Saving the Planet by Design

a presentation by
T. R. Hamzah & Yeang Sdn Bhd

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T. R. Hamzah & Yeang (TRHY) as a practise: our founders



Ken Yeang (Dr)

(Ph.D. Cantab, AA Dipl, APAM, FSIA, RIBA)

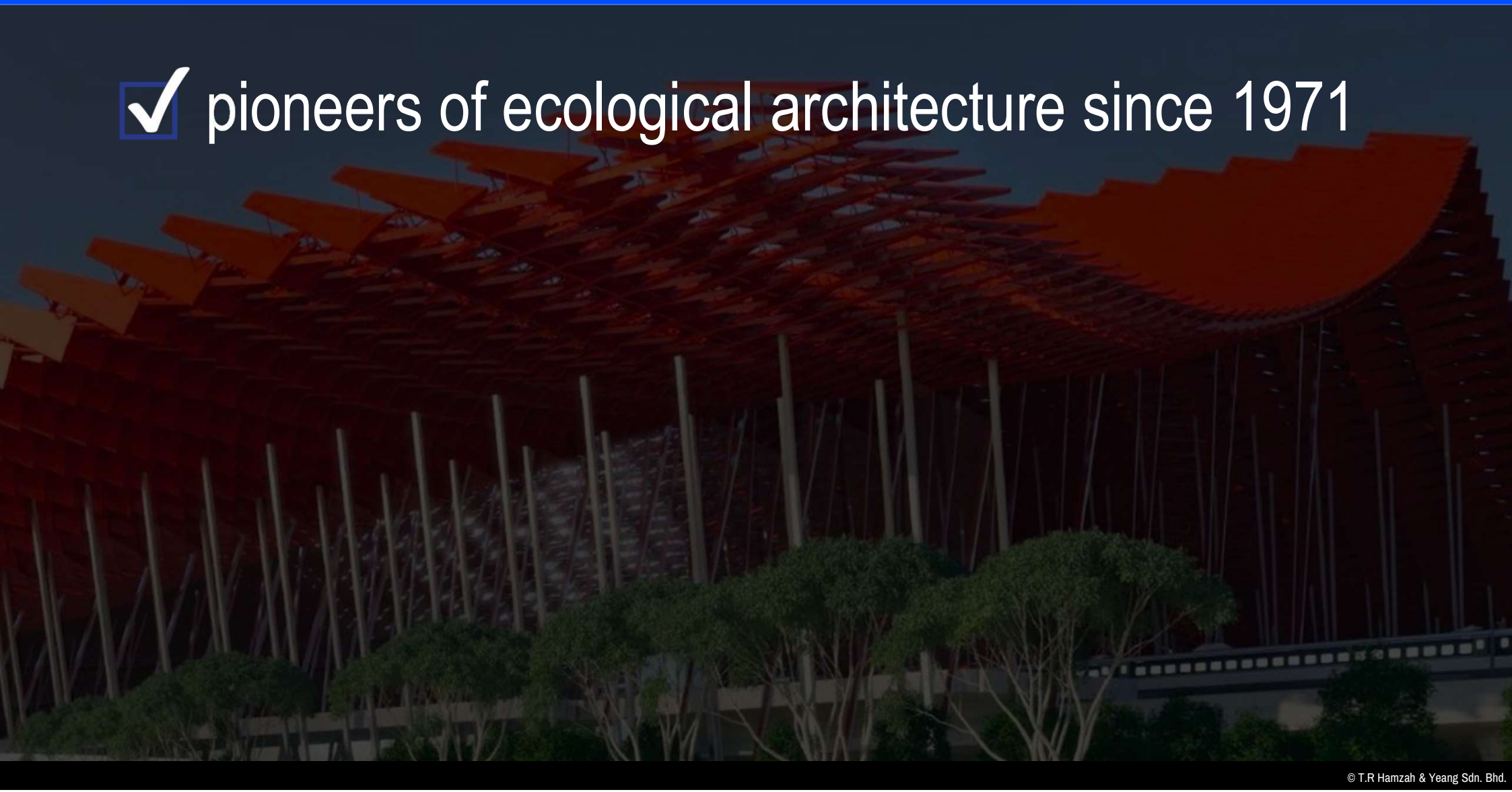


Tengku Robert Hamzah

(AA Dipl, APAM)

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T. R. Hamzah & Yeang (TRHY) as a practise



- ☑ pioneers of ecological architecture since 1971

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T. R. Hamzah & Yeang (TRHY) as a practise



- ☑ **pioneers of ecological architecture since 1971**
  long before sustainability became mainstream
- ☑ **beyond green certifications**
  our designs achieve true carbon neutrality through ecological design

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T. R. Hamzah & Yeang (TRHY) as a practise



- ☑ **pioneers of ecological architecture since 1971**
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- ☑ **beyond green certifications**
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- ☑ **signature and iconic**
  known for designing world-recognized green landmarks and design inspiration

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T. R. Hamzah & Yeang (TRHY) as a practise



- ☑ **pioneers of ecological architecture since 1971**
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- ☑ **beyond green certifications**
  our designs achieve true carbon neutrality through ecological design
- ☑ **signature and iconic**
  known for designing world-recognized green landmarks and design inspiration
- ☑ **proven track-record**
  design experience across Asia, Europe & the Middle East

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T. R. Hamzah & Yeang (TRHY) as a practise: list of awards and accolades

..over 70 awards over 25 years..

2026 **PAM Gold Awards:** TNB Monopole Transmission Towers, Penang
2025 **Star Property Awards 2025 (Real Estate Developer):** Skylon Residence
2024 **AIA International Design** Firm Award
2024 **Frost & Sullivan Institute** - Visionary Leadership Best Practices Recognition
2022 **Australian Institute of Architect**- 2022 Leadership in Sustainability Prize
2021 **The Edge Malaysia**-PAM Green Excellence Award (Honorary Mention)- Putrajaya Suasana
2021 **PAM** Gold Medal Award: Commercial (High Rise) Category- Putrajaya Suasana
2020 **Acoustical Society of America (ASA) -** Gold Medal
2020 **Global Forum on Human Settlements** (supported by UN Environment Sustainable Development) Planning and Design for Suasana Putrajaya
2020 **Malaysia Green Building Council** Best Research
2018 **Malaysia Green Building Council** Best Commercial Building - Putrajaya Suasana
2017 **Cityscape Award** for Putrajaya Suasana
2016 **Architectural Society of China** - Liang Sicheng Architecture Prize
2016 **FIABCI World Prix d' Excellence Awards**: Solaris (Fusionopolis)
2016 **PAM** Award Commendation: Single Residential - R-House
2015 **Archute** - 40th Most Famous Architects of the 21st Century
2015 **The Malaysian Construction Industry Excellence Awards**- Prominent Player
2015 **BCA-SGBC Green Building Individual Awards**: Green Architect Lifetime
2014 **FuturARC** Green Leadership Award: Solaris (Fusionopolis)
2014 **World Alliance of Sustainable Cities Design**: Design Master
2014 **AIA International Region Design Awards**, Hong Kong: Solaris, Fusionopolis



► **Ken Yeang** receiving the 2024 **AIA International Design Firm Award**, honouring T.R. Hamzah & Yeang Sdn. Bhd. for excellence in sustainable architectural practice.

2010 **MATRADE** Export Excellence Award: Services
2009 **CNBC Asia Pacific Property** Award: Spire Edge, Manesar, India
2009 **BCA Green Mark** Platinum Award: Solaris
2009 **BCA Green Mark** Platinum Award: Singapore National Library
2009 **CNBC Asia Pacific Property** Award: Best Residential Apartment - TTDI Plaza
2008 **MATRADE** Export Excellence Award: Winning Entry - Solaris (Fusionopolis)
2007 **ASEAN** Energy Efficient Building Awards: 1st prize-'New & Existing' buildings
2007 **BCA Singapore Silver Award**: Universal Design
2006 **Council of Tall Buildings and Urban Habitat** - Lynn Beedle Lifetime Achievement Award
2006 **Malaysian Interior Design Awards** - IPDM Industry Achievement Award
2006 **Royal Institute of Chartered Surveyors** (RICS) Award for Sustainability
2006 **SIA** Facade Design Excellence Silver Award: Singapore National Library
2006 **MCIEA (Malaysian Construction Industry Award)**
2005 **BCA Singapore Green Mark** Platinum Award: Green & Sustainable Building
2001 **World Association of Chinese Architects (WACA)**: Gold Medal Award
2000 **Sir Robert Matthew Award**, Commonwealth Association of Architects (CAA)
2000 **Hunter Douglas** Competition (Open), Malaysia: Winning Entry
2000 **Beijing World Science & Trade Centre** Competition: Winning Entry
Huannan Masterplan Competition for **Hopsons** Award, China: Winning Entry
1996 **RAIA** International Architecture Award: Menara Mesiniaga
1996 **Aga Khan Award for Architecture**, Switzerland: Menara Mesiniaga



"..you deserve the award.." Receipt of Merdeka Award (2011) from Prime Minister (Malaysia)

