

# PORTFOLIO

Bamboo Architecture



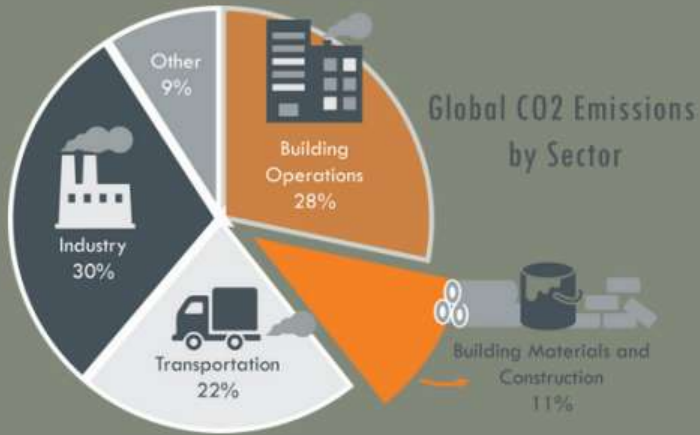
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# THE PROBLEM - Climate Change & Social Imbalance



- 11% of global greenhouse gas emissions result from the carbon footprint of building materials. Fortunately, we have a remarkable and eco-friendly material Bamboo.
- Building construction and operations account for approximately 39% of CO2 emission annually.
- By year 2030, Architecture 2030 has projected that the embodied carbon of building material will contribute to 74% of total global CO2 emissions from building industry.

## THE SOLUTION

Replace Unsustainable Material Wood By Most Eco-friendly Natural Material On The Planet "**BAMBOO**" for following reasons.

- It is one of the fastest renewable natural resource, a grass which is similar to wood
- Generates better livelihood opportunities for farmers, rural folk, artisans living in villages



### Renewable Resource

Bamboo is a rapidly renewable resource, with some species growing up to 91 cm (36 inches) in a single day.



### Versatility and Flexibility

Bamboo is a highly versatile material that can be used for various construction purposes, including structural frames, flooring, roofing, wall panels, and decorative elements.



### Energy Efficiency and Thermal Insulation

Bamboo exhibits excellent thermal insulation properties, helping to regulate indoor temperatures and reduce energy consumption for heating and cooling.



### Strength and Durability

Despite its lightweight nature, bamboo exhibits remarkable strength and durability, often surpassing the tensile strength of steel and the compressive strength of concrete. Its high strength-to-weight ratio makes it an excellent material for structural elements in construction.



# Bamboo and Sustainable Development Goals (SDGs)

Bamboo has an important role in biodiversity conservation and contributes to soil and water management, and biomass production, and supports the rural economy. As bamboo plays key roles in biodiversity, land restoration, and livelihood improvement, it well fits into many of the UN Sustainable Development Goals (SDGs).

## WHY BAMBOO AND RATTAN?



Bamboo and rattan can be strategic solutions to some of the most pressing global challenges, including the United Nations Sustainable Development Goals (SDGs).



### Tools for poverty alleviation

Bamboo and rattan provide important livelihood sources for millions of people, and are considered some of the world's most valuable non-timber forest products. They grow fast, mature quickly, regenerate annually, and can be used to create thousands of products, from handicrafts and fodder to furniture and flooring. Bamboo and rattan are also light, flexible and easy to process; this provides farmers with opportunities to engage in initial processing, which increases their share in value addition.



### Affordable and clean energy

Bamboo can be an important source of biomass energy for cooking, heating and electricity. Bamboo fuelwood, charcoal and briquettes provide a more sustainable substitute for wood biomass in places where people rely on wood for cooking and heating. It can be converted to pellets or gas for heat and electricity generation.

### Sustainable and resilient construction

Bamboo provides a cheap, sustainable source of housing material for many people living in the tropics and subtropics. Bamboo poles are strong, lightweight and flexible, and have long been used in the construction of houses, bridges and scaffolding. Recently, engineered bamboo has been used to create modular housing material, which can be transported and assembled quickly. Because bamboo "bends but does not break", houses made from bamboo can withstand earthquakes.



### Innovative, eco-friendly products

Bamboo and rattan can be a parts of low-carbon lifestyles. They grow fast, produce new shoots annually and have many diverse uses. Bamboo is a bio-based alternative to single-use plastic or wood products, including cutlery, straws, paper and packaging, with heavy-duty applications: companies are exploring the use of bamboo composite for use in pipes, blades of wind turbines and shipping container flooring. Rattan is being trialed for use as a bone-regenerating implant.



### A means to combat climate change

Bamboo contributes to climate change mitigation and adaptation. Because it grows fast and matures quickly, bamboo can be harvested regularly, creating a large number of durable products which store carbon. Bamboo also has relatively high tolerance to climate shocks, such as drought, fire and fluctuating temperatures, making it a resilient source of income in climate-vulnerable communities. Planting bamboo provides an effective wind break, helping prevent erosion and increase soil moisture in degraded landscapes.

### Conserving life on land

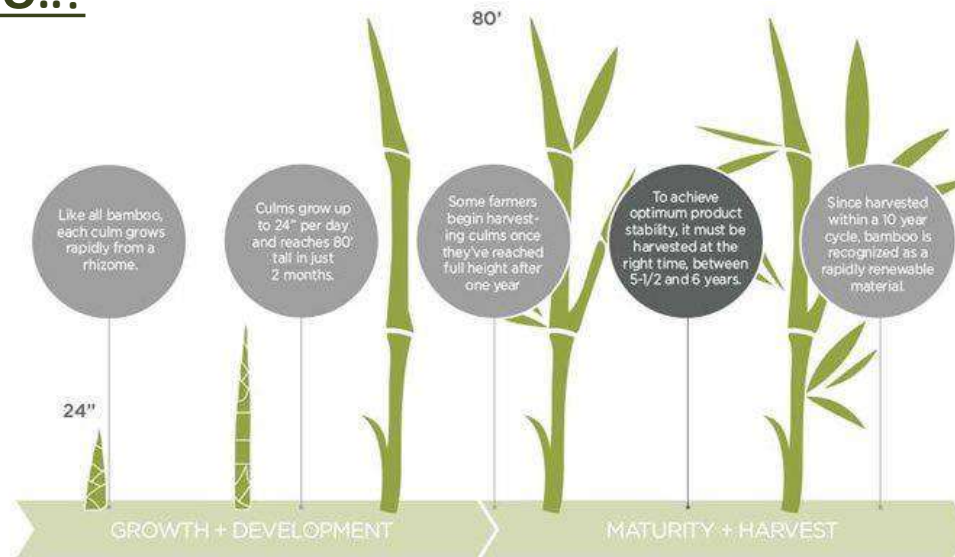
Bamboo can be an important plant for reversing land degradation and is being used for this purpose in many countries. In addition, bamboo and rattan are key parts of biodiverse ecosystems. A number of the world's most iconic endangered species rely on these plants for survival, including the giant panda, red panda, mountain gorilla and bale mountain monkey.



### Revitalizing global partnerships

Bamboo and rattan are common resources across the world's tropical and subtropical belt, and countries can learn a great deal from others' experiences in managing and using these plants. INBAR functions as a powerful mechanism for South-South cooperation, breaking down barriers and sharing knowledge, skills, technologies and strategies on bamboo resource management and utilization across its network of Member States.

# WHY BAMBOO..?



## **1. Bamboo is Rapidly Renewable**

Did you know that bamboo is technically a grass? Actually, it's the world's fastest growing grass! A rapidly renewable material, bamboo grows for only five to seven years before it is harvested. Comparatively, hardwood grows for approximately 50 years before it can be harvested.





# **BENEFITS OF THE BAMBOO AS CONSTRUCTION MATERIAL**

## **TECHNOLOGICAL ADVANTAGES**



### **DURABILITY**

- With proper treatment, bamboo provides a service life of up to 30 years
- Can be used as a complimentary/supportive material.
  - Easy maintenance and replaceable



### **EARTHQUAKE RESISTANCE**

- Due to its lightweight and elastic property, bamboo can resist earthquake pressure

## **ECONOMIC ADVANTAGES**



### **AFFORDABILITY**

- Bamboo housing is low cost compared to wood and masonry
- It is available as raw building materials



### **EMPLOYMENT GENERATION**

- The manufacturing of low-cost bamboo houses provides employment to a large number of people
- It can generate extra employment like cultivation, harvesting, primary processing, transportation and marketing of bamboo

## **ENVIRONMENTAL ADVANTAGES**



### **ENVIRONMENTAL BENEFITS**

- Bamboo is a energy efficient material that do not harm the health and environment
- Bamboo requires only 1/8 of the energy that concrete needs to create a building material of the same capacity.
- In comparison to steel bamboo needs only 1/50 the amount of energy for processing



### **CONTROL OF DEFORESTATION**

- In the Costa Rican context 70 Ha of bamboo plantation is sufficient for 1000 houses where if it was made of timber it would 600 Ha of natural forest
- Bamboo can regenerate within 2-3 years
- Social acceptability Bamboo has been in use for centuries and socially valued and accepted element of construction.

# GOKHALE BAMBOO PAVILION

The project is a pavilion space design for a client in the lawn of his bungalow on existing plinth. The structure entirely constructed out of bamboo in the strong landscape surrounded by mountain and dense vegetation.

Structure inspired from Japanese pagoda with simple geometry with three different level around 4 meter in height. Using only treated bamboo with traditional joinery with bamboo nails and rope tie and prefabricated bamboo 4 arches placed on four side of the structure for aesthetic purpose and 4 semi-circular arches placed diagonally for batter load transfer.

The roof made up of three different layers with using New Zealand pine and second waterproofing layer and top layer have random placement of bamboo shingles.

The structure made by a team of skilled bamboo artist over a duration of 13 days putting their heart and soul into it and bring this thought into reality.

The main function of this space for seating and mainly for meditation purpose in peaceful environment we always try to maximize the potential of bamboo.

## PROJECT INFORMATION

**Project Name:-** Gokhale Pavilion

**Site:-** Lavasa, Pune. (Hill Top View Street)

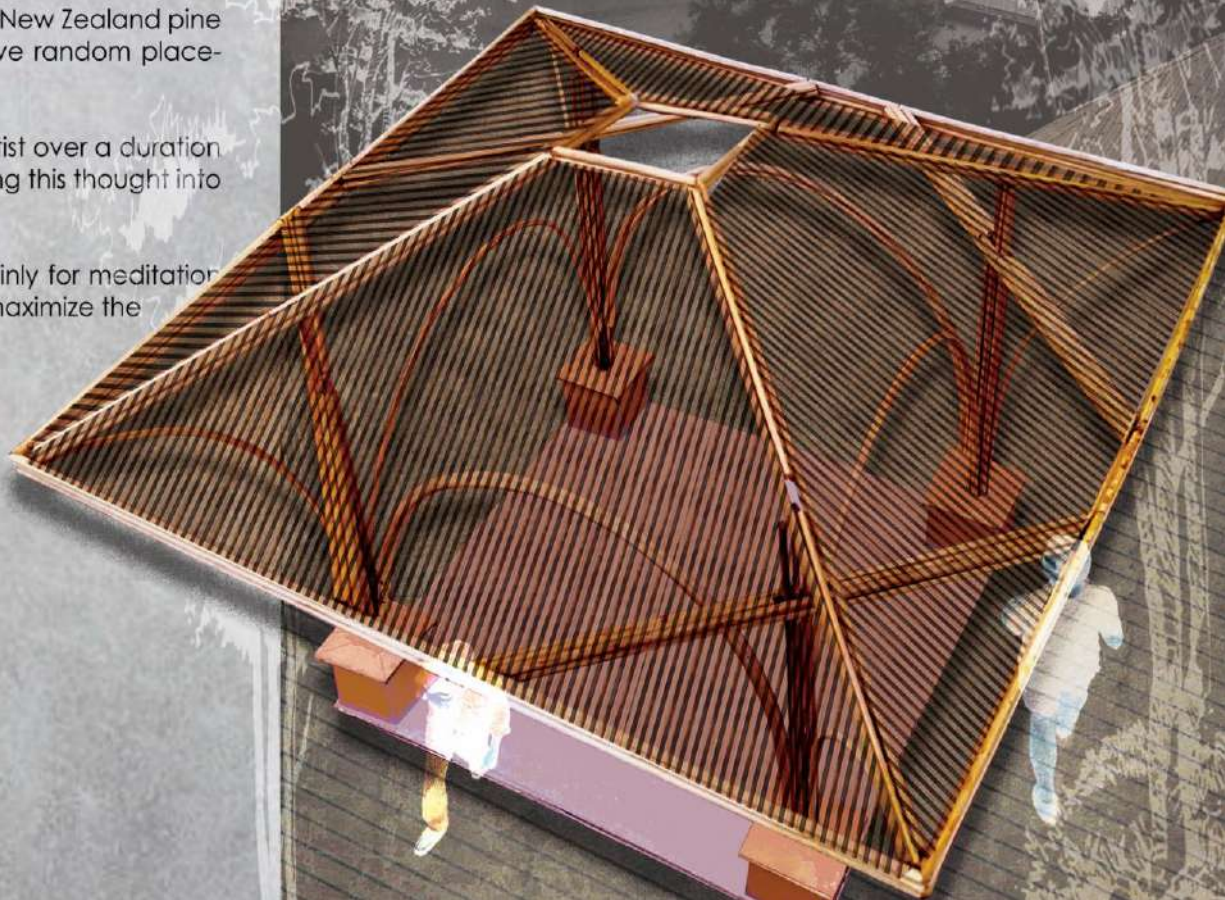
**Area:-** 350 Sq.ft.

