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## Konya City Stadium

Konya City, Turkey

**ARCHITECTURE** Margaret Court Tennis Arena in Melbourne; Zhuhai Hengqin International Tennis Centre in China; Mercedes-Benz Stadium in Atlanta; The Couch - a new clubhouse for Tennis Club IJburg in Amsterdam; HBZ Stadium in Abu Dhabi & Football Stadium Arena Borisov in Borisov, Belarus **INTERIOR** Odette; Smoke & Mirrors; Vanimal **LANDSCAPING** Playground Equipment **SHOW PREVIEW** Cambodia Architect & Decor 2016



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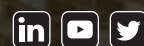
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may - june 2016

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**On the Cover:** Konya City Stadium in Konya, Turkey. Photo: © BKA Archive

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## Complementary products

There are lots of required equipment that needs to be installed in every fountain. Level control / Wind control / Overflow / Junction boxes / Cable inlet fitting box / Cable inlet fitting

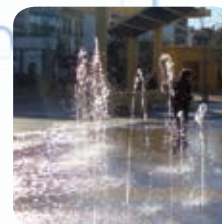
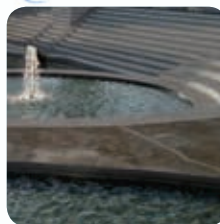
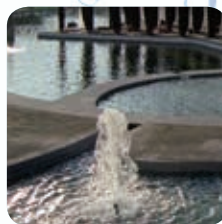
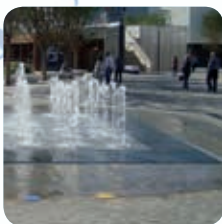
## Interaction

Enjoyment is one of the aims of a fountain. That is why, interaction products are to upgrade viewers into participants. Inmotion system / Interactive sensors & ropes / Communication & choreography

## Illumination

Linking and choreographing it together with the water effects and the music transforms the fountain into an spectacle.

Nano LEDs / Mini leds / Circular LEDs / Halospot LEDs / PAR v1 v2 LED / LED strip / DMX drivers



## editor's note



**H**ello readers, welcome to another issue of *Southeast Asia Building*. The architecture fraternity is still shocked to learn the sudden demise of star architect Zaha Hadid. My team and I would like to extend our heartfelt condolences to her family and her firm. She was a great inspiration and her legacy lives on in the wonderful buildings that she has designed.

In this issue, we would like to share with our readers some stunning sports stadiums and facilities around the world. Sports facilities are gradually moving away from the conventional design to one that is high-tech, sustainable, functional and pleasing to the eyes. We have put together sports projects that showcase the creative works of various architects located in different parts of the world.

A shift in design is also taking place in restaurants. The use of different colours and materials is slowly being introduced to the design of restaurants to create a more attractive and enjoyable dining experience for people. Check out some beautiful restaurant concepts in our interior design section.

Despite the popularity of online computer games and gadgets, outdoor play still remains one of the most popular activities of children. Playground equipment continues to be an important part of many residential and public developments and now they even cater to children of all abilities. Read all about playgrounds in our landscaping section.

Enjoy this issue and meanwhile, visit and like our Facebook page and follow us on Twitter!

*Amita Natverlal*

### NEXT ISSUE THEMES:

- Architecture – Education
- Interior – Entertainment
- Landscaping – Pool Equipment & Accessories

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## Kuwait's largest mixed-use waterfront retail, lifestyle and leisure destination takes shape

**Dubai, UAE** – AL KOUT, a project under the overarching umbrella of the Tamdeen Group – Kuwait's leading mixed-use property developer that is reshaping the urban and social landscape of the country through innovative projects – is on schedule to formally open in the fourth quarter of 2017.

Mohammed Jassim Khalid Al Marzouq, Chairman, Tamdeen Group said: "The New AL KOUT in southern Kuwait is set to become an Arabian landmark through its fusion of traditional architecture and modern contemporary design and will be a true representation of the growing lifestyle, shopping, leisure and entertainment aspirations of our country."

The development of AL KOUT is being carried out by a Tamdeen Group subsidiary company. When completed, the development will include six different experiences, all reflecting the architectural heritage of Kuwait.

In its entirety, AL KOUT, will be a single but multi-faceted destination with diverse offerings for those with a love of retail, lifestyle and leisure experiences. A major component of the project is the replacement of Al Manshar Mall and four residential towers, with the new Al Kout Mall, built at a cost of KD 70 million.

The expansion of the mall will reflect additional retail space, making AL KOUT the largest shopping center in southern Kuwait with over 100,000 square metres of retail leasable area.

The mall will have multi-storey car parking to accommodate 3,600 cars. "Construction is well underway and we are building the mall to the highest specifications," said Ahmed Al Sarawi, CEO of Tamdeen Shopping Centers.

Anchor tenants will move in to the mall in 2017, as they start their fit-out in order to complete the works by the mall opening date. The remaining tenants will move in once the mall is ready. The mall will be managed and operated by GLA, a professional mall-management firm.

The new retail component will have outlets, restaurants, cafes, as well as a food court, a gym and spa.

The adjacent luxurious 200-suite Rotana Hotel has been a huge success from the day it opened. The hotel will connect directly to the shops and restaurants within the new Al Kout



A rendering of the new AL KOUT mall.

Mall. Rotana has a huge demand for weddings, conferences and other gala events. To cater to this, a brand new purpose-built ballroom of 3,700 square metres is being added to the property. This facility will be unique in Fahaheel and will add value to the entire destination.

The new Al Kout Mall will be linked by a signature bridge to Souq Al Kout which is significant for its traditional design and serves as the community hub of southern Kuwait. With its landmark fountains and stunning views of the marina, the redeveloped souq will have a new upscale offering, along with Nag'at Al Kout, the traditional fishing wharf where fishermen ply their trade.

AL KOUT's stunning 1.6 kilometres of immaculate seafront across Fahaheel Beach is now being renamed Sahel Al Kout. The beachfront offers uninterrupted views of the Arabian Gulf and blends seamlessly with the state-of-the-art marina, Marsa Al Kout with its excellent facilities for over 150 boats.

In addition, AL KOUT includes a traditional market, a supermarket, banks, international entertainment venues, a marina, a fishing port, musical fountains and al fresco dining opportunities.

Upon completion of all phases, AL KOUT will occupy a massive 300,000 square metres of area creating Kuwait's largest waterfront mixed use destination.

## Atkins wins water supply consultancy contract for new housing developments in Hong Kong

**Hong Kong** – Atkins has won a major consultancy contract for water supply for new housing developments in Hong Kong. Awarded by Hong Kong Water Supplies Department (WSD), Atkins will investigate, design, construct and commission the proposed water supply system in for the housing developments in the Sheung Shui and Fanling areas of Hong Kong.

Tony Chik, Atkins' project director, said: "The new housing developments, as part of the HKSAR's government initiative, is an important move to address the housing need in Hong Kong. We've been collaborating with WSD for the past decade to provide quality water services for the sustainable development of Hong Kong in helping to bring a secure water supply to its people."

The scope of this multi-disciplinary project comprises upgrading of Tai Po Fresh Water Pumping Station and associated water mains; construction of a new fresh water service reservoir with a capacity of about 55,000 cubic metres; laying of approximately 13km long trunk and distribution mains with size ranging from 150mm diameter to 1,000mm diameter. Atkins' services include civil, structural, slope upgrading, site formation, site investigation, electrical and mechanical, environmental, traffic, architectural, landscaping, land study, cost estimation, public consultation, Building Information Modelling (BIM), contract management and site supervision.

Construction is scheduled to commence in early 2018 for phased completion of water supply system by December 2022.

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## Burj Al Arab Jumeirah expands with the addition of an outdoor luxury leisure concept

**Dubai, UAE** – Dubai's sail-shaped Burj Al Arab Jumeirah, is bringing an expansive outdoor luxury leisure concept, called 'North Deck', to the market – by ship from Finland, over 8,000 nautical miles away. The hotel, which is renowned for pushing the boundaries of architectural design and luxury service, unveils a global first in hotel construction with a breakthrough combination of creative marine design, ingenious engineering and guest-friendly planning.

The North Deck, which is due to open to guests in the second quarter of 2016, has been developed using state-of-the-art marine technology, design and manufacturing expertise, with a strong focus on environmental benefits. The 10,000 square metres private luxury deck will fan 100 metres out into the Arabian Gulf and accommodate 32 cabanas, 400 sun loungers, one fresh water pool measuring 612 square metres and one salt water pool measuring 828 square metres, one restaurant and a bar.

The deck has been developed by marine construction experts ADMARES at a shipyard in Finland that specialises in the construction of cruise ships and yachts, guaranteeing the highest standards in both manufacture and finish. The off-site process has meant minimal disruption to guests.

Made from steel and weighing around 5,000 tonnes, the North Deck left Finland on 9th January 2016 and is currently being transported to Dubai by sea. On arrival at the hotel in mid-February, the six sections will be lifted by crane and lowered onto a grid of 90 steel piles, each 914mm in diameter, stretching from the hotel out into the Arabian Gulf.

The construction and steel pile installation process will cause minimal impact to the marine environment. In fact it has been designed to provide shade for local fish and to attract undersea ecosystems that are known to cluster around steel piles.



North Deck. Photo: © Burj Al Arab Jumeirah

## Cayan Group expands into Europe

**Riyadh, Saudi Arabia** – Cayan Group, one of the Middle East's leading real estate developers, is making its foray into Europe, commencing with an alliance with Spanish real estate developer, Sarena. The elite partnership will witness the two companies jointly develop a project in stylish Costa del Sol which is situated in Marbella in Spain.

With this union, Cayan Group initiates its ambitious expansion plan into European markets which marks a major milestone for the Group. Embarking on a new strategy, Cayan Group aims to expand into newer markets, predominantly in the European belt, thus becoming a real estate leader internationally and strengthening its position the world over. The European real estate market is going through a lucrative phase with hardly any signs of easing up and it is Cayan Group's strategic decision to penetrate the European market during this time and be part of this gainful period.

Cayan Group will develop this upcoming project in partnership with Sarena Group and will also handle the sales and marketing for the venture in the region. Commenting on the developments, Ahmed Alhatti, President and Chairman of Cayan Group, said: "Although our absolute priority is the development of strategic projects within the Kingdom which we will be announcing multiple projects soon, developing projects in Europe is a strategic decision that was made at the first place to serve our clients better and offer them a variety of options that will cater to their needs. Secondly, this decision comes as a proof of the ability of Cayan Group to stand out in the most competitive markets. Partnering with the notable Sarena Group has a special importance to us and we are positive that



Marbella

this project will achieve a huge success."

Gabriel Massoud, the Founder of Sarena further added: "Cayan Group's projects are exemplary and we are pleased to partner with a Group of such caliber and reputation. We look forward to this partnership which will open the door for Sarena to enter the Middle East region and specifically the Saudi market to develop unique projects in the future."

Sarena was founded Marbella in the early 80s. After developed a front line beach project in Marbella called Coral Beach, Sarena established La Mairena by acquiring 2,000,000 square metres of land in the pristine hills above Marbella. The land is known for its marvelous views sceneries and charming nature, it continues to be used for picturesque developments and projects.



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## FBEYE International completes five-year re-design of the InterContinental Singapore

**Hong Kong** – FBEYE International announced the completion of their latest design project, The InterContinental Singapore, after an extensive five-year renovation scheme.

After the successful completion of the Executive Club Lounge, 67 Shophouse Guestrooms and Suites, as well as the specialty Cantonese restaurant “Man Fu Yuan”, leading design firm FBEYE was appointed to design the hotel lobby, lobby lounge, All Day Dining restaurant, and the 316 Tower Guestrooms and Suites.

Continuing the unique theme and to complement the character of the vibrant locale - Arab Street, Kampong Glam, Little India and Chinatown - the grand lobby has been redesigned with a focus on nature with design details representative of a by-gone era, and characteristic of the distinct Peranakan Culture.

In addition, the Concierge Lounge located at the entrance of the hotel lobby was created based on the living room of a traditional Peranakan home. The corridor walls are lined with a series of exquisite art pieces, each bordered by British-inspired columns which stem from inspirations of the colonial architecture of old Singapore.

Ash & Elm, the latest addition to the InterContinental Singapore's collection of dining establishments, is a vibrant restaurant focused on European Dining. The dynamic space transforms throughout the day, with the skylight canopy running the length of the dining area providing a sense of movement, as glimmers of natural daylight provide an ever-



The lobby lounge at the InterContinental Singapore, designed by FBEYE International.

changing colour palate to the space in the day. FBEYE International integrated the use of natural materials in areas, using butcher-block worktops, a mixture of exotic marble, aged oak timbre and mosaic tiles in the flooring as well as the timber walls to introduce an organic feel to the space as well as imbuing an atmosphere of liveliness. In the evening, Pendant lights comprising of hand-cut polished crystals are switched on to help set the mood, making it cosier and inviting for guests. Besides the hotel's public spaces, FBEYE International also meticulously designed

the hotel's 316 guestrooms and suites. Inspired by ornate art, ceramics, and eye catching embroidery, the guestroom design exudes a residential feel that is tranquil without being over imposing.

The Deluxe Rooms, which make up the bulk of the guestrooms in the main tower, were specially designed with the pinnacle of luxury and elegance in mind. A harmonious blend of textures and colours, with silk-threaded wall coverings and panels against white walls, are adorned with gold trimmings on the ceiling. Produced exclusively by FBEYE International, the headboards above the beds were created with exquisite padded silk coverings to represent a contemporary interpretation of Peranakan tile motifs.

Additionally the guestrooms represent fitted cabinets with black lacquered doors made of mahogany veneers and solids, replete with a champagne gold gilt finish, exuding the beauty of oriental charm.

## Otis Singapore wins escalator modernisation contract from SMRT Corporation Ltd

**Singapore** – Otis Elevator Co (S) Pte Ltd (Otis Singapore) will fully refurbish and modernise 233 escalators at 42 train stations along the Singapore Mass Rapid Transit rail network's North-South and East-West lines. Valued at U.S. \$33.8 million (S\$ 47.3 million), the project is scheduled to commence from the third quarter of 2016, with targeted completion in 2021. Otis is a unit of United Technologies Corp. (NYSE: UTX). This project is the first refurbishment and modernisation effort for escalators on the North-South and East-West lines. When completed, all 233 escalators will be upgraded with higher efficiency machines as well as new energy-saving controllers. These features allow the escalators to operate at different speeds and better cater to passenger traffic during different periods of the day. “Otis has a long history of providing solutions to large-scale transportation and infrastructure projects across the world,” said Greg Nagle, Managing Director, Otis Singapore. “We are delighted that SMRT has chosen to work with us for this project. Our appointment is testament to the quality, reliability and safety of our products, affirming our position as the world's leading manufacturer and service provider of elevators, escalators and moving walkways,” he added.

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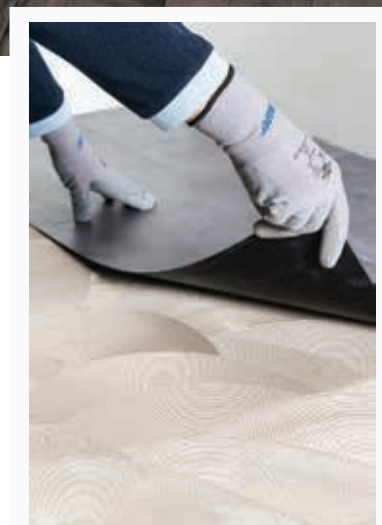
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## BuildTech Yangon 2016 returns with an expanded focus

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**Singapore** – The third edition of BuildTech Yangon, one of Myanmar's leading trade shows for the building and construction development sector, will be held from 26 to 28 May at the Myanmar Convention Centre.

Organised by Sphere Exhibits, a subsidiary of Singapore Press Holdings (SPH), and co-organised by the Myanmar Construction Entrepreneurs Association (MCEA), BuildTech Yangon 2016 returns this year with an expanded focus, taking to the stage some 120 exhibiting companies showcasing equipment, machinery and solutions on facilities management, interior finishing and architectural solutions. This is in addition to its array of staple exhibits from the construction machinery building materials and mechanical engineering segments.

This new focus is in line with recent developments in Myanmar's construction sector, which is booming following the opening up of Myanmar's economy to the world.

Meanwhile, increased awareness of construction and workplace safety has given rise to a greater focus on safety and disaster prevention in this year's BuildTech Yangon.

The show of an extensive showcase from Austria, China, Indonesia, Korea, Thailand, Vietnam, Singapore and Myanmar is expected to attract over 4,500 visitors.

Myanmar's construction industry is expected to continue growing at a relatively fast pace compared to other emerging markets from 2015 to 2019. This positive outlook is supported by Myanmar's expanding economy, increased government investment in public infrastructure, and the rising interest of domestic and foreign real estate developers in constructing residential units to meet the population's housing demand.

In real terms, the industry's output value recorded a compound annual growth rate (CAGR) of 7.4 percent during the period 2010 to 2014, and is expected to post a CAGR of 6.0 percent from 2015 to 2019, according to a report from research firm Timetric. The trade exhibition will also feature key profiles centering on four main sectors: Onsite Construction Machinery and Equipment; Building Materials and Architectural Solutions; Interior Furnishing; and Facilities Management.

Construction Safety and Work at Heights are key highlights in this year's BuildTech Yangon Business Seminar Series, which returns for the second year. The seminar will cover a range of topics addressing key concerns in foreign investment, recent developments in construction laws governing building and construction investment in Myanmar, and infrastructure and construction management. Delegates will benefit from a conducive knowledge-based sharing platform featuring leading local and international industry practitioners in this much anticipated, complimentary three-day seminar series.

Two one-and-a-half day tracked seminars focusing on Workplace Safety and Facilities Management have been added to the range of seminars for local professionals who are keen to attend a more technical and focused seminar platform. These seminars come with certificates of attendance from MCEA as well as industry points from Myanmar Engineering Council as part of its effort to encourage continued skills upgrading for professionals in the building construction sector.

Several panel discussions revolving around disaster and safety management as well as safety in vertical construction will be conducted in the Workplace Safety Seminar.

The Industry Networking Evening will take place on 26 May, while the MCEA Annual General Meeting and MCEA's Golden 20 Jubilee Gala & Awards Presentation will be held on 27 May at the Myanmar Convention Centre.

BuildTech Yangon 2016 is supported by the International Facilities Management Association, Singapore Chapter, International Powered Access Federation; Malaysia Heavy Construction Equipment Owners Association, Myanmar Engineering Council; Myanmar Engineering Society; Myanmar Industries Association; Singapore Institute of Building Limited; VABM (Vietnam Association for Building Materials); Vietnam Electronics Industry Association and WSH (Asia).

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

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## Nippon Otis to modernise elevators for U.S. embassy in Tokyo

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**Tokyo, Japan** – Nippon Otis Elevator Company has been awarded the multi-million-dollar Chancery Elevator project to modernise elevators at the U.S. Embassy in Tokyo, Japan. As a part of this project, Otis will supply four Gen2® elevators with the CompassPlus™ destination management system, the latest destination management technology. Otis is a unit of United Technologies Corp.

The modernisation of the elevator system will result in significant benefits for the customer and end users. Otis Gen2® elevators with flat-belt technology provide superior ride quality and passenger comfort. They are equipped with the latest safety standards, including the Pulse™ system, which automatically monitors the integrity of the elevator belts 24/7. The CompassPlus™ destination management system is anticipated to reduce elevator waiting time and transport passengers to their destinations faster.

Otis elevators were installed in the U.S. embassy building when it was built in 1976, and Otis has serviced the embassy's elevators since then.

"We are excited about this opportunity and believe our technology and product offerings are key differentiators," said Hiroshi Yamagami, representative director, Zone Operations, Nippon Otis Elevator Company. "The U.S. Embassy in Tokyo has been a Nippon Otis customer since 1976, and we are honoured to continue supplying our products, systems and services to one of Japan's key foreign government buildings," added Hiroshi.



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## Australia allows taller wooden structures from May 2016 onwards

**Sydney, Australia** – A two-year consultation and research process spearheaded by industry group Forest and Wood Products Australia (FWPA) will see the local industry join leading international markets in allowing timber construction in taller structures.

Preliminary modelling indicates construction costs could be reduced by up to 15 percent, while new material options including engineered timbers create exciting opportunities for developers, architects, engineers and designers.

Until now, the choice of construction materials for mid-rise urban developments has been limited to a traditional palette that excluded timber – however changes to the National Construction Code (NCC) from 1 May 2016 will enable timber buildings of up to eight storeys without the need for expensive Alternative Solutions to gain approval.

The managing director of Forest and Wood Products Australia, Ric Sinclair, said the changes to the code would deliver a wide range of benefits to local

residents, property buyers and the domestic building industry – and has been developed in consultation with representatives of the timber, insurance industries, regulatory bodies, domestic building and fire and emergency authorities.

“This initiative will bring Australia up to pace with much of the rest of the world – so that the building property industry can take advantage of the environmental and cost benefits of domestic timber construction. Wood can offer quicker build times, with less noise and disruption for neighbours. It can also offer innovative design approaches,” said Ric.

Currently, timber building systems are restricted to three storeys under the NCC’s deemed-to-satisfy provisions, with taller buildings requiring an ‘alternative solution’ to be designed and documented to gain approval. Alternative solutions, while practical on some larger projects, are generally too costly for smaller jobs.

The new code creates a voluntary prescriptive performance (previously known as a deemed-to-satisfy solution)



**Ric Sinclair, Managing Director, Forest & Wood Products Australia**

for the use of timber building systems in Class 2 (apartments), Class 3 (hotels) and Class 5 (office) buildings up to 25 metres in effective height.

The new solution covers both traditional timber framing and innovative massive timber systems – such as cross laminated timber (CLT) and Glulam – and comprises the use of appropriate layers of fire resistant materials and sprinkler systems.



**Exterior of The Green in Parkville, Melbourne, Australia.**  
Photo supplied by Frasers Property Australia



**Construction of The Green in Parkville, Melbourne, Australia.**  
Photo supplied by Frasers Property Australia

## Ceres Organics gains first 5 Green Star rating for a food warehouse

**Auckland, New Zealand** – A warehouse complex in Mt Wellington, Auckland has become the first building of its type in New Zealand to gain a Green Star rating. Ceres Organics’ 5,500 square metre home at 82 Carbine Road consists of a two level office building attached to large precast concrete warehouse. From the outset, sustainability was integral to the project.

The building is oriented to make the most of passive solar heating and natural light. Built on a brownfield site, the project incorporated material recycled from the former derelict building. Concrete was chosen for the bulk of the building structure to give good thermal mass, helping it stay cool in summer and warm in winter. The need for mechanical air conditioning and artificial lighting is minimised through natural ventilation and daylight harvesting.



Only two other buildings in New Zealand have been certified under the Green Star Industrial tool, and this is the first food warehouse to do so. A rating of 5 Green Star denotes New Zealand excellence.

