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Sivas, Turkey

ARCHITECTURE Mapei solutions for tennis land in Australia; Redevelopment of the National Football Stadium in Papua New Guinea; Colourful sports park completed in Schiedam, The Netherlands; and The Zaha Hadid Architects' designed stadium in Stroud, UK to be made of wood **INTERIOR** Restaurants **LANDSCAPING** Playground Safety & Playground Equipment (Dry) **SHOW PREVIEW** Cambodia Architect & Décor 2017 **PLUS** Product Feature on Paints & Coatings



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On the Cover: Sivas Stadium in Sivas, Turkey.
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Hello readers, it's already May and I'm amazed by how fast the months are passing by. We have just completed our May/June issue and we hope you enjoy reading it as much as we enjoyed putting it together.

In this issue, we look at the architectural designs of sports venues around the world. Sport facilities have evolved in terms of their sizes, locations, engineering techniques and building materials. You can see some wonderful masterpieces by renowned architects in the pages inside.

These days, restaurants are also tastefully designed so that the interiors are inviting and pleasant for the guests to enjoy their food better. The choice of interior colours, furniture, lighting and flooring can all make the dining experience a more memorable one for the guests. Check out some nice restaurant projects inside.

In landscaping, we look at the aspect of safety in playground design. Children are usually prone to injuries at playgrounds but this can be minimised with proper design and compliance with safety standards. Read the interviews with suppliers and experts.

If you have any comments, send me an email at seab@tradelinkmedia.com.sg.

Amita Natveelal

NEXT ISSUE THEMES

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

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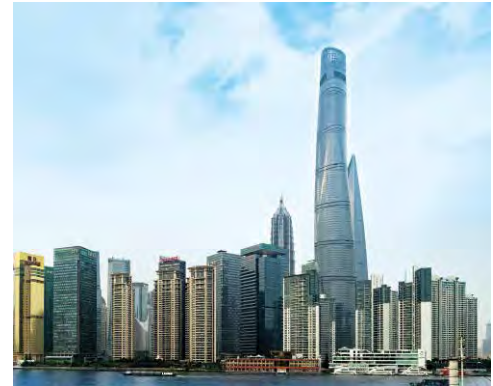
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Mitsubishi Electric achieves three Guinness World Records titles for fastest and tallest elevators



Pictured from left to right: Mitsubishi Electric Corporation, Executive Officer and Group President, Building Systems Mr Nobuyuki Abe; Mitsubishi Electric Corporation President & CEO Mr Masaki Sakuyama; and Shanghai Mitsubishi Elevator Co., Ltd. Chairman of the Board Mr Fan Bing Xun. Photo: © Mitsubishi Electric



Mitsubishi Electric elevators are operating in the 632 metre Shanghai Tower. Photo: © Mitsubishi Electric

Tokyo, Japan – Mitsubishi Electric Corporation announced that Mitsubishi Electric elevators have achieved three GUINNESS WORLD RECORDS® titles for the following record categories: Fastest lift (elevator), Tallest lift (elevator) in a building and Fastest double-deck lift (elevator). All three models are operating in the 632-metre Shanghai Tower, China's tallest building. Mitsubishi Electric received the GUINNESS WORLD RECORDS certificates during a ceremony in its head office, Tokyo on 8 December 2016.

The Mitsubishi Electric elevators were certified by Guinness World Records Ltd. as follows:

- Fastest lift (elevator): one unit that travels at 1,230 metres per minute, or 73.8 kilometres per hour, directly from the second basement level to the observation deck on the 119th floor in just about 53 seconds
- Tallest lift (elevator): in a building: two emergency-use units that travel 578.55 metres between the third basement level and the 121st floor
- Fastest double-deck lift (elevator): eight units that travel at 600 metres per minutes, or 36.0 kilometres per hour, directly between the ground floor and hotel lobby on the 101st floor

Faithful+Gould enhances management team in Singapore and Malaysia

Singapore – Asia Pacific's leading integrated project and programme management consultancy, Faithful+Gould, is pleased to announce the appointment of Tom Daly as Regional Director.

With a strong background in development advisory, program management and commercial management, in his new role, Tom will be focused on leading the Singapore project management business and continuing to grow its Malaysia office.

Tom's experience covers a broad range of projects across Australia, the Middle East, Singapore, Malaysia, Thailand and corporate real estate, retail and residential sectors. He is also an expert in project management processes and procedures, and was responsible for the establishment of ISO 9000 certified regional Project Management Quality system. Tom has led a number of large-scale projects in Singapore including the 2014 Singapore Grand Prix, InterContinental Hotel, Fairmont and Swissôtel, and held senior roles in various Marina Bay Sands projects.



Tom Daly. Photo: © Faithful+Gould

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Hong Kong East Community Green Station wins Urban Land Institute 2016 Global Awards for Excellence

Hong Kong – Hong Kong East Community Green Station has been selected as a global winner in the Urban Land Institute's (ULI) 2016 Global Awards for Excellence programme, widely recognised as one of the land use industry's most prestigious awards programme. The programme, established in 1979, recognises real estate projects that achieve a high standard of excellence in design, construction, economics, planning, and management. Open to the entire industry (not just ULI



Aerial View from Hing Man Street. Photo: © Architectural Services Department

members), the awards programme is viewed as the centerpiece of ULI's efforts to identify and promote best practices in all types of real estate development. The Hong Kong East Community Green Station is one of 11 winning real estate development projects from around the globe to be honoured this year, and the only global winning project in Asia.

In May 2015, the Environmental Protection Department of Hong Kong completed the Hong Kong East Community Green Station to implement the "reduction first" waste management strategy, as a pilot project for promoting green living and collection of recyclables at the community level. Instead of a traditional garbage collection point, the Station is designed as a positive asset to the local community with the inclusion of an education center, work area for handling recyclables, office, ancillary facilities, and a landscape area. In total, the project includes around 26,000 square feet of open space and landscaping, around 8,000 square feet of industrial space, and around 4,000 square feet of educational space, with around 7,500 square feet for buildings. The total cost of the project is around US\$3 million.

The flyover above the site contributes to the passive cooling of the venues thus reducing solar heat gain. Modular containers are reused as the bases of the buildings and modified to suit the need of different functions. An additional overhanging roof and vertical greening shelter the interior from direct sunlight. Various sustainable initiatives put the green culture of "Use Less, Waste Less" into practice. The Station collects recyclables such as electrical appliances, compact fluorescent lamps, glass bottles and rechargeable batteries which are sorted in the recyclables repository before delivery to qualified recyclers for proper treatment and the conversion of waste into usable resources.

Hong Kong East Community Green Station transformed a temporary carpark under a flyover into a public gathering place to bridge the old and new neighborhood within an existing dense residential area. The concept was to create a new street through the site to connect the surrounding communities through the use of green wall, bamboo trellis and a courtyard garden. The project

has become a focal point for the local neighbourhoods where the new street and the landscape area embody a variety of gathering spaces as an interpretation of pavilions in a traditional Chinese Garden, representing the local cultural values. Hong Kong East Community Green Station has organised over 100 events on site and has become a popular spot for environmental education and recycling support in the Eastern District of Hong Kong.

"Cities are about people – the way people interact, get around, and go about their daily routines. Great cities are made of great places that make the urban experience easy and enjoyable," said Awards Jury Chairman Steve Navarro, Executive Vice President, CBRE | the Furman Co. in Greenville, South Carolina.

"These projects reflect the highest standards of design, construction, economics, planning, and management. But most important: they are improving people's quality of life," added Steve.

"The Global Awards for Excellence showcase efforts that have both succeeded in pushing ingenuity and exemplifying best practices in land use across the globe," said Patrick L. Phillips, ULI Global Chief Executive Officer. "This year's winners have demonstrated a committed contribution to responsible real estate development and a dedication to building thriving, livable communities," added Patrick.



Exhibition Block. Photo: © Architectural Services Department

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Hebei China Fortune Football Club leads the field

Beijing, China – Hebei China Fortune Football Club (CFFC), has announced plans for a new professional training centre after nearly two years of research and planning. Designed by global sports architects Populous, the training base for one of the biggest clubs in the China Super League will be the first within their football industry to cater for everyone from the youth training academy right through to the reserve and first teams.

Owners, CFFC, have a strong commitment to building on the traditions and history of the century-old club. Speaking at the launch Club Chairman, Zhao Hongjing spoke about their desire to ensure their long-term success.

“Looking all over the world, whenever there is a powerful football club, there is always a complete set of infrastructure to back it up. Both the club and head coach Pellegrini take the construction of a youth training system very seriously, and we believe that it’s like a football philosophy and strategy, just like that practiced by the youth training echelon of FC Barcelona,” said Hongjing.

To be located in Gu’an County of Hebei Province, approximately 50 kilometres south of Beijing, the training base will include 12 FIFA standard football fields, a training hub, medical centre, hotel and apartment, gym and all the support facilities.

Populous senior principal leading the design team, Andrew James, said the launch marked an exciting time for the company with the football world closely following the growth of the game in China.

“This facility has been benchmarked against the world’s best training centres, with a focus on the European football model. CFFC spent 12 months visiting some 20 football training centres in Europe and provided us with an extensive design brief of their requirements. Our task was to assimilate all their technical requirements into a design that was functional, efficient and aesthetically pleasing. We have set out to create an environment where the footballers love coming to work, to train, to socialise, to enjoy themselves,” said James.

For Head Coach Manuel Pellegrini the training base is a very important platform for the development of the Club over the next decade. “We will build-up an entire youth training system here. If there is not a good training base, all the other things will not make any sense,” he said.

Populous has designed innovative facilities for professional football clubs right around the world, from national venues like Wembley Stadium, new homes for Premier League clubs like Tottenham Hotspurs and Arsenal, to FIFA World Cup stadiums in Brazil and South Africa.



Bird's eye view showing the entire base. Artist impression: © Populous

Keppel Land and Metland to jointly develop landed homes in Greater Jakarta

Singapore – Keppel Land Limited (Keppel Land), through its wholly-owned subsidiary, PT Sukses Manis Indonesia, has taken a 50 percent stake in a joint development with PT Metropolitan Permata Development, a subsidiary of PT Metropolitan Land Tbk (Metland), for a total consideration of Rp 250 billion (approximately S\$26 million). Metland is one of Indonesia’s leading property developers. The joint development will yield about 450 landed homes on a 12-hectare site in Tangerang, a satellite city located adjacent to West Jakarta.

Mr Sam Moon Thong, President (Indonesia), Keppel Land, said: “Indonesia is one of Keppel Land’s key growth markets and we are focused on scaling up our presence in Greater Jakarta which is experiencing rapid growth. We are happy to develop a prime residential site together with a strong, like-minded partner like Metland. We seek to meet the needs of a fast-growing middle class who aspire to own quality homes.”

Mr Thomas J. Angfendy, President Director of PT Metropolitan Land Tbk, said: “We are pleased to partner Keppel Land on this project where we will tap on our respective strengths for a quality residential development to enhance the Metland Puri township.”

Strategically located within the established Metland Puri township, future residents can enjoy excellent connectivity to business districts and various facilities and amenities via the Merak Toll Road and Karang Tengah Toll Road. The Soekarno-Hatta International Airport is also just a 30-minute drive away.

In West Jakarta, Keppel Land is developing West Vista and another residential development at Daan Mogot which will yield over 7,000 units in total.

Deyaar builds on reputation for excellence with ISO certificate

Dubai, UAE – Deyaar Development PJSC, one of the UAE's leading property development and real estate services companies, has been awarded the internationally recognised quality management certificate ISO 9001:2008.

The prestigious certificate, awarded to Deyaar's Property Management division, came after a comprehensive evaluation. Deyaar Property Management has earned a professional reputation for reliability and efficiency among landlords, with a 97 percent occupancy rate and a 98 percent renewal rate.

Rabindran Thaver, Acting Head – Deyaar Property Management said: "Over the years, our commitment to quality and excellence has been recognised by our stakeholders. This latest achievement further validates our strict adherence to international quality standards and it will further boost customer confidence in Deyaar. These certifications attest to the efforts of the Deyaar Property Management team in consistently delivering the highest standards."

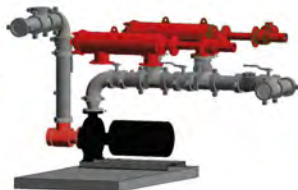
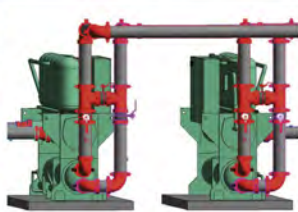
Deyaar Property Management's services include property inspections and appraisals, tenancy contracts, payments, collections and renewals, as well as legal assistance and other statutory requirements. With eight offices located across the UAE including Dubai, Abu Dhabi, Sharjah, Ajman, Al Ain, Ras Al Khaimah and Fujairah, Deyaar Property Management is responsible for over 17,000 units across 950 properties.

Rabindran Thaver. Photo: © Deyaar Development PJSC



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The Atkins-designed new South Island Line starts to serve the community in Hong Kong

Hong Kong – Hong Kong MTR's new South Island Line, for which Atkins was the detailed designer for a key section, started operating on 28 December 2016, serving the 350,000 residents and workers in Southern District.

John Blackwood, Atkins' Director for transport in Asia Pacific, said: "We've been working with MTRC for over 40 years but it's always a thrill to see a new line come into operation, providing significant benefits to the community along the alignment."

The new line runs in a combination of underground sections and on elevated structures, with five stations in total. Atkins was appointed by the MTR Corporation to provide the detailed design for two elevated new stations at Ocean Park and Wong Chuk Hang, 1.9 kilometres of new elevated viaduct, a new 247 metres bridge spanning the Aberdeen Channel Bridge, noise barriers, widening of a major open nullah for drainage, slope works, complex utility diversions and other associated works.

"As the South Island Line is an elevated railway on the densely populated Hong Kong Island, it was a particularly challenging project as it is becoming progressively more difficult to build above ground railway lines in Hong Kong," added John.

Stakeholder engagement was a key success factor for the project. One of the key challenges was to ensure an optimal design whilst recognising stakeholders' requirements, both during and after construction. Another key aspect was to ensure that the visual impacts of the above ground structures were sensitively treated. The noise barrier design is fully integrated with the overhead line and trackside auxiliary system which allows a noticeable reduction in the overall width and height of the railway viaduct. This minimises the disturbance to the existing properties along the alignment. Reduced steelwork, structural envelope and maintenance requirement for the viaduct led to significant cost and time savings during the construction.

Lee Ieronimo, Atkins' Project Manager for South Island Line, said: "I can see the transformation we are bringing to the local community in Wong Chuk Hang every day. I'm extremely proud to be part of the team to bring this transformation and convenient travel means to the local community and visitors alike."



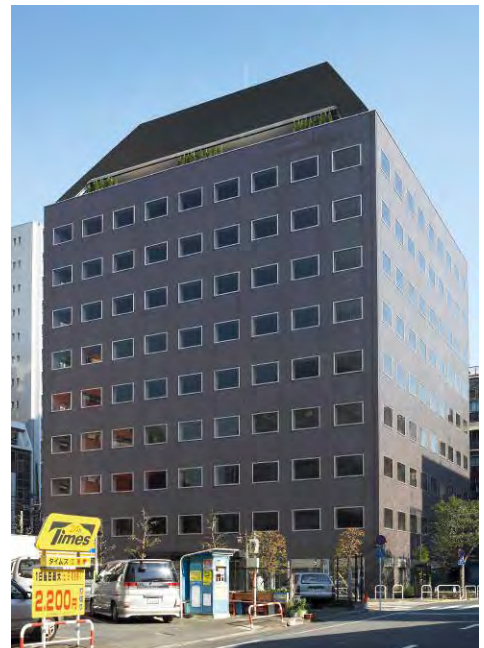
Ocean Park station on the South Island Line. Photo: © Atkins

Pacifica Capital to open Marriott's first Moxy Hotel in Japan

Tokyo, Japan – Tokyo-based commercial real estate developer Pacifica Capital K.K. has signed a management contract with Marriott International to open Japan's first location for the young, fast-growing brand "Moxy Hotels" in November 2017.

The property, to be known as "Moxy Tokyo Kinshicho Hotel", is a short walk from Kinshicho, one of Tokyo's busiest train stations and near some of the capital's major tourist attractions such as Asakusa and Tokyo Sky Tree. It is also within a block of an expressway onramp making the property convenient to Haneda and Narita airports as well as Tokyo Disneyland. The hotel will have 205 rooms ranging 18-28 square metres, large, attractive and comfortable food and beverage facilities, a gym and meeting rooms.

Launched in 2014, Moxy is a boutique hotel concept targeted at Millennials using the latest technology and a strong emphasis on fun and useful public areas with comfortable space to eat, drink, work and communicate 24/7. Currently, there are 7 Moxy hotels open in the U.S. and Europe and a strong development pipeline.



The Moxy Hotel in Japan currently under construction. Photo provided by Pacifica Capital K.K.

The 14th edition of Guangzhou Electrical Building Technology returns on 9 June with positive response from notable brands

Guangzhou, China – Followed by the release of the 13th Five-Year Plan, innovative technologies including IoT, cloud computing and big data are penetrating into the traditional building construction, which contributes to the transformation of the building industry. To accommodate the latest market trend, the Guangzhou Electrical Building Technology (GEBT) exhibition will return to the China Import and Export Fair Complex Guangzhou on 9-12 June 2017. This year, GEBT will focus on three core themes, including electrical engineering, intelligent building and smart home markets. The fair gathers renowned institutions and notable brands to offer an array of cutting-edge technologies and solutions to visitors.

To date, international and domestic associations and brands have shown strong support to the show. Over 100 exhibitors have confirmed to participate in the fair, including Auguan, Bittel, Canall, CATO, CITYGROW, Crodigy, Eastsoft, EnOcean, FU YOU SIN, Gamder, HDL HOME WORLD, Hope More, Keze, KNX, Lammin, Lechao, Longsheng, LONGYANG, Ltech, LUMI, Nedfon, ONLYTECH, ORVIBO, OUCHUANGYUAN, Panasonic, Povos, Rishun, S&B, Seyoung, Szsaw, T- Touching, Tender, Vanhi IoT, Wintom, WISE, Xiaowei, ZigBee and more. Exhibitors from diverse fields will showcase their latest technologies and products.



Photo from the Guangzhou Electrical Building Technology 2016 show. Photo: © Messe Frankfurt / Guangzhou Electrical Building Technology

Booming market of energy-efficient buildings and development of smart cities driven by information technology

The Chinese government's efforts in promoting green buildings and energy-efficient buildings have created higher demand for electrical engineering, intelligent building and smart home markets. According to the latest statistics provided by the Ministry of Housing and Urban-Rural Development of the People's Republic of China (MOHURD) in January 2017, the energy consumed by the building industry continues to rise, contributing to 33 percent of the total national energy consumption. This provides ample business opportunities for the energy-efficient building market. "Outline of the 13th Five-Year Plan for the Housing and Urban-Rural Development" initiated by MOHURD states that 50 percent of all new urban developments should be made up of green buildings by 2020. In addition, the implementation of national policies including "National Plan on New Urbanization (2014-2020)", "Made in China 2025" and "Green Building Action Plan" will further expand the energy-efficient building market and provide numerous investment opportunities in the industry.

Due to the development of information technology, urban residents have higher expectations on green buildings and intelligent

buildings, which leads to growing demand for smart city services. One of the major trends is transforming the traditional building industry by internet, mobile network and IoT technologies. According to planning and deployment laid out by related government ministries, commissions and local governments, the number of planned smart cities is expected to exceed 500 by 2017. As the pace of smart city construction accelerates at different levels, it is estimated that the market will expand vigorously.

China is making a greater push for green buildings and energy-efficient buildings, electrical engineering, intelligent buildings and smart home. These developments, coupled with the growing needs for intelligent buildings, make for a promising market with huge opportunities. GEBT continues to dedicate itself to revealing the latest industry development and innovative technologies.

To find out more about GEBT, please visit www.building.messefrankfurt.com.cn or email building@china.messefrankfurt.com.



Photo from the Guangzhou Electrical Building Technology 2016 show. Photo: © Messe Frankfurt / Guangzhou Electrical Building Technology

Ascott inks six new properties in China as it scales up for another year of exceptional growth

Singapore – CapitaLand’s wholly owned serviced residence business unit, The Ascott Limited (Ascott), races ahead by securing contracts to manage six properties with more than 1,200 apartment units in China, on the back of record growth last year. The new properties entrench Ascott’s presence in Changsha, Shenzhen, Tianjin and Wuhan, while extending its footprint to two more cities – Handan and Xuzhou. Ascott is also poised to boost its fee income by opening an all-time high of more than 30 properties worldwide this year, of which 16 will be in China, as it further cements its leading position in the industry.

Mr Lee Chee Koon, Ascott’s Chief Executive Officer (CEO), said: “Ascott crossed the 50,000-unit milestone last year, and there will be no let-up in our efforts to build up Ascott’s global scale and accelerate our growth in 2017. By expanding our network, the management fees we get over time will strengthen Ascott’s earnings profile to deliver sustainable returns and drive return on equity. We clinched a record 10,000 units in 2016 and this is expected to contribute S\$25 million to S\$30 million of fee income to Ascott annually as the properties progressively open and stabilise. As we expand across our different brands to offer more accommodation choices and tailored experiences to our customers internationally, we are confident of achieving our global target of 80,000 units by 2020.”



Ascott Xiangjiang FFC Changsha. Photo: © The Ascott Limited



Tujia Somerset Congtai Handan. Photo: © The Ascott Limited



Citadines Qingshan SCPG Centre Wuhan. Photo: © The Ascott Limited

L&T Technology Services Limited & UTC Commercial Businesses establish innovation lab for intelligent buildings, connected homes and cold chain logistics

Bengaluru, India – L&T Technology Services Limited, a leading global pure-play engineering R&D services company, and UTC Climate, Controls & Security and Otis, units of United Technologies Corp., have announced a strategic collaboration to create an innovation laboratory focused on integrated buildings, smart homes and cold chain technologies. The lab will be located at LTTTS’ Bengaluru campus, with support from the UTC business units.

“This is a wonderful opportunity to enhance our Internet of Things commitment together. The intent is to explore innovative ways to contribute to our product roadmap for buildings, homes and the cold chain. We have begun work on some core projects and intend to bring them to fruition in the coming year,” said Mary Lombardo, Vice President, engineering innovation & research, UTC Climate, Controls & Security and Otis.

The lab will conduct intelligent buildings work in the area of adaptive climate and environmental controls designed to save energy and money, as well as positively impact workforce productivity. Engineers will also develop real-time analytics to measure key elevator performance metrics.

Innovations in connected homes will focus on innovative sensors and sensor integration that builds on the current home automation initiative and provides additional relevant and accurate information to users to gain insights on health, comfort, cost and energy usage, safety and security.

The third focus area is in cold chain technology. The intent is to ensure freshness of products in the cold chain from “farm to fork” using next generation sensors and analytics to predict and control the ripening of fresh produce, meats and other assets that require tight control.

Dr. Keshab Panda, CEO and Managing Director, L&T Technology Services Limited said: “We are very excited to put our expertise in sensor technologies, analytics and smart buildings to work for UTC’s commercial businesses. At L&T Technology Services, our combined domain and engineering expertise helps innovate IoT solutions that really matter. What makes us successful is our ability to think out of the box and constantly experiment with new technologies.”

The collaboration between UTC Climate, Controls & Security, Otis and LTTS began in 2005.



Dr. Keshab Panda. Photo: © L&T Technology Services Limited

Caboolture’s new GP Super Clinic ditches institutional design for nature and wellness focus

Caboolture, Australia – Wilson Architects has set the benchmark for healthcare design, with Caboolture’s new GP Super Clinic.

Unlike institutional designs traditionally employed by clinics, the \$8M facility features vertical gardens, fish ponds and an atrium to foster a feeling of healing and respite.

Caboolture local Fiona Heckelmann said the light-filled spaces provide an organic and calming atmosphere.

“From a patient’s perspective, it’s revitalising and refreshing – because of the fact that you’re surrounded by nature and life,” said Fiona.

Wilson Architects’ design approach focuses on the experience of the occupants and visitors using a Salutogenic approach – a method coined by professor of medical sociology, Aaron Antonovsky. This approach promotes wellbeing in healthcare, and focuses on factors that support human health, rather than on factors that cause disease.

Caboolture GP Super Clinic Executive Director David Hooper said: “There’s a very strong link between feeling good, and being well. The focus [at our Super Clinic] is on being well and staying well – we’re focused on the system of the wellness concept.”

Wilson Architects’ intent was to facilitate a positive human experience through design – a design which was scalable to enable the future viability of the centre.



Photo: © Alex Chomicz

Global design studio launches new venture in Bristol

Sydney, Australia – McGregor Coxall has opened a studio in the city of Bristol, complementing its operations in Sydney, Melbourne and Shanghai. Founded in Australia, the firm has built a strong reputation as a thought leader in delivering design solutions for complex urban and environmental challenges. With over 400 projects across three continents the company's disciplines include Urbanism, Landscape Architecture, Environment.

Director and Bristol Studio leader Michael Cowdy said: "Bristol is a creative city with a rich passion for community and environment. We know that housing, infrastructure and the environment present a constant challenge to development authorities, so we are bringing our international experience, research and successful project methodology to address these issues. We look forward to expanding our portfolio in the UK and helping our clients to achieve sustainable prosperity."

McGregor Coxall has won over 80 awards including the much coveted International Landscape TOPOS award and the International Waterfront award for Ballast Point Park. In 2016 the team received four AILA National Awards including the National Award of Excellence in Urban Design for the Parramatta City River Foreshore, Sydney's second CBD.

McGregor Coxall has also developed the Biocity Research Studio to understand trends and solutions in tackling the challenges facing cities globally. Combining science with technology and design, the studio conducts research via global partnerships with universities, industry, private investors, NGO's and government.

Sydney based CEO Adrian McGregor said: "We have selected Bristol as a launch pad for our European projects to extend the environmental urbanism and landscape architecture design work we are undertaking in Australasia. Our global 'one studio' team is now located in four cities providing services for our global clients."

New innovation centres to serve customers better



Jebsen & Jessen Ingredients Coating Centre. Photo: © Jebsen & Jessen Ingredients

Bangkok, Thailand – Diversified industrial group, Jebsen & Jessen (SEA), has launched two new regional centres of innovation under its ingredient business unit to help customers and principals in the consumer and coating industries bring and adapt products to the Southeast Asian market faster and more effectively.

Situated in two locations along the thriving Sukhumvit district of Bangkok, Thailand, the innovation centres will have 12 dedicated scientists and technicians leveraging a range of cutting edge analysis and prototyping equipment in the THB 28 mil (SG\$1.1 million) laboratories. This is the first innovation centre by Jebsen & Jessen Ingredients catering to the personal care and food industries, and the most advanced and highly equipped laboratory for the coating sector.

The new 230 square metres Consumer Industries Innovation Centre includes two different laboratory environments serving the food as well as the personal care industries. These two labs support customers in innovating and designing new product applications by experimenting with our principals' ingredients so that they are equipped to face new food and personal care market demands and exciting consumer offers.

The 400 square metres Coating Innovation Centre, offers cutting-edge technical, application as well as formulation support to customers and manufacturers in the paint and coating industries.

"Having these innovation centres located in the region helps our customers and principals innovate, formulate and adapt faster to the dynamic ASEAN markets," said Marc Deschamps, Regional Managing Director & CEO of Jebsen & Jessen Ingredients.

"Besides having ingredients adapted to specific local needs and palates of South East Asian customers and consumers, we can also provide technical assistance and support within the same time-zone and conduct testing more quickly. A critical success factor of these labs is that we can invite and train customers in their own home region, together with our supplier partners. Our training centre offers a modern and exciting laboratory environment for 'hands on' experience, where theory and practice go hand in hand."

In these new facilities, Jebsen & Jessen Ingredients is now also able to produce samples and prototypes within the region and conduct batch testing of products as well as to custom formulate principals' ingredients for customers, while providing prompt technical support and trouble-shooting.

Jebsen & Jessen Ingredients is strategically expanding its role by offering value-added services like research and application development to customers and principals. Having the right infrastructure on hand is an important growth factor for many companies in the industry.

Unique roof creates Thailand's largest column-free exhibition space

Bangkok, Thailand – An innovative roof design, which forms part of the expansion of the BITEC facility in Bangkok, has created by far the largest column-free exhibition space in Thailand, allowing the venue to offer unparalleled staging and display.

The Bangkok International Trade & Exhibition Centre (BITEC) now has so much open space that exhibitors have the capability to stage displays reaching 25 metres into the air. Exhibitors and visitors to the newly expanded exhibition centre will benefit from unblocked views and an innovative roof which is capable of accommodating huge suspended displays. The BITEC now has so much open space that were it to stage an aviation show, Airbus would be able to showcase a full-sized A380 model indoors.

In line with the vision of its owner, BHIRAJ BURI GROUP, the new BITEC heralds an era of unrivalled exhibitions and related events in Bangkok. The exhibition centre opened in 1997 and is located in the Bang Na district of the city.

As the lead structural engineer, Aurecon office in Thailand played a key role in the expansion project. The company worked closely with the architect to balance aesthetics and engineering practicalities, optimising the design while also respecting the architect's desire for a dramatic addition to the Bangkok skyline – complete with elegant masts and cables. In addition to the detailed design of the finished structure, the company worked out a detailed construction sequence to facilitate the erection of this unusual structure for the main contractor, Italian-Thai Development.

Creating space and width

Stretching to 108 metres between columns at its widest section, the new long-span structure gives the venue its impressive floor space possibilities. The expansion more than doubles the area of the exhibition centre, adding 32,000 square metres to the existing 38,000 square metres.

The expansion has two distinct, large areas, each with a different clear height. The first section features a height of 25 metres – high enough to accommodate the tail section of an Airbus A380 replica – with a 108 metres column-to-column span; while the second has a clear height of 15 metres with a 90 metres column-to-column span. The light-weight roof also has the capacity to support large hanging loads.

One of the biggest challenges for the design was supporting the weight of the roof. To counter this, Aurecon's engineers used advanced modelling and structural analysis to evaluate the size, specification and siting of the cable-stays, together with the optimum lattice design for the roof truss.

To create such long column-to-column spaces, Aurecon designed an innovative support system for the roof structure. This design has the main roof truss supported by fore stays on each side, with these cables then supported on masts around the edge of the building. A further cable from the top of each mast is anchored to the ground, via a configuration that incorporates a back stay, tie stay and reaction beam. There is one mast design for every three roof trusses. (Please refer to Illustration 1.)

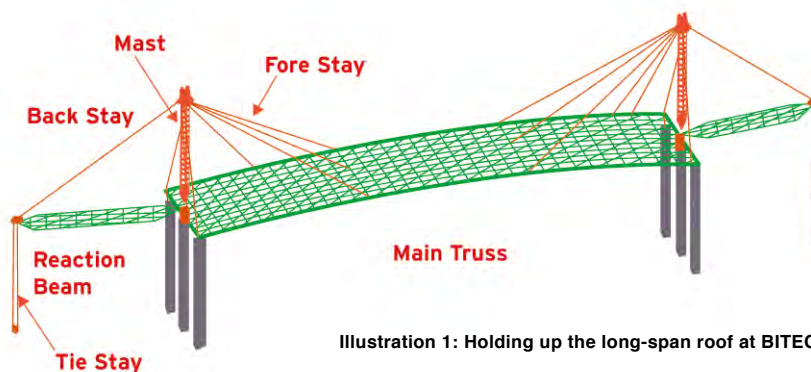


Illustration 1: Holding up the long-span roof at BITEC, Thailand. Illustration: © Aurecon

Getting the sequence right

More importantly, a detailed erection sequence was developed for the building contractor, which required the roof's lattice structure to be jacked above its final resting height during assembly. Doing this meant that as the contractor systematically removed the jacks - in line with the erection sequence - the downward motion induced the required tension in the cable stays to meet design requirements.

"One of the most significant engineering challenges was making sure we got the erection sequence right," explained Pisit Yingmanokit, Technical Director, Aurecon in Thailand, the project's senior structural engineer. "It was quite a meticulous process to ensure the roof would maintain its desired shape and strength, but the end result is something unique in Thailand, allowing the venue to stage much bigger and better events," he added.

"Aurecon is proud to have had the opportunity to collaborate with one of Thailand's premier property developers to engineer the focal element of the BITEC expansion," said Thiti Ariyakul, Project Leader and Executive Director of Aurecon in Thailand. "It is a perfect showcase for the design and engineering talent of Thailand, with every phase of the job handled by a Thai company," he added.

The new BITEC venue welcomed its first exhibition on 23 November 2016.

Nakheel invests AED150 million to create 105 kilometres of scenic cycle tracks across communities in Dubai

Dubai, UAE – Master developer Nakheel is investing AED150 million to bring 105 kilometres of bicycle tracks to its communities across Dubai, with all routes linked to the Government's Cycling Master Plan.

Safe, scenic bike routes are being created to encourage recreational cycling and promote health and wellbeing among families and individuals of all ages as part of Nakheel's commitment to enhancing its developments with new facilities and services. The developer is also building a 10-kilometres 'super loop' – for more experienced riders – as part of its cycle route network.

The Nakheel Communities Cycling Masterplan, mapped out today (Wednesday) by Nakheel Chairman Ali Rashid Lootah, will be constructed over the next two years, with phased delivery between now and Q2 2019. Nakheel plans a series of subsequent bike tracks once the first 105 kilometres are completed.

Cycling is one of the fastest growing activities in Dubai, with an ever-increasing number of events, initiatives and groups promoting the sport. Dedicated bike paths are needed to allow both new and experienced cyclists to ride safely, without having to use main roads, says Nakheel.

Work is already under way on a 5-kilometres track at Nakheel's new Nad Al Sheba community, currently under construction along Sheikh Mohammed Bin Zayed Road in Dubai. Other developments covered by phase one are Jumeirah Islands, Jumeirah Heights, Jumeirah Park, Jumeirah Village (Triangle and Circle), Al Furjan, The



Photo: © Nakheel

Gardens, Discovery Gardens and Garden View Villas.

Nakheel Chairman Ali Rashid Lootah said: "Cycling in Dubai has seen a huge surge in popularity over the last few years, with the Government promoting the sport through world class events like the Dubai Tour and by building hundreds of kilometres of bike routes across the city. Our new cycle track network will make cycling more accessible and inspire people to get pedalling as a way to keep fit, socialise and help the environment. Under our plan, people will be able to bike their

way to the shops, school and friends' houses without getting in the car. Our plan will encourage people to take up cycling as a sport and recreational activity, in turn promoting health and fitness among all age groups. It will also offer something for experienced riders, who will benefit from new routes linked to Dubai's existing bike path network as well as our 10 km super loop."

The new routes will pass through some of Nakheel's most mature and prestigious communities, where cyclists' journeys will be enhanced by lush scenery and greenery.

