

FAÇADE IN FOCUS:

HAMAD INTERNATIONAL AIRPORT, DOHA, QATAR

Bringing to life a mega-project



Hamad International Airport in Doha, Qatar is an international five-star gateway that, when it opened in 2014, set new standards in the aviation industry for architecture, design quality and travel experience.

The vision was to create an entire airport complex – an iconic place that would redefine the way customers travel and do business. In order to achieve this, 22 sqkm of land was reclaimed from the sea to create an artificial peninsula a third of the size of the city of Doha. The site houses a three-storey, 600,000 sqm passenger terminal, 40,000 sqm of retail, food and beverage facilities, two of the longest commercial runways in the world, five piers, 41 gates, a 90m-high control tower, luxury hotels, fitness and wellness facilities, one of the world's largest aircraft maintenance hangars, a public mosque, a large car park and offices.

Courtesy of NDIA



“Hamad International Airport is a destination in its own right, for passengers transiting through, or travelling to Doha as their final destination.”

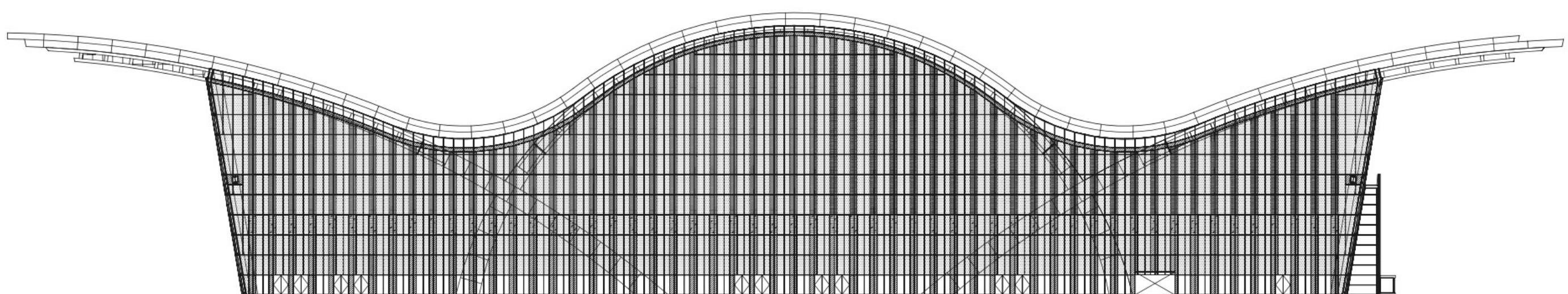
Akbar Al Baker, Group CEO of HIA and Qatar Airways

A NATIONAL LANDMARK

Global architecture firm HOK was tasked with creating the world's best passenger terminal – both a gateway to Qatar and the preferred travel hub for the Middle East.

HOK's architectural solutions embodied the best of contemporary design while paying homage to Qatar's rich cultural heritage and natural environment. The airport is the first thing that passengers see from the coast and the goal was to create a structure that would become the icon of an entire country while visually communicating a feeling of hospitality.

The architects identified two natural elements that distinguish the natural landscape: the dunes of the desert and the waves of the ocean. These are echoed in the curving silhouette of the airport's project roof, which gives rhythm and lightness to the building, and remains imprinted in the minds of travellers.



Passenger Terminal
east and west elevation.

GIVING FORM TO THE FAÇADES

The light, open impression created by the airport is reinforced by the glass façades that cover three sides of the terminal. The abundant use of glass also maintains a connection with the outside environment, providing daylight that is controlled by the shading effect of the projecting roof, and by sunshades and high-performance glass surfaces. Inside, the light is diffused uniformly thanks to the soft colours of the inside environments and the skylights in the roof.

The airport was built in stages, and its structure changed shape over time, starting with the iconic façade of the Main Terminal Building, which houses Concourses A and B, through to subsequent extensions to the central spine.

Permasteelisa Group was honoured to be appointed to design, engineer, manufacture and install the external façades for this monumental project. In total, we successfully delivered:

- 200,000 sqm of external façades
- Over 4,300 tonnes of architecturally exposed steelwork
- 18,667 customised façade units.