2014 **NPark Leaf Certificate Awards Singapore**: Solaris, Fusionopolis
2013 **MGBC** Excellence & Leadership in Sustainability Award
2013 **ARCASIA Award**: Honorary Mention, Industrial Building - DIGI Data Centre
2013 **Universiti Malaya** - Honorary Doctorate in Architecture
2012 **Green Building Index**, Malaysia - Plaza VADS (Annex Block)
2012 **RAIA International Architecture Award**: Finalist - Solaris, Fusionopolis
2012 **Green Building Index**, Malaysia: Gold - DiGi
2012 **Council on Tall Buildings and Urban Habitat**: Finalist
2011 **RIBA International Award**: Solaris, Fusionopolis
2011 **Regional Holcim Award** for Sustainable Construction: Putrajaya 2C5
2011 **World Association of Chinese Architects** (WACA) **Gold Medal Award**: Solaris **LEED Platinum** status on the pre-certification: Spire Edge, India
2011 **PAM Gold Medal**: Solaris (Fusionopolis)
2011 **PAM Award Commendation**: Ganendra Art House
2011 **Merdeka Award** for the 'Environment' category from Malaysian Government
2011 **Fast Company**, March Issue: TOP 10 Most Innovative Architect Firm
2010 **Green Good Design** Awards - Solaris (Fusionopolis)



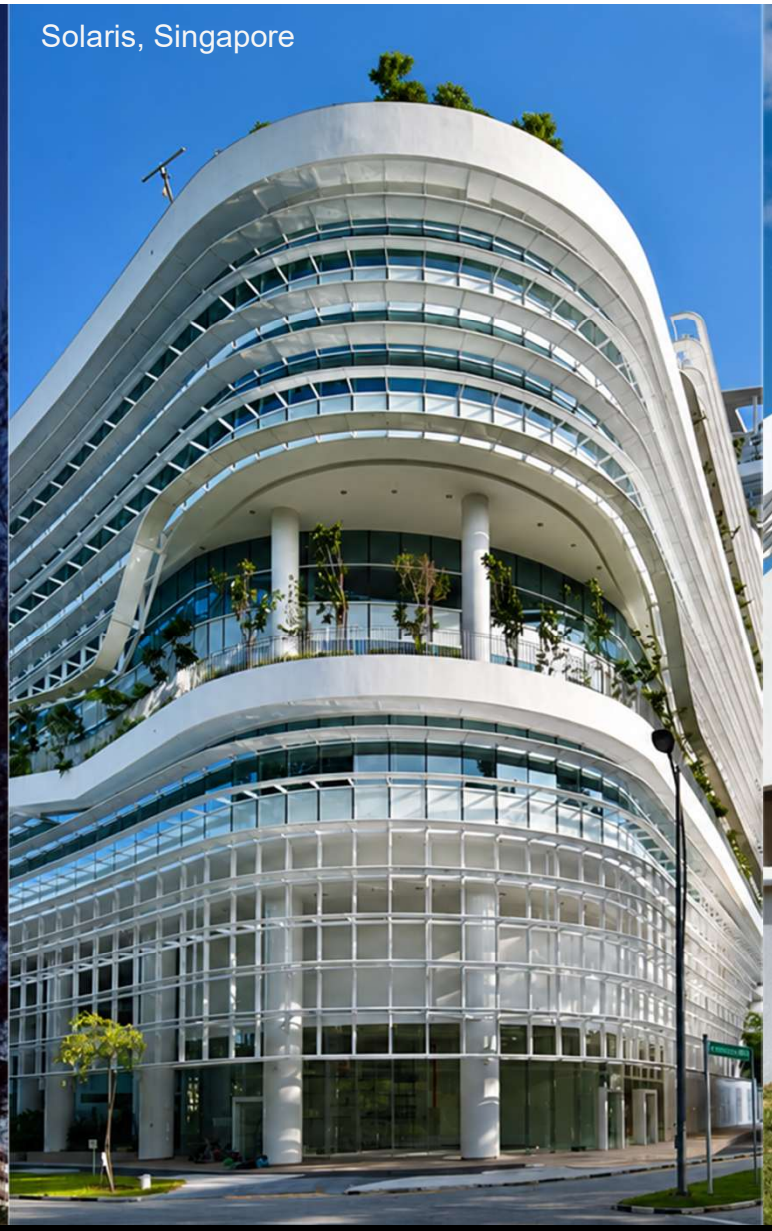
► *Architectural Society of China Liang Sicheng Award 2016 received from Minister of Construction, China*


► meeting **HH The Aga Khan** (second left) at the **Aga Khan Award** for Architecture Ceremony in Marrakesh, Morocco.



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Menara Mesiniaga, Malaysia


Solaris, Singapore


Roof-Roof House, Malaysia

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our current condition

OUR PLANET'S CURRENT CONDITION

- humanity
  human society
- boat
  built environment
- turbulent sea
  endangered Planet
- leak
  environmental crisis



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We must together fix this leak

OUR PLANET'S CURRENT CONDITION

- humanity
  human society
- boat
  built environment
- turbulent sea
  endangered Planet
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  environmental crisis



HOW DO WE RESCUE THE PLANET?

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Solutions through ecology: We build using biomimicry and nature-based systems

OUR PLANET'S CURRENT CONDITION

- humanity
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  environmental crisis



HOW DO WE RESCUE THE PLANET?

information & directives? → ecology
as applied ecology

means & equipment? → biomimicry
nature-based systems

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our design factors: based on Dr. Ken Yeang's key ecological design factors.

design factors	design objectives	metrics



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human design factor: human health, well-being and happiness.

design factors	design objectives	metrics
humans	• human health • human well-being & happiness	**NWHS** (Net Well-being & Happy Society)

•happiness quotes
•well-being factor



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hydrology and nature factors: integrate water management and biodiversity.

design factors			design objectives	metrics
humans				
• social • economic • political • Institutional • cultural	• ecological ethics • ecologically responsible behaviour • ecologically responsible diet	• human health • human well-being & happiness	**NWHS** (Net Well-being & Happy Society)	•happiness quotion •well-being factor
hydrology				
• rainfall • waterways • seas • snow	• rainfall • dew • lakes • ground water	• water management • water conservation • water reuse & recycling	**NZW** (Net Zero Water)	•net zero •net surplus
nature				
• habitats • species • biodiversity	• biomes • biosphere • ecosystems	• abiotic constituents • biotic constituents • biogeochemical cycles	**NPEI** (Net Positive Ecological Impact)	•biodiversity %tage •species loss •ecosystem degradation



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energy systems factors: optimize all energy systems.

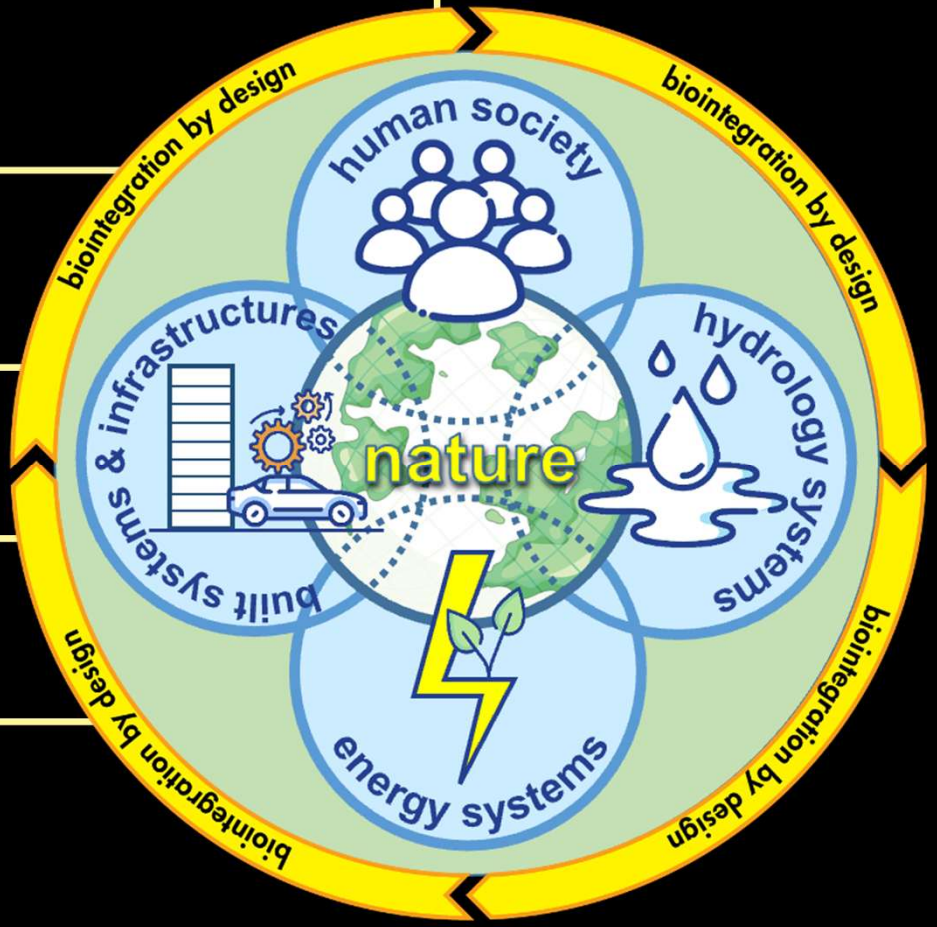
design factors			design objectives	metrics
humans				
• social • economic • political • Institutional • cultural	• ecological ethics • ecologically responsible behaviour • ecologically responsible diet	• human health • human well-being & happiness	**NWHS** (Net Well-being & Happy Society)	•happiness quotion •well-being factor
hydrology				
• rainfall • waterways • seas • snow	• rainfall • dew • lakes • ground water	• water management • water conservation • water reuse & recycling	**NZW** (Net Zero Water)	•net zero •net surplus
nature				
• habitats • species • biodiversity	• biomes • biosphere • ecosystems	• abiotic constituents • biotic constituents • biogeochemical cycles	**NPEI** (Net Positive Ecological Impact)	•biodiversity %tage •species loss •ecosystem degredation
energy systems				
• renewable • ambient • hydrogen • battery	• electronic systems • advance biofuels • geothermal energy • thermal storage	• passive mode systems • mixed-mode systems • smart full mode systems • productive mode systems	**NZE/C** (Net Zero Energy/ Carbon)	•net zero •net surplus