Ceres Organics' Managing Director Noel Josephson said sustainability was vital to the company's ethos. "Our business is organics, and we're serious about walking the talk on sustainability. So the design and construction of our new building had to have low environmental impact. Our team of 80 staff moved in at the end of 2013 and we're all delighted with the result. We're more than 40 percent more efficient in terms of energy use than the previous building. It's also a lovely building to work in, with good natural light and fresh air. Getting the Green Star rating is icing on the cake, because it's proof of the high sustainability standard we were aiming for."

Other sustainability features of the building include:

- solar hot water system
- rainwater collection system, with low water usage fittings
- fully automated building management system (BMS) to monitor lighting, CO2 levels, and water and energy usage
- energy efficient LED lighting
- dedicated recycling area to minimise the volume of waste that goes to landfill
- low-VOC, sustainably sourced materials.
- substantial greenery in the office environment

The project picked up points for innovation under the Green Star rating, including for the stringent carbon footprinting used by Ceres to measure the building's impact.

The building is owned and was developed for Ceres Organics by Norak Properties Ltd. The Green Star Accredited Professional was Paul Jurasovich, Senior Project Architect and Sustainable Design Consultant at Williams Architects.

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## Thailand Lighting Fair 2016 (THLF 2016) to feature 'Smart Lights. Smart Life.' Driving Force to the Global Digital Life of IoT

*This year, THLF 2016 will expand its show space covering more than 10,000 square metres to reinforce its position as ASEAN's leading trade fair on lighting technology, design and solution.*

**Bangkok, Thailand** – Provincial Electricity Authority (Thailand) in collaboration with Messe Frankfurt and The Exhibiz Co.,Ltd. officially announced the second consecutive year of its 'Thailand Lighting Fair 2016' after its last year record of success. This year, the THLF 2016 will expand its show space up to 10,000 square metres to feature under 'Smart Lights. Smart Life.' driving force behind the IoT and the global trend in energy efficiency. THLF 2016 will be held at the Bangkok International Trade & Exhibition Centre (BITEC), Hall 101-102, from 1-3 September 2016.

Thailand Lighting Fair 2016 is a lighting trade exhibition powered by Messe Frankfurt, and combines innovative lighting solutions from upstream services to downstream supplies under one roof. Held under the theme, 'Smart Lights. Smart Life.', a wide array of innovative lighting technologies will be made available at the trade show, presented by more than 350 leading lighting companies from around the globe, taking over 10,000 square metres of exhibition space enabling it to serve over 10,000 trade visitors across the region.

Thailand Lighting Fair 2016 – 'Smart Lights. Smart Life.' will showcase Smart Business – a premiere regional hub for lighting business networking and matching platform; Smart Living – a premier regional hub for lighting product, technology and innovation for living and lifestyle purposes including design showcase combining 'Design + Function' by well-known Thai lighting designers; Smart Solutions – a premier regional hub for energy-efficiency lighting and smart lighting technologies for commercial and industrial purposes.

Additionally, THLF 2016 will provide a platform for a Lighting Design Showcase, where Thailand's talent's lighting designers will display their 'Design + Function' creative ideas, a Decorative Lighting Zone, and a wide range of seminars and workshops under compelling topics including SOLAR energy, City lighting / Urban lighting, Trends of Intelligent Lighting Technology Development, LED Intelligent Lighting Solutions, Global Lighting Trends 2016, etc. 'Thailand Lighting Fair 2016' will be conducted in parallel with 'SMARTECH', ASEAN's leading conference and exhibition in smart technology.

**For more information on THLF 2016, tel (+66) 2 664 6499, ext. 200, 201, 209, 2010; fax (+66) 2 664 6477; email [info@thailandlightingfair.com](mailto:info@thailandlightingfair.com) or visit [www.thailandlightingfair.com](http://www.thailandlightingfair.com).**

## Early signs of success for Emprasa project in India

**Singapore** – A transformational smart city project in India has proved popular with over 780 apartments sold in just three weeks. Emprasa Smart City, located in Bangalore, will provide accommodation and work space for 5,000 people. Targeted at start-up companies and entrepreneurs, the 48-acre masterplan has been designed by Broadway Malyan based on a "work, live, play" concept. It incorporates a range of residential options, small business space and community-focused facilities.

Ankit Kamboj, Associate at Broadway Malyan, said: "With its innovative planning and design, this project will transform business in Bangalore, delivering a modern, high-tech Smart City providing quality office space and accommodation for thousands of people."

The workspace element has been planned based on a 'plug and play' philosophy. Occupants will be charged per desk to work in fully serviced offices with shared facilities, such as IT equipment and kitchens, and administration support provided.

Suresh Rangarajan, Managing Director of Emprasa, said: "The aim of Emprasa is to encourage the growth of a community of like-minded people who are focused on building new businesses and want to work in a collaborative and vibrant environment."

A range of accommodation options will be available from single studios to two-bed apartments with lounge, kitchen and bathroom facilities. Like the office space, this will be fully serviced by housekeeping staff. The masterplan also comprises a number of complementary uses so that residents can get everything they need onsite. This includes a business school, convention and exhibition centre, training facilities, 5-star hotel, 3-star serviced apartments, hospital, theatre and multiplex, over 100 retail units (with restaurants, pubs, and nightclubs alongside shopping), and leisure facilities including spa, salon, gymnasium, swimming pool and cricket and football pitches. The scheme incorporates a number of technologies to help developer ARCL meet its smart city aspirations. As well as the Wi-Fi connectivity throughout the site, the plans include green energy generation through solar panels, energy storage (excess energy will be stored during off-peak periods), smart metering and intelligent heating and lighting systems.



Emprasa Smart City. Photo: © Broadway Malyan

## Piscine Asia enters into third year with a new name

**Singapore** – For the third time, the leading Asian swimming pool & spa event is coming back to Singapore with a new name in 2016. Piscine Asia, previously known as Piscine SPLASH! Asia, will take place on 5 & 6 October 2016 at the Marina Bay Sands Expo & Convention Centre.

Piscine Asia will deliver the Asian pool and spa market a dedicated show with a comprehensive and qualitative offer. Exhibitors for the 2016 show will include construction and installation, pool equipment and accessories, maintenance, protection and security, health and wellness, outdoor equipment, equipment and accessories for around the swimming pool and also services.

The next edition will not only provide the *crème de la crème* of local and international providers but also events for the pool professionals such as Piscine Innovations (a specific area on the show dedicated to exhibit new products), Piscine Water Tests (a dedicated area where technological, aquafitness and other products can be tested and demonstrated in real conditions), Speed Meeting (a service for exhibitors and visitors to schedule 30 minutes appointments on the show), Pool Vision contest (the greatest pools and spas in Asia will be awarded on and an exhibition of the projects' photos will be displayed on the show), conferences (a program of trainings on pool and spa topics presented by the exhibitors), the Pool Summit (a special event offering an opportunity to discuss trends and figures in the sector worldwide and to initiate networking between the major companies in the sector and federations / associations) and also a special day with a technical visit.

The 2015 edition was organised by GL events Exhibitions and Interpoint Events, and saw over 120 exhibitors and brands from 18 countries. As a premier pool and spa event in the Southeast Asia region, the biggest names in the industry were represented, including Pentair, Australian Innovative Systems, Fluidra, Herborner, Speck Pumpen, Bombas, HornerXpress, Maytronics, Hayward, Heliocol and many more. There were also several local companies, including Advanced Marine, Water Co, Proserv and SG Hardware.

Nearly 1100 visitors from 29 countries attended the show. They included pool construction and installation professionals, pool and spa maintenance companies, general construction companies, distributors, landscapers, architects, public authorities and many more. Visitors from Malaysia, Singapore, Thailand, Vietnam, Indonesia and Philippines comprised 14 percent of the market.

For more information, visit [www.piscine-asia.com](http://www.piscine-asia.com).



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## Forest City granted duty-free zone status and corporate incentives to lure investors and tourists

**Singapore** – Forest City, one of Southeast Asia's largest mixed-use green developments and a joint venture project by Hong Kong-listed Country Garden Holdings Co Ltd and Johor's Esplanade Danga 88 Sdn Bhd, has been granted a duty-free zone status and a slew of incentives by the Federal Government of Malaysia.

In announcing the incentives at the grand opening ceremony of Forest City on 6 March 2016, Prime Minister Dato' Seri Najib Tun Razak said: "To ensure the success of Forest City, I am pleased

to declare duty free zone area at Forest City, enabling local residents, businesses and tourists to benefit from the work, live and play environment."

Other incentives that were announced include corporate tax incentive for qualified companies or companies with Iskandar Development Region status involved in tourism and MICE, education and healthcare, corporate tax incentive for Green Developer and Green Development Manager and a waiver on company equity restriction for foreign investors to claim these incentives.

His Royal Highness Sultan Ibrahim Ibni Almarhum Sultan Iskandar, the Sultan of Johor, Chief Minister of Johor Y.A.B Dato' Mohamed Khaled Nordin and several distinguished guests and business partners graced the event.

Being a green development, Forest City is also working with G-Energy, an international green consultant, towards achieving internationally-recognised GreenRE and Green Mark certifications.

In addition, Forest City has also achieved Iskandar Development Region (IDR) status development for tourism and MICE (meeting, incentives, conference and exhibition), education and healthcare sectors. The IDR status currently grants a five-year tax exemption or 100 percent investment tax allowance of the capital expenditure against 100 percent of statutory income. Among the upcoming amenities, the first duty-free shopping mall will be ready to welcome shoppers by end-2016 at the Fisherman's Wharf on Island 1 of Forest City, which will carry a wide range of leading international brands and products. Another attraction will be a five-star boutique hotel.



Overview of the Forest City, Phase 1. Photo: © Country Garden Holdings

## ST Aerospace unveils new VIP aircraft interiors centre in Singapore

**Singapore** – ST Aerospace opened its new VIP aircraft interiors centre at the Seletar Aerospace Park in Singapore. With this new facility, ST Aerospace will bring its full suite of VIP luxury cabin interior design, engineering, installation and maintenance services to the region, serving customers from across Asia Pacific and the Middle East.

Officially opened by Dr Koh Poh Koon, Minister of State, Ministry of Trade and Industry & National Development, the 2,690 square metres Centre of Excellence for VIP aircraft interiors comprises a hangar capable of accommodating a Boeing 757 aircraft, design studio, workshops for carpentry, upholstery, sanding and painting, as well as offices for the sales and marketing teams.

This facility is ST Aerospace's second of its kind – the first was established in 2011 at San Antonio, Texas.



ST Aerospace VIP aircraft interiors centre opening ceremony. Photo: © ST Aerospace

## Ascott fast-tracks China expansion through strategic alliance with the Chinese construction firm

**Singapore** – CapitalLand’s wholly owned serviced residence business unit, The Ascott Limited (Ascott), continues its aggressive expansion by forging a strategic alliance with Dongfu Investment Development Corporation – a real estate subsidiary of China State Construction Engineering Company (CSCEC), one of China’s largest state-owned construction and infrastructure builders. Through this partnership, Ascott will have the first right to manage apartments currently under development as well as future projects to be built by Dongfu Investment. Both parties will draw on each other’s capabilities, resources, brands and sales network to expand in China.

Dongfu Investment’s parent company, CSCEC, is ranked 37 amongst Fortune’s global 500 companies with massive projects internationally from Singapore to United Arab Emirates and South America. Ascott’s partnership with Dongfu Investment follows its recent alliances with fast-growing companies such as Alibaba’s online travel site Alitrip and Tujia.com International, China’s largest online apartment sharing platform equivalent to Airbnb, as well as leading developers such as Vanke and Yuexiu.

Ascott and Dongfu Investment kicked off this alliance with a management contract for the 148-unit Citadines Guoxitai Xi’an which is slated to open in 2018. The addition of Citadines Guoxitai Xi’an has further reinforced Ascott’s leadership position as the largest international serviced residence owner-operator in China, with more than 14,000 units in 24 cities.




Citadines Guoxitai Xi’an.  
Photo: © The Ascott Limited

## What you can expect from us in South East Asia?

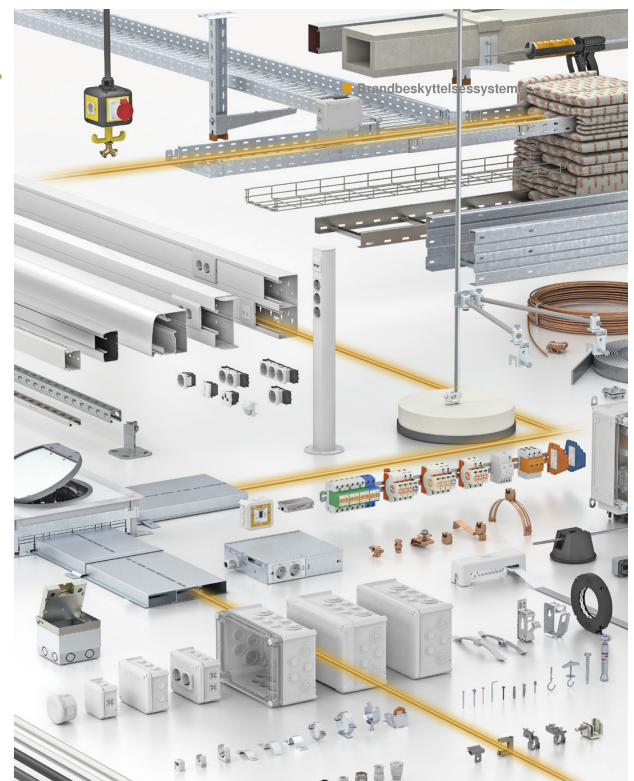


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## Hans Butzer, AIA, honoured with the 2016 AIA Thomas Jefferson Award

**Washington, D.C., USA** – Hans Butzer, AIA, is being recognised with the 2016 AIA Thomas Jefferson Award for his work advancing the caliber of public building in Oklahoma City. The Thomas Jefferson Award recognises excellence in architectural advocacy and achievement. Butzer will be honoured at the 2016 AIA National Convention in Philadelphia.

The phenomenal transformation that has occurred in Oklahoma City in the early 21st century is a direct result of Butzer's work. He has imbedded himself in public boards and commissions and on committees that have charted a vision for the metropolis. His track record of award winning designs of the highest caliber crafted through participatory design processes is no small feat. Leading an engaged community design processes requires patience, stellar listening skills, and the maturity of an experienced diplomat to negotiate community politics, which Butzer has masterfully demonstrated.

Butzer's impact on Oklahoma City is profound, having designed the Oklahoma City National Memorial, and other landmark projects in his city like the Oklahoma City Skydance Bridge. Butzer is a gifted and accomplished architect who has built his career in Oklahoma City by dedicating himself to improving the built landscape and enriching the fundamental civic dignity of the city. He is a true citizen architect: a practitioner and educator that demonstrates throughout his work that architecture can enhance communities and cities.

The jury for the 2016 AIA Thomas Jefferson Award includes: Drew White, FAIA (Chair), Axis Architecture & Interiors; Ric Bell, FAIA, City of New York, Department of Design and Construction; Sarah Dirsas, AIA, KG&D Architects; Daniel Feil, FAIA, Dwight D. Eisenhower Memorial Commission and Jennifer Penner, Assoc. AIA, Studio Southwest Architects, Inc.

## Flanagan Lawrence wins outdoor theatre competition

**London, UK** – Flanagan Lawrence has won the competition for the Szczecin Summer Theatre in Poland. The brief called for design proposals to maximise the flexibility of the 1976-designed theatre for a variety of performances on the stage, and to add a new roof to enclose both the stage and the audience. The underside of the roof, which covers the stage and front of auditorium, will enhance and project the natural acoustic for orchestral events. This is achieved by a roof which is structurally independent of the existing arch, and is formed by a curved truss which serves as the edge beam to a single cable net structure. This net supports a series of inflated fabric roof panels and suspended acoustic reflectors. Two additional trusses span the stage to support the load of the lighting grid.

The back of the stage is enclosed acoustically by curved glazed screens, which offer picturesque views out to Rusalka Lake and create a scenic backdrop to performances.

Flanagan Lawrence's proposal will also upgrade the 2,500 seat structure with additional facilities including a box office, bathrooms, a café and a refurbished backstage area. The original structure, including the concrete arch, was designed by Zbigniew Abrahamowicz and opened in 1976.



Artist's impression of the Szczecin Summer Theatre in Poland. Image: © Flanagan Lawrence

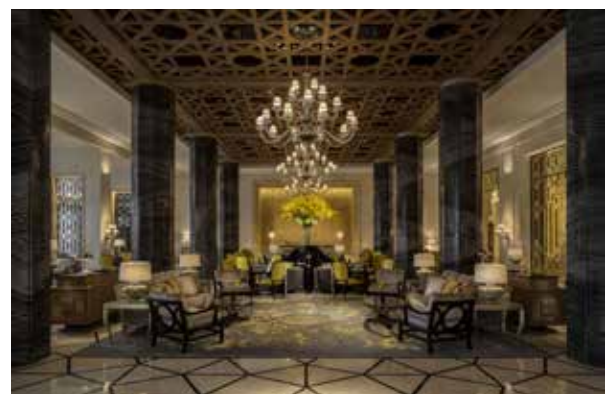
## SICIS Mosaics in Dubai Four Season Resort

**Ravenna, Italy** – The sophisticated Four Seasons Resort in Dubai, located on Jumeirah Beach Road, has chosen the precious and unique pattern of SICIS mosaics to decorate many of its wonderful areas.

In several spaces of the hotel, as lobby, cafes and in the living rooms, you can admire entire walls made with the luxurious SICIS Gold Collection characterised by artistic mosaic with gold leaf. They resemble real precious tapestries in mosaic and give to the environments absolute elegance and prestige.

Some of the most unusual SICIS mosaic collection, in artistic and pixel layouts, embellish the swimming pools and cafes on the outside area. SICIS Gold Collection and SICIS Stone on the floor can be found also in the luxury Wellness and Fitness areas.

Other lines including SICIS Murano, Stone, Neo Colibri, Mary Gold and others are adorning the lounge and the suites to give a special touch to the unique style that characterises the entire resort, combining Arabic taste with contemporary design.



## World's second largest building, Shanghai Tower, achieves LEED Platinum

**Washington, DC, USA** – Shanghai Tower, the tallest building in China and the second tallest in the world, recently achieved LEED Platinum for Core and Shell. The Tower, located at the core of Pudong's growing Lujiazui finance and trade area in Shanghai, is 632 metres high.

LEED is the world's most widely applied green building rating system and is currently used in more than 150 countries and territories across the globe. LEED CS (Core and Shell) is the certification for the envelope of a building, and Platinum is the highest level of certification a building can achieve. China is the second largest market for LEED in the world

outside the United States, with 118.3 million gross square metres of space participating in the LEED green building rating system.

"As the tallest and one of the greenest landmarks in China, Shanghai Tower shows China's responsibility and commitment to the world to improve the environment and boost the health of its people," said Mahesh Ramanujam, Chief Operating Officer of USGBC. "Every story about LEED is a story about leadership, and leaders across the globe understand that LEED is a powerful tool that accelerates global market transformation of our built environment," he added.

The tower is a green building powerhouse buoyed not only by LEED, but also by China Three Star certification, which was awarded by China's Ministry of Housing and Urban-Rural Development (MOHURD).

LEED Platinum certification will save significantly on costs for Shanghai Tower. For example, among all its intelligent building control systems, the lighting system alone will save more than \$556,000 each year in energy.



Photo: © Gensler

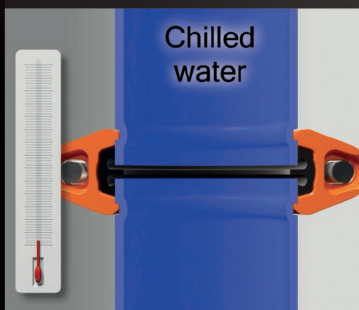
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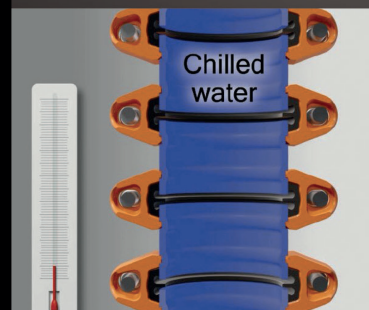
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## HOK wins Middle East Consultant Award

**London, UK** – HOK has been recognised as Urban Design and Landscaping Company of the Year at the 2015 Middle East Consultant Awards. The award ceremony took place on 6 December 2016 at the Jumeriah Emirates Towers Hotel in Dubai.

HOK, which has an office in Dubai, has been active in the Middle East for more than 35 years, delivering complex projects across many sectors.

“We have an extensive portfolio of successful projects across the Middle East, demonstrating a deep understanding of local culture and practices,” said Daniel Hajjar, Managing Principal for London. “Our landscape architects and urban

planners work together as a cohesive team to provide comprehensive design solutions for a wide range of projects. We are delighted that our multidisciplinary expertise has been recognised with this prestigious award,” he added.

The Middle East Consultant Awards celebrate the region’s best multidisciplinary consultants and specialists in the built environment sector. HOK won the top prize in the Urban Design and Landscaping Company of the Year category, which acknowledges “impeccably crafted urban design and landscaping work in the Middle East.”

HOK’s current and recent projects in the Middle East include the master plan for Dubai Expo 2020; the Marina Mall in Doha; The Change Initiative sustainable retail prototype store in Dubai; the Rosewood Abu Dhabi hotel; and two of the largest high-rises currently under construction in the Gulf Cooperation Council (GCC) region: the 74-storey Abu Dhabi National Oil Company Headquarters in Abu Dhabi and the 80-storey Capital Market Authority Tower in Riyadh.



Marina Mall. Photo: © HOK

## PGT, Inc. completes acquisition of WinDoor, Incorporated

**Venice, Florida, USA** – PGT, Inc., a leading manufacturer and supplier of impact-resistant windows and doors announced it has completed its acquisition of WinDoor, a provider of high-performance, impact-resistant windows and doors for five-star resorts, luxury high-rise condominiums, hotels and custom residential homes. WinDoor, Incorporated is now a wholly-owned subsidiary of PGTI.

The transaction introduces a third brand to the PGTI portfolio to include PGT, CGI, and WinDoor. All three business units serve the impact-resistant window and door market.

The acquisition is expected to:

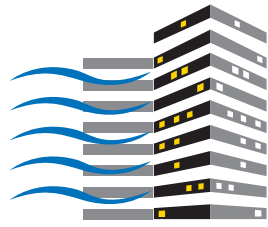
- Enhance PGTI’s leadership position in the growing impact-resistant window and door industry while offering its customers a wide variety of offerings
- Add a high-quality company with accretive margins
- Diversify and broaden PGTI’s brand and product portfolio, including the addition of thermally-broken products and more comprehensive sliding & swing door product lines
- Increase penetration into the commercial and high-end fenestration markets
- Strengthen the Company’s ability to compete against national suppliers and other storm protection systems
- Create synergies by maximizing efficiencies and scale including purchasing and logistics
- Broaden manufacturing footprint and capabilities

The Company’s stated business strategy is that:

- WinDoor, Inc. will continue to operate and manufacture products in Orlando, Florida.
- WinDoor, Inc. will remain a separate and distinct brand in the marketplace.
- PGTI will leverage best practices and synergies of PGT Windows & Doors, CGI and WinDoor to provide incremental value to employees, customers, business partners, and stockholders.



