FLYT

Selected Projects
1999-2015

Contents

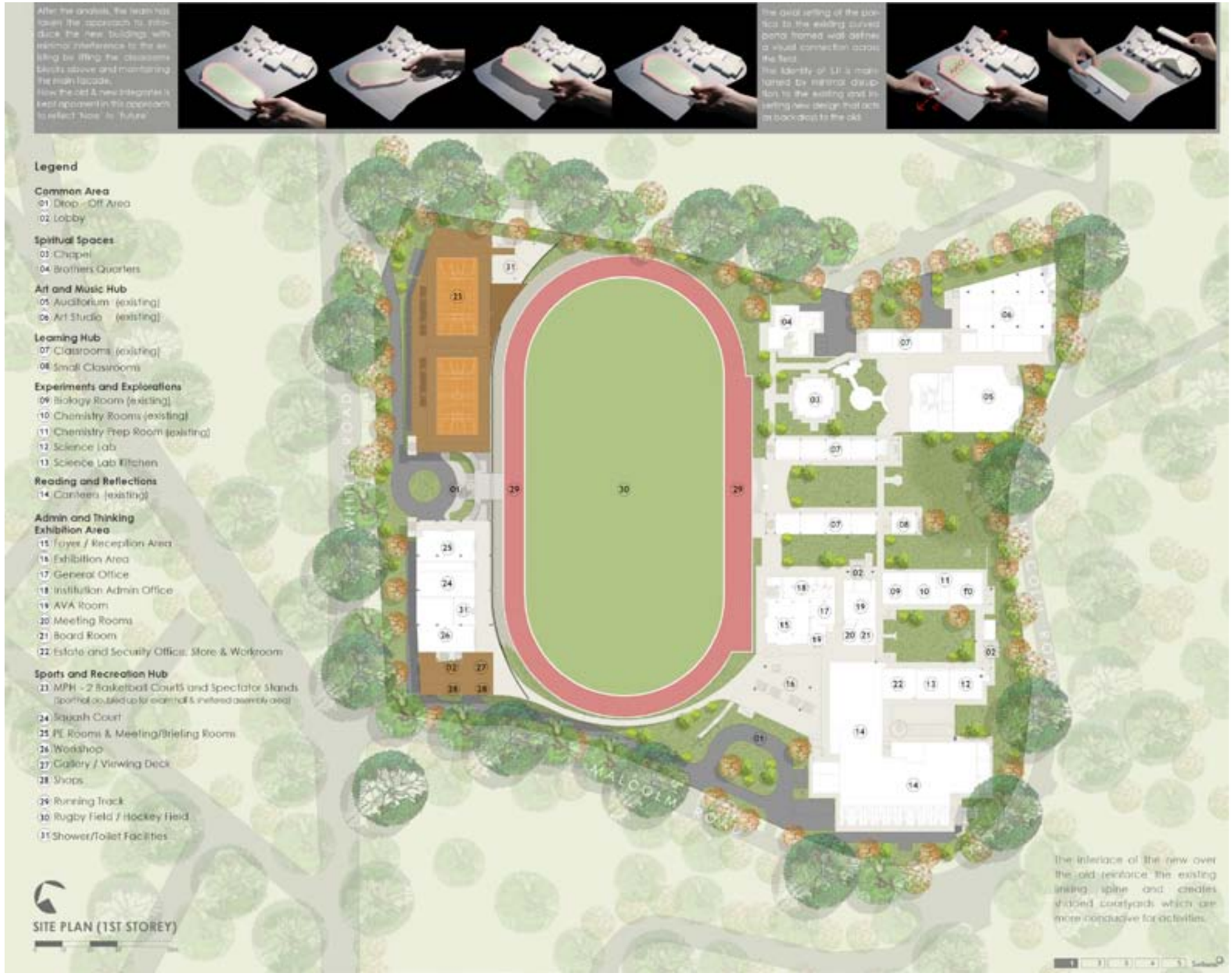
Built* Works

Built* Works (Residential)

Built* Works (Affordable Housing)

Un-built Works

Design Research & Experiments



St Joseph's Institution (Additions)

2013-2017

Award:
Design Competition Winner


St. Joseph's Institution

CleanTech One

2010-2012
Project size: 37,500 sqm (GFA)
Site Area: 1.50 Ha
GPR: 2.50

Awards:
2011 BCA GreenMark Award (Platinum)
2011 IES Prestigous Engineering Achievement Awards
2013 SIA Architecture Design Award (Honoarable Mention)
2013 Singapore Landscape Architecture (Merit)
2014 The Chicago Athenaeum Int'l Green Good Design Award
2014 World Landscape Planning Design Award (Bronze Prize)

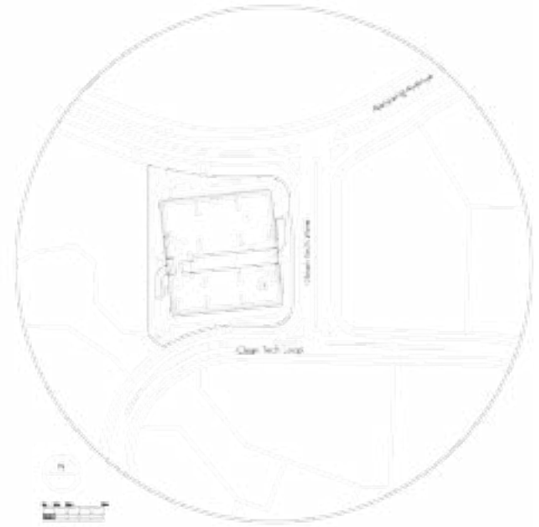
Project Background and Client's Brief
CleanTech Park is Singapore's first Eco-Business Park. It is a 50ha site developed for clean technology activities spanning the areas of R&D, test-bedding and prototyping, as well as other compatible industries. It positions Singapore as a global test-bed and the preferred site for the early adoption of clean technology products and solutions for urbanized settings in the Tropics.

Ecological Literacy
CTO, being the seed building, gives the Business Park a highly visual presence. Abutting the northern part of the green core zone, it acts as a gateway beacon and successfully gives JTC's development a strong identity. Being prominent and the initiator of an entire new business model movement, CTO has an added role as an educator. Itself manifested as a top green building to BCA's gradings, it also creates added awareness through its experimental attributes such as its sky trellis as a urban shading device and the reflective gazing panels in the atrium as light bouncers. A digital display is conceptualised (but not yet installed) for the public atrium that will show consolidated charts and diagrams about the building's energy performance including its renewable energy harvesting data.

Site Constraints to Design Solutions
Situated on a site with both a tight building height limit and relatively high plot ratio posed interesting challenges to the design of the building. The complication is doubled when the spaces required high floor-to-floor heights. A clever and strategic space planning and functional zoning approach was deployed to meet all the requirements of the building, and still craft out negative-void spaces within the building for greenery.

A typical and modulated floor plate capable of spatial partitioning permutations was designed for the upper levels to accommodate the research laboratories. The lower levels would house the other uses compacted three-dimensionally to maximise the available volumetric space.

Dividing the usable zone and the building's supporting 'organs' (plant rooms and back-of-house facilities) is a horizontal datum level that creates an artificial ground. This ground (zoned as "the Living Atrium") has its two ends stitched with the real ground physically and conceptually to form the 'Green Ribbon' that cuts through the building.



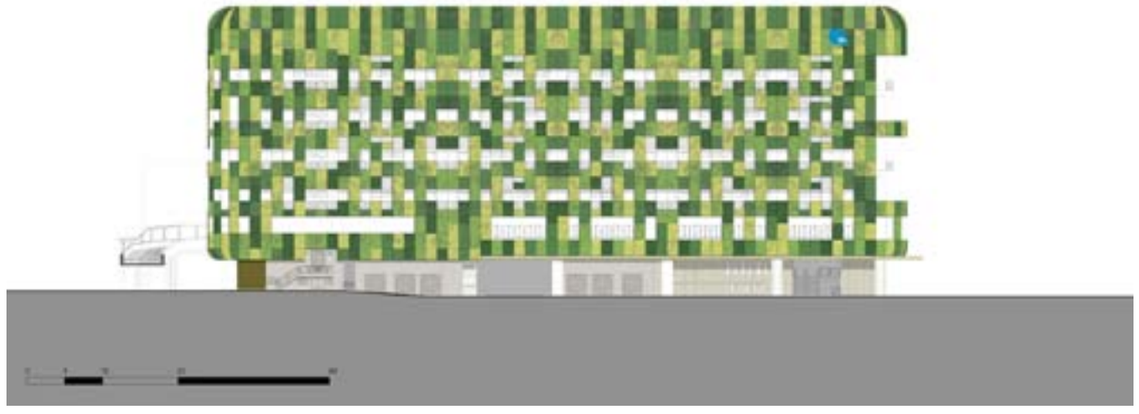
The Capsule form: "more with less"
Located at the entrance and being the 1st building of CleanTech Park, CTO is envisioned to be both an exciting place for R&D as well as an iconic object that communicates the vision of CleanTech Park in supporting clean technologies, sustainable development and urban solutions. It sets the design datum and green technology benchmark for subsequent buildings in the business park. Right from the onset, CTO itself as a building is conceived as a living laboratory where test-bedding and early adoption of new products is fully embraced.

The design philosophy is to have a holistic approach that seeks to balance the environmental, economic and social aspects of a sustainable design. To 'achieve more with less' - more productivity with less energy, more energy with less carbon, and more economic growth with less impact- is the driving force of the design. Conceptualized as a 'capsule-like' form nestled amidst the organic greenery, the 'intense and compact' 6-storey building epitomizes the design attitude and aim of 'achieving more with less'.

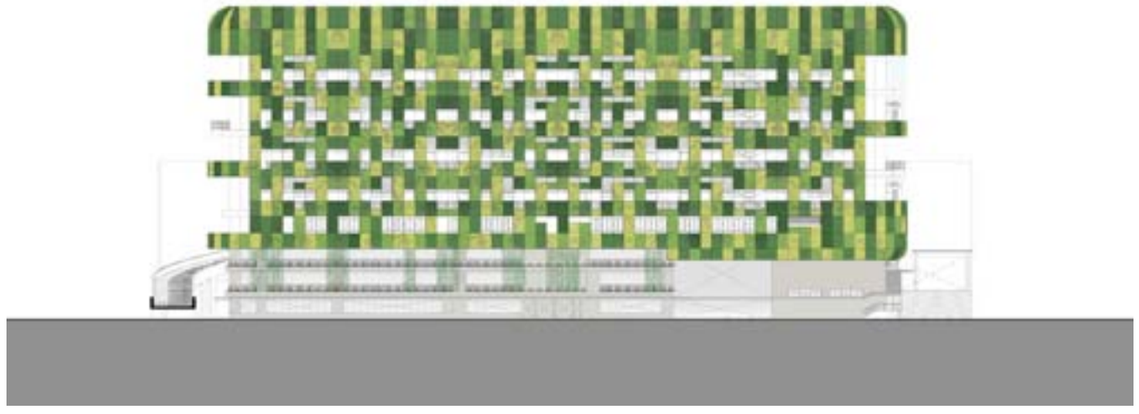
Wellness of Inhabitants
At the heart of the building is the 'Living Atrium' which visually connects working areas to the public areas below. It is designed to be a comfortable and casual semi-outdoor environment that is welcoming and inclusive to its nearby communities. Located within the full-height atrium space is a café with seating spilling out onto the Green Ribbon. The atrium zone also works as an informal meeting area, doubling up its primary logic as circulation space.

The distribution of sky gardens of various scales and types along the periphery of the circulatory corridors provide an excellent area to contrast the highly clinical lab interiors of each office. It is believed that the natural ventilation combined with good shading contributes greatly to physiological and psychological wellness.

The inhabitants are feasted with a building that has excellent indoor environmental quality Alongside the porosity of open-ness and views to the surrounding landscape, the building is easily understood and appreciated.



South Elevation



North Elevation

West Elevation

East Elevation

Harmonisation with Place and Environmental Sensitivity

Recognizing the inevitable fact that the development of CTO will alter the existing green rustic environment, measures are taken to protect the existing ecology as much as possible, striving to achieve a seamless and benign integration of the built environment and nature.

The design has managed to achieve a high total green area of 2.7 times its site area. Existing trees are also retained as much as possible, and native plants selected in the landscaping design to achieve the tropical theme (which blends unanimously with the overall theme of the business park).

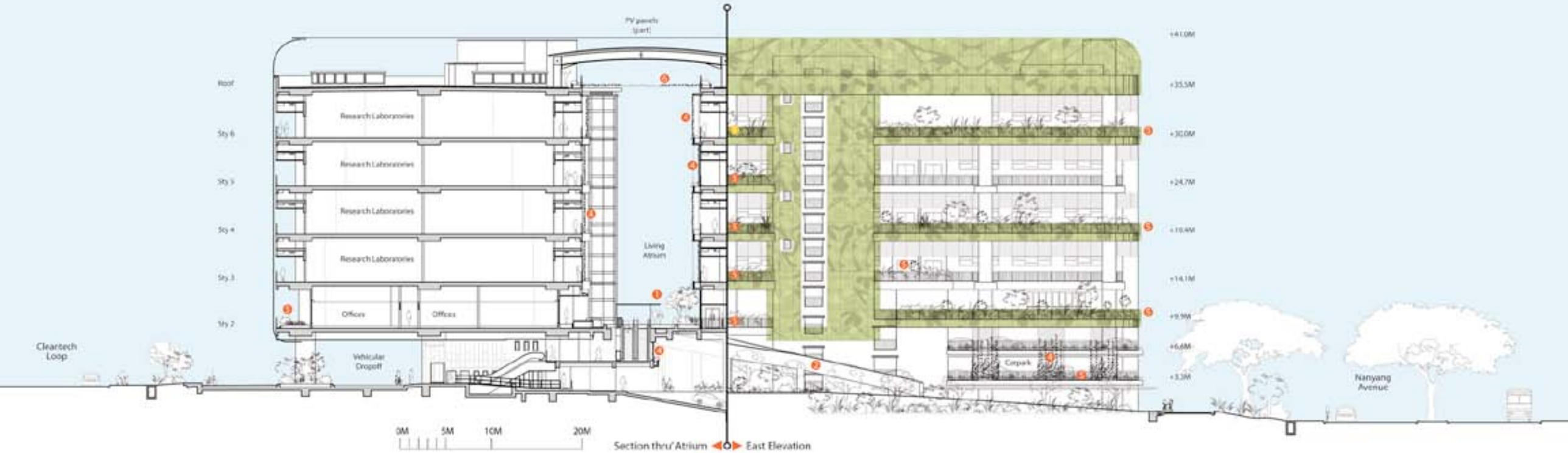
Integrated Landscape

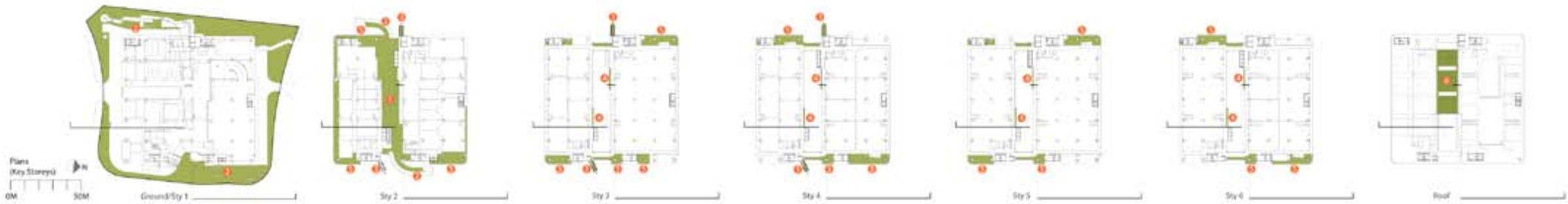
CleanTech Park is developed around a Central Green Core which is characterized by conserved topography and lush tree planting. At the urban scale, this Central Green Core serves as a pedestrian portal to all areas of the business park and provides spaces for interaction for the people working in the area. From design inception, CTO has been organised to have its circulation flows complement its adjacency to the northern part of this Green Core.

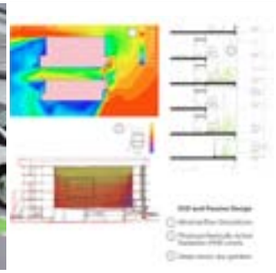
Landscaping at CTO is designed to work seamlessly within and around the building by juxtaposing the pure architectural form with the abundantly injected planted high-rise greenery of gardens, walls and sky trellis.

The range of features and details are comprehensively integrated with the architecture and with each other. The palette of locally familiar plants and trees help create a cooler micro-environment, and are themselves irrigated by harvested rainwater. At the ground level, 3 bio-swales retain a high percentage of rainwater to reduce irrigation needs.

The composite array of landscaping and high level greenery at CTO is integral to its functional uniqueness and usability. What is created is conceptually powerful, aesthetically appealing and functionally practical.


PV panels (part)
Roof
Sty 6
Sty 5
Sty 4
Sty 3
Sty 2
Research Laboratories
Research Laboratories
Research Laboratories
Research Laboratories
Offices
Offices
Living Atrium
Vehicular Dropoff
Cleartech Loop
Carpark
Nanyang Avenue
+41.0M
+35.5M
+30.0M
+24.7M
+19.4M
+14.1M
+9.9M
+6.6M
+3.3M
0M
5M
10M
20M
Section thru' Atrium
East Elevation

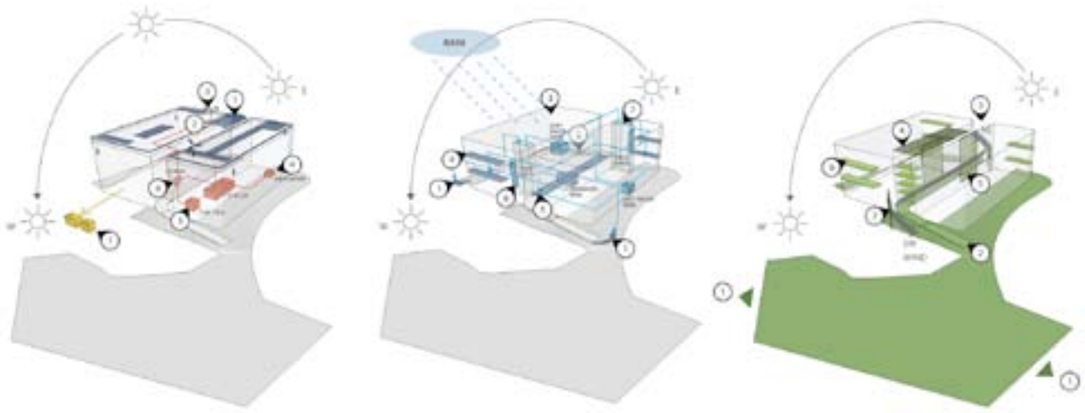

Plans (Key Storeys)
N
0M
50M
Ground/Sty 1
Sty 2
Sty 3
Sty 4
Sty 5
Sty 6
Roof
Key Greenery Features
1 Living Atrium
This stone is a unique focus, where the inside of a building has an outward looking approach. The East-West alignment allows
2 Green Ribbons
The two ramps access to the atrium on its East and West each that stitches the crowd stream seamlessly to the ground level. Integrated within the landscape details here is a
3 GreenWall (Windwall)
Physical walls located and protruding from the East and West elevations that help channel air flow from the natural breezes of the tropics. On its face, a simple system of
4 GreenWall (Atrium)
Used beside the glass lifts of each tower facing the atrium, the sketch of green wall is composed of tiny spooles that give an added 3-dimensional relief. Framing the two
5 Sky Gardens & Planters
The extensive pockets of sky terraces of the East and West elevations are both a visual feast and a practical cooling strategy. These
6 Sky Trellis
Conceived to be an experimental sky-rise landscaping detail, the sky trellis underwent extensive experimentation and testing during the entire construction period of the
Green Features Legend
1 Living Atrium
2 Green Ribbon



Renewable Resources and Tropical Passive Design
Besides integrating state-of-the-art technologies (PV panels, rainwater harvesting, Electric car charging station, test-bed wind turbine, etc.) into the building, the design strongly believes in applying passive design to demonstrate sustainability values that are tailored for the Tropics.

By understanding the climatic context which the building is situated in, a climatic responsive building is design, reducing the dependency on mechanical and electrical machinery.

Wind and shadow simulations were done to ensure that the 'Living Atrium' is in a comfortable condition. Another example is the use of Photosynthetically Active Radiation (PAR) simulations to identify pockets where there is enough solar radiation and light for vertical greening within the atrium space.