Health and sustainability: no longer an either/or equation

Sydney, Australia – A new guidance document that compares and aligns the Green Star and WELL Building Standard™ (WELL) rating systems will support building owners looking to boost the sustainability of their assets and support the health and wellbeing of people inside the buildings.

The Green Building Council of Australia (GBCA) and the International WELL Building Institute™ (IWBI™) announced a new partnership in 2016, and are working collaboratively to promote health and wellbeing in the design, construction and operations of buildings, fitouts and communities in Australia.

Green Star and WELL Building Standard: Approaches to buildings or fitouts seeking a dual rating maps the Green Star credits and criteria that may be used for an assessment under the WELL Building Standard, and vice versa.

"As owners and investors increasingly look to third-party certification to demonstrate transparency, accountability and a

commitment to best practice, we must ensure certification is an easy and cost-effective process," said the GBCA's Head of Market Transformation, Jorge Chapa.

"By working together to map out the synergies within the two rating tools, project teams can avoid duplication of effort, and achieve both Green Star and WELL ratings faster, and cheaper. Building owners don't have to choose between health and sustainability – both are more easily achieved as a result of this work," added Mr Chapa.

"By every measure, Australia has long been a global sustainability leader," said IWBI Chairman and CEO Rick Fedrizzi. "So it's no surprise that its real estate community has been at the forefront of efforts to use buildings to more intentionally advance the health and well-being of the people who spend so much time in them. By taking advantage of the natural synergies between Green Star and WELL, we can have rapid and significant impact on both planetary and public health. We're proud to work alongside GBCA to advance our shared mission," added Mr Fedrizzi.

The document provides guidance specific to new buildings or new fitouts being rated under Green Star – Design & As Built or Green Star – Interiors. Future versions will include guidance specific to buildings seeking Green Star – Performance ratings.

"This new guidance will provide industry with extra support to deliver buildings that are efficient, productive and healthy for the environment, and for people too," concluded Mr Chapa.

Download *Green Star and WELL Building Standard: Approaches to buildings or fitouts seeking a dual rating* from the GBCA and IWBI websites: www.wellcertified.com or www.gbca.org.au.



Romilly Madew (left) and Paul Scialla announcing GBCA, WELL partnership at the Green Cities 2016 conference. Photo: © GBCA

Frasers Centrepoint Singapore unveils unique zones at Frasers Tower to address new working styles

Singapore – Frasers Centrepoint Singapore has launched Frasers Tower – a new office development that provides a flexible work environment to cater to the evolving needs of the workforce.

Frasers Tower's four unique community zones, coupled with its own park and plenty of greenery will accommodate the working community's growing needs of work-life balance. The show suite was unveiled on 7 February 2017 to showcase the workplace that will transform the way tenants work with its unique blend of workspace and nature.

Located at 182 Cecil Street, Frasers Tower is expected to be completed in the second quarter of 2018. The development has a total net lettable area ("NLA") of approximately 663,000 square feet and comprises a 38-storey Premium Grade-A office tower and an adjacent three-storey cascading retail podium featuring various food and beverage offerings. It is also the first commercial building to be nestled in a park of its own that connects to the Telok Ayer Park.

Commenting on the value proposition of Frasers Tower, Mr. Christopher Tang, Chief Executive Officer, Frasers Centrepoint Singapore, said: "Businesses will be attracted to the new landmark as it occupies the prime corridor between the core CBD and upcoming Greater Southern Waterfront development, with complementary retail and lifestyle offerings in the vibrant and dynamic precinct. The appeal of the development is also in its unique blend of workspace and nature designed to inspire a stimulating, innovative and functional work environment. With the reduced office supply in 2018 and beyond, we are confident that demand for Frasers Tower will grow."



Frasers Tower. Photo: © Frasers Centrepoint Singapore

Nakheel and Centara sign joint venture for AED500 million beachfront resort with waterpark at Dubai's Deira Islands



The joint venture between Nakheel and Centara was signed in Bangkok by Nakheel Chairman Ali Rashid Lootah and Centara Chairman Suthikiati Chirathivat. Photo: © Nakheel

From left to right:

1. Mr. Dan Chinsupakul, Executive Advisor, Centara Hotels and Resorts
2. Mr. Suparat Chirathivat, Vice President of Business Development, Centara Hotels and Resorts
3. Mr. Thirayuth Chirathivat, Chief Executive Officer, Centara Hotels and Resorts
4. Mr. Suthikiati Chirathivat, Chairman of the Board, Centara Hotels and Resorts
5. Mr. Ali Rashid Ahmed Lootah, Chairman of Nakheel Investment Projects LLC
6. Mr. Thorsten Ries, Managing Director of Hospitality and Leisure, Nakheel Investment Projects LLC
7. Dr. Ronnachit Mahattanapreut, Senior Vice President of Finance & Administration, Centara Hotels and Resorts
8. Mr. David Robert Good, Vice President of Operations, Centara Hotels and Resorts

Dubai, UAE – UAE master developer Nakheel and leading Thai hotel group Centara Hotels and Resorts have signed a joint venture agreement to create a 550-room, AED500 million beachfront resort with waterpark at Deira Islands in Dubai.

Under the agreement, cemented in Bangkok by Nakheel Chairman Ali Rashid Lootah and Centara Chairman Suthikiati Chirathivat, the two companies will deliver an upscale resort on a prime stretch of beach on Deira Islands – Nakheel's new, 15.3 square kilometres, world-class tourism, leisure, retail and entertainment hub that will contribute significantly to the Government of Dubai's tourism vision.

Nakheel's joint venture with Centara is the latest development in the company's aggressive expansion into Dubai's hospitality sector and its second international joint venture for Deira Islands. The first, an 800-room, AED900 million all-inclusive resort and waterpark with Spain's RIU Hotels & Resorts, was confirmed in February last year.

As the first Centara establishment in the UAE, the new resort will cover an area of 295,900 square feet. Features include a waterpark, dining facilities, business centre, kids' club, spa and fitness centre. The resort is anticipated to have soft opening in 2019 and grand opening in 2020.

Centara Hotels & Resorts is part of Central Group, one of Thailand's most prominent family-owned conglomerate holding companies that is involved in merchandising, real estate, retailing, hospitality and restaurants. Centara's portfolio currently includes around 14,000 room keys across 65 hotels and resorts under six distinctive brands in Asia, Indian Ocean, and the Middle East.

Nakheel Chairman Ali Rashid Lootah said: "Our joint venture with Centara cements our commitment to partnering with successful, reputable international hotel brands to bring new tourism concepts to Dubai in line with the Government of Dubai's tourism vision."

Today's signing is a key milestone in hospitality expansion – and the beginning of a long-term strategic partnership between Nakheel and one of Thailand's biggest, most popular hotel operators. We look forward to seeing this exciting project come to fruition by delivering a new and unique offering at Deira Islands."

Suthikiati Chirathivat, Chairman of Centara Hotels and Resorts remarked: "We are thrilled and proud to be partnering with Nakheel on this joint venture hotel investment that will see Centara Hotels & Resorts operate and manage a distinguished new resort in an exciting new destination. This partnership is a ground-breaking move for Centara as we continue to extend our upscale resort portfolio internationally. This is Centara's first hotel in Dubai, and the UAE, and represents our arrival in a key gateway city in the Middle East. As we look forward to an even stronger and meaningful business partnership with Nakheel in the near future, we believe that Centara Deira Island Beach Resort Dubai will offer unforgettable holiday experiences to guests through our unique Centara hospitality and service."

CTBUH recognises completion of Guangzhou CTF Finance Centre, now the fifth tallest building in the world

Guangzhou, China – The Council on Tall Buildings and Urban Habitat (CTBUH) has certified the completion of Guangzhou CTF Finance Centre, located within the burgeoning Zhujiang New Town business district. At 530 metres it is the tallest building in Guangzhou, second tallest in China, and fifth tallest worldwide.

Developed by New World Development Company and designed by Kohn Pedersen Fox Associates (KPF), this supertall skyscraper rounds out a trio of Guangzhou's tallest structures, including Guangzhou International Finance Center and Canton Tower, all centered around Huacheng Square, the city's premier urban park and the central axis of Zhujiang New Town. Below, a subterranean retail concourse connects the mixed-use skyscraper with transport interchanges, directly integrating the project into the city and the wider Pearl River Delta region.

The mixed-use programming of Guangzhou CTF is reflected in its sculpted form, incorporating setbacks at four major transition points coinciding with shifts from office to residential programming, residential to hotel, hotel to crown, and crown to sky. Each setback is aligned to correspond with varying heights of nearby buildings and features verdant outdoor terraces high above the cityscape, offering sightlines to the horizon in all directions.

The tower's elevation is defined by a series of subtle terra cotta mullions running the full length of its height, accentuating its verticality. The material selection cleverly references both Chinese architectural traditions and early skyscraper design, while also providing environmental benefits in the form of reduced embodied energy, corrosion-resistance, and sun shading. It is the tallest application of terra cotta in the world.

The building adopts a megacolumn outrigger core system to achieve its spectacular height. A square core together with eight concrete megacolumns provides primary structural support, while four levels of steel outriggers and six sets of double-layer belt trusses provide additional lateral stability.

During the 2016 CTBUH International Conference in October, Guangzhou CTF served as the setting for the main programme as it passed through the city. Delegates further had the opportunity to interact with the tower during a networking session held in collaboration with New World Development. The momentous occasion doubled as a celebration for the skyscraper and marked one of the first opportunities to occupy the building.

As the tallest building to complete in 2016, Guangzhou CTF highlights a year in which China continued its unprecedented vertical expansion, accounting for 66 percent of all 200-metre-plus buildings completed in 2016.



Photo: © K11 / New World Development

Schmidt Hammer Lassen Architects win international competition to design the new Shanghai Library, China

Shanghai, China – Schmidt Hammer Lassen has won a two stage international competition to design the new city library for Shanghai, China. Shanghai is currently the most populous city in the world with nearly 25 million inhabitants, and has a central library system that dates back to 1847. The practice saw off competition from Kengo Kuma, David Chipperfield and Dominique Perrault to the prestigious commission after a 6 month two stage process. The 110,000 square metres library, located in Pudong District – the area of the city known for its iconic skyline, will sit immediately next to Century Park – the largest park in the city spread over 140 hectares.



Exterior image of Shanghai Library. Image by BATB

The project is conceived as a singular monolithic object floating above the tree canopy within the park. The main library volume floats above two pavilions that will house a 1200 seat performance venue, exhibition and events space and a dedicated children's library, that will all open up towards a series of landscaped courtyards and gardens.

"We see the library as the focal point in a park. A central rock within a city scale Chinese garden," said Chris Hardie, Partner at Schmidt Hammer Lassen. "One of the most compelling things about this project is its location within a parkland setting. You are in the heart of the world's largest city, yet we have the opportunity to create a sanctuary for knowledge and media in the trees," added Chris.

The project completes a trilogy of cultural projects alongside the Science & Technology Museum and the Shanghai Oriental Arts Centre – all which surround the centre of the Pudong Government – and sit alongside Century Avenue that links Century Park to the Business District that forms the now globally recognisable skyline of Shanghai.

In 1995, Shanghai Library merged with the Shanghai Institute of Scientific and Technological Information resulting in an advanced and comprehensive public library, the first in China that combines public library services with Scientific and Technological research functions.

The library itself is organised around a grand central atrium in the form of three staggered reading rooms that open up and connect to various parts of the library and various contextual parts of the city from Century Park to the east, a new library park to the south and the city to the north and west.



Interior image of Shanghai Library. Image by D&W

The library volume is carved and twisted to reflect the surrounding park and sky, and continuously clad in a facade of clear, insulated and fritted glass. The glass panels are arranged in horizontal bands that are angled to minimise solar glare - in addition to horizontal louvres - allowing unobstructed panoramic views to the park and city beyond.

The project is now progressing through Scheme Design, with Detail Design expected to be completed in the first half of 2017. The Library is expected to be completed and ready to open in 2020.

Rove Healthcare City offers the best of business and leisure in Dubai's centrally located neighbourhood

Dubai, UAE – Dubai Healthcare City, the hub for medical enterprises, healthcare facilities and medical education, now has a new design-influenced, value-lifestyle hotel adjacent to it, which will appeal in equal measure to business and leisure guests as well as wellness tourists, with Emaar Hospitality Group opening doors to Rove Healthcare City.

Rove Healthcare City is the third property under Rove Hotels, a contemporary mid-scale lifestyle brand, and its unveiling follows the opening of Rove Downtown Dubai and Rove City Centre, with the focus on assuring an authentic and engaging customer experience.

The unique selling proposition of Rove Healthcare City is its location, which is only 10 minutes from Dubai International Airport, Dubai World Trade Centre, Downtown Dubai and DIFC. In close proximity to the established neighbourhoods of Karama, Satwa, Bur Dubai and Deira, the hotel offers guests effortless access to a wide range of shopping and leisure options that are conventionally part of the tourist itinerary.

Like all Rove Hotels, Rove Healthcare City's elegant design and central location is further highlighted by hyper-connectivity – walking distance from Dubai Metro, easy access to the main motorway and a hop stop away from cinemas, Wafi Mall and Lamcy Plaza, and leisure attractions.

The unique character of the location, away from the bustle of the city, yet centrally placed near major business headquarters, cultural clubs, hospitals, educational institutions and residential neighbourhoods makes Rove Healthcare City a destination of choice for tourists and for an evening out for local residents.

The 286-room hotel, 30 percent of the rooms interconnected for the convenience of families, will also serve as a stimulating cultural hub, where the young and trendy can get together for a social evening, and for families to enjoy quality time with friends and loved ones.

Assuring simplicity, flexibility, authenticity and fuss-free service – the hallmarks of Rove Hotels, it will also celebrate its unique cultural idiom, where it takes inspiration from the neighbourhood, which is dotted with green parks, the children's city, and the Dubai Creek, within walking distance.

Rove Healthcare City also serves as a venue of choice for business events and Continuing Medical Education (CME) training programmes, which will appeal to healthcare companies, distributors and others seeking to engage medical professionals in Dubai Healthcare City. Its proximity to Rashid Hospital and the American Hospital means guests of in-house patients, especially wellness tourists, will have a comfortable place to stay.

The new property will also be an ideal venue for artists who perform at the cultural venues nearby such as the Alliance Française, Al Nasr Leisureland, British Council, India Club and Iranian Club, among others. Rove Healthcare City will also appeal to the nearby international schools as well as the business headquarters located in the neighbourhood for hosting their guests.

As with all Rove Hotels, there are standard features including free Wi-Fi access; late checkout at 2pm; swimming pool, sundeck and 24-hour gym; 24-hour self-service laundromat and interconnecting rooms.

Chris Newman, Chief Operating Officer of Emaar Hospitality Group, said: "Rove Healthcare City is a unique property that caters to the needs of the business community and visitors to the Dubai Healthcare City and the surrounding neighbourhoods. The location has a unique dynamic, being home to hospitals, schools, social and cultural clubs, family parks and malls. Tucked away from the bustle of the city yet in a central location, the area demanded a hotel that assures guests true value hospitality experiences. We deliver that with Rove Healthcare City."



Rove Healthcare City lobby.

Dr. Cheong Koon Hean is celebrated as Urban Land Institute J.C. Nichols Laureate

Singapore – Dr. Cheong Koon Hean, a widely acclaimed architect and urban planner credited with shaping much of Singapore’s urban landscape, has been celebrated in Singapore as the most recent recipient of the Urban Land Institute (ULI) J.C. Nichols Prize for Visionaries in Urban Development.

Dr. Cheong is the 17th Nichols laureate and the first from Asia. The prize is the highest honour bestowed by the Institute, which is a global, member-driven organisation dedicated to responsible leadership in land use and the creation of thriving, sustainable communities.

The ULI J.C. Nichols Prize recognises a person or a person representing an institution whose work demonstrates a commitment to the creation of communities that reflect the highest standards of design and development. The prize honours the legacy of Kansas City, Missouri, developer J.C. Nichols, a founding ULI member considered to be one of America’s most creative entrepreneurs in land use during the first half of the 20th century.

Dr. Cheong, whose extraordinary career in city building spans 35 years, is Chief Executive Officer of Singapore’s Housing & Development Board (HDB), which builds and manages public housing for more than 80 percent of the city-state’s population. With over 9 in 10 of them owning the homes they live in, it has one of the highest homeownership rates in the world. Since holding this position in 2010, she has overseen one of Singapore’s largest residential building programs to help address the high housing demand. She has also introduced HDB’s ‘Roadmap to Better Living in HDB Towns’, which guides HDB’s development of well-designed, sustainable and community-centric towns.

In 2004, Dr. Cheong became the first woman to be named CEO of Singapore’s Urban Redevelopment Authority (URA), where she had worked as an urban planner since 1990. In that capacity, Dr. Cheong played a key role in several transformative developments, including Marina Bay, a new vibrant live-work-play destination that created a signature skyline for Singapore. She championed the concept of creative placemaking to inject greater vibrancy not only at Marina Bay, but also in downtown areas such as the historic Singapore River and the civic and museum district at Bras Basah-Bugis. She was instrumental in the development of new growth areas at Kallang Riverside and Paya Lebar, as well as Jurong Lake District, transforming an industrial area into a new regional center with a vibrant community by introducing new housing, retail, and commercial uses.

Under Dr. Cheong’s leadership, the URA developed a conservation programme that has been recognised by ULI as one of the most comprehensive conservation programmes in Southeast Asia, balancing economic considerations with the need to safeguard Singapore’s heritage. She championed policies and urban plans to beautify Singapore with “sky rise” greenery, ample public spaces and urban art.

Dr. Cheong was awarded the Nichols Prize by ULI Foundation President Kathleen Carey. “What Dr. Cheong has accomplished in Singapore exemplifies what the Nichols Prize is about – being an urban visionary, taking chances, weathering the risks and producing even better results,” said Carey.

“Doing this has not come easy. It requires collective effort, innovative policies and plans, and dedicated and capable people, all supported by strong leadership. It is heartening that the Urban Land Institute recognises the role of urban planners, many of whom work behind the scenes, to shape cities for a better future,” said Dr. Cheong.

In selecting Dr. Cheong as the prize recipient, Nichols Prize Jury members pointed to Dr. Cheong’s successful efforts to improve the quality of affordable housing – not just increase the quantity – for Singapore’s residents, with a special emphasis on keeping extended families closer together. In raising standards for housing design, she guided the transformation of Singapore’s public housing into award-winning projects, including The Pinnacle@Duxton, Waterway Terraces at Punggol, as well as SkyTerrace and SkyVille @ Dawson. “She has been very effective at finding new ways to make housing for families attainable, and at accommodating the many different cultures and ethnicities in Singapore in socially harmonious communities,” said Jury Chairman Marilyn J. Taylor, professor of architecture and design and former dean of the University of Pennsylvania School of Design in Philadelphia.

In addition to Taylor, other jury members were: Mark Johnson, president of Civitas in Denver, Colorado; Dana Crawford, chairman, Urban Neighborhoods Inc., Denver, Colorado; Ellen Dunham Jones, professor, School of Architecture, Georgia Institute of Technology, Atlanta, Georgia; and Sir Stuart Lipton, a former Nichols Prize laureate and founder of Lipton Rogers Developments LLP in London.



Dr. Cheong Koon Hean. Photo: © Housing & Development Board

Leading architects vote Aurecon among top five best partners globally

Sydney, Australia – As the boundaries of design are continually changed and extended, the role of the engineer has expanded to include that of design thinker and skilled collaborator on projects that challenge the boundaries of what has been accomplished before.

Anticipating and adapting to this trend, Aurecon was highly ranked for the third year running in the 2017 annual World Architecture 100 (WA100) survey of the world's leading architectural practices, and again voted one of the global top five 'Best Partners' in both the 'Service engineers' and 'Structural engineers' categories.

The comprehensive WA100 survey conducted by the prestigious UK-based *Building Design* magazine asks architects to name their 'favourite professional associates' based on a diverse range of key performance indicators, including an outstanding commitment to clients, contribution to creativity and project outcomes, collaboration and chemistry. Ingenuity and technical expertise which enhance a concept from a design perspective ranks particularly highly.

"Design encompasses a meaning beyond the making of a physical thing; it is a way of doing and a way of thinking. Aurecon's distinctiveness has come from weaving all aspects of design into our organisational DNA as a means of crafting new value. We have made Design-Led Engineering our signature discipline and imbued its principles across our global footprint," said John McGuire, Aurecon's Chief Innovation Officer.

Aurecon Managing Director – Built Environment, James Bennett added: "It is hugely rewarding that our commitment to clever, inspirational design is truly valued by the global architecture community."



Jumeirah Al Naseem exterior pool - A project by Aurecon.

A superlative recent example of ingenious design was the collaboration between Aurecon and Cox Rayner Architects which spawned the award winning design concept for the Flood Resilient Ferry Terminals for Brisbane. The ambitious design tested the boundaries of convention to introduce world-first technical innovation to maritime engineering.

Other examples of high profile creative Aurecon projects include Melbourne's 567 Collins Street defining the move from singular functional urban space design to ecosystems; Dubai's Jumeirah Al Naseem, Thailand's MahaNakhon Tower; and Shanghai's Mapletree Project.



Mapletree Business Centre and VivoCity at night - A project by Aurecon
Photo courtesy of Aedas.

Spanish architect Francisco Mangado is the winner of the prestigious Berlin Art Prize

Barcelona, Spain – The Akademie der Künste in Berlin has awarded the architect Francisco Mangado with the Berlin Art Prize 2017, in the Architecture Section. This award is recognition of his career as an architect, with works such as the Museum of Fine Arts in Asturias (2015), the Spanish Pavilion for the Zaragoza Expo (2008), the Alava Archaeological Museum (2009) and the Center Of Congresses of Palma de Mallorca (2016).

The Berlin Art Prize was founded in 1948 and it honours five other sections besides architecture:

- Visual Arts: Axel Anklam (Germany)
- Music: Elena Mendoza (Spain)
- Literature: Annet Gröschner (Germany)
- Performing Arts: Valery Tscheplanowa (Russia)
- Film and Media Art: Athina Rachel Tsangari (Greece)



Francisco Mangado. Photo: © Juan Rodríguez Fotos

The 2017 Großer Kunstpreis Berlin (Berlin Art Prize: Grand Prize) has been awarded to Turkish filmmaker Emin Alper. The Awards Ceremony will be held on Saturday, 18 March 2017, at the Akademie's Pariser Platz location in Berlin.

Foster + Partners wins Jabal Omar Development Project competition in Makkah, Saudi Arabia



Visualisation of the Jabal Omar Development.
Image: © Foster + Partners

London, UK – Foster + Partners' competition winning scheme for a new luxury hotel and serviced apartments in the heart of Makkah has been revealed. Inspired by traditional Arab architecture, its design reinterprets the traditional dense building clusters, creating a new contemporary vernacular that respects its sacred location. Following the mountainous terrain, its cascading vertical elements form a new topography. The new mixed-use development will create a new gateway along the route to the Grand Mosque for pilgrims from the world over.

Luke Fox, Head of Studio and Senior Executive Partner, Foster + Partners who attended the ceremony said: "We are absolutely delighted to have won the competition. Makkah is one of the most unique cities in the world. As the home of the Holy Kaaba - the holiest site in Islam - it presents a special challenge and honour for any developer and architect. Our design sets out to create an innovative building form that will be respectful to the scale and importance of the Grand Mosque."

The scheme addresses the shortage of accommodation in Makkah in response to the rapid growth in visitor numbers. Occupying a large portion of the site, the orientation of all rooms and apartments maximise and optimise views towards the Holy Kaaba – the main focal point for every visitor. Generated from the inside-out, its interiors design is an antidote to the lack of identity that typical generic hotel rooms suffer from. Every room has a dedicated space for private prayer and contemplation that provides direct views to the Grand Mosque and Holy Kaaba.

Located on the axis between the new Haramain High-speed Rail Station and the Grand Mosque, the site also forms a key part of the pilgrims' journey towards the Holy Kaaba. A dramatic pedestrian ramp integrated with the new topography will take the pilgrims through naturally lit spaces, adding to the special experience of visiting the Grand Mosque.

Mr Fox added: "Our endeavour has been to make the experience special and appropriate to its unique location. The design follows a philosophy of 'luxury with humility' with an understated elegance throughout the development. On behalf of all the design team I would like to thank Jabal Omar Development Company for choosing to work with us. We are incredibly eager to begin work on the next stage, and look forward to a successful collaboration."

Newforma expands board of directors with appointment of Rainer Gawlick

Manchester, New Hampshire, USA – Newforma, a project information management (PIM) software company for AECO (architecture, engineering, construction and owner) companies, announced that Mr Rainer Gawlick, a seasoned sales and marketing executive, has joined its board of directors.

Mr Gawlick brings 25 years of experience as an operational executive, board member, and management consultant to Newforma. He has held executive sales and marketing positions at private and public technology companies, including AspenTech, Lightship Telecom, SolidWorks, Sophos, and Intranlinks.

Most recently, he served as president of Perfecto Mobile, a leader in empowering enterprises to deliver high-quality digital experiences. He also serves on the board of Protolabs where he chairs the compensation committee and assists in increasing the sophistication and effectiveness of the company's marketing and sales functions. Rainer started his career at McKinsey & Company after earning a Ph.D. in Computer Science from MIT.

"Newforma is proud to add someone of Rainer's talents to our board as we continue to grow and solidify our leadership position in the AECO industry," said Ian Howell, CEO at Newforma. "We believe Rainer's extensive sales and marketing experience, including his background in software technology and knowledge of international markets, will be a great asset for our organisation," he added.

"Newforma has established itself as trusted and valuable partner for AECO organizations across the globe for over a decade," said Mr Gawlick. "This is an exciting time for both the company and the industry, and I am honoured to contribute to Newforma's next phase of success," he added.



Rainer Gawlick.
Photo: © Newforma

PPG reaches agreement with Knauf for sale of Plaka plasterboard business

Pittsburgh, Pennsylvania, USA – PPG announced that it has reached a definitive agreement to sell the assets of its Mexico-based Plaka plasterboard and cement-board business to Knauf International GmbH. The transaction is expected to close in the first half of 2017, subject to regulatory approvals and other customary closing conditions. Financial terms were not disclosed.

PPG acquired the Plaka business in 2014 as part of its acquisition of Comex, S.A. de C.V. Plaka, with approximate sales of \$30 million in 2015, manufactures plasterboard, cement board and drywall primarily for the Mexican construction market. The business employs about 200 people and operates a manufacturing facility in Querétaro, Mexico.

Chris Harding is elected Chair of BDP

London, UK – Chris Harding has been elected the new Chair of BDP and takes up the role from 1 January 2017.

He began his career at BDP in Sheffield in 1989 and has been a company director for 14 years. He is currently head of the architecture profession across the practice and was previously head of the education sector.

An active design thinker who has worked on some of the practice's best projects, he has been elected to stimulate the continuous development of the practice as a socially progressive integrated design firm. He is particularly passionate about creating people centred environments and his work has received the highest acclaim. In 2012 he was awarded an Honorary Fellowship by the University of South Wales for his pivotal role in the design and construction of its multi award winning City Campus.

Chris said: "This is a fantastic moment in our history. With a predicted two billion more city dwellers by 2050, urbanisation and the liveable city agenda is a key opportunity for BDP. Our pairing with Nippon Koei creates a global architecture, engineering and design firm to meet the challenges of a dynamic and changing world."

The role of Chair is re-elected by BDP's Board every two years. Chris takes over from David Cash who has chaired BDP since 2012, having played a key role steering the practice to become a leading international design collective.



Chris Harding. Photo: © BDP

Construction underway on Coda at Tech Square

Atlanta, Georgia, USA – John Portman & Associates celebrated the commencement of construction for Coda at Tech Square in Midtown, at the edge of the Georgia Institute of Technology campus. The highly-anticipated 770,000 square foot mixed-use development is the first project of its kind in Atlanta and in the Southeast. Portman Holdings will serve as developer for the project and DPR Construction as the general contractor. Construction is scheduled to complete in early 2019.

The milestone occasion was commemorated with remarks from Jack Portman, Vice Chairman of Portman Holdings and John Portman & Associates, and Dr. G.P. "Bud" Peterson,

President of Georgia Tech. All expressed excitement over Atlanta's first Class-T office asset, which is designed for technological innovation through every detail – from advanced research facilities and a high-speed data centre, to outstanding food offerings, outdoor gathering spaces and the "Collaborative Core", which will be the heart of this building. Coda will provide innovative companies the rare opportunity to co-locate with one another, alongside world-class researchers and faculty from Georgia Tech.

"The best projects are the ones where the Client's imagination challenges the Architect," said Pierluca Maffey, Principal/VP Design of John Portman & Associates. "Coda started with a compelling programmatic vision set forth by Georgia Tech and unfolded with Portman Holdings' commitment to contributing to and in executing that vision. John Portman & Associates was able to creatively translate all of that input into a design which meets the economic goals of the client, the academic goals of the educational institution and pushes the imagination further by engaging the participation of the general public," added Pierluca.



Rendering of Coda at Tech Square. Photo: © John Portman & Associates

Major businesses back global project to ensure all buildings are net zero emissions by 2050

London, UK – Three major global businesses have backed the World Green Building Council's ambitious long-term target to ensure that all buildings are net zero carbon emissions by 2050, as official sponsors of the Advancing Net Zero project.

Engineering firm Integral Group, international property and infrastructure group Lendlease and the product manufacturer the ROCKWOOL Group have all joined the groundbreaking project, which aims for every single building – both new and existing – to operate at zero carbon emissions by 2050, or sooner.

They are joined by the new funder Blackstone Ranch Institute, which supports high impact environmental projects that seek change on an international scale. The Rockefeller Brothers Fund and ClimateWorks Foundation have also previously supported the project.

Advancing Net Zero launched in June 2016 and calls upon national Green Building Councils, which own or operate certification schemes to introduce or adopt a net zero certification scheme for their market, with a pilot version ready for January 2018. As of today, 11 Green Building Councils are participating in the project, including countries with some of the largest and fastest growing building markets. Additional Green Building Councils in the WorldGBC network, including those who do not operate certification programmes in their

market, will be participating in other aspects of the global project throughout 2017.

Terri Wills, CEO of the World Green Building Council, said: "Our Advancing Net Zero project continues to grow and expand its international impact day by day. The support of major companies such as Integral Group, Lendlease and ROCKWOOL demonstrates the huge appetite amongst businesses to design, build, invest in and operate net zero buildings. We've started to pave the path towards net zero and there's no turning back until every building gets there before 2050."

The goal to achieve a net zero emissions global building stock by 2050 is the means by which the building sector will help to deliver on the Paris Agreement, forged at COP21 in December 2015. It was in Paris that WorldGBC, its 74 Green Building Councils and their 32,000 member companies committed to reduce CO₂ emissions from buildings by 84 gigatonnes by 2050 – what the International Energy Agency say is needed from the sector to keep global temperature rises to within 2 degrees.

WorldGBC will publish a report in Spring 2017 highlighting the specific actions businesses, governments and NGOs (including Green Building Councils) must take in order to achieve 100 per cent net zero buildings by 2050.

Scatec Solar partners to build 200 MW PV in Malaysia

Oslo, Norway – Scatec Solar has entered the Malaysian large-scale solar energy market by joining forces with a local ItraMAS-led consortium that has signed three 21-year Power Purchase Agreements (PPAs) with the country's largest electricity utility, Tenaga Nasional Berhad (TNB).

The partnership covers three solar projects totaling nearly 200 MW and involves a total investment of close to USD 300 million. Located in Merchang in the north, Jasir in the south and Gurun in the west of Peninsular Malaysia, the three photovoltaic solar parks cover more than 200 acres each.

Scatec Solar expects to invest about USD 60 million through preference shares partly convertible to a 49 percent equity ownership in the projects. The investment expects to provide long term stable cash flows and to meet Scatec Solar's investment hurdle rates. The agreement with the Malaysian consortium includes Scatec Solar acting in its well-known integrated role, including undertaking the turnkey EPC for the projects.

"This is a landmark opportunity to bring our wide-ranging expertise to realise the largest solar energy portfolio in Southeast Asia. For Scatec Solar and our partners, this is a stepping stone to enter one of the most dynamic and fast growing regions of the world," said Raymond Carlsen, CEO of Scatec Solar.

Welcoming the co-development of the projects by Scatec Solar, Choo Boo Lee, CEO of ItraMAS said: "This is a significant achievement for Malaysia and the solar industry in the region as these projects will help develop local supply chains and uplift local communities." Malaysia is already a major manufacturing hub for Chinese solar energy equipment.

The three solar projects are expected to generate 285,000 MWh of electricity per year. The clean solar electricity will avoid 210,000 tons of carbon emissions per year, taking Malaysia closer to achieving its promised emission cuts under the Paris Climate Agreement.

TSUM Kiev reimaged by Benoy

London, UK – TSUM, the iconic department store in the heart of Kiev, Ukraine has been reimaged internally and externally by Benoy as the architect, interior designer, visualiser and brand applicator of the project.

As one of the most distinguished and respected developments in Kiev's city centre, the TSUM building has a rich heritage, originally designed by the esteemed Soviet architect, Alexey Shchusev in 1939. Although damaged during the years of World War II, TSUM was rebuilt and extended in 1956. It is this 1956 building that has been refurbished and extended to become a leading retail destination in the city.

"As one of Kiev's most admired buildings, it was an honour for Benoy to work on a project that has such a deep rooted cultural and historical significance to the city. We have preserved the characteristics of TSUM, while modernising it for the 21st century customer, introducing a free-form void at the centre of the store that offers a dramatic focal point," said Jason Clark, Senior Associate Director at Benoy.

Paying homage to the identity of the building there has been a full restoration of the existing 1938 and 1956 Art Deco facades, preserving these characteristics for future generations. In a complementary contrast, the interior space has been modernised and reconfigured to suit the contemporary retail landscape; here the new TSUM accommodates over 22,000 square metres of retail space across nine levels. Benoy's design is centred on a dramatic sculptural free-form void that twists up through the centre of the department store.

"We are proud to unveil the new TSUM, a department store that has redefined the retail landscape of Kiev. It was imperative for us to maintain the historic facade of the building while providing a complementary internal redesign that promotes social exchange and heightens the experience for the modern day shopper," said Brian Handley, CEO at TSUM Kiev.

At the very top of the building, the glazed clerestory houses restaurants and a rooftop terrace, offering views not only over the famous Khreshchatyk Street below but across the whole city. Below ground, there has been an additional 200 parking places provided within two levels of underground parking.

Both a culturally and historically significant project, the transformed TSUM has reaffirmed its place as a vibrant 21st century luxury retail and fine dining in the heart of the Kiev.



Photo: © Esta Holding

Russell-Cotes Art Gallery & Museum receives major national funding

Bournemouth, England – The Russell-Cotes Art Gallery & Museum has received £132,453 for its Art Galleries Skylight Project, from the Department for Culture Media and Sport / Wolfson Museums and Galleries Improvement fund.