Photo by WinDoor Inc.



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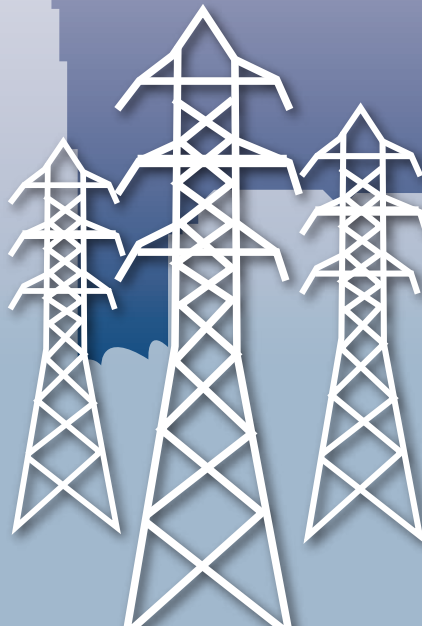
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## KCAP + ORANGE win first prize Vasilievsky Island competition in St. Petersburg

**Rotterdam, The Netherlands** – KCAP Architects&Planners and ORANGE Architects have won the first prize in the urban and architectural competition for the most western tip of Vasilievsky Island in St. Petersburg. With its important role in the historical outreach of St. Petersburg towards the West, Vasilievsky Island will become the most prominent manifestation of the city of St. Petersburg on the Gulf of Finland. With the urban plan, the 15-hectare site will become a new part of the city with a diverse mix of urban functions facilitating and interconnecting the surrounding areas. It will become a new face of St. Petersburg as entrance of the city from the water.

The design concept of KCAP and ORANGE focuses on enhancing the iconic value of the city of St. Petersburg and on creating an attractive and high-quality environment for living, working and recreation. The peninsula will be enlarged with a park to enjoy the waterfront at the Finnish Bay. Solid blocks and a diversity of enclosed urban courtyards define the urban layout and refer to the historical structure of St. Petersburg. Towers form the layer above the urban blocks. They allow for spectacular panorama views to the sea and the city centre. Topped with gold-coloured spires, in the tradition of St. Petersburg's architecture, a unique landmark silhouette of Vasilievsky Island evolves and creates an expressive,



Photo: ©KCAP-Orange Architects

recognisable and iconic image.

The international design competition was organised by Glorax Development and the municipality of St. Petersburg. It started with 12 competitors in the first phase and continued with six in the second round, of which three national and three international teams. Next to KCAP in cooperation with ORANGE Architects also A-Len from St. Petersburg was awarded with the first prize. Both teams will be involved in the further elaboration of the project.

## Internorm awards LISEC with the "Supplier Award 2015"

**Hausmening, Austria** – With the annual awarding of the "Internorm Supplier Awards", Europe's leading window brand Internorm has been honouring supply partners for outstanding performances for more than 25 years.

The "Internorm Supplier Awards 2015" were awarded in the three categories "Product components", "Investment goods" and "Service" as part of the festivities on the occasion of the 85-year anniversary of Internorm in Vienna on 4 February 2016. The award in the category "Investment goods" was awarded to LISEC Austria GmbH from Hausmening.

"LiSEC has delivered a top performance in our major investment project tempering furnace. Apart from the best possible support and the absolute adherence to delivery dates we would like to emphasise that LiSEC has not only complied with the agreed upon performance data but has significantly exceeded them", this is how the Internorm Purchasing Manager Helmut Freynhofer justified the decision of the jury.

"Internorm and LiSEC have been enjoying an intensive cooperative partnership already for more than 30 years. In the realisation and commissioning phase of our tempering furnace, LiSEC has once again proven that the seemingly impossible has yet become possible," added the co-owner of Internorm, Christian Klingner.

With the commissioning of an own plant for the production of tempered safety glass at the Traun site, Internorm has further enhanced its manufacturing expertise and at the same time the independence from suppliers in 2015. "Apart from the profile extrusion and the production of insulating glass, the production of tempered safety glass is now almost completely also in our hands. With our own tempering plant, we are in the perfect position to make tempered safety glass the standard for our products and to provide for a still greater safety already in the basic configuration," said Klingner.



Awarding of the Internorm Supplier Award in the category investment goods. From the left to the right: Thomas Vondrak, Johann Habring, Helmut Freynhofer (Internorm), Peter Rattinger, Anita Gutjahr, Klaus Preyler, Werner Mihatsch, Leopold Dammelhart, Klaus Siedl (LiSEC), Anette Klinger (Internorm). Image copyright: Internorm

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## World famous architect Zaha Hadid dies

**London, UK** – World famous Zaha Hadid passed away in Miami on March 31, 2016. As reported by Zaha Hadid Architects, she died from a sudden heart attack while being treated in hospital.

Zaha Hadid was widely regarded to be the greatest female architect in the world today. Born in Baghdad in 1950, she studied mathematics at the American University of Beirut before starting her architectural journey in 1972 at the Architectural Association in London.

By 1979 she had established her own practice in London – Zaha Hadid Architects – garnering a reputation across the world for her groundbreaking theoretical works including The Peak in Hong Kong (1983), the Kurfürstendamm in Berlin (1986) and the Cardiff Bay Opera House in Wales (1994).

Working with office partner Patrik Schumacher, her interest was in the interface between architecture, landscape, and geology; which her practice integrates with the use of innovative technologies often resulting in unexpected and dynamic architectural forms.

Zaha Hadid's first major built commission, one that affirmed her international recognition, was the Vitra Fire Station in Weil Am Rhein, Germany (1993); subsequent notable projects including the MAXXI: Italian National Museum of 21st Century Arts in Rome (2009), the London Aquatics Centre for the 2012 Olympic Games (2011) and the Heydar Aliyev Centre in Baku (2013) illustrate her quest for complex, fluid space. Buildings such as the Rosenthal Center for Contemporary Art in Cincinnati (2003) and the Guangzhou Opera House in China (2010) have also been hailed as architecture that transforms our ideas of the future with visionary spatial concepts defined by advanced design, material and construction processes.

In 2004, Zaha Hadid became the first woman to be awarded the Pritzker Architecture Prize. She twice won the UK's most prestigious architecture award, the RIBA Stirling Prize: in 2010 for the MAXXI Museum in Rome, a building for the staging of 21st century art, the distillation of years of experimentation, a mature piece of architecture conveying a calmness that belies the complexities of its form and organisation; and the Evelyn Grace Academy, a unique design, expertly inserted into an extremely tight site, that shows the students, staff and local residents they are valued and celebrates the school's specialism throughout its fabric, with views of student participation at every turn.

Zaha Hadid's other awards included the Republic of France's Commandeur de l'Ordre des Arts et des Lettres, Japan's Praemium Imperiale and in 2012, Zaha Hadid was made a Dame Commander of the Order of the British Empire. She was made Honorary Member of the American Academy of Arts and Letters and Fellow of the American Institute of Architecture.

She held various academic roles including the Kenzo Tange Chair at the Graduate School of Design, Harvard University; the Sullivan Chair at the University of Illinois, School of Architecture. Hadid also taught studios at Columbia University, Yale University and the University of Applied Arts in Vienna.

Zaha Hadid was recently awarded the RIBA's 2016 Royal Gold Medal, the first woman to be awarded the prestigious honour in her own right.



Zaha Hadid. Photography © Mary McCartney



*"We are deeply saddened by the demise of world-renowned architect Ms Zaha Hadid. CapitaLand has always been impressed by the creativity and boldness of her architectural designs, and has worked closely with Zaha Hadid Architects to create the landmark residential development d'Leedon in Singapore, which was completed just two years ago. We have lost a great architect of our time, but her legacy will endure for generations. Our deepest condolences to Zaha Hadid's loved ones and colleagues,"* said Mr Wen Khai Meng, CEO of CapitaLand Singapore.

Left: d'Leedon, a landmark residential development in Singapore by CapitaLand Singapore, was designed by Zaha Hadid. It was also her first high-rise residential project in Singapore. Photo credit: Aaron Pocock



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## SeARCH wins competition in Paris

**Amsterdam, The Netherlands** – SeARCH has won the competition for plot T10 in the new Paris Rive Gauche district, facing the immense Halle Freyssinet, undergoing renovations for 1000 start-ups, the world's largest digital business incubator, and the even so gigantic Bibliothèque Nationale de France François Mitterrand.

SeARCH has, in collaboration with Atelier Phileas and LA architectures, designed three adjacent city blocks with social, student and middle income public housing, commercial areas and an underground parking.

The block designed by SeARCH for ICF HABITAT NOVEDIS, the national railway (SNCF) housing partner, comprises a 7-storey base and a 5-storey top. A distinct 'cut' between the two connects two roof gardens at level 5 and 7.

## Museum of London West Smithfield International Design competition launched

**London, UK** – On 12 February 2016, the Museum of London and Malcolm Reading Consultants launched an international search for an outstanding architect or team of architects to create a new building for the museum at West Smithfield in the City of London.

The project at the heart of the two-stage design competition has a £130-150 million construction budget, and is focused on regenerating a nationally-significant landmark and creating new contemporary galleries within a group of historic buildings on the West Smithfield site. The Museum of London is one of the top 10 museums and galleries in the UK capital and responsible for the world's largest archaeological archive, which currently holds six million artefacts.

The Smithfield area, close to the much-anticipated Crossrail interchange at Farringdon, is expected to experience rapid economic growth as new transport links transform access.

The competition has been designed to be sympathetic to emerging designers, as well as established museum specialists. The turnover threshold for entrants has been set relatively low (in relation to project value) at £2 million and collaborations between architects are encouraged. **Full details of the competition, including the entry portal, are available on this website: <https://competitions.malcolmreading.co.uk/museumoflondon>.**



Copyright: Image © MRC/Luke Hayes

## Perstorp develops winning formula with top sports flooring manufacturer Herculan

**Malmo, Sweden** – Perstorp, a world leader in polycaprolactone polyols, is continuously looking to diversify and develop its current portfolio of products to solve specific customer needs. One successful project has involved Herculan, a major flooring manufacturer where a new innovative product has been developed, tested and introduced into high performance polyurethane flooring solutions.

The new product provides Herculan with advantages in processability due to its low viscosity and low tendency to crystallize. It also increases overall mechanical performance. This has allowed Herculan to formulate a robust solution for their customers enhancing their product offering by improved features like abrasion resistance, ball bouncing ability and shock absorption.

"Developing customer products with raw materials having these mechanical properties is a pleasure – and beyond that enables us to use, manufacture and deliver products that won't have a tendency to crystallize," said Dr. Michael Kissel, Manager R&D at Herculan.

"We are happy to see yet another example of a project that helps our customers improve the end-performance of their products. This shows one of our core values, Focused Innovation, at its best," said Joel Neale, Product Manager Capa™, at Perstorp.



Photo: © Herculan



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## USGBC announces the 2015 top 10 provinces and municipalities in Mainland China participating in LEED

**Washington, D.C., USA** – The U.S. Green Building Council announced the 2015 Top 10 Provinces and Municipalities in Mainland China participating in LEED, the world's most widely used and recognised green building rating system. The Top 10 list highlights the provinces and municipalities in China making significant strides in sustainable building design and accelerating market transformation by bringing healthier buildings to the people of China.

Shanghai topped the list, with over 2.4 million gross square metres (GSM) of LEED-certified space, followed by Guangdong (over 1 million GSM) and Beijing, with over a million GSM as well. The findings are based only on projects certified in 2015 and not on the total amount of certified space in China's provinces and municipalities.

The announcement comes at a time of increased environmental awareness across China that has enabled sustainability to gain vast social and political traction. Heightened concerns over unsafe levels of PM2.5 air pollution in major population centers such as Beijing and Shanghai have helped to demonstrate the important role that green buildings play in maintaining the health and wellness of the Chinese people. Additionally, China has pledged to cap its emissions by 2030, and coal emissions in China fell two percent last year – further underscoring the country's commitment to sustainability.

"Every story about a LEED building is a story about leaders, and leaders in China understand that LEED is a powerful market tool that works," said Mahesh Ramanujam, Chief Operating Officer of USGBC and President of GBCI. "I want to thank the Chinese business leaders and policymakers who are leading the way. Together, we are moving forward to create a healthier, more sustainable future for China through wide-scale adoption of green building rating systems," he added.

The 10 provinces and municipalities that made the list are geographically, demographically and economically diverse: five of them are from the developed coastal region (Shanghai, Guangdong, Tianjin, Zhejiang and Jiangsu), Sichuan and Chongqing are from the western inland region, Liaoning is from the northeast and Henan is from central China, as is Beijing, China's political and cultural centre.

## Schmidt Hammer Lassen Architects and Gottlieb Paludan Architects win international competition to design waste-to-energy plant in Shenzhen



Visual: © Beauty & the Bit, Madrid and Ginsun, Shanghai

**Aarhus, Denmark** – The team of Schmidt Hammer Lassen Architects and Gottlieb Paludan Architects has won an international competition to design a waste-to-energy plant in Shenzhen, China, which is claimed to be the largest of its kind in the world.

Located on the mountainous outskirts of Shenzhen the new Shenzhen East Waste-to-Energy Plant will incinerate 5,000 tonnes of waste per day – equalling one third of the waste generated by Shenzhen's 20 million inhabitants every year. The plant will utilise the most advanced technology in waste incineration and power generation, whilst at the same time act as a source of education for the citizens of Shenzhen.

The winning design organises the entire plant, including auxiliary buildings, into one circular building - breaking with the traditional rectangular layout of industrial facilities. By proposing a clear circular form, the footprint of the plant is minimised and it reduces the amount of excavation required to build on the site.

Public visitors are invited into the plant through a landscaped park, via an entrance bridge that rises between the stacks to an entrance lobby and visitor centre overlooking the plant machinery. An internal circular path and walkway circle the plant explaining each process, before leading up to a 1.5 kilometres panoramic public walkway on the roof overlooking the surrounding landscape and the city of Shenzhen.

The 66,000 square metres roof is designed to be covered by up to 44,000 square metres of photovoltaic panels providing the opportunity for the plant to not only provide a cleaner way to deal with the city's waste but also contribute to the renewable energy provision for the city.

The plant is intended to showcase the Waste-to-Energy production as an important technical process that is geared to deal with the issues of growing waste, as well as the issue of finding more environmentally friendly ways of generating electricity. At the same time visitors become informed on the challenge of the growing amounts of waste we produce every day and are also educated on initiatives on how to reduce their own amount of daily waste.

Detailed design work is due to begin in early 2016, and the plant is scheduled to start operating in 2020.

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## CTBUH names Bosco Verticale “Best Tall Building Worldwide” for 2015

**Chicago, Illinois, USA** – The Council on Tall Buildings and Urban Habitat (CTBUH) Awards Jury selected Bosco Verticale, Milan, as the “2015 Best Tall Building Worldwide” at the 14th Annual CTBUH International Best Tall Building Awards Symposium, Ceremony & Dinner held on 12 November 2015 at the Illinois Institute of Technology, Chicago.

The final decision was the culmination of a nearly year-long juried selection process considering 123 entries representing a total of 33 countries. In July, the CTBUH Awards Jury named a winner from each of the four competing regions in the world: Americas, Asia & Australasia, Europe, and Middle East & Africa. The Regional Winners were One World Trade Center, New York City, United States; CapitaGreen, Singapore; Bosco Verticale, Milan, Italy; Burj Mohammed Bin Rashid Tower, Abu Dhabi, United Arab Emirates. Senior representatives of each of the winners gave presentations at the Awards Symposium at Hermann Hall, with the jury convening immediately afterwards to determine an overall winner. IIT Dean Wiel Arets then had the honor of awarding the title of overall “Best Tall Building Worldwide” to Bosco Verticale at an elegant Ceremony & Dinner held in Mies van der Rohe’s iconic masterpiece S.R. Crown Hall.

Although the CTBUH International Best Tall Building Awards programme is ostensibly centered on a single building type, the diversity in this year’s winning submissions was remarkable. Awards Jury Chair, Mun Summ Wong, Co-Founder, WOHA Architects, shed light on the challenge of selecting this year’s winner, “How do you start to compare a building like Bosco Verticale, which has trees all over it and is just over 100 meters tall, with One World Trade Center – sleek, elegant, poised, and more than five times taller than the former? One is where people live, and the other where they work.”

The jury applauded Bosco Verticale, which translates to “Vertical Forest,” for its extraordinary implementation of vegetation at such scale and height. The building supplants traditional cladding materials with screens of greenery such that the plants act as an extension of the tower’s exterior envelope, creating a distinct microclimate. The building’s intensive “living façade,” incorporating numerous trees and 90+ species of vegetation, is an active interface to the surrounding environment. Along with creating a beautiful appearance, the living green façade concurrently stimulates interaction with the surrounding environment while also protecting against it, in fact enhancing the sustainability of the project. The jury called this exploration of the viability of greenery at such heights groundbreaking.



Bosco Verticale. Photo: © Elena Giacomello

## Pinnacle uses Newforma Project Center to manage massive quantities of information generated by Jeddah Tower project

**Manchester, New Hampshire, USA** – Newforma, a project information management (PIM) software company transforming building and infrastructure project delivery, announced that Pinnacle Infotech Solutions (PINNACLE) is using Newforma® Project Center software to manage the massive quantities of project information generated by the design of Jeddah Tower in Saudi Arabia. Renowned as Kingdom Tower, the building will rise to 3,280 feet (1,000 metres) when completed in 2018. The Jeddah Tower is one of PINNACLE’s 154 projects managed in Newforma Project Center.

PINNACLE Vice President Biswaroop Todi said: “Pinnacle’s role in MEP design calculation of the Jeddah Tower includes electromechanical calculations, value engineering, resizing of air handling and water handling equipment, design of the containment system, light layout and distribution panels, coordinated models, block wiring diagrams, combined services drawings, layout drawings and conversion of IFC drawings to shop drawings. We also have to validate designs, conforming to the international codes and standards. We acknowledge that managing such high volumes of project information and collaboration would not have been possible without Newforma software. An instance of project management challenge is found in file transfers. To date, Pinnacle has used Newforma to exchange 4038 files, having customized the Newforma transmittal document to conform to the engineer’s specifications. Using BIM/Revit technology with Newforma is enabling complete coordination to be conducted virtually, in the cloud.”

Efficient collaboration is important for the project because Pinnacle has 75+ team members located in Saudi Arabia and India. Newforma software automatically records who has uploaded and downloaded what information and at which point of time, reinforcing accountability.

Besides using Newforma Project Center to automate transmittals and manage file transfers, the team uses the software for project information management functions such as:

- Managing project emails
- Managing RFIs
- Comparing files
- Controlling document versioning and issuance

Regarding document control, over 17,163 record documents are planned through Newforma. Moreover, reporting, versioning and issuing are conducted through this platform.



Kingdom Tower under construction. Photo: © Pinnacle

## Santiago Calatrava wins international design competition for iconic observation tower in Dubai Creek Harbor

### New York, New York, USA

– Engineer and architect Santiago Calatrava has won an international design competition for a landmark observation tower in Dubai Creek Harbor, His Highness Shaikh Mohammad Bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates and ruler of Dubai announced recently.

Mr Calatrava's soaring tower design, one of six proposals submitted by competing firms, is inspired by Islamic architecture and fuses modern, sustainable design with the rich culture and heritage of the United Arab Emirates.

"This architectural wonder will be as great as the Burj Khalifa and the Eiffel Tower," said His Highness Shaikh Mohammad.

"Combining Islamic architecture with modern design, the tower at Dubai Creek will become a national monument as well as a cultural and tourist destination," said Mohammad Ali Al Alabbar, President of Emaar Properties, which will develop the tower together with Dubai Holding. Emaar Properties is the same firm that built the Burj Khalifa, currently the tallest building in the world.

"We feel extremely thankful and honoured to have been selected for such an important project," said Santiago Calatrava. "Dubai is one of the places where innovative and revolutionary architecture is making incredible strides. In our proposed design, we have united local traditional architecture with that of the 21st century."



Photo: © Santiago Calatrava

## Syria: Post-War Housing Competition

**London, UK** – An international open ideas competition for architecture students and young architects is initiated to research the new housing concepts for the future of the post-war Syria. The civil war in Syrian Arab Republic, which has started in 2011, created the biggest refugee crisis after the World War II. According to UNHCR, over 4,300,000 people has left the country and fled to Turkey, Lebanon, Jordan, Iraq and now Europe. While world leaders are looking for the international solution of the Syrian civil war and refugee crisis, many Syrians are looking forward for the opportunity to come back home as soon as the war is over.

Competition participants are asked to propose a solution for housing scarcity crisis, which will affect the country as more and more cities of the war-torn country will be freed and refugees will start to come back. Living conditions in the current refugee camps and temporary buildings across Europe and other countries are mostly inhuman, making refugees feel desperate, since there's also nowhere to come back as the Syrian towns are in ruins, offering nothing to people who once lived there.

The vital part of the new housing concept should become a creation of such living conditions which will be attractive for once displaced Syrians to return. People, who spent years in temporary shelters and adapted buildings, will look for "solid ground" to begin a new life. New housing concept should be able to permanently accommodate people in need of a new home and become a new page in the history of Syria.

Architects, students, engineers and designers are invited to participate in the competition. Participants must register by April 23, 2016. **For further information, visit <http://matterbetter.com>.**

## Toronto's 2016 Winter Stations Design Competition unveils winners

**Toronto, Ontario, Canada** – Now in its second year, Toronto's Winter Stations Design Competition selected its four winning designs from 378 submissions. These four installations were joined by three student-led designs from participating schools. Built around the beaches' lifeguard stations, each interactive structure invited both adults and children to touch, climb and play with the whimsical pieces of art.

In addition, a brand new beach community fire place, donated by Diamante Developments and designed by renowned Canadian architect Douglas Cardinal was also unveiled in a special ceremony that included a blessing from Cardinal himself.

"The fire space is defined by a sinuous curved wall that grows out of the ground and wraps around the fire, blanketing the people around the fire and protecting them from the wind," said Douglas. "The people sitting with their backs towards the wall can enjoy the view of the beach as well. The wall's curve is symbolic of nature; the curves found in the land and the water. The charred cedar finish of the wall connects the wall to the fire," added Douglas.

Founded by RAW Design, Ferris + Associates and Curio, Winter Stations Design Competition's uses design to inspire Torontonians back outside.

