

MESHONYX

3D VISUALISATION · PROJECT BOOK

Ambuja

A lotus-petal cultural centre rising from a reflecting pool in the Western Ghats

Project AM-001 | Issued 08 Oct 2026 | Blender Cycles · Full HD (1920 × 1080) | Meshonyx workflow v1.2

PROJECT AT A GLANCE

Ambuja

22.5 m
OVERALL HEIGHT

32
CONCRETE PETAL SHELLS

Ø 91 m
REFLECTING POOL

515 m²
ATRIUM FLOOR

91 m
HELICAL RAMP, 1 IN 11

0
CLIENT DRAWINGS: ORIGINAL DESIGN

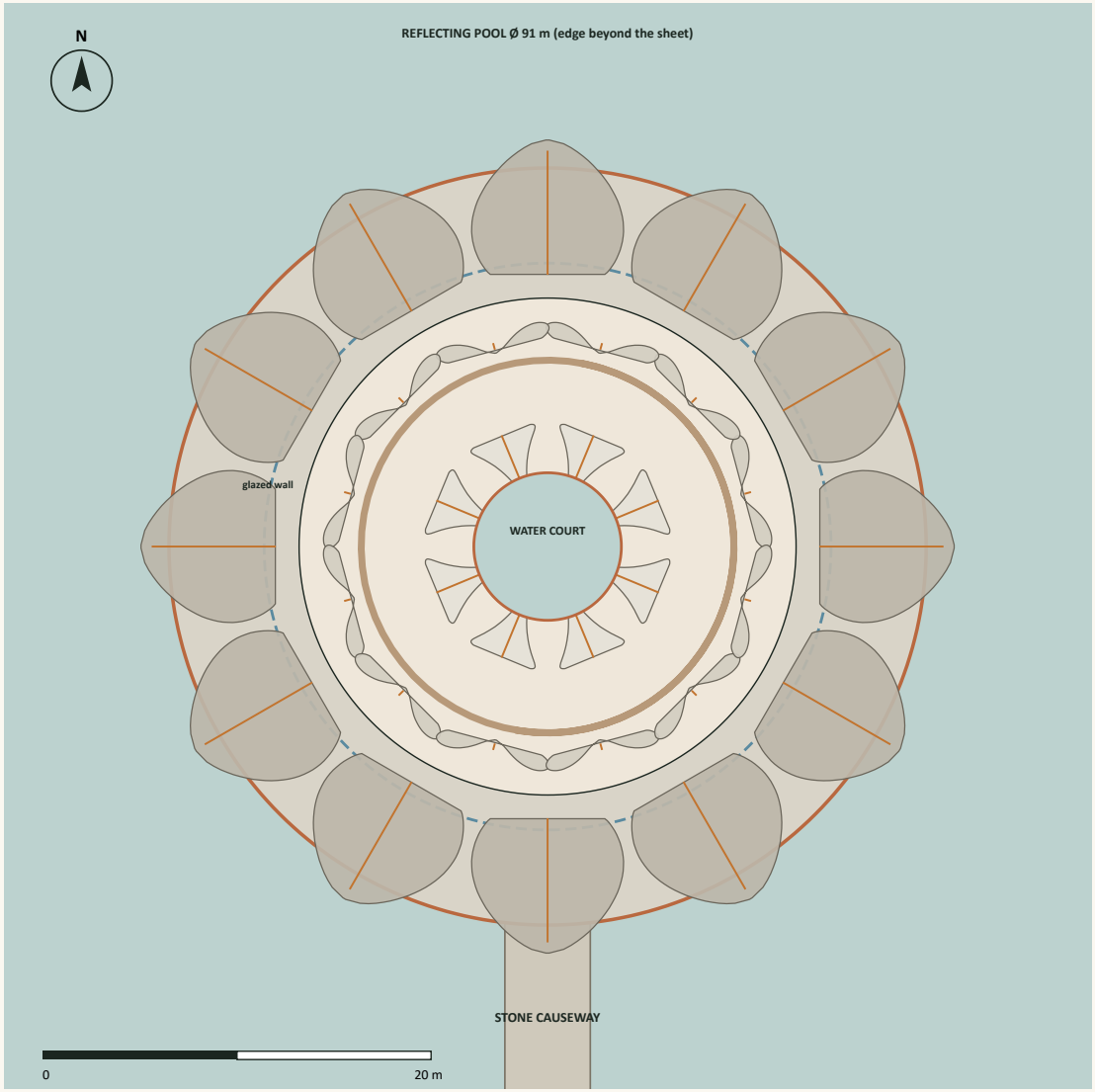
Ambuja is a showpiece: no client brief, only the question of how far a concrete shell can feel like a flower. Each petal is a tapering, doubly curved shell only 0.14 to 0.6 m thick; the rings are staggered so the outer petals frame the middle ones and all converge on an oculus above a water court.