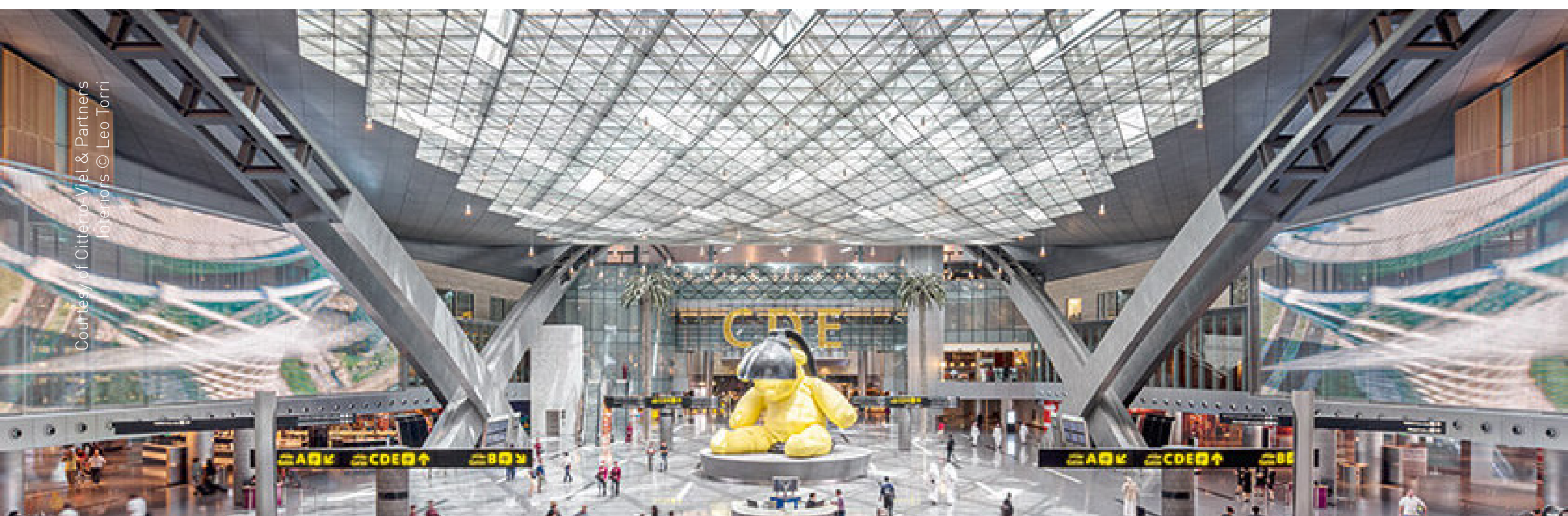


DIMENSIONS AND DEMANDS

Phase 1 of the project involved the design, supply and installation of architecturally exposed steelwork to support the unitised curtain walls for the Main Terminal Building, Concourse A and Concourse B. A phase 1 expansion plan focused on the addition of bus and taxi pavilions, vertical circulation node areas built to accommodate premium lounges, and inland border facility areas. In total, we delivered 2,431 tonnes of architecturally exposed steelwork to support 11,400 units of curtain wall, exterior sunshading and exterior cladding – amounting to an overall area of over 110,000 sqm of façade.

Phase 2 of the project involved the design, supply and installation of 1,058 tonnes of architecturally exposed steelwork, along with unitised curtain wall and louvres for Concourse C, covering an overall area of 36,700 sqm. Concourse C features an exterior sunshading system that was added to the outside of the curtain wall.

Phase 3 focused on the north node extension, with 51,000 sqm of exterior curtain wall, 903 tonnes of architecturally exposed steelwork, aluminium composite panel cladding and aluminium louvres for Concourses D and E.

