



WASL TOWER

DUBAI

WASL TOWER, LOCATED IN DOWNTOWN DUBAI AND DESIGNED IN PARTNERSHIP BY UNITED NETWORK STUDIO (UNS) AND LEAD ENGINEERING CONSULTANT WERNER SOBEK, HAS BEEN COMPLETED. ▀

IMAGE: © Johnsey Photography



IMAGES: © Ahmad Alnaji - SARAB

High-Rise Building

“ The Wasi Tower is a 302-metre-tall high-rise structure located off Sheikh Zayed road and adjacent the Burj Khalifa in the heart of Dubai's city centre.



Since 2013, the teams have worked with Wasi Group to create a high-rise in Dubai that supports the UAE's ambition to be a key player in sustainable transformation worldwide, while contributing to the city's drive for world-renowned architecture over the next 100 years. Today, Wasi Tower stands out within the city skyline as an innovative, adaptable, and sustainable landmark in the heart of the city.

The Wasi Tower is a 302-metre-tall high-rise structure located off Sheikh Zayed road and adjacent the Burj Khalifa in the heart of Dubai's city centre. Completed in late 2025, Wasi Tower has one of the world's tallest terracotta ceramic facades, setting a regional standard for the use of this timeless material and its inherent sustainable properties.

The tower's responsiveness and ability to acclimatise to harsh climatic conditions



by way of passive shading and cooling techniques that are articulated throughout the facade, set this building apart in the Dubai skyline. The building's form morphs and folds to minimise solar incident heat exposure while maximising the shielding effect of its abrasion and heat-resistant ceramic cloak. The design's dynamic proximity to infrastructure, varying mix of programmatic typologies, and ambition towards sustainability all provided the catalyst for a solution driven design process.

UNKS' design concept reflects the building's connection to its unique location which enjoys access to the metro, pedestrian walkways, and major roadways. The design

adopts a 'contrapposto' movement, allowing the mixed-used tower to face in multiple directions and offer a constantly changing profile across the city.

Covering 167,733 m², Wasi Tower houses a diverse mixed use programme that includes the Mandarin Oriental Downtown hotel, residential units, offices, and amenity spaces such as the hotel's multi-story health and wellness centre and a convention hall for ceremonies, weddings and conferences, creating a vertical community that caters to a variety of user groups. The design also incorporates elevated public areas, offering unique spaces for socialising, dining, wellness and chance encounters high above the city. »

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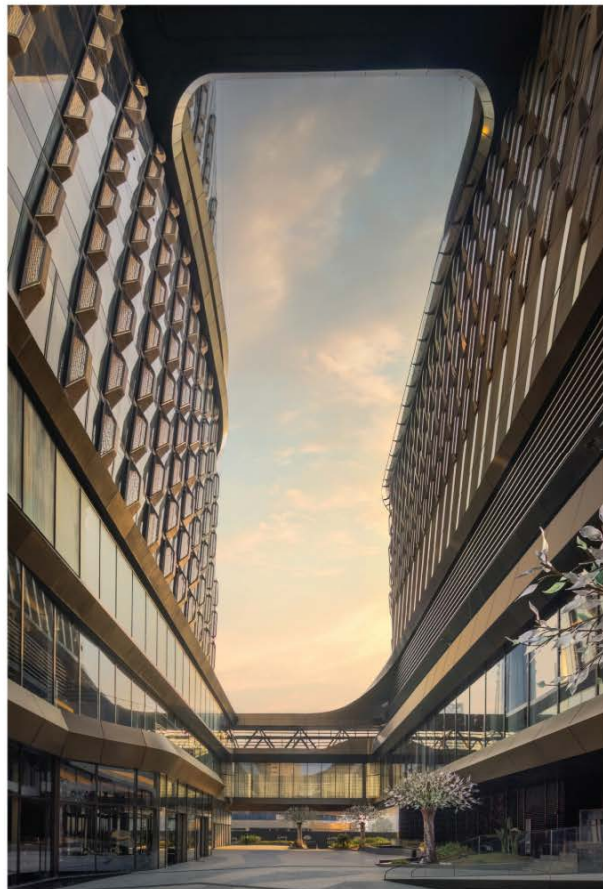
A TRANSFORMATIVE FACADE

West Tower now hosts the region's tallest building to feature a ceramic facade, a robust material chosen for its cultural significance and durability. Thousands of ceramic fins provide shading, reduce heat radiation and capture high winds, adapting to the desert climate while reducing cooling loads by approximately 10% compared to older towers in the city. Ceramics, a traditional material in the region, were reimagined by UNS for high-rise application, combining low-tech manufacturing methods with advanced design techniques, its reinvention at scale

signals a continuity between material heritage and modern innovation.

The facade operates as a 360-degree system, layered in response to the building's solar orientation. The ceramic fins form a protective cloak that wraps around the tower, acting as a passive environmental filter. Their placement and configuration on the facade, developed through parametric modelling, balances environmental performance with aesthetics. The fins allow daylight to penetrate deep into the interior while shielding incident solar heat gain, supporting

both energy efficiency and occupant comfort. Each composite ceramic fin features a custom terracotta profile, baked with a metallic glaze that enables it to transform visually throughout the day and seasons. As the fins channel wind around the building, integrated aluminum grille enable the airflow to cool the heat absorbed by the ceramic modules, while the cavity between the fins and the tower's interior curtainwall system further supports passive cooling. This dual-purpose envelope combines functionality with expressive design, creating a facade that is both energy efficient and visually striking. ➤





IMAGES: © Johnnie Photography

High-Rise Building

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A WALK IN THE CITY

Wasi Tower functions not as a standalone object, but as an urban node connecting infrastructure, programme, and people.

