

# TECHNOLOGY

What role can technology play in promoting the cause of architecture within Muslim societies? In addition to being used to improve the quality of architecture, from concept to implementation – from the use of computers to new techniques of construction – technology has also served as the means for framing a new approach to the question of representation and appearance. The Doha Tower in Qatar continues some of the geometric strategies first shown at the Institut du Monde Arabe in Paris, but here applied to a high-rise structure – an approach that enables the building to be contemporary while recalling the tradition of geometric patterns that is so deeply embedded within the local culture. Similarly, the King Fahad National Library in Saudi Arabia uses the concept of a deep ‘lightweight’ facade to provide a geometrically intricate exterior. The use of technology here produces a Janus-faced facade – representational on the outside, and providing shade from direct sunlight in the interior.

# Doha Tower

Doha, Qatar

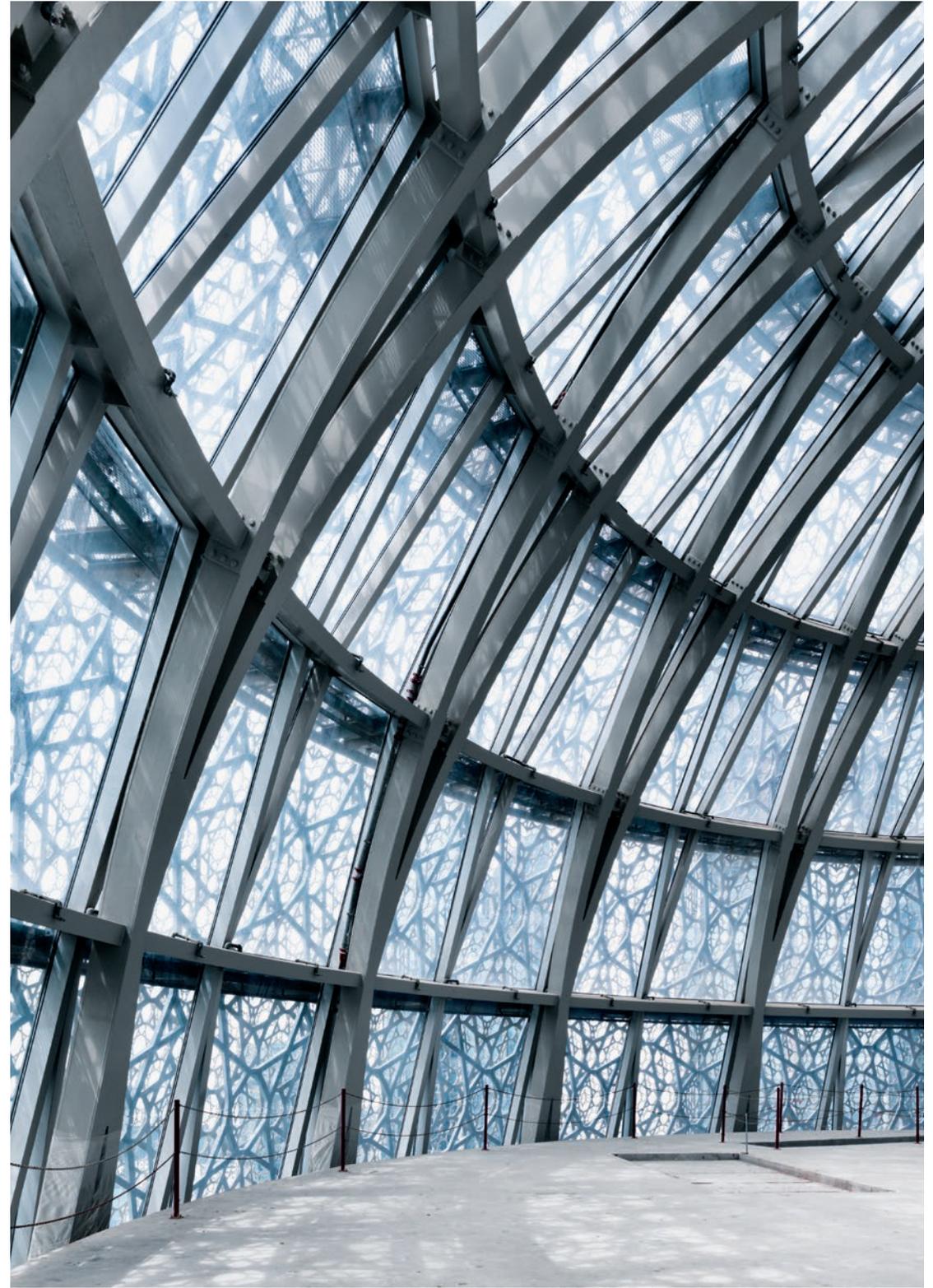
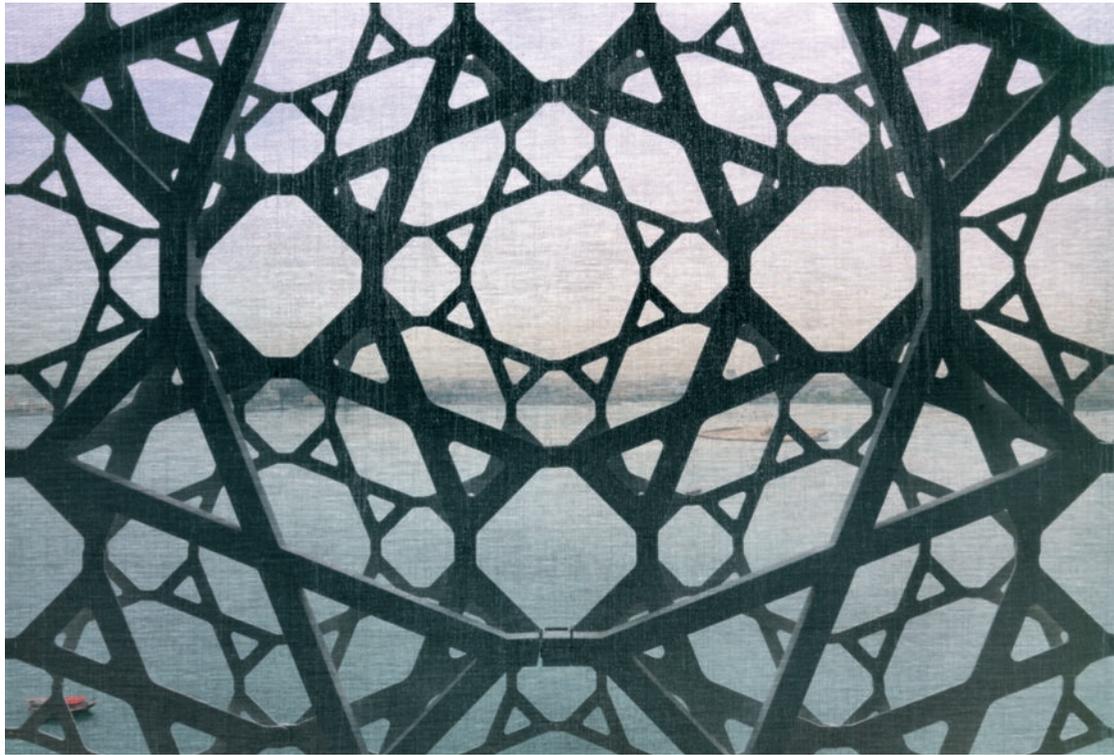
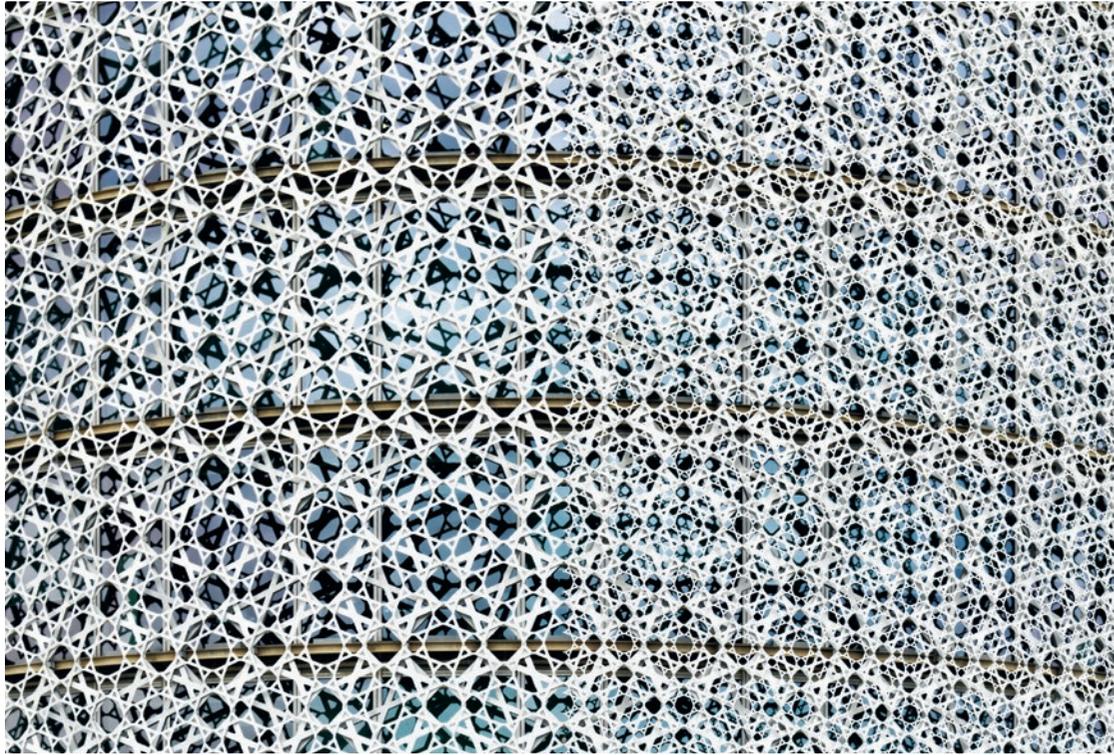
Doha Tower is one of the most distinctive landmarks in the Qatari capital. Designed by French architect Jean Nouvel, the 46-storey office building was commissioned by Sheikh Saud bin Mohammed Al Thani in the early 2000s as part of a larger strategy to give the city a modern urban skyline inspired by international cities like Hong Kong – but with an Islamic cultural twist. The design is based on a round-tower typology – not unlike Nouvel's Torre Agbar in Barcelona – covered with an aluminium outer facade. Like a mashrabiyya, this brise-soleil is defined by an abstract, geometric pattern. Butterfly-shaped aluminium tiles at four different scales are overlaid along the facade in response to solar conditions. The varying density of the layers – ranging from 25 per cent opacity on the north elevation to 60 per cent on the east and west – has a sculptural effect, producing subtle changes in the geometry and the external appearance of the screen.

