# GreenPulse

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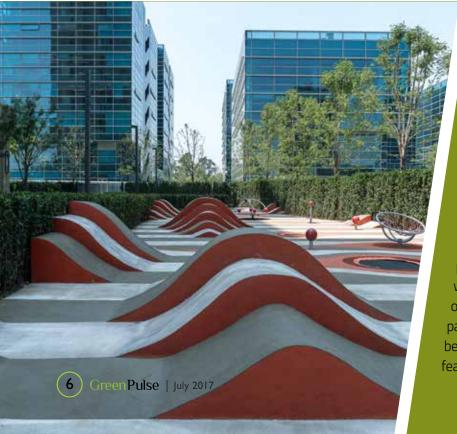












Located in the Changping district north of Beijing the project is defined by its stylish contemporary architecture and a landscape that subdivides into a trio of differently characterized zones organized around the requirements of three main programmatic areas: commercial/retail, office plus residential living. Aground plane pattern of shifting rectangular strips forms an aesthetic tactic that is rigorously applied forging a unique and memorable identity for the entire site. This pattern permits variations and differentiation within the three main landscape zones. The strips of this motif are versatile. They become either paving strips, planting strips or peel up to become bespoke street furniture, lighting and entry gateway features.





The dominant landscape zone of the project is the Central Park open space that acts as a green public heart. It sits adjacent to a series of sunken gardens which are framed by raised gardens planted with perennials, hedges and ornamental grasses. Along these edges people can sit and enjoy the sun or lounge on custom seating carefully placed among trees and grass of the Central Park. A long curving water feature, like a scythe, separates private residential in the south from the more publicly occupied buildings towards the north. Designed to utilize harvested, treated rainwater collected from the site, this large-scaled water element is a real focal point and creates enjoyable, playful and relaxing experiences for the local residents and public visitor alike.



## Cover Story

At the northern most perimeter, along Qui Bei Road Promenade is the Eco Zone: a linear landscape with an ecological function; collecting and absorbing storm water run-off from the impervious surfaces of the site. The mesic habitat provides a strong imageable landscape for the project along this major road. Seating, an area for strolling and one of the two sculptural gateway structures occur here and draw people into the green heart of the site. Adjacent to the Eco Zone, moving south into the site, office courtyard gardens and landscapes around the Headquarters Offices form a precinct of similar programs but uniquely designed and curated outdoor spaces.

Residential living has been placed at the southern section of the site to provide greater privacy. These landscapes offer smaller scaled garden rooms, semi-enclosed by hedges or feature walls to offer intimate outdoor amenities for more individual or family use and enjoyment. A dynamic, engaging and brilliantly colored children's play area with unique elements cater to multiple age groups and levels of ability with a variety of seating elements positioned in sun or shade.

Since LEED Gold accreditation was desired, several parameters were observed in the landscape strategy which primarily addressed efficient and sustainable urban drainage, proposed harvesting and re-use of storm water run-off plus reduction of urban heat island effect by increasing the green ratio. Furthermore, attention was paid to the microclimate of the different zones by screening north-westerly winter winds and welcoming southeasterly summer winds that are further cooled by passing over the large shallow water feature in the Central Park. These considerations contribute imbedded features, not necessarily obvious, to a place where people can live, work and flourish.

Location: Beijing, China
Client: Beijing Ningke Real Estate
Architect: RTKL
Size: 60 hectares
Status: Completed 2016
Photographer: Terrence Zhang



