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BAMBOO  
CONSTRUCTION

# Bamboo

Lightweight  
structures  
in Urban Area



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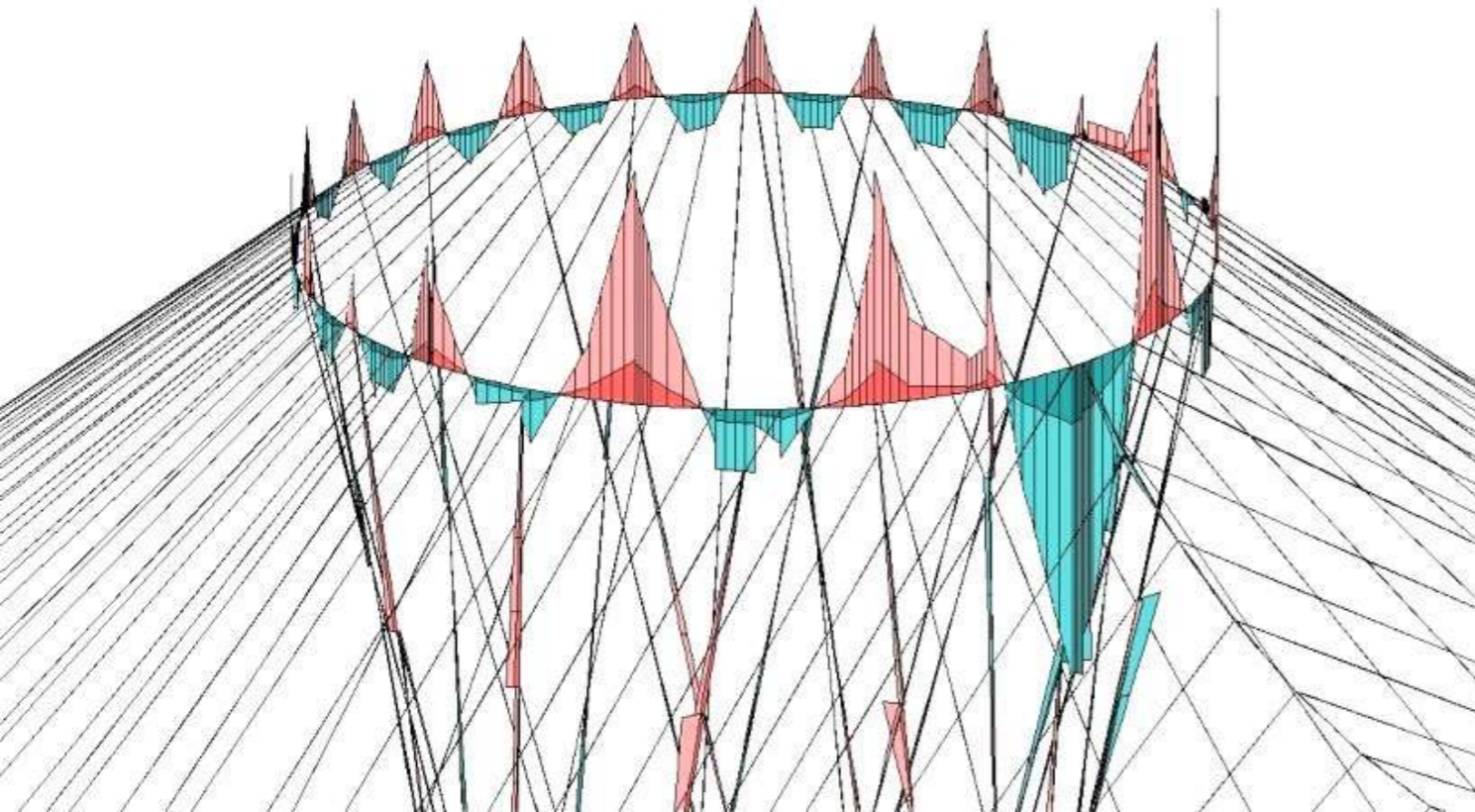
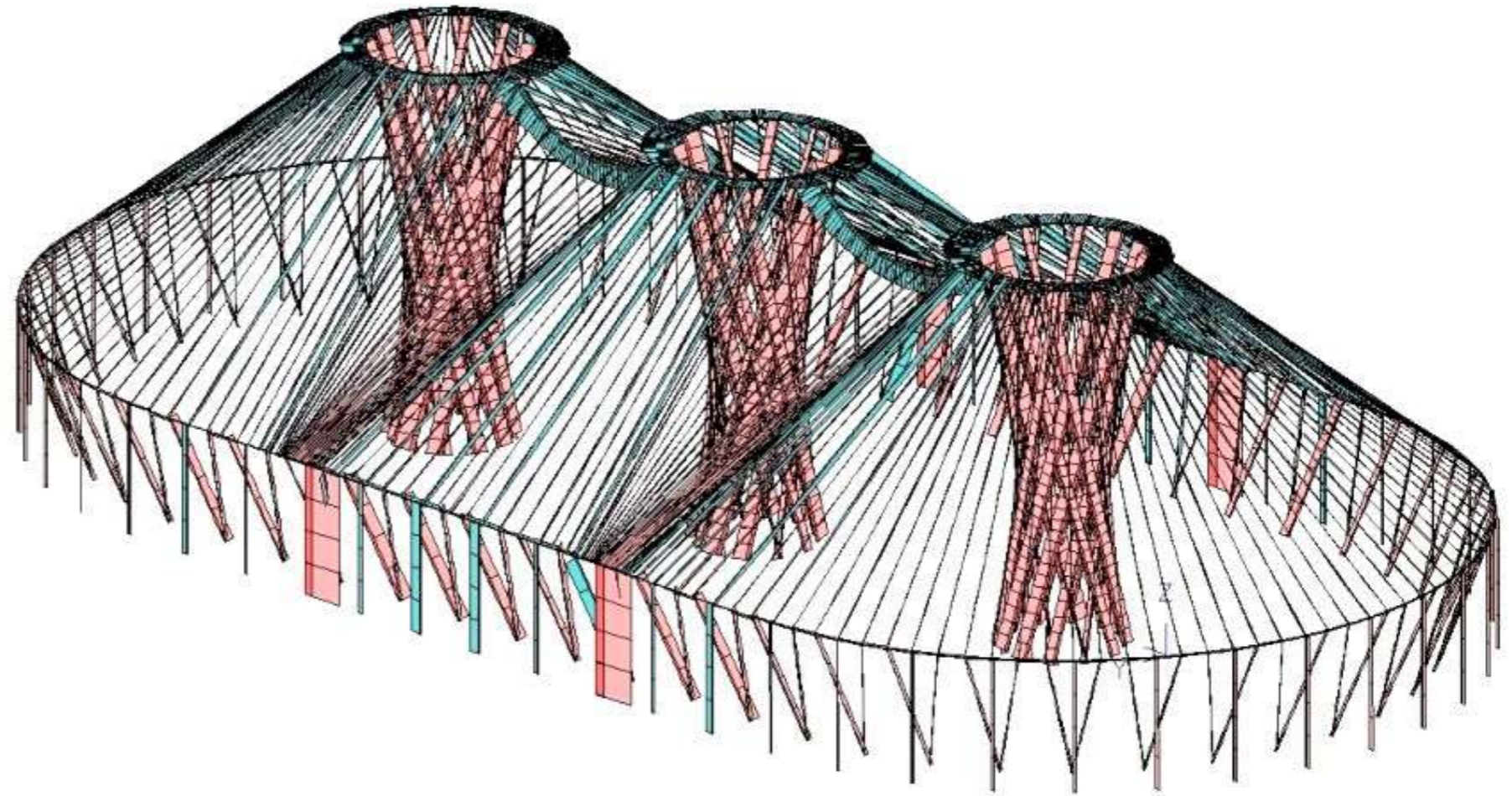
# Nature as inspiration