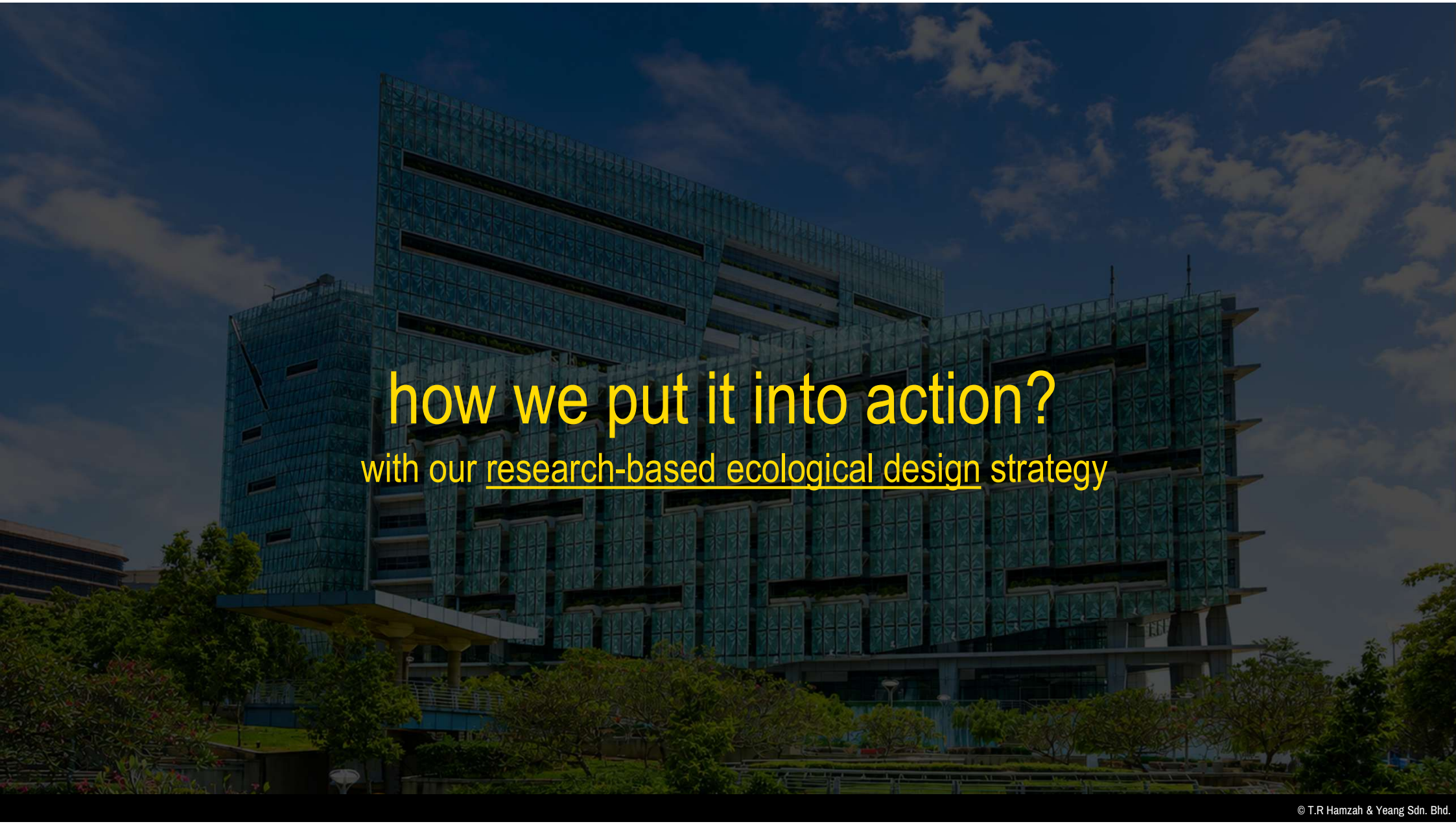
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built systems & artefacts factor: infrastructures, structures, and manufacturing.

design factors			design objectives	metrics
humans				
• social • economic • political • Institutional • cultural	• ecological ethics • ecologically responsible behaviour • ecologically responsible diet	• human health • human well-being & happiness	**NWHS** (Net Well-being & Happy Society)	•happiness quotion •well-being factor
hydrology				
• rainfall • waterways • seas • snow	• rainfall • dew • lakes • ground water	• water management • water conservation • water reuse & recycling	**NZW** (Net Zero Water)	•net zero •net surplus
nature				
• habitats • species • biodiversity	• biomes • biosphere • ecosystems	• abiotic constituents • biotic constituents • biogeochemical cycles	**NPEI** (Net Positive Ecological Impact)	•biodiversity %tage •species loss •ecosystem degredation
energy systems				
• renewable • ambient • hydrogen • battery	• electronic systems • advance biofuels • geothermal energy • thermal storage	• passive mode systems • mixed-mode systems • smart full mode systems • productive mode systems	**NZE/C** (Net Zero Energy/ Carbon)	•net zero •net surplus
built systems & artefacts				
• structures • infrastructure • artefacts • recycling • reuse	• carbon capture systems • zero carbon steel • zero carbon cement • zero carbon fertilizer • zero carbon plastic	• hydrogen production without emitting carbon • low embodied energy • large scale electricity storage	**NZW/E** (Net Zero Waste/ Emissions)	•carbon content •%tage recycled •emissions level

