

ARCHITECTURE · INTERIOR DESIGN · LANDSCAPING · M.E.P. SYSTEMS

January / February 2022

# SEAB

SOUTHEAST ASIA BUILDING

**THE GREEN ISSUE**

## Sustainability in Landscape Architecture

ON THE COVER: The Metro Forest / Bangkok, Thailand

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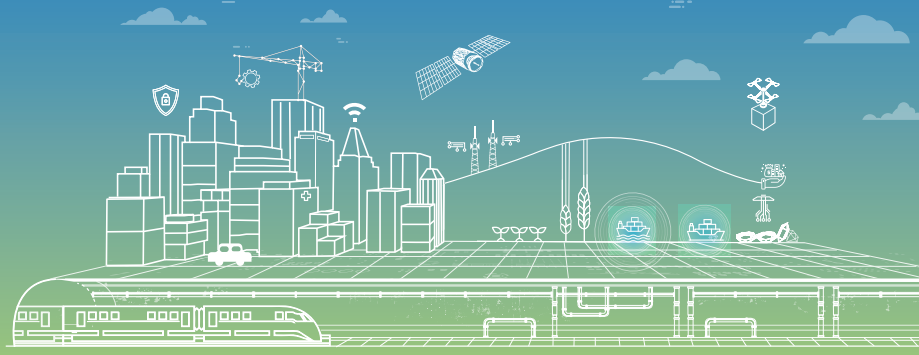
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**On the Cover:** The Metro-Forest in Bangkok, Thailand. Photographer: Rungkit Charoenwat

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**H**ello dear readers, happy new year and welcome to the first issue of 2022. This year, we have a new format to make our magazine more interesting. As you can see on the cover, the theme

for the Jan/Feb issue is on sustainability in landscape architecture. We have showcased projects that have put sustainability at the forefront of their design. These include landscape projects such as the Metro-Forest on the cover. In this project, TK Studio Co., Ltd has designed an urban forest for ecological regeneration in Bangkok.

Landscape architecture also includes designing parks and playgrounds. Since the theme is on sustainability, we have compiled some playground projects that have used eco-friendly equipment and building material.

We also had the opportunity to interview: a) Dr. Srilalitha Gopalakrishnan, President, Singapore Institute of Landscape Architects (SILA) and b) Jürgen Böhler, APAC CEO of TK Elevator in this issue.

In the PDF version of this Jan/Feb 2022 issue, we have included a product showcase section and a show review of Architecture & Building Services (ABS) 2021. So don't forget to download the PDF copy from our website: [seab.tradelinkmedia.biz](http://seab.tradelinkmedia.biz).

Take care and stay safe.

*Amita Natverlal*

**MARCH/APRIL 2022 ISSUE**

The Technology Issue – Digitalization in Architecture  
Digital tools and processes such as Building Information Modeling, Augmented Reality, Internet of Things, 3D modeling, and 3D digital renderings are changing the way architects build and this issue looks at how digitalization is shaping the built environment. Includes projects, trends and experts' opinion.



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## Aedas projects win Bronze at the 2021 MIPIM Asia Award

**Hong Kong** – At the 2021 MIPIM Asia Awards Ceremony held on 9 December 2021, Aedas was announced Bronze Winner for two exceptional projects:

### **1. Shanghai EDGE, Shanghai, PRC** (by Executive Director Wei Li, and Global Design Principal Ken Wai) Best Mixed-Use Development – Bronze Winner

Located in the Suhewan area near Shanghai's old city, Shanghai EDGE is a three-dimensional edifice in the high-density urban space with suspended volumes, comprised of retail and cultural blocks as well as ample public platforms. Its ingenuity lies in its optimal architectural form, the vertical stacking design, which has made possible the natural division of functions. Through deploying skillful techniques, floor area is maximised to carve out breakout spaces for leisure and a host of creative endeavours. The development is in essence a vessel for the public's cultural life, in service to the city and its communities.

### **2. International Sports and Culture Exchange Center, Shenzhen, PRC** (by Executive Director Chris Chen, and Executive Director Leon Liang) Best Futura Project – Bronze Winner

Marked by a 3.6 kilometres vertical running track wrapped along the building envelope, Shenzhen Futian International Sports and Culture Exchange Centre is a community landmark building that integrates sports, culture and social interaction. The vertical stacking strategy is adopted to integrate the development's multifunctional spaces, supporting office and public facilities within a high-rise building mass, enabling each program to operate independently while staying connected through open spaces. The centre serves to meet the diverse needs of citizens, provide Futian with 24/7 integrated development, and establish itself as a culture and lifestyle hub in the Greater Bay Area of China.



International Sports and Culture Exchange Center, Shenzhen, PRC. Photo: © Aedas



Shanghai EDGE, Shanghai, PRC. Photo: © Aedas



# Cooling Singapore

## with Nippon Paint COOL-TEC SolaReflect Coatings

The urban heat island (UHI) effect, compounded by global warming, has significantly affected the thermal comfort of major cities around the world. It is especially severe in Singapore, where our dense built environment contains numerous urban canyons that trap heat in the surfaces of their buildings and roads, elevating outdoor temperatures to uncomfortably and even dangerously high levels.

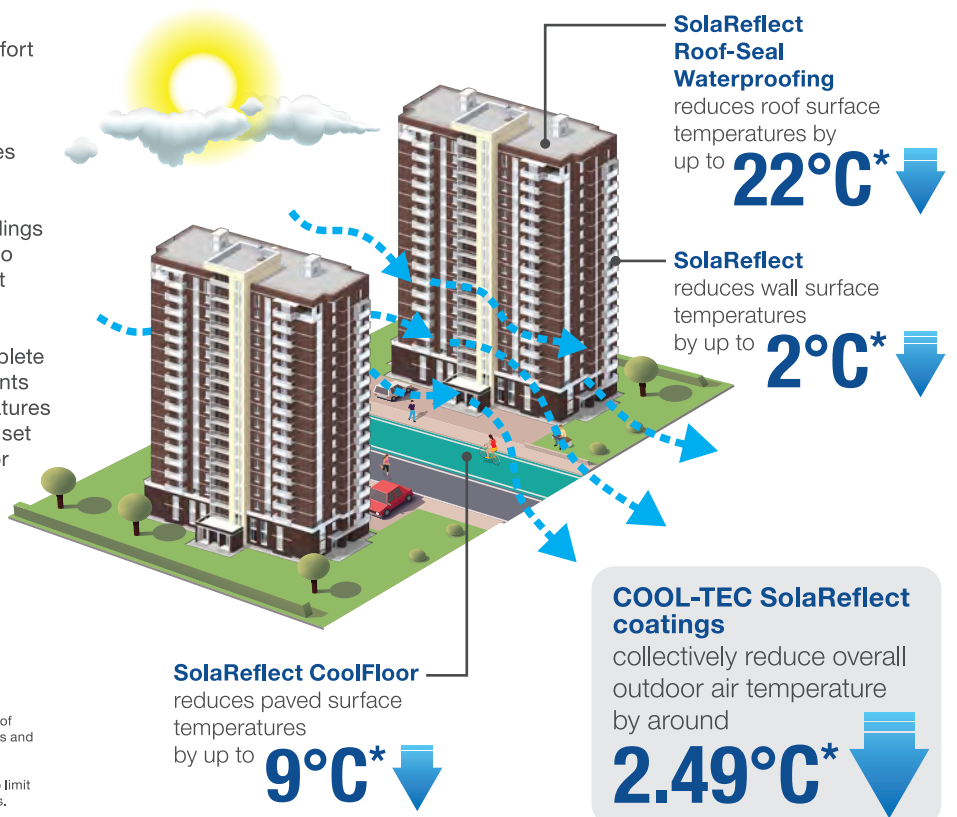
While it is clearly not viable to structurally alter existing buildings or change the map of our city, solar-reflective coatings – also known as cool paints – can reflect solar radiation from built surfaces and back into the atmosphere.

**Nippon Paint COOL-TEC SolaReflect coatings** are a complete cool paint coating system for roofs, exterior walls, pavements and roads that can collectively reduce outdoor air temperatures by 2.49°C<sup>1</sup>. This temperature reduction exceeds the target set by the Paris Agreement<sup>2</sup> and significantly improves outdoor thermal comfort for pedestrians and the local community.

To find out more about how you can help make Singapore a greener, cooler and more liveable city with COOL-TEC SolaReflect coatings, contact Nippon Paint today.

<sup>1</sup>Results of a case study conducted by independent researchers in Singapore on the effects of COOL-TEC SolaReflect coatings on roofs, walls and roads on lowering surface temperatures and ambient (outdoor air) temperatures.

<sup>2</sup>The Paris Agreement is a legally binding international treaty on climate change. Its goal is to limit global warming to well below 2°C, and preferably to 1.5°C, compared to pre-industrial levels.



## Digital Blue Foam – A global SaaS building design platform, launches

**Singapore** – Digital Blue Foam (DBF), a Singapore-headquartered global Software-as-a-Service (SaaS) building design platform has launched, having invested two million US dollars in development over the last couple of years. The DBF platform is a web-based interactive generative design tool uniquely bringing together software, artificial intelligence (AI) and data. It replaces legacy technologies commonly used in the sector, while adding geospatial data, sustainability validation, and city scoring, making design faster, better, and more cost efficient.

DBF is also in discussions on a funding round, with the new funds supporting expansion, recruitment, and platform enhancements. There are also expansion plans for Asia, Europe, and the Americas. On a mission to make sustainable building design accessible, they will double down on interactive AI "flavours", unique to DBF and its Generative Design capabilities.

The DBF platform is a building design tool made for architects, planners, developers, and educators. It is the brainchild of architects Camiel Weijenberg and Sayjel Vijay Patel. Camiel has 10 years of experience running his architecture studio; he has also worked for Zaha Hadid Architects. Sayjel is a Founding Professor at the Dubai Institute of Design and Innovation (DIDI) and an Alumni of MIT.

The two co-founders are modernising the archaic Architecture, Engineering, and Construction (AEC) industry, by providing technology powered by artificial intelligence (AI). This industry-disrupting technology improves efficiencies and reduces project timelines, enabling higher quality design, creating better buildings and cities.

According to McKinsey & Company, the construction industry is increasing its emphasis on R&D, with greater investment in construction technology. Global R&D spending by the top construction companies grew by 77 percent from 2013 to 2017. COVID-19 is accelerating this further, driving investments in digitalization.

DBF Co-founder Camiel Weijenberg said, "Buildings are the fabric of cities, and sustainably designed buildings are a necessity today. The built environment is responsible for 40 percent of global Co2 emissions. Climate change is the existential challenge of this generation, and cities cannot continue to be designed as they still are. We need to adapt and change our ways, fast!"

"Our software integrates the core elements of the design process – data collection, 3D modelling, sustainability validation, city score, project comparison, and drawing production – within a single online tool. The tool syncs to various Building Information Modelling (BIM) software like Archicad, Revit, Rhino3D, SketchUp," concluded Camiel.

The DBF platform is a web-based interactive generative design tool uniquely bringing together software, artificial intelligence (AI), and data. The platform incorporates geospatial data into the design process, including web-based APIs from maps, environmental services, 3D data sets of the



Sayjel Vijay Patel, CTO & Co-Founder, (on the left) and Camiel Weijenberg, CEO & Co-Founder (on the right). Photo courtesy of Digital Blue Foam.

context, etc. This data is carefully scrutinized, selected, and presented in an easy-to-use environment.

The DBF AI includes – real-time Daylight Autonomy Score, Solar Radiation Simulation, Instant Shadow Study, Wind Score, and Sun Path Animation – inputs that allow a designer to validate a design in real-time without the use of expensive and complex software while designing a net-zero Co2 building.

DBF also created a proprietary neighbourhood scoring system to automate descriptive spatial metrics of neighbourhood quality based on geo-location. The technology supports the "15-minute city" planning strategy, which places amenities and services within a 15-minute walk of residents, a critical sustainability metric. The 15-minute-City concept includes residential, office, health, institutions, public facilities, commerce, markets, restaurants, transportation, and utilities.

An early DBF user, Takenaka Corporation is one of Japan's five largest and oldest construction companies. Using DBF, they have accelerated project design delivery by 750 percent. One large project that would traditionally take four years has been reduced to just one year. Takenaka now has over 20 teams and 500 users on the DBF platform, including their architects, BIM Managers, real-estate developers, and construction managers across Takenaka subsidiaries.

DBF is also working with the next generation of architects and planners to lead change within the industry. In Singapore, DBF is working with Professor Dr. Clayton Miller from the National University of Singapore (NUS) and in Singapore University of Technology and Design (SUTD), DBF is working with multiple professors in the Architecture and Sustainable Design (ASD) Department.

The DBF name comes from the hot-wire cut blue foam models used by architecture and planning students in design schools. The platform, with 7000+ users, is priced similar to popular tools like Figma or Canva for individual users to enterprise teams, accessible through subscription.

**To find out more about the platform and pricing plans, visit [www.digitalbluefoam.com](http://www.digitalbluefoam.com).**

## Prestigious 2021 Good Design Award for Sustainability goes to Aboriginal Health Hub in Newman, WA

**Sydney, Australia** – Sydney-based Kaunitz Yeung Architecture has received two prestigious 2021 Good Design Awards, including the top Award for Sustainability for their design of the Puntukurnu Aboriginal Medical Services Healthcare Hub in Newman, Western Australia.

The Good Design Award for Sustainability is awarded to an entry that represents the highest level of excellence in sustainable design practice. The Award is limited to only one recipient that, in the judge's opinion, will have a positive impact in promoting excellence in sustainable design.

Andrea Elhers, a member of the Good Design judging panel, said; "The judges drew from the entire field of 'Good Design' award entries for the design for 'sustainability award,' and we were looking for design initiatives that create substantial change in environmental, economic, and social outcomes.

"The judges' panel selected the Puntukurnu AMS Healthcare Hub (PAMS) in Newman, Western Australia, as the 'design for sustainability award' for social sustainability. "This project shows outstanding leadership in the co-design process which was manifested into the built environment, and its users have applauded that process. The judges were impressed that through this inclusive, respectful design and approach, the community has genuine ownership of the centre. It has also brought health, well-being, and social cohesion outcomes. "On behalf of the jury, congratulations to Kaunitz Yeung Architecture and the community who committed to designing an exceptional social and culturally sustainable outcome."

The project was also recognised with a 'Best in Class' accolade at the awards, which are one of the longest-running international design awards, promoting excellence in design and innovation since 1958. The Good Design Award for 'Best in Class' is limited to the top 30 projects in the Good Design Awards and represents the highest level of design excellence in Architectural Design and absolute best in class design.

David Kaunitz, Director at Kaunitz Yeung Architecture, said, "We are thrilled that the Newman Health Clinic has been recognised with two accolades including the best in Sustainability at the 2021 Good Design Awards. This recognition highlights that high quality, award-winning architecture is not a matter of cost, but commitment and true collaboration with the people for whom the buildings are being designed and built for. This project combines best practice / culturally appropriate clinical care that is connected to people, country and culture. The rammed earth was made exclusively with earth from the site. The art screens were made from the art of seven artists, selected by the communities and representing all the communities serviced by the building. The endemic native landscaping shades the central courtyard and provides a new un-fenced public park. The 150kW rooftop photovoltaic system delivers the largest solar power rooftop in the area and is a standout feature providing close to 100 percent solar energy and saving PAMS



**Puntukurnu Aboriginal Medical Services Healthcare Hub in Newman, Western Australia. Photography Robert Frith, Acorn Photography**

thousands in operating costs. This project is the culmination of all we have learnt from working with Martu communities for the last four years and the communities of the Western Australian Desert for the last decade. Their generosity and wisdom have taught us so much. The project shows what is possible with true collaboration with Aboriginal people and we thank them wholeheartedly."

The PAMS Healthcare Hub is the first primary healthcare facility to be constructed in Newman and serves the 10,000 strong population of primarily Indigenous Australians and surrounding remote communities. The site's design was facilitated in close consultation with the local community, ensuring that architectural elements are appropriate to culture and country. Indeed, the hub features rammed earth from the site itself.

The clinic, which was commissioned by the Puntukurnu Aboriginal Medical Services (PAMS) and located 12,000 kilometres north of Perth in the remote town of Newman, has been well received in the community with over 15,000 patient visits since opening at the end of July 2020.

Robby Chibawe, CEO of PAMS, said, "The respectful and collaborative approach by Kaunitz Yeung Architecture with the Martu Elders and communities has created a deep sense of ownership and pride in this health centre amongst the local community."

Kaunitz Yeung Architecture has built a strong reputation in collaborating with communities, stakeholders and end-users to produce internationally recognized architecture within modest budgets that places people at the centre of buildings. They have a significant body of award-winning architecture and have worked in more than 30 Aboriginal & Torres Strait Island communities, 200 Pacific Island communities as well as in Asia.

## AURECON-WSP joint venture to lead the new MTR Hung Shui Kiu Station design in Hong Kong

**Hong Kong** – The MTR Corporation announced the award of a design consultancy to AURECON-WSP Joint Venture after the tender process to carry out the planning and design for Hung Shui Kiu Station of the Tuen Ma Line. The Hung Shui Kiu Station will serve the future transport needs of the Hung Shui Kiu/Ha Tsuen New Development Area, bringing convenience to residents and reducing travelling time. The scope of the consultancy includes development of the scheme into an engineering design, preparation of the construction programme, gazette plans and project cost estimate, as well as liaison with government departments and other stakeholders. The AURECON-WSP Joint Venture will work closely with the Corporation's Capital Works team to deliver the consultancy.

According to MTR Corporation, the award of this contract marks a major milestone for the Hung Shui Kiu Station project. The new station on the Tuen Ma Line will be situated at the future town centre of the Hung Shui Kiu/Ha Tsuen New Development Area and will provide residents with railway connection to other areas in Hong Kong. The Hung Shui Kiu Station project will serve the future transport needs of the Hung Shui Kiu/Ha Tsuen New Development Area and also release the development potential in the vicinity. The team will maintain ongoing dialogue with the community during the design and construction of the project.

Other works relating to the Hung Shui Kiu Station project,



including ground investigation and survey of existing utilities, will also commence soon.

In May this year, the Government invited the Corporation to proceed with the detailed planning and design of the Hung Shui Kiu Station project. The project includes a new Hung Shui Kiu Station, located on the Tuen Ma Line between the existing Tin Shui Wai and Siu Hong stations. The main construction works are expected to commence in 2024 for completion in 2030.

