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DESIGN AND ARCHITECTURE

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**UCCA DUNE
ART MUSEUM**
OPEN ARCHITECTURE

FUNAN
WOODS BAGOT

**PLANTERS' HAVEN
BUNGALOW**
MJKANNY ARCHITECT

COR JESU ORATORY
ZUBU DESIGN ASSOCIATES &
KENNETH COBONPUE

**AFFORDABLE
HOUSING**
HOW ARCHITECTURE
SHOULD HELP



/ WORDS MICHELE KOH MOROLLO

MEDIATING LAND AND SEA

Submerged within the sand dunes of a beach resort community in Hebei, China, UCCA Dune Art Museum by OPEN Architecture encourages the appreciation of both art and nature.



In Hebei, China, Beijing-based OPEN Architecture has built an art museum that serves as the cultural and social core of the Aranya beachside resort community in Qinhuangdao's Bohai Bay.

Named UCCA Dune Art Museum, the building, which sits along a quiet beach, is partially submerged beneath natural sand dunes and composed of organically-shaped, interconnected, grotto and cave-like segments that mediate the space between land and sea.

When the project's lead architects Li Hu and Huang Wenjiang first visited the site,

they were awed by the surreal beauty of the wind-carved dunes.

DUNES AND CELLS

Such dunes play an important role in the coastal ecosystem, but with the growth of the seaside tourism industry in China, many of them have been leveled off to make room for ocean-view real estate developments.

Wanting to protect and preserve this vulnerable ecosystem and save the site from encroaching developers, the architects decided to blur the boundaries between

/ 1

The main entrance to the museum yawns open like the mouth of a cave.

/ OPPOSITE

An aerial view of the organically-shaped museum, which is partially submerged beneath the dunes.





2
The main and largest gallery is illuminated by a large skylight.

/ OPPOSITE
The curved interior walls and thresholds mimic the undulating forms of the sand dunes.

building and landscape, and between art and environment, by designing a museum that enhances the value of the dunes.

Through an iterative, evolutionary process of structural and architectural modeling, they arrived at a design that optimised the building's ability to support the pressure of the sand enveloping the gallery spaces.

The 930m² museum, which includes a reception, café, community room, exhibition spaces, outdoor exhibition areas and a roof terrace, was created as a series of organically-shaped, interconnected "cells".

Located along the easternmost, sea-facing side of the building are cells that

contain galleries, a café, and ancillary spaces that open up directly onto the beach.

From a long, dark, entry tunnel and a small reception area, the space opens up dramatically to reveal the museum's largest, multifunctional, sky-lit gallery.

"The varying sizes and shapes of each 'cell' allows for both individual and communal connection with art, but also sculpts the spatial experiences of visitors as they move through the museum's galleries," says Li.

The layout re-imagines the typical art-viewing experience by seamlessly merging architecture, art and nature.

The museum's flowing form – a





3

/ 3
 The museum's skylights were carefully designed to appropriately admit and temper sunlight during different seasons and times of the day.

rejection of the box volumes typical of a museum or gallery spaces – is not only aesthetically innovative but also rigorous in its response to local site conditions.

“These conditions include everything from the physical form of the surrounding dune to more intangible features such as patterns of natural light.

“The shape of the museum’s skylights, for instance, was extensively studied alongside digital simulations investigating the angle and trajectory of sunbeams on-site at different times of the day and year.

“Their distinctive designs ensure that the natural light admitted into the museum is appropriately tempered to suit the programme of its spaces,” says Huang.

LIGHT AND HEAVY

This thoughtful planning to maximise natural light sources is apparent in the three skylights aligned to draw in direct sunrays from different angles through the changing seasons of the year, and the

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 A spiral staircase, which ascends to the dunes, echoes the twisting curves of the nautilus shell.



