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LIVING THE GREEN LIFESTYLE

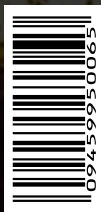
GIFT
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THE MAKING OF GARDENS BY THE BAY

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ISSUE 10



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UPFRONT

GREEN GIVING

With the celebration of the season's festivities, we receive gifts of all kinds. What is most important for these gifts is the thought rather than their values. However, we cannot deny the fact that we do consider the value of the gifts and the appropriateness of these gifts whenever we buy gifts for the season's festivities and celebrations.

With the recent emphasis on the green cause and living the sustainable lifestyle in a built environment, pushing for recycling, reducing and reusing as well as the use of energy saving home appliances, etc. I thought we should seriously consider giving green gifts instead of the regular gifts that are usually given at these festivities and celebrations.

A good start is to give a green gift is to give a plant as a gift this season of festivities and celebrations. It symbolises growth, love and care – mutually between the giver and the receiver. Think about this, and I am sure you will see the relevance and appropriateness of giving plants as gifts for the season's festivities as well as on special occasions like birthdays, anniversaries and for Mother's Day and Father's Day.

See page 51 and participate in winning a Terrarium to give away as a wonderful green gift for the season of festivities and celebrations.

Merry Christmas and a Happy New Year 2013! The team at Landscape Forum wishes you and all yours every success, happiness and good health in 2013.

See you next year!

JOSEPH HONG
Editor

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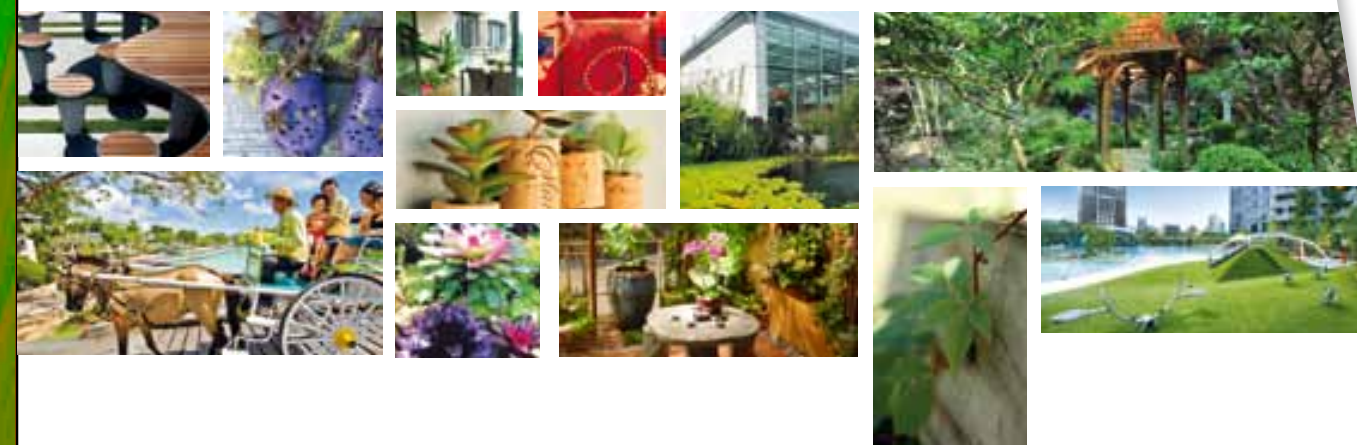
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**Win a
Terrarium**
See page 51



NATURAL LUXURY

[MEADOWS@PIERCE]





The Meadows@Pierce is built on land with much significance and history. Reading this extract from the National Parks Board (www.nparks.gov.sg) on the Lower and Upper Pierce Reservoir says it all:

"Pierce Reservoir was commissioned on 26th March 1912 by his Excellency Sir Arthur Young and was known then as the Kallang River Reservoir. This waterwork, together with Woodleigh, took 10 years to construct and upon completion, provided 9 million gallons of water daily. It was renamed as Peirce Reservoir in 1922 after Robert Peirce, the Municipal Engineer from 1901 to 1916. In 1975, it was again renamed as Lower Peirce Reservoir, after the new Upper Peirce Reservoir Park was constructed. Lower and Upper Peirce Reservoir Parks are known for their tranquil and scenic settings. This is where people can escape from the hustle and bustle of city life to just dwell in serene surroundings. Both parks are 6 hectares in area."

The development, sited along Upper Thomson Road that offers an amazing ambience and sight of the Lower Pierce Reservoir, boasts of a total of 475 units contained within three 5-storey blocks and one 14-storey block.

And within reach of two major highways, residents at the Meadows@Pierce can enjoy both the natural luxury of the foliage and greenery of the Lower Pierce Reservoir and the conveniences of modern-day urban living.

What is simply amazing is that the Meadows@Pierce is designed as two differing gardens: The rainforest at one wing and the meadow at the other wing with an elevated long garden doubling as a garden living room centrifugal to the two green spaces. The two gardens of the Meadows@Pierce seamlessly blend with the tranquil and natural scenic settings of the Lower Pierce Reservoir according residents a sense of living in a garden complemented with facilities that are found in condominiums.

"When conceptualising the landscaping of Meadows@Pierce, we began by exploring the concept of giving residents a sense of 'fairy tale' living in a garden amidst condominium built-forms and features," explained Huai Yan, the landscape architect instrumental in designing the landscape of Meadows@Pierce. "These collections of classic garden follies and features lend themselves as conversational pieces whenever residents are enjoying their merriment and relaxation in the gardens of the Meadow@Pierce."

WHEN CONCEPTUALISING THE LANDSCAPING OF MEADOWS@PIERCE, WE BEGAN BY EXPLORING THE CONCEPT OF GIVING RESIDENTS A SENSE OF 'FAIRY TALE' LIVING IN A GARDEN AMIDST CONDOMINIUM BUILT-FORMS AND FEATURES...

— HUI YAN, THE LANDSCAPE ARCHITECT INSTRUMENTAL IN DESIGNING THE LANDSCAPE OF MEADOWS@PIERCE.





Product Design Pte Ltd installed 60 sets of Ligman 'Syndy Oval' 20641 indirect light using Philips 1 X 70W Master Colour CDMT Elite lamp source within the precinct of the Meadows@Pierce driveway. With its excellent colour quality, which remains stable through the product's lifetime, the installation ensures light output maintains display brightness at the lowest operating costs with low heat generation. Residents of Meadows@Pierce will have enhanced comfort as they walk or drive along the driveway.

Drawing inspiration from follies found in gardens, and with designed structures for recreational activities, there are three differing sections dividing the condominium's landscape. These comprised the meadows, the rainforest and the middle space, designed as a communal garden for all to enjoy, that draws the two gardens together.

Created with 'building and plants' in mind, every garden landscape have the co-existence of natural plants and man-made structures to bring to fore the essence of a garden that will make the outdoors relaxing and inspiring. Eucalyptus, Melaleuca and other gum trees have been planted in the gardens as they are fast carbon sequestering trees that help to redeem the carbon footprints so created with the built-up environment.

MEADOW COURT – MEANDERING BROOK AND TREE HOUSES

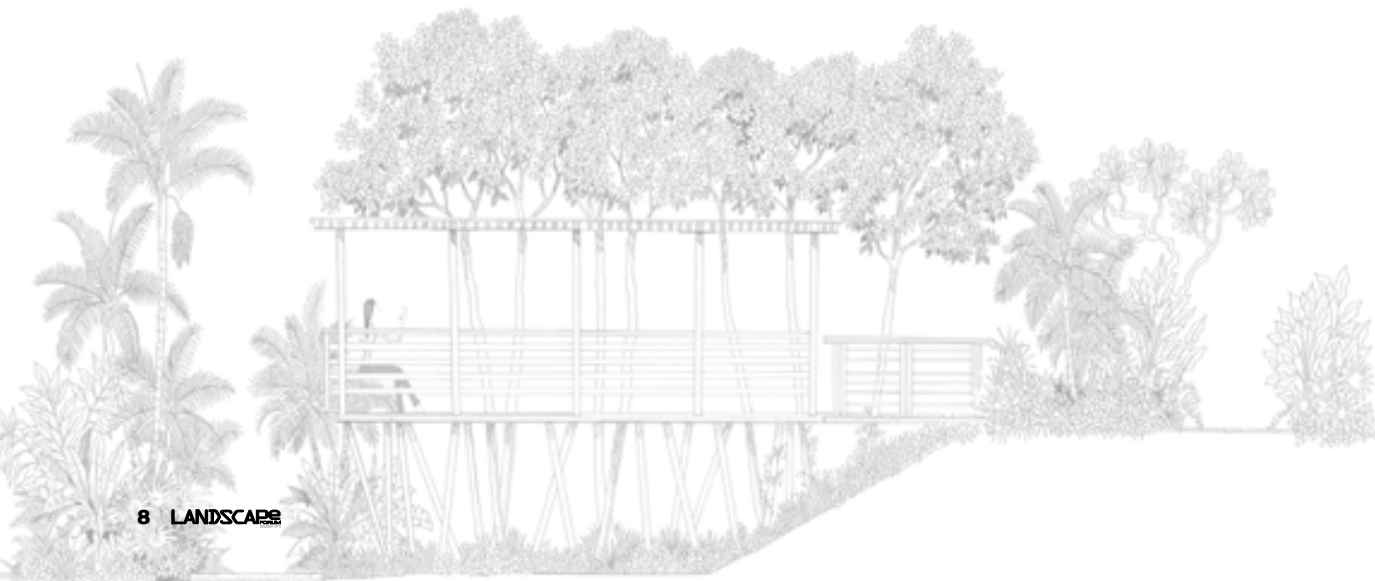
Dotting this garden of a meandering brook snaking through a meadow-like garden are the white trunks of the *Caesalpinia Ferrea* and the rainbow coloured trunks of the *Eucalyptus Deglupta* with the tree houses forming the personal enclosed space for the second floor units.

Circular lawn mounts enclose children playground and BBQ pits. These perfect green craters erupt from the ground to form a delightful sculptural topography.

RAINFOREST COURT – GIANT LILY HOP AND STARGAZER JACUZZI (GROTTO)

A unique feature of this garden is the long water feature particularly designed to echo the 50-metre Olympic-sized swimming pool in this rainforest garden. Resembling giant lily pads, these were created as stepping stones for kids to hop on.

Hoping to conjure the exotic and the mysterious realm of Henri Rousseau's paintings, the planting palette surrounding this rainforest court is made up of broad leave *Heliconias*, Bananas and Ginger with their spears of colourful blooms, sculptural *Plumerias*, giant leave *Alocasia*, a profusion of creepers (*Vernonia Elliptica*) over any concrete surface and a string of orchestra of differing palm trunks.