## Second edition of Geo Connect Asia 2022 returns in March 2022

**Singapore** – Geo Connect Asia (GCA) 2022, the second edition of Southeast Asia's geospatial and location intelligence event, returns to Singapore on 23 and 24 March 2022 at the Marina Bay Sands Expo & Convention Centre.

International events organiser Montgomery Asia said that the event will have twice the number of participants and double the capacity of floor space than the inaugural event in 2020. The second edition will be in a largely in-person format but also comprise of a virtual component to cater to the wider audience in Asia. Virtual attendees may attend a series of webinars, schedule online matchmade meetings or utilise event quick chat functions.

GCA 2022 will be held concurrently with two other industry shows: Digital

Construction Asia (DCA) and Unmanned Aerial Vehicle (UAV) Asia. Together, all the shows will bring together the latest innovations in surveying and monitoring equipment, sensors, robotics and mapping solutions, etc., under one roof.

Themed "Geospatial & Location Intelligence Solutions for Asia – Underground, Land & Sea to Sky", GCA 2022 seeks to address the increasing interplay between ground and satellite technologies, and artificial intelligence (AI) and data analytics, amid growing momentum towards a Geospatial 4.0 world. Visitors can look forward to a comprehensive showcase of the latest technologies and solutions for government and non-for-profit markets, and multiple industry verticals.

Singapore has long been established

as a technology-centric business gateway for the ASEAN region and beyond, and has had a continued focus on advancing geospatial capabilities to support smart services and solutions. Subject to prevailing safe management measures and border policies, GCA 2022 is set to position Singapore as the preeminent regional meeting place for the industry, hosting over 80 international exhibitors and 2,500 professional visitors, alongside 100 enterprises, associations and agencies featuring all aspects of geospatial technologies, digital construction and UAV solutions.

Rupert Owen, Co-Founder of Geo Connect Asia, said, "We are delighted to bring back Geo Connect Asia in March 2022 as an in-person focused

show and conference. As geospatial solutions become more applicable in most industries, and more accessible via ground and satellite imagery, especially in the Southeast Asian region, the desire to meet and discuss developments and opportunities is evident. With ever-expanding opportunities, we see the industry being transformed into an exciting space in which to operate. The addition of digital construction and UAV solutions as complementary industries in one event will enable solution providers to experience first-hand a full range of exciting industry developments in Singapore."

The event will be graced by Guest-of-Honour Edwin Tong SC, Minister for Culture, Community and Youth and Second Minister for Law, who will deliver the opening address. Also in attendance will be Colin Low, Chief Executive of the Singapore Land Authority (SLA), and Dr Nadine Alameh, Chief Executive Officer of the Open Geospatial Consortium (OGC).

### Geo Connect Asia Conference

The Geo Connect Asia Conference 2022 will facilitate knowledge transfer among industry players to address some of the world's leading challenges. By encouraging interoperability, open sourcing and the sharing of key learnings from the pandemic, there is increased opportunity for improving productivity in predominantly traditional industries and accelerating rapid change in others.

Packed into two full days, the conference will comprise over 10 fireside chats featuring over 50 prominent industry speakers, panellists and moderators. Preview of the conference topics include:

- Digital twins for the built environment & climate-resilient communities
- Recycle, renew, refresh – repurposing the urban landscape
- Managing the future of city data – structure, sovereignty & sustainability
- Coastal resource protection and

flood planning, recovery & resilience

- Building biodiversity & the greening of communities
- Information mapping for sustainable information exchange
- Earth observation & satellite innovations – microscopic analysis from the sky
- Drones for good & goods
- Geo AI & robotics
- Women in geospatial technology
- Geo-entrepreneurship: creating a new wave of start-ups
- What's new in Maptech?

Concurrently, GCA 2022 is curating four expert stage programmes, namely Smart Agriculture, Digital Construction Asia, UAV Asia, and Digital Underground Connect. Several free-to-attend programmes include the Tech Talk and PropTech stage. Geo Connect Asia 2022 will launch its full programme and registration in January 2022.

**For updates and announcements, visit [www.GeoConnectAsia.com](http://www.GeoConnectAsia.com).**

## 10 Design completes Lakefront Shopping Mall in Zhuhai

**Hong Kong** – International architecture practice, 10 Design (part of Egis group), welcomes shoppers to the 117,000 square metres designed mall that sits on the edge of Jinsha Lake in Zhuhai, China. Jinwan Mall is 10 Design's second project to complete on Huafa's Jinwan Aviation City, along with the recently built Industrial Service Centre and soon to be completed International Business Centre.

Jointly led by Design Partners Ted Givens and Scott Findley together with Project Partner Miriam Auyeung (COO), the retail scheme envisions the integration of a traditional courtyard garden with hypermodern space. The development weaves together the main mall, retail street and the waterside pavilions consisting of F&B and retail spaces, with ample outdoor spaces opening onto the lake. The retail street and the mall are tied together with the glass canopy spine that allows for weather-proof connectivity and use of the amenities. The facade which takes the form of Chinese stacked stone walls wraps around the scheme, coming alive with its rhombi shapes inspired by the 4th-dimensional hypercube. It plays with the gradient by a mixture of dark and light panels to break up the massing, as well as the lighting features acting upon perforated panels at night.

Design Partner Ted Givens commented: "Our design for Jinwan Mall transforms the regular shopping mall into an outdoor retail experience closely linked to nature, creating a new paradigm

of how people experience retail spaces and bringing a new destination to Zhuhai's Jinwan District".

The urban frontage of the development along the roads creates an insulated appearance in contrast to the open, pedestrianised lakefront side of the mall. The perimetral wall facing the main streets is solid to prevent noise, except for two subtle openings acting as main entrances and glass fissures that allow dramatic views into the mall. The inner wall opens toward the lake and waterfront gardens via glass façades along with cascading down staircases and green terraces, blurring the line between the retail space and nature.

The circulation is made effortless like a meandering stroll through the garden, starting from the entrances to the mall's atrium, retail street and opening up to the garden and lake, by multiple pathways and interwoven spaces. The development's unique retail planning involving features such as the courtyard fountain and flexible waterfront space for pop-up shops and performance stages encourages gathering and lingering by visitors to the area.

Project Partner Miriam Auyeung (COO) commented: "The Jinwan Mall development has been designed to maximise the nature and outdoor lifestyle of Zhuhai whilst tying it to the hypermodern concepts of discovery and exploration. This new retail destination will provide the city with a public landmark that is inviting and accessible for all."

## Niklas Braun becomes Technical Director of the LAMILUX Heinrich Strunz Group

**Rehau, Germany** – Niklas Braun succeeds Joachim Hessemer, who retired after 27 years with LAMILUX, one of Europe's leading manufacturers of skylights, glass roof constructions, smoke and heat exhaust ventilation systems (SHEVS), and complex building control systems. It all started in 2002 when the civil engineering graduate came to Upper Franconia, where he spent 12 years working for the Rehau Group. There he held various management positions within the production, research, development and technology and innovation management divisions.

With his wealth of international experience and knowledge gained from years as Group Managing Director of the Rehau Group, Executive Vice-President

of the automotive supplier faurecia and member of the Executive Management of Bolta Werke GmbH, among others, he will in future be the head of the technology division for skylights and complement the extended management team of the internationally active family-run company based in Rehau, which currently employs a workforce of around 1200 people.

"For me, the focus is always on dealing with people, be it colleagues or customers. Success only comes when you have a connection to people and understand what their needs and concerns are," explains Niklas Braun. In his new position as Technical Director of Skylights, he is also looking forward to working with his team to develop and offer our customers products,



Niklas Braun. Photo: © LAMILUX

innovations and world premières that inspire people, and to build on existing successes in the field of skylight technology.

## HENN wins competition to design Brainergy Hub

**Berlin, Germany** – HENN has won the competition to design Brainergy Hub in Jülich, Düren in Germany. The distinctive, circular design is the heart of a new knowledge hub dedicated to sustainable and renewable energy research. HENN's innovative use of material, form and renewable technologies means the Hub is not only passive, but energy producing, and will function as the brain and battery of the Brainergy masterplan. Located along the autobahn, HENN's design acts as a lighthouse, symbolizing Germany's shift towards renewable energy and a green future.

Heiner Farwick, Jury Chairman: "The jury was very pleased with the amount of energy and enthusiasm that went into working on the designs. We have chosen a piece of work that offers great innovation potential and is not a generally conventional solution."

Marcin Kropidlo, Project Director at HENN Berlin: "The circle is omnidirectional, always equal. It's a democratic shape that never turns its back on the surrounding buildings. Within this circular footprint, we've made the Hub as pragmatic and efficient as possible. The result is a pixelated cloud of structural repetitive elements that create a highly flexible modular system."

The Hub's recessed ground floor connects the north and south sides of the campus, and contains meeting rooms and a canteen. Above, the building's circular balcony inscribes a pixel-like modular system that allows offices to easily grow or shrink. The structural grid is punctuated by a large central atrium, surrounded by collaborative work areas and communal



Rendering courtesy of HENN.

programs. The main spiral staircase leads visitors through this extroverted space, while the balcony and external staircases offer shortcuts and allow office modules to be used independently. The design utilizes a hybrid structure of timber, concrete, and steel. Warm wood is used for interior cladding, as well as columns and beams; concrete slabs provide passive heating and cooling; and the steel balcony and exterior stairwells offer structural support. Solar panels are deployed on the roof and the balcony. The circular balcony railings act as tracks for sun-seeking photovoltaic panels that follow the path of the sun, transforming the building into an energy-producing sundial.

Brainergy Hub is the latest example of HENN's expertise in the field of office design. HENN has recently completed the Zalando HQ in Berlin and the Merck Innovation Center in Darmstadt.

## Urban Transformation Summit focuses on public-private collaboration

**Detroit, USA** – At the World Economic Forum's inaugural Urban Transformation Summit, which closed on Wednesday, 9 December 2021, global leaders underscored the need for increased public-private collaboration to capitalize on new infrastructure funding and tackle growing urban challenges around the globe.

"Our cities and our communities are changing right before our eyes. Digitization is transforming urban economies, public health and safety concerns are tearing at the social fabric of communities – and trillions of dollars of new infrastructure funding across the globe holds the potential to transform the physical environment," said Jeff Merritt, Head of Urban Transformation at the World Economic Forum. "Now more than ever, it is critical that public and private sector stakeholders come together to shape a future that does not just work for the privileged few but delivers for all residents."

"We have to be real about what this moment in time presents for us and not dismiss it, said Michael Hancock, Mayor of Denver. "We have to be very intentional in our efforts and say we're going to create a new opportunity that America has not seen and give a chance to right the wrongs of some of the great epic moments in our history."

"Climate change is not some far distant activity. It is real, and it is occurring now," said Yvonne Aki-Sawyers, Mayor of Freetown, Sierra Leone.

Mike Duggan, Mayor of Detroit, said: "We don't need any more think tanks, we don't need any more papers. We need public-private partnerships."

The summit, which comprised both in-person events in Detroit and virtual convenings, included more than 350 mayors, business executives, community leaders and experts in urban development from 38 countries in North America, South America, Europe, Africa, Asia and Australia.

It marked the official launch of the World Economic Forum's new global Centre for Urban Transformation and spurred a series of new initiatives



Photo: © World Economic Forum

and collaborations to support the development of more sustainable and inclusive cities.

### Notable outcomes and commitments:

Two cities in Europe – Stockholm and Lisbon – were added to the roster of City Strategy Dialogues planned for 2022. In collaboration with MIT, the convenings, which include both public-facing events and more intimate workshops, pair mayors and senior city leaders with global experts and business leaders to forge new approaches to pressing urban challenges.

"New technologies are promising to transform cities in a way similar to what the automobile did in the 20th century," said Carlo Ratti, Professor of Urban Technologies and Planning Director of the MIT SENSEable City Lab. "That's why we need new forums – such as the Urban Transformation Summit, the City Dialogues that MIT will co-host with the Forum – to share knowledge and lessons from all over the world."

Eight cities in Latin America, Africa and Asia – Bogotá, Buenos Aires, Lagos, Dhaka, Jakarta, Kigali, Nairobi, and Rio de Janeiro – have designated neighbourhoods as urban testbeds for new businesses, products and services that can improve quality of life for local residents and mitigate social and environmental challenges associated with rapid urbanization.



Urban Transformation Summit, Opening Session, Kofi Bonner, CEO of Bedrock (second from left). Photo: © World Economic Forum

Following a four-month review of key barriers to public-private collaboration in cities, the World Economic Forum and its partners will develop new resources and tools to help cities better coordinate place-based strategies and accelerate community partnerships.

Design Core Detroit will lead a participatory design process in collaboration with the Forum to design a Fellowship Program in Detroit.

The design process will identify and map new opportunities to scale community-based solutions that will connect Forum business partners to contribute technical assistance towards achieving community-led goals.

Plans for the next edition of the Urban Transformation Summit have already been set in motion. The event will convene once again in Detroit, 11-13 October 2022.

# Beauty and sustainability for EMERGENCY's new hospital in Uganda

**DESIGNED BY RENZO PIANO AND COMPLETED IN ACCORDANCE WITH LOCAL BUILDING TRADITIONS, THE NEW CHILDREN'S SURGICAL HOSPITAL HAS OPENED IN ENTEBBE.**

“I like to think of Africa as a kind of testing ground for the future and not just the scene of so much suffering and forgotten wars. Gino always asked me to design a “scandalously beautiful” hospital, because some people think it is scandalous to offer everybody beauty and excellence, particularly the less fortunate. In all African languages, most notably Swahili, the idea of beauty is always associated with the idea of goodness: there can be no beauty without goodness”.

That is how Renzo Piano described the origins of the project he designed for a children's surgical hospital for EMERGENCY in Uganda that opened on 21st April 2021. Built in Entebbe with the help of numerous Italian businesses, including the Mapei Group, the project was developed pro bono by the architect Renzo Piano, RPBW (Renzo Piano Building Workshop), Studio TAMassociati, and EMERGENCY's own Building Division.

Uganda is a country where the mortality rate for children under the age of five is 49 for every 1000 births. 30 percent of these deaths could be avoided if there was adequate surgical care. One of the first to join ANME (Africa's high-quality

health care network set up in 2010 by EMERGENCY), Uganda realised years ago that it had to strengthen its paediatric surgery services. EMERGENCY decided to open a paediatric surgery hospital in this country and the Ugandan government provided the land on which the complex is built free of charge and committed to helping it get built. It also covers 20

percent of the hospital's annual running costs. This paediatric surgery centre actually triples the number of surgical beds available to children in Uganda.

## **The hospital**

The hospital is located along the banks of Lake Victoria and treats all children under the age of 18 free of charge. The





centre covers an area of 9700 square metres and provides the community with 3 operating rooms, 72, hospital beds, including 6 in intensive care and 16 in sub-intensive care, 6 clinics, a radiology unit, a laboratory with a blood bank, a CAT scanner, a pharmacy, accommodation for foreign patients, and an outdoor playground. Most of the energy is supplied by 2500 photovoltaic solar panels on the roof. The hospital is part of an elaborate landscape plan designed by Studio Franco and Simona Giorgetta, which focuses on the natural and sustainable side of the entire project. This means plenty of attention has been given to the gardens that form a natural environmental mitigation system, as well as contributing to the so-called "healing architecture": a welcoming and well cared for setting has a positive impact on the patient healing process.

### Mapei's contribution

Right from the design phase, the hospital was intended to only have limited impact on the surrounding environment and local culture. That is why the architect, Renzo Piano, wanted to build in compliance with local building traditions, opting for the so-called pisé construction technique. This technique uses a compound made of soil, sand, gravel and a little bit of water to prevent cracking during the drying process. The resulting paste is then compressed in wooden formworks. The clay provides notable heat inertia

keeping the building's temperature and humidity levels constant, but it cannot provide adequate mechanical resistance or sufficient resistance to rainfall. The Mapei Group came to the project's aid by sending its own technicians on-site. After sending some samples of material to Mapei's R&D laboratories, special latest-generation binding agents were developed to make this technique more versatile and durable. Mapei's help involved sending 6 containers of admixture to the building site from Italy, as well as formworks to shape the rammed earth. Applying a highly innovative technology to an ancient building technique made it possible to construct the hospital walls sustainably, guaranteeing versatility and durability. Using a material so widely available locally like clay also reduced the project's environmental impact.

As Mapei's CEO, Veronica Squinzi, pointed out: "We are proud that our research, materials and technical support were able to contribute to this project that embodies many of the values Mapei believes in: hard work, excellence, sustainability and beauty. We hope this innovative solution can be used for building other local facilities to help the community to grow".

**Article source: Realtà Mapei International no. 87/2021**

*Photos provided by Mapei.*

# Lingbao Children's Center

DESIGNED BY UNARCHITECTE, THIS CHILD GROWTH AND DEVELOPMENT CENTRE IS LIKE A NEW FORM OF PARK, ORGANICALLY EMBEDDED INTO THE COMMUNITY, INJECTING NEW VITALITY INTO THE COMMUNITY.

Lingbao City is a county-level city under the jurisdiction of Sanmenxia City, Henan Province. This was a building renovation project located in a community in the north of Lingbao. Later, it became a child growth and development centre of the area. Before transformation, the original building was of low quality, with cramped space, and an unfinished office building was on the opposite to its south side. And the construction period for the project was tight. What's more, this was the first time for a well-known Chinese preschool education institution to develop the county-level city market, so the conservative expectations of the local market led the start-up capital relatively limited.

Under such conditions and circumstances, unarchitecte still hoped to build a small white world different from the whole community, a clean and real space where children can concentrate on playing and cognition, exploring and thinking, so as to obtain true feelings and happiness.





The outdoor playground and the architecture are ultimately extended and integrated with each other.



Original site of the Lingbao Children's Center.



Zhang Hetian

**“Based on its own function, architecture should be active and alive to improve its local urban space.”**

**Zhang Hetian, Principal, unarchitecte**

Removing the decorations and all the extra vertical lines on the L-shaped corridor, getting rid of the original shape, unarchitecte cleaned the external facade of the original building as much as possible to make the building concise and stretching. At the same time, with five sets of slides leaning out of the facade, the outdoor spaces of each floor are connected, and children's activity paths became undulating and has a happy flow. Pitching in from the outside to the inside, walls with high saturation



Paradise without walls.



Many plots around the site are returned to the community.



The slides on the building and the hillocks on the playground create happy undulations.



The boundary forms the different activity field.



