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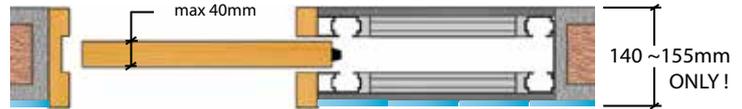
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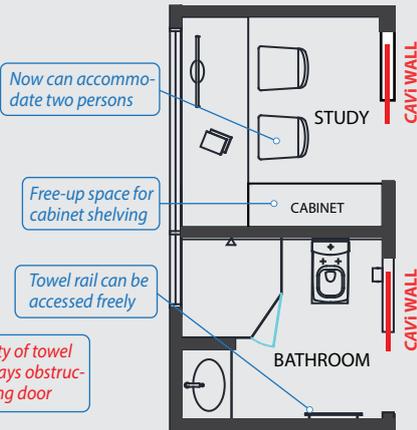
## FLAWS OF TRADITIONAL DOORS

**Problem:** Tight room space reduced further by the swing door.



## BENEFITS OF CAViWALL

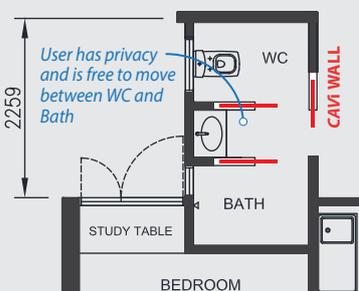
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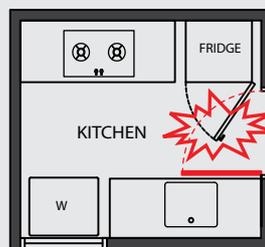


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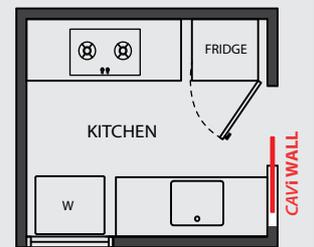


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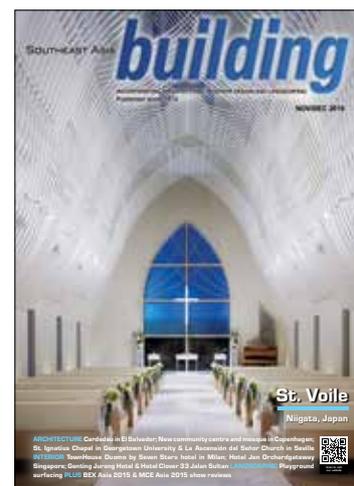
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**On the Cover:** St. Voile Chapel in Niigata, Japan. Photo: © Nacasa & Partners

Cover design by Fawzeeah Yamin



GCC Sliding And Stacking Wall System



GCC Sliding And Folding Wall System

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**GCC** has dedicated huge efforts in glass hardware and system development since 1981. **GCC** also provides variety of great solutions for users to create wide, fresh, and comfortable spaces. The product range cover from houses, office buildings, restaurants, hotels to department stores, etc.

Space planning is always a key point that designers and users focus on. To better serve user's expectation and the market trend, **GCC** launches "**Heavy Duty Sliding And Stacking Wall System**" and "**Sliding And Folding Wall System**". There are two major features of these two creative systems. First of all, it dose not require to drill through glass and no need to use AB glue on glass. These two features offer more convenient operability to users and significantly cut down the installation time. Moreover, it dose not require floor guide anymore, and it keeps the floor flawlessly from washing and dust and maintains simple and neat partition system. In addition, **GCC** offers anti-UV PVC seal, weather resisted rubber seal and weather brush to keep mosquitoes and insects away. All these options allows customer to flexible apply **GCC's** products in different conditions.

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Looking forward, **GCC** will continue to devote its effort in developing more user-friendly systems to offer more effortless solutions, and most importantly to provide better living experiences to users.

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# editor's note



**D**ear readers, hello and welcome to another issue of *Southeast Asia Building!* The year has passed by so fast and in just a blink of an eye, we have published the sixth issue for this year.

Having covered historic buildings, airports, sports stadiums, schools and green buildings, we now turn our focus on religious buildings in this issue. Many new religious buildings today are cleverly combining elements from modern architecture and traditional religious design. We have featured some examples of stunning religious building projects from around the world.

Our interior design section puts the spotlight on the hospitality sector. Many hotels are now focused on creating the first impression by incorporating eye-catching facades, green walls and even water features. You can read about these design trends in the hotel projects that we have published in this issue.

In landscaping, we look at playground surfacing, that is, how to select right type of materials to prevent children from getting injured on playgrounds and to create an aesthetically pleasing and functional space for them to play and have fun.

Finally, we have a roundup of the recently completed BEX Asia 2015 and MCE Asia 2015 shows in Singapore. This year, BEX Asia and MCE Asia united to showcase a wide range of green solutions from all over the world for a sustainable built environment. Don't miss the show review on pages 78 to 88.

To conclude the final issue for the year, I would like to wish one and all a very happy and exciting 2016. If you have any comments that you would like to share with me, drop me an email at [seab@tradelinkmedia.com.sg](mailto:seab@tradelinkmedia.com.sg).

*Amita Natveelal*

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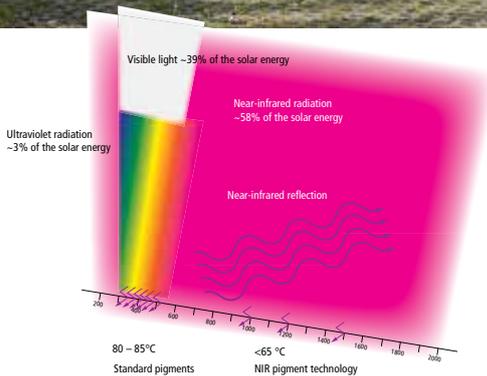
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[www.sto-sea.com](http://www.sto-sea.com)



## Macau's newest shopping destination opens

**Macau** – Benoy celebrated the grand opening of Macau's newest luxury retail development – 'The Promenade' at the spectacular entertainment and leisure destination, Galaxy Macau, on 27 May 2015.

A shopping destination and café society for the international community, The Promenade connects the first and second chapters of Galaxy Macau, featuring over 200 luxury and lifestyle brands and also linking the development's six world-class hotels.

Adding 65,000 square metres to complete the retail development, which is almost 1.5 kilometres in length, The Promenade is a luxury shopping destination that loops the length of Galaxy Macau. Covered by 22,600 square metres of Italian marble, the ultra-luxurious interior has been designed to ensure the retail and hotel areas sit in harmony with each other.

Tactile finishes, natural stone, patterned detailing, soft lighting and 5-Star amenities all contribute to the peaceful opulence and grandeur of The Promenade. Acoustic materials dampen and absorb noise, producing a relaxing and enchanting shopping experience.

Other notable design highlights include a double-height green wall and multi-storey glass curtain in the Jade Lobby, and the Pearl Lobby with its scenic lift that showcases generous skylights across The Promenade.



Photo: © Benoy

## Populous officially recognised for innovation

**Brisbane, Australia** – The global architecture firm, Populous, has been named in the top 20 of BRW's 50 Most Innovative companies 2015 in Australia. Populous, with its main Australasian bases in Sydney and Brisbane, came in 16th in BRW's list of 50 Most Innovative Companies. BRW evaluates hundreds of applications each year considering a range of measures such as formal innovation process and employee engagement.

The BRW List focused on Populous' innovation with its design of the world's largest indoor arena, Philippine Arena, which opened



The world's largest indoor arena, the 50,000 seat Philippine Arena, designed by Populous, opened in Manila in July 2014.

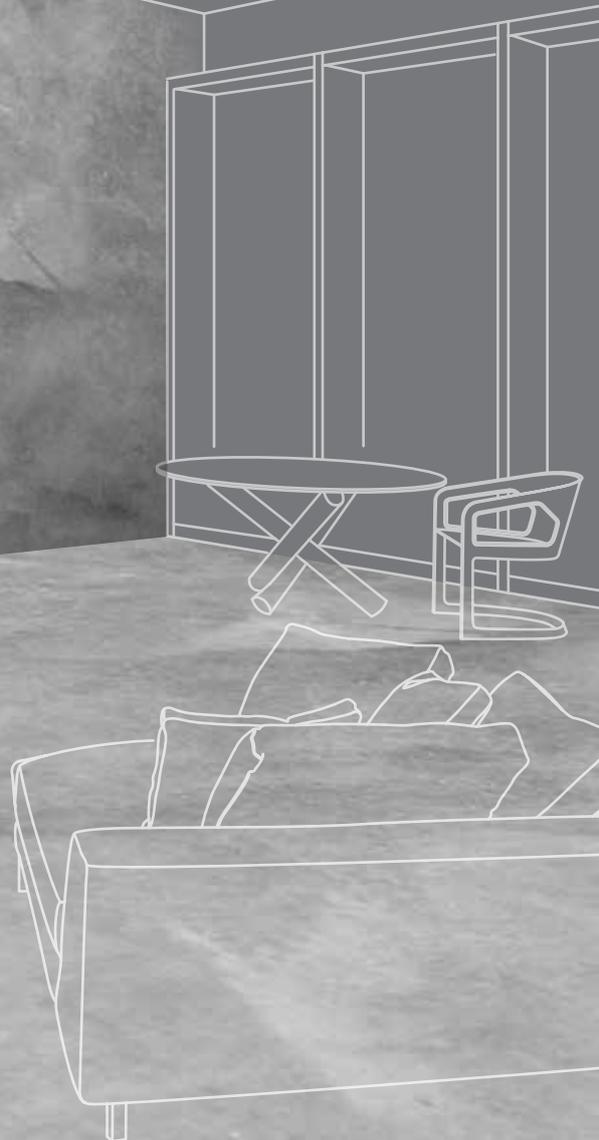
in Manila in 2014. The 50,000 seat indoor arena required innovative thinking to deal with not only the vast scale of the building, but the technical challenges created by the brief to achieve a single focal point, at the front of the arena.

Populous head of Australian projects, Senior Principal Richard Breslin, said Populous believed the design solutions for a building the scale and size of Philippine Arena have taken arena design a step forward.

"Innovation is part of our global DNA, an essential element of our culture. Everyone at Populous has a number on their timesheet specifically for allocating time to innovation. We actively invest in our staff from the most senior to the most junior, to collaborate across our global offices to develop ideas. We consciously empower our people with the freedom to think and engage at whatever scale, across whatever discipline. With our Clients, innovation is a priority from the very first workshop," he said.

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## Next generation of property and design professionals to re-imagine Sydney's main street

**Hong Kong** – The Urban Land Institute (ULI), through the ULI Young Leaders Group (YLG) in Australia, has launched a competition inviting young property and design professionals from around the world to reimagine the heart of Sydney's central business district.

The competition is part of the Urban Innovations Ideas Initiative that champions urban innovation, collaboration and youth leadership in the property industry, and explores ways to improve the liveability of our growing and ever-changing cities.

The competition, *George Street 2020*, Reimagine Sydney's Main Street, was launched on the 13th August 2015 and run to late November 2015, with the stage 1 winners announced at the opening event of the Sydney Architecture Festival on 2 October, followed by a public exhibition showcasing the submissions.

The competition's primary aim is to provide a platform for today's young professionals to express and stimulate ideas about how cities can add social, cultural, ecological and economic value through the potential of public space and judges will look for ideas that enhance public space opportunities along the new light rail corridor.

The Urban Innovation Initiative has been organised by the ULI Young Leaders Group, with support by the ULI Urban Innovations sponsor, Mirvac. The competition is supported by the Committee for Sydney and the City of Sydney.

John Carfi, Mirvac's Head of Residential said: "Mirvac is delighted to be involved in The ULI's Urban Innovation Initiative. Innovation is at the core of our culture. We encourage the call for fresh international ideas on the successful urbanisation of our Cities at critical phases in their development."



### George Street 2020, Re-imagining Sydney's Main Street

The 2015 competition seeks ideas for the activation of Sydney's George Street, coinciding with the implementation of the new light rail in 2020. The competition is split into two stages:

- Stage 1: Entrants present their ideas by submitting 1 x 30 second video, 1 x A3 image and 500 words of text describing their concept;
- Stage 2: Shortlisted entrants will be mentored by industry professionals relevant to their project to refine and develop their idea to a professional standard.

The Urban Innovations Prize will be awarded to the competition winner and will include a cash prize as well as the opportunity to present their idea at ULI's 2016 Asia Pacific Summit. **For competition details, visit [www.urbaninnovations.com.au](http://www.urbaninnovations.com.au).**

## Monier® awarded best brand in roof systems

**Kuala Lumpur, Malaysia** – Recently, in conjunction with the 10th Anniversary of the BrandLaureate, Monier® was awarded a very special and prestigious award called "The BrandLaureate Special Edition World Award 2015".

This award is reserved only for the deserving few and is a once-in-a-lifetime award that is bestowed only to Brand Champion who have created good and lasting impression in consumers' mind. This is the hallmark of successful brands and the differentiating factor between the ordinary and the chosen. As the winner, Monier® exemplifies all the above-mentioned and is deserving of being awarded as the "Best Roof System".

The awards ceremony, held on 11th August 2015, was graced by K K Johan, President of the BrandLaureate. Mr Marco and Mr Walter, CEO & CFO of MONIER Asia Pacific received the award on behalf of MONIER.



## The Architecture & Building Services 2015 Series launched at Marina Bay Sands

**Singapore** – The Architecture & Building Services 2015 Series (ABS 2015 Series) took place on 29 & 30 September and 1 October 2015 at the Marina Bay Sands Convention Centre in Singapore.

The ABS 2015 was spearheaded by ArchXpo 2015, the 2nd International Exhibition of architecture & The Built Environment being organised by the Singapore Institute of Architects and CEMS; co-located with the 14th Safety & Security Asia and the 12th Fire & Disaster Asia, in collaboration with the Security Systems Association of Singapore.

The other co-located shows were the 3rd International Facility Management Expo or iFaME 2015, which is being supported by the International Facility Management Association (Singapore Chapter); the 3rd LED & Light Asia 2015, endorsed by the Lighting Association of Singapore and the Singapore Manufacturing Federation; and the Work Safe Asia 2015, supported by the Workplace Safety & Health or WSH Council.

The mega show, comprising of six leading architectural and building services shows and four key conferences for these industries, was declared open by Mr Baey Yam Keng, Parliamentary Secretary, Ministry of Culture, Community and Youth, Member of Parliament, Tampines GRC, Deputy Chairman of Government Parliamentary Committee for Communications & Information on 29 September.

ArchXpo 2015 was a showcase of technologies, products and services for the architectural and built environment industries and was also a key pillar of the Archifest series. Along with the Archifest Conference, the exhibition was a key gathering of industry experts and talents that make for excellent architectural and built environment design, as well as an invaluable platform for the exchange of research and innovation in architectural design, practice and education.



From left to right: Mr Lam Jooi Koon, Mr Jeffrey Seah, Mr Theodore Chan, Mr Baey Yam Keng, Mr Edward Liu, Mr Nelson Tee & Mr Tony Khoo officially launching the ABS 2015 series at Marina Bay Sands. Photo: © CEMS

ArchXpo 2015, together with International Facility Management Expo 2015, LED+Light Asia 2015, Safety & Security Asia 2015, Fire & Disaster Asia 2015 and Work Safe Asia 2015 presented a comprehensive and integrated platform for all building needs under one roof and on a dedicated space of more than 8,000 square metres. A total of 162 exhibitors from 20 countries took part in the mega show.

The collaboration of six flagship exhibitions was conceptualised with the strategic purpose of creating an integrated premier sourcing platform for the architectural and building management industries.

The three-day show also saw four major conferences taking place concurrently – the Archifest Conference, the Security Industry Conference (SIC) 2015, the Workplace Safety & Health Forum and the International Facility Management Conference 2015. The Archifest Conference, organised by SIA, promoted dialogues between the local and overseas architects and academicians on the theme “What Future”. The Security Industry Conference (SIC) 2015 was organised to help security professionals enhance their skill strategies. SIC 2015 presented a panel of top quality speakers who shared relevant case studies on the adoption of technology to enhance productivity and workflow efficiency.

One of the key attractions of the ABS 2015 series was the booths created for the shows by the exhibitors. The show organisers introduced the UP Awards, which were presented to the best-looking show-stopper booths with the most flair and innovation. In the ‘Best Boutique Booth’ category, the Gold Award was won by Arc Floor Pte Ltd. This year’s Diamond Award for the ‘Best Larger Booth’ category was won by Assa Abloy Singapore Pte Ltd. Elmich Pte Ltd/Pacific Forest Products Pte Ltd won the Gold Award in this category.

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



Photo: © CEMS

## ARCHIDEX 15 – Bigger & Better

**Kuala Lumpur, Malaysia** – ARCHIDEX 15, the 16th International Architecture, Interior Design and Building Exhibition, Malaysia, returned with a bigger show from 12 to 15 August at the Kuala Lumpur Convention Centre. A targeted audience of over 34,000 attended the exhibition including 14,000 architects, interior designers and developers from over 60 countries.

ARCHIDEX achieved unprecedented records of over 550 Malaysian and international companies from 19 countries taking 1,300 booths sprawled across all nine halls of the convention centre. Recognised as one of Malaysia's largest exhibitions, ARCHIDEX had extended another new hall at the adjacent Mandarin Oriental Hotel this year.

ARCHIDEX was jointly organised by the Malaysian Institute of Architects (Pertubuhan Arkitek Malaysia or PAM) and C.I.S Network Sdn Bhd, a leading Malaysian trade and lifestyle exhibitions organiser.

The exhibition was held concurrently with the annual Kuala Lumpur Architecture Festival (KLAF) and PAM Convention, which is regarded as an influential platform to showcase the works of emerging and established local and international architects and designers.

"Asia is home to some of the world's most innovative and intriguing architecture with many more on the horizon," said PAM President Ar. Mohd Zulhemlee An.

"Our PAM Convention consistently brings together well established and avant garde architects and designers to share their work in DATUM:KL (International Architectural Design Conference), held alongside ARCHIDEX, resulting in an interesting and inspiring exchange of ideas and solutions amongst our fraternity. We are excited to be part of a constantly evolving industry and we hope to continue elevating this event onto even greater heights," added Zulhemlee.

ARCHIDEX's success has earned the show a highly coveted position at the forefront of the region's robust architecture, design and building industry. ARCHIDEX is also recognised as a popular gateway



The Official Opening Ceremony of ARCHIDEX 15 & ECO-B was graced by Guests of Honour. From left to right: Yang Berbahagia Dato' Vincent Lim, President of C.I.S Network Sdn Bhd & Joint-Organiser of ARCHIDEX; Yang Berusaha Ar. Mohd Zulhemlee An, President of Pertubuhan Arkitek Malaysia (PAM) & Joint Organiser of ARCHIDEX & ECO-B; Yang Berbahagia Ar. Professor Datuk Dr Amer Hamzah bin Mohd Yunus, President of LAM (Lembaga Arkitek Malaysia/Board of Architects Malaysia) Representing Yang Berhormat Dato' Sri Haji Fadillah Haji Yusof, the Minister of Works, Malaysia; Ar. Sathirut Nui Tandanand, President of Architects Regional Council Asia (ARCASIA); and Yang Berbahagia Tan Sri Dato' Sri Ar. Hj Esa Hj. Mohamed, President of International Union of Architects (UIA).

into the burgeoning South East Asian market and an ideal platform to launch innovative new collections.

"It was a natural decision for us to grow our footprint beyond Malaysia with the establishment of the ASEAN Economic Community (AEC)," explained C.I.S Network Sdn Bhd President Dato' Vincent Lim.

"Comprising 10 Southeast Asian nations with a singular goal of transforming our vibrant region into a single market and production base, the AEC gives us a competitive advantage, as we are all emerging economies. As a well-recognised and highly regarded exhibition, ARCHIDEX is an ideal gateway into this thriving region," he added.

Accordingly, ARCHIDEX has seen a steady growth of foreign participation each year. This year, exhibitors hailed from 19 countries – Austria, Australia, Belgium, China, France, Germany, Hong Kong, Indonesia, Japan, Korea, Malaysia, Netherlands, Singapore, Spain, Switzerland, Taiwan, Thailand, Turkey and the United States of America. Country Pavilions

participating were from Austria, China, Germany, Singapore and USA.

ARCHIDEX covered all aspects of the architecture, design and building industry needs under one roof, structured into the categories of –

- Window, doors and glass
- Kitchen and appliances
- Sanitaryware
- Roofing, tiles and stones
- Architectural and building materials
- Interior, floor and walls
- Eco building products

The ECO-B exhibition was co-located with ARCHIDEX. This popular exhibition explored a growing interest in environmentally responsible buildings around the world as well as the advancements in technology and innovative solutions available.

The product categories covered energy and water efficiency, indoor environmental quality, and materials and resources.

A highlight this year was the introduction of the Advanced Materials section at Hall 9B. This display

showcased brilliant innovations, technological development and cutting edge solutions for the industry today. These products were carefully curated, and were nominees or winners for the ARCHIDEX 15 New Product Award and Green Dot Award.

Advanced Materials allowed architects and designers a first-hand glimpse of the latest technological breakthroughs and solutions available. A stringent set of criteria was used to make the final selection. These products were chosen for their various features including sustainability, durability, and performance. From solar technologies and nanomaterials, this selection represented innovation at its best.

In line with continuing efforts to promote a spirit of innovative excellence among exhibitors, this year's ARCHIDEX saw a strategic repositioning of its competitive annual awards that are highly coveted industry recognition.

The New Product Awards remained an acknowledgment for excellence in design and production, whereas the New Eco Product Awards will now be known as the Green Dot Award. This is aimed at strengthening the award's identity with its exemplary environmental attributes. A respected panel of judges evaluated products that were distinguished by superior design and innovation, technological advancements, and sustainability factors. All the nominees and winners' panel displays were located at the Foyer in Hall 2, and also at the participating exhibitors' booths.

Similarly to the previous editions, the four-day exhibition was packed with concurrently held events and networking sessions with DATUM:KL, forums (PPF, Green Building Forum, and Kuala Lumpur Design Festival), trade talks (Biz@ARCHIDEX & Biz@ECO-B), exhibitor product launches, industry meetings, industry luncheons, hosted cocktails and a Building Industry Gala

Dinner (BIG Night).

This year's ARCHIDEX also marked the start of a unique green collaboration between ARCHIDEX and the Malaysian Association of Convention and Exhibition Organisers and Suppliers (MACEOS) together with Biji-Biji Initiative, a Malaysian social enterprise that champions sustainable living by reusing discarded materials into useful objects. Under this green initiative, all banners displayed at ARCHIDEX would be collected and sent to Biji-Biji Initiative to be recycled into fashionable and trendy bags.

The Premier Partner of ARCHIDEX 15 was Lamitak, while its Strategic Partners were Malaysia Mosaics Sdn Bhd, Roca Malaysia Sdn Bhd, Kian Interiors Sdn Bhd, Formica Malaysia Sdn Bhd, Akzo Nobel Paints Malaysia Sdn Bhd - Dulux, and Antah Schindler Sdn Bhd.

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## ZW3D CAD/CAM celebrates 30th anniversary

**Guangzhou, China** – ZW3D, one of the world's leading suppliers of advanced CAD/CAM solutions for the manufacturing industry, announced the 30th anniversary of ZW3D CAD/CAM.

"30 is an age of vitality and energy for humans, almost vintage for a car, an eternity for an ant and next to nothing for a star," said Mark Vorwaller, President of ZWSOFT America.

"I think, what 30 means to us is the amazing amount of experience that we've gathered - 30 years of global partnerships, 30 years of services & 30 years spent on collaboration and invention," he added.

Back in 1986, ZW3D, developed by Mark as ModelMATE, was one of the 1st commercial PC-based solid modelers. In 1999, Solid-Surface Hybrid Modeling technology, one of the most revolutionary developments in ZW3D, was added, bringing the first hybrid modeler to the industry. This technology eliminates the boundaries between solid and surface modeling, making solid features feasible on surface as well.

"Aesthetics are becoming increasingly important even with industrial products. The ZW3D hybrid modeling is packed with surfacing capabilities we need for the smoothly-contoured designs required for a product like the Power Cap," said Mark Williams, R&D Manager at Johnstone Safety Products Ltd. "ZW3D really helped us to design this product to not only work well but look best," he added.



Designing with ZW3D CAD/CAM.

Later on, via a successful alliance with SNK (SHIN NIPPON KOKI CO., LTD.), a machine tool company, a turnkey solution for manufacturers was integrated. ZW3D had developed into one of the first design-through-manufacturing packages and was awarded "Gold Winner & Product of the Year" by NASA Tech Brief in 2002.

Today, ZW3D incorporates with various partner applications, like TraceParts for parts library, FTI for sheet metal, Keyshot for rendering, Simwise for FEA & Eureka for machining etc., to break the limits of CAD/CAM.

"One of the greatest part of being involved in a company watching it grows is to see how ZW3D is used in every day work. It's all around us and used to design and machine auto parts, consumer products, electrics, molds," said Colin Lin, Director of ZW3D Overseas Business.



ZW3D CAD/CAM in Asia.



30th anniversary logo of ZW3D CAD/CAM.

## Next generation of Otis eService takes customer service to next level

**Singapore** – Otis Elevator has launched the next generation of its industry-leading eService, a responsive customer platform that proactively provides elevator, escalator and moving walkway maintenance information in real-time via computer, tablet or smart phone devices. With nearly two million units covered by Otis service agreements, the redesigned eService is now available to support one of the most extensive service networks in the world. eService can be accessed by all customers with equipment covered by Otis service contracts, including non-Otis equipment. Otis is a unit of United Technologies Corp.

"The new eService platform will create superior value for Otis customers now and in the future," said Sam Talbot, director of worldwide service, Otis. "The new eService design and features are a direct result of customer feedback and offer enhanced transparency of service work scheduled and performed. It represents Otis' commitment to continual innovation and technology leadership," added Sam.

The eService communication system pushes real-time vital information to customers online, as well as through e-mail and text messages to keep them up-to-date on equipment performance, service requests and critical account information. Through one simple performance dashboard, Otis customers can review elevator service history and performance data, receive instantaneous email alerts on issues and open calls, contact Otis and more, with available features depending on location.

The Otis eService application was enhanced by employing cloud technology through a collaboration with Microsoft.



Photo: © Otis Elevator

## Shaw Contract Group opens news office-cum-showroom in Singapore

**Singapore** – Shaw Contract Group, one of the world’s largest carpet manufacturers in the world, has opened a new combined office and showroom in Singapore. The facility is located in Great World City West Tower at 1 Kim Seng Promenade and will showcase the full portfolio of inspired designs from Shaw Contract Group.

The new office-cum-showroom covers an area of 2,562 square feet. It uses glass panels to maximise nature light and minimise energy consumption and allows a more integrated interaction to take place between visitors and staff. Designed by SCA Design Pte Ltd, the new showroom is Green Mark-certified by BCA and environmentally friendly to be consistent with other Shaw Contract’s showrooms around the world.

The new showroom will facilitate architects, designers and end users to explore Shaw Contract’s products and designs and view them on a large scale.

During the official opening party, more than 10 styles of carpets were laid on the floor of the showroom to showcase the different designs, colours and patterns. Carpet tiles displayed showed the multitude of colours available.

“As a firm champion of the environment, we weave sustainability into the fabric of our business – our products, manufacturing process, business operations including the space we work and live in, whilst ensuring we deliver the needs of our clients with high-performing products,” said Dan Clark, Managing Director (Asia Pacific). “We are confident our new showroom will better serve our clients within the region and allow us to connect as a community.”

Guests present at the showroom’s opening party were given a preview of Shaw Contract’s latest carpet collections – ‘The Park’ and ‘Noble Materials’ by Kimberly Morgan, senior designer for global workspace. The Park collection reinforces the idea and demonstrates that through great design, balance can be achieved in the spaced we gather, play and escape. The Noble Materials collection is about geometry and meticulously plotted diagrams. “The Park is a collaboration with the Contract Group and the Hospitality Group while the Noble Materials is designed for high end office use,” said Kimberly.

Also present at the showroom opening was Todd Jarvis, Director Global Marketing. Speaking to *Southeast Asia Building*, he said that the new showroom would give clients in Singapore a feel of the real products online. “Clients can come to our showroom and take a look at the entire collection of our carpets to get ideas for their projects,” said Todd.

When asked about emerging trends, Todd said that there was a crossover of market segments, whereby carpets designed for office use are now being used in healthcare industry, and vice versa. “We see an increasing trend in the crossover of designs. Carpet designs used by offices are now utilised in the other sectors such as healthcare and hospitality,” he said.

Besides being one of the largest carpet manufacturers in the world, Shaw Contract Group has also one of the largest custom-designed team in the world. It has a huge team with an entire plant of prototype machines. “We have a design studio to produce tailored-made designs for our clients,” he added.

The new showroom is located at 1 Kim Seng Promenade, #15-12 Great World City West Tower.



Dan Clark and Kimberly Morgan cutting the ribbon to mark the official opening of the new showroom. Photo: © Shaw Contract Group



As many as 100 guests comprising of architects, designers and design professionals attended the showroom opening. Photo: © Shaw Contract Group



A wide range of carpet designs were on display at the showroom. Photo: © Shaw Contract Group

Todd Jarvis posing with the Shaw Contract Group’s carpet collection in the new showroom.



## Atkins' designed Vincom Landmark 81 begins construction

**Ho Chi Minh City, Vietnam** – Construction has begun on the Atkins-designed Vincom Landmark 81 - a supertall skyscraper located in Ho Chi Minh City, Vietnam. Atkins is the lead architect working closely with Arup for the structural design, one of many global projects on which the two British design companies are collaborating. With an expected height of 460 metres, this building will be the tallest building in Vietnam once completed, adding a new iconic landmark to Ho Chi Minh City's ever growing skyline.

Atkins' scope includes architecture and landscape design. The 81-storey development is located in Vinhomes Central Park - one of the most prime locations in Ho Chi Minh City, Vietnam. Its frontage faces the beautiful Saigon River, and is conveniently connected via major road and water transportation. Featuring a modern and unusual architecture design that symbolises the diversity and fast-emergence of Ho Chi Minh City, this mixed-use development involves space for hotel, serviced residential apartment and retail. At the base of this skyscraper is a sumptuous shopping centre featuring the finest retailers under one roof for a top-class shopping experience. The 241,000 square metres development will also feature contemporary landscape design that merges natural beauty into this building.

Bertil de Kleynen, director of architecture and landscape for Atkins in Asia Pacific, said: "Our challenge was to create a unique and dynamic landmark tower design to support Vingroup's vision for a high-end mixed use development. The tower is integrated into the public realm that addresses sustainable design challenges at various interfaces of the project."

The construction of Vincom Landmark 81 is expected to be completed in 2017.



## Opera House awarded for sustainability leadership

**Sydney, Australia** – The Sydney Opera House has been awarded a 4 Star Green Star – Performance rating by the Green Building Council of Australia (GBCA), putting the national icon among a select few World Heritage buildings that have achieved green certification globally.

The announcement was made jointly by NSW Deputy Premier and Minister for the Arts Troy Grant, Sydney Opera House Building Director Greg McTaggart, and GBCA Chief Executive Officer Romilly Madew on stage in the Concert Hall – a key venue in the Opera House's sustainability strategy.

The 4 Star Green Star rating, awarded for 'best practice' in the industry, is an extraordinary achievement for a heritage building. It will also be critical to the Opera House's Decade of Renewal, a sequenced programme of works to update the world-renowned performing arts centre for 21st century audiences, artists and visitors.

NSW Deputy Premier and Minister for the Arts Troy Grant said, "The Opera House is an icon of Sydney and a symbol of modern Australia so it's vital that it sets the standard. The endorsement of the Opera House by the GBCA sends a clear message that green buildings don't have to be new – even the most recognisable and historic landmarks can earn a place among the most celebrated sustainable buildings in the world."

Romilly Madew, Chief Executive Officer of the Green Building Council of Australia said, "About 340 million square metres of commercial and public building space in Australia needs upgrading. Despite the operating costs amounting to around \$27 billion a year, the general consensus has been that it's 'too hard' to improve the sustainability of these buildings.



Photo: © Sydney Opera House

The Sydney Opera House has laid down the gauntlet for the property industry with a pragmatic, practical approach which shows even the most iconic, historic and challenging buildings can be high-performing, energy efficient and sustainable. If you can green the Opera House, you can green anything."

