

TALL buildings + URBAN habitat

Volume 6



Bibliographic Reference:

Muliani, T. & Dolejsova, M. (eds.) (2023) *Tall Buildings + Urban Habitat, Volume 6*. Chicago: Council on Tall Buildings and Urban Habitat.

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Printed in the USA

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Library of Congress Cataloging-in-Publication Data

A catalog record has been requested for this book

ISBN: 978-0-939493-82-1

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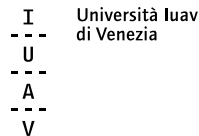
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The projects profiled in this book are those submitted to the Council on Tall Buildings and Urban Habitat's 2023 Global Awards program. See page 306 to learn more about this program.

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Valley

Amsterdam, Netherlands

Over the last two decades as the Zuidas area developed into the main international business center of Amsterdam, there was a reduced focus on residential interests. That is changing with the mixed-use development of the Valley, transforming the area into a more livable and complete urban quarter. This building form is arranged by three rugged towers and takes its name from the green valley in which it is nestled.

The location of the complex sits on the border between residential and commercial functions, forming a connection between green sports fields on the east and the dense urban setting of the business center on its west. By placing residential volumes on top of a multifunctional plinth and pushing them to the very edge of the envelope, the resulting massing reads as one single entity. The unique appearance of the building makes Valley a striking landmark in an otherwise conventional and rather monotonous business district.

In mirroring the corporate surroundings by way of a reflecting glass exterior façade, the design acknowledges its corporate heritage and visually connects to its immediate neighbors. In contrast, the inner façade is carved out of this reflective block, creating a series of stepping, stone terraces with large planters that cover the building in vegetation. These oppositional façade treatments provide the visual transition from business center to a livable residential neighborhood. The residential levels have large windows that open to fresh air and sliding doors to the outdoor spaces with full glass railings protecting against wind and sound, providing unencumbered panoramic views.

The lower levels of the development are publicly accessible and reached by staircases that wind upwards directly from the street level to the 5th floor. Inside the building is the Grotto, a large interior hall providing access to shops, offices, and exhibitions. Natural daylight filters in by two large skylights above.

Committed to the urgency of addressing climate change, the design integrates several approaches to social and environmental responsibility. The latest generation of smart technologies are integrated in the office areas, including IP-

Completion Date: December 2021
Height: North Tower: 100 m (327 ft); South Tower: 80 m (261 ft); Middle Tower: 67 m (219 ft);
Stories: North Tower: 29; South Tower: 23; Middle Tower: 19
Area: 75,000 m² (807,293 sq ft)
Primary Function: Residential/Office
Owner: RJB Group of Companies
Developer: EDGE Technologies
Architects: MVRDV (design); Inbo (architect of record)
Structural Engineer: Ingenieursgroep Van Rossum
MEP Engineer: Deerns
Project Manager: Drees & Sommer Advanced Building
Main Contractors: G&S Bouw; Boele & van Eesteren
Other CTBUH Member Consultants: Arup (façade); Deerns (façade maintenance, vertical transportation); CBRE (marketing)
Other CTBUH Member Supplier: Schüco (cladding)

based Building Automation Systems and various sensors linked to monitoring actual use. This provides accurate occupation data used to adapt lighting, cleaning, energy, and installation maintenance. Additionally, the gardens bring not only a needed greening to Amsterdam's Zuidas business district, they help reduce heat islands, ensure water retention, and increase biodiversity in the area. The extensive planting also helps reduce noise and provide air filtration. The commercial spaces earned a BREEAM-NL Excellent certification and the residential section scores an average of eight for the six benchmarks on the GPR Building scale. Additionally, the Valley has an Energy Performance Coefficient (EPC) of -0.30.

By significantly raising the bar for this prime location with a variety of characteristics, the project has become a striking example of the city's ambition and will function as a promise of sustainability for future developments.





Atlantis The Royal Resort

Dubai, United Arab Emirates

The design of this mixed-use building complex is highly responsive to the physical, cultural, and environmental context of Dubai. Situated on the outer ring of Palm Jumeirah, the building's curvature takes advantage of its location on this man-made archipelago, granting the building two distinct waterfront perspectives: an uninterrupted vista of the Persian Gulf on one side and views of Palm Jumeirah's sheltered lagoon and the Dubai skyline on the other.

Atlantis the Royal functions as a dining, shopping, and entertainment destination for the entire district. The tower is half hotel and half residential, while the podium integrates all functions of a dynamic neighborhood with expansive public areas that have shops and places to eat, providing a walkable destination for visitors and residents. The stepped blocks and gently curving form separate the residential and hotel program while still fostering a sense of community through shared views. The design allows for the indoor-outdoor spaces created between the shifting blocks. These gaps become naturally ventilated and shaded outdoor courts, all to ensure that a significant portion of the hotel rooms and residences have outdoor spaces, private pools, and shaded gardens.