The colour walls establish the stereoscopic sense of the deep white space.

colour were used locally, which not only leapingly while continuously established the stereoscopic sense of the deep white space, but also guided the transformation order of the functional space. The feeling of purity was intended by us to be spread to the outdoor playground, eliminating the boundary between the internal building

and the external space, which two parts ultimately extended and integrated with each other.

At this point, even though the entire site and community had been clearly defined, but the site was separated from the community, like floating above the skin of the later one. This was not yet what unarchitecte had expected. The architect's vision is an urban space where children and the community learn from each other. And the fence at the edge of the site became the interrelated critical surface.

Accordingly, unarchitecte gave up many large and small plots around the site and returned it to the community as its public space; and this made the walls thick to form a middle zone between the growth and development centre and the outer city. In the spaces outside provided by the roundabout fence walls, the community will furnish with rest seats and sports equipment, and plant trees. Hence people can get closer to the internal playground and be surrounded and infected by the activities of the children. They can talk to the children and feel the purity in the eyes of children. At the same time, children can curiously watch the elderly in the outside playing chess and learn the skills, get used to normal greetings

and exchanges with strangers, and even observe the small crafts and business practices of vendors who occasionally set up stalls outside.

The curved fence walls also influenced the developing of the interior activity spaces. In this way, layer by layer, from the outer city, the middle zone, the tortuous boundary, various types of internal venues, the outdoor platforms between the building and the playground, the outer porch, the front hall of each outdoor activity venue to the various indoor activities and functional spaces, a multi-dimensional experience is set for the children to perceive when crossing through the spaces and grow up in exchanges. Correspondingly, this child growth and development centre is like a new form of park, organically embedded into the community, injecting new vitality into the community.

After opening to the public, the child growth and development centre has been gradually referred to as "paradise without walls" by local people. Residents of the community are attracted to bring their children to play here; the rudimentary municipal road on the south side of the site raised concern, which has been put on the agenda and will be repaired as soon as possible; the office building opposite has been negotiated by some people to buy and complete its construction; last but not the least, residential housing prices in surrounding communities have also increased by 10 percent in just a few months. This park embedded in the community is gradually affecting and improving the whole community.



Multi-function hall.

## PROJECT DETAILS

**Project Name:** Lingbao Children's Center

**Location:** Lingbao City, Henan Province, China

**Client:** Yangguangyulu Group

**Architect:** unarchitecte

**Landscape Architect:** unarchitecte

**Gross Built Area:** 11235.06 square metres (Building Renovation 7139.58 square metres, Outdoor activity area 4095.48 square metres)

**Completion:** 2020

**Photographer:** Commune One, Zhang Hetian

# The Metro-Forest Project

TK STUDIO CO., LTD  
DESIGNED AN  
URBAN FOREST FOR  
ECOLOGICAL  
REGENERATION IN  
BANGKOK.

The Metro-Forest Project is located at eastern fringe of Bangkok, approximately six kilometres from the Suvarnabhumi International Airport. In early 2012, the design team was commissioned by the PTT Reforestation Institute to design an urban forest for ecological regeneration, to cultivate environmental awareness and educate visitors about local forest ecology. For less than two hectares plot of PTT's abandon land, this project offers a unique kind of urban park with forest like atmosphere in very small area.

For site survey and analysis, soil and water were tested and found clay soil that slightly salinity with high brackish underground water table, which is problematic for plant growth and reforestation. Therefore, the raised berm was chosen for planting areas to avoid filling the site. Besides providing

plant growth condition, these created berms were meant to be sponges for absorbing water, as zero run off was the project's main criteria. The earthwork design serves as the backbone of the site's new ecology and accommodates many design criteria including to direct seepage flow from the built waterfall through the berms' channels for irrigation, to improve site's ventilation, to prevent outside pollutions, to control ground level perspective, and to create diverse micro-ecology.

To stimulate plant growth and diverse ecology, the reforestation technique of Dr. Akira Miyawaki was implemented. The layout of the species was carefully grouped according to successional rate and appropriate growing conditions. Species able to survive during intermittent flooding conditions were planted along the riparian edge. While atop the berms, a diverse mix of









Tawatchai Kobkaikit

**“As landscape architects, our responsibility is to create a better environment and help bring people closer to nature. At The Metro–Forest Project, we attempted to connect people to the forest – a forest that represents the actual vegetation in Bangkok; a forest designed to be driven by the process of natural selection and reach different stages of ecological succession. By focusing on the basic elements of soil, water, species and the planting of 60,000 strong seedlings of 279 various species on 4.7 acres of vacant land, the landscape planting technique, originally developed by Dr. Akira Miyawaki and later adapted by the ecological forest consultant, is what we believe to be a low energy consuming method that will shape the idea of how landscape planting design should be approached within the many constraints of today’s and the future built environment. The Metro Forest Project now is part of the built environment where people can appreciate without having to go out of town to enjoy the happiness of being with nature.”**

**Tawatchai Kobkaikit, Managing Director & Landscape Architect, TK Studio Co., Ltd.**



deciduous forest plants and lowland Dipterocarp cover the area. Approximately 60,000 tree saplings of more than 279 unique species were planted. These saplings were density planted to encourage natural selection, following Darwinian evolutionary theory “the survival of the fittest”.

In addition, the multiple layers of forest canopy as appear in nature was designed. The planted saplings grew very rapidly for the first three years, after that they continued to grow at diminishing rate, while their canopy coverage appeared significantly denser and the forest like atmosphere was established. After the canopy has reached maturation, ground level trail will be provided. In early stages, visitors may spend time on the skywalk and observation tower, which were designed to minimize disturbance of the burgeoning forest and allow close-up views of the canopy. The created forest has become an extension of LEED Platinum NC rammed–earth exhibition centre.

Maintenance of the site will look for the forest to manage itself, as no management is the best management. However, data of plant growth at Metro–Forest was collected periodically and found that trees grew at the predicted rate. As the forest evolving to mature stage, it induced small animals, creating biodiversity, and establishing new ecosystem for the project. Monitoring its succession and richness of biodiversity will be implemented as the continuously on–going project evolves over generations to come. This project is truly a public outreach commitment to inspire awareness of urban forestry and the importance of environmental stewardship in Thailand.

## PROJECT DETAILS

**Project Name:** The Metro–Forest Project

**Location:** No. 81, Sukhapiban 2nd Road, Prawet District, Bangkok, Thailand

**Owner:** PTT Public Company Limited, managed by PTT Reforestation Institute

**Landscape Architect:** TK Studio Co., Ltd.

**Size:** 19,200 square metres or 2 hectares (4.75 acre)

**Sustainable Design Certification:** LEED Platinum 2016 (LEED BD+C: New Construction v3 – LEED 2009)

**Period of Construction:** 2012–2015

**Photographer:** Rungkit Charoenwat



Photography: CM Droid

# Bendigo Botanic Garden

THE BENDIGO BOTANIC GARDEN – THE GARDEN FOR THE FUTURE (THE GARDEN) IS A THREE-HECTARE CONTEMPORARY EXPANSION OF THE HERITAGE LISTED BENDIGO BOTANIC GARDENS. TCL WAS THE LEAD CONSULTANT AND LANDSCAPE ARCHITECT FOR THIS PROJECT.

**K**ey elements of The Garden for the Future include showcasing botanical collections relevant to Australian region's climate and providing a wonderful open space for outdoor events, informal recreation activities, gatherings, picnics, educational programmes, and horticultural research.

The Garden demonstrates resilience to a changing climate through the incorporation of 500 different types of plants that are suitable to Bendigo's current and predicted climate. The Garden does not use any potable water for irrigation; it uses exclusively recycled water, future proofing the gardens in case of drought and water restrictions.

Benefits of the design include increased liveability by providing high quality outdoor experiences to ensure Greater Bendigo remains a



Photography: Alison Holtzer

great place to live, work, visit and invest. The Garden provides opportunities for community engagement, and social connection, to help residents be fit and active and maintain good mental health.

With 30,000 plants and 4,700 square metres of turf, the garden increased carbon sequestration and reduced the heat island effect. The garden provides a diverse habitat for local species and connecting to the important adjacent wildlife corridor – Bendigo Creek.

The Garden has been well utilised over summer as an outdoor classroom by its neighbouring school, White Hills

Primary. In the future, the city intends to implement a curriculum approved K-12 school programme to engage the regions children and encourage them to embrace sustainable practices.

**The new garden provides the following ecosystem services:**  
**Carbon Sequestration and Air Purification**

The three-hectare garden contains 30,000 plants and 4,700 square metres of turf lawn. Through the process of photosynthesis these plants help reduce carbon dioxide and purify the air. The gardens also contain over 100 trees



Lisa Howard

**“As landscape architects, we have an opportunity to communicate important environmental messages through high quality and memorable design. We wanted to create a diversity of plant genera, species and forms that come together in a way that is attractive and interesting but organised in a strong framework that allows for research and testing. Some plants will offer quick growth, being visually evident in two to three years. But the majority will be of medium to slow growth, where the design intent may not be immediately visible for ten to fifteen years, before the garden reaches full maturity in 30 to 40 years.”**

**TCL Director Lisa Howard**



Photography: Alison Holtzer



Photography: Alison Holtzer



Photography: Alison Holtzer

which contribute to reducing urban heat island effect through canopy cover.

**Potable Water Reduction**

The site is irrigated via a recycled water irrigation system which saves 14 mega litres of potable water annually. Future plans include the installation of a 0.5 millimetres underground stormwater harvesting system which will capture stormwater from the adjacent residential catchment before treating and reusing the water within the gardens.

**Increased Biodiversity**

The garden showcases over 500 different species of plants suitable to our current and predicted climate. This includes a diverse collection of Australian native and international plants.

**Wildlife Habitat**

The garden adjoins the Bendigo Creek which is an important wildlife corridor for Greater Bendigo. The plant collection which interfaces with the creek is comprised of Australian native plants that provide important habitat for native fauna.

**Reduced Embodied Energy**

The garden contains mostly pervious surfaces such as gravel paths which are low in embodied energy and allow for ground water recharge.

All of the furniture within the gardens contains sustainably sourced Australian hardwood timber. The gardens feature a number of custom seats including a 130 linear metre seat around the promenade which reuses 800 linear metres of red gum recovered from the nearby major VicRoads Ravenswood interchange project.

**PROJECT DETAILS**

**Project Name:** Bendigo Botanic Garden – Garden for the Future

**Location:** 557- 559 Napier St, White Hills VIC 3550, Australia

**Client:** City of Greater Bendigo

**Lead Consultant and Landscape Architect:** TCL

**Other Designers Involved in the**

**Design of Landscape:** Collaboration with Paul Thompson (planting), Peter Elliot Architecture and Urban Design (architecture), Matt Harding (sculpture)

**Design Year:** 2013

**Year Built:** 2018

# Malabar Hill Forest Trail

THE MALABAR HILL FOREST TRAIL, DESIGNED BY **IMK ARCHITECTS**, CREATES AN ELEVATED, WINDING, WOODEN WALKWAY FOR PEOPLE TO EXPERIENCE THE 12-ACRE MALABAR HILL FOREST, ONE OF THE LAST REMAINING NATURAL ECOSYSTEMS IN MUMBAI, INDIA.

**T**he Malabar Hill Forest Trail project presents a novel way to catalyze the preservation and restoration of often neglected and degrading urban forests that are increasingly prone to the effects of unchecked development.

The walk will take visitors on an immersive natural journey, providing a place of recreation and experiencing nature, exploring the potential of ecotourism in the middle of one of the world's densest cities. The project is a collective initiative of the Malabar Hill Citizens' Forum, the Nepeansea Road Citizens' Forum (NRCF), and IMK Architects, and is supported by the JSW Foundation. It will be funded by the Brihanmumbai Municipal Corporation (BMC), and is slated for completion by the end of 2021.





Malabar Hill Forest Trail offers remarkable views of the Arabian Sea as well as Mumbai's skyline.



**Malabar Hill Forest Trail – Location in Mumbai.**



**Malabar Hill Forest Trail – Site access.**



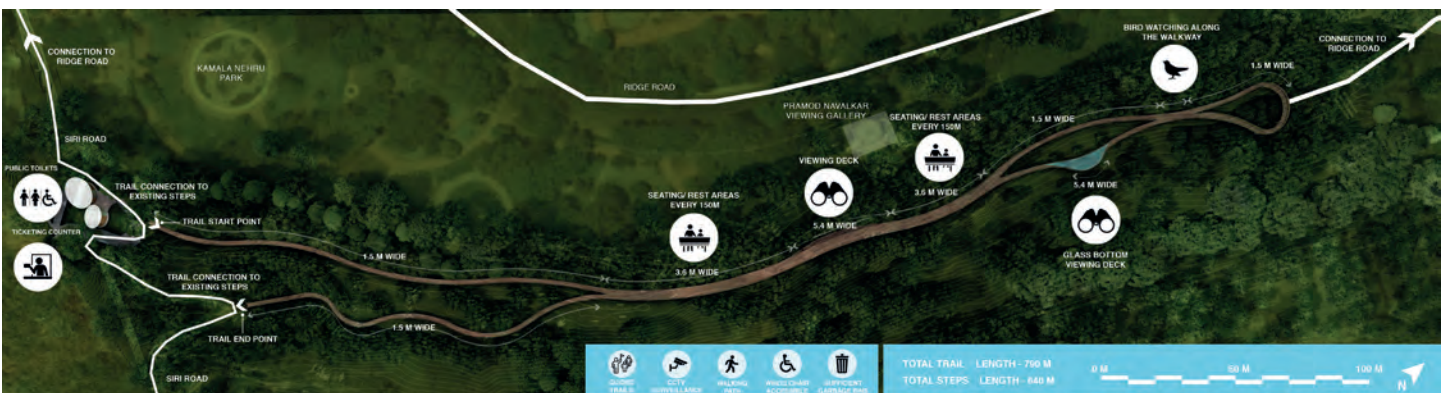
Malabar Hill Forest Trail – Seating and information panels are planned along the walk for visitors.



Malabar Hill Forest Trail – The elevated walkway will be constructed without damaging a single tree.

The Malabar Hill Forest is a roughly 12-acre green pocket of land in the midst of the densely populated urban landscape of Mumbai. It houses a diverse mix of flora and fauna: including trees like gulmohar, copperpod, mango, coconut, rain tree, jamun, and jackfruit, and a dozen rare birds including the rose-ringed parakeet, hornbill, coppersmith barbet, magpie-robin, golden oriole, and peafowl.

A historically popular venue for joggers, athletes, nature lovers, and leisure seekers from the Malabar Hill neighbourhood, the forest today seems to be falling into a state of disrepair and neglect. Temporary and permanent structures spread through the forest, including a stairwell, a greenhouse, as well as older access steps, trails, fences and guardrails are worn down or broken; garbage and construction waste are routinely dumped along the trails, which are also often used as latrines by passersby; and the forest is coming under increasing threat of encroachment by slums along its eastern edge. The hillock's subsoil has started to give away too



Malabar Hill Forest Trail – Site Plan



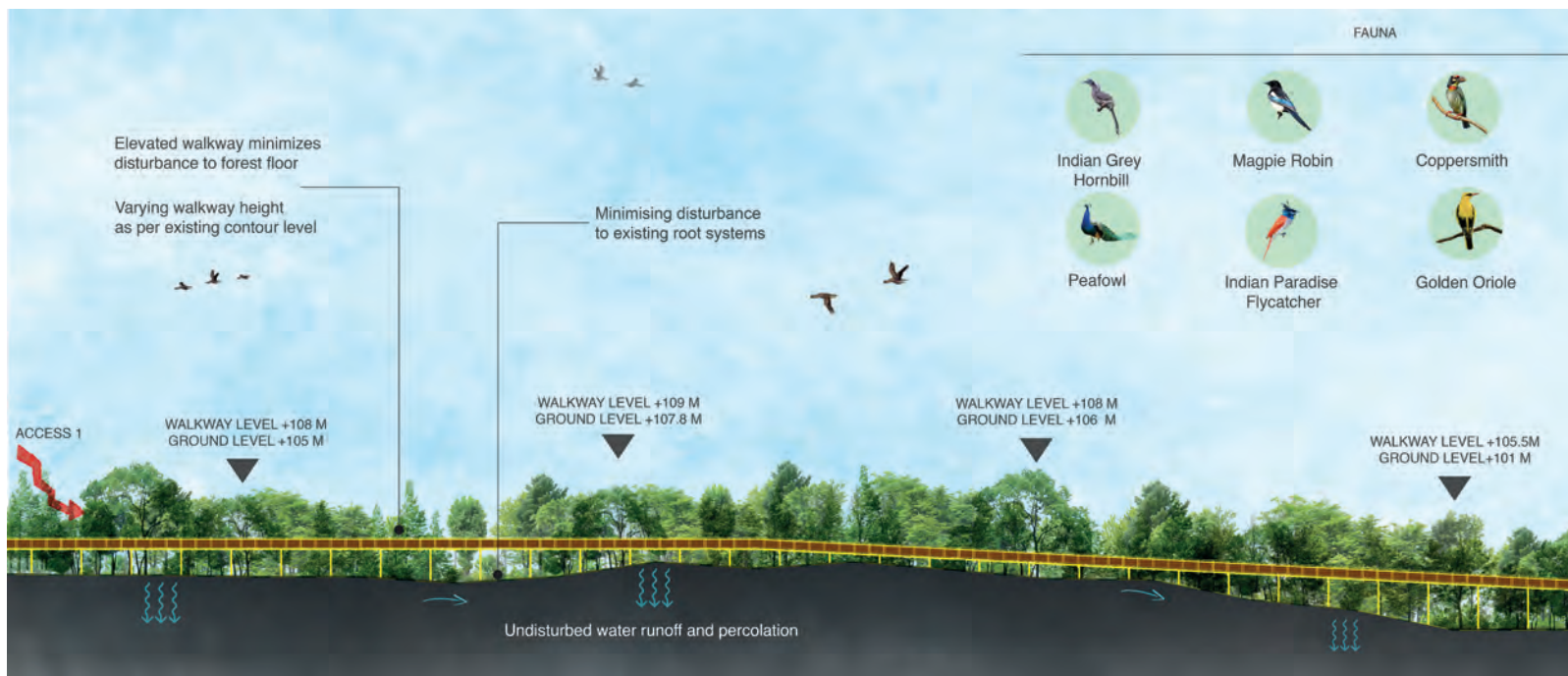
Malabar Hill Forest Trail opens up unexplored avenues for bird-watching and recreation in the middle of Mumbai.

due to constant soil erosion, which is exacerbated by vigorous stormwater run-off along the steep slopes. Furthermore, the area is increasingly becoming an avenue for antisocial activities such as illicit liquor brewing and consumption of drugs, leading to safety concerns. Evidently, the forest and the ecological systems it supports are under threat, and if kept unsupervised, might soon be encroached upon in entirety.