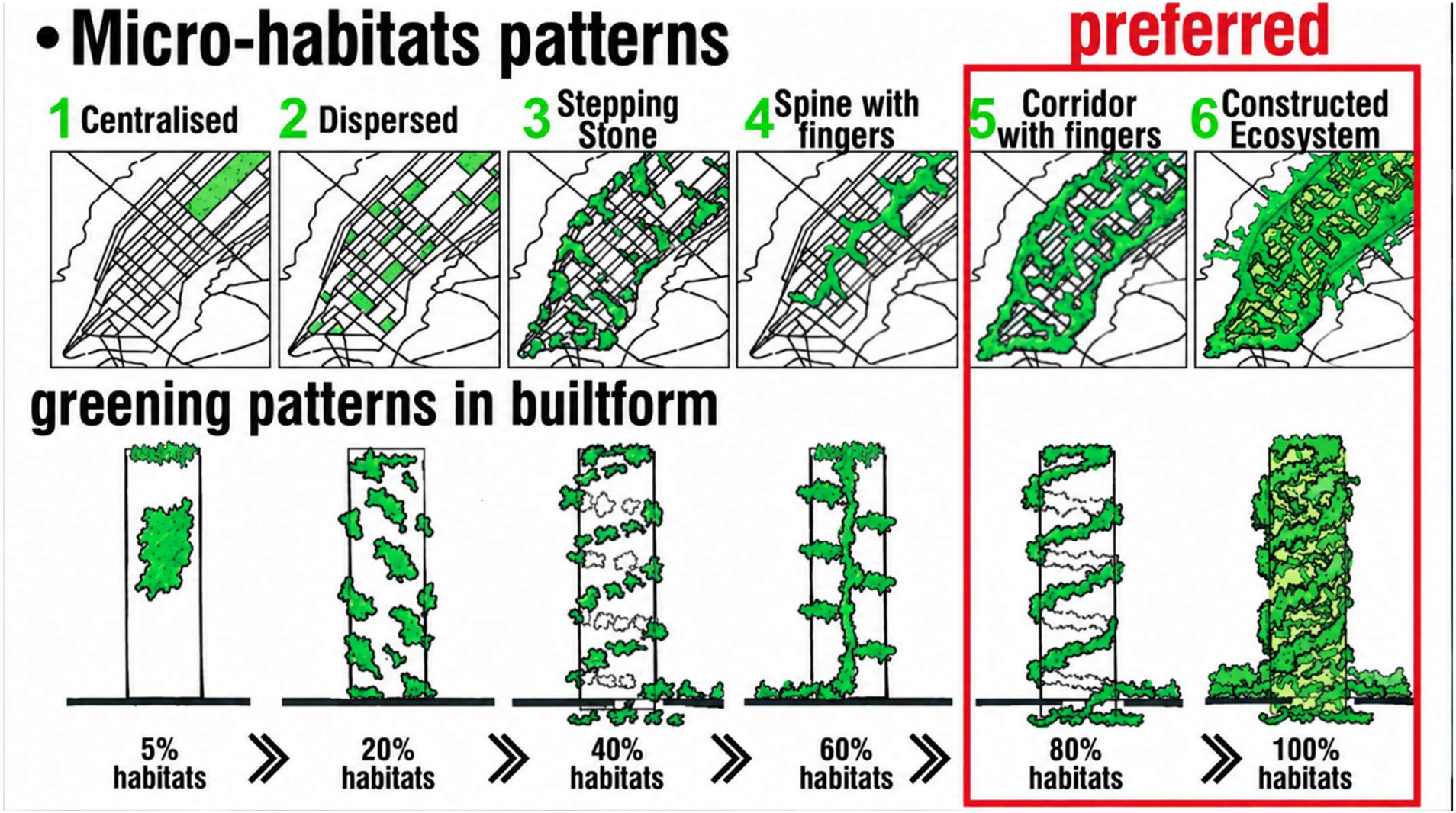


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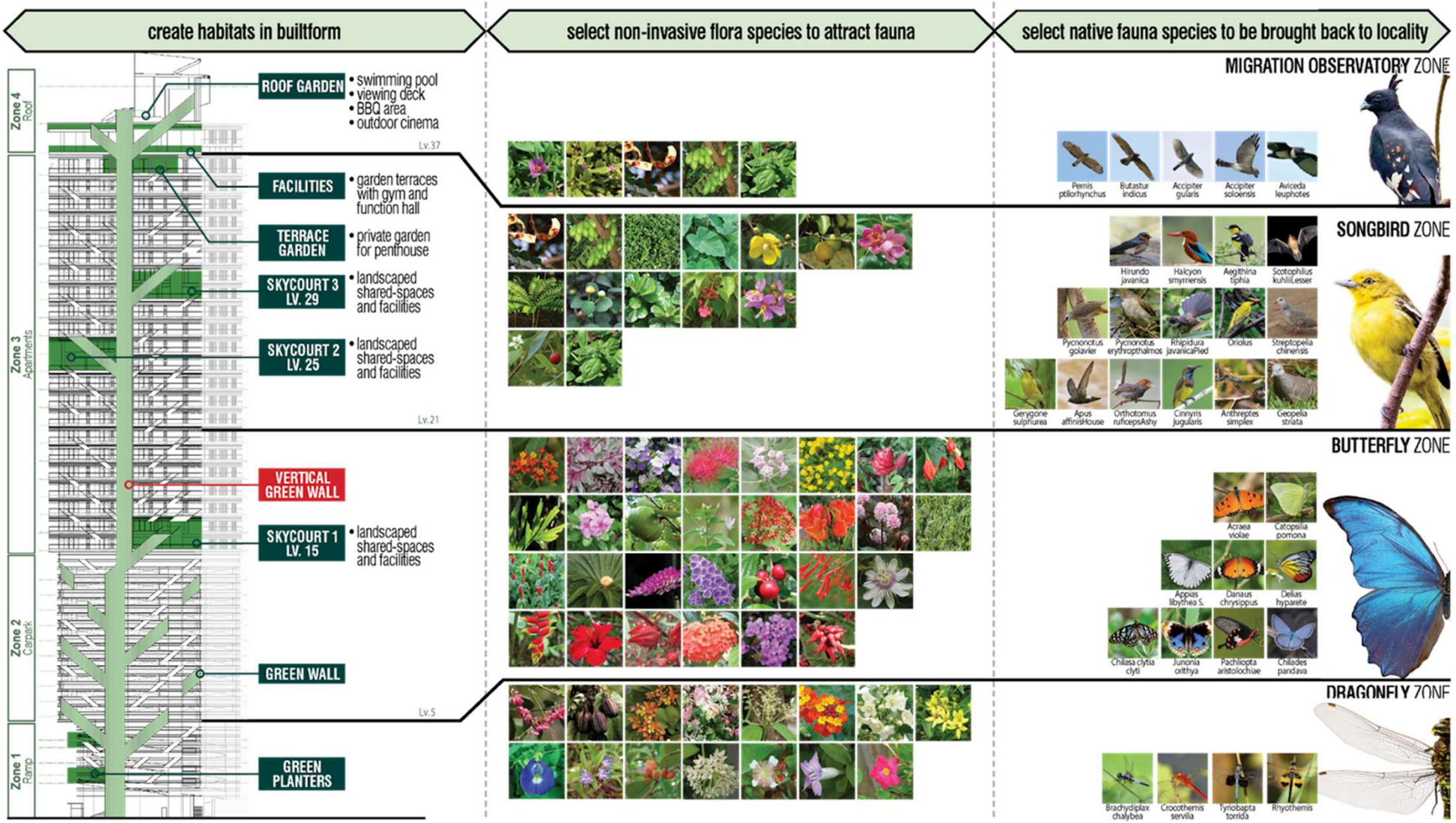


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greening patterns in builtform: vertical patterns and continuous corridors and green ecosystems.



example of design for biodiversity enhancement for Skylon Residence, Malaysia (2025)

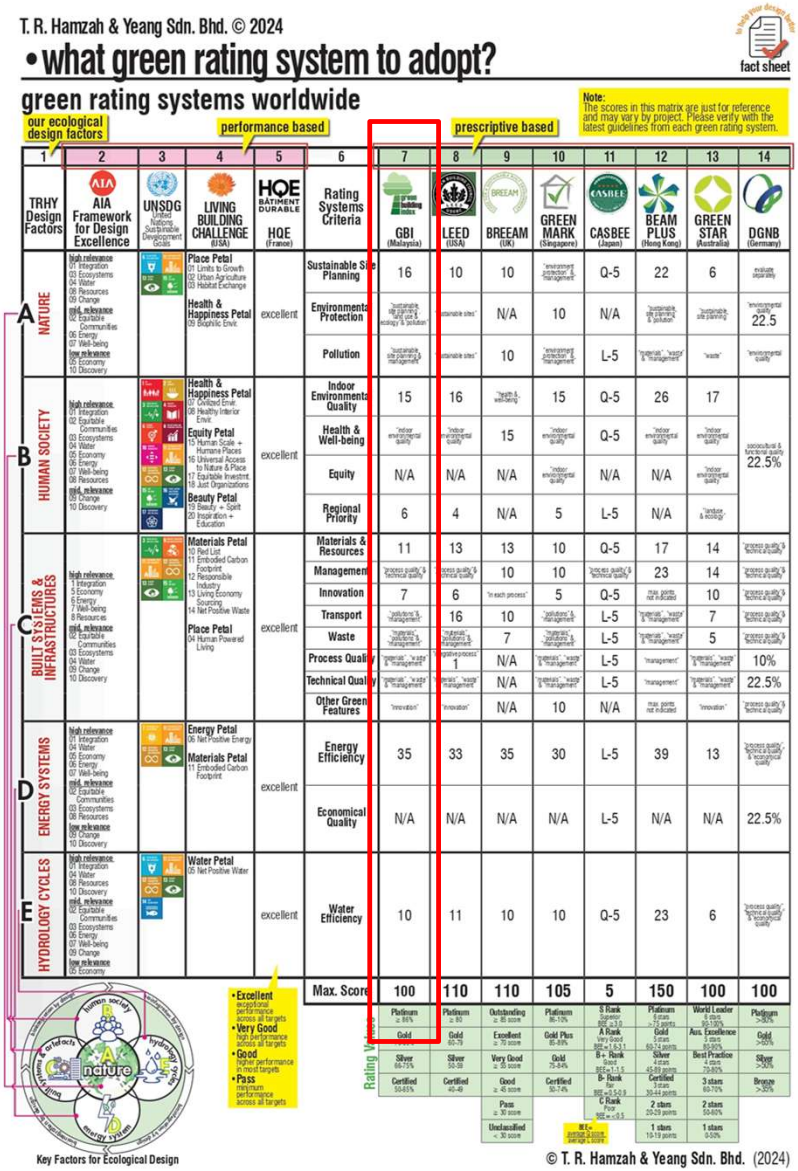


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example of design for biodiversity enhancement for Skylon Residence, Malaysia (2025)



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Scan to download our green rating system fact sheet

ocation: Putrajaya, Malaysia

Location: Penang, Malaysia

architecture





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Suasana Putrajaya (2017): design for energy & water



Client: Putrajaya Holdings Sdn. Bhd.
Location: Putrajaya, Malaysia
Year of Completion: 2017
Total GFA: 813,321 sqft / 75,560 sqm

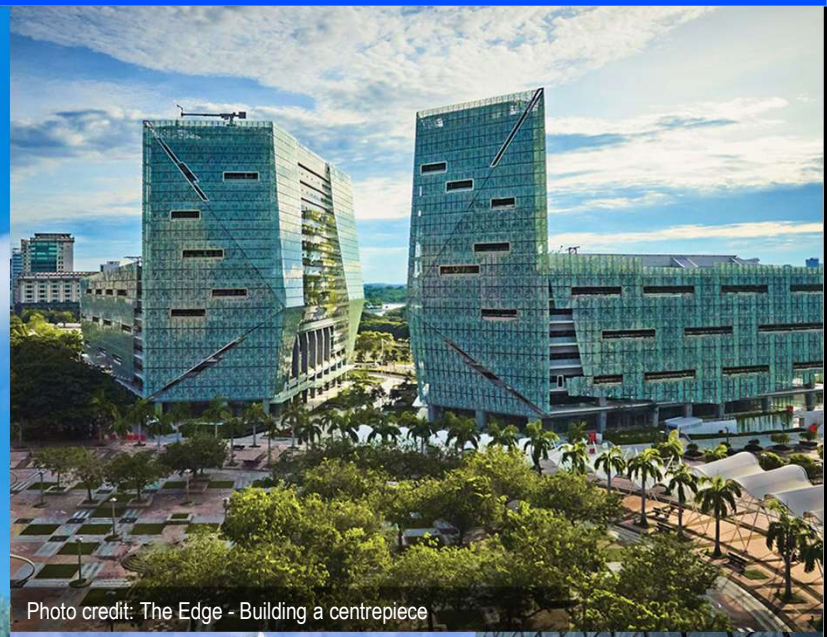


Photo credit: The Edge - Building a centrepiece



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Suasana Putrajaya (2017): building features - wide, open skycourts



Client: Putrajaya Holdings Sdn. Bhd.
Location: Putrajaya, Malaysia
Year of Completion: 2017
Total GFA: 813,321 sqft / 75,560 sqm