"Moving in to year two, we could not be more impressed with the calibre of design and dedication from each team," said Roland Rom Colthoff, founder of RAW Design. "Each installation brings its own unique story to the beach, demonstrating that, no matter what the temperature, design draws the crowds," added Roland.

All seven installations and the firepit are located along Toronto's east beaches, broadly located south of Queen Street East, between Woodbine and Victoria Park Avenues. They will stay open to the public until March 20, 2016.



The beach's brand new community fire place, designed by renowned Canadian Architect Douglas Cardinal, shielded the crowd from Lake Ontario's blustery winds. Photo credit: Khristel Stecher



Project & project team: In the Belly of a Bear by Caitlind r.c Brown, Wayne Garrett and Lane Shordee  
Location: Calgary, Canada  
Photo credit: Khristel Stecher



Project & project team: Floating Ropes by MUDO (Elodie Doukhan and Nicolas Mussche)  
Location: Montreal, Canada  
Photo credit: Khristel Stecher



Project & project team: Sauna by FFLO (Claire Furnley and James Fox),  
Location: Kent, UK  
Photo credit: Khristel Stecher



Project & project team: Flow by Calvin Fung and Victor Huynh  
Location: Toronto, Canada  
Photo credit: Khristel Stecher



Project & project team: Lithoform by Ryerson University  
Location: Toronto, Ontario  
Photo credit: Khristel Stecher



Project & project team: The Steam Canoe by OCADU  
Location: Toronto, Ontario  
Photo credit: OCADU



Project & project team: Aurora Borealis by Laurentian University  
Location: Sudbury, Ontario  
Photo credit: Khristel Stecher

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## Green building to remain robust in Singapore

**London, UK** – Singapore is the country with the highest level of green building involvement, according to a latest report published today by Dodge Data & Analytics and United Technologies Corporation (UTC), with the World Green Building Council (WorldGBC) as a research partner.

In the latest *World Green Building Trends 2016, Developing Markets Accelerate Global Green Growth* report, 97 percent of Singapore-based respondents indicated that they are engaged in some degree of green building, the highest level of involvement among all countries surveyed. The report also indicates that the growth of green building activity in Singapore is expected to remain robust from 2015 through 2018, with most of the Singapore-based survey respondents committing to do more than 60 percent of their projects green.

Singapore is also poised to be a global leader in four green building sectors over the next three years:

- **Retrofitting of existing buildings:** highest percentage of survey respondents who indicated that they will engage in green retrofits of existing buildings in the next three years.
- **New commercial construction:** 53 percent of Singapore-based respondents expect to do new commercial projects in the next three years, above the global average of 46 percent.
- **New institutional construction:** at 48 percent of survey respondents, Singapore leads in the area of constructing new healthcare facilities, schools, public buildings, etc.
- **New high-rise residential:** Singapore leads this sector with 48 percent, tied with India.

The report also states that global green building continues to double every three years. In addition, the most widely reported benefit worldwide is lower operating costs from green buildings, once again reiterating that green buildings also make business sense.

“This study offers further evidence on the strong business case for green building – the growth of which is now a truly a global phenomenon,” remarked Ms Terri Wills, CEO of the WorldGBC. “Green building is playing a critical role in the development of many emerging economies, particularly as their populations grow and create a pressing need for a built environment that is both sustainable and ensures a high quality of life,” she added.

The positive survey results come as good news for the green building industry, as certified green building services and solutions would continue – and even increase – in demand. “The survey reinforces our belief that there is great support for building green and the market is growing and maturing with even greater significance placed on innovative, high performance green building solutions,” said Mr Chia Ngiang Hong, President of the Singapore Green Building Council (SGBC).

“SGBC certifies green building products and services for their environmental performance in buildings, and we have seen greater interest and demand for such certified products and services from the industry as green building continues to gain traction,” he added.

## The 12th Batch of passionately professional Green Associate Professionals was trained successfully

**Colombo, Sri Lanka** – The 12th batch of Green Associate Professionals was held at Hector Kobbekaduwa Agrarian Research and Training Institute, Colombo 07, Sri Lanka, as the next in line of a highly successful series of Professional training courses held since 2010.

The opening ceremony was held ceremoniously at the Conference Hall of the Hector Kobbekaduwa Agrarian Research and Training Institute on the 29th of January, 2016. Eng. C. H. De Tissera, Chairman of the Construction Industry Development Authority joined the opening ceremony as the chief guest. The success of the grand opening ceremony was assured by the special guests Prof. Sarath Kotagama, Professor of Environmental Science in the Department of Zoology of the University of Colombo, Prof. Ranjith Dissanayake, Executive Vice Chairman of the Green



Building Council of Sri Lanka and Head of the Department of Civil Engineering, University of Peradeniya and Mr Lionel Nawagamuwa, Director, Green Building Council of Sri Lanka.

Mr Srinath Dolege, Marketing Manager of J Lanka Technologies (Pvt) Ltd., became the driving force behind the training course as he was the main sponsor of the Associate Professional Training course of Jan/Feb 2016.

This training was participated by more than 50 construction industry professionals such as Engineers, Architects, Quantity Surveyors, University Academics and Environmental Management experts, etc.. and it ran over four days.

20 course units pertaining to Scientific and Technical Aspects of environmentally sound constructions and its application and importance in Sri Lanka and the world were covered during the training session. Moreover, a group building design project, a

field visit to the Mahaweli Wing of the Central Engineering Consultancy Bureau Head Office; an exemplary green building with a Gold Rating by the Green Building Council of Sri Lanka and a written examination were to be completed by the participants to be certified as a Green Professional.

Green Associate Professional Course does not merely teach you the concept of sustainability, certify you as an internationally recognised Green Associated Professional, train you how to adopt green practices to constructions, but prepare you to put the training into action.

### What is the common frontier to tackle waste energetically? GBCSL wanted to answer!

GBCSL knew full well that connecting people with right information and right resources at right time was the path to bring forth the treasures that would protect the mother earth

from ecological, economic and social damage. As waste was one severe problem, which prevents achieving holistic goals of greening the environment; GBCSL took initiatives to arrange a Green Talk to address the matter.

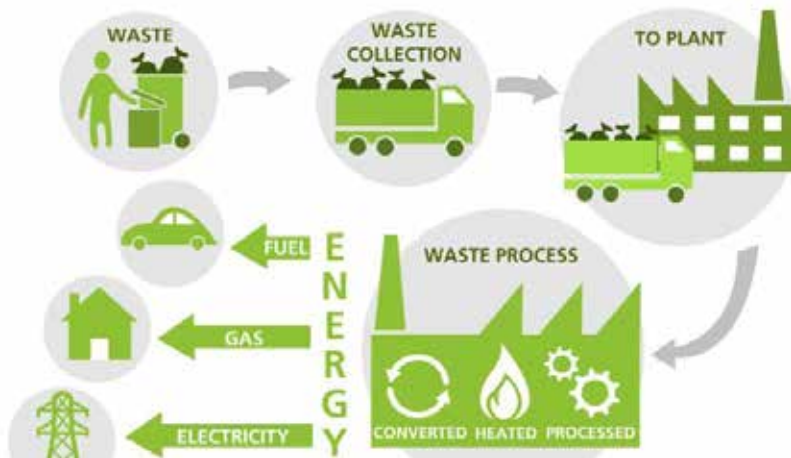
The Green Talk under the topic of "Tackling Waste Energetically: The Common Frontier" was successfully held on 19th January, 2016 at Auditorium of Sri Lanka Association for the Advancement of Science, Colombo 07, Sri Lanka.

The Resource Person for the worthy endeavor was Prof. Ajith de Alwis. He is a Professor at the Department of Chemical and Process Engineering at the University of Moratuwa and the Project Director of Coordinating Secretariat for Science, Technology and Innovation (COSTI) Sri Lanka.

Special Guests presented at the occasion were Prof. Ranjith Dissanayake, Executive Vice Chairman of the Green Building Council of Sri Lanka, Eng. Shiromal Fernando, Vice Chairman of the Green Building Council of Sri Lanka, and Mr Lionel Nawagamuwa, Director of the Green Building Council of Sri Lanka.

120 Professionals associated with the construction industry, Academics and Undergraduates participated the Green Talk and were pleased by the informative and practical nature of the event.

An Award Ceremony was also held concurrently with the Green Talk, where 18 Accredited Professionals of the Green Building Council of Sri Lanka were presented with their Membership Card and Official Stamp. It was a proud moment of the history of GBCSL.



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Kuala Lumpur, Malaysia  
Tel: +60 3 2176 8788  
Fax: +60 3 2164 8786  
Email: aseanmne@ubm.com  
Website: www.aseanmne.com

**9-12 June 2016**

**Cambodia Architect and Décor 2016**

Diamond Island Convention & Exhibition Center  
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Website: www.cambodiaarchitectdecor.com

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Website: www.thailandlightingfair.com

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Website: www.palmexpo.net

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Yangon, Myanmar  
Tel: +60 3 4041 9889  
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Website: www.myanbuild.net

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Email: theresa.gan@giec.biz  
Website: www.concrete-asia.com

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Email: candice@terranoa-consulting.com  
Website: www.piscine-asia.com

**9-11 Nov 2016****Konstruksi Indonesia 2016**

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Jakarta, Indonesia  
Tel: +62 21 391 3037  
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Email: dwi@infrastructureasia.com  
Website: www.constructionindonesia.com

**28-30 Sept 2016****ArchXpo 2016**

Marina Bay Sands  
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Tel: +65 6278 8666  
Fax: +65 6278 4077  
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Website: www.archxpo.com.sg

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Fax: +66 2 713 3034  
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Website: http://myanmarbuilddecor.com

**9-11 Nov 2016****The Big 5 Construct Indonesia**

Jakarta Convention Centre  
Jakarta, Indonesia  
Tel: +971 4 438 0355  
Fax: +971 4 438 0356  
Email: AshleyRoberts@dmgeventsme.com  
Website: www.thebig5constructindonesia.com

# KONYA CITY STADIUM SCORES HIGH IN DESIGN

**K**onya City Stadium is located on the north of the Konya city in Turkey, 9 kilometres away from the city centre on an area of 450,000 square metres. A sports hall, swimming pool, velodrome and a concourse is also available on the site plan. The Konya Stadium is accessible by the railway system, private vehicles and public transport system. Designed by Bahadır Kul Architects, Konya City Stadium is conceptualised with an approach of harmonising the cultural codes with contemporary structure. The exterior of the structure is in white-green colours, which symbolises the city football team.

Planning of the structure is based on UEFA criteria. The total seating capacity of the stadium, which is 42,000, is separated as the lower and the upper in the grandstand. The seating area settlement is called as the east, west, south and north. A sufficient number of toilets and buffet areas were planned under all the grandstands for the audience.



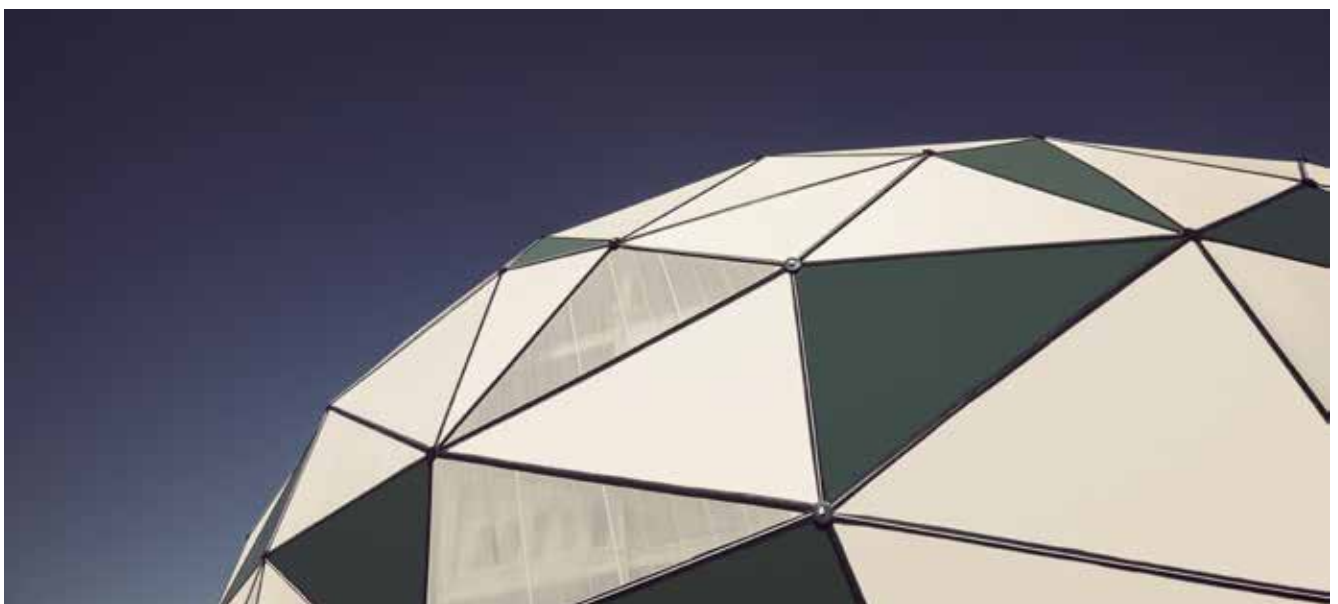
Photo: © BKA Archive



Photographer: Ket Kolektif

The football field is covered with artificial turf that is heated from below based on the FIFA and UEFA criteria. The top part of this area is covered with high technical featured materials, which enables the arena to be used for different functions. The grandstands are reinforced with concrete, and roof and the facades are made of steel. Wall and roof is covered with composite panel and quadroclad panels, aluminum interlock systems and solar olympic polycarbonate and tinted green glass is used in wall and roof covering. Metal pans with a width of 30 cm and depth of 15 cm is used to create a constant canal which defines the forms, provides the drainage of roof and facade water, and assembly the linear LED lightning system. The concrete areas are made of brut concrete.

Athlete locker rooms, training areas, the referee and jury rooms and various sizes of rooms for media and VIP entrances are planned on the western grandstand which also has a main carrier made out of concrete. Technical units and management offices are also in this region.



Photographer: Ket Kolektif



Photographer: Ket Kolektif

#### PROJECT DATA

**Project:** Konya City Stadium  
**Location:** Konya, Turkey  
**Client:** Konya Metropolitan Municipality  
**Architecture firm:** Bahadır Kul Architects  
**Project type:** Sports  
**Capacity:** 42,000 people  
**Site area:** 250,000 square metres  
**Total floor area:** 90,000 square metres  
**Project year:** 2012  
**Construction period:** 2013-2014

Durable, robust and easy to clean aesthetic materials are used on the walls and on the ceiling. Athletes use this elevation to reach the playground. The grandstands are two floored and designed to be in the form of an arch with 44 steps. The distance of the grandstands to the field is between 9 to 11 metres. The most distant audience from the football field is planned to be 90 metres away from the centre. Audience, media, lounge, VIP, athlete, and security guards entrances and circulation areas are separated from each other. The stair blocks of the upper and the lower grandstands are separated. Radiant heaters are positioned under the roof for the audience comfort and a sub-heating system is used in order to protect the turf under heavy weather conditions.



Photographer: Ket Kolektif

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Stone materials were installed in and around Margaret Court with Mapei products. Photographer: John Gollings

# Margaret Court Tennis Arena in Melbourne

Melbourne Park will remain the home of the Australian Open for generations, thanks to a multi-million dollar transformation of this world class sporting precinct.

**T**he redevelopment of Melbourne Park aimed to cater for the growing popularity of the Australian Open tennis tournament and to establish Melbourne and Olympic Parks as an unbeatable sports and events precinct. Aside from the Australian Open, Melbourne and Olympic Parks is one of the biggest sports and entertainment complex in the world, hosting around 600 events and attracting more than two million people.



Photographer: John Gollings

The redevelopment placed a strong emphasis on the comfort of patrons, with more open space and shade, increased seating capacity, better connections to public transport and the city, and easier movement into and within the precinct.

In the latest redevelopment phase at Melbourne and Olympic Parks, Margaret Court Arena (MCA) has been given a complete transformation to create the precinct's third all-weather arena. This particular venue was formerly known as Show Court One, but was renamed on the eve of the 2003 Australian Open to honour the retired Australian tennis player Margaret Court, who has won more Grand Slam titles than any other player in history, either male or female.

The design team, NH Architecture + Populous, was appointed by Major Projects Victoria on behalf of the Victorian Government to complete the 183 million dollar redevelopment. The project was completed late last year in time for the 2015 Australian Open. The new MCA includes an innovative retractable roof, seating for 7,500 spectators and concourse connectivity to the adjacent Rod Laver Arena. A significant part of the challenge was to manage the construction to enable Margaret Court Arena to be used during the Australian Open each January during the three year construction period. Furthermore the construction had to minimise disruption to the adjacent Rod Laver Arena and the over 50 events it hosts each year.

The primary function of the redeveloped Margaret Court Arena is to stage major matches of the Grand Slam tournament, but the multi-purpose venue will also host netball, basketball, major concerts and entertainment events. Its operable roof is the fastest closing roof in Australia, able to shut completely in less than five minutes enabling Margaret Court to become a functional all-weather boutique venue for a busy all year round schedule.

The project sets a new benchmark with its sustainability initiatives: it is the first Gold LEED accredited sports venue in Australia. Water consumption has been carefully considered and sustainable strategies adopted to reduce potable water consumption. Enabling works have provided the infrastructure for rainwater harvesting and treatment facilities which include a 4.5 millimeters storm water retention tank to capture rainwater from the new roof. Preliminary calculations demonstrate an overall reduction of 45 percent in water use against conventional arena design water efficiency measures.



### Rapid and efficient installation of bluestone and granite pavers



Photos above: The Mapei system proposed included KERAQUICK and KERAPOXY.

As a long-standing Mapei customer, DeFazio Tiles and Stone were awarded the contract to install over 7,000 square metres of 300 x 300 mm granite and bluestone pavers in and around the Margaret Court Arena. Prior to commencing work, DeFazio commissioned Mapei to perform pullout tests on the installation system proposed. It was extremely important to select an installation system that would not only perform well but would also meet strict deadlines critical to the success and handover of the project. Tests exceeded expectations and the installation of the bluestone and granite pavers commenced.



Photographer: John Gollings

An existing polyurethane membrane (that was installed some years ago) was repaired to remove its loose and flaky condition. The area was cleaned to ensure it was free from dust and debris. MAPEPRIM SP two-component, solvent-free primer for smoothing compounds and adhesives was applied over the top of the repaired polyurethane waterproofing membrane, prior to the installation of the bluestone and granite pavers.

The sand and cement bed was treated with PLANICRETE SP (a multi-purpose latex which is manufactured and distributed on the Australian market by Mapei Australia) to ensure an efflorescent-free paving installation. PLANICRETE SP was mixed in a 1:1 ratio with water and neat cement and applied to the concrete screed.

MAPELASTIC SMART two-component, high-flexibility cementitious mortar was applied over the substrate which

acted both as a waterproofing membrane and efflorescence barrier.

MAPECEM QUICKPATCH (a high-performance, high flow patching compound which is distributed on the Australian market by Mapei Australia) was also utilised to repair any deficiencies in the substrate as well as forming ramps to the tennis courts from the walkways.

With the importance of this project being completed prior to the Australian Open in January, KERAQUICK deformable cementitious adhesive with no vertical slip and extended open time was the perfect choice. KERAQUICK is not only a high performance adhesive but it is also quick-setting and develops a high bonding strength within 2-3 hours, perfect for rapid tile and stone installation projects.



Joints in internal paved areas were grouted using KERACOLOR FF pre-blended, high-performance, polymer-modified cementitious mortar with water-repellent DropEffect® technology for joints up to 6 mm wide, while in the external paved areas joints were grouted with KERACOLOR GG pre-blended, high-performance polymer-modified cementitious mortar for grouting joints from 4 to 15 mm wide.

300 x 300 mm granite stones were also installed on the metal staircases inside the stadium using KERAPOXY adhesive. KERAPOXY is a two-component, high-performance, anti-acid epoxy mortar and adhesive with no vertical slip for laying and grouting ceramic tiles and stone material.

For more information, email [mapei@mapei.com.sg](mailto:mapei@mapei.com.sg).

Article source: *Realtà Mapei International* no. 55/2015

#### Mapei products

Preparing the substrates: Mapeprim SP, Planicrete SP\*, Mapecem Quickpatch\*

Waterproofing substrates: Mapelastic Smart

Installing stone materials: Keraquick, Kerapoxy

Grouting joints: Keracolor FF, Keracolor GG

\*These products are distributed on the Australian market by Mapei Australia.

#### PROJECT DATA

**Project:** Margaret Court Tennis Arena

**Location:** Melbourne, Australia

**Client:** Victorian State Government

**Design:** Populous and NH Architecture

**Works Direction:** Major Projects Victoria

**Main Contractor:** Lend Lease Corporation Limited

**Stone Installation Contractor:** DeFazio Tiles and Stone

**Mapei Coordinator:** Paul Buckley, Mapei Australia

**Period of the Intervention:** 2014

**Intervention by Mapei:** supplying products for preparing and waterproofing the substrate, for the installation of stone materials and for grouting joints

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# ZHUHAI TENNIS CENTRE

## — A WINNING DESIGN

**T**he Zhuhai Hengqin International Tennis Centre on the southern coast of China, designed by global architects Populous, is an international standard tennis facility. It will host the WTA Elite Trophy Zhuhai from 2015-2019.

The first stage includes a Centre Court with 5,000 seats, a match court with seating for 1,500, four match courts with 250 seats each, and 12 training courts. The first stage of the Tennis Centre was completed in September 2015 and held its first very successful tournament, the WTA Elite Trophy, in November 2015.

Zhuhai Tennis Centre is claimed to be the first Centre Court built in China to have a roof and still be recognised as outdoor tennis court, protecting players and spectators from the elements.

Stage two of the project, due to start late 2016, will include a 15,000 seats tennis arena, indoor training hall, athletes' apartments, a tennis museum and additional match courts.

“The speed and quality of construction has been very impressive,” said Andrew James, Populous Senior Principal and Director of Asian projects.

The WTA Elite Trophy is classified as an outdoor tournament which meant the atmosphere for players (temperature and humidity) had to be the same on the covered courts as the uncovered courts.

Populous project manager, Associate Principal Tiric Chang said the solution for centre court was to design an inner and outer roof that offered weather protection but allowed filtered sunlight and natural air flow into the arena.

“We arrived at an elegant, simple, cost effective solution – a cantilevered outer roof over the seating and a circular inner roof over the court, offering protection from the sun, enabling play to continue in wet weather, and allowing gaps for natural ventilation,” he said.

“Our vision for the arena was to establish a venue that achieves the best fan, player, and media experience with match and training facilities to accommodate and attract high profile international players,” added Tiric.