As the first high-rise of its scale on the west side of Sheikh Zayed Road, Wasi Tower bridges two distinct areas of Dubai: the commercial cluster around Burj Khalifa and the street-based development of City Walk. As a response to this distinctive location, the design features semi-public zones, shared amenities, and elevated gathering spaces to create opportunities for interaction and engagement. As such, the tower was designed to welcome not only residents, hotel guests, and employees, but the wider public who can also enjoy its seven restaurants and bars.

Health, comfort, and operational performance were embedded into the project through a Good for the People, Good for the Environment framework, developed by Werner Sobek Green Technologies. The result is a building that supports daily life across different user groups and contributes to the ongoing transformation of Dubai’s ground-level urban experience. »



SUSTAINABILITY, TECHNOLOGY, AND HEALTH TO THE CORE

The design and construction of Wasi Tower incorporated a range of innovations to improve efficiency and reduce environmental impact.

The ceramic fins on the facade reduce solar gain and cooling demand, while solar thermal panels and reflective glazing improve energy efficiency. The tower’s lighting is also managed through daylight-responsive systems, and LED lighting reduces perimeter-zone energy use by up to 20%. An integrated heat pump system and district cooling further reduce the carbon footprint. Materials were selected for their environmental performance, with regionally sourced granite and aluminium, recycled PET acoustic panels, and low-VOC finishes used throughout. Outdoor areas feature passive cooling and planting to create

comfortable microclimates.

The tower’s structural system was designed for efficiency and flexibility. Post-tensioned floor slabs, hybrid concrete columns, and mechanical-level outriggers enabled an efficient floorplate with minimal internal columns. This approach, which had never been used before in Dubai, resulted in 3,000 cubic metres less concrete used in total. Additionally, health and user-comfort were prioritised, with CO2-based ventilation controls, natural daylight access, open floorplates, and clear spatial orientation promoting user wellbeing.

Wasi Tower stands as a testament to UNS’s continuous drive for innovation – creating people-centered, high-performance environments in step with the UAE’s climate agenda. »

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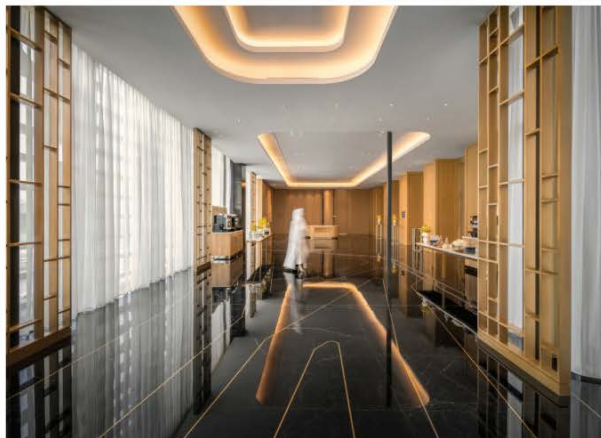
ONE-OF-A-KIND HOTEL

The Mandarin Oriental Downtown hotel within Wael Tower was developed in close collaboration with the hotel operator and GA Design - who were responsible for the interior design concept of the hotel areas. This ensured alignment between the architectural concept and the hotel's specific requirements. As such, the organisation is divided into vertical neighbourhoods, with wellness facilities, dining areas, and event spaces distributed across several levels. The design supports a clear relationship between public arrival, private services, and shared amenities. Public event spaces, such as meeting rooms and celebration areas, are located on the lower levels and remain fully accessible from the ground floor. These spaces open directly onto the ground floor and landscaped courtyard, ensuring transparency and connectivity.



The hotel lobby, located on Level 36, offers a unique arrival experience. Late-evening venues on Levels 61 and 62 provide elevated views of the city, while wellness facilities on Levels 11 and 12 offer a retreat from the urban environment. This spatial arrangement reflects the tower's broader design goals, integrating hospitality with the building's mixed-use programme and embedding a hospitality experience throughout the entire structure.

Reflecting the project's integrated approach to architecture and interior experience, Mandarin Oriental Downtown Dubai was recognised with the Architecture: Hotel Award at the 2025 Identity Design Awards, which celebrate excellence in design across the Middle East. ■



DESIMONE CONSULTING ENGINEERING

DeSimone Consulting Engineering provides structural design, façade and building envelope consulting, vertical transportation consulting, structural detailing, single source steel, fabrication-ready modeling (FIM), forensics, and advisory services across a wide range of building types.

Known for bringing innovation to the creation of exceptional, award-winning buildings all over the world, we pride ourselves in being creative problem-solvers, working relentlessly to achieve each client's vision.

During contractor bidding for the 64-story Wael Tower, DeSimone's structural engineers completed a critical value engineering and design review, developing a material-efficient, highly buildable structural alternative. The hybrid system combines a high-performance reinforced concrete core with composite concrete and steel outriggers connected to six composite perimeter columns.

To support the tower's dynamic form, engineers integrated localized steel bracing, sloping columns, and strategically elongated cantilevers at the corners of post-tensioned slabs. Unitized aluminium and steel bracket systems provide structural backing for the terracotta façade and glass curtain wall, anchoring both to the concrete frame.

DeSimone transformed a complex architectural vision into an innovative, buildable, and efficient reality. The optimized design saved approximately 3,000 cubic meters of concrete and an estimated \$55 million USD while helping to redefine Dubai's skyline. Wael Tower demonstrates DeSimone's commitment to delivering innovative structural engineering solutions that create iconic buildings and lasting value for clients, partners, and communities. ■

For more information, visit: <https://www.desimone.com/>



Wael Tower Dubai, UAE

Structural engineers to UNS and Wael Group

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