**Design:-** Green Ocean Design Studio.

**Status:-** Completed (2017)

**Typology:-** Permanent Structure.

**Execution Duration:-** 13 Days







Green Oceans Fresh Snacks

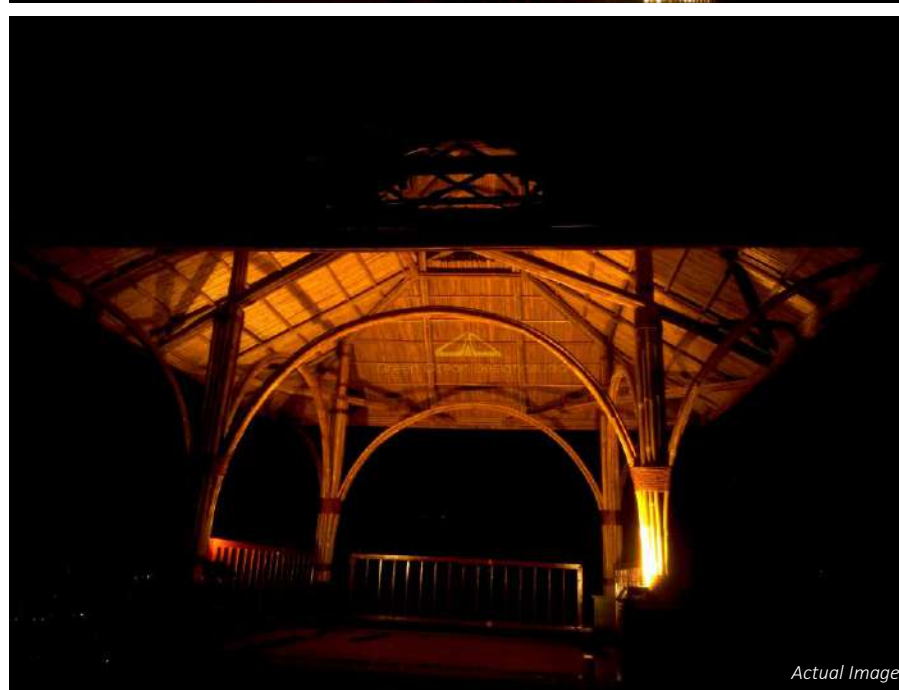








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# ECOTOURISM BAMBOO COTTAGE

Prefabricated Bamboo cottage build with combination of various species for Bamboo construction. This cottage is an exploration of diversified use of Bamboo as a material for construction.

The project 'Ecotourism Bamboo Cottage' was visioned with sketches, models and drawings equally playing a role in the entire process of designing. The studio following its philosophies makes it a point that the design is honest with the context, craft, construction and community. 'Ecotourism Bamboo Cottage' truly aims to achieve not just a sustainable approach but a lifestyle.

This cottage is a Bamboo Art Piece. Its Central Structure consists of Prefabricated Bamboo Arches, erected on-site with mechanical aid. It also consists of a Knitwork that is being woven by using Bamboo Scaffoldings.

Every Experience on-site with Bamboo turns out to be unique with its own challenges. But it is the vision of End Result that keeps us Motivated.

## PROJECT INFORMATION

**Project Name:-** Ecotourism Bamboo Cottage.

**Site:-** MBDB Office Campus, Nagpur, Maharashtra, India

**Area:-** 1000 Sq.Ft ( Including Mezzanine Floor, Balcony, Entrance Porch, )

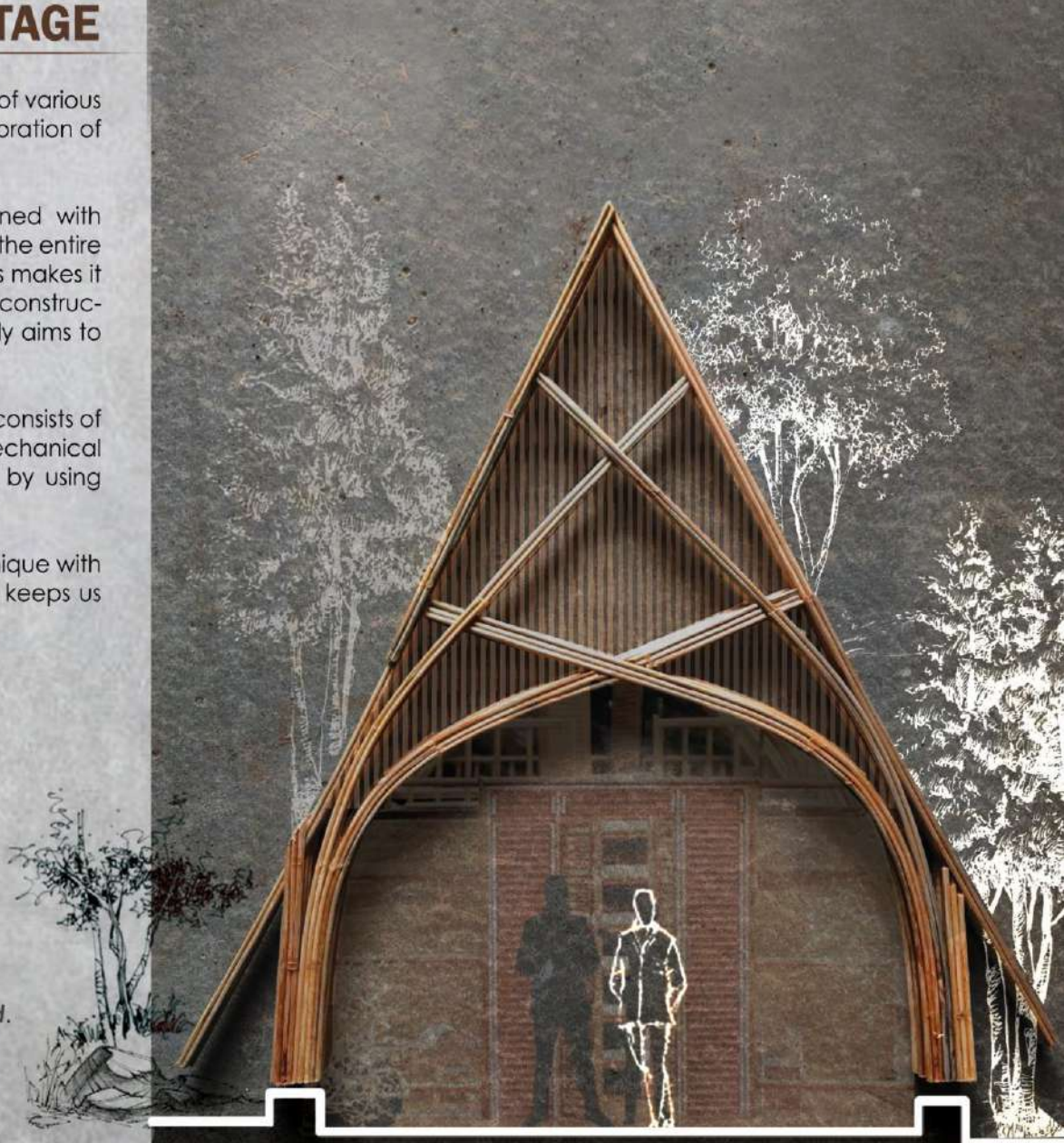
**Design:-** Green Ocean Design Studio.

**Construction:-** Maharashtra Bamboo Development Board.

**Status:-** Under Construction.

**Typology:-** Permanent structure.

**Civil Contractor:-** N D Bhende Construction.

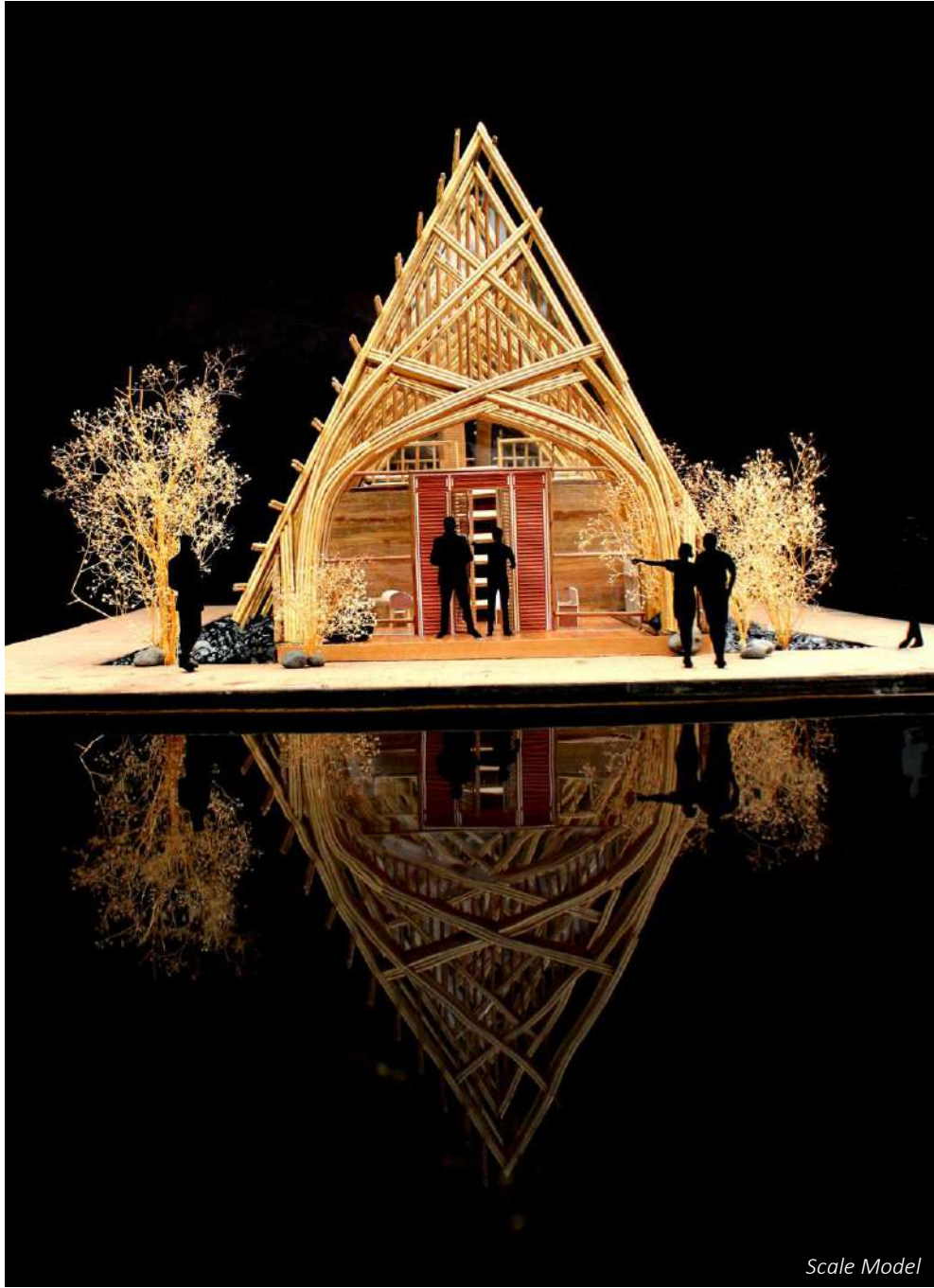




Scale Model



Scale Model



Scale Model







Scale Model

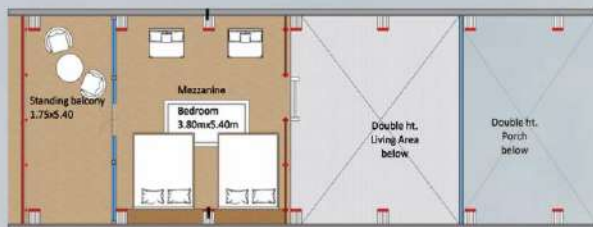


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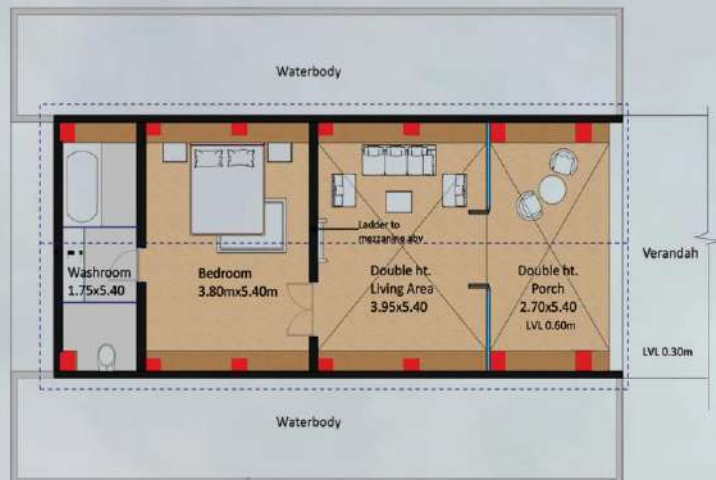