Combined with the slightly reflective glass curtainwall that makes up the inner facade, the aluminium screen creates a play of light and shade in the interior office spaces. Large open-plan floors, with 3 m ceilings, are generated through the application of an innovative diagrid (diagonal grid) structure of round, reinforced-concrete columns located in the perimeter of each office floor. The dome at the top of the tower has a crisscrossing lattice-steel structure distinct from the diagrid columns.

The design of the interior reflects the client's desire for a cool industrial aesthetic, with its combination of grey fair-faced concrete walls and galvanised steel flooring and ceiling. A further dose of drama is added by the large interior atrium, which houses eight glass lifts reaching 112 m to the 27th floor.

The long gestation of the project, combined with the technological precision of the design, called for a close collaboration between the Qatari clients, the French architects, the Chinese structural engineers and fabricators and local distributors and contractors, making Doha Tower a truly international work.





**Client**

Saud bin Mohammed bin Ali bin Abdullah bin Jassim bin Mohammed Al Thani, Doha, Qatar

**Client Representative**

Hassan Al Duhaimi, Doha, Qatar

**Architect**

Ateliers Jean Nouvel, Paris, France:  
Jean Nouvel, principal  
Hafid Rakem, Ingrid Menon, project managers  
Marie-Hélène Baldran, Vincent Laplante, Emmanuel Biard, Antoine Bordenave, Gian Luca Ferrarini, Lina Ghotmeh, Nick Gilliland, Eva Grimard, Nicolas Laisne, Marie Maillard, Stefan Matthys, Barbara Sajgalikova, Carmen Salinas, Anna Sans, Anne Traband, Elodie Vadepped, Camille Vidal, Nives Voinov, Nabila Zerrouki, Anna Voeller, project team

**Consultants – Design Stage**

Terrell International, Paris, France:  
Peter Terrell, structural and MEP consultant

BCS SA Cormondreche, Neuchâtel, Switzerland:  
Philippe Bissat, facade consultant

Avel Acoustique, Paris, France:  
Jean Paul Lamoureux, acoustic consultant

JP Molé SAS, France:  
Jean-Pierre Molé, parking consultant

Europtima, quantity surveyor, Paris, France

Socotec International, security consultant,  
Montigny-le-Bretonneux, France

Pluriconsult, kitchen consultant, Fresnes, France

MTC Surveys, surveyor, Doha, Qatar

**Local Architect**

Arab Engineering Bureau, Doha, Qatar:  
Ibrahim Al Jidah, local architect

**Consultants – Construction**

Gardiner & Theobald International, Doha, Qatar:  
Chris Mentell, Quantity Surveyor

Gleeds Gulf Engineering Consultants, Construction Management, Doha, Qatar:  
Douglas Bayley, project manager  
Mamoon Atout, construction manager

Dar Al Handasa, Construction Management, Doha, Qatar:  
Hani Akkawi, project manager

Socotec International, Dubai, UAE:  
Alain Sabah, structural engineering

Ian Banham & Associates, Abu-Dhabi, UAE, mechanical engineering

**Lighting Design**

Aik, Paris, France:  
Yann Kersale, lighting consultant

**Landscaping**

Ingénieurs et Paysages, Versailles, France: Jean-Claude Hardy, landscape consultant