This vital programme of improvement will restore the structure of the building, improve the environment for the visitor and transform the museum's ability to secure seminal loans and deliver outstanding exhibitions.

Paul Ramsbottom, CEO of the Wolfson Foundation, added: "This is a wonderful example of how a charity and government can work fruitfully together in partnership and we are grateful to government for matching our funding. The awards demonstrate the richness and variety of the country's museum collections. From Egyptian mummies in Leicester to a Roman fort on Tyneside, this is a gloriously diverse set of projects - but all demonstrate excellence and all will improve the visitor experience. In announcing these awards I also want to pay tribute to Giles Waterfield. He was a brilliant advisor to the programme from its inception and sparkled at an expert panel meeting in the very week in which he tragically and unexpectedly died. We all owe him a great deal."

In the Russell-Cotes Art Gallery & Museum, the four Edwardian art galleries earmarked for upgrades each contain a beautiful stained glass window in the ceiling, covered on the roof by a wooden and glass skylight structure. These are intended to be enjoyed with overhead light filtered through the stained glass. However, the exposed seaside location of the house has meant that these roof-lights are no longer fully functional or environmentally compliant. During this project, the rotten skylights will be dismantled and new structures constructed containing tinted, toughened glass to reduce heat loss and for long term LUX reduction, and the stained glass will be conserved and repaired. This is not a cheap intervention, but a high quality and sustainable solution which is required to enable the museum's exhibition galleries to fulfil their significant potential. The project will renovate the physical structure of the building and, by allowing the museum to remove temporary covers and restore and reveal all the stained glass fully, will recreate the beautiful light in the galleries which was part of the original architectural design and vision. This will have a transformative effect on its visitors and their enjoyment of the museum's internationally significant art collections.

The improvements to environmental conditions will improve care for the museum's own collections and also put the Russell-Cotes Art Gallery & Museum in a position to borrow significant and high value paintings, sculpture, and other works from larger museums and galleries as part of an ambitious exhibition programme which has been planned up until 2020.



The Russell-Cotes Museum and Art Gallery, Skylight and Stairs in Main Hall.



The Russell-Cotes Museum and Art Gallery, view from The Terrace over Bournemouth.

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JBA Risk Management releases multi-peril probabilistic flood model for Vietnam

London, UK – JBA Risk Management has released the first ever high resolution, multi-peril flood model for Vietnam to help the insurance industry better understand flood risk in Vietnam.

Jane Toothill, Director at JBA Risk Management, a UK-based hazard modelling company, explained: “The model allows insurers to better understand which locations are most exposed to severe and frequent flooding. It will be particularly useful for understanding flood correlations between areas of major exposure such as industrial parks and large cities.”

The 2011 flooding in Thailand had a huge impact on Thai industry, which had cascading global impacts. Industrial parks and factories for multinational companies were severely affected across the country. As the Asian insurance market continues to recover from the US\$12 billion in loss, the industry is starting to question if it is prepared for the next large event in this region.

Insurance is one of the fastest growing sectors of the Vietnamese economy. Industrial zones have been a large part of that growth, with revenues from these industrial zones increasing by 90 percent since 2014. Increasing industrial developments have encroached onto historic flood plains, so there is increasing potential for extreme flood loss in Vietnam.

JBA Risk Management’s Vietnam Flood Probabilistic Model is the first multi-peril (river flood and surface water) catastrophe model for the re/insurance industry, aiding risk management in Vietnam. The model has been developed to cater for the aggregated exposure portfolios while maintaining the need for high resolution flood analysis.

The event set was developed using JBA’s Global Flood Event Set (GFES) methodology, resulting in tens of thousands of tropical cyclone and non-tropical cyclone driven plausible flood scenarios. Each event can be made up of elements of one or two perils described by the return period of the flood intensity.

According to JBA Risk Management, flooding is an extremely localised peril, with hazard intensities often varying considerably on very short spatial scales with underlying topography. For this reason, the model is based on consistent 30 metre mapping and allows for detailed latitude/longitude level risk analysis with the inclusion of 646 industrial zones to enable site-level analysis.

Quantifying flood risk as accurately as possible requires the effects of flood defences to be represented realistically in the model. More than 2,000 kilometres of detailed flood defences are included in the model from detailed mapping of aerial imagery.

Vulnerability functions for properties have been specified for each occupancy / structure type for residential, commercial and industrial lines of business, as well as the inclusion of motor (motorbikes and roads) and agriculture (crops and farm buildings). Vulnerability functions were developed for each property type demonstrating significantly different vulnerability to flood, whilst ensuring the total number of distinct functions was appropriate given the uncertainties involved.

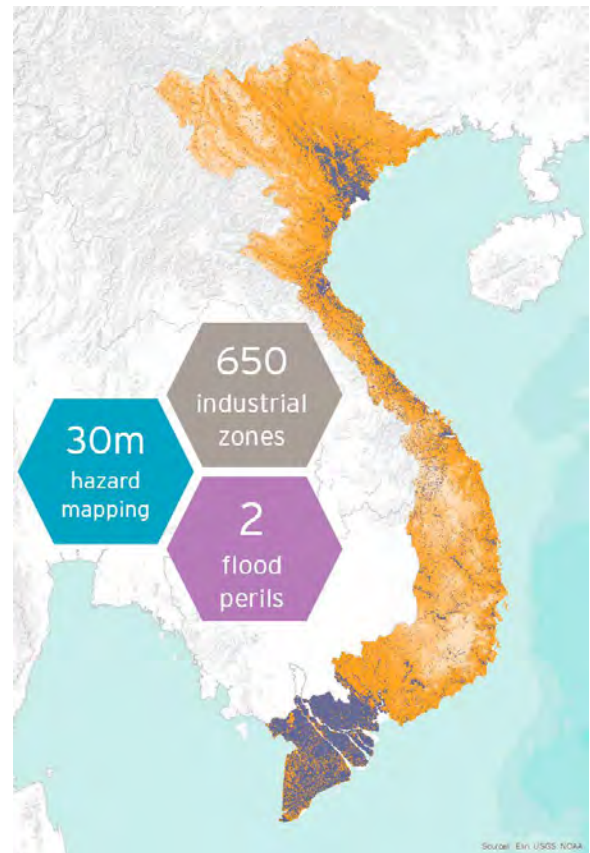


Image: © JBA Risk Management

Design proposals for the new UK Holocaust Memorial released

London, UK – The 10 design proposals for the United Kingdom’s National Holocaust Memorial have been released in an online gallery. The United Kingdom Holocaust Memorial Foundation launched an international design competition in September 2016, seeking to identify the very best architectural talent to create an emotionally powerful and sensitively-designed memorial. 92 teams entered the competition, with a shortlist of 10 invited to submit concept designs. These designs are being displayed publicly at a number of venues across the UK, as well as online.

The new memorial will stand in the shadow of Parliament, at the heart of the country’s democracy, in Victoria Tower Gardens. This new structure will honour victims and survivors of Nazi persecution. It will also educate future generations about the dangers of prejudice and hatred, and serve as a powerful statement of the country’s values as a nation.

The United Kingdom Holocaust Memorial Foundation is consulting on the shortlist with technical experts, those working in the field of Holocaust remembrance and education, as well as the general public. The winning design will be selected by a jury, but the public consultation will help inform the final decision on the memorial. The 10 shortlisted designs can be viewed online at <https://competitions.malcolmreading.co.uk/holocaustmemorial/#shortlist>.

AECOM Team to design new Schiphol pier

Schiphol, The Netherlands – Royal Schiphol Group will be designing the pier of the future together with the AECOM Team. The successful bid team has been commissioned to deliver a full design for the new pier and airside facilities in late 2017. Schiphol selected the winning team as a consequence of its architectural outlook, suggested approach and related price.

The team brings relevant Dutch capability combined with international experience in aviation, architecture, sustainability and interior design from AECOM, Cepezed, Imd, dGmR and Copijn.

The new pier is expected to be operational in late 2019 and will give Schiphol eight new gates. There will be five new gates for narrow-body aircraft on the north side, while the south side will have three gates for wide-body aircraft, which can also be used to connect six narrow-body aircrafts. In a later stage two additional wide-body gates will be created on the south side of the new pier.

Birgit Otto, COO of Royal Schiphol Group: "We are extremely pleased that an international team of this calibre will be designing the pier. The AECOM Team has a clear vision of the contribution it can make to achieving the aims of Schiphol. The team has also managed to demonstrate that rapid construction does not necessarily have to be at odds with the sustainability objectives of Schiphol and an attractive passenger experience. Together we will be preparing Schiphol for the future with greater comfort for passengers and more facilities for airlines."



Artist's impression: © Amsterdam Airport Schiphol

Naive Slimtech receives the 2016 Good Design Award

Fiorano Modenese, Italy – Naive Slimtech, the Lea Ceramiche collection designed by Patrick Norguet, has received the prestigious Good Design Award for 2016.

The Good Design Award, established in 1950 and organised by the Chicago Athenaeum - Museum of Architecture and Design in collaboration with the European Centre for Architecture, Art, Design, and Urban Studies, is one of the most well known international design awards worldwide and is presented annually to the most innovative industrial design projects to be developed over the course of the year. For 2016 the jury selected 900 new products from over 46 countries around the world, awarding them for their innovation.

What makes Naive unique is the cutting-edge technology that permitted the creation of a large format slab – 3m x 1m with a thickness of only 5.5mm – characterised by an almost three-dimensional surface texture. The patterns, reproduced in four colours, establish a bas-relief design; a pattern of lines that emphasises the depth of texture and creates a graphic floating effect that is both pleasing to the touch and visually attractive. Resistant and durable, easy to cut into any shape, it can be installed on walls and on floors in any type of space, both residential and low-traffic commercial.

The Good Design Award is associated with another important award, the *German Design Award's Special Mention*, also presented to Naive in 2016. These two important awards highlight and acknowledge the commitment taken by the company to constantly experiment with new technological solutions and to provide new decorative languages in the use of ceramic.



Photos: © Lea Ceramiche

Rafael Aranda, Carme Pigem and Ramon Vilalta receive the 2017 Pritzker Architecture Prize

Chicago, Illinois – Rafael Aranda, Carme Pigem and Ramon Vilalta have been selected as the 2017 Pritzker Architecture Prize Laureates, announced Tom Pritzker, Chairman of Hyatt Foundation, which sponsors the award that is known internationally as architecture's highest honour.

The three architects, originating from Olot, in the Catalan region of Spain, have worked together collaboratively since founding their firm RCR Arquitectes, in their hometown in 1988. Their work demonstrates an unyielding commitment to place and its narrative, to create spaces that are in discourse with their respective contexts. Harmonizing materiality with transparency, Aranda, Pigem and Vilalta seek connections between the exterior and interior, resulting in emotional and experiential architecture.

Mr Pritzker remarked: "The jury has selected three architects who have been working collaboratively for nearly three decades. Mr Aranda, Ms Pigem and Mr Vilalta have had an impact on the discipline far beyond their immediate area. Their works range from public and private spaces to cultural venues and educational institutions, and their ability to intensely relate the environment specific to each site is a testament to their process and deep integrity."

Mr Aranda, Ms Pigem and Mr Vilalta represent the first time that three architects together are honoured with the prize. Their intensely collaborative way of working together, where the creative process, commitment to vision and all responsibilities are shared equally, led to the selection of the three individuals for this year's award. As the winners of the 39th edition of the Prize, it is the second time that laureates hail from Spain, following Rafael Moneo who received the award in 1996. In response to being named the 2017 Laureates of the Pritzker Prize, Ms Pigem stated: "It is a great joy and a great responsibility. We are thrilled that this year three professionals, who work closely together in everything we do, are recognised."



Rafael Aranda, Carme Pigem and Ramon Vilalta. Photo by Javier Lorenzo Domínguez. Photo courtesy of the Pritzker Architecture Prize.

The locally-based architects evoke universal identity through their creative and extensive use of modern materials including recycled steel and plastic. "They've demonstrated that unity of a material can lend such incredible strength and simplicity to a building," said Glenn Murcutt, Jury Chair. "The collaboration of these three architects produces uncompromising architecture of a poetic level, representing timeless work that reflects great respect for the past, while projecting clarity that is of the present and the future," added Glenn. As such, an early 20th century foundry has become their office, Barberí Space (2007), and many remnants of the original building have remained, blended with highly contrasting, new elements, which were added only where essential.

Notable projects include La Cuisine Art Center (Nègrepelisse, France, 2014), Soulages Museum in collaboration with G. Trégouët (Rodez, France, 2014), La Lira Theatre Public Open Space in collaboration with J. Puigcorbè (Ripoll, Girona, Spain, 2011), Les Cols restaurant marquee (Olot, Girona, Spain, 2011), El Petit Comte Kindergarten in

collaboration with J. Puigcorbè (Besalú, Girona, Spain, 2010), Bell-Lloc Winery (Palamos, Girona, Spain, 2007), Sant Antoni - Joan Oliver Library, Senior Citizen's Center and Cándida Pérez Gardens (Barcelona, Spain, 2007), and Tossol-Basil Athletics Track (Olot, Girona, Spain, 2000).

The 2017 Pritzker Prize Jury Citation states, in part, "We live in a globalised world where we must rely on international influences, trade, discussion, transactions, etc. But more and more people fear that because of this international influence...we will lose our local values, our local art, and our local customs...Rafael Aranda, Carme Pigem and Ramon Vilalta tell us that it may be possible to have both. They help us to see, in a most beautiful and poetic way, that the answer to the question is not 'either/or' and that we can, at least in architecture, aspire to have both; our roots firmly in place and our arms outstretched to the rest of the world."

This year, the Pritzker Prize ceremony will take place at the State Guest House, Akasaka Palace in Tokyo, Japan, on 20 May 2017.

Dormakaba completes acquisition of Mechanical Security businesses from Stanley Black & Decker – new top-three player in the North American market

Rümlang, Switzerland – dormakaba has completed the acquisition of certain Mechanical Security businesses from Stanley Black & Decker and has closed the transaction effective 22 February 2017, following satisfaction of customary closing conditions including the receipt of all necessary regulatory approvals. The transaction was first announced on 21 December 2016.

With this acquisition, dormakaba gains substantial scale in line with its staked strategy, evolving from a distant four to a strong number three player in the attractive North American market that can offer the full portfolio of door hardware and access control solutions to customers. In addition, the acquisition considerably enhances dormakaba's prospects for further profitable growth, mainly through:

- A large installed base with currently hundreds of thousands of end-users sites across North America, providing dormakaba with an attractive and stable repeat business and opportunities for future upgrades;
- Strengthened market position with the addition of well-recognised industry brands including "BEST" and "PHI";
- Improved position in growing verticals such as education and healthcare, complementing dormakaba's strong position in hospitality, multi-housing and government;
- Established specification writing capabilities, allowing dormakaba to compete in additional construction bids;
- Enhanced product breadth with a broad range of mechanical security solutions as well as wireless and cloud-based electronic locks.

As previously announced, the transaction encompasses Stanley Commercial Hardware based mainly across North America and a production facility in Taiwan, as well as GMT in China. Full operational integration is expected to take up to three years. The dormakaba post-merger integration process in North America and in Asia is well advanced, thereby allowing for a successful integration of this important strategic acquisition.



With the closing of the transaction, Philip Bradney will join dormakaba and will take over managing responsibility for the acquired businesses in North America (his CV is available on www.dormakaba.com).

Philip Bradney has decades-long experience in the industry. For over 20 years, he held senior management positions at BEST Access Systems and then Stanley, guiding the company's integration into Stanley Black & Decker until 2009. COO Access Solutions Americas Michael Kincaid: "We are pleased that Philip Bradney is joining our Americas team and are convinced that his extensive industry knowledge and integration experience will be a valuable asset for grasping the opportunities presented by this acquisition."

The transaction is expected to be neutral to EBIDTA margin of dormakaba Group from closing and accretive from full year 2019/2020 onwards, and immediately accretive to earnings per share. The acquisition implies a pre-synergies EV/EBITDA multiple of 13.8x on a 2016E basis (9x multiple post expected revenue and cost synergies to be achieved within four years, and tax benefits). The acquisition is fully debt financed by an increase in the existing syndicated bank credit facility.

dormakaba Group is one of the top three companies in the global market for access and security solutions. With strong brands such as Dorma and Kaba in our portfolio, we are a single source for products, solutions, and services related to doors and secure access to buildings and rooms. dormakaba is being represented globally in over 130 countries by its own activities and numerous cooperation partners. dormakaba Group is listed at the SIX Swiss Exchange, is headquartered in Rümlang (Zurich / Switzerland) and generated in financial year 2015/2016 with nearly 16,000 employees a turnover of over CHF 2.3 billion.

For more information, visit www.dormakaba.com.sg.

The IFLA Student Landscape Architecture Design Competition 2017 is now open!

Brussels, Belgium – With a deadline for entries of 12 September 2017, an international jury will award 1st, 2nd and 3rd placed prizes during the 54th IFLA World Congress in Montreal, Canada. The theme of this year's Landscape Architecture Student Competition is "Landscapes of Power: Design for Social Justice".

With the advent of global warming, sustainable development practices and the energy/food/water/waste question, we must view landscape architecture in its broadest role, as landscape intervention and transformation going beyond the urban realm. Living in this time offers an opportunity to consider other scales, adjacencies, systems and complexities to prepare adequately for a future with a balanced distribution of social and environmental values. As this congress, the first interdisciplinary design summit, design is at the core of informed spatial change; and at the forefront of this summit lie landscapes of power, addressing questions of spatial complexities and social equity.

Dr. Beverly A. Sandalack, Chair of the IFLA Student Landscape Architecture Design Competition said: "The Competition has been an important part of the IFLA World Congress for some time. One of the roles of the competition is to promote and encourage the evolution of the profession of landscape architecture through education. Students have the opportunity to have their work reviewed alongside that of their peers from around the world. The discipline required to prepare a competition entry is a very useful exercise for students, and helps them prepare for some of the rigours of professional life."

For more information, visit www.ifla.org.



IFLA
INTERNATIONAL FEDERATION
OF LANDSCAPE ARCHITECTS

KONE revolutionises elevator maintenance with new customisable KONE Care™ service offering and 24/7 Connected Services

Helsinki, Finland – KONE, a global leader in the elevator and escalator industry, has launched a unique tailor-made approach for its maintenance services and new 24/7 Connected Services, which uses the IBM Watson IoT (Internet of Things) platform.

The company is bringing new levels of flexibility to elevator maintenance, with the introduction of a fully customizable portfolio of services and advanced tools, designed to meet the individual needs of different customers, such as building owners and facility managers. KONE's customers will be able to request and customize services to match the specific requirements of their business, their tenants, or their building type, instead of pre-designed service packages.

"With new technologies and connectivity, we are able to even better meet our customers' changing needs and expectations on speed, transparency and predictability. Our customized approach for maintenance services is designed together with customers, for our customers, to help them to better succeed in their business and add value in totally new ways," said Henrik Ehrnrooth, President and CEO, KONE.

As part of KONE Care™, KONE has also launched 24/7 Connected Services, which uses the IBM Watson IoT platform and other advanced technologies to bring intelligent services to elevators and escalators. It means a completely new experience for KONE's customers, with less equipment downtime, fewer

faults and detailed information on maintenance work. For people using elevators and escalators, it means less waiting time and more personalised experiences. The system enables vast amounts of data from elevator sensors to be monitored, analyzed and displayed in real-time, improving equipment performance, reliability and safety.

Ehrnrooth continued: "This is just the beginning. With this platform we will be able to bring new services and innovations faster to the market for our customers and consumers. Not only are we able to customise services based on our customers' individual needs - with better predictability, planning and peace of mind - but we will also bring artificial intelligence for our services, which will help predict and suggest resolutions to potential problems."

The launch of 24/7 Connected Services comes a year after KONE and IBM announced a multiyear agreement in which IBM will provide cloud-based Internet of Things (IoT) technologies and services to drive innovation in the elevator and escalator industry.

Both the new KONE service offering and 24/7 Connected Services have been piloted and introduced in selected markets and will be commercially available broadly during 2017, with roll-out continuing throughout 2018. KONE aims to connect over one million additional elevators and escalators to the cloud over the next few years.



Image: © KONE Corporation

Qatar Green Building Council announces 'Qatar Sustainability Week 2017'

Aims to engage wide community in sustainability-oriented activities.

Doha, Qatar – Qatar Green Building Council (QGBC) has announced the dates for Qatar Sustainability Week 2017. The week-long initiative, which hosts numerous sustainability events across the country, will take place from 28 October to 4 November 2017.

Qatar Sustainability Week grants stakeholders from the public and private sectors an opportunity to promote the nation's sustainability vision and address society's understanding of and attitude towards the concept. It will also highlight the key role the wider community plays in advancing Qatar's long-term 'green' agenda.

Qatar Green Building Conference 2017, the week's flagship event, will also run from 29-31 October 2017. The third edition of the conference will bring together industry leaders and sustainability experts to address and showcase their innovative solutions to Qatar's, as well as the region's, environmental challenges.

Highlighting QGBC's contributions to Qatar's sustainability vision, Engineer Meshal Al Shamari, Director, QGBC, said: "QGBC has made tremendous strides in advancing Qatar's sustainable development goals. The launch of Qatar Sustainability Week last year was a notable achievement for QGBC and a significant nationwide event. This initiative plays a crucial role in raising awareness among the wider community, while showcasing the progress Qatar has made in the areas of sustainability and green buildings."

The inaugural Qatar Sustainability Week in 2016 was a resounding success with more than 10,000 members of the public attending over 100 events held across three cities in Qatar. Additionally, more than 300 delegates from 51 countries attended the second Qatar Green Building Conference, which hosted 74 renowned speakers and 17 exhibitors over the three-day summit.

Commenting on the work of QGBC, a member of Qatar Foundation for Education, Science and Community Development (QF), Al Shamari added: "This year bears a special significance for QGBC and Qatar's sustainability industry as we will be rolling out our newest initiative, 'Green Life', the world's first sustainability loyalty programme. Leading up to Qatar Sustainability Week 2017, residents, organisations and businesses in Qatar will have the opportunity to attend a series of exciting events, and we encourage everyone to join us."



The Qatar Sustainability Week 2016 was a success with more than 10,000 members of the public attending over 100 events held across three cities in Qatar. Photo: © QGBC

Interior Design Confederation of Singapore launches Singapore's first-ever Registry of Qualified Professional Interior Designers leading to accreditation

Singapore – Interior Design Confederation of Singapore (IDCS) announced the launch of Singapore's first recognition and approval process for Qualified Professional Interior Designers (QPID). Long awaited by the industry, businesses and consumers alike, this recognition process will allow the confederation to administer controls and measures to enhance the image and output of the industry as a whole.

IDCS estimates that there are 7,500 qualified Interior Designers in Singapore, of which approximately 3,000-5,000 are in practice. Qualified Interior Designers are those who have attained a diploma or degree in a related, hospitality design, built environment or spatial design field. Out of the 11 national tertiary institutions in Singapore, 5 of them offer Interior Design programmes. There are also private institutions that offer spatial design courses. There are 420 architectural firms in Singapore (as listed by the Singapore Institute of Architects) and IDCS estimates that there are about 800 Interior Design businesses.

With this registry, IDCS will compile Singapore's first comprehensive listing of professional and qualified Interior Designers, so that clients of design services will be assured that they are engaging firstly, a trained, and qualified designer and secondly, one who is practising and appraised of current industry trends and regulations. IDCS aims to regulate Interior Designers by ensuring their adherence to a professional code of conduct with continued professional learning and development upon which IDCS will implement an accreditation programme to support society's needs by ensuring that Interior Designers are continuously motivated to upgrade and enhance the provision of professional Interior Design services.

The Interior Design industry has often been confused with contracting works and other forms of spatial planning due to a lack of understanding and education to the general public. The IDCS intends to put an end to this confusion by running a series of education as well as industry enhancement programmes. In the long run, these will be skewed to better define the uniqueness of the industry while



Alvin Chia, Chairman of Renovation and Decoration Advisory Centre (RDAC) (left), and George Budiman, President of Interior Design Confederation Singapore (IDCS). Photo: © IDCS

raising the level of professionalism of its practitioners – in the hopes of reducing misunderstandings between consumers, Interior Designers, associated trades and professionals.

Said George Budiman, IDCS' current elected President: "IDCS was formed through a merger of 2 associations to be a united front for all Interior Designers to work together to better our industry and provide better value to Singapore. It has taken us some time to understand the needs of the industry and our national/government directives and to formulate plans that we can take forward as a body. I am pleased to finally announce the launch of this series of recognition and plans for accreditation that IDCS will undertake to help individuals and businesses make better informed choices." George is also the owner of Cynosure Pte Ltd, an award-winning design firm with offices in Singapore and Shanghai and Chairman and Founder of ACIA (Asian Creative Industries Alliances).

IDCS will administer the qualification programme and list recognised firms and Interior Designers on the IDCS website (www.interiordesign.org.sg). Firms are required to maintain their registration status by accumulating a minimum of 20 CPD (Continued Professional Development) points across various

industry training programmes, and a reassessment of the firm's/member's adherence to the Interior Designers Code of Professional Conduct (COPC) for certified designers. In its first year, in order to allow members to adjust to the requirements of recognition, IDCS will lower this minimum to 10 points required for recognition in 2018. At present, for 2017, all registered and accepted members of IDCS will be listed on the IDCS website. Members of IDCS are required to have a recognised qualification in Interior Design, and to be currently practising. From 2017 through 2018, IDCS will accept members who may not have professional qualifications but who have a comprehensive Interior Design portfolio and who show their commitment to the COPC. This will enable long-standing designers and firms to continue their practice, but under the watchful eye of IDCS.

Signing of COPC

The signing of the COPC is Singapore's first-ever consolidated effort to attain a pledge and commitment from Interior Design firms and professionals to uphold the values and ethos of the profession. 25 first supporters from the industry have today pledged their commitment to uphold professional standards in Interior Design and IDCS will be

onboarding more firms by the end of the year.

A Registry First, Accreditation Next

“At this point in time, IDCS is putting in place the registry to allow us to monitor and regulate standards in Interior Design. With the future accreditation programme that we intend to launch, possibly with other industry stakeholders, IDCS will ensure that Interior Designers are properly certified, and conduct themselves responsibly according to the Interior Design professional code of conduct. This should also give clients of Interior Design services some assurance of the service they are engaging. As the programme develops and the industry dynamics change in view of this accreditation, IDCS will continuously review and tighten guidelines,” said Cameron Woo, Council Chairperson for

The Industry Development Programme. Cameron is listed as one of the top 70 Interior Designers in the world and is the founder of international award-winning firm, Cameron Woo Design, based in Sydney and Singapore.

Clients of Interior Design services may access IDCS’ listings to verify the status and recognition of Interior Designers and/or firms. Previously unavailable in the public domain, it is IDCS’ aim that this compilation will give some level of assurance to buyers that the services they are engaging are those of a properly qualified designer who is bound by the association’s qualifying criteria and code of conduct.

RADAC Partnership

In addition to this registry, IDCS and the RADAC will also be partnering to provide more comprehensive services to Interior Designers and their clients. One such service is the availability of

RADAC’s mediation services to help Interior Designers and clients resolve any matters that may arise in the course of the service agreement.

“As a service, perceived quality and expectations or general understanding of the contract terms may differ between both parties. Sometimes, it may be clients who do not understand market practices, and other times, it may be a general misconception on the scope of work that leads to dissatisfaction on either side. RADAC’s mediation services provide an independent assessment of the situation, and advises both sides in order to arrive at a fair and reasonable conclusion. We look forward to working with IDCS to provide this service to their members as well, so that more people may benefit from our work,” says Edward Tan, Executive Director of RADAC. RADAC was established 30 years ago to provide assistance to home owners and businesses in this trade.

New president and board members appointed to lead SGBC

Singapore – Mr Tan Swee Yiow has taken over the reins of leadership for the Singapore Green Building Council (SGBC) from Mr Chia Ngiang Hong during the Council’s 8th Annual General Meeting held at the Grand Copthorne Waterfront Hotel on 30 March 2017.

The newly-minted SGBC Board (2017/2019) led by Mr Tan as the President was formally introduced to almost 100 SGBC corporate members and representatives from Singapore’s building and construction industry. Comprising a diverse mix of individuals from each crucial pillar of the construction sector, the new SGBC Board is well-poised to further accelerate the awareness and subsequent adoption of green building practices.

“Green building has come a long way since the inception of the Singapore Green Building Council in 2009,” said Mr Tan. “The real estate sector worldwide has evolved over the years with the changing needs of businesses and people. To stay relevant and ahead, we need to constantly improve ourselves and be on the pulse of the latest technology and innovations. I am confident that the new Board will be able to further push the envelope for sustainability and advance green building to greater heights.”

Mr Tan was recently appointed the Chief Executive Officer of Keppel REIT Management Limited, a real estate investment trust sponsored by SGBC founding member Keppel Land Limited.



Mr Tan Swee Yiow (left) and Mr Chia Ngiang Hong, the former SGBC president. Photo: © SGBC

A CHAT WITH

**KEAT ONG, PRESIDENT, SOCIETY OF
INTERIOR DESIGNERS SINGAPORE**

Keat Ong talks to *Southeast Asia Building* magazine about his current role and the key mission of SIDS. He also provides some insight into the challenges and opportunities facing interior designers in Singapore and the launch of the inaugural Singapore Interior Design Awards (SIDA), which he says will “bring Singapore to the global stage of interior design”.

Q: Can you let us know what is the key mission of the Society of Interior Designers Singapore (SIDS)? What are some of SIDS’ key objectives? What is its role and what does it hope to achieve?

First and foremost, SIDS is the professional body representing the interior designers (ID) in Singapore. The society wants to be able to move ahead to help the profession stay strong and vibrant as we look towards the future. We want to be the bridge to enable ID professionals to expand into bigger markets outside of Singapore. To achieve that, we will also have to be able to project ourselves well to the world by helping uphold and promote the good reputation of our ID professionals.

Q: How different is SIDS from other interior design associations in Singapore?

The society is run by volunteers, and the council is elected by members. We represent the voice of the industry. While Singapore remains a key market and it is where we belong, we are also dedicated to help our members and our industry raise its professional stature and expand overseas where there are many more opportunities for us. So we are not here to be inward-looking or just to uplift and maintain the integrity and image of our industry but help our members and the industry reach new horizons, new markets and seal new partnerships for growth. An association depends on the strength of its

members and we are committed to assist our members and the industry grow stronger and better.

Q: What are your plans to grow and uplift the industry?

There is a roadmap we have drafted last year to take on a more outward looking approach over the next few years; we have formulated a series of initiatives to bring our talents out of Singapore. The heart of this is the Singapore Design Outpost (SDO) programme that will showcase the best of our talents in selected foreign cities where designers from both sides will benefit from collaborations and/ or partnerships. Regular industry-related activities such as public lectures and exhibitions will be held to boost the exchanges of ideas between Singapore designers and our overseas counterparts. We are already working with four cities to initiate these SDOs. Back home, we are also working hard with our government body, Design Singapore Council (DSG) to formulate an accreditation system to reinforce our practitioners' position in the region and internationally in order to become much more competitive. We will also continue with our SIDS design lecture series to bring talented design masters and senior management of bigger design firms into Singapore to share their experiences and skills. These are only a few highlights which we are able to share for now.

Q: What are some of the challenges faced by interior designers today? And how will SIDS help its members deal with these challenges?

There are many challenges faced by IDs in Singapore today. Realistically speaking, being a small country with very limited natural resources, there will always be the situation of oversupply. This includes the service industry. The interior design is one of them. It is labour-reliant, if not labour-intensive for the bigger firms. Generally, ID practitioners here can be loosely divided into few categories starting from pure ID practices to the design-and-build firms (which do the building contract works after the design process and are usually bigger in size) to the architecture firms (that either integrate ID into their projects, or as a cross-disciplinary practice).

With the slowing global economy, many ID firms here, which originally specialised in commercial design are forced to take up residential projects while many architects who normally reject ID jobs are pressured to integrate the services into their projects.

In short, the biggest problem I reckon now is there just are not enough jobs for every one of us! Hence SIDS is setting up the SDOs with our foreign partners to bring the more capable ones out of the country to enlarge this ecosystem.

Q: What is the objective of SIDS launching its inaugural Singapore Interior Design Awards (SIDA)?

How is the response to the SIDA Award? Are you pleased with the results?

We created an Interior Design Award to bring Singapore to the global stage and to recognise top talent in the global interior design industry. The SIDS team believes strongly that good designs have no boundaries. With the changing demographics and economics in Asia, there has been a lot of global attention focusing on this region.

Singapore today is also regarded as one of the important portals for entering the increasingly lucrative Asian market. With Singapore attaining the status as a UNESCO Creative City of Design, it makes very much sense for us in the society to create an international interior design award that caters to the world! I must say we are happy with the outcome of this inaugural attempt. We had received more than 300 international entries within less than three months of its commencement – from Singapore, China, Japan, Taiwan, Hong Kong, Japan, South East Asia, to as far as UK!

Q: What is the outlook for the interior design industry in Singapore and the region? What can interior designers look forward to in the coming years?

There are two main drivers for the industry that excite me for the coming years. Being a professional practitioner, the first is that of the rise of interior design as a profession as a global phenomenon where interior design "heroes" are being singled out, no longer living under the shadows of the architects. More established global awards such as Red Dot, IF, A'design and others are including ID as part of their award category line-ups. We have WIN (World Interior News) award being independent of WAN (World Architecture News) award and INSIDE World Festival as the ID sister to the World Architecture Festival!

As an Asian, the second thing that excites me is the rise of the Asian design power. I love to use the Asian or Chinese-speaking entertainment industry (movie & music) as an analogy to depict the current Asian or Chinese-speaking ID industry. Over the last two decades, the Asian ID industry has become so prominent that it has its very own ecosystem. This is especially true over last few years - which had seen the fastest growth of this ecosystem, thanks to the rise of social media. The epicentre of this "ecosystem" is China. It has its own celebrities, media platforms, and landmark events and even the architects are eagerly seeking entry into this ecosystem to try to get a piece of the glamour! How does this affect Singapore? This island nation is the node where West meets East and vice versa; many Singaporeans also happen to be the most competent bilingual people in the region. This has provided us with a very good basis to compete in this new Chinese-speaking ID ecosystem. Our connectivity to the western world is another asset - highly sought after by our counterparts. Thus Singaporean IDs have a very good chance of expanding our business turfs if we make the next right move!