Project	Ambuja ('lotus-born'): cultural centre and observatory pavilion, Meshonyx project AM-001
Concept	Three rings of thin doubly-curved concrete petals (12 + 12 + 8) form an open bloom; the gaps between the outer petals are glazed
Programme	Lotus atrium for performance and exhibition (about 400 people), ramp gallery, library mezzanine, water court, sky deck
Site	Terraced tea and jungle hillside in Kerala, low cloud in the valley, causeway across a circular reflecting pool
Materials	Board-marked white concrete, laterite plinth and parapets, teak mullions, clear glass, black water, brass accents
Method	Fully parametric: every petal is generated from a handful of numbers; plan and section on the next pages are drawn from the same parameters



DRAWING 01

Plan



Plan
Plan generated from the build parameters. Petals are drawn at their true top-view outline (ridge line in copper). North is plan-up; the causeway runs south.

Petal schedule

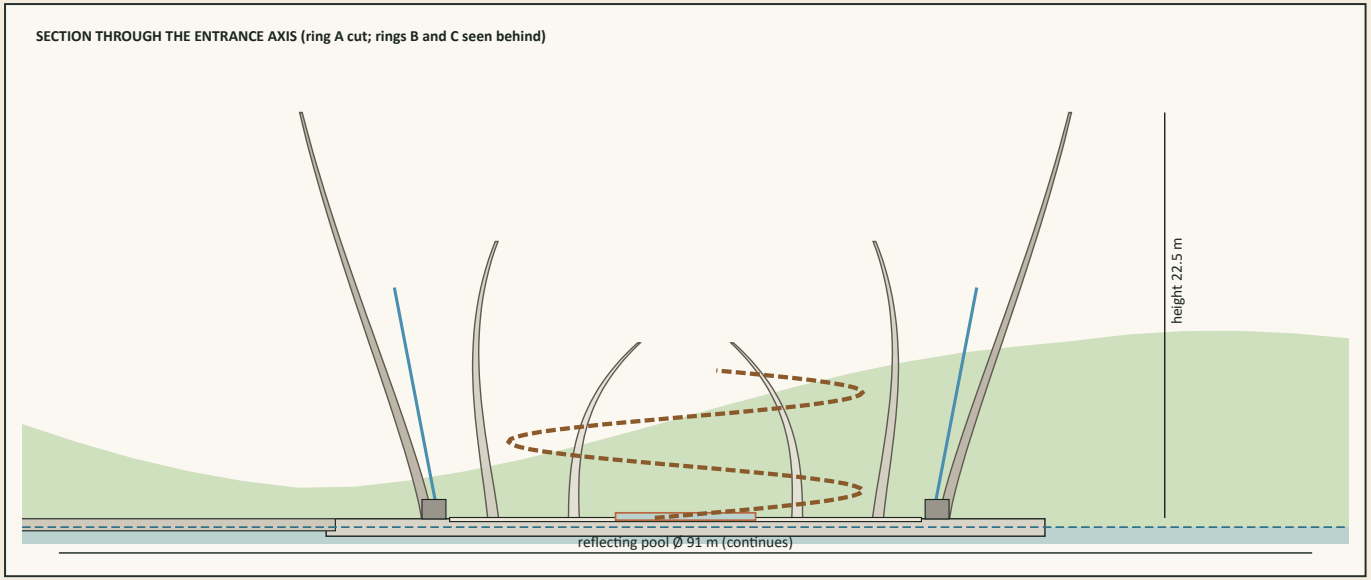
Ring	No.	Base r m	Height m	Lean m
A outer	12	14.0	22.0	8.0
B middle	12	10.5	15.0	2.5
C inner	8	6.2	9.5	-0.6

Main elements

Element	Size
Reflecting pool	Ø 91 m
Platform	Ø 39 m
Glazed wall	r 13.4 to 15.8 m, 12.5 m high
Atrium floor	Ø 25.6 m (515 m²)
Water court	Ø 7.6 m
Helical ramp	1.5 turns, +8 m, about 91 m long
Causeway	27.6 m × 4.4 m

DRAWING 02

Section



Section

Elevation section through the entrance axis. Dashed copper line: the helical ramp. Blue line: glazed wall between the outer petals.