From the installation of new energy-efficient technologies in key performance venues to the use of eco-friendly cleaning products and a robust Reconciliation Action Plan, a wide range of both environmental and social sustainability initiatives across three core areas have contributed to the Opera House's 4 Star rating.

## WATANABE COFFEE Shop celebrates grand opening ceremony

**Singapore** – WATANABE COFFEE Shop, designed by COCOCHICAM Designs, an architectural design company of Cambodia, celebrated the grand opening ceremony at the ground floor in Singapore Isetan Scotts.

WATANABE COFFEE Shop / Wa-Cafe, which is managed by Kitchen511 PTE LTD in China Town Point, now has become the second branch.

The interior of the coffee shop is French inspired, but casual and comfortable, and takes advantage of wood and brick. While enjoying a prime location in Singapore, it is focused on the space of relaxation and comfort.

Mr Kawauchi Toshishige, the person in charge and the CEO of COCOCHICAM Designs said: "It has different scenes to enjoy in the morning, daytime and nighttime. It also has configured to be an international city cozy space to worthy and multinational customers in Singapore."

It has been created to value the needs of clients that want to expand the cafe culture of Japan from Singapore to Asia. In Cambodia there is a tendency to order in Thailand and Vietnam, but this time, COCOCHICAM Designs got this opportunity from Singapore. Mr Kawauchi added: "I'll try to bring a quality that can compete in the world while we are operating an office in Cambodia. And for the staffs, it has become a great confidence."



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## CapitaLand celebrates official opening of CapitaGreen



'CapitaGreen official opening' depicts senior representatives from the joint venture, main contractor and Pritzker Prize-winning architect Toyo Ito toasting to the continuous growth of CapitaGreen, one of the greenest office buildings in Singapore's CBD.

From left to right:

- 1) Ms Lynette Leong, CEO, CapitaLand Commercial Trust Management Limited;
- 2) Mr Jo Kato, Representative Director and Deputy President, Mitsubishi Estate Co.;
- 3) Mr Lim Ming Yan, President & Group CEO, CapitaLand Limited;
- 4) Mr Ng Kee Choe, Chairman, CapitaLand;
- 5) Mr Soo Kok Leng, Chairman, CapitaLand Commercial Trust Management Limited;
- 6) Mr Toichi Takenaka, Chairman of Board & CEO, Takenaka Corporation;
- 7) Mr Toyo Ito, Principal, Toyo Ito & Associates, Architects; and
- 8) Mr Wen Khai Meng, CEO, CapitaLand Singapore

**Singapore** – CapitaGreen, the landmark premium office development in Singapore's Central Business District (CBD) was officially opened on 9 September 2015. Completed in December 2014, CapitaGreen is a 242-metre, 40-storey premium Grade A office building, jointly developed by CapitaLand, CapitaLand Commercial Trust and Mitsubishi Estate Asia.

Through the use of innovative construction technologies, 'design-and-build' methods and streamlined work processes, CapitaGreen was completed in 36 months, compared to the industry average of 40-42 months it would take to complete a building of this scale. With its striking green façade and rooftop wind scoop which contributes to cooling the building naturally, CapitaGreen's sustainable design makes it one of the greenest office buildings in the CBD.

Today, CapitaGreen is already home to about 30 multinational companies from diverse industry sectors including insurance, energy and commodities, technology and e-commerce, and financial services. They include Bordier & Cie, Cargill, Catlin Asia Pacific, China Life Insurance, Fitness First, Jardine Lloyd Thompson, Jones Day, Lloyds Banking Group, Rakuten, Schrodgers Investment Management and South32. To-date, aggregate committed occupancy stands at approximately 83 percent or 583,200 square feet of total net lettable area. Many tenants were attracted to CapitaGreen because of its sustainable design principles, which are aligned with their own corporate values and business focus. A number of tenants including Lloyds Banking Group, Schrodgers Investment Management and South32 have embarked on the process of being certified under the BCA Green Mark Office Interior scheme.

Mr Lim Ming Yan, President and Group CEO, CapitaLand said "CapitaGreen is a stellar example of how CapitaLand has always placed strong emphasis on incorporating concepts of accessibility, connectivity, safety, lush greenery, healthy indoor air quality, operational efficiency and community bonding into our buildings."

CapitaGreen features the stunning award-winning sustainable design of Toyo Ito, winner of the prestigious Pritzker Architecture Prize in 2013. It has been conferred the "Best Tall Building Award for Asia & Australasia" by the Council on Tall Buildings and Urban Habitat (CTBUH) in 2015. CTBUH recognises projects that have made extraordinary contributions to the advancement of tall buildings and the urban environment, as well as achieve sustainability at the highest and broadest level. For its environmentally-sustainable and inclusive design, CapitaGreen was also awarded the Green Mark Platinum Award in 2012 and Universal Design Gold<sup>PLUS</sup> in 2013 by Singapore's Building and Construction Authority.

## Ecobuild Southeast Asia 2015 completes third edition successfully

**Kuala Lumpur, Malaysia** – Ecobuild Southeast Asia 2015, which took place from 9-11 September 2015 at the Putra World Trade Centre in Kuala Lumpur, was hailed a huge success by the show's organiser United Business Media (M) Sdn Bhd.

Entering into its third edition, Ecobuild Southeast Asia 2015 and International Construction Week 2015 was officiated by Malaysia Prime Minister, Dato' Sri Mohd. Najib Bin Tun Haji Abdul Razak. The opening ceremony was witnessed by over 1,500 industry professionals. Other honourable guests who attended the ceremony were the Malaysia Minister of Works Dato' Sri Fadillah Bin Haji Yusof and his deputy Datuk Rosnah Binti Haji Abdul Rashid and other dignitaries from all over the world. The Prime Minister officiated ICW 2015, Ecobuild SEA 2015 and launched the blueprint of the Construction Industry Transformation Programme (CITP).

The three-day exhibition showcased a wide array of products and cutting-edge technologies from key industry players across the world. Participating in this event were more than 100 companies from various countries, including the UK, China, the Middle East, Taiwan, Japan, Australia, Singapore and Malaysia.

Next year, Ecobuild Southeast Asia 2016 will have a new date, new look and new venue. It will be held from 12-14 April 2016 at the Kuala Lumpur Convention Centre in Kuala Lumpur, Malaysia. For more information, visit [www.ecobuildsea.com](http://www.ecobuildsea.com).



Malaysia Prime Minister, Dato' Sri Mohd. Najib Bin Tun Haji Abdul Razak officiated the 3rd edition of Ecobuild Southeast Asia 2015 and International Construction Week 2015 together with Dato' Sri Fadillah Bin Haji Yusof, Minister of Works Malaysia, his Deputy Datuk Rosnah Binti Haji Abdul Rashid, Secretary General of Ministry of Work, Dato' Sri Zohari Bin Haji Yakob, Chief Executive of CIDB Malaysia Dato' Sri Ir. Dr. Judin Abdul Karim, Director General of Public Works Department Datuk Ir. Adanan Bin Mohamed Hussain and UBM Managing Director ASEAN Business of UBM Asia Mr. M Gandhi.



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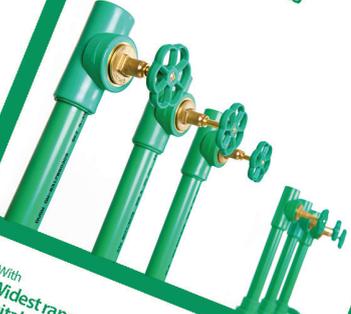
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## Depa signs new contracts worth AED 719 million

**Dubai, UAE** – Depa Limited, one of the world's leading interior contracting companies, signed new contracts worth over AED 719 million\* in the first half of 2015 as the company cemented its position in core markets by winning the Madinat Jumeirah Extension and Dubai Opera, while expanding into new international territories.

A major milestone was reached this year when Depa once again secured a high-profile contract in the United States. The agreement will see its Asian-based subsidiary Design Studio Group supply kitchen and vanity cabinets to 626 First Avenue, a 756-unit luxury residential development along New York City's East River.

Design Studio was also awarded three significant projects in Asia, including The first is a contract for the alteration and addition of works at the 476-room Swissôtel Merchant Court Singapore; the second and another one for interior design and fit-out work at the 150-room W Hotel Kuala Lumpur. In total, Design Studio signed projects worth AED 126 million in the first few months of 2015.

After securing AED 95 million worth of contracts earlier this year, Vedder, the company's German yacht interior contracting specialist, in Q2-2015 agreed two contracts of close to AED 190 million for the interiors and exterior packages of two yachts, currently built at the Lürssen ship yard in Bremen.

Meanwhile, Depa Interiors secured the company's first ever contract in

Bangladesh. The AED 81 million order covers the refurbishment of the public areas and 226 rooms of the famous InterContinental Hotel, Dhaka, the first international five star hotel in the country, opened in 1966. This project is also a testimony of Depa's continued strong relationship with IHG, currently completing the last stages of the fit-out of the InterContinental 'Blue Diamond' in Luanda, Angola.

Nadim Akhras, Group CEO, Depa, said, "Depa has started 2015 with confidence, securing more than AED 700 million of new work across an array of prestigious new projects. Significantly, Depa Interiors secured its first ever contract in Bangladesh and Design Studio tapped into the US market once again, as our international expansion strategy continues to gain traction.

In Dubai, Depa Interiors won contracts worth AED 87 million, including landmark projects such as Emaar's Dubai Opera in Downtown, the Madinat Jumeirah Extension and FF&E packages for the new Nikki Beach Resort, developed by Meraas.

Depa Albarakah agreed a AED 16 million contract for the supply and installation of dry wall partition works at IMG's Theme Parks site. Deco Emirates won AED 77 million worth of contracts during the period with companies including Christian Dior, Louis Vuitton, Hermes, D&G, Michael Kors and a confidential blue-chip client for their office and a state of the art retail space in Mall of the Emirates.



**Nadim Akhras**

Mr Akhras added, "These new deals, especially the Dubai Opera and the Madinat Jumeirah, have given us a solid platform on which we will continue our strategy to build a balanced portfolio through geographical diversification whilst maintaining the highest standards of quality within the industry in our core home markets."

Depa specialises in the turnkey fit-out and furnishing of five star hotels and resorts, high-end retail stores and malls, luxurious offices, large scale infrastructure projects such as airports, villas, palaces, private jets and yachts around the world.

\* Out of the AED 719 million new projects signed in H1, AED 275 million contributed to the Backlog reported in the Q1 2015 trading statement

## Jumeirah Group to operate luxury hotel, serviced apartments and private residences for RP Global's US\$1 billion iconic tower

**Dubai, UAE** – Jumeirah Group, a global luxury hotel company and a member of Dubai Holding, has been appointed by leading property investment company RP Global to operate a mixed-use development within RP Global's US\$1 billion iconic tower. The Jumeirah Business Bay will include a 200-room luxury Jumeirah hotel as well as 350 serviced apartments and 290 luxurious residences managed under the Jumeirah brand.

The super-tall tower will have a built-up area of over 3 million square feet, offering spectacular views of Downtown Dubai and Burj Khalifa. A luxury urban resort destination, the tower will include extensive food and beverage outlets, an award winning Talise Spa and Health Club, conference and banquet facilities and a dynamic open air, rooftop Sky bar. Located in the heart of Business Bay, behind the Dubai Metro station and parallel to Sheikh Zayed Road, the tower is designed by world renowned architectural and engineering firm, Atkins Global, which also designed the world-famous Burj Al Arab Jumeirah, and is expected to be completed before the opening of Expo 2020.

One of the tower's exciting features is the thrilling sky attraction, a dynamic interactive experience taking visitors high over the towers of Business Bay. Mr Gerald Lawless, President and Group CEO, Jumeirah Group, said: "RP Global is a company

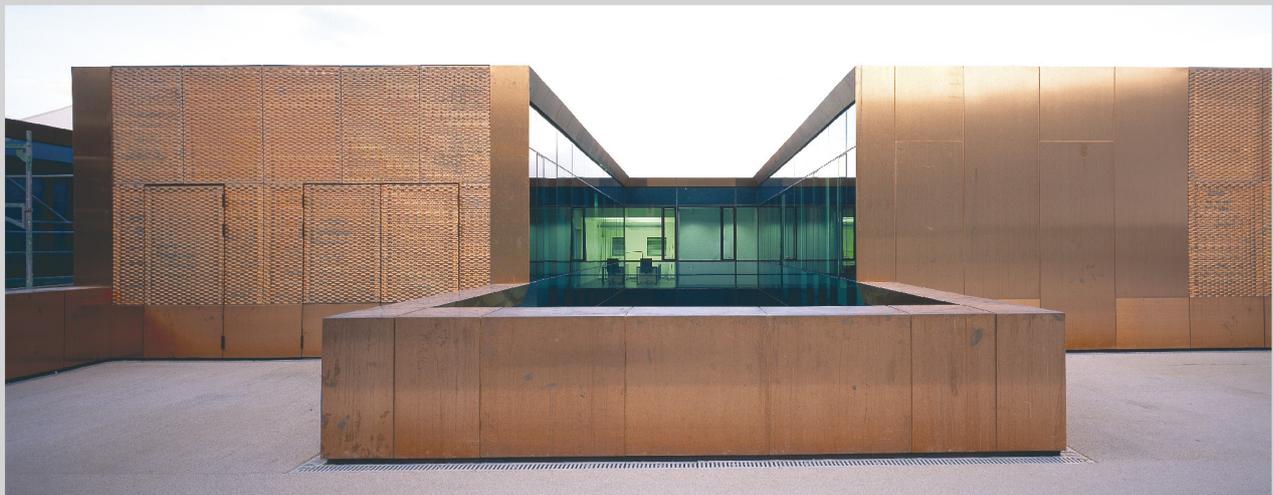
committed to excellence, and we look forward to working together and operating this outstanding property. Jumeirah has a reputation for luxury and exceptional hospitality, and our partnership reflects the strong synergies between Jumeirah Group and RP Global. As Dubai moves towards its tourism vision of receiving 20 million visitors a year by 2020, we are proud to be strengthening our Jumeirah portfolio in Dubai."

Dr Ravi Pillai, Chairman, RP Group of Companies, the holding company of RP Global, said: "We are investing close to US\$1 billion of our own resources into Dubai's real estate sector to develop a world-class tower that will be operated by the esteemed luxury hospitality brand, Jumeirah Group. RP Global is committed to superior quality and timely delivery and like the Jumeirah Group, we strive to create well designed, innovative lifestyle concepts for our buyers. Dubai's resident population is growing rapidly and we are looking forward to adding an iconic tower to Dubai's skyline in partnership with Jumeirah."

The management agreement between RP Global and the Jumeirah Group was signed by Dr Ravi Pillai and Gerald Lawless at a ceremony held at the Jumeirah Group's flagship property, the Burj Al Arab Jumeirah.



Dr Ravi Pillai, Chairman, RP Group of Companies (left) and Mr Gerald Lawless, President and Group CEO, Jumeirah Group at the management agreement ceremony.



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## HDB conferred Prestigious Engineering Award for its Urban Environment Modelling town planning tool

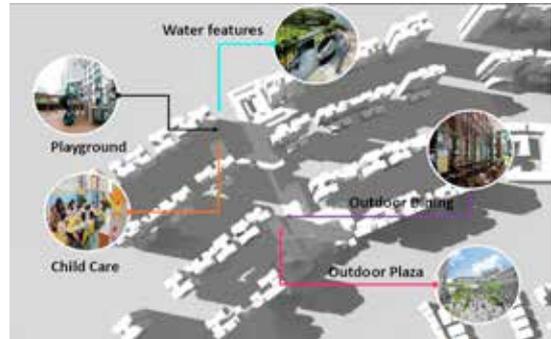
**Singapore** – The Housing & Development Board (HDB) has been conferred the Institution of Engineers, Singapore (IES) Prestigious Engineering Achievement Award 2015 for its Urban Environmental Modelling (UEM) town planning tool. This award is a testament to HDB's efforts to leverage on technology to create public housing that is well designed and sustainable.

Residents in Punggol Eco-town and in upcoming housing estates such as Bidadari and Tampines North, stand to benefit from this award-winning tool. The tool has the ability to conduct analysis on the wind flow, solar irradiance and shaded areas within each town, allowing new flats to be designed to provide maximum thermal comfort and a more conducive living environment.

The UEM town planning tool is one of the key strategies that HDB adopts to better understand the urban environment. The tool has the ability to simulate various aspects of a living environment, allowing planners, architects and engineers to experiment and determine how best to site new flats to optimise wind flow, or to minimise heat and glare. It provides a virtual platform for testing a planned environment, before the actual implementation of developments, thereby reducing the risk of physical trial and error.

For example, during the planning of Punggol Eco-town, the UEM tool was used to determine the microclimatic conditions at a town level. Treelodge @ Punggol was the first HDB project to benefit from the use of such wind flow simulation.

Besides wind flow, the UEM tool is able to assist town planners with identifying areas within the town that would receive large amount of heat from the sun throughout the day. This will enable planners to introduce more greenery in these areas to minimise heat gain. Similarly, the modelling tool highlights the shaded areas within the towns. This helps the planners to site community facilities like playgrounds and childcare centres in the more shaded areas, where possible.



The UEM tool helps planners identify shaded areas to site community facilities like playgrounds and childcare centres. Photo courtesy of Housing & Development Board

## U.S. Hardwood exports to Southeast Asia reflect difficult market

**Singapore** – Global exports of U.S. Hardwoods in the first half of 2015 were down in comparison to the same period in 2014, however some markets have shown significant growth according to the United States Department of Agriculture statistics. The U.S. is still on target to export just over US\$2 billion worth of lumber for the second highest annual export total ever.

The value of American hardwood lumber exports to Southeast Asia totalled US\$111.6 million from January-June 2015. Although this is a decrease from the same point in 2014 some countries within Southeast Asia have made significant growth within the first six months of 2015.

Indonesia showed significant advancements in comparison to 2014 with lumber increasing by 21 percent in value and a 13 percent increase in log imports as well as a 40 percent increase in veneer imports. In 2014 many producers in Indonesia turned to lumber and veneer as a raw material rather than logs, this has now changed and they appear to have switched back to using logs as well. Cherry and Ash led the species growth - up a staggering 1,162 percent and 432 percent in comparison to the same point in 2014.

Thailand has had a large increase in hardwood lumber shipments with an increase of 24 percent in value for the first six months of 2015. Hardwood veneer also made a vast increase of 648 percent totalling \$134,858.

Vietnam is still the largest user of American Hardwoods in Southeast Asia even though hardwood lumber and veneer imports have decreased compared to the same period last

year. There was however a 13 percent increase in hardwood log shipments from the USA to Vietnam at a value of US\$24.3 million. Like other Southeast Asian countries American Cherry had the largest increase in value of 368 percent which shows that American Cherry is having a comeback due to its stunning colour and workable characteristics. American Black Walnut has increased by 142 percent in value including logs which may be due to the expansion of Vietnam's domestic consumption market for joinery and furniture products as well as exports. American Black Walnut continues to be fashionable for use in furniture, cabinet making, architectural interiors and high class joinery.

Malaysia imported U.S. lumber valued at US\$1.7 million, a drop of 21 percent. Imports of veneer registered a decrease of 20 percent to US\$2.5 million indicating the fact that producers are using slightly more veneer as a raw material. American Cherry was Malaysia's largest imported species for the first six months of 2015 with a rise of 101 percent.

Singapore and Philippines are relatively small markets where demand for American hardwood lumber has reached US\$846,849 and US\$683,044 respectively. This shows significant increases of 50 percent and 53 percent in comparison to the same point in 2014. Singapore furniture industry remains highly competitive with its neighbours by setting up production facilities in China, Vietnam, Malaysia and Indonesia. "Southeast Asian markets will continue to play a very important role in the growth of US hardwood exports in 2015," said John Chan, AHEC Director for Greater China and Southeast Asia.

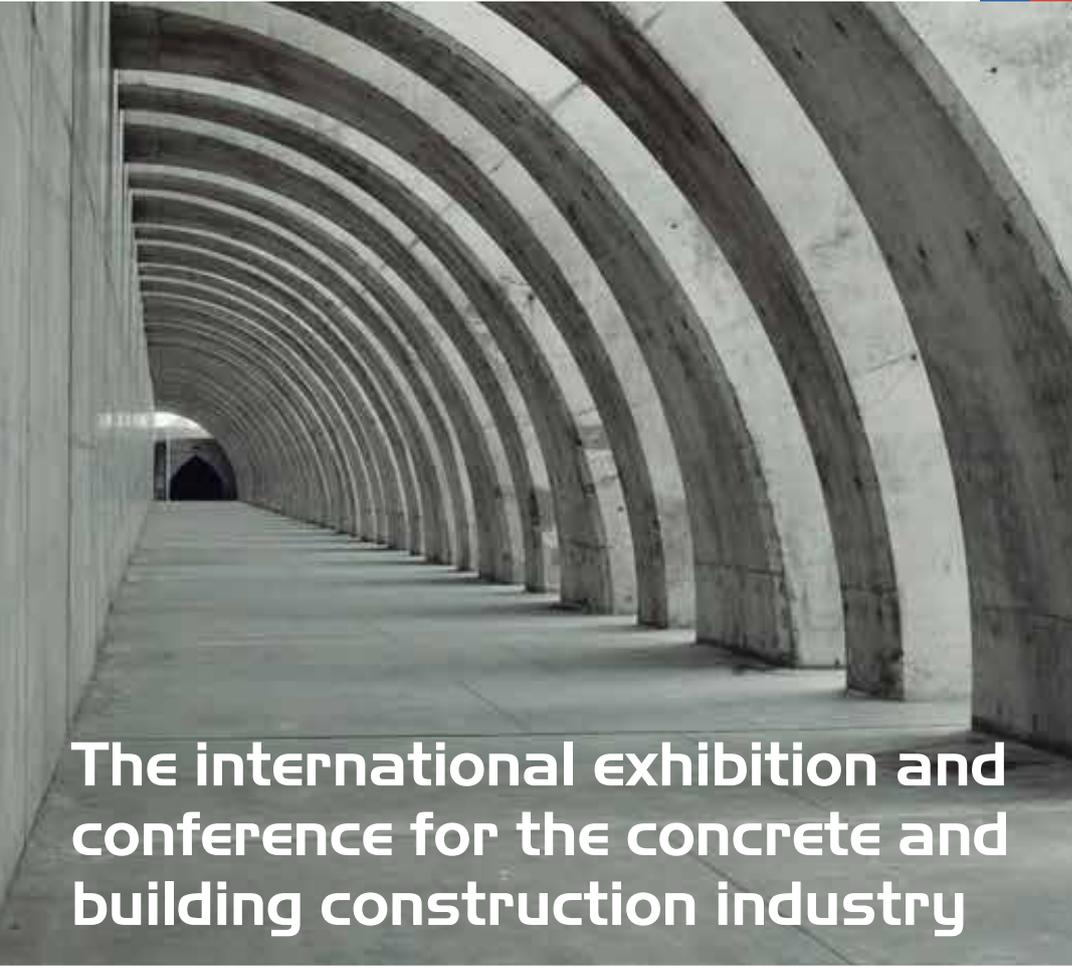


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## BCA launches new Green Mark 2015 to raise the bar for sustainability

**Singapore** – At the joint opening ceremony of the Singapore Green Building Week (SGBW) 2015, BEX Asia 2015, MCE Asia 2015 and IGBC 2015 held at the Marina Bay Sands on 2 September 2015, Guest-of-Honour Mr Choi Shing Kwok, Permanent Secretary, Ministry of the Environment and Water Resources, announced the new Green Mark 2015 and details of the BCA SkyLab, claimed to be the world's first high-rise rotatable laboratory for the tropics. He also shared key findings from the second BCA Building Energy Benchmarking Report (BEBR) and latest green initiatives rolled out by the Building and Construction Authority (BCA).

### Launch of the Green Mark 2015

In its commemorative 10th year for BCA Green Mark scheme this year, BCA introduced a new version of the Green Mark scheme called the "Green Mark 2015" to further push the boundaries on environmental sustainability. The Green Mark 2015 was developed through a collaborative framework involving more than 100 industry specialists and experts, and 12 taskforces led by BCA. The collaboration was complemented by extensive consultation with industry bodies and academia. This version, which was developed for new non-residential buildings, will incorporate key changes, with an expanded focus to address sustainability in a more balanced and holistic manner.

Green Mark 2015 has been structured into four main sections:

- (i) Climatic Response,
- (ii) Building Energy Performance
- (iii) Resource Stewardship
- (iv) Smart & Healthy Building.

A bonus section on advanced green building efforts is included, to spur efforts beyond requirements. Key benefits for building occupants and users include a stronger emphasis on indoor environmental quality in relation to enhanced health and well-being, and buildings that are equipped with smart controls and analytics to assist in the management and optimisation of building resources.

The revamped scheme will enable projects to analyse its energy effectiveness in both the optimisation of energy efficiency as well as energy consumption. Greater recognition for renewable energy will be considered; this will accelerate solar PV adoption by further encouraging the use of renewable energy through solar feasibility studies and solar ready roof design. The scheme is launched for piloting and will be fine-tuned before full implementation.

Dr John Keung, Chief Executive Officer of BCA, commented: "Green Mark 2015 will play a more prominent role in driving and communicating sustainability outcomes in Singapore, as buildings consume more than 30 percent of the total electricity. It will recognise the leadership of building owners who drive improvements to the overall environmental credentials of projects. Such leadership by the building owner will add a layer of accountability and integrity to the projects teams in business sustainability reporting."

### The BCA SkyLab – A high-rise rotatable laboratory for the tropics

Guest-of-Honour Mr Choi Shing Kwok also unveiled the details of the BCA SkyLab, claimed to be the world's first high-rise rotatable laboratory for the tropics with state-of-the-art facilities for testing and development of innovative energy-efficient building technologies.

Built on the rooftop of a new building at the BCA Academy, the BCA SkyLab is constructed on a rotatable platform to enable tests to be carried out at any orientation to the sun and wind. The BCA SkyLab is part of BCA's plans to further accelerate the pace of research, development and application of energy-efficient building technologies.

Developed in collaboration with Lawrence Berkeley National Laboratory (LBNL) in California, the BCA SkyLab complements BCA's existing Zero Energy Building (ZEB) to develop green building research and development efforts in Singapore. BCA SkyLab is expected to be completed with a pipeline of technologies to start test-bedding by the first half of next year.

### Release of the BCA Building Energy Benchmarking Report 2015

BCA also released the Building Energy Benchmarking Report (BEBR) 2015 for the second year. The report provides a comparative study which covers commercial buildings and consists of two years' data.

The three key findings in the report are:

- (i) Commercial buildings achieved better energy performance in 2014 compared to 2013, with retail buildings showing the most significant improvement.
- (ii) BCA Green Mark certified commercial buildings continued to perform better than non-certified buildings.
- (iii) Tenants' electricity consumption continued to be comparable to that of their building owners, reaffirming the potential for tenants to play more active roles in improving the energy performance of their premises.



The BCA SkyLab. Photo: © Building and Construction Authority

## motiongate™ Dubai brings cinematic adventure to life

**Dubai, UAE** – motiongate™ Dubai, the flagship theme park within Dubai Parks and Resorts, has officially shouted “lights, camera, action!” as it unveiled how it has united for the first time, three Hollywood giants, Sony Pictures Studios, DreamWorks Animation and Lionsgate, to create the ultimate cinematic theme park for the Middle East.

Guido Zucchi, General Manager of motiongate™ Dubai said: “When motiongate™ Dubai opens its gates in October 2016, we will be presenting 1.9 million square feet of theme park magic filled with immersive rides, shows, restaurants and shops inspired by some of Hollywood’s favourite films. Working alongside three of the world’s biggest studios, motiongate™ Dubai is capturing every element that makes a movie truly memorable and bringing it to life as theme park experiences. These and much more will be revealed to our fans in the coming months.”

Inspired by the magic of movies, motiongate™ Dubai is working closely with its studio partners to re-create the excitement, adventure and action of 13 Hollywood film franchises in the shape of immersive theme park experiences, rivalling that of some of the world’s best. Thrilling rides will journey guests into new character storylines, innovative multimedia technologies will create new cinematic realities and high energy musical stage shows and opportunities to interact with some of film’s most memorable characters are just a taste of what motiongate™ Dubai will deliver to fans across the region, and worldwide.

Stanford Pinto, Chief Parks Operating Officer for Dubai Parks and Resorts said: “Dubai Parks and Resorts will be a significant contributor to UAE’s fast emerging leisure and entertainment landscape, with a distinct offer that is unrivalled anywhere else. As our flagship, and the Middle East’s largest theme park motiongate™ Dubai will be an outstanding showcase of film, adventure and memorable experiences.”



Front entrance façade of motiongate™ Dubai.

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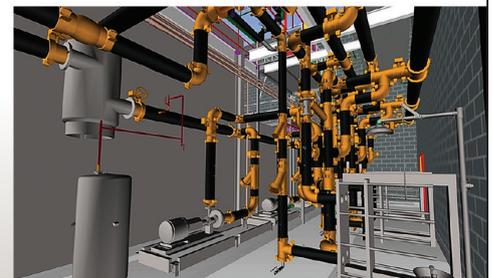
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## Fairy tales comes to life at Tampines HDB estate

**Singapore** – The playground at 239 Tampines St 21 comes to life from popular Hans Christian Anderson fairy tales like Little Mermaid, Tinderbox & Ugly Duckling where the characters from the stories and interact with children via an interactive augmented reality technology. “The SMART playground combines the physical playground, which Kompan has been making for years, with a digital learning concept based on Hans Christian Andersen’s fairytales - stories we all know like The Little Mermaid, The Ugly Duckling and The Tinderbox,” said Jeanette Fich Jespersen, KOMPAN Play Institute.

“This playground makes children and adults an active part of those stories on every piece of equipment. Through the app, the stories can be experienced before, during and after a visit to the playground,” she added.

By scanning the QR code with a smartphone or an iPad or phone at the playground, users can download five apps (PLAY GATE, PLAY ALONG, PIC-2-WORD, READ ALONG & TALE RUN) for free, thus creating a link between the physical and virtual world.

The apps offer the popular fairy tales of Hans Christian Anderson to read or have read out loud in 16 different languages. Children can bring back the experience of Hans Christian Anderson back home and access a full universe of learning support digital games based on the themes from the beloved fairy tales.



## Wilson Architects & Henning Larsen Architects win \$75 million flagship education precinct for Queensland University of Technology

**Sydney, Australia** – Australia’s Wilson Architects and Scandinavian firm Henning Larsen Architects have joined forces to win the tender to design QUT’s \$75 million Education Precinct. The project will be a model for educational precincts internationally and will set a new benchmark for contemporary and sustainable design.

“This project will be a flagship and transformative development for QUT, offering new teaching and learning opportunities in a stimulating and sustainable world-class environment,” said Hamilton Wilson, Managing Director, Wilson Architects. Wilson Architects + Henning Larsen Architects will provide an experienced, global team to undertake the project. Wilson Architects are Australia’s leading education architecture specialists and were recently awarded a prestigious international CEFPI\* Award for James Cook University’s Education Central in Townsville. They are undertaking current projects throughout Australia and Malaysia.

Anders Saelan, Partner and Architect, Henning Larsen Architects said, “Australia leads the global education sector in terms of their approach to learning. In Scandinavia, we have a strong history in this field as well, and I think that we can inspire each other and create innovative and effective learning environments by pooling our knowledge and references.”

The Precinct will promote a strong identity for QUT and position the university at the forefront of tertiary education studies in the region by creating a new teaching building for the Faculty of Education, the Oodgeroo Unit and E Learning services. Extensive landscaping will create a new pedestrian hub for the campus and strong connections with the Kelvin Grove community. Wilson Architects + Henning Larsen Architects are partnering with Taylor Cullity Lethlean (TCL), Australia’s pre-eminent landscape architects, to collaborate this part of the project.



\* Council for Education Facilities Planners International – the world’s most respected organisation sharing knowledge, experience and best practice in planning, designing and building great learning environments.

## Tottenham Hotspur unveils new Populous stadium design

**London, UK** – Tottenham Hotspur has unveiled their updated designs and plans for the Northumberland Development Project, which will be submitted to the London Borough of Haringey in the coming weeks. The scheme includes a new Populous-designed stadium that will be the first of its kind in the world as well as a hotel and visitor attractions.