#### **Upcoming GREEN Events:**

#### The ECOCITY World Summit

12-14 July, 2017

Melbourne, Australia,

www.ecocity2017.com

#### Archidex 2017

19-22 July, 2017

KLCC, Malaysia

www.archidex.com.my

#### **ISAP2017**

International Forum for Sustainable Asia and the Pacific

25-26 July 2017,

www.iges.or.jp/isap/2017/en/

#### Global Compact Network Singapore Summit

29-30 August ,2017,

Suntec Convention Centre, Singapore,

http://gcnssummit.com/

#### **ICSD 2017**

5th International Conference on Sustainable Development

6-7 Sept, 2017

Rome, Italy

www.ecsdev.org

# **BEX**(Î) ASIA

#### Bex Asia 2017

12-14 September 2017

Marina Bay Sands, Singapore

www.bex-asia.com

# Mostra Convegno Expocomfort (MCE Asia)

12-14 September 2017,

Marina Bay Sands, Singapore

www.mcexpocomfort-asia.com

# APLD 2018 International Landscape Design Conference

13-17 September 2017

Toronto, Canada

www.apld.org/events

# 2017 APRU Sustainable Cities and Landscapes Conference

15-17 September 2017

University of Oregon, Portland, Oregon, USA

# 2017 Taiwan International Air Purification and Sanitation Show

18-20 October 2017

Hall 1, Taipei, Taiwan

#### **IGEM 2017**

11-13 October 2017

KLCC, Malaysia

www.igem.my/home

#### **IFLA World Congress 2017**

15-16 October 2017

Montreal, Canada

http://iflaonline.org

#### 21st National Conference

22-25 October 2017

RACV Royal Pines Resort, Queensland, Australia

www.eiseverywhere.com/ehome/234026

#### ISOCARP-OAPA/53rd ISOCARP Congress

24-27 October 2017

Portland, Oregon, USA

http://iflaonline.org/events

#### IFLA Asia Pacific Regional Congress

02-05 November 2017

Bangkok, Thailand

www.2017iflaapr.com

#### Urban Scape Asia 2017

09 - 11 November 2017

Singapore EXPO Convention and Exhibition Centre

• www.greenurbanscapeasia.com

#### Sustainable Brands'17 Bangkok

29 - 30 November 2017

Bangkok Thailand

#### Intersolar India 2017

05-07 December 2017

Mumbai, India

www.intersolar.in/en/home.html

# **Carbon Absorbing** Green Tower- Tao Zhu Yin Yuan project

Tao Zhu Yin Yuan project is a perfect fusion of Western and Oriental technology and culture. The tower is *directly inspired by the double-helix* structure of DNA, the source of life and the symbol of harmony, and reflects upon the idea of ultimate balance

The tower presents a pioneer concept of sustainable residential eco-construction that aims at limiting the ecological footprint of its inhabitants," Callebaut, the architect behind this design explains.

The 21-story apartment complex builds in ways for residents to reduce their energy consumption. The design utilizes natural lighting and ventilation. It also includes rainwater recycling and rooftop solar panels.

#### THE ECOLOGIC PHILOSOPHY OF THE PROJECT:

The tower is eco-designed to represent the perfect fusion between Climate, Landscape and Architecture. The sunlight, thermal and wind analysis have enabled us to improve the bioclimatic design of the project.

The landscape, designed by SWA from San Francisco, reinforces the spiralling movement of the tower by a continuum between the landscape balconies, the garden on ground floor and the seismic joint in circular shape all around the basement.

The central core has been designed to separate totally the vertical circulations into two housing units on the same level. This core is fixed (it does not pivot). But in order to ensure the rotation of the storeys floor by floor, it is surrounded by a (naturally lightened) horizontal circulation loop welcoming the entry foyer dedicated to each unit.





## Special Story

This buffer loop enables thus to set the main entrance always in the axis of each apartment and this despite of the 4.5 degrees rotation storey by storey.



THE MAIN COMPONENTS OF THE PROJECT:

The luxuriant forest and the glade:

The central core has been designed to separate totally the vertical circulations into two housing units on the same level. This core is fixed (it does not pivot). But in order to ensure the rotation of the storeys floor by floor, it is surrounded by a (naturally lightened) horizontal circulation loop welcoming the entry foyer dedicated to each unit. This buffer loop enables thus to set the main entrance always in the axis of each apartment and this despite of the 4.5 degrees rotation storey by storey. An alternative has been studied to build sky entry foyers directly around the cylindrical central core offering thus planted entry foyers with spectacular front view on the city of Taipei.