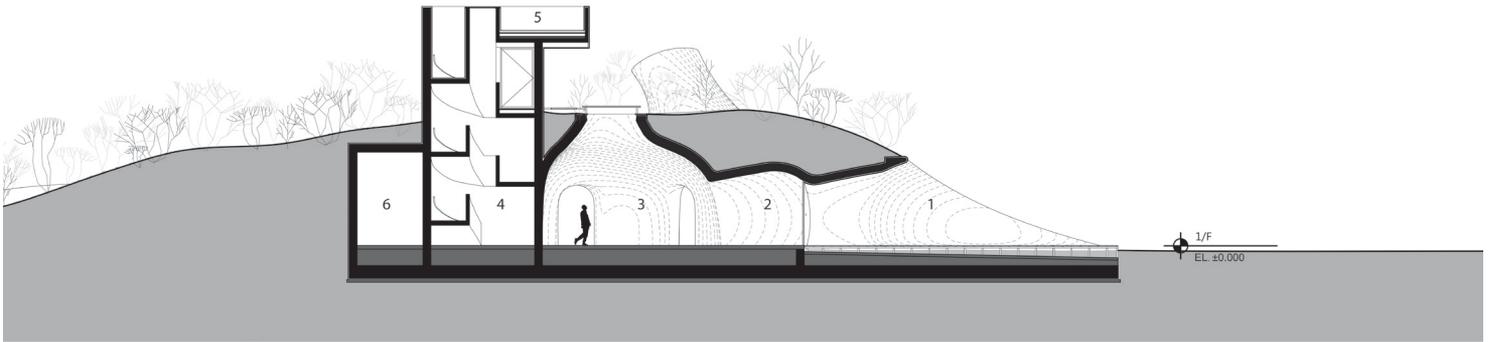
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long, flat skylight in the café used to illuminate one of the walls for a dramatic ambient effect.

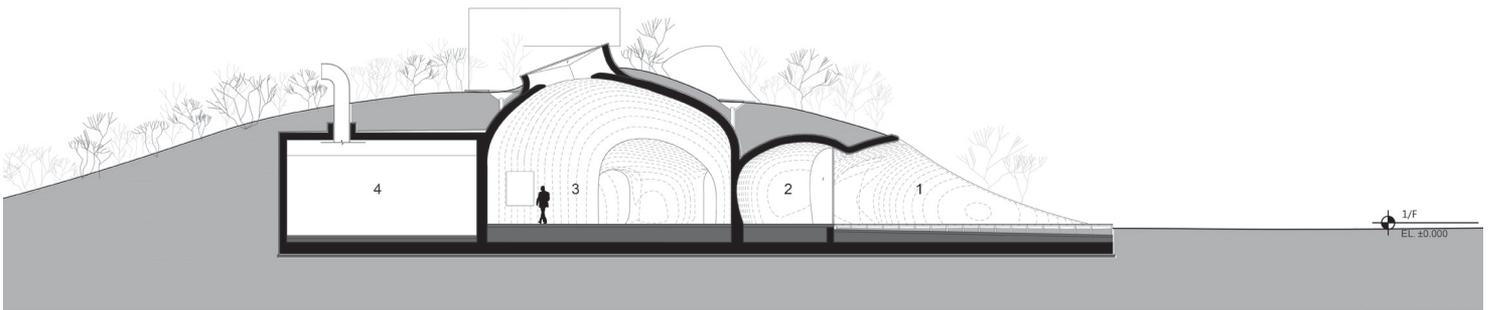
“The museum not only engages with the artwork and the community, and with the changing visual landscape of the sea and sky, but also with more abstract natural phenomena such as light and seasons.

“In this way, the UCC Dune Art Museum establishes a profound and innovative connection with the natural conditions of its site,” says Li.