Described by Club Chairman Daniel Levy as “visually dramatic” and a “landmark building for Tottenham,” the new stadium will be truly perfect for both elite football (soccer) and NFL, with a state-of-the-art retractable pitch.



Aerial night view of the Tottenham Hotspur. Photo: © Populous

Senior Principal of Populous, Christopher Lee, spoke about the stadium as the design was launched: “The new Tottenham Hotspur Stadium marks a new generation of stadia design: stadia that provide an unparalleled experience for all fans, that are civic in their nature and hold community at their heart but above all else create the most intense and atmospheric place to watch football.

“The seating bowl is designed to create an intimate relationship between player and spectator, its 17,000 capacity single tier end stand, a tribute to traditional English football grounds, will be the largest in the UK and will be the engine that drives the intensity and atmosphere in the new Spurs stadium. It will be like no other,” said Lee.

The design team comprises Populous in respect of the stadium design, the hotel and the visitor attractions; Allies & Morrison for the new homes; and Donald Insall Associates as heritage architects.



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## KONE begins installation activities at Kingdom Tower construction site

**Helsinki, Finland** – KONE, a global leader in the elevator and escalator industry, has initiated the very first phases of its elevator installations at the impressive Kingdom Tower construction site in Jeddah, Saudi Arabia. The Kingdom Tower project, which is owned and developed by Jeddah Economic Company (JEC), will be the world's tallest building once completed in 2018 and is expected to rise to a height of more than one kilometre.

KONE Areeco, KONE's Saudi Arabian joint venture, has been involved in the planning and design of all vertical transportation systems for the Kingdom Tower over the past two years in conjunction with KONE's global experts. The project team arrived on site last January and is currently working on pre-installation activities concerning the fitting of the elevator system's guiderails, which is expected to begin towards the end of this year. The installation of the guiderails, as well as the eventual installation of the KONE elevator cars, will then progress as the Kingdom Tower's central structure rises over the coming years.

KONE's engineering and project management teams are meticulously preparing for the next phases of the project, which will cover the manufacturing and delivery of KONE's vertical transportation solutions. For a building with such unprecedented height, KONE will deliver uniquely advanced technology: the world's fastest and highest DoubleDeck elevators, supported by the revolutionary KONE UltraRope® technology, as well as the latest People Flow Intelligence solutions.

"I am delighted we are now at the stage of taking the next leap with KONE in the construction of the Kingdom Tower," said Mr Mounib Hammoud, CEO of Jeddah Economic Company, owner and developer of the Kingdom Tower and Kingdom City, which is chaired by HRH Prince Al Waleed Bin Talal Al Saud, Chairman of Kingdom Holding Company. "Building the tallest tower in the world is about human ingenuity and the strength of the materials used. Based on this premise, KONE is the only vertical transportation service provider in the world capable of delivering what we need at the Kingdom Tower - specifically the capability of travelling at a speed of over 10 meters per second with DoubleDeck elevators to reach the highest liveable floor in the world in 52 seconds. In addition, the high-speed elevators will rise 660 metres to the observation deck, making it the world's highest elevator rise," added Mr Hammoud.



## A Spanish research and education centre chosen to create a new school of design and architecture in China

**Barcelona, Spain** – The collaboration agreement whereby the Catalonia Institute for Advanced Architecture and the Zurich University of the Arts, together with the Harbin Institute of Technology of China (HIT), the 9th university in a ranking of 3,000 Chinese universities, will create a training centre for design, architecture and urbanism in Shenzhen, China, was signed on 28 July 2015.

This new non-profit centre will house up to 1,200 post-graduate and doctoral students, with an emphasis on the three subject areas Architecture, Infrastructures & Urbanism, Products, Spaces & Urban Cultures, and Identity, Communication & Media. It is based in a new campus for Research, Education and Production to be built within the HIT campus and will be designed by the IAAC in collaboration with the city of Shenzhen, the ZHdK and the HIT.

The cooperation agreement was formally signed by Areti Markopoulou, director of the Institute for Advanced Architecture of Catalonia, WU Yihuan, Vice Mayor of the City of Shenzhen, Ding Xuemei, Vice President of Harbin Institute of Technology and Thomas D. Meier, president of Zurich University of the Arts. The signing ceremony was attended by Swiss and Spanish diplomats as well as by Xu Quin, Mayor of the City of Shenzhen, who thanked the party and the government for their attention and support for this cooperation in running the school.

The agreement agrees on advice from the IAAC and the ZHdK for the creation of eight master's degree programmes and a Hub for technological research in the field of design, architecture and urbanism in the city of Shenzhen.



**Dcha izq, Areti Markopoulou, IAAC Academic Director, Ding Xuemei, Vice President of HIT Shenzhen, Wu Yihuan, Deputy Mayor of Shenzhen, Dr. Thomas D. Meier, President of Zurich University sign the agreement in Shenzhen, China.**

Lecturers and other staff will have the opportunity to acquire experience in a major international project, cooperating with one of the largest universities in China (HIT) and two of the world's leading architecture schools (IAAC and ZHdK), while benefiting from the strong practical focus provided by the involvement of local companies and institutions. Exchanges will give lecturers and students the opportunity to carry out teaching, learning and research within an extremely dynamic cultural and economic environment.

## CTBUH announces 10 Year Award winner for 2015

**Chicago, Illinois, USA** – The Council on Tall Buildings and Urban Habitat (CTBUH) is pleased to announce this year's winner of the 10 Year Award – Malmö's Turning Torso.

The 10 Year Award recognises completed tall buildings that have proven to be valuable to their cities and communities over a period of time. This award category provides an opportunity to revisit projects that have been operational for a decade, and recognise those that have performed successfully across any number of a wide range of criteria, including environmental, engineering performance, vertical transport, iconography, and others.

Completed in 2005, the Turning Torso was the first twisting skyscraper in the world, rotating a full 90 degrees along its height in nine pentagonal sections. Inspired by a white marble sculpture created by Spanish architect, engineer, and artist, Santiago Calatrava, the tower embodies Malmö's revival and Sweden's determination to lead the world in expressive, sustainable design typologies. Intentionally provocative and contextually definitive, the Turning Torso has become a landmark of the city's redeveloped Western Harbour. At 190 meters, it remains the tallest building in Scandinavia.

The CTBUH Board of Trustees applauded the revolutionary nature of the design, and affirmed its lasting impact both on its home city of Malmö, as well as on the broader world of tall building design and architecture. Timothy Johnson, Vice Chairman, CTBUH Board of Trustees and Partner, NBBJ said, "The Twisting Torso is one of those superb examples that went beyond the creation of a signature tower and helped shape an entirely new and invigorating urban fabric." With an unprecedented architectural form, and an entirely unique combination of structural solutions, the Turning Torso is one-of-a-kind, even 10 years after its completion.

This project will be featured in the Best Tall Buildings book, published in conjunction with Images Publishing, and distributed internationally each year. All CTBUH Awards winners and finalists will be celebrated at the CTBUH 14th Annual Awards Symposium, which will take place at the Illinois Institute of Technology, Chicago, on 12 November 2015.



Turning Torso. Photo: © Barbara Burg + Oliver Schuh, Palladium Photodesign, [www.palladium.de](http://www.palladium.de)

## Richard Meier & Partners announces the CDC "55 Timeless" Xin-Yi Residential Tower in Taipei



Rendering: Vize.com Courtesy Richard Meier & Partners Architects

**New York, USA** – Richard Meier & Partners has unveiled the new CDC "55 Timeless" Xin-Yi Residential Tower in Taipei, Taiwan. Commissioned as an urban landmark by Continental Development Corporation, the tower rises 127 metres and will set a precedent in Taiwan as a private building that dedicates its entire landscape to the public realm.

The building is currently under construction and on target to complete the superstructure by the end of this year with an opening expected in 2017.

The design of the tower is based upon geometric clarity and an openness that are reflected in its horizontal and vertical organisation. The building consists of two complimentary volumes, a transparent south volume and a solid north volume. The relationship between these two main elements is emphasised through a subtle shift in both plan and elevation creating a dynamism and variation in scale that responds to the immediate urban environment.

The solid north volume contains the core of the residential units that flows towards the transparent south volume, which is a natural light-filled space where living, social and the more public programs are located. A carefully crafted geometric organization allows viewing corridors towards the mountains in the far distance.

Richard Meier commented: "Natural light is a very important element of the CDC "55 Timeless" Xin-Yi Residential Tower and the architectural grid helps to bring all the elements of the building into a rational organization so that all of these elements are interrelated both horizontally and vertically. This by consequence affects the structure and the detailing of the building bringing everything into a harmonious whole. As a city rooted in tradition, as well as one of the global hubs in technological innovation, Taipei encapsulates the history of Taiwan. We hope this building will contribute to the vitality and the public life of the city centre."

The massing and proportions of the building are in harmony with the existing context, creating a lower and upper tower volume.

The lower part of the building will have two apartments per floor and the upper portion is designed for one large apartment unit per floor. Luxury amenities, including an exterior swimming pool and roof deck, are located on the top floors of the tower with views towards Taipei 101.

This building aims to contribute to the continuing growth of the Xin-Yi district as well as to the city of Taipei, a modern and vibrant urban centre in Asia.

## EmiratesGBC and MEFMA host joint networking event on Facility Management and retrofitting



EGBC and MEFMA panel discussion on Facilities Management and Retrofitting.

**Dubai, UAE** – Emirates Green Building Council (EmiratesGBC) has joined hands with Middle East Facility Management Association (MEFMA), the dedicated platform for the Facility Management (FM) industry, to host a networking event focused on the role of Facility Management companies in the burgeoning retrofit market in the UAE and the importance of education and trained professionals in post-retrofit maintenance.

The discussion was moderated by Khaled Bushnaq, Vice Chair of EmiratesGBC, with panellists including: Ali Al Suwaidi, Board Member of MEFMA; Stuart Harrison, Support Services Director of Emrill Services LLC; and K. Anbalagan, Managing Partner of Proleed Mechanical Engineering Consultancies. They discussed three key topics: training, retrofitting certifications and the importance of energy auditors in building retrofitting.

Khaled Bushnaq said: "Training and trained professionals play a pivotal role when it comes to post-retrofit maintenance and the continuation of preventive care implemented in any building. One of the key purposes of the joint networking event was to put the spotlight on the current situation of training within the industry and identify next steps to follow with the aim to create a fully integrated facility management industry adequately equipped for the 'retrofit revolution.'"

Ali Al Suwaidi added: "Facility management is at the core of the retrofit process and plays a key role in ensuring long-term sustainability of buildings. It is crucial that we work together so that we can evolve and adapt to new retrofit processes. We have been collaborating with EmiratesGBC, and find these joint networking events extremely useful to keep a line of

communication amongst stakeholders and further develop the building and facility management industries."

To kick-start the event, the interactive discussion analysed training as the frequently cited missing link within the FM industry, and how FMCs are effectively training their personnel when it comes to short and long-term maintenance of building energy systems and for the implementation of preventive care in their building operation schedule.

Aiming to shed light on the missing components that come in the way of sustaining energy saving and performance after a retrofit project is completed, experts took a look at the role of FMCs and how equipped they are in handling post-retrofit building systems and energy management systems.

The second discussion was on retrofitting certifications, and how ISO 50001 is emerging as an important certification in the commercial sector where savings in energy management are almost guaranteed, such as in the UAE.

Lastly, the panel discussed the importance of energy auditors as an essential component in the list of certified professionals needed for a building retrofit process and how FMCs can benefit from hiring certified energy auditors directly on their team as opposed to outsourcing the auditing task. "At EmiratesGBC, we strive to promote green building practices and have placed a strong focus on education and workshops to create awareness within the industry and to help stakeholders in their efforts to make a greener UAE. Events like this highlight our commitment to support the development of the industry towards sustainable development," explained Bushnaq.

## SGBC launches new magazine to raise profile of green building products

**Singapore** – The Singapore Green Building Council (SGBC) has launched a new magazine called 'SG Green' to increase the awareness and recognition of green building products in the local building and construction industry.

The SG Green magazine, which was unveiled at SGBC's 6th Anniversary Dinner in the presence of Mr Quek See Tiat, Chairman, Building and Construction Authority (BCA), focuses on the practical and technical applications of green building materials and products certified by SGBC's Singapore Green Building Product (SGBP) and Singapore Green Building Services (SGBS) labelling schemes.

“We hope that with this new magazine, the industry can be better informed of the numerous green building product and service choices they can use for their projects,” said Mr Chia Ngiang Hong, President of the SGBC. “With this knowledge, building professionals can specify more environmentally-proven products, leading to more quality green buildings and contributing towards our national target of greening 80 percent of our existing building stock by 2030,” he added.

SG Green will bring each issue’s focus into a number of tailored sections that reflect the issues of the day in built environment, namely New Buildings, Existing Buildings, Interiors, Sustainability Leadership and Education. The magazine, set to be published twice a year, will also showcase some of the higher-rated products emerging from the SGBP scheme. Readers will get information and ideas on the various green building products, their applications in projects as well as on local and regional green product trends.

During the Anniversary Dinner, 20 companies also received their SGBP and SGBS certificates. They have successfully cleared the stringent assessment process to be a certified green building product or building-related service. Application of such certified green solutions can contribute to a building project’s eventual rating under the Building and Construction Authority’s Green Mark Scheme. To date, more than 700 products and about 50 building-related services have been certified by the SGBP and SGBS labelling schemes.



From left to right: Mr Quek See Tiat, Mr Chia Ngiang Hong and Mdm Vivien Heng, Board Member and Technical Coordinator for SGBC. Photo: © Singapore Green Building Council

## Rocell Bathware awarded Green Label Certificate by the Green Building Council of Sri Lanka

**Colombo, Sri Lanka** – Rocell Bathware Ltd was founded in April 2009 upon the philosophy of high international standards and long lasting elegance. As a manufacturer of vitreous china and fire clay sanitaryware, with output capacities exceeding 250,000 pieces per annum, Rocell Bathware has fast become the top most bathware brand in the country. The company is the result of strategic expansion by Rocell, and remains the first and only sanitaryware manufacturer in Sri Lanka.

Rocell bathware’s portfolio development revolves around the desire to innovate, collaborating with renowned Italian designers, the company offer best in design and best in quality – world-class products, enhancing the lifestyles of their customers.

Rocell Bathware products are manufactured to the highest international quality standards, conforming to British standard specification BS 3402:1969. All machinery, production technology and knowhow in our hi-tech manufacturing facility comes from Sacmi of Italy, one of the world’s leading technology experts in sanitary ware. This includes robotic glazing, high pressure casting with robotic demoulding and automated dryers for drying and high performance kilns for firing of sanitaryware.

As a responsible stakeholder of Sri Lanka’s industrial sector, Rocell commits immensely towards maintaining green principles, which are formulated towards mitigating possible environmental impact from its manufacturing processes. This commitment by Rocell have been recognised by The Green Building Council of Sri Lanka (GBCSL), the country’s leading authority on implementing green concept and green building practices, and awarded the coveted Green Label Certificate for Vitreous China and Fine Fire Clay products from Rocell Bathware.

Today, Rocell’s unique brand of elegance can be found in a network of 50 showrooms, and one in Australia, each showcasing an assortment of bathware products designed to capture the imagination. With a unique brand of elegance reaching the far corners of the globe, thanks to numerous international partnerships across four continents, Rocell continues to be a truly international icon in style and modern living.



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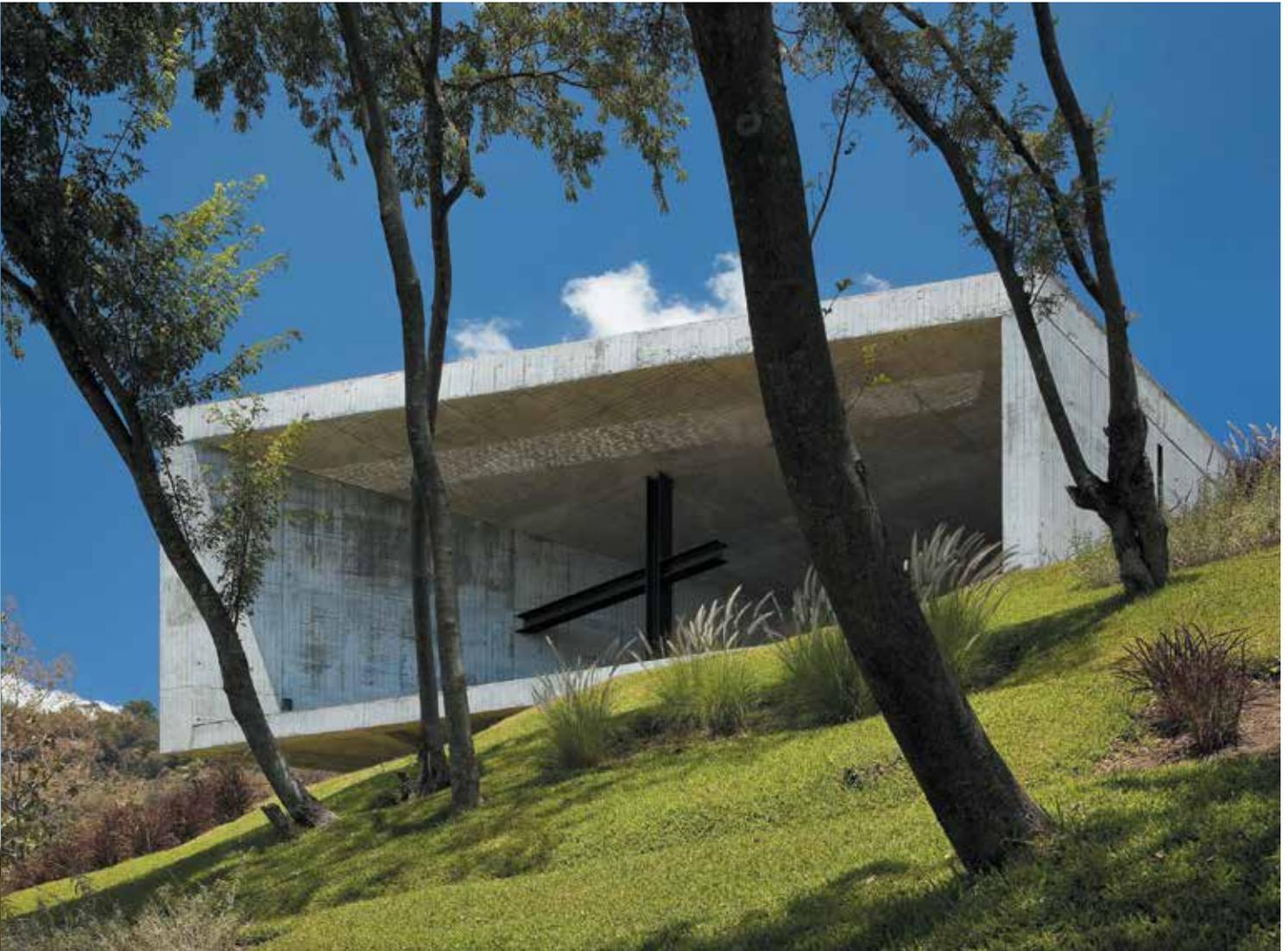
# Cardedeu

## - AN ASYMMETRIC CONCRETE CHAPEL IN EL SALVADOR

**N**estled in the mountains surrounding Lake Coatepeque in El Salvador, "Cardedeu", maximises the opportunities of an open event space in a setting of privileged natural beauty with spectacular views. EMC Arquitectura, a leading architecture studio in El Salvador, complemented it with a chapel, a restaurant, a hotel and other supporting spaces.

The design was developed respecting a combination of plains and slopes in the site, and the constant relationship to the lake. EMC Arquitectura arrived at a simple architecture that provides space for versatile experiences.

The architect created an informal reticular pattern with the goal of revealing the project. In the entrance to the complex, they limited the user's view to the lake, suggesting only a small portion of the environment, and thus setting an intention that permeates the entire project. This invites the user to explore the entire program and its surroundings.



EMC Arquitectura generated a series of different relationships between the built and natural, dissolving in some cases the boundaries between the interior and exterior.

Circulation between the volumes composing the project is specifically fragmented with the purpose of limiting or enhancing user views along the route. So, the architect generated a series of different relationships between the built and the natural, dissolving in some cases the limit of the interior and exterior.

Furthermore, the use of local materials tied the project to the materiality of the area. Subsequently, the introduction of foreign materials, such as concrete and steel, allowed them to create structures that are projected over the terrain and generate floating sensations between the trees, and even fly over the lake.

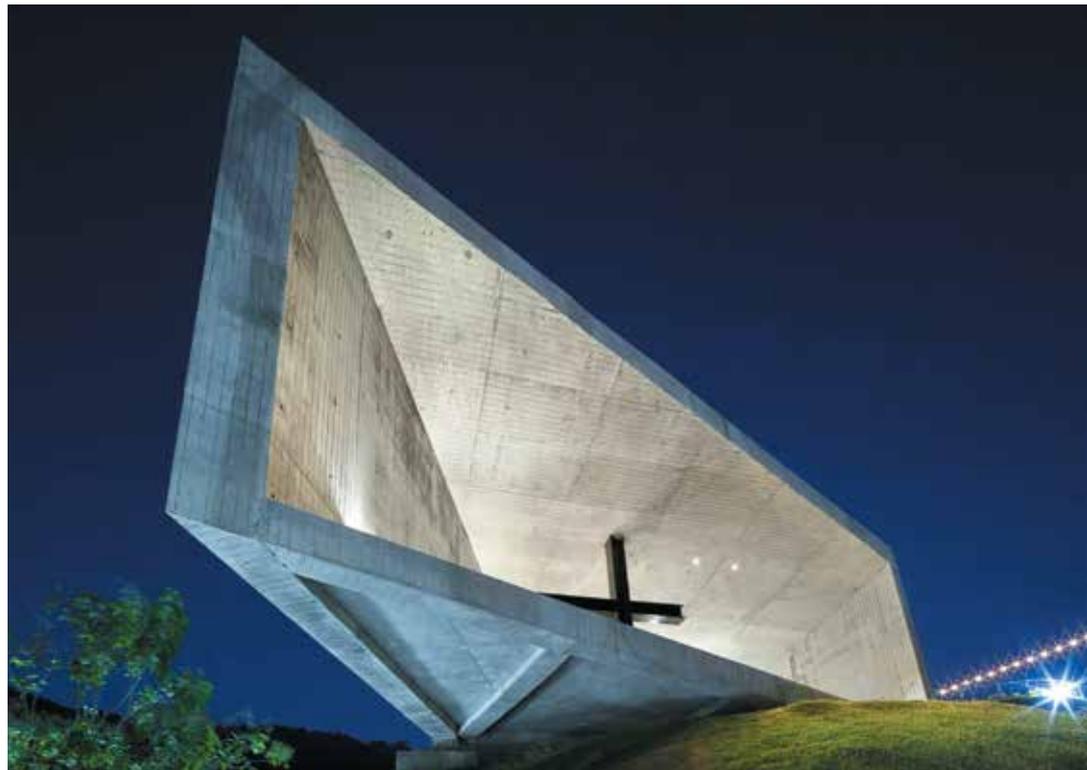




The chapel was intended as a scene for the landscape and handled as a unique space developed with a single material, concrete, to highlight the lake and mountains. It is like an extruded box where the two ends are removed, leaving a permanent cross ventilation.

The handling of the concrete is unpretentious and the only existing furniture, beside the pews, is a simple altar that appears to float on a reflecting pool, which in turn creates an endless effect with the lake. The structure is simple, emphasised by a single column, shaped as "The Cross," the protagonist of the chapel.

All photos: © Tom Arban



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# New community centre and mosque in Copenhagen

The new community centre and mosque at Dortheavej in Copenhagen, designed by Henning Larsen Architects, is a modern, Nordic interpretation of Islamic architecture, and represents a new chapter in the history of Danish architecture, bringing this meeting of Nordic and Islamic building traditions to Denmark for the first time.

## Nordic and Islamic architecture

For half a century, Danish architects – among them Henning Larsen Architects – have been designing projects in the Middle East in which Nordic architecture meets Islamic tradition. One of Henning Larsen Architects' first projects in the region was the Ministry of Foreign Affairs in Riyadh, Saudi Arabia. Completed in 1984, the building has since received a number of international awards, including the prestigious Aga Khan Award for Architecture in 1989.

In both Nordic and Islamic building traditions, the poetry of daylight is used to stage spatial experiences and give shape and meaning to a building. With impact, breaks and rhythm, daylight creates a sensual experience. The Ministry of Foreign Affairs is experienced by Arabs as a Nordic-inspired building. The architecture is simple – its main decorative element, the patterned floors throughout. Despite its Nordic influence, the building is a reinterpretation of classical Islamic building elements: fountains, lush green interior courtyards and daylight that is filtered gently into the rooms through *mashrabiya*, the intricately carved screens used in Islamic architecture.

The new community centre and mosque at Dortheavej in Copenhagen is a modern, Nordic interpretation of Islamic architecture, and represents a new chapter in the history of Danish architecture, bringing this meeting of Nordic and Islamic building traditions to Denmark for the first time. The community centre will belong to all Danish Muslims, regardless of ethnic or cultural background.



Illustrations of the new cultural/community centre and mosque on corner of Dortheavej and Tomsgaardsvej.



A passage from Tomgaardsvej to Dortheavej provides access to the inner court.

### Features of the new community centre and mosque

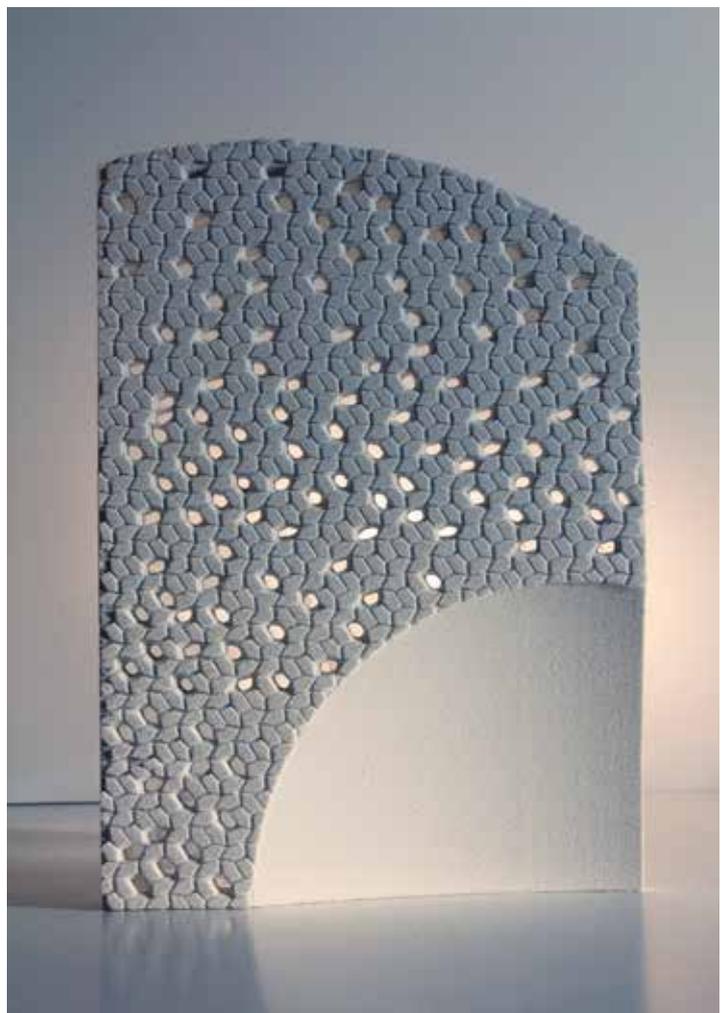
Located on the corner of Dortheavej and Tomsgaardsvej the community centre is oriented to face the district's new library on Rentemestervej. Together, the two buildings will constitute an architectural rejuvenation of Copenhagen's otherwise neglected Northwest neighbourhood.

Composed volumetrically of a number of domes, the interior is experienced as a single space. The large and centralised inner court brings together the building's two functions of community centre and mosque.

A passage from Tomsgaardsvej to Dortheavej leads directly into the inner court, inviting passersby to visit the community centre, which also includes a café, bazaar, library, bookshop, classrooms, meeting rooms, offices and underground parking for cars and bikes.

The geometric pattern of the facades is inspired by Islamic ornamentation, and varying apertures in the facade create an interior illuminated by varying levels of daylight, depending on the function of the room. The openness of the façade fluctuates from near-opacity to transparency at street level, in a welcoming gesture of openness to the community around it. Along Tomsgaardsvej, the transparent façade is pushed back to create an outdoor seating area on the sidewalk, further emphasising the invitation.

Oriented towards Mecca, the building takes its shape from a geometric system of domes and barrel arches. All domes have the same radius but are pulled to different heights, creating a dynamic roof silhouette from the exterior and a captivating ceiling-scape inside. Within the dome system, three are cut off at different heights to create large openings to the sky; the largest



of these is over the inner court. Two domes are merged in the centre of the building to form the prayer hall. This more intimate and holy interior space has no opening and is indirectly lit from the spaces to either side.

**Urban development in Copenhagen’s Northwest neighbourhood**

Outer Nørrebro and the Northwest neighbourhood in Copenhagen are together one of Denmark’s most densely populated areas. They have benefited only minutely from the urban redevelopment initiative that has improved much of Copenhagen in recent years; the new library on Rentemestervej is one of the exceptions to this unfortunate rule. An additional architectural and cultural improvement can help create a stronger neighbourhood identity and sense of community.

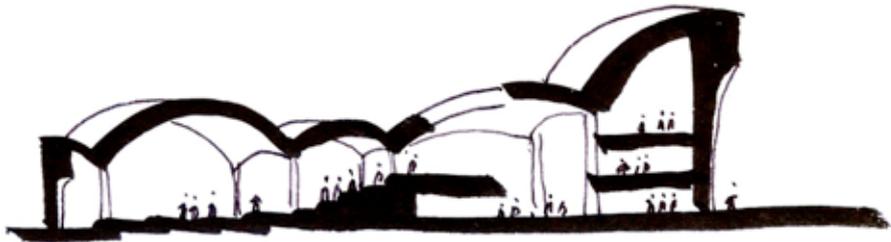
**Modern facilities for 2,000 Muslims**

The Islamic Society of Denmark has about 2,000 members and receives up to 5,000 guests annually as part of the organisation’s cultural outreach work. The association’s current offices are in derelict industrial buildings currently standing on the proposed building site; these insufficient buildings will be demolished to make way for the new community centre and mosque.

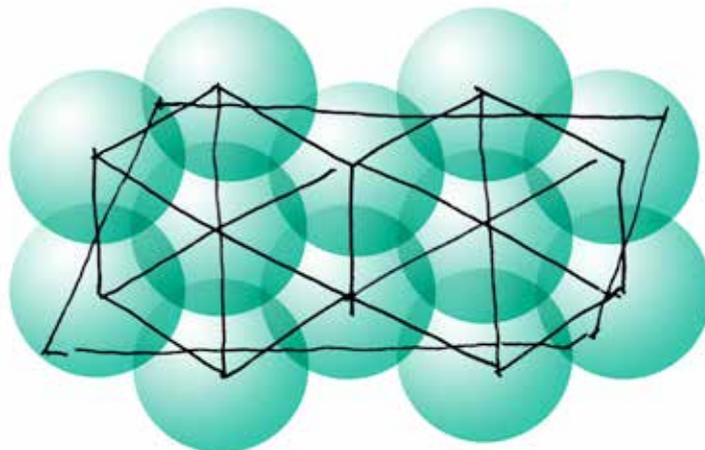
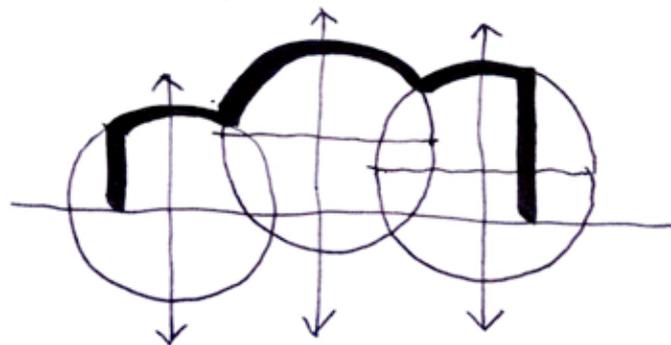
The organisation is in great need of modern facilities. In addition to its program of religious activities, the new mosque will provide a positive and welcoming setting for the many social initiatives under The Islamic Society of Denmark. The initiatives focus on supporting local children and young people of diverse ethnic backgrounds, and helping them to develop a stronger attachment to Danish society. The activities include homework help, sports and creative workshops.