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MEZZANINE FLOOR PLAN



GROUND FLOOR PLAN

### AREA STATEMENT:

CARPET AREA (GROUND FLOOR) : 57.75 Sq.m (621.62 Sq.ft)

CARPET AREA (MEZZANINE) : 26 Sq.m (272.97 Sq.ft)

TOTAL CARPET AREA : 83.75 Sq.m (901.48 Sq.ft)

TOTAL BUILT-UP AREA (PLINTH) : 71.14 Sq.m (765.75 Sq.ft)

*Prefabricated Bamboo cottage build with combination of various species for Bamboo construction. This cottage is an exploration of diversified use of Bamboo as a material for construction.*

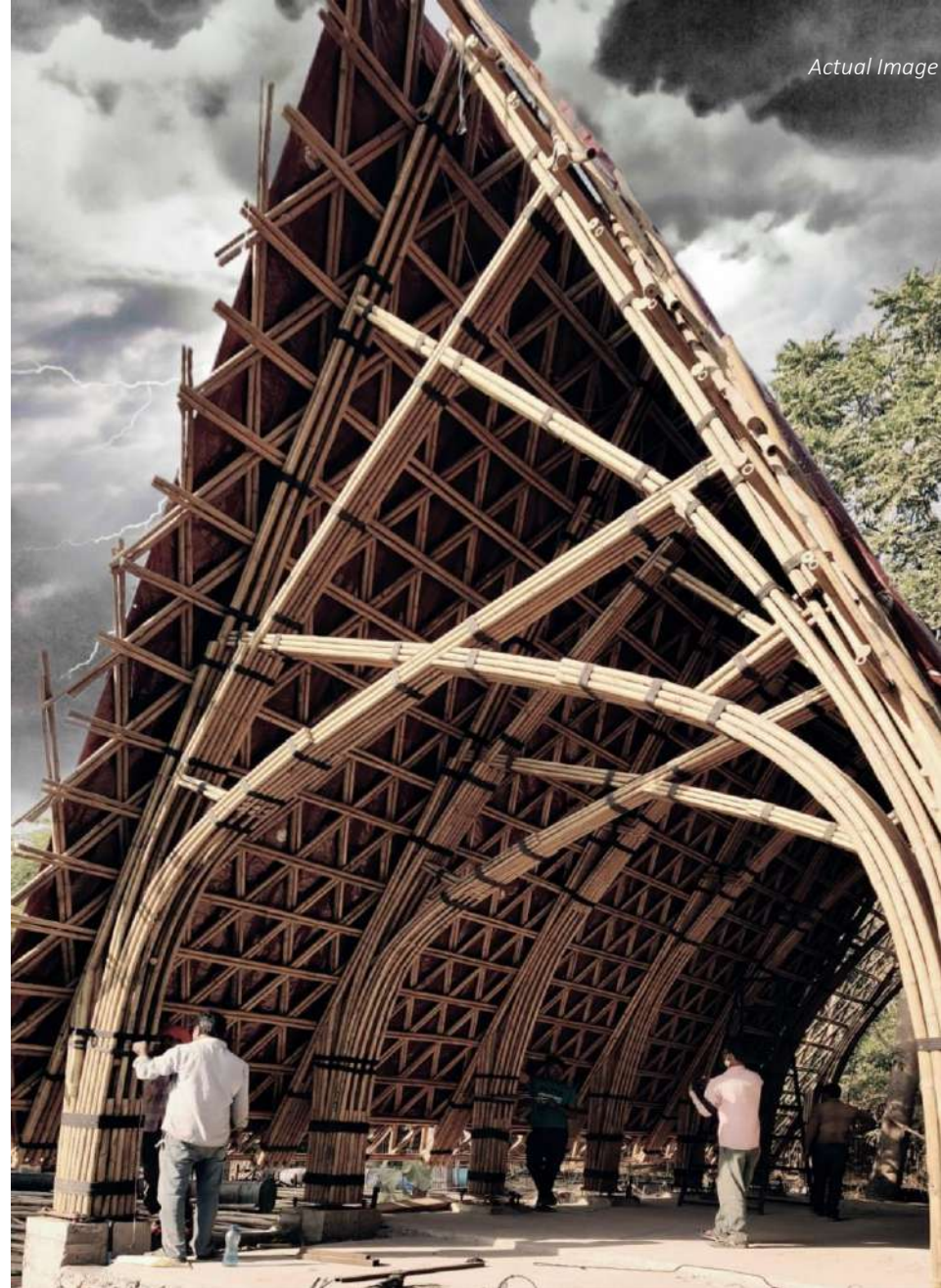




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Actual Image



Actual Image



Scale Model











# THE BAMBOO PAVILION

The bamboo pavilion features 8 arched frames of columns/trusses combined with purlins. The structure reaches almost 6 meters high and is erected on a steel base plate and explored possibilities of long span structures using bamboo as construction material.

The structure has been constructed from a combination of bundled bamboo members, creating a vast internal space spanning 10 meters X 10 meters, while the form of the structure is shaped to maximize usability of space. The Bamboo pavilion ensures the minimal use of steel and other materials. Treatment processing methods for the bamboo allow the shoots to display their characteristics as flexible, durable and cost-effective building materials.

The main purpose behind choosing bundled bamboo structural system is to showcase and make people aware about strengths and possibilities in bamboo construction using locally available species i.e., *Dendrocalamus Stocksii*. The Bamboo frame is a prototype and can be used in varied manners.

## PROJECT INFORMATION

**Project Name:** *Agrovision Bamboo Pavilion 2021*

**Site :-** *Reshimbagh, Nagpur, Maharashtra, India*

**Area :-** *1000 Sq.Ft (10 MX10MX 6M)*

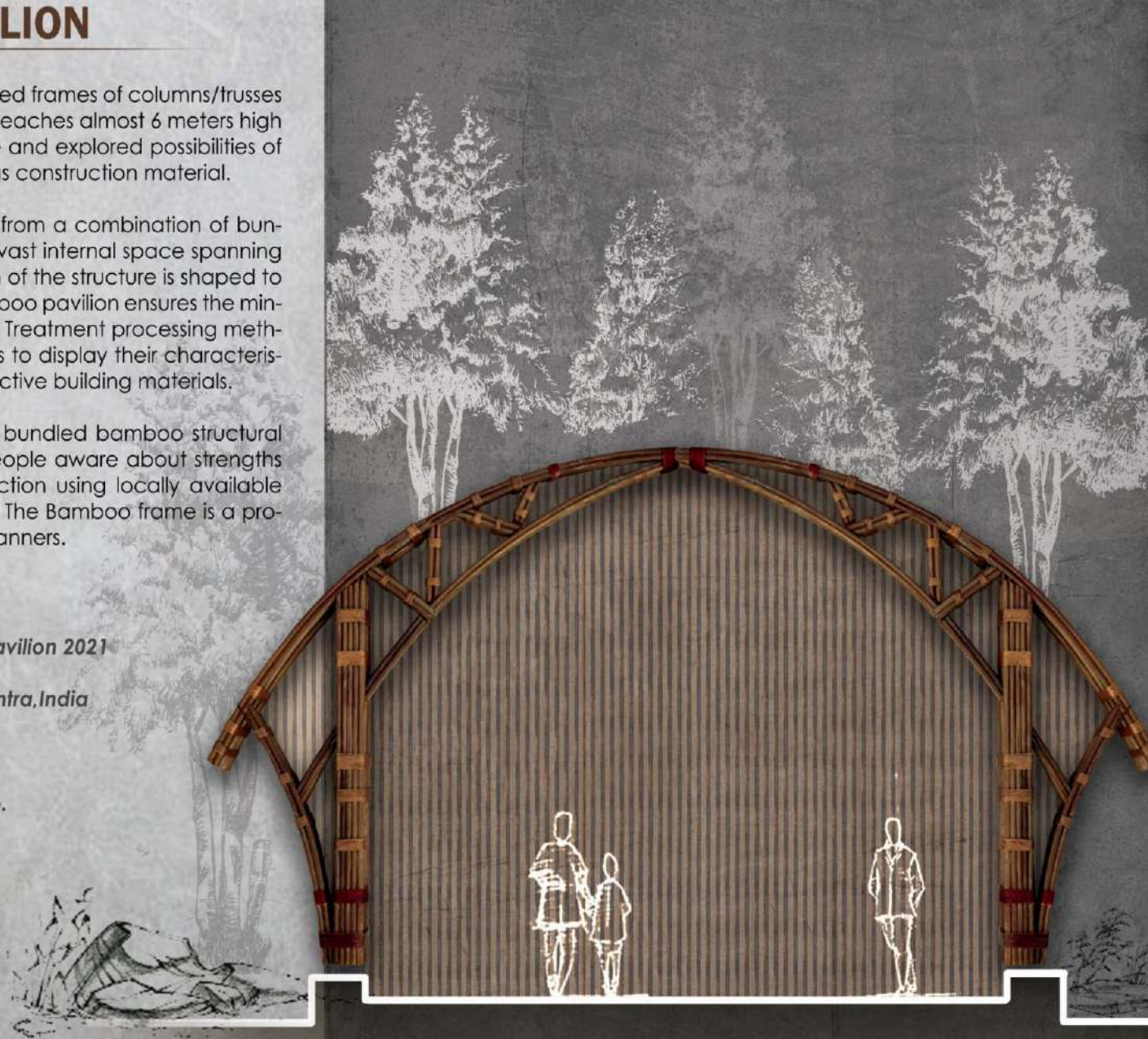
**Design :-** *Green Ocean Design Studio.*

**Construction :-** *Maharashtra Bamboo Development Board.*

**Status :-** *Completed.*

**Typology :** *Temporary structure*

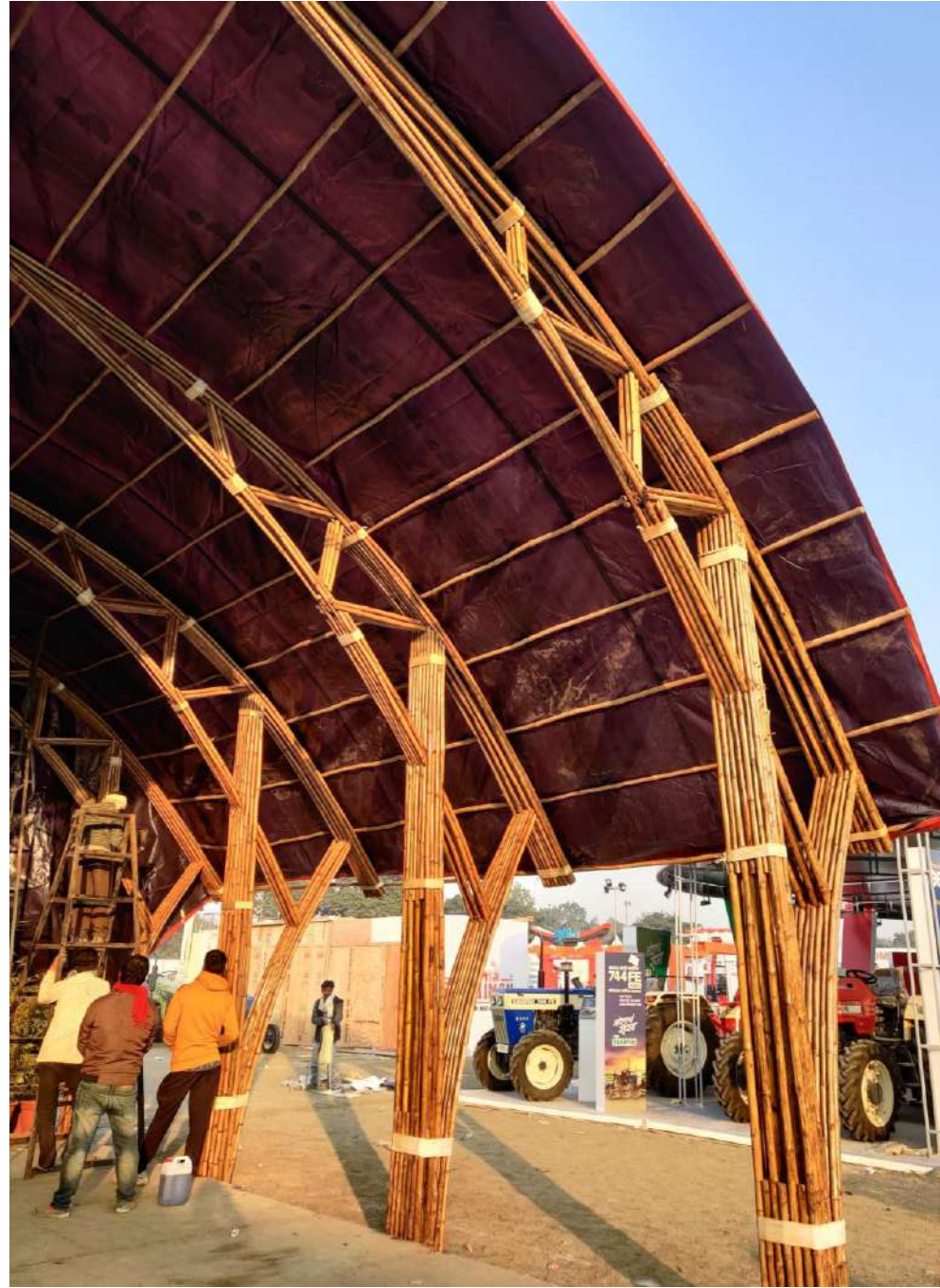
**Project Cost :-** *10 Lakh (Tentative)*

















# THE DIVINE SPACES

Shri Sai Mandir Nagpur is the only the temple trust to have pioneered the reconstruction of the Shri Ganesh, Maa Durga and Dattatreya Bhagavan Mandir that forms part of the temple premises has been reconstructed completely in bamboo.