CONSTRUCTION RECYCLED MATERIALS, LIKE 'ECO-CONCRETE' WITH RECYCLED CONCRETE AGGREGATE AND CEMENT-REPLACEMENT-MILLED WASTE AND ECO FINISHES, HAVE BEEN USED EXTENSIVELY TO ENSURE ENVIRONMENTAL PROTECTION AND GOOD INDOOR AIR QUALITY.



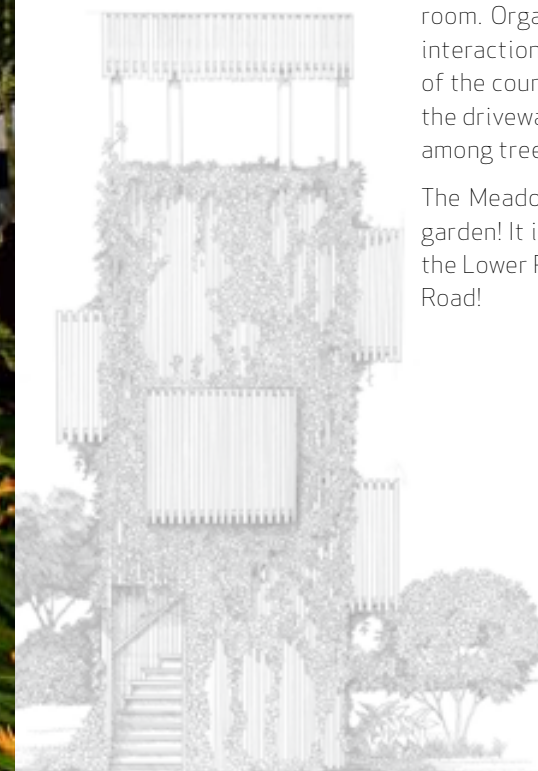
BIRD WATCHING TOWER (GARDEN TOWER)

Located at the forest edge of the condominium, the bird-watching tower's stairways are clad with wire mesh that encourages climbers (Thunbergia Glandiflora) to camouflage the tower into a 'green stairway' for that leisurely climb to watch the birds in their happy ways and enjoying their melodious chirping.

TREE CANOPY - OUTDOOR LIVING ROOM

Situated in the middle of the rainforest and meadow is the elevated linear garden court designed like a living room. Organic form table tops for those lazy afternoon tea interactions with other residents and friends line the middle of the court with dense canopies of trees that puncture from the driveway below offer shading and cozy ambience of living among tree canopies.

The Meadows@Pierce is certainly a condominium built in a garden! It is natural luxury that is the envy of many that visit the Lower Pierce Reservoir and driving along Upper Thomson Road!



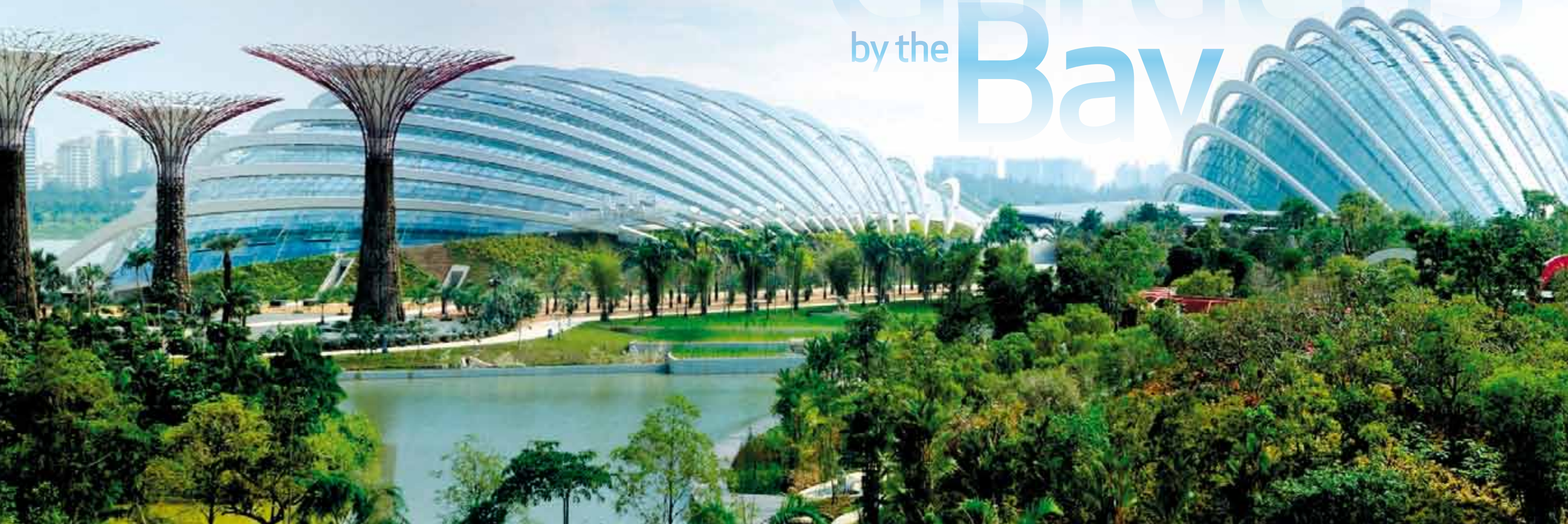
The Editor thanks Ong & Ong Pte Ltd (Architects) and the Salad Dressing (Landscape Architects) for their contributions and kind assistance towards this editorial feature on the Meadows@Pierce.

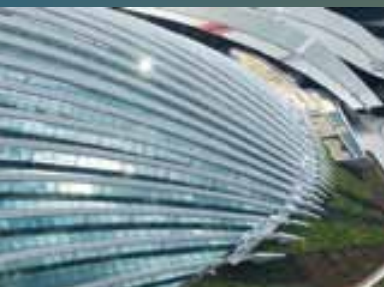
The complexity and matrix of grasses, wild flowers, plants and trees, the composition of these communities and their relationship to their respective context, make up the theme of a garden. The successful combination of stylistic elements will undoubtedly produce a sense of harmony yet intrigue, ornamental yet inspiring.

For Gardens by the Bay, it goes a step further by integrating diverse themed gardens, consisting of both natural and man-made elements, into a wholesome and complementary ecosystem that is wondrously sustainable.

GARDENS SHOULD INSTILL IN US AN AWARENESS OF ECOSYSTEMS, PLANT ADAPTATIONS AND NATURAL CYCLES. THE PLANTS AND ECOSYSTEMS OF A GARDEN USUALLY GIVE US AN INDICATION OF THE CHARACTER OF THE LANDSCAPE THAT THEY OCCUPY.

The Making of Gardens by the Bay





FROM IDEA TO REALITY

The genesis of Gardens by the Bay is an idea that has developed over the last four decades, as the concept of the 'Garden City' evolved into the 'City in a Garden'. Gardens by the Bay represents the culmination of the 'Garden City' initiative set in motion over 40 years ago by then Prime Minister Lee Kuan Yew, and is aligned with the 'City in a Garden' concept by underlining the recognition of the immense value that parks and gardens play as venues for our communities to bond and interact.

Following the inception, the next phase was to develop an aesthetically pleasing masterplan design that encapsulates the essence of what will enrich the lifestyle and recreational activities of both Singaporeans and visitors alike, while addressing today's pressing environmental concerns. This calls for

creativity and innovation, balanced with a sense of practicality and feasibility. Public feedback was also taken into consideration in finalising the masterplan for this national pride.

The end result is a horticulture haven, consisting of exotic species, towering vertical gardens, large collections of bromeliads and captivating displays of floral nuance to accentuate the significance of our ecosystem.

"Besides being aesthetically pleasing, the horticultural displays in Gardens by the Bay carry important themes and messages. Our aim is to entertain and educate visitors by transporting them into diverse botanical worlds and presenting the plant kingdom in a compelling way that illustrates its important relationship with Man and the ecosystem," says Mr Kenneth Er, Chief Operating Officer of Gardens by the Bay.

THE GENESIS OF GARDENS BY THE BAY IS AN IDEA THAT HAS DEVELOPED OVER THE LAST FOUR DECADES, AS THE CONCEPT OF THE 'GARDEN CITY' EVOLVED INTO THE 'CITY IN A GARDEN'.





OUR AIM IS TO ENTERTAIN AND EDUCATE VISITORS BY TRANSPORTING THEM INTO DIVERSE BOTANICAL WORLDS AND PRESENTING THE PLANT KINGDOM IN A COMPELLING WAY THAT ILLUSTRATES ITS IMPORTANT RELATIONSHIP WITH MAN AND THE ECOSYSTEM.

— MR KENNETH ER, CHIEF OPERATING OFFICER OF GARDENS BY THE BAY.

COOL CLIMATES

Named the Flower Dome (cool dry biome) and Cloud Forest (cool moist biome), the two glass biomes located in the Bay South area are cooled conservatories that represent the amalgamation of architectural beauty, environmental engineering and horticultural excellence. Replicating the cool-moist climate of the Tropical Montane region and the cool- dry climate of the Mediterranean and semi-arid sub-tropical regions, these regions are among the most threatened habitats in the world, with many plant species facing the threat of climate change and habitat loss brought about by human activities.

These iconic features were designed with the Gardens' landscape in mind, as well as the surrounding urban context. With sustainability as the key factor for the Gardens by the Bay, the composition of the two forms is based on a unique geometry to maximise light levels through the use

of spectrally selective glass and light sensor operated shadings in the conservatories for plants to flourish within.

With the application of thermal stratification, it ensures that cool air settles at the lower occupied zone and warm air is allowed to rise and vented out at high levels. This is enhanced by ground-cooling, which is achieved by chilled water pipes cast within the ground slabs. "With the use of cutting-edge technologies to provide energy-efficient solutions in cooling, it displays a concerted effort in plan and design for sustainable cycles in energy and water use," adds Mr. Kenneth Er.

Possibly the world's largest spanning grid-shell structures, their distinctive forms blend into the rich landscape of the gardens, featuring about 226,000 exotic plants from every continent (except Antarctica), amazingly sustaining a whole new world of horticulture in Singapore.





OUT OF THE 18, ELEVEN SUPERTREES ARE EMBEDDED WITH ENVIRONMENTAL FUNCTIONS. THESE INCLUDE PHOTOVOLTAIC CELLS TO HARVEST SOLAR ENERGY FOR THE LIGHTING OF THE SUPERTREES, AS WELL AS INTEGRATION WITH THE CONSERVATORIES TO SERVE AS AIR EXHAUST RECEPTACLES.



VERTICAL HORIZONS

Uniquely designed vertical gardens ranging from 25 to 50 metres in height, the Supertrees calls out an emphasis on the vertical display of tropical flowering climbers, epiphytes and ferns.