Key levels

Level	Height m
Pool water	0.0
Platform	+0.45
Atrium floor	+0.5
Ramp top	+8.5
Outer petal tips	+22.5
Middle petal tips	+15.5
Inner petal tips	+10.0



EXTERIOR · DAWN

Ambuja at first light

Twelve concrete petals open above a mirror-still pool; a stone causeway leads to the entrance.



EXTERIOR · BLUE HOUR

The lantern

Warm light lines trace the petals; the gaps glow like a lantern in the mist.



EXTERIOR

Aerial view

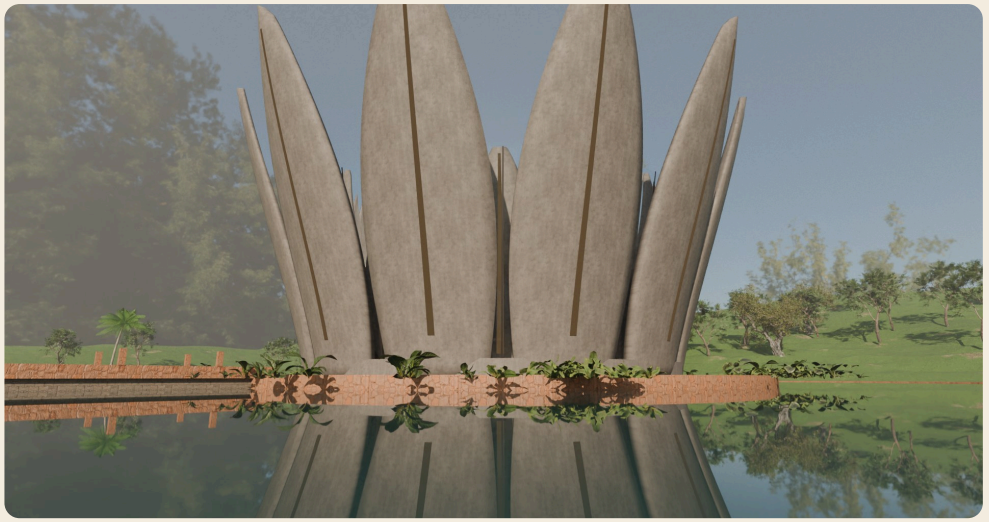
Twelve outer petals open above the reflecting pool; the causeway crosses from the south shore.

