

**Title:** **Connecting the City: People, Density & Infrastructure**

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# Connecting the City: People, Density & Infrastructure

### Abstract

*The future of humanity on this planet relies on the collective benefits of urban density; reducing both land consumption and the energy needed to construct and operate the horizontally dispersed city. Tall buildings must now be the vehicles for creating increased density, not just through sheer height, but by connecting multiple layers of the city. Physical urban infrastructure, circulation, greenery, and urban functions traditionally restricted to the ground level would all, ideally, continue up and into the building, such that the buildings themselves become an extension of the city: a part of the two-dimensional horizontal urban plane flipped vertical.*

*The 2017 CTBUH Conference explores these, and many other, ideas in the fertile ground of Sydney, Melbourne, and Brisbane, Australia; all of which are lauded worldwide for their high quality of life, but nevertheless are grappling with contemporary global-city challenges: density vs. suburbanization; modernity vs. historical preservation; infrastructure vs. urban life, etc. The following pages contain highlights of the Conference program which represent the incredible diversity of practitioners and thinkers coming together for five days, spurring discussions that will last much longer.*

**Keywords:** Connectivity, Urban Planning, Vertical Urbanism, Density, infrastructure

### Quay Quarter Tower, Sydney



The unique and iconic Quay Quarter Tower is a highly innovative new building, to be built at the Circular Quay area in Sydney. The tower, set to open in 2020, comprises

five shifting glass volumes stacked upon each other, rotating away from the base, creating “working villages” more intimate in scale. This rotation will enhance views over the Opera House and Sydney Harbour, and helps self-shade the northern façade from intense afternoon sun, while creating significant outdoor sky garden terraces. Critically, the new project will preserve and restore some of Sydney’s signature laneways that had been obscured or interrupted by earlier projects, allowing pedestrians to pass through its base on a public right of way. Perhaps most remarkably, the Quay Quarter Tower is not a fully new-build project; rather, it is a radical renovation of an existing 1976 building, the AMP Centre, reusing 60% of its structural system but rendering the building almost unrecognizable.

**Completion Date:** 2020 (expected)

**Height:** 216 m

**Stories:** 54

**Area:** 102,000 m<sup>2</sup>

**Primary Function:** Office



Quay Quarter Tower, Sydney. © 3XN

### CTBUH 2017 International Conference

Quay Quarter Tower will be discussed in depth in Session 2B: Quay Quarter Tower Sydney, Monday 30 October at 11:15 a.m., chaired by **Eve Clark**, Design Director of AMP Capital Investors

### The Role of Tall Buildings in the Sustainable Sydney 2030 Plan

**Plenary 1: Connecting the City**  
Monday 30 October, 9:00 a.m.



Monica Barone, CEO,  
City of Sydney

Adopted in 2007, after 18 months of extensive consultation, the **Sustainable Sydney 2030** plan describes how the City Council will achieve a compact city that is

“green, global and connected.” The plan’s narrative describes the nexus between environmental performance, economic prosperity and social well-being. It provides the overarching framework for everything that is undertaken at the City of Sydney and every resource that is allocated. It is obviously critical to the plan that tall and dense development be implemented intelligently and strategically along transport corridors. With so much investment occurring in that network today, and the price of housing at historic highs, now is the time to reconcile the plan’s vision with the reality happening on, under, and high above the ground.

## Architectural Agency

Session 3B: *Connecting the City: A Global Perspective*  
Monday 30 October, 1:45 p.m.



Joshua Prince-Ramus,  
Founding Principal, REX  
Architecture

No building typology has so radically ruptured the status quo of the urban environment as the skyscraper. And none has so quickly been enslaved by convention, its rote universality leveling context. Tower design is predominantly a normative reaction to *a priori* development concerns. However, if architectural agency is acknowledged and engaged in the definition of first development principles, design can be proactive. It can salve/solve financial exposure, contractual tensions, schedule constraints, limited local building capabilities, and even difficult cultural norms. Exploring these root challenges with a critical naiveté yields designs that are so strategically and functionally specific – so effectively unconventional – that they also offer profoundly unique aesthetic experiences. While not “looking like their surroundings,” such designs are nonetheless enablers of new, tailored opportunities for their built and social environs, and hence deeply contextual. With these factors in mind, architectural agency can turn conventional high-rise development on its head, and for the better.