Zhuhai is widely regarded as the most liveable city in China and a popular tourist destination. The Deputy Director of the Zhuhai Culture, Sports and Tourism Bureau, Cheng Yurong, said the city is committed to continue the process of internationalisation.

“This Tennis Centre can help elevate us onto the wider world stage, significantly helping to improve our international image and influence,” he added.

The Zhuhai Tennis Centre has been designed as a green park for the community. It provides a ‘raised forest’ landscape to provide a lush environment, which will be used by people during non-event days.

Populous was also engaged to help activate the site to make it friendly and appealing to families as well as designing an iconic entranceway of harvested and live bamboo to reflect the surrounding city landscape.

#### PROJECT DATA

**Project:** Zhuhai Hengqin International Tennis Centre

**Location:** Zhuhai, China

**Client:** Zhuhai Huafa Culture and Educational Tourism Industrial Development Co Ltd

**Architecture firm:** Populous

**Capacity:**

5,000 tennis arena

1,500 seat match court

12 training courts

Indoor training hall

Tennis museum (Stage 1)

12,000 seat tennis arena (Stage 2)

**Completion:** Stage 1 – 2015

**Photos:** © Populous and Ron Van Sluijs





Mercedes-Benz Stadium's entry plaza. Photo: © HOK

# Mercedes-Benz Stadium

## – An Iconic Architectural Landmark

**T**he design for Mercedes-Benz Stadium in Atlanta, Georgia, USA, creates an exceptional game-day experience for fans and an iconic architectural landmark for the city.

Designed as a signature element rather than a utilitarian cover, the Mercedes-Benz Stadium's retractable roof provides a radical departure from the kinetic roofs of other sports facilities. Derived from the shape of a falcon's wing, a reference to the Atlanta Falcons NFL team, the roof features eight triangular panels that wrap the stadium and move in unison along individual tracks. This allows the roof to open and close like a camera aperture. Exterior lighting can easily change the colour of the transparent facade.

The stadium interior offers fans an immersive, technology-driven game-day experience. A wide variety of seating options provide fans with varying ticket prices, vantage points, degrees of service and amenities. A 360-degree HD halo video board



Public Plaza at Mercedes-Benz Stadium. Photo: © HOK

built into the roof offers fans clear views from every seat. Other amenities include a technology lounge, a 100-yard bar and a floor-to-ceiling window offering views of downtown Atlanta.

Designed for flexibility, the stadium can be quickly reconfigured to accommodate games for Atlanta United FC, the city's new Major League Soccer franchise. Retractable seats surrounding the field allow fans to get close to the action for both soccer and football. Digital media platforms throughout the stadium offer flexible opportunities for teams and sponsors to display targeted programmable content on game days.



Mercedes-Benz Stadium Seating Bowl. Photo: © HOK

In addition to serving as an anchor for the downtown tourist and entertainment district, the stadium will catalyze changes in neighbourhoods surrounding the development. The project team's focus on sustainable design, construction and operations extends into the community through the creation of urban farming and open recreation spaces.

HOK is collaborating on the design with tvsdesign, Goode Van Slyke Architecture and Stanley Beaman & Sears.

#### PROJECT DATA

**Project:** Mercedes-Benz Stadium

**Location:** Atlanta, Georgia, USA

**Client:** Atlanta Falcons

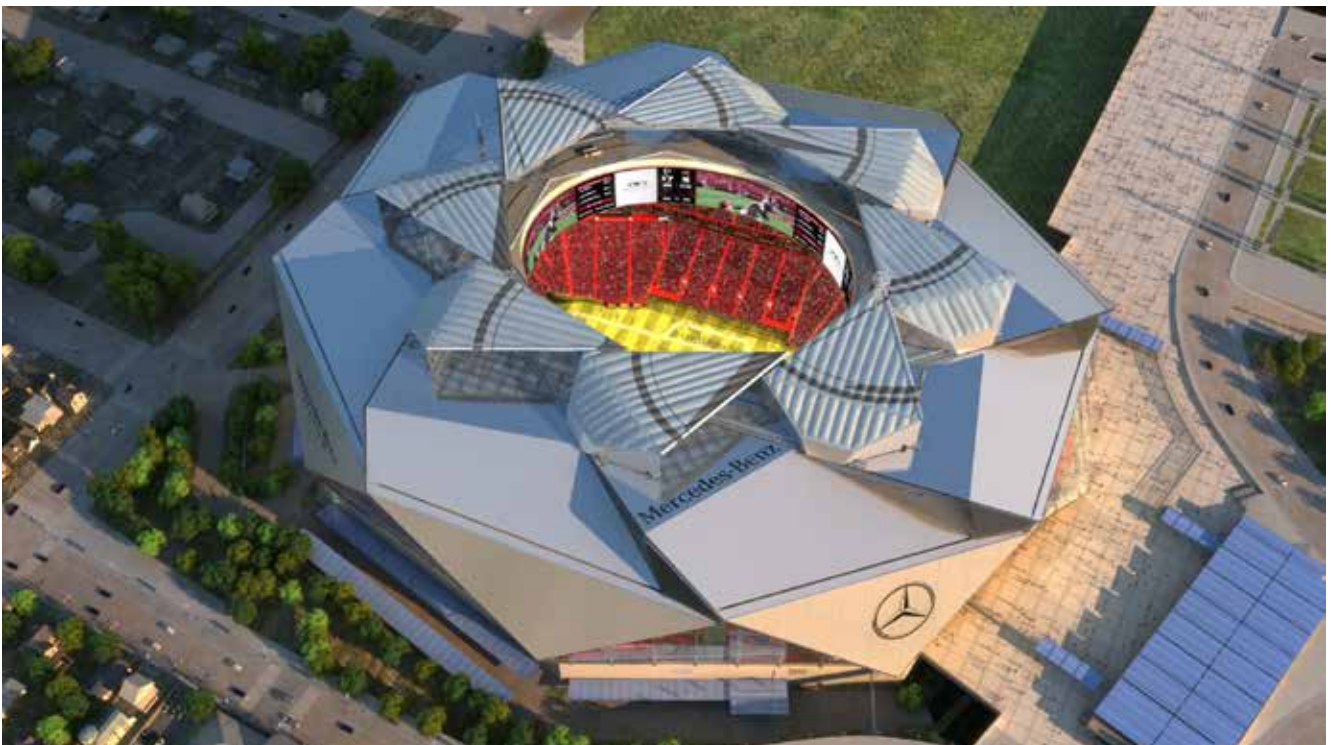
**Architecture firms:** HOK, tvsdesign, Goode Van Slyke Architecture and Stanley Beaman & Sears

**Size:** 2 million square feet / 185,806 square metres

**Seats:** 71,000 seats for NFL games / 32,456 for MLS games

**Green certification:** Pursuing LEED certification

**Completion:** 2017



Aerial view of the open roof at Mercedes-Benz Stadium. Photo: © HOK



## The Couch – A new clubhouse for Tennis Club IJburg

*The design for a clubhouse for the Tennis Club IJburg in the east of Amsterdam by MVRDV is an attempt to minimise the use of valuable playing space by combining the clubhouse typology, a long low strip opened up to views of the courts on one side and the waters of the IJMeer on the other, with that of a sports tribune or grandstand, perfectly angled for centre-court viewing. The roof of the club folds up to form this informal spectator platform, which can seat up to 200 people.*

IJburg is a new district to the east of Amsterdam. On its six artificial islands, 18,000 homes will be eventually be built for 45,000 residents. At present, the district holds just 16,000 of these inhabitants. There are many initiatives to attract people to the area, such as the beach at Blijburg aan Zee, and the newly formed IJburg Tennis Club itself. The tennis club, currently with 1100 members, has 10 clay courts and a tennis school. The new club house will be the centre of the club's activities. The zoning for the area allowed space for a tennis club, but a building could not be built quickly enough, and so the courts were made and a temporary facility installed.

MVRDV's design will now fill this gap with an iconically functional building which provides both a viewing platform and a club overlooking the water. The aim of the club is to be as accessible as possible, meaning that it is open to the public, free of charge, 365 days a year. Not a private club, but a meeting place for young and old, where you can grab a coffee and a healthy snack, or meet with friends, or even just check your emails. MVRDV's challenge was to create a building that works as a central gathering for the area. A living room for IJburg, where the building becomes a part of the community like piece of street furniture.





The club house is a long open volume with services on either side such as dressing rooms, a kitchen, storage and toilets. The main space is multifunctional, so it can be used for the club's many events. The roof dips down towards the south side and is raised towards the north up to a height of seven

metres, creating an informal tribune for the club. The wide glass front to the north side allows extensive natural lighting and provides a view out over the waters of the IJ-lake.

Inside the club house, the concrete construction is clad with FSC-certified wood, with the outside fully sealed with an EPDM polymer hot spray in the same colour and texture as the clay tennis courts. The reduced glass surface to the south helps to cool the building. The thermal mass characteristics of the materialisation in concrete and wood are used to reach a high degree of energy efficiency. The building will be heated with district heating made efficient by a heat exchange system. In summer there will be natural ventilation, adding to the ambitious sustainability profile of the structure.

#### PROJECT DATA

**Project:** The Couch – TC IJburg

**Location:** Amsterdam, The Netherlands

**Client:** TC IJburg, Amsterdam, The Netherlands

**Architect:** MVRDV

**Program:** 322 square metres tennis club and viewing platform

**Completion:** 2013-2015

**Photos:** © Daria Scagliola & Stijn Brakkee.





Photo: © Dennis Gilbert

# HBZ STADIUM

– STYLISH HOME OF  
AL AIN FOOTBALL CLUB



Photo: © Dennis Gilbert

*HBZ Stadium is the home of Al Ain Football Club, one of the leading clubs in the UAE Pro League. Designed by Pattern Architects, a London-based architectural practice focused on innovative rule-based parametric design, the 25,000 seat FIFA class football stadium introduces a new approach to sports architecture in the Gulf region by embedding Al Ain's identity into the very fabric of the design. Part of this identity is defined by the local desert climate and landscape. In 2015 HBZ won DB's prestigious Stadium of the Year Award and was a finalist at the World Architecture Festival.*

**A**l Ain is the second largest city in the Emirate of Abu Dhabi and has been inhabited for thousands of years. It is well known for its date palm plantations. Pattern's design is inspired by the rotating fractal geometry of the date palm fronds. The architects used the latest parametric technology to create an outer facade that reflects this.

This "Palm Bole" facade also acts as a passive cooling device; shading the building during the heat of the day whilst allowing fresh air to flow. Within the bowl this creates comfortable spectator conditions and aids grass growth for the pitch.

The roof for the HBZ Stadium is the first example in the region that is specifically designed for solar protection. Most stadia in the Gulf are based on the European model of a drip-line roof that has been developed for wet climates and is therefore redundant in arid parts of the world.

Pattern Architects took inspiration from the Arabic head-dress and created a sinuous and gravity-bending



Photo: © Dennis Gilbert

parasol roof that shades the pitch and the spectators during a match, whilst allowing enough sunlight on the natural grass pitch during the day to allow it to flourish. The apparent levitating form of the roof allows all spectators an unobstructed view of the action and intensifies the atmosphere within the bowl during the match.

A key area of investigation was audience segmentation. The unique slope-cut lower tier addresses this at HBZ and results in more high value seats.

As a typology, HBZ Stadium is very much a sports venue in a community. Pedestrian access is encouraged and there is no sea of car parking around the stadium. The architecture also supports non-match day opportunities and a building that is a vibrant destination year-round.

"HBZ Stadium is our first built project. It embodies our design principles of natural order, mathematics and visual harmony. We are very, very proud of it and what we have achieved as a practice going into our fourth year," said Architect Dipesh Patel, Founder of Pattern.



Photo: © Dennis Gilbert



Photo: © Dennis Gilbert

**HBZ Key Design Credits:**

The original client was The Crown Prince Court with the following design team:

**Lead Design & Architecture:** Pattern Design

**Architect of Record:** Mark Habre and Associate

**Lead Consultant & Master Planner:** Broadway Malyan

**Structural Engineer:** Thornton Tomasetti

**Building Services:** Hoare Lea

Post-contract the design team changed and was employed by BAM (Main Contractor):

**Lead Design & Architecture:** Pattern Design

**Structural Engineer Roof:** Schlaich Bergermann & Partner

**Structural Engineer Superstructure:** WSP

**Building Services:** Hoare Lea



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Photo: © Tomaz Gregoric

## Football Stadium Arena Borisov



Photo: © Tomaz Gregoric



Photo: © Tomaz Gregoric

The concept of the Football Stadium Arena Borisov takes into account the natural advantages of the location and the existing interventions within the terrain, while maintaining as many of the existing trees on site as possible. Besides 13,000 seats there is additional 3,000 square metres of public space and are classified 4 stars according to UEFA categorization. Traffic and parking is organised between the forest.

The arena forms a unified rounded dome, giving the impression of a single enclosed object. The Skin of the dome gives an impression of a fragile stretched perforated textile pulled over the stadium skeleton. The covered space between the skin and the tribunes is a public street-a vestibule with public program (shops, bars, services, toilets) and galleries above (offices, VIP, press).

Internally, the rounded arena provides good acoustics and encourages an extrovert atmosphere from the players and the fans alike during the game, but focuses concentration during training time. The playing surface has N-S orientation, with a total area of 85x105 metres, on which 68x105 metres is used for playing. The remaining area allows enough space for the installation of advertising screens, photographers and cameras. The seats are arranged around the playing field in rows of 17 along the sides and rows of 27-28 along the short sides. The upper west gallery is reserved for press cabins,



Photo: © Tomaz Gregoric



Photo: © Tomaz Gregoric

with seats and tables for 40 journalists and direct stair access to the press room and mix zone. In the east are the VIP stands, with 250 seats and bar and entertainment spaces. The VIP is accessed directly via an elevator from the entrance area with a car driveway. The athletes have a separate access on the lower platform, with passage to team buses and parking. At each entry point to the field are two dressing rooms, mix zone, physiotherapy and a space for doping control.

There are four floors with extra program and service facilities under the west stand area and three floors under the east side. The foyer for visitors is located on the first floor level and has four stairway access points. It is a covered plateau, naturally ventilated and unheated. Extending all around the inner stadium arena, this space contains the visitor's toilets, bars, first-aid room and detention: it is a place to break during half-time.

3,000 square metres of public program is distributed at ground level on the north, south and east ends of the structure. In the east, a restaurant and bowling area are located. The restaurant prepares meals for the VIP during the match, with a service elevator for catering to the VIP lounge and bar within its public foyer. In the south, there are public fitness/gym studios. Other public area spaces are designed for various commercial activities. All restaurants have access from the public platform. Around the platform is a rounded pedestrian square, as a peripheral roundabout and meeting area. Parking pockets are organised into the existing forest area.

#### PROJECT DATA

**Project:** Football Stadium Arena Borisov

**Location:** Borisov, Belarus

**Client:** FC Bate

County of Borisov

**Architect:** OFIS ARCHITECTS

**Engineering and local office:** Magnus Group

**Program:** Football stadium + public program

**Type:** Public + private

**Area:** Public program – 3,628 square metres

Offices – 480 square metres

Service – 2,000 square metres

**Capacity:** Audience – 13,000 seats

VIP – 620 seats

Press seats – 100

Parking spaces – 800

**Structure:** Steel, reinforced concrete; roof structure-metal beams with aluminium cladding

**Status:** Commission – 2010

Construction – 2011

Completion – 2014



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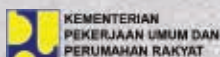
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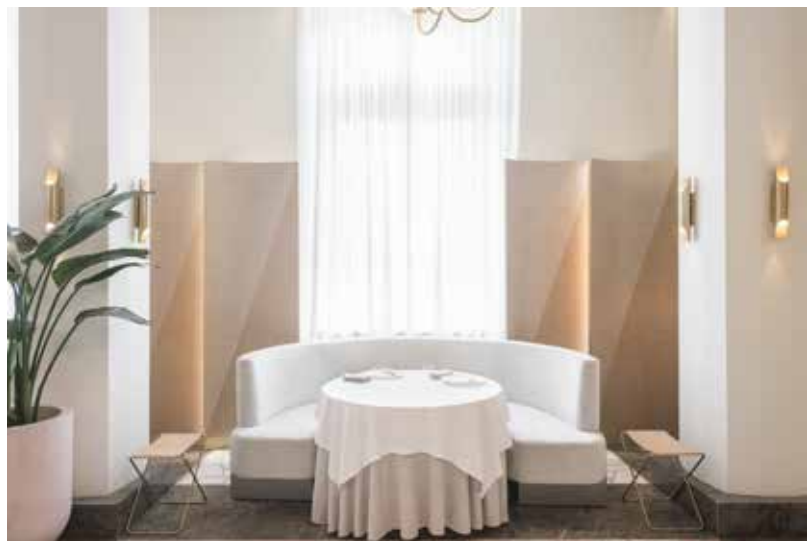
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# *Odette*





Universal Design Studio has revealed its design of the long-awaited Odette restaurant, located in the newly refurbished Singapore National Art Gallery – home to the Nation’s art collection.

Odette, named as a tribute to chef Julien Royer’s grandmother, was designed as an art piece in itself, an extension of the collection housed in the historic building.

The design of the space was approached with a mind to honouring the integrity of Royer’s dishes: delicate, refined and elegant. This celebration of craft is demonstrated through the use of natural, raw elements presented in a soft colour palette of natural timber, pink terrazzo marble, with nickel and brass accents.

The use of natural light and a bright palette offers a welcome departure from more traditional fine dining restaurants where darker, heavier tones are often found. Universal Design Studio sought to achieve these refreshing objectives all while respecting the historic and iconic location within the National Gallery – a Colonial Era, Classical building, formerly the Supreme Court House of Singapore.

The gallery’s original Corinthian columns are referenced with faceted columns in the dining room, as is the striking floor of the gallery lobby, through the use of Palladiana marble in the restaurant.

A key feature central to the dining experience is the glass-encased kitchen, where diners have the opportunity to witness the chefs at work. Universal Design Studio has also collaborated with Singaporean artist Dawn Ng to create a mobile centerpiece for the restaurant.

All photos: © Odette

## – A new restaurant in the Singapore National Art Gallery





## *Smoke & Mirrors* – A unique combination of design, location & panorama

**Asylum designs branding and interior for Smoke & Mirrors, a newest addition to Singapore's tipple scene perched atop the sixth floor of the National Gallery of Singapore.**

**S**moke & Mirrors brings a new standard of bar and bartending to Singapore. Located at the National Gallery of Singapore, one of Singapore's most historically and culturally significant icons and also the world's largest public display of modern Southeast Asian art; Smoke & Mirrors is a stylish cocktail bar with a spectacular panoramic view of Singapore's skyline.

Inspired by illusion and art, Asylum intentionally breaks visual and spatial boundaries in their branding and interior approach for Smoke & Mirrors. The experience is an enigmatic entrancement that is reflective of the bar's philosophy of theatrical and innovative cocktails.



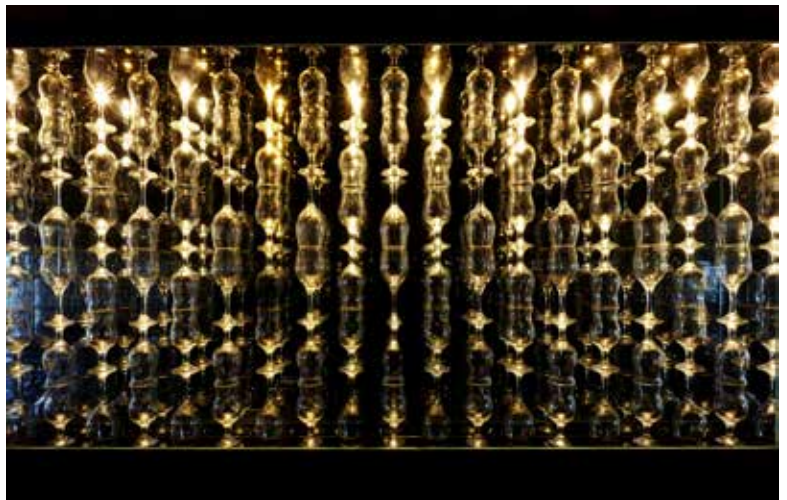


Sophisticated minimalism progresses into a rhythm of optical illusion patterns reflected in the printed collaterals - name cards and lining of the menu.

The entrance corridor is a seemingly infinite, plane mirror corridor guided by wall displays of over 1,400 wine glasses that leads to the 'jewel' within the 2,500 square feet space - an imposing art sculpture cum mirrored surface bar counter that immediately draws the eye and tipplers. The symbolic meaning is akin to a 'jewel' perched atop the National Gallery; finished in high-shine stainless steel and intentionally displaced to break the conventional carving of indoor and al fresco areas. This open bar layout creates a seamless view of the breathtaking skyline that places architectural giants - Swissotel, Singapore Flyer, Esplanade, Art Science Museum, Marina Bay Sands and Singapore's business district; on a horizon.

Floating screen panels made from tactfully angled walnut timber tiles, line the facade of the bar - only allowing a sneak peek into the space that shrouds the bar with a sense of privacy and mystery. From the inside, the screen panels form visual rhythm and texture to the background of intimate private seating areas. Juxtaposed the wood is the sleek addition of customised copper light covers that suspend above seating areas adding modernity and sophistication to the warm, loungey ambience.

All photos: © Asylum



# Vanimal Vegetarian Restaurant

via architecture has revealed the design concept for the interiors of vanimal vegetarian restaurant in hong kong.

**H**ong Kong-based interior design studio, via architecture has unveiled its latest project, designing the interiors for Vanimal, an innovative vegetarian restaurant in Kennedy Town. Working closely with owner and chef Paul Hui from the famed private kitchen Fa Zu Jie, the award-winning studio was tasked with designing a 30-seat vegetarian restaurant where quality and freshness characterise both the design and the food.

"VANIMAL" describes both the vegetarian menu and the guests' instinctive, animal-like appetite for meat-free cuisine.

To create an urban, creative setting, he drew inspiration from iconic art works by Jean Michel Basquiat, as well as Antonio Gaudi's Park Güell. Since the restaurant's name combines opposing elements, the interior design juxtaposes vibrant colours and plush textures with raw, industrial materials and concrete surfaces to play with contrasts and create a sense of energy.

As guests enter, they are greeted by a five-metre long timber sculpture that depicts the mythical low-lying Vanimal. As well as defining the dining area, the curved sculpture doubles as a free-standing counter. The open kitchen and bar anchors the restaurant space, allowing diners to watch the chefs in action while admiring the jars of kimchi, preserved vegetables and specialty drinks on display.



