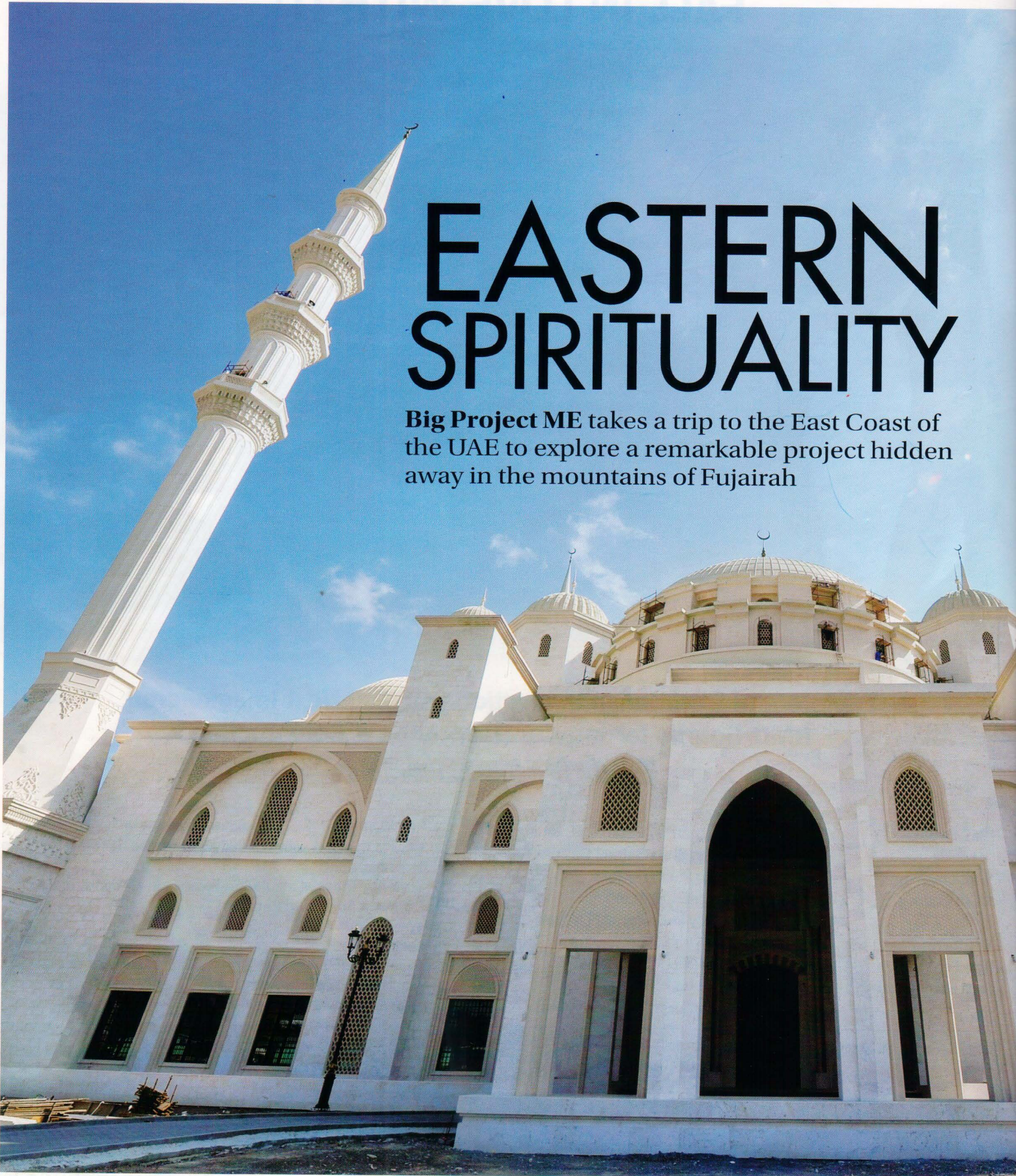


EASTERN SPIRITUALITY

Big Project ME takes a trip to the East Coast of the UAE to explore a remarkable project hidden away in the mountains of Fujairah



Total Area	38,500m ²
Prayer Hall	6,980m ²
Covered Courtyard	4,884m ²
Open Courtyard	5,124m ²
Female Prayer Hall	2,014m ²
Balcony Level	1,725m ²



Over the years, the East Coast emirate of Fujairah has acquired a reputation as something of a local holiday destination, with beaches and mountains that are perfect for weekend getaways and day trips. As a result of this burgeoning tourism industry, there has been a surge in the number of hotels and resorts being built along its coastline.

Despite all the construction work going on, the ruler of the emirate, HH Sheikh Hamad bin Mohammed Al Sharqi, was determined to create something truly unique for his people. An iconic structure that would match anything built in Dubai, Abu Dhabi or Qatar.

This desire has led to the creation of what could become one of the East Coast's most defining cultural landmarks, the Sheikh Zayed Mosque of Fujairah.

Much like how its counterpart in Abu Dhabi has become a tourist attraction and reference point for Islamic architecture,

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the Fujairah mosque aims to be more than just a place of worship.

Built in the Ottoman Islamic style, the mosque bears more than a passing resemblance to one of the most famous buildings in the world, the Sultan Ahmed Mosque in Istanbul, Turkey. This was a deliberate choice by the Fujairah ruler, as he wanted a building that paid tribute to Islam's history, says Hesham Sheikh Amin, managing director of Arkitek ICB, the Malaysian firm behind the design of the project.

"It was a challenging project," he recalls. "The Sheikh wanted a completely traditional design and we tried to combine (modern elements), because we knew that a lot of elements, the craftsmanship and the workmanship, wasn't available. But the Sheikh wanted it that way, so we had to overcome that."