Environmental Gadgets

1. Photovoltaic Panels
2. Windturbine (test-bed)
3. Weather station
4. Air purifier to improve the air quality in FM office (test-bed)
5. Fuel Cell (1 Mega-watt) (future)
6. Energy Performance Digital Screen (future)
7. Recycling (common office waste)

Water Elements

1. Biotope (rainwater)
2. Rain Garden (rainwater)
3. Rooftop Rainwater Collection (rainwater)
4. Irrigation of Sky Gardens (rainwater)
5. Irrigation of Green Ribbon (rainwater)
6. Water Storage Wall (by others)
7. Washbasin water and the air-con condensate collected and pumped back for toilet (Water Cistern) flushing

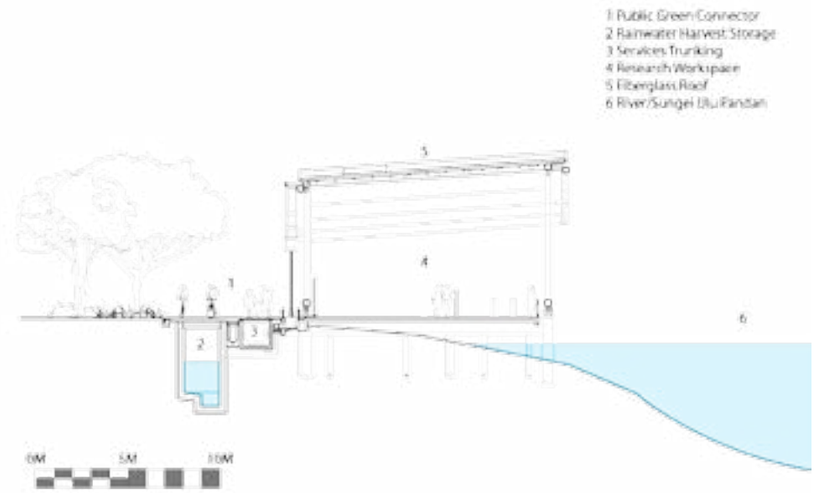
Landscaped Elements

1. Connection to larger Green Core
2. Green Ribbon
3. Living Atrium
4. Roof Trellis
5. Green Walls
6. Sky Gardens
7. Green Wall Wind Wall/Scoop

Scalar Illusion and "Wrapping"
CTO condenses a usable floor area of almost half a million square feet, into a compact capsule-like form, making the building seems smaller than it actually is. This is achieved through a visual treatment of the perforated screen that wraps the building, comprising of controlled and modulated perforations producing a graphic image of leaves and branches. Applying this technique over a pure form creates a powerful presence that articulates clarity and simplicity.

Although measuring close to 100m in its four sides, CTO achieves an intriguing scalar illusion and appears smaller than it actually is. As intended , the architecture sits in its environment, respecting its humble and honest duty to be part of the larger research park (being developed by JTC).

Climatically, the skin functions as a shading membrane that allows through it an abundance of natural lighting. Its perforated treatment assists to cut down the rainwater splashing onto the corridors, but allows one at the corridor to have uninterrupted views to the surrounding beautiful landscape (especially at the datum level of the tree canopies).



Van Kleef Aquatic Science Centre

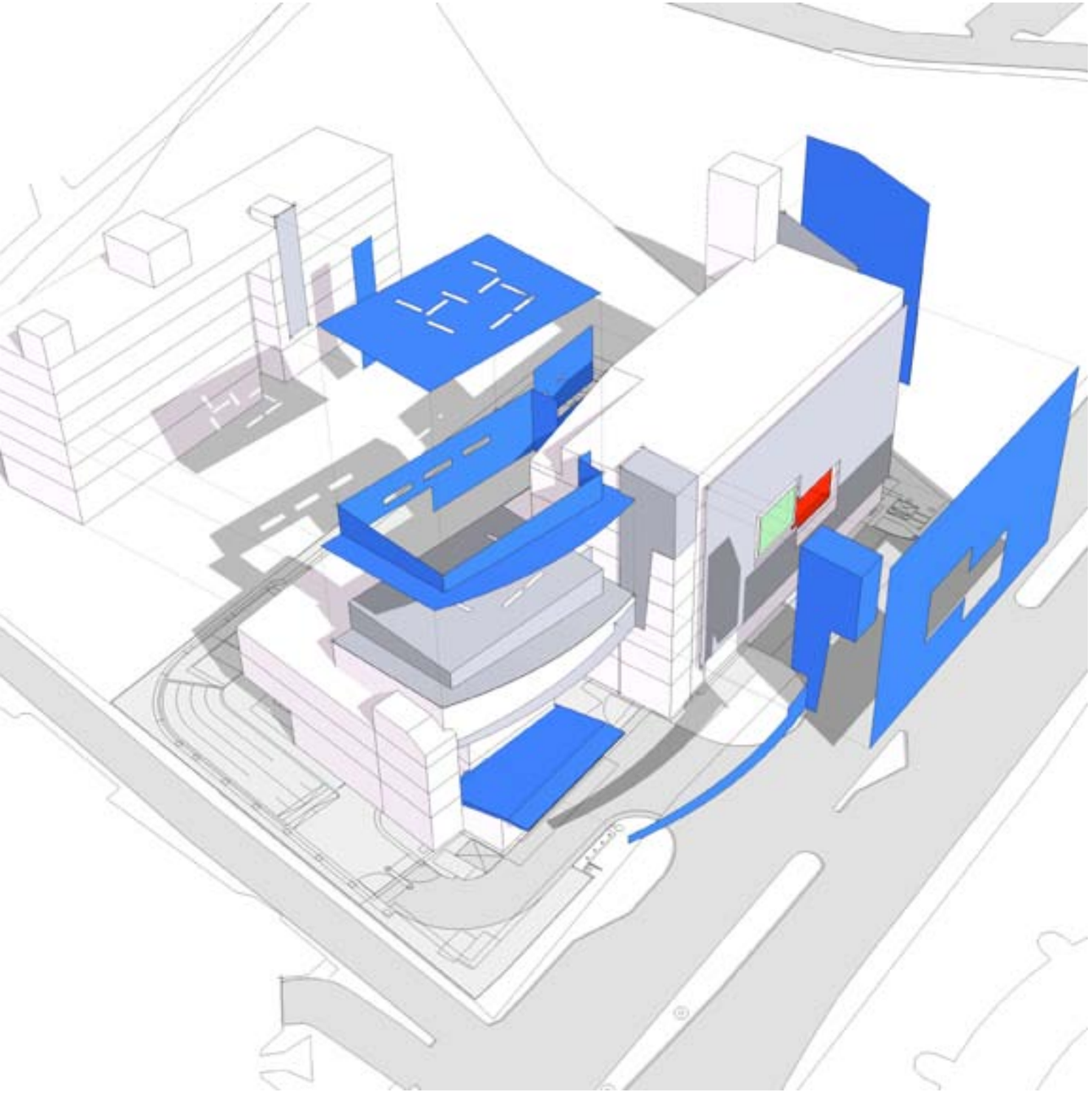
2008-2010
Project size: 1,785 sqm (GFA)
Site Area: 0.88 Ha
GPR: 0.2

Awards:
2011 BCA GreenMark (Gold Plus)
2011 US LEED (Gold)

The Van Kleef Aquatic Science Centre is a water research centre situated along the natural embankment of Sungei Ulu Pandan. The first-of-its-kind facility has a design that responds intimately to its context both environmentally as well as an urban form. Elevated off the river bed, it retains the land and waterways biodiversity, and counters any extreme climate changes (it is designed to be just above the highest possible flood level).

From the onset of a long design process, we understand that the majority of the centre's spaces can be naturally ventilated and simulated with daylight conditions through a fresh approach of designing with minimal enclosed and air-conditioned spaces. It creates almost outdoor physical conditions, which are needed for research work, while maintaining the weather protection function using large fibreglass roofs.

The main design challenge is the roof: it has to be both aesthetically appealing due to the high visual prominence, as well as highly functional in harvesting rainwater for research use. Integrated with an expressive structural design, the roof sheets are shaped to direct rainwater to the chain links that guide the funneled rainwater to storage tanks underground. The geometry and form of the roof also effectively alleviates and disperses trapped heat.



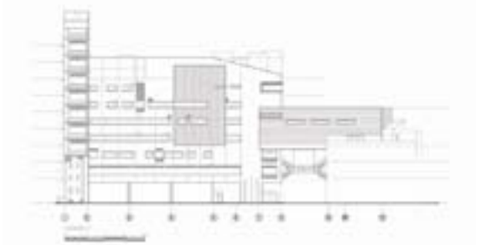
Queensway MHA Building

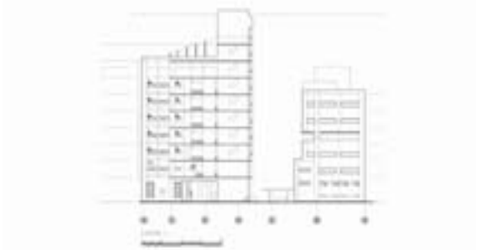
SCDF 1st Div HQ cum Alexandra Fire Stn co-located with SPF Queenstown Neighbourhood Police Centre

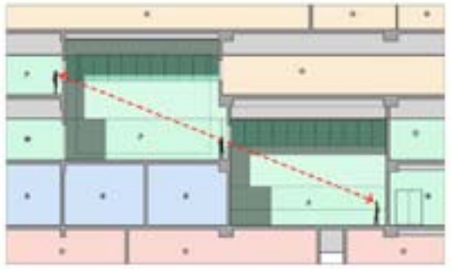
2000-2005
Project size: 19,040 sqm (GFA)
Site Area: 0.72 Ha
GPR: 2.64

Before

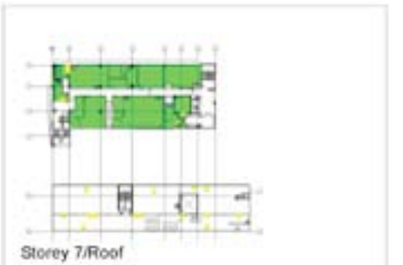
After








Storey 3


Storey 7/Roof


Storey 2

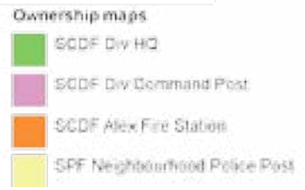

Storey 6


Storey 1

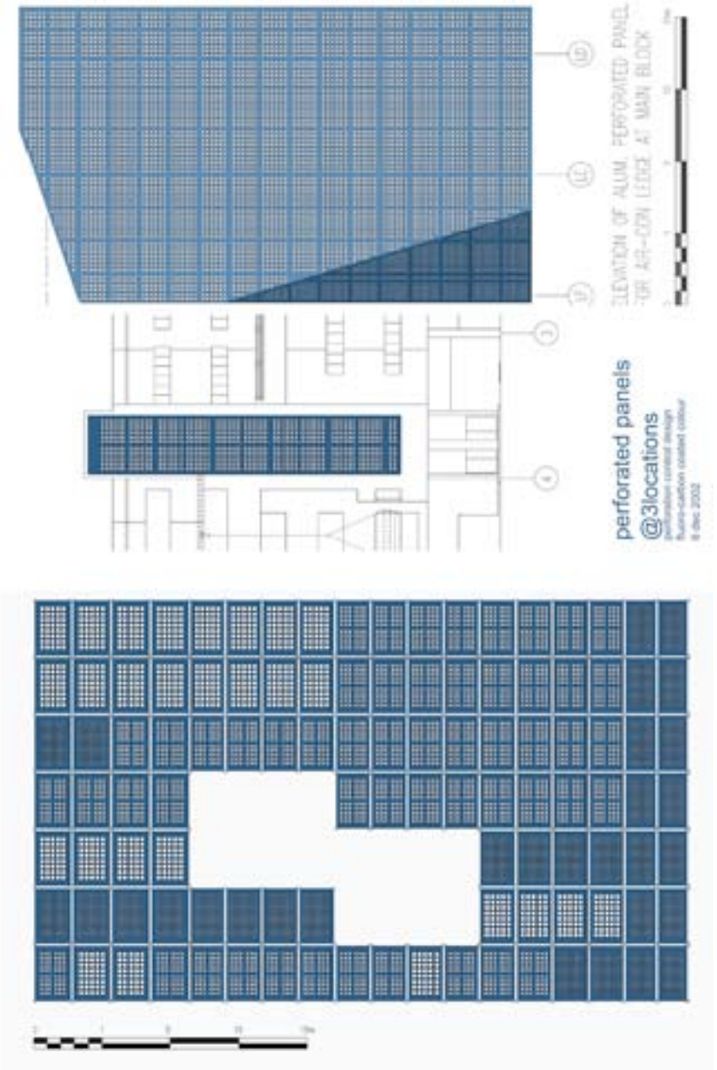

Storey 5


Basement

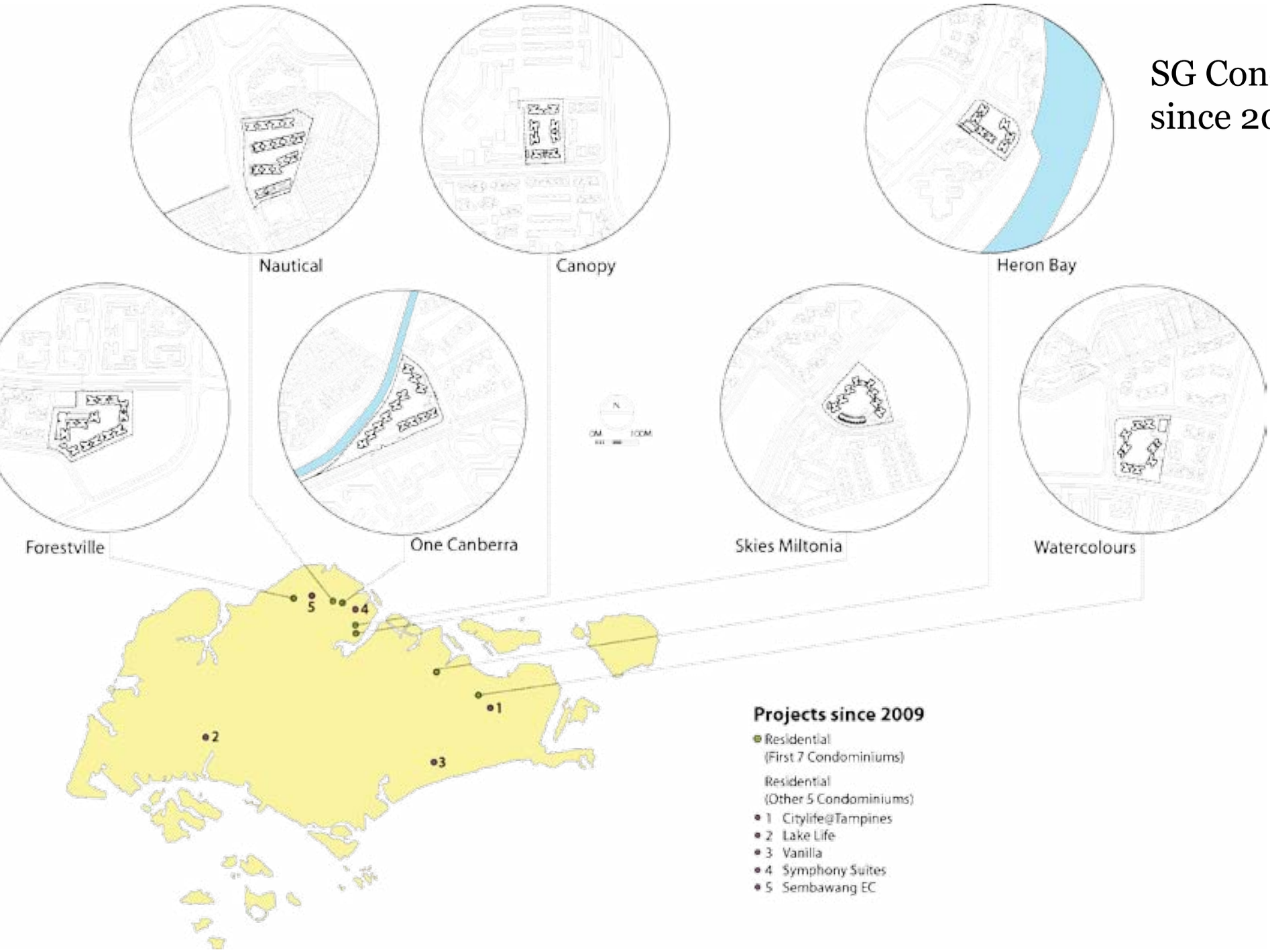

Storey 4


Ownership maps
SCDF Div HQ
SCDF Div Command Post
SCDF Alex Fire Station
SPF Neighbourhood Police Post


QUEENSTOWN
NEIGHBOURHOOD POLICE CENTRE


ELEVATION OF ALUM. PERFORATED PANEL
FOR AIR-CON LEDGE AT MAIN BLOCK
perforated panels
@3locations

SG Condominiums since 2009



Forestville

2012-2016(estimated)
Project size: 72,240 sqm (GFA)
Site Area: 2.58 Ha
GPR: 2.80

Located in the leafy northern suburb town of Woodlands, Forestville has 653 residential units of a wide spectrum of sizes. The 14 residential blocks are arranged around the site perimeter to achieve the generous and spacious central landscape, which is one of the project's main selling features. A few residential towers are located on top of the podium car park in the west. On the roof of this car park is a communal garden designed for quiet activities such as yoga.

Most of the units located on the ground have a private-enclosed space that faces the central landscape. They also have direct access to the development's many water features such as the family pool, lap pool, wading pool, and reflection pool.

Forestville is one of the very few executive condominium projects, whichh as a large collection of water-based activity zones. Complementing this is the ingenious styling of soft and hard landscaping. Characteristic species of plants, such as the traveller's palm and frangipani, are artistically clustered together in different parts for spatial impact, and to give a sense of identity to the residential blocks.

With its artfully crafted and lush landscaped environment, Forestville offers its inhabitants a tranquil home and a welcoming feeling of retreat.

Skies Miltonia

2011-2015(estimated)
Project size: 39,015 sqm (GFA)
Site Area: 1.69 Ha
GPR: 2.10

Award:
2013 BCA GreenMark Award (GoldPlus)

Towering above the picture-perfect precinct of Yishun is a landmark of the North, Skies Miltonia. The prominent development elegantly combines eight blocks of 13-storey condominiums, a row of ten sophisticated townhouses and two retail units. It fronts both Orchid Country Club and Sungei Seletar Reservoir, which makes the views from the units truly spectacular.

From a distance, this development is easily distiguishable because of its unique layout and stunning massing configuration.

The elevation treatment adds finesse and varety to the architecture. Bold frames express the development's emphasis on views and accentuate its elevation composition. Poised at the central and highest location of the blocks is a Sky Gym. A glass lift that enables residents to enjoy views of the golf course ascends directly to this pure 'box'. In order to extend the optimal viewing edge, the building's mass was moulded and formed to hug the western and eastern boundaries of the site.

The townhouses along the southern edge complement the building's composition. This results in an articulated skyline that is architecturally clear and powerful. Central to the design is the large expanse of open space in the heart of the site that accommodates all the facilities, which are common to all high-end condominium developments.

Heron Bay

2011-2015(estimated)
Project size: 47,638 sqm (GFA)
Site Area: 1.36 Ha
GPR: 3.50

Award:
2014 BCA GreenMark Award (Gold)

With its close proximity to Sungei Serangoon and Punggol Park, Heron Bay is designed to tap on the good views and accessibility that are offered by the site. The design concept of 'a river runs through' inspired the extension of the waterway into the estate and, connects all residential blocks with extensive landscaping and water features.

The executive condominium project provides a wide range of unit types ranging from two to five-bedroom units. Dual-key units have also been designed and introduced to cater to multi-generation families.

Penthouse units are double storey with open-to-sky roof terraces and provisions for an outdoor BBQ or jacuzzi.

All six blocks are orientated to maximise the views towards the waterways and park. These 16 and 17-storey towers are expressed with a modern interpretation of wave-like profiles, together with the gable-end walls and beams. The landscaped deck is designed with lush plantings and various pools that surround the residential units. For the ground floor units, water features like jacuzzis are provided as a 'lifestyle option' for buyers.

Full-condominium facilities are provided, including a 50m lap pool, water play equipments, hydro spa, clubhouse-cum-gym, and tennis court. The basement car park provides direct access to all the residential units.

The Nautical

2010-2015(estimated)
Project size: 42,572 sqm (GFA)
Site Area: 3.04 Ha
GPR: 1.40

Inspired by Sembawang's rich naval and rubber plantation past, The Nautical is a reinterpretation of docking cruise ships. The sloping site forms a 'basin' along Sembawang Road, an ideal landform for a water landscape with semi-basement vehicle parking below.

The Nautical is a condominium development with 435 dwelling units of different sizes, from one-bedroom to four-bedroom units, as well as penthouses. Four five-storey building blocks are sensitively placed across the sloping terrain facing the north-south and are slightly tilted to play on distorted perspectives. This extends the sense of arrival and other major landscaping, while minimising glare and heat gain for all residential units.

The blocks are stylistically sloped and sliced to express the angular curves of a boat. It also takes onto its pristine white façade an expression of balconies, windows and ledges. Two blocks in the middle are sloped with stepping terraces at the west that extend down to ground level where the water landscape terminates at the horizon, framing the perfect sun-set moment.

This project demonstrates how a well-conceived idea can result in an impactful commercial development that can generate extremely positive interest from both prospective buyers and the local community.