## Beyond Tall: The Living Building

Session 2G: *Future Technologies*  
Monday 30 October, 11:15 a.m.



David Malott, CTBUH  
Chairman/Founder &  
CEO, AI.

In a world that is rapidly urbanizing, we need innovative approaches that not only sustain, but actively adapt and respond. Technology has the power to augment architecture: to turn an inherently static system into one that is responsive. Spaces, buildings, and even cities will have



International Towers, Sydney. © Lendlease

## International Towers, Sydney



The three-building International Towers complex is the first major project in the redevelopment of Barangaroo South into a new waterfront

extension of Sydney's CBD. International Towers was conceived as three sibling buildings with varying heights and specific design features, to provide each building with its own identity. One of the identity markers is in the arrangement and color of the vertical solar shades applied to the exterior façades, improving the thermal performance of the buildings. The elevator cores were positioned to the northern edge of each building footprint, providing for expansive office floor plates while also further reducing energy consumption through a reduction of glazing on each building's northern exposure.

Designing workspaces around social interaction was a key part of the design process. It was important to provide communal meeting areas beside the elevator cores interlinking workers throughout each building. The entirety of the roofs, both at the podium and uppermost levels, are also available as open-air terraces, courtesy of

utilizing a centralized mechanical plant to efficiently provide services to all three buildings. At street level, all three buildings share a common basement and single entry point for vehicles, in order to enhance the pedestrian-friendliness of the towers' intersection with the ground.

**Completion Date:** 2016

**Height:** 217 m (Tower 1)/178 m (Tower 2)/169 m (Tower 3)

**Stories:** 51 (Tower 1)/43 (Tower 2)/40 (Tower 3)

**Area:** 118,000 m<sup>2</sup> (Tower 1)/98,658 m<sup>2</sup> (Tower 2)/90,105 m<sup>2</sup> (Tower 3)

**Primary Function:** Office

## CTBUH 2017

International Conference

Ivan Harbour of Rogers Stirk Harbour + Partners, architect of International Towers, will speak in Plenary 3: *The Future of Connected Cities and Skyscrapers*, Tuesday 31 Oct at 3:45 p.m. The building will also host the **Day 1 Networking Reception**, on Monday 30 Oct at 6:00 p.m.

the ability to communicate with each other and with us. The advent of faster, cheaper, and smaller computing powered by 4G/5G connectivity allows flexible and rapid deployment in both new and existing buildings. Machine learning platforms such as IBM Watson's Cognitive IoT enable a next generation of architecture of not only form, space, and material – but of responsiveness, empathy, and learned behavior. The role of the architect will be transformed from designing core-and-shell to programming of

user experiences in digitally augmented buildings. The pairing of real-world environments with digitized versions of themselves will create new ways to interact with the physical world via tangible and intuitive interfaces. These emerging technologies can be “tamed” and put to great use at both the urban and the human scale.



Australia 108, Melbourne. © Fender Katsalidis Architects

## CTBUH 2017

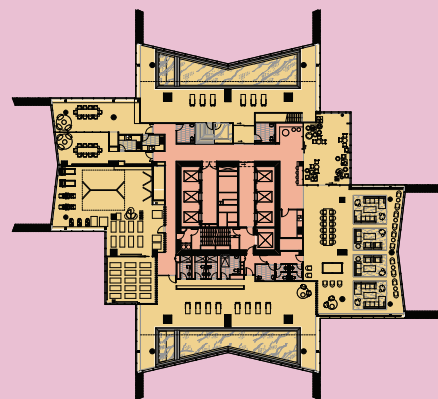
International Conference

**Karl Fender** of Fender Katsalidis Architects, architect of Australia 108, will present **"The Future of the Australian Skyscraper"** in Plenary 3: *The Future of Connected Cities and Skyscrapers*, Tuesday 31 October at 3:45 p.m.