Drawing inspiration from Mozarabic architecture, the design incorporates a combination of breeze, shade, and water. The sky-courts and sky-terraces respond to the environment by leveraging littoral winds for enhanced thermal comfort and are shaded by the blocks above, further cooled by the presence of water. A central skybridge, spanning 90 meters in length, connects the two halves of the complex and serves as a grand gateway. It also adds to the building's iconic silhouette. The skybridge offers pools, lounges, cabanas, and other amenities, creating a lush oasis for visitors. Other design gestures include breezeways that frame conference spaces and resort amenities, and an expansive open lobby at the heart of the complex.

Several strategies mitigate the development's energy use and moderate its microclimate. Sunshades and deep terraces provide shade during the hottest months, reducing interior climate control loads. The building's shape and screen-like form direct breezes over the water and local vegetation, moderating the microclimate of the outdoor spaces. Water features throughout the resort utilize recycled water, contributing to sustainability efforts. These techniques help keep the outdoor spaces comfortable all year round. In addition, a district approach leveraging the existing infrastructure found at Palm Jumeirah, and other high-efficiency energy and mechanical choices help minimize the building's impact.



Completion Date: October 2022

Height: 178 m (584 ft)

Stories: 46

Area: 408,365 m² (4,395,604 sq ft)

Primary Functions: Hotel/Residential

Owner: Investment Corporation of Dubai

Developers: Investment Corporation of Dubai; Kerzner International

Architects: Kohn Pedersen Fox Associates (design); DEC Dynamic Design Studio (architect of record); IBI Group Architects (architect of record)

Structural Engineers: Arup; WSP

MEP Engineer: WSP (design)

Project Manager: Turner International LLC

Main Contractors: BESIX; Ssangyong Engineering & Construction

Other CTBUH Member Consultants: WSP (civil, façade, LEED, sustainability, vertical transportation); RWDI (wind)

Other CTBUH Member Suppliers: Siderise (fire stopping); Doka GmbH (formwork); ArcelorMittal (steel)



Quay Quarter Tower

Sydney, Australia

Quay Quarter Tower uniquely repositions an existing underused building, provides world-class office space, and activates a livelier public realm for the people of Sydney. The design was influenced by its surrounding context, project constraints, as well as a focus on sustainability and well-being. At street level, the podium contains retail and improves visual and physical permeability, activating the public domain. Taking advantage of the Sydney climate, the internal market hall extends to external terraces, and the podium rooftop park and cafe provide a new destination and much-needed greenery. The podium's sandstone façade and indentations in the massing pay homage to the adjacent heritage buildings, harmonizing the tower and the street-level experience.

The project embraced upcycling the existing 1976 AMP Center, retaining a significant portion of its beams, columns, and slabs, as well as over 95 percent of its existing core. This approach resulted in substantial embodied carbon savings of over 12,000 metric tons in concrete alone. The repositioned tower consists of five stacked volumes, each arranged around an atrium facing the iconic Sydney Harbor to the north. These atria serve as informal social spaces, activating the workspace and promoting interaction among occupants to create a vertical village. Natural daylight permeates the 2,000-square-meter floor plates improving the energy efficiency and well-being of the interior.

The stepped and shifting northern façade of the building reflects its context as it ascends. The lower blocks of the tower face Young Street, an active precinct, while also providing views of the Sydney Harbor Bridge. As the blocks rise, the façade gradually shifts towards the east, offering wider harbor views that include the Botanical Gardens and the Sydney Opera House. This design approach ensures that the building does not cast additional shadows over the adjacent Royal Botanic Gardens or the public museum space to the south.

Going far beyond just adapting the existing structure, the design adds approximately 45,000 square meters of new construction, doubling the floor area and creating a new world-class high-rise office from an outdated, underperforming building. The building also exceeds the operational carbon

