Council on Tall Buildings and Urban Habitat Awards 2015: Exemplifying Tall Building Trends

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The 14th annual Council on Tall Buildings and Urban Habitat (CTBUH) Awards Symposium, Ceremony, and Dinner was held once again on the campus of the Illinois Institute of Technology, Chicago, on 12 November 2015. The programme featured iconic structures from around the globe that have contributed and demonstrated innovative concepts to the skyscraper industry.

Each year, the CTBUH recognises projects that have made extraordinary contributions—such as achieving sustainability at the highest and broadest level—to the advancement of tall buildings and the urban environment. Tall buildings present a polarising presence in their cities, admired for their sheer height or skyline silhouettes, yet criticised for their poor environmental performance and street-level experience. The objective of the awards is to deliver a comprehensive and sophisticated view of these important buildings, while advocating for improvements in every aspect of their performance, especially those that have the greatest effect on the people who use these buildings each day. This often means that the buildings highlighted are not necessarily the tallest in a given year, but they embody the best qualities and innovations in the typology.

The CTBUH Awards jury—chaired by Wong Mun Summ, Founding Director of WOHA Architects—had its hands full when 123 projects were nominated for the 2015 awards, a new Council record. From that daunting list, winners were first selected in four regions: Bosco Verticale for Europe, One World Trade Center for the Americas, CapitaGreen for Asia & Australasia, and Burj Mohammed Bin Rashid for the Middle East & Africa. Additionally, a winner was chosen for the Urban Habitat Award, which acknowledges a tall building that contributes positively and significantly to its surrounding urban realm. This year, the Urban Habitat Award was given to PARKROYAL on Pickering in Singapore.

This year's winners and finalists are remarkable in that they show a strong commitment to sustainability, with some exemplifying dramatic progress in the use of greenery both to enhance the comfort of the building's users and reduce the environmental impact of the building. Concepts of vertical greenery are still relatively new to the industry, and, as a result, many architects are experimenting with ways to include vegetation at height using innovative designs, technologies, and forms. The resulting structures push the limits of what is considered possible for high-rise design and point towards the direction that the industry is headed.

Senior representatives from each of the four regional winners were invited to give presentations at the symposium, after which the jury convened to deliberate on an overall winner. As in years past, the symposium audience was also asked to vote on a winner, and for the first time the two choices differed from each other. While the jury favored Bosco Verticale, the audience preferred One World Trade Center.

Each of this year's award winners is reflective of the trends that are shaping the future of the industry, in not just vertical greenery, but also improved sustainability, greater attention to local context, advanced structural integrity, and connections to the surrounding built environment, to name a few.

TOP
Bosco Verticale, awarded the Best Tall Building Worldwide and Best Tall Building Europe, is home to enough plants for an entire hectare of forest cover (Photo: Elena Giacomello).

BOTTOM
The Best Tall Building Asia & Australasia was awarded to CapitaGreen, an office tower that was modelled after a living tree (Photo: CapitaLand Limited).

Best Tall Building Winners

BOSCO VERTICALE

Best Tall Building Worldwide
Best Tall Building Europe

Award Recipients Fondo Porta Nuova Isola, COIMA, Hines Italia, Boeri Studio, Arup, Deerns, Colombo Costruzioni S.p.A., ZH Construction Company S.p.A., Dolce Vita Capital S.r.l., Studio Emanuela Borio, and Studio Laura Gatti
Location Milan **Completion Date** 2014

The Best Tall Building Worldwide and Best Tall Building Europe was awarded to Bosco Verticale, one of the most intensive living green façades ever realised. It utilises an architectural concept that replaces traditional cladding materials with screens of vegetation creating a distinct microclimate that works to improve the sustainability of the structure. This type of design creates an urban ecosystem that encourages interaction between the flora, fauna, and the apartments' residents. The tower is home to 480 big and medium size trees, 250 small size trees, 11,000 groundcover plants, and 5,000 shrubs, which is equivalent to an entire hectare of forest.