With a total of 18 Supertrees located at the Bay South, the massive heights of these plants allows the creation of vertical gardens that showcases tropical plants on a scale they have never been presented before in a garden. They counter balance the visual impact of the conservatories and create height in the Gardens to balance current and future tall developments in the surroundings.

While also marrying form and function of mature trees, the large canopies of the Supertrees provide shade and shelter in the day and lighting as well as projected media at night. Like dominant trees in the rainforest, they support a living skin of bromeliads, ferns and flowering climbers.

Comprising of four major parts, the Supertrees has a reinforcement concrete core in the inner vertical structure, trunk made out of a steel



frame, planting panels in preparation for the planting of living skin, and the canopy that will be assembled and hoisted via a hydraulic jack system.

Over 162,900 plants comprising more than 200 species and varieties of bromeliads, orchids, ferns and tropical flowering climbers, including *Tillandsia stricta* from Brazil, *Tillandsia fasciculata* from Panama, *Cattleya maxima* from Ecuador, and *Pseudorhipsalis* from Costa Rica, are planted on the Supertrees.

Out of the 18, eleven Supertrees are embedded with environmental functions. These include photovoltaic cells to harvest solar energy for the lighting of the Supertrees, as well as integration with the conservatories to serve as air exhaust receptacles. The plants are chosen based on a list of conditions, including their suitability for vertical planting, as well as their hardiness, lack of need for soil, and visual captivation.

AQUATIC HABITATS

At Bay South, two lakes are available to provide an integral addition to the environmental sustainability of Gardens by the Bay. Both the Dragonfly Lake and Kingfisher Lake are home to a myriad of living plants and aquatic creatures. Peppered with free-floating plants such as water hyacinth, emergents such as water banana, Nyle Papyrus and Bull-rush, as well as marsh plants such as Beach Morning Glory and Indian Shot, this water ecosystem also boosts a lively aquatic life consisting of dragonflies, lizards, butterflies, birds, terrapins, tilapias, guppies, mosquito fish, and apple snails.

Besides providing aquatic habitats for biodiversity, the lake system also acts as a natural filtration system for water from the Gardens catchment. Enveloping the Gardens' periphery, the lakes are designed for integration with the adjacent Marina Reservoir. Water run-off from within the Gardens is captured by the lake system and cleansed by aquatic plants before being discharged into the reservoir. Naturally treated water from the lake system is also used in the built-in irrigation system for the Gardens.



TEHC International played a prominent part in the making of Garden by the Bay. The company constructed the beautiful Themed Gardens – Colonial, Malay, Chinese, Indian, Discovery, Eden, Fruits and Flowers, Understory, World of Palms and Secret Life of Trees.

With each garden reflecting a different theme, TEHC International was key in the conceptualisation of its unique designs, individualised storyline, personalised drawings, selection of materials and ultimately, transforming the concept to reality.

The tasks involved in constructing the gardens include the felling of the first tree, excavation of the ground, M & E installation to the irrigation systems, erection of foundations and structural works, placement of stone artefacts, scenic paint work, as well as timber and plastering work. The scope of work is mammoth. Thorough planning and flawless mobilisation of manpower, machinery and equipment were essential in making this project a success.

In addition, TEHC International was responsible for the planting of mature trees and plants in the themed gardens including the maintenance of these gardens. It was a challenge to plant massive, mature trees, with some reaching up to 12 – 15 metres high. The task requires skilful handling, patience as well as effective problem solving skills due to the complications that arise from transplanting. It involves precise arboriculture calculation for the right size of rootball and planning the most efficient logistic paths to minimise the stress on transplanted trees and palms. In total, TEHC International has carried out more than 2,000 successful transplantations from all over Singapore for Garden by the Bay.



“To enhance the ecological function of the lake system, water-sensitive landscape design strategies have to be implemented,” says Mr. Kenneth Er. “For example, filter beds comprising of aquatic reeds and wetlands are located where water enters and discharges from the lake system to reduce water flow and filter the sediments out. At the same time, to reduce nutrient load, islands of aquatic plants and reed beds are incorporated to absorb nutrients, such as nitrogen and phosphorus, in the water. A reduction of nitrogen levels is critical to minimising algae bloom and ensures better water quality.”

CHALLENGES FACED

The massive task of incorporating different themed gardens, a diversified ecosystem and contrasting stylistic designs, combined with ambitious considerations for sustainability and cutting-edge technology, presents a set of challenges that had to be addressed.

Even before the first stalk of flower could be planted, as Gardens by the Bay sits on reclaimed

land, associated works had to be carried out before establishing any other development. This included soil improvement works and setting up basic infrastructure, such as drainage system and key vehicular access roads, to facilitate the construction of the Gardens.

The following important consideration that had to be made was determining the buying time for plants. It takes time for plants to establish and for a garden to grow and mature. To speed up the process of getting the Gardens ready, mature trees, instead of seedlings, were planted.

Planting huge matured trees was a demanding task, as it requires extreme patience and precise arboriculture calculation to avoid causing accidental damage or stress to these plants. As part of the Gardens’ objectives to address environmental issues, some of these trees were salvaged from sites that were affected by other development projects. In testament of the Gardens’ innovation and creativity, the Supertrees are another solution for ‘buying time’ as they provide immediate scale and dimension to the Gardens.

Ensuring that the Gardens is accessible to the masses is critical in making it a hotspot for people from all walks of life to visit, enjoy its offerings and learn about the flora and fauna of the ecosystem. In this respect, all the appropriate linkages and access from surrounding developments and public transportation, such as the bus, Bayfront MRT station and parking facilities, to the Gardens are provided. Universal design has also been incorporated into the Gardens, making it friendly for the disabled, elderly and families with small children. A people-mover system is also being provided to facilitate movement around the Gardens.

It is important to remember that Singapore has a hot and humid tropical climate, potentially dissuading people from visiting parks and gardens during a large part of the day to seek the cool comfort of shopping malls and other indoor recreational activities. The way to combat this issue was to drastically enhance visitor comfort naturally at the Gardens and providing them with cool solutions.

Landforms within the Gardens were designed with wind direction in mind, so as to create spaces with gentle breezes. A conscious effort was also made to provide as much shade as possible in the Gardens, using foliage and shelters. Additionally, the cooled conservatories provide an all-weather space for the enjoyment of horticulture while filling the gap in visitation when the outdoor heat and humidity deter visitors.

CITY IN A GARDEN

Gardens by the Bay celebrates a harmonious ecosystem that also captures the essence of a garden in a downtown setting, complementing the surrounding developments and contributing to making Marina Bay a vibrant destination to live, work and play. With its various key features and different themed areas, Gardens by the Bay offers a vibrant oasis showcasing floral displays while also celebrating city living.

As a leading supplier and manufacturer of specialty construction chemicals, **QUICSEAL** is the prime provider of waterproofing membranes as well as a host of other construction chemicals and products for the making of the Garden by the Bay. The company is dedicated to provide high performing standards and quality of his products, and is a corporate member of the Singapore Green Building Council and Singapore Environment Council.

QUICSEAL supplied a wide range of construction related materials for companied involved in the project. Swee Hong used QUICSEAL 401 control crack inducer, as well as QUICSEAL 404, 201 and 208 used as sealants ideal for sealing movement joints in pavements.

For Thompson Industries, the company used liquid applied QUICSEAL 104 flexible cementitious waterproofing membrane, non-toxic QUICSEAL 607 latex bonding agent and QUICSEAL 201 PU Sealant for the creations of Chinese Garden Cascade, Dragonfly Lake, Spitting Lion, and Tadpole Play Garden. QUICSEAL 104 flexible cementitious waterproofing membrane is perfect for the job due to its high performance and suitability for use in contact with potable water. It is also Green Label and Singapore Green Building Council certified.

In addition, QUICSEAL high quality products were also instrumental in the making of the Malay Garden, Colonial Garden, Fruits and Flowers, as well as the Discovery Garden for TEHC. For the Chinese Garden water feature, QUICSEAL 104, 608, 604+602 and 621+609 were used for tiling while QUICSEAL 608, 604+602 and QUICSEAL 621WG were used for paving of the floor in the Indian Garden.

Challenges are common when undertaking such a massive task. QUICSEAL was faced the difficult test of filling large tile gaps exceeding 12 mm. Conventional colour grouts cannot fill these gaps without shrinkage cracking. To solve this issue, QUICSEAL’s R&D and technical teams were enlisted to specially design a colour grout to meet such requirements.



Photos courtesy of
Gardens by the Bay and
Masayuki Fukuoka (Japan)





RESORT

at the forefront of
ECO-SUSTAINABILITY

WITH A MORE GREEN SAVVY GENERATION OF CONSUMERS, AND WITH EVER DWINDLING NATURAL RESOURCES, ECOTOURISM IS RECEIVING GREATER ATTENTION OF LATE. I AM OF THE OPINION THAT CHAMPIONING THE GREEN CAUSE ISN'T JUST ABOUT BEING AT THE FOREFRONT OF THE 'RECYCLE, REUSE AND REDUCE' ADAGE BUT ALSO AT THE FOREFRONT OF ALL THAT WE DO AND LIVE. OF PARTICULAR CONSIDERATION FOR ME, IN CHAMPIONING THE GREEN CAUSE IS 'ECOTOURISM'.



WHAT EXACTLY IS 'ECOTOURISM'?

The International Ecotourism Society (TIES) defines ecotourism as "responsible travel to natural areas that conserves the environment and improves the well-being of local people" (TIES 1990). I would state that three considerations arise from TIES' definition of ecotourism in the context of an eco-sustainable resort:

- An eco-sustainable resort should provide for conservation measures
- An eco-sustainable resort should engage in meaningful community participation
- An eco-sustainable resort should be run profitably and can sustain itself



In one short statement, ‘ecotourism’ is really about “uniting conservation, communities and sustainable travel”.

However, it would be quite an uphill task or near impossible to give a one size fits all approach to this definition for resorts that are termed eco-sustainable and appeal as being participants of ecotourism because the cultures they operate in and the economics they survive in can vary from one resort to another. Therefore, the crux of an eco-sustainable resort is to “uniting conservation, communities and sustainable travel” within the local context.

Plantation Bay Resort and Spa is one such resort that aptly fits the definition of an eco-sustainable resort – this resort in Cebu, Philippines, unites conservation, communities and sustainable travel in the activities that they engaged in. And, what’s more this naturally beautiful resort and spa is an ultimate paradise getaway that combines sustainability, natural luxury and excitement within its natural confines. The resort’s location on Mactan Island, Cebu is truly amazing and there is probably no other resorts in the world that enjoys such a well-shielded position against natural perils as Plantation Bay Resort and Spa has.