**Contractor**

China State Construction Engineering Corporation Ltd, Beijing, China:  
Guo Haizhou, Project Manager

**Sub-contractors**

Hebei Jinhuan Steel Structure Engineering Co Ltd, steel structure, Hebei, China  
Zhu Hai King Glass Engineering Co Ltd, aluminium facade and glass, Zhuhai, China  
Samko, MEP Contractor, Doha, Qatar

**Project Data**

Diameter: 45 m  
Height: 231.5 m  
Total built area: 110,000 m<sup>2</sup>  
Total site area: 13,000 m<sup>2</sup>  
Cost: 186,850,000 USD  
Commission: 2002  
Design: July 2002–July 2003  
Construction: August 2004–March 2012  
Completion: 2012

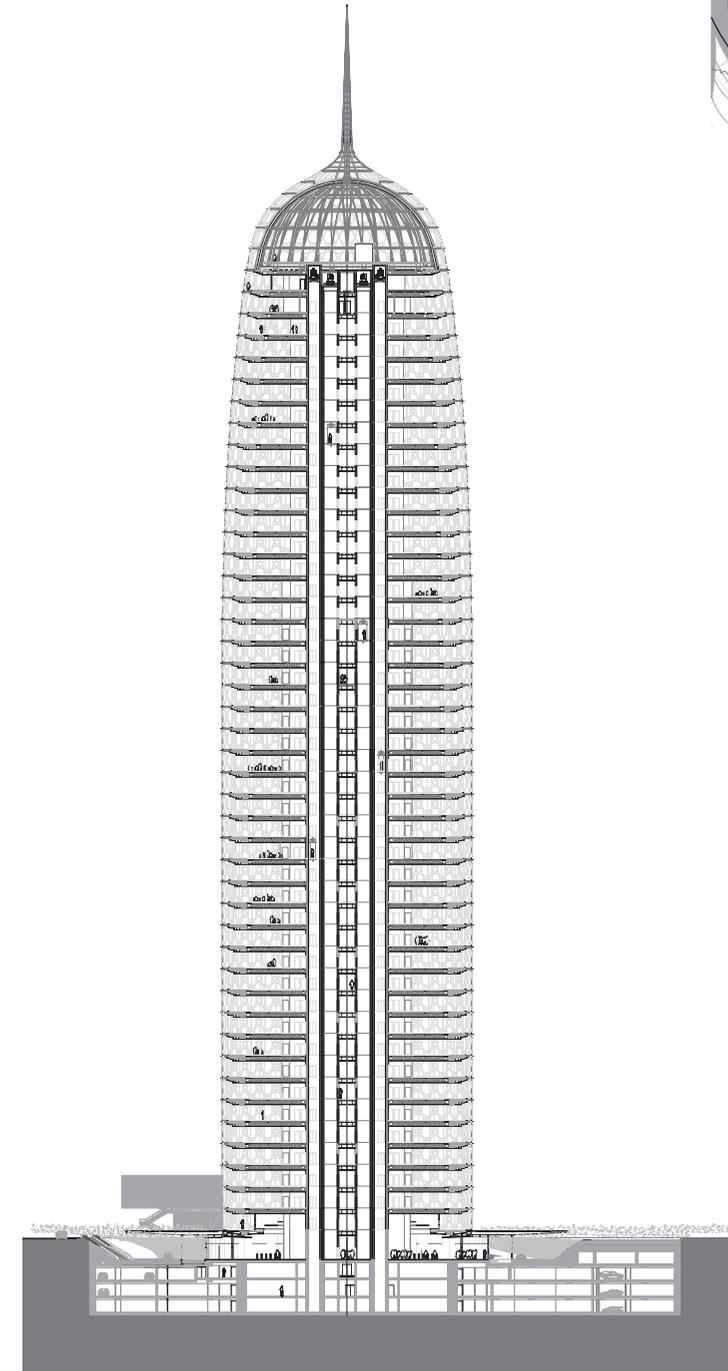
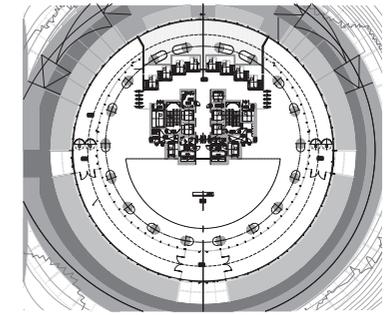
**Jean Nouvel**

Jean Nouvel ranked first in the entrance examination to the Ecole Nationale Supérieure des Beaux-Arts in Paris in 1966 and obtained his degree in 1972. Assistant to the architect Claude Parent and influenced by urban planner and essayist Paul Virilio during his studies, he started his first architecture practice in association with François Seigneur in 1970. Soon afterwards, he became a founding member of 'Mars 1976', the movement whose purpose was to establish links between people and decision makers, and, subsequently, was a founder of the Syndicat de l'architecture. His strong stances and provocative opinions on contemporary architecture in the urban context together with his unfailing ability to inject originality into all the projects he undertakes have formed his international image.

In 1989 his Institut du Monde Arabe in Paris was the recipient of an Aga Khan Award for Architecture and, in 2000, Nouvel received the Lion d'Or of the Venice Biennale. In 2001 he received three of the highest international awards: the Royal Gold Medal of the Royal Institute of British Architects (RIBA), the Praemium Imperiale of Japan's Fine Arts Association and the Borromini Prize for the Culture and Conference Centre in Lucerne. He was the recipient of the prestigious Pritzker Prize in 2008. In France, he has received many awards including the Gold Medal of the French Academy of Architecture, two Equeures d'argent and the National Grand Prize for Architecture. His current firm, Ateliers Jean Nouvel, is one of the largest architectural practices in France, active in the fields of architecture, urban design, landscape design as well as industrial and interior design.

**Website**

[www.jeannouvel.com](http://www.jeannouvel.com)





# Deep Skin Triumphs

Hanif Kara

As architects today step up to embrace the potential of advances in technology, they often find themselves meeting technologists coming the other way, in search of some meaning greater than 'making as the only reality'. The shortlist for this 13th Award Cycle does not escape that paradoxical state. In all of the 19 projects we can trace, in varying degrees and combinations, the intricate relationship and tension between two contemporary cultures – a tension most vividly expressed in the building's 'skin'. On the one hand, there is the 'representational' – the rationale of everyday life, dominated by cultural values and traditions that are not easily converted into technical terms (in architecture this strand often starts from phenomenology); on the other, the 'technological' – the rationale of an autonomous horizon that sanctions anonymity and challenges the adequacy of representation (in turn, this often starts from science).

Going beyond this tension, the selection of projects for the Award is guided by a rigorous, tried-and-tested process that draws our attention to the whole range of issues faced by those involved in shaping the built environment today – whether as clients, designers, constructors or inhabitants of the space. The projects may be tall, small, curved, flat or broad: we are encouraged to look beyond the themes of aesthetics or tectonics to consider how the architects engage with the key goal of improving the quality of life while responding to the growing challenges posed by rapid urbanisation, population growth and environmental change.