One Canberra

2010-2015(estimated)
Project size:74,303 sqm (GFA)
Site Area: 2.97 Ha
GPR: 2.50

Aligned along Sungei Simpang Kiri and inspired by a water theme, One Canberra is a prestigious executive condominium project with 665 dwelling units. It provides a variety of unit types catering to couples, as well as multi-generation families via 'dual-key' and double storey penthouses.

Open balconies and roof terraces create extended spaces for outdoor activities and greenery for all units. The water from Sungei Simpang Kiri is extended into the 'heart' of the land, and creates a variety of waterscapes among its abundant tropical foliage. These waterscapes include a free-form 50m pool, family pool, wading pool, jacuzzi, water playground, cascading features and reflecting pools. The approach of using 'water' as the linking element between the inside and the outside softens the high-density housing requirement.

Arranged in a staggered manner, the 12 to 14 storey towers are orientated to maximise distant views and avoid facing the western sun. The layout fully utilises the triangular plot and creates interesting common spaces with a unique skyline, especially along the waterfront. These towers are draped with large windows and different balconies – a simple architectural façade that reflects its dynamic and 'fluid' characteristic along the waterfront.

Watercolours

2010-2014
Project size: 42,910 sqm (GFA)
Site Area: 2.04 Ha
GPR: 2.10

Watercolours' design draws attention to its colour-themed central communal spaces, which house a host of facilities, including a 50m lap pool, children's wading pool, water jets spa, clubhouse and gym, and water-themed play areas. Colour accents are adopted at these features to expressively enhance the art- themed and vibrant activity space.

Housing 416 units, the eight residential towers encircle the water features. The blocks along the east-west edge of the site are rotated about their axis so that no units face the west or the adjacent development's blocks. The variety of units comprise two, three and four-bedroom units, dual-key units, and penthouses.

Views of the central space are optimised through large balconies in the living rooms, as well as the master bedrooms in the upper storeys of the blocks. The single-storey semi-basement car park is also cleverly designed to integrate air well openings at the landscape deck level for enhanced natural ventilation. Thu s, a wate r sprinkle r system is not needed, effectively fre eing up head room for other Mechanical & Electrical Engineering services.

The Canopy

2009-2013
Project size: 46,413 sqm (GFA)
Site Area: 1.66 Ha
GPR: 2.80

Award:
2011 BCA GreenMark Award (GoldPlus)

The Canopy is located in the mature estate of Yishun. It is bounded on its east by a large expanse of vegetation and, on its north by an open space of playground and recreational amenities. It is a high quality executive condominium development comprising eight towers, which house 406 two, three, and four-bedroom units. With the site configuration, constraints of some blocks facing the west were resolved by creatively designing the unit's plans and fenestration proportions. A strong visual and physical axis runs from the development's entrance to Yishun Neighbourhood Park. The layout creates a common space centred on nature and its themed play areas.

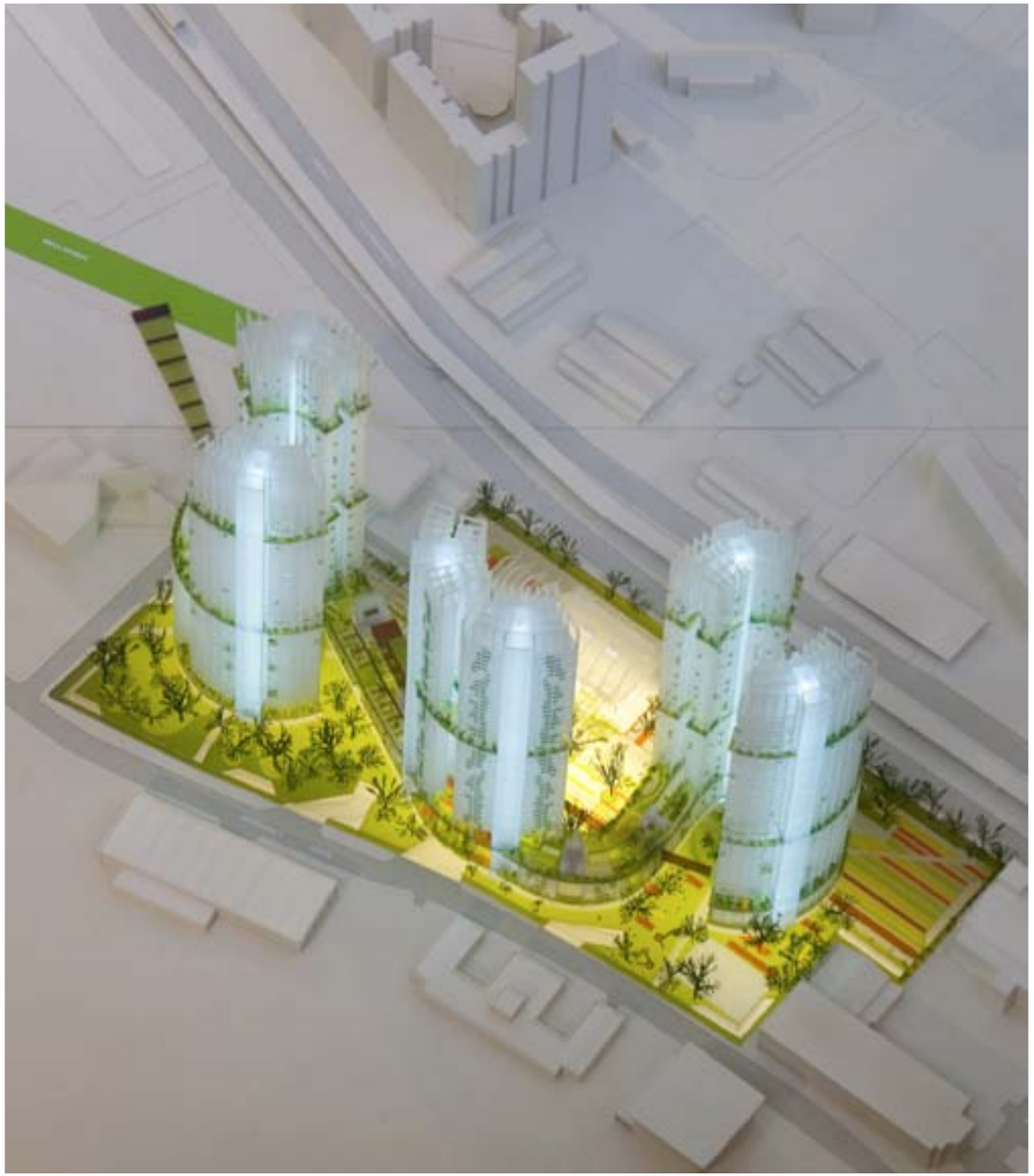
The Canopy is extensively landscaped and boasts an array of facilities including a 50m lap pool and children's wading pool. The gym pavilion and outdoor dining structures overlook the pools. Views of these internal green and recreational spaces from each apartment are carefully optimised and individually considered.

Designed for Singapore's Building & Construction Authority's Green Mark Gold Plus Award, its details are custom-made and well crafted. Well proportioned balconies in each apartment and passive design elements promote natural ventilation and reduce heat build-up in internal areas. As one of the first private residential projects to adopt green design technologies, the project incorporates recycled building materials, rainwater harnessing and environmentally responsible construction management.

Kunming Eco-Bungalows Masterplan

2007

Project size: 94,427 sqm (GFA)
Site Area: 9.74 Ha
GPR: 0.97



Dawson New Generation Housing

2007-2020(estimated)
Project size: 146,413 sqm (GFA)
Site Area: 3.14 Ha
GPR: 4.67

Award:
Commission upon invitation
BCA GreenMark (Platinum) (Targetted 2015)

This public housing development brings together 1,200 dwelling units, a hawker centre, HDB branch office, commercial and social communal facilities in an intensified rejuvenation of Singapore's very first satellite town.

A sense of place and memory is created through the introduction of a new vibrant centre where the old town centre used to sit. A continuous ribbon of landscaped features and amenities embraces the existing old market and former town square. The green experience extends from the central garden at the ground level up into the communal roof gardens with shared amenities for residents. Landscaped sky terraces offer panoramic views towards the city and its surroundings.

Home in The Park

Modulation and Permutations of housing units.

Altitude levels: Three recognisable altitude bands, 'low-rise', 'mid-rise' and 'high-rise', fulfil the variety of living preferences. The 'low-rise' housing creates intimacy for the activities occurring at ground level, while the 'high rise' flats capitalise on views across the surrounding landscape.

Flexibility : Flats can be extended in both a horizontal and vertical direction, allowing for a more organic variety of accommodation to develop.

Family Unit : A modular system made of standardised parts allow for flats to be altered and adapted internally according to family requirements.

Sustainability: An informative web-based selection approach provides varied choices of spatial configuration to encourage minimal renovation in order to save valuable energy and material resources, this is a more sustainable living.

Extended Family Living

Below : A Typical Day at the New Dawson Estate

An illustration of the way each family member engages with the spaces created in the Estate

Grandma and Grandpa
are the heart of the family. Grandpa retired three years ago. He now enjoys reading, meeting friends with their birds, walking in the park... all the things he had no time for before.
Grandma loves to care for her grandchildren and to prepare the daily family dinner at their place...

Their **younger daughter**
has just married her former colleague and they have started their own advertising agency. They enjoy the convenience of living together with their parents, but also are happy to adjourn to their own studio above.

Their **older son**
has been married for eight years: he and his wife have two children, 7 and 3 years old.
He is working as a bank administrator and his wife is a teacher.

As the grandparents only live one level above, it is convenient for them to leave their children with their grandparents while they are out for work; and the children are happy to be with Granny and Grandfather.

grandpa

grandma

younger daughter

son-in-law

older son

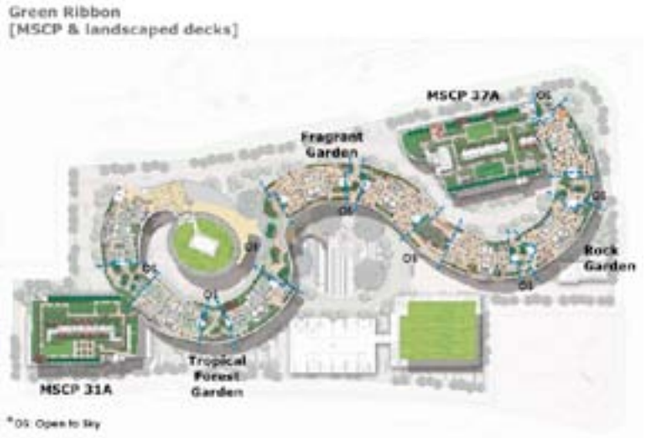
daughter-in-law

granddaughter

grandson


Home in the Park
Gradation of Green Datums
Sky Terraces
@ 27th Storey
• Landscape Garden with communal gathering spaces
• Services areas & refuge floor
Green Ribbon
@ 2nd to 8th Storey
•An extension of greenery & communal facilities, eg 3D playground & fitness, seating
•corners & communal spaces
Town square@Ground Level
• Well shaded by existing trees
• central plaza for main activity zone


Sky Terrace
[Sky-gardens/Landscaped decks)
Sun-rise Terrace
Sun-set Terrace
OS
*OS Open to Sky


Green Ribbon
[MSCP & landscaped decks]
MSCP 27A
Fragrant Garden
Rock Garden
Tropical Forest Garden
MSCP 31A
*OS Open to Sky


1st Storey Landscape
LEGEND
Margaret drive (cat 4)
Commercial Building
Commonwealth avenue [Cat 2]

Tiong Bahru View

2006-2015
Project size: 84,585 sqm (GFA)
Site Area: 1.71 Ha
GPR: 4.95

Awards:
2012 BCA GreenMark (Gold Plus)

Located for High-density Living
Tiong Bahru View is located in the matured and centrally located Bukit Merah, with Tiong Bahru MRT station integrated with the mall literally adjacent to it. With such excellent connections to various transport networks, and geographically a sought-after address, the development sits on prime land and is thus planned with an unusually high plot ratio of 4.95.

Having to house 700 dwelling units on a small 1.7 Ha plot, the development is dense and could only go sky-wards. Achieving density requires clear strategies to ensure a highly liveable and comfortable built environment that does not feel congested. Thus, our approach was to ensure that the lower zone is porous and has a sense of open-ness whilst being sensitively organised with pockets of spaces for residents and public alike.

Urban Design and Streetscape
With the site directly fronting a main and busy road, several key site planning decisions were made as a response the existing conditions.

The tall 25-40 storey residential towers were deliberately set back so that the original urban quality of the street setback is not affected. The location is characterised on one side by the commercially busy Tiong Bahru Plaza mall, and on the other by a stretch of SIT housing lining both sides of the road. At the mall side, there is a reasonably deep plaza-like pedestrian space along the entire road edged; for the SIT housing blocks, the scale is also gentle as the buildings are only 4-storey high. To respond to this, Tiong Bahru View's strip of 2-storey shops was placed aligning Tiong Bahru Road with a segment bending into Bukit Ho Swee Link. Furthermore, the provision of covered walkway for the public also serve to increase the footfall for the shops and the eating house, enhancing their commercial viability.

Another key planning strategy was the staggered arrangement of the four blocks. All the residential towers are orientated North-South to minimise the solar heat gains. The set of two blocks at the rear are principally the large-unit point blocks and are paired to capitalise on the stunning views. To relate to, and also the ensure minimum overlapping of frontages, the other pair of towers at the front are positioned towards the eastern half of the site. This also coincides with the profile of the site. Looking from the main street elevation, the staggering of the front towers rising from the left to right is also a response to the existing Tiong Bahru Plaza, ensuring sufficient distance and providing relief between the tall structures.

Pure Function and Simple Forms

The buildings are designed to evoke a sense of grandness and punctuate the Tiong Bahru urban skyline with its undulating heights and simple form. With clean lines and large windows on its façade, the development also lends a touch of modern housing typology for this matured precinct.

The unit layout is geared to provide maximum views outwards, enhanced privacy and flexible functional spaces. All the units come with full height windows in the living/dining area.

The long 2-storey commercial-communal block facing Tiong Bahru Road serves as a strong horizontal urban edge to the streetscape. The pedestrian entrance is located between the commercial block and the eating house. It has a double volume space with covered link ways, trellises, seats, planter boxes with pavements that integrate seamlessly with the precinct landscape that flows into the lift lobby spaces and the central roof garden. The residents can meet and interact as well as mark the entry into the precinct with this grand entrance.

'Tiong Bahru style'

Tiong Bahru View is located in a matured estate that has a unique architectural history and context. From the onset of the design conceptualisation, it was decided that the new 40 storey residential towers would draw design reference from its long-existing neighbours.

Tiong Bahru Estate was the first project undertaken by Singapore Improvement Trust (SIT), administered by the British colonial authority, to provide mass public housing in Singapore in the 1930s.The architectural features were highly influenced by the Art Deco style. The style adapted the Singapore tropical climate and resulted in many details of distinctive aesthetic character.

Examples of these included the curving forms, long horizontal lines, circular staircase, the circular 'nautical' fenestrations, and the use of chamfered corners.

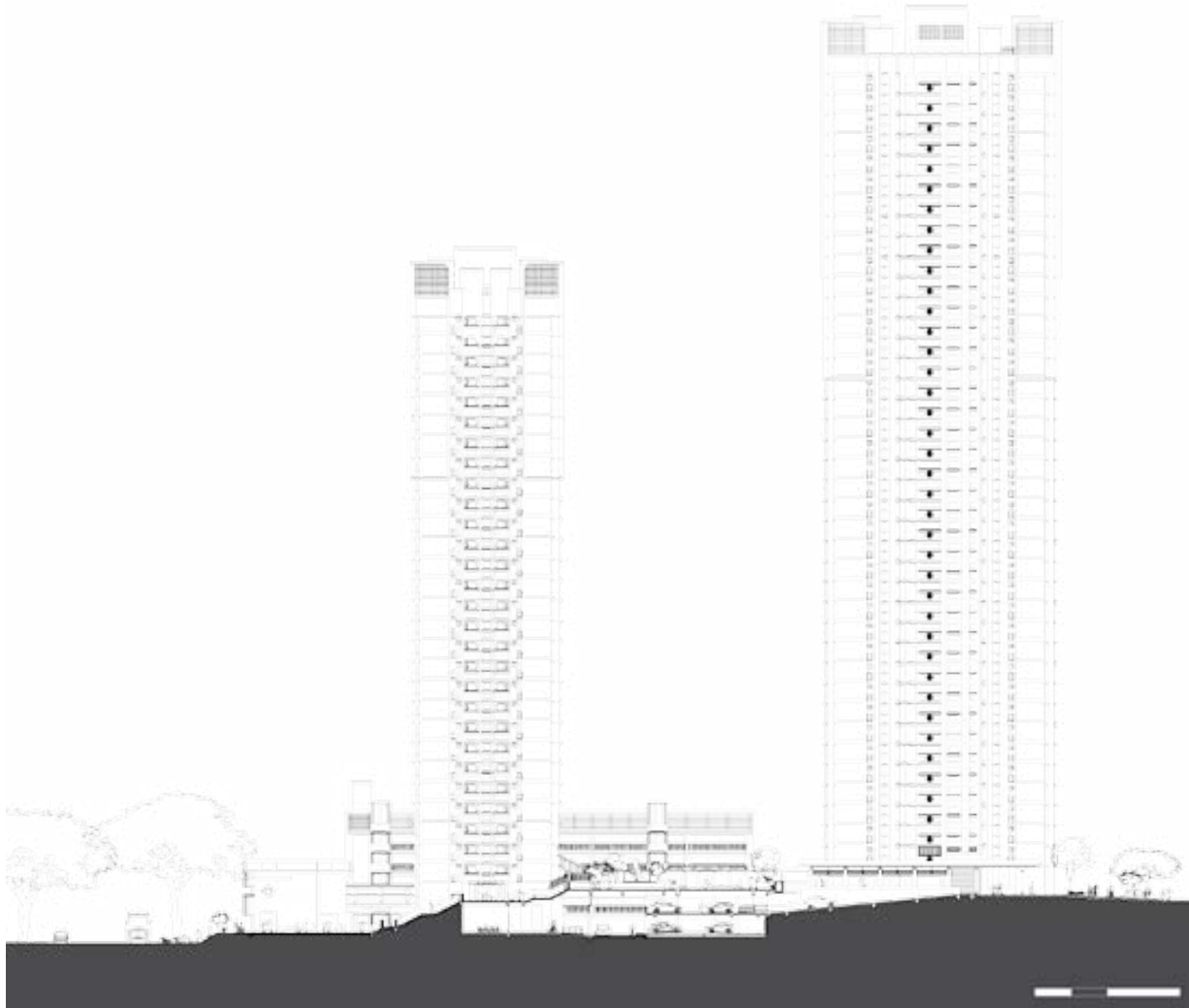
At Tiong Bahru View, some details were cleverly borrowed and others further adapted and improvised. Visible details apart from those mentioned above are the circular flat slab system at the public seating area, and the column-less long corridor alongside the shops. On the elevation of the residential towers, dark-grey chamfered frames that echo the same style also complement the modern horizontal lines to provide the distinctive 'aethestics'. Harmoniously blending with the surrounding context, the Art Deco style was re-interpreted and applied with a 21st century twist.

Facilities and Amenities

There are altogether four 25-40 storey residential blocks and a 2/5 storey multi-storey carpark, with a band of 1-2 storey commercial outlets facing the main road. Being a SERS development, the community that lives within it includes a wide array of family unit types, and straddles a wide age band. Thus, a broad range of facilities and amenities are provided to cater for all generations.

The development has its own eating house, and numerous shops along the commercial belt. For recreation, many activity spaces are inserted to serve the communal needs. The roof of the 2 storey portion of the carpark is 'reclaimed' to become a garden. This garden, being ingeniously set to be at the same level as the higher platform of the site's rear, is experienced like the ground rather than the roof of a building from Jalan Bukit Ho Swee. Design considerations are carefully considered to create an intricate balance of private and intimate spatial qualities. Lush plantings in clusters are interspersed along perimeter of the green roof deck to screen off noise, while defining small pockets of spaces for small-group interaction and family gatherings.

Overall, residents are pampered with outdoor facilities such as the 3G playground that include the children's play area, the adult's exercise area and the elderly workout garden, pebble walk, open activities space, seats provision, resting shelters, sheltered linkways and a precinct pavilion.



Limbang Green

2009-2013
Project size: 50,680 sqm (GFA)
Site Area: 1.81 Ha
GPR: 2.80

Awards:
2009 Design Competition (Winner)
2012 BCA GreenMark (GoldPlus)
2014 HDB Design Awards (Merit)

Limbang Green is a complex challenge with a sensitive site, which requires creative solutions as the MRT track passes through the site, reducing almost one-third of the overall site area. Not only that the MRT track calls for careful attention, the only access to the site is sandwiched between two major buildings, resulting in minimum construction access.

The project team came up with numerous options to illustrate how the construction access can be done below the MRT track while preserving the safety of the passing trains. On the other hand, the design intention of providing a sustainable living is carried through to almost every aspect. A lush open green space, which is crucial for all housing developments, is introduced within the strong urban edge along the MRT track, with residential blocks strategically arranged to form a generous central green space.

The MSCP is situated parallel to the MRT track, plays an important role as the noise barrier. The undesirable area below the track is transformed into a contemporary park, a unique way of community engaging.