## Australia 108, Melbourne



Australia 108 is set to become the Southern Hemisphere's tallest residential building. It is designed as a sculptural counterpart to Eureka Tower, with which it will form a visual gateway to Melbourne's western coastal regions. To be delivered by Singapore's Aspiat Development Group, the 100-story tower will deliver 1,105 apartments of all shapes and sizes when completed in 2019. The smallest one-bedroom apartments are just over 50 square meters, and the largest apartment – a multi-level penthouse – recently sold off plan for over AU\$25 million. The building comprises an engaging combination of orthogonal and softly-curved forms, punctuated at two-thirds of the building height by a dramatic, two-story gold "starburst." The planned form of this element, which houses the residential community's leisure and recreational



Australia 108, Melbourne – Level 70 "starburst" plan. © Fender Katsalidis Architects

facilities, is derived from the Commonwealth star on the Australian flag.

**Completion Date:** 2020 (expected)

**Height:** 317 m

**Stories:** 100

**Area:** 138,266 m<sup>2</sup>

**Primary Function:** Residential

## Humanizing TOD Infrastructure

*Session 4A: Connected Buildings and Urban Mobility*  
Monday 30 October, 3:45 p.m.



Fred Clarke, Senior Design Principal, Pelli Clarke Pelli

Over the last decade, a team of architects have worked towards delivering the Salesforce Transit Center in downtown San Francisco – otherwise known as the "Grand Central of the West" – and the adjacent Salesforce Tower, which will be the city's tallest building when

complete. The burgeoning Transit Center district, centered on the Transit Center's rooftop park, has become one of the most successful examples of transit-based urban design and development in the world. This project illustrates the benefits of transit-based urban infrastructure development. In particular, it showcases the ways in which large-scale infrastructure can be humanized, making it open, friendly, supportive of the public realm, and welcoming to a wide range of users. It also demonstrates how a combination of public development and private enterprise can contribute positively to

a dense central downtown district. Transit-based development is a familiar typology internationally, especially in Japan and China. The United States, however, has tended to push these projects to the city's edge, prioritizing the private automobile and adding to unsustainable low-density urban sprawl. Projects like the Salesforce Transit Center and Tower can reverse this trend.

## PassivHaus – The Standard for High-Comfort, Low-Energy, and High-Quality Construction

*Pre-Conference Workshop: PassivHaus for High-Rise*  
Sunday 29 October, 8:30 a.m.

*Session 3G: Smart Technologies*  
Monday 30 October, 1:45 p.m.



Johanna Trickett, ESD Consultant, Aurecon

Australia faces the urgent need to significantly reduce carbon emissions, despite the challenge of population growth. Our cities are growing in response to the

“No building typology has so radically ruptured the status quo of the urban environment as the skyscraper. And none has so quickly been enslaved by convention, its rote universality leveling context.”

– Joshua Prince-Ramus, Founding Principal, REX Architecture

need for additional urban accommodation. But how are we supposed to decrease our emissions without rapidly increasing our buildings' performance? The PassivHaus tool offers an answer to this question. This low-energy building standard is currently gaining major traction around the world. More than 20,000 commercial and residential projects have been built to date using this approach. Describing a small number of building performance requirements, it is simple in principle – but not easy to achieve. A key requirement is a healthy balance of energy gains and losses, achieved through high-performance façades and heat recovery ventilation. Certified buildings achieve an energy reduction of 75 to 90%. The PassivHaus vision emphasizes comfortable living with uniformly warm walls, floors and windows. It presents a building condition where drafts, condensation and mold growth are no longer a problem, and provides a permanent supply of fresh air with a pleasant temperature. In combination with the standard's stringent comfort benchmarks, this can only be achieved through high-quality building design and construction. The pH standard offers a tool that verifies quality construction, high occupant comfort, and low energy consumption through third-party certification.

## The Future of the Workplace

*Plenary 2: Panel Discussion*

*Tuesday 31 October, 9:00 a.m.*



Anthony Henry, *Head of Workspace Design, Macquarie Group*



Robbie Robertson, *Partner, Deloitte Consulting*



Jennifer Saiz, *Head of Group Property, Commonwealth Bank of Australia*



Cameron Scott, *Chief Operating Officer - Corporate Solutions, JLL*



Steve Watts, *CTBUH Chairman-Elect/Partner, alinea Consulting*

As companies continue to occupy dense urban centers, the workplaces therein must constantly evolve across numerous dimensions: tenant demands, overall market shifts, environmental standards, and technological advancements, to name a few. We frequently hear that the open office is the best environment for collaboration and serendipitous interactions – but we also hear about a backlash toward open and “deskless” offices.