The building’s interior is experienced as one assembled room under the domes with a large courtroom in the middle.



The new cultural community centre and mosque relates to the quarter’s characteristic library across the street.



The form of the building site and the mosque’s orientations towards Mecca is shaped by a geometric system of vaults and hexagons that provides the domes’ location.

**PROJECT DATA**

**Project:** New community centre and mosque

**Location:** Dortheavej, Copenhagen

**Architect:** Henning Larsen Architects

**Client:** The Islamic Society of Denmark

**Area:** 2,890 square metres

**Expected construction period:** 2017-2019

**Illustrations:** © Henning Larsen

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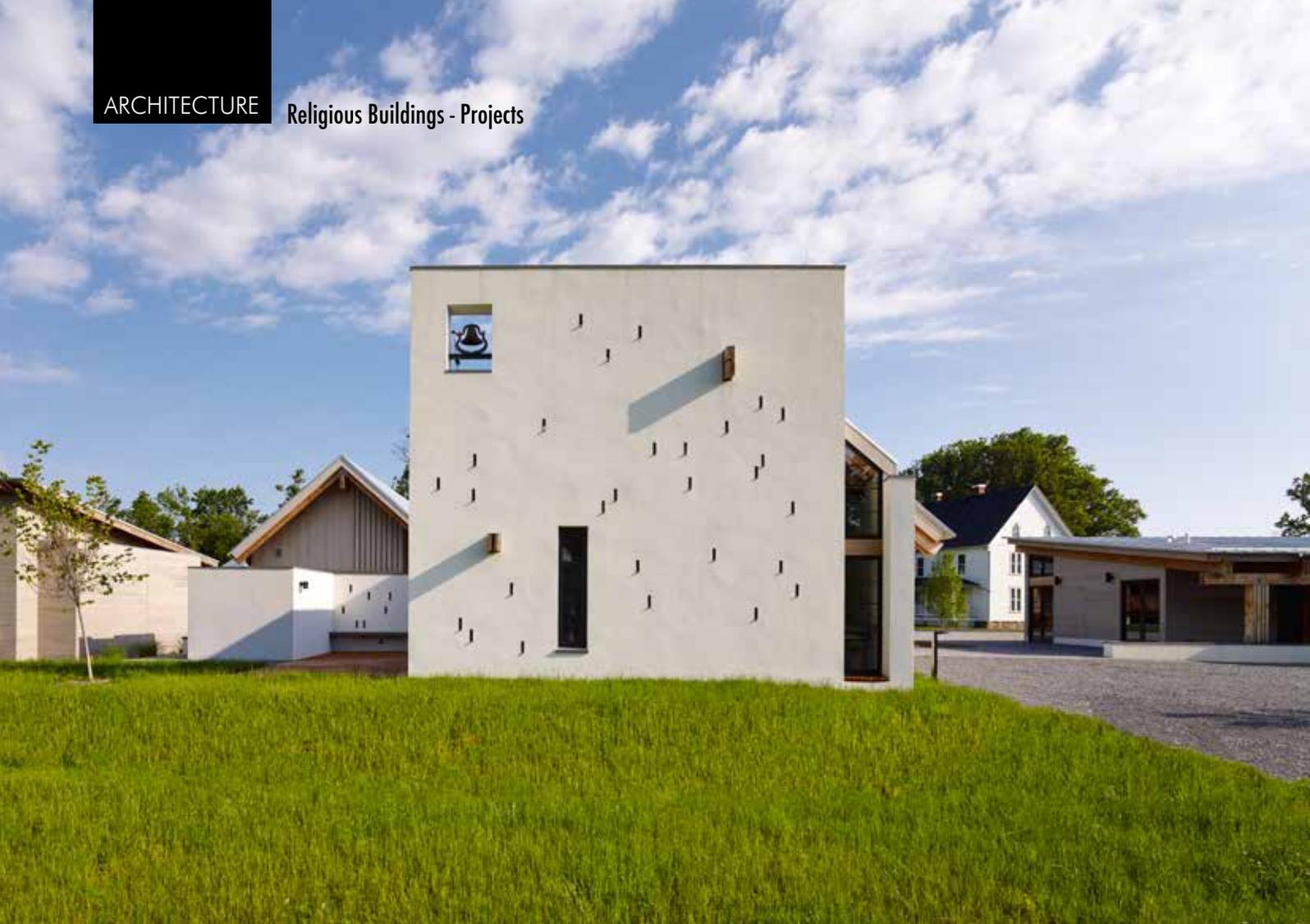
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## St Ignatius Chapel in Georgetown University

Combining a spare yet textured modernism, simple massing, and a palette that speaks of the region, the St Ignatius Chapel serves the Georgetown University's mission unlike any other facility in Georgetown's 225-year history. Completed in 2013, St. Ignatius Chapel, as part of the Calcagnini Contemplative Center, provides a permanent home for the University's rich programme of religious and secular retreats.

At the core of Ignatian teachings and Jesuit traditions are spiritual exercises that are the basis of the ritual of retreats within this order. Georgetown, perhaps the nation's premier Jesuit university, has developed a wide-ranging programme of retreats; some are spiritual, others are non-religious, some are for faculty, and others focused on student participants. Historically, Georgetown rented multiple venues to serve this broad agenda. In 2004, the school purchased land in rural Clarke County,



Virginia to build a centre housing all its retreats. A key component of the center is St. Ignatius Chapel, the only non-denominational yet spiritual building serving the Georgetown community.

This facility will enable existing programmes to serve a greater number of participants, allow new offerings to be added to the programme and meet the spiritual needs of those attending secular gatherings.

Small and intimate, the chapel is intended for groups up to 24. Developing an architecture that imparts a strong and clear spirituality without specific reference to any one religion was at the heart of the design. Georgetown takes pride in the diversity of the student body, faculty, and staff and the chapel needed to serve the entire community, both religious (Catholic, Protestant, Jewish, Muslim, Hindu, etc.) and those without a specific spiritual affinity. The design succeeds through its austere palette and simplicity of design, avoiding domesticity and overt religious allusion. Unlike many projects, the design process was not driven by expertise gleaned from a body of similar work or quantifiable metrics. The impelling force was the on-going conversation and collaboration among the client – a Jesuit priest who headed the University's office for Mission and Ministry, the donor, who was committed to the inclusiveness of the retreat programmes and the architect, who had never designed a chapel, and whose religious affiliation, left behind in childhood, was far from that of Georgetown.

With this quotation from the University's mission statement as guide, "...founded on the principle that serious and sustained discourse among people of different faiths, cultures, and beliefs promotes intellectual, ethical and spiritual understanding..." each – client, donor and architect – informed with his specific body of knowledge and concerns, brought a critical sensibility along with openness and respect for the proficiency and values of the others. This conversation resulted in a process where previously singular understandings became layered, and "obvious" answers, once questioned, turned into starting points for more creative solutions.



At times it was actually a lack of expertise, an ignorance of the subject, which led to a question that resulted in a more thoughtful and elegant design. Good projects demand engaged and challenging clients; Dynerman Architects PC had just that.

#### **Sustainable design**

Despite this project's low budget, less than \$240 /square foot, where possible, the architect's efforts held close to sustainable and responsible

design. In some cases design decisions aligned with LEED standards in other instances Passive House criterion was their model. The surcharge costs associated with administration and management, necessary for LEED certification, precluded pursuing that goal. While design decisions touched on many components – natural and artificial lighting, sealants and coatings, ease of assembly – the architect's focus was directed at three key areas of design: sitting and



orientation, thermal mass and the reduction of thermal bridging and selection of materials which were locally available, reduced waste and durable.

Oriented with its large south facing wall and the glazed courtyard facade opening to the west, the design maximises heat gain in the winter with the thermal mass of the thick masonry wall and concrete floor. Later in the year, the deep eave and courtyard wall to the northwest provide needed shade. The north façade, except for the entry door, is sealed to the outside, minimising any heat loss.

Exterior walls and structural components were detailed to reduce or eliminate all thermal bridging. This included a thermally broken glazing system, a beam design that incorporated a thermal gaps and the doubling and separation of glass slabs in the stucco walls. Together, this approach resulted in a very tight building.

Aesthetically, the architect's material choices worked to echo the local farm buildings of the region. But this approach also allowed the architect to embrace the practicality and durability, and by extension, the sustainability, historically found in these simple rural structures.

The roof assembly included locally fabricated SIPs panels, providing high R-value – 50+– with speed and ease of construction and no on-site waste. The unpainted galvanized aluminum roof resists rust and requires little maintenance, again reducing waste during construction and in the long term. Wood selections – fir for exposed structural members and cedar shiplap cladding – were made based on the material's ability to weather well, little or no need for sealants (all used were low VOCs) and local availability.

Detailing choices were made with similar focus. The ridge beam, designed as a flitch beam, employs stacked 2 x12s with steel plates and bolts. This method allows the span to be carried with a beam made of dimensional lumber and readily available materials, and for a carpentry crew to assemble the ridge on site. The embedded glass pavers, turned upright and wrapped in slate tiles from a Virginia quarry, which effectively transform the paver edges into mirrors, provide an array of crystalline highlights. These slivers of light combined with the reflected light from the stucco walls fill the Chapel with abundant yet soft general lighting. When electric lighting is needed it is provided with LED fixtures.

By coupling traditional palette choices and construction methods with current standards and systems the result is a building that addresses climatic concerns, minimises the structure's footprint while embracing more timeless design goals.

#### PROJECT DATA

**Project:** St Ignatius Chapel  
Calcagnini Contemplative Center  
Georgetown University

**Location:** Clarke County, VA, USA

**Architect:** Dynerman Architects PC

**Total floor area:** 65 square metres

#### Awards:

- 2014 Faith & Form/IFRAA International Awards Program for Religious Art & Architecture: Honor Award in Religious Architecture
- 2014 Virginia Society AIA: Honor Award
- 2014 Interior Design Magazine: Best of Year Awards Honoree
- 2009 Washington Chapter AIA: Honor Award for Unbuilt Projects Completion: 2013

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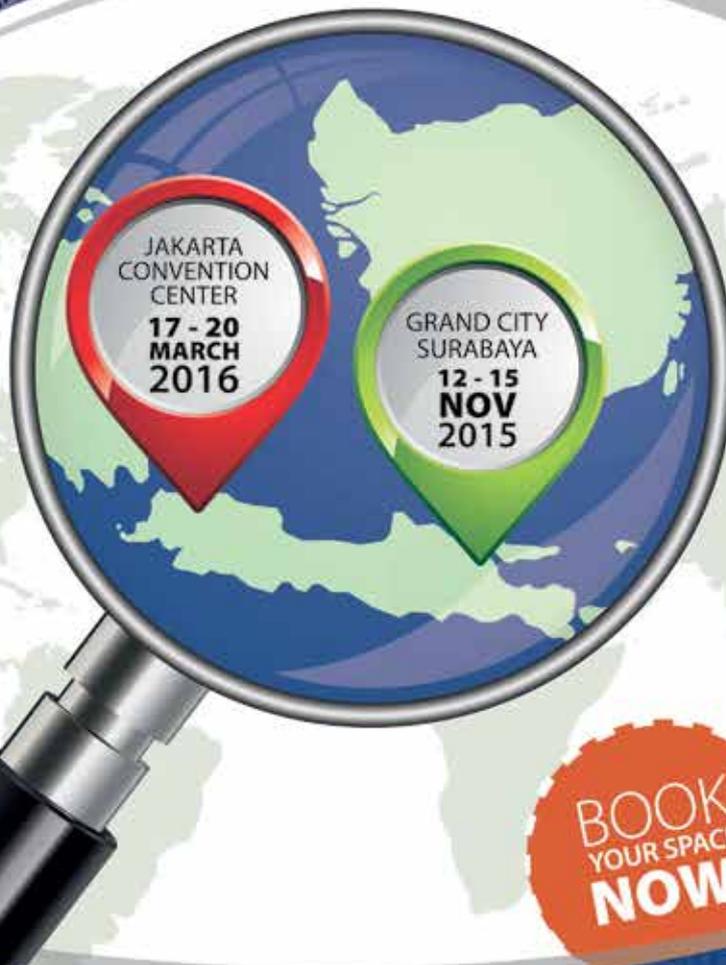
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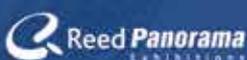
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## St. Voile in Niigata

The St. Voile Chapel, designed by Kasahara Design Work, has a unique design concept – the wedding veil. Completed in 2014, the chapel is part of the Humming Plaza VIP Niigata institution.

**E**riko Kasahara and Yumiko Ota of Kasahara Design Work designed the chapel of new construction along the Shinano River Kamitokoro, Niigata-city. It was completed in September 2014.

In designing the St. Voile Chapel, it was important to keep balance with the existing main building for wedding. On that point, the architects designed the appearance of chapel with the presence as one volume which height is 14.5 metres.

Roof and outer wall were finished with one method of construction and were trimmed a ridgeline as much as possible. The architects expressed a voluminous feel of the architecture by using natural slate with the taste of the secular variation.

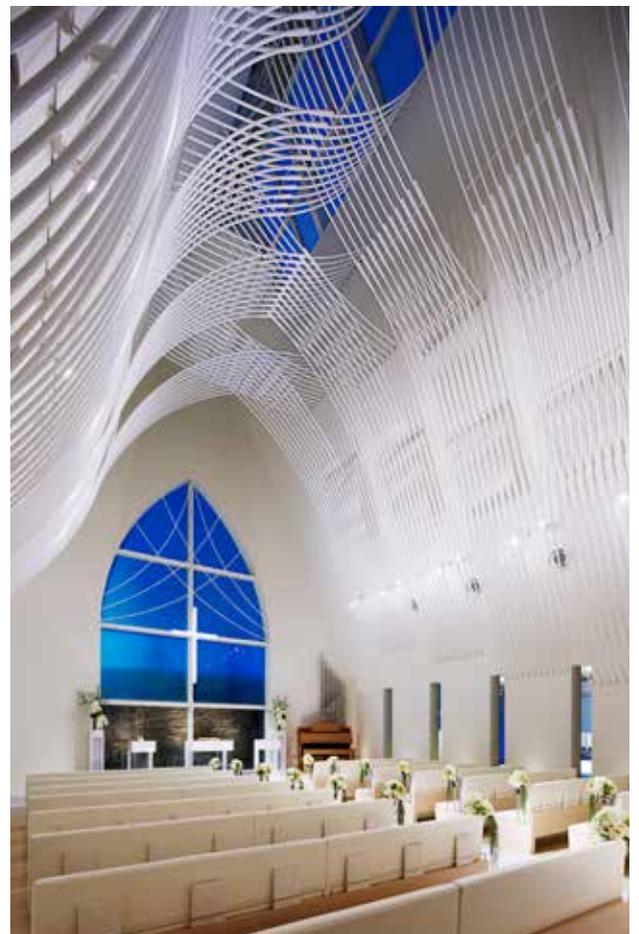
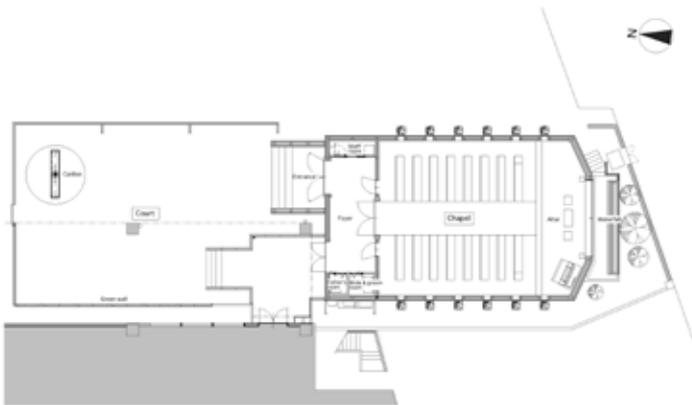
The inside is the space that is clean with pure white for opposite poles with the appearance. The design concept is “Wedding Veil”. The white is considered to be the colour that is religiously important from old days, the veil in particular has been conveyed as the thing which protected a bride from a wicked thing. The veil is symbolised that past life is over and is rebared to new life. The new chapel is the clean space that the soft veils surround the holy ceremony and dance blessing two people.

The architects united pipes of 28.6 φ one by one and made a shape such as the cloth to realise the image. These pipes are all arcs of same 5000R, and are reversed each line in the long distance direction.

The architects expressed the movement that each cloth wavers by moving the position of the point of intersection of the arc little by little, and changing an angle.

The veil pipes make an independent structure body and separate from the structure of the skeleton. When we have a look up it, several pieces of cloth seems to dance in a ceiling flutteringly. The cloth catches the light from a ceiling and invests flare of the light in the whole more.

Receiving gentle light, veils seem to right wrap up the whole space kindly. The architects were able to make extremely simple space while making complicated phase difference.



#### PROJECT DATA

**Project:** St. Voile (part of Humming Plaza VIP Niigata institution)  
**Location:** 2-11-33 Kamitokoro, Niigata-city, Niigata, Japan  
**Architect:** Kasahara Design Work – Eriko Kasahara and Yumiko Ota  
**Collaborators:** OGA Structural Engineers – Shigenori Oga  
Daiko Electric Co Ltd  
**Main manufacturers:** Takizawa Co Ltd  
**Floor area:** 161.86 square metres  
**Completion:** 3rd September 2014  
**Photos:** © Nacasa & Partners



# La Ascensión del Señor Church

**T**he La Ascensión del Señor Church, located in Seville, Spain, is the result of the competition organised by the Archdiocese of Seville in 2010.

From the beginning, the international design firm AGi architects realised that the design of the church was not a formal exercise but it had to tackle many social issues not so associated to what the representation of a church is. Why?

First, because Church has moved from being a reference social institution to an outdated and nearly reviled organisation, little linked to social issues. Second, it should be noted that this is a newly established residential area on the outskirts of the city of Seville, a new growing area of the city lacking of neighbourhood identity and with high rates of population at risk of exclusion and marginalization.

So AGi architects set out in this project the recovery of the social role of the Church. This requires a necessary opening of the institution to the community, not only of the human groups that compose it, but its empty and built spaces, which have always been representative of the community in which they reside.

How to do it? First, solving the existing social needs of the neighbourhood whether economic, social, related to coexistence and shelter, family, etc. The aim is that the parish becomes this meeting point, a place that opens to the public to be listened and welcomed. Afterwards, the inherent spiritual task of the church will be delivered.





One of the main elements of AGi architects' design is the main entrance that invites to access into the parish centre and creates a welcoming space that is embodied in the existing large central courtyard. The architect opened the church outside, inviting people to freely access the garden which is perceived from the street.

While the main entrance's size is large to emphasise the character of welcoming and inviting users inside, containment is pursued towards outside, with a more domestic and social and less dogmatic scale. In fact, the inherent symbols of a church – cross, belfry - are located secondly.

Conceptually, a stone carpet is unfolded from the central courtyard to enter the main space of the church creating a huge vessel that houses the congregation of believers and, on the other hand, we have the folded roof – with different levels and openings for the introduction of natural light inside – that structures spaces in relation to the liturgy requirements.

The 1,000 square metres church is located in a plot of 1,150 square metres annexed to the existing Parish centre. The plan of the church is divided into three worship's areas: the main space of the church; baptismal font; and penitential chapel and sacristy, which are linked and interrelated, both physically and visually, with three open mixed used spaces, designed both for the development of social activities (training, entertainment, etc.) and spiritual actions due to they could also be an extension of the worship's spaces.

AGi architects has chosen to implement economy and sustainability principles in the choice of materials and construction techniques used in this project, being this building extremely sensitive to the current economic circumstances and to the conditions of its end users. Therefore, they have tried to minimise direct solar radiation on the spaces opening windows to north, and an elongated crack behind the altar, creating a line of diffuse light to south. Recyclable materials have been chosen that also mean an easy maintenance by community members.

Despite the reduced and limited budget of the project, AGi architects has been able to incorporate special details, such as craft making wooden furniture like benches, confessional, altar and small interior details, so that the neighbourhood feel comfortable in this new space created for them.

In essence, this church is very close to the community, reaching the transcendental through the existing social problems and needs.



#### PROJECT DATA

**Project:** La Ascención del Señor Church

**Location:** Seville, Spain

**Client:** Archdiocese of Seville

**Architect:** AGi architects

**Size:** 1,150 square metres

**Date:** 2010-2013

**Photography:** Miguel de Guzmán

#### Awards:

- Nominated for the European Union Prize for Contemporary Architecture
- Mies van der Rohe Award 2015
- 2014 World Architecture Festival Award Winner – Completed Buildings Religion category
- Finalist in 2014 Architizer A+ Awards – Religious Building category



A view of Piazza Duomo from the balcony of one of the suites.

## TownHouse Duomo by Seven Stars hotel in Milan

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The building hosting the TownHouse Duomo by Seven Stars.

**T**ownHouse Duomo by Seven Stars, a brand new boutique hotel in the heart of Milan, opened last February. Each of the fourteen suites in the hotel has been given a personal touch by a group of Italian architects.

The new jewel in the crown of the luxury Milan scene belongs to the Alessandro Rosso Group which, in 2007, first opened the Seven Stars Galleria hotel inside Vittorio Emanuele II Arcade, one of only eight hotels in the world to have been awarded seven stars. The building that houses TownHouse Duomo also sits in the heart of the most fashionable area of Milan, but unlike its sister hotel it has something unique to offer: the views are not over the inside of the Arcade since twelve of the suites have their own private balconies overlooking Piazza del Duomo with a view of the Duomo Cathedral. The entrance to the hotel is directly under the arcades. Apart from the rooms it also has a restaurant, private meeting and function rooms and a café which, in the evening, is transformed into an elegant lounge bar ("Duomo 21") with a terrace opening onto the Piazza. The hotel also hosts the World Expo Commissioners Club welcoming Expo 2015's Commissioners and delegations.



Each of the 14 suites has its own unique design devised by an Italian architect.



Suite No. 10, the Swan Room, designed by the architect Simone Micheli, is characterised by the use of minimalist colours and the image of a large swan.

### A room with a view of the Duomo

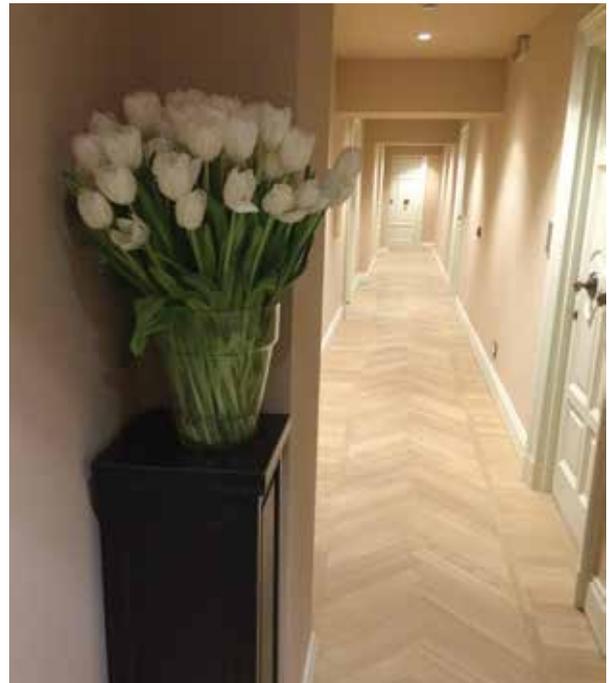
Because it is in such a delicate position, the entire project was supervised by the City of Milan's Superintendence for Architectural Heritage. The operation is part of the plan promoted by Milan City Council to upgrade Vittorio Emanuele Arcade for the upcoming Expo 2015. For the occasion, the local council also wished to upgrade the upper floors of the Galleria and it was the Seven Stars' owner itself that financed an ongoing project to create a walkway along the roofs of the buildings to trace part of the passageways below running through Vittorio Emanuele Arcade. From here it is possible to admire the skyline of the city; the new skyscrapers at Citylife and Porta Nuova district, the Branca and Rai towers, church bell towers and the Madonnina statue that sits atop the Duomo Cathedral. Each of the fourteen suites has its own unique design and the furnishings, which are often unique pieces, have been crafted by leading Italian manufacturers. Only the highest quality materials have been used for the finishes, while cutting-edge home-automation and lighting technology has been adopted and optimised right down to the finest detail to guarantee maximum comfort for guests. Each designer was given free rein to express their ideas and the result is a showroom of design, where every suite becomes its own world in terms of materials, finishes, form and colour: from the suite with a four-poster bed to another dominated by the colour black, from lights and LED's around the bed to the warm tones of wooden furnishings and fittings. The design studios that have created the rooms are Jacopo della Fontana D2U, Agostino Danilo Reale, Giovanni Fiorito, Maison Mami) Design by Luigi Ciccarelli, Massimiliano Mandalini, Massimo Magaldi, Matteo Fantoni Studio and Simone Micheli. The furnishings and fittings included works by famous companies such as Artemide, Flos, Alcantara, Bisazza, Teuco, Villeroy Boch and many more.

### Mapei has also left its mark

Mapei took part in this prestigious project by supplying their expertise and own products for works carried out on areas inside the hotel. The company was involved in the creation of suite no. 10, known as the "Swan Room",



**Laying wooden floors**  
To bond the wooden floors in a herringbone pattern in the corridors leading to the suites, Mapei proposed **ULTRABOND ECO P909** 2K light coloured two-component, solvent-free polyurethane adhesive with very low emission level of volatile organic compounds (EMICODE EC1R-certified), ideal for all types of wooden floors. Further interventions, such as the waterproofing of several substrates and the rebuilding of the small balconies, are currently on-going.





The image of a large swan is reflected on its mosaic "twin" in the bathroom's mirror.

designed by the architect Simone Micheli, with whom Mapei has been working for a number of years.

Just as the name of the room would suggest, it is characterised by a large mosaic wall with the image of an elegant white swan. Because this was such a delicate design, highly skilled craftsmen were required for its creation.

Mapei Technical Services worked alongside the designer and proposed the use of ELASTORAPID adhesive in its white shade to bond the stone mosaic.

This is a two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive with no vertical slip and extended open time which is classified C2FTE S2 according to EN 12004 standard.

ULTRACOLOR PLUS high-performance, anti-efflorescence, quick-setting and drying polymer-modified mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology was used in its white shade to grout the joints. This product is indeed ideal for joints from 2 to 20 mm wide.

Mapei also contributed to the installation of the wooden floorings in the communal corridors.

Mapei's intention once again was to play a role in the execution of a particularly innovative and prestigious project to promote the historic buildings of Milan. And the company played its part by adding cutting-edge technology as an example of excellence in the building industry.

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

Article source: *Realtà Mapei International* no. 52/2015

#### Mapei Products

Laying mosaics: Elastorapid, Ultracolor Plus

Laying wooden floors: Ultrabond Eco P909 2K



#### PROJECT DATA

**Project:** TownHouse Duomo by Seven Stars

**Location:** Milan (Italy)

**Period of Construction:** 2014-2015

**Period of the Intervention:** 2014-2015

**Intervention by Mapei:** supplying products for laying mosaics in the no. 10 suite and wooden floors in the corridors

**Design:** Simone Micheli

**Client:** Seven Star Galleria Italia

**Laying Company:** Impresa Prada

**Works Direction:** Archt. Saverio

**Mapei Co-ordinators:** Igor Pellegrini, Antonio Salomone (Mapei SpA)

**Photos by:** Gianni Dal Magro, Umberto Armiraglio, and Jurgen Eheim



Façade of Hotel Jen Orchardgateway Singapore.

#### PROJECT DATA

**Project:** Hotel Jen Orchardgateway Singapore

**Location:** 277 Orchard Road, #10-01 Singapore 238858

**Owner/Developer/Investor:** Oversea-Chinese Banking Corporation

**Owner/Developer/Investor:** Shangri-La International Hotel Management Ltd

**Operating Company:** Shangri-La Management - United Engineers Developments Pte Ltd

**Interior Designer:** TANGE Associates Asia Pte Ltd  
Architect: AWP Pte Ltd Singapore

**Lighting Designer:**

- Tokyo Shomei Consultant

**Other Contractors / Consultants:**

- Main Contractor Hyundai, DDS Architect, Sunray,

- Alpha Singapore (M&E Consultant),

- Kitchen Consultant – CKP – KL

- Signage Consultant – Design Datum

- Landscape – Peridian Asia Pte Ltd Singapore

**Furniture:** DPDI

**Carpets / Flooring:** Hyundai/ DPDL

**Lighting:** Tokyo Shomei Consultant

**Bathroom fittings:** Hyundai (TOTO)

**Photos:** © Hotel Jen Orchardgateway Singapore

# HOTEL JEN ORCHARDGATEWAY SINGAPORE

## - A haven for business and leisure travelers

**H**otel Jen Orchardgateway Singapore, the first of a new 'Jenre' of fresh, friendly and fuss-free mid-range hotels by Shangri-La International Hotel Management Ltd, opened its doors to the public in Singapore on 15 September 2014. The opening is the first in a major initiative to launch the Hotel Jen brand in nine key gateway cities across Asia Pacific by March 2015.

Centrally located along Singapore's principal shopping belt, Orchard Road, and in close proximity to the CBD, Hotel Jen Orchardgateway Singapore is well positioned for guests to discover distinctive local experiences, inspired by the virtual persona Jen, a professional hotelier who loves life, travel and the adventure of discovering new places. The hotel has 499 rooms.

Commenting on the hotel's opening and the new brand, Lothar Nessmann, chief operations officer of Hotel Jen, said: "We are



Hotel Lobby Located at level 10



Panorama Club Room.



Superior Room.



Deluxe Room.

thrilled to open the doors to our first Hotel Jen here at Orchardgateway. Catering to the changing demands of our existing customers and the more independently-minded 'millennial' mindset, the Jen brand offers travellers greater flexibility to blend the boundaries between business and leisure. An authentic 'informed and friendly' service style will allow the guests to discover Singapore's unique local culture without unnecessary fuss."

Located directly above Orchardgateway – Singapore's newest shopping mall – Hotel Jen Orchardgateway Singapore is interconnected with three shopping malls providing a seamless, weatherproof shopping experience and direct access to Somerset MRT station offering effortless connectivity to all parts of Singapore.

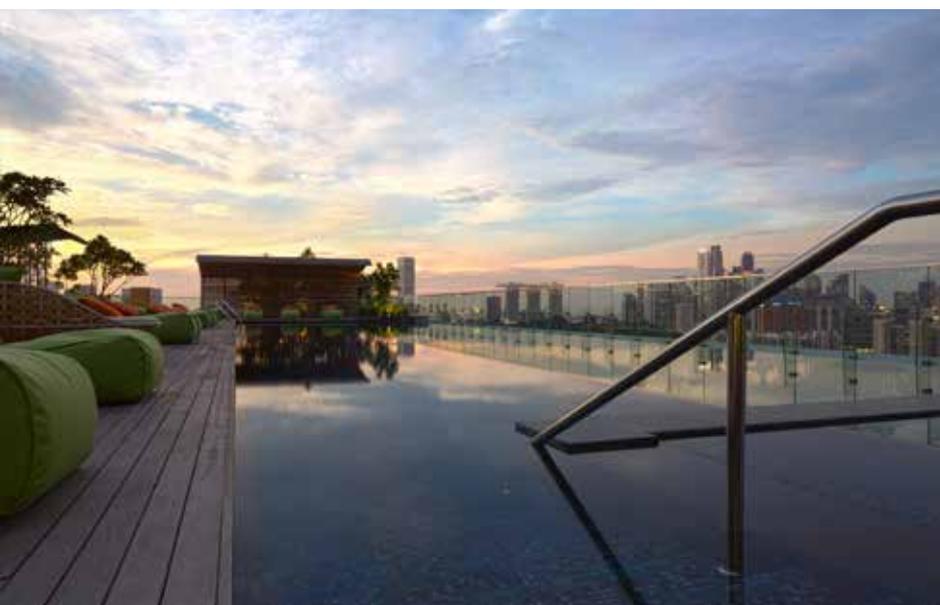
The Hotel Jen brand delivers what matters most to guests with a millennial mindset. Quality, comfort and value are paired with honest, authentic service; all underpinned by the important things done well without unnecessary fuss or intrusion.