The Malabar Hill Forest Trail thus arises out of the urgent need to preserve and restore the forest's rich ecosystem, while creating a new, sustainable interface between nature

and the city.

Traversing roughly the same path as the two older trails on the ground level, the new, elevated walkway will run a total length of 705 metres, taking visitors through the entire length of the forest. The site will be fenced on the ground level and ingress/egress points will be provided at either end of the trail, connecting it to the two existing, prominent points of access for Malabar Hill: a 192-step stairway from the Babulnath temple in the south and a 100-step picturesque stairway carved into the hill from the Hughes Road bus stop



Malabar Hill Forest Trail – The elevated walkway minimises impact on the forest floor.



Rahul Kadri

**“The project seeks to set a precedent for other green, tourist spots in the country by demonstrating how we can enjoy nature while causing minimum disturbance to the environment.”**

**Rahul Kadri, Partner & Principal Architect, IMK Architects**

area in the south-west, both of which will be restored as part of the project. In addition, a utility block with toilets, ticketing booths, and other public amenities will come up at the start of the trail towards the west along the Siri Road.

The trail, set to be constructed without damaging a single tree in the forest, will stand on a series of cylindrical, epoxy-coated structural steel columns, which can be easily repaired or replaced. Its height will vary from a minimum of 2 metres over the ground to 10 metres in response to the terrain.

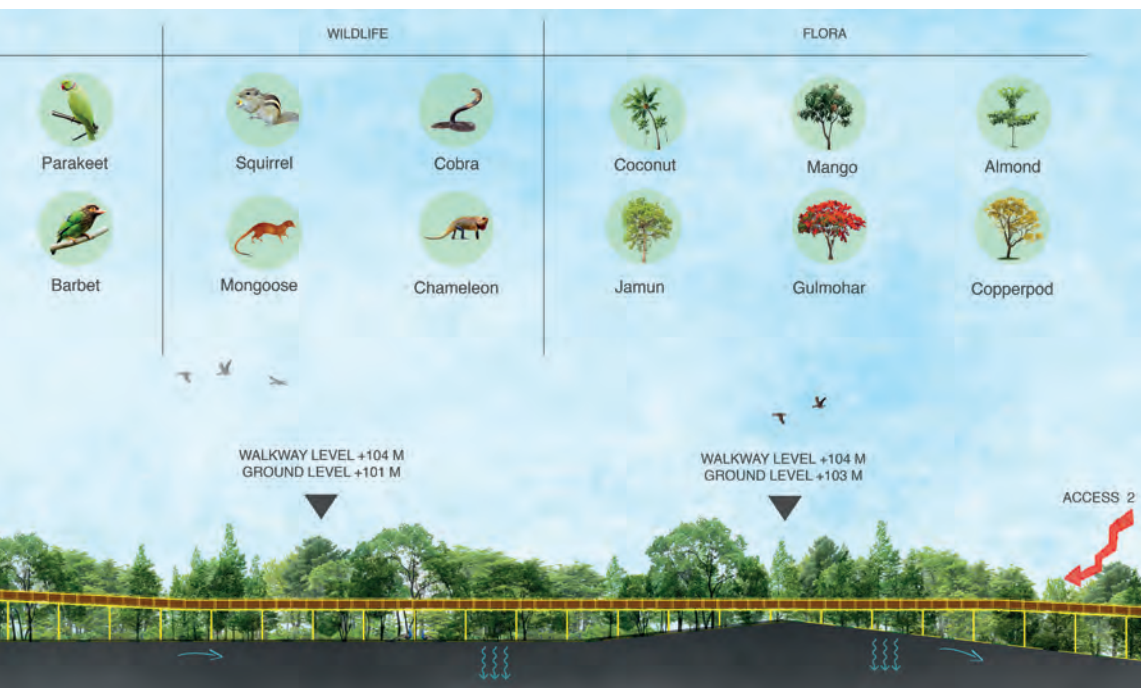
The seemingly simple intervention of elevating the trail will regulate visitor access to the forest on the ground level, as well as minimise the use of concrete on the forest floor. This will ensure that the natural flow of water along the hill slopes, as well as the movement of wildlife in the forest remains undisturbed. Additionally, the trail will stand on low-impact pile foundations to limit interference with existing root systems in the soil.

The walkway deck will be made of local, weathered Sal wood in an effort to seamlessly merge the trail with the forest. It will be supported by steel joists over structural steel

beams, which will themselves be supported by the columns. Averaging at 1.5 metres, the width of the deck will increase every 150 metres to accommodate amenities for visitors: from 1.5 metres to 3.6 metres to include seating zones, and to 5.4 metres to accommodate expansive viewing decks, one of which will feature a glass bottom.

The walkway will be illuminated by warm lighting fixtures placed within the Sal wood balustrade, a strategy centred on keeping light pollution spilling onto the forest floor to a minimum. Information panels and small kiosks along the walk will provide essential information to first-time or infrequent visitors. Garbage bins will be placed at regular intervals too to help curb instances of littering, while a network of CCTV cameras will ensure improved supervision of the precinct.

The Malabar Hill Forest Trail will thus offer an unparalleled and transcendent natural experience akin to walking in the woods in the heart of a bustling city like Mumbai – opening up unexplored avenues for bird-watching and recreation as well as facilitating remarkable views of the Arabian Sea and the city skyline.



## PROJECT DETAILS

**Project Name:** Malabar Hill Forest Trail

**Location:** Mumbai, India

**Client:** Construction of elevated Nature's Trail (Tree walk) at Kamla Nehru park, Malabar hill under H. E department in D ward

**Funded By:** The Brihanmumbai Municipal Corporation (BMC)

**Architect & Landscape Architect:** IMK Architects

**Design Team:** Rahul Kadri, Harish Vyas, Bhumika Ganjawala, Heena Sheikh, Pramod Shelar

**Size:** 12 acres

**Completion:** End of 2021

**Drawings & 3D Views:** © IMK Architects

# Kingfisher Wetlands

KINGFISHER WETLANDS IS A NEW 15,000 SQUARE METRES NATURE SANCTUARY – SLIGHTLY BIGGER THAN THE SIZE OF TWO FOOTBALL PITCHES – SITUATED ALONG THE WATERFRONT PROMENADE OF GARDENS BY THE BAY, NEAR THE OPEN-AIR FOOD COURT SATAY BY THE BAY AND THE UPCOMING GARDENS BY THE BAY MRT STATION ON THE THOMSON-EAST COAST LINE. THE DESIGN WAS DONE BY THE GARDENS BY THE BAY TEAM.

The Covid-19 pandemic has seen more people looking to nature for respite and recreation. This growing interest in nature is reflected in the visitorship to Gardens by the Bay, which has welcomed more than 10 million visitors since the circuit breaker in April 2020. The development of Kingfisher Wetlands is part of continuous efforts to enhance and enrich the Gardens and to provide the public with new nature-rich areas to explore.

**The transformation of the Kingfisher Wetlands site**  
 With the S\$0.5 million donation from Kikkoman, the original site, which was popular with bird-watchers and nature photographers because of the diversity of wildlife there, was enhanced to improve the experience for visitors. Newly-created water cascades and streamlets between the two waterbodies in the area, Lotus Pond and Kingfisher Lake, improve the overall water quality by creating more water movement, circulation and aeration, with the aim of encouraging more microhabitats to form so that biodiversity can flourish. More than 200 native true mangrove trees and mangrove associates were planted, which can contribute to sustainability by storing “blue” carbon. A new wildlife look-out was also constructed, while educational signage inform the public on birds and animals that frequent the area.

With the area popular with wildlife, the Gardens by the Bay team took pains to ensure development work was carried out sensitively. Baseline environmental surveys were first conducted to better understand the potential negative impact, and effort was made to mitigate such impact. Most of the existing trees were transplanted from the original site, and the alignments of the new waterways that connect Lotus Pond with Kingfisher Lake were carved out in a way that respects the existing context of the landscape, for example, to avoid removing sizeable trees growing there.

In addition, the wildlife lookout was modelled extensively in 3D, with the exact radii and lengths for each structural module detailed out so that they can be fabricated offsite at a factory, then brought in to site for installation. This method minimises, as much as possible, the noise generated by heavy construction. Such interventions reduce disruptions, and allow ecosystem functions to recover quickly and wildlife to reconnect seamlessly post-development.



**Planting mangroves for “blue” carbon**  
 With the planting of native and endangered species of true mangroves and mangrove associates – including native, critically endangered species such as the Firefly Mangrove (*Sonneratia caseolaris*) and Upriver Orange Mangrove (*Bruguiera sexangula*) – Kingfisher Wetlands is also making a contribution to the environment in terms of carbon sequestration and storage. By taking in carbon, mangroves are a natural way of reducing the amount of greenhouse gases in the atmosphere. Mangroves are known to be able to sequester more carbon than rainforests, with most of this carbon stored in the soil beneath these trees. This is what is known as “blue” carbon – the carbon captured by ocean and coastal ecosystems. As part of the ground work to develop Kingfisher Wetlands, initial surveys of the soil carbon content were carried out in some of the waterbodies in Gardens by the Bay. The results showed that although these were reclaimed ecosystems, they are functioning very well, on a scale similar to some of







Lee Ping Ping

**“The two waterbodies in the area, Kingfisher Lake and Lotus Pond, were always a little physically and visually isolated from each other, and it was here that we saw the potential for sensitively-implemented improvements to a site already well-loved by bird photographers.**

**Within the larger framework of improving water quality and circulation within these waterbodies, there was also a strong design intent to create interesting spaces for the wider community to explore, and enhance the waterbodies as freshwater mangrove wetlands for biodiversity to flourish. This inspired the design and creation of new water cascades and meandering streamlets, which would contribute to the diversity of microhabitats in the area. The contrast between soft willowy plants and the terraced rockscapes, coupled with the sound of moving water, animates the space, creating a sense of movement and time. The wildlife lookout is inspired by the natural form of a leaf, and is designed to sit organically at the edge of the Lotus Pond, interfacing seamlessly with its aquatic setting. All the individual design elements were put together to create a space that is serene but alive.”**

Gardens by the Bay’s Deputy Director of Design **Lee Ping Ping**



Singapore’s natural coastal systems such as mangrove and seagrass habitats. Such findings are promising, and suggest the potential of urban eco-systems like the Kingfisher Wetlands to store carbon in the long term.

#### **Biodiversity in Kingfisher Wetlands**

Over the years, the bird monitoring programme of Gardens by the Bay has recorded over 130 species of birds. This is almost one-third of the bird species found in Singapore, and 16 out of 40 migratory species spotted in Singapore are known to visit the Kingfisher Wetlands area. Birds that can be spotted in the area include several of Singapore’s nine Kingfisher species, such as the White-Collared Kingfisher, Common Kingfisher and more rarely, the Oriental Dwarf Kingfisher, as well as the White-breasted Waterhen, Scarlet-backed Flowerpecker, Yellow Bittern and Lesser Whistling Duck. The area is also home to insects like the Plain Tiger Butterfly and Blue Dasher Dragonfly, and animals like the Smooth-coated Otter and Malayan Water Monitor.

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#### **PROJECT DETAILS**

**Project Name:** Kingfisher Wetlands

**Location:** Gardens by the Bay, Singapore

**Client:** Gardens by the Bay

**Designer:** Lee Ping Ping (Deputy Director, Design, Gardens by the Bay)

**Project Manager:** Gerline Oh (Senior Assistant Director, Development, Gardens by the Bay)

**Horticulture Team:** Anton van der Schans (Principal Horticulturist, Gardens by the Bay), Derek Wee (Deputy Director, Gardens Operations, Gardens by the Bay), Irene Chong (Manager, Gardens Operations, Gardens by the Bay)

**Main Contractor:** TEHC International

**Size:** 15,000 square metres

**Opening:** 12 November 2021

**Photos:** © Gardens by the Bay



The project created a sustainable and healthy workplace for its employee successfully. It embraced maximum efforts to promote a green culture in which employees can live, work and enjoy.

# Titan Integrity Campus

ONE LANDSCAPE DESIGN LIMITED HAS BLENDED THE INDOOR WITH THE NATURAL ENVIRONMENT FOR THE TITAN INTEGRITY CAMPUS IN BANGALORE, INDIA.

**T**he primary objective for this project was to create a sustainable and healthy workplace for the future that stimulates the mind, brings nature to its central setting and merges indoor with outdoor.

The brief was to unify the surrounding landscape with the architecture of the building in a way that the designed landscape will foster ecological engagement throughout the site.

The main challenge was to blend a new development into the natural environment. Obtaining the LEED certification was the design parties' commitment to keeping the building sustainability throughout its life cycle, and in this regard landscape design played the most significant role in achieving this cherished goal.

The design focused solution to this challenge was to envision the site as an ecologically rich park on both a horizontal and vertical axis of the building. The building sculpturally integrates the landscape vertically through a sequence of green terraces and horizontally through a series of water bodies with a Bio-lake as the heart.





The cascading green terraces along with the lake create an adequate micro-climate thus minimizing mechanical cooling.



Viraj Chatterjee

**“The uniqueness of this project is no doubt the indefectible integration of the natural to the manufactured, a landscape design nothing but a newly constructed nature’s playground in the heart of the city.”**

**Viraj Chatterjee, Founder and Design Principal at ONE Landscape**



Large amount of green space throughout the project and the Bio-lake helps on reducing greenhouse effect, absorbing heat and turning carbon dioxide into oxygen.



Bio Lake helps to increase wildlife footprint within the city and integrate the design well with the surrounding.



The Lake does not only act as water retention, but also acts as a secondary fire storage tank in case of emergency.

Designed as visual extension of an existing lake adjoining the site and imagined as key feature, the Bio-lake brings nature and wildlife into the middle of the campus while reflecting the sculptural façade of the building. It is further connected perceivably with a central pool ( fire tank) through a series of cascades where stone boulders in water simulate a natural stream within the park. The Bio-lake and its green islands introduce a ecological habitat linking local wildlife to engage with the said green spaces. The new landscape of the campus thus blends beautifully, ecologically and seamlessly into the existing landscape.

The cascading idea is intrinsic to the overall design of the site. A series of receding green cascades rise on either sides of the Bio-lake evoking the feeling of elevated ground plane at every level rendering the building a non-entity, an extension of the landscape. The green terraces become outdoor incubation platforms where ideas are generated under the shades of trees and among sounds of birds. They further create an adequate micro-climate, thus minimizing

mechanical cooling. The building with its seamless outdoor indoor connectivity and the landscape with a series of interlinked pathways significantly fosters not only interaction among employees but also creativity.

The project is a LEED Platinum Building giving great emphasis on landscape and sustainability and no doubt a design benchmark in addressing the present challenges of global warming and climate change.

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## PROJECT DETAILS

**Project Name:** Titan Integrity Campus, Bangalore, India

**Location:** Electronic City Phase 2, Bangalore, India

**Client:** Titan Company Limited

**Architect:** Mindspace Architects

**Landscape Architect:** ONE Landscape Design Limited

**Area:** 2.6 hectares

**Completion:** 2018

**Photography:** Mia Studio

# HOSPITAL PARK'S PLAYGROUND MADE FROM RECYCLED PLASTIC

A unique playground manufactured from recycled material was inaugurated at a hospital in Denmark at the beginning of September 2021 by **KOMPAN**.

**D**iscarded plastic packaging from the hospital in the city of Randers was converted into a brand new and throughout circular playground for the hospital park by KOMPAN. The playground in Randers, Denmark looks like a regular playground, but with the pedagogical theme circles. But if you notice the logo of the UN sustainability goals on the ground with 17 different colours, right next to an enlarged recycling logo, then maybe you start to wonder, if the name *the circular playground* might stand for something more.

The design of the play equipment is the same as KOMPAN has been manufacturing for many years. The difference and what is very special about this playground, is that the play equipment is manufactured from recycled material, says Dorthe Thorup-Kjærulff who is Director of Sustainability Projects at KOMPAN, the company who manufactured the play equipment.

The playground was created in a partnership, inspired by the UN sustainability goals. The project shows how a partnership between public and private can save CO<sup>2</sup>, by working together and reusing materials. The partnership was comprised of KOMPAN, the municipality of Randers, the Region of Central Jutland, whose hospital for two years collected plastic for recycling, Dansk Affaldsminimering ApS, who processed the plastic into granulates for molding plastic, and Compas a strategic centre for circular economy. A total of 300 kg of plastic waste from several hospitals in the region was used, but also ocean waste, food packaging waste, textile waste, and even old shoes were used in the manufacturing. Compared with a playground built from virgin plastic, the CO<sup>2</sup> waste is reduced by 54



Photo: © KOMPAN A/S

percent. In addition, the play equipment made from recycled materials can be recycled again.

On YouTube, in the video – Sustainable Playground in Randers, Dorthe Thorup-Kjærulff shows by tapping on two different types of play equipment, the difference in sound between a piece of traditional manufactured play equipment and a piece of play equipment manufactured of recycled textile mixed with recycled plastic bags. This is the sound of the future, says Dorthe, when she is tapping on the new material, which sounds a bit different. The future is to reuse used materials for something new instead of discarding it.

*The circular playground* got its very first start in a midwife's kitchen when she wondered why she separated her waste at home, but not at work. Now she is handling the hospital's waste. We are trying to produce health with our garbage, she says in the video. In this case, the plastic came back as a

beautiful playground in the hospital park, a place where both children and adults can get outside, move around, and stay in great shape.

"For me, this playground is the beginning of a new era. A new time. We must think differently," says Anne Poulsen from Compas.

## PROJECT DETAILS

**Project Name:** The Circular Playground

**Location:** Randers, Denmark

**Partners:** KOMPAN, the municipality of Randers, the Region of Central Jutland, and Dansk Affaldsminimering ApS  
Other Team Members: Randers Regional Hospital, Aarhus University Hospital, and the Horsens Regional Hospital

**Architect:** Alexander Sundberg (KOMPAN)

**Playground Equipment Manufacturer:** KOMPAN

**Completion:** September 2021

# TWISTED BAMBOO TOWERS

At Sky Sanctuary Residence, **Playpoint** has designed a playground with steel poles that are themed to look like bamboo poles.



