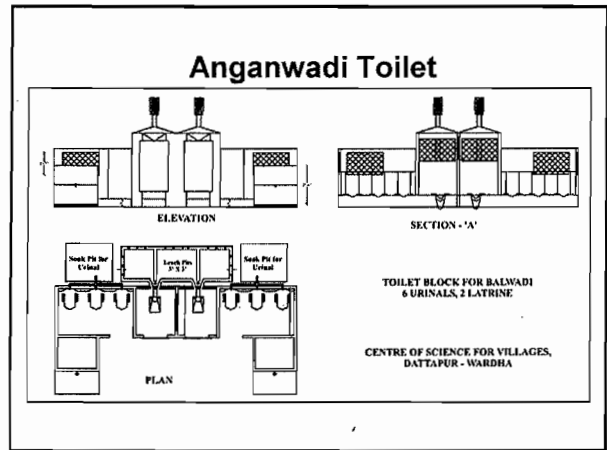
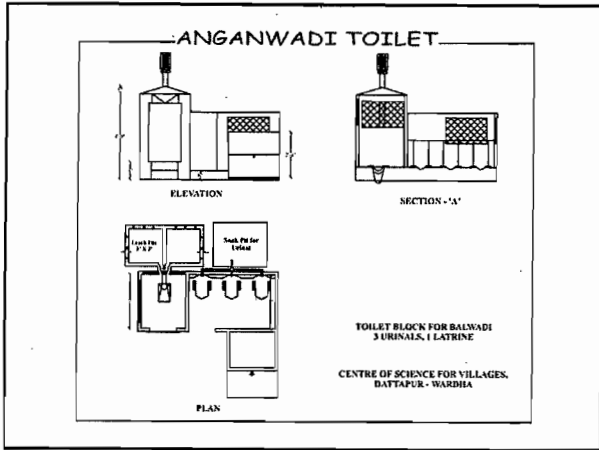
**Toilet Superstructure - Polyethylene Sheet**

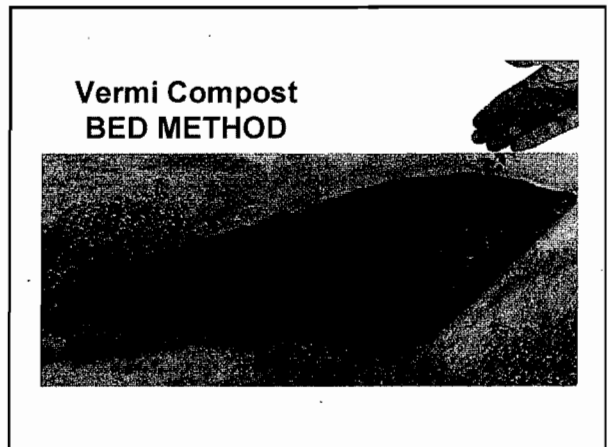
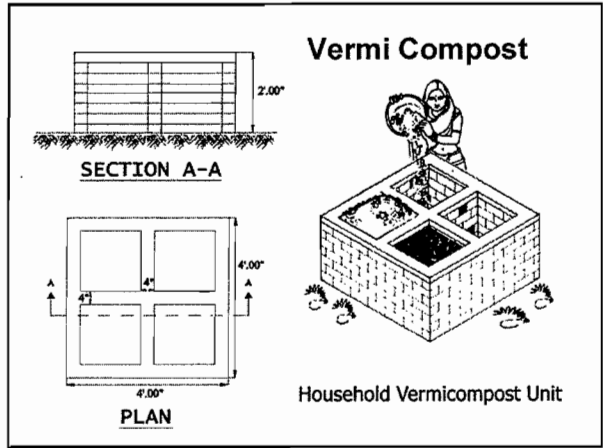
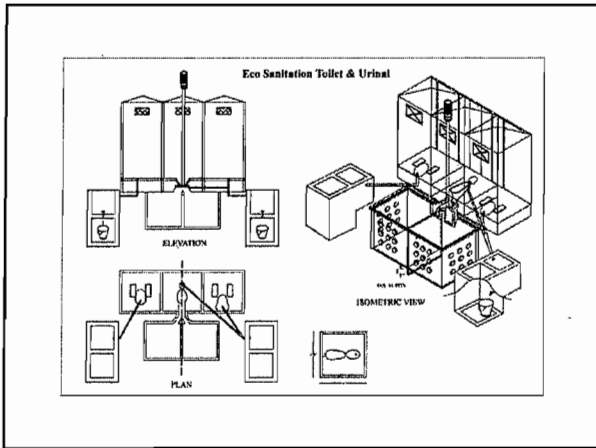