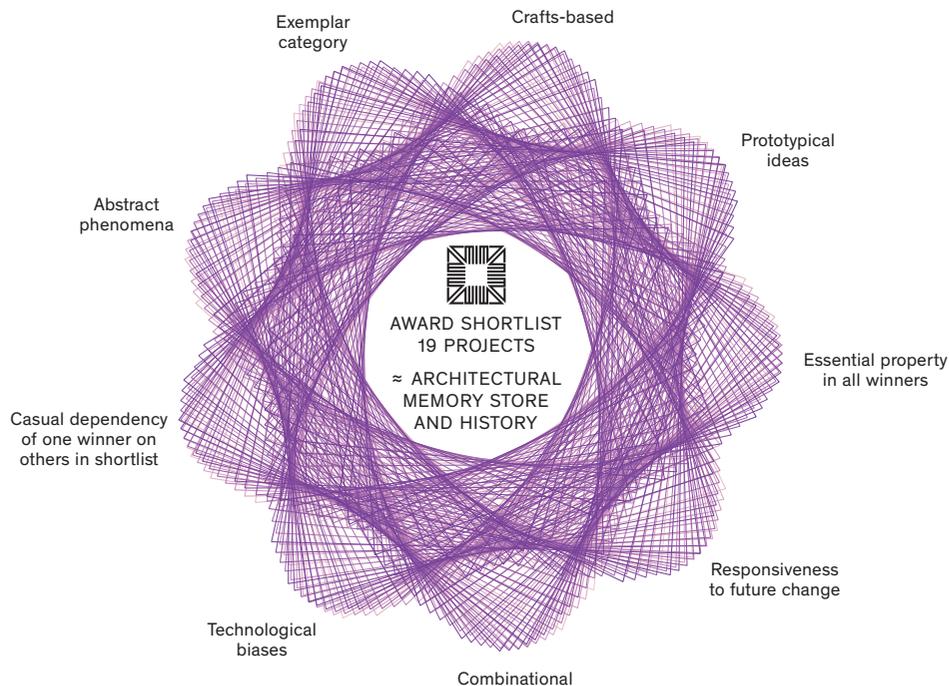
How, then, do we evaluate this engagement? And how do we connect these projects to the idea of plurality which in the context of the Award is a framework of ethical and cultural values articulated through architecture.<sup>1</sup> As an avowed technologist, my innate tendency is to fall back on professional responsibility quantified by efficient closed systems based on criteria such as cost, constructability or performance. That approach is not effective here. To address this complex task I would therefore propose that the full shortlist of 19 is treated as a 'bundle', ensuring that no project is reduced to a single 'architectural type', since the work eludes such neat categorisation. Try, for example, to compare the Superkilen urban park in Denmark with the Tabiat Pedestrian Bridge in Iran using the familiar framework of 'public space': one is on the ground and used by the diaspora of 60 cultures, the other is suspended in the air and predominantly serves a single community. To avoid the temptation to theorise a singular aspect of the architecture, we need to acknowledge the projects as a set of exemplars. In that way, the plurality of the bundle offers a convenient multiplicity of ideas – some intended by their designers, others most likely not. From this, we can

methodically find the transformational impact of these ideas and reverse-engineer the bundle to derive a notional pluralistic model (figure 1). At the heart of this model lies ‘architectural memory and history’ and its multiple connections to other fields, from philosophy to politics and economics.

To further elaborate the bundle and, more precisely, the winning projects, we can then return to the element that most vividly illustrates the tension in contemporary practice – the skin of the building. It is possible to individuate the full range of the skin, from its narrowest interpretation – patina – to its deepest – the core of the project. Here, to some extent, the skin takes on mixings propagated by the current dissolution of boundaries – geographical, political, economic, technological, aesthetic and cultural.

Let’s start, then, by sampling some soundbites extracted from video interviews with the architects provided by the Award. The quotes are grouped in accordance with material or technique.

Figure 1: A notional pluralistic model of useful concepts derived from the shortlist of the Award 2016



Set 1: Skin as low-technology **craft-based** materials and techniques

‘It’s naturally ventilated and, interestingly, the brickwork is load-bearing.’

Marina Tabassum, Bait ur Rouf Mosque, Bangladesh

‘The idea behind using stone is that it’s local and ages well.’

Amer Kammash, Royal Academy for Nature Conservation, Jordan

‘When you touch these amazing bricks you get the feeling that you are touching a valuable carpet with a set of knots.’

Alireza Mashhadi Mirza, 40 Knots House, Iran

‘Broken forms of beautiful handmade bricks . . .’

Kashef Chowdhury, Friendship Centre, Bangladesh

‘A diagonal offset brick keeping dust and rain out, but allowing light in . . . We took care to use local material differently.’

Toshiko Mori and Jordan MacTavish, Thread Cultural Centre, Senegal

Set 2: Skin as **primary structural** system (potential redundancy in performance compared to sets 1 and 3)

‘People like to stay on it’; ‘Even though it’s full of steel it feels like I am walking in a forest’.

Leila Araghian and a visitor, Tabiat Pedestrian Bridge, Iran (exposed steel tubes)

‘The whole building is conceived as heavy building.’

Saleem Jalil, Issam Fares Institute, Lebanon (exposed reinforced concrete)

‘[It’s] split into three areas: a red square, a black square and a green park on the ground.’

Nanna Gyldholm Møller, Superkilen, Denmark (patina only)

Set 3: Skin as **high-technology** materials and techniques

‘[It’s] covered with one large roof – that’s why you see a tensile structural fabric screen that provides shading on the outside: we tried to create something technological with the vernacular.’

Thomas Lücking, King Fahad National Library, Saudi Arabia

‘A glass cylinder protected by a mashrabiyya with different levels of cover (differentiated opacity) ... We used aluminium and worked with tension and restraint.’

Jean Nouvel, Doha Tower, Qatar

‘That’s why the aluminium panels are not horizontal, but parallel to the street.’

Angela Garcia, Ceuta Public Library, Spain

Proportionately the capital costs of skins are significant in any project (figure 2), but skins are responsive to change: facades can easily be replaced, not so foundations. And as figure 3 shows, set 3 – high-technology materials and techniques – consume a large amount of energy in their manufacture compared to set 1 (craft-based materials and techniques).

