

the emirates

'Rain of light' from dome will filter on to Louvre

Design is tested in Saadiyat warehouse

An open-air dome will cover the galleries of the Louvre Abu Dhabi with dappled rays of light that pass through 10 layers of patterns



Sheikh Sultan bin Tahnoon Al Nahyan, chairman of the TDIC, and Jean Nouvel, the architect of the new Louvre Abu Dhabi, study an experimental section of the museum's dome design. Galen Clarke / The National

Bradley Hope

ABU DHABI // Inside a large warehouse on Saadiyat Island yesterday, Sheikh Sultan bin Tahnoon Al Nahyan looked up in wonder.

Sunbeams cut through the darkened space, hitting a section of wall in a bright, dappled pattern.

"This is like poetry," said Sheikh Sultan, the chairman of the Tourism Development & Investment Company. "You can see the rays very clearly. This shows it works. It can be done." He was pointing to a mock-up of the domed roof that will cover the Louvre Abu Dhabi, one of four museums planned for the centre of Saadiyat Island's cultural district.

Engineers had created a small section of what will eventually be a 180-metre-wide dome and placed it over the flat top of the pyramid-shaped warehouse.

Jean Nouvel, the architect of the project, called the resulting display of sunlight coming through the lattice-covered dome a "rain of light".

The holes in the dome appear random at first, but they are actually created by 10 layers of different patterns.

"It's a geometry," Mr Nouvel said. "It's a special system that creates patterns with rotation. As the sun moves, the light changes."

The dome will be an open-air structure covering individual galleries below.

It will consist of two five-layer sections, each with its own pattern. The top layer has holes over 30 per cent of its surface and the bottom layer has holes over 10 per cent of its surface.

As a result, only 3 per cent of the light that hits the top of the dome will filter through, creating pat-

terns on the galleries and pools of water.

Some galleries may also have roofs with windows or blinds to let the light through, and all will be climate-controlled to protect the artwork.

At night, the dome will be lit by a system that is still in development.

The dome will appear to be "almost floating" over the galleries, said Tim Page, an associate director of the engineering firm Buro Happold. The structure will weigh about 6,600 tonnes and sit on four pillars hidden inside the gallery buildings.

The purpose of building the model was to fine-tune the final design of the dome. Until now, most tests were done on computer simulators and at a facility in Stuttgart.

But nothing could replace the experience of Abu Dhabi's midday

sun passing through the prototype, said Matthias Schuler, an engineer from Transsolar Energietechnik who is working on the project.

"We need to get this just right," he said. "Little changes make a big difference."

Carrying a thermometer and a light sensor, Mr Schuler continually checked the "quality of the light".

He said the inherent dustiness of the air in Abu Dhabi would make it easier for visitors to the museum to see the beams of light.

One issue that had been discovered, he said, was that light coming through the warehouse doors reflected off the floor and diminished the impact of light coming through the dome. He said they plan to darken the ground outside the dome to absorb this light.

In his architectural statement for

the museum, Mr Nouvel said the ever-changing light would invoke images of souqs and alleyways covered by canopies and trellised windows in Arab cities.

Describing the experience, he wrote: "A microclimate emerged from the sensations that great Arab architecture has explored countless times: controlling light and geometry ... structuring shadows, opening up trails of discovery."

Speaking yesterday, Mr Nouvel described the project in the context of the arc of history.

"When a country is at its apogee, it creates a lot of very strong testimonies," Mr Nouvel said. "You've seen this with many countries over time in Europe and the US."

"In the Middle East, that time has come."

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Lighting up the Louvre



Sheikh Sultan bin Tahnoon Al Nahyan, right, the chairman of TDIC, and Jean Nouvel, the French architect, inspect a mock-up of the Louvre Abu Dhabi's roof. The open-air dome will cover the galleries of the museum with dappled rays of light that pass through 10 layers of patterns. Story, page a4. Galen Clarke / The National