Design Guru
Prof. M.P. Ranjan
TRAINING WORKSHOP ON CONSTRUCTION OF

“BAMBOO TOILETS”
for public and community
by
Kamesh Salam

10th World Bamboo Congress
Damyang, South Korea
India had and has the problems of defecation in the open and manual cleaning of nightsoil by untouchables called human scavengers. Gandhi was the first person whose attention was drawn to find out solutions of these problems.
Shri Narendra Modi is the first Prime Minister of India who has given importance to sanitation and toilets after Mahatma Gandhi.

To pay tribute to Mahatma on his 150th Birth Anniversary, he in his speech on 15th August 2014 called upon the people to end the practice of defecation in open by 2019. Lunch Swatch Bharat – Clean India Mission.
Open Defecation
Continuation of human scavenging — A shame to our ‘modern’ civilization.

The appalling hardships, humiliation and exploitation the scavengers faced, have no parallel in human history.
Bamboo, one of the fastest growing plants, whether to call as green gold, giant grass or woody grass it is one of the amazing raw materials to explore in various ways and means for all kinds of applications for day to day uses.
Without bamboo the Indian would be poor, very poor, very poor indeed!
ADAPTED TECHNOLOGY FOR LOW COST BAMBOO HOUSE
IMPORTANT ASPECTS IN LOW COST HOUSING

1. Foundation should be of optimum depth
2. Plinth should be of optimum height.
3. Opening should be provided appropriately.
5. Utilising of local architectural technic.
6. Follow the optimum path for management to reduce labour.
7. Reducing the cost in wall paneling.
Bamboo for Housing

- Environmental Sustainability: **Bamboo** can be sustainably harvested and replenished with virtually no impact to the environment.

- Structural stability: **Bamboo** exceeds the strength of construction wood by several times. It is durable in earthquake prone areas & long lasting.

- Aesthetic: **Bamboo** constructions are graceful & elegant. **Bamboo** has a tradition dating back years because of its beauty and luxurious ambiance.
BAMBOO STRUCTURES
ECO RESORT USING BAMBOO AND LOCALLY AVAILABLE MATERIALS

BAMBOO STRUCTURE ERECTED ON CONCRETE COLUMN.
LOW COST HOUSE AT BIHAR, INDIA

TOTAL AREA : 310 SQ.FT
RATE/SQ.FT : 210/SQ.FT

FIRST LOW COST HOUSE
CONSTRUCTION DETAILS

WALL PANEL DETAILLING
BAMBOO SPLITS AND CEMENT

FOOTING DETAIL
PLASTERRING OF WALL PANEL
WIRE MESH ADDED FOR EXTRA STRENGTH
DETAILS OF CONSTRUCTION

1. 6” PLINTH WITH 8” FLOOR HEIGHT
2. SINGLE BAMBOO STRUCTURE
3. PCC PLASTERED OF FOUR LAYERS 2.5” THICK. RATIO OF 1:4
4. COMPLETED HOUSE

BAMBOO SPLITS FOR WALL LOCALLY PROCCURED
JOINTS HAVE BEEN CHANGED TO SINGLE BAMBOO JOINT

THE WALL IS REPLACED BY LOCALLY WOVEN BAMBOO MAT

EACH JOINTS HAVE BEEN WORKED OUT TO REDUCE COST

COMPLETED STRUCTURE WITH WALLED BAMBOO MATS
BAMBOO SPLIT FRAME WORK WITH STEEL STIRRUPS

BAMBOO STRIPS REPLACING STEEL

BAMBOO SUPER STRUCTURE

PREPARATION OF FOUNDATION WITH BAMBOO REINFORCEMENT
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