

HYPERBAMBOO

TECHNOLOGY

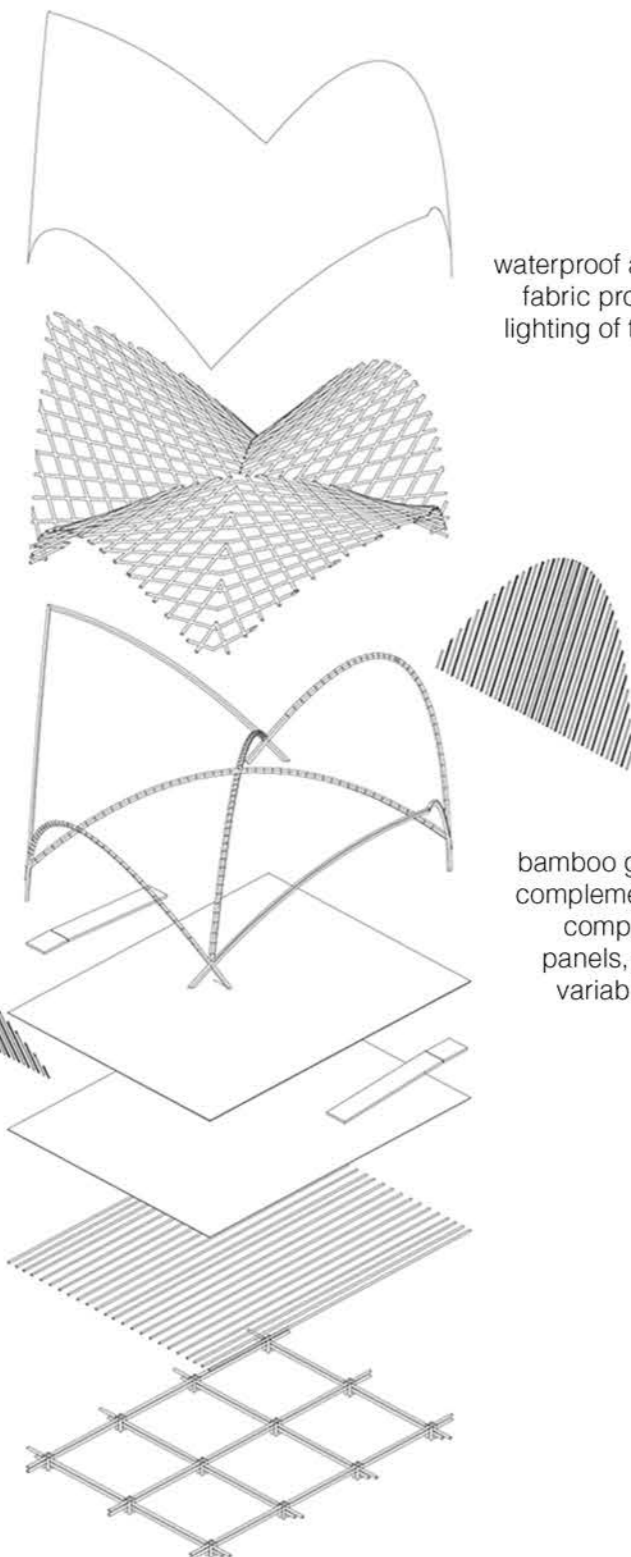
STRUCTURE
bamboo rectilinear elements shaping three-dimensional grid connected to two internal diagonal ribs and four parabolic arches

PLATFORM
bamboo regular grid on steel plates laying directly on the ground and supporting lightly sloping plan for accessibility

bamboo flooring upon bamboo laminated panels

ROOF
waterproof and translucent fabric providing diffused lighting of the inner space

PARTITION
bamboo grid supporting complementary bamboo components (canes, panels, mesh) offering variable protection to light and wind



CONCEPT

The hyperbolic bamboo pavilion is a **temporary construction** which its simple construction shows the great **potential of bamboo material**.

The pure and sophisticated geometry of the two intersecting **hyperbolic parabolas** stresses the material taking advantage of its tensile strength and flexibility characteristic, creating a **light form resistant structure** and a remarkable architectural space.

HYPERBAMBOO combines the **traditional material** and the **innovative construction system**, referring to the outstanding roofs of Cambodian architecture as well.