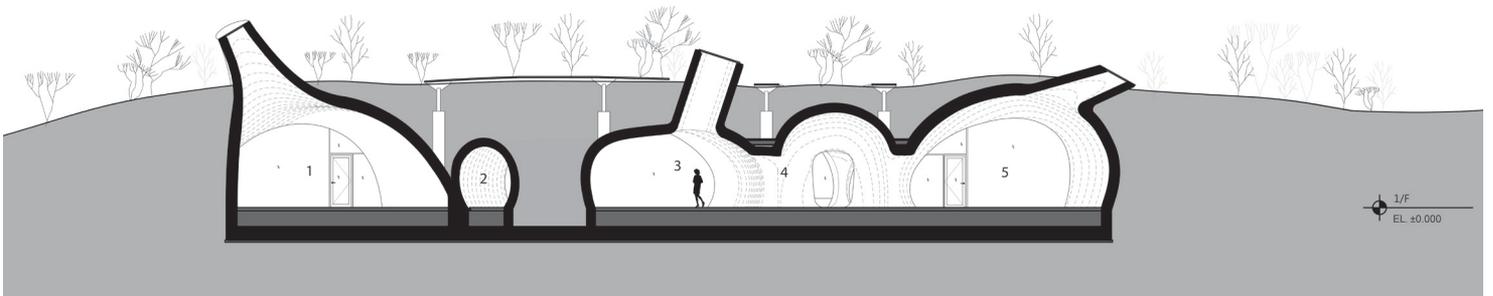
SECTIONAL PERSPECTIVE



- | | | |
|-------------------------------|-----------------------|------------|
| 1. OUTDOOR EXHIBITION TERRACE | 2. SECONDARY ENTRANCE | 3. GALLERY |
| 4. STAIRS | 5. VIEWING PLATFORM | 6. TOILET |



- | | | |
|-------------------------------|------------|------------|
| 1. OUTDOOR EXHIBITION TERRACE | 2. GALLERY | 3. GALLERY |
| 4. GEOTHERMAL PLANT | | |



- | | | |
|--------------|-----------------------|------------|
| 1. CAFETERIA | 2. SECONDARY ENTRANCE | 3. GALLERY |
| 4. GALLERY | 5. GALLERY | |

/ 5-6

Along the easternmost side of the museum are galleries and ancillary spaces that look out towards, or open up onto the beach.





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UCCA DUNE ART MUSEUM

LOCATION / HEBEI, CHINA
COMPLETION / 2018
BUILDING AREA / 930M²
ARCHITECT / OPEN ARCHITECTURE
LEAD ARCHITECTS / LI HU, HUANG WENJING
CONTRACTOR / CABR TECHNOLOGY CO.
C&S CONSULTANTS / CABR TECHNOLOGY CO.
M&C CONSULTANTS / CABR TECHNOLOGY CO.
AWARDS / ICON DESIGN 100 TALENTI 2019 – ARCHITECTURE;
 IDEAT FUTURE AWARD 2019 – PUBLIC BUILDING OF
 THE YEAR; ARCHDAILY BUILDING OF THE YEAR 2019 –
 CULTURAL ARCHITECTURE



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The biggest challenge for the architects was producing the complex three-dimensional geometry of the museum's concrete shell.

Because of the weight of the concrete, the formwork for this shell could not be constructed with CNC milling or other advanced technology, so it was built with curved strips of wood, hand-crafted by local Qinhuangdao shipbuilders using a traditional method.

The building's doors and windows, reception desk, bar counter, and bathroom sinks were also all custom-designed and made by hand.

The eight tables in the café were designed by OPEN Architecture, and each has a distinct shape that mirrors the floor plans of the eight main gallery spaces.

Sustainable features include a low-energy, zero-emission ground source heat

pump system used in lieu of traditional air conditioning, and a sand-covered roof that greatly reduces the building's summer heat load.

Once the building was complete, plants with expansive and sturdy root systems such as the native amorphas, locusts, and beach grasses were planted to reestablish the surrounding sand.

"The building's exterior seeks to merge the experience of viewing and admiring art with that of viewing and admiring nature," says Li.

"Visitors can wander through the underground galleries to enjoy the artworks. They can wander onto the outdoor exhibition terraces to reflect on the beauty of the surrounding beach, or ascend a spiral staircase that takes them above the dune to contemplate the ocean from a look-out tower."