By level, the central core gathers 2 staircases, 4 high speed elevators of 24 people (1800 kg), 1 car elevators (also useful to carry enormous art pieces, luxury antique vehicles, or even huge pianos, etc.), 2 sky garages in glass and also all the vertical shafts for the main flows. All these vertical flows are covered by a huge bearing exoskeleton in reinforced steel.

#### The apartments, a maximal spatial and technical flexibility:

The apartments of 540 M<sup>2</sup> on average superimpose themselves under the shape of two planted twists unified around a central core. Each unit presents a storey structurally made with Vierendeel beams system behind glass facades only on even floors. All levels are linked at both ends by two spiralling mega columns covered by green walls. Each apartment is completely free of columns!

This structural concept inspired of the DNA chain enables a maximal flexibility in terms of interior layout. It ensures also an optimal visual permeability (indoor-outdoor connectivity) towards the suspended gardens of the balconies in foreground and the urban panorama on the background.

 The spatial flexibility is divided in 4 main typologies of storeys of 2 or 4 units:

Typology A: 2 units with curved living rooms around a central core.

Typology B: 2 units with living rooms stretched in the length behind the Southern façades.

Typology C: 2 units with living rooms set in bow by the panoramic storey.

Typology D: 4 units in duplex with living rooms benefiting from a double height.

In addition to these basic typologies, two huge clubhouses are set up on the roof floors so as to

respect the setback required by the building volume. Therefore, from the same standardized double helix (1.250 M2 floor area), the rotation of the storey and its customizable interior laying-out makes every level be a unique floor for each resident!

 The technical flexibility is obtained by the integration of the double deck and double wall concepts:

Spatially hyper-flexible, the constructive system proposed also a total flexibility to the level of technical distribution of the flows. Additional vertical flows are organized with "oblique shafts" along the glass façade. The system of double deck is integrated at each level under the shape of a double floor and a suspended ceiling. The network of the flows (rain water, used water, hot water, electricity, under floorheating, cool air, hot air, optic fibre, etc.) crossing the central core can thus irrigate without any difficulty on the horizontal way all the surface area of each storey. Moreover, the use of castellated beams will enable to take advantage of a maximal free height under ceiling. The interior partitioning of each apartment will be à la carte according to the wishes of each inhabitant. The double walls will compartmentalize the different rooms following the curved axes of the building by integrating also many useful storage spaces.

 The energetic efficiency is obtained by isolating façades with high performance named inter-layer or double-layer:

The tower is covered by linear crystalline façades repeating themselves at each level. The identical façades in every apartment will be pre-manufactured in factory to accelerate their setting-up during the works. A multilayer glass (airspace + Polyvinyl Butyral) or double layer façades with integrated blinds will be directly associated there in order to protect the interior spaces from the solar radiation in summer and to limit the calorific loss in winter.

#### The landscape balconies, green cascades of flowers, fruits, vegetables and aromates:

The landscape concept is to build a cascade of suspended gardens which cover the entire building. The tower becomes then a true vertical inhabited park, in a box of nature in the heart of the city! The selected essences will be preferably eatable in order to make each inhabitant gardener in its own vegetable consumption. Suspended orchards, organic vegetable gardens, aromatic and medicinal gardens will flourish the wide and deep jardinière along the global periphery of each apartment. Garden furniture, compost spaces

## Special Story

from waste to organic fertilizers, fuel cells, rain water tanks for the irrigation of plants, and ecologic nests for birds will be directly integrated in the design of these jardinières. In order to protect the organic substrate tanks from the heating coming from the solar radiation, the planting beds will be covered by a layer of Bethel white granite on honeycomb. The white colour of the tower will provide a new emblematic, pure and fresh identity.

#### The tower generates through its morphology in rotation two types of very specific landscape balconies:

- The balconies called ascending or positive: open-air, they benefit from a maximal sunshine and enable to cultivate their trees and shrubs of subtropical essences. Ideally living rooms should be set up on this side. It will be also possible to inlay photovoltaic sunshades at the extremity of the slab according to the wishes of each resident. Thermal captors could be also set up in order to produce sanitary hot water.
- The balconies called descending or negative: Covered by the superior level, they offer half shadowed relaxing spaces to cultivate flowers, vegetables, aromatic plants and falling and climbing species. Bedrooms are best set up on this side.