**Bamboo Reinforced Leach Pit**



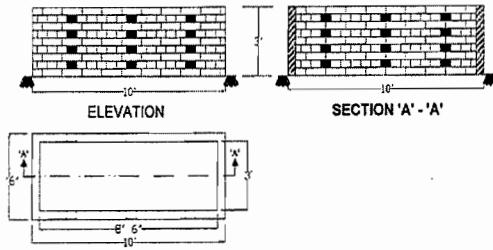




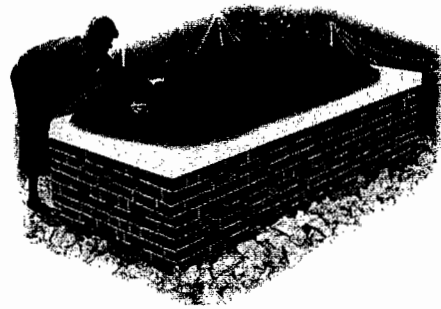




### NADEP Compost Tank



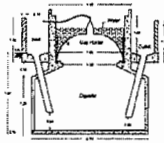
### NADEP COMPOST TANK



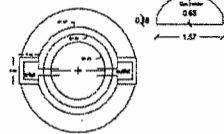
### Energy BALAJI BIOGAS PLANT - DRAWING