Cebu is located in the heart of the Philippines, entirely surrounded by much larger islands. This simply means that most typhoons never reach Cebu, and the occasional storms that do

are already much weakened before they make land fall in Cebu. The danger from tsunamis is effectively zero, there is no known seismic fault in this area and any long-range tsunami would be blocked by other islands.

Plantation Bay Resort and Spa faces the Hilutungan Channel which is 300 metres deep and has a steady current. This not only makes the waters here exceptionally clean and scuba-diving awesome, but also free of dangerous sharks and barracuda which like to scavenge in still, shallow waters.

Can you imagine yourself enjoying an afternoon of sea sports on sun soaked waters that reflects the warmth sunshine and bathe the pristine beaches? Life in natural luxury – a lifestyle that is never available in Singapore (we have to pay a hefty price to live in one!).

A huge plus, I feel, for Plantation Bay Resort and Spa is that it was built and operated with proper regard and concern for the environment. The resort’s lovely lagoon was built over a site consisting of barren rocks hence no ecosystem was ever destroyed for the sake of the resort’s unique natural ambience. Crushed lime stone was used in creating the fabulous white-sand-filled beaches bordering the lagoon. And, unlike other beach sand, the sand at Plantation Bay Resort and Spa’s beach is always cool to the touch, even under any warm afternoon sun.



The fine woods used in some furniture were recycled from old houses or church timbers. The wood ceilings in the lobby and in the many bedrooms and meeting rooms were actually made of ordinary plywood that was painstakingly hand-stained to simulate the look of mahogany panels. Extensive use was made of coconut timber, a widely available renewable resource, while other coconut parts of little commercial value were used in decorations and finishes around the resort.

I noticed that the use of plastics was avoided wherever possible, a feature that certainly minimises the risks of fire and smoke hazards.

The resort breeds some of its own fish for its restaurant use in fish ponds within the resort. In partnership with universities and public agencies, Plantation Bay Resort and Spa spares no effort at protecting marine life and promoting the stability of coral reefs. Since the resort's opening in 1996, there has been a marked re-growth of the coral reefs in the areas where the resort is located.

With a sustainable ambience in Plantation Bay Resort and Spa, one would have wondered about its sanitation process. Well, be assured that the resort implements septic tanks for residential sewage spreading over a large area to avoid concentration of effluent in its flow.



The laundry is equipped with a biomechanical waste treatment plant. No wastes are dumped into the sea and the resort's garbage is trucked to landfills. Bottles and cans are separated and sold for recycling use.

Built on 11.4 hectares of secluded grounds with its all-natural surroundings, and a mere 30 minutes from Cebu City, Plantation Bay Resort and Spa has English, Korean, Japanese, Mandarin and Spanish-speaking staff members to extend warm welcome to international guests, making everyone feel right at home.



The crisp elegance of colonial-plantation architecture complements one of the largest privately-owned waterways in the world. All rooms are 46 square metres, air-conditioned and adorably furnished with plantation-styled furniture, remote-control television, oil paintings and suitably accessorised.

I particularly loved the bathroom; it is simply spacious with coral stone and marble finishes and comes equipped with a deep bath tub that offered me a most memorably refreshing time after spending a busy day of activities in the sun and sea.

I mentioned at the beginning of this article that an eco-sustainable resort should also include 'meaningful community participation' while it rolls out its conservation measures. I must say that Plantation Bay Resort and Spa is in all its essence an eco-sustainable resort with its community involvement that "improves the well-being of (the) local people".

The resort provides free school bus service in the community that it operates in, making it possible for hundreds of local children who could not otherwise afford public transportation, to make their way to school. With most of the funding provided by the resort, a day-care centre for indigent families in South Cebu City and an orphanage for street children in Manila are now testament of the resort's commitment to be a truly eco-sustainable resort. On a continuing basis, the resort also supports a number of local residents for vocational training. With its regular beach clean-up campaign, the resort

has contributed to increasing environmental awareness in the community and society it is located.

In 2004, Plantation Bay Resort and Spa paid for the reforestation of about 120 hectares of Cebu's highlands. For two years, 2008 and 2009, the resort provided free medical services to a total of over 1,000 local residents.

Well, I have not forgotten about the gastronomical delights that I savoured at Plantation Bay Resort and Spa. Besides the Palmero – an Italian restaurant that serves Spanish Tapas and Italian Pastas, and the Fiji Restaurant – serving an array of Pacific Rim cuisine, I find the Kilimanjaro Kafe most impressive. This 24 X 7 restaurant has an international cuisine catering to everyone from steaks to vegetarian dishes, Filipino to Korean favourites and of course, tasty appetisers to tempting deserts! And let me say this, it serves a stunning themed breakfast buffet every morning!

For a romantic honeymoon or a fun family getaway or just simply to chill out after a business meeting, Plantation Bay Resort and Spa is definitely your choice resort for either of these options. Like me, you will be an eco traveler living life in all its luxury and excitement, and at the same time contributing to meaningful community participation and conservation measures that the resort engages in. Staying in Plantation Bay Resort and Spa will mean advocating the green lifestyle and at the same time enjoying a healthier lifestyle.



For more information, visit www.plantationbay.com.

For better understanding of definition of eco tourism, visit www.ecotourism.org/what-is-ecotourism.

The epitome of GREEN LUXURY

Inspired by the buzzing energy of the city set against Sentosa's natural surroundings and located adjacent to the 228 W-branded residences, the W Singapore-Sentosa Cove offers a fully integrated lifestyle experience featuring 240 guest rooms and suites, two signature restaurants, a destination bar, the W Lounge experience, WET pool deck and bar, Away Spa, and more than 1,500 meters of modern meeting and event space.

W Singapore – Sentosa Cove

An urban oasis, “the opening of W Singapore – Sentosa Cove heralds a new era of hospitality for our country,” said Mr. Kwek Leng Beng, Executive Chairman of City Developments Limited. “Together with Quayside Isle, W Singapore will add to the vibrancy of Sentosa Cove by providing residents and visitors with a marina lifestyle haven unlike ever before.”

And complementing this “new era of hospitality” are the green and sustainable features of W Singapore, sending excitement and thrill down the spine of every green savvy traveler. Indeed, this is where nature and luxury blend to deliver an exceptionally evocative and enchanting ambience infused with simple elegance, certainly heralding a “new era of hospitality..... with a marina lifestyle haven unlike ever before”!

I don’t wish to ramble on with descriptive paragraphs of W Singapore, you would have read much of these but I think it will suffice that I simply list W Singapore’s green and sustainable features and you will agree with Mr. Kwek that W Singapore is indeed an iconic representation of the “new era of hospitality”.

ORIENTATION OF W SINGAPORE– SENTOSA COVE

The layout is optimised for functionality mitigating environmental impact with the use of solid walls to significantly reduce heat transmission along the guestroom corridor. The south and west-facing guestrooms have generous balconies for natural shading while enhancing guest experience with wonderful views.

Natural Daylight

The W Singapore engages passive architecture to enhance natural daylighting, reducing reliance on additional lighting at the W Singapore.

WET Deck

The wood used to construct the WET Deck is Forest Stewardship Council (FSC) Certified. FSC is an independent, non-government, not for profit organisation established to promote the responsible management of the world’s forest.





LED Lighting / LED HD TVs

At night the external façade will be lit by color changing LED lighting, and incidentally, all guest rooms and suites at the W Singapore feature 40" LED HD TVs.

Lightshafts

These are built in toilets at WET and AWAY Spa to allow for natural lighting during the day time.

Rainwater Harvesting System

Rainwater is collected at the rooftop and used to water the landscaping every day.

Passive Architectural Design/Site Orientation

At the back of the hotel, near GYM and AWAY spa area, is shaded and a distinct drop in temperature can be felt, a good example of effective natural shading.

In the rooms

LED mood lighting will certainly add to guests' romantic escapades without adding up the energy costs for W Singapore! Windows of guestroom are double-glazed for reduced heat transmission and the balcony has innovative sensor feature to have the air-conditioning automatically turning to fan mode should the balcony doors be left open for more than 30 minutes.

The design of the W Singapore-Sentosa Cove has been inspired by much of Sentosa's lush, tropical landscape. On arrival, guests are welcomed by a waterfall with projections of vibrant graphic patterns on the water while the outdoor terrace features glowing grass lights, rock-shaped daybeds and an over-scaled rock garden. In the hotel's W Lounge, a DJ console carved out of natural stone creates a centerpiece, overlooking the lawn, which illuminates in the evening.

Yes, the W Singapore-Sentosa Cove is where 'green luxury' is clearly defined offering guests an ultimate experience in luxury and yet sustainable



The W Singapore - Sentosa Cove is owned and developed by an affiliate of City Developments Limited. The Editor thanks the W Singapore - Sentosa Cove for the information and assistance rendered for this editorial feature.

For more information, visit www.wsingaporesentoscove.com and www.whotels.com/singapore.



A FASCINATING FLORAL FIESTA

BEING ENTHRALLED BY THE GARDENS AND PLANTS FROM AROUND THE WORLD HAS GIVEN ME A NEW PERSPECTIVE ON THE ART OF LANDSCAPING. IT IS NOT JUST A STATIC ART FORM, BUT A LIVING AND EVER-CHANGING INSPIRING CREATION. IT IS NOT JUST PREDOMINANTLY GREEN, BUT FILLED WITH VIVID COLOURS

When one mentions the word 'garden', it is understandable to have the mental image of a static, predominantly green, and perfectly manicured plot of land. Sometimes, one may even think of the simple container plants hanging at the window of an apartment balcony.

Although there are many different types of gardens, it is hard to imagine them as exciting and inspiring visuals until I visited the Singapore Garden Festival (SGF) 2012 on 6th July. It was

truly an eye-opener to admire breathtaking displays of gardens that are so alive, vibrant and insightful, all at once!

Organised by the National Parks Board (NParks), SGF is the first garden show to showcase creations of the world's top award-winning garden and floral designs under one roof at the Suntec Singapore International Convention & Exhibition Centre. Dubbed as Asia's much-awaited garden and flower shower, this fourth

biennial event showcases over 280,000 plants and 70,000 stalks of cut flowers brought together by 39 designers from 19 countries. With up to 37 masterpieces on display for the visitors (the largest ever since the festival's inauguration in 2006), it was evident that SGF 2012 was going to be a bigger and better event than its predecessors.

Besides providing a platform for landscape designers from around the globe to congregate

and showcase their creations to hundreds of thousands of visitors, SGF 2012 has also included new exhibits, such as 'Balcony Gardens' and 'Floral Table Series'. Of course, popular highlights such as 'Best of Show Landscape and Fantasy Gardens' as well as 'Floral Windows to the World' returned to dazzle the visitors with stunning set designs and landscape showcases from all over the world.