The design of the main drop off, located near to the site access, starts the seamless walking experience within the open green space. Almost as if it cuts through the site, the internal pedestrian route is continued from the main drop off to the central green space and through series of ramp going up to the roof garden and meander down to the ground level, rejoined with the park designed below the MRT track. It is accompanied by careful and responsive integration of barrier free access and outdoor activities along and surrounding the route. This solution redefines the usage and exploits the site's potential, creating valuable addition of recreational areas for the residents.

Simple and elegant white washed façade colour with light blue tinted glass panels and a touch of copper colour for the roof feature and certain canopies, form a distinctive block and precinct identity. The selection of elegant white acts as a strong backdrop to the lush greenery landscape from the street level. In addition, a slight curved roof feature at selected corners of the residential blocks gives a strong sense of block identity. Groove lines at regular intervals on the precast façade are added to accentuate the sleek shadow lines at little cost.

Boon Lay Meadow

2009-2013
Project size: 61,699 sqm (GFA)
Site Area: 2.00 Ha
GPR: 3.08

Awards:
2009 Design Competition (Winner)
2011 BCA GreenMark (GoldPlus)

The development site is located at Jurong West bounded on 2 sides by Jurong west Avenue 2 and Boon Lay Drive.

Boon Lay Meadow consists of 705 units of Standard flats housed in five 16-storey residential blocks. It has good frontage with mature trees along Jurong West Avenue 2. Unique to this nature-inspired residential development is Tree-inspired design concept around a large central green space.

The beauty of nature is always something to marvel at. Its earth colours with warm hues of brown and green never fails to relax the mind and spirit. Boon Lay Meadow endeavors to capture these qualities through the tree-inspired design and rich landscaping in the central open space. To create soothing atmosphere that one wants to come home to after a hard day's work.

A budding seed that propagates into a breadth of greenery, expanding horizontally at ground level and growing vertically on the block's façade is the driving concept of the proposal

The 'climbing effect' of the random hues of brown painted walls and tinted windows suggests a growing tree trunk reaching for sunlight.

The tree-branch inspired building crown completes the physical features of a tree from ground up to present a unified whole.

Greenery is also introduced at the roof-top of the proposed multi-storey car park to bring nature closer to the residents. The new car park is connected to the existing car park to optimize the parking facilities for both existing and new housing development.

Segar Grove

2008-2013
Project size: 53,455 sqm (GFA)
Site Area: 1.78 Ha
GPR: 3.00

Awards:
2014 SIA Architecture Design Award (Honourable Mention)
2014 HDB Design Awards (Winner)
2014 BCA Universal Design Mark Awards (Gold)

The site layout takes its form from responding to the surroundings, with the idea of creating a point of confluence along the Park Connector between the Bukit Panjang Neighbourhood Park and the Bukit Timah Nature Reserve. The canal at the side along the park connector is part of the ABC Waters programme to be developed under PUB.

The location of the site along this green belt allows for the potential of integrating the precinct facilities and landscaping with the rest of the existing green spaces around and beyond the site.

The blocks are laid out in a way with the consideration of maximizing views to the internal precinct space and to the open spaces beyond such as the Bukit Timah Nature Reserve.

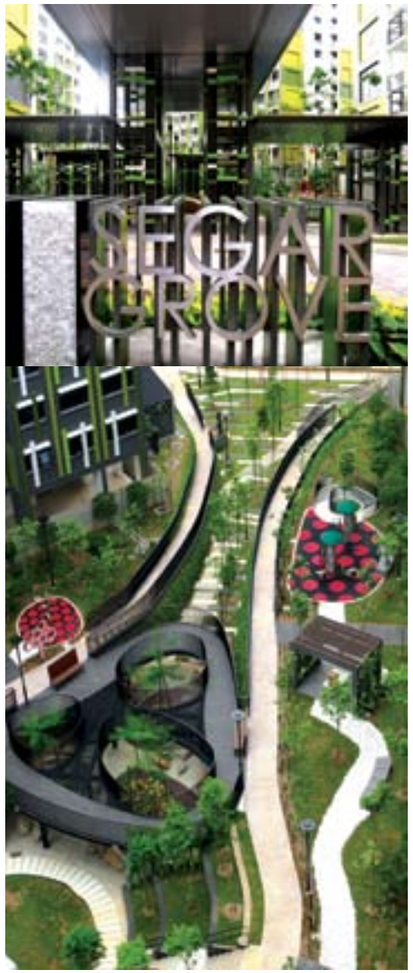
The common areas are naturally ventilated and there is adequate provision of openings for cross ventilation within residential unit.

The multi-storey car park within the precinct is located the edge of the site next to the Kranji Expressway. This acts as a noise / barrier block and buffers the residential blocks to allow a more premium environment. Bridges and ramps will be constructed to connect to the existing neighbouring multi-storey car park at N4 C12 for convenient use by residents at both precincts.

Void decks at the 1st storey of all blocks are interlinked to one another and to the precinct pavilion and the multistory car park via pedestrian linkways and drop off porches.

To create a harmonised yet unique identity, the design form for the buildings reflected the undulating terrain and greenscape of Bukit Panjang. The layout of the blocks reflected a winding string of hills. The building façade created the illusion of a range of hills with white clouds above using vertical features and colors to denote the texture of forest and hills contrasted by monochromatic white-washed walls floors representing clouds and sky on the higher floors.

The concept for the landscape design focuses on extending the green connector into the precinct with the creation of a large central space. Through a clear hierarchy of spaces, different facilities for children, adult, elderly and the community are structured through well connected linkways and paths.



Straits Vista @Marsiling

2008-2012
Project size: 45,492 sqm (GFA)
Site Area: 1.32 Ha
GPR: 3.45

Awards:
2013 BCA Construction Productivity Awards

The development site is located in Woodlands, fronting Marsiling Lane. With its strategic position amidst existing housing estates, the design strategy is a balance of integration with the surrounding community and the creation of a distinctive precinct.

Careful site analysis revealed an inward concentration of activities which are connected by covered walkways cutting through various precincts. Enhancing this neighborhood fabric translated to perimeter layout of the residential blocks, creating a central generous green space which connects to adjacent precinct amenities.

The concept of Woodlands as a forest town bears resemblance to this tree-inspired façade. The dark brown vertical fins acting as tree trunks randomly branches out to dark brown canopies and green window frames signifying tree branches and leaves.

To create further play, corner treatment of bay windows at higher levels and building crown suggests a tree house perched on a tree. The contrast of the dark brown and olive green painted features against the generally white painted walls gives a striking yet elegant façade.

Fernvale Vista

2008-2012
Project size: 67,899 sqm (GFA)
Site Area: 1.78 Ha + 0.70 Ha (Common Green)
GPR: 3.81

Awards:
2009 BCA GreenMark (Certified)
2011 HDB Design Award (Merit)

Relating to the estate sub-theme of plantations and the proximity to Fernvale road, the building masses are tiered to echo the idea of a valley plantation, complementing the neighbouring skyline.

The idea of fractal geometry, which ferns exemplify, is abstracted and used in the overall landscape composition of the central space and pedestrian networks. The landscape elements and common green are designed to echo the character of the plantations, using ferns as a landscaping language to enhance the central focus.

The elevation exudes a contemporary feel, with the strong verticality of the building juxtaposed with horizontal canopies and shifting windows.

Segar Meadows

2007-2011
Project size: 48,621 sqm (GFA)
Site Area: 1.62 Ha
GPR: 3.00

Awards:
2012 BCA GreenMark Award (Gold)

With the challenge next to Bukit Panjang LRT track and height constraint, 4 blocks of 16-storey residential blocks are neatly arranged with its centrally located green-roof MSCP and amenities (namely education center, playground and precinct pavilion to support residents' events and functions).

Taking advantage of the rectangular site profile, all blocks are orientated to face North-South directions, to avoid direct Western sun. This also coincides with the available views which are primarily towards the north. The modern and sleek elevation treatment of the blocks are different to the architectural languages of the existing blocks of another era, creating a distinctive characteristic to the precinct and contributing to the aesthetic quality of its surrounding.

Seamless connection between built landscape and existing green connector network is another interesting aspect in the development. The estate;s Landscape and open spaces become an extension of this park route where nature is brought to the residents' doorstep.

Woodlands Rental Housing

2008-2012
Project size: 45,492 sqm (GFA)
Site Area: 1.32 Ha
GPR: 3.45

Awards:
2010 BCA GreenMark Award (Gold)

Compared to other value housing built in Singapore, Rental Housing at Woodlands is well considered but fairly basic, as for over 50 years Singaporeans have developed high aspirations for their government-built homes. But for many developing countries on the first rung of planned residential improvement, this project is the perfect answer to low-cost housing, meeting every requirement for a comfortable living environment.

As a rented rather than resident-owned housing development, this project was conceived to fill a social gap. Rental Housing at Woodlands provides a short-term solution for residents in transition, offering low-income occupants, such as those with young families or saving to upgrade to permanent accommodation, a place to stay.

Situated on the edge of a well-established, but predominantly suburban area, known as Woodlands, this project enjoys the benefits of a privileged and quiet location. Public transport, local amenities such as schools, markets and neighbourhood facilities, as well as nearby green park spaces and native forestland are all within short reach of residents.

Strategically developed on a corner plot of land, Rental Housing at Woodlands makes intensive use of the site area. Two L-shaped blocks sit facing each other, connected by a covered walkway and drop-off point. Between them is the wide central driveway, giving a much prized degree of visual separation and privacy while still encouraging positive neighbourhood surveillance.

This cost-saving approach runs throughout the scheme. For people with limited funds for luxuries like air conditioning, this project provides a comfortable living space, in the most environmentally efficient way possible. The rear facade is orientated to take the brunt of the hot Singapore sun with an effective window-to-wall ratio to minimise heat gain, while the front facade is punctured with large openings to bring in natural light and give tenants full cross-ventilation.

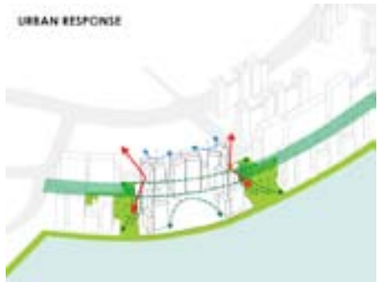
As a low-cost housing project, its construction needed to be fast, in order to be cost-effective. This was achieved by using a combination of modular systems, such as internal ferrolite partitions and other precast technologies to speed up its assembly. To save on the development's long- term maintenance costs, energy-efficient light fittings and other such solutions were integrated, to reduce its overall power consumption budget by more than 50% a year.

Rental Housing at Woodlands is essentially a prototype development. It is a forward-looking, efficient, environmentally sensitive and low-cost building model, utilising precast technologies, green materials and the fundamentals of sustainable design. With rising housing prices and urban migration, plus the growing disparity in income between the rich and poor, this development has the potential to be a beacon for future affordable housing worldwide.

Punggol West C1&2

1999-2005
Project size: 91,516 sqm (GFA)
Site Area: 3.41 Ha
GPR: 2.68

Awards:
2006 FIABCI Prix d'Excellence Award (2nd Runner-up)



Punggol North

2015
Project size: 106,216 sqm (GFA)
Site Area: 2.66 Ha
GPR: 4.07

One of the major considerations was to integrate the site with the urban design of Punggol Northshore. The design approach is unique and refreshing, yet preserves the essence and character of its context.

In alignment with the "waterfront" theme, the development is inspired by beach enclaves, where gently undulating lush mountains surround a low-lying beach resort, suggesting a "holiday at your door-step!"

In addition to the architectural design, the distinctive layout proposal is driven by macro considerations at the urban level, namely:

Edge
The site embraces the active frontage along the waterfront by "bringing in" the "sea" and "beach". Building blocks with sea views are represented as hills overlooking the sea. The layered planting strategy on rooftops and building facades are also likened to densely planted mountains.

Relief
Maintaining the urban intention of Punggol Northshore, but enhancing pedestrian experience along the park connector. We create urban relief along waterfront, dissolving the urban wall.

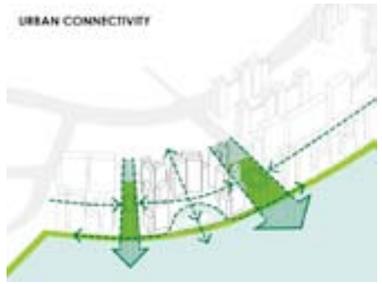
Response
The masterplan features a strong central green spine which straddles across multiple precincts. Green lungs are intermittently placed to connect the boulevard to the waterfront. In response, the blocks are tilted to "welcome" people. This results in additional green and communal spaces for activities.

Profile
The massing profile complements and continues the waterfront experience by retaining a sense of scale.

Connectivity
The development maintains porosity through the central spine, allowing for seamless connectivity to neighbouring precincts, common greens, amenities and the waterfront. This enhances the visual identity of Punggol Northshore, creating an integrated and well-connected community.

Skyline
Blocks facing the waterfront mimic similar rhythms with adjacent blocks. Blocks vary from 15, 20 and 27 storeys with the lower blocks (15 and 20 storeys) closer to the waterfront. Taller blocks are placed towards the road (mostly 27 storeys). This creates a dynamic skyline along the waterfront and boulevard.

Blocks facing the boulevard are 8, 20 and 27 storeys. This creates a variegated skyline matching surrounding developments while relating to the adjacent school.



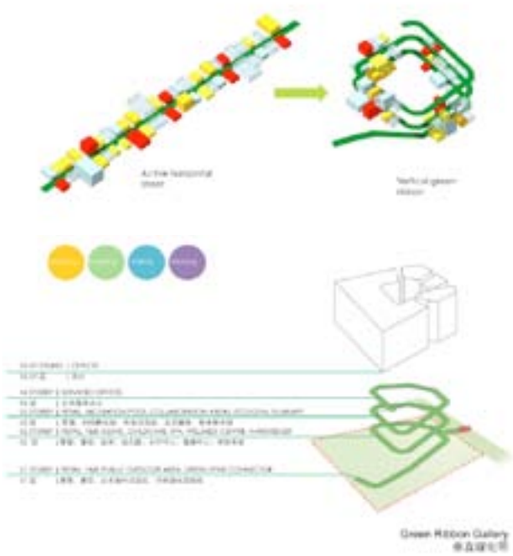

Seamless Integration, Connecting Communities
JOHORE STRAITS
LEGEND
1. Precinct Marker
2. Main Dropoff
3. Resting Area
4. Terraced Planters
5. Central Park
6. Adult Fitness Corner
7. Elderly Fitness Corner
8. Playground (Ages 2-5)
9. Playground (Ages 6-12)
10. Pavilion/Shelter
11. Courtyard Deck
12. Viewing Deck @ 10a & 10b
13. Trellis
14. Seating Area
15. Open Lawn
16. Rain Garden Feature
17. Viewing Deck @ 10a
18. IPPT Fitness Corner
19. Precinct Entrance/ Precinct Connector
20. Footpath
21. Shady Area
22. Gathering Plaza
23. Precinct Pavilion
24. Community Garden
25. Future Coast Protection
26. Outdoor Cafe
27. Eating House
28. Minimart
29. Shops
30. Resident's Committee Centre (RCC)
31. Future Childcare Centre (FCCC)
32. Jogging Track
33. Neighbourhood Park Plaza
34. Commercial Plaza
35. Bus Shelter
36. Electrical Substation/ Precinct Marker
37. Park Connector Networks
38. Existing Common Green
N
BOULEVARD

TianJin Eco-City Plot16

2014

Project size: 27,600 sqm (GFA)
Site Area: 1.15 Ha
GPR: 2.40

Invited Concept Design



Nawamin Supernova

2014

Project size: 579,000 sqm (GFA)
Site Area: 19.30 Ha
GPR: 3.00

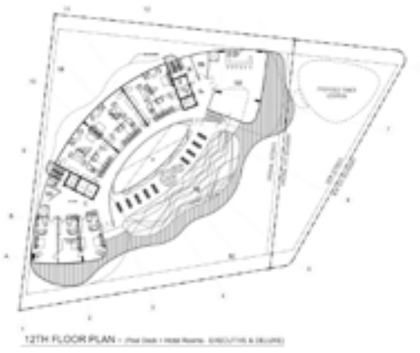
Invited Masterplan Design Concept

The Ocean @Maldives

2014

Project size: 23,940 sqm (GFA)
Site Area: 0.31 Ha
GPR: 7.72

Invited Design Concept



12TH FLOOR PLAN -

3RD FLOOR PLAN -

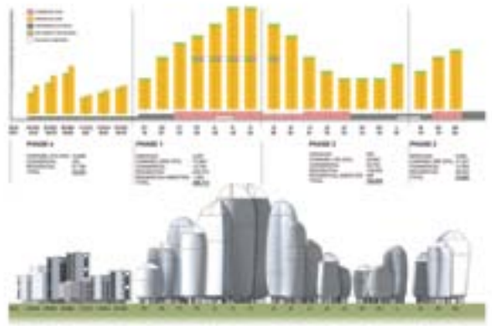
1ST FLOOR PLAN -

Bintaro Jaya Concept Masterplan

2013

Project size: 640,000 sqm (GFA)
Site Area: 20.0 Ha
GPR: 3.20

Invited Design Concept Masterplan Competition



the Natural History Museum, a new public plaza to as a landmark for NUS cultural 'hub'

Past, present, future: an integrated massing with light connections

The landscape as a new topography

NUS Natural History Musuem

2010-2011

Project size: 7,000 sqm (GFA)
Site Area: 0.60 Ha
GPR: 1.17

Design Competition Entry

What is a Natural History Museum in today's context?
In the past natural history museums were largely private collections of botanical explores and private researchers, such as Raffles, Wallace or Farquhar, searching for medical cures, the answer to evolution or following an obsession to classify all living things. Today Natural History Museums are at the cutting edge of research and discovery, and a desire to both engage and entertain to disseminate this important knowledge.

Our vision of the Natural History Museum (design concepts and aesthetics)
The Natural History Museum is uniquely placed within the heart of South East Asia to be the central hub for biodiversity research and education in this region. Supporting this prestigious task should be an immediately identifiable, iconic building, rooted within the context of South East Asia. Our building fits this profile and holds a set of key characteristics for the task in hand. The building is:

intuitive – read without complex directional graphics, the functional elements of the building can be clearly understood though the building design.

adaptable – with the flexibility to constantly adapt and evolve, to stay always at the forefront of both research and education.

engaging – from daily activities under the shelter of the cantilever to a place to ' just be' in the evening an watch an outdoor films projected onto the façade.

influential – without any major interventions, the museum is given 'light roots' to draw the surrounding buildings closer and breathe life into the arts and culture hub.

The Visitor Experience
Both the natural environment and the collection invade the exhibition spaces. Through a universal palette of materials, the inside and outside become one seamless entity with the roof top becoming the 5th façade.

The visitor can:

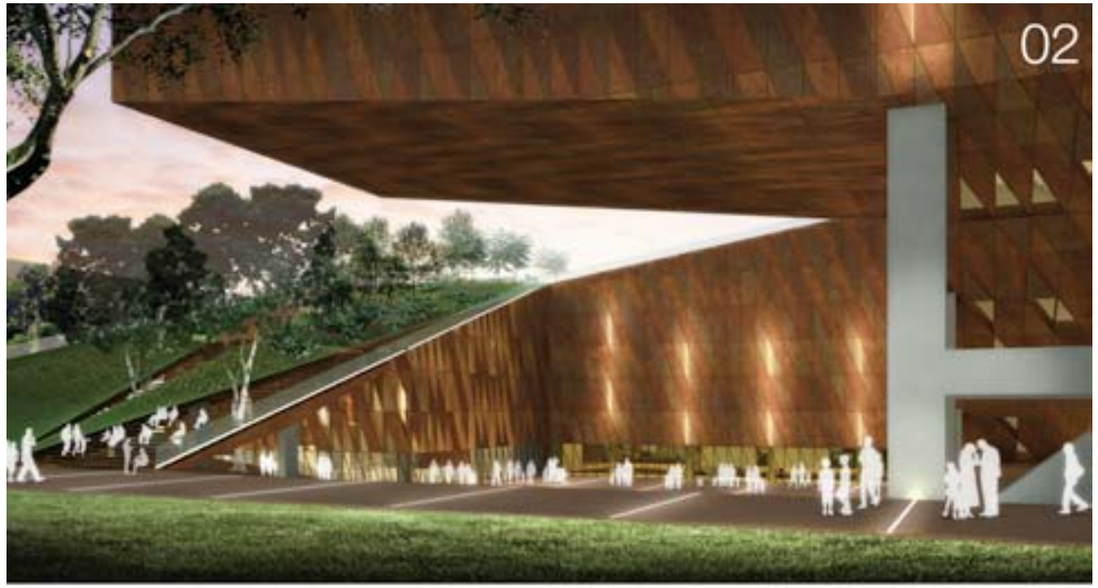
receive a new experience on a second visit. With few permanent walls, the exhibition spaces can expand and contract as the content and collection grow.

move beyond the physicality of the exhibition space. High-tech elements extend beyond the walls of the museum bringing the visitor into the natural environment of SE Asia, or to other museum collections or online exhibitions and current affairs, for instance.

experience travelling or rotating exhibitions at the temporary gallery level, under museum standard conditions.

travel through a series of distinctly different environments and changes of light conditions, from the large dinosaurs in the filtered, naturally lit, triple height entrance space to the low lighting conditions in the exhibition hall for the fragile collection.