CENTRE OF SCIENCE FOR VILLAGES, WARDHA

Balaji Biogas Plant

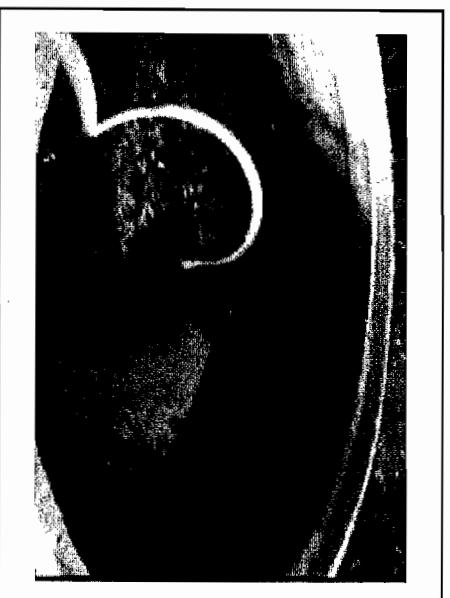
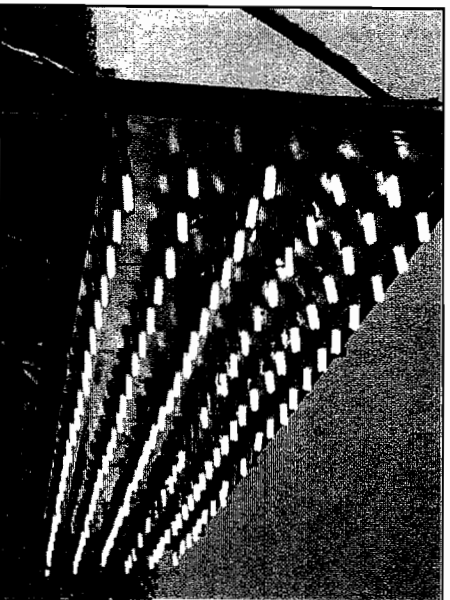
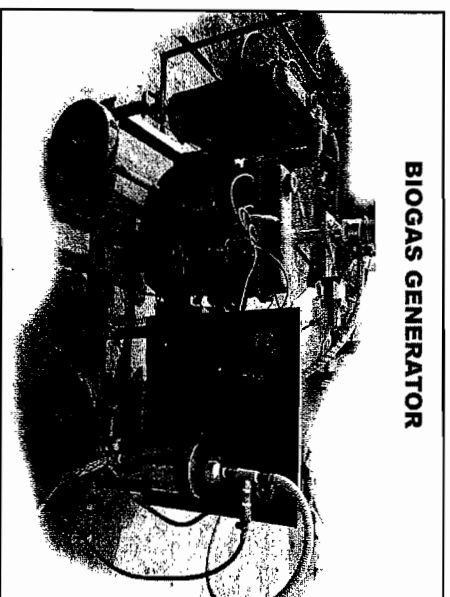