What observations can we make based on these samples? What makes the skin so relevant to how we perceive the work of architecture as a whole? The theoretician and curator Stephan Trüby reminds us that the facade – the face of a building – participates in processes of visual categorisation: ‘The facade is so powerful – like a face it triggers an almost Pavlovian response, a cascade of judgements about hierarchy and value ... modern attempts to destabilise the hierarchy perhaps need a few more hundred years to embed themselves in the western brain.’<sup>2</sup> And others, such as the journalist Virginia Postrel, go even further in describing how the aesthetic imperative taps into deep human instincts: ‘Valuable goods and services are worth more in attractive wrappings is one way of looking at substance and its relationship to surface.’<sup>3</sup>

In reality, the last two decades have seen a significant erosion of the architectural profession as responsibility for the design of facades has increasingly been surrendered to other, more technologically advanced disciplines. Against this troubled background, the ‘deep skin triumphs’ of the Award shortlist are to be celebrated. In each case, the richness of the skin is the outcome of the architect’s successful negotiation and mediation of the variegated tensions at work in the projects. It is to be hoped that, as a set of exemplars, this bundle will inspire others to reclaim a more certain role for the architect and bring about a renewed attachment to task that lies at the very core of the discipline – so averting a wreckage for future designers of the world.<sup>4</sup>

1 See Homi Bhabha, ‘From Public Space to Public Sphere’ in Mohsen Mostafavi (ed), *Architecture is Life: Aga Khan Award for Architecture* (Zurich: Lars Müller, 2013). For a perspective from outside the AKAA, see also Aaron Olko, ‘Pluralism in Architecture’, paper for ‘The Digital Turn’, Southern California Institute of Architecture, Fall 2012.

2 ‘Facade’ in Rem Koolhaas et al, *Elements* (Venice: Marsilio Editori, 2014).

3 Virginia Postrel, *The Substance of Style: How the Rise of Aesthetic Value is Remaking Commerce, Culture and Consciousness* (New York: Harper Collins, 2003).

4 Richard E Susskind and Daniel Susskind, *The Future of the Professions* (Oxford: Oxford University Press, 2015).

Figure 2: Embodied energy: energy usage in manufacturing of skin materials

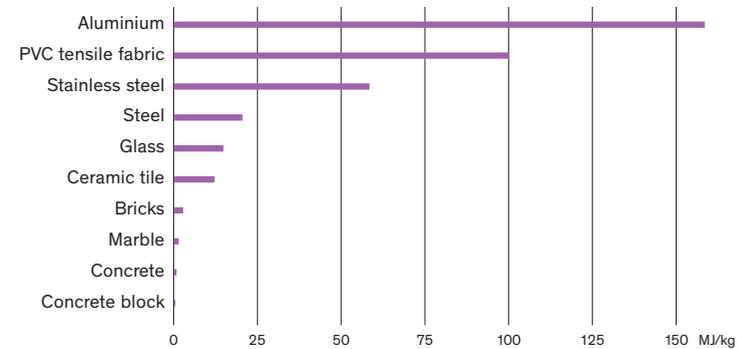
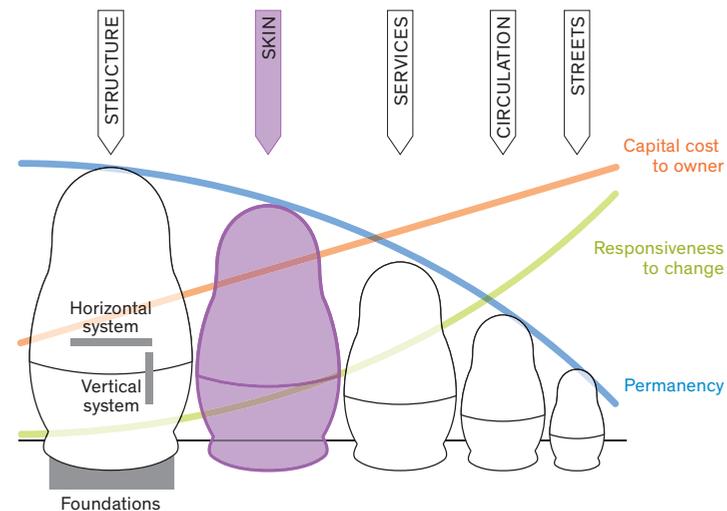