Along with creating a beautiful façade, the incorporation of vegetation into the structure adds a number of sustainable design elements. The foliage acts to improve air quality by filtering out dust and sequestering carbon, while also mitigating the urban heat island effect and reducing noise pollution. As a whole, the living green façade concurrently stimulates interaction with the surrounding environment while also protecting against it.

Speaking of his vision for a vertical forest, Stefano Boeri, Founder and Senior Architect of Boeri Studio, said, "I started to imagine a tall building not covered in glass, not covered in minerals, but covered by leaves. Not ornamental plants, but real leaves from real trees." From this concept, Boeri executed his vision with precision. The result is a one-of-a-kind building that reexamines the fundamental nature of what a tall building can achieve.

CAPITAGREEN

Best Tall Building Asia & Australasia

Award Recipients CapitaLand Commercial Trust, CapitaLand Limited, Mitsubishi Estate Asia, Toyo Ito & Associates, Architects, RSP Architects Planners & Engineers Pte Ltd, Sasaki and Partners, Takenaka Corporation, Langdon & Seah (Singapore) Pte Ltd, Squire Mech Pte Ltd, Sitetectonix Pte Ltd, Arup Singapore Pte Ltd, Lighting Planners Associates (S) Pte Ltd, Mitsubishi Jisho Sekkei Inc, Square Peg Design, and RWDI **Location** Singapore
Completion Date 2014

CapitaGreen is located within Singapore's Central Business District and in close proximity to downtown Marina Bay. The building, which was conceptualised as a living plant, channels cool air from above the building through a petal-like wind scoop and an inner duct. The cooler, fresher air is then delivered to the tenants of the building. CapitaGreen's façade is covered with abundant foliage, giving the tower its iconic appearance. Plants are also placed within its innovative double-skin façade which features floor-to-ceiling curtain glass walls that reduce solar heat gain and let in natural sunlight into the offices. Along with its ornate design, the building is unique in that it is the first in Singapore to use "supercrete", an ultra-high-strength concrete which significantly reduces the amount of concrete needed, resulting in a reduction in energy and manpower.

Inspired by Singapore's traditional environment, Shinichi Takeuchi, Chief Architect of Toyo Ito & Associates, Architects, said, "We intended to reproduce the forest by means of new architectural strategy and make CapitaGreen a new symbol for twenty-first-century Singapore by reconsidering the relationship between architecture and nature." With a clear design direction and thoughtful planning, CapitaGreen has indeed succeeded in developing a new relationship between building and environment.

The Burj Mohammed Bin Rashid has a smooth, sleek, and reflective façade designed to ensure minimum maintenance in a dusty environment. It was awarded Best Tall Building Middle East & Africa (Photo: Foster+Partners).

ONE WORLD TRADE CENTER

Best Tall Building Americas

Award Recipients 1 World Trade Center LLC, Silverstein Properties, Port Authority of New York and New Jersey; The Durst Organization, Skidmore, Owings & Merrill LLP, WSP Group, Schlaich Bergermann und Partner, Leslie E. Robertson Associates, Jaros, Baum & Bolles, STV, Tishman Construction, Cerami & Associates, Philip Habib & Associates, Code Consultants, Inc., AECOM, Arnold & Porter LLP, Benson Industries, Permasteelisa Group, Lerch Bates, Mueser Rutledge Consulting Engineers, Mathews Nielsen Landscape Architects; Peter Walker Landscape Architects, Brandston Partnership, Inc., Claude Engle, The Hettema Group, Ducibella Venter & Santore, Viridian Energy & Environmental, LLC, Philip Habib & Associates, Jaros, Baum & Bolles, Pentagram, RWDI, CS Group Construction Specialties Company, Viracon, ThyssenKrupp, Grace Construction Products, Dow Corning Corporation, Sika Services AG, and ArcelorMittal **Location** New York City **Completion Date** 2014

One World Trade Center is a new landmark for New York City rising from the northwest corner of the six-hectare World Trade Center site. The building's podium has a square plan that matches the dimensions of the first World Trade Center towers, while its roof and parapet heights also symbolically reference the heights of the original buildings. The tower's eight stainless-steel edges also recall the reflective corners of the first twin towers. Its four corners slope gently from the first office level inward until, at the roof, the floor plan again forms a square but rotated 45 degrees from the base quadrangle, and with a reduced dimension. Depending on the viewer's perspective and angle of light, in turn, One World Trade Center appears as a rectangular solid or a tapering obelisk.