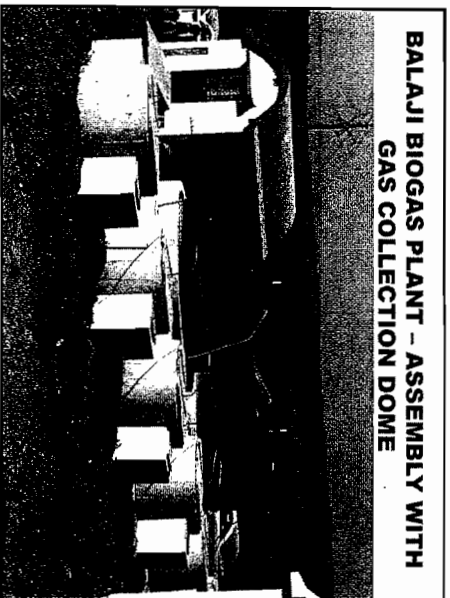


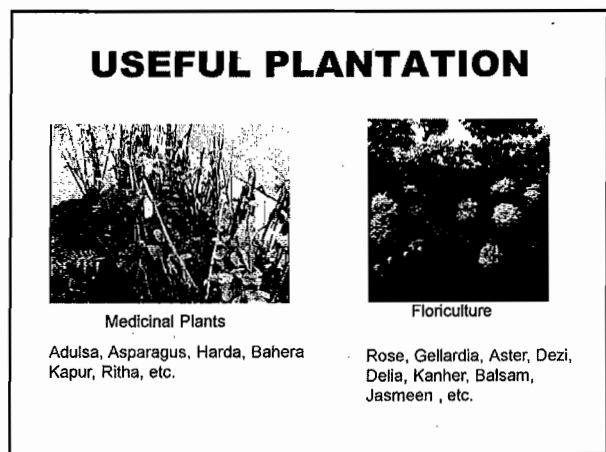
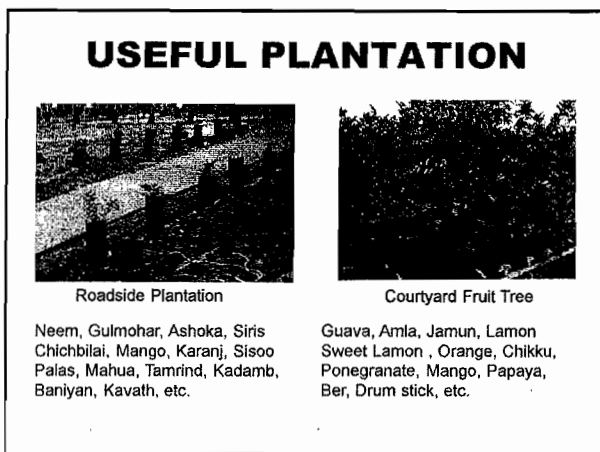
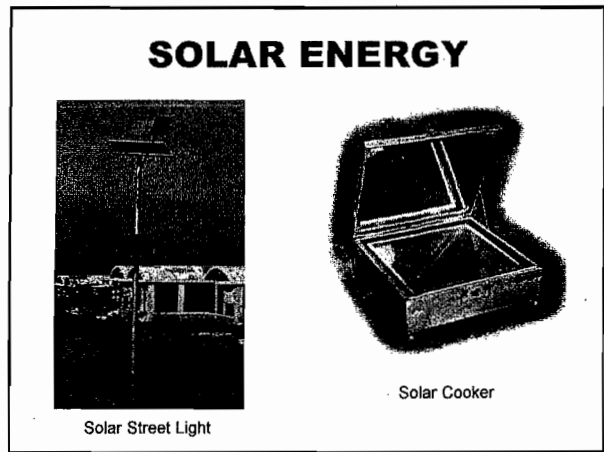
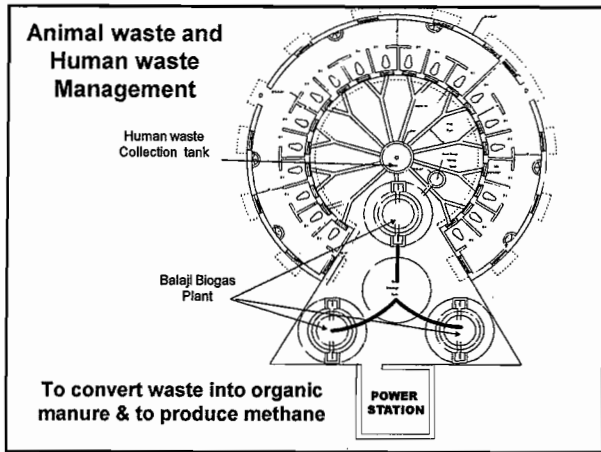
Cross Section