The creative canvas is immensely full filling - Arches, domes, delicate weaves and bends are part of this structure and the Inspiration being the original Mandir structure. The Structural potential of bamboo is explored by the use of arches and curved support members. Roof cladded with bamboo mat board from top and bamboo strip board from bottom.

The roof is supported by bamboo arches from front and both sides and rested on existing wall at the rear side. Bamboo Jali (Traditional bamboo weaving) is used as infill panel between arches. The roof cantilever of 3'6" is supported by two curved supports at front, one each at diagonals and one each at both sides.

## PROJECT INFORMATION

**Project Name:-** Bamboo Temple.

**Client:-** Shri Sai Sansthan Nagpur

**Site:-** Sai Mandir Wardha Road, Nagpur, Maharashtra, India

**Area:-** Plinth Area=120Sq.ft Roof Area= 250 Sq.ft  
Total Height of Structure: 5.75m (18'10")

**Design:-** Green Ocean Design Studio.

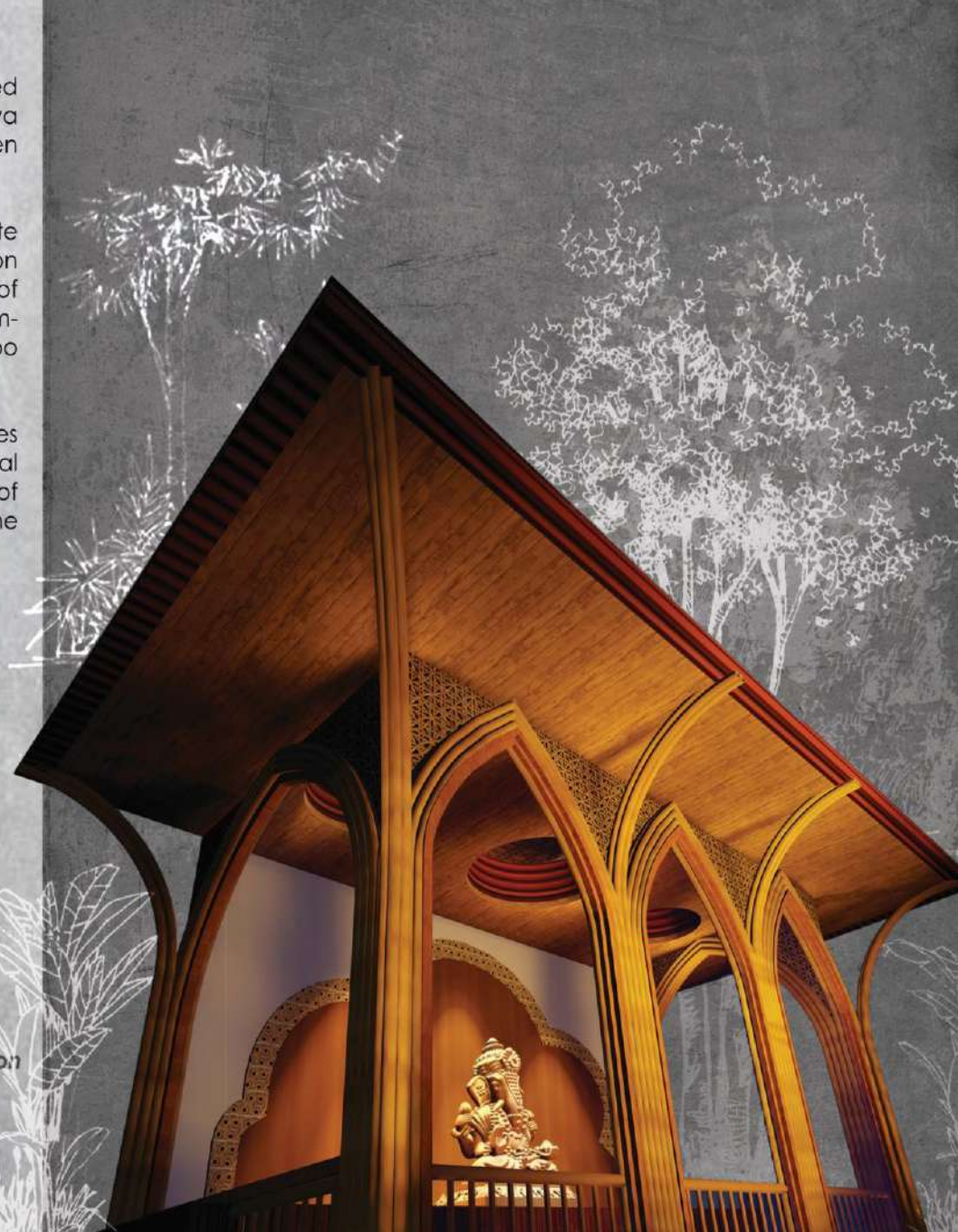
**Construction:-** Maharashtra Bamboo Development Board.

**Status:-** Completed. **Supported by:** Green Planet social Foundation

**Typology:-** Permanent structure.

**Civil Contractor:-** N D Bhende Construction.

**Project Cost:-** 7.5 Lakh (Tentative)



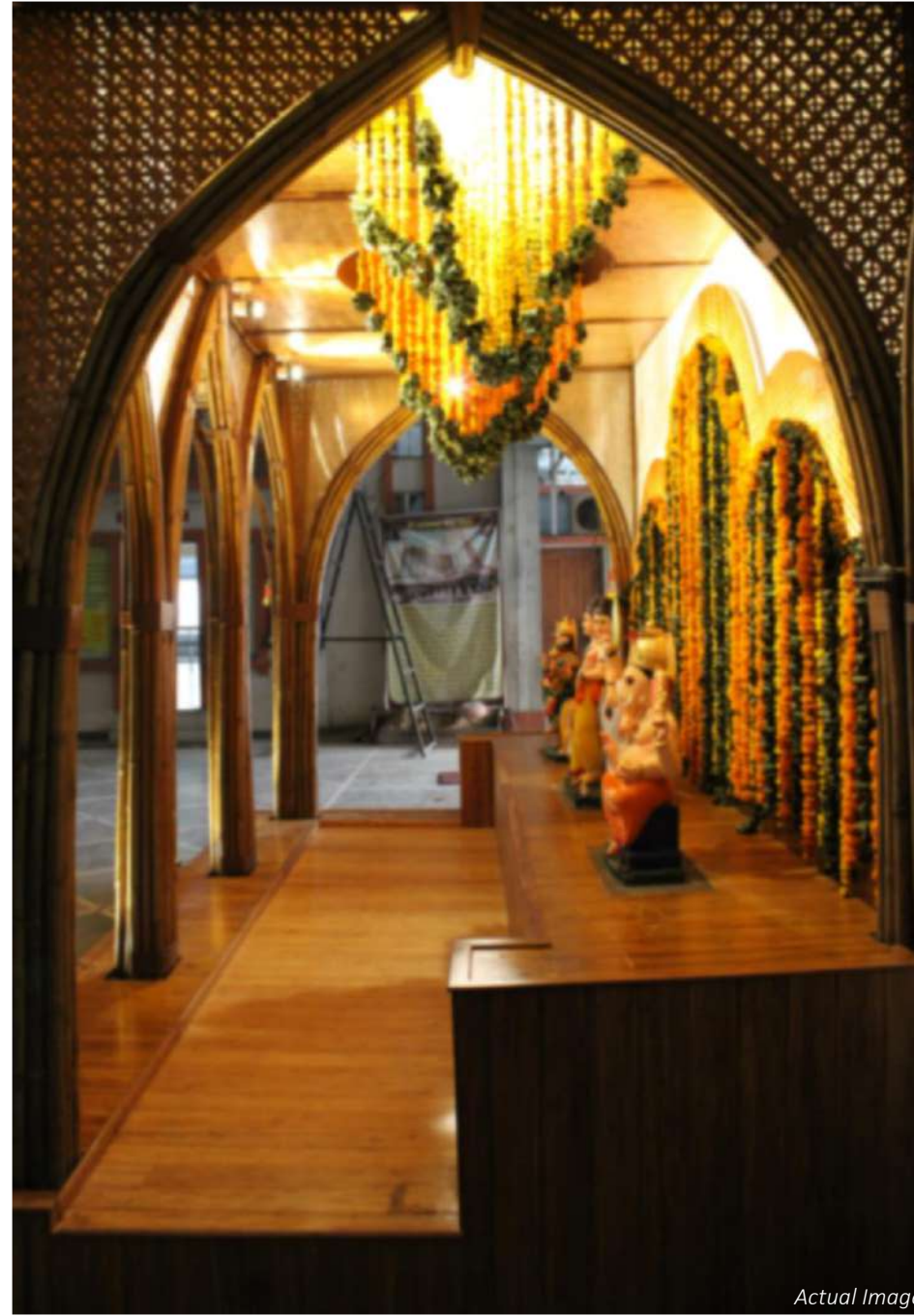








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# PARABOLOID BAMBOO PAVILION

This bamboo pavilion is constructed for the central India's largest Agri summit 11th Agro-vision exhibition. The pavilion is a composite bamboo structure composed of 18 elements (bamboo leaf), with using local bamboo as well as different species from Maharashtra.

This structure spanning 5M X 20M and central height 6M. paraboloid bamboo structure itself is an example of Possibilities in bamboo Architecture.

The pavilion is comprised of 18 modules and each one of them is shaped in the combination of two hyperbolic shell structures. The thin bamboo measured only 40 - 50 mm in diameters, are assembled by nail and tightened by rope.

Identically shaped bamboo units gradually grow, it gives an excellent contrast with large opening space at the end. It was used as a social display place in the exhibition.