Telecommuting is getting a second look, but communication technology is more prevalent and pervasive than ever. Attracting new talent can mean outdoor spaces at height, daycare and healthcare facilities

on-site, and many other disruptions to the traditional “glass box” office building model. What will be the trajectory of these influencing factors? How will they take form in the highly competitive global high-rise market? One thing is certain: the next generation of high-rise workplaces won't look like the last.

## Wynyard Place, Sydney



Brookfield's Wynyard Place, currently under construction in the heart of Sydney, perfectly embodies the Conference theme of “Connecting the City: People, Density &

Infrastructure.” At the heart of this transformational project is a grand urban room housing Wynyard Station's new transit hall, opening up connections between the city's commercial hub of George Street with the historic Wynyard Park and integrating the restored heritage buildings Shell House and 285 George Street. This will allow for better connectivity with the surrounding neighborhoods and Sydney as a whole. The transit hall will be flanked by prime retail amenities for office workers and visitors, and above will be a new Premium Grade commercial office tower. With an appearance characterized

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International Conference

Ken Shuttleworth of Make, architect of Wynyard Place, will present “Wynyard Place” in the Opening Plenary: *Connecting the City: Sydney*, Monday 30 October at 9:00 a.m.

by the playful arrangement of interlocking rectangular blocks, the development's 34-story, 6-Green Star-rated office tower will read differently from every angle and optimize views from within.

**Completion Date:** 2019 (expected)

**Height:** 134 m

**Stories:** 34

**Area:** 70,200 m<sup>2</sup>

**Primary Function:** Office



One Wynyard Place, Sydney. © Brookfield

“The shift to residential development over the past two decades has been at the expense of vital commercial floor space. In the last four years alone, 52% of new floor space developed in Central Sydney was residential.”

– Graham Jahn, Director of City Planning, City of Sydney



Circular Quay Tower, Sydney. © Foster + Partners

## Circular Quay Tower, Sydney



Circular Quay Tower will be the centerpiece of an urban regeneration precinct that will reshape the northern end of the CBD into a vibrant community.

Taking advantage of its topography and unique location near Sydney Harbour, the tower will be an exciting new addition to Sydney's iconic skyline, also contributing to its status as a global city.

Located between George and Pitt streets – near to the city's famous harbor – the Circular Quay Tower scheme is characterized by a network of pedestrian laneways that cross the site at different levels. The laneways will be lined with shops, cafés, and bars, celebrating Sydney as a unique destination. The tower makes a distinctive contribution to Sydney's skyline with its innovative façade – a series of external cross-braces derived from structural stress diagrams. The southern façade is broken down into three bays, with the concrete cores “book-ending” the three transparent

banks of lifts that animate the façade. The entire elevation is vertically articulated to modulate its visual impact on the skyline. The expressed structure also allows flexibility in interior layouts, with the core offset to one side. The innovative workspaces at Circular Quay Tower are flexibly designed to support new ways of working in the 21st century, so that anyone from a new start-up to large companies can enjoy this prime urban location.

**Completion Date:** 2021 (expected)

**Height:** 263 m

**Stories:** 54

**Area:** 50,000 m<sup>2</sup>

**Primary Function:** Office

## CTBUH 2017

International Conference

Gerard Evenden of Foster + Partners will present “Circular Quay Tower: The Next Tallest Office Building in Sydney” in the Opening Plenary: *Connecting the City: Sydney*, Monday 30 Oct at 9:00 a.m.

## The Impact of the Central Sydney Planning Strategy on Tall Buildings

Session 3F: Density and Urbanity in the Sydney Context  
Monday 30 October, 1:45 p.m.

Session 4B: Circular Quay Tower:  
Aligning Private and Public Outcomes  
Monday 30 October, 3:45 p.m.



Graham Jahn, Director of City Planning, City of Sydney

The Central Sydney Planning Strategy sets urban design policy for the critical CBD area through 2036. It identifies and translates the setting for the heart of modern Sydney to

grow in stature and importance. It builds on the success of a truly mixed-use center and the transformational investment that different sectors can bring into the city with the right framework and settings.