**T**he Twisted Bamboo Towers at the Sky Sanctuary Residence are inspired by bamboo tree forests. Combined with a variety of play elements, the majestic steel poles are powder coated in green colour to make children feel like they are spending time in nature.

Various rope/net constructions are suspended between the bamboo poles. The combination of shaped surfacing with the bamboo poles creates an adventurous world for the kids to explore and offers enough space for children to find their own space.

In addition, mini hammocks are suspended between the bamboo poles to create a social space for the older children to lounge in.

In terms of sustainability, steel is a popular material among developers, architects and even playground equipment manufacturers. It is durable, cost-efficient and malleable. Steel is also 100 percent recyclable, which is why it is widely used by designers. According to Jason Sim, Managing Director, Playpoint (Singapore) Pte Ltd, steel can be integrated into the design of the playground in many ways such as posts, decks and clamps of a playground structure. Even the tiniest nut and bolt of a playground equipment can be moulded using steel.

## PROJECT DETAILS

**Project Name:** Twisted Bamboo Towers playground

**Location:** Sky Sanctuary Residence, 23-4, Jalan 3 /101C, Cheras Business Centre, Jalan Cheras, 56100, Kuala Lumpur, Malaysia

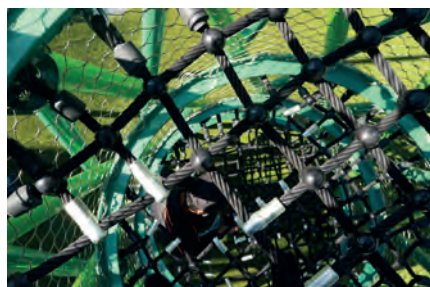
**Client:** SkySanctuary Development Sdn Bhd

**Landscape Architect:** Praxcis Design Sdn Bhd

**Playground Equipment Supplier / Designer:** Playpoint (Singapore) Pte Ltd / Kinetics Play

**Realisation Date:** April 2021

**Photos:** © Kinetics Play



# CLIMBING PARK OF LUOFU MOUNTAIN

**unarchitecte** has created an unusual play space by building suspended nets among massive trees which allow children to climb between the branches.

**L**ying in mountains with a lake by side, the School Affiliated to Luofu Mountain Chinese Classics Institute in Guangdong province covers an area of over a hundred acres. Inside of the school, hundreds of evergreen trees flourish in a tiny valley. The school authorities hope to make use of the valley for outdoor activities, so that children can enjoy happy physical education.

A forest can become a place for children to return to nature, to explore and to think, to sweat and to sit still alone. In the nature, they can forget themselves and can also search for their inner selves. Building a climbing system, architects connect all the trees in the valley by hundreds of diverse white triangle nets to constitute a combination of various topological folding surfaces like a "white sea" for children to swim carefree.

Hanging baskets located in high or low levels are called "wormholes" by students. These cages are linked to each other in several round yards at the bottom of the valley. A slender ladder slides straight down from the top of one side of the valley to the swings on sand above which an octagonal glass maze stands on a suspended square; next to the sand dune is the trampoline platform.

What's more, two huge spiral tubes and hemispherical tents embrace students inside of them, floating among the crowns of trees as crystal jellyfishes drifting on the sea. Thanks to the system, children have intimate access to the great nature in different height, to make houses for squirrels, to sing with birds and to enjoy the sunshine glistening through the leaves. In rough-and-tumble play, they build up friendship and learn to help each other; in silence exposed in nature, they picture the truth of beauty. Unconsciously, they grow up physically strong and mentally positive.

No tree was cut down during the construction except those already withered. In the basic climbing system, every side of triangle nets is fixed on a tree by solid steel wire ropes with sleepers in order to protect the plants. When the gap between boles was too wide or the bole was not strong enough, columns were set to serve as a supplemental support posts. To some extent, the whole forest is a unit, with a second safety net under the higher system. In the year of construction, no trees fall down although frequently attacked by typhoon. It is convenient to get in and out through multiple exits set on the ground and in the aerial structure. In addition the scope



of activities is defined by yards and corridors on the ground, which is easy to administrate and to ensure the safety of students.

This cute valley is a paradise for adults as well. Many parents who came with their children from surrounding cities have also retrieved their own joy of childhood. So you have one more place to communicate with nature in Luofu Mountain. Here, everyone is a child.

## PROJECT DETAILS

**Project Name:** Climbing Park of Luofu Mountain

**Location:** Boluo County, Huizhou City, Canton Province, China

**Client:** The School Affiliated to Luofu Mountain Chinese Classics Institute

**Architect:** unarchitecte

**Architect in charge:** Zhang Hetian

**Area:** 5000 square metres

**Materials:** Polyester net (Note: Maybe it is one of the biggest polyester-net climbing parks, specially built for school, in the world.)

**Completion:** 2018

**Photographer:** Zhang Hetian

# THE RUBBERTREE

The Rubbertree is a playground design by artist AnneMarie van Splunter for refugee children of Baan Tha Aj School, Thailand.

**T**he Rubbertree was designed in 2011 for an innovative school playground- competition of Go Play!, an international non-profit organisation. The design was for a school of 1000 refugee children. It was chosen for a Honorable mention in Innovation in Competition Play for All/Architecture for Humanity, but has not been realised yet.

## Concept

Children and adults need a safe place, they need to be rooted in solid ground. This tropical tree with long and expanding roots offers an open and inviting landscape on different levels: spaces to roam and explore for spontaneous play. It provides shelter and shadow and shade. Places where children can sit in, on, under, or lean against and find a place where they can make a den. Simultaneously, the tree is a great sculpture and will make a lovely picture when children are playing all-over its trunk.

## From cradle-to-cradle

Tyres are made of latex from the rubber tree and now, having served their duty, become a sculpture of a rubber tree. That is a full circle. In this way, trash becomes poetry.

In the digital world the Rubbertree-design is highlighted worldwide on hundreds of sites, such as Archpaper, Oneweekofdesign, Notcot and Treehugger and Inhabitat, two of the leading blogs on sustainable design and architecture in the U.S.

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## PROJECT DETAILS

**Artist:** AnneMarie van Splunter, NL

**Engineer:** Ing. W.B.M. Ham

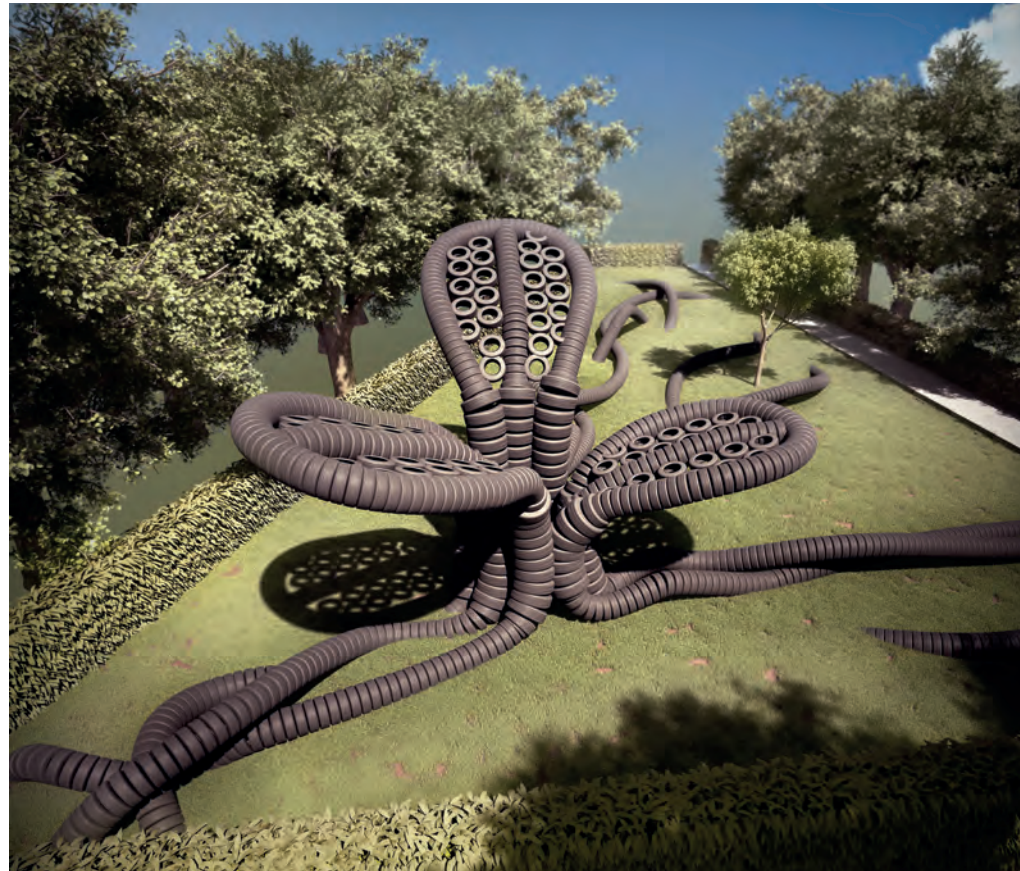
**3D visualization:** Joel

**Year of design:** 2011

**Materials:** Motorbike tyres, bamboo, and liana rope

**Measures:** 33 x 17 metres, the height ca. 5 metres

The size is flexible however, and could be adapted to a specific site.



# “Singapore has a unique challenge of balancing high-density with a sustainable and liveable environment for its residents.”

Interview with Dr. Srilalitha Gopalakrishnan, President, Singapore Institute of Landscape Architects (SILA)



Dr. Srilalitha Gopalakrishnan

**Dr. Srilalitha Gopalakrishnan** shares her views on how Singapore can achieve a more sustainable landscape design and the unique challenges facing the country and landscape designers as a whole.

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**SEAB: Tell us about yourself. Where do you work and what is your role as the President of SILA?**

**DR SRILALITHA:** I am a landscape architect with over 15 years of professional experience and diverse projects across Singapore, Malaysia, China, Hong Kong, and India. I worked with Tierra Design in Singapore for over 11 years on residential, commercial, hospitality, institutional, recreational, and master planning, with many of my projects winning several accolades. The Lee Kong Chian Natural History Museum (LKNHM), Singapore, was applauded for its fresh attempt at integrating native landscapes.

In 2013, my project, Park Royal-on-Pickering, swept the top design awards in Singapore, winning the President's Award for Design of the Year. My firm belief



Kampung Admiralty. Photo: © Ramboll Studio Dreiseitl (RSD)

in integrated landscape design as an effective solution for sustainable high-density urban environments motivated the move towards pursuing a PhD in Architecture and Sustainable Design at Singapore University of Technology and Design (SUTD). My PhD in Architecture and Sustainable Design, under the guidance and supervision of Professor Thomas Schroepfer at SUTD, focused on the increased benefits of integrated landscape design in high-density urban environments and the development of strategies towards evidence-based design practice for economically and socially sustainable urban design solutions.

As a postdoc researcher and project coordinator for the Dense and Green Cities module in the Future Cities Lab Global programme at the Singapore-ETH Centre, I look forward to applying the research methodology on urban scales studies towards evaluating the performance of sustainable integrated districts in order to design effective design strategies for future urban planning. Dedicated to raising the quality and standards of Landscape Architecture within Singapore and Asia, I have been serving on the Council of the Singapore Institute of Landscape Architects (SILA) under various executive roles since 2012 and currently, I serve as the President of the Institute for the 2021 – 2023 term. I also regularly lecture at local and regional educational institutions to raise the profile of landscape architecture in Asia.

The Singapore Institute of Landscape Architects (SILA) is a non-profit organisation representing the Landscape Architectural professional in Singapore. It was established in 1985 to advance the science and art of Landscape Architecture and the theory and practice of landscape, environmental, and urban design, promote research and education therein and create and maintain a high standard of professional qualification.

As an elected representative for the profession and its registered members, the President of SILA is a spokesperson for Landscape Architecture in Singapore and the region. The President's role involves taking the profession forward towards the Institute's visions and working closely with the Council to address the professional interests of the members. SILA's four strategic pillars of Leadership in Design, Elevating Awareness, Training and Development and Professional Practice are the focus areas for the future roadmap. In addition to the larger overseeing role for SILA, I chair SILA's Leadership in Design Strategic Pillar to create and promote the integration of urban environments and complex natural systems through responsible, innovative, and resilient designs. I also represent SILA at various national level committees and strategic planning groups.

**SEAB: Singapore has made great strides in becoming a sustainable city. What kind of progress has landscape architecture made over the past 3 to 5 years? What has changed? How has it evolved?**

**DR SRILALITHA:** Singapore has a unique challenge of balancing high-density with a sustainable and liveable environment for its residents. The biophilic approach of bringing nature closer to everyone's doorstep has been the key to its success as a high-density, high-rise city with high-quality urban living. Landscape architecture, in many ways, has been the cornerstone in



Lakeside Garden (Jurong Lake Gardens West). Photo: © Ramboll Studio Dreiseitl (RSD)

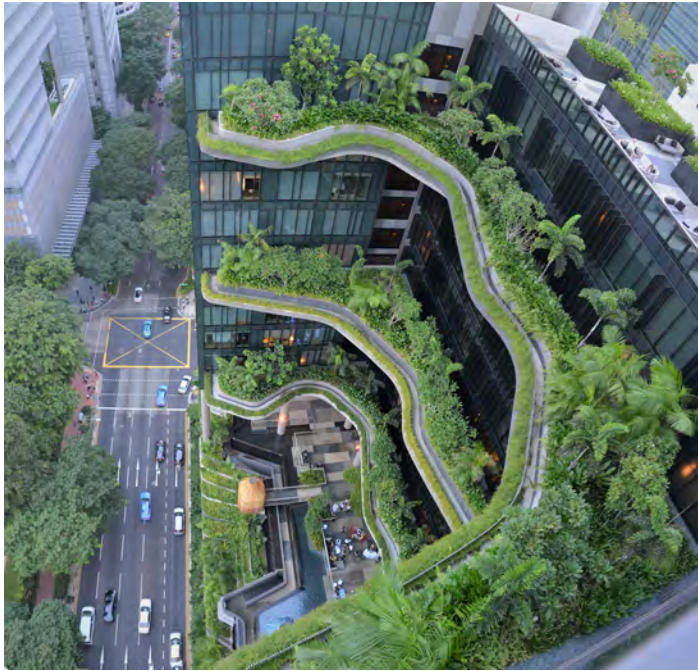
**“SILA's four strategic pillars of Leadership in Design, Elevating Awareness, Training and Development and Professional Practice are the focus areas for the future roadmap.”**

– Dr Srilalitha

this transformation. Intensifying urban greenery along the horizontal and vertical dimensions saw the emergence of a unique integrated urban design approach.

The green and blue systems are seen as a two-dimensional infrastructure solution and a three-dimensional matrix for addressing complex urban challenges. While the skyscraper greening initiative introduced through URA's LUSH (Landscape for Urban Spaces and High-rise) and LRA (Landscape Replacement Area) programmes in 2008 highlighted the aesthetic benefits of pervasive greenery on buildings, in recent years, the landscape architecture practices have focused on the increased value of these integrated green elements as means of providing architectural, social, environmental, ecological and economic benefits for the city.

In addition to increasing the urban greenery footprint in the three-dimensional city matrix, landscape architecture also saw a more focused approach towards urban greenery as a means for ecological restorations, ecosystems conservation, habitat preservation and enhancements in addition to recreation and education. Increasing awareness towards urban landscape



**PARKROYAL on Pickering.** Photo: © Tierra Design

spaces as ecological nodes saw different perspectives in design emerge towards creating a resilient city for the future. These are very positive developments towards a whole systems approach to landscape architecture practice.

**SEAB: What are some of the sustainable landscape design projects in Singapore that excite you? What projects are you currently working on?**

**DR SRILALITHA:** On top of my list is the Kampung Admiralty project by WOHA / RSD, which won the world-building of the year award at the World Architecture Festival in 2018. This project pushed many boundaries as a unique future prototype. In addition to setting a new urban design approach of vertically stacked urban planning, the project also extended green and blue infrastructure integration in the vertical plane. In addition to serving as social recreational spaces, the landscape spaces in this project also functioned as components of bio-engineered stormwater management. The introduction of a vast range of native and fruit planting within the elevated levels attracted many birds, butterflies, and insects higher than the neighbouring ground-level parks. The idea of designing

**"In recent years, the landscape architecture practices in Singapore have focused on the increased value of these integrated green elements as means of providing architectural, social, environmental, ecological and economic benefits for the city."**

– Dr Srilalitha

urban landscape spaces as a connected system of parts that contributes to its larger urban context was unique and set a potential direction as a future urban design solution.

One of the projects I had worked on at Tierra Design was The Tembusu condominium, where the green and blue integration approach was used as a central concept in the landscape design for a private condominium. In addition to the pervasive greenery at all levels, all water features were designed as elements to harvest, treat and display rain water. The idea was to clean and slow release of rainwater from the development into the public drains, thus contributing to an added layer of resilience to the urban system. Another set of exciting projects is Dawson's public housing developments – Skyville@Dawson and SkyParc@Dawson. Both these projects addressed different aspects of sustainable landscape design. Skyville landscape design enhanced the social sustainability of the landscape spaces by providing physical and visual connectivity through the different elevated layers. At the same time, SkyParc introduced an eco-corridor with elements like bird boxes, insect hotels, etc., that encourage wildlife and biodiversity within urban residential estates.

In terms of landscape projects with nature conservation, Jurong Lake, Learning Forest and Rifle Range are all very successful as ecological and recreational urban spaces. With its unique connectivity, the Rail Corridor will also be an interesting project to follow. Some parts of the 24-kilometres stretch have already been restored and open to the public. Many other spaces are in the process of enhancements. This project would also set new benchmarks on sustainable landscape design at



**The Learning Forest at the Singapore Botanic Gardens.** Photo: © Stephen Caffyn Landscape Design (SCLD)

an urban scale, where community participation in design and management, that is, in place-making and place-keeping, will be critical takeaways.

Many more interesting projects are on the near horizon, like Tengah Township, Punggol Digital District, and Jurong Lake District. The visions and aspirations for these new developments are exciting, and the landscape design approach will define new benchmarks for urban planning and liveability.

I am currently involved in urban research for developing predictive tools for landscape design and planning for future cities. My study focuses on network science and its applications to evaluate landscape design performance in dense and vertical urban built environments. I enjoy the challenges that the field of research offers, and it helps open new perspectives of looking at the same things. It also provides the possibilities to explore principles and methods from various fields of science that offer means to address the complex issues in urban planning and design. More importantly, coming from 15 years of practice, it also gives me the unique opportunity to bring my vast practice experience to the table and bridge the much-needed gap between research and its applications.