A luminous glass curtain wall sheaths the tower on all sides from the 20th floor to the observatory, which contributes to the tower's crystalline elegance. Designers worked with industry experts to develop glass of unprecedented scale, capable of withstanding the wind loads of super tall construction while meeting stringent security requirements. Insulated glass units span the full floor-to-floor height of each storey with no intermediate mullions—a first in skyscraper construction. The building not only seeks to redefine the World Trade Center's relationship to greater Manhattan, but also offers flexible, state-of-the-art office space fit for the city's premier organisations.

BURJ MOHAMMED BIN RASHID

Best Tall Building Middle East & Africa

Award Recipients Aldar Properties, Foster + Partners, Halvorson and Partners, ChapmanBDSP, Atkins, Arabian Construction Company, V3 Companies, Arup, Lerch Bates Europe, RWDI, Yuanda, Manntech, and SANTA MARGARITA **Location** Abu Dhabi **Completion Date** 2014

Burj Mohammed Bin Rashid is located in the heart of Abu Dhabi at the site of the old Central Market, a traditional crossroads and meeting point in the city. A souk extends the marketplace into the building, facilitating a gentle transition between public and private spaces. A smooth, sleek, and reflective façade is designed to ensure minimum maintenance in such a dusty environment. Meanwhile, layers of internal shading control glare and unwanted heat gain. The exterior envelope of the tower undulates in waves as it wraps around the core. This glass cladding creates a mirage effect that alludes to its geographic context.

The billowing design of the tower generates unique floor plans that deviate widely from those found in a typical tall building, resulting in an assortment of multiform spaces. Apartment layouts maximise living space at the corners of the structure, emphasising its curvature and providing dual-aspect views. Shared services are controlled by a centralised automated system in order to optimise energy performance, and local building materials were used wherever possible during construction to reduce the economic and environmental costs of transporting imported materials.

The Best Tall Building Americas went to One World Trade Center. The building's structure pays tribute to the first World Trade Center towers (Photo: James Ewing).

PARKROYAL ON PICKERING

Urban Habitat Award

Award Recipients UOL Group Limited, Pan Pacific Hotels Group, WOHA Architects Pte Ltd, TEP Consultants Pte Ltd, Beca Carter Hollings & Ferner S.E. Asia Pte Ltd, Tiong Seng Contractors (Pte) Ltd, CCW Associates Pte Ltd, Meinhardt Facade Technology (S) Pte. Ltd, Tierra Design (S) Pte. Ltd, LJ Energy Pte Ltd, and Rider Levett Bucknall
Location Singapore **Completion Date** 2013

PARKROYAL on Pickering was named Urban Habitat Award for its extensive greenery and pedestrian-oriented integration with the ground plane.

PARKROYAL on Pickering is located in the midst of Singapore's high-density city center, and achieves its "hotel-in-a-garden" concept through extensive amount of landscaping carefully integrated into the building's design. The project incorporates extensive greenery and landscaping throughout.

A contoured podium responds to the street scale, drawing inspiration from the terraced landscapes of rice paddies. These contours create dramatic outdoor plazas and gardens, which flow seamlessly into the interiors. The building appears to hover above the ground, resting on a series of columns that resemble the trunks of trees. This structural solution opens up the footprint underneath the building, making way for an expansive vegetated buffer between the street and a covered walkway that encircles the perimeter. This "urban verandah" establishes a cool, protected thoroughfare along the entirety of the block.

Multiple, extensive sky gardens are inserted along the façade, bringing lush greenery directly to the guestrooms and public areas. There are 15,000 square metres of plantings, water features, waterfalls, terraces, and green walls in the many sky gardens. In terms of scale, the landscaping amounts to 215 percent of the site area, showing that even as our cities become taller and denser, we do not have to lose our green spaces. CG