SPECIAL REPORT: MANUFACTURING EXPERTS DISCUSS THE GULF’S GROWING CONSTRUCTION CHEMICALS MARKET

NEWS • ANALYSIS • INTELLIGENCE • PROJECTS • CONTRACTS • TENDERS

CONSTRUCTION WEEK
AN ITP BUSINESS PUBLICATION
CONSTRUCTIONWEEKONLINE.COM

DECEMBER 11–15, 2017 • ISSUE 680

DOWNLOAD THE APP

ROUND-UP
Basma Group and Arada to build Sharjah’s first Anantara hotel
p14

CLEAN LIVING
HOW CAN GULF-BASED CONSULTANTS MITIGATE THE IMPACT OF HAZARDOUS VOCs?
P26

WASTING NO TIME
BEE’AH’S GROUP CEO REVEALS THE COMPANY’S LONG-TERM GROWTH PLANS
P32

FULLY BOOKED

CW VISITS THE SITE OF DUBAI’S $272M MOHAMMED BIN RASHID LIBRARY PROJECT, WHICH WILL HOUSE MORE THAN 4.5 MILLION BOOKS WHEN IT OPENS IN 2018
ONE FOR THE BOOKS

WORDS BY FATIMA DE LA CERNA | PHOTOGRAPHY BY AASIYA JAGADEESH
With 2018 as its target completion date, Dubai’s Mohammed bin Rashid Library is set to claim the title as the biggest library and cultural project in the Arab world.

In this day and age, when information is accessible on the web and books are available in digital format, libraries could be seen as redundant by some — veritable relics playing host to dusty tomes that seem unwieldy compared to palm-sized smartphones or mobile e-readers.

Viewed against a backdrop of increasing dependence on technological contraptions, it is an assumption that’s easy to make, but one that is not quite on the mark.

Much like how traditional institutions like banks are adapting to the changing business landscape by offering electronic products and services, so are libraries. Case in point: the Mohammed bin Rashid (MBR) Library that is currently being built in Dubai.

The $272.3m (AED1bn) project was unveiled in February last year by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, in support of President HH Sheikh Khalifa bin Zayed Al Nahyan’s declaration of 2016 as the Year of Reading.

Speaking at the launch event, Sheikh Mohammed said: “We decided to start the Year of Reading by launching this state-of-the-art library, and [letting] everyone know that we will transform the UAE into an Arab and global cultural and learning centre, while strongly establishing reading as a societal norm.”

Described as the largest library and cultural project in the Arab world by Dubai
“OPTIMISED MECHANICAL EQUIPMENT HAS BEEN PROCURED TO SIGNIFICANTLY REDUCE THE ENERGY CONSUMPTION OF THE BUILDING, INCLUDING A WATER-COOLED CHILLER.”

SAMEH SAMY, ASGC

Municipality, the authority spearheading its development, the MBR Library is located in Al Jaddaf and overlooks Dubai Creek.

It will boast eight specialised libraries – children, youth, family, multimedia, business, Arabic, international, and popular – and more than 1.5 million printed books, two million digital books, and one million audio books, as well as conference and study rooms, exhibition areas, a 544-seat auditorium, a café, and parking spaces.

In addition to fulfilling the traditional role of a library, the project will host more than 100 events per year and is expected to receive nine million visitors annually, although it will be able to accommodate up to 42 million.

Construction of the library commenced in October 2016, with ASGC winning the main contract, valued at $245m (AED900m).

Commenting on the library’s progress, Sameh Samy, project director at ASGC, tells Construction Week that blockwork and mechanical, electrical, and plumbing (MEP) first fix works are ongoing while the concrete work has reached the fourth floor.

The vertical core walls, meanwhile, have been completed up to the roof, with ASGC noting that it is using a pin connection system to fix the upper part of the building – from the fifth to seventh floors – to the core walls, ensuring stability and correct alignment.