THE UNIQUE ASPECT OF OUR DISPLAY IS THAT IT IS NOT A MOTIONLESS SHOWCASE. IT IS CONCEPTUALISED TO BE INSPIRING AND EVER-CHANGING, AND I BELIEVE OUR COMPANY HAS ACHIEVED THAT BRILLIANTLY.

— GORDON LAM, GTH ENGINEERING AND CONSTRUCTION PTE LTD

However, the first fascinating garden I saw did not emerge from one of the featured showcases. Rather, it was the entrance display itself that took me by surprise. Greeted by a fairytale castle themed entrance display with 5-metre tall topiary arches, animal-shaped topiaries, pixies and frog soldiers peeking out from colourful flowering plants and simulated castle walls decorated by climbing plants, it was akin to walking to Disneyland. The magical fairytale theme makes a simply exquisite entrance for the event.

But the magic did not end there.

I was greeted by John Cullen's garden showcase of 'Luminescent Perspective' (USA) featuring a timed lighting sequence every two minutes simulating the cycle of the sun from morning until dusk. Implemented by GTH Engineering and Construction Pte Ltd, the company was able to expertly materialised this inspiring concept.

an accomplished establishment in landscape design, planning and construction.

"The unique aspect of our display is that it is not a motionless showcase. It is conceptualised to be inspiring and ever-changing, and I believe our company has achieved that brilliantly," said Gordon Lam from GTH Engineering and Construction Pte Ltd.

I was also inspired by another local showcase 'What You See Is What You Think' (Singapore) by Fumiko Sano. A tribute to our homeland, the showcase highlights the transformation and evolution of Singapore's landscape. Littered with elements found in traditional Singapore cityscape such as vintage roof tiles, decorative ventilation openings, glazed ceramic tiles with traditional motifs and hanging plants that represent the growth of ficus on roof, the exhibit is an excellent reflection of Singapore's cultural landscape brought to life by Landscape Engineering Pte Ltd.

With such magic, passion and precision put into each exhibit, it is of little wonder that these showcases have garnered prestigious gold medals in different awards.

In the Balcony Gardens section, I was immediately drawn to 'Haven of the Immortals' showcase. There were no fancy lighting shows, elaborate earthquake-like motions or fairytale magic involved. There were no unnecessary tricks or timed sequences. Yet, it managed to induce an intense feeling of revelation and relaxation in my entire being. While the earlier showcases excited me, this particular showcase moved my heart and brought me to a different realm, away from the bustling crowds and into my own world.

Designed by Chew Seok Choon from Zen Landscape Pte Ltd, the garden displayed a private and peaceful refuge to relax the body and mind. It was a garden of contemplation, a sanctuary that warmly invited others to embrace their inner self. I can imagine this visual art piece located in a high-rise building while exuding the feeling of being in a landed property.

I was even more surprised that the designer did not start her career as a landscaping artist. A renowned choreographer and dancer for the National Theatre Dance Company, Seok Choon decided to extend her creative expression to another platform – the landscaping field. With 18 years of landscape experience, she recently

won the 2011 LIAS Excellence Award from the Landscape Industry Association (Singapore).

When asked regarding the challenges of bringing the design to life, Seok Choon replied, "It was a long process deciding which flowers suit the concept best. As a perfectionist, I had to keep brainstorming until I am able to find the best set of flowers that not only leave a lasting impression on the visitors, but also complement one another aesthetically well".

At Zen Landscape, Seok Choon is able to pursue her specialisation in landscaping design. Well-known in creating aesthetically green, artistic and sustainable garden landscape in homes, the company ensures that every project under its helm is designed to boost rejuvenation in each residential garden with a refreshing atmosphere.

Being enthralled by the gardens and plants from around the world has given me a new perspective on the art of landscaping. It is not just a static art form, but a living and ever-changing inspiring creation. It is not just predominantly green, but filled with vivid colours.

A truly exquisite garden will not allow you to walk past without a backward glance, or depart without a feeling of awe or tranquility.

It induces an inspiring and awesome feeling on the beauty of gardens that will stay with you long after you leave.





Balcony Gardens - Your Personal Garden in a Small Space

A small balcony garden can be the best little hideaway, your very own refuge from your demanding work life and hectic schedule. Although its purpose is to provide a stress-free environment, creating your very first personal balcony garden may not be a walk in the park.

It is important to research the type of plants available, understand their needs and figure out the different adornments you wish to add to the balcony. It can be a daunting task for the first-timers and those who do not have a green thumb. Without any proper planning or research, you may be forced to re-think the project halfway through and start over. To avoid that, it is best to decide the most critical (and perhaps more difficult) part of balcony garden: choosing a concept.

With a certain theme or concept in mind, not only will it be solidify the end goal of your project in your mind, it will also create a clear picture of what you need to buy or do for your balcony. Do not rely on buying mismatched potted plants, patio dining set and a fish tank with the hopes of creating a

serene and peaceful atmosphere. Invest in plants or decorations that will come together to induce the tranquil and relaxing setting that you crave.

URBAN WONDER

If your home adopts a modern and chic look, you might be compelled to stick to the urban theme for your balcony. Having an urban theme does not necessarily translate to less plants. In fact, there are many accessories and decorations you can play with to produce a modern look.

For example, consider investing in a mural wall. The idea of a mural wall is to install shelves, hooks or other items on the walls of your balcony for the purpose of being plant holders. These shelves are available in modern polygon shapes or interesting circular forms exude a contemporary finishing. With this versatile accessory, you may also set up beautiful lighting effects with the use of spotlights on the mural wall to induce a tinge of romance in the air. At the same time, it also maximises the use of space, perfect for a small balcony.

Take a look at container plants or potted plants as well. There are more available now than just the traditional claypots. Store your plants in unique apothecary jars, metallic plant pots, or simple black containers to suit your concept. Be also on the look out for the latest technologies of balcony gardens decorations. For example, the new design Grass Mosaic consists of shallow pots, usually made of acrylic stone, to be filled with prefabricated lawn grass or wooden panels. These grass modules are ideal for occupants who dream of a walking barefoot on the garden but could currently only be content with a balcony garden. These grass modules are the perfect accessories to modern balconies.

SOULFUL ZEN

When it comes to creating a Zen garden, the focal point of the balcony will be a Japanese rock garden. Usually comprised of rocks, water features, and pruned bushes, the objective of the Zen garden is to share an intimate connection with nature while aiding in the meditation process to explore the meaning of life. The two main elements of a Zen or a “dry style” garden are rocks to form mountains and sand to form flowing water. It is important to note that the sand used in Japanese gardens is not sand from the beach but actually crushed granite in varying shades of white gray to beige at approximately 2 mm in size. Do note to refrain from using light colored crushed granite in sunny areas as it will produce a blinding glare. However, it will be perfect to brighten up an indoor garden or dark shaded garden.

The next step to creating your Zen haven is deciding on the border planting. Do not be discouraged by the small space offered by your balcony as it can actually give you plenty of freedom to experiment with garden scale and miniature landscape. There are many plants that will work well in this Japanese setting. Such examples are dwarf hostas, pachysandra, dwarf daylilies, Bonsai trees and shrubs. Indoor plants such as Norfolk pine and Aspidistra will also make for wonderful background plants for a Zen garden.

This is followed by a water element opposite the sandbox to complement the dry module. This can be an earthenware bowl with a fountain consisting of a bamboo component that fills with water and then once full, gently tips forward allowing the water to spill into the bowl in a tranquil fashion. Consider surrounding the bowl with baby's tears, ivy or other suitable creeping indoor plants. Place a finishing touch with a bamboo screen to offer privacy and wind protection.

COUNTRY CHARM

The most challenging part of creating a nature-based theme for your balcony garden is to minimise cluttering, especially for space-restricted balconies. It is not about filling the balcony with big plants and bushes, it is about recreating a country and homely atmosphere for your balcony.

Cottage gardens are generally made of a mix of annuals and perennials, and consist of quirky containers, such as watering cans and mini wheel barrows. Terra cotta and rustic-looking pottery also work well for the planters. To further accentuate the feel of being one with nature, consider dressing the balcony wall in a natural look by decorating it with a vine or any climbing plant to cover the whole wall surface. Invest in plants growing out of soils, upwards, downwards, sideways and underneath larger plants, then arrange them to ensure minimal clutter and maximise the feel of nature.

You may also grow herbs, such as mint, in your country-themed garden. In addition to its functional use, think of it as a natural air freshener. If you have a pet dog however, avoid growing plants rich in essential oils, such as thyme and tansy. Consider also using terra cotta tiles with rough surfaces to give a sense of warmth and induce a natural feel. Opting for wood flooring is also a favourable choice as it will add a rustic mood and naturalistic feel.

Once you have decided on your favourite theme, proceed to design the layout and set a fixed budget. It is best also to bear in mind the possible level of maintenance each plant requires.

With detailed planning and careful execution, your chosen dream theme garden will easily be your very own sanctuary at the balcony of course.



For more information, visit www.singaporegardenfestival.com and www.facebook.com/SGGardenFest. The Editor thanks the National Parks Board for information and assistance provided for this editorial feature on the Singapore Garden Festival.



The Haven of the Immortals



There is comfort food and there is comfort corner. Nutritious food nourishes the body while an alluring abode uplifts the spirit; a respite from the hustle and bustle of urban living – an enduring inspiration amidst greenery and lush foliage, this balcony garden expresses the aura of paradise symbolic of immortality. This is when time stands still, evoking a sense of timelessness as you revel in the freshness of the early morning and the smell of dew from the leaves and foliage of this balcony garden.

Aptly named "The Haven of the Immortals", it exudes a sense of exhilaration of being in a heavenly place yet with an exacting feeling of green-luxury living in paradise! The gate-like trellis and tall plants on the one side double up as a shield for privacy and for demarcating this corner balcony from the surrounding high-rise buildings.

The stone slabs, pebbles and low shrubs and foliage are strategically designed to leave a window for an unblocked view of the panoramic landscape to be enjoyed from a high-rise apartment. The morning sun streaks through the shrubs and foliage, allowing the hanging garden and trellises to capture the

warmth of the sunshine, adding to the enduring vibrancy of the fresh morning air.

To the left of the hanging gardens of colourful potted plants is an exotic dragon stone pond with fishes adding a dash of life. The melodious sound of the water feature adds a touch of dynamism to the ambience. The bonsai plant symbolic of the thousand-year pine trees in the Chinese mountains depicts the realm of the immortals.

Now, imagine sighting a lotus pond overlooking a lush mountaintop onto a river that winds its way down a valley and passing a lone wooden hut in the quiet distance.