### BALAJI BIOGAS PLANT









### AGROWASTE CHULHA



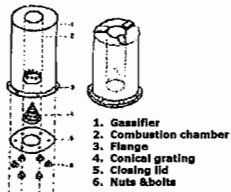
**3 Stone Stove**  
(efficiency 5%)



**Improved Cook stoves**  
(efficiency 25%-30%)



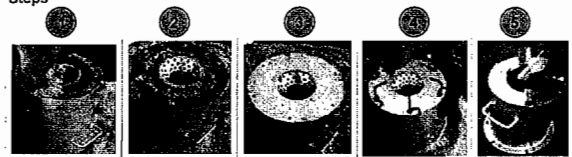
**Next Generation Gasifier Stoves**  
(efficiency of 40%)

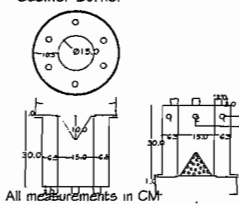


1. Gasifier
2. Combustion chamber
3. Flange
4. Conical grating
5. Closing lid
6. Nuts & Bolts


### Bio Residue Gasifier Burner

Steps

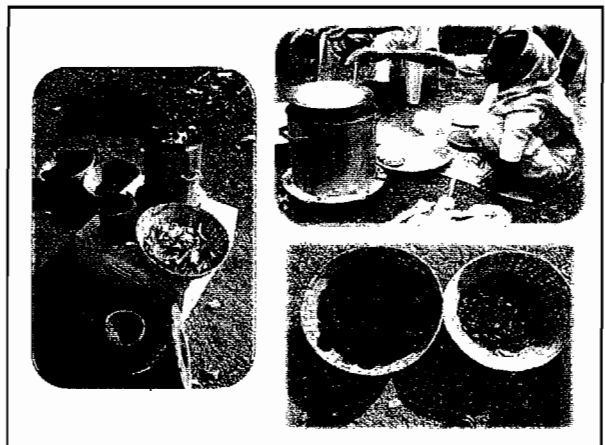




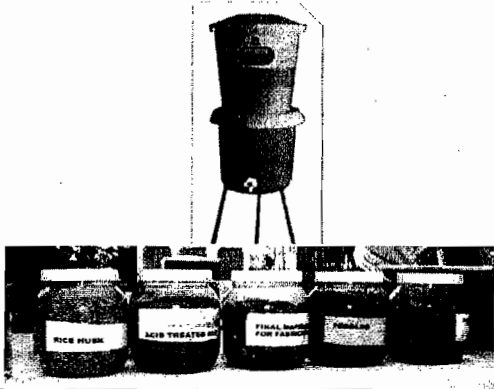
All measurements in CM



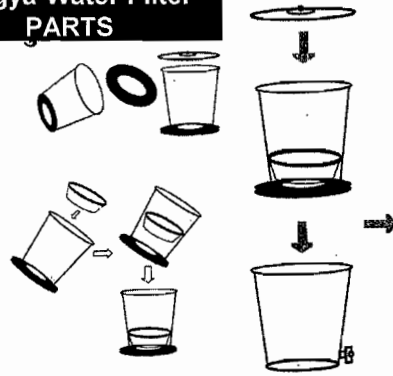
Agro Waste Pieces of Wood



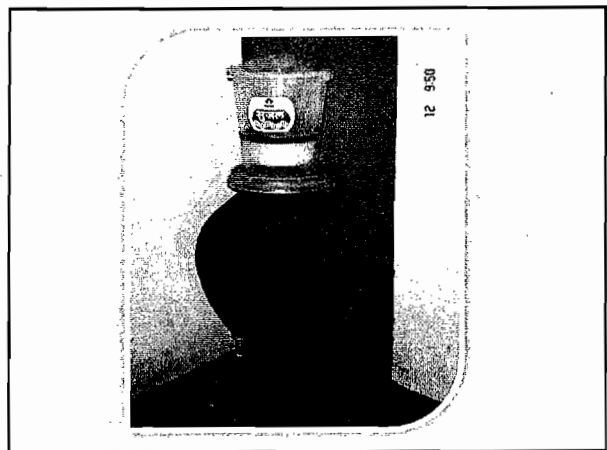
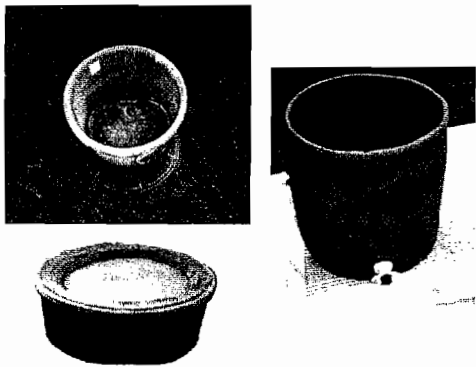
# Water Filter



# "Arogya Water Filter" PARTS



# AROGYA WATER FILTER - COMPONENTS



No	Features	Water Filter CSV	Bolling	Inline purifier
1	Harmful bacteria removal	√	30-40 Min. boiling is essential	√
2	Better taste	√	X	√
3	Turbidity Removal	√	X	√
4	Odour removal	√	X	√
5	Expensive gas is not needed	√	√	√
6	No Electricity	√	√	X
7	Continuous free flow water is not needed	√	√	X
8	No need of plumbing	√	√	X
9	No need of highly expensive maintenance	√	√	X
10	Low cost	√	X	X