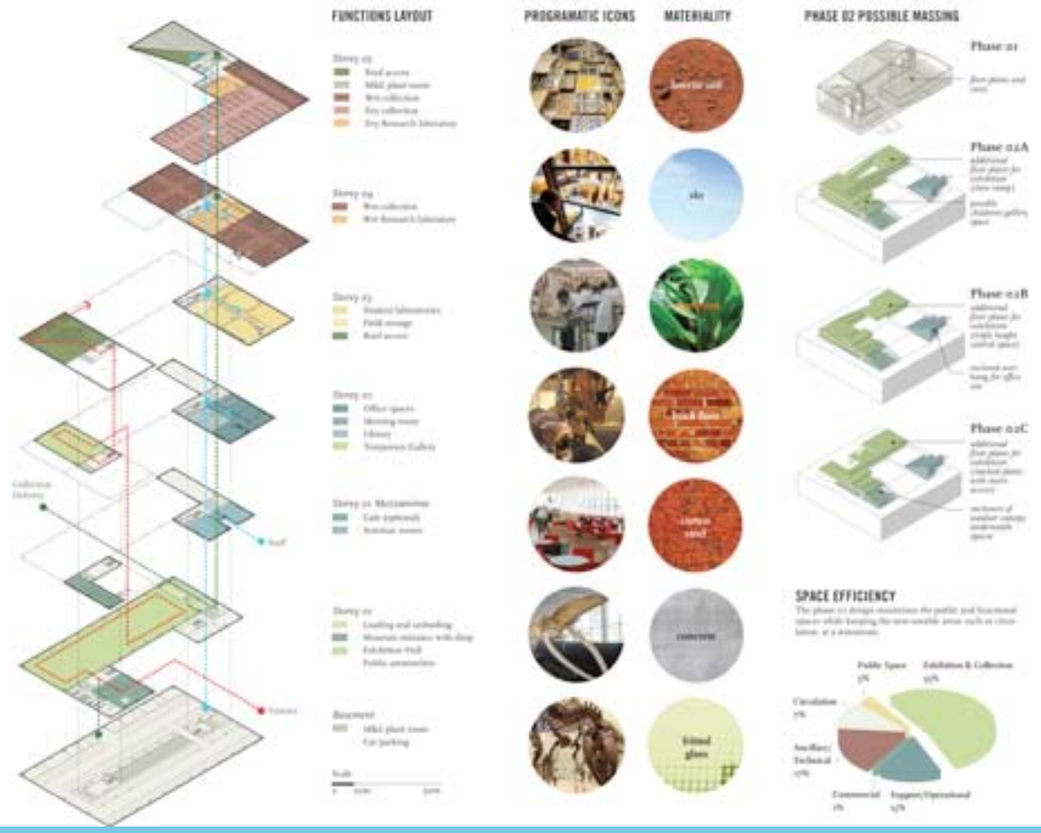
enjoy the museum out of working hours. Accessible from the ground floor 'Habitat Walk' is a 'free exhibition space' with suggestions of the animals true surroundings from shoreline to plateau.

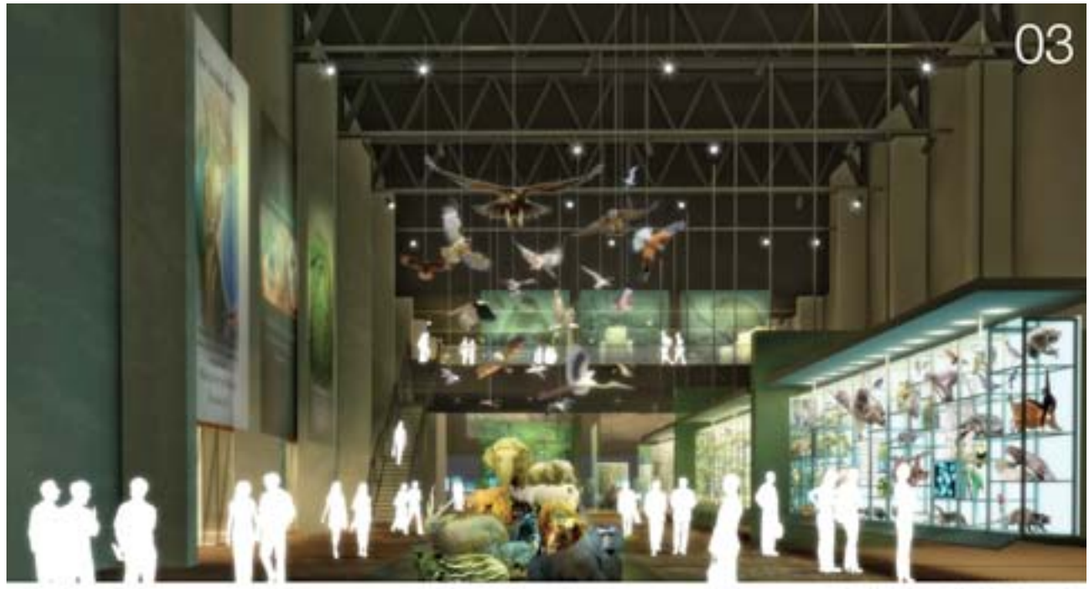


the shade of the cantilever is an invitation to inhabit the generous public space, a conducive environment for outdoor events.

CONTINUITY OF SPACES: AN EFFECTIVE LAYOUT

NATURAL HISTORY MUSEUM OF SINGAPORE

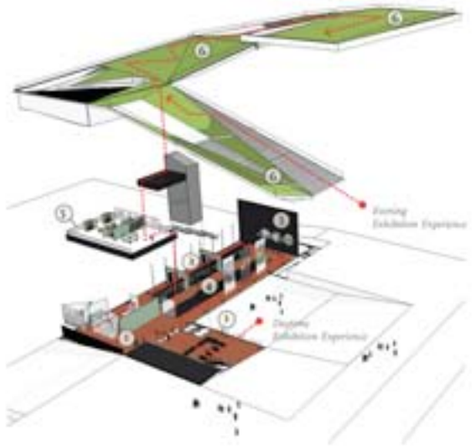


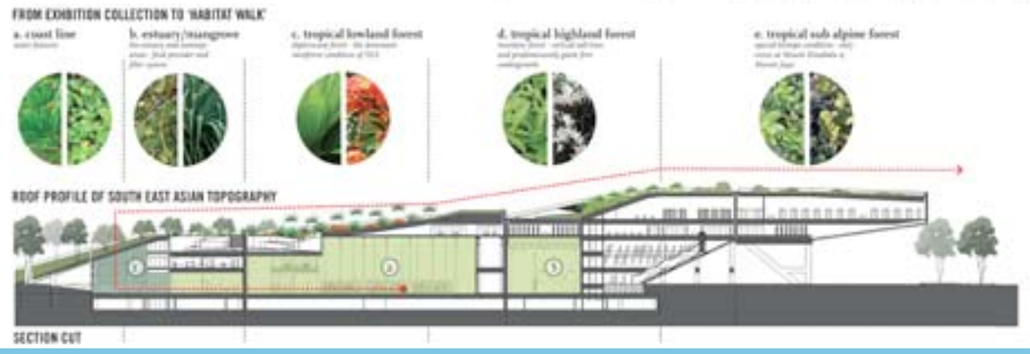


walk within the menagerie of South East Asian animals

DESIGN CONCEPTS FOR GALLERY AREAS

NATURAL HISTORY MUSEUM OF SINGAPORE





The Datum

2010

Project size: 50,445 sqm (GFA)
Site Area: 1.68 Ha
GPR: 3.00

Feasibility/Design Proposal
(Executive Condominium)

COMMONWEALTH

School of Science & Technology

2009

Project size: 64,700 sqm (GFA)
Site Area: 3.00 Ha
GPR: 2.16

Award:
Design Competition (Runner-up)

The School of Science and Technology, Singapore, is a premier institution that offers an innovative and vibrant learning experience for top students between 13-16 years of age. Here, pervasive use of Information Communication Technology (ICT), and greater exposure to real-world applications, are hallmarks of the school's distinctive brand of education, aiming to nurture bright students to becoming successful entrepreneurs and captains of the industry.

The new School proposal adopts a series of unique Educational and Teaching Hubs elevated above a vehicular-free informal outdoor learning space. All these distinctive new volumes are innovatively linked at strategic points to enhance and multiply the school's unique objective.
The design of the school is developed based on 2 principles in mind, namely:

- Context/environment response amidst the existing forested environment

- Multiplying the school's unique operating intentions by fusing education and industry based learning

All learning suites are detailed to optimize flexibility in changes should re-configuration of spaces are required.

Circulation & Security

Zoning

Circulation

Safety + Security

Roof

LVL 6

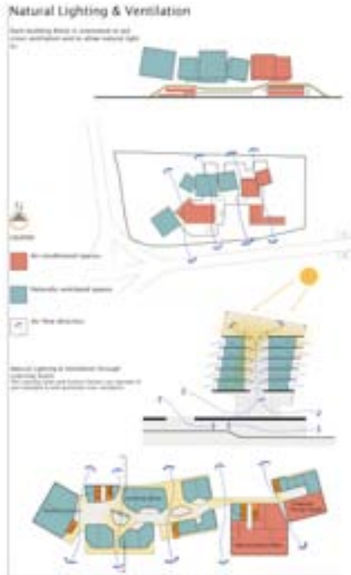
LVL 4 & 5

LVL 2 & 3

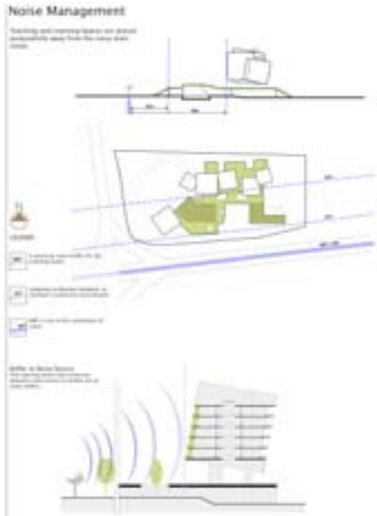
Environmental Study

Solar Study

Natural Lighting & Ventilation



Noise Management




Computer lab
ADMT studio
ADM studio
CAD room
Green roof
Entrepreneur centre
Foyer
Carpark
Auditorium
LVL 1

Reem

2009

Project size: 183,980 sqm (GFA)
Site Area: 13.12 Ha
GPR: 1.40

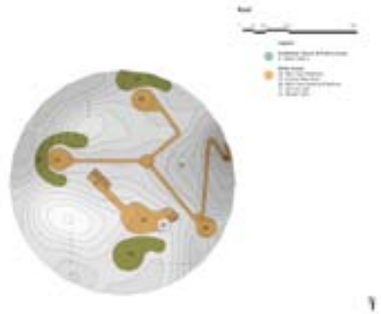
Invited Concept Masterplan Proposal

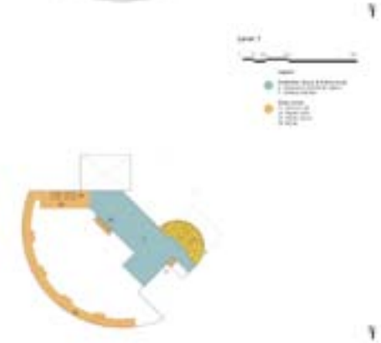
Project S

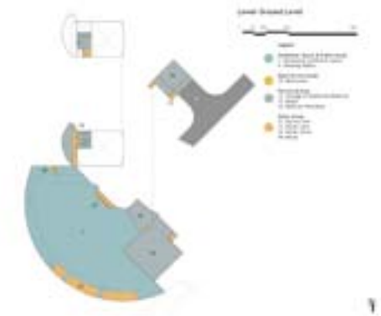
2009

Project size: 93,095 sqm (GFA)
Site Area: 1.10 Ha
GPR: 8.46

Invited Design Proposal/Competition







Brazil Unicamp Exploratory Science Musuem

2009

Project size: 7,350sqm (GFA)

Design competition proposal

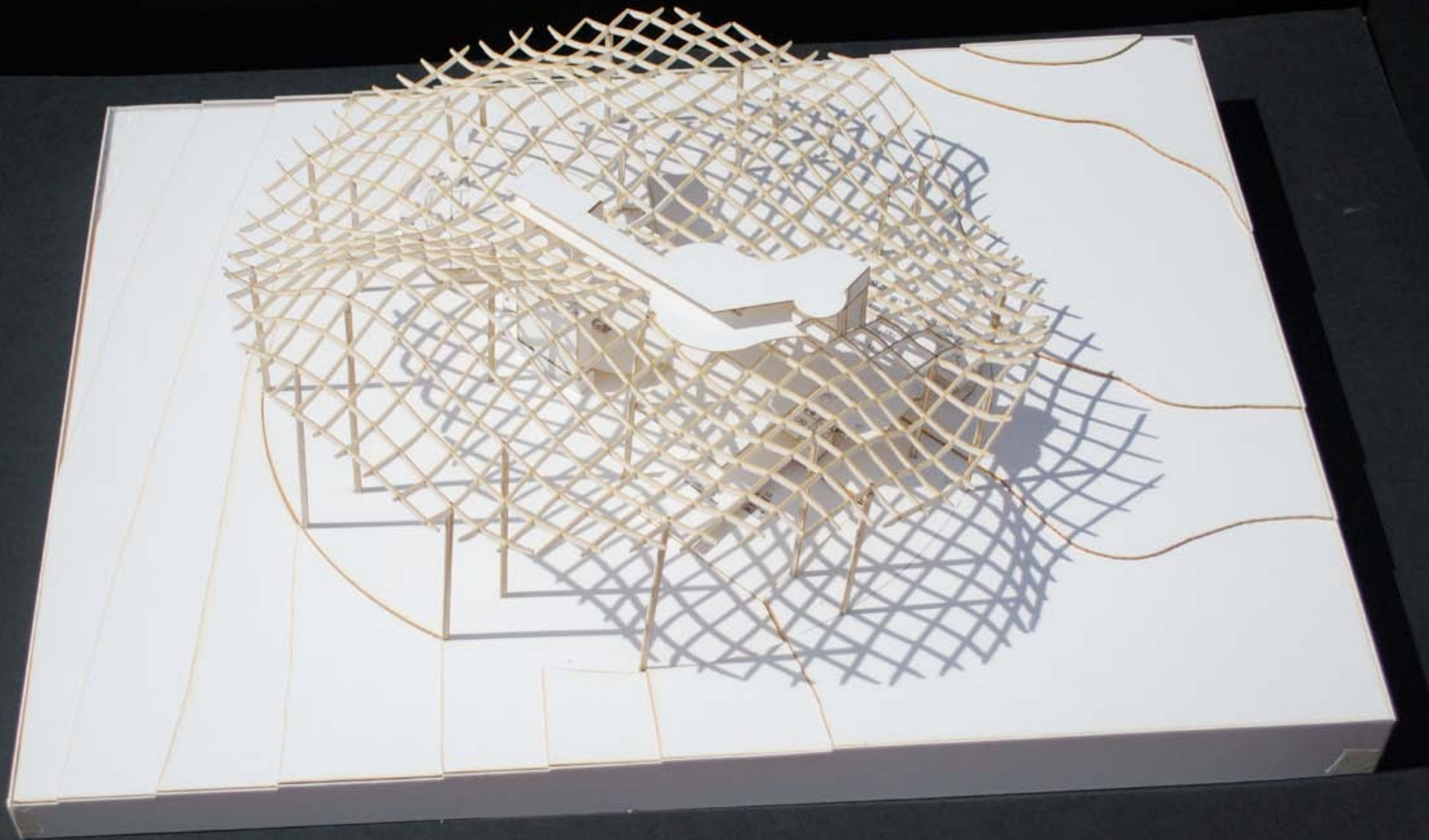
The five areas outlined in the brief were organised, grouped and divided into public and private spaces. The volumetric requirements of each area was determined, allowing the floor plate positioning on the site to work with the natural topography. Using the slope to arrange the plates minimises earthworks and reduces the impact on the site.

The spaces are organised for ease of circulation, maximum light penetration and natural ventilation. Relationship to existing site buildings with similar programmatic agenda is also established through landscaping and visual connections.

Entry and access points have considered the existing site buildings and terrain. Landscaping draws people from the car park to a central area before they continue to the Museum or other existing buildings, all with visual connections of one another. The internal spaces maximise views to the north/west, west and south/west.

Visual connections are created between the open entry space and the proposed Time and Space Square exhibition space, and further to the proposed multimedia exhibition on the site of the NanoAdventure tent.

The entry space provides shelter from the elements and acts as a gathering space for large and small groups who may be entering the museum, using the auditorium, café and library facilities, or just observing the Time and Space Square and about to go for a walk on the roof. The building draws you in by creating a visual connection at the entry gathering space to some of the larger exhibited objects in the Museum such as dinosaurs and airplanes, beckoning you to enter and explore what's inside.



The **Lantern**

DESIGN CONCEPT

Positive and negative space in architecture is the balance of a composition or of a space. For a large part, positive space as a clearly defined medium is more readily accessible for form or space making. On the other hand, negative space is perceived as a counterbalance to positive space.

"Negative space gives the eye a "place to rest," increasing the appeal of a composition through subtle means. The term is also used by musicians to indicate silence within a piece." - Wikipedia.com

By carving a void from a solid mass to generate a form obscures negative space as a by-product of positive space. In this design, the void takes precedence over form to create an interesting spatial experience. The simplicity of the box with its unexpected elliptical interior exudes a design of understated appeal.

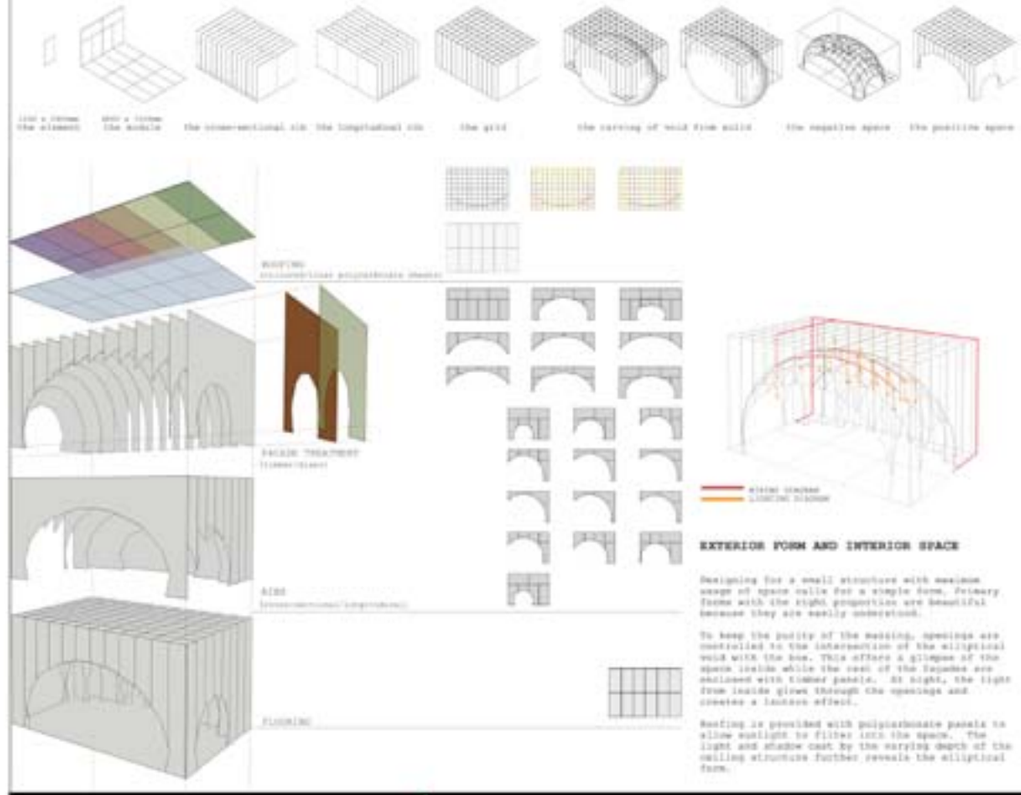
THE ART FUND PAVILION
Architecture Competition

BOARD TITLE:
DESIGN CONCEPT

BOARD #
1 / 4

Surbana International Consultancy Pte Ltd
CONTACT NAME: Lim New Fong Frans, Christine Amy Boyce-Sy
COUNTRY: Singapore
EMAIL: fransim@surbana.com, christineamy@surbana.com
WEBSITE: www.surbana.com
TELEPHONE: +65 6348 3216
MOBILE: +65 9489 7044

The **Lantern**

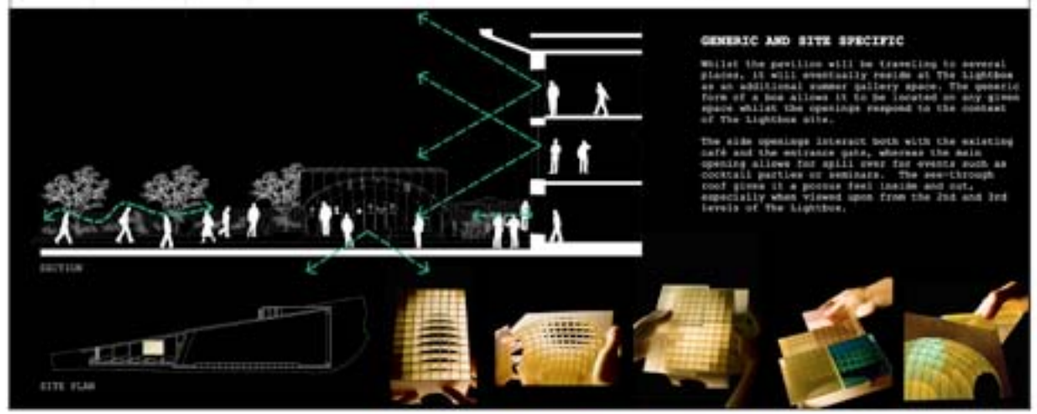


EXTERIOR FORM AND INTERIOR SPACE

Designing for a small structure with maximum usage of space calls for a simple form. Primary forms with the right proportion are beautiful because they are easily understood.