FUNCTIONAL AND SPATIAL PROGRAMME

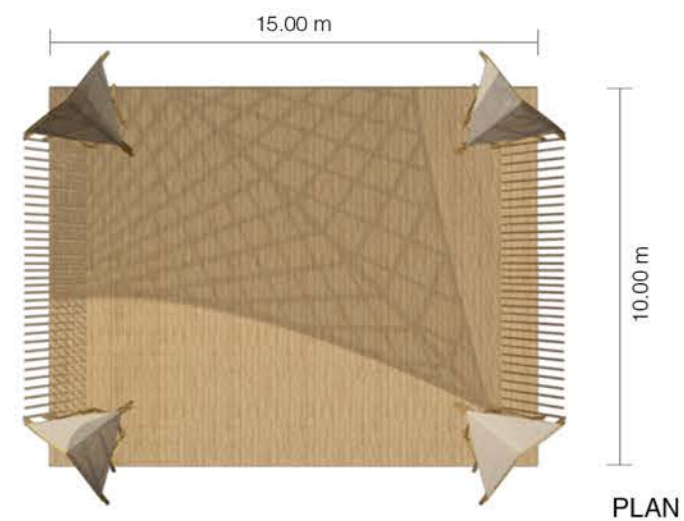
The internal space is based on a single plane which perception is emphasized by the wide covering structure. It is conceived as an **open space** where **freely arranged installations** show the characteristics and potential of the bamboo use, as well as those already well expressed by the components of the pavilion itself.

The **pavilion entrances** are facing both the main longitudinal axis of the square, where people move during the Festival, being completely open in order to ensure a broad understanding of the pavilion and **attract people** to go through it.

The overhanging and sloping roof creates a visual **landmark**, drawing attention of visitors walking around the big square. The slightly raised plan and the overlying roof favor moments of rest for visitors.

The two shorter sides are complemented by **inclined walls** that shield the view towards the adjacent stores.

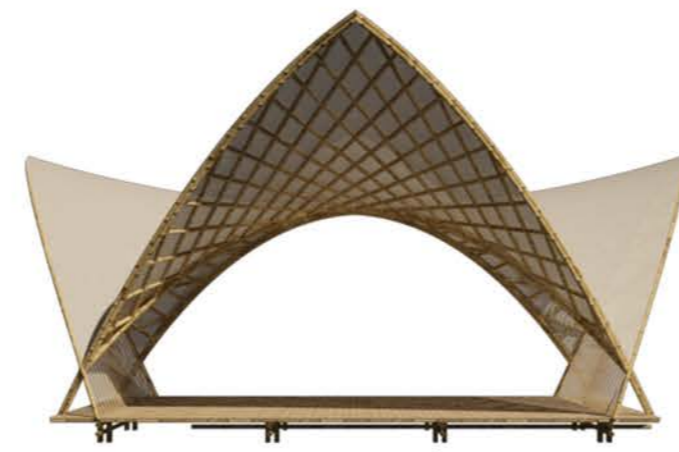
HYPERBAMBOO can have variable external partitions. It can be completely open or closed on all four sides. It can also be closed alternately on two opposite sides. So it is possible to have different use depending on the functional needs or environmental conditions.



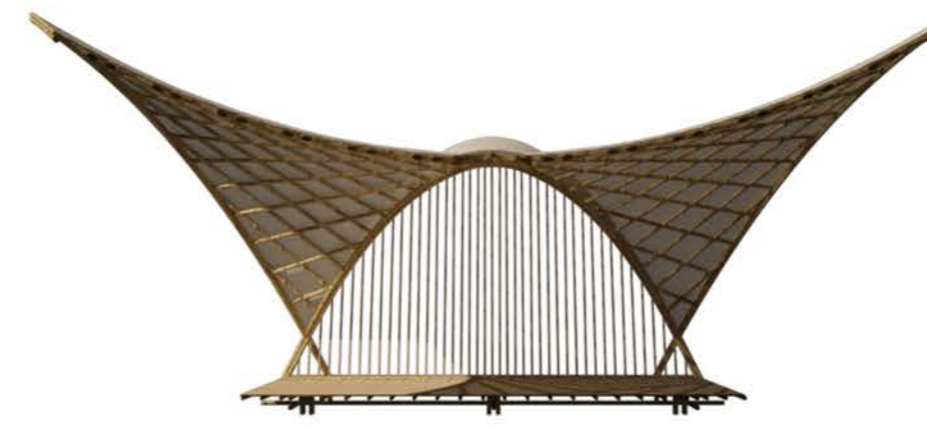
PLAN



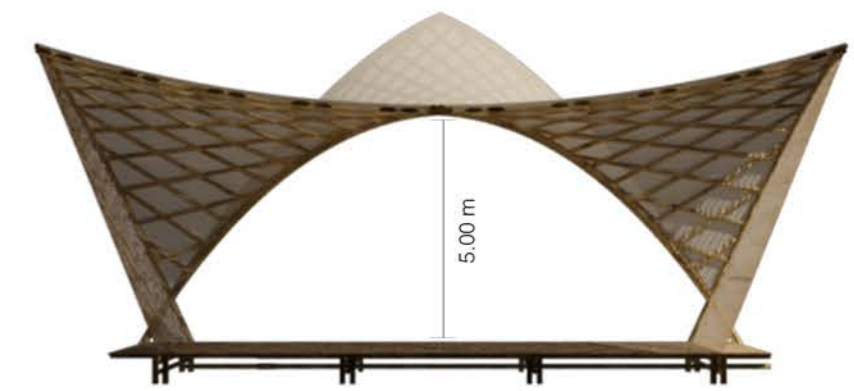
EAST / WEST ELEVATION



NORTH / SOUTH ELEVATION



TRANSVERSE SECTION



LONGITUDINAL SECTION



ENVIRONMENTAL ISSUE

The shape created by the roof can efficiently shade the inner space and, at the same time, protect it from rain.