Designed to meet the needs of these independently minded business and leisure travelers whether individuals, families or groups, key highlights of Hotel Jen Orchardgateway Singapore include cutting-edge technology throughout the hotel includes fast free WiFi, fun and colourful mobile charging stations throughout the hotel, laundry wash and fold service at one price for unlimited items in the laundry bag, iMac stations for today's tech-savvy travelers and a PressReader app with free access to 2,500 online publications, replacing the traditional morning newspaper. The rooftop pool and Baywatch@Jen bar boast panoramic views of Singapore's dramatic skyline, including Marina Bay and the CBD. Playing to its location on Orchard Road, floor-to-ceiling windows offer guests dramatic backdrops to their choice of Superior (27 square metres), Deluxe (from 32 square metres) or Premier Panorama (from 41 square metres) rooms.

The launch of Hotel Jen Orchardgateway Singapore is the first opening of this major initiative to re-brand many of Shangri-La's existing Traders Hotels across the region. In the first phase of the Hotel Jen roll-out, the Traders hotels in Singapore, Hong Kong, Brisbane, Penang, Johor Bahru, Manila, Maldives, Beijing and Shenyang will be rebranded to Hotel Jen from September 2014 to March 2015. Traders Hotel Singapore on Cuscaden Road will be the first property to undergo the transformation on 25 September 2014, bringing an intuitive service and relaxed, friendly style to the existing collection of mid-range hotels. Future Hotel Jen development projects are under discussion in key gateway cities in Southeast Asia.



**Makan@Jen is an all-day restaurant offering a blend of local specialities and international classics.**



**The rooftop pool and Baywatch@Jen boast panoramic views of Singapore's dramatic skyline, including Marina Bay area and the CBD.**

# *Genting Jurong Hotel*

## – Hotel in a Garden



Façade of the Genting Hotel Jurong. Photo: © Resorts World Sentosa

In April 2015, Resorts World Sentosa opened the new Genting Hotel Jurong. As the first major hotel to open in the Jurong Lake District, the 557-room Genting Hotel Jurong heralds exciting new developments in the western part of Singapore.

Located along Jurong Town Hall Road, the hotel is sited next to the future High Speed Rail terminus that will link Singapore and Kuala Lumpur, Malaysia. It is also in close proximity to the International Business Park, the Jurong East Bus Terminal and Mass Rapid Transit station as well as popular shopping malls.

Genting Hotel Jurong features sleek architecture, with clean-line furnishings livened up by vibrant dashes of colour. The three room types include tastefully designed Superior and Deluxe Rooms as well as Suites. Each guest room comes with complimentary WIFI access, flat screen TV, USB charging sockets and other amenities. Guests can also enjoy facilities like a self-service laundromat, a gym, and a swimming pool.

Well-connected by expressways and public transport, Genting Hotel Jurong is only a 15-minute drive from the Tuas Checkpoint, a 25-minute drive from Resorts World Sentosa and a 40-minute drive from Changi International Airport. Hotel guests can ride the complimentary 24-hour shuttle bus that runs continually between Genting Hotel Jurong and RWS.

### Key eco-friendly features at Genting Hotel Jurong

To complement the lush tropical lakeside environment close to the Jurong Lake, Genting Hotel Jurong features a “hotel in a garden” setting with lush greenery and landscape that includes a roof-top garden as well as an accessible sky terrace for guests to enjoy expansive views of the Jurong Lake District.

As a Green Mark Platinum award recipient, some of the interesting eco-friendly features of the functional and eco-friendly hotel include:

- Majority of the hotel façade is North and South facing to minimise heat gain.
- Regenerative power together with the use of variable speed, high efficiency motors for lifts save almost 25 percent in lift energy consumption. Power saved is routed back to hotel facilities for building use. Normal lifts without this feature do not have such power savings.



Lobby of the hotel. Photo: © Resorts World Sentosa



Deluxe room. Photo: © Resorts World Sentosa



Superior room. Photo: © Resorts World Sentosa



Deluxe suite. Photo: © Resorts World Sentosa



Ballroom (Theatre set up). Photo: © Resorts World Sentosa

- Majority use of energy-saving LED lighting has resulted in 65 percent reduction in power consumption.
- Green cement was used to construct the hotel. The use of Recycled Concrete Aggregates (RCA) rather than natural aggregates has contributed to the sustainable construction of Genting Hotel Jurong.
- As an integral part of the hotel's conservation strategy, the landscape is fully auto-irrigated to reduce water consumption. Water for irrigation purposes is collected from surface run-off, air-con condensates and supplemented by Newater.
- More than 50 percent of plant species at the hotel are native plant species for Jurong Lake District, many of which, support wildlife like butterflies, birds, etc.

### MICE facilities at Genting Hotel Jurong

Genting Hotel Jurong is well equipped with MICE facilities, including the versatile and functional Genting Ballroom that can be partitioned into three sections for greater flexibility. Featuring a high ceiling with ample natural light, the pillar-less ballroom spans 426 square metres with a capacity of up to 300 guests, making it the perfect venue for seminars and conferences, corporate luncheons, dinner and dance events, as well as wedding banquets.

Five meeting rooms also offer natural daylight and flexible layouts to accommodate various needs. For a different experience, the hotel's Sky Lounge located at the roof-top with an adjoining lawn is perfect for intimate receptions and parties. Clients will enjoy the lush greenery and tranquil environment of the Jurong Lake District, inside the "hotel in a garden".



Orchid room. (Classroom setting). Photo: © Resorts World



Row of 17 conservation shophouses; guestrooms and suites of Southeast Asia décor featuring original wood panelled windows. Photo: © Hotel Clover

# HOTEL CLOVER 33 JALAN SULTAN

- A serene urban sanctuary



Interior corridor of the hotel. Photo: © Hotel Clover



Exterior view of the Hotel Clover 33 Jalan Sultan. Photo: © Hotel Clover

**H**otel Clover 33 Jalan Sultan, which opened in July 2014, is the latest hotel property launched by Hotel Clover in Singapore. It is housed in a row of 17 two-storey conserved shophouses, and the premise is furnished with well-appointed rooms and suites, complemented by thoughtful touches and impeccable service. The hotel is equipped with a total of 88 rooms and suites with six different categories on offer, all of which feature interiors of rich wood and intricately handpicked finishings and plush beds.

Nestled in the vibrant Bugis enclave, known for its colourful past and equally colourful present, the discerning travellers and guests will find much charm in this heritage building. As a serene urban sanctuary, it exudes a sense of relaxed elegance and is an ideal retreat to unwind, recharge and explore in one of the Singapore's most sought-after and culturally-rich areas.

The hotel's shophouse exterior draws inspiration from the rich heritage of Southeast Asia, providing the perfect foil for the hotel's historic design. The interior consists of matching tones and blends rich, dark brown colour palettes together with warm lighting, contributing to the rustic feel of the hotel. The design is a subtle mix of the serious, fun and quirky. The overall feel is then completed with the contemporary design accentuated with tasteful and historic touches.



Loft Family room, designed for families of up to 2 adults and 2 children. Photo: © Hotel Clover



View of the hotel's gym. Photo: © Hotel Clover

The lobby is furnished with textured wooden tables and ottomans, with nature-inspired design featured in different areas and corners. Hotel guests would be enthralled as they enter the hotel and be greeted with quirky animal-shaped chairs (think Rooster and duck), framed-up seashells and photos of birds - pointing, it almost seems, to the building's past life as a seafront property.

Steeped in the mantra of 'Simplicity in Luxury' are Hotel Clover 33 Jalan Sultan's unique Loft Suites (17 units). The 30-38 square metres loft suite boasts a private living area on the ground level and an indulgent bedroom with a pair of Siamese daybeds on the mezzanine level. These cleverly-designed loft suites are ideal for not just leisure but also corporate travellers, providing comfortable abodes with leisure-enabling convenience.

For the ultimate indulgence, prepare to be enchanted by the uniqueness and authenticity of Hotel Clover 33 Jalan Sultan's Garden Suites (3 units). Each unit has a different Southeast Asian touch with different décor and ornaments to complement the overall feel. Of the three suites, each featuring an elegantly-appointed bedroom and a private garden, there are two Garden King Suites - one is Indonesian-inspired while the other takes on a Peranakan feel. The third Garden Suite, a Garden Lavish Suite, channels a beautiful Thai quality and boasts a built-in hydro bath.

As an urban sanctuary with a rhythm all its own, another highlight of Hotel Clover 33 Jalan Sultan would be 19 of its uniquely-designed Garden Rooms, featuring an airy patios decked with wood and lush vertical gardens. Guests would have the choice of relaxing under the sun at such patios in the comfort of their own rooms. Alternatively, hit the gymnasium for a morning workout or spend an hour or two at the hotel's cosy lounge on the ground floor if you are looking for a little space of your own.

All rooms and suites at Hotel Clover 33 Jalan Sultan are fully equipped with complimentary mini bar, coffee- and tea-making facilities, unlimited Internet access and local calls. On the F&B front, guests can dine at the property's Clover Garden, an East meets West restaurant offering all day dining.

Located on the fringe of Bugis, a microcosm of Southeast Asia, Bugis is the melting pot where different ethnic elements and culture meet. Within a few minutes' walk, guests have access to sights and amenities like Chinese and Hindu temples, Muslim mosques, arts and culture venues, street stalls, shopping malls, hipster cafes and even eateries offering anything from Thai and Mainland Chinese to Indonesian flavours.

Hotel Clover 33 Jalan Sultan is a Southeast Asian flavoured respite harmonized with the nature-inspired features and heritage neighbourhood.



Garden King room, Peranakan inspired décor. Photo: © Hotel Clover



Garden Lavish Suite 5 (with Hydrobath), design taking inspiration from Thailand. Photo: © Hotel Clover

# Safety Surfacing in Singapore's Playgrounds

Text by Patrick Lee, Director, CT-Art Creation Pte Ltd.

Singapore has one of the highest per capita number of playgrounds in the world. The most popular type of surfacing used is EPDM (Ethylene Propylene Diene Manomer) safety surface; also called poured-in-place surfacing in the USA. Sand is used in most destination parks in Singapore, like West Coast Park, Pasir Ris Park and Bishan-Ang Mo Kio Parks. With growing installation of Aquatic Play, such areas have been installed with a polyurethane material type surfacing.

Other types of surfacing include artificial turf, rubber mulch, rubber tiles and real turf installed over a rubber mat.

Falls is the second major cause of most playground deaths and serious debilitating injuries, based on statistics from experts in the USA, it is therefore a necessity to protect children with safety surfacing over the fall zones of playgrounds to prevent the likelihood of a life-threatening head injury.

I will discuss the benefits of the different materials, provide some reference to International and Singapore Standards, and methods to ensure safety surfacing meets with fall height of the Play Equipment.

## Common Types of Safety Surfacing used in Singapore

| Type of Surfacing                       | Benefit   | Drawbacks  |
|---|---|--|
| EPDM (Ethylene Propylene Diene Manomer) | <ul style="list-style-type: none"> <li>• Good impact attenuation properties upon installation.</li> <li>• Multi-colours</li> <li>• Allows wheelchair accessibility</li> <li>• Medium cost</li> <li>• Ease of maintenance</li> </ul> | <ul style="list-style-type: none"> <li>• Impact attenuation properties degrades over time.</li> <li>• Colours are not ultra-violet stable, unless used with Aliphatic binders which will improve its stability.</li> </ul> |
| Sand                                    | <ul style="list-style-type: none"> <li>• Good impact attenuation properties upon installation</li> <li>• Low cost</li> </ul>  | <ul style="list-style-type: none"> <li>• Requires raking and clearing of debris.</li> </ul>  |
| Polyurethane Surfacing                  | <ul style="list-style-type: none"> <li>• Chlorine and UV resistant</li> <li>• Bright colours</li> <li>• Fire resistant</li> </ul>   | <ul style="list-style-type: none"> <li>• High cost</li> </ul>  |

## International Standards for Safety Surfacing

| Country   | Standard No. | Description   |
|-----------|--------------|---|
| Singapore | SS495        | Impact Attenuation of Surface Systems Under and Around Playground Equipment                   |
| USA       | ASTM F1292   | Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment         |
| USA       | ASTM F1951   | Determination of Accessibility of Surface System Under and Around Playground Equipment        |
| USA       | ASTM F2223   | ASTM Standards on Playground Surfacing  |
| USA       | ASTM F2479   | Specification, Purchase, Installation and Maintenance of Poured-In-Place Playground Surfacing |
| Europe    | EN 1177      | Impact Absorbing Playground Surfacing, Requirements and Test Methods                          |



A polyurethane type surfacing at a Splashpad at Gardens by the Bay in Singapore.

The current practice of playground owners to ensure safety surfacing meets with the standards includes an impact test, performed by a third party certified playground safety inspector and certified/trained user of the impact test equipment. Current standards require that the surfacing meets with a minimum reading of HIC (Head Impact Criteria) of 1000 and G-Max 200.

There is no perfect safety surfacing, considerations for selection includes the Fall height of the equipment, critical height of surfacing, cost – initial vs long term, frequency of use, maintenance, environmental factors, method of containment and accessibility.

Patrick Lee is the Director of CT-Art Creation Pte Ltd, he is a Certified Playground Safety Inspector (1999), EN1176 Operations Playground Inspector, trained Playground Maintenance Technician, Aquatic Facility Operator.

**For more information, contact Patrick at tel (+65) 6762 9891, email [patrick@ctart.com.sg](mailto:patrick@ctart.com.sg) or visit [www.ctart.com.sg](http://www.ctart.com.sg).**

# PLAYGROUND INJURY PREVENTION AND ACCESSIBILITY STRATEGIES

Text by Rolf Huber, President, Canadian Playground Advisory Inc.



## About the author

Rolf Huber has been involved in the playground surfacing industry since 1981 and an active member of and delegate to international standards writing bodies, CSA, ASTM, ISO since 1990. He has visited Singapore a number of times since 2000 providing training for the Triax2000 and Triax2010. Protection of children when they fall in playgrounds and accessibility are constant and consistent themes in his teachings and writing. **For more information, contact Rolf Huber at [rolf@playgroundadvisory.com](mailto:rolf@playgroundadvisory.com).**

Children engaging in challenging play is critical to the future of any country. Children learn about and develop their physical, mental and social abilities as well about their peers, society and how to solve problems. They will internalize their experiences and become better members of society and contribute to a better future. It is the job of the designers and providers of play environments to create playspaces that provide challenge without exposing children to unforeseen hazards, considering reasonable foreseeable misuse, and also provides accessibility for those with special needs.

As the adults and play providers we must decide the injury thresholds we are prepared to expose our children to understanding that 70-78 percent of injuries are the result of falls and the current thresholds are a 10-15 percent risk of a fatal head injury (<http://playgroundadvisory.com/publications/Articles/Impact%20Attenuation%20Values%20&%20Prevention%20of%20Head%20Injuries%20in%20Playgrounds%2014-8-11.pdf>).

Standards such as ASTM F1292-13 allow the owner to deviate from the life-threatening 200g and 1000 HIC, by allowing the owner to select higher drop heights and lower values for g and HIC, thereby providing better impact attenuation and a significantly lower risk of injury. Once the injury threshold is established a hazard analysis can be performed by the manufacturer, design consultant or owner (<http://playgroundadvisory.com/publications/Articles/Hazard%20Assessments%20in%20Play%20for%20Children.pdf>).

This helps to create the play environment that provides both challenge and prevents unwanted injuries. Accessibility of the surfacing must be provided to ensure access for both children and caregivers of all abilities (<http://playgroundadvisory.com/publications/newsletters/CPA%20February%202011.pdf>) to the play and understand that we all are our brothers' keepers. Although accessibility is not a universal requirement, it is important to give it consideration and once a decision has been made, to get the accessibility performance right.

A key element of a successful playground will be the post installation compliance inspection prior to opening it to children by a trained CPSI ([www.internationalplaygroundsafetyinstitute.com/](http://www.internationalplaygroundsafetyinstitute.com/)) using the probes, tools and other test method devices ([www.Triax2015.com](http://www.Triax2015.com)) to ensure that the specified performance has been met. This testing and inspection will continue during the life of the playground to verify playground equipment and surfacing maintenance is being performed to ensure continued compliance with injury prevention and other performance requirement such as accessibility.

Now children can enter an inviting play environment that they can choose which challengers and risks to take on and enjoy their experience within an inclusive spaces that parents and caregivers know their children with sustain injuries within an acceptable threshold. Time to join the future.

With these management steps in place parents and caregivers should feel comfortable knowing their children can enter a barrier free and inclusive play environment and choose which challenges and risks to experience without sustaining serious injuries above an

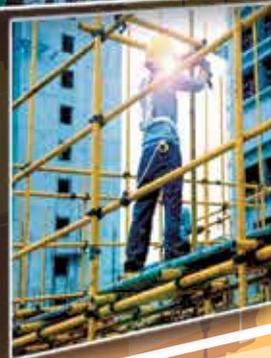
acceptable threshold as identified in the scope of the Standard. To be successful in attaining this goal the standard-users need a comprehensive background in all aspects of implementing a successful public playground which meets the developmental needs of all children. This requires knowledge and understanding of all applicable standards for public playground equipment and impact attenuating surfacing system standards along with some practical experience in applying these standard requirements. There is some level of professional judgement all standard-users should have in order to be successful in applying these requirements. This can only be learned over time with a solid base of practical knowledge on all aspects of playground development and with a lot or practice. It is time to join the future.

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# PIPING SYSTEM DESIGN INSIGHT FROM VICTAULIC REVIT® EXPERT RALPH SCHOCH

Ralph Schoch is the Revit® Technology and Internal Support Manager in the Construction Piping Services Division (CPS) at Victaulic, a leading manufacturer of mechanical pipe-joining and fire protection systems. For 16 years he has been developing 3D piping system layouts for projects large and small. In addition to Revit, Ralph has experience in Navisworks, Fabrication CADmep, Inventor, Solidworks, and Bentley Autoplant. He is a member of Autodesk Developers Network and Professional Member of AUGI, and recently presented as a keynote speaker at the Revit Technology Conference (RTC) Asia held in Singapore in September 2015.



Ralph's interest in 3D system modeling led him to begin developing content for Revit in 2009. Ralph began developing "families" – the Revit term for software design components – that allows Victaulic customers to design their piping systems within Revit using Victaulic products. These families have been used around the world from engineering to construction with full fabrication from the Revit model. In an interview with Victaulic, Ralph explains how using Revit can change the way engineers design systems and improve their projects.

**Q: What can customers and Revit users do with the expertise you provide through Construction Piping Services?**

> When a customer comes to Victaulic for help designing systems, we provide the tools through our Revit families for them to efficiently create complex pipe routing systems. The families, which are native within Revit, help define piping types to automatically place when routing the piping.

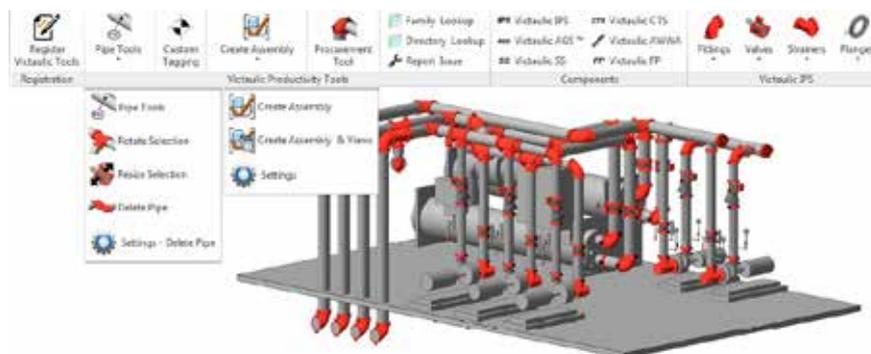
Our "Victaulic Tools For Revit" add-ins allow us to improve user efficiency throughout the routing and bill-of-material process. Once the routing is complete we can then help create fabrication assembly documents of the piping system. We also provide BIM services for estimation and model creation.

**Q: Can you explain the role add-ins play in designing a piping system?**

> A software add-in is a type of program module (or file) that adds functionality to a software product, usually in the form of a command automating a task or some customisation of the product's behavior. When you talk about an add-in for Revit we mean a module containing code that makes use of the Revit API (Application Program Interface). Revit loads such add-ins and uses them to adjust its behaviour when the user of the add-in executes a particular command.

**Q: What makes the "Victaulic Tools For Revit" valuable?**

> Without these Victaulic tools, the methods for creating construction documentation are slow and difficult to manage. Using the Victaulic tools drives increased productivity by automating the bill of material creation, sorting and exporting process when creating construction documentation in Revit. The tools automate the tagging, sequencing and drawing tag placement for pipes and components, along with the order, selection, and creation of assemblies within the project. If engineers aren't using them and instead have the "generic" families, those may not be optimised for routing and documentation, which increases the work required to create it.



Using the Victaulic Toolbar drives increased productivity.

at the outset it can seem as if a new user has to re-learn how to create projects based on what Revit wants, and it can seem daunting. Taking the time to set up your content and properly set up project templates can shorten the initial learning curve tremendously. Victaulic's product family library is helpful to new Revit users as they optimise that set-up.

Eventually as new users gain comfort with the program, they will start to understand how the software works and the benefits become evident. It's not uncommon for a user to learn Revit and not go back to AutoCAD at all, that's how powerful and beneficial the software can be.

**Q: How much time can this save during the course of a project?**

> With the combination of Victaulic's switch to Revit and our customised tools we have seen in-house productivity of up to 20 percent over Autodesk Fabrication CADmep software deliverables.

**Q: What will someone notice when they switch from traditional 2D AutoCAD software to Revit?**

> Revit is an opportunity for traditional AutoCAD users to do their work in a new way, review their current work processes and develop a new set of deliverables. At

**Q: What goes into creating Revit content from Victaulic that benefits a customer's project?**

> The methods used to create Revit families can greatly affect the final deliverables within the project. When creating content, we test each family to make sure it functions correctly in the project routing. We also test the content in all levels of detail to assure what we present provides the correct representation in all display levels.

We develop our native content, but more importantly we also use and test our content on projects with our in-house BIM Services Team. This gives us the knowledge to be able to understand and solve any content related issues our customers may have.

**Q: What considerations go into developing Revit families?**

> We pay careful attention to how the parameters are written, the number of types and the way in which the family routes in a system to be sure they display properly throughout the various levels of detail. We also place emphasis on how subcategories can be used to control visibility. We take file size into consideration, specifically looking for ways to keep the size to a minimum.

**Q: In regard to file size, can you address concerns about how including custom families would affect file size and performance?**

> The common myth is that the size of a family can affect the project's performance the more it is used. We tested this by loading our Victaulic elbow family into a fire protection piping project designed for a 20-storey building. After switching all the elbows throughout the project to the Victaulic elbow the total file size increased by only 308kb – the size of one family.

We then tested model performance and no change was evident. This tells us that we can improve the quality of our project by including the necessary Victaulic families and not always pay a price on performance or file size.

One other point we have discovered is that it isn't always the size of the family but the way parameters are written and how the family is designed to flex that can affect project routing performance the most. That's where developing our families plays an important role. We build them knowing the best way to write and design them.

**Q: Why is more detail, such as using Victaulic elbows instead of generic Revit renderings, helpful in a Revit drawing?**

> By adding higher levels of detail in the correct areas of your project, you can help reduce RFIs that slow down the project later on. More detail helps you improve calculations and assist in the project quoting process. All of this additional data in the model can also be passed to the owner for aid in facilities management.



**Q: Is Revit support affected by different markets or pipe materials?**

> Right now, we support all major markets that use Revit for design. We have built out Revit families to support Victaulic products in aluminum, carbon steel, copper, stainless steel and AWWA-standard materials.

**Q: Beyond Revit, what other software systems does CPS support?**

> We support more than 20 major software platforms that our customers work with, including many Autodesk, Intergraph and Bentley solutions.



**Q: How does Victaulic work with CPS customers to make sure their Revit content imports and routes go smoothly?**

> When a customer has an issue we work one on one to resolve it. If this means email, phone call, or even connecting remotely to their computer, we will do what it takes to resolve the issue for our customer.

**Q: After more than five years working to implement Revit designs, in what ways have interacting with customers helped improve the Revit services CPS provides?**

> We value the input from customers on our content and services. Currently, we have received many comments from the engineering community, and we are listening. We will be providing engineering

specific content with an emphasis on usability and display representation all within a template that you can transfer pipe types that are predefined and ready to go. This new content will be a mix between generic and manufacturer specific. We are also working on various customer training events with more details to follow.

For more information about Victaulic Tools for Revit or to download a 30-day free trial, visit [www.victaulicsoftware.com](http://www.victaulicsoftware.com).

# OBO Bettermann South East Asia Pte Ltd

## – Empowering your projects

Since the 3rd of January 2015, OBO Bettermann South East Asia's CEO, Mr Conrad de Lange has set up the headquarters for the Southeast Asian market in Singapore. Complete with warehouse and logistic facilities at 18 Tampines Industrial Crescent, OBO Bettermann is ready to serve the market with industry experience and expertise of more than a century. Besides cable support systems, OBO Bettermann offer professional products in the following segments as well:

- Connection and Fastening System
- Transient and Lightning Protection System
- Fire Protection System
- Cable Routing System
- Device System
- Underfloor System

### The Future of Cable Support Systems has begun

What is more than a simple piece of steel plate to carry cables going around from infrastructures like tunnels and bridges to buildings like hospitals and industrial plants? With the ever increasing demand for more services and complex network of pipes, cable supports and HVAC systems, the task has never been easy for consultants and mechanical and electrical engineers.

Skyscrapers, Green buildings and mission critical industrial plants all demand better and more reliable cable support systems with a tad more innovation and intelligence. Increasing labour cost calls for more productive methods of installation which in turn facilitates shorter project timeline.

OBO Bettermann from Germany, brings about a new generation of cable support system and accessories with paradigm shifting possibilities and ideologies.

### The 'Magic' Cable Tray System

Available in different grades of material and finishing, suitable for every industrial, commercial and infrastructure application. The Magic cable tray system was designed to improve the way of installation, increase the loading capability, maximise support structures and most importantly to better hold and protect the cables which they are supporting.



### *Simplified mounting*

The lighter structure produces a considerable benefit for overhead mounting and at great heights. The Magic cable tray system is the world's first completely screw-less tray system. All the system components and tray types are equipped with the innovative Magic connection from the tray through to the fitting. The combination of both advantages makes mounting simpler and quicker. To illustrate this, a 400 metre length of cable tray connection requires only 24 minutes compared to 4 hours and 16 minutes with the conventional cable tray using bolt and nut connection.

### *Load capacity increased*

Compared to previous systems, Magic cable trays offer greater stability. The complex 3D structure and the different material structure around the laser seam produce previously unachieved load values. As an example, a minimum support distance at 1.5 metres apart is achieved with less than 20mm deflection for all ranges of cable tray width.



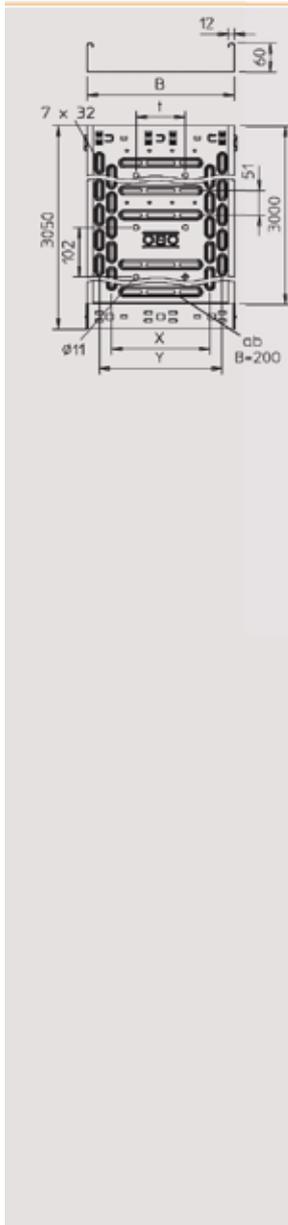
### *Lockable fittings*

Even faster. Even simpler. All the classic fittings, such as bends, T pieces, mounting/branch pieces and intersections are equipped with the trusted, lockable Magic connector. The cable tray is run into the fitting connection from above with the spring element. Just connect the pieces, lock them in place – and you're done. Gone are the days where a big and costly Tee piece is required when the Magic add-on Tee does the same function with increased flexibility and yet at a lower cost.

### *Improved eco-balance*

The use of the new, highly innovative and patented manufacturing method DUO-Plus leads to a considerably optimised CO2 balance for

Side height 60



**Cable tray RKS-Magic®**

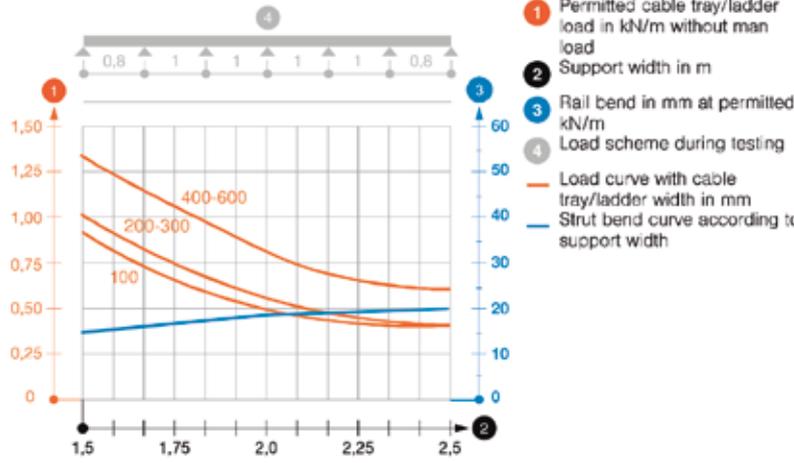
| Type        | Width<br>mm | Plate<br>thickness<br>mm | Length<br>mm | Useful<br>cross-<br>section<br>cm² | Dimen-<br>sion x<br>mm | Dimen-<br>sion y<br>mm | Dimen-<br>sion z<br>mm | Appr. load: |       |       | Weight<br>kg/100 m | Item No.  |
|-------------|-------------|--------------------------|--------------|------------------------------------|------------------------|------------------------|------------------------|-------------|-------|-------|--------------------|-----------|
|             |             |                          |              |                                    |                        |                        |                        | 1.5 m       | 2.0 m | 2.5 m |                    |           |
| RKSM 610 FS | 100         | 0.75                     | 3,050        | 58                                 | -                      | 50                     | -                      | 0.9         | 0.5   | 0.4   | 134.300            | 6047 61 1 |
| RKSM 615 FS | 150         | 0.75                     | 3,050        | 88                                 | 50                     | 100                    | -                      | 1           | 0.55  | 0.4   | 157.700            | 6047 63 0 |
| RKSM 620 FS | 200         | 0.75                     | 3,050        | 118                                | 100                    | 150                    | -                      | 1           | 0.55  | 0.4   | 183.000            | 6047 63 8 |
| RKSM 630 FS | 300         | 0.75                     | 3,050        | 178                                | 200                    | 250                    | 100                    | 1           | 0.55  | 0.4   | 239.000            | 6047 65 4 |
| RKSM 640 FS | 400         | 0.9                      | 3,050        | 238                                | 300                    | 350                    | 200                    | 1.35        | 0.8   | 0.6   | 331.300            | 6047 68 9 |
| RKSM 650 FS | 500         | 0.9                      | 3,050        | 298                                | 400                    | 450                    | 300                    | 1.35        | 0.8   | 0.6   | 392.300            | 6047 71 9 |
| RKSM 660 FS | 600         | 0.9                      | 3,050        | 358                                | 450                    | 550                    | 400                    | 1.35        | 0.8   | 0.6   | 453.330            | 6047 73 5 |
| RKSM 610 FT | 100         | 0.75                     | 3,050        | 58                                 | -                      | 50                     | -                      | 0.9         | 0.5   | 0.4   | 175.340            | 6047 61 2 |
| RKSM 615 FT | 150         | 0.75                     | 3,050        | 88                                 | 50                     | 100                    | -                      | 1           | 0.55  | 0.4   | 221.670            | 6047 63 1 |
| RKSM 620 FT | 200         | 0.75                     | 3,050        | 118                                | 100                    | 150                    | -                      | 1           | 0.55  | 0.4   | 245.670            | 6047 63 9 |
| RKSM 630 FT | 300         | 0.75                     | 3,050        | 178                                | 200                    | 250                    | 100                    | 1           | 0.55  | 0.4   | 317.000            | 6047 65 5 |
| RKSM 640 FT | 400         | 0.9                      | 3,050        | 238                                | 300                    | 350                    | 200                    | 1.35        | 0.8   | 0.6   | 426.340            | 6047 69 0 |
| RKSM 650 FT | 500         | 0.9                      | 3,050        | 298                                | 400                    | 450                    | 300                    | 1.35        | 0.8   | 0.6   | 514.340            | 6047 72 0 |
| RKSM 660 FT | 600         | 0.9                      | 3,050        | 358                                | 450                    | 550                    | 400                    | 1.35        | 0.8   | 0.6   | 628.000            | 6047 73 6 |



Si Steel FS Strip-galvanised FT Hot-dip galvanised /m

**RKSM 60 = efficient magic cable tray system with 60 mm side height.**  
 Magnetic shield insulation without cover 20 dB, with cover 50 dB.  
 Cable tray with quick connection system, including all the relevant connection components for time-saving and economic installation, with beaded straight base perforation, 7 x 20 mm, for bracket mounting and, from the width 200 mm, with 7 x 32 mm transverse beading for cable ventilation and simplified mounting. With 11 mm perforation for direct threaded rod suspension. Continuous side perforation, 7 x 20 mm, as connector perforation.  
 The stock length is 60 mm, the usable length when combined is 60 mm.  
 The spring element FED 60 can be ordered separately as a accessory part (spare) for the cable tray RKS-Magic with a side height of 60 mm under the article number 6068859.  
 The continuous equipotential bonding is guaranteed without additional components.  
 VDE and function maintenance (DIN 4102 Part 12) tested cable tray system.