Interior of Vanimal houses exclusive dining chairs that echo the natural elements and animal instincts. Photo: © via architecture



Entrance of Vanimal. Photo: © via architecture

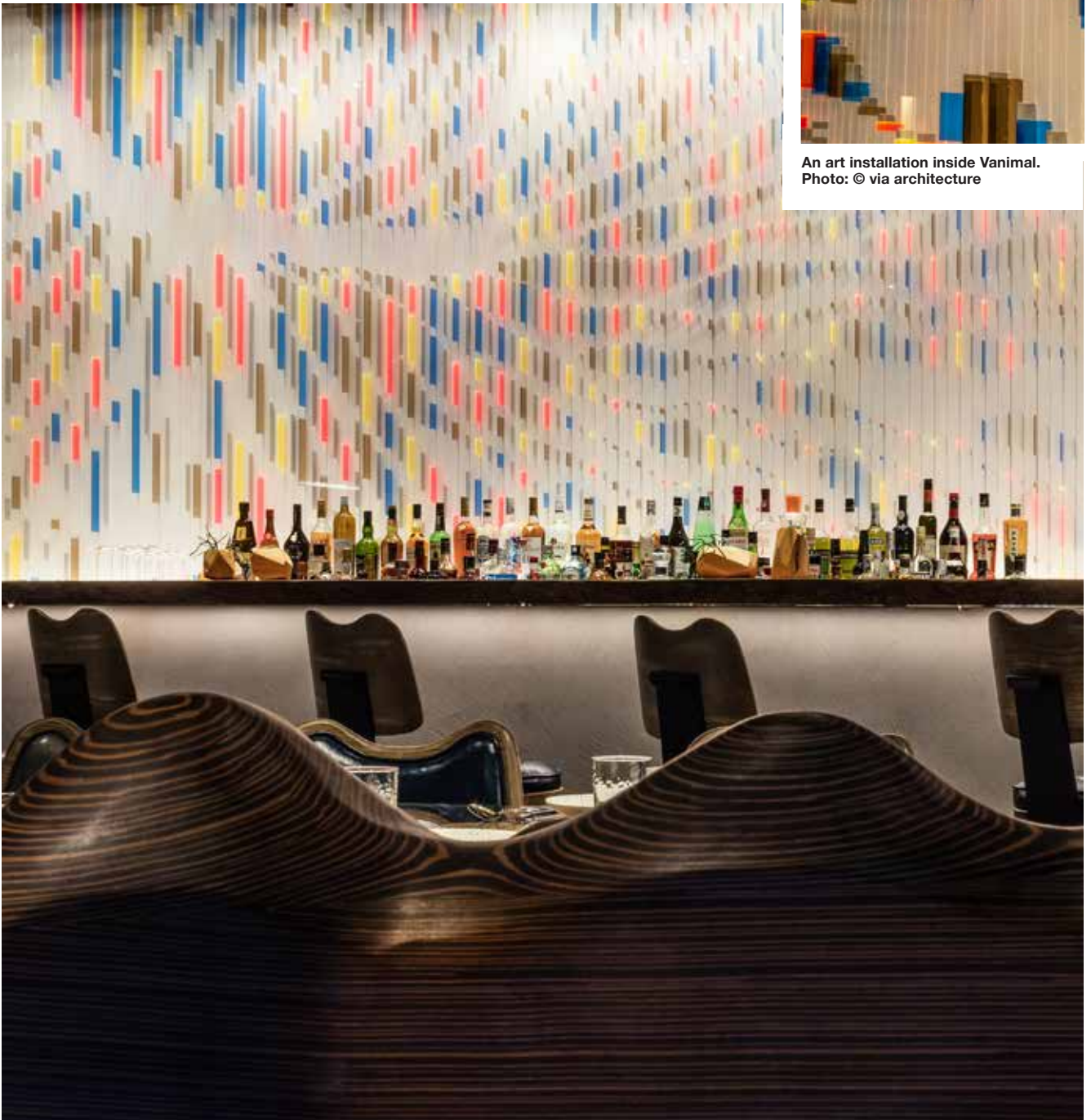
Adding to the design's bespoke qualities, via architecture created a series of exclusive dining chairs that echo the natural elements and animal instincts. The design team also crafted several bespoke pieces for the space, including a neon dinosaur installation, and an abstract relief sculpture inspired by the textures of vegetables.

"In designing Vanimal, we wanted to play on the dual identities contained in the name," explained Frank Leung, Principal of via architecture.

"We aimed to convey contrasts, add dissimilar elements and embrace the way differences can bring surprising results. With Kennedy Town establishing itself as Hong Kong's restaurant hub, Vanimal will bring something new to the neighbourhood, both in its design and dining concept," added Frank.



An art installation inside Vanimal.  
Photo: © via architecture



Vibrant colours characterize the interior design of Vanimal. Photo: © via architecture

# Playpoint integrates nature and play for Pinyi Greens



Playpoint (Singapore) Pte Ltd recently completed a design-and-build playground for Pinyi Greens HDB estate in Singapore. The design-and-build playground, which aims to integrate landscape and play together, is claimed to be the first of its kind here.

**B**ounded by Chai Chee Road and Chai Chee Street, Ping Yi Greens comprises six 15-storey residential blocks. For this project, Playpoint (Singapore) Pte Ltd was appointed to install the design-and-build playground at blocks 807B & 807C Chai Chee Street.

The landscape architect of Pinyi Greens, Martin Lee Designs, called for a multi-level playground concept, which was not only unique but also uncommon from the rest of the playgrounds in Singapore. Playpoint (Singapore) was engaged to provide its expertise to the project. After studying the consultant's requirements and the playground space, Playpoint (Singapore) proposed the Pentagon dome Net structure play tailored for the project





The Pentagon dome Net structure with internal climbing maze, slide and climbable structure resting on the EPDM terrain steps, created an interesting landscape for the playground. Children can have fun climbing outside and inside the structure; and they can also feel satisfied sliding down from the slide after reaching the top of the dome. In addition to the hidden entrances to the play dome, telephone tubes, spinner bowls and trampoline at the playground make it an ideal space for children of all ages to spin, jump and experiment with the play structure. The installation of the net structure spans an area of 320 square metres.

"The client approved our proposal because the design and the playground concept satisfied their requirement," said Mr Jason Sim, Managing Director, Playpoint (Singapore) Pte Ltd. The project was completed in June 2015.

The Pentagon dome Net structure is available in Singapore through Playpoint (Singapore) Pte Ltd. For more information, tel (+65) 6398 1558, fax (+65) 6398 1559, email [info@playpoint.com.sg](mailto:info@playpoint.com.sg) or visit [www.playpoint.asia](http://www.playpoint.asia).

#### PROJECT DATA

**Project:** Pinyi Greens

**Location:** 807B & 807C Chai Chee Street, Singapore

**Client:** Housing & Development Board

**Landscape Architect:** Martin Lee Designs

**Playground Equipment Supplier:**

Playpoint (Singapore) Pte Ltd

**Completion:** June 2015

**Photography:** Tuckys Photography

# Driving Empathy

## - Inclusion on the Playground



**Ian Proud**

As research manager and inclusive play manager, Ian has led Playworld's inclusive play initiative since its inception, culminating in the development of the Inclusive Play Design Guide, a manufacturer-neutral, educational and inspirational resource. Specializing in trends, the future and managing change, Ian has led highly-rated workshops at state and national conferences, he holds a B.A. in 3D design and an MBA.

Text by Ian Proud, Playworld

In my experience, most parents of children with disabilities are fully accepting of their family. They do not want their children to change, but they do yearn for understanding or empathy from other families. The playground can be designed to make that more likely.

If we increase contact between typically-developing children and those with disabilities, they are more likely to understand one another.

Six years ago, Playworld assembled a team of experts from a variety of disability-related fields. This group developed a 70-page Inclusive Play Design Guide (IPDG) intended to be the basis of an international standard for inclusion on the playground.

The Guide argues that child development should be the standard around which we design playgrounds, not aesthetics or risk reduction.

Using child development as a guiding standard means using concepts such as 'rich play environment' in the playground. We previously had little definition as to what that meant. The IPDG now shows how to achieve play richness.

According to Article 31 of the United Nations Convention on the Rights of a Child, every child has a right to engage in play. It is a vital part of children's development and a key factor in how they come to understand the world around them. Unfortunately, many children are unable to reap the benefits of play or engage in the activity due to the nature of most parks and playgrounds.



Claude Moore Fun for All Playground, Warrenton, Virginia, USA. Photo: © Playworld



Zahra Baker All Children's Playground, Hickory, North Carolina. Photo: © Playworld

### Reassess Our Idea of Who Is Disabled

International statistics are not widely available, but based on data for the US from Kaiser Family Foundation data, 12 percent of the population is affected by a disability. This includes developmental disabilities, brain development disorders such as autism, disabilities due to aging, accident injuries, etc. There are national standards for wheelchair access in some countries that require the elimination of physical barriers, but less than one in 20 children in the US with a disability has a physical disability.

### Access Does Not Equal Engagement

Allowing someone inside your home is a good step toward making them feel welcome, but how comfortable will they feel if they are given something to do in a different room than everyone else? A successful inclusive playground will drive engagement between children of different abilities.

### Eight Keys to Inclusion

The IPDG has 60 different inclusive goals or intents. Outlined below are eight of the key objectives:



Cedar Creek Park, Allentown, Pennsylvania, USA. Photo: © Playworld

### Sensory, Physical & Social

The play environment for all children will be enriched by choosing activities for each of these types of play, but children who have difficulty with sensory input or need help socialising will need this diversity to select what they need.

### Multiple Challenge Levels

Different levels of challenge allow a wide variety of people to be welcomed into the play space. There is something for everyone, including the typically-developing child.

### Grouping of Activities

If those activities are located adjacent to one another, users are likely to have contact and be familiar with each other. That is where the magic happens. The appearance of difference disappears. We become human to one another.

### Activities at All Levels

Height means perceived risk, but this decision can have consequences for inclusion if not handled carefully. Incorporate activities for people in chairs at all heights and consider ground-based play.

### Pods, Rooms or Zones

On larger playgrounds, take 'grouping activities together' to the next level. Create rooms that are dedicated to an activity such as sounds. This allows a child to choose the kind of activity they know they can tolerate.

### The Coolest Thing

Look at the playground design. What activity will be featured in a story tied to the playground opening? That activity

should be useable by everyone.

### Unitary Surfacing

There are two major categories of playground surfacing: loose and unitary. A child in a chair will have much more difficulty moving their chair across loose surfacing. On some loose surfaces it will be impossible to move a chair. Use unitary surfacing.

### Routes and Maneuverability

Travel routes around and through the playground and surrounding areas should be wide enough for people and wheelchairs to pass, transfer onto and off equipment, and get close to activities.

### Orientation Paths

Orientation paths give people a chance to understand how the playground is organised and their options – before jumping in. This is especially useful for children with Autism Spectrum Disorder (ASD) or Sensory Processing Disorder (SPD).

An orientation path starts at the entrance(s) to the playground and navigates the whole playground in one of two ways – through the center or around the outside. Smaller playgrounds have a path around the perimeter while larger ones have a path connecting the zones of activity.

These are some of the ways that children of all abilities can be made to feel welcome on the playground while still challenging the typically-developing child. We can build community with an invitation to everyone to engage with each other and create empathy in the public space.

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



Mallard Park, Caldwell, Idaho, USA. Photo: © Playworld

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# *OBO Bettermann offers one stop cable management and support systems*

**O**BO Bettermann, a name synonymous to cable management and support systems, has been in the industry for over 100 years. The name has been going global since then. On 3rd January 2015, OBO Bettermann South East Asia Pte. Ltd., was established and the tradition goes on. The owner of the company Mr Andreas Bettermann personally chose and sent Mr Conrad de Lange to be the Chief Executive Officer of this hub here in Singapore.

Mr de Lange worked out on all sides and aspects of the establishment right from the start but to find a suitable office cum warehouse was quite a hurdle for him. The business has begun in Oxley Road and in September 2015, a new home was found in 18 Tampines Industrial Crescent, #03-11, The Space@ Tampines. Renovation started on and was in full swing in order to achieve the target date of full operation beginning January 2016. Under the steadfast and determined person of the CEO every detail of the renovation works were relentlessly monitored until completion was done.

Now, standing where it is, the company has slowly grown and it keeps on traversing the road on its way to the destination where the whole OBO SEA Team is committed to be. OBO Bettermann South East Asia is here to be closer to its existing distributors and clients in the Southeast Asia, Pacific and even to countries like Japan and the Republic of Korea. It wants to bring a faster, reliable and efficient service to these regions. The hub has its own sales and engineering team as well as a logistic centre. It offers and conducts products, solutions and applications seminars to distributors and prospective clients. To equip itself on the demands of a diversified market that it caters, OBO has more than half a million euro worth of its items in the warehouse. This will guarantee a faster delivery time to bring the products to the end users. It offers professional services to bring the following seven product segments in the market:

- Cable support systems (KTS)
- Connection and Fastening System (VBS)
- Transient and Lightning Protection System (TBS)
- Fire Protection System (BSS)
- Cable Routing System (LFS)

## - Device System (EGS)

## - Underfloor System (UFS)

To assist the customers, Mr Conrad de Lange had chosen his team meticulously. These people have his trust and confidence, in whom, he is sure would deliver the high standard quality of service and performance that the company, OBO Bettermann has been known for.

Ms Astrid van der Geest, Director, Finance & Operations & Human Resource

Mr James Gan, Manager, Sales & Engineering

Ms Maria Jogi Acosta-Mueller, Manager, Back Office & Logistic

Mr Thac Truong, Consultant, Sales Engineering

Mr Leo Chandran Desmond, Warehouse Assistant

## What can OBO Bettermann South East Asia offer?

With all the ever increasing demand for more services and complex network of pipes, cable support and HVAC systems, OBO Bettermann brings out a variable possibilities and ideologies a new generation of cable support systems and accessories to make the tasks for consultants and mechanical as electrical engineers easier, more productive, cost effective and for a shorter project time completion. Take the case of the "Magic Cable Tray System", the easy screw-less products. They are available in different grades of materials and finishing suitable for every industrial, commercial and infrastructure application. Advantages will be simplified mounting, increase in load capacity, improved cable ventilation, water run-off guarantee.

Further, OBO Bettermann can offer you solutions for all electro technical applications on Solar Power, Data Centers, Tunnelling, Hospitals, Food and Beverage Industry, Public Buildings, Hotels, Offices and other structural projects even in the residential objects.

To update the knowledge of its distributors and prospective clients, OBO Bettermann conducted a two-day seminar the Crown Plaza Hotel and a warehouse/office visit on 20 and 21 January 2016. Mr Juergen Trinkwald, Product Manager, TBS Business Unit and Mr Thomas Butzek, Manager, International Sales flew in from OBO Germany to share their expertise on Transient and Lighting Protection Systems and also to give support to their colleagues in Singapore. The attendance was



The two-day seminar conducted by OBO Bettermann drew many clients and customers.



a resounding one and camaraderie was enhanced among the group. Definitely, more product seminars and trainings are planned by Mr de Lange as a sign of his dedication and willingness to support the customers in their need of OBO products but more than that, it is to strengthen the ties between OBO Bettermann and its valued clients.

Just for the short span of time that OBO South East Asia is in the SEA, its presence could be strongly felt through the existence of its products on structures like Gardens by the Bay Singapore and Hauni Malaysia Sdn. Bhd. and Heineken facility

in Cambodia etc.

Download a copy of the OBO Compact catalogue for your daily construction needs: [http://obo-bettermann.com.sg/media/Kompakt\\_SEA\\_\\_WEB\\_72dpi\\_07122015\\_EN\\_klein.pdf](http://obo-bettermann.com.sg/media/Kompakt_SEA__WEB_72dpi_07122015_EN_klein.pdf)

**For more information, contact OBO Bettermann South East Asia at tel (+65) 6385 5805, email [info@obobettermann.com.sg](mailto:info@obobettermann.com.sg) or visit [www.obo-bettermann.com.sg](http://www.obo-bettermann.com.sg). The company is also looking for new colleagues. If you are interested, email [vandergeest.astrid@obo.sg](mailto:vandergeest.astrid@obo.sg) for more information.**



# The Mémorial ACTe – An Architectural Gem

**TECHNAL was proud to be associated with The Mémorial ACTe, a Caribbean Centre of Expression and Memory of Slavery and the Slave Trade, located on the Pointe-à-Pitre coast.**

**T**he Mémorial ACTe is a Caribbean Centre of Expression and Memory of Slavery and the Slave Trade, built on the symbolic site of the former Darboussier sugar refinery, on the Pointe-à-Pitre coast. Inaugurated in May 2015, the structure covers more than 7,000 square metres and overlooks the coast. The architectural project, which also aimed to renovate and revitalise a deprived area, pays tribute to a long oppressed people. The building consists of two blocks supporting a latticework made of anodized aluminum. This silver-coloured latticework shimmers both night and day, evoking the roots and quest for origins echoed by the history of slavery and the slave trade. This latticework protects the building, which has black granite-clad façades, from sunlight. This creates a constellation of bright shards of quartz, symbolising the millions of souls lost.

The aluminum joinery systems and façades of the two buildings, that support the latticework, were designed by the company SAVIMA. The GEODE horizontal trame façades of the museum building open it up to the light and the ocean. It features a faceted curtain wall system, which offers exceptional flexibility in terms of geometric composition. The thinness of the profiles ensures a maximised glass surface area, which greatly enhances the admission of natural light, while the thermal break in the GEODE system and the SOLEAL insulating doors provides optimised thermal and acoustic comfort.

Though the museum building is air-conditioned, particularly to protect the exhibition items, the building which houses the restaurant and conference room benefits from the natural ventilation and solar protection provided by SAFETYLINE louvers.

For more information, visit [www.technal-int.com](http://www.technal-int.com).

## PROJECT DATA

**Contracting authority:** BETCI, FI ingénierie, SIGMA acoustique, technical design offices.

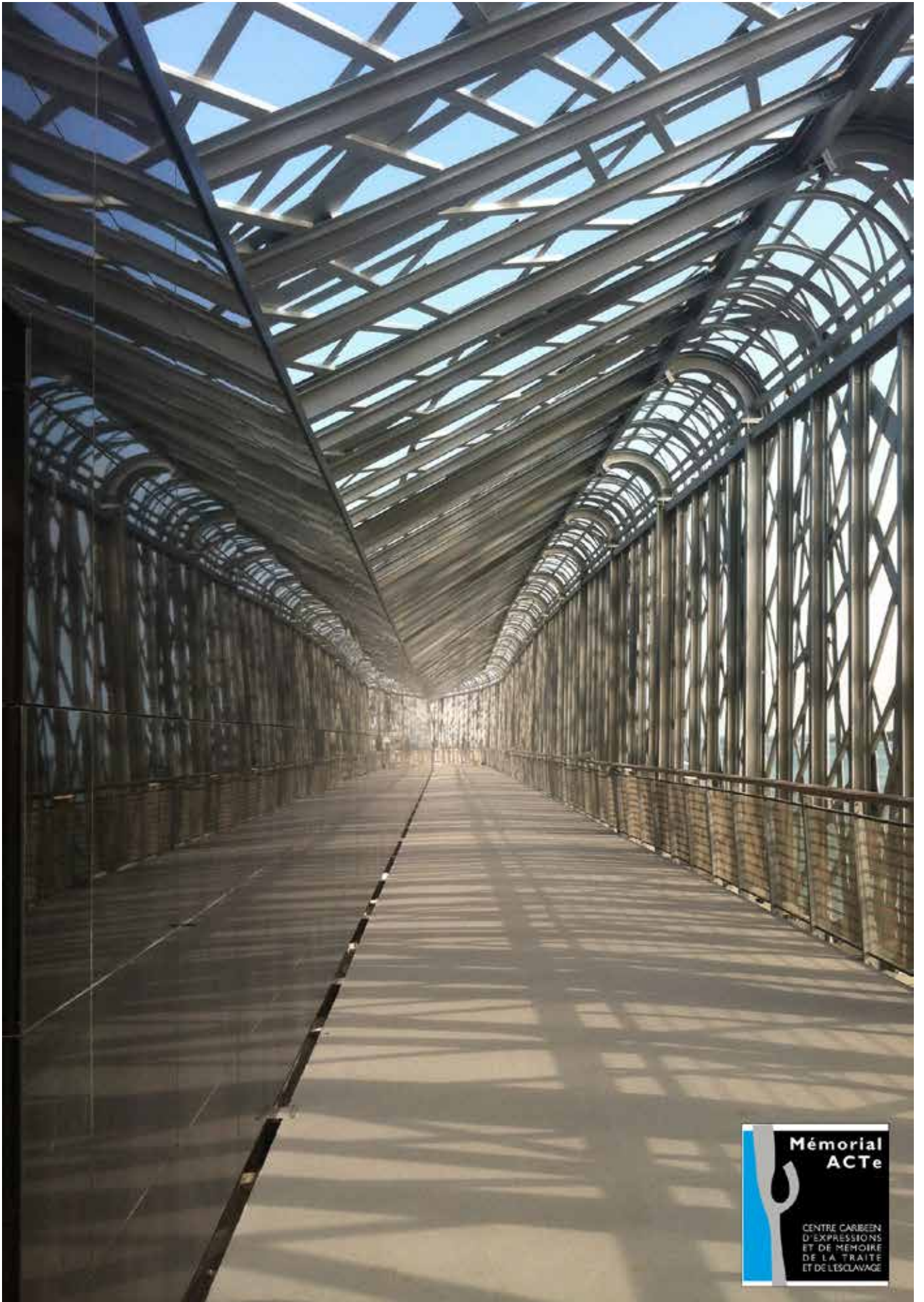
**Architects:** Pascal Berthelot, Jean-Michel Mocka-Célestine, BMC Group. Fabien Doré, Michael Marton, Doré-Marton Group

**TECHNAL manufacturer-installer:** SAVIMA

**Aluminum latticework manufacturer:** Castel & Fromager

**Photos:** G. Aricque.





# Using grooved mechanical joining systems to accommodate thermal piping movement

Text by David Hudson, Senior Engineer, Victaulic. Images courtesy of Victaulic.

**T**he key to effectively accommodating thermal expansion and contraction in a building is to allow the predictable, controlled movement of the piping itself. This can be done in a variety of ways, and the selection of a specific method is based upon the engineer, the type of piping system and the project parameters.

Thermal transients may impose stress on a piping system as the pipe grows when heated and contracts when cooled. All materials, including pipe, experience dimension changes as a result of changes in temperatures and their coefficient of expansion. This often occurs at directional changes or causes “bowing” at the mid points of long straight pipe runs, resulting in stress on the piping system and equipment.

When a system is subjected to temperature, it may experience horizontal movement, vertical movement and angular deflection simultaneously. Additional strains on the piping system vary based on whether the piping is vertical or horizontal. For horizontal piping, the major obstacle is typically the space constraints around the length and turns of the pipe. For vertical piping, considerations are different and should involve dynamic, static and elevation head calculations of the pressures and loads that are exerted on the bottom portion of the pipe.