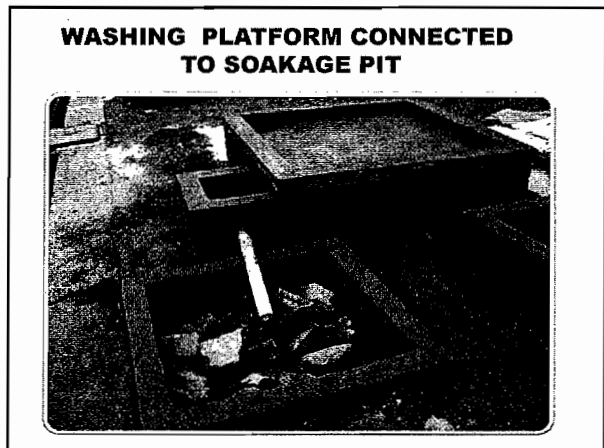
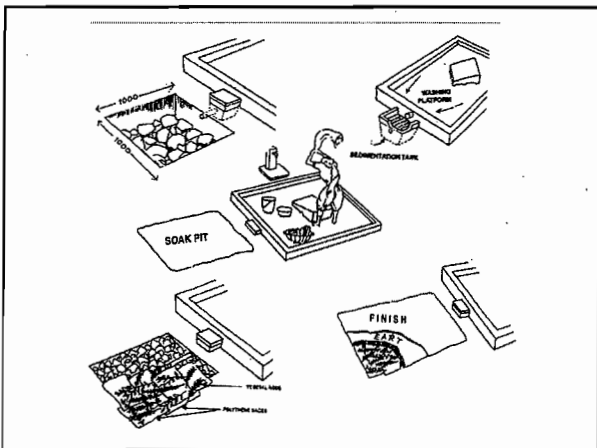
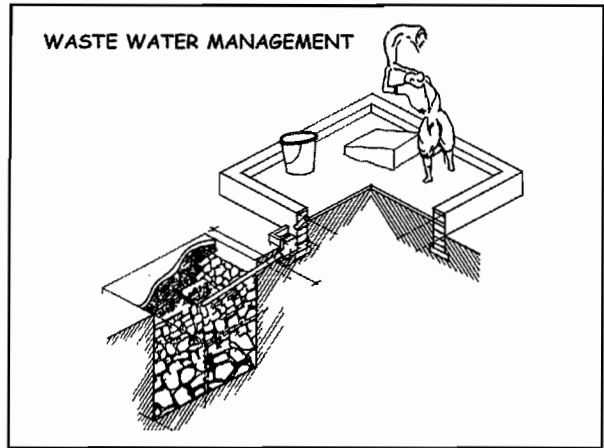
**Salient Features of Arogya Water Filter:**

Studies have confirmed the efficiency of the filter with respect to microbial removal. This filter could remove many associated problems apart from microorganisms. This will help the rural masses to drink safe water, which will in turn reduce the gastro intestinal diseases.

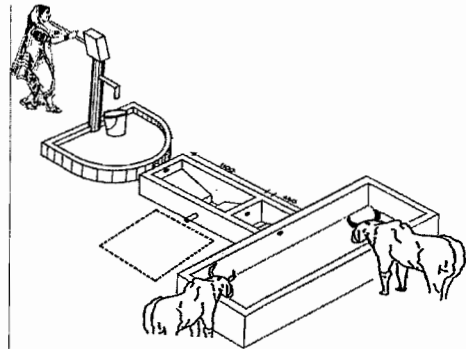
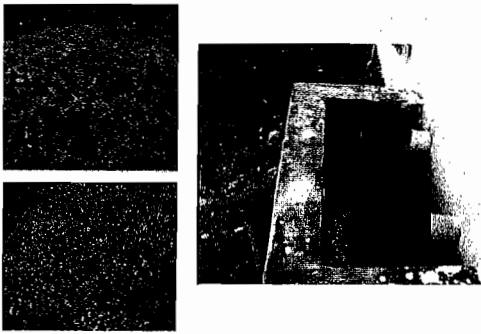
This filter apart from removing microbial contamination also removes heavy metals, fluoride and hardness from the water samples.

Finally it can be concluded based on the detail experimental work that the low cost filter fabricated at Centre of Science for Villages, Dattapur is very effective.