In bow of the housing storeys, are laid-out some outdoor garden bath sanctuary that coils themselves up in an alcove dig in the façade of each apartment. Different from the modern city built of concrete, glass and steel, the AGORA GARDEN tower appears in an urban centre as a green twisted mountain. Following the seasons, the planted essences (with persistent and deciduous leaves) will make its colours and its



abundance to evolve. Declining a camaieu of green in the summer, the tower will blaze with golden and bloody colours in autumn. In spring, it will be bloomed with thousands colours and will liberate floral fragrances from its fruit trees. The tower will then develop perfumed micro-climate for the very best welfare of its inhabitants!

#### 3.6. The photovoltaic roof and its gardens for phytopurification:

Located at 100 meters high, a huge photovoltaic pergola of 1000 m2 transforms the sun rays into electric energy which is directly reintroduced into the network of the building. Under this layer with bluesteel reflection, clubhouses are located on the roof surrounded by panoramic sky gardens. They filter and purify the rain water with the action of the plants in order to reinject the water by gravity in the distribution network of sanitary water. From this terrace, there is an extraordinary panoramic view of the 101 tower.

#### 3.7. The landscape basement naturally lightened and ventilated:

Contrary to the traditional car park of 2.10 meters, high under beams are plunged under an artificial shadowy light, so the car park of the AGORA GARDEN project benefits from the natural light. Actually, a light well integrating seismic joints makes the light and the fresh air fall to the levels of the basement. Thus, the car park and the connected facilities (swimming pools and fitness) are naturally ventilated. The main access of the basement is done by the Song Yong Road under a sculptural entry gate inspired by a spiralling leaf.

From the B1 level, both car elevators inside the central core can be accessed and can go very quickly to the sky garages located at the entrance of each apartment. The car park is designed in the existing perimeter of the current car park of the pre-existing AGORA GARDEN hotel in order to limit the works cost of excavation and foundations.

Only the South-West wall has been corrected so as to set up a laying-out with double helix. Actually, in the continuation of the rotating tower, the car park is drawn according to a circular plan with an ascending interior helix around the core in the direction of the exit and a second descending helix in the direction of the entrance. The whole set forms a continuous banister that welcomes more than 230 cars and 500 scooters. From slab to slab, the minimal height is 3.10 meters which improves comfortably the atmosphere of the

building of an immaculate white. It is important to notice that the structure of the tower weights through this car park in order to facilitate the descent of the loading of the whole building.

#### THE CHALLENGE A POSITIVE ECOLOGIC REVOLUTION

In the architecture of the project, the association of the living (Bios), the biotechnologies (renewable energies and nanotechnologies), and the NICT (New Technologies of Information and Communication), can meet the Chinese antique thought which always refused to separate the nature and the humanity that nourishes itself from it; the body from the spirit that did not exist without it. Avant-gardist on the theme of contemporary ecologic crisis, the Chinese thought prefers the relationships rather than the separated elements. The human being and its life framework depend from the fusion of the variables.

As humbly written by the influent sinologist, specialist in old China, Marcel Granet in the Chinese Thought in 1934: None opposes the human being from the nature; do not think of opposing them such as the free element from the determined element. The Chinese people only see in the Time and the Space a gathering of occasions and sites. These are interdependences, solidarities that constitute the order of the Universe. We do not think that the Man could form a reign in the Nature or that the spirit distinguishes itself from the material.

In the heart of Taipei, after having built the city on the landscape, after having then built the city on the city, it is now time for the landscape to rebuild itself on the city! In the perspective of ecologic resilience, this project must be considered as an abstraction of geography and a distortion of ecosystem. The project is a Nature built from the living that fights for the re-naturalisation of Ecopolis of tomorrow! This tower reveals strongly and surely the challenge of reinventing a new lifestyle for residential tower, that is self-sufficient, sculpturally unprecedented. It is a project absolutely unique in the world and charismatic drawing with poetry in the Oriental sky, a delicate superposition of sky villas with wide suspended private gardens.