Load diagram, cable tray, type RKSM 60



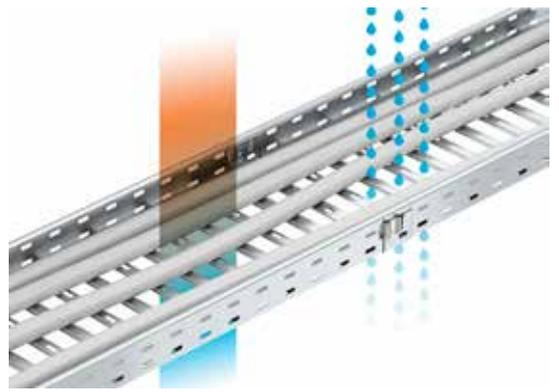
the entire product family. This technological leap saves 2,600 tonnes of CO2 emissions per years. OBO Bettermann cable tray system fulfils the Green requirement of being a sustainable product. This was the main reason that OBO Bettermann is proud to be a member of the Singapore Green Building Council.

**Improved cable ventilation**

The completely new base structure allows perfect cable ventilation. According to VDE 0298-4, a tray made up of more than 30 percent holes is considered a perforated tray. This means that lower reduction factors must be taken into account during cable dimensioning, possibly allowing the use of cables with smaller cross-sections thus achieving cost savings.

**Water run-off guaranteed**

All the perforated Magic cable tray systems of width 200 mm and wider are suitable for safe installations under sprinkler systems - in accordance with the requirements of the VDS. The new base structure allows perfect water run-off.



## Surface testing and corrosion categories

### Corrosion categories to DIN EN ISO 12944

| Corrosion category | Typical environment, inside   | Typical environment, outside  | Corrosion load         | Average zinc loss |
|--------------------|---|---|------------------------|-------------------|
| C 1                | Heated buildings with neutral atmospheres, e.g. offices, shops, schools, hotels   | -   | Insignificant          | <0.1 µm/a         |
| C 2                | Unheated buildings in which condensation can occur, e.g. warehouse, sports' halls   | Atmosphere with low level of impurities. Often rural areas  | Low                    | 0.1 to 0.7 µm/a   |
| C 3                | Production facilities with a high level of humidity and some air impurities, e.g. plants for food production, laundries, breweries, dairies | City and industrial atmosphere, considerable impurities through sulphur dioxide, coastal areas with low salt load | Medium                 | 0.7 to 2.1 µm/a   |
| C 4                | Chemical plants, swimming pools, boat sheds over seawater   | Industrial areas and coastal areas with low salt load   | Strong                 | 2.1 to 4.2 µm/a   |
| C 5-I              | Buildings or areas with almost constant condensation and with high levels of impurities   | Industrial areas with high levels of humidity and aggressive atmosphere   | Very strong (industry) | 4.2 to 8.4 µm/a   |
| C 5-M              | Buildings or areas with almost continuous condensation and with high levels of impurities   | Coastal or offshore areas with salt load.   | Very strong (sea)      | > 4.2 to 8.4 µm/a |

### Classification of corrosion resistance (from the draft of DIN EN 61537)

| Class | Reference material and surface treatment   |
|-------|--|
| 0*    | None   |
| 1     | Electroplated to a minimum thickness of 5 µm   |
| 2     | Electroplated to a minimum thickness of 12 µm  |
| 3     | Pre-galvanised to 275 degrees according to EN 10327 and EN 10326   |
| 4     | Pre-galvanised to 350 degrees according to EN 10327 and EN 10326   |
| 5     | Galvanised to a zinc coating thickness of (minimum) 45 µm according to ISO 1461  |
| 6     | Galvanised to a zinc coating thickness of (minimum) 55 µm according to ISO 1461  |
| 7     | Galvanised to a zinc coating thickness of (minimum) 70 µm according to ISO 1461  |
| 8     | Galvanised to a zinc coating thickness of (minimum) 85 µm according to ISO 1461 (usually high-alloy silicon steel)                     |
| 9A    | Rustproof steel, manufactured according to ASTM: A 240/A 240M - 95 a designation S30403 or EN 10088 degree 1-4301 without finishing ** |
| 9B    | Rustproof steel, manufactured according to ASTM: A 240/A 240M - 95 a designation S31603 or EN 10088 degree 1-4301 without finishing    |
| 9C    | Rustproof steel, manufactured according to ASTM: A 240/A 240M - 95 a designation S30403 or EN 10088 degree 1-4301 with finishing **    |
| 9D    | Rustproof steel, manufactured according to ASTM: A 240/A 240M - 95 a designation S31603 or EN 10088 degree 1-4404 with finishing **    |

\* For materials which do not have a declared corrosion resistance classification

\*\* The end treatment process is used to improve the protection against crack corrosion and the contamination of other steels

### Guarantee of EMC

Cable support systems can make an important contribution to the improvement of EMC. They are passive and can thus make a safe, long-lasting contribution to EMC through the fact that cables are run within cable support systems or are shielded by them. Routing cables inside cable support systems greatly reduces the galvanic decoupling and coupling due to electrical and magnetic fields in the cables. Thus cable support systems can make a contribution to the reduction of coupling from the source to the sink. The shielding action of cable support systems can be quantified by the coupling resistance and the shield attenuation. This gives the planner important engineering parameters for cable support systems for the EMC engineering.

From the analysis of the effectiveness of EMC in buildings (EN 62305-4), we know that lightning discharge is one of the greatest sources of interference to be expected. This causes a direct current feed into the entire equipotential bonding system in the building and/or to magnetic decoupling of interference currents in electrical cables. With regard to these couplings, cable support systems can offer an effective contribution to the reduction of interference voltages.

### Surface testing/salt spray mist test

All the system components must show sufficient resistance against corrosion in agreement with the standard, DIN EN 61537. The minimum zinc layer thicknesses are determined through a measurement. The grouping into the appropriate class is located at the right of the table. The top of the table shows the area of application and the zinc loss to be expected according to DIN EN ISO 12944.

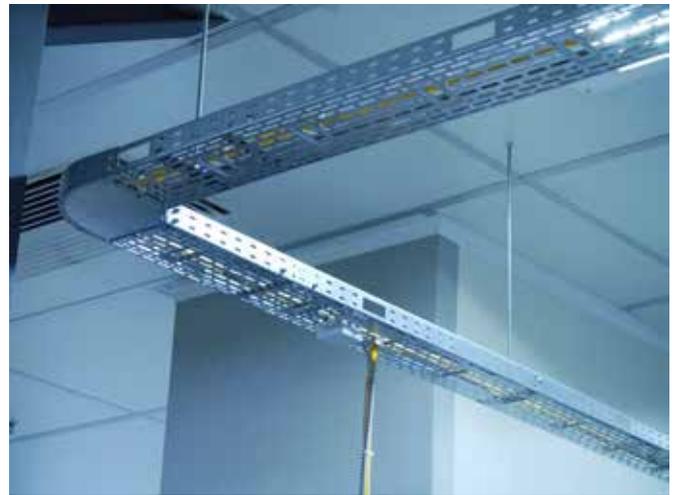
Whether indoors or outdoors, in aggressive atmospheres or under special hygienic conditions: OBO can offer the perfect surface and materials for your cable support system, no matter what the requirements may be. OBO cable support systems are machined from high-quality sheet steel or steel wire and are available with various surfaces. Different hardening and coating methods ensure tailor-made corrosion protection, specially tailored to the appropriate application. In addition, OBO cable support systems are available in stainless steel and with coloured coatings.

OBO offers cable support systems made by professionals for professionals. The technical properties are guaranteed by DIN EN 61537 (follow-up to DIN VDE 0639). It describes all the relevant parameters – from the area of application, through test conditions, up to corrosion resistance and temperature classifications. BIM modelling is also available on the range of Magic cable tray.

### Project Highlights

Esteemed customer and world renowned partner to the tobacco industry, Hauni Malaysia Sdn Bhd has recently installed a full range of cable support systems including cable trays, cable ladders and accessories at their production facility in Malaysia.

Hauni supports customers worldwide in the fields of tobacco processing as well as filter and cigarette manufacturing and emphasises quality and innovation not only in the products but also in the manufacturing environment. OBO Bettermann's cable support systems provided ease of installation as well as guaranteeing the reliability and safety of the overall electrical infrastructure within the facility.



Photos above: Hauni Malaysia Sdn Bhd project by OBO Bettermann SEA



OBO Bettermann SEA is a member of SGBC.

In the pipeline, OBO Bettermann SEA is also partnering with prestigious companies in the region to support projects in the fields of food and beverage manufacturing, educational institution, photovoltaic and more. For example, DBD Engineering Co. Ltd. for the new brewery facility of Heineken in Cambodia.

For more information, contact OBO Bettermann SEA at office tel (+65) 6702 1886, or Mr James Gan, Sales Engineering Manager at tel (+65) 8822 0286. You can also email [info@obo-bettermann.com.sg](mailto:info@obo-bettermann.com.sg) or visit [www.obo-bettermann.com.sg](http://www.obo-bettermann.com.sg) for further details.



OBO Bettermann SEA supported DBD Engineering Co. Ltd.'s project.

# NS BlueScope LYSAGHT® LOCKED SEAM® and LYSAGHT® SELECT SEAM® III

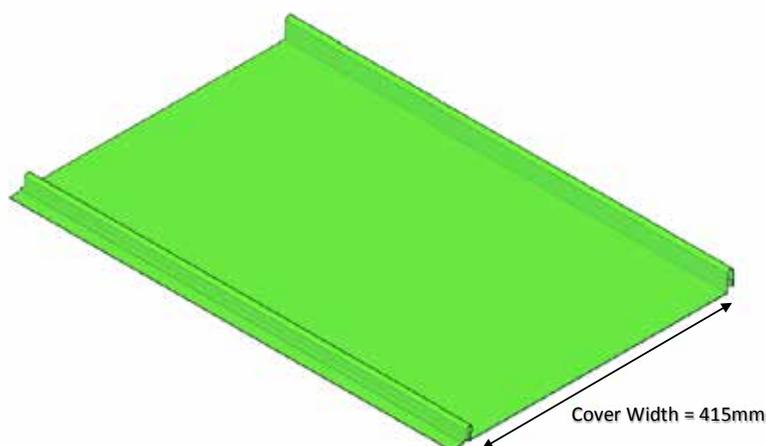
– Designed to create sleek and aesthetically pleasing roofs

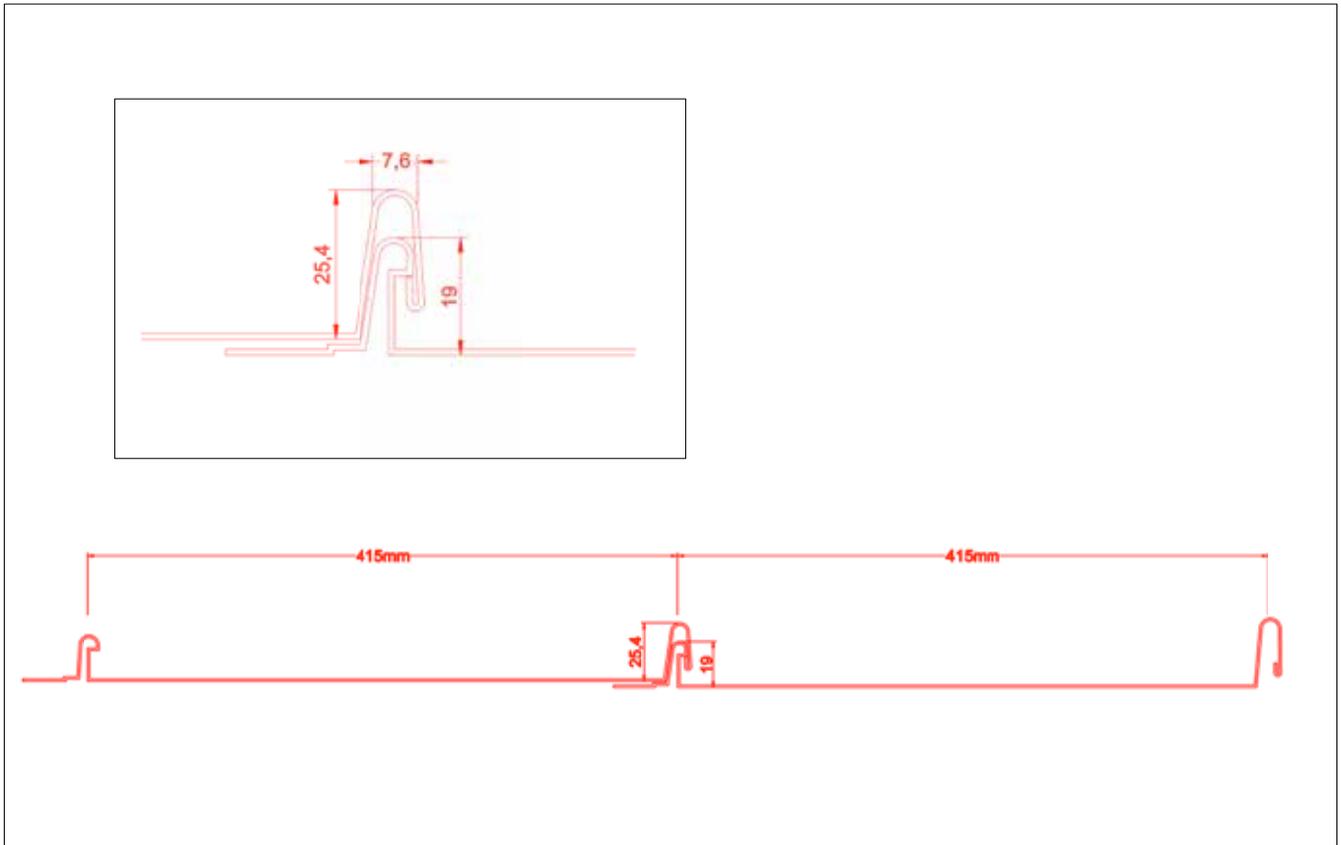
**D**espite the importance of roofs, various people treat them as an afterthought until they notice a leak. The roof is a critical component of the exterior and can dramatically impact the outlook and appearance. That's why it's important to choose roofing material carefully. Roof designs are also important in determining the character and aesthetic appeal of a building. LYSAGHT® LOCKED SEAM® and LYSAGHT® SELECT SEAM® III have been designed and developed to cater to the growing trend amongst Singaporean developers and house-buyers for exceptional quality in roofing and finishings. Sleek and aesthetically pleasing standing seam roof profiles from LYSAGHT® roofing and walling solutions are known for its form and function attributes. As an economical version of standing seam roof and due to its non-industrial appearance, the profiles have made countless popular applications in residential, institutional and commercial roofing projects. The versatility allows for creative roof designs and has demonstrated NS BlueScope Lysaght's leading position in the building products industry. As the latest series is now the

preferred roofing material due to its multiple capabilities and ability to accommodate any roof geometry and design, it has become a replacement for clay tiles.

Minimum accessories are needed to install the roofing sheets with ease. Manufactured from BlueScope Steel's proprietary Clean COLORBOND® steel, its strength to weight ratio, durability and superb weather resistance delivers improved performance. You can find LYSAGHT® standing seam roofing profiles being widely used as roof, wall and fascia with its capability to form both straight and curved roof with classic and sleek pitch.

With modern developers, together with homeowners placing greater emphasis on their aesthetic tastes, their choice of distinctive and beautiful architecture roof design, NS BlueScope Lysaght continues to strengthen its position as a leader in the building products industry with the LOCKED SEAM® and LYSAGHT® SELECT SEAM® III which provides the finest, durable and beautiful roofing solution suited for their specific needs.





The LYSAGHT® SELECT SEAM® III is claimed to be most contemporary alternative to the traditional standing seam, which is SELECT SEAM® I and SELECT SEAM® II. The LYSAGHT® SELECT SEAM® III is not only functionally effortless, it is also suitable for non-curved roof. With traditional installation requiring clips, the LYSAGHT® SELECT SEAM® III is designed to eliminate having to use any clips and is the most cost saving roofing solution with faster installation time and a concealed screw fixing.

Exploring these approaches in detail allows us to rethink how to effectively adapt these techniques to overcome the build-up of heat in modern tropical houses in Southeast Asia. This study reviews the physical characteristics of these approaches to guide architects and building designers. Results indicate a great reduction in operational cost. However, the significant differences in the performance of colour and material properties should be considered, given that the selected approach strongly affects the required thermal conditions of a building.

The future of roofing in Southeast Asia, LYSAGHT® LOCKED SEAM® and LYSAGHT® SELECT SEAM® III are the ultimate roofing solutions for creating the architectural designs of your dreams, enabling freedom in creativity and flexibility in design as well as durability as it is able to adapt to almost any design structure, that is compatible for any roof geometry, providing customisable options to suit a variety of roofs, from pitched to curved and excellent for design with tapered ends.

LYSAGHT® LOCKED SEAM® and LYSAGHT® SELECT SEAM® III are available in Clean COLOURBOND® Steel, imbued with a stunning, metallic sheen, with colour tones that blends beautifully into any cityscape or tropical environment, highly resistant to dirt, fungal growth and staining. Clean COLOURBOND® is for its superior and stronger corrosion resistance compared to galvanised steel, excellent durability against weathering and paint delamination thus ensuring long-lasting aesthetic beauty and peace of mind to both customers as well as developers.

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](http://www.lysaght.com.sg).**



# The High Line, New York (USA)

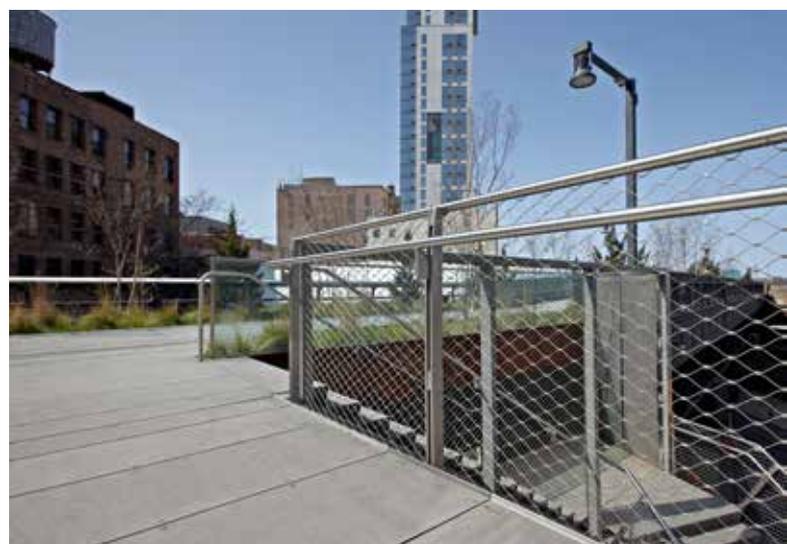
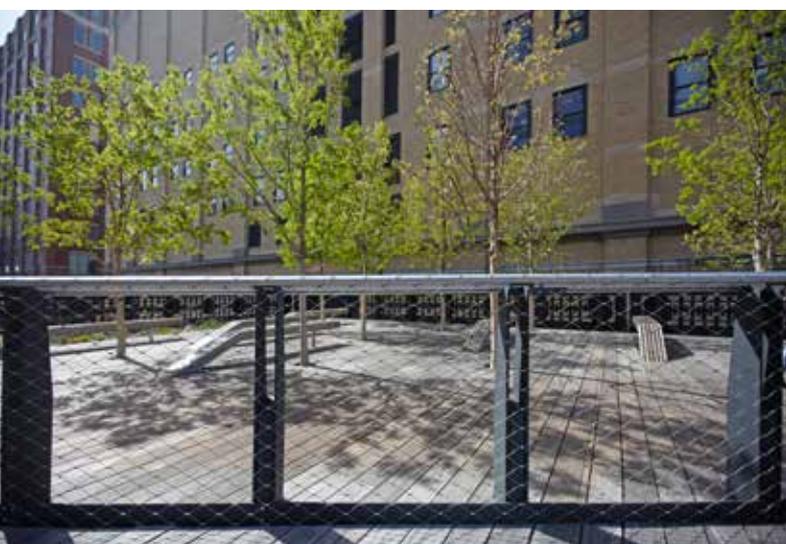
**Architects: James Corner Field Operations, New York/USA; Diller Scofidio + Renfro, New York/USA**

**B**uilt in the 1930s and decommissioned in 1980, the High Line was formerly an elevated freight train line on the West Side of Manhattan. Two sections of the rail line viaduct were transformed into a public park between 2006 and 2011. The landscape architects chose Jakob® Webnet for railing infills and greenwall partitions as well as coated Webnet as infills for historic railings, citing timeless design, unobstructed views, safety and longevity as key assets.

#### **Jakob Products**

AISI 316 Webnet, wire rope net for railing infills and greenwall partitions, coated Webnet for historic pipe railings, and stainless steel ropes.

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





# Domestic specifications need careful consideration too



**Text by Alec Stacey, Technical Manager, Bona Limited. Photos courtesy of Bona AB, Sweden.**

**M**any of the specifications that Bona compiles for architects and designers involve the treatment for wooden floors in high-traffic, commercial environments. However, many of the issues that affect the surface treatments on such floors also impact on domestic floors.

In a typical home there are several areas where floor treatments can show problems over time. Kitchen floors tend to receive high trafficking and repeated wear in localised areas - in front of the cooker and in front of the sink. Also there will be splashes from water, cooking oil and other contaminants from food preparation. Perhaps the greatest single influence on the floor is the presence of abrasive grit and dirt which damages the surface when trafficked underfoot or beneath chairs and tables.

In the case of traditional oil (penetrating oil with no

coating produced) the surface is generally more susceptible to the impact of trafficking due to the exposed wood texture. This can result in the surface retaining dirt and needing a more effective cleaning regime. When oiled surfaces are cleaned using standard detergents, some of the oil that occupies the top layer of the wood will be drawn out. When repeated this can result in the wood surface becoming more absorbent and susceptible to liquid spills and contamination. Due to this property, oil finishes in these areas will require increased levels of maintenance which should include the re-application of oil. Kitchens normally exit to a garden or driveway which means that abrasive material will be trafficked in to the floor. Remember, without a durable coating on the floor's surface, any scratches will damage and scratch the wood, so it is essential to use good quality matting of a suitable size.

Lacquer treatments are always going to perform better within kitchens and entrance areas due to the much more resilient coating, especially when compared with oils and hardwax oils which have a much softer and thinner surface layer. However, the thickness of the coating, derived from the number of coats applied, is also an important factor when it comes to protecting the surface. Maintenance is more straightforward and easier with a 'sealed' surface, although abrasive particles can still scratch and dull the surface in the more heavily trafficked areas. This can be mitigated by periodic application of a polyurethane maintainer (which will allow further coats of lacquer to be applied without aggressive sanding) or a polish.

Wooden stair treads also represent a challenge for floor treatments due to 'scuffing' which tends to occur when using the stairs. One generally finds that the first three or four treads become worn but then little wear is evident on the treads nearer the top. This is again due to abrasive material on footwear. To prevent this, stair treads should receive a robust specification as in kitchens and entrance halls, with an extra coat of lacquer applied. A typical specification would be a primer coat on the bare wood followed by three topcoat applications.

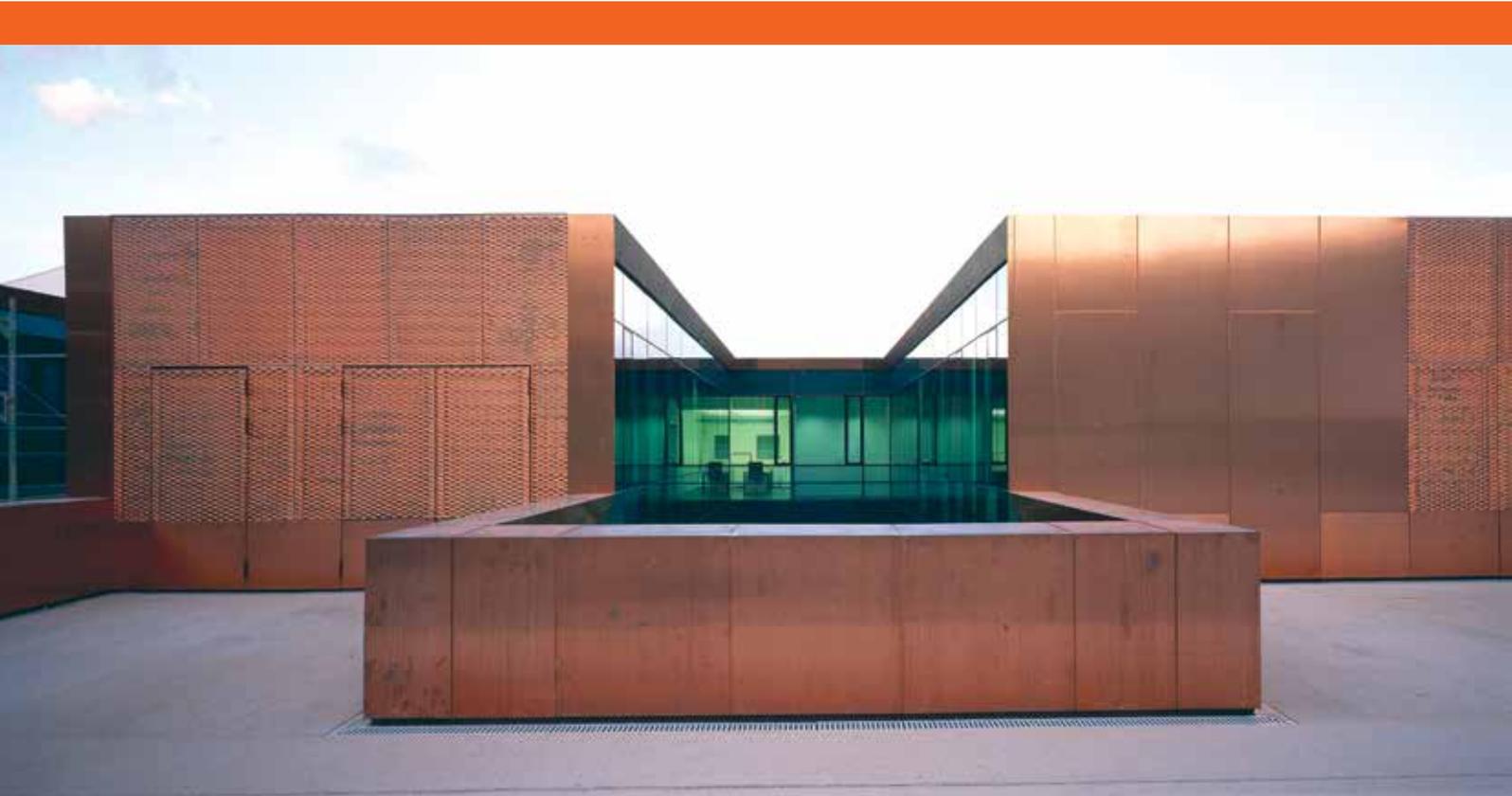
Upstairs in a domestic property, durability becomes less of an issue as footwear tends to be cleaner with much less abrasive material present. Floors treated with oil will have much lower maintenance demands compared to those in the kitchen and entrance areas, although bathrooms may benefit from finishes with low moisture permeability or even anti-slip properties, which can be introduced with some specific lacquer treatments. If you require advice about the specification of finishes for any type of wood floors please contact any of the Bona technical team.

**For more information, please contact Bona Far East & Pacific Pte Ltd at tel (+65) 6377 1158, email [info.apac@bona.com](mailto:info.apac@bona.com) or visit [www.bona.com](http://www.bona.com).**



# Rainscreen cladding in perfection

With the SikaTack® Panel Bonding System unsightly screws or rivets for fixing the panels are no longer necessary.



**G**ood architecture is the key element for an aesthetically beautiful building that also includes modern living comfort, demand on energy saving and finally a sustainable investment. The façade should be the defining element of a well-designed building. When it comes to ventilated facades, Sika has an adhesive system which can exactly meet the requirements described above. For this, the panel can fully develop its original beauty.

## **Invisible panel fixation for all climatic requirements**

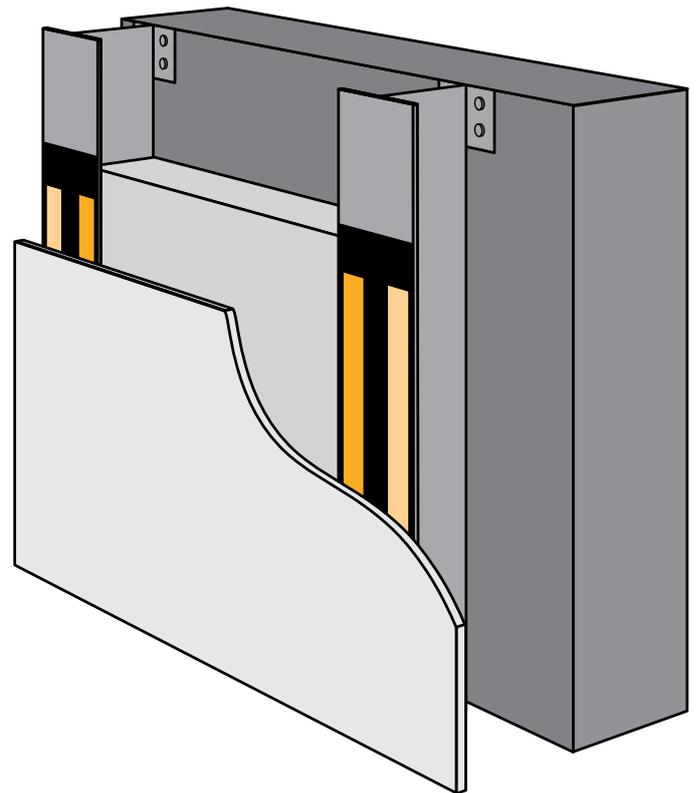
The SikaTack® Panel system comprises of SikaTack® Panel Adhesive and SikaTack® Panel Fixing Tape besides appropriate surface pretreatment agents. The double sided adhesive tape is used for the temporary support of cladding panels while the SikaTack® Panel Adhesive cures. SikaTack® Panel Adhesive is moisture-curing single component adhesive, capable of withstanding extreme dynamic and static loads and climatic conditions. Once cured, the adhesive remains permanently elastic to accommodate differing thermal expansion of various building substrates.