To keep the purity of the massing, openings are controlled to the intersection of the elliptical void with the box. This offers a glimpse of the space inside while the rest of the facades are enclosed with timber panels. At night, the light from inside glows through the openings and creates a lantern effect.

Roofing is provided with polycarbonate panels to allow sunlight to filter into the space. The light and shadow cast by the varying depth of the ceiling structure further reveals the elliptical form.



GENERIC AND SITE SPECIFIC

Whilst the pavilion will be traveling to several places, it will eventually reside at The Lighthox as an additional summer gallery space. The generic form of a box allows it to be located on any given space whilst the openings respond to the context of The Lighthox site.

The side openings interact both with the existing café and the entrance gate, whereas the main opening allows for spill over for events such as cocktail parties or seminars. The see-through roof gives it a porous feel inside and out, especially when viewed upon from the 2nd and 3rd levels of The Lighthox.

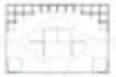
THE ART FUND PAVILION
Architecture Competition

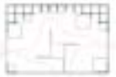
BOARD TITLE:
DESIGN CONCEPT

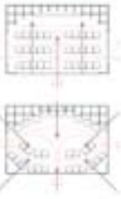
BOARD #
2 / 4

Surbana International Consultancy Pte Ltd
CONTACT NAME: Lim New Fong Frans, Christine Amy Boyce-Sy
COUNTRY: Singapore
EMAIL: fransim@surbana.com, christineamy@surbana.com
WEBSITE: www.surbana.com
TELEPHONE: +65 6348 3216
MOBILE: +65 9489 7044

The **Lantern**







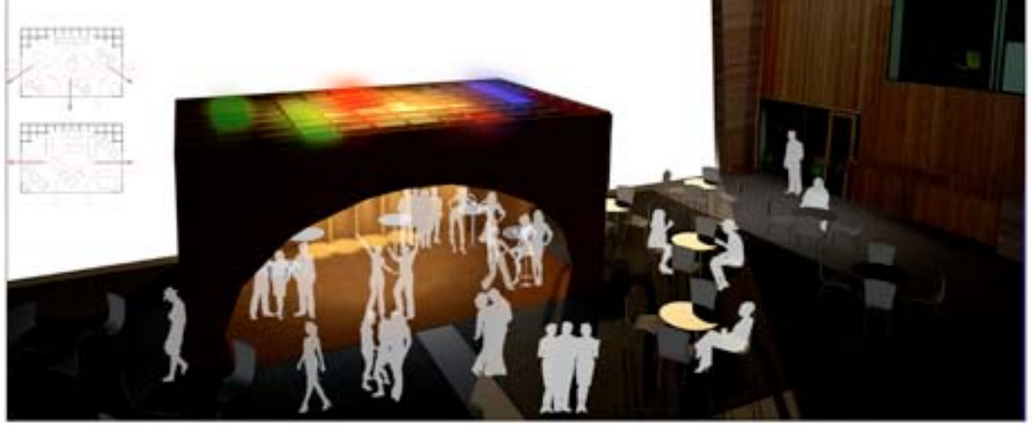
SPACE FLEXIBILITY

The regular form allows not only maximum usage of a small space but also hosts various functions. As the images clearly demonstrate, from day to night the interior space transforms to accommodate intimate to large gatherings.

As an Exhibition Space
The interconnection of the timber panels creates unexpected crevices and niches, where display plinths can be tucked into or where soft lightings are hidden to provide soft glow. Track lightings are also provided to adjust to various exhibit configurations, as well as accentuate curved walls.

As a Formal Presentation Space
With one side of the bus enclosed, electrical wirings for power plugs are hidden behind panels. This serves as a backdrop for presentations where screen projector can be mounted. The elliptical space is also big enough to house 30 seatings.

As an Informal Gathering or Party Space
The three openings allow for spill-over space when hosting large gatherings. The lantern can even be an extension of alfresco dining from the existing cafe. Coloured lightings can also be retrofitted to create the ultimate party scene.



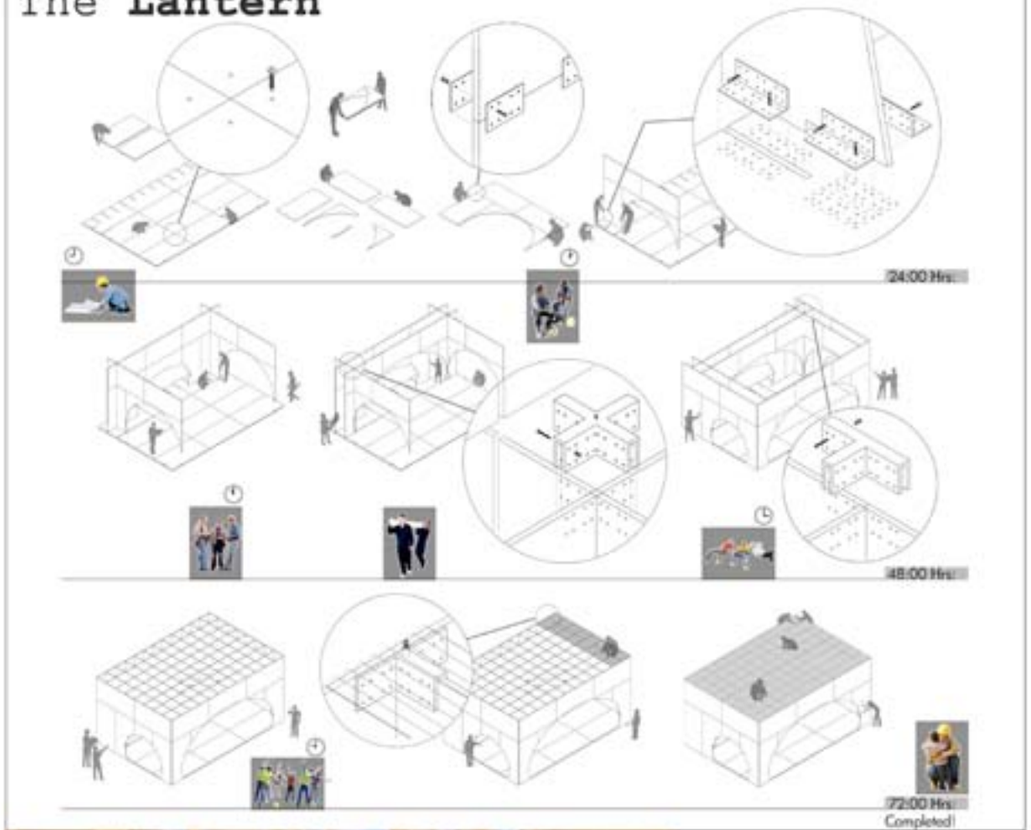
THE ART FUND PAVILION
Architecture Competition

BOARD TITLE:
INTERIOR AND EXTERIOR DESIGN

BOARD #
3 / 4

Surbana International Consultancy Pte Ltd
CONTACT NAME: Lim Yew Tiang Frank, Christine Amy Boyce-Sy
COUNTRY: Singapore
EMAIL: frankim@surbana.com, christineamy@surbana.com
WEBSITE: www.surbana.com
TELEPHONE: +65 6348 3316
MOBILE: +65 9689 7044

The **Lantern**



T2-hour Construction

Another advantage of a simple form is easy and quick construction time. Using only bolts and nuts, the lantern is envisaged to be assembled in T2 hours by a team of 3-4 people.

The assemblage is a grid-like structure with longitudinal and cross-sectional ribs. Each labeled rib consists of components, which are stored in separate boxes to keep things organized.

The biggest single piece is the standard 1200mm/2400mm panel. All panels come with ready drilled holes for straightforward steel plate and bolt connections. Polycarbonate sheets are used for the roofing to keep the structure light and for easy installation.

THE ART FUND PAVILION
Architecture Competition

BOARD TITLE:
CONSTRUCTION DETAIL AND DIAGRAMS

BOARD #
4 / 4

Surbana International Consultancy Pte Ltd
CONTACT NAME: Lim Yew Tiang Frank, Christine Amy Boyce-Sy
COUNTRY: Singapore
EMAIL: frankim@surbana.com, christineamy@surbana.com
WEBSITE: www.surbana.com
TELEPHONE: +65 6348 3316
MOBILE: +65 9689 7044

HongSanSee Serviced Apartments

2008-2009

Project size: 3,376 sqm (GFA)
Site Area: 0.09 Ha
GPR: 3.80

Design Proposal (Outline Planning Permission)

Enggor

2008

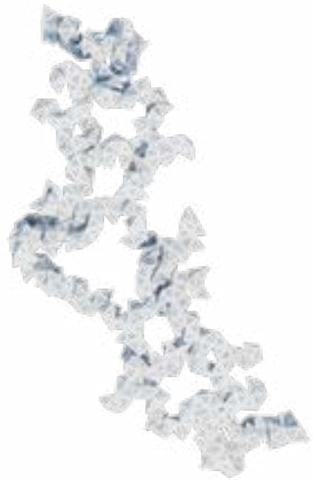
Project size: 25,762 sqm (GFA)
Site Area: 0.28 Ha
GPR: 9.20

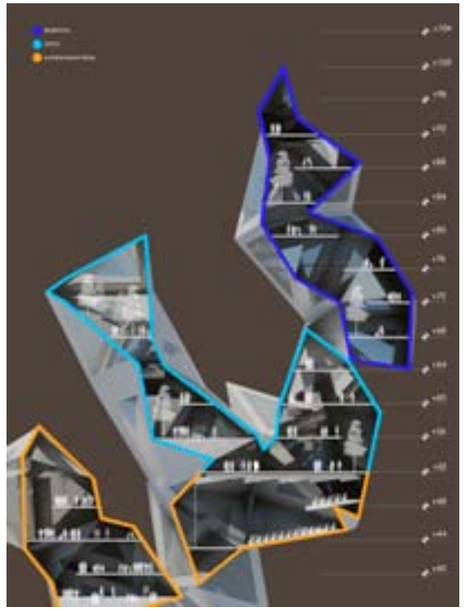
Invited design competition

MultipliCity

2008

Conceptial Ideas Competition Entry





Building Pyramids in the Sky

A Primitive Pyramid Multiplied

From the Great Pyramid at Giza to the majestic Red Pyramid at Dahsur, these man-made structures built from millions of rudimentary limestone blocks have fascinated man for thousands of years. A pyramid's design of being bottom heavy with decreasing loads as it climbs toward the sky allowed early civilization to create structurally sound monuments.

Using a pyramid with a trilateral base as a 4-face basic building block, a complex of inter-supporting pyramids rises up from vacant plots of land on site and into the sky. The human scale is never misguided as the complex is always divisible to this basic pyramid. Her resultant multi-faceted façade reflects the diverse programs she holds within. Its multiplied geometry of spinal pyramid frames, coupled with a constant quarter-surface area contact, not only gives her strength but an endless permutation of spaces.

Location

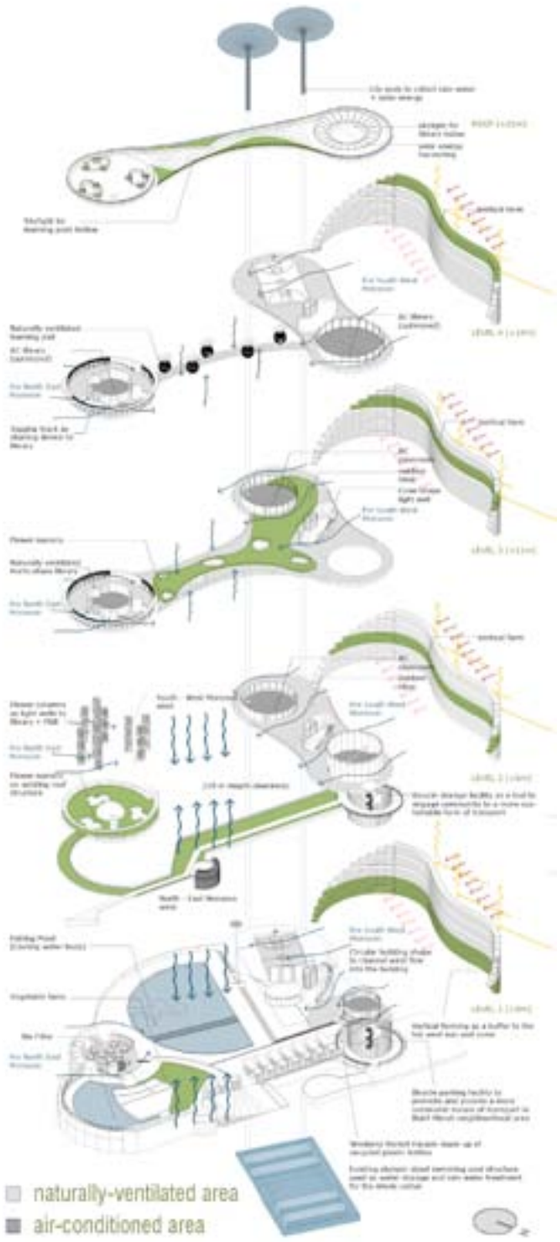
Sited on the Harbour Front Precinct in Southern Singapore, it is the gateway to the country's popular island resort of Sentosa and home to a wide variety of commerce and residences. It is currently developed to be a luxurious holiday location with high-end residential properties.

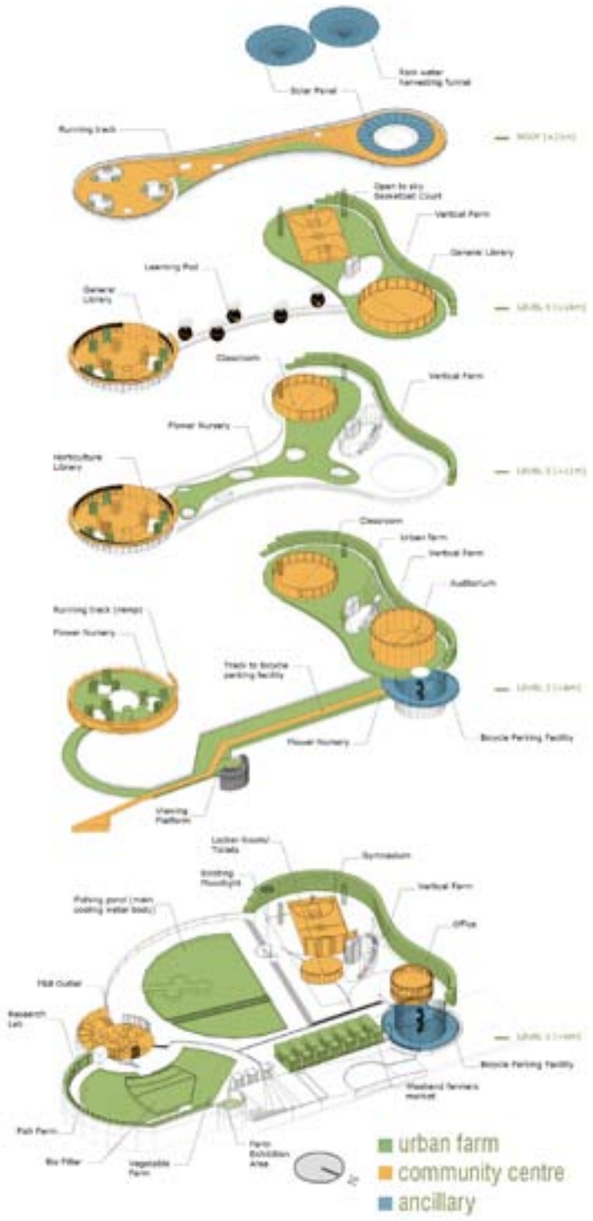
MultipliCity will give the southern coast of Singapore a marker, a landmark to a forward thinking global city.

The New Vernacular

The 21st century skyscraper has a new vernacular; one that is departing from the monolithic tower of the modern movement with a rigid core/space relationship, to one that has its structure and skin digitized whole to a dynamic spatial arrangement. Once seen primarily as a single-use office/work facility with fixed operating hours, is now a 24hour diverse animal that doesn't sleep.

MultipliCity seeks to be an autonomous growth, a model of insatiable multiplication.





LandArk @BM

2008

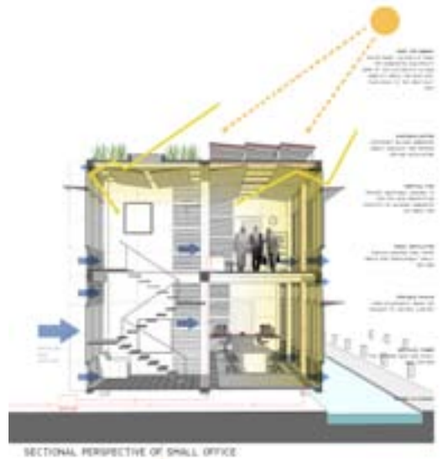
Award:
2008 FuturArc Ideas Competition
(2nd Prize, Professional Category)

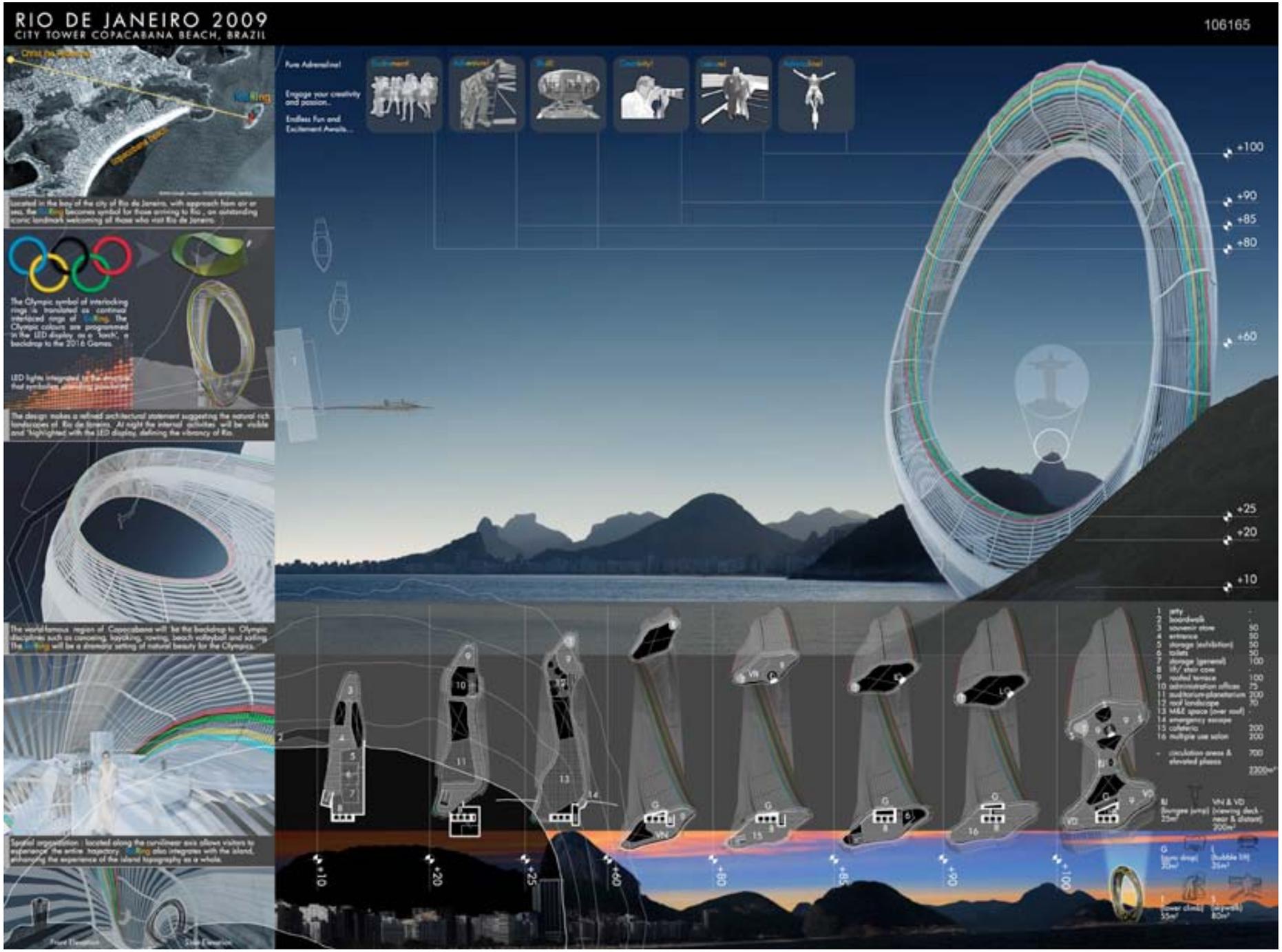
Plug+Play Offices @Jakarta

2008

Award:
2008 FuturArc Ideas Competition
(Citation Award, Professional Category)


SECTIONAL PERSPECTIVE OF MEDIUM OFFICE


SECTIONAL PERSPECTIVE OF SMALL OFFICE



Rio Ring @Rio de Janeiro

2008

Project size: 7,350sqm (GFA)

Design competition proposal

Rio Ring is a Lighthouse-Tower which will become a symbol welcoming all those who visit Rio de Janeiro, whether arriving by air or sea.