Figure 3: Capital cost of skin proportion



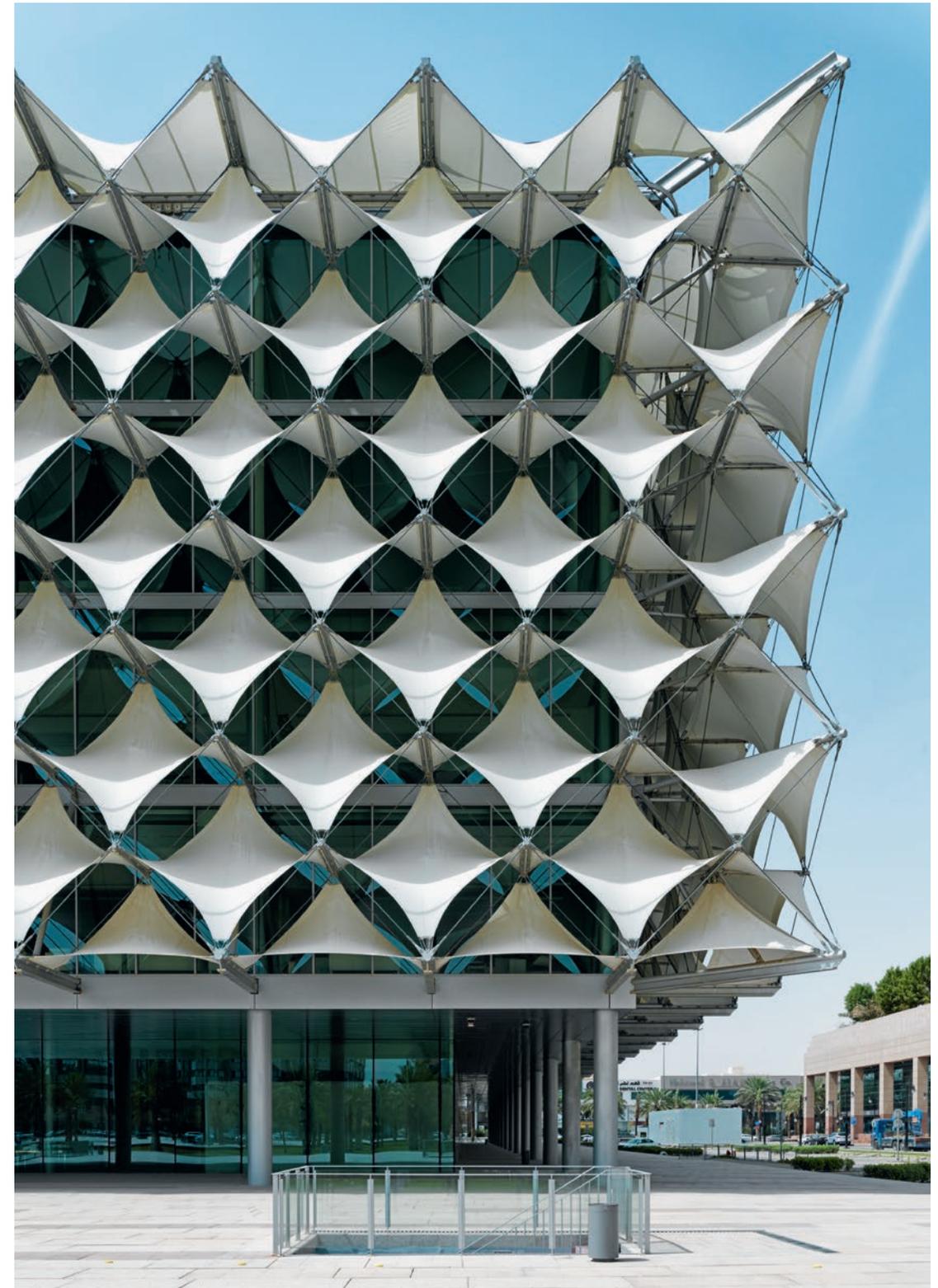
# King Fahad National Library

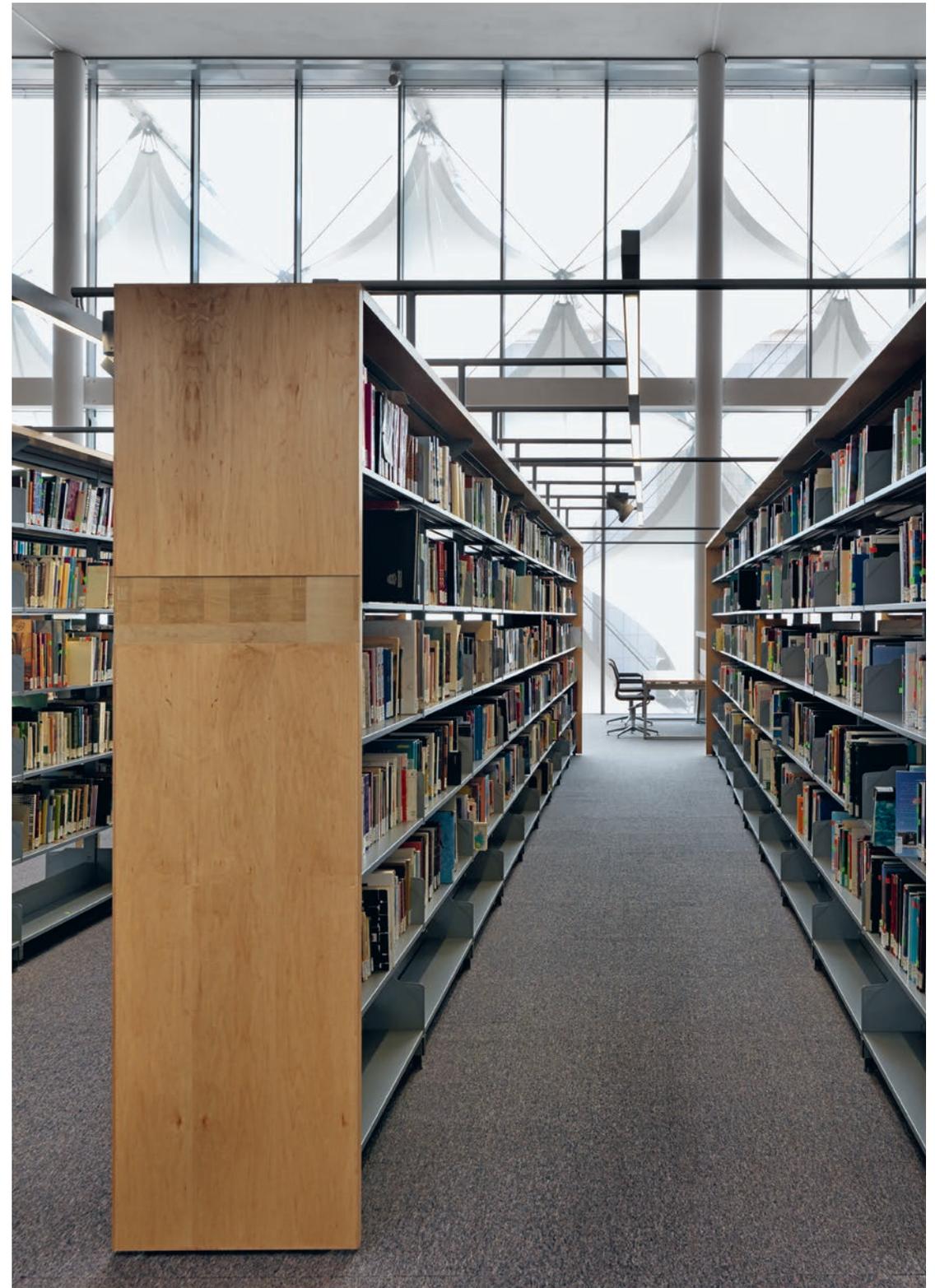
Riyadh, Saudi Arabia

Riyadh's new King Fahad National Library is an impressive architectural, technological and urban undertaking. Enveloping the original 1980s building on the site, it doubles the capacity of the library while providing a public plaza of equal size – a generous gift of open, pedestrian-friendly space in the Kingdom of Saudi Arabia's vehicle-centric capital. The horizontal plane of the plaza defines its boundaries solely through its slight elevation above the surrounding asphalt. Its granite paving, identical to the flooring of the building's lobby, creates a sense of continuity between the two.

The preservation of the 1980s cruciform, dome-topped building – now completely wrapped within the new structure – echoes the remit of the national library itself, which is to preserve and document cultural traditions including, in this instance, the memories of a place. The original library now holds the closed stacks, and the interior as a whole is organised over three floors. The ground level is for circulation and reception (books arrive in boxes to be sorted and catalogued), the second floor for administration. The top floor contains the central reading room, a spacious semi-public space that ties the new steel and glass extension to the entire former roof of the existing building. More than a simple room, this is a reading 'landscape' with ample daylight and sun-protected transparency.

But the most remarkable feature of the King Fahad National Library is perhaps the cladding of the facade. Rhomboidal textile awnings shade the building from direct sunlight while allowing for a maximum of transparency – with views looking in, at the inner workings of the library, as well as out, towards the urban plaza and the city skyline. A reinterpretation of traditional tent structures, the white membranes are supported by a three-dimensional, tensile-stressed steel cable structure. All elements of the facade can withstand the extremes of Riyadh's climate, from the peak of the summer (50°C in the shade) to below zero during winter evenings. Significantly reducing energy consumption and increasing thermal comfort, the library incorporates layered ventilation and floor cooling, appearing here for the first time in the Arab world.