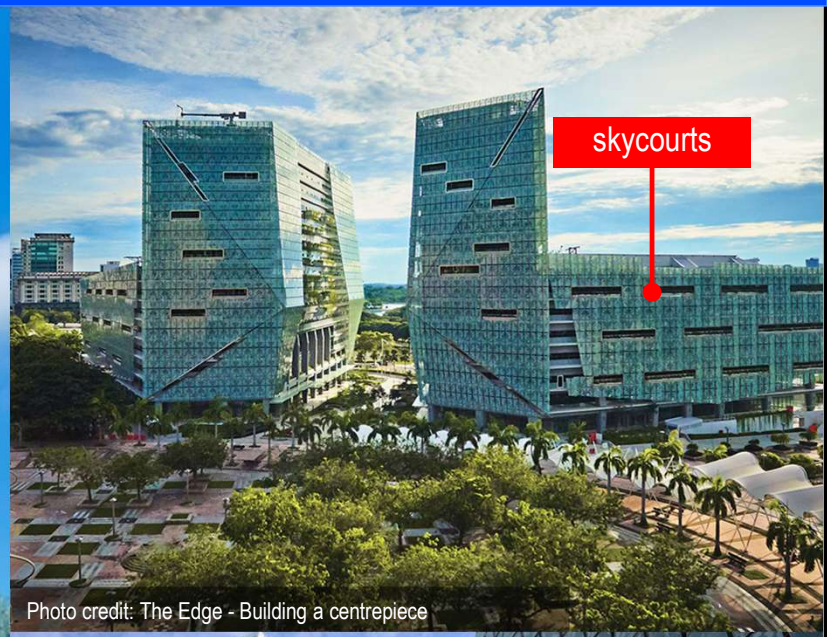


Photo credit: The Edge - Building a centrepiece



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Suasana Putrajaya (2017): facade - a double-skin fritted-glass



Client: Putrajaya Holdings Sdn. Bhd.
Location: Putrajaya, Malaysia
Year of Completion: 2017
Total GFA: 813,321 sqft / 75,560 sqm

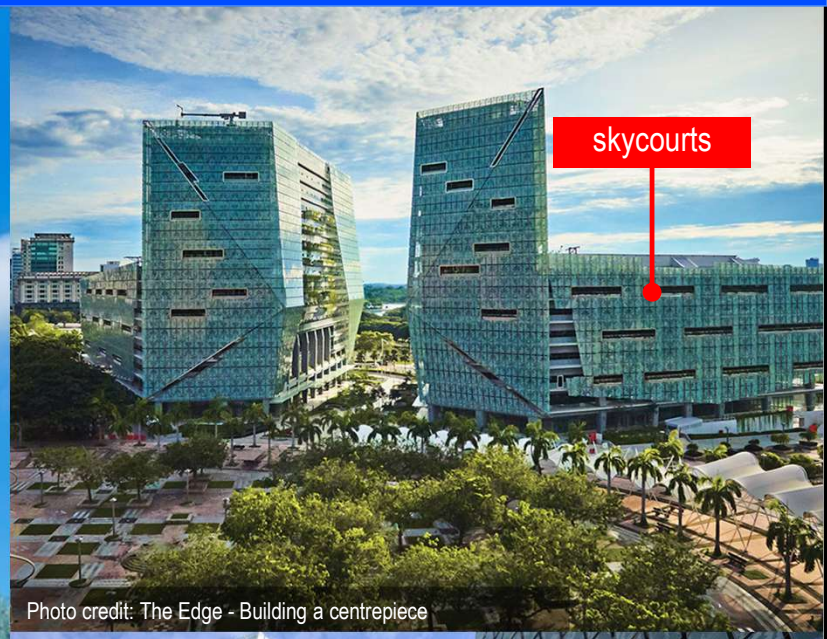


Photo credit: The Edge - Building a centrepiece

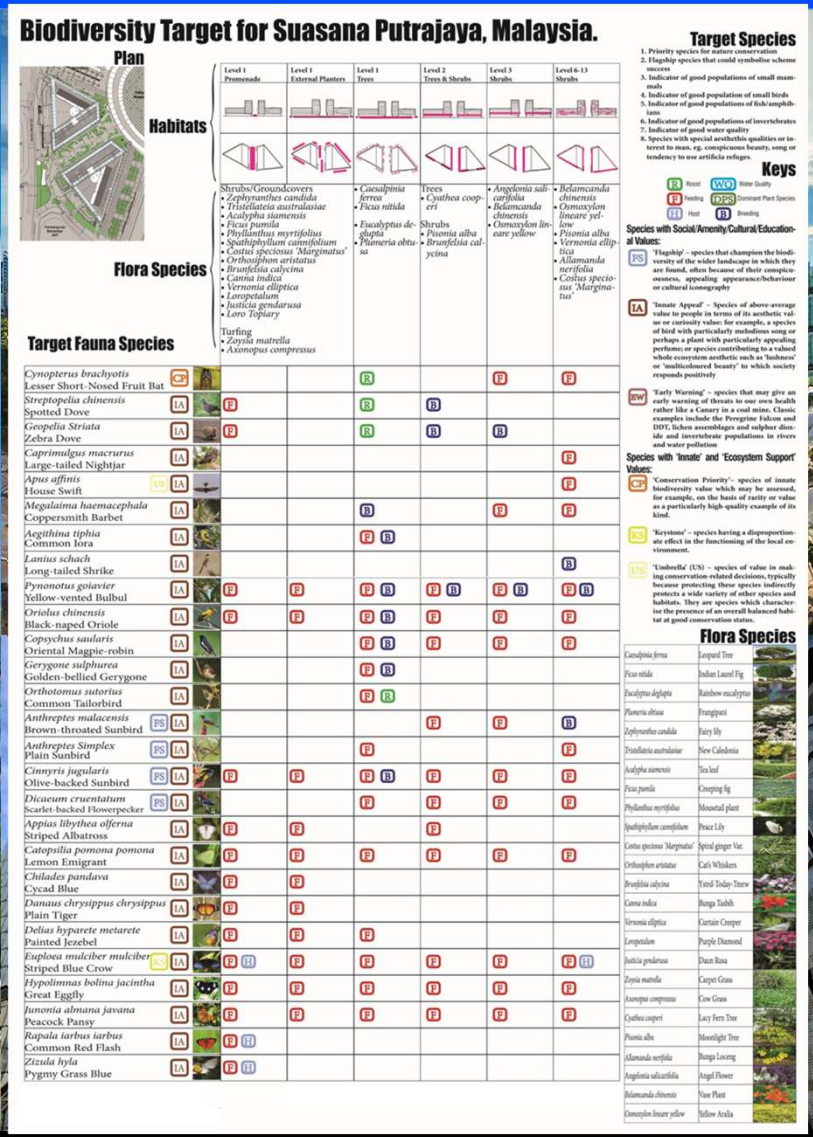


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Suasana Putrajaya (2017): green features - landscaping and sky planter box



Client: Putrajaya Holdings Sdn. Bhd.
Location: Putrajaya, Malaysia
Year of Completion: 2017
Total GFA: 813,321 sqft / 75,560 sqm



Biodiversity Target for Suasana Putrajaya, Malaysia.

Plan

Habitats

Level 1 Promenade | Level 1 External Planters | Level 1 Trees | Level 2 Trees & Shrubs | Level 3 Shrubs | Level 6-13 Shrubs

Flora Species

Shrubs/Groundcovers
- *Zephyranthes candida*
- *Tristellateia australasiae*
- *Acalypha siamensis*
- *Ficus pumila*
- *Phyllanthus myrtifolius*
- *Spathiphyllum cannifolium*
- *Costus speciosus 'Marginatus'*
- *Orthosiphon aristatus*
- *Brunfelsia calycina*
- *Canna indica*
- *Vernonia elliptica*
- *Loropetalum*
- *Justicia gendarusa*
- *Loro Topiary*

Turfing
- *Zoysia matrella*
- *Axonopus compressus*

Caesalpinia ferrea
- *Ficus nitida*

Eucalyptus deglupta
- *Plumeria obtusa*

Trees
- *Cyathea cooperi*

Shrubs
- *Pisonia alba*
- *Brunfelsia calycina*

- *Angelonia salicarifolia*
- *Belamcanda chinensis*
- *Osmoxylon lineare yellow*

- *Belamcanda chinensis*
- *Osmoxylon lineare yellow*
- *Pisonia alba*
- *Vernonia elliptica*
- *Allamanda nerifolia*
- *Costus speciosus 'Marginatus'*