“ Three Mountains ”

# Mortar injection 10-folds joint capacity



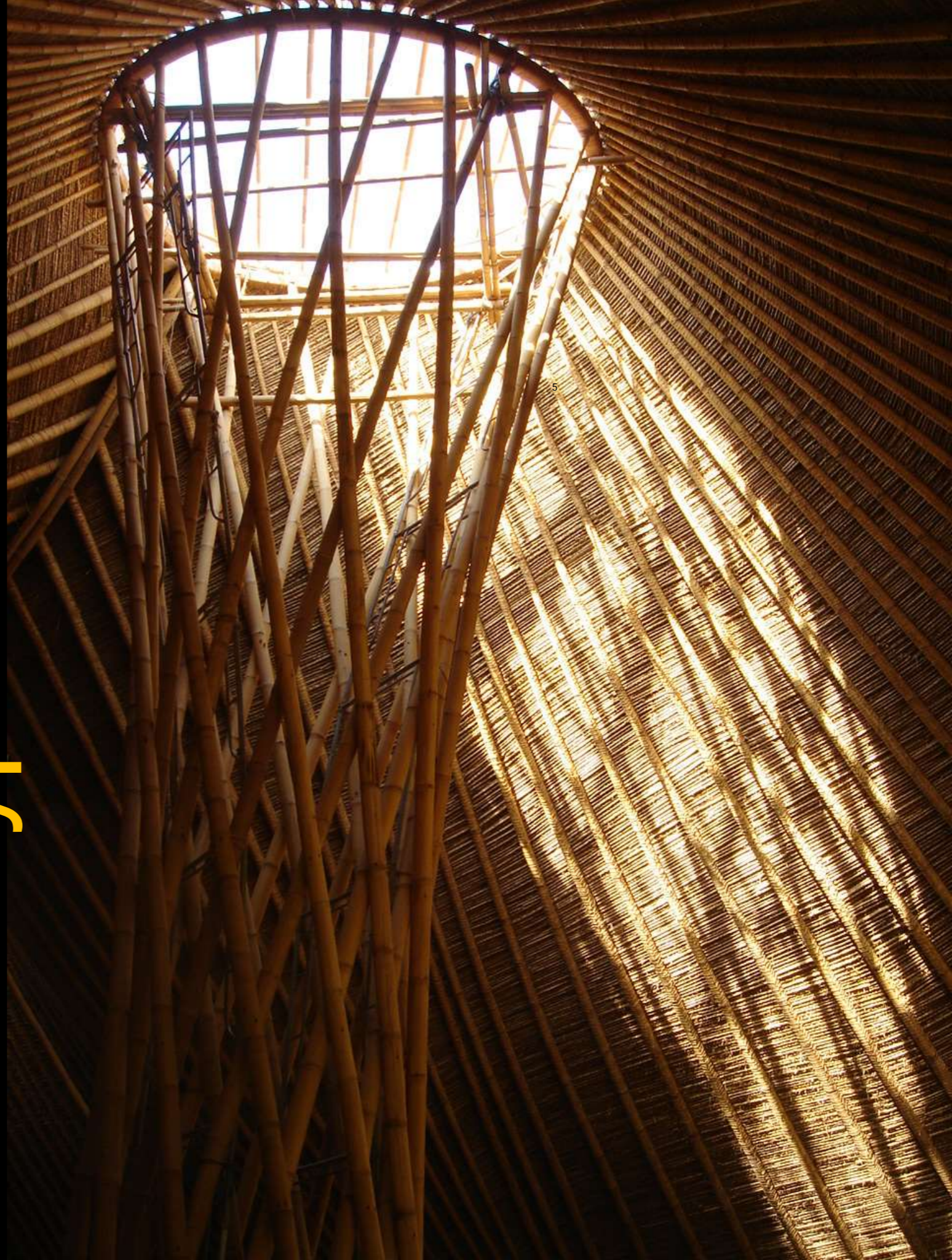


**Structural  
Analysis** by Dr.  
Althoff, Erfurt  
University

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**Sky Light  
Effects  
enhanced  
by natural  
beauty**

**Hyperbolic.**



# THE ARC

The Arc at Green School is a series of bamboo arches spanning 19 meters, interconnected by anticlastic gridshells which derive their strength from curving in two directions.





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**THE ARC**





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5



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THE ARC





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THE ARC



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# First Bamboo structure in USA

Mc Kee Botanical Gardens,  
Construction permits by  
City Hall Vero Beach.  
survived Hurracan Rita in  
2004

Florida.



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Ecuador traditional House  
**Reconstruction,**  
after earthquake 2016



# Prefab Storage hall in Palenque, Mexico



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**Barn style,  
spaced columns  
and beams.**





**House Bridges  
give  
Maximum  
benefit on  
minimal  
maintainence**



## House bridge

30 m, 18. Century



## Bamboo bridge,

40m, 21 Century


Eco-engineering  
con giant Grass





**EcoLodge** in  
Sumatra,  
Bamboo in its  
native  
environment.





Architecture is  
resembling a natural  
Growth pattern.