Last but not least, it is a unique ecologic landmark, new symbol of sustainability at the bottom of the prestigious 101 tower!



TYPE: International Competition -First Prize Winner in November 2010

**CLIENT:** BES Engineering Corporation, Taipei

**CONTRACT LOCATION:** 

XinYin District, Taipei City, Taiwan

PROGRAM: 40 Luxurious Apartments + Facilities

**SURFACE AREA:** 42.335.34 m<sup>2</sup>

**DELIVERY: 2016** 

**CURRENT PHASE:** Construction Documents –

Below grade under construction **GREEN CERTIFICATION: LEED Gold** 

INTERNATIONAL DESIGN ARCHITECT: Vincent Callebaut Architectures, SARL Paris

LOCAL ARCHITECT: LKP Design, Taipei

**STRUCTURAL ENGINEER:** 

King Le Chang & Associates, Taipei

**LOCAL MEP ENGINEERING:** 

Sine & Associates, Taipei

**INTERNATIONAL INTERIOR ARCHITECT:** 

Wilson & Associates (WA), Los Angeles

**INTERNATIONAL LANDSCAPE ARCHITECT:** 

SWA, Sausalito, San Francisco

LOCAL LANDSCAPE ARCHITECT:

Horizon & Atmosphere (H&A), Taipei

INTERNATIONAL LIGHTING DESIGNER:

L'Observatoire International, New-York

LOCAL LIGHTING DESIGNER:

Unolai Design, Taipei

**GREEN CONSULTANT:** Enertek, Taipei

VCA'S TEAM: Emilie Diers, Frederique Beck, Jiao Yang, Florence Mauny, Volker Erlich, Philippe Steels, Marco Conti Sikic, Benoit Patterlini, Maguy

Delrieu, Vincent Callebaut

**MODEL MAKER:** Patrick Laurent

### Face to Face



MR TAI LEE SIANG CHAIRMAN, WORLD GREEN **BUILDING COUNCIL** 

Cities of Love Awards, the first of its kind, was conceived by Tai Lee Siang and Valeria Ang, who are also the co-authors of the book "Cities of Love". Green In Future had an opportunity to talk to Mr Tai on his views on the awards and its long term plans. Cities of Love Awards are looking for sustainable actions or initiatives in Singapore and Southeast Asia which have resulted in positive social, economic or environmental impacts.

Awards for sustainable issues are usually conferred on government or business leaders who have helped to implement large-scale transformations. Whilst important, they rarely show high levels of innovation, care and love for the communities around them.

Tai Lee Sang and Valerie believe smaller enterprises or individuals who are making a deeper societal impact should share in the glory too.

No project is too small, no step is too insignificant if your actions have made a positive impact in some way, they should not be discounted!

Submit your entry and get recognised for your hardwork!

Green In Future is honoured to be associated with the Cities of Love Awards as their media partner for COLA 2017 and will continue to render its support for all of their sustainable efforts.

Tell us briefly about your journey to promote sustainable living?



Although I was trained as an architect in my early years and we were well taught about passive architecture, sustainability was not found in our vocabulary. By

mid 2000s, the message of climate change gained momentum and I was increasingly made aware of the critical challenges. Passive architecture will not be enough to overturn the dire situation. There is a need to actively promote and educate people about sustainability. This is the background to why I started on this journey.



What was the inspiration to come up with **Inception?** 



The word Inception means beginning or commencement. Valerie, my wife, and I had always wanted to start a company that focuses on creativity and

sustainability. We believe that these two great forces

could bring about solutions and transformations. We would like to produce creations such as fashion, publications and initiatives that demonstrate creativity and sustainability. This gave birth to Inception.



Tell us about Cities of Love Book and the transformation to Cities of Love Awards 2017?