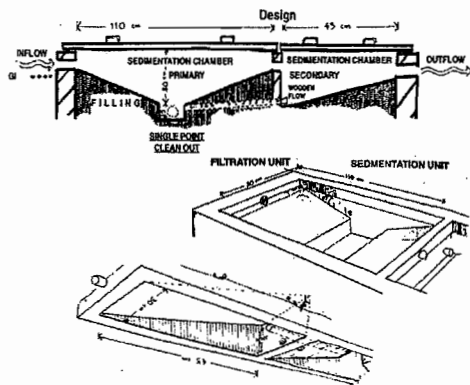
**Note:** Research work done at NEERI, Nagpur



**KITCHEN GARDENING WITH BATHING WASTE WATER**

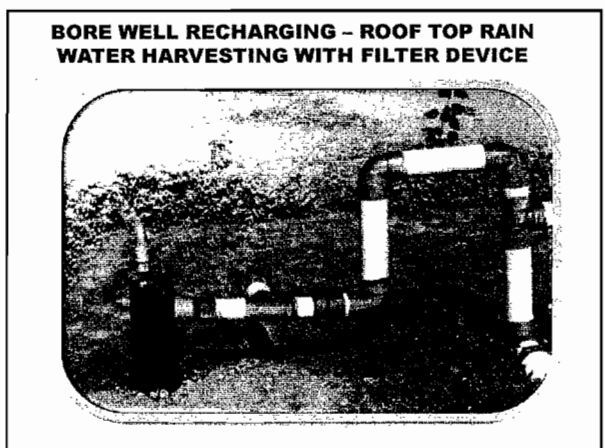
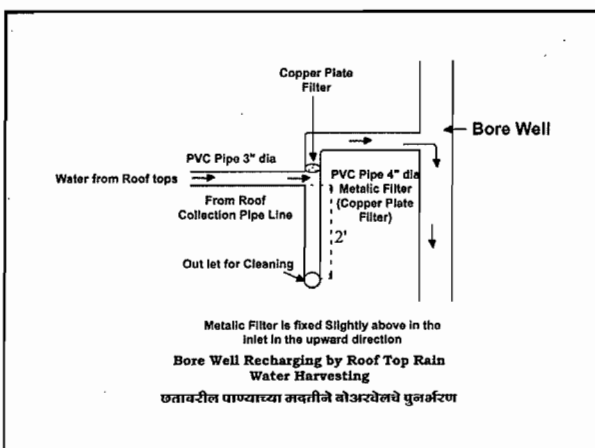
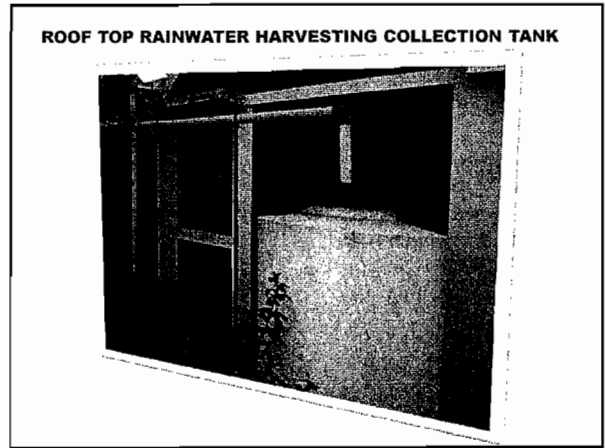
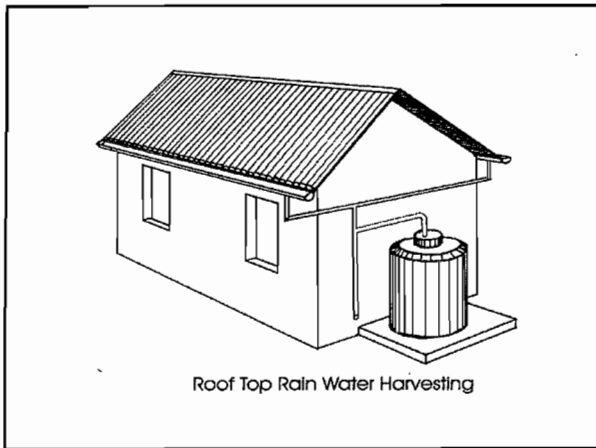