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PinBoo flooring made with bamboo splits, glue free



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20 meter, Arch + Cable Stade  
Bridge, Bali, Indonesia 2008

Sibang Bridge at Greenschool

LÖRÖG  
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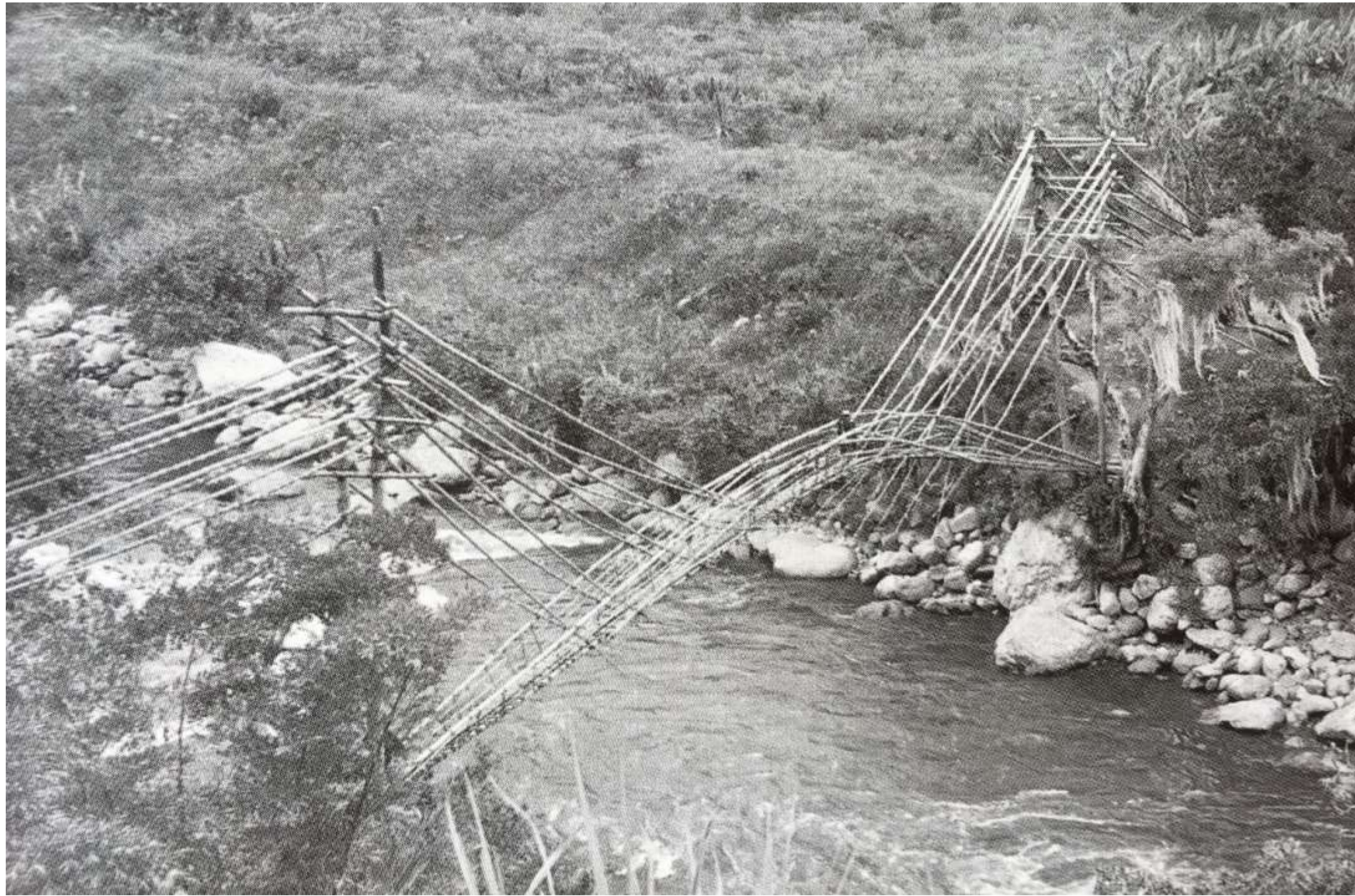


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**Arch  
and  
Tensile  
poles as  
Bridge  
concept**

Concept

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**Bamboo  
Sculpture in a  
modern city  
Cucuta,  
Colombia**





# Easy lifting procedures due to **lightweight**



# “Grouting”, 10x folds the joint capacity





PinBoo, glue free Flooring



Official Load test with a total of 450kg / m<sup>2</sup>



29



Natural Curves bamboo "6  
Packs"

# Modern Design & High Tech Materials



Bridge Trusses are pre-assembled and pushed over the river



Lifting  
procedure  
with a crane, or  
“by hand”,  
traditional style.