## PROJECT INFORMATION

**Project Name:-** *The paraboloid Bamboo structure*

**Site:-** *Reshimbagh Ground, Nagpur, Maharashtra, India*

**Area:-** *100 Sq.m (1076.4 Sq.ft)*

**Design:-** *Green Ocean Design Studio.*

**Construction:-** *Maharashtra Bamboo Development Board.*

**Status:-** *Completed.*

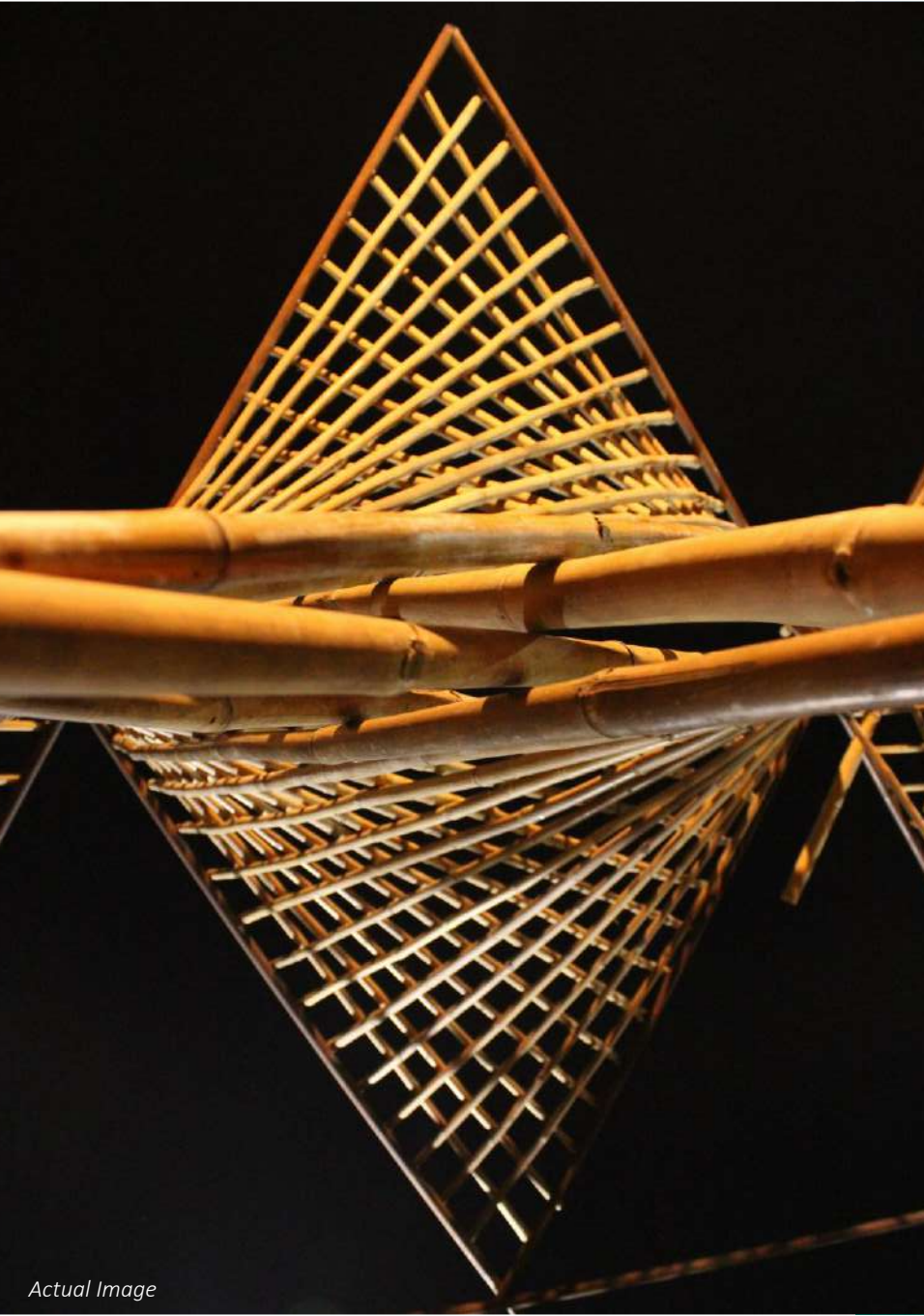
**Typology:-** *Temporary Structure.*

**Execution Duration:-** *148hr with the help of 22 Artisans.*

**Project Cost:-** *10 lakh (Tentative)*







Actual Image



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# KRUSHIK BAMBOO PAVILION

Unfolding a Grand vision out of a minimal space.

This bamboo pavilion is constructed for "Krushik" The Biggest Live Agriculture Demo 2020, Baramati. The pavilion is a composite bamboo structure composed of 6 elements (bamboo leaf). With the use of local as well as different species of Bamboo found in Maharashtra.

This structure spans across 10M X 6M X 4.5M. paraboloid bamboo structure, which itself is an example of possibilities in bamboo Architecture.

Identically shaped bamboo units gradually grow, it gives an excellent contrast with large opening space at the end. It was used as a social display place in the exhibition.

## PROJECT INFORMATION

**Project Name:** *The paraboloid Bamboo structure*

**Site:-** *KVK Baramati, Maharashtra, India*

**Area:-** *60 Sq.m (645.84 Sq.ft)*

**Design:-** *Green Ocean Design Studio.*

**Construction:-** *Maharashtra Bamboo Development Board.*

**Status:-** *Completed.*

**Typology:-** *Temporary Structure.*

**Execution Duration:-** *8 Days with the help of 8 Artisans.*

**Project Cost:-** *4 lakh (Tentative)*











Actual Images



# LOTUS PAVILION

Lotus Pavilion Situated on a dramatic landscape terrain, the pavilion's design leverages the site's unique topography to create a symbiotic relationship between built and natural environments. The resulting structure is a masterful blend of form and function, serving as a serene oasis for meditation and recreation while showcasing the breathtaking views of the surrounding landscape.

The design methodology employed for the Lotus Pavilion was rooted in parametric computational design, drawing inspiration from the biomimicry principles of the Lotus flower. This approach enabled the creation of a structure that not only harmonizes with its surroundings but also amplifies the natural beauty of the site.

The parametric design process allowed for the optimization of structural efficiency, material usage, and environmental performance, resulting in a building that is both sustainable and visually striking.

## PROJECT INFORMATION

**Project Name:-** Lotus Pavilion .

**Client:-** GK TMT.

**Site:-** Madhuban Farmhouse Raipur.

**Area:-** Plinth Area=324Sq.ft Roof Area= 520 Sq.ft  
Total Height of Structure: 4.5m (15')

**Design:-** Green Ocean Design Studio.

**Construction:-** VEDHA (Bamboo work only)

**Status:-** Completed.

**Typology:-** Permanent structure.

**Project Management:-** Mukta infra

**Project Cost:-** 10 lakh(Tentative)

**Photography :-** Ar.Subhi Gawande, Ar.Bhumesh Gonge.











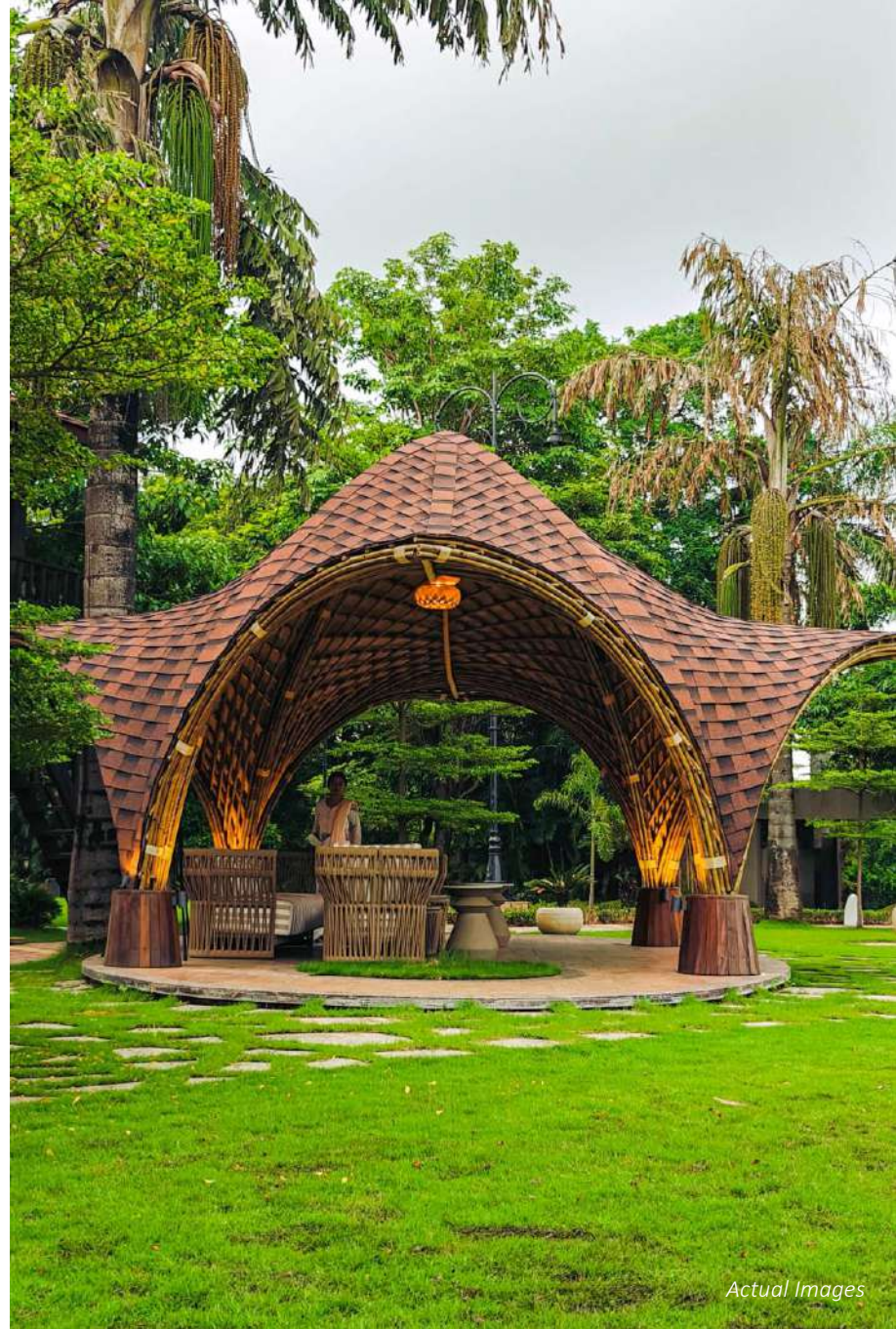




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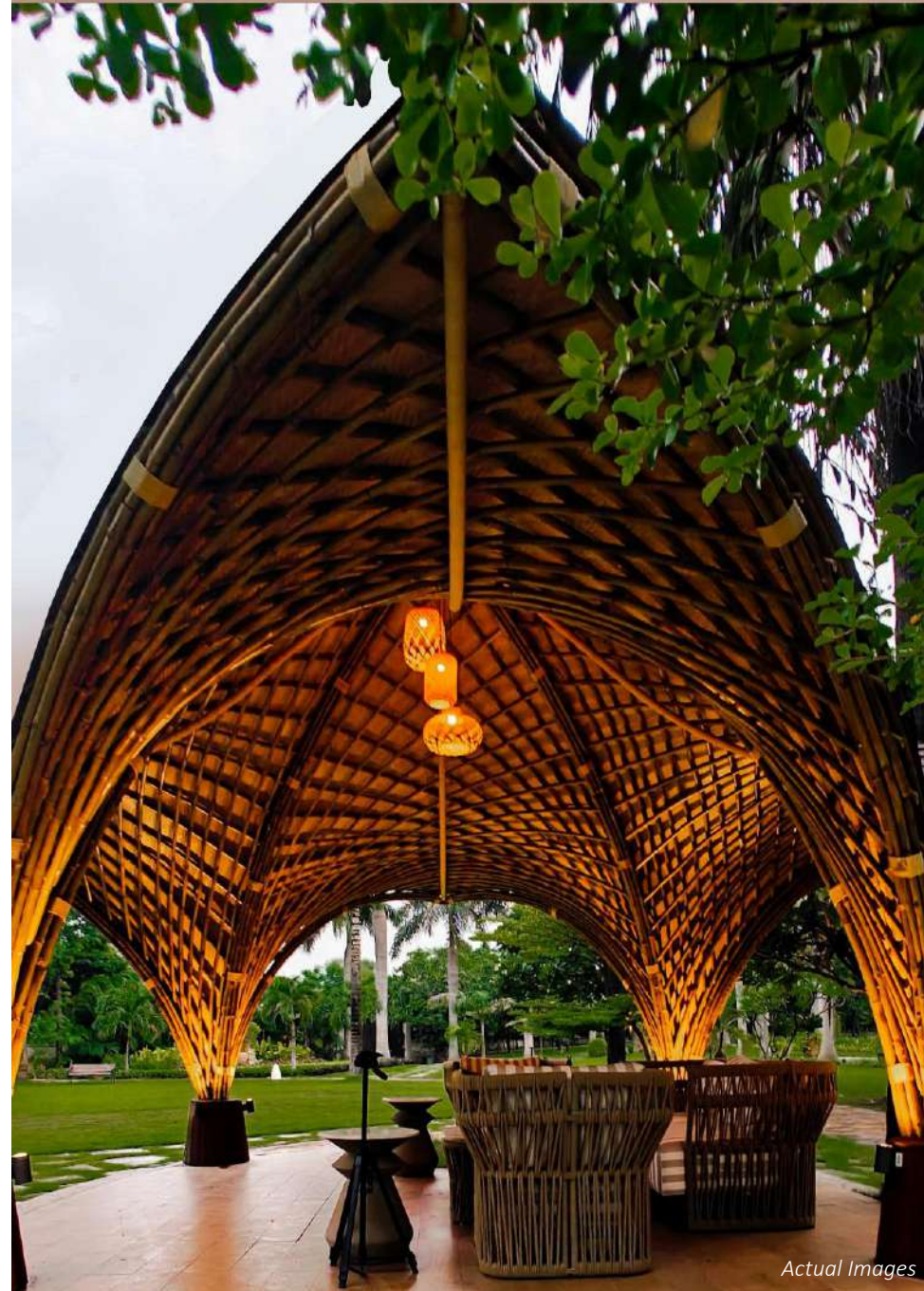








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Actual Images







# BAMBOO INTERIOR SPACE

**GODS**  
(Green Ocean Design Studio)  
Project Formulation by-  
Mr. Aanand fiske  
Photography by-  
THESPACECARDS



Execution by-  
**MBDB**  
(Maharashtra Bamboo Development Board)

APCCF OFFICE  
Vanbhawan, Nagpur





Design by-  
**GODS**  
(Green Ocean Design Studio)  
Project Formulation by-  
Mr. Anand Fiske

Photography by-  
TUSHAR MOGHE

Execution by  
**MBDB**  
(Maharashtra Bamboo Development Board)

APCCF OFFICE  
Vanbhawan, Nagpur





Design by  
**GODS**  
(Green Ocean Design Studio)  
Project Consultation by:  
Mr. Anand Fiske  
Photography by  
THESPACECARTS

Execution by  
**MBDB**  
(Maharashtra Bamboo Development Board)  
APCCF OFFICE  
Vandhawan, Nagpur