**SEAB: In which areas do landscape architects here still need to improve? Is SILA offering any help to them?**

**DR SRILALITHA:** The profession of Landscape Architecture is gathering newfound momentum with the Climate Change Declaration, and the need to balance urban development with ecological sustainability and environmental resilience is more pronounced than ever in the light of unexpected disruptions.



**“Landscape architects need to empower themselves with a wealth of new knowledge and embrace advanced tools and methods to transform the landscape design process effectively.”**

– Dr Srilalitha

In addition, Singapore's aspiration to redefine itself as a 'City in Nature' with nature-based solutions as a key pillar to achieve the SGP 2030 sustainability goals adds a renewed focus to a system-based approach to urban landscape design practice for future developments. As the profession and business practices are gradually but steadily adjusting towards new normalcy, we need to learn and unlearn some of our current approaches, embrace the advancement in the science of landscape architecture and empower the professional practice to better prepare for the new leap in design leadership. Bridging the gap between research and practice is imperative, accessibility to digital and training resources is essential, building up a rich repository of information is a necessity, and continued dialogue between our fellow members, practitioners and industry stakeholders for sharing the future goals, visions and aspirations of the profession is critical.

Landscape architects need to empower themselves with a wealth of new knowledge and embrace advanced tools and methods to transform the landscape design process effectively. An 'informed-design approach' would be imperative for the future.

SILA is building a knowledge repository for landscape practices through the quarterly e-newsletter addressing the critical conversation points related to sustainable landscape design. We also introduced a new segment called 'EDGE', where we feature interesting research related to landscape architecture and review their potential applications to practice.

We also use this avenue to share good practices based on the varied range of projects that are featured. In addition, through our social media channel (Facebook, Instagram), we regularly keep our members updated on the key trends and innovations across the globe. In the past year, SILA also organised a series of webinars to educate the professionals and public on evolving culture of living in nature and the need to learn more about our shared urban ecosystems.

Furthermore, SILA has partnered with CUGE to curate specific workshops and courses for our members to gather more insights on biomimicry, wildlife, ecosystem restorations, biodiversity, ecological connectivity, and various quantitative tools used in the field of landscape planning. SILA is also working closely with NUS to test a BIM library palette developed specifically for the tropical climate. The digital library would provide a valuable plugin for the practices to accurately map and predict the various performance parameters of softscape for the projects. Social outreach events like Kayak N Klean are regularly organised to educate our fellow members and professionals on



Tembusu. Photo: © Tierra Design



Tembusu. Photo: © Tierra Design

the need to keep our environments and waters clean and reinforce the passion and responsibility of our profession towards creating a sustainable and liveable urban environment for all.

**SEAB: There are many issues such as climate change and urbanisation that the industry needs to address. How can product manufacturers of landscape design in Singapore respond to these issues?**

**DR SRILALITHA:** This is indeed an interesting relationship of demand and supply that goes both ways. Suppose the product manufacturers are proactive in introducing a wide range of sustainable, low-carbon footprint, low-energy label products to the design consultants. In that case, the practices will be encouraged to consider and use in their design projects. The other traditional way would be for the landscape practices to push for specific quality standards that meet the sustainability goals set forth by the individual firms and drive the demand for product manufacturers to explore and propose. Either way, it's a win-win; the difference is the time.

In November 2020, six Singapore Landscape Architecture Practices signed the Declaration for Climate & Biodiversity Emergency. They pledged to establish climate and biodiversity mitigation, adaptation and resilience principles as key performance measures of our profession. While this is a small step, we hope to get all practices to embrace and advocate for resilient and regenerative design practices. It would also mean we need to educate and encourage the clients and stakeholders to come onboard this transformation.

What does this mean to the product manufacturers? As a professional commitment, landscape architects will need to explore ways to reduce and recycle landscape construction materials, promote low embodied carbon products, minimise waste from all aspects of design, construction and maintenance and advocate responsible procurement and sustainable products. All of these can only happen with the strong support and backing of the product manufacturers and distributors. The landscape product manufacturers are well-positioned with their extensive global networks to introduce innovative solutions to the stakeholders.

In addition, their R&D arms can also collaborate with firms, educational institutions and research labs to develop new technologies at a commercial scale. The only way forward is to work as a collaborative team where the product industry and design practices leverage each other's expertise to reach the common end goal.

**SEAB: In your role, how do you hope to move the landscape architecture industry here into a more sustainable direction?**

**DR SRILALITHA:** As SILA President, I have the opportunity to be the voice of the profession to the larger built environment industry and all our stakeholders within Singapore and the region. In the same way, I also become a valuable channel to gather the needs, challenges and aspirations of the decision makers at the highest levels and disburse the potential opportunities and transformations required by our practices to be ahead of the game in

meeting the needs of the future.

As an institute, we are committed to supporting our practices to tide through these turbulent phases and provide the base to leap ahead once the opportunities present themselves. As mentioned earlier, the future will need a more integrated systems approach to urban planning and design. Every landscape space needs to become an ecological node that contributes to the functioning of the larger urban ecosystem.

The landscape architecture industry needs to deepen its knowledge on ecology, sociology, biology, geology, hydrology, botany, geography, soil science, health (physical and psychological), architecture, urban planning and widen its knowledge on industrial design, health, environmental psychology, urban wildlife, urban data analytics, network science, complex systems, and advanced digital tools and software. As we can see, the road ahead has a lot to learn, master, adapt and apply.

As an institute, we will provide a range of platforms to address all these different aspects through our programmes and projects under our strategic pillars of Leadership in Design, Elevating Awareness, Training and Development and Professional Practice. Through our Landscape Accreditation program, we plan to roll out continued professional development course modules in partnership with various stakeholders to get the practices ready for the next big leap.

The SILA Landscape Architecture Awards will also align with recognising and celebrating innovative, resilient and regenerative design solutions and encourage all practices to push their boundaries towards setting higher standards for sustainability.

There are also plans to organise a series of sharing by design practices on how small changes in design process can help to make a significant shift over time towards designing for climate change adaptations. I believe that every step in the right direction, even a small one, will translate into a sea of change. Instead of aiming for big and ambitious moves by a few, we hope to take small steps together and gather the momentum for the big waves in future.

## Interview with TK Elevator: TWIN puts two elevator cars in one shaft



Jürgen Böhler

The TWIN elevator from TK Elevator (previously Thyssenkrupp Elevator) has taken the building industry by storm. The innovative invention features two passenger cars operating independently in one shaft. This design makes the most efficient use of available space, uses less energy, and quickens the pace of building occupants. TK Elevator has supplied the TWIN to many projects around the world. **In this issue, Jürgen Böhler, APAC CEO of TK Elevator tells SEAB more about the product's success and its demand in Asia Pacific region.**

**SEAB:** In February 2021, Thyssenkrupp Elevator changed its company name to TK Elevator (TKE). What was the key reason for the change in the name and what does the new logo symbolise?

**JÜRGEN:** Our rebrand to TK Elevator was a result of a change in ownership structure. thyssenkrupp AG no longer holds a major stake in TK Elevator, now we are an independent elevator group. The new TKE brand, including its new look and feel, symbolises our modern approach and people-centric focus. As a stand-alone company and industry leader, we have even greater strengths, agility and freedom as we pioneer the next generation of mobility solutions.

Since our rebrand in February 2021, the new TK Elevator brand was well-received globally by our customers and end-users. In November last year our new brand received two Red Dot awards in the categories "Brand Design & Identity" and "Corporate Design & Identity".

In Asia Pacific, our products are installed in many iconic and newly-constructed buildings and infrastructure projects. Recently one of our projects in China, the Taiyuan Botanical Garden, was recognised "Project of the Year 2022" by the Elevator World magazine, this award highlights our continued achievement in providing and installing some of the most innovative and customer-centric mobility solutions. Over the years, we have also become the provider of choice for maintenance and modernisation services of many investors, property owners and managers such as REITs, across the globe.

**SEAB:** As the APAC CEO of TK Elevator, what are your main role and responsibilities in the company?

**JÜRGEN:** As the CEO of APAC, I oversee the overall business and organisational performance of TK Elevator in the region. I was particularly excited to lead TK Elevator's APAC organisation through our rebranding exercise earlier this year, reinforcing our position as an innovation leader and pioneer in the industry.

With our new brand identity and customer-centric service approach, we are well-positioned to reinforce our share in the market even further in Asia Pacific. Southeast Asia in particular, is a market where I see immense growth potential and one we will continue to invest more resources in. We have all-encompassing sales and service operations in Singapore, Indonesia, Malaysia, Thailand, Vietnam, to name a few, and TKE's innovative products and solutions timely cater for the rapid development needs of the Southeast Asia region, our TWIN elevator for example, is now serving at a landmark complex in Jakarta, Indonesia. With these ASEAN countries making a strong come-back in the post-pandemic era, we are confident that our German-engineered mobility solutions will be the preferred choice of more commercial, residential and infrastructure projects in Southeast Asia.

**SEAB:** The TWIN is a truly innovative product with two passenger cars in a shaft moving independently of each other. How did TKE come up with this idea?

**JÜRGEN:** The TWIN is the perfect testimonial to our understanding of the market and the needs of our customers. It is especially suitable for Asian countries where high-rise development is concentrated in downtown areas where floor space is valuable.

Conventional elevator systems have one car in one shaft. To double passenger handling capacity with a conventional elevator system, double the space will be occupied by the additional shafts – which means less usable floorspace for tenants and less rental income for property owners. With two elevators operating independently in one shaft, our TWIN offers the benefits of significantly increasing system capacity, without the need for extra elevator shafts which takes up precious usable floor space. When compared to existing double-deck elevator solutions, TWIN has the advantages of flexible zoning, lighter in total weight, and the added

flexibility to park one of the cars during non-peak hours to save energy, this is very important for modern green buildings.

**SEAB:** What safety & quality standards do the TWIN elevator meet?

**JÜRGEN:** The TWIN comes with a 4-stage safety management system with independent monitoring, which is certified to the highest industry standards, including the German TÜV and European SIL3. Special Type Examination was carried out by TÜV SÜD New Technologies in the field of Lift department, a Design Examination certificate was also obtained.

With our 4-stage safety system, each car's movement, direction, speed and destination are constantly monitored, if minimum clearance is compromised, both cars will be slowed down; brakes will be applied if car separation is lower than a defined value, and safety gears of both cars will be immediately applied if the system detects further reduction in car separation.

**SEAB:** TWIN elevators save space, reduce passenger travel times and save energy. How much time, space and energy does it save compared to traditional elevators?

**JÜRGEN:** Depending on building design and application, our TWIN system contributes up to 30-50 percent of elevator core size reduction. In a particular use-case, a 21-floor office building which houses about 1,300 people, having 4 TWIN systems versus 8 traditional elevators resulted in 50 percent of shaft space reduction, and 28 percent shorter Average Travel Time to Destination (ATTD). In another use-case involving a 61-floor skyscraper, savings in terms of shaft space and ATTD were 43 percent and 17 percent respectively, with an additional 300+ occupant capacity.

In terms of energy-saving, clearly the biggest advantage of our TWIN is its ability to park one of the two cars while the other stays in operation. This means when passenger volumes are low, very little energy is consumed by the non-moving cars. Additionally, the TWIN can be equipped with energy recovery devices that can feed about 30 percent of energy back into the building's power grid.

**SEAB:** TWIN elevators are installed in many locations. Can you give us the names of the notable projects?

**JÜRGEN:** The TWIN was first introduced in 2006, and has been installed in a large number of landmarks across the globe, including the European Central Bank in Frankfurt, the Parc1 tower in Korea and BMW's base in Munich.

In Asia Pacific, the TWIN is the elevator system of choice for many major projects and landmarks in the region. In Jakarta, Indonesia for example, the MPR/DPR/DPD complex had the TWIN installed; in Korea, our TWIN system has been installed in over 10 locations, including Parc1 the second-tallest building in Seoul; in China, use-cases of the TWIN encompasses modernising a century-old hospital building, new installations in premium hotels and local commercial landmarks and even the new headquarters of a global unicorn start-up company. In Hong Kong, one of local's busiest and most prestigious hospitals selected the TWIN for its newly-built medical centre.

With the TWIN's unparalleled advantages over conventional single-car elevator systems, and the operational efficiency



resulted when combined with our Destination Control and MAX cloud-based predictive maintenance service, we expect more high-rise developments in Asia Pacific to select the TWIN as their elevator system of choice.

**SEAB:** In Asia Pacific region, what kind of demand do you see for the TWIN elevators?

**JÜRGEN:** TWIN is a ground-breaking and one of the best-suited solutions for the Asia Pacific market. Skyscrapers are being built at lightning speed across the region, at the same time older buildings in prime locations are awaiting upgrade and overhaul – in both scenarios, TWIN offers unrivalled efficiency and space-saving advantages over traditional single car or double deck elevator solutions.

As such, I have high hopes for the TWIN in Asia Pacific. I can foresee more developers and property owners interested to leverage our innovation to save space, shorten waiting queues and increase rental income. Premium mid to high-rise buildings with high elevator traffic will benefit the most from our revolutionary TWIN system, including offices, hotels and hospitals, which are being built and modernised in many 1st and 2nd tier cities in China, India and Southeast Asia as we speak.

**SEAB:** What challenges do you see for the elevator industry in Asia Pacific over the next 2-3 years?

**JÜRGEN:** In the short term, impacts of the global supply chain disruption will continue to affect the industry. To ensure our customers have the best experience possible with TK Elevator, our team has been working tirelessly with suppliers and our factories to minimise the impact of all possible supply chain issues through advance product planning and procurement. Our factories in China, Korea and India were strategically situated close to some of our biggest markets, allowing us to respond to market needs in the timeliest-possible manner.

Through continued innovation, we would be able to maintain and advance our competitive edge against other players in the market; through continued optimisation of our product and business portfolios, we would be able to stay ahead of market demands; and through strategic organisational expansions, we ensure TK Elevator serve our customers seamlessly across product spectrums.

# Managing the Lifespan of a Mechanical Lock System

*Text by Urs Spaeni. Photos courtesy of dormakaba.*

Despite the growing appetite towards digital and high-tech entrance solutions, mechanical keys and locks remain the most popular market solutions due to their durability and affordability. Particularly in residential settings, they are the most ubiquitous entrance methods and continue to record stable growth.



Some of dormakaba's most popular mechanical locks and keys are the expert pluS, Quattro Plus, and PENTA.

The global mechanical locks market will be worth USD 9.6 billion by 2026, with an annual growth rate of around 5 percent between 2020 and 2026. These figures mean that even though more technologies such as facial recognition or mobile access facilitate entrances, most people will still handle mechanical locks in their daily lives.

One of the reasons mechanical cylinders are still in high demand is their ease of replacement and extension. Throughout the life cycle of a mechanical lock system, there are often unavoidable uncertainties and changes; keys get lost, new rooms, or even buildings are added and require new locks. While replacing or adding new cylinders can be done quickly, managing a complex mechanical lock system takes commitment and responsibility.

## Why is the Management of a Mechanical Lock System Important?

It is imperative for facility managers to be well-versed with their building's security needs and key systems. To maintain the optimal security standards, from janitorial areas to storage, they must keep track of not only the number and locations of locks and keys, but who has access to them.

In many buildings, a master key system is used. A master key system is a key plan whereby selected keys can open a number of pre-defined doors. It helps maintain better control, saves key replacement costs and is convenient, as there are less keys in circulation. It also provides quick access to all

dormakaba's tailor-made solution is aesthetically-pleasing, flexible, and able to grow and change with your organisation over time.



rooms within the premises, such as for security staff and management personnel. This is not only convenient, but can save precious lives in case of emergencies. Convenient as a master key system may be, facility managers have to adhere to a consistent plan that ensures that certain keys only open certain doors with as few keys as possible in use.

System operators must identify their building's needs and choose new locks or maintain them accordingly. For example, cylinders installed in high humidity settings like a swimming pool or outdoors must be equipped with oxidation protection, lubricated, and maintained regularly. Applying a cleaner on regular intervals such as once a year would ensure the smooth running of the cylinder, maximise safety, and increase its lifespan.

Likewise, when keys change hands frequently, the appropriate measures must be taken to prevent unauthorised copying.



dormakaba PENTA is protected by European Patents EP1185755 and EP2890856B1. This means only dormakaba produces the cylinder locks and additional and/or duplicate keys only at the user's request.

A key's mechanical durability is not always parallel with their security protection. Even if a lock system still appears to be in good shape, the security lifespan might be over. This might happen for a number of security compromises beyond mechanical deterioration, such as the expiry of its patent, after which a key can be copied by anyone.

Similarly, if the keys get lost, misplaced, or if the facility managers lose a track of who has access to them, this means that their lock's lifespan is over.

To ensure complete security of a facility, facility managers must take into consideration the limitations of a lock's lifespan beyond its mechanical function. With careful planning, maintenance, and appropriate management strategies, the master key system has the capability to maximise security at facilities and properties for your peace of mind.

## City Gas rebrands to City Energy, celebrates 160 years

**Singapore** – After 160 years of service as the national piped town gas provider, City Gas is rebranding as City Energy and transforming its piped gas business to provide innovative green energy solutions that meet the needs of a growing city and changing planet, now and into the future. The name change and celebrations will start from 1 December 2021 through to August 2022 with informative and engaging activities which look back at the company's history, as well as look at some of City Energy's plans into the future.

Throughout its rich history, the company has built a strong reputation for safety and reliability to become a trusted energy partner for the nation. Whilst looking back on significant milestones of what the company has achieved for Singapore since 1861 – from lighting the streets with gas lamps in 1864, to switching to pollution-free naphtha gas in 1966; from using natural gas as partial feedstock in town gas production for the first time in 2003, to embracing low-carbon solutions for homes and businesses today – the City Gas leadership understands the urgency for change.

City Energy Chief Executive Officer,



City Energy CEO Mr Perry Ong. Photo credit: City Energy

Mr. Perry Ong, says, "Changing our name to City Energy heralds, on our 160th anniversary, an exciting new era in our history, as we shift to being a leading energy provider with best-in-class quality service and a focus on innovative green technology and solutions. Today, as we energise homes and businesses

with a safe, reliable and continuous stream of piped gas, we recognise our customers' changing needs and our nation's commitment to be a greener and more sustainable city. We are thus thrilled to begin a new chapter and transform to be Singapore's leading sustainable energy company."