It eliminates stress fatigue at corners of panels and prevents cold bridging. The permanent elastic nature of SikaTack® Panel Adhesive System combined with a tenacious adhesion to a variety of panel substrate types accommodates the natural differential movements of varying building materials for the life of most panel types. SikaTack® Panel Adhesive System is suitable for the fixing of composites, ceramic, high pressure laminate, cement based cladding panels as well as many metal and powder coated substrates. This ingenious and simple system offers both the designer and installer alike many advantages over comparable mechanical secret fixing systems.

#### Experience since 1990's

Sika were first who recognised the many benefits of elastic bonding compared to mechanical fixation for facades panels. Back in 1990, the first facades were made with elastic bonded panels. The advantages of the elastic bonding were obvious and therefore the system found rapidly its customers, first throughout Europe and now all over the world. The SikaTack® Panel System, which was developed back then, has lost none of its simplicity and safety in use, to present day. The SikaTack® Panel System has been fully tested and endorsed by DIBt and the BBA.

For more information, contact Sika (Singapore) Pte Ltd at tel (+65) 6777 2811, fax (+65) 6779 6200, email [yan.vincent@sg.sika.com](mailto:yan.vincent@sg.sika.com) or visit [www.sika.com.sg](http://www.sika.com.sg).





2-4 Sept 2015  
Marina Bay Sands  
Singapore

## BEX Asia & MCE Asia unite to showcase green solutions from around the world

For the first time, BEX Asia was held in conjunction with the inaugural MCE Asia, to offer show goers a comprehensive array of green solutions for a sustainable built environment.

The 8th edition of Build Eco Xpo (BEX) Asia took place from 2-4 September 2015 at the Marina Bay Sands in Singapore. This year, BEX Asia was held in conjunction with the inaugural Mostra Convegno Expocomfort (MCE) Asia show. Together, both BEX Asia and MCE Asia 2015 exhibitions brought together more than 500 exhibiting companies from over 35 countries and regions across the world, including Australia, China, Germany, India, Italy, Japan, Turkey, and the United States as well as hosted delegates from Asia, Europe and South America.

“With more than 500 exhibiting companies from across the globe which represents more than 30 percent growth in terms of scale and product representations over last year, BEX Asia and MCE Asia 2015 has strengthened its position as the leading business platform in Southeast Asia for the green building industry to network and exchange insights,” said Michelle Lim, managing director, REED Exhibitions at the joint opening ceremony of the International Green Building Conference 2015, BEX Asia and MCE Asia exhibitions.



From left to right: The Singapore Green Building Week 2015 was launched by Dr John Keung, Mr Quek See Tiat, Mr Choi Shing Kwok, Mr Chia Ngiang Hong, and Ms Debbie Evans. Photo: © Reed Exhibitions Singapore



From left to right: BEX Asia 2015 was officially opened by Ms Michelle Lim, Ms Debbie Evans, Mr Quek See Tiat, Mr Choi Shing Kwok, Mr John Keung, and Mr Chia Ngiang Hong. Photo: © Reed Exhibitions Singapore

Guest-of-Honour Mr Choi Shing Kwok, Permanent Secretary, Ministry of the Environment and Water Resources, inaugurated the joint opening ceremony of BEX Asia 2015, MCE Asia 2015 and International Green Building Conference 2015 in the presence of various dignitaries, both local and international. At the opening ceremony, he announced the launch of the new Green Mark 2015 and details of the BCA SkyLab, the world's first high-rise rotatable laboratory for the tropics. He also shared key findings from the second BCA Building Energy Benchmarking Report (BEBR0 and latest green initiatives rolled out by the Building and Construction Authority (BCA).

### **BEX Asia & MCE Asia provide dual platform to source for green products**

In line with IGBC's "Building Today, Sustaining Tomorrow" theme, both the three-day exhibitions drew 11,060 visitors comprising of building professionals such as architects, real estate developers, building owners, contractors, interior designers and consultants from Singapore and the region to view the latest green building products, energy efficiency solutions and sustainable building technologies.

As a regional show, BEX Asia 2015 included international pavilions from China, Japan and Taiwan. The Japan External Trade Organisation (JETRO) and TPIA (Taiwan) once again participated in BEX Asia with an expanded presence.

Mostra Convegno Expocomfort Asia, also known as MCE Asia 2015, was held for the first time in Asia this year in conjunction with BEX Asia 2015. This show brand originates from Reed Exhibitions Italy, where MCE is recognised as the leading platform in Global Comfort Technology for Europe.

To meet the growing demand for energy efficiency and environmental building comfort in Asia, the focus of MCE Asia 2015 was on the Cooling, Water, Renewable Energy and Heating sectors, complementing BEX Asia 2015 in terms of providing a holistic approach to building sustainability.

Besides the exhibitions, more than 30 industry experts were invited to share their insights on various green building topics and green practices for a sustainable built environment at the 'Green View' and 'Mostra Xchange' seminar areas located at the exhibition halls. Topics included smart technologies for the industry, renewable energy, lighting, cooling, etc.

"In order for green technology to be widely adopted in both homes and companies, more still needs to be done. We will strive to ensure that events such as BEX and MCE Asia continue to provide a strong support base for exhibiting companies, so that they may continue to have a platform to share their solutions and link up with other solution providers," said Ms. Louise Chua, Project Director and Business Development Director of Reed Exhibitions, the organizer for BEX Asia 2015.

Collectively, BEX Asia 2015, MCE Asia 2015 and the International Green Building Conference (IGBC) 2015 were the key platforms during the Singapore Green Building Week in September for the exchange of global expertise, knowledge and solutions for the future of Southeast Asia's Sustainable Built Environment.

The ninth edition of BEX Asia 2015 is expected to be held from 7 to 9 September 2016. It will continue to see a greater introduction of cutting-edge green building technology, as well as a more diversified pool of exhibitors.

**For more information on BEX Asia and MCE Asia 2015, visit [www.bex-asia.com](http://www.bex-asia.com) and [www.mcxpocomfort-asia.com](http://www.mcxpocomfort-asia.com).**

## ■ BEX Asia 2015 Exhibitors

### Netzach Wood Veneers Pte Ltd

Netzach Wood Veneers Pte Ltd is a supplier of premium veneers with business presence in Singapore, Malaysia and Indonesia. At BEX Asia 2015, the company showcased new designs with a natural and random look.

According to Kevin, senior business manager of Netzach Wood Veneers Pte Ltd, the new designs have been developed to meet the needs of mid- to upper-level clients. "The designs are not so consistent looking, thereby making them highly attractive for hotels and homeowners," he said.

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



Netzach displayed the new design of premium veneers at its booth.

### Samrat Plywood Limited



Sneha Singhal, Co-ordinator – International Markets, Samrat Plywood Limited at her booth.

Samrat Plywood Limited, one of India's leading Plywood and Mica (HPL) company took part in BEX Asia 2015 for the first time. The company is nestled in India's most well planned city, Chandigarh. Its manufacturing facilities are based at Derabassi (Punjab) and Nalagarh (Himachal Pradesh) with wide marketing network and a strong workforce of more than 2,000 people. It has grown to be among the top five plywood and mica brands in the country and has explored the available exporting opportunities as well.

At BEX Asia 2015, the company showcased its wide range of HP decorative laminates. Strong and flexible, Samrat's HPL are made of all imported design paper, including 'A' Grade krafts paper for penetration of the best chemical. Only high quality raw material is used. The HPL are durable, consume reduced adhesive and have consistent weight. Applications include home furniture items, wall linings, column claddings, lift linings, doors, shelves, table tops, work-tops, vanity units and cubicles.

Commenting on the company's participation, Sneha Singhal, Co-ordinator – International Markets, Samrat Plywood Limited, said that

the company came to explore export opportunities in Singapore and Southeast Asia region. Samrat Plywood is currently exporting to international markets such as Indonesia and Dubai. "We came to the show to find business opportunities in Singapore as well as in Southeast Asia region. Singapore is like a link to the Southeast Asian markets so it will be a good platform to expand our market presence from here."

Mrs Singhal added that the company's products have a great potential in Singapore and Southeast Asia as they have a good environmental image. "Our laminates are FSC certified and we have applied for the GREENGUARD label and TÜV SÜD certification," she said.

The company's collection of HPL is an epitome of contemporary trends and designs from across the globe. An ardent nature lover, a passionate artist, a glamorous celebrity or a retro teenager, the collection has something for everyone. "We like to explore new ideas and grow qualitatively and not quantitatively. We are very much a niche market so we like to develop new range in terms of taste," she added.

For more information, visit [www.samratply.in](http://www.samratply.in).

## Dexerials Singapore Pte. Ltd.

Dexerials Singapore Pte. Ltd. presented a new heat reflective window film developed to improve the thermal environment of both inside the building and the street. Called 'Albeedo', the heat-ray reflective window film reflects near infrared rays (heat rays) that comes from the sun in an upward direction, which was difficult to achieve with conventional heat reflective window films.

While the new film limits the rise of interior temperatures by reducing heat rays from entering a room through a building's window, it also limits the rise of ground surface temperature near the building by reducing the heat rays reflected towards the ground. It also creates a bright room allowing 68 percent of visible light to pass through a window.

Commenting on the product, Jess Lau, senior executive, sales & marketing department, Dexerials Singapore Pte. Ltd. said: "This product allows us to think about our neighbouring buildings. The heat rays bounces back to the sky instead of landing on the ground or on surrounding buildings."



Jess Lau and her colleagues at the Dexerials booth.

### Features:

- The special mirror finished reflective layer with saw-tooth pattern reflects near infrared rays (heat rays) that comes from the sun in an upward direction and reduces the heat rays reflected towards the ground.
- Blocks 39 percent (ASHRAE Standard 90.1) of the solar radiation heat entering a room through the window compared to non-heat shielding window glass.
- Creates bright room allowing 68 percent of visible light to pass through and cuts 99.5 percent of UV light.
- Effectively prevents glass pieces from scattering or falling.

Albeedo heat reflective window film is suitable for heat shielding around the window areas in office buildings, public space, etc.

For more information, visit [www.dexerials.jp/en](http://www.dexerials.jp/en).

## Puhua International Pte Ltd



Citrine Chua, Sales Manager (left) and Mr Zhao Pu Ping, Managing Director, of Puhua International Pte Ltd.

At BEX Asia 2015, Puhua International Pte Ltd showcased an eco-friendly wall coating plaster made of Diatomite. Diamonite is fossil accumulation soil formed by single-celled plant in about 1-2 million years.

According to Citrine Chua, sales manager, Puhua International Pte Ltd, the PuHua air purifying wall absorbs and decomposes air-borne bacteria acting like a natural air purifier. In doing so, the product can eliminate formaldehyde up to 92 percent within eight hours. The ancient Diamonite Fossils are from California, USA. Its ultrafine pores is 5,000-6,000 times smaller than charcoal. This means it has strong adsorption capacity.

The PuHua air purifying wall also provides many health benefits to the occupants. About 1,000-5,000 negative ions can be released per cm<sup>2</sup>, effectively killing mites and block allergens. This allows humidity control, thus preventing condensation and moulding. "It also saves energy by heat insulation. The thermal conductivity is only 10 times that of conventional mortar soil," said Citrine.

Other advantages of PuHua air purifying wall include sound absorption and fire safety and fire retardant. The product has been installed in several projects such as houses, restaurants and offices around Singapore.

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

## Dongpeng Holding Co Ltd

Dongpeng Holding Co., Ltd., a leading manufacturer of ceramic tile and sanitaryware in China, exhibited in BEX Asia 2015.

Founded in 1972, Dongpeng has been committed to the ceramic industry for more than 40 years, which represents a culmination of strong experience and capabilities. The company's trend-leading products have been widely used in high profile landmark projects all over the world, including Beijing Olympics Venue, National Center for the Performing Arts in Beijing, Empire State in the USA, and Building, etc.

Backed by its trend setting products and innovative business model, Dongpeng brand has developed as an industry iconic brand. Dongpeng brand value has reached to 13.235 billion RMB and ranks number 1 in Hong Kong as the "Symbolic Brand in China's Architecture Ceramic Sector" and listed into the "Top-500 Most Valuable Brand in China" for 10 consecutive times. According to China Industrial Information Issuing Center, Dongpeng is one of the largest ceramic tile companies in China in terms of retail sales value and also one of the largest industry participants in the high-end ceramic tile segment in China.

As the industrial symbol, Dongpeng has participated in drafting of more than 11 ceramic tile and sanitary ware product standards. Dongpeng has 299 national patents and brought to market numbers of innovative manufacturing technologies. The company has strong leading advantages in terms of ceramic products, including porcelain tiles, ceramic tiles, glazed porcelain tiles, curtain wall tiles, sanitary ware, micro glazed porcelain tiles and etc.

Dongpeng has registered internationally in nearly 30 countries and regions, including the United States and the United Kingdom. Its products have been recognised for its high quality and are sold internationally in 66 countries. Its largest export destinations include countries with high quality standards as Canada, Australia and the United States. In 2013, as the only Chinese ceramic brand, Dongpeng was invited to attend the world's top ceramic fairs – Cersaie in Bologna, Italy.

Dongpeng mission is to provide designers and consumers with low-carbon, environment-friendly, high-tech and customised ceramic tile and sanitaryware products. **For more information, visit [www.dongpeng.net](http://www.dongpeng.net).**



Dongpeng Holding Co Ltd's booth at BEX Asia 2015.

## Ping Form Pte Ltd



Andrew Lee Yu Heng (left), Project Director, Ping Form Pte Ltd and his colleague.

Ping Form Pte Ltd is a specialist in Acoustic System, Fire-rated System False Ceiling, Drywall Partition & Wall lining. The company also specialises in Custom Made Furniture, Cabinetry for hotels, offices, shops and homes. With over 20 years of experience, the company has earned a solid reputation and a proven track record in the building and construction industry in Singapore.

In addition, the company is committed to sustainability. It has embedded sustainability practices in its manufacturing process. "We use a lot of natural resources such as natural plaster, water from the rivers and our products are environmentally friendly. They are easily disposable and disintegrated," said Andrew Lee Yu Heng, project director, Ping Form Pte Ltd.

Recently, the company achieved the Green Label certification, putting it in the league of environmentally friendly companies in Singapore.

**For further details, visit [www.pingform.com](http://www.pingform.com).**

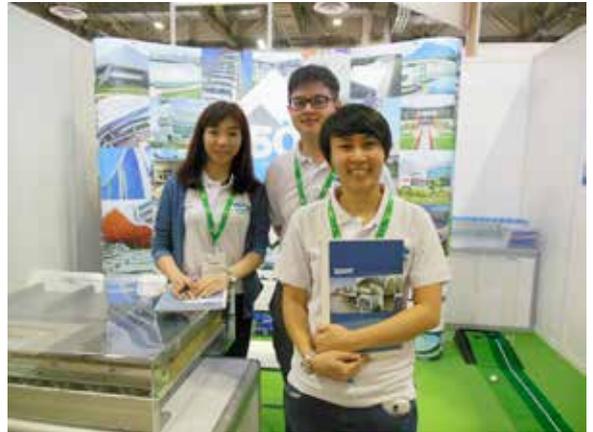
## NS BlueScope Lysaght Singapore Pte Ltd

NS BlueScope Lysaght Singapore Pte Ltd took part in BEX Asia 2015 for the first time and showcased its steel building products and systems to the visitors. On display were LYSAGHT® LOCKED SEAM® and LYSAGHT® BONDEK® II.

"We came to show how our products and systems can contribute to sustainable building design," said Karen Chong, technical specification specialist, NS BlueScope Lysaght Singapore Pte Ltd.

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

**Karen Chong, Technical Specification Specialist,  
NS BlueScope Lysaght Singapore Pte Ltd  
(at the front) and her colleagues.**



## Welden Pte Ltd



**Willie Tan, Business Development Director, Welden Pte Ltd posing with the IPC PFE eight-generation of new digital control, high performance elevator energy saving unit.**

Welden Pte Ltd partnered with Innovative Power Canada (IPC) to showcase the latest IPC PFE the 8th generation elevator energy saving unit at BEX Asia 2015. The PFE has proven installation worldwide.

Early in 2005, IPC designed the first elevator energy saving unit. After 10 years of continuing research, improvement and quality control, the latest IPC PFE the 8th generation elevator energy saving unit is compatible with all kind of elevator brands found in the market.

Generally the existing elevator system or technology that run with braking resistors, variable frequency drive (two-quadrant inverter) and 3-phase AC motor will consume more energy. And this excess energy consumption is attributed to the heat dissipated from the system. Moreover, in order to maintain an optimal running temperature, an additional temperature control measures is in place to cool down the elevator system. So this requires more energy to feed the air-conditioner.

Specifically designed and built for elevator, the 8th generation IPC PFE is smarter for its improved software feature. It will effectively regenerate the braking energy (remove the heating source) and feedback to the power grid without disrupting the quality of the power. Apparently as the temperature

of the elevator system is reduced, the energy feeding the air-conditioner will also reduce accordingly. Due to the fact that the system runs in optimal temperature without frequently overheating the electrical components, the elevator system will last longer, reduced maintenance frequency and result in a better elevator system lifespan.

The PFE's installation will not tamper with the elevator system control motherboard and it is only connected in parallel with the elevator braking unit, and this mean 2 braking units working together. There are built-in protection features that in the event of abnormality detection, the PFE will cut off and allow the existing original braking to run as per previous standard operation.

According to Willie Tan, business development director, Welden Pte Ltd, in the old days, building planners do not consider elevator energy savings due to the extra cost involved. "Traditionally, people do not aware of the possibility of energy savings from existing elevators. Our system now will give the traditional elevators in existing buildings a chance to become green and achieves its energy saving objective," said Mr Tan.

He added that IPC PFE provides a way for a two-quadrant VFD (variable frequency drive) to work like a four-quadrant VFD. Also, since the regenerated energy has been diverted away from braking resistors, it can be used for other devices such as air-conditioner, lighting, water supply system and other devices. The company's on-site result shows that IPC PFE has saved energy up to 15-40 percent per elevator system. That depends upon the speed, traffic and trip frequency of the elevator.

"For over 10 years, IPC is committed to energy saving and our aim is to bring energy efficient products to help the world," said Mr Tan.

For more information, visit [www.welden.biz](http://www.welden.biz).

## Westin International Corporation

Westin International Corporation is a world leading company specialising in innovative exterior coatings. Through years of research and development, Westin has created a spray to imitate genuine stone-like surface replica. Called 'Spraystone', the replica is resilient, resistant to harsh abrasions, static-free, and easy to maintain.

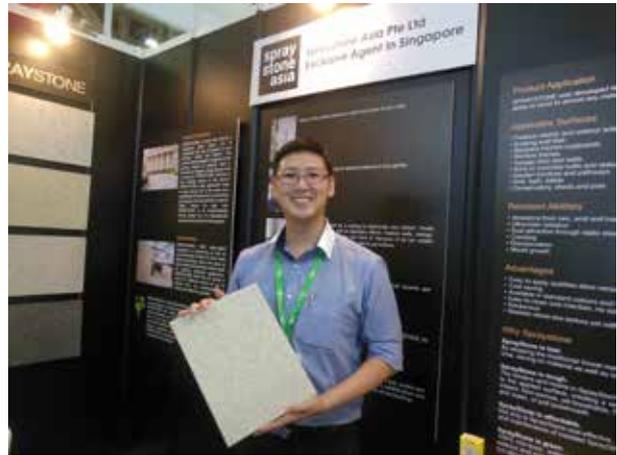
At BEX Asia 2015, Westin International was represented by Spraystone Asia Pte Ltd, its exclusive agent in Singapore. Commenting on the launch of Spraystone, Malcolm Yeo, director of Spraystone Asia Pte Ltd said: "Spraystone is a brand new product in Singapore which allows you to incorporate the look of granite to your building's interior and exterior. This product was developed in response to the growing market of coatings used in architectural designs."

Easily applied with a spray gun, Spraystone produces a near flawless replica of real granite. Spraystone's easy application helps to save energy and at the same time, aesthetically enhances the surroundings by giving the look and feel of nature's beauty without the high cost. Applications of the product include interior and exterior wall surfaces; existing wall tiles; bespoke kitchen cupboards; window frames; garage door and walls; brick or concrete walls; garden furniture and pathways; sink, bath and toilets; and conservatory, sheds and pots.

"Spraystone is a 100 percent eco-friendly product as it is manufactured using only water-based bonding agents," he added.

Spraystone's 100 percent water-based ingredients is cost-saving as well as environmentally-friendly. Its technology allows one spray to emit multiple sand granules which create an authentic stone-like appearance. Spraystone Asia Pte Ltd carries a total of 24 different colours to choose from. Customisation of colours and effects is also possible, said the company.

For further details, visit [www.spraystoneasia.com](http://www.spraystoneasia.com).



Malcolm Yeo, director, Spraystone Asia Pte Ltd holding a Spraystone coated tile at his booth.

## Fellert

At BEX Asia 2015, Fellert showcased their 'Even Better Acoustical System', an acoustical plaster, which is designed as a monolithic alternative to traditional suspended ceilings and wall installations. Made from recycled ultrafine, recycled cotton fibre, the system has many winning features and advantages.

"It can absorb sound up to 85-90 percent; it is long-lasting; and easy to repair," said Nicolas Fulton, international sales director,

Fellert. The finished appearance of the Even Better is limited only by your imagination and offers a variety of finishes and colours to make your creative vision for ceilings and walls a reality. Fellert offers architects and designers a proven method for achieving peak acoustic performance in even the most demanding environments. It is an ideal choice for any space requiring acoustic high-fidelity, including galleries, museums, offices, churches, hospitals, courtrooms, schools and any place where design and sound is important.

The flexibility of Fellert Acoustical Plaster makes installation and maintenance easy. "You just need to mix the powder with water and then spray the mixture on the wall," explained Mr Fulton. Unlike hard rigid plaster coatings, Fellert Even Better Acoustical system allows for easier repairs of the surface.

Because Even Better Acoustical System is made of recycled cotton, the building's structure will not have any cracks when the building moves under structural stress. "Its unique interwoven cotton structure can flex and bend with building movement," said Christer Tilk, international sales director, Fellert.

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



Christer Tilk, international sales director, Fellert International AB (left) and Nicolas Fulton, international sales director, Fellert USA with the Fellert Acoustical Plaster.

## E2XPlantPRO – E2X Technology Pte Ltd

Following on its from vast experience as leading Integrated Energy Saving Solutions providers, E2X Technology offers E2XPlantPRO: a highly specialised control and optimisation solution dedicated to chiller plant rooms. Created with an in-depth understanding of all thermodynamic variables involved in managing plant room HVAC equipment, E2XPlantPRO enables optimum control of every device and its integration into a single synergistic system. E2XPlantPRO is one of the best investments to harness the energy saving potential offered by HVAC chiller plant room equipment, driving real energy saving routines and effectively reducing your total energy bill.

The real strength of E2XPlantPRO lies in its advanced system architecture, based on the following 5 pillars:

### 1) Performance feed-back loop operating logic

At the core of the E2XPlantPRO engine is a performance feed-back loop; a continuous cycling control algorithm, which instantaneously detects changes to the plant, and modifies its actions accordingly. Each control phase (Measure, Verify, Diagnose and Adjust) is managed by specific software modules.

### 2) Complete control and accessibility

Making information easily available for all professionals involved on-site and remotely.

### 3) High configurability: “design once, apply many” approach

Configuration by means of a powerful wizard, which supports parameter changes and helps to eliminate possible errors in programming.

### 4) State-of-the-art technology

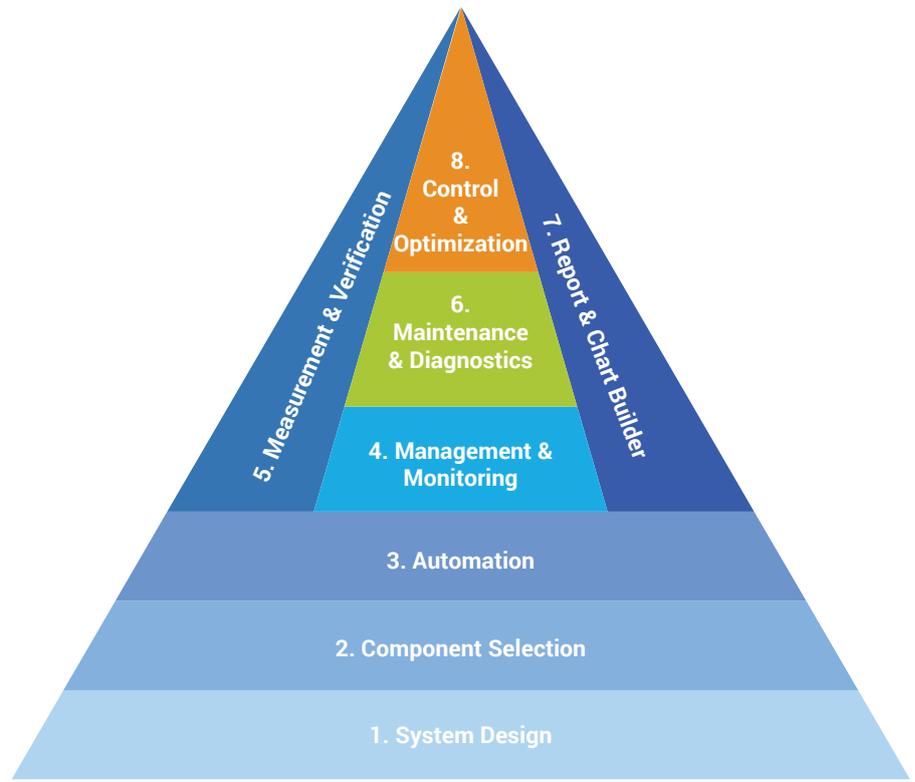
E2XPlantPRO communicates bi-directionally with the BMS through a high speed IP based communications network. It can receive scheduled and set-point modification commands from the BMS and provides complex control & optimisation routines, as well as detailed feedback information, from plant room HVAC equipment in a transparent way.

### 5) Modular approach

The E2XPlantPRO software has a modular structure. Each of the three main functional layers of the system (“Management & Monitoring”; “Maintenance & Diagnostics”; “Control & Optimisation”) is supported by “Measurement & Verification” and “Report & Chart Building” software modules, both of which ensure the highest visibility at each layer of control.

User friendly graphic interface makes it intuitive to monitor and easy to set the parameters. E2XPlantPRO can operate stand-alone or can be natively integrated into a new or existing BMS.

For more information, visit [www.e2X.asia](http://www.e2X.asia).



E2XPlantPRO Chiller Plant Pyramid

## ■ MCE Asia 2015 Exhibitors

### Panasonic Air Conditioning Systems

Panasonic Air Conditioning Systems launched the future standard bearer in energy efficient VRF air conditioning solutions, the FSV- Eco Extreme (EX), at MCE Asia 2015.

The FSV-EX is a new Variable Refrigerant Flow (VRF) system that has been engineered to take energy efficiency to an entirely different level. It introduces this paradigm shift in performance by delivering:

- The highest EER rating in all outdoor capacities
- High efficiency for part load operations that match the customer's actual environment of use
- High durability with strong cooling power even when operating at high ambient temperature and is designed with an extended operation range of up to 52°C

Some of the innovations that allow the FSV-EX to change the game and dramatically reduce energy costs are:

- **New dual large capacity all Inverter Compressors**

It has been designed with new all-Inverter compressors that can be independently controlled to deliver highly flexible performances. As a whole, the system has been designed for efficiency – for extremely precise inverter control.

- **Enlarged heat exchanger surface with triple-surface**

The heat exchangers have been redesigned to maximise surface area. Compared to current dual-surface models, there is no division of space and the area for the heat exchanger is much larger, thus allowing for improved heat transfer.

- **Newly designed curved air discharge bell-mouth for better aerodynamics**

The new curve shape of the bell mouth (air outlet of VRF) with integrated top and bottom assures smooth exhaust flow. This provides more air-volume with the same sound level, and less power input at the same air volume!

- **Superior Oil Recovery Management**

Unlike a regular VRF system that wastes energy by recovering oil from indoor units, the FSV-EX features a 3 stage oil recovery design that's able to minimise the frequency of forced oil recovery thus leading to reduced energy costs and sustained comfort.

During the exhibition, Panasonic launched the new FSV-EX using advanced 3D projection mapping technology to illustrate the system's main features and benefits.

Other than the cutting edge FSV-EX, Panasonic also showcased its other commercial solutions such as the Panasonic Smart Cloud, Gas Heat pump VRF system and Air Handling unit kit (AHU kit) for VRF applications, Multi-Split Room Air Conditioner and Single-Split Room Air Conditioner.

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



Speaking to visitors, Mr Mamoru Yoshida, President of Panasonic Air-Conditioner Company said: "I want to give the Air-Conditioner Company a clear mission and make our major goal becoming a specialised air conditioner company that benefits society. We will develop products that fully address customer's needs and expand our business."

### BITZER Refrigeration Asia Pte Limited

BITZER participated in the inaugural MCE Asia 2015. Managing Director, Rob de Bruyn, said supporting this inaugural event in Singapore was an important development for BITZER's activities in Asia. The forum proved very fruitful to meet and discuss the benefits of applying BITZER products with the many Mechanical Services Consultants attending the exhibition, he said.

BITZER colleagues from China, Middle East, India and Headquarters in Germany were at hand to discuss various interests with their respective OEM customers visiting the exhibition.

Key products on display were the latest BITZER ECOSTAR LHV7E and LH-E series air cooled condensing units, built to comply to the latest stringent energy standards in Europe. Mr Jan Grubel, Product Expert Reciprocating Compressors & Condensing Units,

gave an insightful presentation during the Seminar Series, entitled "BITZER ECOSTAR Condensing Unit - Cutting Edge Technology"; the latest BITZER Intelligent, systematic cooling unit offers latest features to ensure the ECOSTAR remains best in class product for efficient low energy consumption.

The cooling capacity of the BITZER ECOSTAR series can be adapted by the speed control of the compressor and condenser fan in order to best suit actual cooling demands required.

### New BITZER ECOSTAR Condensing Unit

The cooling capacity of the BITZER ECOSTAR series can be adapted by the speed control of the compressor and condenser fan in order to best suit actual requirements. Precise temperature control increases the efficiency of the refrigeration system and reduces operating costs.

By using an EC motor in the new LHV7E, in this generation of ECOSTAR, BITZER has increased the efficiency of the fan, while reducing power consumption. It therefore already exceeds the requirements of the Ecodesign Directive for energy related products (the European Union's ErP Directive), which went into effect in 2015. The company has also optimized condenser efficiency with an Improved mini channel heat exchanger. This technology makes it possible to significantly reduce the refrigerant charge, while the sound-optimized airflow ensures a low noise level.

The cooling capacity of the air cooled BITZER ECOSTAR condensing unit can be adapted by the speed control of the compressor and fan in order to best suit actual requirements. It fulfills the requirements of the Ecodesign Directive for energy-related products (ErP), which went into effect in 2015. The integrated monitoring system constantly monitors the refrigeration system and automatically takes countermeasures if these are reached.



### New LH-E Condensing Unit

The new universal LHE condensing units are ideal for a whole host of applications across all climates. With placements ranging from 4 to 221 m./h, the integrated reciprocating compressors of the tried-and-tested ECOLINE series boast exceptional efficiency and modern capacity control. The condensing units fulfill

the efficiency values required by the EU's Ecodesign Directive, which came into effect on January 1, 2015. In order to fulfill these more stringent requirements, BITZER has replaced the alternating current (AC) fans with electronically commutated (EC) fans featuring permanent magnets in the air cooled LHE condensing units.

The LHE condensing units with ECOLINE reciprocating compressors fulfill the EU's 2015 Ecodesign Directive. That is because BITZER has further developed its air cooled condensing units and integrated both highly efficient ECOLINE compressors and cutting-edge EC fans. The innovative mini-channel heat exchanger, applied to the new series, also increases the capacity of the condensing unit without increasing the size. Because the LHE series is compatible with lots of different refrigerants, it offers users exceptional flexibility.

For more information, visit [www.bitzer.de](http://www.bitzer.de).

## ITAP SpA



Izzat Hannoush, sales manager, ITAP SpA with the company's wide range of valves and fittings.