EXTERIORS

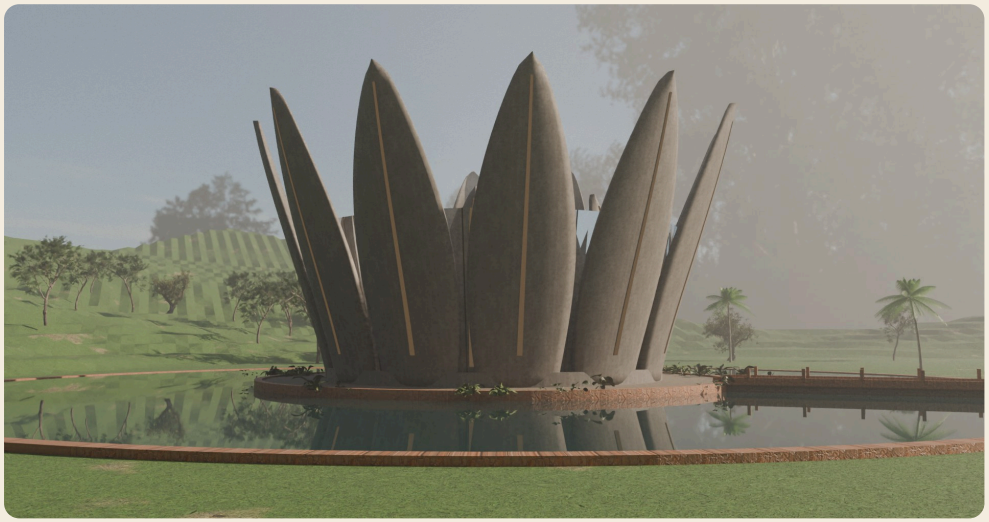
Ambuja



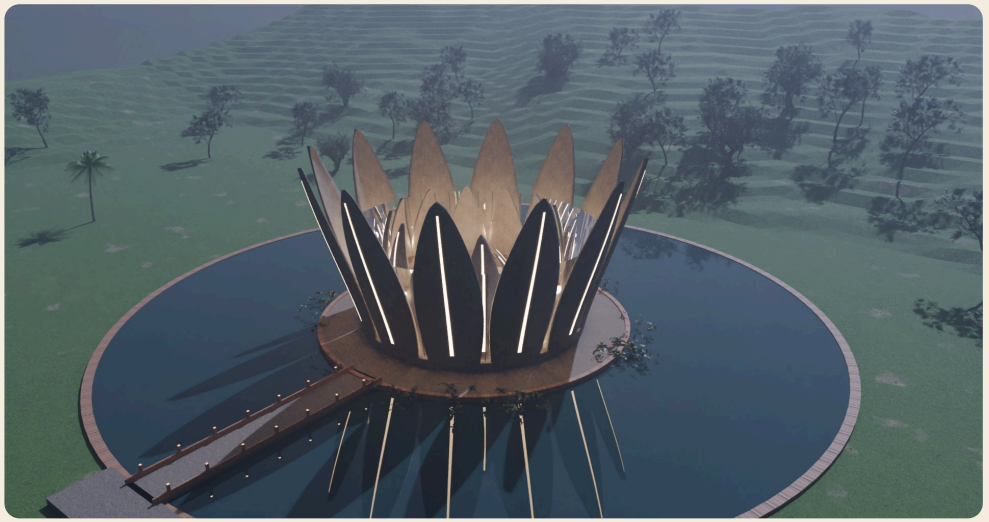
The causeway approach. A 27 m stone causeway with laterite parapets and lantern bollards.



Low reflection. The bloom doubled in the mirror-still pool.



From the west. The three rings of petals seen from the shore.



Aerial at night. Warm light lines trace every petal ridge.

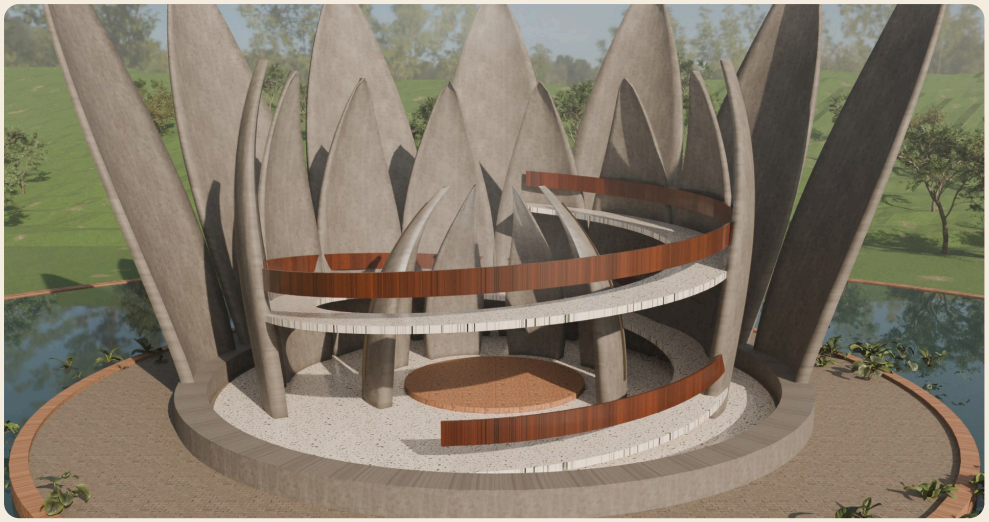


INTERIOR

Looking up the atrium

Petal tips converge on the central oculus.