The vertical structure of 100 meter in heiht will be sufficiently versatile to house multiple sporting and cultural elements, as well as providing a space for recreation and serving as a hige lighthouse. It is composed of multiple LED units locall all the way form the highest part of the edifice, along its entire architectural structure, to the base.

As a strong form looking like a ring but essentially a mobius strip, the design is iconic and easily distinguishable. It imposes a strong presence within the context of the urban and natural surroundings of the city.

QUIN •TOPO THE NEW HORIZON

Quin-topo, the new and exciting residential district at Singapore's Marina South, is a quintet of different urban topographies coming together, each with its own unique quality.

The massing of Quin-Topo is thoughtfully composed to create a resultant urban skyline that acknowledges Singapore's triumphant past, framing her old city's built form up like a painting. Quin Topo will complete this exquisite diorama for everyone approaching Singapore's shores by air or sea.

3 KEY IDEAS

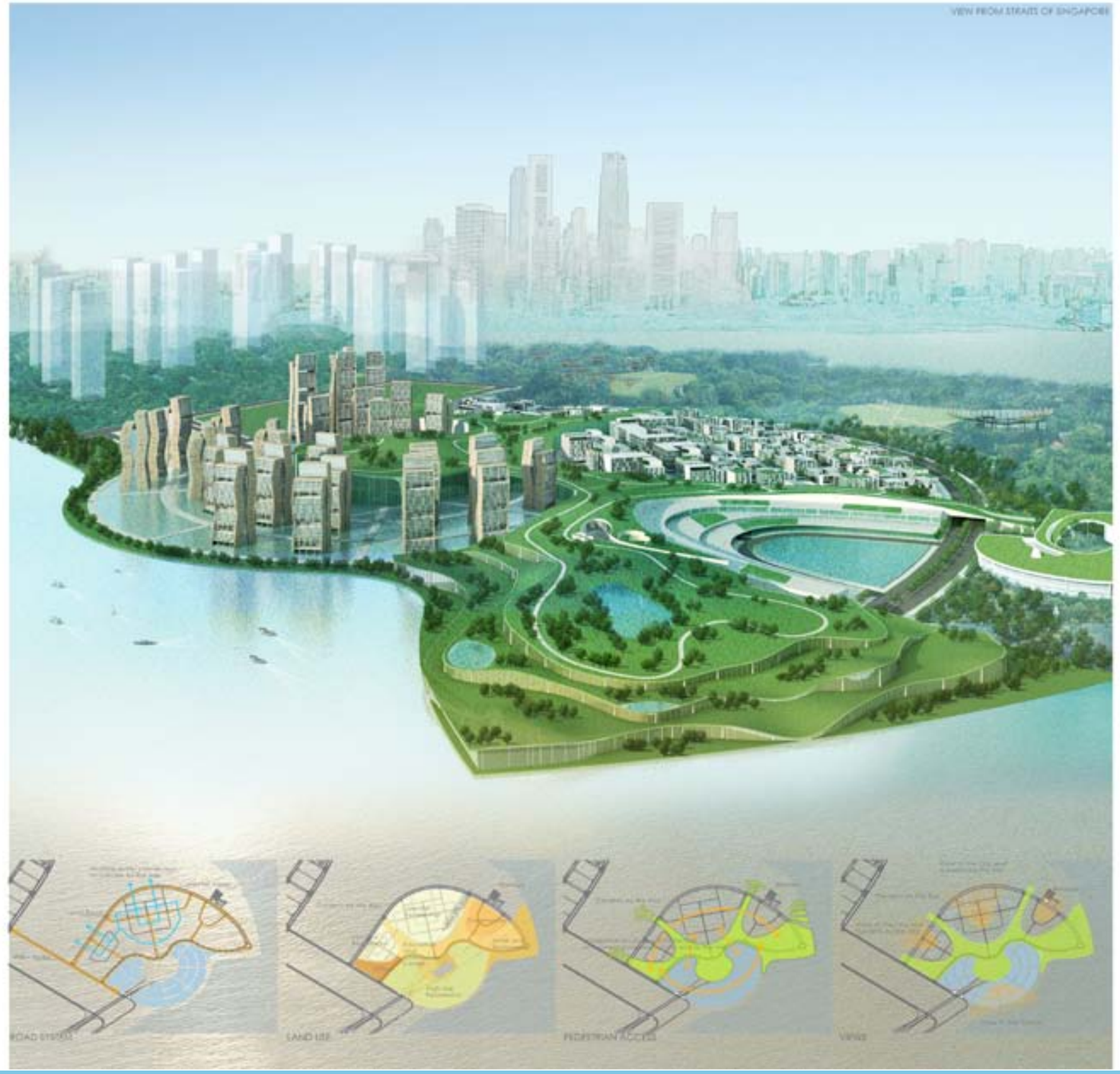
- Firstly, to have her weaved seamlessly onto its immediate context. Sensitive to the Straits of Singapore and the Marina Gardens, QuinTopo is envisioned to be complementary and not a stand-alone entity.
- Secondly, to introduce housing typologies unseen before in Singapore. Its vision is to give residents a new way of living, and to experience a different quality of life.
- Thirdly, as an extension of the first 2 ideas, Quin-topo has 2 broad housing strategies to realise its objectives: THE GREEN and BLUE STRATEGY. Building perimeters are purposefully set for each residential strategy to make full use of existing surrounding site conditions, namely the "Marina Garden by the Bay" and the "Straits of Singapore".

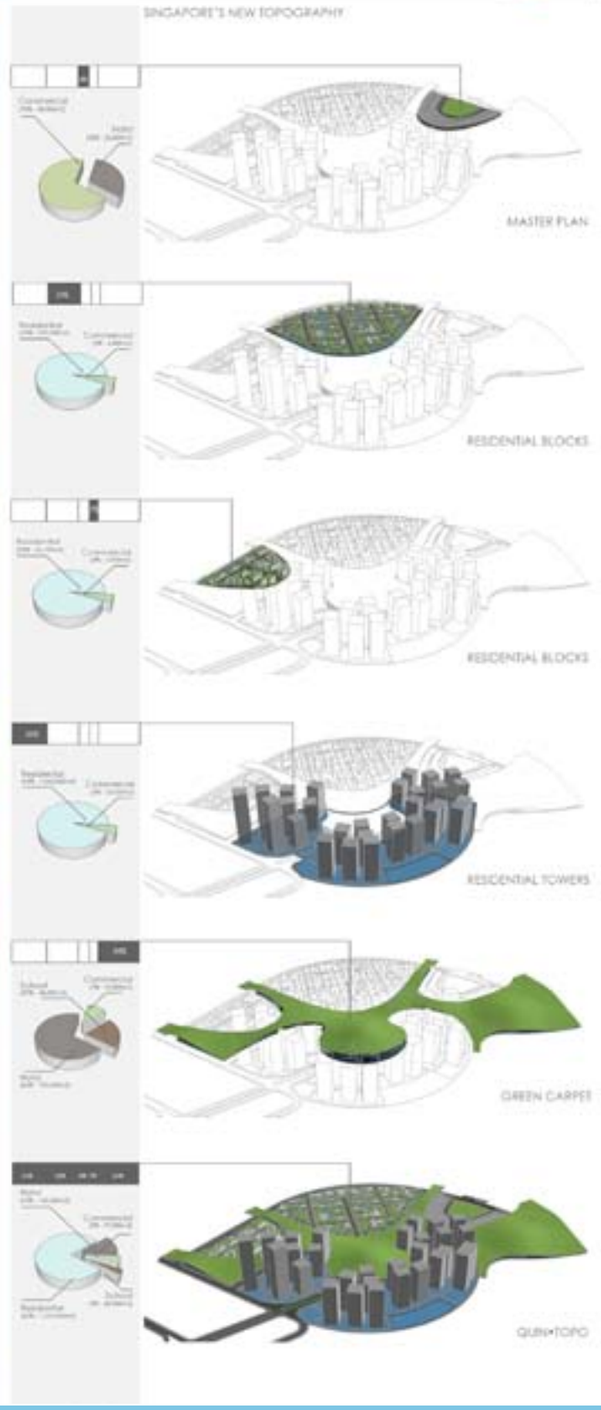
Methods to achieve Gross Floor Area of 1,500,000m2

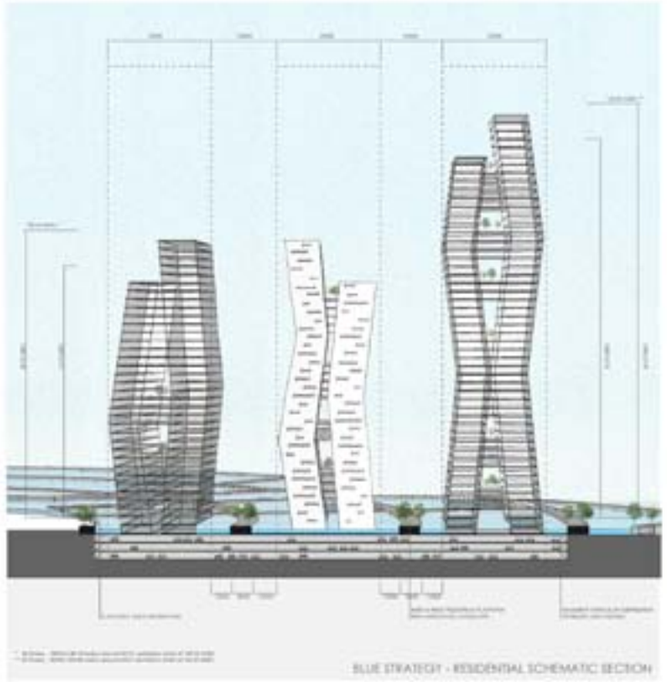
Aspired to introduce a different and exciting urban topography into Singapore's new Marina South Residential District, a series of massing distribution models were studied.

The proposal is to depart from the generic uniform high-rise distribution model and test out ways to arrive at a denser massing model of varying heights with opportunities for fantastic views, efficient connectivity and a high quantum of greenery and tranquil waters.

The proposed massing distribution model gives us a topography that allows for different living and lifestyle options,amazing views out to her changing urban-scape and a stamp on Singapore's position as a forward-thinking global city.


VIEW FROM STRAITS OF SINGAPORE
ROAD SYSTEM
LAND USE
PEDESTRIAN ACCESS
VIEWS


SINGAPORE'S NEW TOPOGRAPHY
MASTER PLAN
RESIDENTIAL BLOCKS
RESIDENTIAL BLOCKS
RESIDENTIAL TOWERS
GREEN CARPET
QUBE+TOPO



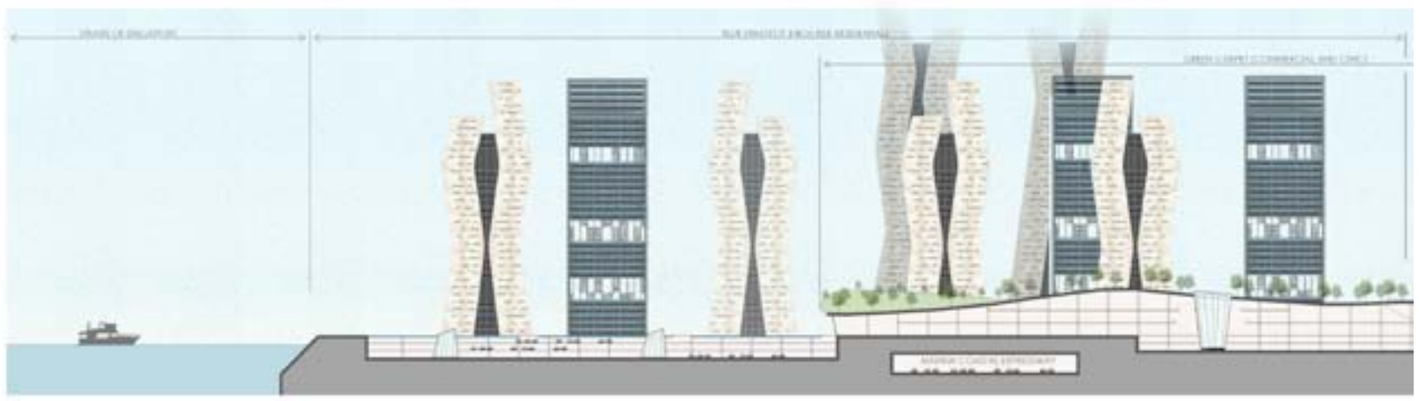
BLUE STRATEGY - RESIDENTIAL SCHEMATIC SECTION

WATER BODY GROUND PLANE - UNIFYING THEME FOR QUIN+TOPO'S BLUE STRATEGY

30 to 50 storey high residential towers sit directly on a vast expanse of water in a radial manner.
This and other planning perimeters proposed for these towers allow breath-taking views out for each residential unit, to the exciting architecture that is to come in Marina South, the ocean and beyond.

The close relationship between the towers and the Straits of Singapore is expressed through an elegant and expansive shallow water carpet, which also allows for water-themed playgrounds for children and a charming water horizon for family activities.

Only with the unique proposed underground vehicular traffic network and carparking system, ground water themed activities are possible.

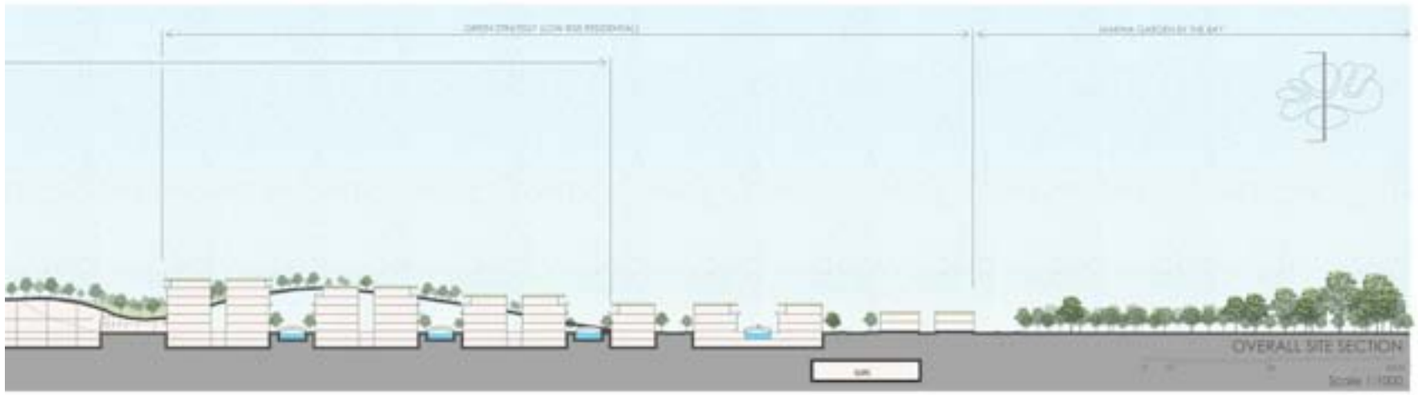


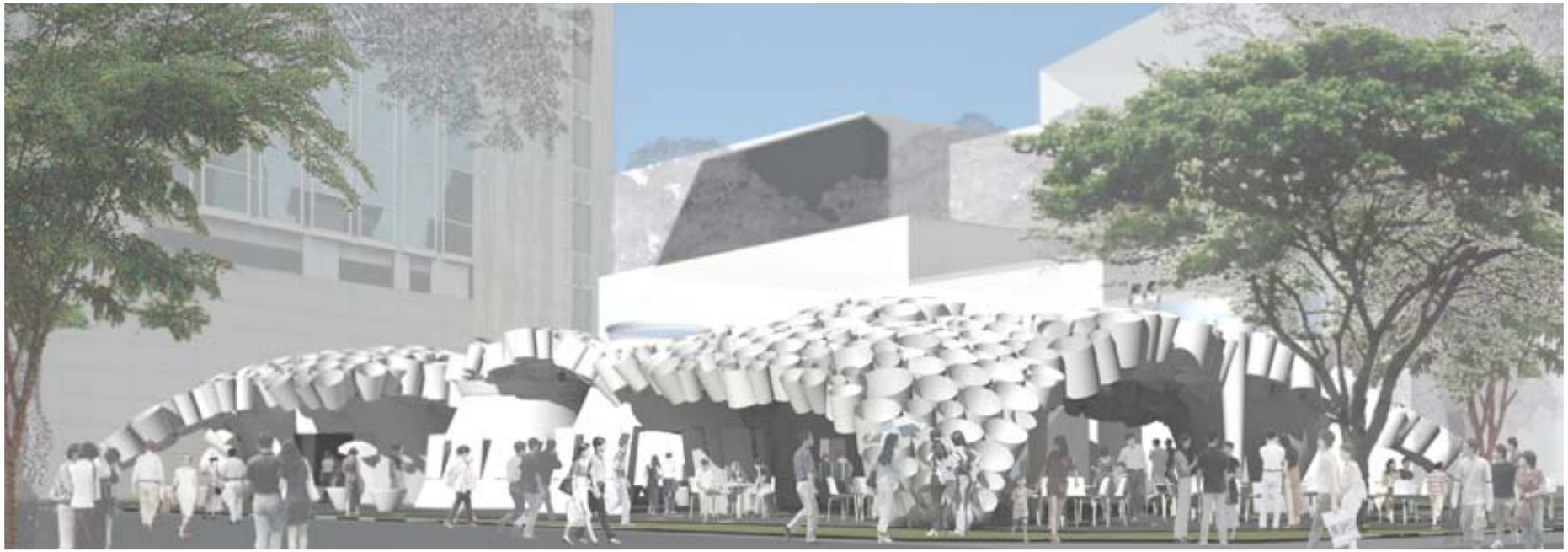
TERRACING RESIDENTIAL BLOCKS TO MARINA GARDENS
-UNIFYING THEME FOR QUIN+TOPO'S GREEN STRATEGY HOUSING

Majority of these terracing roof top spaces will be semi-public gardens that allows residents and their guests to enjoy the fantastic view of Marina Gardens and beyond.

Public gardens and spaces are also purposefully carved out in midst of these series of 2 to 6 storey high apartment blocks, creating a closeness to nature despite its dense and intimate built up form.

Another unique feature is a romantic internal canal system that allows residents to take a boat ride around this residential parcel, bringing them to different public parks to enjoy a picnic or sporting activities with families and friends.