The shift to residential development over the past two decades has been at the expense of vital commercial floor space. In the last four years alone, 52% of new floor space developed in Central Sydney was residential. Based on a business-as-usual scenario to 2036, between 45 and 64% of the projected growth of up to 85,000 jobs will not be able to find space in Central Sydney. Therefore, under the strategy, buildings of 55 meters' height or greater can contain no more than 50% residential program.

Additionally, taller buildings and flexibility in floor space ratios will be allowed on designated “strategic opportunity” or “tower cluster sites.” Very tall towers, which may be built on select sites that do not overshadow public spaces or impact on important views and heritage areas, will be commercial-only floor space. There will be opportunities for towers up to 310 meters in height, for non-residential uses, and floor space ratios will be determined by individual, site-specific, built-form outcomes. These opportunities will not be enshrined in the base planning provisions, but instead would need to be the subject of site-specific amendments to the Local Environmental Plan.

For metropolitan Sydney to retain its global-city status, and Central Sydney its primacy as Australia's commercial core, space must be secured for job growth. The Strategy will increase the amount of additional floor space to more than 2.9 million square meters. This unlocked development capacity will accommodate employment growth under modest projection scenarios.

## What If We Used Nature as the Benchmark for Performance?

*Session 7B: Greening the Vertical Realm  
Tuesday 31 October, 1:45 p.m.*



Mary Casey, Director,  
Social Infrastructure, HKA

For many years in sustainability, we have used our past performance as the benchmark for our current work. This approach was valuable in building awareness, but it has taken us as

far as it can go. By definition, it is backward-looking, and cannot provide any guidance about how to get to where we want to be.

I propose a new benchmark: Nature. What if we used biomimicry as a basis for a new design brief for tall buildings and urban habitat? Architecture's highest civic aspiration is to express who we wish to be as a community, as a culture. What if we extended that idea and asked architecture to also describe who we wish to be as a species?

Seeing nature as model, measure, and mentor affords us the opportunity to design according to our best vision of ourselves in relationship to our ecosystems. In doing so, we would obtain: improved resiliency in our infrastructure; adaptive designs specifically suited to their place; increased health, well-being, and productivity in our human population; and improved biodiversity in our urban environment.

Through the lens of biomimicry, we will ask the question: What is the role of tall buildings in the urban ecosystem? What might we discover?



**Brisbane Skytower** will be featured in the Brisbane Regional City Program, in Session 1, Thursday 2 November at 12:30 p.m. and in Session 2, at 3:00 p.m.

## Brisbane Skytower, Brisbane

**Brisbane Skytower** will be the latest addition and tallest apartment building in Brisbane's skyline, which is rapidly transforming into that of a world-class city. Set adjacent to the botanic gardens and steps away from the bending Brisbane River in two directions, the project contains 1,135 apartments and 1,877 square meters of commercial space. It features four podium levels and shares an eight-story basement with an adjacent hotel development. The structure is reinforced concrete and comprises a triangular core and a finely detailed high-performance glass curtain wall. The shape and aerodynamics of the design enable the tower to avoid the need



Brisbane Skytower, Brisbane. © NRA Collaborative

for mass damper tanks, freeing up valuable penthouse level floor area and improving the project's viability. Having said this, water at height plays a crucial role in distinguishing the building from peers – it will support Australia's highest infinity pool at the tower's crown.

**Completion Date:** 2018 (expected)  
**Height:** 270 m  
**Stories:** 89  
**Area:** 120,400 m<sup>2</sup>  
**Primary Function:** Residential

## Bridging Fire-Safety Gaps

*Pre-Conference Workshop: Fire Performance of Façades  
Sunday 29 October, 8:30 a.m.*

*Session 6C: Engineering for Threats  
Tuesday 31 October, 11:15 a.m.*



Simon Lay, Director,  
Olsson Fire & Risk

The recent tragic fire at Grenfell Tower in London has added a new impetus to understanding the fire safety challenges which have emerged in recent years with regards to modern cladding systems and

materials. Unlike other recent high-rise fires where the façade has been a contributory factor, the scale of the death toll at Grenfell marks a shift in the appreciation of the potential risks and creates a greater urgency. As the pace of tall building development in emerging economies continues to increase,

it is essential that fire safety risks that emerge in established economic regions are also addressed globally.