Target Fauna Species

		Level 1 Promenade	Level 1 External Planters	Level 1 Trees	Level 2 Trees & Shrubs	Level 3 Shrubs	Level 6-13 Shrubs
Cynopterus brachyotis Lesser Short-Nosed Fruit Bat	CP, IA			R		F	F
Streptopelia chinensis Spotted Dove	IA	F		R	B		
Geopelia Striata Zebra Dove	IA	F		R	B	B	
Caprimulgus macrurus Large-tailed Nightjar	IA						F
Apus affinis House Swift	WA, IA						F
Megalaima haemacephala Coppersmith Barbet	IA			B		F	F
Aegithina tiphia Common Iora	IA			F B			
Lanius schach Long-tailed Shrike	IA						B
Pynonotus goiavier Yellow-vented Bulbul	IA	F	F	F B	F B	F B	F B
Oriolus chinensis Black-naped Oriole	IA	F	F	F B	F	F	F
Copsychus saularis Oriental Magpie-robin	IA			F B	F	F	F
Gerygone sulphurea Golden-bellied Gerygone	IA			F B			
Orthotomus sutorius Common Tailorbird	IA			F R			
Anthreptes malacensis Brown-throated Sunbird	FS, IA				F	F	B
Anthreptes Simplex Plain Sunbird	FS, IA			F			F
Cinnyris jugularis Olive-backed Sunbird	FS, IA	F	F	F B	F	F	F
Dicaeum cruentatum Scarlet-backed Flowerpecker	FS, IA			F	F	F	F
Appias libythea olferna Striped Albatross	IA	F	F		F		
Catopsilia pomona pomona Lemon Emigrant	IA	F	F	F	F	F	F
Chilades pandava Cycad Blue	IA	F	F				
Danaus chrysippus chrysippus Plain Tiger	IA	F	F				
Delias hyparete metarete Painted Jezebel	IA	F	F	F			
Euploea mulciber mulciber Striped Blue Crow	RS, IA	F H	F	F	F	F	F H
Hypolimnas bolina jacintha Great Eggfly	IA	F	F	F	F	F	F
Junonia almana javana Peacock Pansy	IA	F	F	F	F	F	F
Rapala iarbus iarbus Common Red Flash	IA	F H					
Zizula hyla Pygmy Grass Blue	IA	F H					

Target Species

1. Priority species for nature conservation
2. Flagship species that could symbolise scheme success
3. Indicator of good populations of small mammals
4. Indicator of good population of small birds
5. Indicator of good populations of fish/amphibians
6. Indicator of good populations of invertebrates
7. Indicator of good water quality
8. Species with special aesthetic qualities or interest to man, eg. conspicuous beauty, song or tendency to use artificia refuges.

Keys

R Roost | WQ Water Quality | F Feeding | DPS Dominant Plant Species | H Host | B Breeding

Species with Social/Amenity/Cultural/Educational Values:

FS 'Flagship' - species that champion the biodiversity of the wider landscape in which they are found, often because of their conspicuousness, appealing appearance/behaviour or cultural iconography

IA 'Innate Appeal' - Species of above-average value to people in terms of its aesthetic value or curiosity value: for example, a species of bird with particularly melodious song or perhaps a plant with particularly appealing perfume; or species contributing to a valued whole ecosystem aesthetic such as 'lushness' or 'multicoloured beauty' to which society responds positively

EW 'Early Warning' - species that may give an early warning of threats to our own health rather like a Canary in a coal mine. Classic examples include the Peregrine Falcon and DDT, lichen assemblages and sulphur dioxide and invertebrate populations in rivers and water pollution

Species with 'Innate' and 'Ecosystem Support' Values:

CP 'Conservation Priority' - species of innate biodiversity value which may be assessed, for example, on the basis of rarity or value as a particularly high-quality example of its kind.

KS 'Keystone' - species having a disproportionate effect in the functioning of the local environment.

US 'Umbrella' (US) - species of value in making conservation-related decisions, typically because protecting these species indirectly protects a wide variety of other species and habitats. They are species which characterise the presence of an overall balanced habitat at good conservation status.

Flora Species

Caesalpinia ferrea	Leopard Tree
Ficus nitida	Indian Laurel Fig
Eucalyptus deglupta	Rainbow eucalyptus
Plumeria obtusa	Frangipani
Zephyranthes candida	Fairy lily
Tristellateia australasiae	New Caledonia
Acalypha siamensis	Tea leaf
Ficus pumila	Creeping fig
Phyllanthus myrtifolius	Mousetail plant
Spathiphyllum cannifolium	Peace Lily
Costus speciosus 'Marginatus'	Spiral ginger Var.
Orthosiphon aristatus	Cat's Whiskers
Brunfelsia calycina	Yesterday-Today-Tmrw
Canna indica	Bunga Tasbih
Vernonia elliptica	Curtain Creeper
Loropetalum	Purple Diamond
Justicia gendarusa	Daun Rusa
Zoysia matrella	Carpet Grass
Axonopus compressus	Cow Grass
Cyathea cooperi	Lacy Fern Tree
Pisonia alba	Moonlight Tree
Allamanda nerifolia	Bunga Locing
Angelonia salicarifolia	Angel Flower
Belamcanda chinensis	Vase Plant
Osmoxylon lineare yellow	Yellow Aralia

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Suasana Putrajaya (2017): energy data lower than baseline



design for reduction of energy consumption

Items	Purpose	Baseline	Proposed
1. Passive Design • Fritted-glass double-skin façade • Roof & skylight	To reduce heat gain - OTTV (Overall Thermal Transfer Value) - RTTV (Roof Thermal Transfer Value)	<50 W/m² <25 W/m²	**29.11 W/m²** **20.88 W/m²**
2. Lighting Systems • Motion sensor in the fire staircase & toilets; • Lighting zoning & photocell sensor in the office area; • LED & T5 light fitting in the office, common areas & façade lighting.	To reduce energy consumption - LEI (Lighting Energy Intensity)	38.55kWh/yr/m²	**30.21 kWh/yr/m²**
3. Mechanical Systems • combination of AHU fan & motor power can generate 60% efficiency	To achieve thermal comfort level of >24°C & humidity level of 55% - ACMV (Air Conditioning & Mechanical Ventilation System)	92.57kWh/yr/m²	**58.57 kWh/yr/m²**
4. Building Control Systems • smart power strips to cut off power of the un-used devices • use devices with higher energy efficiency ratings	To reduce energy consumption - PLEI (Plug Load Energy Intensity)	72.4kWh/yr/m²	**40.40 kWh/yr/m²**
5. Low Energy & Carbon Neutral Systems • passive-mode • mixed-mode • full-mode • productive-mode	To encourage enhancement of building EE performance & reducing CO_2 emission - BEI (Building Energy Intensity)	<150kWh/yr/m²	**136.0 kWh/yr/m²**

136kWh/yr/m2 (lower than baseline of 150kWh/yr/m2)

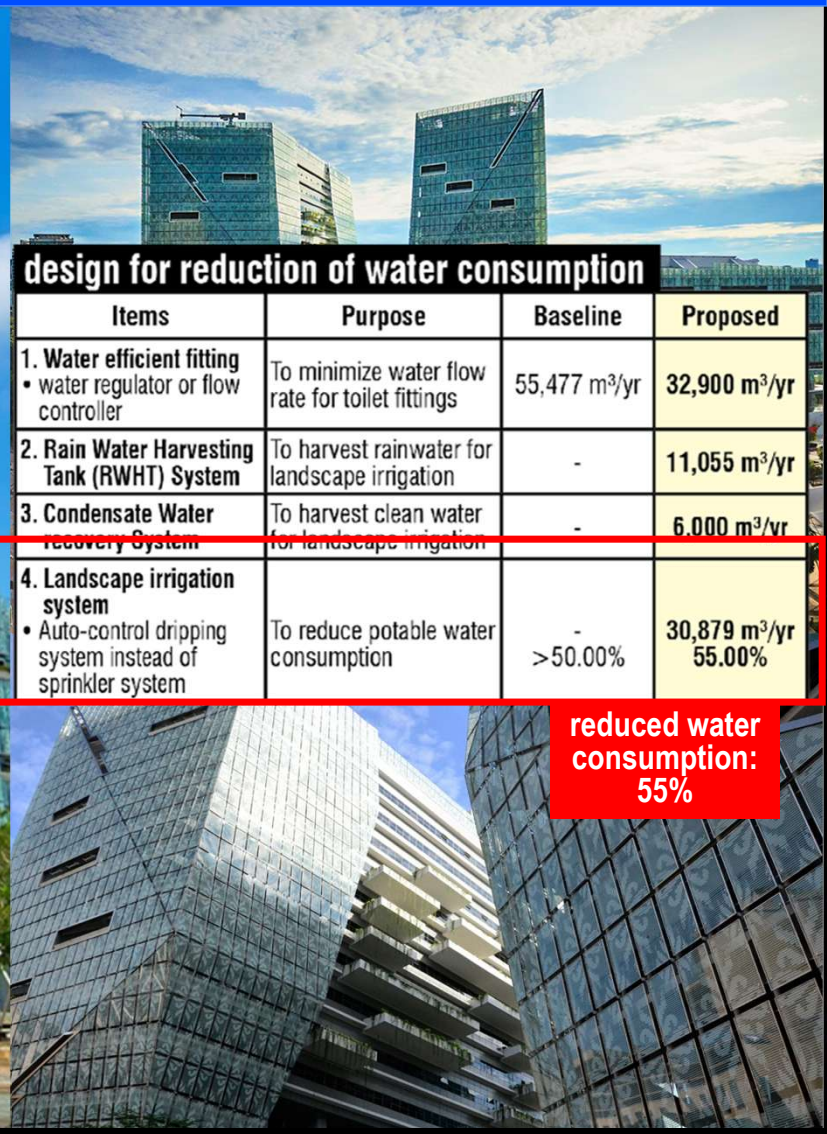
Client: Putrajaya Holdings Sdn. Bhd.
Location: Putrajaya, Malaysia
Year of Completion: 2017
Total GFA: 75,559.53 sqm

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Suasana Putrajaya (2017): water data reduced by 55%.