With the new branding, City Energy, the company is now exploring the use of low-carbon energy solutions such as green hydrogen to strengthen its core energy offerings to underpin Singapore's vision of achieving net-zero emissions beyond 2050. Green hydrogen is a promising zero-carbon fuel to be considered as part of town gas production as it does not emit carbon dioxide during production or combustion.

Mr. Perry Ong continues, "With foundations and generations of knowledge in gas, City Energy is well positioned to support Singapore's drive to being a world-class eco-city within this generation's lifetime. We believe that City Energy can be a positive force against climate change by exploring innovative new energies and technologies to support Singapore's goals for a low-carbon city."



Senoko Gasworks. Photo credit: City Energy

## Holcim Philippines signs 20-year deal with Blueleaf Energy to become country's first cement maker with on-site solar power plant

**Manila, Philippines** – To further improve its sustainability performance, leading building solutions provider Holcim Philippines, Inc. has signed a 20-year power purchase agreement with Blueleaf Energy, a leading renewable energy company, to deliver solar power to its plants in Bulacan and La Union.

Under the agreement, Blueleaf Energy will finance, build, operate, and maintain solar energy facilities in Norzagaray, Bulacan and Bacnotan, La Union with a combined capacity of 29 MWp and an annual generation of more than 50 GWh that will supply up to 15 percent of the energy requirements of Holcim Philippines' plants there. The solar energy facilities are scheduled to be completed in 2024. The partnership is projected to significantly reduce the power costs and carbon footprint of Holcim Philippines. The parties held a signing ceremony on November 16, 2021.

The deal marks Holcim Philippines' transition to sustainable cleaner energy for cement production. Manufacturing cement is energy-intensive so the shift to renewable power enables Holcim Philippines to conserve natural resources and reduce CO2 emissions.

Horia Adrian, President and CEO of Holcim Philippines: "Reducing the carbon footprint of our operations is one of our key sustainability commitments. This year, we have made great progress in this area by stepping up production of blended cements and replacing coal with alternative fuels. Shifting to renewable solar energy will help us further improve as an



Blueleaf Energy & Holcim Philippines held a signing ceremony on 16 November 2021.

environment steward and a partner in building progress in the country sustainably."

Raghuram Natarajan, CEO of Blueleaf Energy: "We are pleased to continue to build our strong track record in delivering world-class clean energy solutions in the region and supporting large multinational companies like Holcim. With our credentials of developing and operating over 2 GW of projects, of which more than 250 MW in the Philippines, this partnership also underscores our strong capability to support corporates in Asia in achieving their clean energy ambitions."

## ASHRAE addresses climate change solutions at UN's COP26

**Glasgow, Scotland** – ASHRAE was represented at the United Nations Climate Change Conference of the Parties (COP26) in Glasgow, Scotland, held from October 31–November 12.

ASHRAE formally participated as a Non-Governmental Organization (NGO) and an official COP observer. The United Nations granted permission for select organizations to participate in COP26 activities. More than 60 of the largest and most influential international architecture, landscape architecture, engineering, planning, and construction firms, along with two dozen organizations representing over one million building industry professionals worldwide, issued a Communiqué to government leaders headed to COP26 challenging them to step up their emissions reduction targets for the built environment. The firms and organizations are signatories of the 1.5°C COP26 Communiqué – an open letter to sovereign governments demonstrating the firms' and organizations' commitment to meet the Paris Agreement's 1.5°C carbon budget and demanding governments do the same.

ASHRAE's focus at COP26 was to emphasize the importance of the building community's participation in addressing the

climate crisis. Architecture 2030 and ASHRAE hosted a COP26 Official Side Event on November 10, 2021 featuring the 1.5°C COP26 Communiqué and its signatories.

The event titled *65% by 2030 / ZERO by 2040: Top 200 Global Firms and Organizations Lead With 1.5°C Climate Actions* highlighted ways in which the signatories are responding to the urgency of the climate crisis and specific actions to decarbonize the built world and meet the Paris Agreement's 1.5°C carbon budget. At the side event, 2021–22 ASHRAE Treasurer Ginger Scoggins, P.E., Fellow ASHRAE, CEM, CxA, highlighted the world's growing building stock and the role of built environment organizations, such as ASHRAE, in assisting both policymakers and industry leaders in better understanding their impact on our climate change solutions.

"ASHRAE signed onto the 1.5°C COP26 Communiqué and we are here today because engineers and scientists involved with HVACR and building systems have been and will continue to be advancing solutions to address climate change," said Scoggins. "We are here because we recognize that the built environment is a key source contributing to the world's greenhouse gas



Photo courtesy of UN Climate Change Conference.

emissions and with the building stock continuing to expand and doubling by 2050, solutions from the buildings community is ever more critical."

Additionally, Scoggins spoke about the credibility of ASHRAE's technical resources and global standing in the development of consensus-based standards.

"ASHRAE's flagship Energy Conservation Standard 90.1 is the benchmark for commercial building energy codes in the United States and has been a key basis for codes and standards around the world for more than 45 years, reducing energy consumption by 50%, yet only 38 countries have specifically named building standards and codes in their

Nationally Determined Contributions," said Scoggins. "Many of the countries where the building stock is expected to grow do not require energy standards for buildings. ASHRAE signed the buildings industry's communique, and we are ready to help policy makers and the buildings industry around the world transform our building stock into one that is sustainable, resilient, and healthy. We are here to be part of the solution and we are up to the challenge."

In a separate statement, 2021-21 ASHRAE President Mick Schwedler, P.E., Fellow ASHRAE, LEED AP, commented on ASHRAE's participation at COP26 and shared additional ways that the Society is addressing climate change.

"ASHRAE's climate action efforts exemplify the Society's core dedication to engineering excellence in environmental stewardship," said Schwedler. "The ASHRAE Global Headquarters building renovation project demonstrates that existing buildings can be transformed into net-zero-energy structures cost-effectively, using current off-the-shelf technologies. Our Advanced Energy Design Guides, developed with our partners, provide zero energy K-12 schools and office buildings guides to equip designers in achieving zero energy and significantly reducing carbon. ASHRAE is proud to work with other world leaders to not only raise awareness of the issues surrounding climate change, but collectively seek to redefine the built environment for the times and continually explore what is possible through industry leading innovation."

## Sungrow makes "2028 Carbon Neutral" Pledge during COP26

**Hefei, China** – COP26, the largest carbon-neutral event across the world draws a conclusion with its commitment to carbon neutrality. On this special occasion, Sungrow, the global leading inverter solution supplier for renewables, makes its own pledge of carbon neutrality by 2028 and expresses its faith to provide clean power for all.

During the past few weeks, The COP26 has tirelessly worked to impact change the world with newly-reached decisions, agreements, and other action items, all of which revolve around cutting CO2 emissions and mitigating climate change. More than 190 countries and 1,000 companies are setting new goals toward sustainability and decarbonization. With these joint efforts, the international community moves closer towards the net zero future.

As a member of the RE 100 Initiative, Sungrow also pledges to reach carbon neutrality by 2028, about its 30th birthday. In 2028, the Company promises to use 100% renewable electricity and realize a net-zero carbon footprint across

its entire production and operation. Guided by the mission of "Clean power for all", Sungrow continues to bring out the best of its core advantages of clean power conversion technologies, maintain a momentum of constant technological innovation, and realize the synergized growth of five key business; including, PV inverters, energy storage, wind power, renewable energy investment and development, and green hydrogen.

### Sungrow's contributions to a more sustainable world

Due to consistent product innovation, globalized manufacturing, warehousing, sales, and service systems, Sungrow has made considerable achievements and made constant contributions to the global transition to renewable energy. By 2021, Sungrow's products have been installed in over 150 countries and regions. In fact, the total inverter shipments reached 182 GW -- a number equivalent to generating around 257,300 GWh of clean electricity per year and

eliminating 205.8 million tons of carbon dioxide. In addition, Sungrow received an AA rate of MSCI ESG rating for two consecutive years, proving its consistent appeal in environmental, governmental, and social investments. As the world's most bankable PV inverter brand in the world (Ref: BloombergNEF), Sungrow occupies about 30% of the global PV inverter market share; dominating top markets in Australia, South Korea, the Middle East, and many other regions.

Further, in 2020, Sungrow shipped more than 800 MWh of energy storage systems worldwide; all of which reported zero security incidents. This year, Sungrow's newly-launched Liquid-Cooled ESS also supplies the largest Solar plus ESS plant in Southeast Asia, initiating a globalized roadmap for the next decade. Upon the successful conclusion of COP26, Sungrow will provide better solutions and service for customers worldwide and make more contributions to sustainable development through dedicated research and innovation.

## TK Elevator wins Elevator World ‘Project of the Year 2022’ award for moving walks

**Hong Kong** – TK Elevator is pleased to once again receive Elevator World’s Project of the Year award. With its Taiyuan Botanical Garden project in Shanxi awarded “Project of the Year 2022” under the “Moving Walks” category, the company has been given this prestigious recognition consecutively in the award’s past three editions. The award highlights TK Elevator’s continued achievement in providing and installing some of the most innovative and customer-centric mobility solutions across the globe.

Occupying the site of a former coal mine, the Taiyuan Botanical Garden was transformed into a modern landscape park and museum by Austrian architect firm Delugan Meissl. Key features of this park include three domed greenhouses and a large terrace providing a panoramic view across the park. The highlight of the project is the moving walkway that extends through an opening through the roof of the entrance building, provided by TK Elevator.

The installation of a pair of TK Elevator’s orinoco moving walks at a 12-degree incline, 1000mm width, 11.85 metres height and 62.4 metres span in the sustainability-themed botanical garden not only sets a new record as the longest and highest (in terms of rise) moving walks installed by the company in China, but also showcases the exceptional build and aesthetic qualities of the German engineered TK Elevator products.



Taiyuan Botanical Garden project in Shanxi. Photo credit: CreatAR

“Customer satisfaction is of paramount importance to TK Elevator. As an iconic element of the park’s design and the sole entrance to the panoramic terrace, the orinoco moving walk was chosen by the customer for its proven track record in safety and reliability,” said Peter Walker, CEO at TK Elevator. “We are proud to show our entrepreneurial spirit and once again convince with our innovative mobility solutions.”

## New Simplex BSIU delivers cost effective management for smaller facilities

**Singapore** – The TrueSite Workstation Building Systems Information Unit (BSIU) from Simplex is designed for facilities that want the benefits of an intuitive, graphical fire alarm system management console, but don’t need the large capacity or client-server features of a TrueSite Workstation Server.

Designed for smaller buildings, the BSIU delivers alarm, event information and operator response instructions using a graphical map of the facility. The BSIU is a software-only solution that can be installed on commercially available computers – which are much less costly than UL864 listed machines required by the TrueSite Workstation – while still meeting all NFPA code requirements.

The BSIU is a perfect fit for primary schools, medical office buildings, clinics, commercial properties and other single-building facilities.

**To know more on BSIU, visit [www.simplex-fire.com](http://www.simplex-fire.com).**

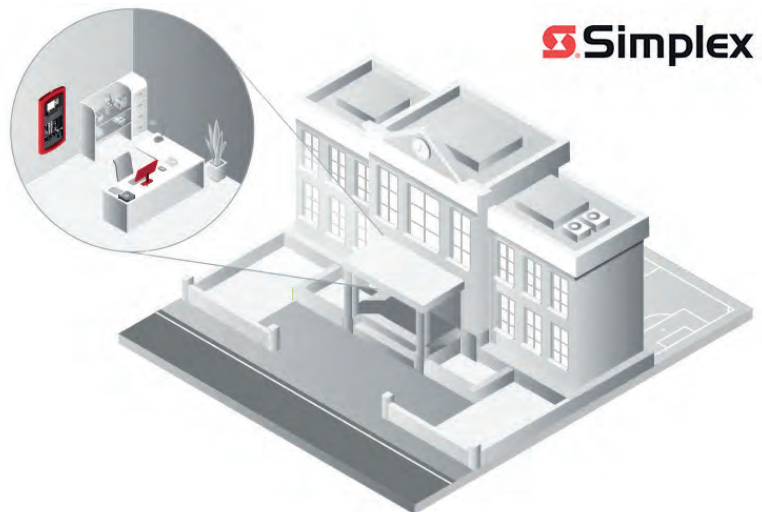


Photo: © Simplex

# Formica Asia now offers award-winning FENIX® range in Singapore

**F**ormica Asia has expanded its product portfolio in Singapore to include the award-winning FENIX® range through its distribution network. In the Singapore market, Formica Singapore Pte. Ltd. will be official exclusive distributor of FENIX starting January 1, 2021.

FENIX are the innovative materials created for interior design by Arpa Industriale in 2013. They arise from the Italian design tradition, reflected in the project stylistic choices: from the colours selection to the overall aesthetic result of the interiors applications. Applying proprietary technologies, the external surface of FENIX is characterised by the use of next generation acrylic resins, hardened and fixed through an Electronic Beam Curing process. With low light reflectivity, the FENIX surface is extremely opaque, soft touch and anti-fingerprint. Thermal healing of superficial micro-scratches is also possible. They are suitable for both vertical and horizontal applications in the following sectors: kitchens, bathrooms, design furniture, retail, offices, and contract.



FENIX NTA®

The FENIX family includes:

**FENIX NTM®:** the first to be introduced in 2013 to meet the market request for smart materials and matt surfaces: it is available in 20 refined and timeless colours. Colours have been selected to highlight and match the latest trends in interior design: a collection of silent elegant colours. All its innovative features – a matt, soft touch, and anti-fingerprint surface, as well as the possible thermal healing of superficial micro-scratches – make FENIX NTM the smart material.

**FENIX NTA®:** its empowered metallic surface features the same characteristics of FENIX. Hence, it is extremely matt with visual comfort and a very pleasant soft touch, as well as anti-fingerprint. Thermal healing of superficial micro-scratches is also possible. The metallic colour range includes Acciaio Hamilton, Argento Dukat and Oro Cortez. Among its pluses, FENIX NTA is suitable both for vertical and horizontal application, and is easy to work with standard carpenters tools, such as regular cutting, milling, polishing and drilling tools; it is also customisable with laser engraving techniques and CNC machining.

For more information, visit [www.formica.com](http://www.formica.com).



Pictured above:  
Application photo  
of FENIX.



Pictured left:  
FENIX NTM®

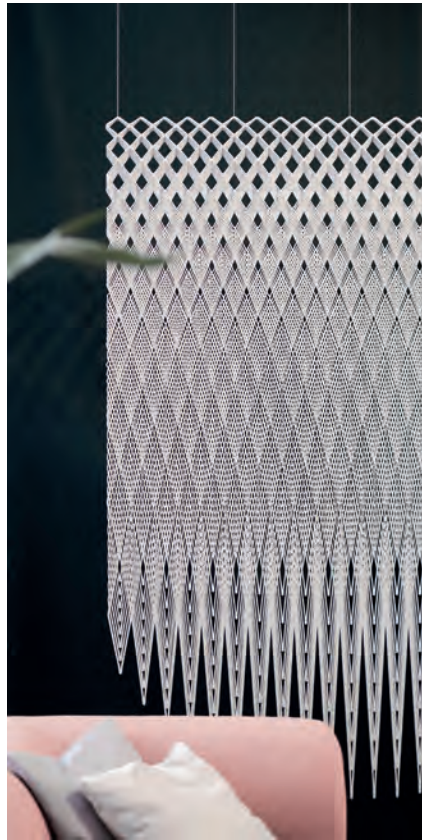
## Crochet Screen by Aectual BV

The Crochet Screen brings 'architectural intimacy' to offices, commercial spaces, hotels, restaurants, and private homes. Designers House of DUS applied Aectual's 3D printing technique so that an almost crocheted effect appears, creating a tactile and elegant structural fabric. The screens bring a new level of privacy and are perfect for enclosing intimate settings in a larger space or adding atmosphere as a unique wall piece.

Advantages include:

- Plant-based and 100 percent circular
- 100 percent VOC-free, 100 percent Red-list free
- Customizable dimensions
- Made-to-order in 17 colours

For more information, visit [www.aectual.com](http://www.aectual.com).



Above & left photos: Screen 'Crochet'. Photos courtesy of Aectual

## Armacell launches ArmaFlex Pro

Armacell, a global leader in flexible foam for the equipment insulation market and a leading provider of engineered foams, launched ArmaFlex Pro, its latest insulation product for mission-critical applications in Singapore in March 2021.

ArmaFlex Pro features an insulating closed-cell structure and a reinforced aluminium foil facing. With an in-built vapour barrier and low thermal conductivity, ArmaFlex Pro offers reliable condensation control performance that is trusted by facilities that operate continuously, including data centres, server rooms and hospitals.

In such mission-critical environments, air contaminants can lead to components overheating, as well as electrical or mechanical failure of components, power supplies and circuit boards. Hence, a dust- and fibre-free insulation material is strongly recommended.

"ArmaFlex Pro is a closed-cell insulation material, and unlike conventional insulation materials, it poses no risk of fibre



ArmaFlex Pro. Photo: © Armacell

leakage and air contamination," explained Xinyan Pay, APAC Product Manager, Armacell.

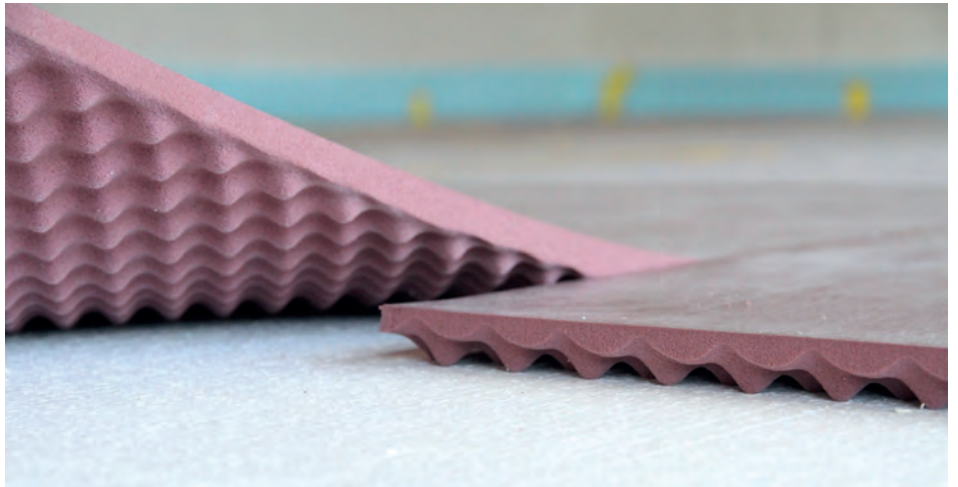
Additionally, this product achieves Class 0 classification according to the British Standard for fire performance BS476 and meets the criteria of the Singapore Civil Defence Force for construction material containing plastic for wall and ceiling material and finishes.