No one government or company can tackle these issues. The CTBUH is a unique organization that brings together the skills and experience to not only understand the challenges but propagate solutions. The Fire Performance of Façades Working Group and Workshop will map out the challenges and pathways to solve these problems. In the room at these seminars and in this group will be the necessary skills to enact change, and it is very much hoped that anyone with an interest in the challenges of fire in high-rise buildings can contribute.



One Queensbridge, Melbourne. © FloodSlicer

## Crown Sydney Hotel & Resort + One Queensbridge, Melbourne



Crown Resorts, one of Australia's largest entertainment groups, is simultaneously developing two signature towers in the nation's two largest cities.

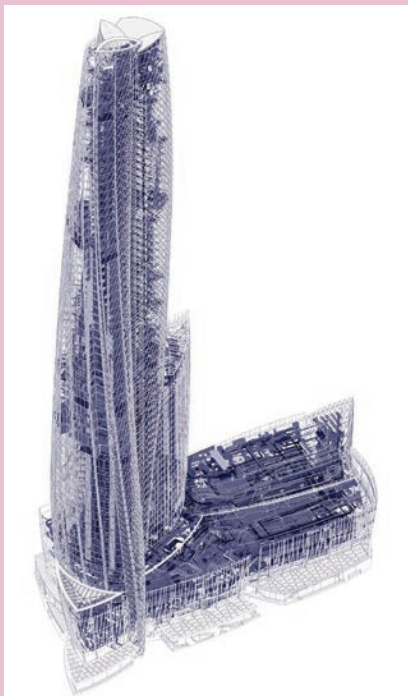
The concept for the Crown Sydney Hotel and Resort is an "inhabited artwork" that takes advantage of its spectacular site, providing a visual marker to the northwest corner of the city's main central business district, and at the same time, offering spectacular views across to the Sydney Opera House and the harbor. Part of the Barangaroo South development, Crown Sydney is a mixed-use residential/hotel/casino project on the Darling Harbour waterfront. The spiraling tower has no two floor plates shaped alike, requiring the development of a helical perimeter-column system and a triangulated

diagrid structure to support the curtain wall where its curvature is most extreme. Its three petal-shaped segments join together at the top, forming a spectacular three-story "sky villa."

Located in Melbourne's Southbank area, One Queensbridge will comprise approximately 700 apartments and a 388-room five-star hotel, incorporating a publicly accessible observation deck with a restaurant, bar, and garden terrace. The design interlocks three spectrum shapes to provide a sculptural composition. The tapering forms allow the tower to read as a beautiful object with a unique identity, contrasting against the more rigid forms of the adjacent buildings. A key component of the design is a new pedestrian link bridge that will provide hotel guests with all-weather access from the lobby of the new hotel to the Crown Melbourne integrated resort.

**Crown Sydney Hotel and Resort**  
**Completion Date:** 2019 (expected)  
**Height:** 271 m  
**Stories:** 75  
**Area:** 77,500 m<sup>2</sup>  
**Primary Functions:** Residential/Hotel/Casino

**One Queensbridge**  
**Completion Date:** TBD  
**Height:** 324 m  
**Stories:** 90  
**Area:** 299,000 m<sup>2</sup>  
**Primary Functions:** Residential/Hotel



Crown Sydney Hotel and Resort, Sydney.  
 © Wilkinson Eyre

### CTBUH 2017 International Conference

Chris Wilkinson of Wilkinson Eyre, architect of the Crown Sydney and One Queensbridge, will present "Urban Policy Towards Tall Buildings Globally: The Architect's Perspective" in Session 2A: Urban Policy, Monday 30 Oct at 11:15 a.m.

## Connectivity's New Paradigm: Rope-less Elevators

Session 3H: Public Realm – Interior Systems  
 Monday 30 October, 1:45 p.m.