Cities of Love is the first book written by Valerie and I in 2016. It is a book about encouraging ground up action and rethinking about the notion of living in cities. The central idea is that

people must play an active role to enhancing our environment. The cumulation of individual efforts can bring about avalanche changes when coupled with strong governmental leadership and industrial participation. In promoting this idea, we found that the concept of Cities of Love Awards gels well with the book and it may serve as catalyst to bring about such an action.

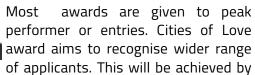
What made you to decide to do it in Singapore?



Singapore is a natural first stop. Given the nation's focus on clean and green, it is an ideal ground for people's involvement on social, economic and environmental fronts. With the strong

support from public, private and people sectors, we hope that we can kick off with a good start.

How will this award stand out from other awards which are given to sustainable projects and people associated?



applying a more lenient judging criteria to include entries that may be considered borderline by other awards. The idea is not to water down standards but to encourage new innovative ideas to flourish and develop further in the future.

In your Book you have mentioned about the 12 Ingredients for a sustainable and lovable city. Are the same ingredients applied for the judging criteria for the award?



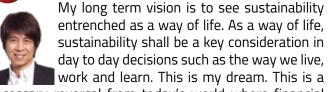
The 12 ingredients will not be applied directly as judging criteria for the award. However, entries that match any of the 12 ingredients will aid in the process of judging.

### How is the selection process?



All the entries will be forwarded to the jury panel for preliminary screening. Once screened, all award winners will be identified and entered into a second round. The second round is for the selection of highest level of recognition.

## What is your long term vision?



necessary reversal from today's world where financial considerations always outweigh other considerations.

#### How is your current role helping in this award journey?



My current role has given me insights and connections to an emerging world of sustainability activists and champions. Many of them toil anonymously and tirelessly to change the world that they

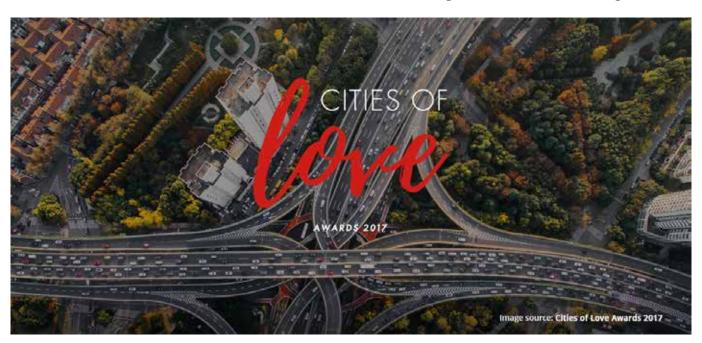
operate in. My wish is to use these contacts to help recognise many such champions.