Scissor Truss, 30m



Grouting





# “Protection by Design”

with bamboo shingles





**Orang Utan Haven,  
Scissor Bridge Truss, 30  
m, Sumatra, Indonesia**

# Concept: Triangle

Pinboo planks for Flooring 4 cm thick.  
Skylight and the free swinging wings



40

**conus  
joints  
for  
space  
frames**

**Mero** system, since 1936

**Space  
frames,  
modular  
prefabrication**



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**Orquids**  
Botanical Gardens,  
Mexico

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# Botanical Gardens

Chapultepec Mexico



**Grid shell,  
(20 x 30m)  
Ghana**

This giant grass is sustainable, appealing, embodies sun energy and it is as versatile as any wood.





**Shells with  
curved  
bamboo,  
*Bambusa  
vulgaris*.**



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# mobile **Yurt**, for Parks and Events



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Playa Viva,  
Guerrero ,  
México



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Kevin Steele, courtesy Playa Viva



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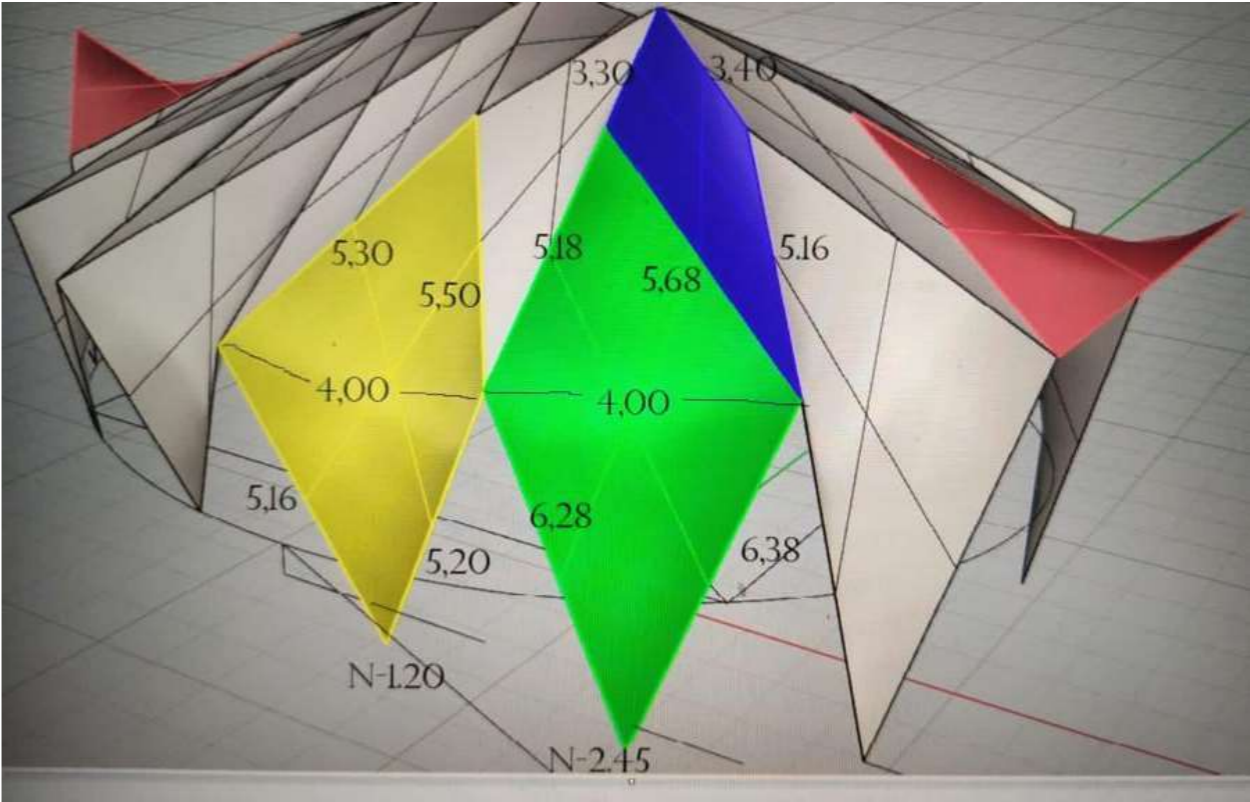