Dario Trabucco, CTBUH  
 Research Manager

Multi-layered streets, bridges spanning between buildings across active roads, flying vehicles to ease commuting, cities fully integrated in three dimensions... These are not the novel plans

of a contemporary, visionary urban planner; rather, they are visions of architects who imagined how cities would have evolved, over a century ago. Now, thanks to recent developments in the elevator industry, a multiply-connected 3D city can be realized, releasing the visionary designs of today's architects from the "evolutionary bottleneck" created by the constraints of incorporating conventional elevators in tall building and urban design. How will the cities look in the future? How will tall building districts be designed, when the street level is no longer the only point of connection or interaction for building users? A CTBUH research study, "A Study on the Design Possibilities Enabled by Rope-less, Non-Vertical Elevators" sponsored by thyssenkrupp, investigates the possibilities that will be enabled for architects and urban planners by the introduction of rope-less, non-vertical elevator technologies.

## Vertical Schools: Are They On the Up?

Session 4C: Vertical Schools  
 Monday 30 October, 3:45 p.m.



Shu-Hsin Soong, Technical  
 Director & Education Sector  
 Leader, AECOM

Primary education is continuing to evolve and transform through the creation of vertical schools, in the shape of new-build facilities or through repurposing and "upcycling" existing buildings. To

successfully deliver vertical city schools not only involves sound engineering and

architectural design, but also the development of new policies and plans that support their use. There are extensive opportunities and challenges to vertical schools. In their design, we must consider how students arrive at school in an already busy city, either through kiss & drop zones or public transport. We must understand that students play where open space is at a premium within our densified cities. And, we must address the building and urban design of new vertical city schools to ensure current pedagogical needs are met, and that design policies are developed to address a school's sense of arrival, location, and operation. No matter how the typology changes, we must still ensure that they look like education facilities.

## Using the Power of Building Data To Create Better Environments

*Session 4A, Connected Buildings and Urban Mobility  
Monday 30 October, 3:45 p.m.*

*Session 7G: Smart Building Solutions  
Tuesday 31 October, 1:45 p.m.*



Peter Halliday, Global Head, Building Performance and Sustainability, Siemens Building Technology

Big data and smart sensors are playing an increasingly significant role in connecting buildings with their operators, occupants, and the cities of which they are part. The Internet of Things and analytic capabilities are creating more

efficient buildings that create value for their owners/occupants, and interact more productively with the urban energy grid and other important infrastructure.

What role do buildings serve within urban environments and how can data help to create more perfect places to work and live? The process begins with a strong understanding of the KPIs that are most relevant for success. Next, the right data needs to be carefully sourced, in order to create insights through advanced analytics and the application of human expertise. By taking action either on-site or remotely, working and living conditions are improved,

## Collins Arch, Melbourne



The AU\$1 billion Collins Arch development transforms an entire 6,000-square-meter city block of Melbourne on the axes toward Docklands, Parliament

House, North Melbourne, and the entertainment precinct across the Yarra River.

Collins Arch connects a variety of key urban typologies; office space, a five-star hotel, retail, restaurants and cafés, over 200 luxury residential apartments and 2,000 square meters of civic space. The arch combines these multiple layers in a striking interconnected dual form.

The design team placed an emphasis on the evolution of texture and materials, considering the building form's transition upward from the ground plane. The eastern façade articulates the relationship between the hotel and residential areas while breaking down the overall scale of the building. At ground level, the façade is defined by a series of frames, providing a sense of scaled-down strength and



Collins Arch, Melbourne. © Woods Bagot

operating and capital expenditures are reduced, and the building becomes an active contributor to balancing the energy grid and advancing the progression of clean energy options. This is an exciting time to be constructing, retrofitting, and connecting buildings in urban habitats. Opportunities are available today to make investments more effective, operations more sustainable and building occupants safer and more productive.

## CTBUH 2017 International Conference

Kate Frear of Woods Bagot will present "Collins Arch – Evolution of Mixed-Use," in Session 4A of the Melbourne Regional City Program, Friday 3 November at 11:00 a.m.

placement as the building meets the surrounding streets.

The design is premised on a complementary set of criteria: an urban design rationale links the project to a larger public space network, while the mixed-use development privileges the activation of the ground plane to create a landmark destination.

**Completion Date:** 2020 (expected)

**Height:** 146 m

**Stories:** 42

**Area:** 49,000 m<sup>2</sup>

**Primary Functions:** Residential/Hotel/Office

### Editor's Note:

A comprehensive guide to all the Conference presentations can be found in the **2017 Conference Proceedings**, available at the Conference and on the CTBUH Web Shop at <http://store.ctbuh.org>