This balcony garden aims to evoke a realm of the immortals where time is never an essence of life but rather tranquillity, beauty, wonder and the pulsating rhyme of life infused into the essence of life.

With each balcony having the potential to blossom into a garden of sorts, revamping the small space into a pictorial view or transforming the small space into a tranquil haven adding value to your property, contact Zen Landscape today.



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PLAY SAFE AT PLAYGROUNDS

Playgrounds benefit kids with fresh air, bonding with parents, interaction with friends and exercise. Most of us live in an HDB flat and staying cooped up in such homes accompanied by computers and gadgets can be damaging in more ways than one for kids, and an occasional break from these can be advantageous for the children.

Children are naturally active and can be accident prone when they play at outdoor play equipment. Besides ensuring adult supervision while children are at play at these playgrounds, playground design safety is the ultimate safety assurance for children.

Yes, accidents do happen however safe and safety conscious one can be. But, as the saying goes, we rather be safe than sorry, and prevention is better than cure.

SAFETY AT THE PLAYGROUND

Key to safety of any playground is the surface. The surface should help reduce injuries and somewhat absorb the impact of a child's fall. We cannot expect a foolproof surface to break the fall and the child to go unscathed, but apart from some scratches and bruises the surface should provide some form of protection for the child who falls from play equipment.

Playground surfaces should be designed child safety, wheelchair accessibility and aesthetics in mind. Surfaces at playgrounds should be free

of standing water and other obstacles like tree stumps, rocks and tree roots that could cause children to trip and fall. Safety-tested rubber or rubber-like materials are safe options for use as surfaces for playgrounds and rubber mats surfaces are also good considerations as they allow the best access for people in wheelchairs.

You will note that cushioned surfaces are usually extended at least 1.83 metres past play equipment, but this is largely dependent on how high a slide is or how long a swing is.



PLAYGROUND EQUIPMENT SHOULD IDEALLY BE GREEN LABEL CERTIFIED BY THE SINGAPORE ENVIRONMENT COUNCIL AND THEY SHOULD BE MADE FROM AT LEAST 50% RECYCLABLE MATERIALS.

— JASON SIM, THE MANAGING DIRECTOR FOR PLAYPOINT (SINGAPORE) PTE LTD



Materials used for playground surfaces can be varied but the common goal with these more popular materials is safety and to absorb the impact of a child's fall. One of the more popular flooring material used for playground surfaces is EPDM Rubber Flooring. Available in a wide range of colours, this is typically a one-piece, seamless EPDM rubber surface, usually about 3/8" thick, which is placed over a layer of cushioning from 1" to 5" inches deep, consisting of rubber particles bound together with a polyurethane binder. PIP meets national standards for safety and wheelchair accessibility. However, the downside of such flooring at the playground is that with the sun's rays and friction from use may cause RPDM colours to fade and degrade after a few years.

Also used as playground surfaces is sand. A major play point is that play sand will never pulverise

and decompose. Mould and fungus growth is also generally not an issue to grapple with. But play sand can be difficult to walk on, and they stick to clothing and skin. I don't particularly like the feeling of sand getting into my sandals while I supervise my children playing at play sand-surfaced playgrounds. Also, the protective ability of these play sand surfaces can be reduced during a rainy day.

Knowing the type of materials used for playground surfaces is certainly comfortable information for parents and those taking care of children like childcare teachers and child minders. But do keep in mind that even proper surfacing can't prevent all injuries, so children at playground should always be under proper adult supervision.

PLAY SAFE PLAY EQUIPMENT

Ideally, playground equipment should be designed for three differing age groups: infants and toddlers under two years old, preschoolers from two to five years old and school going age children from five to 12 years old.

There shouldn't be 'one size fits all' play equipment at playgrounds. Play areas designated for younger children should be separated from those meant for older children. Signs should be clearly displayed to designate each play to prevent confusion. It can be quite inappropriate for younger children to play on equipment designed for older children because equipment sizes and proportions won't be suitable for smaller children and this could lead to unnecessary injury, and vice versa.

WORD OF CAUTION

Whenever your children are playing at the playground, it is important that you conduct a general check of the equipment to be sure that they are clean and well-maintained. There should be no broken equipment, and for wooden equipment, there should be no cracking or splintering. Check that metal equipment is not in a rusted condition.

Check for objects that stick out on equipment that could cut or injure a child or cause clothing to become entangled. All hardware equipment should be secure with no loose parts, and particularly for plastic and wood, there should be no signs of weakening, splinters or rusted surfaces.



The Editor thanks Playpoint (Singapore) Pte Ltd for assistance with this article and for providing the pictures used to illustrate the article.



IMPROPER ESTABLISHMENT PRACTICES OFTEN RESULT IN AN INFERIOR STAND OF GRASS INITIALLY AND CAN CAUSE SERIOUS PROBLEMS IN THE FUTURE.

DICK TOH
Managing Director,
TEHC International Pte Ltd

A golf course's turf grass will enhance the appeal and utility of the golf course. They certainly improve the course for play by reducing erosion, dust, temperatures and glare (and noise). And the most important feature of turfgrass in any golf course: they improve the safety of the golfers because they contribute resilience to the playing surface.

With turfgrass being such critical and significant component of a golf course, it is timely that we are privileged to learn from Mr. Dick Toh, managing director of TEHC International Pte Ltd as he shares with us a short discourse on turf establishment in a golf course.

What exactly is "turf establishment"?

Proper turf establishment is the first and most critical step in any successful turfgrass management programme. If the site is prepared and planted correctly, the result will be a permanent stand of grass that exhibits satisfactory quality. Improper establishment practices often result in an inferior stand of grass initially and can cause serious problems in the future.

For example, acceptable quality may never be achieved if the species and cultivars that are planted cannot adapt to the environmental conditions existing on the site. Failure to improve poor soil is another example of an establishment error that has undesirable long-term effects on turf quality.

What is involved in turf establishment?

Turfgrass establishment consists of species and cultivar selection, site preparation, planting, and post-planting care. Performing each of these practices correctly is absolutely essential. Mistakes made at the time of establishment may continually frustrate the turfgrass manager's future attempts to produce a satisfactory turf.

What planning and considerations will be needed before embarking on turf establishment?

It is most important that the grass selected be adaptable to the growing conditions at the location to be established. It is essential that the grass have the ability to tolerate any stress factors associated with the site.

For example, if trees are present, shade tolerance is a necessity. Turfgrasses grown on an athletic field should exhibit good wear tolerance and recuperative potential. Resistance to diseases common in the area is also a major criterion.

What are the pitfalls to avoid in any turf establishment project?

The degree of turf quality desired and the level of maintenance that will be provided will strongly influence the quality of any turf establishment project. Density, texture, and colours are the primary aesthetic considerations. The size of the maintenance budget, the amount of time and labor available, the type of equipment to be used, and the expertise of the turf manager determine the level of subsequent maintenance that can be performed.

High-quality hybrid Bermuda grasses can produce a turf of unsurpassed beauty, but the maintenance requirement is substantial. Common Bermuda grass needs minimal care, but produce a turf of significantly lower quality.

Is 'turf establishment' the same as 'turf maintenance'?

Turf establishment is planting of turfgrass and turf maintenance is maintaining the turfgrass to a desired standard.

For example, constructing a building is similar to turf establishment, and maintaining the building is similar to turf maintenance.

What factors determine the type of grass that will be needed for turf establishment?

The grass species and variety you select also influence your planting options, as well as the site preparation that you will need to do and the time it takes for the grass to establish. In Singapore, we don't do seeding, hence the 3 most commonly methods used are:

SODDING - Turfgrasses that spread by rhizomes and/or stolons can be grown and harvested as sod. Although sod costs more than seed, sodding may not cost more than seeding when the long-term cost of "growing in" seeded turf is considered. Seed usually requires more irrigation, fertilisation, weed control and time than sod to become established.

SPRIGGING - Sprigs are harvested from turfgrasses that spread by stolons. Sprigs may come in bags for small jobs or in bulk for large jobs. They are planted by uniformly distributing them over the site and then setting them into the ground with specialised equipment. Sprigging is used primarily to establish hybrid Bermuda grasses and Zoysia grass. Sprigging costs more than seeding but less than sodding.

Sprigs are perishable and must be planted as soon as possible after harvest. Sprigging requires a good irrigation system because sprigs must be watered diligently to keep them from drying out as the grass is growing in. After planting, the sprigs may be covered with a thin layer of topsoil to help them get established. Since the sprigging is initially sparse, weed control will likely be necessary once the grass is mature enough to tolerate herbicides labeled for this use.

PLUGGING - Relatively small areas can be established or repaired with plugs of grasses that spread by stolons, such as Bermuda grass, or Zoysia grass. Plugging can be done at any time when adequate moisture is available. The proper distance between plugs depends on the rate of growth and on how soon you want the grass to reach 100 percent ground cover. Plugs must be firmly pressed into the soil and then rolled to give a smooth surface for mowing. Plugs can be obtained by cutting up sod pieces or by taking plugs from healthy turf areas and then backfilling those areas with topsoil. Most sod producers do not market plugs.

What should one do in any turf establishment to ensure a more resilient turf for better golf play in the long run to lower maintenance costs and replacement costs?

The proper planting methods, turfgrass selection and after planting maintenance are the most important keys to ensure a more resilient turf for the long run in terms of lowering maintenance costs and replacement costs.

I am sure you have been enlightened much about turf establishment.

Well, thanks to Mr. Dick Toh, I have. And my next golf play will be more meaningful instead of getting obsessed with getting the ball in the hole within the shortest par.

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LENS ON NATURE



TITLE: Success demands perseverance taken one step at a time.
LOCATION: Bishan Park
TAKEN BY: Josephine Shia, Singapore

Share with readers an inspiring message from Mother Nature with your camera.