2-7 May 2017

ARCHITECT EXPO 2017
Impact Exhibition & Convention Center
Nonthaburi, Thailand
Tel: +66 2 717 2477
Fax: +66 2 717 2466
Email: info@TTFintl.com
Website: www.ArchitectExpo.com

12-13 June 2017

Retrofit Asia Conference
Singapore
Tel: +60 3 2027 4767
Email: alena.pashpekina@fleming.events
Website: www.fleming.events

10-12 Aug 2017

LankaBuild 2017
Sri Lanka Exhibition & Convention Centre (SLECC)
Colombo, Sri Lanka
Tel: +60 3 2692 6888
Fax: +60 3 2692 2788
Email: ian@ambtarsus.com
Website: www.lankabuild.org

13-16 Sept 2017

Concrete Show South East Asia
Jakarta International Expo
Jakarta, Indonesia
Tel: +62 21 2930 5959
Fax: +62 21 2930 5960
Email: niekke.budiman@ubm.com
Website: www.concreteshowseasia.com

24-26 Oct 2017

BuildTech Asia 2017
Singapore EXPO Hall 3 & MAX Atria
Tel: +65 6319 4021
Fax: +65 6319 6140
Email: buildtechasia@sph.com.sg
Website: www.buildtechasia.com

7-10 June 2017

ASEAN Sustainable Energy Week 2017
BITEC, Bangkok
Thailand
Tel: +66 2 642 6911
Fax: +66 2 642 6919-20
Email: info-th@ubm.com
Website: www.asew-expo.com

14-16 June 2017

InfoComm 2017
Orange County Convention Center
Orlando, Florida, USA
Tel: +1 703 273 7200
Fax: +1 703 273 5924
Website: www.infocommshow.org

7-9 Sept 2017

Cambuild 2017
Diamond Island Convention & Exhibition Center
Phnom Penh, Cambodia
Tel: +855 23 901 117
Email: veasna@ambtarsus.com
Website: www.cambuildexpo.com

4-6 Oct 2017

ArchXpo 2017
Marina Bay Sands
Singapore
Tel: +65 6278 8666
Fax: +65 6278 4077
Email: info@cems.com.sg
Website: www.archxpo.com.sg

9-11 Nov 2017

GreenUrbanscape Asia 2017
Singapore EXPO Convention and Exhibition Centre
Singapore
Tel: +65 6403 2195
Fax: +65 6822 2616
Email: doreen.soh@singex.com
Website: www.greenurbanscapeasia.com

8-10 June 2017

Cambodia Architect & Décor 2017
Diamond Island Convention & Exhibition Center
Phnom Penh, Cambodia
Tel: +66 2 713 3033
Fax: +66 2 713 3034
Email: info@icvex.com
Website: www.cambodiaarchitectdecor.com

15-17 June 2017

LaoBuild 2017
Convention Hall, Don Chan Palace
Vientiane, Laos
Tel: +60 3 2692 6888
Fax: +60 3 2692 2788
Email: ian@ambtarsus.com
Website: www.laobuild.com

12-14 Sept 2017

BEX Asia 2017 & MCE Asia 2017
Marina Bay Sands
Singapore
Tel: +65 6780 4671 / +65 6780 4658
Email: info@bex-asia.com
Website: www.bex-asia.com and www.mcxpocomfort-asia.com

4-6 Oct 2017

International Facility Management Expo 2017
Marina Bay Sands
Singapore
Tel: +65 6278 8666
Fax: +65 6278 4077
Email: info@cems.com.sg
Website: www.ifame.com.sg

16-18 Nov 2017

Thailand Building Fair 2017
Hall 102-104, BITEC
Bangkok, Thailand
Tel: +66 2 664 6499
Email: sirapatk@worldexgroup.com
Website: http://thailandbuildingfair.com

9-12 June 2017

Guangzhou Electrical Building Technology 2017
China Import and Export Fair Complex, Guangzhou, China
Tel: +852 22 38 99 37
Fax: +852 25 19 60 79
Email: building@china.messefrankfurt.com
Website: www.building.messefrankfurt.com.cn

19-22 July 2017

ARCHIDEX 2017
Kuala Lumpur Convention Centre
Kuala Lumpur, Malaysia
Tel: +60 3 7982 4668
Fax: +60 3 7982 1648
Email: info@archidex.com.my
Website: www.archidex.com.my

12-14 Sept 2017

IGBC 2017
Marina Bay Sands Singapore
Singapore
Tel: +65 6780 4658
Email: igbc@reedexpo.com.sg
Website: www.bca.gov.sg/events/sgbw/en.html

5-7 Oct 2017

Myanmar Build & Décor 2017
Myanmar Event Park Yangon, Myanmar
Tel: +66 2 713 3033
Fax: +66 2 713 3034
Email: info@icvex.com
Website: http://myanmarbuilddecor.com

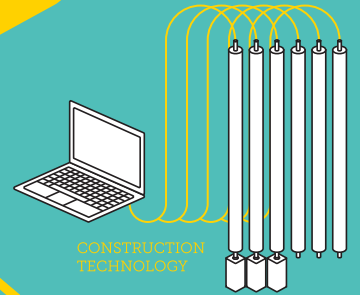
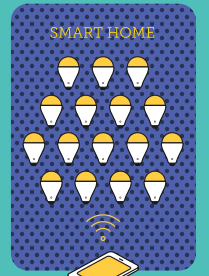
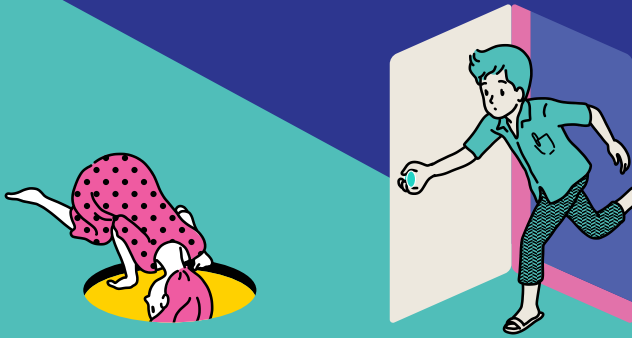
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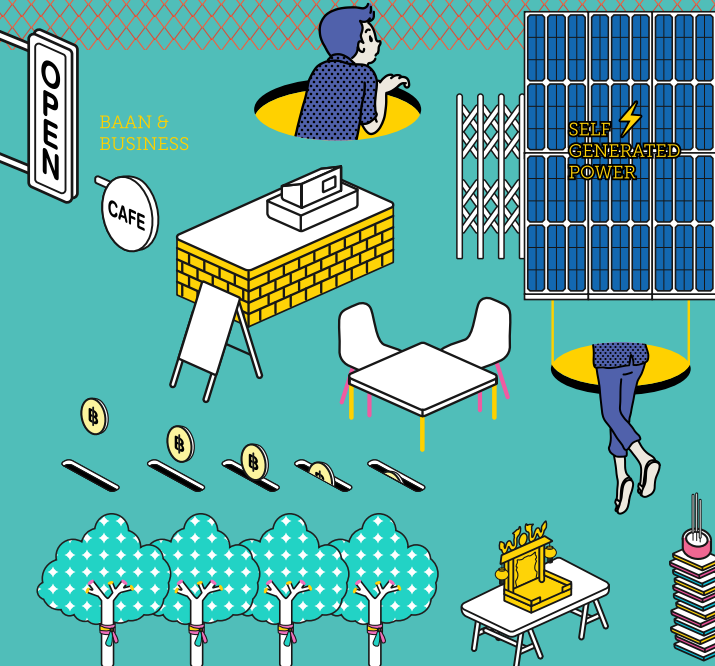
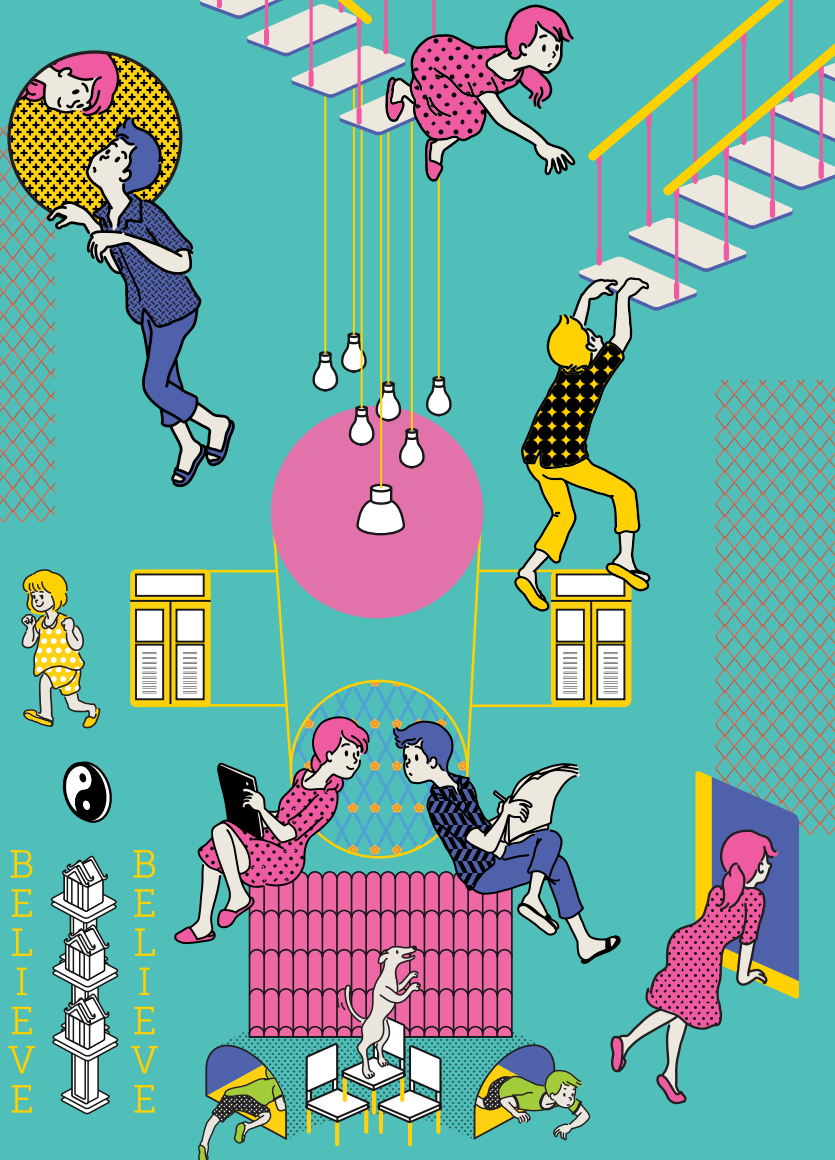


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Sivas Stadium



Photo: © KET Kolektif

– A new iconic landmark in Sivas

Sivas is located in the cold-dry climate region of Turkey, so its winter is strong and the city is under heavy snow in long periods. This parameter is foreground in the design decisions of Sivas Stadium. Energy efficiency is designed according to ecological design criteria, high passive air-conditioning measures, active energy production systems, rainwater harvesting and gray water cycle. The Sivas Stadium is designed by Istanbul-based firm Bahadır Kul Architects.



Photo: © KET Kolektif

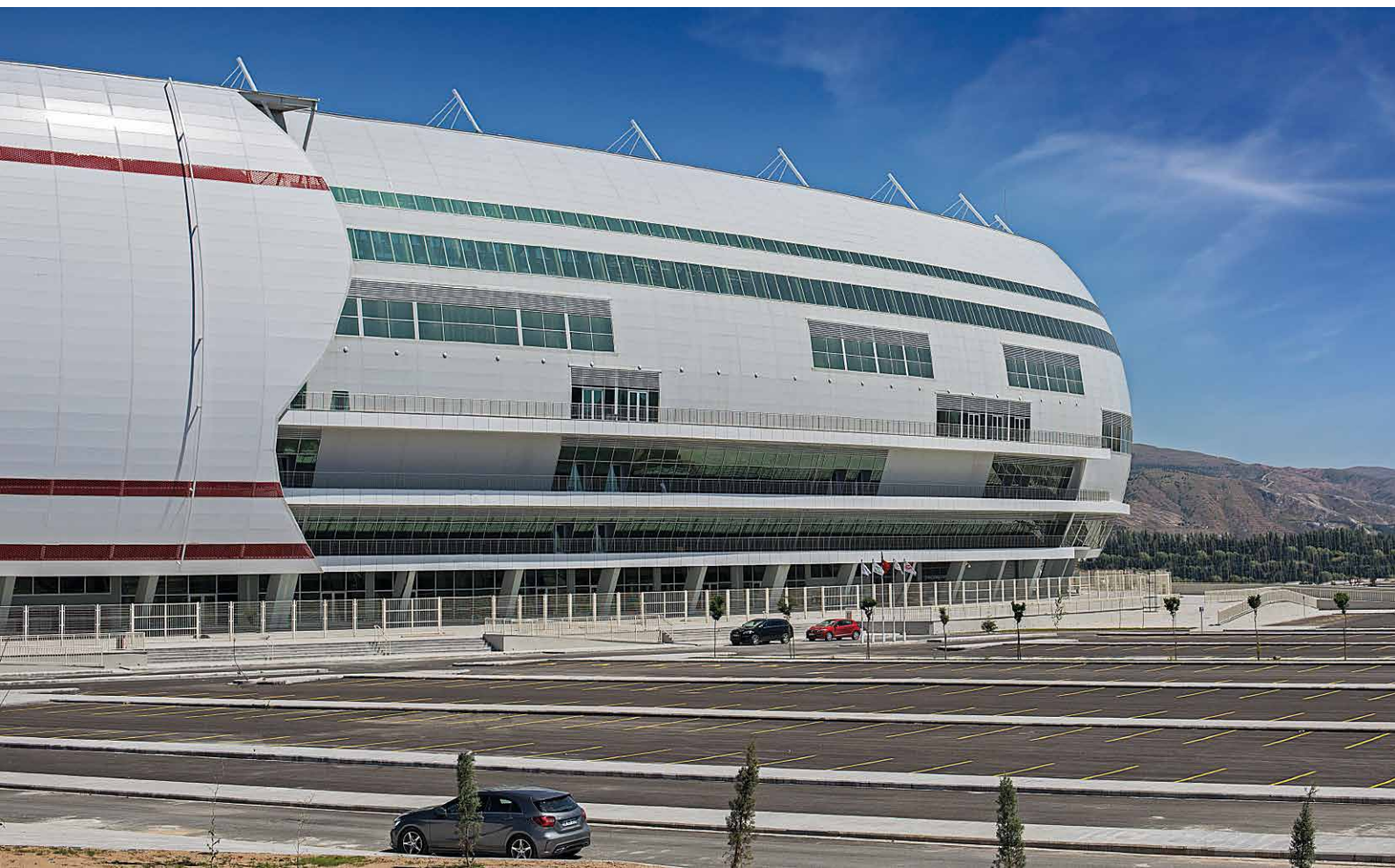


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Photo: © KET Kolektif

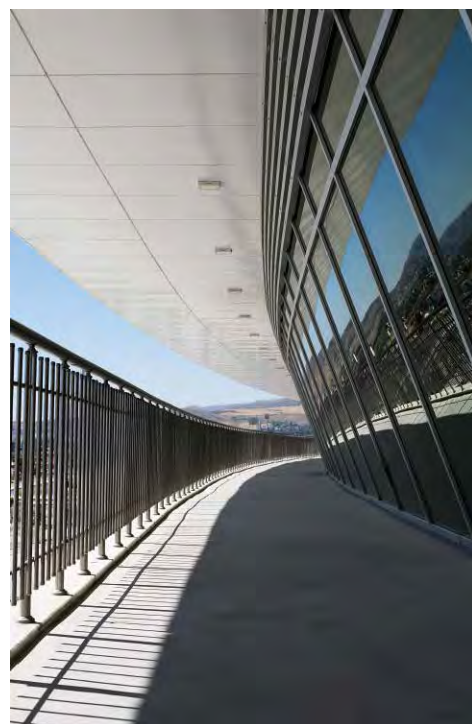


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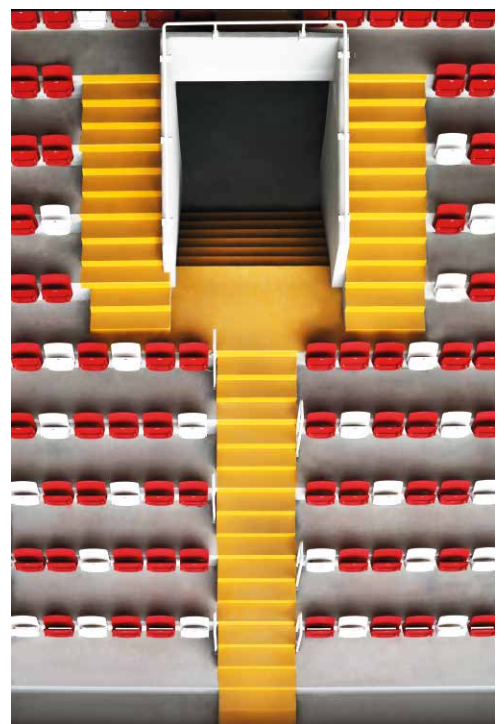


Photo: © KET Kolektif

Due to the fact that stadium is located in a cold climate zone, the building shell is designed to be compact and inward, and this makes a buffer zone for cold winds in the north side of the facade. Creating this kind space in the inner shell to provide thermal insulation with air. In the summer, reserve covers on the north side are opened, allowing for air transfer between the walls. If the north facade is not exposed to direct sunlight, this part will be colder than the other fronts, and on this side there will be low pressure points between the walls. This will result in a continuous and stable airflow in the wall, which will also reduce the energy used for building cooling actions in the summer.

In general, eastern and western facades are exposed to solar radiation three times more heat than the south and north side facades. Because of this reason, window spaces were created in Sivas Arena on the east and west facades for allow to take solar heat. This approach is thought to significantly reduce building heating actions.

The Sivas Stadium's roof area, rainwater canal designed for falling rain and snow water. The collected water will be stored in the reserve area to be used in the environment water and wet spaces. This approach will significantly reduce the amount of building water consumption. Moreover, in the roof area, the solar panels will be positioned on the south side to receive the sun's rays and will generate 798,000 W of energy per day. When it is assumed that a house consumes 5,000W of energy per day; the energy generated in the stadium corresponds to the energy that 160 houses spend. In this context, the building will reduce its energy costs to a minimum by producing its own energy.

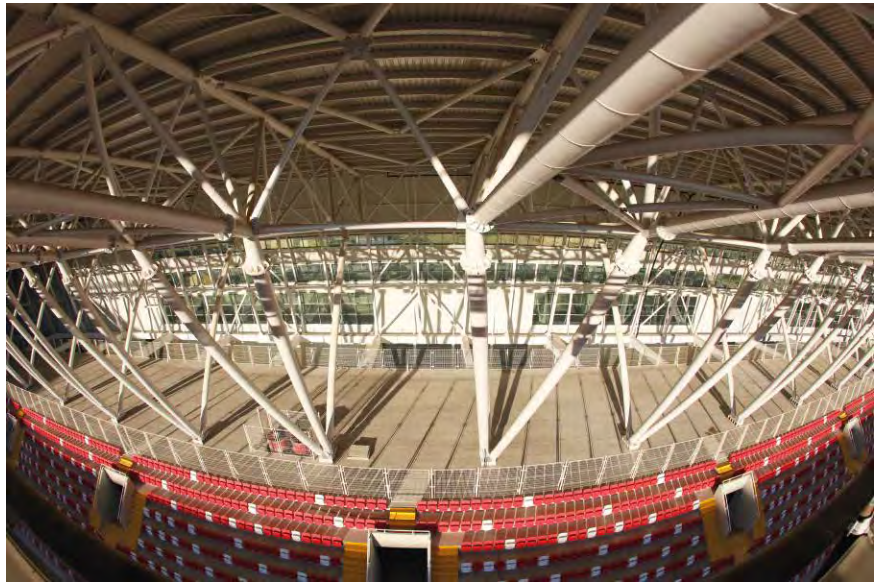


Photo: © KET Kolektif



Photo: © KET Kolektif

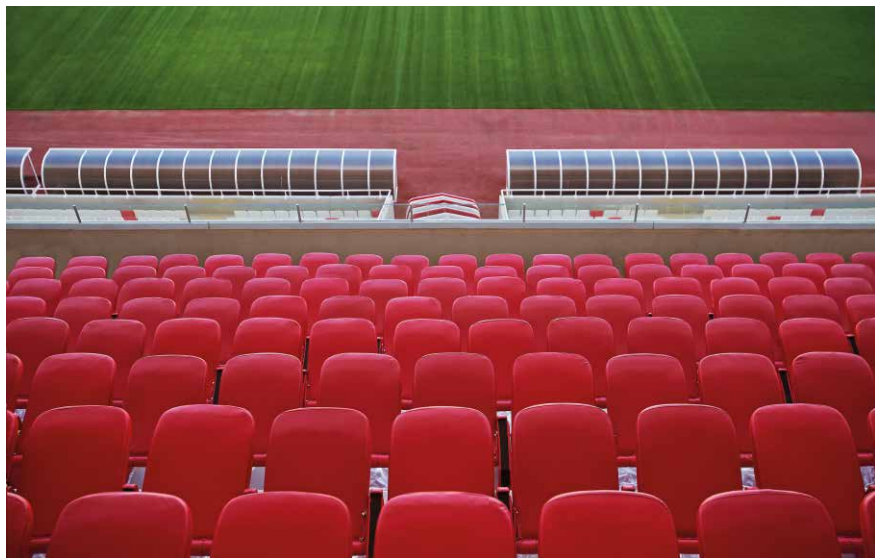


Photo: © KET Kolektif

PROJECT DATA

- Project:** Sivas Stadium
- Location:** Sivas, Turkey
- Client:** TOKI
- Architect:** Bahadır Kul Architects
- Total floor area:** 58,700 square metres
- Site area:** 131,000 square metres
- Capacity:** 25,000 spectators
- Construction period:** 2014-2016
- Photos credits:** KET Kolektif



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Event Highlight



UP Awards 2016



Mapei Solutions for Tennis Land in Australia

New courts made using MAPECOAT TNS System in one of the countries where tennis is most popular.

The tennis ball Mapei first struck back in 2009 is certainly travelling a long way. That was the year when MAPECOAT TNS system first came out and was first used for constructing tennis courts at the Vavassori Academy in Palazzolo sull'Oglio, Northern Italy.

Now, after being used to make hundreds of courts in Italy and Europe, it can add a number of important tennis centres in Australia to its portfolio. A market that is growing fast in a nation where this is considered to be one of the national sports.

Mapei developed MAPECOAT TNS system with the precise aim of creating a product that could really make the playing surfaces even more high-performing, so that courts could be as close as possible to clay in terms of their softness while, at the same time, maintaining the speed and precision associated with a synthetic or cementitious surface.

Acrylic resin-based sport surfaces

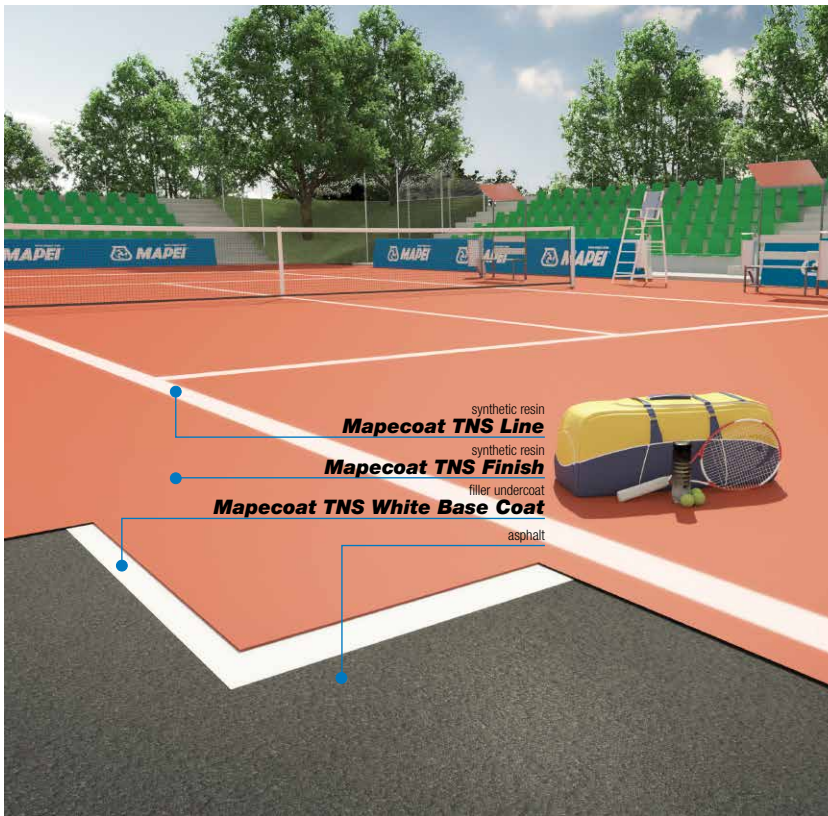
MAPECOAT TNS SYSTEM is a coating and finishing system made from acrylic resin in water dispersion and selected fillers with high resistance to wear, UV rays and weather conditions. It may be used to form flooring for indoor and outdoor sports and multipurpose areas. Sports surfaces made using MAPECOAT TNS system are relatively elastic, offer excellent playing comfort

and have excellent technical performance characteristics, such as the bounce of the ball, sudden changes in direction while running and a high degree of safety, and provide an excellent balance between stability and sliding for those who use such surfaces.

Two more innovative systems for sports surfaces by Mapei are also available: MAPECOAT TNS CUSHION and MAPECOAT TNS COMFORT.

MAPECOAT TNS CUSHION

MAPECOAT TNS CUSHION is a medium elasticity, multi-layered system made from acrylic resin in water dispersion with selected fillers used to make playing surfaces suitable for professional level tennis with high resistance to wear, UV rays and weather conditions. MAPECOAT TNS CUSHION may be applied on existing painted surfaces or on new cementitious or asphalt surfaces. When MAPECOAT TNS CUSHION is applied on substrates, it forms a semi elastic playing surface that has excellent playing comfort and excellent performance characteristics, such as perfect bounce of the ball, quick, safe changes in direction and an excellent compromise between balance and slide for players. The elasticity of MAPECOAT TNS CUSHION allows high-performance coatings to be applied which reduce the effect of impact trauma.



MAPECOAT TNS COMFORT

MAPECOAT TNS COMFORT is a highly elastic, multi-layered system made from acrylic resin in water dispersion with selected fillers applied in combination with granular rubbing matting and is used to make playing surfaces suitable for professional-level tennis with high resistance to wear, UV rays and various weather conditions. MAPECOAT TNS COMFORT may be applied on existing painted surfaces or on new cementitious or asphalt surfaces. When MAPECOAT TNS COMFORT is applied on substrates, it forms an elastic playing surface that has excellent playing comfort and performance characteristics, such as perfect bounce of the ball, quick, safe changes in direction and an excellent compromise between balance and slide for players. The elasticity of MAPECOAT TNS COMFORT allows high-performance coverings to be applied which reduce the effect of impact trauma. Surfaces coated with MAPECOAT TNS COMFORT may be renewed easily and rapidly.



Carrara Gardens Tennis Academy, Gold Coast (Australia)

Carrara Gardens Tennis Academy boasts a wide range of sporting and recreational facilities including a new Outdoor Tennis Centre. The Tennis Centre includes 20 clay tennis courts, built by importing the finest quality clay from Italy. In addition there are also eight full size and one half size concrete tennis courts that required surfacing using MAPECOAT TNS CUSHION system. The project commenced with the application of MAPECOAT I 600 W primer over the concrete base to ensure a perfectly sound substrate for the application of the subsequent MAPECOAT TNS CUSHION system. Once the primer had completely dried, a coat of MAPECOAT TNS WHITE BASE COAT was applied to the surface. This process was followed by five coats of MAPECOAT TNS GREY BASE COAT creating the cushion base for the tennis courts. A coat of MAPECOAT TNS FINISH 1 was applied followed by two coats of MAPECOAT TNS FINISH 3 which gave the tennis courts the desired speed as specified by the client. Once completely dry, the white line marking was created using MAPECOAT TNS LINE WHITE.

A total of eight full size and one half size courts were completed using MAPECOAT TNS CUSHION system with outstanding results, which made the Centre ready to host the Special Olympics for tennis, an international sporting competition for athletes with intellectual disabilities.

Mapei Products

Mapecoat I 600 W, Mapecoat TNS Grey Base Coat, Mapecoat TNS White Base Coat, Mapecoat TNS Finish 1, Mapecoat TNS Finish 3, Mapecoat TNS Color, Mapecoat TNS Line



PROJECT DATA

- Design:** Cactus & Hill and WIM Architects
- Client:** KDV Sports
- Year of Construction:** 2016
- Year of the Mapei Intervention:** 2016
- Main Contractor:** Alder Constructions
- Project Manager:** Adam Taylor
- Tennis Courts Contractor:** KDV Sports
- Mapei Distributor:** Norm East Sports Surfaces
- Mapei Co-ordinator:** Neil McIntosh, Mapei Australia





● Woodriff Gardens Tennis Complex, Griffith (Australia)

The Woodriff Gardens Tennis Complex in Penrith has secured its future with a large investment for resurfacing their 14 courts. Not only are there more than 8000 users of the facility in Penrith, but the impressive events programme, which boasts local, state and national-level tournaments, provides a strong economic impact for the local community.

The installation of the first four tennis courts commenced with the application of MAPECOAT TNS WHITE BASE COAT over the entire newly laid asphalt base. This process was followed by five coats of MAPECOAT TNS GREY BASE COAT creating the cushion base for the tennis court. A coat of MAPECOAT TNS FINISH 1 was applied followed by two coats of MAPECOAT TNS FINISH 3 which gave the tennis courts the desired speed as specified by the client. This completed the tennis court installation and, once completely dry, the white line marking was created using MAPECOAT TNS LINE WHITE. The contractors completed ten full size championship tennis courts using MAPECOAT TNS CUSHION SYSTEM with outstanding results. The Woodriff Gardens Tennis Centre will be enjoyed by social and professional tennis players alike and, accordingly, will become one of the main tennis centres in this Australian State.

Mapei Products

Mapecoat TNS Grey Base Coat, Mapecoat TNS White Base Coat, Mapecoat TNS Finish 1, Mapecoat TNS Finish 3, Mapecoat TNS Line



PROJECT DATA

Design: Tuff Turf and Mapei

Client: Penrith City Council

Period of Construction: 2015-2016

Main Contractor: Tuff Turf

Period of the Mapei Intervention: 2015-2016

Project Manager: Travis Knight

Tennis Courts Contractor: Tuff Turf

Mapei Distributor: Tuff Turf

Mapei Co-ordinators: Neil McIntosh, Mapei Australia; Fabio D'Amato, Mapei SpA (Italy)

Article source: *Realtà Mapei International* no. 59/2016. For more information, email mapei@mapei.com.sg.

Redevelopment of the National Football Stadium in Papua New Guinea





National Football Stadium (formerly Lloyd Robson Oval) is the national stadium of Papua New Guinea and has been the home ground of the national rugby league team since 1975. The stadium has hosted a variety of events including a number of Rugby League World Cup matches.

Populous recently completed the redevelopment of National Football Stadium. The catalyst for this development was the Pacific Games, which PNG hosted in July 2015, and which provided the opportunity to upgrade many of the nation's sporting facilities.

The redeveloped stadium includes 3,000 permanent seats and 9,000 lightweight seats, with an ultimate capacity of 25,000 permanent seats. The facility also includes 500 corporate seats, viewing deck and members seating for an additional 300 people. The main issue Populous had to overcome for this design was cost. The project had a low budget and Papua New Guinea has a very small manufacturing base meaning all material had to be manufactured overseas and shipped in.

The stadium is home to the Hunters, the local Papua New Guinea team who play in the Intrust Super Cup which is the Queensland NRL tournament.

PROJECT DATA

Project: National Football Stadium

Location: Port Moresby, Papua New Guinea

Client: Leighton Construction

Owner/Operator: Oil Search

Architect: Populous

Completion date: February 2016

Photos: © Scott Burrows Photography





Exercising above the motorway

Colourful sports park completed in Schiedam, The Netherlands

How can you make a motorway section attractive and functional for the local residents? This is the question MoederscheimMoonen Architects set to work on for the Municipality of Schiedam. They devised a unique solution for a stretch of the A4 motorway between the Dutch cities of Delft and Schiedam. The result is wonderful green park and a new sports location that will definitely appeal to the imagination. Located some six metres above the motorway, the sports fields are enclosed by one of the largest canvases in Europe. Together with Lace Fence, the architects created no less than 8,500 square metres of colourful fencing that consists of over 1.6 million life-like 'pixels'.



Photography: Ronald Tilleman and Dedots



Photography: Ronald Tilleman and Dedots

Unique solution

Initially, the tunnel and the motorway formed a barrier between the two adjacent residential areas. But the new design has now achieved the opposite. By realising the park and sports fields on top of the tunnel itself, it has literally created new connections between the two residential areas. They offer an environment for everyone living in the area – young and old – to exercise and relax in.

Exercising above the motorway

The complex and multidisciplinary nature of this assignment is reflected in the multiple use of space on top of and around the tunnel. The design features concrete canopy structures on



Photography: Ronald Tilleman and Dedots



Photography: Ronald Tilleman and Dedots



Photography: Ronald Tilleman and Dedots

both sides of the tunnel – creating a large enough surface area to realise sports fields on the roof of the tunnel section. Below these awnings, one finds space for car parks and an indoor athletics, baseball and cricket facility.

The main building is situated in the heart of the park, between the elevated sports fields. As such, it has a direct relationship with the surrounding athletic activity. The building houses a sports hall, changing rooms for various indoor and outdoor sports, rooms for dance and ballet and a large catering establishment with terrace seating. The terrace takes the shape of a plateau. 'Hovering' between the building's different levels, it forms a transitional zone between the different street levels. The building's overall design is characterised by the prominent expressive qualities of the fresh green roof and terrace awnings that emphasise the complex's layered nature.

Largest canvas in Europe

The fields are enclosed by a screen that not only guarantees safety at the location but also mitigates the negative effects of the wind. For its design, the architects teamed up with the specialist firm Lace Fence, known for its innovative architectural woven fabrics. They jointly developed a new product consisting of colourful 'pixels', named Dedots. These pixels are far more than just a pragmatic solution: they lend the environment its own identity, with every square metre in the 1.2-kilometres screen realised according to a unique design. This has resulted in a functional work of art that presents an exciting combination of transparency, permeability to air and imagination. It merges everything that the project is about: nature, sports, connections and energy.