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**Terra  
Mulungu,  
retreat  
center,  
Guararema,  
Brazil**



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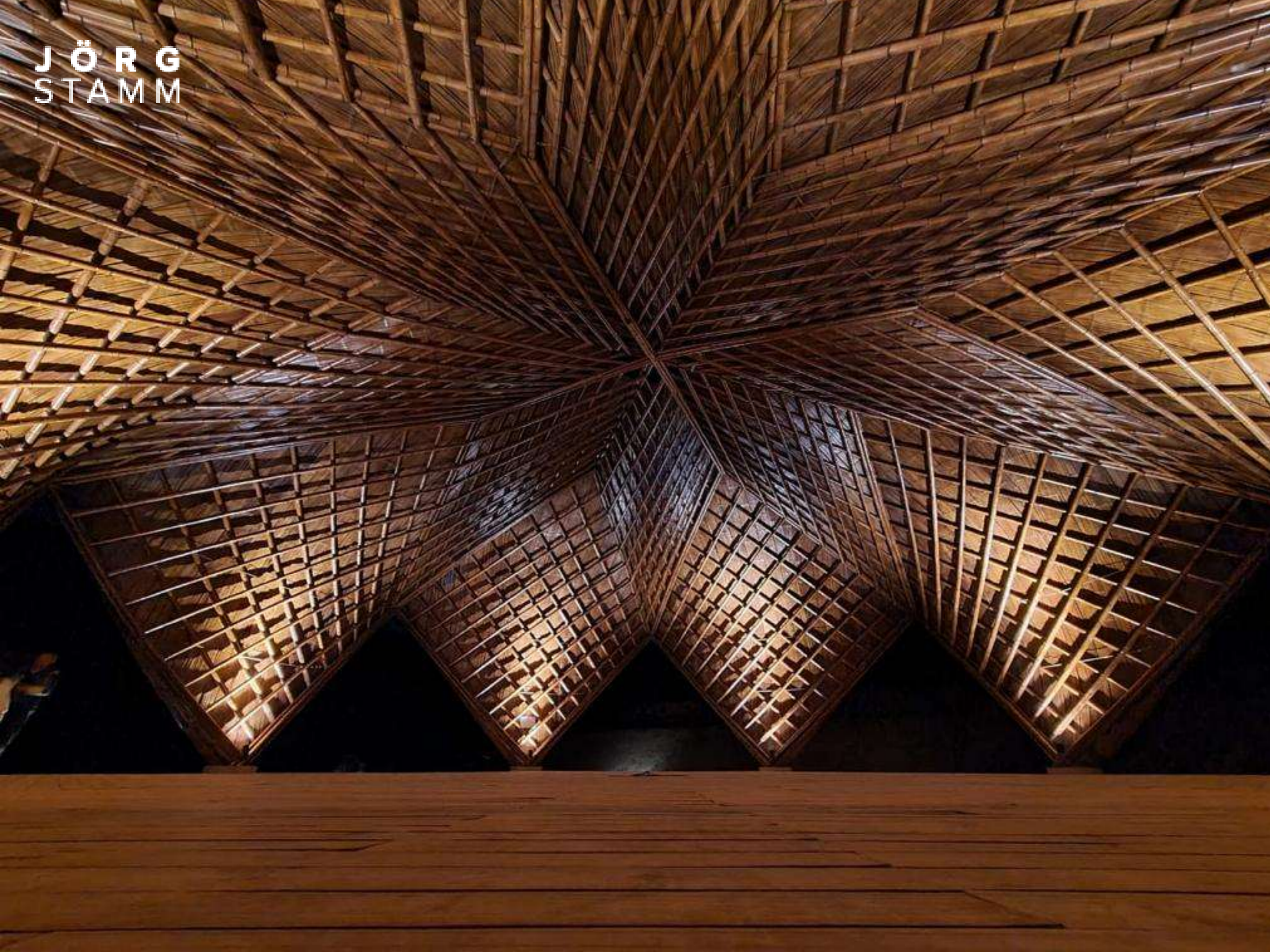
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# Thank You



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