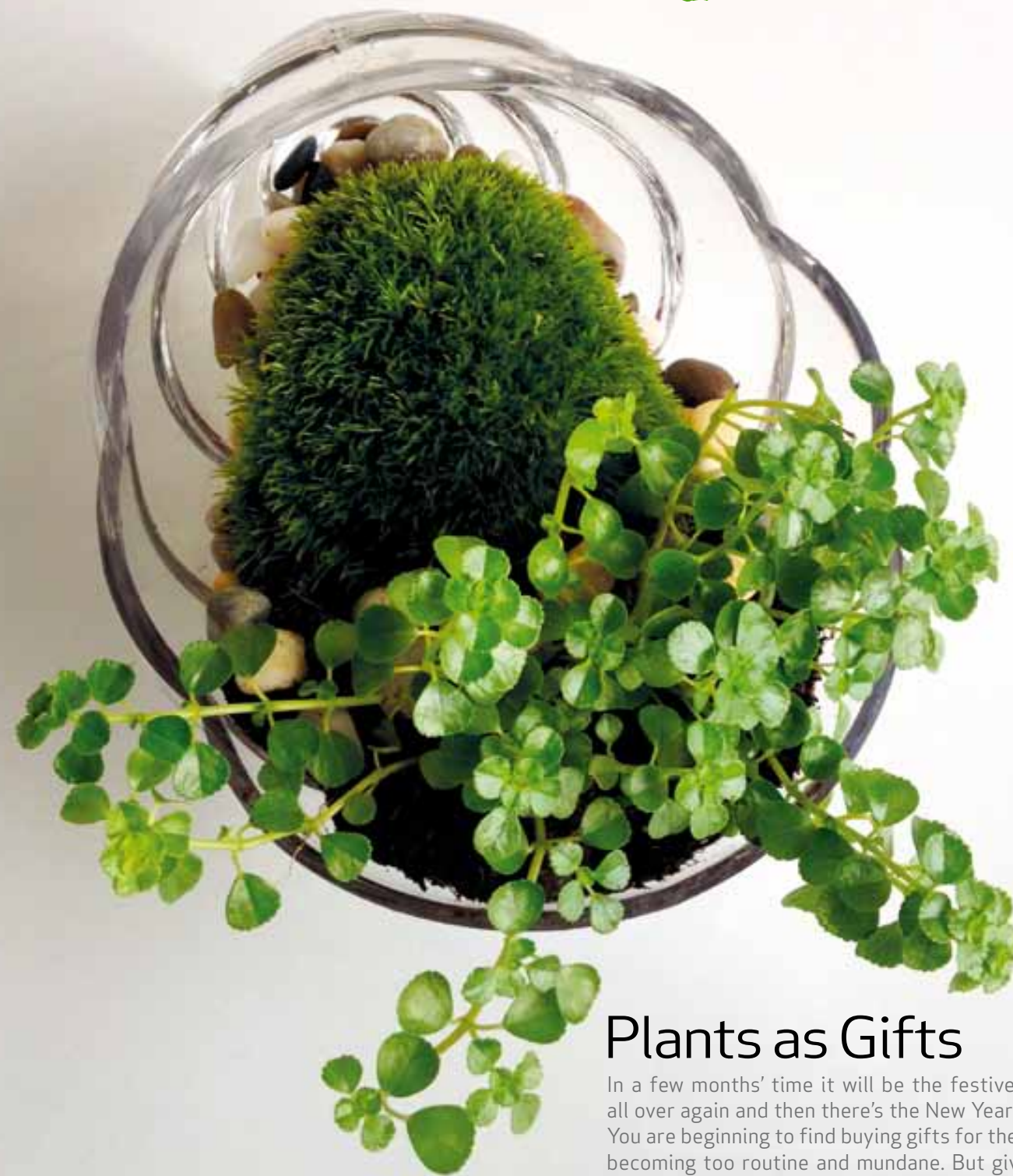
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Send your captioned entries to the Editor at editor@landscape-forum.com.sg and the best and most inspiring green and sustainable message will be published in the next issue of Landscape Forum. This could well be the your break into stardom as a 'Celebrity Nature Photographer'!



TITLE: The sustainable lifestyle in a built environment.
LOCATION: The Gardens by the Bay
TAKEN BY: Masayuki Fukuoka, Japan

Growing Your *Love and Care*



Plants as Gifts

In a few months' time it will be the festive seasons all over again and then there's the New Year of 2013. You are beginning to find buying gifts for the seasons becoming too routine and mundane. But giving gifts during festive season are a 'necessity' as expressions of love and care, and to foster relationships in business and in life.



Paperwhites



Potted Herbs



Amaryllis



Christmas Cactus



Orchids

Well, have you considered buying plants as gifts? They make for great festive gifts, and they grow with time, symbolic of the growing relationship and love that you have towards the person(s). With plants as gifts, the recipient has to reciprocate care for the plant, and seeing the plant flourish and grow will be a constant reminder to value the relationship that the plant symbolises.

I have found, from my rather quick research speaking to my neighbour who is an avid gardener, the following recommended plants can be great as gifts for the festive season because they are easy to care for and they bring a unique sense of joy and warmth just looking at them.

Amaryllis

It produces colourful flowers as an indoor plant. It is often grown as a bulb in a decorative container and requires little watering to grow it to a rich floral showcase. When it flowers, it brings a cheeriness of spring into the year.

Orchids

They certainly look graceful and some Orchids require minimal maintenance. They come in different sizes and colours, and do make great and elegant plant gift.

Christmas Fern

This plant is native to North America and is evergreen all year round. It serves as a natural indoor air filter (as with most ferns), and makes an attractive houseplant with its verdant leaves since ferns don't flower.

Christmas Cactus

Its blooms are red and it flourishes best in a cool, sunny place, for example on the window sill of your house. And, it is so named because it only blooms during the Christmas season, and it can be a great gift for the succulent lover in your life!

Cyclamen

We may not find this here in our humid weather. But if you have an airconditioned home, Cyclamen makes good houseplants. Often found in Southern California as a winter flower, it is a rather short plant and it has unique flowers. This plant gift can convey your message that the recipient is someone special.

Paperwhites

My avid gardener neighbour told me that Paperwhites are another carefree flowering bulb that grow in different mediums like soil or pebbles, providing varying visual effects. The flowers are known to be fragrant and the bulbs can be replanted in a garden after the festive holidays. Great as plant gift for someone who has a garden or a patio garden.

Potted Herbs

Mint, thyme and oregano are good examples of hardy and attractive potted herbs as plant gift. They can be maintained for years in their pots or transferred to a garden, and whether they could be used as herbs is left for you to find out!

Men give their sweethearts roses on Valentine's Day, and women simply go gaga over a bouquet of flowers from the men in their lives. In the same line of thought, why not give indoor plants as gift this festive season?

Plant gifts carry a different significance for the recipients. And for you as the giver, a plant gift expresses that someone is special and it takes effort, time and care to grow the love between father and son, between mother and daughter or simply between friends and lovers.

QUIZ

To win a Terrarium

With the season's festivities' celebrations, Landscape Forum magazine is offering two beautifully made Terrariums for you to give away as gifts.

Take the first stride in this initiative to give a 'green gift' in support of the green cause and sustainable living.

Select your choice gift that you would like to win to give away as gift and email the Editor your name, age, occupation and contact number to editor@landscape-forum.com.sg and in less than 50 words tell the Editor why you deserve to win your choice Terrarium so you can give it away as a green gift in support of the green cause and sustainable living as you celebrate the season's festivities.

Two winners will be notified by email on collection of prizes.

The judges' decision is final and no further correspondence will be entertained.



A Cupcake Stand Moss Terrarium



B Rustic Lamp Design

EMAIL: editor@landscape-forum.com.sg
CLOSING DATE: 15 January 2013

Prizes sponsored by Love In A Bottle (www.LoveInABottle.sg)

GARDENING IN TIGHT SPACES

DO YOU DREAM OF SETTING UP A BEAUTIFUL GARDEN BUT THINK IT IS A LUXURY ONLY FOR THE RICH? DO YOU YEARN TO SPICE UP YOUR HOME WITH GORGEOUS FAUNA BUT DO NOT HAVE THE SPACE FOR IT?

The truth is even the smallest balcony in an apartment can accommodate a garden of enticing flowers or a crop of valuable vegetables in containers. Coined as 'container gardening', this booming greenery concept ensures that anyone is able to enjoy gardening regardless of financial, space or time constraints.

So what exactly is 'container gardening'? As you may have guessed, it is a form of growing plants by using containers instead of the traditional way of planting them in the ground. Although this is not a new form of gardening (potted plants are a common sight after all), it is increasingly becoming more relevant in our modern and urbanised society.

Not to mention that the container garden is limited only by your imagination. As long as a container is able to have room for sufficient soil and water with drainage holes, it can be used to accommodate your mini garden. The holes should not be large, but of a sufficient size to drain excess water. In fact, you do not need to search high and low to buy a suitable container. Consider this as the perfect opportunity for you to recycle an unused item from your household. Items such as buckets, watering cans, fruit baskets or even old tires can be recycled as containers to grow the plants. However, avoid toxic materials such as copper, brass or lead as they can harm the soil.

Now, you may think that using a container as a garden will limit the types of plants you can grow. This is not the case. You can enjoy growing a range of plants, from climbers to creepers, and from annuals to perennials. It is really simply a matter of personal preference.

If you are at a loss, consider the type of maintenance the different types of plants will require. Climbers have the tendency of snaking up the wall for support if you do not cut them quick enough, which may lead to a difficult time to re-pot them without causing damage. Creepers, on the other hand, may be easier to maintain as you may simply snip them on the sides when they are growing too long. It is best to note that growing one plant in one container is the simplest to maintain.

If you are new to the very concept of gardening, you may be overwhelmed by the idea of planting and maintaining plants. There is no reason to. Once you have decided on your container and type of plants, the next on the list is choosing the right type of soil. Look for soils that are certified 100% organic and pest-free. Using pest-free compost means that it is made of recycled materials from garden wastes, making it a greener kind of fertiliser (and it is not necessarily more expensive than other soil). Certified organic soil provides a safe option for your plants as it is made of compost from organic sources and even manure from organically fed animals.

Next on the list is how much sunlight or water does your plants need? Well, there are a lot of factors to consider in regards to this question. Some plants may require more or less water and sunlight than

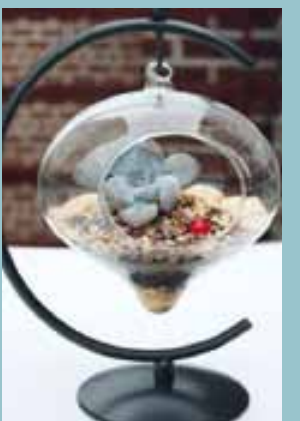
others (check with the botanist on this). Placing the container plants under the hot sun may require you to water the plants more often. If you are unsure, the best solution is to closely observe the plants. As long as they are growing well and not wilting, it is likely that you are on the right track! It is also advisable to place your finger on the soil and see how moist or dry the soil really is. Water it based on what your plant needs and not due to a general rule.

Although container gardening is simple, the benefits and rewards you will reap are likely to be exponential. Do you recall feeling at peace even after a short walk outdoors in the park? Do you feel invigorated by the whiff of aromatic floral scent as you stroll by your neighbour's plant?

Even the smallest container garden can bring about the same level of therapeutic benefits. Simply by having some plants in your house can improve your emotional and mental wellbeing as they do wonders in making you feel calmer and more optimistic. This is the reason why research shows that hospital patients with a garden view recover more quickly than patients with a wall view. There is just something about watching a plant grow that puts you in a light-hearted mood and gives you a perspective on life. If you are feeling lonely and depressed, caring for plants may rouse your sense of purpose in life.