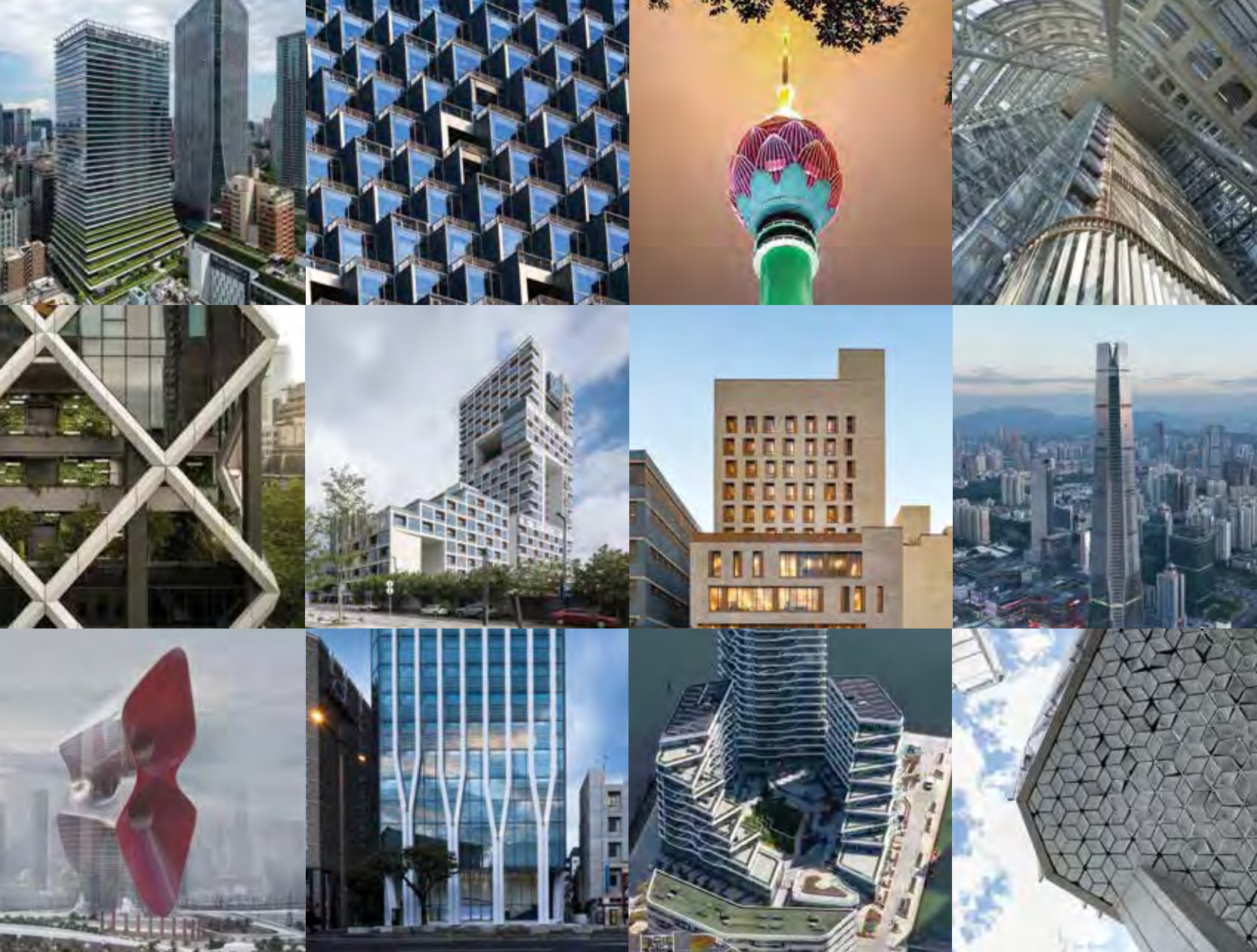
Completion Date: April 2022
Height: 210 m (690 ft)
Stories: 52
Area: 102,000 m² (1,097,919 sq ft)
Primary Function: Office
Owners/Developers: AMP Capital Diversified Property Fund; AMP Capital Wholesale Office Fund
Architects: 3XN (design); BVN (architect of record)
Structural Engineers: ADG Engineers (Aust) Pty Ltd (design); BG&E (design); Kasina Consultants Pty Ltd (peer review)
MEP Engineer: Arup
Project Manager: Pier Property Corporation
Main Contractor: Multiplex
Other CTBUH Member Consultants: Arup (civil, fire, sustainability, vertical transportation); Aspect Studios (landscape); CPP Wind Engineering Consultants (wind)
Other CTBUH Member Suppliers: GERB Vibration Control Systems, Inc (damper); Schindler (elevator); Doka GmbH (formwork)

performance of many newly constructed buildings, achieving a 6-Star Green Star rating and is on track to attain a NABERS 5.5 Energy Office rating. The workspaces have achieved IWBI WELL Gold certification. The self-shading façade reduces solar radiation, minimizing mechanical loads on the building and maximizing views of Sydney Harbor. And finally, the tower provides much-needed greenspace in the dense urban quarter. In addition to the atria, the building also boasts an acre of outside space. A public garden on the podium rooftop and a three-tiered rooftop space provides workers with access to outside space throughout the tower.

The building is also designed for flexible future uses. An innovative removable floor system in the atria means that occupants can opt to remove floor sections or add them back. This flexibility can cater to a range of occupiers and adapt to changing needs as businesses grow or as work practices evolve.







To best serve the inhabitants of the increasingly dense global urban environment, city-shapers must approach the city through an interdisciplinary lens, integrating the tall building into the urban fabric by considering its role as essential urban infrastructure. As cities face a host of challenges, climatic, socio-economic, and otherwise, the projects depicted here provide potential solutions in support of livable, sustainable, and healthy urban communities.

This volume highlights the very best innovations and projects, spanning the range of disciplines involved in city-making, from urban design, to interiors, to specialized engineering, all converging to make the city more resilient and enduring.

The Tall Buildings + Urban Habitat book is produced annually by the Council on Tall Buildings and Urban Habitat (CTBUH), the global authority on the inception, design, construction, and operation of tall buildings and future cities.