For more information, visit [www.armacell.com](http://www.armacell.com).

## Getzner expands its impact noise protection range

**G**etzner Werkstoffe launched two new designs of its impact noise insulation, the Acoustic Floor Mat (AFM), at the start of 2021. The vibration isolating solution now has improved product characteristics, with enhanced dynamic efficacy and a further reduction in the height of the highly resilient impact noise protection mat.

Not only are the requirements for impact noise protection constantly increasing today, they are also constantly changing. In order to support construction planners in spite of this, Getzner, leading experts in vibration and oscillation protection, have developed two new types of Acoustic Floor Mat, which are now also available in Singapore and Southeast Asia. "We have once again pushed the boundaries of what's possible and now, following the intensive development phase, we are looking forward to the forthcoming product launch," underlined Sebastian Wiederin, Product Manager at Getzner.



The Acoustic Floor Mat has improved dynamic effectiveness and is highly resilient.  
Image source: Getzner Werkstoffe

### Impact noise protection for mixed-use buildings

"The most impressive aspect of the insulation mats is their improved dynamic efficacy and their high load capacity. Thanks to their low installation height, they are ideal for mixed-use building complexes with different levels of sound control. They are also perfect for renovation projects with limited space and increased acoustic requirements," explained Sebastian Wiederin.

### Meeting increased sound insulation requirements

The two new impact noise protection mats, AFM 35 and AFM 29, are available in proven Sylomer® product quality and with a 3D corrugated surface. The AFM 35 has an even lower dynamic stiffness than before, which corresponds to 5 MN/m<sup>2</sup>. This also means it achieves a greater impact noise reduction ΔL<sub>w</sub> of 35 dB. "The new Acoustic Floor Mat makes it easier to meet increased sound control requirements in future than it was before," stressed Sebastian Wiederin.

### Highly resilient insulating mats – also suitable for renovations

What sets the second new AFM 29 impact noise protection mat, a homogeneous polyurethane mat, is its high load capacity of 50 kN/m<sup>2</sup> and its effectiveness in insulating impact noise by 29 dB. It has a reduced installation height of just 11 mm. These properties make the AFM 29 ideal for renovations and use under dry screed, but also for areas with high footfall, such as supermarkets. The floor mats are designed for high



The AFM is particularly suitable for building complexes with mixed use and different sound insulation levels as well as for renovation projects.  
Image source: Getzner Werkstoffe

loads. The material's low deflection helps prevent cracks from forming in screed. "The Acoustic Floor Mat offers consistently high impact noise reduction that lasts for decades. With this product, Getzner is making an important contribution to improving quality of life and work," summarised Sebastian Wiederin in closing.

### Acoustic Floor Mat

- Improved dynamic effectiveness
- 3D corrugated surface with Sylomer® product quality
- Reduced installation height

For more information, visit [www.getzner.com](http://www.getzner.com).

# Architecture & Building Services 2021 opens after two years of pause

**S**ingapore – Architecture & Building Services (ABS) 2021, the industry's most comprehensive exhibition on the built environment, returned to Marina Bay Sands Expo & Convention Centre in Singapore after a two-year pause due to the Covid-19 pandemic. This time, the ABS 2021 added a new show called Design Asia 2021, bringing the total number of exhibitions to seven.

The opening was officiated by Guest-of-Honour Lim Biow Chuan, Member of Parliament for Mountbatten Constituency & Member of Government Parliamentary Committee (GPC) for National Development in the presence of visitors, conference delegates and the media on 24 November 2021.

On the second day of the show, the inaugural Design Asia Congress 2021 was opened by Guest-of-Honour Assoc Prof Muhammad Faishal Ibrahim, Minister of State, Ministry of National Development and, Ministry of Home Affairs.

The finalists of the inaugural Design Asia Student Design Competition, held over a period of one year, received their awards and the industry's accolades on stage at the official opening ceremony. The group of design students were the cream of 68 entries from seven institutions.

The competition is a platform for budding design innovators to showcase and commercialise their creative renditions, as well as to connect with the industry's most influential designers. The young designers hope to make significant contributions to the Built Environment scene in Singapore throughout their future careers in design.

On the third day of the show, Mr Desmond Tan, Minister of State, Ministry of Home Affairs & Ministry of Sustainability and The Environment, and Guest-of-Honour, officially opened Safety & Security Asia (SSA) 2021 exhibition and the inaugural; Outcome-Based Contracting (OBS) Conference 2021.

Organised by Conference & Exhibition Management Services (CEMS), ABS 2021 is the premier onestop destination for international products, solutions, and service providers to boost their exposure to the Southeast Asian markets. The show is dedicated for the Built Environment and related sectors ranging from Architecture, Facilities Management, Lighting, Safety and Security, Fire Disaster and Design. Themed 'Design Solutions for The Built Environment', ABS 2021 will



**Ribbon-cutting ceremony at ABS 2021. Photo credit: Conference & Exhibition Management Services (CEMS)**

provide a real-time interactive and curated experience to connect sellers and buyers on a hybrid format – both on-site and virtual.

The seven concurrent tradeshow under ABS 2021 are:

1. ArchXpo 2021 – The 7th International Exhibition of Architecture & the Built Environment
2. International Facility Management Expo (iFaME) 2021 – The 8th International Facility Management Equipment, Products, Technology & Services Exhibition
3. Lighting Asia 2021 – The 7th International LED + Lighting Technology Show
4. Safety & Security Asia 2021 – The 19th International Safety & Security, Technology & Equipment Exhibition
5. Fire & Disaster Asia 2021 – The 17th International Disaster, Emergency Management & Fire Prevention, Technology & Equipment Exhibition
6. Work Safe Asia 2021 – The 7th International Workplace Safety, Technology & Equipment Exhibition
7. Design Asia 2021 – The inaugural International Designers Expo for Asia

ABS 2021 also hosted 10 major conferences, symposiums and forums led by industry experts which are held concurrently with the seven exhibitions. Underscoring the robust presence of thought leadership at the show, the conferences were designed to address new developments, trends, challenges and solutions that directly impact the Built Environment. These provided valuable insights for conference delegates and industry players on how they should position their businesses and operations going forward as Singapore's economy recovers in the endemic phase.

In addition to the exhibitions, there were also 10 conferences held during the three-day show. ABS 2021 had a capacity for 3,000 on-site visitors, 2,000 on-site conference delegates and 3,000 virtual visitors online.



## BeeBryte unveils energy strategies

BeeBryte provides Automatic and predictive control of air-conditioning systems in order to improve the efficiency (up to 40 percent), the comfort level and support on-site teams in the maintenance and operations. The company was represented by Elodie Hecq, Head of Sales – Singapore, at the ABS 2021 show. Elodie said that the company offers new and intelligent ways for energy efficiency in buildings.



**Elodie HECQ, Head of Sales - APAC, BeeBryte**

BeeBryte has developed an intelligent SaaS solution to explore the untapped potential of buildings. Based on artificial intelligence combined with a heating & cooling equipment expertise, the company's platform collects, aggregates, analyses data in depth in order to make HVAC systems predictive and adaptive, unlike traditional reactive solution. It is a non-intrusive service compatible with both new and existing installations of any type and any brand; and it comes at no upfront cost.

**For more information, visit [www.beebryte.com](http://www.beebryte.com).**

## Nano-Star unveils coatings for non-hacking waterproofing

Nano-Star Private Limited presented its wide range of coatings for waterproofing and insulation at the ABS 2021 show. Based in Singapore, the company is a leading provider of advanced construction solutions in Asia. It offers leading technologies in surface chemistry, superb product performance and engineering, and elegant architectural finishings and application.



**Isaac Ong, Director, Nano-Star Private Limited**

Nano Waterproofer outperform traditional membrane or crystallization methods in waterproofing resistance and finishing – all without the need to hack off existing tiles. Nano-Star's Anti-Condensation Paint is able to cut down condensation with a single paint layer.

Nano-Star invests heavily in the latest technologies to develop these superior products. New products are developed yearly to offer stronger performance materials.

**For more information, visit [www.nanostar.sg](http://www.nanostar.sg).**

## DNP Singapore unveils aluminium decor panels for interior & exterior

At ABS 2021 show, DNP Singapore Pte Ltd, presented DNP Aluminium Decor Panel for interior and exterior applications.

DNP Aluminium Decor Panel is a premium, design centric and high-value added aluminium panel series. It provides unique and rich expressions to interior, semi-exterior and exterior spaces.

DNP Singapore has installed the panels in several projects around the world such as Serangoon Mall in Singapore, Abercrombie & fitch in Singapore, Village Hotel Sentosa in Singapore, Takanawa Gateway Station in Japan and Under Armour in USA.

The company is headquartered in Japan with a sales office in Singapore.

**For more information, visit <https://livingspace.dnp.co.jp/arttec/>.**



## Forrester FeedbackNow offers solutions to measure customer feedback

**F**orrester FeedbackNow offers innovative solutions to measure customer feedback to improve their experiences, all in real-time operations. They can help to deliver excellent CX, collect and measure customer feedback to pinpoint emerging issues before they negatively impact an organization. Its customer feedback system provides Smiley Boxes and digital collection methods to collect massive amounts of meaningful customer feedback.

**Intuitive devices allow organizations to achieve high customer feedback response rates. The company's solution adapts to your environment thanks to our large range of wireless equipment:**

- Wall-mounted
- Countertop
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**Swiss made and combining IoT, wireless, LoRa, SigFox, GSM, and proprietary Radio frequency technologies**

The company's solution can be deployed worldwide without any IT integration. Developed and built in Switzerland, the robust construction of the Smiley Box ensures high resistance to water and impact, complete with a battery life of more than a million clicks.

**Powerful and secure**

The company's solution leverages the latest in computing infrastructure, and is always evolving to meet new performance demands. Additionally, its data centre follows

the highest security, privacy and redundancy standards.

**Fully integrated digital devices**

The company's devices measure satisfaction at every touchpoint. The physical and digital devices are fully compatible and interconnected at all times, each fitted with specific features including:

- Virtual Smiley Box for tablet, website or mobile APP
- Real-time actions and data analytics through FeedbackNow APP
- Comprehensive online dashboard and email reports
- Full API support to integrate with existing system

**Tailored solution**

The company's devices can be tailored to fit your brand while its data consolidation can be customized to fit your organizational structure. Moreover, its equipment seamlessly integrates with your environment, complete with hassle free and cost-efficient implementation.

**For more information, visit [www.feedbacknow.com](http://www.feedbacknow.com).**



**Bryan Wang, Director, FeedbackNow APAC**

## Green Koncepts showcases live air quality monitoring system

**G**reen Koncepts is a pioneer in Cloud IoT Solutions that helps businesses harness the power of real-time data from sensors to digitalize workplace systems and to drive sustainability and operational efficiency.

At ABS2021, the company showcased a Live Air Quality Monitoring system to monitor and measure live air quality. The system allows you to know the air you breathe, with a public dashboard that measures Air Quality in real time, and continuously. Key measures include Particulate Matter – PM2.5, PM10, Gases – Ozone, CO, CO2, VOC, Formaldehyde, Ammonia, and of course temperature and humidity.

The Green Koncepts staff showed how organizations can hit the triple bottom line by integrating Indoor Air Quality with their ACMV system for healthier people for thermal comfort and productivity, as well as energy efficiency to drive sustainability efforts. They also



**Photo courtesy of Green Koncepts**



IoT Experience Centre.  
Photo courtesy of  
Green Concepts

explained how using Public Dashboards to enhance employee engagement and demonstrate commitment to employee safety and welfare.

The Viral Index was also showcased. It relates to "Sick Buildings" and how using such an Index can measure the likelihood of pathogens transmissions – elevating workplace well-being discussions beyond monitoring single measures like temperature and CO2 – putting the well-being agenda back into focus.

Besides exhibiting at the show, the CEO & Founder of Green Concepts, Kenneth Lee spoke on the topic of *Practical Challenges of deploying IoT Systems for Smart Buildings* at the 7th IFMC Conference. On day 3 of the show, Team Lead, Sales & Strategic Partnerships, Thomas Ng, gave a special presentation on the topic "Indoor Air Quality – the new workspace amenity" at the Technology Seminar.

As a project lead for Advanced Digital Solutions for Facilities Management Sector under IMDA, Green Concepts offers a pre-approved grant support of up to 80 percent for qualifying organizations to adopt IAQ and other IoT Solutions. For further enquiries, email [info@greenconcepts.com](mailto:info@greenconcepts.com).

You can also visit the company's IoT Experience Centre to experience real smart facility management. The company does weekly tours for visitors.

**For more information, visit [www.greenconcepts.com](http://www.greenconcepts.com).**

## Aptiv8 shares smart construction solutions

Aptiv8, the Digital Assets, Knowledge and Resource Database Specialist, exhibited at ABS 2021 show. The company offers industry leading solutions to smart construction and smart city projects.

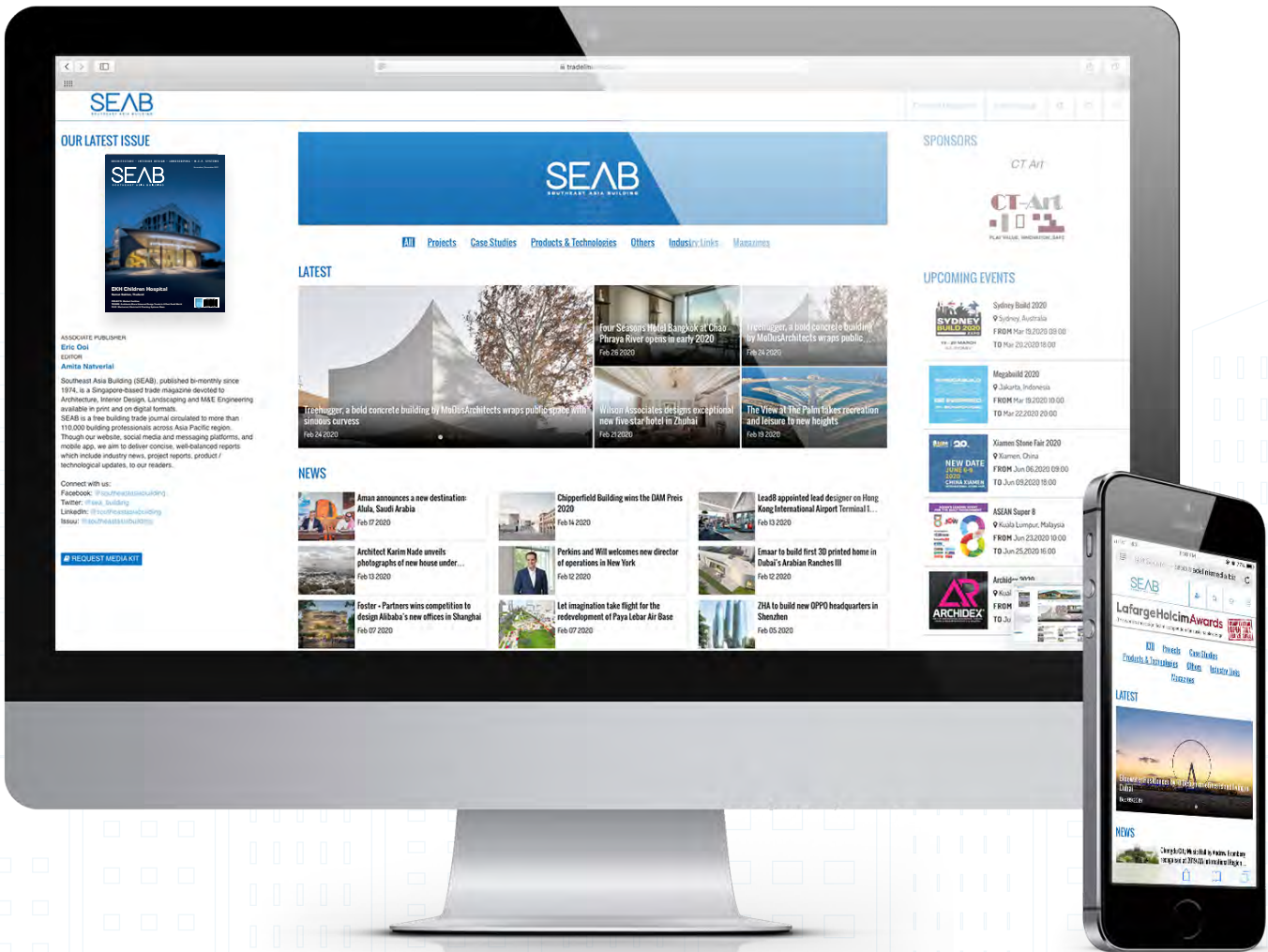
Its smart construction solutions include BIM Consultation Services, Project Management Information System (PMIS), A8 OpenCDE and Digital Work Supervising System (DWSS), while its Smart City solutions comprise of A8 SAMS and A8 GUARDApp.

In addition, Aptiv8 has 150 project implementation & support personnel located in Southeast Asia, Asia Pacific and Middle East supported by partners in various regional offices.

**For more information, visit [www.apriveight.com](http://www.apriveight.com).**



Ivan Ng (on the left) and Tay Yu Sheng (on the right) from Aptiv8.



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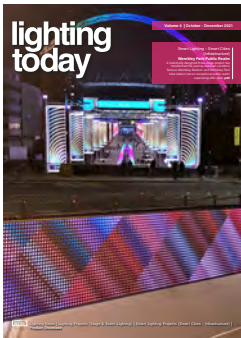


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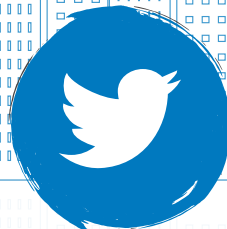
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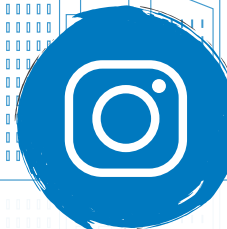
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GEBT 2022	9-12 June 2022	Guangzhou	China	www.building.messefrankfurt.com.cn	IBC
ConsBuild ASIA 2022	28-30 Sept 2022	Bangkok	Thailand	www.consbuild-asia.com	69

**Legend:** IFC (Inside Front Cover), IBC (Inside Back Cover), OBC (Outside Back Cover)



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