Let's not forget that plants are natural airborne contaminants removers. If you are often cooped up at home or in the office, you could potentially be inhaling harmful air substances that are trapped inside. Having indoor plants can remove air pollutants such as volatile organic compounds (VOCs) to improve the quality of air. If you often have headaches for no discernible reasons, it could be due to breathing in of stale air so having plants may eliminate this problem. Not only that, it is also a natural (and potentially cheap) humidifier machine that helps to soften the air and improve your quality of sleep by removing the carbon dioxide and filling the air with oxygen.

With endless benefits associated with plants, there is little reason not to venture into container gardening, especially when it can be hassle-free to maintain and suitable for small homes or offices. Besides, rather than relying on the chemical compounds in medications, is it not better to be naturally healed by our very own Mother Nature?



These plants are amazing ‘creatures’! They provide your garden with that much needed privacy screen from your nosey neighbour, and they are also the burst of colour you need to give vibrancy to your garden.

Climber plants have weak stems and need support to reach sunlight, hence they grow vertically. Some climb by using clinging roots, others climb by twining themselves around the support or using tendrils which can be shoots, leaves or even inflorescences. As such they are great space savers and they are usually used to band in a chunk to provide foliage to cover walls or fence.

Creepers, I should say are the exact opposite, they literally ‘creep’ along the surface (they have stems that creep) and spread themselves over a vast distance. Yes, they do occupy space. Creepers trail or (and also) climb, and they are usually flowering plants providing your garden with a burst of colour contributing to the vibrancy of the garden.

Besides giving your garden and the outside of your home an entirely new look and appearance, the growing of climbers and creepers can contribute to improving the overall ambience of the garden and they are also provenance of habitat and food that many small creatures will be thankful for. These plants also encourage the thriving of wildlife in the garden which in turn will contribute to a glowing and aesthetically refreshing garden.

THEY CLIMB & THEY CREEP

By Kate_Mcknny (Flickr.com)



By Ringgo Gomez (Flickr.com)



By Ne_viens (Flickr.com)

Another upside to growing climbers and creepers: there is no need for lots of equipment and tools, or special knowledge. You can literally beautify an ugly corner or adorn a boring wall or shed with flowering climbing plants to cover the spaces. But the success of your endeavour to grow climbers and creepers will generally depend on your selection of the right types of climbers and creepers. Speak to your neighbourhood gardener, or nursery, I am sure the operators there will be most glad to share their knowledge with you (if you buy the climbers and creepers from them!).

One of the most attractive features of climbers and creepers is that it takes a very short time for them to completely cover ugly facades or large expanses of unsightly walls. And if you need greenery on your balcony without much intrusion into the already small space available for you to laze over an aromatic cup of coffee and reading your favourite novel, climbers and creepers are definitely suitable for providing the needed greenery. Climbers and creepers can also be used on arches, pergolas, trellises, porches, arbours and pillars.

An essential thought on these plants – they have different ways of climbing and thus will require different kinds of climbing supports. Climbing frames or grids, ropes or wires appropriate to

the plants should be fixed to the wall or arches, pergolas, trellises, porches, arbours and pillars before planting. I read that the recommended minimum distance between the house wall and the climbing support should be at least 10 cm.

When purchasing climbers or creepers, it is important that you consider the light, temperature, soil and water conditions suitable for growth of these plants. These conditions are usually found on the labels attached or on the packaging of the plants.

Despite being mostly used for decoration, it is often felt that climbers and creepers are given the least interest among the various types of ornamental plants. I realised that an amateur gardener (like myself) may know only a handful of climbers and creepers. I guess these plants are for decorative purposes and they are rather sturdy folks that need little tending and attention, so practical information on these plants may not be readily available.

Again, I may be wrong so feel free to email me (editor@landscape-forum.com.sg) your comments. I am sure your comments will help me in my quest to know more about climbers and creepers. I will consider publishing these comments in the next issue for the benefit of our avid readers.



TRANSFORM YOUR BALCONY INTO AN OASIS

If you think gardening is an impossible task without a garden, think again. It is possible to cultivate your very own green haven in the balcony of your home.

Invest in an assortment of hanging containers and window boxes to inject diversity into your balcony. Plan an assortment of flowers that will complement one another to accentuate the oasis of your sanctuary.

One major factor to note is that balcony flowers will need to weather all sorts of natural elements, such as sunlight, wind and rain. A remarkable plant to highlight is the Petunia hybrida that blooms profusely when given good care. It is durable in harsh weather conditions.

It is not an easy task, but each balcony has the potential to blossom into a garden. If you wish to engage a professional to design and plan your balcony, to revamp the space into a pictorial view, or to simply transform it into a tranquil haven to add value to your property, contact Zen Landscape today.

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CDL HONoured WITH 2012 ASIA PACIFIC GREEN BUILDER OF THE YEAR AWARD

City Developments Limited (CDL) has been named the Asia Pacific Green Builder of the Year by global research and growth consultancy, Frost & Sullivan. This best-in-class award for the real estate sector is conferred as part of the 2012 Frost & Sullivan Asia Pacific Green Excellence Awards, which honours companies in the Asia Pacific region that have excelled in green product and technology innovation, and service achievements across various industries.

A total of five real estate developers from the Asia Pacific region were shortlisted for the Builder of the Year category. CDL emerged as the best-in-class performer following a rigorous measurement-based assessment and benchmarking process, which encompasses a broad range of criteria including green growth strategy excellence, number of green buildings certified, green and environmental sustainability concept implementation, degree of innovation with services and technologies, leadership in customer and stakeholder value, and leadership in market penetration of green buildings. In particular, CDL's first-mover advantage as one of the pioneer green builders in the region and its success in implementing the culture of building "Green" throughout the organisation with the commitment and drive of its top management was highlighted.

This latest award joins CDL's growing list of global and local sustainability accolades. CDL is the only Singapore corporation to be listed on all three of the world's top sustainability benchmarks: the Dow Jones Sustainability Indexes (World & Asia Pacific – since 2011), FTSE4Good Index Series (since 2002) and the Global 100 Most Sustainable Corporations in the World (since 2010).

ORGANIC LIFESTYLE STARTS AT THE ROOTS

People have now become savvier with hair care, and most people agree that organic products are healthier for the users and better for the environment. However, many have yet to embrace organic hair care because it is often associated with being pricey and inapproachable.

Organic-themed Hair Salon, Ecorganics, aims to change this perception by making organic lifestyle more accessible. Located conveniently at Upper Thomson and using only certified organic hair care products, Ecorganics provides affordable hair care and hairstyling services.

Ecorganics handpicks only products that are certified organic, and are 100% free from ammonia, artificial fragrance, paraben and sodium laureth sulphate (SLS). Armed with many years of experience in the hair care and styling industry, the hair professionals at Ecorganics are also experts in organic products.



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It began with a simple idea – to lead a greener and healthier lifestyle using products that are kind to the environment and our health. In search of safer and healthier products for our personal use, The Naturally Better Company hand-picked results-driven brands from around the world based on a strict criteria.

All of NaturallyBetter™ products are toxic-free, biodegradable and earth-friendly, certified organic, vegan, adhere to fair trade, and contain natural ingredients for outstanding performance. Beauty brands that are available in The Naturally Better Company boutique include Beyond Skin, ecostore, Lavuk, Priti NYC and Tallulah Jane.

With each small step taken, we can have peace of mind for our health and the future of our planet, naturally!



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CANDLES WITH MORAL SCENTS

Not many are aware of the harmful effects of paraffin and lead wicks. Although some candles are marketed as natural candles, in reality, these candles are made of paraffin wax, synthetic scent, synthetic fixatives, with minimal amount of plant essential oil added in.

Not only that, wicks in most candles may have lead or other type of metal core releasing toxic emissions during burning. Research shows that breathing fumes from a burning paraffin candle in an enclosed environment has the same detrimental effect as inhaling significant second-hand tobacco smoke.

Born and incorporated in 2009, Lights of Bliss provides the highest quality and most ecological candles available. The company takes pride in introducing these thoughtful and beautiful products to Singapore to ensure that candle lovers can enjoy a safe and natural alternative.



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Love In A Bottle designs and builds thematic terrariums and also conducts workshops on the making of thematic terrariums in the comfort of your home! Love In A Bottle is indeed seamlessly blending nature and art to express romance, appreciation and happiness over an occasion or anniversary. So the next time you need to express your love for someone special, and want to express this in a unique way, call Love In A Bottle. I assure you that expression of love will be so natural and artistic, it will last almost a lifetime! And, when you are feeling stressed over matters in life, get a thematic terrarium from Love In A Bottle. Your stress will just ooze away, right out of the bottle!

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VEGAN FAST-FOOD OUTLET ASPIRES TO SAVE THE WORLD

The first of its kind in Singapore, the concept for VeganBurg is founded on a plant based diet with the intention to save the world, one burger at a time.

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For more information, please contact:



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INSIGHTS ↗

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Going green and living the sustainable lifestyle has taken its impact on the lighting industry. LIGMAN now offers renewable and long lasting lighting energy in its sleuth of solar lighting solutions. With LIGMAN outdoor solar lighting equipment integrated with high efficiency light sources such as metal halide, high pressure sodium, compact fluorescent, and the even more efficient LED, and leveraging on the abundance of solar energy, you can enjoy outdoor lighting for many years without having to pay for the energy cost.

Another added advantage of LIGMAN solar lighting solutions: you have the benefits of exceptionally sustainable lighting products without exhausting natural resources and creating minimal ecological damage.

The technology for solar energy has been evolving rapidly. Photovoltaic technology and production process techniques are getting more efficient to drive cost down. Payback time for the equipment is getting shorter.

A major plus about solar power is that it can generate electricity no matter how remote the area as long as the sun shines there, even in areas that are inaccessible to power cables because LIGMAN solar lighting design is standalone types that external power cable connection is no longer required.

The photovoltaic array, battery cell and the associated components by LIGMAN design are of high grade for long lasting lighting function. It does not require maintenance except for cleanliness of the photovoltaic panel because of dust accumulation on its surface.

With so much to gain and none to feel disadvantaged, LIGMAN solar lighting solutions are certainly the choice renewable and the most desirable long lasting lighting energy.



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Located in the capital city of Western Australia - Perth - The Grove Precinct is at the forefront of leading edge sustainable design features and technologies. The area includes a public library, community learning centre and administration offices. The buildings include a climate sensitive design; energy and water treatment. The aim is not only to generate water and energy savings, but also to have an education impact and tell a story about what is being archived through using these energy efficient practices.



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