**Clients**

Arriyadh Development Authority, Riyadh, Saudi Arabia:  
Abdulrahman Al-Sari, director of urban and cultural programme  
Waleed Alekrish, construction project director  
Khalid Al-Hazani, director of architecture  
Thomas Ciolek, senior architect

King Fahad National Library, Riyadh, Saudi Arabia:  
Mohammed Al-Rashed, director general  
Mohammed Al-Husaini, general manager IT

**Architect**

Gerber Architekten International GmbH, Dortmund, Germany:  
Eckhard Gerber, general manager and owner  
Thomas C Lücking, general manager and design director

**Landscape Architects**

Gerber Architekten, Dortmund, Germany  
Kienle Planungsgesellschaft Freiraum und Städtebau GmbH, Stuttgart, Germany

**Local Partner and Engineer**

SaudConsult, Riyadh, Saudi Arabia:  
Khurram Karamat, vice president  
Nadeem Sheik, senior structural engineer

**Mechanical and Electrical Engineer**

Drees & Sommer Group-Pan, Stuttgart, Germany:  
Peter Mösle, partner  
Jurenka Michael, senior mechanical engineer  
Ralf Wagner, senior electrical engineer

**Structural Engineer**

Bollinger + Grohmann, Frankfurt am Main, Germany:  
Manfred Grohmann, chairman  
Mark Fahlbusch, partner

**Site Supervision Team**

Arriyadh Development Authority, Riyadh, Saudi Arabia:  
Ahmed Al-Drees, structural engineer  
Anas Al-Mousa, structural engineer  
Yasser Al-Qadi, mechanical engineer

Saudconsult, Riyadh, Saudi Arabia:  
Fawzi Al-Toom, site manager  
Mohammed Sulaiman, architect

Gerber Architekten International GmbH:

Thomas C Lücking, general manager and design director

**Main Contractor**

Saudi Bin Laden Group, Jeddah, Saudi Arabia:  
Fraih Haddad, project manager  
Mohammed Faisal, project architect

**Steel Contractor**

Ali Tamimi Sons Co, Riyadh, Saudi Arabia:  
Eid Tamimi, CEO

**Project Data**

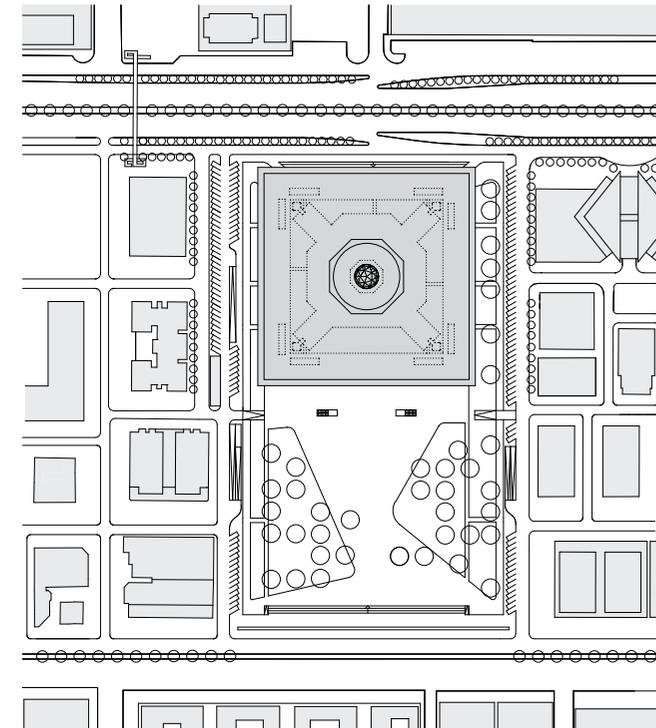
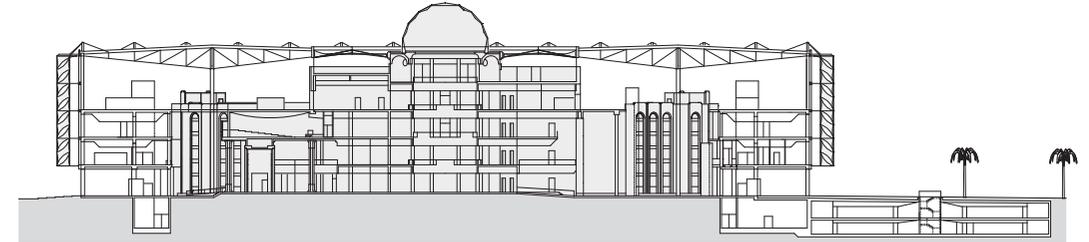
Total site area: 59,558 m<sup>2</sup>  
Old library area: 27,547 m<sup>2</sup>  
Ground floor area: 14,618 m<sup>2</sup>  
Combined floor area: 86,632 m<sup>2</sup>  
Cost: 84,370,000 USD  
Commission: March 2003  
Design: January 2004–August 2006  
Construction: December 2008–November 2013  
Completion: December 2013

**Gerber Architekten**

Gerber Architekten is an award-winning architecture firm based in Dortmund, Germany, with offices in Hamburg, Berlin, Shanghai and Riyadh. The company was founded by Professor Eckhard Gerber in 1966 and currently employs around 170 staff. The firm follows a generalist approach, taking responsibility for a project from the design idea all the way to construction and handover. It is committed to creating an architecture that combines functionality with timelessness and longevity, thus creating projects that are sustainable by design. Over the past 50 years, Gerber Architekten has realised numerous projects in all fields of architecture, national and international. Recent projects include the multiple award-winning King Fahad National Library and the iconic Olaya Metro Station in Riyadh, Saudi Arabia.

**Websites**

[www.kfnl.gov.sa](http://www.kfnl.gov.sa)  
[www.gerberarchitekten.de](http://www.gerberarchitekten.de)





# On Environmental Responsiveness and Technology Integration

Hossein Rezai

The integration of technology into our built environment is essential because of its potential not just to mitigate but to heal the damage wrought by our ever-increasing demands on the planet. Minimisation of heat gain through building orientation, the use of screens and mashrabiyyas, behavioural change, the reduction of embodied and operational carbon footprints – all are important and essential responses to the challenges faced in the ever-expanding built environment. But in themselves, these passive steps are not nearly enough. They cannot reverse the damage that has already been caused, nor can they put a stop to it in the future.

To roll back the damage already inflicted on the environment, particularly over recent decades, technology is our only effective tool. Only the application of technology can lead to a carbon-positive future where our buildings and bridges are transformed into power stations, producing more energy than they consume.

In this light the crucial issues of environmental responsiveness and technology integration should be seen as the two sides of the same coin, as intrinsic parts of the same whole. Throughout the years the Aga Khan Award for Architecture has encouraged and rewarded such projects and initiatives.



Of the 348 projects presented to the Master Jury for the 13th cycle, 32 displayed notable environmental awareness in their construction or sustainable energy- and water-management practices. In the initial review of entries, initiatives such as the IRIS project in Beirut and the LIFT project in Bangladesh caught the attention of the jury.

Located by the sea, the IRIS project consisted of two ‘eyelids’ that opened and closed with the movement of the tides, in the process harnessing the energy of the waves and converting it into electricity. The installation looked somewhat futuristic, and indeed it turned out to be so. Certain practical aspects of the rather interesting idea had not been sufficiently resolved to make the installations permanent enough for inspection by the review team.

The LIFT House combined renewable and water-saving features for affordable housing with an innovative approach to floating structures. While its central ‘core’ remained firmly anchored in the ground, its two wings of accommodation were designed to float on water in the event of flooding. Again, the idea was commendable, but it transpired that the actual prototype house had faced a number of problems.