"Design-wise, we made everything accordingly. We managed to get a very traditional layout and external elevations. The Sheikh also wanted to have a mass volume bigger than similar sort of mosques, like the ones in Damascus and

\$98mn

Original tender for the mosque

\$55.8mn

Re-tender for the mosque

\$20mn

Budget for the interior and landscaping

Istanbul. This is bigger than those two; the largest dome in Istanbul's mosque is 32m or 38m across. We have one at 42m, so it's quite a bit bigger. He wanted it to be something of a record holder," Amin explains.

With design work on the project starting in 2005, the mosque has been in development for a number of years, Amin says, but finally in January 2013, the first phase was completed and it was ready to be handed over for the interiors to be fitted out.

Covering a total area of 182,885m², the entire complex is set to consist of the mosque, a religious learning centre and a luxury residential development. While the mosque and religious centre are to

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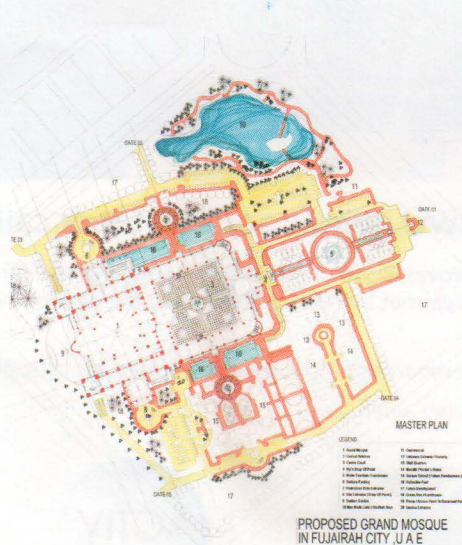


be used by worshippers and religious scholars, the residential developments are to cater to the high-end, luxury market.

"The third building is a multi-storey building that is residential. It will help sustain the expenses, the work of the mosque," Amin says.

"The design that we have now is going to be luxury, two and three bedroom residential. It's a little bit upscale in order to get a bit of income."

"(The mosque) is a huge structure and it's expensive to maintain. So the Sheikh thought (this would be a good way). It's just across the road; we have two plots next to each other. That will be Phase III."



However, he points out that these plans are still a long way off, as the focus is on getting the mosque completed.

With the exterior work done, all that remains is getting the budget from the Ministry of Public Works for the interior design and the landscaping.

"We're waiting for the budget to be determined and we'll be guided by that. Once we have the budget, we're ready to go. All the drawings and design work is already done," he says, estimating that they will have a budget between \$19 million and \$20 million to work with.

While the design of the mosque was certainly challenging, Amin says that the actual construction process proved to be the most difficult, with significant hurdles in place over a long build period.

One of the first priorities was to bring the cost down. Having initially been tendered at \$98 million, the company then decided to value engineer the project and re-tender the project, bringing costs down to \$55.8 million.

The project has been partially funded through a grant of \$30 million by HH Sheikh Khalifa Bin Zayed Al Nahyan.

"During construction, then came the real pain. For example, we had to find a lot of carved stone and you can't find the crafts people just anywhere. So we had to go back, in many cases, to places like Syria to outsource," he explains.

"But we couldn't do everything in carved stone; it would have taken too long and increased the cost significantly, especially when we were already tight on budget. So the main elements, the gates and the very critical and touchable elements, that is all natural carved stone, the rest is artificial aesthetics or GRC materials."

Furthermore, building a project with such massive dimensions caused its own problems, he says, with the height and width of the massive main dome a particular challenge.

"We had to steel frame it," Amin says of the dome. "It was all steel frame and cladding of lightweight GRC. The entire frame was stainless steel space frame. We had to bring in specialised companies to do that."

Furthermore, from an MEP point of view, the dimensions and traditional styles of the building proved to be

particularly awkward, with no space available for the installation of HVAC units, a crucial factor when attempting to fit in over 11,000 worshippers in the inner prayer hall alone.

(In total, the entire mosque can hold 28,000 worshippers).

“It was an engineering challenge,” Amin says. “In the old days you didn’t have AC. But at the same time, because of the style of the building, we don’t have any flat roofs, we’re not supposed to have flat roofs!”

“So we had to find a way to bring the HVAC in. We cannot run the ducts because we don’t have the flat spaces for it, or the false ceilings. So we had to use cavity walls. We have 2m wide cavities (in the walls). But then we had the problem of cooling the centre of the building, because you have a dome effect created,” he says.

“We considered that during the AC study and found that with the dome effect, you have very hot pockets in the dome and you have to distribute the air evenly.”

“So we ran all the risers through the inside of the walls, and the blowers from

The outstanding features of the mosque are six, 107m high minarets, clad in white marble, and rising from each corner of the courtyard.

The two storey building consists of an underground floor that holds a woman’s prayer hall, separate ablution facilities and service rooms, and a ground floor that holds the main prayer hall.

The outer yard is surrounded by four colonnades and topped by 35 small domes.

the walls, so that the air will blow to all four sides of the mosque,” the managing director of Arkitek ICB explains.

One advantage of using the traditional methods of construction was that the mosque was already sustainable from an energy efficiency point of view.

Given that air-conditioning was yet to make an impact on Ottoman architecture in the 1600s, the architects of the age came up with ingenious solutions to keep the interior of their buildings cool.

By following in their footsteps, Amin says that Arkitek ICB was able to build cavity walls that did not require any insulation materials or thermal blocks.

“We used the old style because we could not afford to use new materials as it’s a very traditional building. But at the same time, you have to make it very comfortable to users, and it is actually.”

“Even if you go to old mosques in Istanbul or whatever, it’s very comfortable, even in summer because the heat is all reflected out,” he explains, ending a tour of a truly special achievement in Fujairah’s architectural history. ■