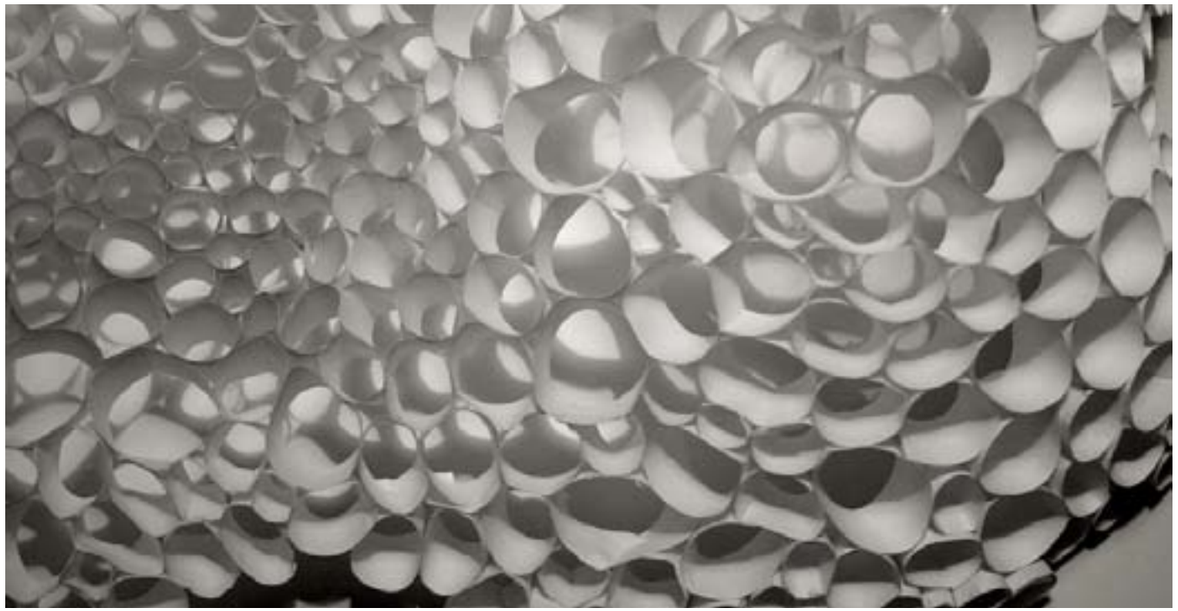


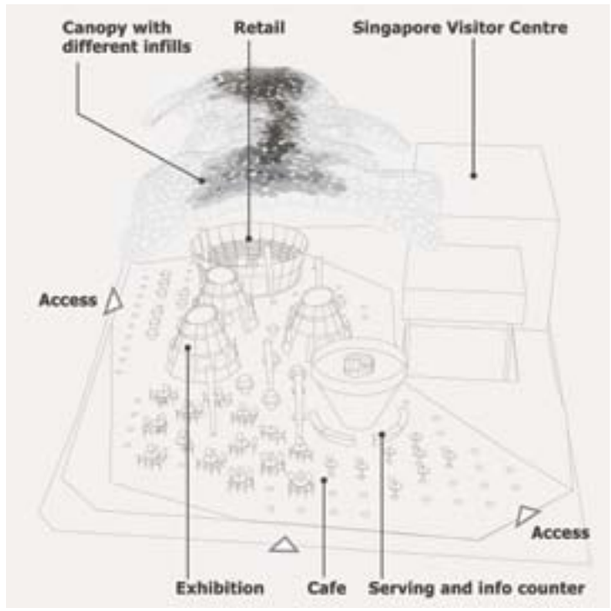
Conesteelation

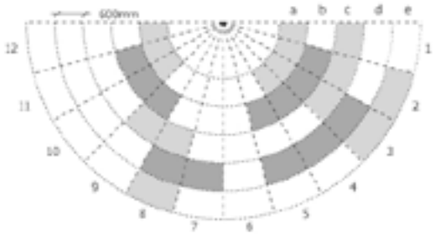
2007

Award:
SIA & Bluescope Lysaght International Design Competition
(Honorary Mention)

An undulating mass of conical components form a homogenous canopy, spreading over the site to shade the activities beneath its span. Internally, large forms wrap around the various zones before punching through, to create support and draw down light into the spaces below. The transition spaces seamlessly merge each zone and the outer surrounding landscape together.







Segments are cut from the same circle and rolled to become cones.

Exploiting the Properties of Steel

This project exploits the versatility of steel plate, which can be welded, riveted, bolted, rolled and laser cut. By the use of standardised and stackable elements, the process of prefabrication can be exploited, reducing the costs of production, construction and transportation. Steel is light, relative to its strength, and both strong in compression and tension. By creating a composite canopy that becomes both roof and wall, the properties of steel are utilised.

The Conical Shape

With the strong Singapore light in mind, the conical shape is used deliberately for its depth, to work primarily as a shading device. The light and shadow that the tapering shape produces becomes an atmospheric tool throughout the building, creating a play of light on wall and floor surfaces. By the use of an undulating constellation of cones, the light within the transition spaces change throughout the day while the inversed cone within the exhibition spaces produced a concentration of light within the room.

Pavilion Elements

Roof Canopy
The enclosure is formed by conical forms in ten various sizes. Each size is cut from segments of the same circle, allowing for maximum material efficiency. The undulating canopy can also be reassembled in a variety of forms according to site requirements.

As an element, the conical shape is not strong individually, but when fitted with an internal ring and connected together, the form acts as one structure. The ring also becomes a frame into which to add an infill material. Each cone can be open, semi-filled or totally filled, according to the environmental requirements needed below. The open rings allow for cross ventilation, perforated metal plates allow for a greater level of shading while the solid plates of glass or metal prevent rain penetration or provide for lighting recesses. Each ring is then attached to the outer edge of each cone.

Supporting structures
The supporting structures of 'rooms' are also cut from the same circle, while the columns vary in size according to how they lock into both floor and roof cones.

Floor system
The floor is formulated as a grid of adaptable cones, set at two point four meter intervals. Using just two of the standardised conical form sizes, the floor plates are cut and the cones recessed until flush with the floor. These elements act as openings to take lighting, columns or furniture.


Cafe and Viewing Platform: "Taking time, just watching"


Exhibition cones and Display: "Sitting in the dappled light"


"A place to sit and chat"


Retail Space

Below the Canopy

The Transition Spaces
The roof cones above are filled with a solid material along the middle, to provide a waterproof circulation space below, while the outer edges are filled with perforated metal to give a softer light.

Café and Information Counter
The café is located at the edge of the site, to draw visitors in and visually link people and activities along Orchard Road with those sitting in the cafe. Set within the floor system are bar tables on the outer edge, while the inner areas of the café have seating that merge through into the exhibition space and beyond. The voyeuristic nature of the cafe is further exploited with the corner viewing tower, accessed by a steel stair around the central support. Here, people can bring their drinks and congregate on the platform in the evening and overlook the lit undulating form.

Exhibition Cones
The large conical 'rooms' are designed to give a quiet and more pure environment. The inverted roof cone is set at an angle either towards or away from the light as required. It can either be filled with glass for weather proofing, with metal for black space projections, or open to sky with a central hole in the floor for drainage. The exhibition 'rooms' are cut with door openings on both sides, to create a through flow of circulation, with sliding doors that can be shut at night for security. The base of the cone remains uncut, to form a structural ring that is recessed below the level of the floor platform.

Retail
In this location the roof becomes dome-like above the angled walls that enclose the space. Like the exhibition spaces, doors are cut into the closed form, with the base acting as a tie below the floor level. Shelving wraps around inside, held in place by steel cables, while central display stands are held in place by the floor cone system.

A Day at the National Art Gallery

Historical spaces within both buildings are linked together within a continuous horizontal experience. Building facades and interiors are preserved, opening up the original architecture to new interpretation.

Humanise and Pedestrianise
The proposal engages the public by introducing a new humanised scale to the grand colonial buildings. This is achieved by the conversion of the road to a pedestrianised zone. Flexibility is incorporated as the space can be easily converted to enable the familiar National Day parades.

NAG as Art-Culture Spark-plug
The proposal proposes to stimulate a long-term Art culture by intensification and multiplicity in programmatic functions of the NAG. New ways of exhibiting and appreciation provides richness to one's experience and re-experience.

In summary, the new NAG is envisaged to be a new Art & Civic Place for the Public.

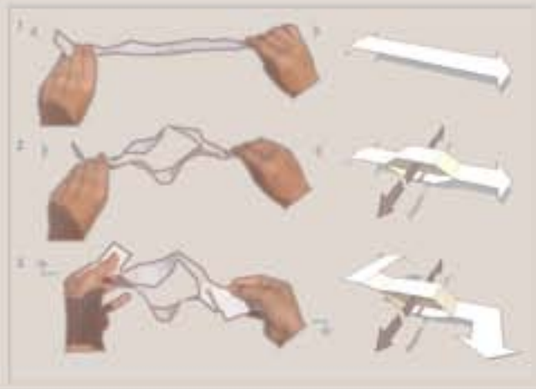
Preservation and Reinterpretation

1. System
Two architectural strips formed by triangulated plates are created to connect the buildings. This folded strips are aligned together to achieve structural stiffness, resulting in a light form system that can "hold" its own with minimal supports.

2. Junction
The spatial cavity created by pushing the ends of the strips is used to 'stitch' the circulation flow from one building to the other. This floating void allows a seamless walkway for the visitors at the third storey level, which is identified as the key exhibition level.

3. Form
The rotation of the strips ends to form an 'S' shape is a gesture to further embrace the two buildings with a new use. Commercial and entertainment functions located at ground level and at roof level are now linked together shaping the multi-functional new identity of the National Art Gallery.

Responsive Innovation



Outdoor Dining & Refreshment Areas

The mirror like finishing reflects the surroundings: sky, clouds, adjacent buildings and Padang, proposing an illusion of disappearance. Commercial vibrancy is situated to invite the casual browser as well as the aficionado.

Public Art Space

The triangulated architectural form is a composite arrangement of highly reflective steel plates and low-e glazing panels. This attractive public area with generous landscaping will function as spill-over spaces for Retail.

Liason

The connecting space created presents itself with an undulating timber clad interior, hosting artwork presented via projections. Internally, rhythmical patterns of shadows will dance in response to sunlight.

Reflecting Roof

At the roof, the combination of dining as well as art appreciation experiences is poised to take full advantage of the magnificent views. The roof-form of the Gallery with complementary lily ponds re-create a new ground, revealing another attractive public venue.

Orientation

The architectural strip functions programmatically differently at its interface with the existing buildings. Though boldly formulated of modern triangulated plates, its materiality draws intimacy to its visitors and immediate environment.

A Day in the National Art Gallery

The Performance 'Dome'

Reinterpreting the 'center stage' theatre typology, this space invites a multidimensional experience for both viewers and performers. Accessible via a dedicated vertical core, visitors arrive on the 6th storey foyer, before entering the to one side of the dome.

Historical Promenade

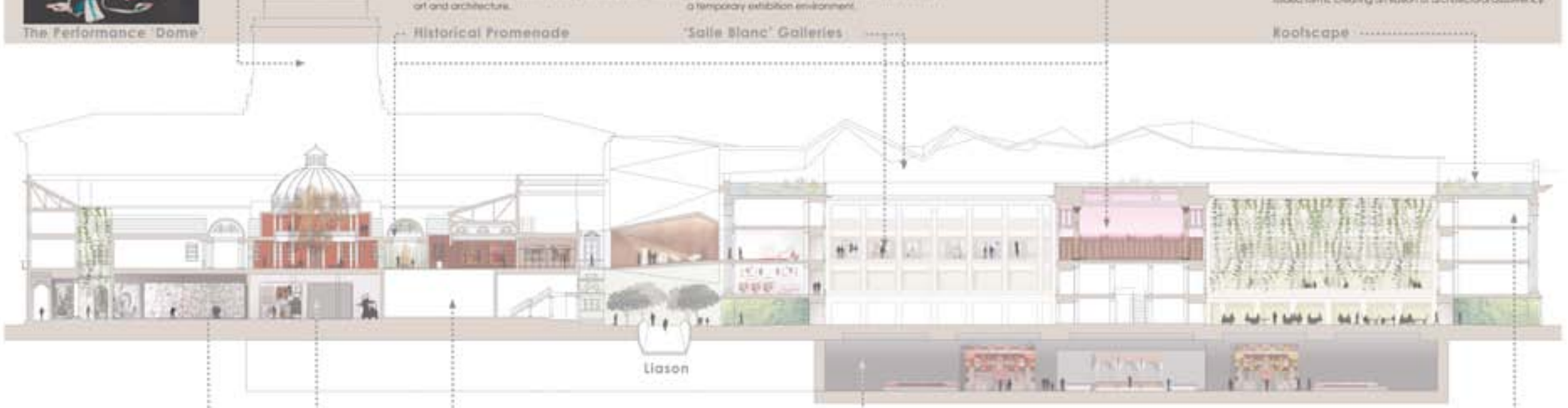
Historical spaces within both buildings are linked together in a continuous horizontal narration, with deliberate reminiscence of important events in Singapore's history. Contemporary pieces are deliberately juxtaposed within a traditional setting to create a new response between art and architecture.

'Salle Blanc' Galleries

The 'white box' spaces propose a new logic of viewer and viewed, creating multiple vistas of the art through the glass wall and across the voids, instead of the conventional single frontal one. The third floor level houses permanent galleries, while the roof level provides a temporary exhibition environment.

Roofscape

A landscape orientated signature is woven through the architecture, softening the authoritarian nature of both buildings. Greenery infiltrates the courtyards, entrance tunnels and roof level with hanging creepers, moss walls and lily ponds. These are in turn mirrored by the adjacent reflective folded forms, creating an illusion of architectural dissolvency.



Experimental Gallery

Accessible from the street, this gallery houses a variety of spaces, including the existing cells with part of the prisoners walkway above. Here, young artists will show and create contemporary art that could explore digital art and new media, hosting temporary events like the Biennale.

Storage and 'Work in Progress' Areas

Conventionally unseen by visitors, the storage space is specifically designed with a large glass wall along one edge, allowing the public to learn and understand about art in a less conventional manner. This also functions as a form of advertisement by revealing the arrival of high profile exhibitions.

'Salle Noir' Galleries

The columnless 'black box' space, is the most flexible of all the galleries with a 6m clear ceiling height. This fluid exhibition space can accomodate any kind of collection as it is equipped with conservation-friendly environment conditions and a controlled level of light.

Commercial Activities

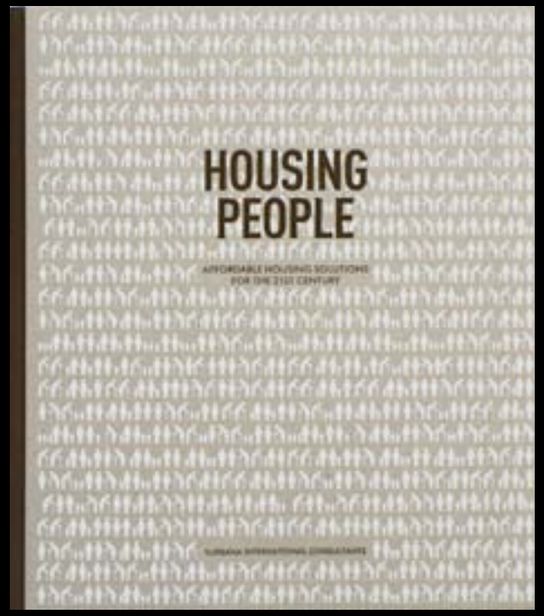
A mixture of commercial activities are positioned around the courtyards on the first and second stories of the City Hall, as well as at roof level. Corporate activities and events maximise the beautiful balconies and spaces of the Supreme Court at the second floor level and above. This develops a migrating array of activity throughout the day and evening.

Children's Laboratory

Located on the top floor, the Children's lab is designed to be a flexible series of spaces for programming and classroom activities; using two columnless wings to allow for multi-purpose uses. The laboratory is also adjacent to administration facilities for easy maintainence and programming.

Project Bel Air

2007
Project size: 26,536 sqm (GFA)
Site Area: 0.87 Ha
GPR: 3.05

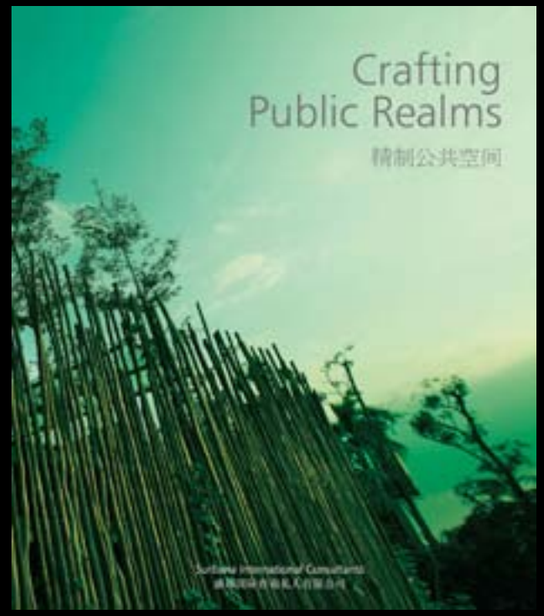


Housing People
(ISBN: 978-981-07-1793-3)
(Edition, 2012)

This book aims to fill the gap between theory and practice, providing accessible information, from experts in the field, on how affordable housing can be built well, at the right price and in the right way for the people it is intended to house. From our designs for rental housing in Woodlands to brand new mass housing in Punggol, it strives to interest a wider audience beyond Singapore, provoking discussion and debate amongst students, practitioners and policy makers alike.

1° N
(ISBN: 978-981-07-7534-6)
(Edition, 2013)

This is a selection of architectural design works by Surbana Architects and showcases a selection of Surbana's fine portfolio in the city of 1 degree North (i.e. Singapore), and demonstrates the versatility of its designing and executing capabilities. Over the last decade, Surbana has imparted the principles of good quality architecture from its rich experience in housing to a very broad spectrum of design typologies. The large array of design directions and strategies shows the open-minded attitude of constant innovation; the refined finished standards is a testament to the robustness of good work processes and systems unique to our large multi-disciplinary organisation.



Crafting Public Realms
(ISBN: 978-981-09-0225-4)
(Edition, 2014)

A building doesn't exist in isolation
Buildings alone cannot provide livability without well designed urban landscapes and public realms. Urban landscapes and public realms are essential elements in a built environment that serve a plethora of needs for people to live, connect and enjoy.
'Crafting Public Realms' captures Surbana's experiences in creating innovative, engaging and sustainable Urban Landscapes and Public Realms. Selected Surbana projects in Urban waterscapes and groundscapes in different scales and locations are showcased. Surbana believes that a city with well designed public realm is 'not a place full of strangers but of acquaintances and rich experiences' – a principle consistently upheld and realized in our projects.

project 2050
(ISBN: 978-981-09-2224-5)
(Edition, 2014)

What will the world be like in the year 2050? Can the cities that will become concentrations of rich programmes be characterized by strategic mega dense city cores?

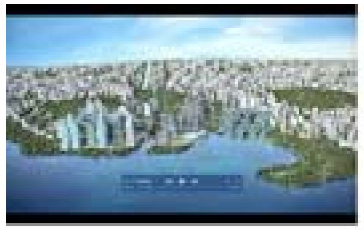
Surbana, as an urban solutions provider, peers into the looking glass and imagines what the city will be like in 35 years' time. Using 2 square kilometres of land as a canvas for a thought exercise, the architects and urban planners of Surbana came together to envisage the future physical environment. This vision of the future will not be a fancy of science fiction; instead, this book examines the issues that Asian cities will be facing in 2050 and postulates what are the urban strategies to be employed, and how our physical urban-scape interfaces with these responses. Shaped by 50 years of institutional experience in urban development, Surbana's initiative aims to start a conversation with urbanists, architects and built environment experts on what the future of our cities hold for us.

project 2050

2013-2014

'project 2050'
Tower typologies

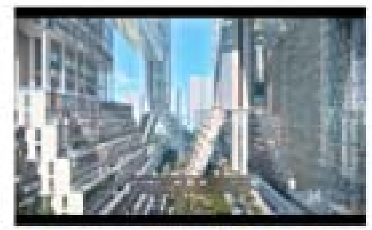
1 Forest
2 Loop
3 O-Tower
4 Hexcity
5 Wellness Tower
6 TOD
7 Food Tower
8 Tropical Pyramids
9 Plug&Play Tower(s)
10 Habitat HD
11 Land of the Sky





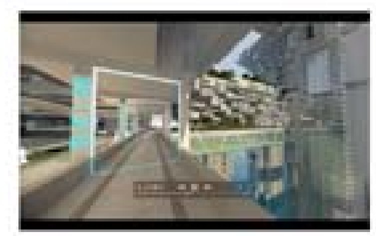




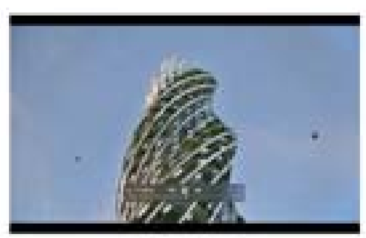


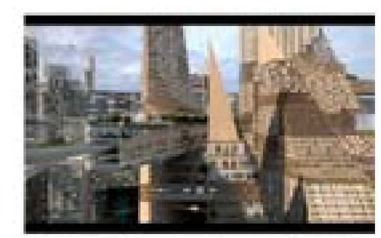


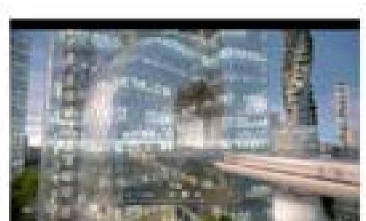
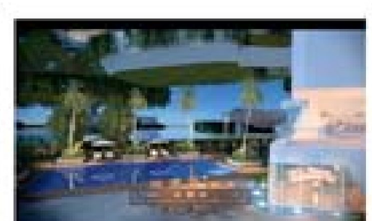







Sphere Studies

2008-2009

Apart from the use of laser-cutting technology to produce the inter-locking ribs which are the inter-locking components of the spherical forms, the study also explored material optimisation (ie minimal wastage of sheet material).

The work included in this book is possible only with the teamwork and adventurous spirit of the various dedicated teams. Almost across all the years, the periods of festive seasons (Christmas, New Year, Chinese New Year) were spent in the studio, working out design solutions and preparing for submissions and presentation packages. I would like to thank all of the Architects whom I have worked with, for sharing my passion.

My deepest gratitude go to my wife, Claire who has patiently put up with all the time I had spent away from home, and supported me throughout all my projects, on some ocassions editing my materials.