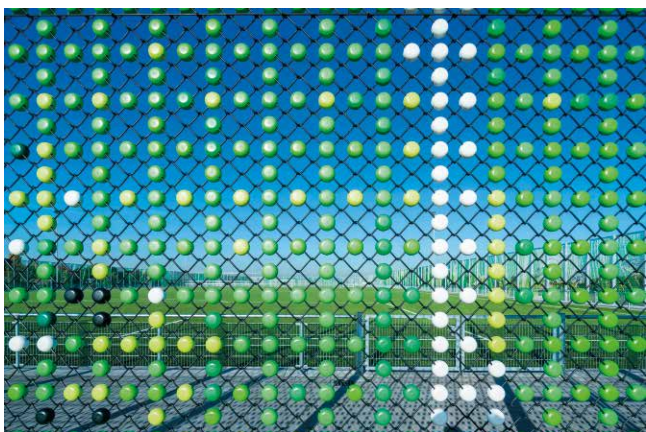
Photography: Ronald Tilleman and Dedots



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Photography: Ronald Tilleman and Dedots

PROJECT DATA

Project: Sports Park
Location: Schiedam, the Netherlands
Client: Municipality of Schiedam, the Netherlands
Programme: Sports hall, multi-purpose rooms, dance halls, canteen, indoor sprinting track, indoor baseball and cricket facilities, car parks
Architects: MoederscheimMoonen Architects
Architect in charge: Erik Moederscheim
Project team: Jim de Koning, Ruud Moonen, Fernando Polo Calvo, Sander Malschaert, Christiaan Harmse
Landscape design: BGSV Bureau voor stedenbouw en landschap
Fence design: Dedots
Structural engineering: CAE Nederland BV
Installation consultancy: IV Bouw BV
Main contractor for the building: Dura Vermeer Bouw Zuidwest BV
Contractor for the landscape: Van Kessel Sport en Cultuurtechniek BV
Surface area: 16,000 square metres
Photography: Ronald Tilleman and Dedots
Finalisation of design: March 2015
Final acceptance: September 2016



Photography: Ronald Tilleman and Dedots



Photography: Ronald Tilleman and Dedots

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Exterior. Render by MIR.

The Zaha Hadid Architects' designed stadium to be made of wood

Forest Green Rovers has selected Zaha Hadid Architects as stadium design winner for its new football stadium in Stroud, UK. The stadium, to be made entirely of wood, is hailed to be the first-of-its-kind in the world.

Following a seven month international competition, Forest Green Rovers has selected the winning design for its new football stadium in Stroud, UK.

Rovers announced the competition in March 2016, and quickly received over 50 entries from around the world, including Sweden, Germany, France, Britain and the United States.

In May, the club shortlisted nine entries, and gave them all two months to work up their concepts, which were reviewed over two days in August, leading to the selection of two finalists. The final two were given another two months to take their concepts further, including a scale model. The competition is now over, and the winning design comes from Zaha Hadid Architects.

Dale Vince, Ecotricity founder and Forest Green Rovers chairman, said: "Zaha Hadid Architects has built some fantastic sports stadia and facilities around the world, including one at the Olympic Park in London, they've designed one of the stadiums for the 2022 World Cup, and now they've designed one for Forest Green.



Interior seating bowl. Render by VA.

The really standout thing about this stadium is that it's going to be almost entirely made of wood – the first time that will have been done anywhere in the world."

"The importance of wood is not only that it's naturally occurring, it has very low embodied carbon – about as low as it gets for a building material. And when you bear in mind that around three quarters of the lifetime carbon impact of any stadium comes from its building materials, you can see why that's so important – and it's why our new stadium will have the lowest embodied carbon of any stadium in the world," add

Added Mr Vince: "We're thrilled with the concept and the amount of thought Zaha Hadid Architects put into their design – their experience of stadia design and their ability to put environmental issues at the heart of what they do really stood out. They took a really challenging brief, ran with it, and have given us an innovative and original new stadium. We've done as much as we can to make our current stadium properly sustainable, but we are limited with what we can do – it simply wasn't built with the environment in mind. At Eco Park, we've started with a blank sheet of paper, and we'll be going further than anyone has done before – this really will be the greenest football stadium in the world."

Jim Heverin, Director at ZHA, said: "We are very proud to be selected to design the new home for Forest Green Rovers that will not only be a new stadium but also an important addition for the community. The club's heritage, ambition and vision reflect our own, combining the latest material research and construction techniques with new design approaches to build

a more ecologically sustainable and inclusive architecture.

Forest Green Rovers have established a holistic vision for the site to retain its pastoral qualities whilst adding new facilities for the town. While the stadium will be the centerpiece, the project creates a new public realm with both recreational and occupational uses, enabling the entire site to contribute to the town – not only on match days, but every day of the year.

The design retains and enhances the existing meadow landscape of the site whilst adding the stadium and other functions for the town. Embodying low carbon construction methods and operational processes, it will be the first all timber football stadium with almost every element made of sustainably sourced timber including its structure, roof cantilevers and louvered cladding. As a building material, timber is highly durable, recyclable and beautiful. The proximity of the stadium's structural elements to each other has also been determined to enable the seating terraces and floor slab to be made from timber. In most other stadiums, these elements are concrete or steel.

The stadium's roof is covered with a transparent membrane, which contributes to turf growth, minimizes stark shadows for players and fans and reduces the volumetric impact of the stadium from distant views in the surrounding landscape.

With the team's community and supporters at its core, fans will be as close as five meters from the pitch and the position of every seat has been calculated to provide excellent, unrestricted views of the entire field of play.

The stadium's continuous spectator bowl surrounding the pitch will enterpi matchday atmosphere.

The stadium's design incorporates the club's future growth. Initially for 5,000 spectators, increasing to 10,000 with the club's success, expansion from phase 1 to phase 2 can be achieved without the costs of major construction works.

Forest Green Rovers' new stadium and Eco Park aims to be carbon neutral or carbon negative, including measures such as the provision of on-site renewable energy generation. The buildings on the site, and their embodied energy, play a substantial role in achieving this ambitious target and demonstrate sustainable architecture can be dynamic and beautiful.

The runner-up competition entry came from Glen Howells Architects, the firm who designed the award-winning Gloucester Services on the M5.

Mr Vince said: "Glen Howells also produced an exceptional design – and they impressed us as much as their design did actually. As a result, we're going to work with them on some future projects."



Concourse. Render by VA.

The Zaha Hadid Architects' designed stadium centerpiece of Eco Park development

The Zaha Hadid Architects' designed stadium will be the centrepiece of the £100million Eco Park development – Ecotricity's 100-acre sports and green technology business park proposal, beside junction 13 of the M5 in Gloucestershire.

Half of Eco Park will consist of state-of-the-art sporting facilities, including the new stadium, grass and all-weather training pitches, publicly accessible multi-disciplinary facilities, and a sports science hub.

The other half will comprise a green technology business park with sustainably built commercial offices and light industrial units, giving Eco Park the potential to create up to 4,000 jobs, including room for the continued expansion of green energy company Ecotricity, who have submitted the overall proposal and who are already the biggest employer in Stroud with 700 people located across four sites.

The proposal will also see the development of a nature reserve on the site, a potential public transport hub, including a Stroud Park and Ride, as well as help with the restoration of the Stroudwater canal.



Interior lobby. Render by VA.

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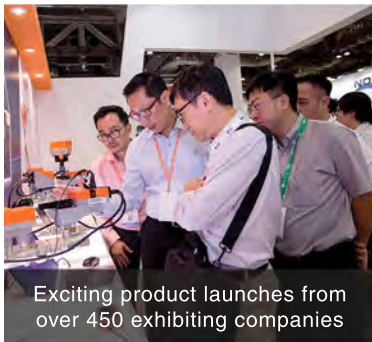


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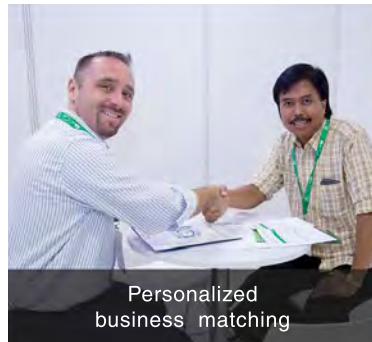


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Potato Head Hong Kong's entrance.

Potato Head Hong Kong debuts with Sou Fujimoto Design

Potato Head Hong Kong represents Tokyo-based architect Sou Fujimoto's first project in the city. The 8,000 square foot space is a collaboration between Fujimoto and PTT Family's in-house creative team, blending Fujimoto's signature style with the group's drive to champion Indonesian craftsmanship in a modern context.

Potato Head Hong Kong's design showcases a deft mix of contemporary and traditional influences through lightweight metal fixtures with heavy crafted teak wood. The mixed-used space evokes a residential feel with distinct areas that organically flow into each other.

Fujimoto is best known for being invited to design the 2013 Serpentine Gallery Pavilion. Aside from becoming the youngest architect to earn one of his industry's highest honours, he joined an illustrious list of past pavilion architects that includes Frank Gehry and the late Oscar Niemeyer.

Potato Head Hong Kong presented an opportunity for Fujimoto to explore the concept of inside and outside spaces in one of the most densely populated cities in the world.

Starting with Potato Head's façade, he takes deceptively simple exterior glass panels and applies a pattern that echoes traditional Hong Kong window frames, and uses these to cover the entire structure. Traditionally made with steel, the frames are designed to enhance security. The effect is a transparent homogenous façade that doesn't impose itself on the neighborhood, but quietly – yet impressively – stands out. From a distance, the venue appears as a strong, white glowing object. Only upon approach, does it reveal its intricate pattern.

In the same way his lattice structure for the Serpentine Pavilion acted as a permeable membrane blurring the boundaries between exterior and interior, Potato Head's entrance opens up to the community to allow his installation to pour into the street. This underscores Potato Head's aim to be a welcoming destination for everyone, from locals popping in to grab coffee or stopping by to shop for artisanal homewares, to executives spending the morning working in the lounge and families enjoying a meal at Kaum restaurant.

The entrance is marked with a coffee counter that opens to the street and a retail space where the architect's now-iconic metal frames and boxes create distinct but open spaces. Suspended from the ceiling are Fujimoto's stainless steel planters, creating the illusion of a floating forest over a space that imperceptibly appears to have no boundaries.

The bar area is a colourful and tropically inspired space that most clearly references PTT Family's island home and flagship property in Bali. The vibrant walls and open-plan setup represent the laid-back and optimistic vision of Potato Head. Another signature feature of the brand design DNA is the mix of customised, Indonesian furniture with mid-century classics and antique pieces like the Marcel Breuer leather armchairs.

The interior's piece de resistance is in Kaum, PTT Family's modern Indonesian dining concept, where over 700 hand-painted panels from Toraja flank the ceilings and walls. These panels were made by families of craftsmen and commissioning this staggering number of carvings helped ensure the skill is passed on to the younger generations of the village that made them. While the black colour of the panels is actual paint, the yellow and orange hues are taken from local stones. The timber (kayu uru) used for the panels are also grown locally in Toraja.

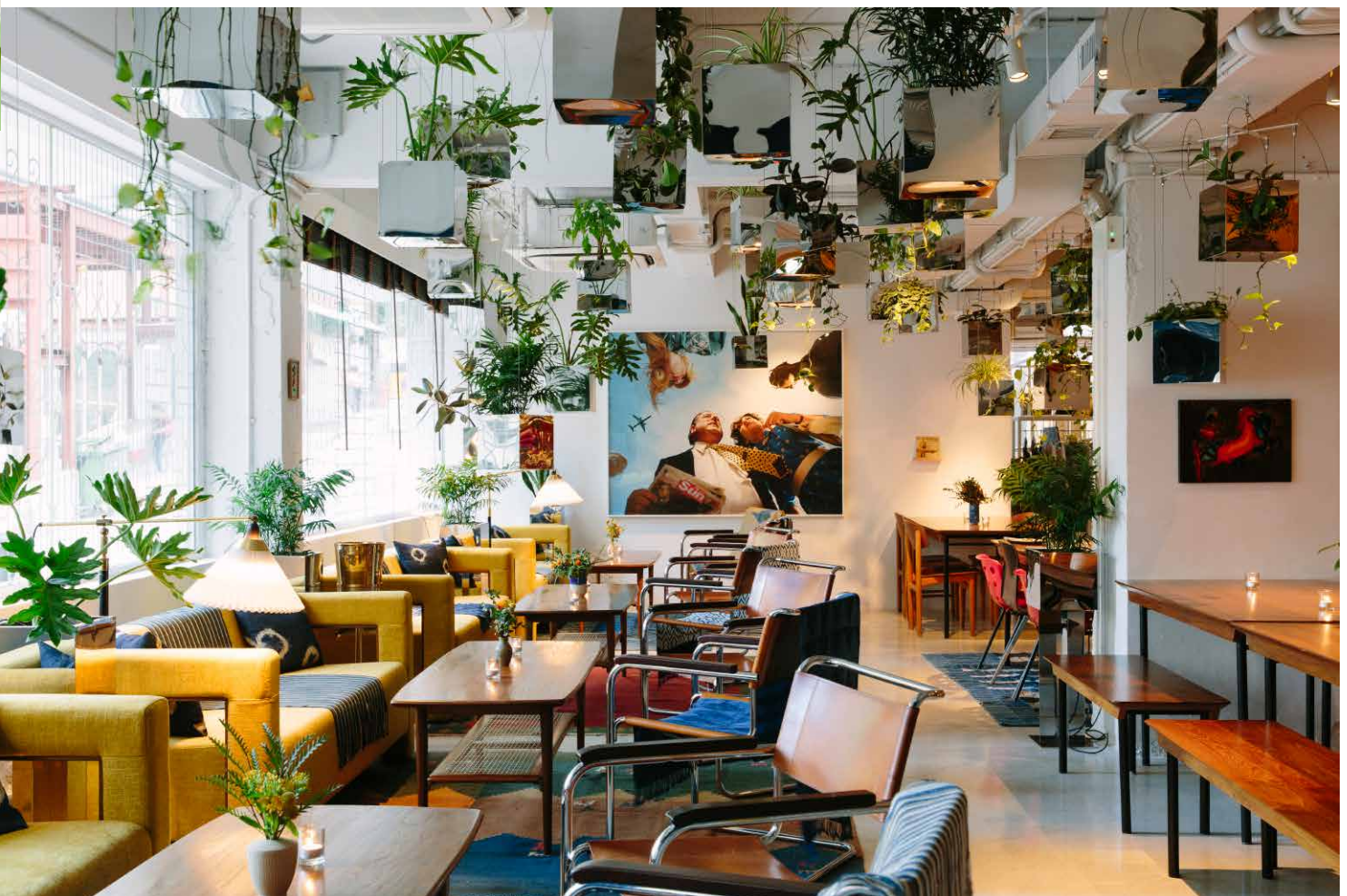
Hidden behind Kaum is the Music Room, one of the most unique spaces in Potato Head. Designed to become a hub for the city's record collectors and audiophiles, it conveys the mood of a secret music lounge. Accessed three ways – through a hidden corridor from the entrance, through Kaum



KAUM restaurant has a modern Indonesian dining concept.

or through a secret entrance on High Street – its wood-paneled and deeply insulated interiors provide the optimum listening experience for guests. An entire wall of the room is filled with records as well as the mammoth JBL 4350 speakers.

As a destination, Potato Head Hong Kong is a welcoming and bustling space for everyone to enjoy without feeling penned in, a rarity in urban Hong Kong.



Potato Head Hong Kong's interior.



Commissary Restaurant

Commissary's Southern Californian vibe brought to life by Hui Designs

Award-winning hospitality entrepreneur Yenn Wong and experienced culinary director Morgan McGlone's newest restaurant collaboration, Commissary, brings a lively Southern Californian restaurant to Pacific Place through Hui Designs.

The design at Commissary is a celebration of Southern California's relaxed style, featuring 70s design touches and colours. The space features a range of subtle references to the era, with custom-designed clay tiles, natural ash wood, brass, 70's style ceramic tiles and distressed walls welcoming diners with a rustic feel and connecting Hong Kong-ers to the warmth of Southern Californian hospitality.

Guests enter Commissary through the large doors set back from Pacific Place's bustling concourse level. By day, light floods through the wide span of bay windows creating a relaxed and airy ambiance; in the evening, strung outdoor lighting penetrates through the windows, making for a more intimate and warm feeling.



Bar at the Commissary.

Diners are welcomed by a large and interesting space. With a unique shape, Hui Designs has introduced angular walls to impart spatial definition to the back dining area. The space is grounded by the long bar and adjoining pastry counter, which wraps around the front wall and massive central round column.

The bar counter at Commissary is a striking focal point. A modern interpretation of a classic wooden bar counter, it grounds the space. Constructed in brass, the bar features a mirror backing to give the area a stunning illusion of continuity.

HAY Soft Edge chairs in oak matt lacquer feature in the main dining room, alongside original vintage Herman Miller DSW chair by Charles and Ray Eames in fiber glass, giving the space an eclectic touch. Along the bar counter diners can sit on custom made stools of solid ash wood and woven rope seats and the space outdoors features olive palisade dining chairs from HAY alongside custom-made high tables.

Commissary has a unique outdoor terrace surrounded by lush plants and string lights illuminating the space giving it a relaxed and cozy atmosphere. Diners can sit at the bay window seat that runs the length of the façade wall for outdoor seating. This was introduced to give a sense of coziness and openness. There is also the option for guests to be seated at the high tables outside, uniquely positioned not only to demarcate the outside space but to provide a sociable setting; groups can sit around the table or stand to create a high energy vibe.

Lighting is simple at Commissary, featuring ping-pong ball globes to illuminate the space, imparting an intimate atmosphere. The space is accented with spotlights highlighting the art work hanging on each of the walls, chosen by Yenn Wong, CEO and Founder of JIA Group herself.

"To me, Southern Californian cuisine conjures up these words – hearty, comfort, fresh, fusion and diversity," says Siew Hui Lim, of Hui Designs, "We wanted to create an ambiance that matches these words. We have worked hard to create a cosy, inviting unpretentious and timeless space with a relaxed atmosphere. We designed everything at Commissary to provide a holistic experience for the guest – each component has been customised to evoke Southern Californian hospitality."



Art at the Commissary banquet area.



Terrace bar at the Commissary.



Outdoor terrace at the Commissary.



Viewpoint of

Jason Sim

Managing Director & Certified Playground Inspector of Playpoint (Singapore) Pte Ltd

Q: Over the past few decades, playgrounds in Singapore have become increasingly creative, cool and even hi-tech. What are some of the reasons behind the shift in this trend?

Cookie Cutter playgrounds have been around in Singapore for the past 20 years. It has created a landscape where most playgrounds look the same with limited distinct features. Clients want to explore more creatively ways to integrate play into the landscape and create iconic play spaces that bring neighbours together to create social bonding and have fun at the same time.

Q: One of the challenges of designing and maintaining playgrounds these days is playground safety. What areas of the playground need the most attention and why?

Safety flooring – making sure that the flooring is able to cushion their fall from a high ground.

Q: When you install a playground equipment, what are the important steps that you need to take to ensure that the play activity is safe for children?

By complying to the safety standards set forth by Singapore standards for playground SS457.

Q: What are the most common types of playground-related injuries in Singapore?

Falls.

Q: Do you have any examples of injuries that have driven you to improve the safety of children on the playgrounds?

No.

Q: In Singapore, who determines the safety standards





for playground equipment?

Spring Singapore.

Q: In your opinion, are these safety standards for playground equipment as well as for supervision of children on playgrounds sufficient enough to protect children from major injuries?

Yes, they are sufficient. It is only when parents are not there to supervise the children that accidents happen.

Q: What changes would you like to see in the safety standards from the manufacturer's point of view?

At present, most playground suppliers in Singapore are buying from the USA. The current standard should also include EN1176 as it is internationally recognised.



Q: How effective is it to involve children, their parents and the local community to co-design and co-develop the playground? Are there any examples of such playgrounds in Singapore?

No. Parents may have only a basic idea of what kind of playground they want based on their past experiences while playgrounds have progressed more forward such as the integration of Augmented reality into playground equipment. As Steve Jobs say, 'consumers do not know what they need, until you show it to them'.

Q: How do you plan to make playgrounds more welcoming, creative and safe for children in the next 2-3 years?

The future of Playgrounds will integrate landscape to the playgrounds and creating one seamless playscape.

Photos courtesy of Playpoint (Singapore) Pte Ltd





New Playground Committee formed under the Landscape Industry Association of (Singapore) [LIAS]

Text by Patrick Lee, Council Member, LIAS

A new Playground Committee has been formed under the Landscape Industry Association of (Singapore) [LIAS]. Members in the Committee have met and agreed on various activities and initiatives that includes introducing European Standards, EN1176 training to certify Operational Playground Safety Inspectors. The Association aims to further enhance the industry of Playground Specialists in the areas of play safety and quality in Singapore.

To date, all training and certification for playground inspectors are based on the ASTM1487 standards. With growing concerns for playground safety for both American and European manufactured play equipment; such training would bridge the gap where there is a lack of expertise on European safety standards. More details on the training shall be available in May 2017.

Other initiatives include future trade mission exhibition visits to Germany or the USA, invitation to invite Mr Kenneth Kutska and Tom Koulosak who are experts on Playground Safety to be patrons and advisors to the Committee.

The Committee has also been active with the Housing Development Board to assist them with the new specifications for Playgrounds.

For more information on the Association, please contact Ms Leong Yi Jie at yijie@scccci.org.sg. The Singapore Chinese Chamber of Commerce is now the Association's secretariat.



Photos courtesy of CT-Art Creation Pte Ltd



Interview with

Mr Cheong Tak Leong

SPRING Singapore, Director (Standards)

Q: Can you tell us a bit about SPRING Singapore?

SPRING Singapore is an agency under the Ministry of Trade and Industry responsible for helping Singapore enterprises grow and building trust in Singapore products and services. As the national standards and accreditation body, SPRING develops and promotes an internationally-recognised standards and quality assurance infrastructure. SPRING also oversees the safety of general consumer goods in Singapore. As the enterprise development agency, SPRING works with partners to help enterprises in financing, capability and management development, technology and innovation, and access to markets.

Q: What role does it have in developing safety standards for the playground industry in Singapore?

As a national standards body, SPRING administers the Singapore Standardisation Programme through an industry-led Singapore Standards Council (SSC). The SSC develops new Singapore Standards and reviews existing Singapore Standards. The SSC also approves the establishment and withdrawal of Singapore Standards. These activities of the SSC are carried out under 12 Standards Committees consisting of representatives from the industry, professional bodies, associations, academia and government agencies.

One of the Standards Committees under the SSC is the General Engineering and Safety Standards Committee (GESSC) which oversees the development of safety standards.

SS 457: 2007 on playground equipment for public use was developed by a Working Group under the direction of the GESSC. The Working Group comprised experts from the Housing & Development Board, National Parks Board, Health Promotion Board, Sport Singapore, Singapore General Hospital, TÜV SÜD PSB Pte Ltd and EM Services Pte Ltd.

SS 457 provides safety requirements for various types of public outdoor playground equipment used by children from the ages of two through 12. The standard, which relates to the design, installation and maintenance of public play equipment, aims to reduce the risk of playground injuries.

Q: Can you share more what the standard covers, which will guide suppliers when designing and installing the playground equipment?

SS 457 provides guidance on the design, installation and maintenance of playground equipment. Among other things, the standard covers playground layout, accessibility, labelling, and performance requirements to prevent the risk of entrapment and injuries from moving parts. For instance, the design of the playground equipment should take into account any head and finger entrapments. The standard also includes specifications for installation to ensure structural integrity and safety.

While SS 457 is not specified as a mandatory requirement in government regulations or Acts, some companies and government agencies use this standard in their specifications when purchasing playground equipment. We encourage other developers to do likewise.

The Working Group is currently revising the SS 457 and targets to publish the revised standard in the first half of 2017. This will help to keep the standard updated in line with new technological changes and safety practices. Some of the proposed additional safety requirements in the revised standard are additional protective barriers for playground equipment which are of certain heights and installation of all anchoring devices below ground level to prevent children from tripping.





The risk-benefit equation of challenging playgrounds



Article by *Jeanette Fich Jespersen, International Manager, KOMPAN Play Institute*

Being a parent represents a feeling of fundamental purpose in a person's life. However, from the minute your child is born, being a parent also entails a fundamental fear of losing what you love. This fear can result in over-protective behaviours that seek to clear the path of the child of any risk or even challenge. In helicopter parenting. When that sort of over-protectiveness occurs in the playground, it ends up being counterproductive to one of the very purposes of playgrounds, namely growing to master the world through physical play experiences.

A growing number of parents and grandparents seem to complain that they find playgrounds too risky. Playground owners report a multitude of complaints and irrational fears from adults in playgrounds. Mostly they derive from a lack of knowledge of how playgrounds are safety certified. But they also derive from a lack of balance in the perception of what are real dangers in childhood and what is healthy risk taking.

The benefits of risk taking in playgrounds

For a child to develop positively, risk taking is mandatory. Taking risk is a way to learn how to navigate the world securely, an important life skill that children only learn by doing. The thrill of risk taking is what motivates classic playground play: anything that responds to action and movements, that provides speed or height, will appeal massively to children, simply because it tickles the stomach. Thus, swings, swaying ropes, springers, spinners and bouncy climbing nets are immensely popular in playgrounds.

A growing body of scientific research states that good playgrounds are important for developing children's physical literacy, which eventually will make them navigate the world, and the playground, more confidently. Physically challenging play actions teach children to handle risk, but also how to handle stressful situations. In brief, playgrounds encourage and provide physical activity, social interaction and learning. More studies state that equipped playgrounds are, from a range of leisure offerings, the offering in which children are the most physically active.

The evident risks of physical inactivity

When talking of physical activity and safety risks of children, parents and decision makers should be made aware of the fact that there is, statistically, more threatening risks to child safety than wildly fun playgrounds: Far too many children do not meet the World Health Organisation's (WHO) minimum guidelines of 60 minutes of physical activity a day. In Singapore, according to the Singaporean Ministry of Health, the average physical activity level in secondary school children is below the minimum recommendation. This means



Photo: © KOMPAN



Photo: © KOMPAN

that the average Singapore child is physically inactive. The cost, both on a personal and societal level, is immense. Physical inactivity in children is prone to harm their physical, social and even cognitive development. Research from the Lancet states that physical inactivity is one of four main contributors to premature death (the others are tobacco, alcohol and obesity).

Playgrounds: a safe answer to the mortal risk of physical inactivity

Challenging playgrounds are an evident answer to the physical inactivity of today's children. They encourage self-chosen, voluntary physical activity. They are among the activities that children themselves mention as their favourite pastime. The WHO in their Global Guidelines for Physical Activity for Health mentions play first, when describing what activities count as physical activity for the 5-18yearolds.

The good and challenging playground of course should be in compliance with the safety standards. The standards make it possible to plan for play in a challenging, yet safe, way. They provide designers with a framework within which we can create fun, challenging play. Ultimately, the safety standards ensure children and their parents the possibility of age appropriate, fun resorts for free play in a safe environment.

The research of the Danish Accident Analysis Statistics, headed by prof. Niels Dieter Rock, shows that children's accidents extremely rarely happen on play equipment. The home or the gym are much more predominant sources of children's accidents.

5 TIPS FOR SECURE RISKY PLAY:

- Use the possible fun features of the landscape in your design (eg. slopes, streams)
- Choose play equipment that is age appropriate and developed and tested with children
- Make sure that play equipment is certified to meet safety standards
- Make sure that the play area meets space and surfacing safety guidelines
- Choose robust, durable technical solutions for equipment that moves

Have playgrounds become too safe?

The debate on playground safety of the last decade has circled around the question of public playgrounds having become too safe:

- Prof. Sandseter from Norway made the headlines of international papers with her ph.d.-thesis claiming that children needed far more risk from physical play than at present, in their daily lives.



- The well-known contributor to the safety debate, prof. David Ball from England, has warmly advocated a risk-benefit approach to playgrounds, reminding readers that playgrounds statistically are more safe than any private home and that the purpose of playgrounds is to a large extend controlled risk taking
- The work of Mike Lanza around “playborhoods”, heavily promotes dangerous play as beneficial to children’s development into healthy adults

A look at the places that are called playgrounds in today’s cities shows that in some cases, playgrounds have become boring: quite some schools and cities do not even want swings in their playgrounds, due to litigation. Some projects scare away from too wild activities, as they fear they will attract too many visitors and get neighbours complaining. Some projects even state that playgrounds should have no pre-made equipment – which is to say no thoroughly tested spinning, swinging or rocking equipment.

Even though innovative playground equipment offers especially older children the challenges and risks that make for thrilling play, park planners sometimes shy away from choosing these risky solutions in fear of litigation. City and playground planners fear parental complaints.

They thrill of play, make it stay

However, some decision makers take the brave choice of offering highly thrilling play areas, with height, speed and challenges for all ages.

Of course they choose equipment that has been tested with children, by professionals, to meet the ergonomic, play behavioral and safety demands. They harvest the benefits of having the most popular gathering points of their cities.



Photo: © KOMPAN



Photo: © KOMPAN

To get to the root of the matter, the irrational fear of adults is what we need to approach. There is a public health task right there for park managers. It’s an educational task, and a very important one. Because as long as adults are fearful of trusting the physical competences of the next generation, interesting playgrounds risk to be an extinct species. That will take the fun out of playgrounds. And it will most certainly bereave the children of the crucial physical development and health gained from play in age appropriate, challenging, well-planned playgrounds.

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Long-term drivers for compressor technologies in commercial air-conditioning

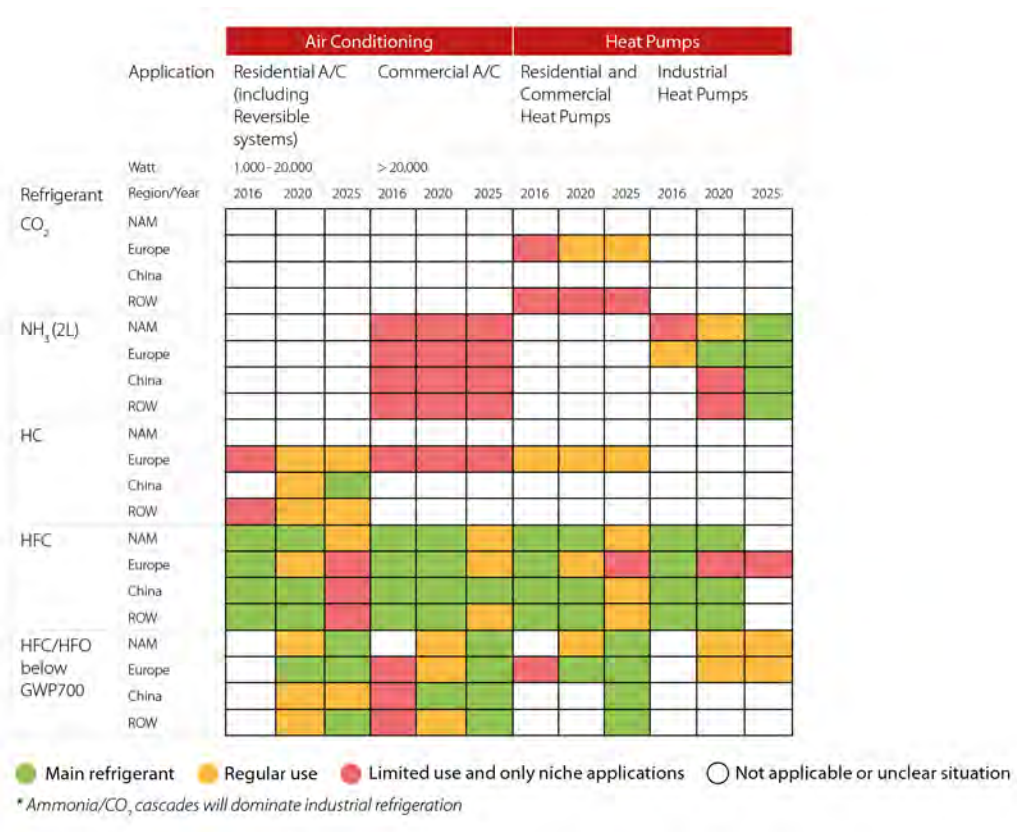
Over the past decades, compressor technologies have continuously evolved. Scroll compressors have significantly extended their application range and variable speed and oil-free centrifugal compressors have entered the market place. What is triggering such transformation? This article sheds light on some of the major trends that have been dominating the refrigeration, air-conditioning and heat pump industry and shows the best solutions for Original Equipment Manufacturers (OEM) and end users in an increasingly competitive global market.

Refrigerants and energy efficiency

Regulations, both at national and international level, are among the most important drivers that spur investment in new technologies.

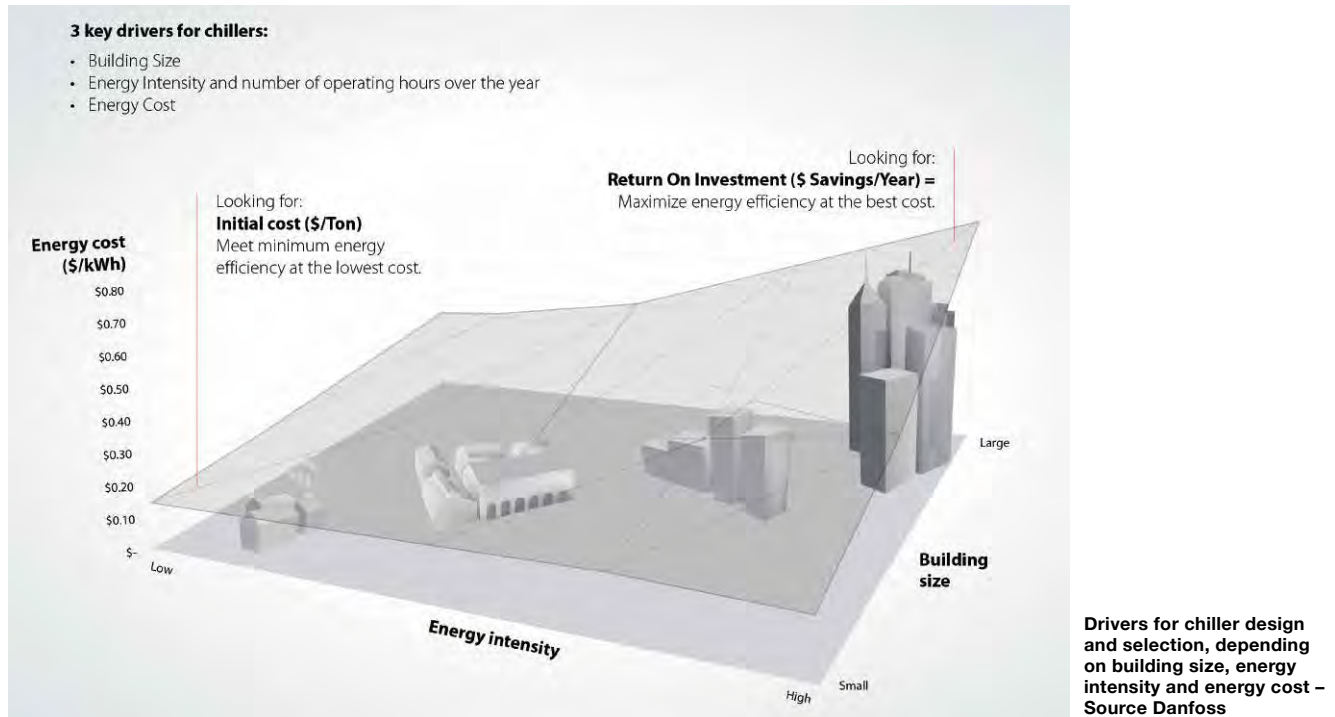
The phase-out of ozone-depleting substances under the Montreal Protocol has led to the introduction of a broad variety of replacements, including HFCs such as R-134a, R-410A and R-404A. The recently agreed Kigali amendment on a global phase-down of HFCs will trigger further changes in the market throwing a shadow on these very solutions.