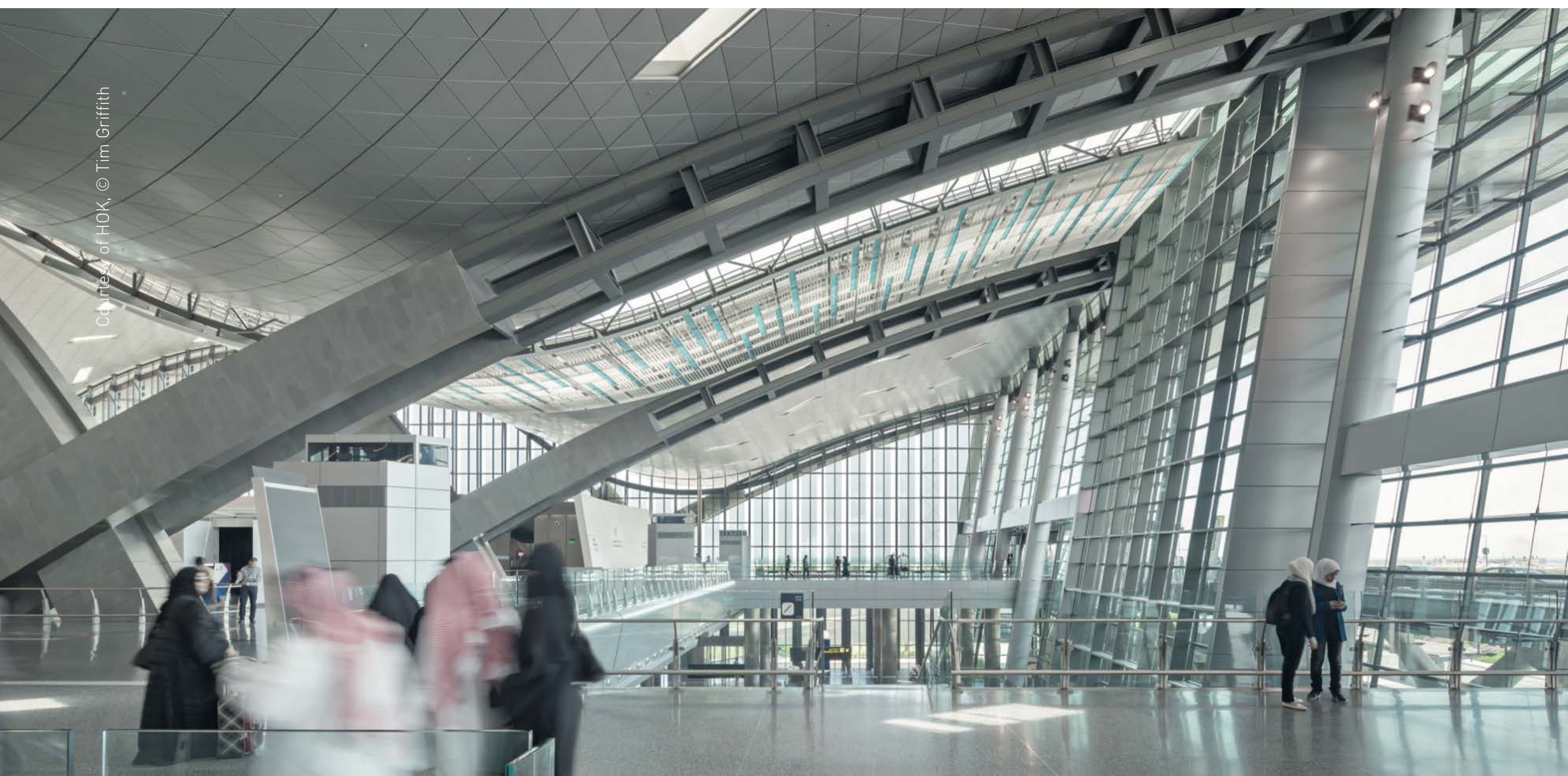


HIGH PERFORMANCE AND QUALITY

The entire structure was designed and developed with energy efficiency in mind, reflecting the Qatari Government's commitment to the environment and sustainable development for future generations.

The spectacular, colossal glass façades open outwards and were created with high-performance insulated glass. For greater interior comfort, the sloping roofs jut out from the façade, reducing direct exposure to the sun and the need for artificial cooling inside.