The openings on the top of the structure four sides allows **natural illumination and cross ventilation** of the inner space in both directions.



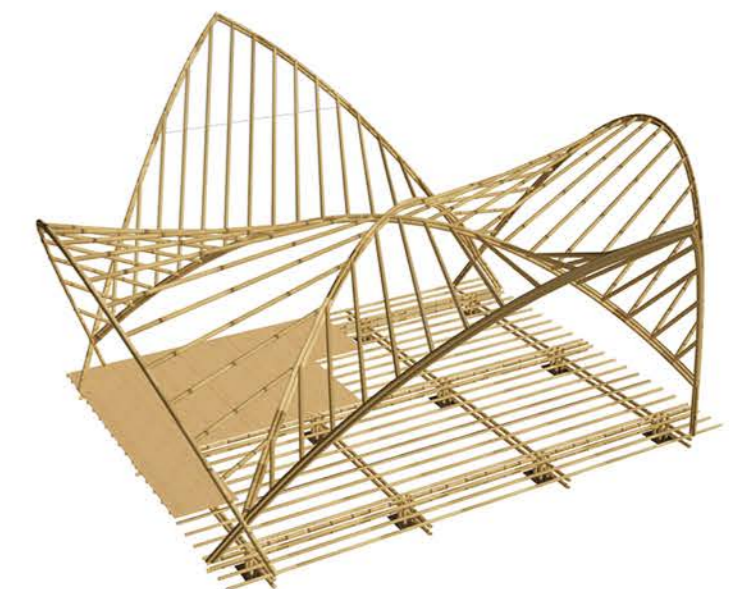
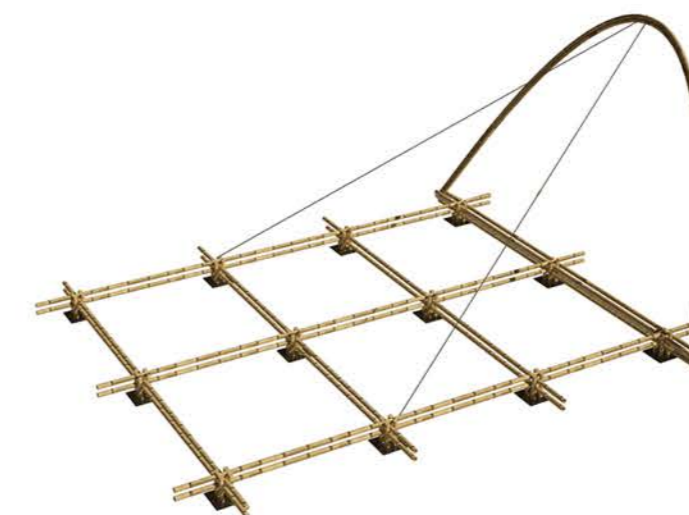
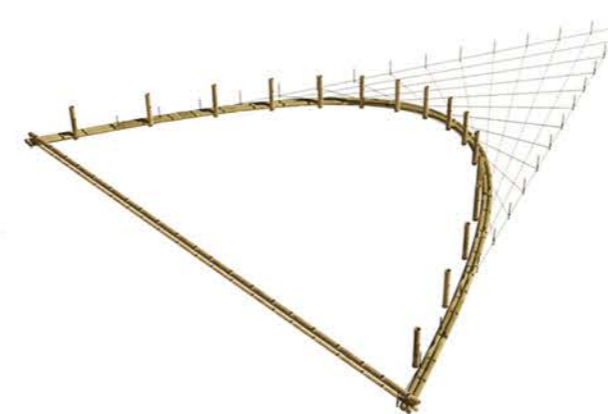
The final result configures the light and dynamic structure obtained by a modular frame that shows the construction process. The hyperbolic curves emphasize the design of the structure allowing the fixing of the transparent cover and the internal and external vision of bamboo elements.

CONSTRUCTION (structure)

BUILDING THE ARCHES

ASSEMBLING ARCHES TO THE PLATFORM

OVERLAPPING THE GRID



Tracing on the ground the grid for the construction of the parabolas with stakes and ropes
Hammering vertical poles on the grid drawing the curve
Folding of the bamboo element against the poles keeping the curve with a provisional bond
Binding the bamboo element and fixing metal plates at the precalculate distance for the spatial grid

elevating the arches and temporarily fixing them to the platform base in order to create stability to this phase construction

positioning the bamboo elements to form the grid and connecting them to the arches, promoting the final stability of the structure