Indeed, while emerging and fast growing markets are still in the process of phasing out ozone depleting substances, mature markets including Europe, North America, Australia, Japan have continued ahead with their refrigerant journey, and are looking at transitioning away from high global warming potential (GWP) HFCs towards lower GWP solutions.



Global refrigerant trends in air conditioning and heating (status in 2016) – Source Danfoss

Energy consumption, energy cost and grid reliability can also be decisive parameters for building owners in fast growing markets when it comes to air conditioning. Depending on the building size, type, and use, as well as the surrounding climate, end users and OEMs are looking for solutions that are suitable for every context. In many cases, the increasing demand for air conditioning can't be considered as optional. From mid-size office buildings that are in operation 10 hours per day, 5 days a week to data centres and large hospitals that operate 24 hours per day, all year long, the multitude of contexts require new design options that take in consideration applied, operating and service costs.



Energy efficiency requirements are becoming increasingly important while both, the reduction of CO2 emissions and energy security play a major role. Many regions and countries worldwide have adopted legislation in that sense, stipulating minimum energy efficiency requirements for products and promoting the use of energy efficient systems. Refrigerant choice is closely interlinked with energy efficiency. For manufacturers, the combination of refrigerant constraints, energy efficiency requirements and building context is a great challenge, even more so as the safety of their products must not be compromised. Indeed, many of the lower GWP refrigerants are flammable and/or toxic, adding yet another factor to the equation and increasing therefore its complexity.

Scrolls are on the rise

Triggered by refrigerant and energy efficiency constraints, scroll compressors have continuously extended their operating envelope over the past years, replacing screw technology in capacity ranges which were previously reserved to the latter.

A leading Danish company, as an example, has a range of scroll compressors from 20kW up to 600kW (manifold configurations) for chiller plants from 300kW up to 1.5 MW cooling capacity.

There are many reasons for the growing success of scroll compressors in the market. One major element is the possibility of combining multiple scrolls in so-called manifold configurations. The development of the manifold design has been sparked among others by energy efficiency requirements which are often expressed as part load efficiencies. In this case, the combination of multiple scrolls allows a higher flexibility than one single circuit with a single alternative compressor. Indeed, manifold scroll configurations provide very flexible modulated cooling capacity allowing extending capacity and performance while maintaining design and applied costs at competitive levels. Alternative technology of compressors, however, is limited in their modulation capacity and start cycling at part loads below 40 percent.

The specific characteristics of HFC R-410A which has been used widely to replace R-22 in stationary air-conditioning applications have certainly also contributed to the growth of scroll compressors. Due to its high volumetric capacity, it allows reducing the size of the compressor and the heat exchanger and improves the heat exchange behaviour. All of these elements lead to reduced applied costs.

In addition to these inherent advantages of scroll compressors, manufacturers like Danfoss have worked hard to further optimise the technology. Specific organ pipes maintain safe oil levels at part-load conditions in manifold configurations and IDVs (Intermediate Discharge Valve) mechanically reduce excessive compression of refrigerant under part-load conditions while maintaining the same cooling capacity.

Up to 12 steps of capacity modulation allow for precise load-matching capabilities, which results in further enhanced energy performance – on average by 15 percent in w/w chillers and by 6 percent in rooftops and A/W chillers.

When energy cost becomes the main driver

While fixed speed scroll compressors cover a wide range of applications, there are cases where even higher energy efficiency is needed, for example in buildings with high energy consumption combined with load fluctuations such as in data centres, manufacturing plants, hotels, hospitals, etc. In such cases, variable speed technology including like in inverter scrolls and or Danfoss Turbocor™ oil-free centrifugal technology deliver outstanding energy efficiency in full and part load operation with energy savings of up to 40 percent compared to traditional compressors.

The capacity of Inverter Scrolls now available from one of the leading manufacturer ranges from 13 to 83 kW (up to 180 kW in hybrid manifold). Oil-free centrifugal chillers can range from around 200kW to 2MW cooling capacity. Offering the advantage of friction-free magnetic bearing technology, which eliminates the cost of oil-related equipment and management hardware as well as the maintenance cost associated with oil service, centrifugal oil-free chillers have started to be the preferred technology whenever highest energy efficiency is needed. What's more, variable speed technology allows for an extremely low starting current (2 amps) compared to that of screw compressors (100 amps) which is particularly relevant for applications with a backup power supply such as in data centres, where the power backup needs to consider starting current requirements of large equipment like chillers.

Danfoss – a reliable partner in an ever changing environment

The HVACR industry has been undergoing major changes over the past decades and continues to evolve rapidly. Global changes in refrigerant policies, triggered by international Treaties such as the Montreal Protocol and the environmental pressure to reduce CO2 emissions play a decisive role. At the same time, population growth, combined with higher standards of living and an increased demand for more comfort, health and technologies put strong pressure on electric grids and drive up the overall energy consumption – making energy efficiency all the more important.

In this challenging environment, it is more important than ever to work with reliable partners that have both, the expertise and the Technology/product range to fulfil highest expectations from OEMs and end users. Danfoss has it all: the company provides solutions for all kinds of applications and requirements and is a true partner for its clients, able to accompany and advise them on how to best face these challenges.

For more information, visit <http://chillers.danfoss.com> or <http://airconditioning.danfoss.com>.

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NS BlueScope Lysaght Singapore meets demanding Asian requirements for roofing and walling with Colorbond® Steel

Colorbond® Steel celebrates 50 years of creativity.

Demand for more aesthetically pleasing and architecturally unique structures has been increasing in tandem with advances in construction technology and material science. NS BlueScope Lysaght Singapore has met the demand from architects, developers, builders, consultants every step of the way with its extensive product range of top quality steel building products and solutions, without compromising on performance, aesthetics and quality.

COLORBOND®, the well-known brand of premium steel from BlueScope found in NS BlueScope Lysaght Singapore's roofing and walling products, ensures market superiority with a cutting-edge, trend-leading approach that is ideal for Asia's built environment. It has been 50 years of colour, creativity and construction for COLORBOND®, a pre-

painted steel combining the superior strength of steel and a corrosion-resistant coating that maintains long-lasting beauty with excellent colour retention.

COLORBOND® steel was first rolled in 1966 in Australia, and then became so popular in Southeast Asia that the decision was made to manufacture COLORBOND steel in Malaysia in 1996, allowing the many orders from surrounding countries to be fulfilled in record time. Fifty years on, COLORBOND® steel is available in a range of attractive colours, and remains a favourite with the professionals.

Many innovations have been incorporated into COLORBOND® steel in five decades, resulting in the elegant, versatile and durable building material that it is today. For instance, Clean COLORBOND® technology, introduced

in 2000, offers a unique oven-cured paint system that prevents surface staining common to tropical environments caused mainly by temperature, moisture and air-borne contaminants. The technology is ideal for tropical countries such as Singapore, ensuring that dirt particles can be easily washed away with rainfall. Clean COLORBOND® Ultra steel is particularly good for building profiles requiring excellent corrosion resistance, such as the moderately severe marine and industrial environments found in Singapore.

Lysaght Building Solutions in COLORBOND® steel

The premium-quality COLORBOND® steel is found in NS BlueScope Lysaght Singapore's roofing and walling products. You can count on the comprehensive range of LYSAGHT® profiles, for instance, the well-liked LYSAGHT® KLIP-LOK® 406 and LYSAGHT® LOCKED SEAM®.

LYSAGHT® KLIP-LOK® 406, a strong, durable, lightweight and versatile long-length roofing and walling profile. LYSAGHT® KLIP-LOK® 406 with its positive concealed clip fixing with no expose fasteners give a clean finish to the design. LYSAGHT® KLIP-LOK® 406 combines the strength of COLORBOND® steel in smart fluted pans and a lock-action ribbed design for all-weather low-pitched roof applications as well as both horizontal and vertical walling installations.

Versatile LYSAGHT® LOCKED SEAM® square ribbed steel roof and wall cladding is economical, durable, and easily employed for the most demanding of modern architectural designs thanks to the outstanding properties of COLORBOND® steel. The LYSAGHT® LOCKED SEAM® profiles are high-quality and lightweight, with excellent watertightness, and can be used for roofs and walls that are curved, pitched or tapered. NS BlueScope Lysaght Singapore's portfolio, ranging from trailblazing architecture to landmark projects, and buildings for industrial, commercial and residential applications, is testament to its enduring reputation as a steel building solutions provider. LYSAGHT® products have been used with striking effect by leading architects to create

the latest largest in modern building designs, through to classic roofing styles for residential projects.

Environmentally friendly

Environment sustainability remains a vita commitment to NS BlueScope Lysaght Singapore, the company ensures all customers receive the highest standard in both quality and efficiency with the environment's best

interest. COLORBOND® Steel has earned both the Singapore Green Building Product label from the Singapore Green Building Council and Eco-Labeling mark from SIRIM QAS International, a member of the Global Ecolabelling Network (GEN).

The SIRIM QAS International and Singapore Green Building certifications determine the product's overall environmental impact and communicate

sustainability information to consumers and businesses. These initiatives are assurance that the product has undergone independent evaluation on environmental performance and that it has met environmental friendliness criteria on aspects of the manufacturing process such as the composition of raw materials, hazardous substances management, as well as how waste and energy are handled.

Project Reference: Changi Airport Terminal 1 and 2



NS BlueScope Lysaght Singapore's project for Changi Airport Terminal 1 and 2 in Singapore that uses LYSAGHT® KLIP-LOK® 406 is one such success story. Expectations were extremely high because the internal airport infrastructure had to present an outstanding first impression as visitors' first view of Singapore while serving as an effective transportation hub at the same time.

NS BlueScope Lysaght Singapore offered key expertise and established experience for the task, while the excellent performance of COLORBOND® steel found in LYSAGHT® KLIP-LOK® 406 over the warranty period and its design versatility provided the ideal solution. Although the challenges of such a project were unprecedented at the time and the scale of the project immense, the combination of talent and superior technology ensured that the job was completed on time and well within a demanding budget.

NS BlueScope Lysaght Singapore

Established 1965 under the umbrella of BlueScope Steel Limited Australia, one of the world's most dynamic and largest steel solution providers and roll formers. For the past 52 years, the steel downstream company has collaborated with various developers and architects, providing them with the most suitable products and solutions in constructing iconic landmarks such as Marina Bay Sands, Singapore National Library, and One Raffles Quay.

NS BlueScope Lysaght Singapore is renowned as the truly tried and tested premium steel building product provider, with manufacturing, supply and installation solutions made perfect for near-sea and high corrosion environments. Their range of products meets the requirement of highly architecturally-demanding structures, without compromising on strength, flexibility or aesthetics in almost all environmental conditions.

All Lysaght products are tested and developed at BlueScope Technology Centre in Chesterhill, Australia. This independent testing facility is accredited internationally by the National Association of Testing Authorities (NATA) and the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Australia.

For more information, contact NS BlueScope Lysaght Singapore Pte Ltd at tel +65 6264 1577 or visit www.lysaght.com.sg.

Wood floor finishes – Aesthetics and Performance

Bona UK recently provided wood floor finishes for a property in London.

Text & photos by Bona UK.

The client wanted a light, non-yellowing, natural surface to the oak floors in this London property. To deliver the required effect, a combination of Bona White primer and Bona Traffic Natural polyurethane lacquer was applied.

Depending upon how many coats are applied, Bona White Primer is designed to 'whiten' the surface from – as in this one coat application – simply providing a subtle pale sheen that will inhibit yellowing over time, to a true whitewashed look when two or more coats are applied.

Bona Traffic Natural was chosen as the top coat because it maintains the non-yellowing look and feel of pure, untreated wood and, at the same time, offers superior surface durability.

There are six Bona primers offering a choice of colouration from Scandinavian white to rich amber. Using a primer as the initial surface coating is more economical than adding an extra lacquer coat. Like all Bona coatings, Bona primers are very easy to use, reduce side bonding and improve the adhesion of the lacquer.

There are six Bona waterborne top coats to offer you a solution for every environment, whether you are looking for a matt or glossy finish, a natural, untreated look, anti-slip properties or supreme surface durability.

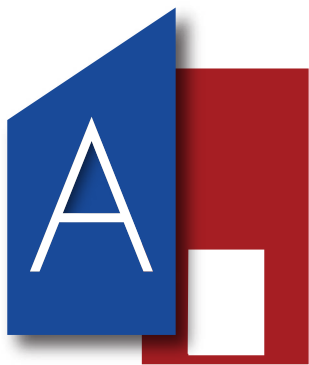
Low VOC Bona primers and lacquers meet the stringent Greenguard emissions standards and all packs carry the Greenguard logo. The global Greenguard Certification programme helps buyers identify products and materials that have low chemical emissions and therefore improve the quality of the air where they are used.

Bona water based finishes and floor care products for



wooden floors are also Green label certified. Green labelling (or eco-labelling) refers to a scheme which awards environment-friendly products with eco-labels. The Singapore Green Labelling Scheme (SGLS) is launched by the Ministry of the Environment. To receive the Green Label waterborne varnishes must comply with the VOCs (Volatile organic compounds) limits specified.

For more information, contact Bona Far East & Pacific Pte Ltd at tel (+65 6377 1158), email info.apac@bona.com or visit www.bona.com.



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Arts Centre of Christchurch, New Zealand

Text & photos by Victaulic

With a history reaching back to 1877 when the site first opened as Canterbury College, the Arts Centre in Christchurch is a collection of 23 heritage buildings that cover a full city block. By the 1950s, increased student numbers meant Canterbury College needed a bigger campus, and it relocated to Ilam as the University of Canterbury in 1978. The Arts Centre's buildings were transferred to the Arts Centre of Christchurch Trust Board to be used for a variety of arts-related activities, including art and artisan studio spaces, cafés and restaurants, theatres, cinemas, retail, outdoor markets, galleries and public performances.

Damages sustained during the earthquakes that struck Christchurch in 2011 led to the Arts Centre closing its doors to enable a NZD290 million restoration project. While preserving the buildings to the highest conservation standards, the restoration created the opportunity to completely modernise the site's infrastructure, including earthquake-resistant building techniques to minimise the impact of future quakes.

While the original schematics of the buildings will not change, services inside the buildings – like heating and cooling – are being retrofitted to utilise modern system designs that promote sustainability, reduce the impact of seismic movements and make future maintenance faster and more efficient.

Although the upgraded systems would have a positive impact on the future of the Arts Centre, the works needed to be completed within the confines of the existing historical spaces, challenging the design and installation of the systems – particularly the layout of the mechanical rooms. This case study focuses on the Library building, located at the centre of the site.

The Victaulic role in system design and prefabrication - Library Building

Dating back to 1916, the Library includes a basement that was historically used for the storage of books. The restoration

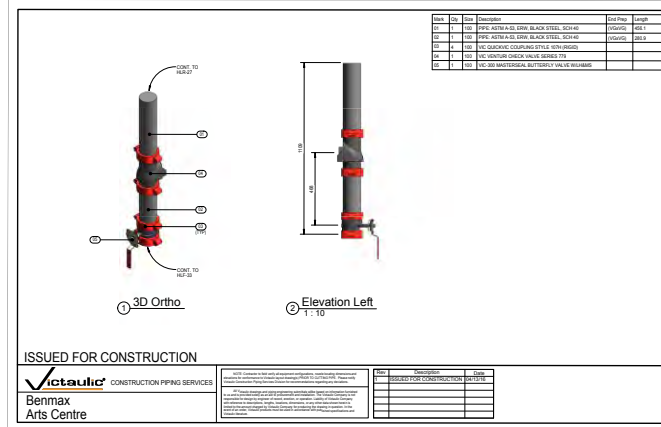
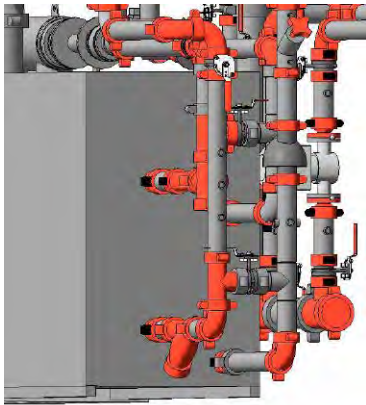


project designated this storage space as the new mechanical room for the heating and air-conditioning systems of the Library and other nearby buildings. This posed a particularly difficult challenge.

"The Library plant room was definitely the most challenging build on the site so far," noted David Morley, site supervisor for Benmax. "With a maximum ceiling height of three metres in the basement and only one narrow stairwell to access the room, we had very little flexibility to get the system components into the space. The basement was originally designed to hold books – we had to get large, heavy industrial components like pumps into the space. We had to get creative," added Morley.

Faced with limited space, Benmax planned to design the system and prefabricate most of the components and pipework before delivering to the site. Prefabrication and forward planning allowed them to virtually plot out the locations of the pumps and pipework before sending a single item to site. This allowed Benmax to break the project down into easier, prefabricated segments that could be dropped into place.

"We [Benmax] commissioned the Victaulic Construction Piping Services (CPS) Department to help us with our mechanical piping system design, and provide detailed spool drawings which we used to prefabricate the pipework," said



Morley. Victaulic CPS provided an overall design of the heating and cooling systems in the pump room, then broke down the schematics into smaller, segmented spools that were small enough to meet the space restrictions of the site. "The spool drawings provided by Victaulic were exceptionally good. They were labelled, numbered and essentially fool-proof – the team was able to quickly fabricate the spool pieces based on the information, and knew exactly where each assembly belonged on the site," he added.

Moreover, the modular nature of Victaulic mechanical piping products lent itself perfectly to prefabrication off site.

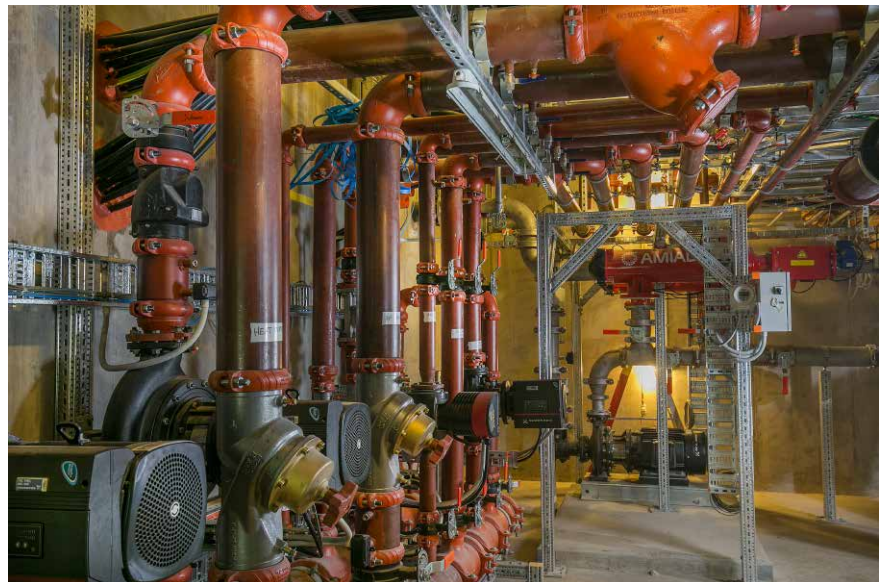
"Because access to the space was down an old stone staircase, we were limited to working in sections of pipe that were less than three metres long. If we had opted for a welded or flanged system, every three metres of pipe would have required welding onsite. With Victaulic, we just threw on a coupling and we were done," said Morley.

Morley noted not only would a welded job have taken exponentially longer to complete, welding in an enclosed site of this nature would have exacerbated health and safety risks: "We would have needed fire permits to weld in the building, high powered fans to suck out the fumes in the space and we would have lost two hours at the end of every day for the fire watch to meet regulations. Not to mention the time it takes to weld compared to using Victaulic. It might take an hour to weld on a bend, depending on the conditions. With Victaulic, it's minutes. There's no doubt about the time savings," he said.

Upgrades to the cooling system

The design of the cooling system underwent an upgrade during the restoration project to make it more sustainable to run long-term.

By utilising the artesian water from the natural subterranean water supply, the system does not require cooling towers, and



in turn eliminates the intensive maintenance involved with cooling tower components. The system uses the constant energy from the artesian water to maintain the correct temperature in the condenser pipework, greatly reducing energy consumption and promoting an environmentally sustainable solution.

The artesian water flows out of the bore wells, where the natural head pressure would push the water six to nine metres in the air, at a constant temperature of 12°C. Variable speed pumps ensure there is always the correct amount of water flowing through the heat exchangers according to demand. This energy (12°C) is constant and in this case is used to heat the condenser water, to prevent it from getting too cold and freezing.

Because the artesian water system is integrated into the natural aquifers, which also serve as an artesian drinking water supply, extra caution was taken to prevent contamination. The pipework in the plant room was specified to be fabricated from type 316 stainless steel to prevent any corrosion or rust. When the water is re-injected underground, it returns as clean and

pure as when it came from the aquifers.

Welding stainless steel has been known to introduce contaminants to systems due to the chemical reaction taking place when the metal is melted. With the Victaulic system, Benmax was guaranteed a safe, clean solution.

“Victaulic was able to provide all of the stainless steel couplings, fittings, butterfly and check valves. In some instances, Victaulic was able to provide Rilsan™ coated product for added protection. We were confident that any component that came in contact with the condenser water system had been time-tested in these types of applications before. It was also a point of added value to our client, as we were able to minimise the number of suppliers in our spec. It’s fantastic to be able to supply everything from the same manufacturer – it makes any future queries about the components in the system very easy to handle,” said Morley.

Seismic considerations

With the intention of creating a seismically-safe restoration at the Arts Centre, Benmax was able to deliver a system that has proven to withstand seismic movement. Victaulic flexible couplings allow for the movement commonly experienced during a seismic event.

Morley noted: “After the earthquakes in 2011 [in Christchurch], I walked through a hospital that had sustained



some damages. Where other pipe joining methods held rigid, causing stress at the joint and ultimately failure, systems that utilised Victaulic flexible couplings didn’t experience a single leak. The flexibility at the joint allowed the entire system to accommodate for the movements during the earthquakes.”

Conclusion

By the end of June 2016, Benmax had installed, tested and commissioned the library plant room systems, and points to the Victaulic grooved system as a major contributor to its success. Benmax notes that the spool drawings supplied by Victaulic could easily be prefabricated off site and then quickly bolted up in the plant room, leading to easier project coordination and tangible time savings.

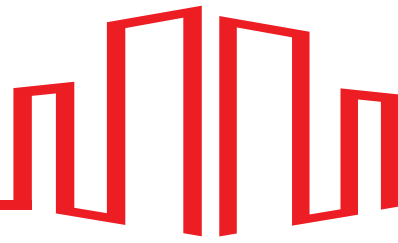
Moreover, Benmax reported a higher joint success rate than alternative joining methods: “During the testing and commissioning of the systems in the library plant room, out of the hundreds of couplings installed we only had one leak due to a nicked gasket. In a welded, flanged or screwed system, we always find a much higher percentage of leaks than the Victaulic grooved system,” said Morley.

Arts Centre site manager Chris Whitty says the new system is a great long-term solution for the site in terms of efficiency and sustainability: “It was a significant outlay in cost but the efficiency of the system means it’s a more economical solution for the site long-term. The new radiators blend sympathetically with the historic surroundings and put out a nice, quiet, gentle heat. The opportunity presented by the earthquakes allowed the Arts Centre to modernise and upgrade its systems to the equivalent of any modern build.”

For more information, visit www.victaulic.com.



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8-10 June 2017
Diamond Island Exhibition & Convention Center (DIECC)
Phnom Penh, Cambodia

Cambodia Architect & Decor returns for second edition

Cambodia Architect and Decor (CAD), first held in Phnom Penh during 9-11 June 2016, proved to be a successfully excellent platform creating networking and business opportunities between international suppliers and local architects, project developers, interior designers as well as traders and distributors. The three-day exhibition welcomed over 3,500 trade visitors and featured over 100 international companies & brands.

The second edition of CAD is scheduled for 8-10 June 2017 at the Diamond Island Exhibition & Convention Center (DIECC) in Phnom Penh. With the continued support from Cambodian Society of Architects and Board of Architects, the event will again host an educational seminar, student design competition, a showcase of design competition winners and a networking architect dinner, in addition to exhibition.

CAD 2017 will showcase over 150 companies and brands from local and international companies including international pavilion from Thailand, Malaysia, Singapore, Vietnam, Italy and China. The exhibition is sponsored by SCG, ASEAN sustainable business leader company who will showcase innovative and eco-friendly building material products, and co-sponsored by Heng Asia, a leading building materials distributor in Cambodia. The exhibition will present many products and designs first launched in Cambodia.



Exhibition highlights include:

- SCG – showcase of innovative and eco-friendly building material products on over 200 square metres space, the biggest stand in the show, covers
 - life-scale mock up roof display
 - products variety display and products application in modern setting
 - in-depth advice from SCG experts
- Heng Asia – showcase of top reliable brands of quality products
- Gio - Home Kitchen's first launch of water proof home kitchen furniture
- Kingsmen - One-stop shop solution for design and construction
- Modernform - Customizable desk & ergonomic chairs to increase your workplace productively and creatively
- Exotic panels for decorating your residential and commercial by MMWALL- Twothousand Progress
- Swimming pool: Fuschia villa, highest quality and value for money by H&T Technology Pool and Spa
- First launch of White Carrara Marble from Italy by CAVA MADIELLE- GDA Marmi



- Metal and wooden furniture from Chair Maker
- and many more

Cambodia construction industry continues to expand

- Cambodia's GDP expected to grow 7.1 percent in 2017, highest among all neighbouring countries with Construction is one of primary sources of growth besides Agriculture, Garments & Footwear and Tourism, according to Asian Development Bank (ADB).
- From the year 2000 to this June, the Ministry of Land Management, Urban Planning and Construction (MLMUPC), Cambodia had approved 35,206 projects that translated to 85 million square metres nationwide. During the same 16-year period, total construction investment reached \$32.3 billion.
- MLMUPC revealed that \$8.5 billion worth of development projects approved in 2016 was significant growth compared to just \$3.3 billion in 2015.
- The Cambodia Infrastructure Report from Business Monitor International forecast construction sector to grow by 9.9 percent in 2016 and 9.8 percent in 2017
- CBRE foresee that FDI will move towards entertainment, hotels, condo-hotels and retail in 2017 where residential sector were largely focused in 2015 and 2016
- Knight Frank projected offices demand to increase by 77 percent within 2020.
- Sihanoukville is one of the most hot spot in 2017! Expect more tourism, hospitality, entertainment investment, and also residential investment.



For more information, tel (+66) 2 713 3033, email info@icvex.com or visit www.cambodiaarchitectdecor.com.



Choosing Paint Colours & Coatings

Colour is the first thing that we see when we enter a room. Therefore, it is important to pick a colour for a wall that creates the correct mood or feeling. In addition, the right colour can also make the space look bigger or smaller and create a sense of balance with the other design elements in the room.

In this special feature on paints and coatings, we look at all the major factors that go into considering a colour for your wall, the common mistakes that are made when specifying a colour and the challenges and opportunities facing paint manufacturers.

In addition, a number of factors also come into play when choosing a colour scheme for the exterior walls of a building. This includes the correct type of coating and how effective it is to protect the surface.

Over the next few pages, several global players share their experiences and insights on the current and future trends affecting the paint and coatings industry.

Global Paints & Coatings Market: A US\$ 176 Billion Opportunity in the Offering

The global market for paints and coatings is projected to be worth US\$ 176.5 billion by 2020, according to a research study by Persistence Market Research. Steady recovery in the global construction sector is expected to fuel consumption; however, weak momentum in the automotive OEM and machinery segment has the potential to impede growth.

Asia Pacific will continue to be at the forefront of global demand and consumption, with China and India accounting for the bulk of demand. As manufacturers focus on producing more high-value paints and coatings to comply with stringent regulations, growth in terms of value will be stronger. It is expected that manufacturers will look to boost their presence in developing countries to compensate for the sluggish demand in Western Europe.

Marine, industrial, and architectural & decorative will remain the leading end-users, with industrial sector set to witness the highest growth rates. Use of high-quality paints for decorative and maintenance purposes will create significant growth opportunities for manufacturers catering to the industrial sector.

The global paints and coatings market will continue to be influenced by the U.S. dollar during the forecast period. As most raw materials are priced in the U.S. dollar, drastic fluctuation in the currency prices will influence the supply chain. Fluctuation in oil prices will also remain an influencing factor in both the short- and long-term.

Demand from construction and automotive sector will remain key to the prospects of paints and coatings manufacturers. According to Persistence Market Research's analysis, the paints & coatings market will continue to be influenced by changing regulatory guidelines. Stringency in regulatory guidelines in the U.S. and Europe can impact the entire supply chain – from raw material suppliers to end-users. For example, the deteriorating air quality in China has led local authorities to enforce stringent emission guidelines and VOC content in industrial coatings.

Supplier divestment remains a key trend in the global paints & coatings market. The anticipated merger of Dow and DuPont can prompt other key players to create independent entities. Overall, Persistence Market Research maintains a positive outlook on the global paints & coatings sector, and expects the market to grow at over 5 percent annual rates through 2020.

For more information, visit www.persistence marketresearch.com/market-research/paints-coatings-market.asp.

An Interview with

Nippon Paint (S) Co Pte Ltd

Shelly Chan, Marketing Manager, Nippon Paint (S) Co Pte Ltd, shares her views.

Q: Choosing the right colour of paint is one of the most important steps in decorating a room. What factors do designers need to consider when choosing a paint colour for an interior wall?

Designers need to consider the theme and mood of the overall design concept in accordance with their client's brief, the size and purpose of the space, and any existing finish that for whatever reason should not be changed.

In simple terms, light colours 'recede' and create the effect of enlarging a space, while dark colours 'advance' and create the effect of reducing a space.

In addition to colour, a designer should also consider the gloss level and texture of the paint. A single colour may come in various gloss levels and textures, each subtly altering the perception of the shade and the mood of the space in the eye of the beholder.

Last but not least, designers should consider the kind of lighting that will apply to the painted space. Hence the same colour may appear vastly different under different types of lighting.

Q: What are the common mistakes that designers make when it comes to specifying paint colour for their clients? And what solutions can you suggest for them?

In specifying paints, besides colour, designers should also specify the finished appearance, such as matt or gloss. A single product can produce a variety of different finishes depending on the application process. For example, Nippon Paint Texkote can be used as a body coat and applied in various ways to achieve different types of three-dimensional effects. Likewise, Nippon Paint Momento Special Effects Paint can be used to achieve various multi-coloured tones and effects, determined by the skill and technique of the applicator.

Furthermore, designers should also specify the functional properties of a paint, if required. Beyond merely decorating, today's paints can perform specific functions from minimising cleaning to preventing the spread of diseases, such as Nippon Paint Odour-less Easywash, Nippon Paint VirusGuard and Nippon Paint MozzieGuard.



Nippon Paint has completed many Housing & Development Board (HDB) projects in Singapore.





Q: Exterior walls are usually subjected to weather conditions and sometimes pollution. How should designers choose a suitable colour scheme for their clients?

In Singapore, exterior paints are usually benchmarked against the Singapore Standards 345 (SS:345) and thus are certified as able to withstand the conditions and extremes of our tropical climate.

Often, the pollutants in our urban environment result in unsightly dirt streak marks resulting from the washing down of surface dirt. The good news is, there are certain products in the market with built-in hydrophilic paint films that minimise the dirt streaking effect. For example, Nippon Paint Weatherbond AlgaeGuard not only resists microbiological growth but also helps in minimising dirt streak marks.

Ideally, the potential for dirt streaks should be considered from the earliest stages of a design and planning, at blueprint stage. Design details that eliminate or minimise surfaces for dirt retention can substantially minimise or even eliminate dirt streak marks. Some building owners deliberately opt for darker colours to conceal potential dirt streak marks.

Q: What kind of coatings are usually applied on exterior colour paints and how effective are they in protecting the surface of the wall?

Paint products and coatings should be selected to decorate and protect the surface of a wall depending on the type of substrate, from cement screed to brickwork, sheet metal, timber and so on; the environmental conditions to which the wall will be subjected; the desired appearance of the wall; and any other desired or required function, such as in the case of a 'cool paint'. Nippon Paint SolaReflect, for example, can help reflect away the NIR (Near Infrared Reflectance) portion of the sun's rays before it can be absorbed by the building's surface and generate heat. This not only keeps the surface of the wall and the interior of the building cooler, but also helps curb the urban heat island effect.

In Singapore, paint systems are expected to perform in compliance with SS:345's standards, and beyond.



Singapore Changi Airport Terminal 2 is another iconic project by Nippon Paint.

Q: Can you share with us any project (local or international) that shows how a colour selection was useful in meeting the client's needs?

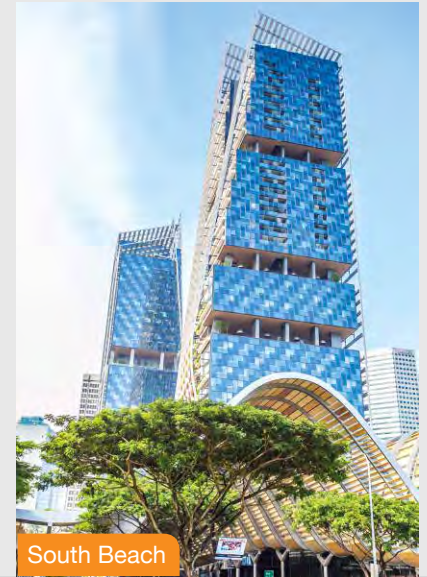
For any project, it is crucial to prepare the colour and/or material selection with ample time factored in for the client to review and approve it. In Singapore, all building projects follow this process, whereby the material manufacturer provides the colour selection and samples for the client's viewing and approval.

A typical project would be the painting of a new HDB block or the repainting of an old one. We would provide a few colour schemes that show different colour combinations digitally superimposed on the building to be painted, for the client's consideration. Since the approved colours will stay on the building for a minimum of five years, due care should be taken to ensure that the colour combination will be well received.