#### Is this award a yearly one? What do you feel Singapore and the region can gain and learn from this award?

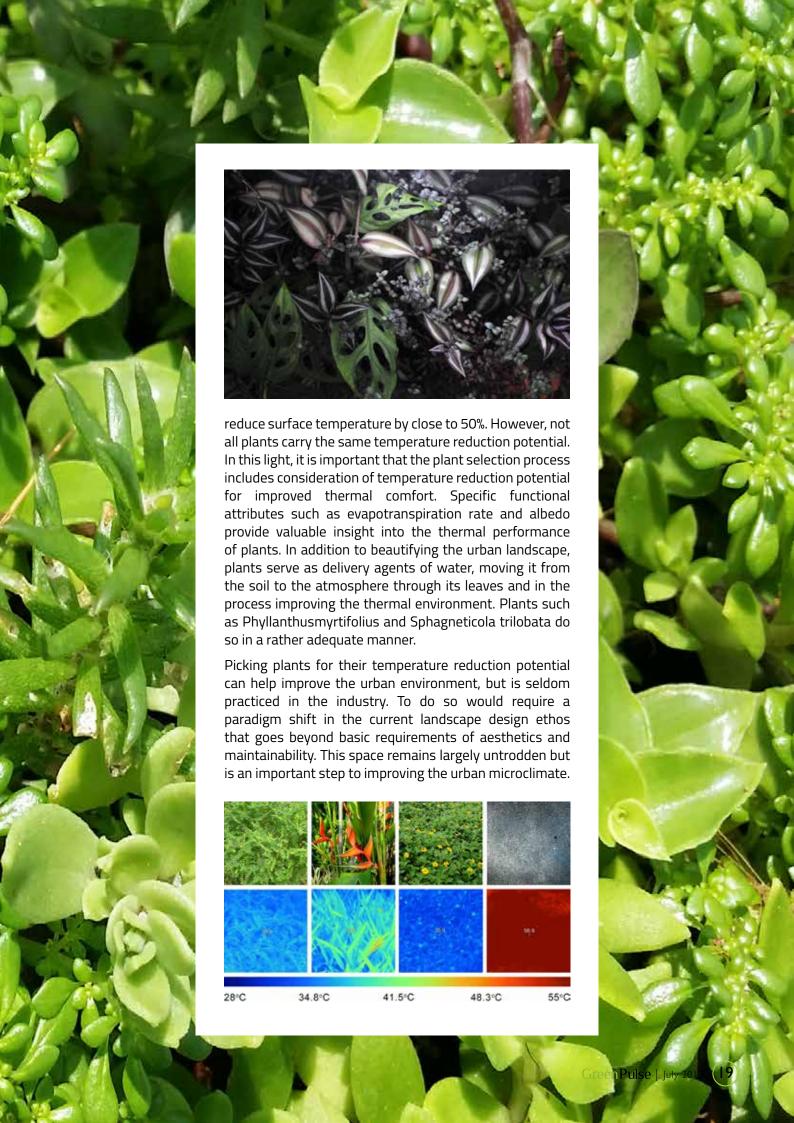


Yes, this is an annual award. Through this award, I hope that we can learn that sustainability is more than just a word. It embodies many good social, economic and environmental virtues and values. By

adopting these good values, societies can learn to be self-sustaining instead of self-consuming.







# Build Eco Xpo (BEX) Ramps Up 10th Anniversary Edition

to Catalyse Change in Asia's Sustainable Buildings Landscape





Build Eco Xpo (BEX) Asia, Southeast Asia's leading trade exhibition for the green building market, is set to welcome international visitors this September. Paving the future for a greener, sustainable living, the event will be held in conjunction with Mostra Convegno Expocomfort (MCE) Asia, a regional HVAC-R, water and energy exhibition, and the International Green Building Conference (IGBC), at Marina Bay Sands from 12 to 14 September 2017.

According to the UN, half of Southeast Asia's population will be urban residents by 2018. Cities account for 60 to 80 percent of energy consumption and generate more than 70 per cent of the human-induced greenhouse gas emissions. Shining the light on the latest solutions for building developers and managers, BEX Asia 2017 and its co-located event, MCE Asia, are expected to play host to over 450 exhibiting companies internationally and attract over 12,000 visitors across the region.

Promising an all-rounded experience for participants, BEX and MCE Asia will feature complementary seminars that will offer a mix of perspectives to support knowledge building and exchange and inspire innovation in the industry.

"Across Southeast Asia, it is heartening to see policymakers, building owners, developers and architects tackling the pressing issue of climate change head-on," commented Ms. Louise Chua, Project Director of BEX Asia at Reed Exhibitions. "Increasing awareness of the repercussions of climate change and translating this to action is

key in the fight against climate change. For 10 years, our goal has been to inspire the industry to innovate and increase adoption of sustainable practices and technology in their projects. The 10th anniversary edition of BEX Asia brings all industry stakeholders together for a meaningful conversation on driving the region's sustainability agenda in the next ten years."

"We have made remarkable progress in the last ten years, evidenced in the growth of green collar jobs and the increased scale of building construction events. BEX Asia has continued to evolve as a linchpin in the transformation of the building and construction industry. We are proud to bring the region's best minds together and provide industry players access to the latest tools, technologies and expertise required to propel sustainable building forward," added Chua.