Execution by  
**MBDB**  
(Maharashtra Bamboo Development Board)  
APCCF OFFICE  
Vandhawan, Nagpur  
Design by  
**GODS**  
(Green Ocean Design Studio)  
Project Consultation by:  
Mr. Anand Fiske  
Photography by  
THESPACECARTS





Design by:  
**GODS**  
(Green Ocean Design Studio)  
Project Formulation by:  
Mr. Anand Fiske  
Photography by:

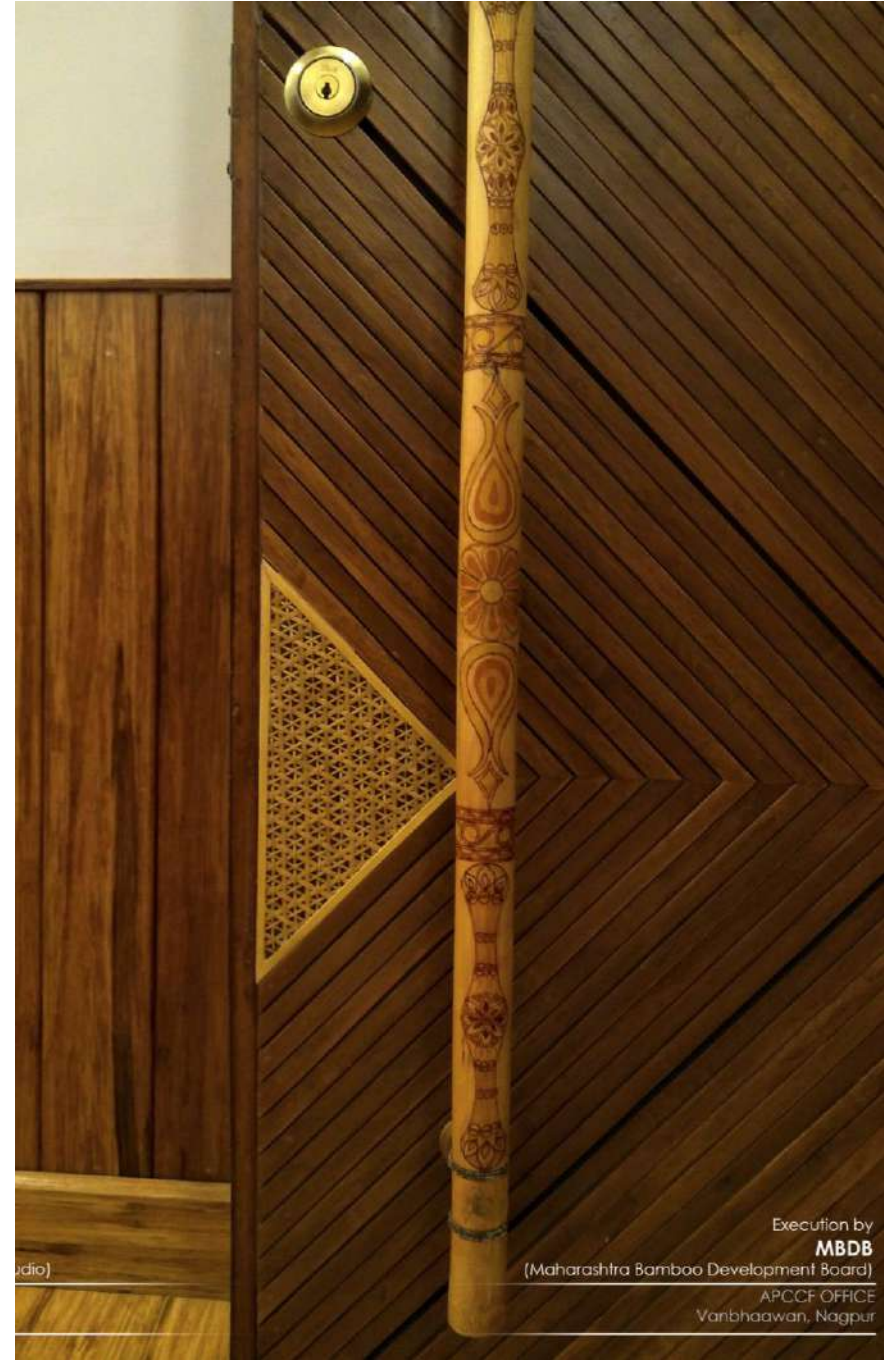
Execution by  
**MBDB**  
(Maharashtra Bamboo Development Board)  
APCCF OFFICE  
3, Govindwadi, Mumbai





Design by  
**GODS**  
 (Green Ocean Design Studio)  
 Project Formulation by:  
 Mr. Anand Fiske  
 Photography by:  
 THE SPACE CARDS

Execution by  
**MBDB**  
 (Maharashtra Bamboo Development Board)  
 APCCF OFFICE  
 Vanbhaawan, Nagpur



udio)

Execution by  
**MBDB**  
 (Maharashtra Bamboo Development Board)  
 APCCF OFFICE  
 Vanbhaawan, Nagpur





Design by-  
**GODS**  
(Green Ocean Design Studio)  
Project Formulation by-  
Mr. Aanand fiske

Photography by-  
TUNES & PICS & POPS

Execution by  
**MBDB**  
(Maharashtra Bamboo Development Board)

APCCF OFFICE  
Mumbai



# BAMBOO INTERIOR SPACE





























# RESTAURANT SPACE

Half circular Bamboo Restaurant features a flat roof, which is covered with a local popular material for roofing. The building is completely open architecture, connecting to nature harmoniously. The main structure is built in a very simple way and takes advantage of the characteristics of bamboo.

The shape of the roof is good for capturing the wind inside the building. This contributes to the ecology aspect by minimizing the use of air conditioner. With its deep eaves and the water in the open spaces, people feel as if they are living in the nature.

Structure floats over the natural landscape. This building is a pure bamboo structure, using no steel or other man-made structural materials.

The open space can be used for many purposes such as wedding parties, live music concerts, ceremonies etc. This is an achievement not only in terms of structures in bamboo but it also creates a new trend for new ecological material.

## PROJECT INFORMATION

**Project Name:** *Restaurant Space*

**Area :-** *Customised*

**Design :-** *Green Ocean Design Studio.*

**Status :-** *Proposed*

**Typology :** *Permanent Structure.*

**Project Cost :-** *2200 - 2500 Rs per Sq.ft.(Tentative)*





















# RESTAURANT SPACE : 2

In the planning of the restaurant, it is located near by artificial lake that plays the role of regulating the temperature of the whole project in general and the restaurant in particular. The lake plays an extremely important role, especially in areas with high summer temperature.

The restaurant has an open design space, providing indoor, semi-outdoor and outdoor spaces to bring different experiences to diners. Users can feel the space inside and outside the house at the same time, feel the interior space of the bamboo structure and the space of mountains and lakes outside.

## PROJECT INFORMATION

**Project Name:** *Restaurant Space*

**Area :-** *Customised*

**Design :-** *Green Ocean Design Studio.*

**Status :-** *Proposed*

**Typology :** *Permanent Structure.*

**Project Cost :-** *2200 - 2500 Rs per Sq.ft.(Tentative)*





















# BAMBOO SHOP MOHARLI

**SUB STRUCTURE:** As site is located in forest reserve, the structural foundation would be built in precast Concrete blocks and Fabrication deck above.

**SUPER STRUCTURE:** taking into consideration sustainable pallet, walls would be built in Rammed earth/exposed brick.

**ROOF:** Roof comprises of Prefabricated Bundled bamboo trusses, Purlins, battens and top layer of bamboo mat corrugated sheet

**DOOR & WINDOWS:** Door and window panels in Bamboo wood Frame and glazed panel/louvered panel shutters as per detail.

**ELECTRICAL FITTINGS:** Complete electrical fittings including Switches, Sockets, Fans, LED lights as per selection and at actual.

**FURNITURE:** Bamboo furniture like reception desk, chairs, display racks etc. as per selection

## PROJECT INFORMATION

**Project Name:** Bamboo Shop at Moharli

**Site:-** Moharli Gate Tadoba, Chandrapur, Maharashtra, India

**Area:-** Plinth Area= 450 Sq.Ft , Carpet Area= 330 Sq.Ft

**Design:-** Green Ocean Design Studio.

**Status:-** Proposed 2021.

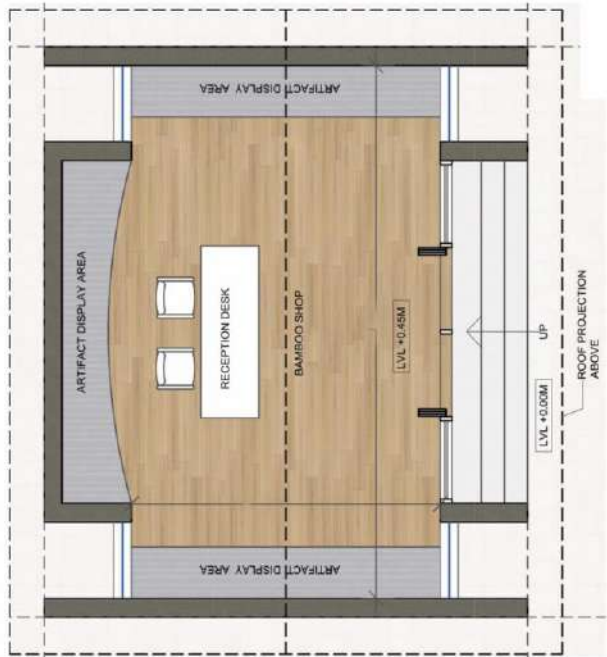
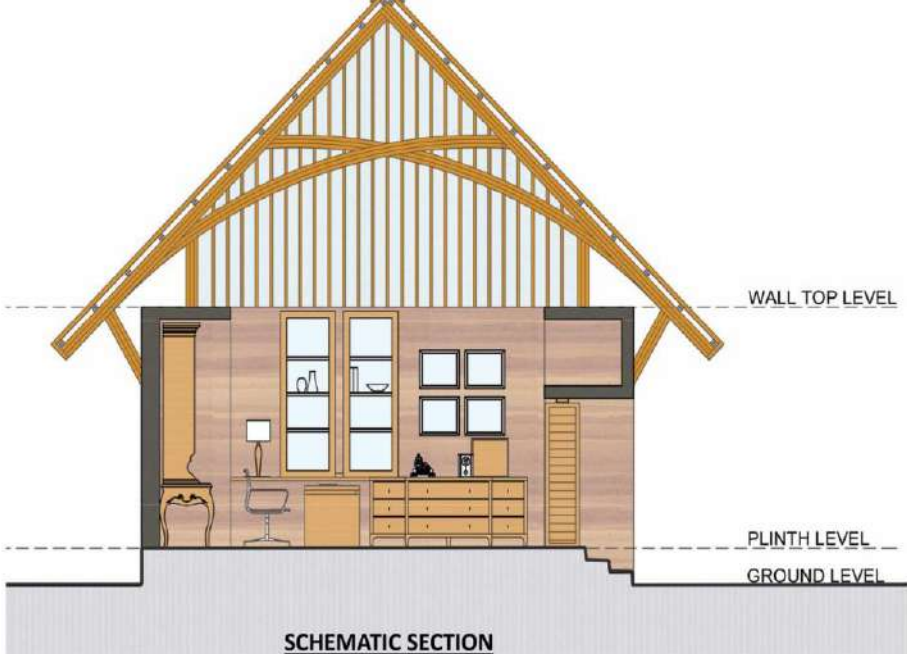
**Typology:** Permanent Structure.

**Execution Duration:** 90 Days (Tentative)

**Project Cost:-** 15 Lakh (Tentative)

















# LAKE DEVELOPMENT CAFE PROPOSAL

## Project Overview

### GENERAL SPECIFICATION:

CCB vacuum pressure treated bamboo (Species: *dentrocalamus stocksii*), with natural taper will be used for the bamboo skeleton of the structure including columns, beams, lateral supports, purlins etc. The above arrangement is fixed using bamboo pegs, studs and washers, metal connectors (if required) & finished in Exterior grade PU.

### ROOF:

1st layer- Bamboo mat/Bamboo Mat Board

Middle Layer-Waterproofing-Underlayment  
(Waterproofing layers.)

Top Layer-Exterior combination of Bamboo purlins, battens, with asphalt roofing tiles.