Other entries integrated technological excellence into their design to achieve sustainability goals. Khamsa House is a low-embodied carbon structure. The construction incorporates bricks made with compressed earth from the site and a cementitious binder. The house also deploys a combination of renewable generation systems – both wind and solar sources – to achieve an operational zero-energy status. During times of low occupancy, excess energy can be exported to the national grid, benefiting the surrounding areas as part of a decentralised energy network.

Another zero-energy building, the Masdar Institute, is entirely powered by solar energy. The inflated ETFE panels incorporated into its facade, though lightweight, provide a highly effective solution to controlling extreme variations in heat and temperature. Recognition of these efforts could help to make the use of such innovative materials more mainstream.

The Mauritius Commercial Bank, the first BREAAAM-certified building in the Southern Hemisphere, incorporates highly sophisticated technology in a different manner. Its Building Management System includes sensors which track the path of the sun, monitoring the intensity of solar radiation and cloud cover and adjusting the indoor climate to achieve the optimum efficiency for the building zones.



Technology can be used not only in construction and operation, but also in design optimisation. Siemens' Middle East headquarters employed computer algorithms to determine the precise size, shape and positioning of its facade elements and sun-shading devices to minimise solar radiation while maximising light penetration.

The use of parametrics takes the integrated design and modelling process to the next level, helping to achieve the most efficient use of materials. Though it may not have been derived from such rigorous parametric analyses, the variable intensity of the double-skin shading device of the Doha Tower reflects this principle. In turn, the multilayered glass and stone facade of KAPSARC Community Mosque speaks of similar aspirations.

The Ford Otosan R&D Centre uses a different technological innovation: that of transforming elements within a building to allow for multiple functions, a strategy that can effectively reduce the building footprint. Such developments will hopefully also make it possible for other infrequently occupied spaces – such as stadia or conference halls – to have more varied usage in the future.



The Park Royal Hotel in Singapore, with its lush, vegetated terraces, takes urban greenery to new heights. By providing a wide range of habitats, the plants are improving biodiversity in a dense urban environment and positively affecting the microclimate of the neighbourhood as a whole. The successful establishment of such an extensive high-rise landscape depends both on rigorous studies of the local micro-ecology and on the appropriate use of technology.

Such bold ideas deserve recognition and encouragement. Environmental sustainability is not limited to active and visible measures such as low-energy buildings powered by photovoltaic panels. Rather, it can be demonstrated using a multitude of techniques and approaches across a whole range of scales. Carbon footprints can be reduced by selecting cutting-edge low-carbon materials and processes such as cement-free concrete or Precast, Prefabricated Volumetric Construction (PPVC), or by integrating parametric or simulation-driven forms that lead to passive design excellence. The use of locally appropriate materials and technology has historically been beneficial in urban development, but today's development agendas require a more sophisticated and global approach.

Looking at past Award recipients from the 1995 to 2013 cycles, four buildings in particular stand out for the way they address their environmental impact: the Salam Centre for Cardiac Surgery, Bibliotheca Alexandrina, Moulmein Rise Residential Building and Menara Mesiniaga.

The Salam Centre for Cardiac Surgery and Bibliotheca Alexandrina are both focused on material reuse and operational energy-effectiveness. Moulmein Rise takes passive design and climate responsiveness as the basis for its design and form, both in its external massing and its internal layouts and details. And Menara Mesiniaga set a new trend in environmental responsiveness and technology integration at the time it was designed and developed – some 20 years ago.

The brief of the Aga Khan Award for Architecture clearly favours a congruent approach to the fundamentals of environmental protection, sustainability and technical integration. A wide range of projects is submitted in each cycle. However, it is fair to say that environmental credentials generally do not feature in a rigorous and consistent manner in all of the entries. The past emphasis on the strong cultural and social aspects of the architecture may have created a belief that environmental and technological innovation is not what the jury members are looking for when they are making their selection.

This is not so. While questions of social equity and integration are indeed important, they are by no means the only considerations. It is to be hoped that future cycles of the Award will attract a larger pool of such interesting and technologically rich projects and in turn reward them for their innovative aspects as much as for their architectural and social merit.

# Beyond Function

Dominique Perrault

Though diverse, the projects included in this volume all share one trait in common: they see the context as having an essential function in defining architecture. This is a specific role that goes beyond the notion of functionalism set out by the modern movement in the twentieth century. Rather, in establishing a relation of use between a building and its environment, it proposes to create spaces that can accommodate functions other than those enumerated in the programme of construction.

We should note here that the importance of a building within its context does not increase in direct proportion to its scale. For example, the very small library in the hutong in an old part of Beijing creates a micro-landmark that speaks, through its use, of the life of the neighbourhood. In order to intensify activity, this building densifies the urban fabric, in stark contrast to the rational planning approach, which would demolish an old neighbourhood in order to replace it with something completely new.

At the other end of the scale we have the Tabiat Pedestrian Bridge in Iran, an immense (XXL) piece of infrastructure. This is not so much a simple bridge that links two parks or sides of a highway as a whole bundle or network of bridges that weave together, transforming at certain points into belvederes or promenades – uses that do not generally fall within the ambit of a generic bridge. Here too, new surfaces have been created to embrace the diversity of urban life.

A new type of public space is being created by the architecture of the buildings. As proof of this we have the Bait ur Rouf Mosque in Dhaka, Bangladesh, with its very precise and delicate organisation in which the vestibule, with its little colonnades, defines an architectural place in between the exterior public space and the mystic heart of the building. Likewise, in the Friendship Centre in rural northern Bangladesh, the public space extends over the top of the building, creating a kind of rooftop park. Akin to an archaeological ruin, the building is submerged in the landscape, offering a garden in place of a facade. So, once again, these two buildings go beyond the simple definition of function to propose new surfaces in the urban fabric or rural landscape.

In Beirut this interplay between the existing and the new finds a spectacular and convincing expression. The Issam Fares Institute has a very strong architectural presence, yet curiously its footprint is extremely minimal. This form frees the ground and creates a great window onto the landscape, in the process establishing a very positive relationship with the more traditional buildings around it: rather than aggressively enclosing the courtyards and gardens, the

modern building opens up the campus. Here too a respect for the use of the existing ground creates a new ground, which floats like a cantilever over the campus.

In conclusion, we might say that contemporary architecture is more concerned with the geographical situation of a building than was perhaps the case in the recent past. A historical analysis of the context no longer seems an adequate basis on which to elaborate an architectural statement that fulfils the needs of both society and the environment.

‘Beyond function’ becomes ‘beyond architecture’.

The transverse nature of the sharing economy points to the importance of horizontality – of extending the terrain – as a strategy for the sustainable development of cities and landscapes. Verticality in itself cannot ensure the quality of the environment. This new, more sensitive approach is engendering more open attitudes, as the strict respect for function gives way to unexpected, improbable, unprecedented uses – something absolutely vital for society today.