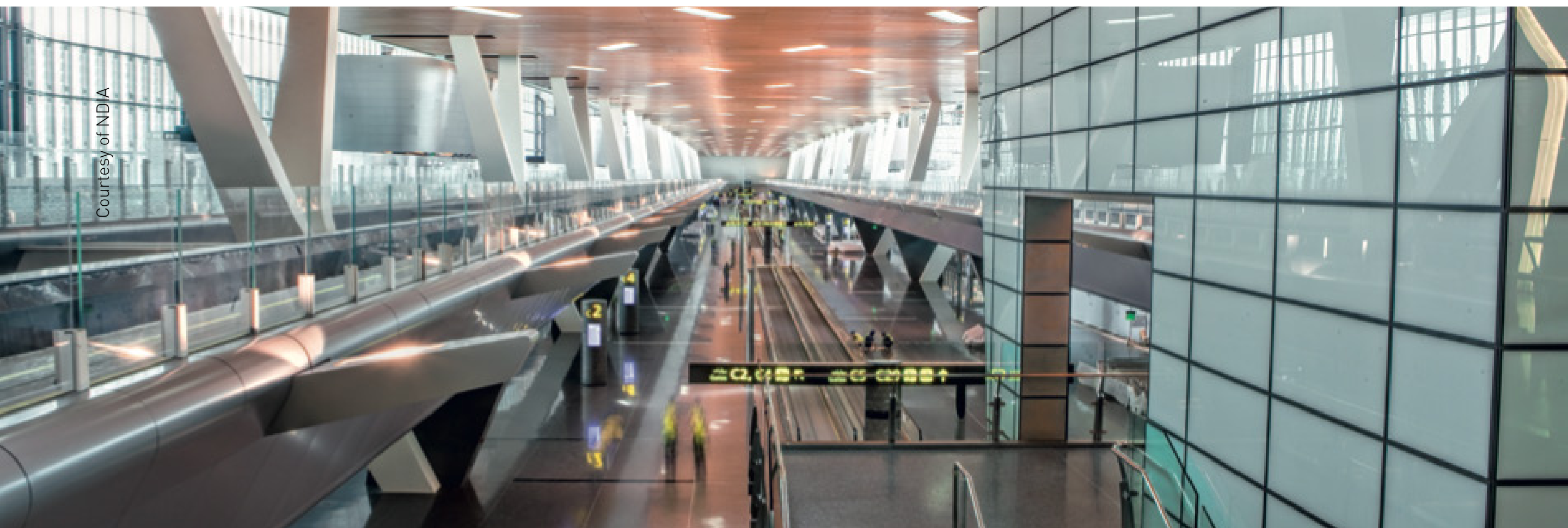
Our team designed customised procedures to guarantee quality; for example, each piece of painted architecturally exposed steelwork was comprehensively evaluated against the requirements of suppliers and manufacturers. Complex logistics were expertly handled to ensure smooth installation and timely project progress, including the transportation from Dubai of some façade elements over 30m in length.



MOVING INSIDE

In addition to bringing to life the remarkable façade for Hamad International Airport, our team's expertise was central to creating the environment inside the building, including:

- 25,500 sqm of interior works
- 2,400 decorative glass fins
- 1,400 high-end airport counters
- 40,000 sqm of premium lounges (these alone involved over 6,000 architectural drawings!)



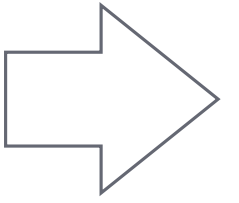
“Bringing outstanding quality and perfectly engineered products to the construction site allowed us to achieve the goals set in terms of quality and execution times.”

Permasteelisa Group Project Director

The airport is a multi-level space, with natural light flowing through the side glass curtain walls and roof. For the Main Terminal Building, we supplied and installed a variety of glazed features, including feature walls, interior façades, security screens, glass waterfalls, glazed cladding of panoramic lifts, indoor garden courts and bridge roofs. For Concourse C, we constructed glazed balustrades, security screens, lifts, stairs, gate cladding and glass fins for a length of 1km.

Our third interior contract involved the delivery of 1,400 high-end airport counters and millworks, ranging from large retail kiosks and passport control booths, to information desks, cupboards, online check-in counters, and freestanding phone and internet kiosks. With every detailed element, the design aim was to embody efficiency, functionality and quality.





PREMIUM OUTCOMES

Hamad International Airport features 12 premium lounges that cover an area of more than 40,000 sqm and feature extremely sophisticated, refined solutions, finishes and materials. Permasteelisa Group was awarded the contract to create the lounges, which were designed by Italian architects Citterio-Viel & Partners.

This aspect of the project alone was an astonishing undertaking for our team, involving:

- Over 200 project management colleagues in Italy and Qatar
- More than 6,000 architectural drawings
- 7,500 person-months of construction management
- Peaks of 4,500 people per day to be managed on site
- More than 500 suppliers and over 5.5 million kg of materials.



The project was extremely complex and demanded innovative technical solutions, exceptionally high standards, the use of extremely valuable materials, meeting tight deadlines, and the production of bespoke architectural elements. Effective management of this complexity depended on excellent collaboration across the Group's designers, project managers and installation experts.



A NEW MODEL FOR MOBILITY

Over a decade on from its inauguration, Hamad International Airport continues to live up to expectations, confirming the quality of the architecture and services offered on the immense surface of its spaces.

With its elegant, modern design, innovation and sustainability, the airport remains an icon of mobility for Qatar and the world, and a source of inspiration for the design of large-scale, complex solutions which push the limits of possibility.



This issue of Façade in Focus is adapted from the book Complexity and Eternal Beauty, published by Permasteelisa Group in 2017.

PROJECT CREDITS

Developer: Government State of Qatar represented by the New Doha International Airport (NDIA) Steering Committee

Architect: HOK, Citterio-Viel & Partners Interiors (premium lounges)

Contractor: SOJV, SMJV