Client: Putrajaya Holdings Sdn. Bhd.
Location: Putrajaya, Malaysia
Year of Completion: 2017
Total GFA: 813,321 sqft / 75,560 sqm



design for reduction of water consumption

Items	Purpose	Baseline	Proposed
1. Water efficient fitting • water regulator or flow controller	To minimize water flow rate for toilet fittings	55,477 m³/yr	32,900 m³/yr
2. Rain Water Harvesting Tank (RWHT) System	To harvest rainwater for landscape irrigation	-	11,055 m³/yr
3. Condensate Water recovery System	To harvest clean water for landscape irrigation	-	6,000 m³/yr
4. Landscape irrigation system • Auto-control dripping system instead of sprinkler system	To reduce potable water consumption	- >50.00%	30,879 m³/yr 55.00%

reduced water consumption: 55%

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Suasana Putrajaya (2017): awards



Client: Putrajaya Holdings Sdn. Bhd.
Location: Putrajaya, Malaysia
Year of Completion: 2017
Total GFA: 813,321 sqft / 75,560 sqm

Awards:

- **Cityscape Awards, Dubai (2018)**: *Commercial Project Award*
- **Holcim Awards, Switzerland (2011)**: *Acknowledged for Ecological Design*
- **The Edge Malaysia-PAM Green Excellence Award (2021)**: *Honored for Sustainable Design*

Photo credit: The Edge - Building a centrepiece

- **MalaysiaGBC Leadership Awards (2020)**: *Best New Green Commercial Building*
- **Green Building Index (GBI):** Silver Rating (Rainwater Harvesting & Advanced Facades)

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Solaris, One North (2012): design for maximum energy savings & green connectivity

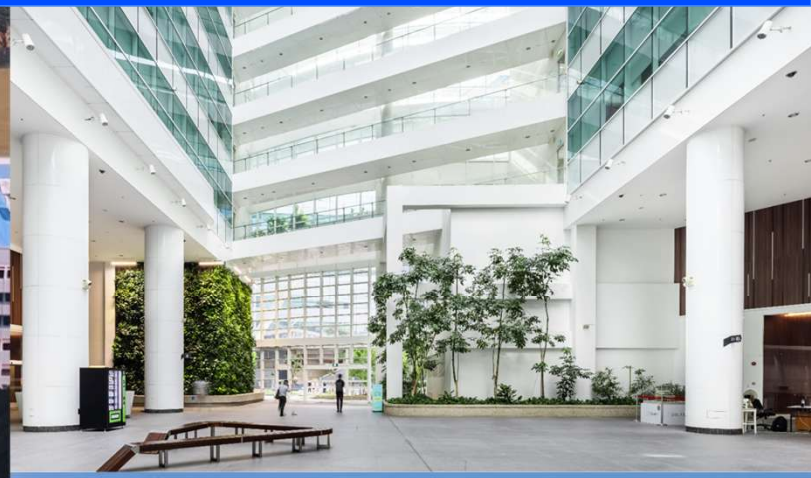




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Solaris, One North (2012) achieved Singapore's highest green rating certification







Singapore's BCA Green Mark Platinum

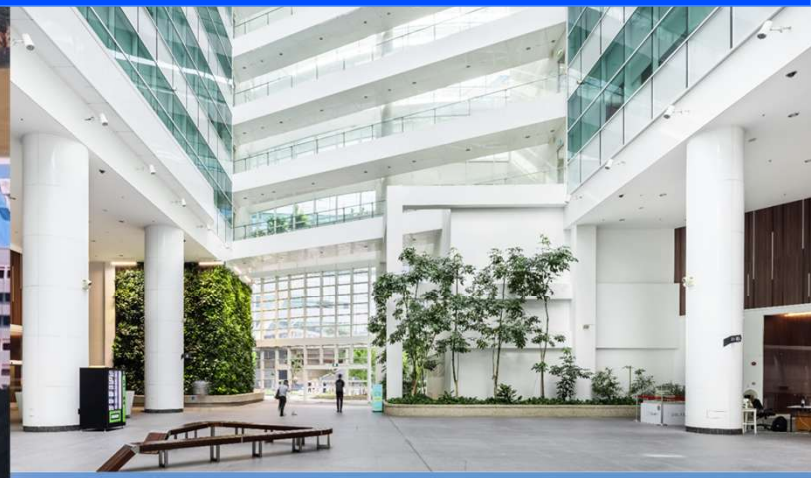
Client: SoilBuild Group Holdings
Location: 1 Fusionopolis Walk, Singapore
Year of Completion: 2010
Total GFA: 50,271 sqm / 4,670 sqm

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Solaris, One North (2012): green landscape ratio area is 108% of the site.



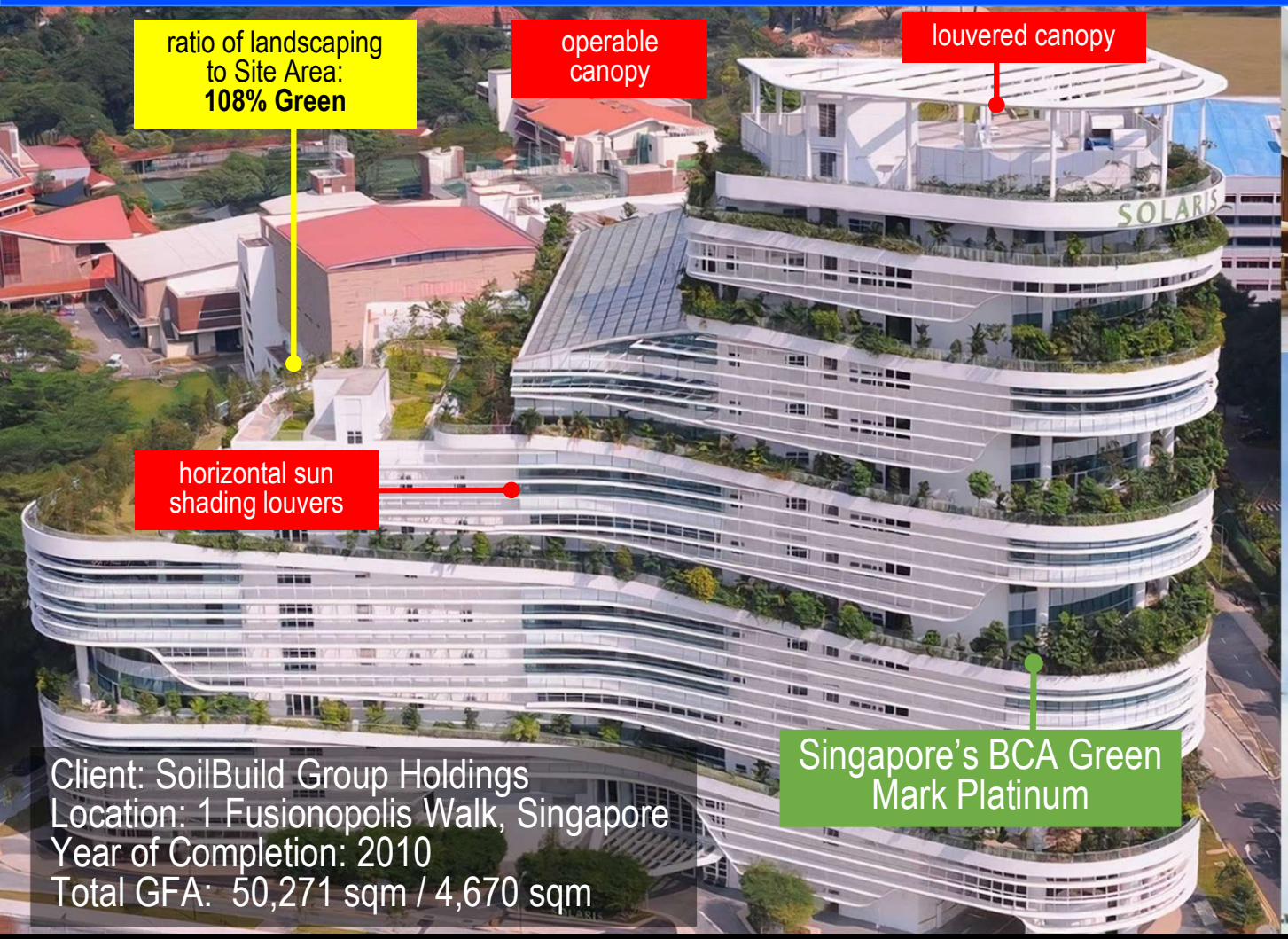
Client: SoilBuild Group Holdings
Location: 1 Fusionopolis Walk, Singapore
Year of Completion: 2010
Total GFA: 50,271 sqm / 4,670 sqm





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Solaris, One North (2012): horizontal sun-shading vertical louvers to block heat and naturally ventilate the public atrium.

