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MIDDLE EAST

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MATERIAL WORLD

Oliver Ephgrave speaks to regional experts on the challenges and recent trends for material specification in the Middle East

The GCC's abundance of sunlight might be a blessing for barbecue lovers and beachcombers, but for the region's architects it is a constant challenge. One of the major considerations is the specification of appropriate materials that can withstand the extreme heat and humidity.

Tarek Qaddumi, principal for UAE-based TNQ Architectural & Engineering Consultants, remarks: "Extreme heat is always top of mind for architects and engineers in the GCC. This translates into choosing high performing materials with strong heat insulation qualities, and heat resistant materials which will maintain their integrity throughout their intended lifetime.

"Unfortunately sometimes we see a specification of natural materials with low tolerance to heat, humidity and strong sunlight."

Qaddumi suggests the industry should be more proactive in finding ways to beat the heat. He continues: "I think the weather has been a strong reason for a very conservative approach to the exploration of

alternative materials. I would highly encourage exploring the viability of different materials to expand the pool of tried and tested products. But equally, I would encourage such endeavours to proceed with caution, research and experimentation under actual conditions.

"Most technological advancements in the field of construction have been geared to serve colder climates, while I think hotter climates have just as much need for research in the field. Over the next few years, we at TNQ intend to explore different systems as we've already started in several of our projects."

Another consideration for specifiers is the distance from building materials manufacturers. "Most materials are not manufactured locally," he continues. "Shipping materials across large distances has its environmental impact. Availability of samples locally for physical inspection and readily available stock for delivery on site at short notice are also missed because of these distances."

For this reason Qaddumi states that regional specifiers are more inclined to work with "reputable traders who come prepared with samples and carry a fair amount of stock" rather than those that depend entirely on orders to import material.

He says his firm is not averse to specifying local materials, adding: "I have no concerns over specifying locally - the products are fairly competitive in price and quality. The concern stems from products that are imported from less than dependable sources."



49°C

HIGHEST RECORDED
TEMPERATURE IN
DUBAI

The weather is one of the major concerns for specifiers in the Middle East.



Sumaya
Dabbagh,
principal,
Dabbagh
Architects.



Sumaya Dabbagh, principal at Dubai-based Dabbagh Architects, is not convinced by the quality of all local products but states they should be considered for sustainability. She says: "The quality of materials that are manufactured locally varies. Some adhere to international standards, whereas others do not."

When it comes to the common mistakes made by architects when specifying, Dabbagh points to a lack of research and thorough understanding of materials.

She opines: "It is vital that the material is well understood and its performance is evaluated based on standards and tests done by the manufacturer in order to select the right material that would give the required performance. This study of materials before including them in specifications is sometimes lacking amongst

consultants due to time constraints during the design stage."

Dabbagh adds that sometimes materials are incorrectly applied. "Even good quality materials, if not used in the correct way, can be problematic. For instance, certain porous stone may be excellent as wall cladding but the same material can perform poorly when used as flooring. These oversights can easily be avoided through more careful study and trials through mock-ups, prior to using the material in a real project."

She continues: "Some external cladding materials rely on frequent rainfall for cleaning. Deposits of dust and oils from the atmosphere can cause certain materials to deteriorate. Most manufacturers test the materials before they launch the product and problems appear if materials are exposed to conditions different from those in which they were tested under. This is where architects must pay attention to the technical specification of each material."

Qaddumi states that Middle East architects have a watered down role in specification compared to other markets. "With a few exceptions, the reality is that architects are not generally paid to produce coordinated construction documents and to perform the QS and particular specification scope as required. In the Middle East, what is known as final design is the equivalent to the US design development stage."

He says that his own firm is pushing to change this trend but is encountering client resistance. "We've been advocates for changing this reality and often pushing our own design scope beyond our commission. How-



ever we've noticed that most clients understand the status quo and accept that as a market standard.

"Usually, the client is happy with the existing model, because they maintain a certain degree of flexibility as far as selection. It also allows them to involve the contractor - the common perception is that the contractor has a deeper physical engagement with the construction industry and, therefore, an inherent control over the schedule and final cost of a project."

Qaddumi continues: "The choice of materials then becomes a pseudo-democratic process where the architect argues performance, quality and

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I think it would be very beneficial if consultants would share experiences or lessons learned with regards to material specifications."

Sumaya Dabbagh, Dabbagh Architects



aesthetic (or doesn't), the contractor argues cost and delivery times and the client has the third vote. This is fine for as long as the contractor is responsible for the overall design and coordination from the moment they're on board, as is the case in the French delivery model.

The situation in the Middle East, according to Qaddumi, is that the coordination is a grey area during the construction process, as the contractor is making choices and the architect is approving partial shop drawings and material submissions.

Instead, he advocates the architect taking the leading role, as in the US market model. "The approach we

advocate, and implement ourselves, is that the architect chooses every material and specifies every source, brand, make and model; produces coordinated construction documents based on these choices; prepares or supervises the preparation of accurate cost estimates on this basis; and follows the construction on site with much greater clarity."

He continues: "The architect can then be held more responsible for ensuring quality, schedule and cost. Should there be a reason for revisions or value engineering, these can be treated systematically as a stand-alone exercise."

Qaddumi states that clients are wary of over-specification. "Given the importance of the economic viability and sustainability of such large investments, a developer wants to know that they are not overspending on materials that a better design could have at least mitigated. They also want to know that they are not overspending on performance that is not necessary, given the development targets, or buying an overly resilient material that is several times more expensive than an alternative that requires replacing once during the lifetime of a building.

"Another client concern is overspending for the sake of installing a particular brand that is equal to a generic alternative. Once a client is assured of all of these things, other costs can be appreciated as an investment in reducing future running costs and resources. The investment in good materials should, therefore, make as much sense to the investor as it would to the architect."

Dabbagh calls for more collaboration and knowledge-sharing in the industry. "It would be very beneficial if consultants would share experiences or lessons learnt with regards to material specifications. In the

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UAE, we need to create more forums for discussion amongst consultants and suppliers."

Tarek Qaddumi,
principal, TNQ.

When asked whether there are any recent trends in specification, Qaddumi replies: "Besides a movement towards specifying more green materials, the only other trend I'm aware of in recent weeks is the authorities mandating non-flammable aluminium composite panels following several fires in the UAE because of non-fire rated counterparts that have been an industry standard in the GCC for years."

Dabbagh also points to the move towards more sustainable products. "I would say the recent trends are the specifications of environmentally-friendly products such as recycled materials that contribute to a reduced carbon footprint; materials that are free from VOCs and products that reduce energy consumption of buildings. Such materials are becoming more relevant in increasing the awareness about the benefits of green buildings. This is the only way forward if our built environment in this region is to become sustainable," she concludes. 