Carbon steel pipe will experience thermal expansion or contraction at a rate of 0.75 inches for every 100° F change in temperature per every 100 feet of pipe. Piping subject to temperature changes is placed in a condition of stress, with potentially damaging reactive forces on components or equipment. The forces generated during this thermal dimension change are often significant and the movement must be accommodated and controlled, to prevent transmission of these stresses throughout the piping system.

Inadequate accommodation of this movement can result in business risks caused by excess stress on the piping system, including increased incidence of ruptures and leaks, increased stress on boilers, chillers, valves and other equipment and components, and increased downtime and labor expenses. This can negatively impact the owners of the building by resulting in increased maintenance costs and potential business shutdowns.

When accommodating thermal expansion and contraction, the grooved pipe joining system conforms to industry practices while providing design flexibility, reducing stress on the piping system and providing a more compact, inspectable and productive method of installation over other pipe-joining methods such as welding or flanging. Additionally, the grooved

method has all sealing elements combined within a metallic housing.

There are four common methods for accommodating thermal pipe movement with a grooved system:

- 1) providing an expansion joint utilizing grooved mechanical pipe components
- 2) allowing the system to “free-float”
- 3) utilizing the linear movement/deflection capabilities of flexible grooved couplings
- 4) providing an expansion loop utilizing grooved mechanical components

The selection of one of these methods is dependent on the system type, the scope of the project and the engineer’s preference. Since it is impossible to predict all system designs, this article will call attention to the design benefits and mechanical advantages of the grooved piping method when used to accommodate thermal expansion and contraction.

## The grooved mechanical pipe joint

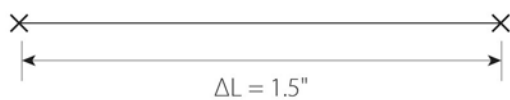
Grooved mechanical couplings allow for movement in the pipe due to the design of the components. The dimensions of the coupling key are narrower than the groove in the pipe allowing room for that coupling key to move in the pipe groove. Additionally, the width of the coupling housing allows for pipe end separation leaving room for controlled linear and angular movement. The mechanical coupling remains a self-restrained joint, and the unique pressure responsive design provides sealing even under deflection and pipe movement.



Grooved mechanical couplings are a great alternative to welded U-shaped expansion loops, welded offsets, expansion joints and rubber bellows. These couplings are easier and faster to install, accommodate movement within the design capability of the coupling, all the while doing this within the products "free range of motion." This means that piping system movement caused by thermal expansion and contraction can be accommodated in smaller spaces, with low stress on the components.

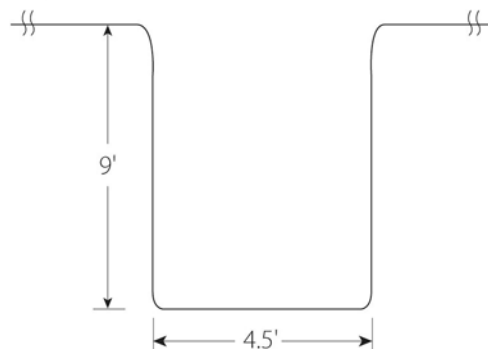
#### Example:

Between 2 anchors on a run of 6" pipe, the anticipated growth due to an increase in temperature is  $\Delta L = 1.5"$ .



To accommodate the 1.5" of growth, the engineer can design:

- a) A welded expansion loop per ASHRAE Systems Handbook



OR

- b) Install a Victaulic Style 155 Expansion Joint (utilizing a series of flexible couplings)



\* Range of capable movement of a Victaulic Style 155 for 6" pipe.

NOTE: A series of flexible couplings may be used; however, the number of couplings and movement capability will vary based on the manufacturer.

### Accommodating thermal movement utilising expansion joints

Grooved mechanical couplings are available with two distinct performance features. One class is designed as "rigid" and the other as "flexible". Rigid grooved mechanical couplings are designed to "fix" the joint in its installed position, permitting neither linear, angular nor rotational movement at the joints. Flexible grooved mechanical couplings on the other hand are designed to allow controlled linear and angular movement at each joint that can accommodate pipeline deflection.

Expansion joints are devices that can be compressed or expanded axially and are generally the most costly alternative for accommodating thermal movement. A welded expansion

joint is typically an expensive specialty joint, flanged into the system and requiring regular maintenance. More cost-effective expansion joints utilise grooved mechanical couplings and specially grooved, short pipe nipples with flexible couplings placed in long straight runs of pipe and pre-set to allow the desired amount of contraction and/or expansion. Axial movement can be adjusted by simply adding or removing couplings. When a series of flexible couplings are installed, the resulting grooved expansion joint will further protect equipment by reducing vibrations and stresses in the system.

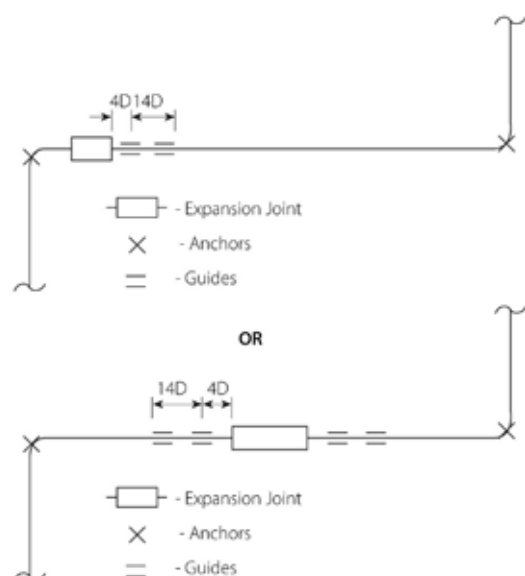
Whether using specialty expansion joints or a grooved expansion joint, the adjacent piping must be properly guided to ensure the movement is directed into the device and no lateral movement is experienced.

For proper operation of the expansion joint, the piping system should be divided into separate expansion and contraction sections with suitable supports, guides and anchors to direct axial pipe movement.

Anchors should be classified as main or intermediate for the purpose of force analysis. Main anchors are installed at terminal points, major branch connections, or changes of piping direction. The forces acting on a main anchor are due to pressure thrust, velocity flow and friction of alignment guides and weight support devices.

Intermediate anchors are installed in long runs to divide them into smaller expanding sections to facilitate using less complex expansion joints. The force acting on the intermediate anchor is due to friction at guides, weight of supports or hangers, and the activation force required to compress or expand an expansion joint.

Pipe alignment guides are essential to ensure axial movement of the expansion joint. If the situation allows, the expansion joint should be adjacent to an anchor within four pipe diameters. The first and second alignment guides on the opposite side of the expansion joint should be located a maximum distance of four and 14 pipe diameters, respectively. Additional intermediate guides may be required throughout the system for pipe alignment. If the expansion joint cannot be located adjacent to an anchor, install guides on both sides of the unit.

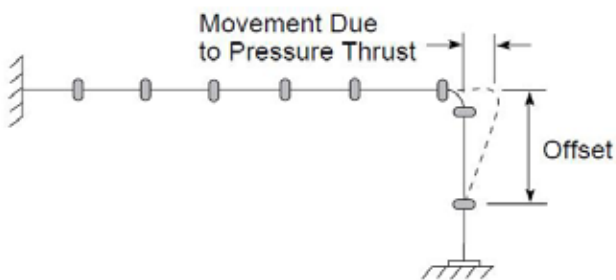


Grooved expansion joints may be used as flexible connectors; however, they will not simultaneously provide full expansion and full deflection. Expansion joints installed horizontally require independent support to prevent deflection, which will reduce the available expansion.

### Accommodating thermal movement utilising a free-floating system

Free-floating piping systems allow thermal expansion and contraction without the use of expansion joints. As long as this movement does not cause bending moment stresses at branch connections, it is not harmful to joints and changes in direction or to parts of structures and other equipment. A free-floating system can be achieved by installing additional grooved mechanical joints or by installing guides to control the direction of movement. Engineers must take the effects of pressure thrusts into account when utilising flexible grooved couplings, as the pipe will be moved to the full extent of the available pipe end gaps when allowed to float.

Ensure that branch connections and offsets are sufficiently long so that the maximum angular deflection of the coupling is never exceeded and that it can accommodate the anticipated total movement of the pipes. Otherwise, it is advised to anchor the system and to direct movements.

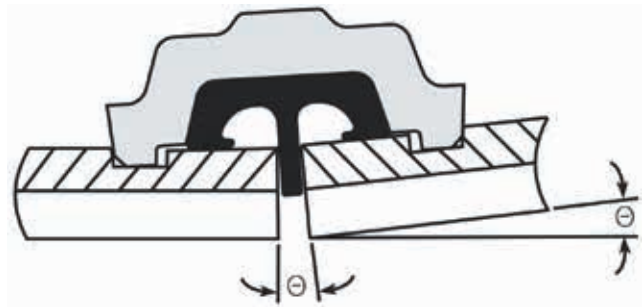


### Flexible grooved couplings for linear movement and deflection

Grooved mechanical couplings are an alternative to welded U-shaped expansion loops, welded offsets, expansion joints and rubber bellows. Associated with a free floating system, flexible couplings are used in piping systems to accommodate piping thermal growth – without any additional components or piping configuration required. Certain characteristics distinguish flexible groove type couplings from other types and methods of pipe joining. When they are understood, the designer can utilise the many advantages that these couplings provide.

By using flexible couplings at changes of direction and directing the movement toward the directional change with properly placed anchors and guides, movement is accommodated by the joining method itself. This method also produces little or no additional stresses in the system, unlike a welded expansion loop.

Flexible couplings also can be used strictly for their axial movement capabilities. In this case, straight runs are anchored on each end and the piping is guided at every other length. Each flexible joint is pre-gapped (either fully gapped or fully closed/buttet) at installation to ensure that there are enough couplings to accommodate the expected expansion and/or contraction.



The flexible grooved coupling allows for controlled angular flexibility and rotational movement to take place at joints.

Flexible grooved type couplings allow angular flexibility and rotational movement to take place at joints. In order to determine the appropriate number of couplings to use, compute the change in the linear length of the piping system by taking into account the length and size of the piping system and maximum and minimum operating temperatures.

Where full linear movement is required, a grooved expansion joint can be used. Note, joints which are fully deflected, can no longer provide linear movement. Partially deflected joints will provide some portion of linear movement. It is also important to consider that standard cut-grooved pipe will provide double the expansion and contraction or deflection capabilities of the same size standard roll-grooved pipe.

When considering offsets utilising grooved mechanical joints, the offsets must be capable of deflecting sufficiently to prevent harmful bending moments at the joints. If the pipes were to expand due to thermal changes, then further growth of the pipes would also take place at the ends.

Flexible couplings do not automatically provide for expansion or contraction of piping. Always consider best setting for pipe end gaps. In anchored systems, gaps must be set to handle combinations of expansion and contraction. In free floating systems, offsets of sufficient length must be used to accommodate movement without over-deflecting joints.

Ensure anchorage and support is adequate. Use anchors to direct movement away from or to protect critical changes in direction, branch connections and structure. Spacing and types of supports should be considered in accommodating anticipated pipe movements.

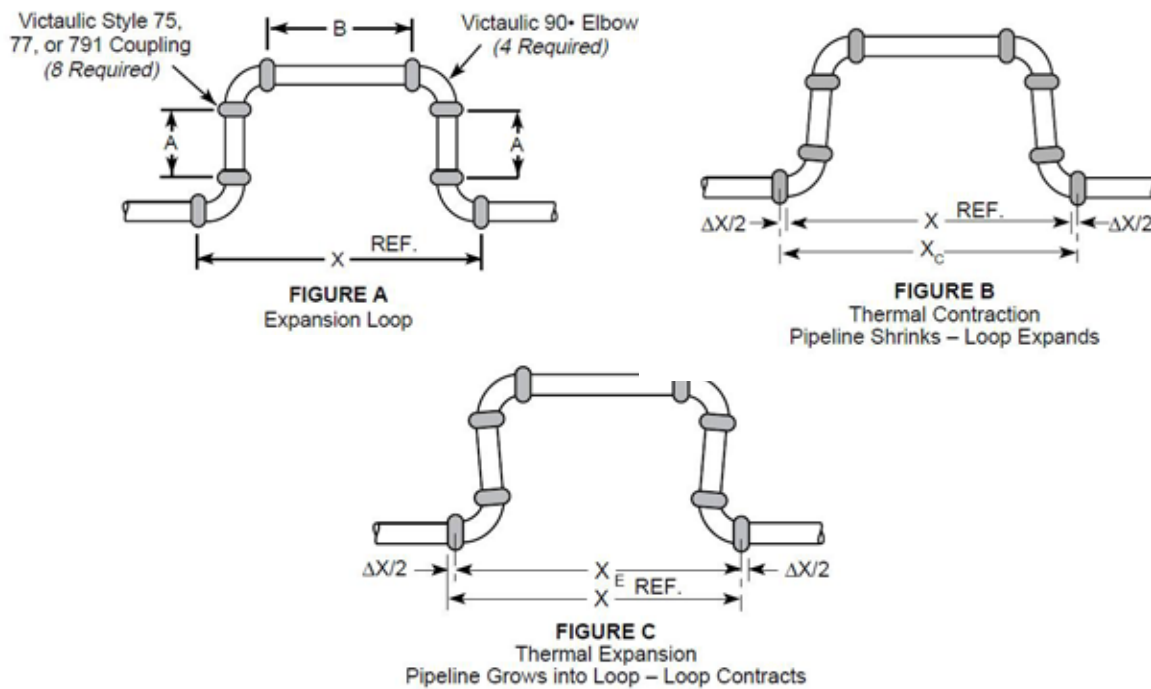
### Expansion loops utilising flexible couplings and fittings

In vertical straight runs of pipe, expansion loops utilising a U-shaped pipe configuration can also be designed into the piping system to accommodate expansion and contraction. Expansion loops can be designed as welded or grooved. Welded expansion loops require eight welded joints and fittings to assemble. In a welded expansion loop, the piping bends or flexes to accommodate the straight run movement. Although this method works, the forces to bend and flex the pipe are much greater than in a grooved loop, and the forces generate a larger magnitude of stress which requires larger anchors and guides to direct the movement and protect components and structures.

The flexible mechanical joint can be used in expansion loops without inducing stresses in the pipes, elbows or joints.

Also, it is important to note that expansion loops utilising rigid couplings are not designed to accommodate angular deflection, however an expansion loop utilising rigid grooved copper couplings is designed to conform to industry standards.

The deflection capability of flexible couplings allows for thermal growth/contraction to be absorbed within the couplings at the elbows as the thermal forces induce deflection. A total of eight flexible grooved mechanical couplings, four grooved end 90-degree elbows and three pipe spools are required to complete each expansion loop. As system temperatures lower and the pipe run contracts, the loop expands and the deflection capability of the couplings accommodates this movement. As system temperatures increase the opposite effect occurs as the pipe run expands and the loop contracts with the couplings accommodating the deflection in the opposite direction (See Figures A through C).



Using flexible couplings in an expansion loop configuration reduces the amount of force needed to flex the loop, and the loop itself is much smaller. A loop constructed in this manner will be 1/2 to 1/3 the size of a welded loop with the same capacity.

The space constraints of today's buildings also make this a more attractive option in HVAC piping, though welded expansion loops are still required in some system applications.

### Making the best choice

Grooved mechanical systems offer four different methods to provide flexible, controlled movement of a piping system. The selection of expansion joints, free-floating systems, flexible couplings or expansion loops will be based on the type of piping system, the amount of anticipated movement and the mechanical engineer's preference.

In addition to effectively accommodating thermal expansion and contraction, engineers should consider the additional benefits of using the grooved method during construction, including a simplified assembly process that is readily inspectable relative to welded systems. Also, mechanical couplings reduce the need for welding and reduce man hours and material handling on the site, making for safer job sites and reduced risk of injury on-site. During operation, the simple disassembly of a coupling reduces chances of deferred maintenance and lengthy downtime for routine or unscheduled maintenance.

Overall, choosing the grooved mechanical method is an efficient way to accommodate excess stress on any piping system, eliminate incidents of ruptures and leaks due to thermal expansion, decrease maintenance needs of equipment, and simplifies the commissioning process.

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

### About the Author

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9-11 June 2016

Diamond Island Exhibition & Convention Center (DIECC)  
Phnom Penh, Cambodia

## Inaugural Cambodia Architect & Decor 2016 show announced

Cambodia Architect & Decor 2016 takes place during the property and economic boom in Cambodia.

**W**ith the successful series of Myanmar Build & Decor, ICVeX, the professional trade exhibition organiser and owner of Myanmar Build & Decor, has joined hands with the Cambodian Society of Architect (CSA) in organising the first Cambodia Architect & Decor 2016 show to serve Cambodia's growing demand of building materials, architectural, interior design, furniture and decoration.

Cambodia Architect & Decor will become the first exhibition that will update trend and design development for building and construction industry. It is scheduled for 9-11 June 2016 at the Diamond Island Exhibition & Convention Center (DIECC) in Phnom Penh.

Cambodia Architect & Decor 2016 will showcase over 100 companies from local and international including international pavilions from Thailand, Malaysia, Singapore, Vietnam and China. The exhibition is officially sponsored by SCG – the giant Southeast Asian player in the building & construction industry and co-sponsored by Heng Asia – a leading building materials distributor in Cambodia. The exhibition will also showcase many products and design first time in Cambodia.

Cambodia Architect & Decor 2016 is being held during the current property and economic boom in Cambodia.

### Here are some latest developments:

- Cambodia expects GDP growth of 7 percent minimum for the next stable years.
- Building materials, decorative and furniture are ranked among the top most products demanded by Cambodian due to urbanisation and government infrastructure development.
- According to CBRE, condominium market in Phnom Penh continued to expand, investors are enjoying capital gains of up to 30 percent.
- Overall supply in Phnom Penh is expected to increase by 533.75 percent by the end of 2018, driven by new large scale projects.

### Highlights of Cambodia Architect & Decor 2016:

- Meet over 100 companies from local and international
- See new products and design first time in Cambodia
- Update on industry trends and development
- Visit Thailand, Malaysia, Singapore, Vietnam and China Pavilions
- Attend Cambodia's Design Innovation Seminar organised by Cambodian Society of Architect (CSA)
- Networking "Cambodia Architect Gala Dinner"
- Witness the award winners of the next generation of Cambodian Architects

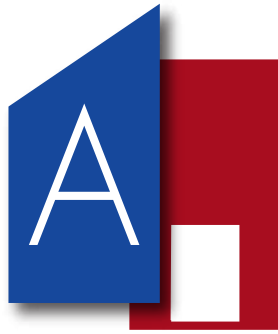
**Co-organised by:** Cambodian Society of Architect (CSA) and ICVeX Co., Ltd.

**Endorsed by:** Ministry of Commerce

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- Young Entrepreneurs Association of Cambodia

For more information on Cambodia Architect & Decor 2016, contact ICVeX Co., Ltd. at tel (+66) 713 3033, email [info@icvex.com](mailto:info@icvex.com) or visit [www.cambodiaarchitectdecor.com](http://www.cambodiaarchitectdecor.com).

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## Cambodia ARCHITECT AND DECOR

### 9-11 June 2016

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## Fast Facts

- Minimum 7% GDP growth expected for the next few years.
- Political and social stability good for business investment.
- Overall supply in Phnom Penh expected to rise by 534% by end of 2018, driven by large-scale projects under Overseas Cambodia Investment Corporation's development.
- Condominium market in Phnom Penh continued to expand, claimed by CBRE in December 2014. Consequently investors enjoy capital gains of up to 30% from early off-plan purchase.
- Building materials, architecture, interior & decor ranked among top demand of construction driven by rapid urbanization.

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The DIY Synthetic Grass is available in Singapore through

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Finished in RAL 9016 as standard and manufactured to EN 14037 the flexibility and functionality of the Zehnder ZIP mean it can be adapted to suit the individual requirements of any project.

**For more information, visit [www.zehnder.co.uk](http://www.zehnder.co.uk).**



ZIP Radiant Heating Panels installed at Plymouth School of Creative Arts in Devon. Photo: © Zehnder Group UK Limited



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ASTRALPOOL Fountains offers all kinds of decorative fountains: Water show, dancing fountains, games, dynamic light fountains, floating fountains, artificial lakes, and so on. In fact, the company usually

joins projects with some of the most world renowned architects and architectural studios as Toyo Ito, Jean Nouvel, Enric Miralles and Benedetta Tagliabue workshop EMBT, Arriola & Fiol. The company carries out the design and installation of "Turnkey" fountain facilities, has a strong engineering and technical team which projects and develops the ideas proposed by the customer. The main goal of the company is to interpret the client's ideas and to find the best solutions for each project. Thus, all projects developed by ASTRALPOOL Fountains, stand out for its individuality, which makes it unique in its kind.

In accordance with the philosophy of the company, ASTRALPOOL Fountains the two referred concepts of fountains and clean environment are inseparable and go in one way. All projects the company carries out, present this philosophy. The company highlights the importance of a low energy and low water consumption in fountain's performance. Optimisation of resources, efficiency and safe operation were the decisive factors in awarding the company with the quality certificate ISO 9001: 2000, and then the Certificate in Management ISO 14001 Environmental protection.

ASTRALPOOL Fountains strives for innovation and top creativity, bringing exclusive fountain construction and maximising the concept ideas of the customer. The company operates under the motto "We bring the water into architecture", which reveals the basic direction of the company activity.

The fountain company blends art and nature to create dynamic forms of water to be integrated into the urban environment.

ASTRALPOOL Fountains is available in Singapore from Fluidra Singapore Pte Ltd. For more information, tel (+65) 6382 0130, fax (+65) 6382 0136, email [info@fluidra.sg](mailto:info@fluidra.sg) or visit [www.fluidra.sg](http://www.fluidra.sg). Besides Singapore, the company also has offices in Selangor (Malaysia), Samutprakarn (Thailand), Jakarta Selatan (Indonesia), Ho Chi Minh City (Vietnam); and Shanghai (China).