ITAP SpA, one of the leading production companies in Italy of valves, fittings and distribution manifolds for plumbing and heating systems, took part in the inaugural MCE Asia 2015 for the first time.

Founded in Lumezzane (Brescia) in 1972, ITAP offers ball and gate valves, check and foot valves, bibcocks, build-in valves and supply stops, and washing machine valves, as well as accessories for solar heating systems. It also provides heating products, such as valves and lockshields for radiators; zone valves and manifolds; pre-assembled manifolds in brass; accessories for manifolds; air vent valves and safety valves; thermostats and chrono-thermostats; and pre-assembled manifolds in stainless steel. In addition, the company offers fittings, including multi-fit fittings; Vx fittings for polyethylene pipes; mechanical fittings and accessories. The company's production is 100 percent Made in Italy.

The company is very focused on quality and it is proud to offer products bearing the approval of numerous international certifying bodies. ITAP products have obtained approvals by more than 30 certification bodies from all over the world.

According to Izzat Hannoush, sales manager, ITAP SpA, the company will work towards making better products, which are lightweight, contains less lead and more environmentally friendly. He added that the company was already working with some dealers and distributors in Singapore for the past 25 years and it aims to increase its market presence further.

For further information, visit [www.itap.it](http://www.itap.it).

## ebm-papst SEA Pte Ltd

The ebm-papst Group is one of the world's leading manufacturers of fans and motors. Since it was founded, the technology company has continuously set global market standards. These developments range from electronically controlled EC fans, to aerodynamic improvements to fan blades, to resource-conserving selection of materials, including biomaterials. ebm-papst SEA Pte. Ltd. is the local subsidiary of the ebm-papst group and has been operating in Southeast Asia for almost twenty years. From its headquarters in Singapore, it has established successful subsidiaries in Indonesia, Malaysia, the Philippines, Thailand and Vietnam.

Visitors to the MCE Asia 2015 were able to learn about the high energy saving benefits of ebm-papst EC fans. Heating, ventilation and air-conditioning (HVAC) and other air moving applications account for up to a third of a building's total carbon emissions. Therefore it is fundamental to any building's energy efficiency that the right fan is selected.

Traditional HVAC systems will use AC motors, which have been shown to be highly inefficient with a peak efficiency of as low as 30 percent. By switching to an ebm-papst EC fan, peak efficiencies can be delivered and result in a reduction in energy consumption. This not only delivers on the cost savings that all firms crave, but also helps to meet the requirements of Singapore's dedication to a sustainable built environment.

An EC motor is a brushless, permanent magnet, synchronous motor. ebm-papst was one of the first fan producers to recognize the economic and ecological advantages offered by EC technology and was instrumental in promoting its development. Today ebm-papst claims to offer the largest range of EC fans and motors in the world.

Commenting on the company's participation, Coleman Lim, Managing Director, ebm-papst SEA Pte Ltd said: "We have been in Asia for the past 20 years and products are designed for lower energy consumption to meet the needs of the sustainable built environment in the region."

For its strong focus on sustainability, the company had won a prestigious award. "We won the German Sustainability Award in 2013/2014 and this year we became a member of the Singapore Green Building Council," said Iris Pioch, head of marketing, Southeast Asia, ebm-papst SEA Pte Ltd.



Cartsen Ederer (left), technical director, ebm-papst SEA Pte Ltd and Iris Pioch, head of marketing, Southeast Asia, ebm-papst SEA Pte Ltd at their booth.



Coleman Lim, Managing Director, ebm-papst SEA Pte Ltd

The product showcase at MCE Asia 2015 focused on new and high efficient products, which include:

- The innovative range of AxiCool fans, which set new standards on the evaporator and cooling unit market. Not least thanks to the level of system efficiency achieved through the perfect interaction of the individual components. The compact axial fan is extremely easy to handle and offers outstanding efficiency throughout whilst making sparing use of resources. Convenient service, ease of operation and excellent air throw round off the spectrum of positive features.
- The AxiTop diffuser with its extreme noise reduction potential. The AxiTop is mounted on top of an axial fan, converts a large part of the dynamic airflow energy into static pressure by reducing air speed. This greatly improves efficiency, which in turn reduces operating speed and noise. Visitors were able to convince themselves of the straightforward mounting on existing wall plates, which permits simple retrofits on existing systems.
- The air inlet grill FlowGrid, which is an add-on for axial and centrifugal fans and has been recognised for its design quality by the German Design Award. It drastically reduces noise levels in refrigeration, ventilation and air-conditioning technology.
- The new range of RadiPac EC centrifugal plug fans, developed specifically for air handling unit manufacturers. A single RadiPac fan unit includes all components required for ventilation demands at a smaller overall footprint. RadiPac EC centrifugal fans score highly with their excellent characteristics – from high efficiency to easy handling and low space requirements.
- The RadiCal centrifugal fans with backward-curved blades: the new standard in ventilation and air-conditioning. Radical features include both noise minimisation and a further decrease in energy consumption. The RadiCal impeller with backward-curved blades is made of fibreglass-reinforced plastic, enabling an aerodynamically optimised shape that cuts the noise level in half and reduces power requirements significantly.

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

## DOOR CLOSERS | GOOD CREDIT CORPORATION

Good Credit Corporation (GCC) has dedicated huge efforts in glass hardware and system development since 1981. GCC provides variety of great solutions for users to create wide, fresh, and comfortable spaces. The company's product range covers from houses, office buildings, restaurants, hotels to department stores, and GCC always supply brilliant solutions for any spaces with great user experiences. In the coming five years, GCC expects to see more hydraulic door closers to be used in every door panel. To help the architect's elegant design and to ensure safety, GCC door closers undergo very strict tests before they are released in the market.

GCC Concealed Overhead Door Closer ODC-960 is specially designed for the hotel room entrance. The loading capacity is up to 80 kilograms with the door width 1,100 mm to meet the hotel demand in every country.

Furthermore, GCC Heavy Duty Cam system double action floor spring GTS-750 & GTS-750V (EN1~EN4 adjustable) can take the door weight 150 kilograms. The heavy duty floor spring GTS-800 can take the door weight 300 kilograms and the closing force is adjustable from 25~54Nm.



GCC concealed overhead door closer cam action ODC-960



GCC heavy duty cam system double action floor spring GTS-750/750V & GTS-800

For more information, e-mail [gcctw@ms7.hinet.net](mailto:gcctw@ms7.hinet.net) or visit [www.gccintw.com.tw](http://www.gccintw.com.tw).

CAVIWALL | SLIDE & HIDE SYSTEM (S) PTE LTD

SLIDE & HIDE System (S) Pte Ltd is a Singapore-based company and a leading manufacturer of concealed sliding door system since 1995. Its brand, SLIDEHIDE is well known amongst developers, architects and interior designers, as a solution to overcome a tight space room layout design. Over the years, SLIDEHIDE had been installed in Singapore, Malaysia, China, Japan, Dubai, Sri Lanka and other Asian countries.

Adding to the range of products, CAVIWALL is the latest Do-It-Yourself (DIY) system. The main advantages of this product are that, it is lightweight, rugged and is recyclable, which is ideal for projects in remote areas. Another important feature and advantage is that the casing can be customised on site to suit last minute reduction in structural opening and lintel height.

Both SLIDEHIDE and CAVIWALL series offer a wide range of designs to suit any wall construction method, for example, brickwall or partition stud wall and can be used in areas such as bathroom, kitchen, walk-in wardrobe, etc.

For more information, please contact SLIDE & HIDE System (S) Pte Ltd at tel (+65) 6369 9988, fax (+65) 6369 9977 or email [enquiry@slidehide.com.sg](mailto:enquiry@slidehide.com.sg). You can also visit [www.slidehide.com.sg](http://www.slidehide.com.sg) for more details.



ALUMINUM & UPVC WINDOWS AND DOORS | NF BUILD MART GROUP CO LTD



Founded 2007, NF Build Mart Group Co Ltd specialises in the design and production of aluminum and UPVC windows and doors. The company’s products are sold both in China and exported to many countries such as USA, Germany, Britain, French, Italy, India, and to the Southeast Asian region.

NF Build Mart has 40,000 square metres of production area and its plants are equipped with automatic CNC equipment. The company carries out intensive management, data management, scientific management and conforms to the standard of ISO9001:2008, ISO14001:2004 and GB/T28001-2001.

NF Build Mart manufactures a wide range of door and window products such as casement doors and windows, folding doors and windows, sliding doors and windows, hung doors and windows, villas’ windows and many other types of doors. The company has applied for 60 patents in appearances, structures and functions. NF Build Mart also provides custom made door and window systems.

Its products have been installed in various places such as houses, hotels, villas, apartments, offices and etc.

Over the years, NF Build Mart has become a leading brand in the window and door industry in China. The company has more than 1,000 distributors covering provinces, city and county in China. In 2012, NF Build Mart was awarded “Aluminum and UPVC Door & Window Leading Brand” by “China MenDu.Com.”

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

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STOCOLOR TROPICLEAN SOLAR | STO

**StoColor TropiClean Solar is an intelligent paint developed for tropical climates to achieve clean and cool facades.**

StoColor TropiClean Solar is specially formulated to withstand the harmful effects of urban, tropical environments such as heat, rain, humidity, algae, air pollution and dust, which accelerate building facade degradation. This unique coating keeps your facade dirt-free for as long as possible, and helps reduce your building's surface temperature too.

Thanks to Zirconium (Zr) enriched fillers combined with surface temperature reducing NIR (Near-Infrared Reflection) pigments, StoColor TropiClean Solar is scientifically proven to effectively reduce surface temperature and provide enhanced dirt-resistance protection. The result: a superior coating that provides a cooler building and prolongs the intervals between repainting.



Conventional pigments have been replaced by NIR pigments in the new StoColor TropiClean Solar facade coating. Thanks to this special technology, dark surfaces stay up to 20 percent cooler when compared to conventional coatings.

**Surface-active and functional** – StoColor TropiClean Solar reflects a large proportion of the near-infrared range of sunlight, acting as a heat shield against solar heat, particularly in the case of low lightness values. Conventional pigments have been replaced by NIR pigments in the new StoColor TropiClean Solar facade coating. Thanks to this special technology, dark surfaces stay up to 20 percent cooler when compared to conventional coatings. As temperature peaks caused by solar radiation are kept below 70°C, the facade is also protected against crack formation.

Reducing surface temperature, cooling the building and thus delivering lower cooling cost is not the only benefit.

The special coating also stays harder in hot climates, does not become soft and tacky, and is therefore much less likely to attract dirt compared to conventional coatings.

**Brilliant and intense colour shades**

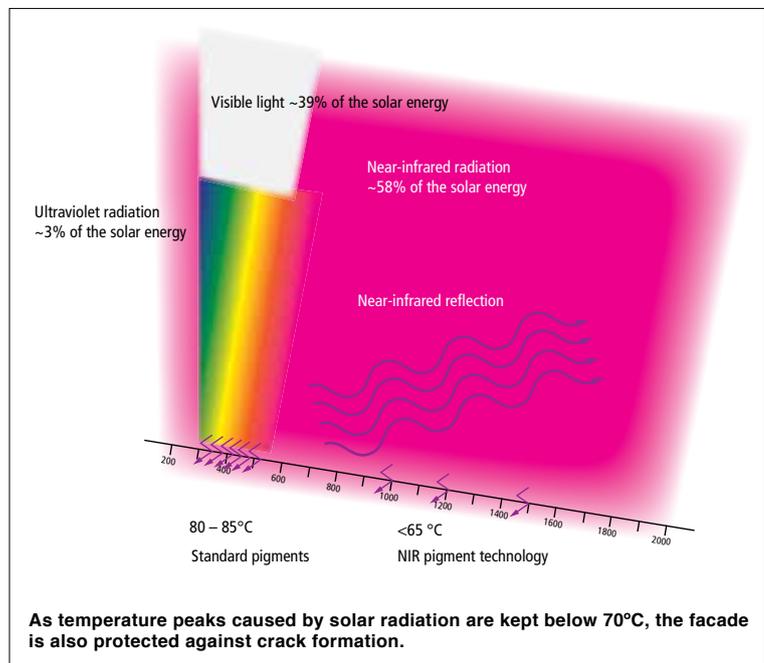
– StoColor TropiClean Solar is part of iQ-Intelligent Technology, the paint generation of the future. The intelligent facade paints can do more than just conventional paints.



iQ-Intelligent Technology means improved function through optimised product properties. The result: more protection, durability, colour stability, and sustainability; facade paints for the future.

**Robust and reliable** – This keyword unites proven all-round products. StoColor TropiClean Solar can be employed for a wide range of applications and features excellent water repellency, adhesion, durability, and ease of application.

For more information, contact Sto SEA at tel (+65) 6453 3080, fax (+65) 6453 3543, e-mail [info.sg@sto.com](mailto:info.sg@sto.com) or visit [www.sto-sea.com](http://www.sto-sea.com).



## ECO RESILIENT FLOORING | THE FLOOR GALLERY SINGAPORE

Eco resilient flooring is one of the latest types of flooring products in the industry, which is highly waterproof, termite proof as well as having eco quality. As there is a wide range of resilient flooring products in the market with different variations of product trademarked names or category names such as high end, luxury or words like ultimate, it is therefore important for home owners to understand the benefits of such resilient flooring. One thing in common is that such flooring products are using patented click system (either Unilin or Valinge) for the installation and they can be simply grouped together as click resilient flooring.

Here are three other similar properties the homeowners can look into a typical click resilient flooring.

### 1) Waterproof

As the product is not made of wood or compressed wood, the flooring is naturally waterproof. Therefore such kind of resilient flooring is often recommended for wet areas such as the kitchen, the laundry area, house basement, areas below air-conditioners as well as the dry bathroom areas.

### 2) Termite Proof

Another similar properties for all click resilient flooring products is their termite proof feature. The flooring material is inedible for termites therefore it is good for homeowners who are living near forested landed areas.

### 3) No Hollow Sound

The installation of click resilient flooring products follow the surface contour of the subfloor, what it means is that, it create no hollow sound but a silent subtle sound when stepped on. Below are some other properties that will differentiate a good quality click resilient flooring to a normal quality click resilient flooring.

#### a) Thickness and Wear Layer

A good quality click resilient flooring has at least a thickness of 5.0mm as well as a wear layer of 0.5mm. Such size and dimension will contribute to a more solid feel for the flooring when stepped on.

#### b) Scratch Resistant Layer

All click resilient flooring products are not scratch proof but the good ones may have better scratch resistant properties. Though homeowners with pets can consider the flooring due to its easy maintenance and waterproof features, they have to know that such flooring is only scratch resistance. Good quality click resilient flooring has patented wear layer system to enhance the scratch resistant properties.

#### c) Tested For Indoor Air Quality

Good quality click resilient flooring products are tested for high standards in terms of air quality. Therefore, homeowners have to look for click resilient flooring products with accreditation such as Floor Score or other test results for better air quality especially in enclosed areas.

#### d) Eco Renewable

Quality click resilient flooring can be renewed and reused over and over again which helps to save costs as well as create a



eco renewable for the home owners. What it means that, the home owners can bring along the resilient flooring when one moves home. Look for quality click resilient flooring with relevant eco labels.

#### e) Slip Resistance and Impact Resistance

Good quality click resilient flooring has relatively higher slip resistance as well as impact resistance. Therefore it enhances safety at home.

Bespoke eco resilient flooring has all the properties of a good quality click resilient flooring as above, with its focus more on the eco friendly feature of the flooring in terms of production as well as the usage. In summary, home owners have a wide variety of click resilient flooring choices to choose from in today's market, therefore irregardless of the numerous names given by the flooring distributors on this type of flooring, it is therefore important for them to choose the right quality of click resilient flooring products for their homes or commercial properties.

#### f) Singapore Green Label Certified

Eco resilient flooring by The Floor Gallery is claimed to be the first click resilient flooring product in Singapore which obtained the Singapore Green Label. This shows an advancement in green technology as compared to most existing click resilient flooring products.

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

HIGH-TECH & GREEN WINDOW AND DOOR PRODUCTS

BAUTEK

BAUTEK is a venture enterprise in Gyeonggi-do, Korea, that produces high-tech window and door products with the European system. The company's long-term vision is growing to be a green-energy specialty company that provides a wide range of products from energy savers to energy production equipment.

**ELIV – uPVC System Louver**

This product ensures complete and easy open/close feature under diverse weather conditions by providing an excellent Thermal Insulation, Efficiently Blocking Rainwater and Air, Durability, Easy open/close Operation, Delicate Design and Improved Ventilation. Especially, since unit structure (T30) of the company's louver is multi-applied, it can be used with a variety of profiles for doors and windows made of any materials (plastic, aluminum and wood). Furthermore, it can be easily optimised, installed and replaced under any circumstances.

**Advantages of ELIV**

1. Excellent Thermal Insulation - Synthetic resin (uPVC) material and barriers with multiple air layers compose the uPVC louver and ensure excellent thermal insulation.
2. Efficiently Blocks Rainwater and air - The rainwater cover on the bracket and the EPDM gasket between the upper and lower uPVC louvers prevent leak and improve air tightness.
3. Durable and Semipermanent - Reinforcement beams exist inside and the five-fold structure including fixing bolts, wedges, and holders improves the wind pressure resistance



and prevents slates from missing.

4. Easy open & close operation and delicate design - Gear-driven type enables open & close operation with small force and fine adjustment is possible. The European style is applied to the handle to ensure delicate design; the handle length is adjustable to allow easy operation.
5. Improved ventilation efficiency - Wind speed is fast in the streamline design similar to aircraft wings; the ventilation efficiency is improved.

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

UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEMS

EATON

Buildings play a key role in our impact on the environment. By 2050, global demand for energy in buildings is projected to increase up to 60 percent, according to International Energy Agency. Eaton's Green Building systems and solutions support sustainable building infrastructure and automation. The company's products help to minimise the impact on the environment and reduce costs at all levels. For example, Eaton's Uninterruptible Power Supply (UPS) systems can help customers reduce electricity consumption in large datacenters and critical IT equipment.

To help businesses increase their energy efficiency and sustainability, Eaton provides quality backup power, Uninterruptible Power Supply (UPS) which can prevent up to 50 percent less power loss compared with traditional UPS, overall reducing the costs associated with energy and operations.

**Eaton 9395 UPS**

The Eaton 9395 UPS significantly improves energy efficiency and sustainability, while offering a much smaller footprint than legacy systems. Operating at greater than 94 percent efficiency, the 9395 requires less power, which in turn creates cooler operating conditions. This translates to reduced facility air-conditioning requirements, while extending the life of UPS components and batteries. Even more, the 9395's Energy Saver Mode (ESM) enables the UPS to maintain excellent input THD without the use of input filters, enabling 99 percent energy efficiency.

Conversely, most competitive products must rely on input filters, which lower their efficiency rating. The use of sustainable materials and highly efficient manufacturing technology in the design of the 9395 has resulted in the lowest UPS lifecycle carbon footprint on the market, with 80 percent less energy required for production and testing. The 9395 also offers the smallest footprint in its class – 50 to 60 percent less than competitive units. For more information, visit [www.eaton.com](http://www.eaton.com).



Eaton 9395 UPS

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NOYA THATCHED ROOF TILES

XIAMEN NOYA MANUFACTURING & TRADING CO LTD

Noya thatched roof tiles are made of synthetic resin and still meets the green requirements. It is an ideal material for roof decoration.

Noya simulation thatch tiles have the following features. It can be matched into a variety of grass colours and can withstand strong wind and rain. The tiles can be easily installed and after installation, no maintenance or replacement is needed.

Noya thatched roof tiles can emulate a variety of shapes, dome, roof slopes and other requirements. The tiles have a long lifespan of 10 to 20 years.

Applications of Noya thatched roof tiles include: hotels located in gardens, zoo, theme parks, restaurants or bars in the outdoor pavilion, spa resorts, parks and scenery, resorts, bus stations, recreation pavilion, high-end residential buildings, villas, museums, seaside bars, beach grill bar, water sports pavilion, tropical-style venues and so on.

The colour of the tiles will not fade. This is because it consists of a special process made imitation of natural grass (straw) and tiles. It is the best imitation of natural thatched roof decoration materials as it has beautiful colours, it is elegant, lightweight, rust-proof, durable, fire resistant, fungi-free, and easy to install.

Noya thatched roof tiles is available from Xiamen NOYA Manufacturing & Trading Co Ltd. For more information, visit [www.noyabuildingmaterial.com](http://www.noyabuildingmaterial.com).



Noya Thatched Roof Tiles



Noya Thatched Roof Tiles used in a hotel project.

ACOUSTIC PARTITION SYSTEM

ADVANCED WALL SYSTEM (S) PTE LTD

Advanced Wall System (S) Pte Ltd has been providing acoustic partition system for the last decade in Singapore. The company, which started as a dealer for international brand partition system, is now known as AWS. It has become a familiar and established name in the corporate world.

The centre of the company's product concept is to seek design excellence – from the concept to the smallest detail, precise engineering requirement, countless testing and not forgetting aesthetics. AWS is now proud to introduce its own proprietary partition system called "CRISTALLO". CRISTALLO is an award-winning product in the SME Prestige Award 2014. Through years of on site experiences and extensive research & development, CRISTALLO was developed specially for projects in Asia with fast-paced office fit-out environments.

CRISTALLO is different from the traditional dog bone joint, which requires adhesive application. The "clip on" polycarbonate is designed to hold

glass panel together without dependence of any adhesive. It solves the skilled labour tight situation in many developed countries where silicon joints have to be applied by experienced skilled workers. This often results in variation of silicon work when manpower is over stretched in jobs that happen in the same period of time.

"We developed this product to eliminate the use of silicon to joint glass. We can also install glass horizontally without using aluminium frame," said Glen Tew, General Manager, Advanced Wall System (S) Pte Ltd.

**Advantages of transparent polycarbonate strip:**

- 1) Glass dry joint
- 2) Easy to install
- 3) Clean & neat detail
- 4) No adhesive required
- 5) Durable & recyclable
- 6) Designed for 10mm to 12mm thick glass
- 7) Collection of vivid colours available



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

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ITS 915 CONCEALED CAM-ACTION DOOR CLOSER | DORMA



DORMA Singapore has started production and launched ITS 915 in Region Far East, the new cam-action concealed door closer in the DORMA product range. ITS 915 is designed and manufactured to high quality standards, performing in compliance with EN1154 and carrying the CE marking.

The ITS 915 concealed door closer can be installed directly onto the door or frame, making it virtually invisible, and it can be used on almost any type of door with a thickness of 45 mm or more.

The compact design of the closer body and slide-channel allows the door to maintain a high level of integrity. At the same time, it offers all the benefits of advanced technology with the proven heart-shaped cam, which ensures that the closing and opening of the door are easy to use for everyone.

ITS 915 provides the reliability and quality which all DORMA products are well-known for.

### Advantages of ITS 915

#### 1) For the trade

- Hassle-free ordering and inventory management – the closer body (non-handed) and the slide-channel arm assembly are packed in one box for ease of handling.

#### 2) For the installer

- Ease of installation – Compact concealed cam-action (non-handed system) door closer with an identical mounting position for both EN 3 and EN 4.
- Easy and separate adjustments of the two closing speeds.

#### 3) For the architect/specifier/designer

- Unblemished appearance of prestige doors – concealed installation.
- Innovative engineering and design by DORMA.
- Compliance with statutory requirements for a barrier-free building (C UL US Listed and tested to EN 1154 by the State Material Testing Authority, Dortmund, Germany).

#### 4) For the user

- Barrier-free with DORMA Easy Open technology – Easy access for all users and for children, seniors, and the physically-disabled.
- Convenience and Comfort – optional hold-open device and cushioned limit stay.
- Enhanced protection against vandalism – concealed installation.

For more information, contact Benedict Kwok at email [benedict.kwok@dorma.com](mailto:benedict.kwok@dorma.com) or visit [www.dorma.com.sg](http://www.dorma.com.sg).

## MONIER® HORIZON™ 8 CONCRETE ROOF TILE SOLUTION | MONIER®

Modern houses often sport low pitch roof designs, commonly known as the flat roof design. This design is regarded as being contemporary and stylish, as well as minimalistic. The new Monier® Horizon™ 8 Roof System claims to offer the complete solution for low pitch roof design, delivering the lowest pitch level in the market at only 8°. This means that roof designs for houses can be even more flexible and go even lower or flatter. Aesthetic outlook on modern houses aside, concrete roof tiles are known for their durability, high heat reflectivity and low noise. All these attributes ensure occupants a more comfortable, enjoyable and environmentally friendly living space in Malaysia's tropical climate.

The Monier® Horizon™ 8 roof tile is modern, trendy and highly functional. At a competitive price, this new roof system is poised to offer even more roof design choices for home owners. There are three colours to choose from and they are Black, Brown and Grey. Choose from the types of angular fitting series available such as Angular Ridge, Angular Ridge End, Verge, Monoridge, and Monoridge-End to complement the different types of roof design. High quality surface material is used to maintain its colour stability and consistency even after an extended period.



The new Monier's Horizon Tile 8 Concrete Roof Tile Solution engineered for roof pitch as low as 8 degrees.

### The new Monier's Horizon Tile Colour Palette.



Black



Brown



Grey

### Features & benefits

#### 100 percent leakproof

Monier® roof system is durable and 100 percent leakproof. Even with rain falls aplenty in Malaysia, house owners do not need to worry about leaky ceilings and wet floors. Additionally, concrete actually gains in strength over time as they get harder through further carbonization by absorbing CO<sub>2</sub>. This gives concrete tiles an edge over other types of roofing in terms of durability and longer lifespan. Monier's roof tiles are made to prevent fungus and algae growth on the surface. They are not easily damaged and allow walkability.

#### Low noise

The natural properties of concrete tiles provide outstanding acoustic performance for a quieter indoor environment. The mass of the tile body and the batten system absorb sound waves, helping home owners to save on heavy investment for huge insulation. What's more, the sounds from rain, wind or street traffic are less noticeable with a concrete-tiled roof, which translates to more uninterrupted sleeps in a peaceful ambience.

#### Superior heat reflection

Monier® Horizon™ 8 Roof System effectively reflects radiant heat and has higher residual heat dissipation which prevents large build-up of residual heat to ensure residents a cooler indoor environment and maximum comfort of living. The surface materials for roof tiles, underlay and passive heat removal design applied for this roof system remove excess heat through self-ventilation.

Monier® Horizon™ 8 Roof System is the ideal and environmentally friendly roof system for low pitched roof. **For more information, visit [www.monier.com.my](http://www.monier.com.my).**

DYSON AIRBLADE™ HAND DRYER | DYSON



The Dyson Airblade™ hand dryer range is the result of nearly three years of intensive R&D by a team of 125 Dyson engineers and an investment of £40m. Dyson has over 100 engineers in its in-house motors team and continues to invest £10m a year into motor R&D. The latest Dyson digital motor cost £26.9 million to develop. In its lifetime the digital motor inside a Dyson Airblade™ hand dryer can move around 162,000 m<sup>3</sup> of air – enough to fill 26 million balloons<sup>1</sup>.

It all began with James Dyson himself, who wondered if a vacuum cleaner really needed that bag. Later, Dyson engineers discovered hand dryers could dry hands without heat and fans didn't have to use blades to cool you down.

At Dyson, the company has been challenging the conventions of existing technology for over 20 years. Dyson's engineers use this approach every day – helping them invent new machines that simply work better.

**Airblade™ technology has evolved**

The latest Dyson Airblade™ hand dryers are powered by the Dyson digital motor v4 – one of the world's smallest, fully integrated 1600w motors. Its small size and power density are what have made Dyson's latest hand dryer technology possible. Dyson Airblade™ hand dryers are fast and hygienic. They cost less to run than other hand dryers and paper towels. They are also better for the environment.

Dyson Airblade™ hand dryers dry hands hygienically in just 10 seconds. They have a touch free operation, use HEPA filter and contain a lifetime antibacterial additive, which can help prevent the growth of bacteria.

They are engineered to last. They have been repeatedly tested for durability and resilience to physical and chemical abuse. They have also been exposed to real-life environments to ensure that it can withstand the pressures of high usage. They are robust and vandal-proof.

**Dyson Airblade™ hand dryers are Hygienic**

Warm air hand dryers use 60 year old technology that relies on evaporation to dry hands. Washroom air, which can contain germs from faeces, is heated up and blown onto people's shoes, clothes and freshly washed hands.

Bacteria and viruses in washrooms can cause colds, flu, sickness, diarrhoea or worse. Dyson Airblade™ hand dryers, have HEPA filters installed as standard, which capture up to 99.9 percent of particles the size of bacteria and viruses in the washroom air. So hands are dried with cleaner air, not dirty air.

**Dyson Airblade™ hand dryers are better for the environment**

From cutting down trees, through chemical processes to disposal – using paper towels has a significant impact on the environment. Most used paper towels cannot be recycled. They have to be disposed of. Used paper towels, packaging and bin liner end up in landfill or an incinerator.

Dyson Airblade™ hand dryers produce up to 79 percent less CO<sup>2</sup> than some other hand dryers and up to 76 percent less than paper towels. Dyson Airblade™ hand dryers have a lower environmental impact across measures including carbon emissions and energy consumption.

With a five year guarantee, the Dyson Airblade™ hand dryer is built to last. Even so, many components are designed to be recyclable with negligible environment impact.

For further information, contact the Singapore Dyson office at tel (+65) 6479 5538 or visit the website [www.dyson.com.sg](http://www.dyson.com.sg).

<sup>1</sup> Based on standard nine inch party balloons.

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## INSULATED FIRE SHUTTERS | SKB SHUTTERS

SKB Shutters is a Malaysian-based roller shutter and steel door manufacturer since 1957. This year, SKB Shutters achieved a breakthrough and launched its new range of Insulated Fire Shutters that aims to address performance, durability and reliability with a fabric-absent design.

The earlier generation and presently still widely available insulated fire shutters are made of layers of fabric and steel - fabric serves the key properties of thermal insulation barrier and steel for fire resistance integrity. As building construction reaches its completion, the industry also begins to witness the immediate issues of product maintenance and longevity. This type of insulated fire shutters were showing signs of sagging below the ceiling level as soon as before the defect and liability period ends. Quickly the industry realises that product performance testing for integrity may not necessarily reflect its durability and reliability over time, especially when we are looking at useful life of buildings to be on average between 20-30 years. These defect conditions are mainly caused by the condensation accumulated above ceiling level which are also where most fire shutters are housed to conceal its appearance when not in use. Condensation source comes from services that run above ceiling through compartments such as water, gas, air-conditioning and etc. It can be easily expected that at such moisture levels, mould and bacteria growth may likely be the case affecting possible indoor air quality issues.



The panel shutter from SKB Shutters is an air-tight design to prevent direct heat transfer from one compartment to another on either side of the shutter. The steel panel construction is also sandwiched with insulation properties to limit heat penetration and extending the acceptable controlled temperature on the other side of the fire's point of origin up to three hours and reliable fire resistance integrity. Although product longevity and durability is not tested for conformance, the composition and material used to construct the shutters are steel, a durable metal property itself. Being a panel shutter, the surface deflection is minimal and aesthetically more flexible in design and concealing its appearance when not in use. For shutters that remains shut at most times, steel panels are more durable to environment change such as temperature difference and possible intentional modification e.g. vandalism. Aesthetically it is designed to mimic a permanent wall except that is operable and flexible in opening and closing the compartment.

Product longevity also touches upon product maintenance very closely and taken into account by users or owners you may say, as a parallel consideration. With a single operation mechanism versus double-roller mechanism (fabric and steel for each) for each complete unit of shutters also proves that additional effort is required to maintain the operating device. Key considerations were also given to reduce maintenance as panels should be easily replaceable when it is compromised by vandalism or environment change whereas fabric components are advised to replace the entire roll to ensure its performance. This proves to be costly and suggests extended down time for users as well. Hence, SKB Shutters is here to stay with the new generation steel-based insulated fire shutters specially designed for effective performance and durability.

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



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The core capabilities are the lamination of glass, edging, and the company's know-how of producing glass components with additional functional, and decorative elements. Applications for the company's glass include: glass facades, glass roofs, glass stairs, glass balustrades, safety glazing, all-glass constructions, interior design and custom-made glass units.

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



sedak's new insulating glass line. Photo: © René Müller Photographie; all rights reserved to sedak GmbH & Co. KG

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