Nippon Paint: Covering Every Sector of the Market



Ng Teng Fong Hospital



South Beach

From protecting delicate human health to protecting the mammoth machinery of heavy industry, Nippon Paint leaves no sector of the market uncovered.

Painting a Healthier Environment

More than a decade ago, Nippon Paint paved the way for other paint brands to follow with the launch of the first odourless paint in the Singapore Market, Nippon Paint Odour-less Premium All-in-One. Aided by an intensive advertising campaign educating the public on the perils of paint odour, the paint was embraced by health-conscious Singaporeans and remains a best-seller till today.

In environments where heavy human traffic carries a high risk of contagion, such as hospitals, childcare centres and schools, Nippon Paint products are actively preventing the spread of both

common and potentially life-threatening diseases.

Nippon Paint Bio-glaze and VirusGuard contain various combinations of encapsulated active ingredients with anti-bacterial, anti-fungal and anti-viral properties. Optimising hygiene while sparing human resources, they all offer easy washability and low maintenance.

In response to the growing threat of mosquito-borne diseases such as dengue fever and the Zika virus, Nippon Paint recently released MozzieGuard, a paint that knocks down and eliminates mosquitoes within seconds of landing on a painted wall.

Meeting the Heavy Demands of Industry

Nippon Paint provides a wide range of protective coatings that meet the unique challenges of heavy industry.

Nippon Paint FloorShield provides multi-layered flooring solutions for heavy-traffic areas such as car parks and warehouses, while the ultra-performance Hi-Pon and Zinky ranges are formulated for use on metal structures subject to extreme environments, such as bridges, water tanks and petrochemical containers.

Arguably the flagship product in Nippon Paint's range of products developed especially for the trade, Nippon Paint Duflonar provides the ultimate protection against weathering for architectural aluminium surfaces. Often, a single application can last for the entire lifetime of a building.

From the ground up, there is virtually no surface not covered by a Nippon Paint product.



Caribbean at Keppel Bay

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Email: customer@nipponpaint.com.sg
Website: www.nipponpaint.com.sg

An Interview with

Mapei Far East Pte Ltd

Lincoln Lim, Coatings Specialist, Mapei Far East Pte Ltd, shares his views.

Q: Choosing the right colour of paint is one of the most important steps in decorating a room. What factors do designers need to consider when choosing a paint colour for an interior wall?

In my opinion, the colour should live up to the purpose of the room. So, selecting the paint colour really depends on the function of the room (i.e. bedroom, study or playroom for children etc). However, while colour choice might be important, the selection of paint type should also be considered. For example, if the room is poorly ventilated and subject to the formation of mould and mildew, then you should select a water-repellent paint that resists such conditions.

Q: What are the common mistakes that designers make when it comes to specifying paint colour for their clients? And what solutions can you suggest for them?

It is possible that while choosing the colour, they might overlook on the type of paint. For interiors, painted walls can be subject to abrasion marks during daily activities. In this case, a water-based polyurethane paint might be a better option. Water-based polyurethane paints have better abrasion and stain resistance. It is also available in a wide range of colours and is more durable.

Q: Exterior walls are usually subjected to weather conditions and sometimes pollution. How should designers choose a suitable colour scheme for their clients?

I observed that most painted facades are usually with pastel colours. While pastel colour is pleasing to the eye, dirt is more visible compared to darker colours. Dirt formed can be easily seen and when rain water washes off the dirt, unsightly streak marks may form. To reduce this issue, it is advisable to include a flashing in the design for the windows, protrusions and edges.

Q: What kind of paint coatings are usually applied on exterior walls and how effective are they in protecting the surface of the wall?

For painting walls in new construction as well as restoration of very old buildings, we recommend a silicone mineral paint which is extremely useful in our highly humid environment. This is a breathable system which allows the moisture to escape from the substrate and at the same time repel rain water from entering.

More so for walls of old restoration buildings, it is very important for the moisture inside the substrate to be released. However, if you apply a conventional film-forming emulsion or acrylic paint, these paints are not breathable and can result in blistering & paint peeling.

When repainting existing buildings with concrete structures, we recommend the use of our Hybrid-Silicone paint system. This system has excellent colour retention and repels water. The water repellent characteristic prevents water from entering the wall and thus it protects the substrate from moisture attacking the free lime in the cement mortar.

Q: Can you share with us any project (local or international) that shows how a colour selection was useful in meeting the client's needs?

Mapei's mineral and silicone-hybrid paints were applied on the external façade of the SUTD building (Singapore University Technology Design) in Singapore. A total of 8 colours were used (including the shades) and visually, I think the façade looks great



Singapore University of Technology and Design, SUTD. Photo courtesy of UNStudio

and it brings out the liveliness of a modern university. In USA, the walls of Guggenheim Museum building were painted in white and it brings out the character of an artistic museum.

Q: What are the major challenges facing paint and coatings manufacturers today and what measures are being taken to overcome them?

The major challenge for paints and coatings manufacturers today is that a painting or repainting job requires much more than the decorative aspect. Especially for “Double R” (Repair and Redecoration) repainting jobs, typically it is necessary to repair the substrate starting from old rusty reinforcement bars, hollow and cracked plasters, water seepage and window sealant replacement, etc. Not all paints and coatings manufacturers are in the position to offer a total solution and so will face limitations to accomplish good performance works.

Mapei faces this challenge as an opportunity to provide solutions and our capabilities in offering a one-stop partnership for all works from start to finish.



Sultan Mosque in Singapore. Photo courtesy of Mapei Far East.

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An Interview with

Kansai Paint (S) Pte Ltd

Mr Chee Teck Soon (Technical Manager)/ Kansai Paint Singapore shares his views.

Q: Choosing the right colour of paint is one of the most important steps in decorating a room. What factors do designers need to consider when choosing a paint colour for an interior wall?

As colours are much subjective by individual, so there is no right or wrong. However, choosing a dark tone colour will make the room look smaller while lighter tone will make it appear brighter and larger.

Q: What are the common mistakes that designers make when it comes to specifying paint colour for their clients? And what solutions can you suggest for them?

A lot of time, designer will choose colours that blend with the intended furnishing colours, that should be the right way. However, some too bright colours are only good for deco and furniture like lamps and sofa but not the walls e.g cobalt blue.

Q: Exterior walls are usually subjected to weather conditions and sometimes pollution. How should designers choose a suitable colour scheme for their clients?

Pastel shades and low sheen finish will be good as it appear flatter and smoother even if the wall is not perfect, it also reduce vividness of discolouration and chalking under prolong exposure. On the other hand, deep tone colours will be obvious in visual, showing great contrast of colour with exposed colours turning whitish and duller when colour faded and chalking occurred.

Q: What kind of coatings are usually applied on exterior colour paints and how effective are they in protecting the surface of the wall?

Generally exterior grade Acrylic water base paint can last for at least 3 years, better grade give 5 years. Silicone type and Fluoropolymer grade can extend to 8 years and 10 years respectively. These paint besides resisting UV to avoid discolouration and chalking, some elastomeric grade also



provide coverage to hair line cracks of walls, others reflect solar or insulate heat to provide cooler interior and improve conservation of energy.

Q: Can you share with us any project (local or international) that shows how a colour selection was useful in meeting the client's needs?

We provide colour scheme in simulation of the building prior to actual painting for HDB and some private condo to the architect.

Q: What are the major challenges facing paint and coatings manufacturers today and what measures are being taken to overcome them?

The major change that has taken place in the coatings industry during the last 40 years has been the adoption of new coating technologies. Until the early 1970s, most of the coatings were conventional lowsolids, solvent-based formulations; waterborne (latex) paints, used in architectural applications, accounted for 30–35 percent of the total. In the late 1970s, however, impending government regulations on air pollution control focusing on industrial coating operations stimulated the development of low-solvent and solventless coatings that could reduce the emission of volatile organic compounds (VOCs).

Energy conservation and rising solvent costs were also contributing factors. These new coating technologies include waterborne (thermosetting emulsion, colloidal dispersion, water-soluble) coatings, high-solids coatings, two-component systems, powder coatings, and radiation-curable coatings.

An Interview with

Berger Paints Singapore Pte Ltd

Angeline Khoo, Marketing Assistant Manager, Berger Paints Singapore Pte Ltd, shares her views.

Q: Choosing the right colour of paint is one of the most important steps in decorating a room. What factors do designers need to consider when choosing a paint colour for an interior wall?

The colours you choose will depend on your personal tastes and preferences. Colours are intricately linked with mood, and can elevate or depress your spirits. For rooms that require rest and repose, opt for cooler colours from the blue, green and lavender families. Pastels will work very well in such spaces, while dark colours may be overwhelming and depressing.

For rooms that are about energy and vitality, such as living rooms, family rooms or home offices, try warm colours from the red, orange and yellow families. Mild warm shades such as peach and lemon yellow create happy atmospheres. Of course, vibrant colours must be used carefully; try to restrict them to

feature walls or décor accents such as furnishings or art. For smaller, darker spaces, use light colours to liven them up and create an illusion of space. Using neutral colours also helps you play off your prized objects.

Q: What are the common mistakes that designers make when it comes to specifying paint colour for their clients? And what solutions can you suggest for them?

Most of the time, designers choose the colours using pantone shades. It is different from the paint chart or paint fandeck. Colour is a phenomenon of light caused by how our eyes detect differing qualities of projected or reflected light. Hue defines pure colour. Tone is a visual property of colour. Tone is softer than the original colour as colour is mixed with white, greys and black.

Monitors and printers may be calibrated differently leading to differences in colour as well. When in doubt, refer to a physical shade card from Berger Paints Singapore. Alternatively, designers can use the colour visualizer, which allows you to play around with complementary and analogous colour schemes. It also allows you to see how these combinations will look in your home.

Q: Exterior walls are usually subjected to weather conditions and sometimes pollution. How should designers choose a suitable colour scheme for their clients?

Again, Our Colour Visualizer allows you to play around with complementary and analogous colour schemes. It allows you to see how these combinations will look on the external walls. Berger Paints will definitely recommend colours which are to your preference and able to last for 5 years and above.

Q: What kind of coatings are usually applied on exterior colour paints and how effective are they in protecting the surface of the wall?

Apart from choosing colours, the determine factor is the paint system that will be used on the surface. We have a few systems that is solely for exterior walls - Weathercoat 345 & Weatherflex 500 which consists of good features such as:

- Thermo-reflective
- Self-Cleansing
- Elastomeric
- Anti-carbonation
- Stain-resistance
- Easy wash ability

Q: Can you share with us any project (local or international) that shows how a colour selection was useful in meeting the client's needs?



One of the examples: Berger Paints is approved vendor for HDB Re-painting projects. Before any painting works is carried out, Berger Paint - using our technology to propose 3 to 4 colour schemes for the Town Councils and HDB Team to select. This gives a perspective of how it will look before the actual paint work proceeds. It is one of the most important steps to go through before the actual work starts.

An Interview with Performance Coatings Pte Ltd

Dominic Neo, Business Development Executive, Performance Coatings International Pte Ltd shares his views.

Q: Choosing the right colour of paint is one of the most important steps in decorating a room. What factors do designers need to consider when choosing a paint colour for an interior wall?

It goes beyond selecting a colour; there are so many different shades of colours to consider. Our company distributes and applies Sherwin Williams paint, and they have over 1500 rich and vibrant colours. The most important factor would be to consider is the over-arching design theme. Your paint colours anchor and define the environment. You've to ensure that the colour complements your fittings and furnishings, and creates the vibe that you're trying to build.

Q: What are the common mistakes that designers make when it comes to specifying paint colour for their clients? And what solutions can you suggest for them?

I've seen designers impose their own preferences. They need to keep an open mind and put their client's own ideas first. To a lesser extent, I've been noticing a lot of white homes and cafes, due to the rise of Scandinavian interior design concepts. However, while a fresh white wall looks great, white may not be the best choice over time due to its greater susceptibility to staining and yellowing.

Q: Exterior walls are usually subjected to weather conditions and sometimes pollution. How should designers choose a suitable colour scheme for their clients?

They have to keep colour fastness in mind. Deep accent colours are comparatively weaker i.e. they will fade faster.

Q: What kind of coatings are usually applied on exterior colour paints and how effective are they in protecting the surface of the wall?

They need to use – and in most cases, to enforce the use of – a high quality acrylic paint. It needs to be highly resistant towards blistering, peeling and fading. Further, the paint



needs to be anti-mould and mildew. Sherwin Williams Emerald, a paint and primer in one, is a good example of a premium acrylic paint. They're usually highly effective, if surface preparation and application procedures are adhered to. The applicator cannot take any shortcuts. Designers can consider using lime-based plaster too. Our company is the specialist applicator of Oikos paint. Their coatings must be trowelled on by hand. The Travertino range and the elastomeric coatings are used in many conservation projects all around the world.

Q: Can you share with us any project (local or international) that shows how a colour selection was useful in meeting the client's needs?

An effective paint colour choice creates the right atmosphere. We recently completed an interior decorative painting job at Changi Airport's Terminal 4. We chose a subtle, cream colour, in a traditional Italian stucco finish. The textured effect was applied onto the elevated plaster walls in the arrival hall. Although the colour and texture were not overtly outstanding, it met the client's needs – the arrival hall should be warm and inviting. The subtle cream colour created that vibe.

Q: What are the major challenges facing paint and coatings manufacturers today and what measures are being taken to overcome them?

The consumers are becoming smarter. It's a good kind of challenge. Manufacturers are being challenged by discerning consumers, who are educating themselves on new coatings technology. They're aware of the paint's functional aspects – VOC levels, hide, coverage, anti-mildew properties etc. Manufacturers have to innovate, in order to differentiate themselves. Take Sherwin Williams for example. They just released Paint Shield, a microbicial paint that actively kills common hospital acquired infections (MRSA, E.COLI, VRE etc.) for up to four years. There's no other paint like it in the market. This paint would be perfect for hospitals, schools, offices, gyms, nursing homes and even homes.

An Interview with

Sherwin-Williams (S) Pte Ltd



Jermaine Chua, SEA Market Development Manager, Global Market Development – Global Finishes Group, Sherwin-Williams (S) Pte Ltd shares her views.

Q: Choosing the right colour of paint is one of the most important steps in decorating a room. What factors do designers need to consider when choosing a paint color for an interior wall?

Decorating a room is not all about colours despite the fact that it is the first thing that someone who walks into the room sees. The other function of paint is protection. It is important that the designer selects a colour palette that suits the function of the room – cheerful colours for childcare centres, soothing neutrals for healthcare, warm colours for the home, etc. While selecting colours for a room, it is also important to take into consideration the amount and type of lighting in that room as lights can affect how the colour is seen.

Q: What are some of the common mistakes that designers make when it comes to specifying paint colour for their clients? And what solutions can you suggest for them?

When it comes to colours, there is no right or wrong. Colours are subjective and tailored to the client's preference. Most designers do not pay enough attention to the type of paint they specify as they usually specify only the colour of the paint. Another factor which needs more attention is gloss level. Gloss levels and lighting will affect the finishing look.

It is important that designers specify the type of paint to be used as this will definitely value-add to their services to the client. For example, for healthcare facilities, a microbicial paint such as Paint Shield should be used as this will actively eliminate most bacteria within a 2-hour surface contact period and this paint is effective for up to 4 years; homes should be painted using a zero VOC paint (even after tinting) such as Harmony which also reduces the formaldehyde from other sources. Harmony is odourless compared to some other similar paints which has slight odour which some people are sensitive to.

Q: Exterior walls are usually subjected to weather conditions and sometimes pollution. How would designers choose a suitable colour scheme for their clients?

Paints for exterior walls are meant to withstand harsher conditions compared to interior paints. Exterior walls are also subject to expansion and contraction and it is common to see shrinkage cracks on the walls. There should be a certain amount of elasticity (latex) in exterior paints but the paint should not be 'too elastic' resulting in 'bubbles' or blisters.

A well thought out colour scheme will enhance the features of the building and hides the 'flaws' of the building. It is important to take into consideration the orientation and height of the façade when selecting colours as these factors affect how the colour is seen.

Q: What kind of coatings are usually applied on exterior colour paints and how effective are they in protecting the surface of the wall?

There is no one-for-all painting system, which usually comprises of a sealer and finishing coats. There are different types of sealers for different substrates with different conditions. Efflorescence on walls is likely due to insufficient curing. For such conditions where the pH value of the concrete is more than 9, it is advisable to use Loxon Conditioner. Exterior wall coatings should have some elasticity as the exterior walls are expanding and contracting daily. Paints with a higher Light Reflectance Value will help to reduce



the amount of heat passing through the walls thus reducing the amount of energy for cooling purpose.

Q: Can you share with us any project that shows how a colour selection was useful in meeting the client's needs?

The HOLLYWOOD sign in Los Angeles USA was painted with our Emerald to ensure that the signage would remain crisp white with time and be protected against peeling, chalking, mildew and weathering. The client wanted a clean bright white and we offered our High Reflective White (SW7757). Emerald has excellent stain resistance, keeping the HOLLYWOOD sign cleaner for a longer time.

Q: What are the major challenges facing paint and coatings manufacturers today and what measures are being taken to overcome them?

Cost is always a challenge. It is important to educate the consumers that better quality paints cost a little more but the benefits are worth way more than that. We are constantly trying to share with professional architects and designers the benefits of using Sherwin-Williams paints so that they may in turn share the benefits with the users.

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ABSORBENT MATERIAL | ALPHA ACOUSTIKI LTD

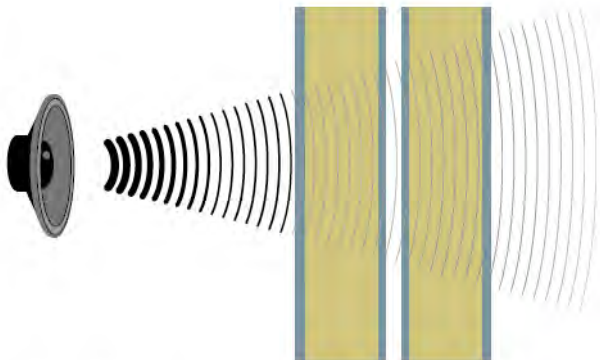
Noise in most industries is a serious health issue that affects the employees and their health. It can also be a significant environmental noise problem that requires soundproofing to meet comfort or legal standards.

Therefore the noise receiver in industrial applications is not only the workers (occupational noise) but also the nearby noise receivers like nearby houses etc. At the same time, interior acoustics is a fast growing field for architects around the world.

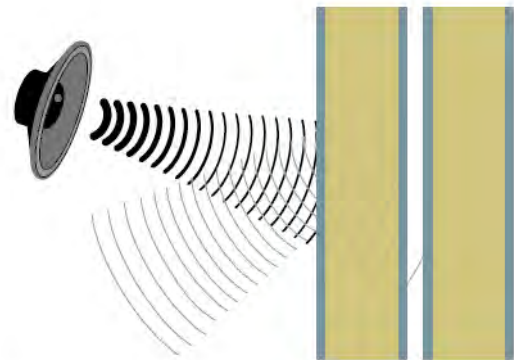
Absorbent material like ISOLFON SEP (usually porous) offer increased sound absorption but are not suitable for noise insulation and that is because a large ratio of the energy propagates through their mass. On the other hand the high-density materials like ISOLFON Barrier are good in sound insulation (due to the law of mass) but bad absorbers.

The below graphs explain the critical differences between sound absorption and sound reduction/insulation.

Sound absorption and sound reduction



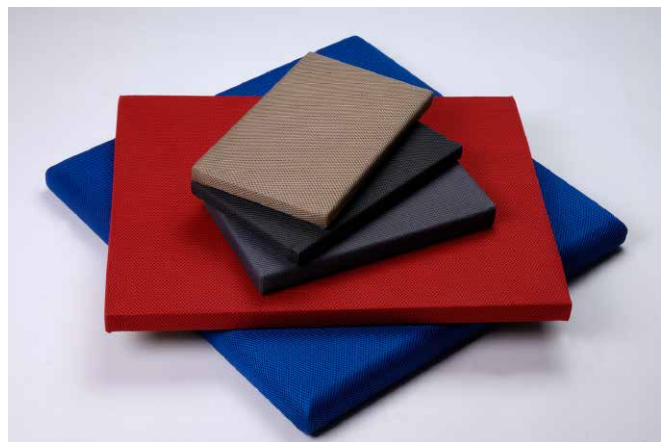
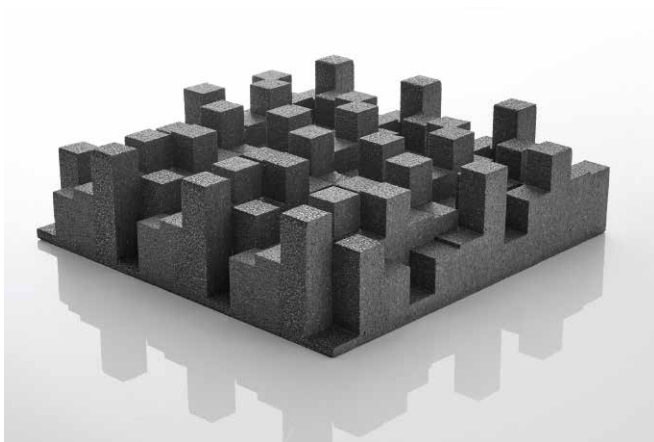
Sound absorption



Sound reduction

Utilising the above acoustic theory principal ALPHA ACOUSTIKI based in Greece specialises in acoustic solutions since 1978 and has resolved a wide range of acoustic applications and projects.

Solving acoustic problems is the company's passion and it strives for constant improvement and further solutions that will resolve industrial soundproofing but also building soundproofing problems.



Photos: © Alpha Acoustiki Ltd

For more information, visit <http://alphacoustic.com> and www.antivibration-systems.com.



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ACOUSTIC PANEL | OFFECCT AB

In Thomas Sandell's new acoustic panel Soundwave® Ceramic, architecture and design comes together. With his exceptional knowledge of the details required to create a qualitative interior, Sandell has designed an acoustic panel that is more architecture than design and that is as pleasing for the eyes and ears as it is lean on the environment.

The inspiration for Ceramic are tiles, a product of many qualities even though the contribution to a good acoustic environment is not one of them. When Thomas Sandell now interprets the architectural qualities of ceramic tiles to design, it is with the help of recycled polyester fibre, an environmentally friendly material whose qualities Offecct has successfully developed during many years in its collection Soundwave®.

"When working on Ceramic, I have tried to think more like an architect than a designer," said Thomas Sandell who throughout his career has successfully managed to combine both professions.

Instead of creating an acoustic panel that is expressive, which according to Sandell design often is, the ambition of Ceramic has been to develop a panel that can cover large surfaces – much in the same way as ceramics are used in architecture.

"I asked myself: 'what does an architect imagine an acoustic panel to look like and what functions should it inhabit?'" Thomas Sandell found the answer to the question as well as inspiration for Ceramic in one of his most recent architectural projects – a private house in the Stockholm Archipelago where ceramic tiles from a revered Dutch ceramics factory was used.

"Soundwave® Ceramic is an acoustic panel with two features," said Anders Englund, Design Manager at Offecct. "We wanted an acoustic panel with which an entire wall structure without any visible joints can be created, even though the geometry of each unit is a square."

For more information, visit www.offecct.com.



Photo: © Thomas Harrysson Photograph. Photo courtesy of OFFECCT AB.

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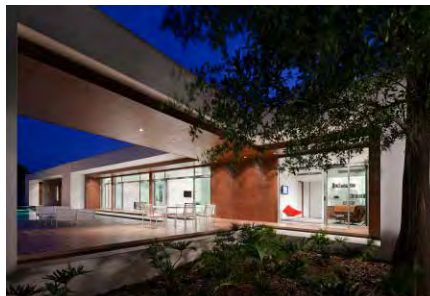


Photo: © Paul Warchol



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Architects, designers and contractors alike appreciate the long list of benefits TruGrain products offer. Attributes include water- and slip-resistance, dimensional stability, high UV tolerance, and resistance to mold and fungus growth. Easy workability, design flexibility, and a wide palette of natural and designer stains make TruGrain products ideal for use in residential and commercial projects.

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For more information, visit www.westechbp.com.

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- Raw materials are from renowned suppliers like PPG, AGC, Guardian and etc. The company is the first and only PPG licensed fabricator in Singapore.

- Services worldwide customers including designers and architects. Fast turnaround fabrication lead time with dedicated sales and customer service team.

- Unlimited customisation and freedom in designs. Continuously focuses on innovation and product development.

- International and regional certifications are a testament of the company striving towards quality and distinction to consistently meet regulatory requirement while meeting customers' needs.

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Besides that, DDG Glass also supplies other glass products such as Low-E Glass, Solar Control Glass, Digital Printed Glass and etc to enhance energy efficiency. Low E and Solar Control Glass improve the thermal performance and thus, reduce the cost for air-conditioning system. It is ideal glass for saving building energy to make the building environment friendly. Digital Printed Glass use durable ceramic inks with the images directly print onto the glass. It can hold up under all weather conditions which is ideal printing solution for building exterior as well. With the possibilities of printing 360 degree, it can turn any panel of glass into stunning canvas.

For more information, visit www.ddg-glass.com.



Energy efficiency low-E glass & digital printing glass for building facade. Photo: © DDG Glass



Energy efficiency low-E glass for building facade. Photo: © DDG Glass



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The breadth and depth of the skyrise greenery movement have grown over time across cities. Elevated building platforms, gaps, corners, roofs and even underground spaces have become new planes for land-scarce cities like Singapore. With this evolving symbiotic relationship between cities and nature, a diversity of landscape typologies has emerged to meet a range of community objectives.

The **fourth edition of the International Skyrise Greenery Conference (ISGC)** continues to deepen the conversation of skyrise greenery. It will focus on the topics of resilience, new levels of greening and integrating social needs into urban infrastructure. The conference also offers an open platform to draw lessons from the challenges nature presents – shaping intents, outcomes and even the bottom line of greening projects. Scheduled for **9 & 10 November** at the Singapore EXPO Convention and Exhibition Centre, ISGC 2017 is the key skyrise greenery conference that you do not want to miss!

ISGC 2017 will be held alongside **GreenUrbanScape Asia 2017**, an international exhibition on landscape, leisure, greenery design, construction and technology, to be held on **9 – 11 November 2017**.

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The product was tested in various countries worldwide and since then more than 20,000 square metres of Royal Grass Sense has been installed. It is expected that Royal Grass Sense will rapidly gain a position in the top of best-selling artificial grass types. It is ideal for use on green roofs, around buildings, in decorative gardens such as front lawns, and for presentational purposes, such as exhibitions or store furnishings.



Photo: © Royal Grass

Singapore Green Label

Although quality and look and feel are important factors to consider when selecting an artificial grass brand, it might also be good to consider environmental aspects. Royal Grass was awarded the Singapore Green Label by the Singapore Environment Council in 2015. It is the first and only product brand with all of its products "Green Label" Certified.

Eco Outdoor is the sole distributor in Southeast Asia for Royal Grass. For more information, visit www.royalgrass.com or www.ecooutdoor.com.my.

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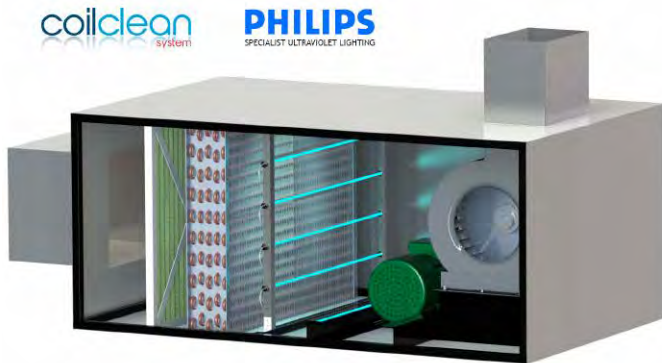
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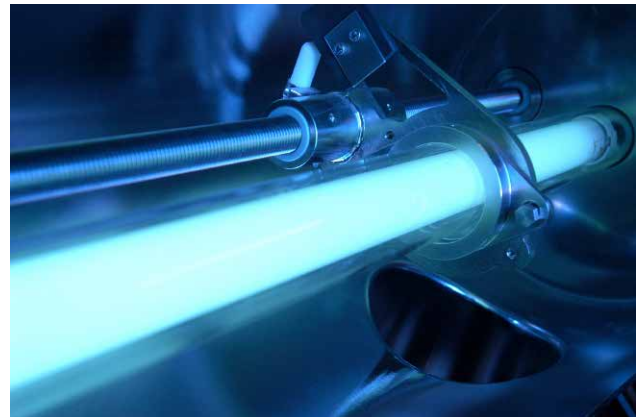
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There is no known organism or pathogen that can survive UV-C energy. Photo: © Clean Air (Thailand) Co., Ltd



Ultraviolet Germicidal Irradiation keeps the evaporator coil in an 'as new' condition for its operational working life. Photo: © Clean Air (Thailand) Co., Ltd

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Studies, published by the Lancet, prove that UVGI dramatically cuts the risk of cross- contamination of viruses amongst staff and customers in buildings. This helps to protect against illness and allergies thereby reducing absenteeism and increasing productivity. It also reduces mold within HVAC systems, which gets rid of bad smells and improves the efficiency of the system.

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Established in 2010, Everise Technology Development Limited (Hong Kong) is one of the pioneers in the application of nano-materials in construction industry. The company specialises in the provision of novel and green construction materials that demonstrate significant advantages over the conventional ones. Offering a versatile range of eco-construction services, Everise offers two outstanding green building materials, Eco Concrete Seal and Thermal Insulation Coating.

Eco Concrete Seal (ECT-Seal)

Eco Concrete Seal (ECT-Seal) is a colourless, odourless, non-toxic, water-based, non-flammable, non-caustic, nano-sized and deep penetrating concrete treatment (up to 30mm) designed to protect and strengthen concrete or other cement-based substances. Through a chemical reaction with concrete, ECT-Seal forms nano-sized crystals that block up pores and cavities. Thus, a long-term and superior barrier would be created against moisture and corrosives.

Traditional concrete waterproofing products available in the market are only effective on either positive or negative side. They haven't said that the result won't last or cannot bear UV. ECT-Seal is the solution to treat water leakage regardless of both positive or negative sides, or even under extreme condition.



Thermal Insulation Coating (TIC). Photo: © Everise Technology Development Limited

Thermal Insulation Coating (TIC)

The company's Thermal Insulation Coating (TIC) is an eco-friendly and nano-enhanced cementitious coating, which emphasises extremely high insulation performance, ultra-thinness, water-resistance, fireproof, UV resistant, anti-corrosion and with a unique feature of high tensile strength. All these have made it a competitive product in such erratic market. With extremely low thermal conductivity, a 3-5 mm thick of TIC is effective to produce 8-10°C temperature difference. Also, the cementitious nature of TIC provides a seamless characteristic and flexibility on application. TIC can be installed both indoor and outdoor, which do not require a lot of valuable space. For these reasons, they make the company's

thermal insulation coating ideal for use in various situations.

For more information, visit www.everise.com.hk.



Eco Concrete Seal (ECT-Seal). Photo: © Everise Technology Development Limited

natural resources
green technology
green building products
sustainable development
healthy indoor air
solar energy
ecological construction
green architecture
raw materials
zero carbon emission
buildings that breathe

The September/October 2017 issue of Southeast Asia Building is dedicated to sustainable architecture, green building technology and eco-friendly building products. And we are looking for article contributions from you! If you wish to submit your project or product story for our consideration in this issue, you can write to the editor at seab@tradelinkmedia.com.sg

Deadline for submission is 1st July 2017!

NON-LOAD PARTITION WALL | ELEMATIC

Concrete precast has revolutionised the way new buildings are designed, planned and build. It does not matter if you want to shape a building that looks like it has been built at the turn of the century, like the Ralph Lauren Flagship Store in New York, or if you want to form architecture of tomorrow like the Burjal Arab Hotel in Dubai. Precast is empowering architects to reshape their approach of designing constructions, without the loss of any attributes conventional concrete is providing. In fact, there are a lot of advantages precast concrete is bringing with, such as time efficiency, easy installation, no need for skim coating and an economical wall structure.



Acotec non-load partition wall by Elematic. Photo: © Elematic



Example of a precast building. Photo: © Elematic

A proven technology is the Acotec non-load partition wall by Elematic. The wall panels can be used in practically every application anywhere in the world, while being installed six times faster than a partition wall is built. Acotec is unaffected by moisture, provides a better sound dampening while using less space and is resistant to seismic occurrence. Due to the shape of Acotec, electrical installations are easy and it is even possible to regulate the temperature of the construction using an air flow through the wall panel. At the same time the technology is saving 40 percent of concrete material and is more energy efficient.

Elematic from Finland is a world leading provider of precast plants and together with the local support of Rieckermann we transform visions into reality. Rieckermann is the sales partner of Elematic in Southeast Asia.

For more information, visit www.elematic.com and www.riekermann.com.

FREESTANDING & AUTONOMOUS ROOM SYSTEM | LINDNER GROUP KG

The Room-in-Room system Lindner Cube is a freestanding and autonomous room system that requires no connection to surrounding structural elements. Thus, this system offers ideal places of retreat with utmost flexibility and freedom of design. Spatial layouts in open-space environments are often the subject of change, where Lindner Cube can meet the demands individually. The system can be moved as whole cube, thus allowing it to adapt to specific circumstances.

Partition. Transparent. Exchangeable.

The basis of Lindner Cube is Lindner's range of Partition systems. This included various choices: single glazings allow a maximal overall share of glass, resulting in high transparency and a natural incidence of light. Metal or wooden partitions as well as double glazings can be combined freely while also being interchangeable. Depending on the executed system and its parts, sound insulation of up to 56 dB Rw can be achieved. Flush integration of acoustic elements further increases the acoustics within the system.

Ceiling. Optimal Sound Absorption. Illumination.

The ceiling consists of perforated metal ceiling panels. This optimises their sound absorption. At the same time, the panels can be fitted with luminaires or LEDs, creating an additional source of light. The ventilation unit, which runs in Ultra Silent Mode, enables concentrated and undisturbed work.

Door. Manifold Executions. Open or limited.

Lindner integrates swing and sliding doors that are tailored to the Room-in-Room system. The dimensions regarding length, width and height as well as the layout are basically unlimited. It is possible to construct a room completely closed or with an open side. Lindner Cube creates a place of quiet, discretion and mental productivity in every open-space office, without requiring substantial redevelopment works.



Above photos: © Lindner Group KG

For more information, visit www.Lindner-Group.com.

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PROTECTION FOR CONCRETE FLOORING | WACKER

A brand new way to protect your concrete flooring against stain!

Traditionally found in factory halls, garages and warehouses, concrete and cement-bound flowing screed floors have over the years won over architects and developers for its design potential; widely used in showrooms, shopping malls, restaurants and museums, kitchen and living room floors etc. since the 1980s.