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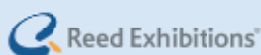
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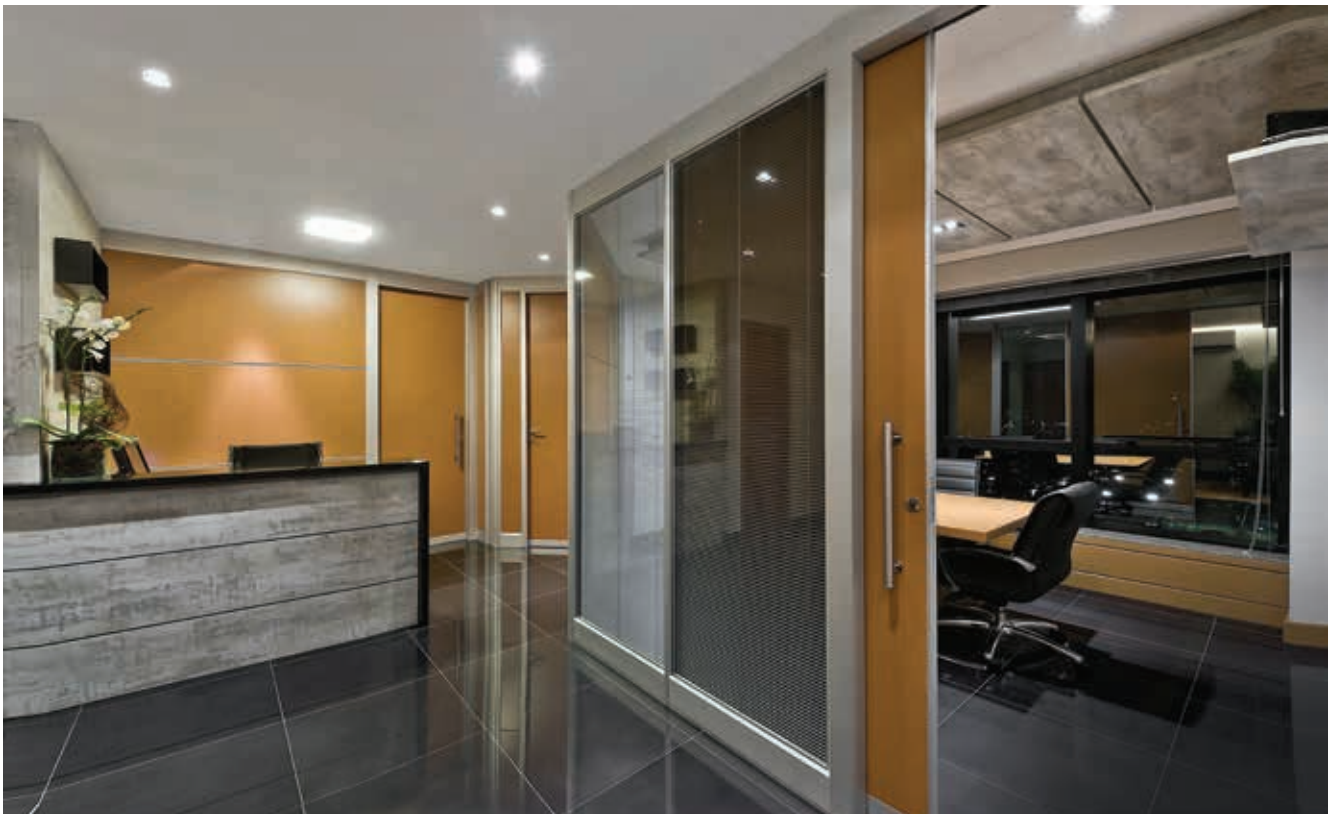
For more information on how to create a more humane, modern and relaxing workspace, visit [www.wallworksoffice.com](http://www.wallworksoffice.com).



Canvas painting. Photo: © Wallworks Office



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VCON is a company known for its innovation, hard work and integrity. VCON is also a very versatile company obtaining engineers, technicians and operations managers who exhibit expertise to construct a wide range of buildings, airports, hotels, warehouse, department stores, as well as many other channeling tasks.

Quality for VCON does not end at its factories. The company strives to deliver the best service and the finest product to its customers. VCON claims to be the only Hollow-Core manufacturer that is ISO certified in all fields. These include production, transportation and installation. VCON precast concrete products are designed and produced in accordance with Precast Pre-stressed Concrete Institute (USA) requirements.

Hollow Core Slab is a precast, pre-stressed concrete with continuous voids. Using this unique slab will not only reduce building costs but also reduce the overall weight of a structure. As an added benefit, the hollow core slabs will eliminate the need to drill the slab for electrical and mechanical runs.

VCON Hollow Core Slab is press-stressed with P.C. wires, commonly used as structure of building floors. VCON Hollow-Core Slab can immediately withstand weight on them without any temporary support. Generally, the width is 1.20 metres, while the thickness and the length varies depending on the type of work and beam span.

Excellent fire resistance is another attribute of the VCON Hollow Core Slab. Depending on thickness and strand cover, ratings up to four-hour endurance can be achieved. VCON Hollow Core Slab has excellent sound transmission characteristics associated with concrete. The sound transmission class rating ranges from approximately 47 to 57 without concrete topping.

Glass Fiber Reinforced Concrete (GRC) is one of the most popular and innovative building materials currently used throughout North America, Europe and the Middle East. GRC is primary used as an exterior façade for both new or restoration of existing building façade. GRC panel is lightweight, durable and provides tremendous design flexibility. GRC panels help reduce cost of the foundation, structural framing needed to support multi-storey buildings. This enables the owner to reduce overall construction costs and accelerate schedules without sacrificing the durability or the architectural aesthetic of precast fabrication. GRC provides design freedom for architects. It can be molded into almost any shape and colour.

VCON has earned an industry wide reputation for its ability to manage and deliver on large GRC projects. VCON was awarded the most sophisticated glass fiber reinforced concrete project in Thailand in 2013 for Emquartier.

Emquartier is a new mixed-use 530,000 square foot mall in Bangkok. This is a mall unlike any you have seen before. A gleaming multi-level spiral structure of glass and curved VCON white glass fiber reinforced concrete (GFRC) with flashes of greenery and landscape features. There is a 40 metres waterfall, a rainforest chandelier and open-air floating gardens.

The surrounding EmDistrict is an entirely new space in Bangkok. Alongside Emporium, Emquartier will be joined by a third mall Emsphere, in 2018. The most ambitious mall of the three, promising super-yacht levels of luxury. In three year's time, this new EmDistrict will house more than 1,000 Thai and international brands, luxury fashion labels, technology, lifestyle and dining establishment.

For more information on VCON Group, visit [www.vconthai.com](http://www.vconthai.com).



VCON Hollow Core Slabs and Precast Concrete installation. Photo: © VCON Group



VCON white glass fiber reinforced concrete panel is being shipped to Emquartier. Photo: © VCON Group



VCON white glass fiber reinforced concrete on the façade of Emquartier. Photo: © VCON Group



Night view of Emquartier. Photo: © VCON Group

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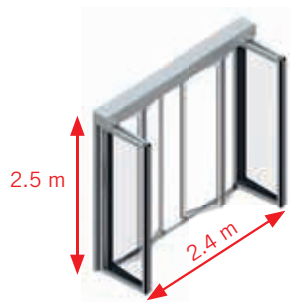
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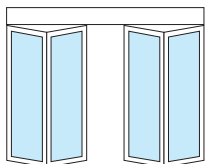
FFT FLEX GREEN FOLDING DOOR | DORMA



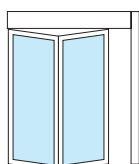
Wherever tight spaces need to be opened up for wide access, that's where the FFT FLEX Green folding door comes into operation. It is a suitable solution for both external doors and internal doors in narrow passageways as well as barrier-free access points in public buildings.



There are two options of opening doorsets:



**Bi-parting opening doorset:**  
maximum clear opening width of up to 2.4 metres



**Unilateral opening doorset:**  
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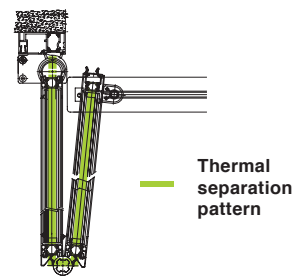
**Quite, dynamic and wind load resistant**

The innovative operating system convinces with its improved performance enabling operating smoothness, increased dynamic response and enhanced resistance to wind loads. It detects wind loads and compensates for them accordingly. Moreover

the FFT FLEX Green offers certified user safety and performance characteristics in accordance to EN 16361.

**Sustainable and energy saving**

Whether it's cold or hot outside, the FFT FLEX Green folding door offers outstanding thermal separation with low thermal transmittance values to support the energy efficiency in a building. In this scope, DORMA supports customers with the certified computation of their specific thermal transmittance value.



**For emergency exits and escape routes**

DORMA's proven DualDrive technology secures the emergency exit in any situation. A reliable opening and closing of the door is guaranteed by the fact that the system self-monitors on a continuous basis. In case of power failure an integrated battery pack provides for the reliable operation.

DORMA has won the "German Design Award Special 2016" for its new folding door FFT FLEX Green.



For further information, email [frank.ho@dorma.com](mailto:frank.ho@dorma.com) or visit [www.dorma.com.sg](http://www.dorma.com.sg).



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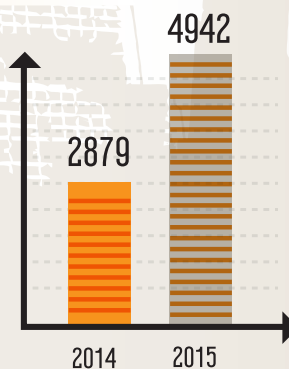
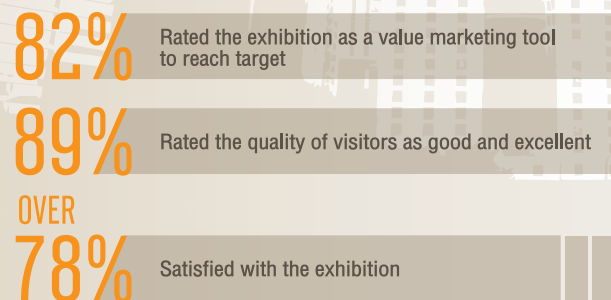


### Fast Facts

- FDI projection was US\$ 5 Billion for 2014-2015 but was easily surpassed to US\$8.1 Billion.
- Estimated population of around 60 million offers huge potential market for import.
- Yangon, 7.3 million estimated population, ranked as one of Asia's top 5 emerging investment spots by Asia Property Report.
- Myanmar's construction forecasted to reach US\$6.6 Billion by 2018, with over 8% annual growth rate for the next 5 years.

### A Promising Platform Connecting to Myanmar

#### Exhibitors' Feedback



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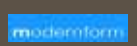
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- Power Supplies and Battery Chargers
- Converters for Emergency Lighting
- Cathodic Protection Power Supplies
- DC/DC Converters
- Transformers and anything else, which you may need.



Threephase industrial UPS 400 kVA.



Hybrid Solar / Wind off-grid power plant 110 kW installed in Kashobwe, D.R. Congo.

The company's main customers include but are not limited to ABB, ILVA (Italian steelworks), Trenitalia (Italian railroads), Exxon Mobile oil, the Italian Navy (with aircraft carriers), the Italian Army, the Italian Aviation, Samsung, Siemens, Terna, Enel (Italian energy supplier), ASHGHAL (Public Works Authority Qatar), Honeywell, Site Technology (Qatar), Ministry of Public Works (Iraq), Parsons (Qatar), Thai Navy, Petrom (Romania), Saipem, Socabelec East Africa (Kenya), SESCO (Kuwait), several hospitals, banks and airports throughout the world.

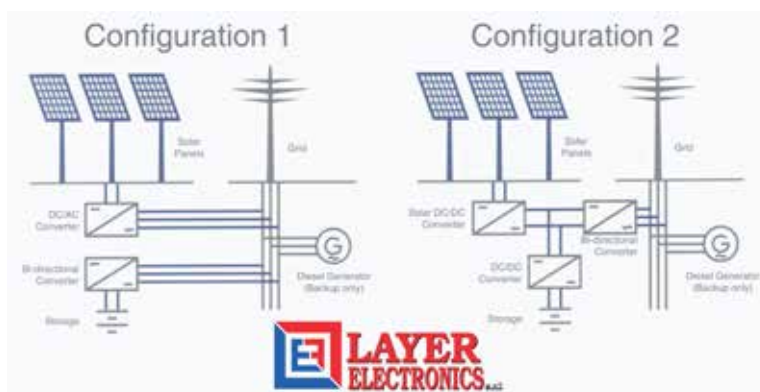
Recently, the company launched its upgraded Futura series of industrial UPS in Hannover Messe 2016. The management through Digital Signal Processor (DSP) allows so many controls to also protect the UPS and the connected load under the worst electric conditions, environmental and in overload. Particular attention is given in safeguarding the connected load through an insulation transformer in output. The Futura series of industrial UPS is a high technology product thanks to its operating system and, being the only one of its kind you can connect multiple units in adaptive parallel, it is ideal for very high loads.

The Futura series of industrial UPS represents the state-of-the-art in quality and technology, accumulated by LAYER ELECTRONICS in almost 50 years of experience in the field of the stabilization and static conversion of the energy.

Layer Electronics, which is still aiming for continuous development, has developed a project along with the CNR (Consiglio Nazionale delle Ricerche - National Research Council) and the DIEETCAM of the University of Palermo: a prototype of bi-directional converter completely controlled by DSP, fed by renewable energy sources (solar, wind, etc.) and by a storage system (lead-acid, NiCd, Li-Ion, NaNiCl2).

- The conversion system is able to perform actions of local control, and to respond to remote control signals in order to:
- Contribute to processes of regulation of the voltage and frequency of the electrical system in grid connection;
  - Support the voltage and frequency, maintaining their values within predetermined ranges of variation in stand-alone;
  - Keep adequate power quality indices in all the operating conditions.

The following pictures show two possible configurations:



This bi-directional converter will be available soon. For more information, visit [www.layer.it](http://www.layer.it).



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CONSTRUCTION APP PROVIDER | FINALCAD

FINALCAD, the company providing digital processes and services to the construction industry to change the way we build, is going a step further into smart data by providing two new web applications: GETMYDATA enables users to download their customer data, and FINALBIM provides managers with a real-time overview of their current projects.

GETMYDATA and FINALBIM share the same ambition: to accelerate the construction industry's digital transformation by providing smart solutions both in the field and for project management, through innovative analytics and decision-making tools.

FINALCAD is differentiated for its ability to transform raw data into reliable analytics, whether internal analytics for companies or general interest studies, like those of the FINALCAD Construction Observatory. The generic nature of information processed enables FINALCAD to provide analytics and neutral, objective studies relevant to all industry players. Data neutrality and anonymity are key commitments for FINALCAD; this is explained in greater detail in the "FINALCAD Data Usage Charter". FINALCAD is an independent player striving to change the way we build.

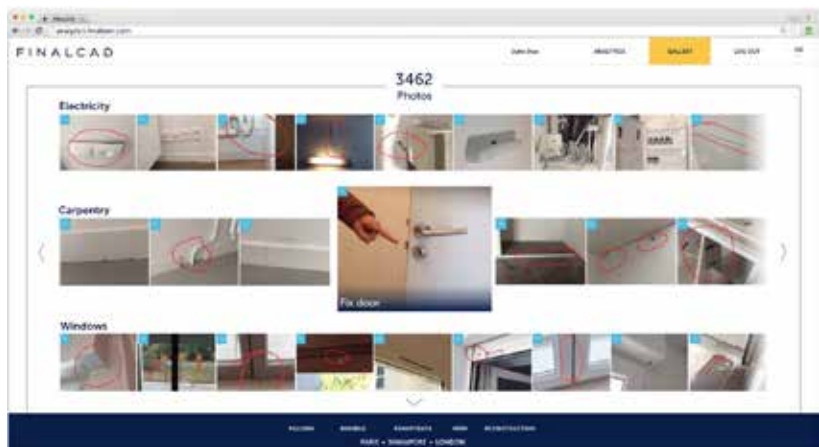
The two new applications use FINALCAD's "DSPP" approach: Distribute (with GETMYDATA), Synthesize (with FINALBIM), Predict and Prescribe (with the FINALCAD mobile app on work sites). GETMYDATA provides information systems managers with a simple, effective solution to retrieve data collected via the FINALCAD application by the company's various internal users. With one click, a user with credentials can access notes, snags, quality controls and an image database through a secured web interface. This data can be downloaded directly in CSV format and integrated into the company's existing big data systems.

While BIM programmes are becoming increasingly more important within construction companies, traditional BIM struggles to enrich with worksite data. With FINALBIM, managers can now monitor their operations' progress with compiled statistics in real time from a web platform. This platform provides an overview of how observations are distributed by trade, a ranking of the most recurring observations (by trade), project process in the form of an interactive site map, and a photo gallery featuring observations collected by FINALCAD users in real time. FINALCAD algorithms harmonize this data in order to generate this instant analysis. FINALBIM is a true decision-making tool designed to connect managers with site operations through a simple, compelling user interface.

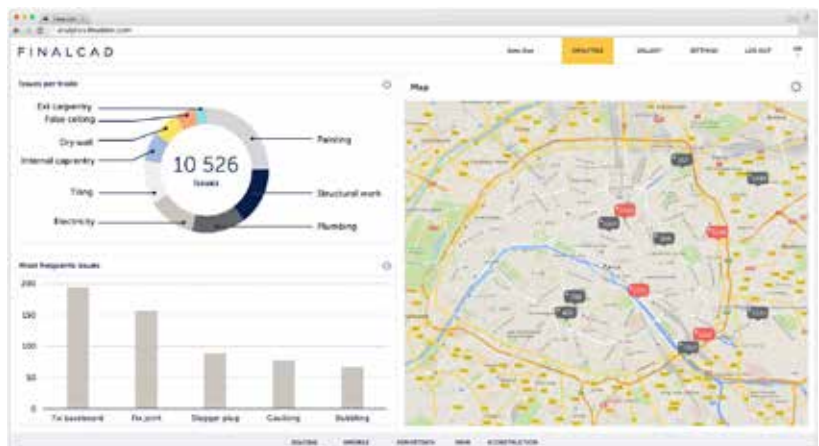
For more information, visit [www.finalcad.com](http://www.finalcad.com).



GETMYDATA. Photo: © FINALCAD



FINALBIM Gallery. Photo: © FINALCAD



FINALBIM statistics. Photo: © FINALCAD

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WALL PROTECTION | WOLF GORDON



Shift pattern. Photo: © Wolf Gordon



Grain pattern. Photo: © Wolf Gordon



Ashlar pattern. Photo: © Wolf Gordon

Wolf-Gordon, an American design company offering designers a wide range of interior surfacing products, has introduced RAMPART, a collection of impact-resistant wall protection products engineered for high-traffic commercial interiors.

Developed by WG Design Studio, RAMPART is a superior wall protection solution that performs as well as leading rigid sheet goods while offering designers a wider range of aesthetically pleasing patterns and colours, greater flexibility, and significantly lower installation costs per square foot.

RAMPART combines resilience and flexibility. It is engineered for interiors in medium-to heavy traffic areas where protection against scratches, dents, and scrapes is a concern and expensive rigid sheet panels may be more than what is required. RAMPART is ideal for restaurants and food service environments, hospitality, educational, institutional, and healthcare facilities, daycare and senior centres, workout rooms, break areas, meeting rooms, collaborative office spaces, and busy corridors in other commercial spaces.

Thicker and more durable than Type II wallcovering, RAMPART features a heavy-duty construction and specially formulated finish called Surcoat, which ensure long wearing walls. The product's super-dense cotton or polyester/cotton backing provides additional dimensional stability and secure adhesion. Its specially formulated finish can be easily cleaned with soap and water as well as a variety of heavy-duty cleaning agents, disinfectants, and phenols, making RAMPART a perfect choice for environments where cleanliness and antimicrobial protection are essential.

Compared to the leading rigid sheet goods, RAMPART provides the same high performance for Surface Abrasion, Hard Body Impact, and Surface Indentation, and comparable performance in Soft Body Impact testing. It exceeds the maximum capacity of a Scrape Adhesion test machine without incurring significant scratches or surface removal, and receives a higher fire rating for Surface Burning characteristics.

RAMPART is 54" wide, packaged in 27-yard rolls, which are easy to ship, store, and install without the need for a specialist. It requires no trim or molding pieces and, unlike rigid sheet panels, can be railroaded for a seamless installation. RAMPART was introduced on 1 March 2016, with five original patterns in a wide variety of colourways that range from versatile, practical neutrals to vibrant, cheerful hues.

The Patterns include: Shift, Grain, Forge, Sparta and Ashlar. For more information, visit [www.wolfgordon.com](http://www.wolfgordon.com).

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MODULAR FLOORING SOLUTION | J+J FLOORING GROUP

J+J Flooring Group has introduced Index, a modular flooring solution of expressive colour that artfully defines and guides through complex spaces, providing necessary details that tell a story of not only colour, but also of destination.

Inspired by London's wonderfully simple colour-coded mass transit map system, nicknamed "the Tube," Index, like the Tube itself, is a shining example of the impact of chromatic inspiration. Its unique ability to serve as both a reference and a one-of-a-kind story makes it suitable for a range of interior environments.

Three neutral bases and four bright sets of accents allow for a palette creation that reflects the demands of each unique space. Available in either 24" x 24" square tiles or 12" x 48" demi-plank tiles, the modular tile options provide a multitude of imaginative installation configurations. Each individual product is beautiful enough to stand on its own or they can be effortlessly coordinated with each other. Index's size, colour and pattern possibilities support spaces that require directional, informative or creative visions alike.

"The use of colour in wayfinding has long been a common practice in signage, but the utilization of directional colour within the floor finish is a more subtle and sophisticated approach to address circulation, navigation, and critical work zones," said J+J Director of Product David Fuehrer. "Index takes this practice and delivers an additional design component that allows for even greater diversity in a designer's quest to create an informative, modular flooring plan."

Index contributes to sustainable specifications and LEED points. It contains recycled content, is NSF 140 Gold certified and recyclable through the J+J Reclamation Program. Index has received the Carpet and Rug Institute's Green Label Plus for meeting indoor air quality standards. A third-party Environmental Product Declaration is available on Index and all standard Invision products.

Index is created using J+J Flooring Group's Encore® SD Ultima® solution dyed nylon with ColorLoc® Plus and Nexus Modular backing. The product also includes ProTex, a proprietary technology that impedes soiling and improves cleanability. Index is back by lifetime performance warranties for fiber, yarn and backing systems.

For more information, visit [www.jj-invision.com](http://www.jj-invision.com).



Photos: © J+J Flooring Group/Invision



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DECORATIVE LAMINATE | FORMICA GROUP



Photos above: © Formica

Huddle spaces, idea generation labs and information hubs are all the rage in both new office construction and renovation as corporations seek design solutions for improving employee collaboration and productivity. Formica Group addresses this trend by introducing its newest high pressure laminate, Formica® Magnetic Laminate in Asia.

Formica® Magnetic Laminate is a decorative laminate with all the benefits and assured quality of traditional Formica® laminate but with added advantages ideal for communication and display.

Formica® Magnetic Laminate features a durable, dry erase surface over an iron foil to give it magnetic qualities. Combining the dual functions of dry erase board and magnetic bulletin board into one beautiful surface, Formica® Magnetic Laminate is a practical and stylish addition to office meeting and training rooms, school classrooms and other working environments. Formica® Magnetic Laminate is available in two finishes – Matte finish which is suitable to use as Chalkboard, and Gloss Finish which is suitable to use as Markerboard.

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

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Stainless Steel Drainage & Civil's products are Green Tag certified and manufactured in Queensland.

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



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