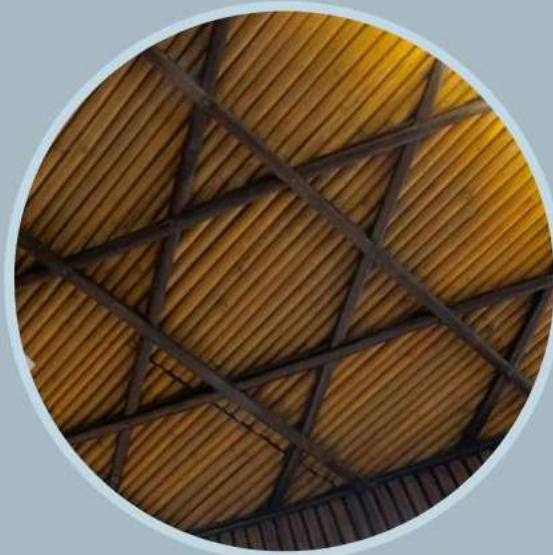




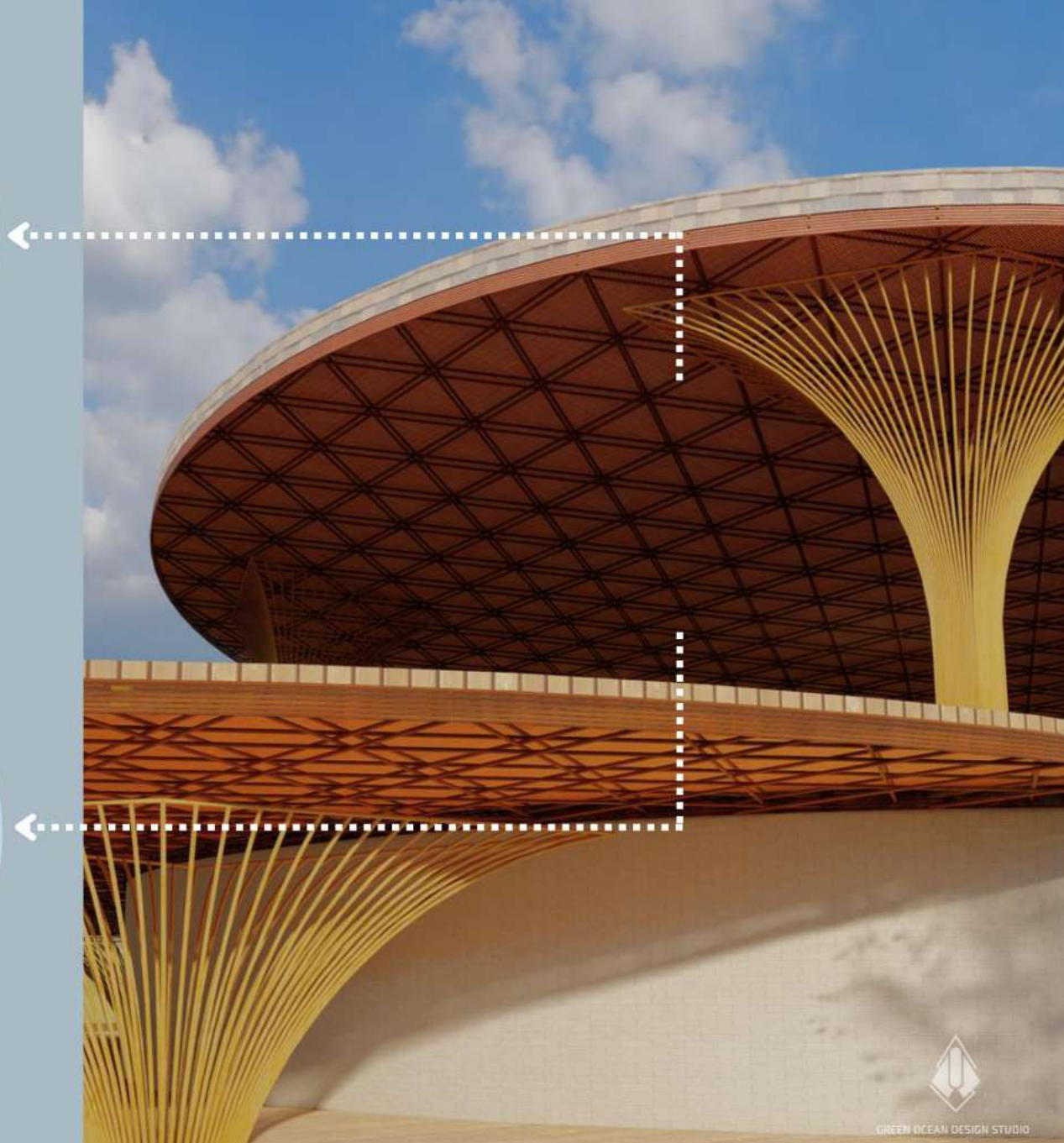




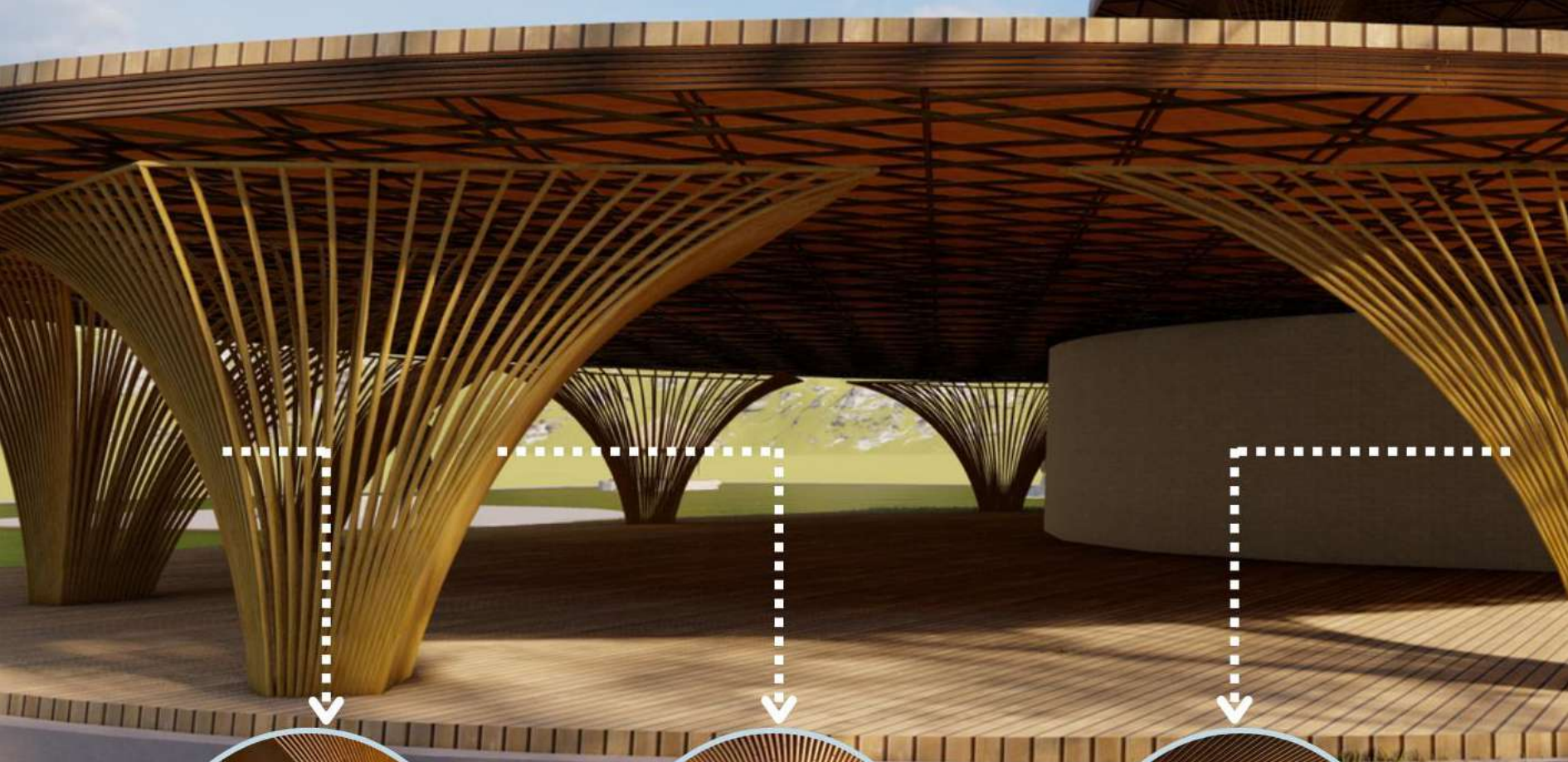
CEILING DETAIL



CEILING DETAIL







COLUMN OPTION-1



COLUMN OPTION-2



COLUMN OPTION-3





# LAKE DEVELOPMENT PROPOSAL POD OPTION-1

## Project Overview

(Area 500 Sq.Ft Tentative)

### GENERAL SPECIFICATION:

CCB vacuum pressure treated bamboo (Species: *dentrocalamus stocksii*), with natural taper will be used for the bamboo skeleton of the structure including columns, beams, lateral supports, purlins etc. The above arrangement is fixed using bamboo pegs, studs and washers, metal connectors (if required) & finished in Exterior grade PU.

### ROOF:

1st layer- Bamboo mat/Bamboo Mat Board

Middle Layer-Waterproofing-Underlayment  
(Waterproofing layers.)

Top Layer-Exterior combination of Bamboo purlins, battens, with asphalt roofing tiles.









# LAKE DEVELOPMENT PROPOSAL POD OPTION-2

## Project Overview

(Area 500 Sq.Ft Tentative)

### GENERAL SPECIFICATION:

CCB vacuum pressure treated bamboo (Species: *dentrocalamus stocksii*), with natural taper will be used for the bamboo skeleton of the structure including columns, beams, lateral supports, purlins etc. The above arrangement is fixed using bamboo pegs, studs and washers, metal connectors (if required) & finished in Exterior grade PU.

### ROOF:

1st layer- Bamboo mat/Bamboo Mat Board

Middle Layer-Waterproofing-Underlayment (Waterproofing layers.)

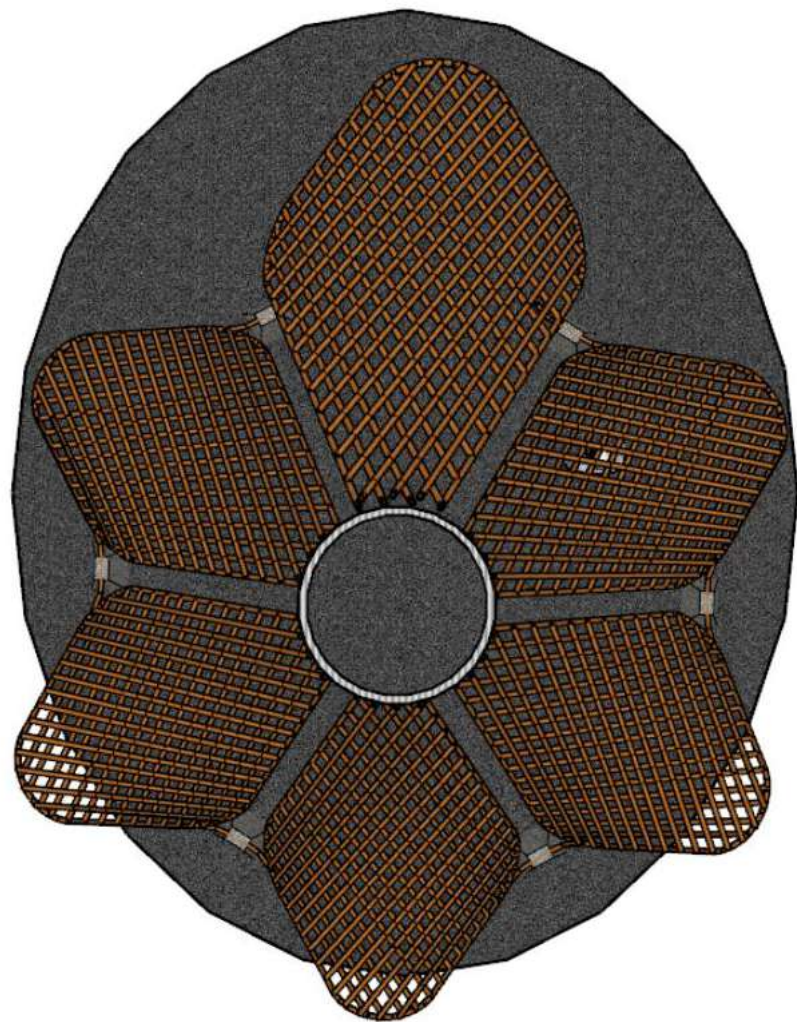
Top Layer-Exterior combination of Bamboo purlins, battens, with asphalt roofing tiles.