Everyday Soiling

Concrete floors and cement-bound screeds are less water-resistant more susceptible to wear and tear. As a result of its porosity, the unprotected surface also absorbs spilled drinks, engine oil or other fluids. This causes soiling that cannot be entirely removed- leaving unsightly stains. Concrete and screed flooring are therefore generally protected against soiling and abrasion before it is installed- through a range of water or solvent based impregnation agents.

There is however a recurring issue on hand: The effectiveness of several conventional concrete-floor impregnating agents, silicate-based agents as well as silane-based products, offer only very limited protection for several applications- even for everyday soiling. The construction industry is also striving to avoid solvent-based systems due to toxicological and environmental-protection reasons. In short, the industry is seeking solvent-free impregnations that provide highly effective stain protection.

WACKER SILRES® BS 6920

At the European Coating Show in April 2017, WACKER presented a novel binder for concrete impregnation. Marketed as SILRES® BS 6920, this low-viscosity binder is based on the Groups' alpha-silane technology and is distinguished by its anti-staining properties, colour-intensifying effect and exceptionally high load-bearing capacity. The dirt-repelling action of formulations based on SILRES® 6920 also makes them far superior to conventional impregnating agents. It can be easily processed into ready-to-use impregnating agents and thin coatings for concrete and flowing-screed floors in industrial, commercial and private residential buildings. An alpha-silane-terminated polyether that cures on contact with moisture, SILRES® BS 6920 penetrates deep into the pores of a cement-bound floor, filling the pores completely and forming a thin, shiny film on the surface. Once cured, everyday substances containing water or oil are unable to enter the pores, offering a highly effective stain protection.

Impregnating agents based on SILRES® 6920 are recommended to be applied twice. The first coating strengthens the floor. A second produces a homogeneous surface that increases scratch and scrub resistance, making the floor polishable. This treatment also intensifies the colour of the substrate and accentuate the grain of the stone. To accelerate curing, the binder is usually formulated with an aminofunctional silane that ensures good adhesion to cement-bound substrates. It is possible to walk on or drive over the floors twenty-four hours after treatment.

SILRES® BS 6920 offers formulators considerable flexibility. Its low viscosity makes solvent-free processing possible, although

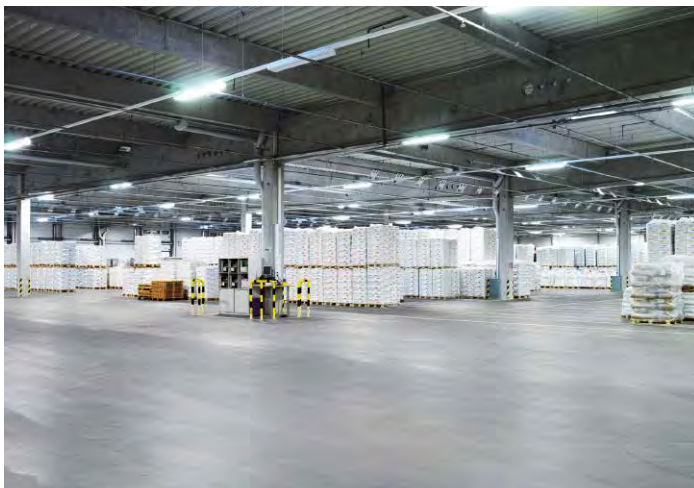


WACKER presented an innovative binder for the impregnation of cement-bound substrates at the European Coatings Show. Tests have shown that SILRES® BS 6920 offers substrates effective protection against even stubborn stains. Even after several hours, red wine, coffee and oil can be wiped off without leaving any stains. Photo: © WACKER

a solvent may be added if required. Formulators can use pigments, reinforcing fillers and matting agents to broadly vary the properties of their end products. These ready-to-use, one-part end products can be applied using a mop, roller or airless spray gun. The binder has a high flash point, so no special precautions need to be taken.

The application possibilities of impregnation agents that are produced with this silane-terminated binder ranges from parking garages, car repair shops, train stations, logistics centers, showrooms, restaurants, event and convention centers, museums and residential buildings. The treated floor is easy care and simple to keep clean. Even substances like red wine, Coca-Cola, coffee, mustard, ketchup and engine oil stains or tire marks that are left on the surface for some time can be wiped off easily without any lasting stains.

For more information, contact WACKER at tel (+65) 6542 6638, fax (+65) 6542 6632, email info.singapore@wacker.com or visit www.wacker.com.



A logistics warehouse site with concrete floor. Photo: © WACKER

LANKA BUILD '17

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NATURAL STONES & TILES

FUTAR ENTERPRISES PRIVATE LIMITED

Photo 1



Photos 1 & 2: Colorado Gold, as showcased in a villa project, which Futar worked on, located at Victoria Park Road in Singapore, is a white marble originating from Colorado, USA.

Starting out from a humble shop house unit along Joo Chiat Road selling tiles, Futar has come a long way since it was founded in 1971. The company started with only specialising in Japanese ceramic tiles 40 years ago, and has grown to become one of Singapore's leading suppliers in construction finishing material for natural stone, ceramic tiles, bathroom fittings, and compressed quartz.

With the company's full production facility warehouse located at Changi North Way, Futar offers unique stone fabrication works and customised cut-to-size countertops and vanity tops - all under one roof. Having traveled to many ends of the world to procure only the best for its clientele, Futar strives to only bring in the most unique and exotic materials. Futar has an extensive range of products from every continent in the world, even from Africa, South America and the Middle East.

Colorado Gold, as showcased in a villa project, which Futar worked on, located at Victoria Park Road in Singapore, is a white marble originating from Colorado, USA. Having a gold and grey vein characteristic to its nature and a clean white based background, Colorado Gold carries an understated elegance as well as a timeless look to make

it versatile for almost any genre of interior style. It is an extremely good alternative material for clients with a slightly tighter budget to cater for the usual luxurious Italian white marble such as Statuario and Calacatta, and for those who prefer a more unique white stone to use rather than playing safe with Volakas and Carrara all the time.

For more information, visit www.futar.com.sg.

Photo 2



VACUUM ELEVATOR

PNEUMATIC VACUUM ELEVATORS

Pneumatic Vacuum Elevators, (PVE) LLC is the designer and manufacturer of the vacuum elevator, the world's only air-driven, self-supporting, eco-friendly, plug & play home elevator. PVE is an innovative, technology-based company that has revolutionised how people and goods may be vertically transported within residential, marine and stage environments.

Through the application of fundamental physics and the utilisation of attractive materials, PVE has virtually created a transportation vehicle within a bubble. By using an air pump to generate areas of higher to lower atmospheric pressure within the cylinder hoist way, the unit smoothly moves between floors while consuming much less energy than other home elevators.

Founded in 2002, in Miami, Florida, USA, the company proudly manufactures three versions of its vacuum elevators, ranging from single to three-passenger, wheelchair-accessible model. Rather than using cables or pistons, PVE manufactures the only elevator that is powered by one of the most abundant resources in the world – air!

The innovative home elevator does not require any pre-construction shaft, pit or machine room to operate, is capable of up to 50 foot (15 metres) vertical rise over as many as five stops and can be installed in as little as two to three days. Due to its minimal footprint, rapid installation and a unique panoramic design, the Pneumatic Vacuum Elevator goes where other elevators simply cannot. PVE maintains an expanding network of more than 250 authorised dealers worldwide in over 65 countries.

For more information, visit www.VacuumElevators.com.

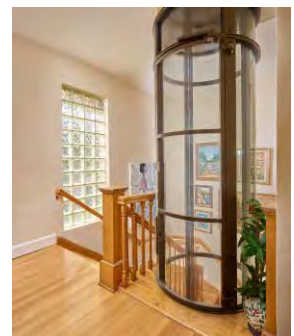


Photo: © Pneumatic Vacuum Elevators, LLC



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ULTRA LIGHTWEIGHT PRECAST PANEL | VODAPRUF PTE LTD



Worker installing vPanel for PSB fire rating test. Photo: © Vodapruf



Conducting a door slam test at PSB. Photo: © Vodapruf

vPanel is an ultra lightweight precast panel made by Vodapruf Pte Ltd using a combination of fibre cement board and Lightherm aggregates. Ranging from only 24.5kg/m² to 47kg/m², it is claimed to be the lightest wall panel in the industry.

vPanel comes in various thickness, and the 100mm vPanel is able to achieve an impressive fire rating of four hours. It also has very high thermal and sound insulation due to the presence of Lightherm aggregates. With the easy installation of vPanel, it is both labour and cost saving. The finishing of vPanel is of high quality standard and does not require the need for skim coating.

vPanel is very ideal for both internal and external wall. vPanel can also be used on the roof as a lightweight roof panel with good thermal insulation properties. Vodapruf is able to assist on the U-value calculation for client. vPanel can be innovatively used as floor board. This system has high load bearing capacity as it is steel-reinforced.

vSlab

Another innovation by Vodapruf following vPanel is vSlab, which is a precast prefabricated insulation concrete slab. It is used on reinforced concrete flat roofs as a thermal insulation and sound isolation layer. It also plays the role as a protection screed layer for waterproofing membrane of inverted-roof-system.



vSlab is a high insulation precast roof panel which is able to achieve the U-value requirement stipulated by Building & Construction Authority (BCA). Photo: © Vodapruf

For more information, visit www.vodapruf.com.

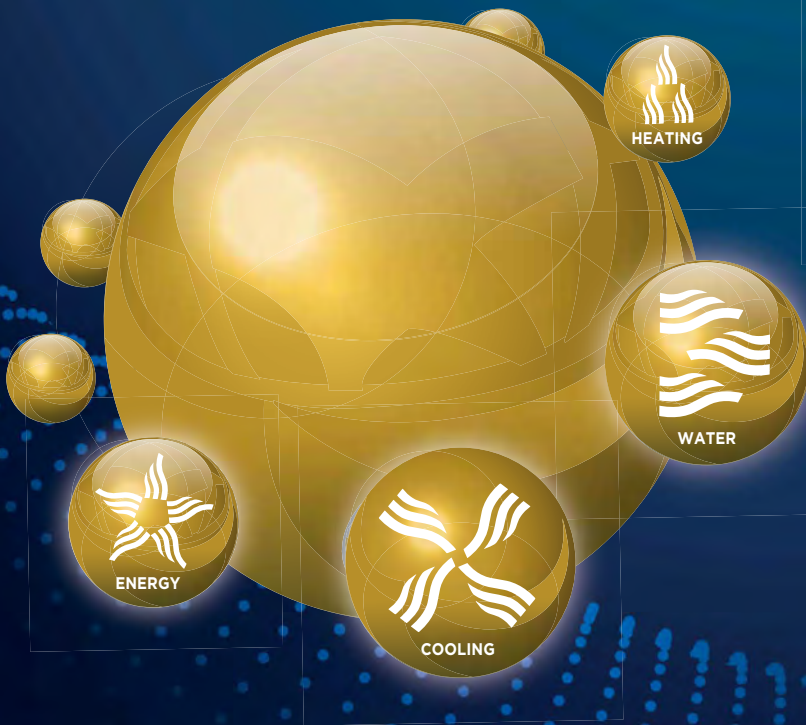
ECOTECH PIPING SYSTEM | TECHGLOBAL INCORPORATED

The Ecotech (Mega Green) PPR Piping System has been in the Philippine market since 2000, which is over a decade now and with good reason. Ecotech PPR pipes are made with the best virgin resins Korea has to offer to create a product that will last more than a lifetime. The high-grade virgin materials ensure heightened pressure and temperature tolerance, making it superior over its standard competitors. Moreover, European-made Battenfeld extrusion machines are used to make each Ecotech pipe to the utmost quality. Because of this, the Ecotech PPR Piping System surpasses European standards according to DIN 8077/78 and the DVGW which are renowned institutions when it comes to the waterline industry.

Ecotech Exceptional

The Ecotech PPR Piping System adapts German-based aesthetics and design to create superior performance compared to the standard

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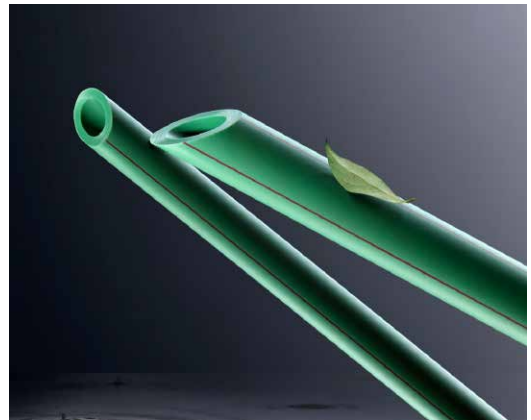


PPR pipe in the market. Ecotech uses high-grade brass materials that are zinc-resistant and its threaded fittings are grooved in structural design. This is to ensure that its fittings are almost indestructible and the grooved structure ensures superior leak-proof performance compared to the standard ones.

Ecotech Edge

Besides those mentioned above, the Ecotech PPR Piping System also exhibits:

- 100 percent high-class Korean virgin raw-materials
- Thicker than normal PPRC pipes and fittings
- Groove-tail structure
- High chemical resistance
- Suitable for hot & cold application
- Absolute leak-proof performance
- Absolute noise free performance especially during high flow rates
- Hygienic and environmentally friendly
- Normal pressure of PN 20
- Up to 1500 PSI Pressure Tolerance
- Up to 95 C Temperature Tolerance



The Ecotech PPR Piping System

For more information, visit www.techglobal.com.ph.

**BUILDING & CONSTRUCTION
PRODUCTS**

**EASTERN WIN
ENTERPRISES PTE LTD**

Eastern Win Enterprises is a leading distributor of quality building materials and construction hardware, representing international manufacturers and major brands in Singapore. The company's products include construction adhesives and sealants, waterproofing coatings and systems, concrete bonding agent, steel slotted angles and warehouse racking systems. These products are supplied to the building and construction industries in Singapore and to the neighbouring countries.

HB Fuller Firesound Acoustic Sealant

A recent HDB BTO project in Toa Payoh has approved and used HB Fuller Firesound Acoustic Sealant for acoustics sealing of internal partition walls in all the units. HB Fuller Firesound was tested at PKA Acoustic Consulting Laboratory in NSW, Australia. Test results according to AS1276.1 shows Firesound performed as an excellent acoustic sealant with Sound Transmission Class (STC) 65 rating in a wall constructed using 2 leaves of aerated concrete plus plasterboard facings. In test involving 10mm joints in brick walls, sound insulation rating of $R_w + C_{tr} 49$ was achieved in a 220mm brick wall, and $R_w + C_{tr} 55$ in a 220mm brick wall with plasterboard facing. However as acoustics performance is determined according to the type and dimension of substrates, advice should be sought regarding overall design concept.

As the name implies, HB Fuller Firesound is also an excellent fire stopping sealant tested at Warrington Fire Research Laboratory in Australia. It complies with both AS1530.4 2014 and BS476-20-1987 and has Certificates of Conformity issued by TUV SUD PSB Singapore.



Zwaluw High Tack Adhesive

Zwaluw High Tack has been especially developed as a truly universal adhesive for bonding many building materials such as: stone, concrete, mirrors, glass, plasterboard, PU, uPVC, hard plastics, enamel, ceramic, copper, lead, zinc, aluminium, metals, stainless steel, wood and painted surfaces.

Zwaluw High Tack is an adhesive with extreme high grab properties based on hybrid technology which cures under influence of humidity to form a durable elastic rubber. Zwaluw High Tack is also free of isocyanates, phthalates, solvents and silicones making it the obvious choice where "Green" product is required.

Zwaluw High Tack tensile bond strength is 2.20Mpa, meaning it can withstand 22.4kg force per square centimetre. That's a pretty impressive number for a universal adhesive.

For more information, visit www.easternwin.com.

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PREFABRICATED HOUSE | KEDA LIGHT STEEL HOUSING SYSTEM CO LTD

Keda Light Steel Housing System Co., Ltd. is one of the biggest manufacturers of prefabricated houses in Guangdong China since 2002. The company has more than 10 years of experience in this field.

The company's main products include modular house, container house, steel structure warehouse, light steel villa house and portable kiosk etc. At the same time, customised products are also available.

Light steel house is an anomalous mobile prefab house, tailored according to customer's requirements. It has beautiful designs and adopts superior quality materials. Different floor plans can be designed according to environment at site and usage, offering comfortable space. It can be repeatedly assembled and disassembled.

For more information, visit www.kedaprefab.com.



Keda Light Steel recently completed a new prefab house in Malaysia. Photo: © Keda Light Steel Housing System Co., Ltd

SOFTWARE FOR THE READY MIX CONCRETE BUSINESS

FREEWILL SOLUTIONS

RMX Express is a highly specialised software for the Ready Mix Concrete business from Freewill Solutions. RMX Express allows you to handle the Batching Plant Operation as well as the Ready Mix Concrete Distribution using a single, integrated software platform – RMX Express. No matter whether you manage one plant or hundreds of plants, RMX Express connects it all and provides the visibility and agility you need to run your business time and cost efficient where reallocating orders from an overly busy plant to one with free capacity is an effort of just a few mouse clicks. Finally, Freewill Solutions believes that you want to deliver Ready Mix Concrete and not paper. Therefore RMX-Express goes that extra mile and supports paperless delivery as well as electronic invoicing.

RMX Express Basic Package contains:

- Centralised or remote order taking
- Centralised plant allocation and dispatch
- Split total order quantity into truck loads
- Show where order volumes exceed production and/or delivery capacity
- Simulation of new delivery scenarios with Dynamic Scheduling (drag and drop)
- Closing sales orders and invoice issuance to customers
- Consolidation of raw material requirements using centralized inventory management
- Comprehensive real time dashboards to monitor distribution operation and business results
- Interface with batching equipment or existing batching software
- Integration with existing ERP systems such as SAP



Photo: © Freewill Solutions

RMX Express Optional Features

- Electronic Proof of Delivery (EPOD) with 4 different security layers
- e-Invoicing
- Integrated raw material monitoring using storage sensors

RMX Express is a product of Freewill Solutions. Freewill Solutions, established in 1991, is a leading software developer and professional services provider offering integrated end-to-end business solutions in Southeast Asia and worldwide. For more information, visit www.freewillsolutionsproducts.com.



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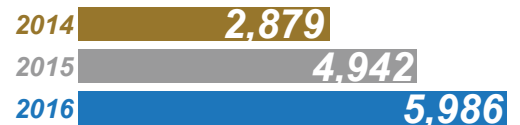
Fast Facts

- Myanmar's construction sector registered a 7.2% compound annual growth rate from 2011 to 2015, and is set to carry a 10.37% annual growth rate from 2016 to 2020.

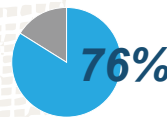
- Myanmar construction industry's value stood at US\$8.2 billion in 2015, and is anticipated to value US\$13.5 billion in 2020.

- FDI in 2015-16 real estate sector raked in roughly \$345 million worth of foreign investment flowed into the real estate market in Myanmar through the end of January 2016 with nearly \$100 million of that sum invested in January alone.

Growing Number of Visitors



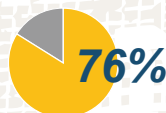
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**METAL & STEEL WIRE PRODUCT
MANUFACTURER**

CHUN HOE CORPORATE GROUP

Chun Hoe was incorporated on 8th December 1993 in Singapore as a metal and steel wire product manufacturer. After two decades, Chun Hoe has evolved into something quite different. The company has grown and expanded tremendously in terms of its business and production size.

Furthermore, Chun Hoe has accumulated 20 years of experience and technological know-how that is applied in its manufacturing activities. Chun Hoe places great emphasis on quality control and the continuous enhancement of its products in terms of quality, durability, usability and so on, consistent with its company's philosophy – 'Quality always comes first'.

In 2000, Chun Hoe was awarded the SIRIM certificate as recognition for its top-notch product quality. As a result, Chun Hoe's products are always met with strong and increasing demands. The company allows itself to have a massive inventory size to cope with large scale and urgent orders and it is proud that it is almost never out of stock.

Chun Hoe is now one of the biggest metal wire products manufacturers in the Malaysian market and the company has planned to expand its marketing coverage into overseas markets. It has successfully penetrated into Singapore and Indonesia markets. Not only that, it has allocated its head office in Singapore. Therefore, Chun Hoe has transformed into Chun Hoe Corporate Group and it is looking forward for more business opportunities across ASEAN countries.



Photo supplied by Chun Hoe Corporate Group

Chun Hoe's range of products include:

- BRC Fence
- Anti Climb Fence
- V-press Fence
- Chain link Fence
- Gabion Basket Wire
- Reno Mattresses
- Heavy Hexagonal Mesh
- Slope Protection Net Mesh
- Geotextile
- Geogrid
- Geocell
- Geocomposite
- Stainless Steel Concertina
- Barbed Wire
- Aluminium Barbed Wire
- Heavy Zinc Coated Galvanized
- Steel Bar
- BRC Steel Wire Welded Mesh
- BRC Galvanized Wire Welded
- Wire Nail



Photo supplied by Chun Hoe Corporate Group



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For more information, contact Chun Hoe Corporate Group at tel (+65) 8799 7134 email admin@chunhoe.com.sg or visit www.chunhoe.com.sg.

INTEGRATED AIR AND ODOUR SOLUTIONS PROVIDER

AIR & ODOUR MANAGEMENT (AOM) PHILIPPINES

Air & Odor Management (AOM) Philippines is an integrated air and odour solutions company that promotes all aspects of clean air living, which include diagnostic assessment and odour control, air purifying, bacteria and mould remediation and ambient scenting.

As a leading company in the air solutions industry, AOM proudly provides its clients in the restaurant, hotel, and hospitality industries with crucial equipment they need to prevent fire hazards.

Meet the Scrubbox – A kitchen exhaust air cleaner from AOM

AOM's proprietary Scrubbox greatly minimises the risk of kitchen fires by leveraging on electrostatic precipitation to provide effective containment of particulate matters, grease, oil, water vapour, smell, and smoke generated from cooking to the strict standards set forth by Singapore's National Environment Agency (NEA).

AOM's Scrubbox features include:

- Superior Quality - Recognised certifications from CE, FCC, TUV, and SGS
- Unrivalled Efficiency - Possesses a filtration efficiency of up to 98.1 percent
- Advance Technology - State-of-the-art Electrostatic Precipitator collects up to 0.01 micron particles of oil & grease, smoke, and odour
- Safety First – Prevents fire hazard by accumulating excess oil and grease.
- Greener Environment - Discharges clean air as its by-product

For more information, visit www.aom.ph.



The Scrubbox. Photo: © AOM Philippines



BILLION SG6300NZL IoT GATEWAY

BILLION ELECTRIC

Billion Electric, a leading provider of Smart City and IoT solutions, announced the launch of its innovative IoT Gateway, SG6300NZL, an important hub that connects various sensors/devices through Zigbee, Ethernet, RS485, and PLC communications. The new IoT Gateway provides a flexible development platform through a well-defined API for system integrators and software partners to utilize and create diverse applications.

Billion SG6300NZL is an all-in-one IoT gateway that can automatically connect front-end device API information and transfer the data to a customer-defined central management platform in a diversity of communication protocols, allowing users to overview and analyze various data on streams. Ranging from smart meter, power plug, intelligent switch, IHD, thermostat to environmental sensor, SG6300NZL unlocks the correlation between two sides of system integration works and creates a community for all IoT devices.

SG6300NZL also features as a wireless AP providing Internet service and acts as a wireless bridge that can be attached to any existing wireless gateway. With its Dual-WAN design, Internet access via broadband/DSL and back up through 3G/4G network, Billion SG6300NZL can significantly extend the wireless coverage while minimising the wiring costs to keep users always connected.

As the global networking equipment supplier, Billion showcases its in-depth insights of IoT communication development in two vertical markets: Smart Energy Management (SEMS) and Smart Streetlight Control Solutions (LCMS), which have been widely implemented at a diversity of facilities across the globe, including residential apartments, households, factories, buildings, chain stores, solar power plants, streetlight. These two solutions are highly scalable for the integration with existing any BMS and CMS systems to empower the correct architecture.

“M2M connectivity can visualise and convert the operations into valuable data, where every business activity can be effectively monitored and improved with optimal efficiency. By leveraging Billion M2M/IoT gateways, our clients can abstract information and connect to any central management system to generate enriching business models for different vertical markets,” said Jason Liao, Product Marketing Manager of Billion.

For more information, visit www.billion.com.



Photo: © Billion Electric

SOLID SURFACE MATERIAL

HI-MACS® BY LG HAUSYS

LG Hausys has launched the Velvet Colours, four new solid shades of HI-MACS®. The new colours belonging to the Solid range, take inspiration from the beauty of the natural world including rich organic pigments and tactile materials such as leather and raw clay. Mink, Evergreen, Cosmic Blue and Suede join together to create atmospheric finishes for the highest quality solid surface material. The Velvet Colours will add a balanced and authentic sophistication to any environment.

Evergreen

Surround yourself with the depth of Evergreen. A classic tone inspired by our need to revert back to nature and to connect with our surroundings. This colour rests between warm and cool within an environment bringing the outside in and creating an atmosphere of calm. This crafted and organic green can work alongside natural wood furniture and textiles within cosmopolitan spaces.

Cosmic Blue

Add a modern elegance with Cosmic Blue. With a dark undertone this blue has structure and holds a certain power that demands to be noticed. Taking influence from textiles of the fashion industry and in particular denim, Cosmic Blue is the perfect alternative to a monotone colour scheme and this tone imbues richness wherever it is used. Couple with deep wood or metal-framed furniture, or alongside copper or bronze accents for the ultimate finish to any space.

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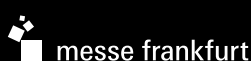
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Mink

Discover silky luxury with Mink, a warm and comforting tone that is sure to offer a velvet finish to any project. Add a dynamic element to an ordinary interior with this subtle grey. This solid surface works effortlessly with other neutrals bringing positive warmth to otherwise all white interiors. The chic finish of Mink offers an inviting softness and has a wholesome appeal that is perfect for sophisticated spaces, especially where mixed with organic wood or ceramic.



Velvet Colours, four new solid shades of HI-MACS®. Photo: © LG Hausys Europe GmbH

Suede

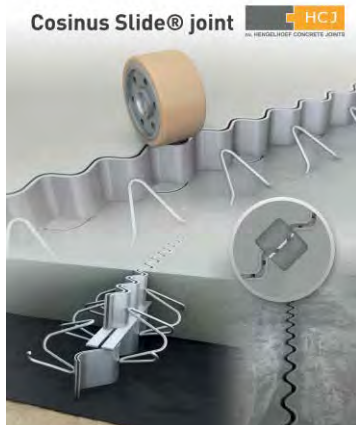
Channeling Minimalism in its purest sense Suede offers the industry a new neutral that strips back a space revealing only what is essential. Inspired by raw ceramics and natural untreated finishes this colour offers an alternative to stark white with a balancing and tranquil feel. Use alongside hints of gold in commercial spaces with high levels of activity.

All colours are available from 1 March 2017. For more information, visit www.himacs.eu.

EXPANSION JOINTS FOR INDUSTRIAL FLOORS

HENGELHOEF CONCRETE JOINTS CORPORATION

The Cosinus Slide® joint is a patented profile that satisfies the requirements of floor usability such as shock- and vibration-free joint crossings regardless the speed of forklifts. This feature generates extended advantages in the field of: Environment, Healthcare and well-being at work, Durability of the floor and Enhanced profitability of operators and cost savings.

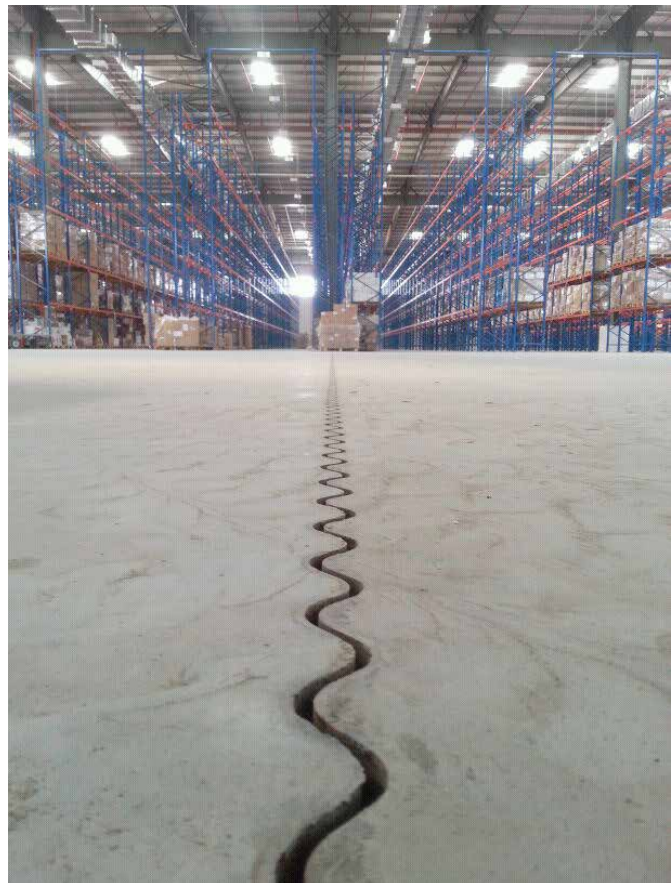


The Cosinus Slide® joint.
Photos above & right: © Hengelhoeft
Concrete Joints Corporation

Furthermore, thanks to unique geometry of the Cosinus Slide® joint it is now possible to measure the exact load transfer of the Cosinus Slide® joint and provide a complete calculation at ultimate limit state for all relevant loads and combinations. This calculation does not replace the design of industrial floor slab itself, but completes the missing part required for joint profiles, providing an accurate assessment of load transfer at the joint used in the floor design.

The Cosinus Slide® joint was recently launched at the Concrete Show South East Asia 2016 in September 2016 in Jakarta, Indonesia.

For more information, visit www.hcjoints.be.





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DIGITAL SIGNAGE SOLUTIONS | TOSHIBA TEC

Toshiba Tec Corporation has announced the availability of digital signage to its customer base with a focus on serving organisations in the sports and entertainment and retail industries especially in the United States and Europe. Toshiba Tec equips clients with all of the hardware, software and services required to implement best-in-class digital signage ranging from a single screen to large stadium displays.

Through Toshiba America Business Solutions' strong partnership with AEG, a leading sports and entertainment company in the world, Toshiba Tec currently implements digital signage in several stadiums and arenas. The company's digital signage has been introduced in the following sports and entertainment venues throughout the United States and Europe: STAPLES Center and L.A. Live in Los Angeles, T-Mobile Arena and Toshiba Plaza in Las Vegas, Mercedes-Benz Arena in Berlin.

The retail industry represents a significant portion of the digital signage market. As the global market share leader in POS technology, Toshiba Tec is well- positioned to offer comprehensive digital signage solutions to the worldwide customers of another group company, Toshiba Global Commerce Solutions. Toshiba's digital signage is now in use within such diverse retail environments as specialty and grocery stores.

For more information, visit www.toshibatec.co.jp/en/



Toshiba Tec's digital signage solution is used at the building of "T-Mobile Arena" located in Las Vegas, USA. Photo: © Toshiba Tec

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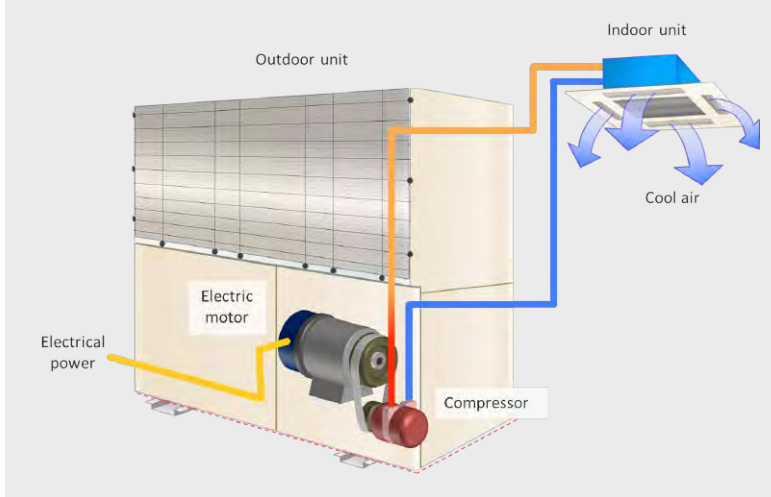
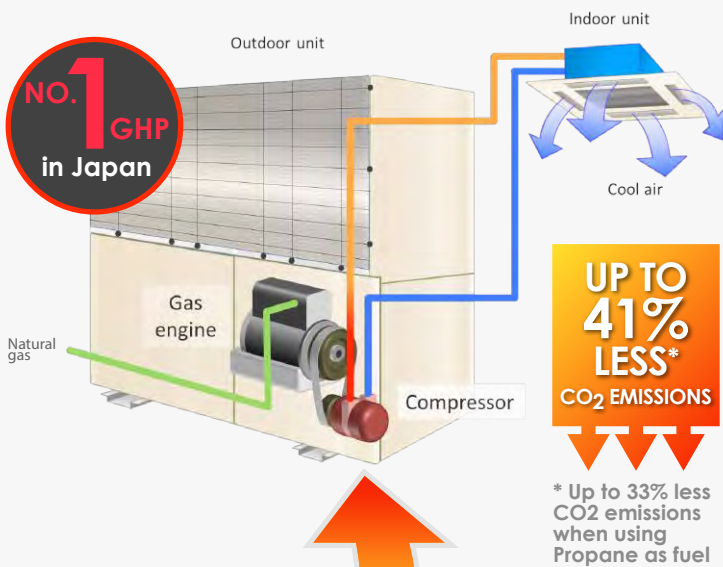


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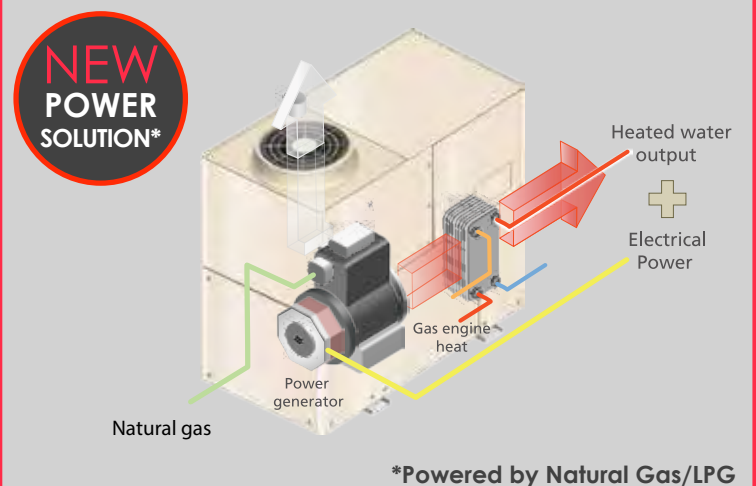


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