Spill Water Recycling Unit

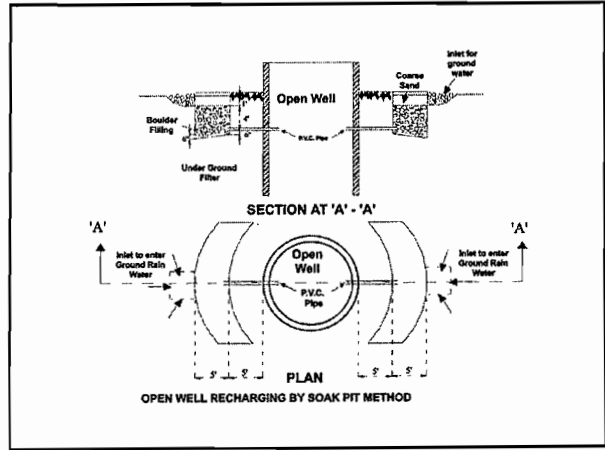
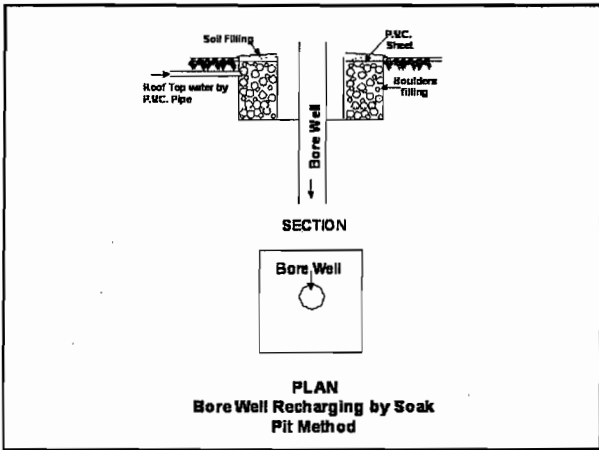


**SPILL WATER RECYCLING UNIT ATTACHED TO OPEN WELL**

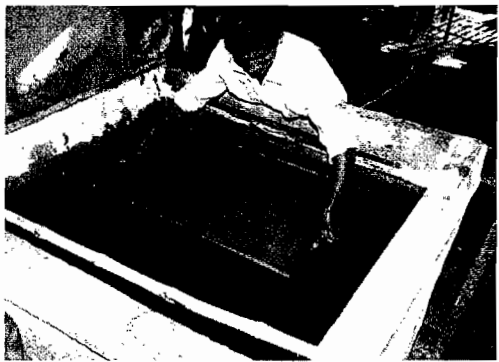








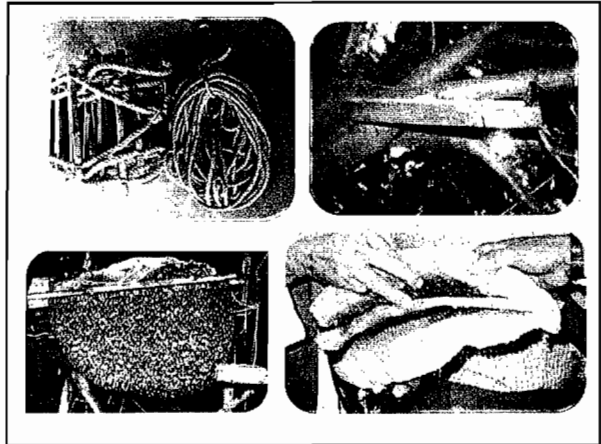
**Hand Made Paper Production Process**



**Hand Made Paper & Board Products**



**Non Violent Methods of  
HONEY EXTRACTION**



**SHEETAL POT  
(Rural Refrigerator)**



**FUNCTIONING**