# LAKE DEVELOPMENT PROPOSAL POD OPTION-5

## Project Overview

(Area 500 Sq.Ft Tentative)

### GENERAL SPECIFICATION:

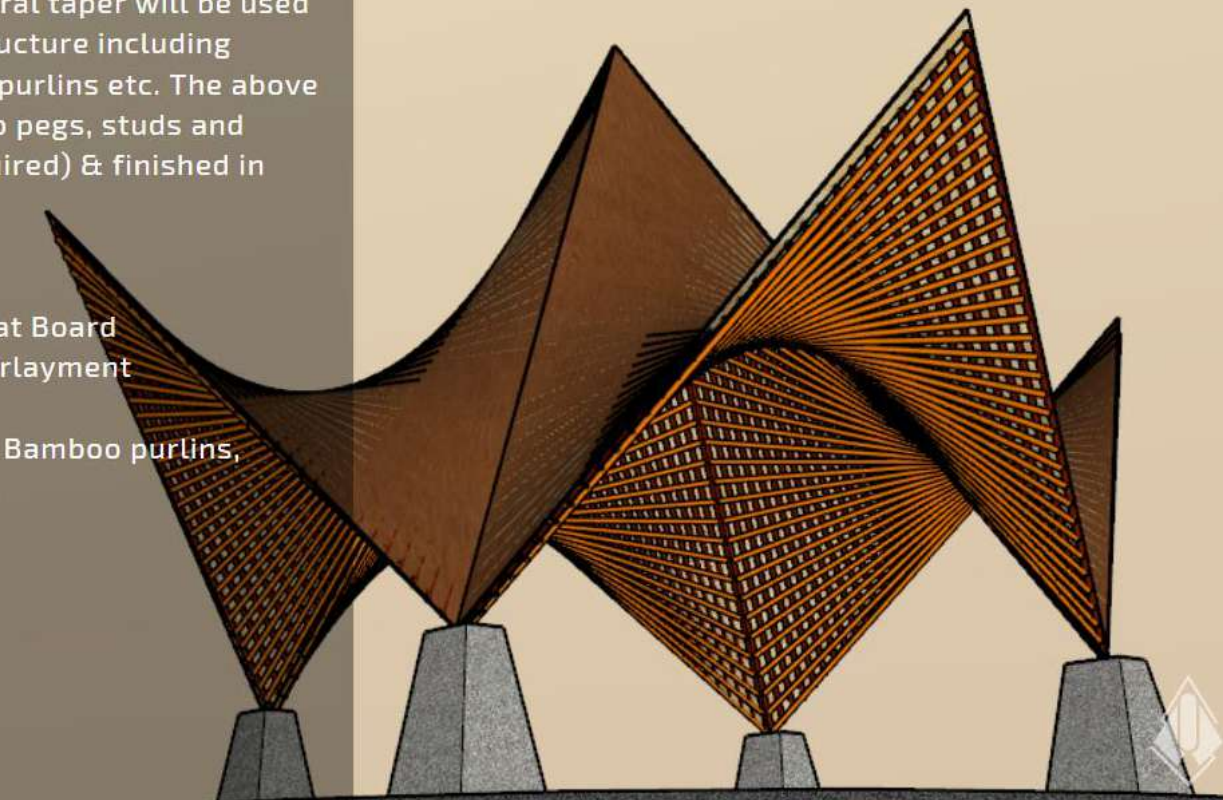
CCB vacuum pressure treated bamboo (Species: *dentrocalamus stocksii*), with natural taper will be used for the bamboo skeleton of the structure including columns, beams, lateral supports, purlins etc. The above arrangement is fixed using bamboo pegs, studs and washers, metal connectors (if required) & finished in Exterior grade PU.

### ROOF:

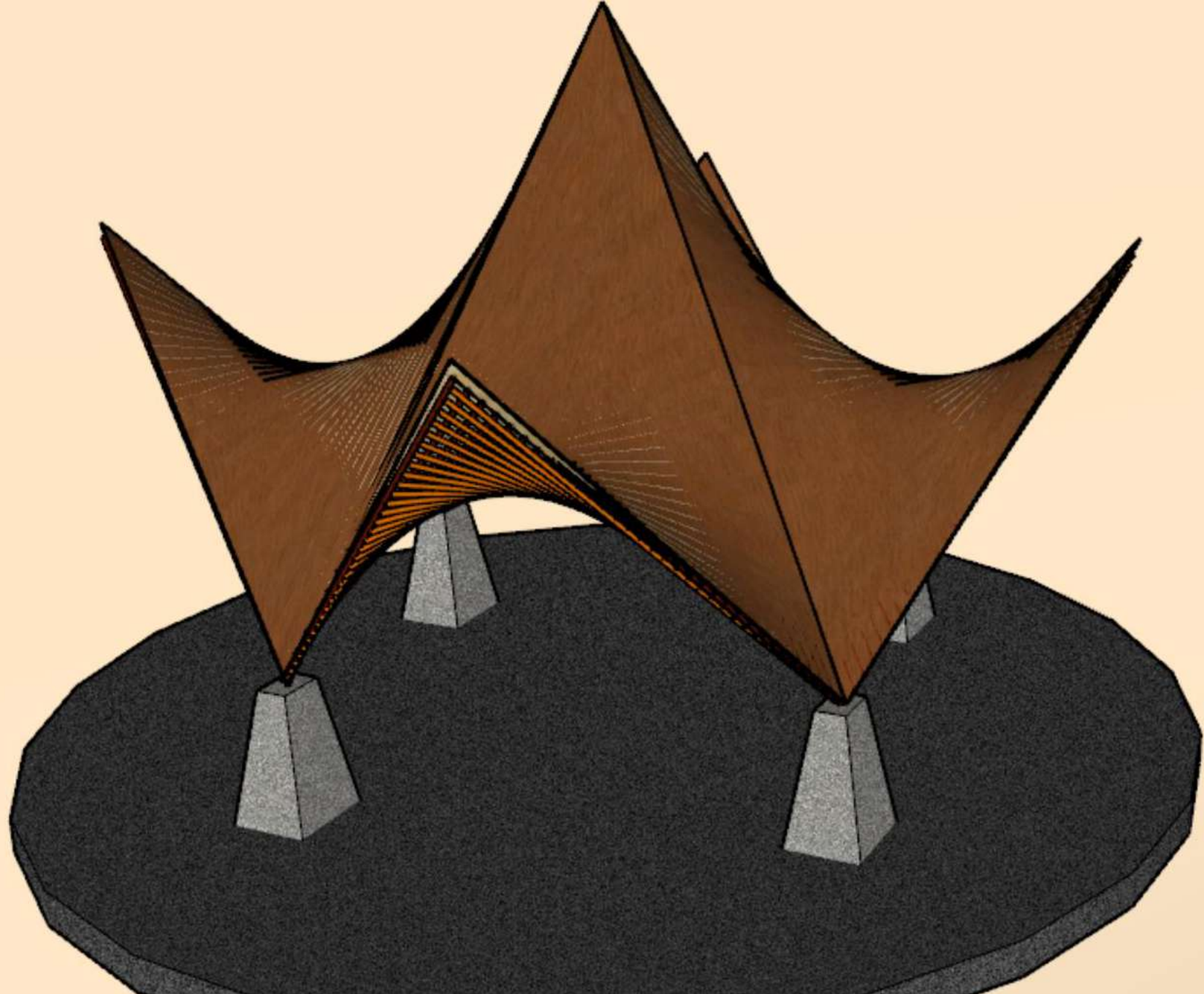
1st layer- Bamboo mat/Bamboo Mat Board

Middle Layer-Waterproofing-Underlayment  
(Waterproofing layers.)

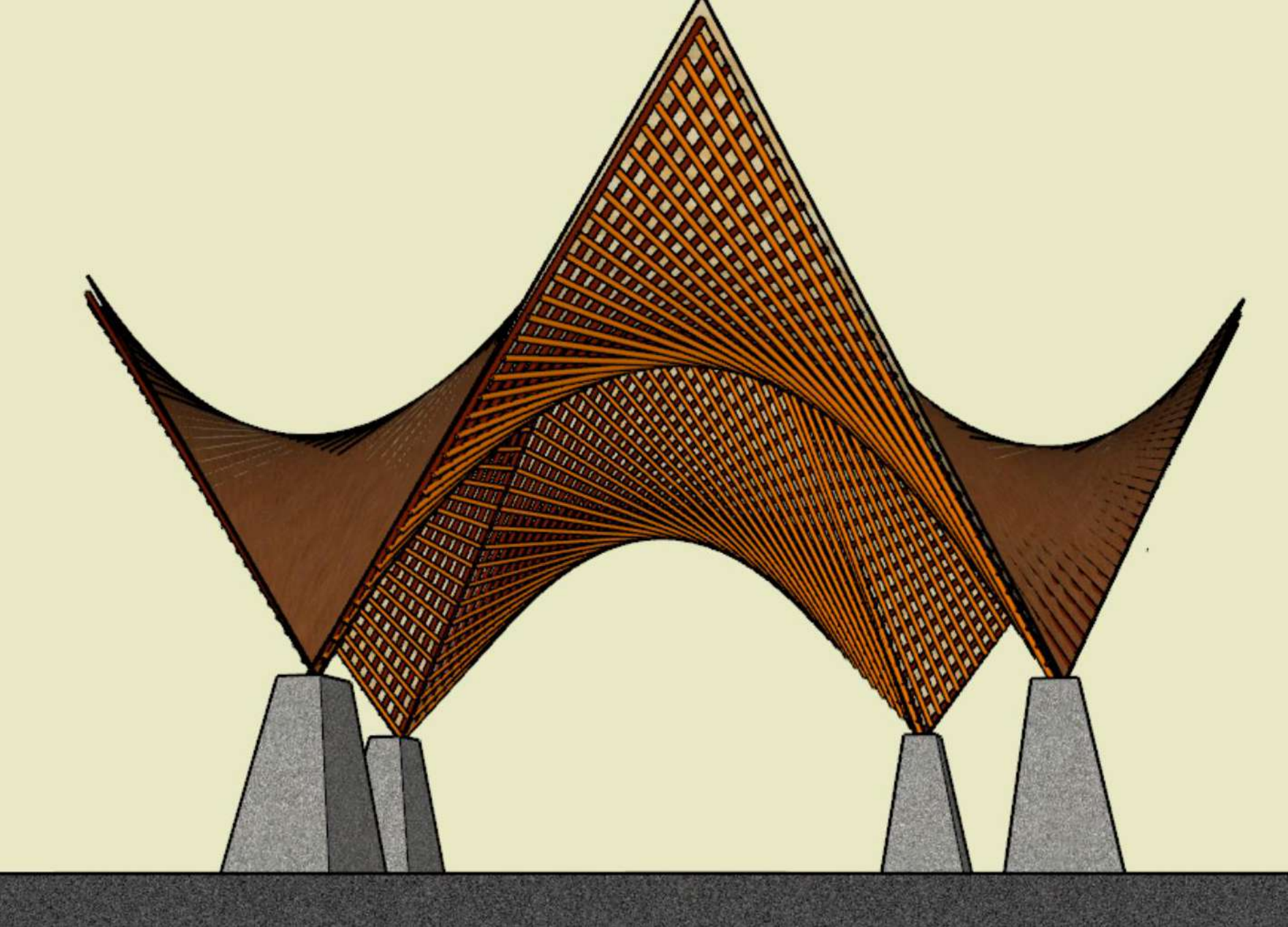
Top Layer-Exterior combination of Bamboo purlins,  
battens, with asphalt roofing tiles.















# Bamboo Pavilion Chiplun





# BAMBOO PAVILION CHIPLUN OPTION 1

## Project Overview

(Area 1800 Sq.Ft Tentative)

### GENERAL SPECIFICATION:

CCB vacuum pressure treated bamboo (Species: *dentrocalamus stocksii*), with natural taper will be used for the bamboo skeleton of the structure including columns, beams, lateral supports, purlins etc. The above arrangement is fixed using bamboo pegs, studs and washers, metal connectors (if required) & finished in Exterior grade PU.

### ROOF:

1st layer- Bamboo mat/Bamboo Mat Board

Middle Layer-Waterproofing-Underlayment  
(Waterproofing layers.)

Top Layer-Exterior combination of Bamboo purlins,  
battens, with asphalt roofing tiles.



VOLUMETRIC STUDY



















# BAMBOO PAVILION CHIPLUN OPTION 2

## Project Overview

(Area 1800 Sq.Ft Tentative)

### GENERAL SPECIFICATION:

CCB vacuum pressure treated bamboo (Species: *dentrocalamus stocksii*), with natural taper will be used for the bamboo skeleton of the structure including columns, beams, lateral supports, purlins etc. The above arrangement is fixed using bamboo pegs, studs and washers, metal connectors (if required) & finished in Exterior grade PU.

### ROOF:

1st layer- Bamboo mat/Bamboo Mat Board

Middle Layer-Waterproofing-Underlayment  
(Waterproofing layers.)

Top Layer-Exterior combination of Bamboo purlins, battens, with asphalt roofing tiles.



VOLUMETRIC STUDY

















# BAMBOO PAVILION CHIPLUN OPTION 3



GREEN OCEAN DESIGN STUDIO

## Project Overview

(Area 1800 Sq.Ft Tentative)

### GENERAL SPECIFICATION:

CCB vacuum pressure treated bamboo (Species: *dentrocalamus stocksii*), with natural taper will be used for the bamboo skeleton of the structure including columns, beams, lateral supports, purlins etc. The above arrangement is fixed using bamboo pegs, studs and washers, metal connectors (if required) & finished in Exterior grade PU.

### ROOF:

1st layer- Bamboo mat/Bamboo Mat Board

Middle Layer-Waterproofing-Underlayment  
(Waterproofing layers.)

Top Layer-Exterior combination of Bamboo purlins, battens, with asphalt roofing tiles.



VOLUMETRIC STUDY



















## **Green Ocean Design Studio**

Bamboo Architecture | Interior Design | Product Design

**PUNE | NAGPUR**

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# **THANK YOU**