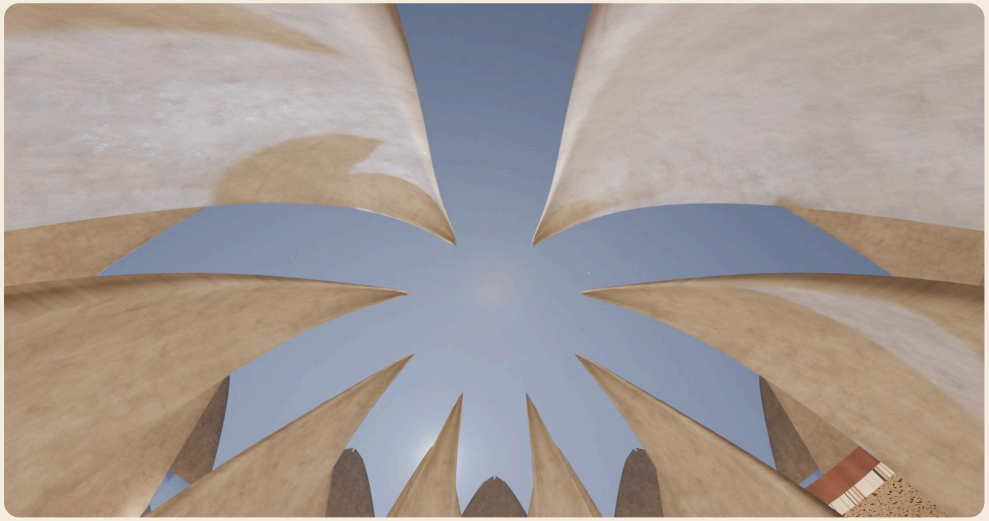
Ambuja



Cutaway from the south. With the south petals removed: the helical ramp, terrazzo atrium floor and water court inside the three rings.



Cutaway from the east. The ramp climbs 8 m inside the bloom between the middle and inner petals.



Atrium at night. Lamps glow in the petal gaps and up the ramp.

PROJECT DETAILS

Specification and deliverables

Assumptions and design decisions

- All dimensions are design parameters (no survey, no client plan).
- Petal thickness tapers from 0.6 m at the base to 0.14 m at the tip; structure is indicative, not engineered.
- Terrain, trees and tea terraces are procedural / Poly Haven scans; mist is a bounded volume.
- Interior furnishing is not modelled; the atrium is shown as built form and light.
- Dawn uses a warm-tinted HDRI sun; blue hour uses a moonlit HDRI with warm lamps and light strips on every petal ridge.

Render settings

- Blender 5.2 Cycles on CPU, 40–56 samples adaptive, OpenImageDenoise, AgX view transform.
- All renders 1920 × 1080, rendered in three bands and stitched.

Credits: ambientCG and Poly Haven (CC0) textures, HDRIs and models; geometry, layout and lighting by Meshonyx scripts.

Render index

Render	File	Size (px)
Hero Day	01_dawn_hero_1080p.png	1920 × 1080
Hero Night	02_blue_hour_hero_1080p.png	1920 × 1080
Aerial view	04_aerial_1080p.png	1920 × 1080
The causeway approach	05_causeway_1080p.png	1920 × 1080
Low reflection	14_reflection_1080p.png	1920 × 1080
From the west	09_side_1080p.png	1920 × 1080
Aerial at night	11_aerial_night_1080p.png	1920 × 1080
Looking up the atrium	03_atrium_up_1080p.png	1920 × 1080
Cutaway from the south	12_cutaway_front_1080p.png	1920 × 1080
Cutaway from the east	13_cutaway_side_1080p.png	1920 × 1080
Atrium at night	10_atrium_night_1080p.png	1920 × 1080

Automatic QA

Image	Status
01_dawn_hero_1080p.png	PASS
02_blue_hour_hero_1080p.png	PASS
03_atrium_up_1080p.png	PASS
04_aerial_1080p.png	PASS
05_causeway_1080p.png	PASS
09_side_1080p.png	PASS
10_atrium_night_1080p.png	PASS
11_aerial_night_1080p.png	WARN
12_cutaway_front_1080p.png	PASS
13_cutaway_side_1080p.png	PASS
14_reflection_1080p.png	PASS

Every image was also opened and checked by eye before sign-off.