“The steel structure, which is approximately 5,700 tonnes, is prefabricated and progressing from the fourth to seventh floors,” says Samy, who notes that the project, with a total built-up area of 54,061m², is 22% complete, boosting ASGC’s confidence that its 2018 target completion date will be met.

He admits, however, that time has been a challenge, especially in light of the project’s complex architectural design, which is inspired by the rehal – the book rest used for the Holy Quran – and so closely resembles an open book that the library has come to be referred to as “book-shaped”.

He says that because the project has cantilevered components, the steel structure has been “difficult” to implement, adding that coordinating with the subcontractors for the steel structure, cladding, and glass has also been an issue.

“The main challenge of the project is closing the envelope, because of the sequence of work involved,” he elaborates. “You need to complete the higher level first before you can
GREEN-RATED LIBRARY

To ensure that the MBR Library supports the UAE's sustainable agenda, the project is being developed to meet two green building standards – LEED and Dubai Municipality’s Al’ Safat – and both at platinum level.

According to ASGC, in instances when the requirements of the two systems vary, the team goes for whichever standard is higher, noting that both systems “focus on creating an energy- and water-efficient building using sustainable materials to create optimal interior spaces”.

Detailing the measures that are being implemented on the project, Sameh Samy tells Construction Week: “The library utilises passive design measures, such as a high-performance opaque envelope with a U-value of 0.1 W/m²K (watts per square metre Kelvin), high-performance glazing, smart glass that changes its thermal properties, and external shading devices.

“In addition, optimised mechanical equipment has been procured to significantly reduce the energy consumption of the building, including a water-cooled chiller with a coefficient of performance (COP) of 6.5.

“Other sustainable aspects include the selection of building materials with minimal environmental and health impact,” he adds.

start on the lower level, so [...] coordination among the subcontractors was complicated.”

Explaining how ASGC addressed these issues, he continues: “We did a detailed mission statement by dividing the building zone by zone, starting with the higher level. We identified how we can go zone by zone for the steel structure, the cladding, and then glass. And after that, remove the scaffolding to start on the lower level. We are using the mission statement to coordinate with the subcontractors already on site.”

These subcontractors include Al Shafar Steel Engineering (ASSENT), Emirates Beton, and the main MEP subcontractor, Al Shafar United, all three of which are ASGC subsidiary companies.

ASGC is also working with JML, the glass subcontractor, and Affan, the subcontractor of the Library's skylight, which is 60m long and 16.6m wide, and made of high-performance glass.

High-performance glass, reveals Samy, covers 40%, or 10,500m², of the project's 26,700m² elevation, while cladding makes up 60%, or 16,200m².

He further notes that of the 10,500m² of glass elevation, 7,600m² or 72% is made of smart glass, making the MBR Library the largest project in the UAE to make use of what he describes as “intangible” electronic glazing that comes with automated daylight control, and can be programmed to achieve the desired shading inside the library.

“For example, if someone needs to make a presentation and wants certain areas to be dark, the mobile app [can be used] to override the daylight programme,” he explains, emphasising that technology not only will feature prominently in the library’s operations but is also a major tool being used in its construction, from building information modelling (BIM) to drones.

The latter, he says, are being employed by the company to monitor the progress on the project. “Once a week, we view a video captured by a drone camera, and we also have a time-lapse camera,” he says.

The use of construction technologies is not limited to the library project but characterises ASGC’s general project portfolio, notes Samy.

The firm is working on more than $2.1bn (AED7.8bn) worth of projects at the moment, including the Dubai Mall expansion, Dubai Airport Terminal 1, and Abu Dhabi’s Marina Bloom – all high-profile projects, and reflective of the UAE’s active construction industry and continued growth as a country.

And it is this growth that initiatives like the MBR Library seek to support, for as Sheikh Mohammed put it: “The human mind is the centre of development, and the book is the tool used to renew the mind. A nation can never grow without a renewed mind and a lively, knowledgeable spirit.”