New features continue to be added as BEX Asia evolves to keep pace with the industry. The 2017 edition will feature BEX-MCE Green Trails, a specially curated site tour designed to provide a deeper experiential understanding of green building practices and infrastructure in Singapore. The tour will take visitors to outstanding Green Mark Platinum buildings in Singapore, including BCA Skylab, CapitaGreen, Mapletree Business City and United World College Southeast Asia.

## BEX Asia 2017 – Endorsing change for a sustainable future

This year, BEX Asia looks ahead to push forth a change in mindset to accelerate Southeast Asia's green building developments. For the first time,

the use of cutting-edge technology such as virtual reality (VR) in building design and construction will be featured to encourage designers, developers and contractors to incorporate these tools in their future projects. With demos and VR games from AAF International AsiaPacific, Resource Data Management Asia and Nanyang Polytechnic, visitors are able to experience building functions in a fun and engaging way.

Topics such as sustainability in interior design, intelligent green buildings, Artificial and Intelligence(AI)forintuitiveandsmartbuildingswill also be key discussion areas at the event. Visitors can look forward to the Smart Web feature area that will showcase the latest technologies from Azbil Singapore, Creston and Synergix, designed to accelerate automation amidst technological advancements such as the Internet of Things. The area will feature intelligent solutions such as building and lighting controls, HVAC optimization, access & security controls and electrical network controls that provide actionable insights to help drive better building efficiency.

"As cities search for ways to manage their energy demand and carbon footprint, they must start looking to integrate technology to enhance the performance of building management and increase the energy efficiency of buildings. We are proud to be introducing Azbil's solutions at BEX Asia 2017 and contribute towards the sustainable development in the region," said Lim Cheng Yin, Deputy General Manager, Azbil Singapore Pte Ltd

Visitors at BEX Asia 2017 should also look out for an installation by G3 that leads the trend in smart buildings. Set within the exhibition floor will be the 'FINCH', a smart living space that is modular, relocatable and sustainable. Fabricated using cross-laminated timber (CLT), FINCH is adaptable and future-proof. It can be interconnected and stacked, creating limitless options for living and working spaces in any environment.

Cementing BEX Asia's position as a leading industry platform for innovations solutions, more than 193 exhibitors have already agreed to participate at BEX Asia 2017, including top names such as AAF, AGC, Ariston, Azbil, Big Ass Fans, Belimo, Camfil, Crestron, ebm-papst, Kansai,

Nippon, Parex, Reflex Winkelmann GmbH, ST Electronics, SMARDT, and Waldmann.

MCE Asia 2017 - A game-changing business solution to drive the trend towards Net Zero Energy Building (NZEB).

MCE Asia, the Asian edition of Mostra Convegno Expocomfort (MCE), Europe's longest running trade exhibition for environmentally-friendly comfort technology, is set to open its doors for the third year running.

Contributing to the region's green building agenda, MCE Asia will see top names such as ebm-papst Southeast Asia, AGC Asia and Reflex Winkelmann GmbH returning to showcase their latest innovations focusing on energy, efficiency for heating, ventilation, air-conditioning and ventilation.

These household names will be joined by first time exhibitors such as AAF Singapore, Kyung Dong Industrial and Yanmar Asia, with an array of solutions that represent next-generation fittings, fixtures and controls for sustainable buildings of the future.

Specially for HVAC-R & plumbing contractors, engineers, consultants, facilities managers and owners, MCE Asia will deep dive into topics such as air and water sustainability in healthcare and ways to design and manage energy-efficient buildings. The event also incorporates pavilions representing Canada, China, Japan, Korea, Taiwan, and Netherlands among others, bringing delegates closer to the opportunities and innovations in these markets.

"We are excited to participate in MCE Asia 2017 and share our latest innovations with the industry. As the number one Italian water heater brand, we appreciate platforms such as MCE Asia that allow us to explore business opportunities across the region. Through this expo, we get to demonstrate our wide range of water heating solutions to industry thought leaders, and potentially form partnerships to gear towards a greener, more sustainable building industry." said Richard Chua, South East Pacific Director, Ariston Thermo Group.