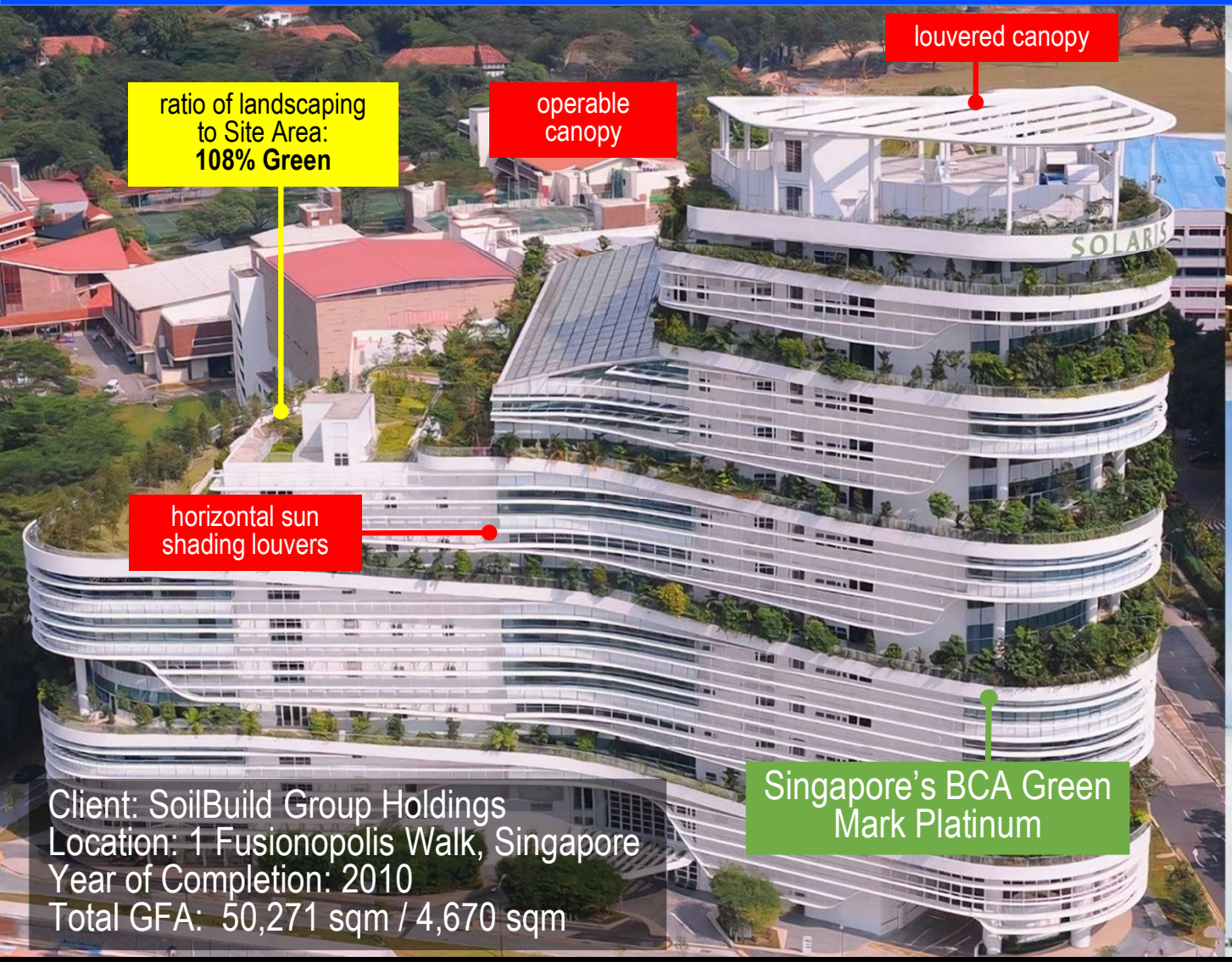


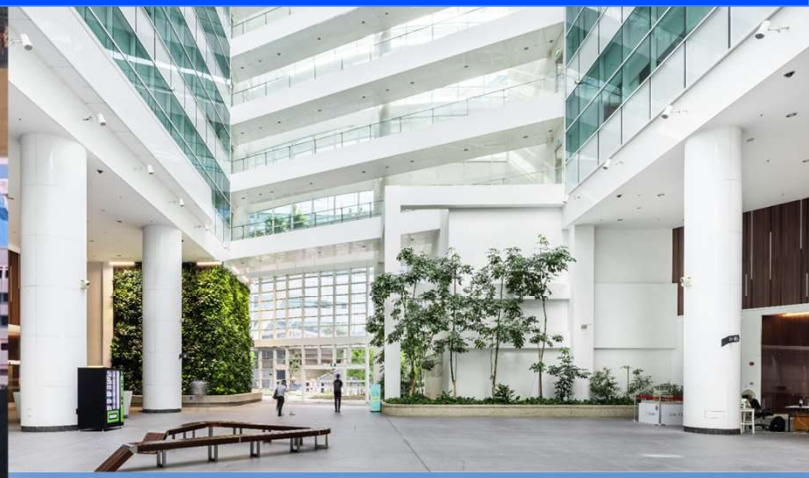




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Solaris, One North (2012): horizontal canopy helps naturally ventilate the public atrium.



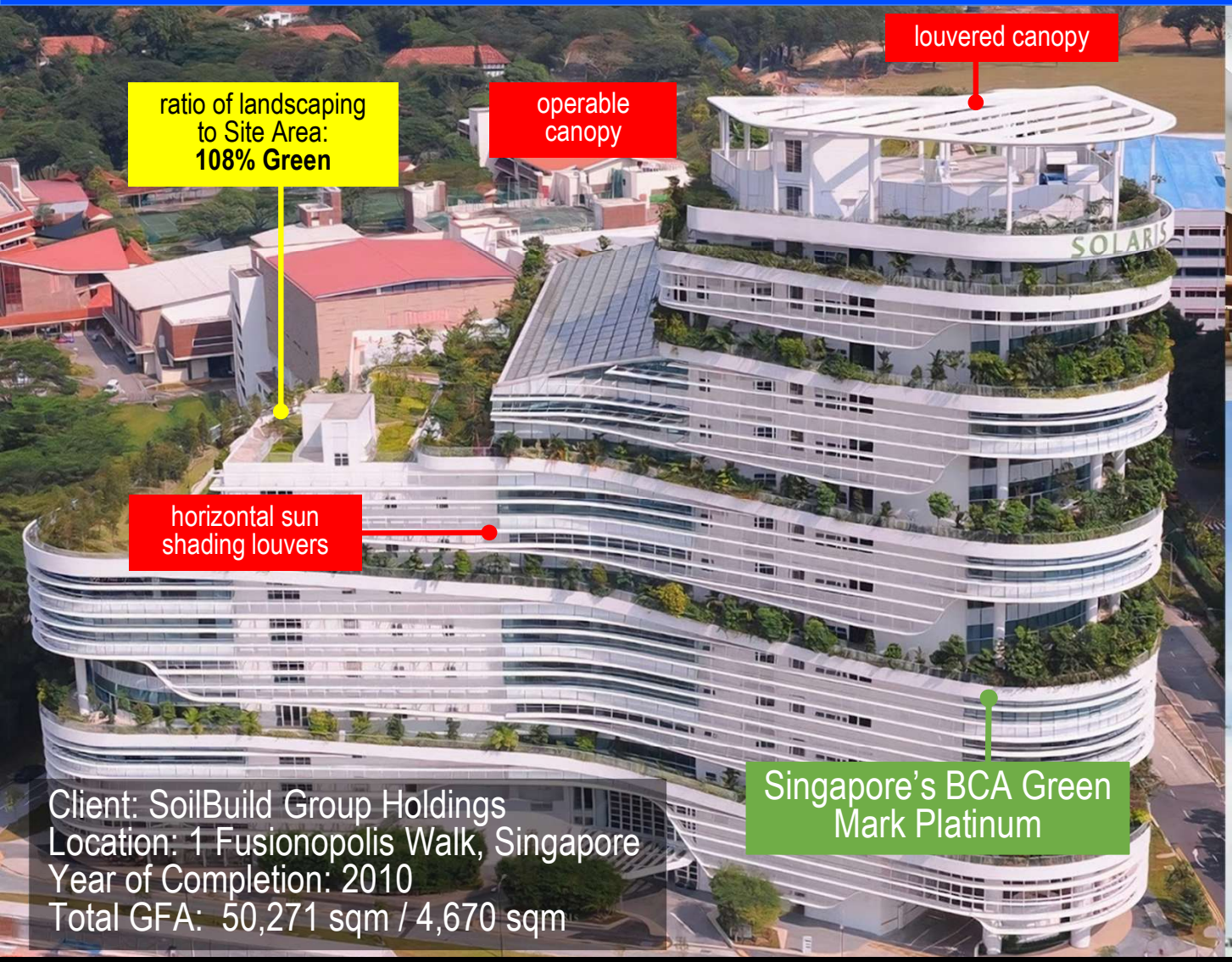


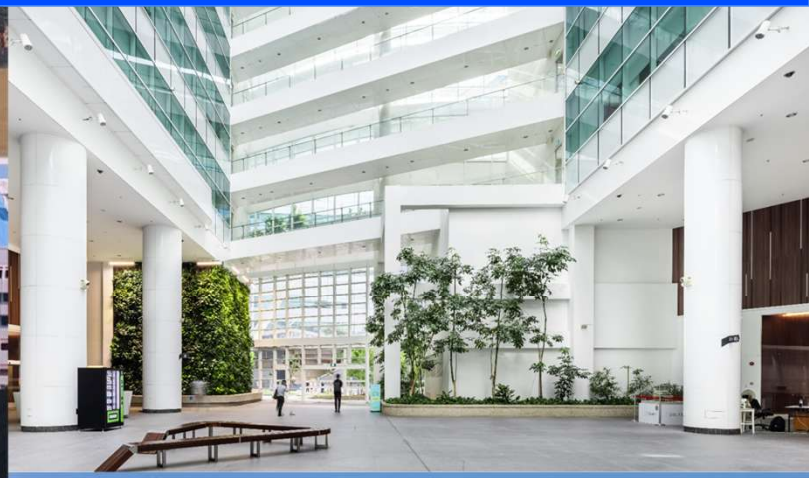


Client: SoilBuild Group Holdings
Location: 1 Fusionopolis Walk, Singapore
Year of Completion: 2010
Total GFA: 50,271 sqm / 4,670 sqm

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Solaris, One North (2012): roof feature - a dynamic, mechanically operable canopy.



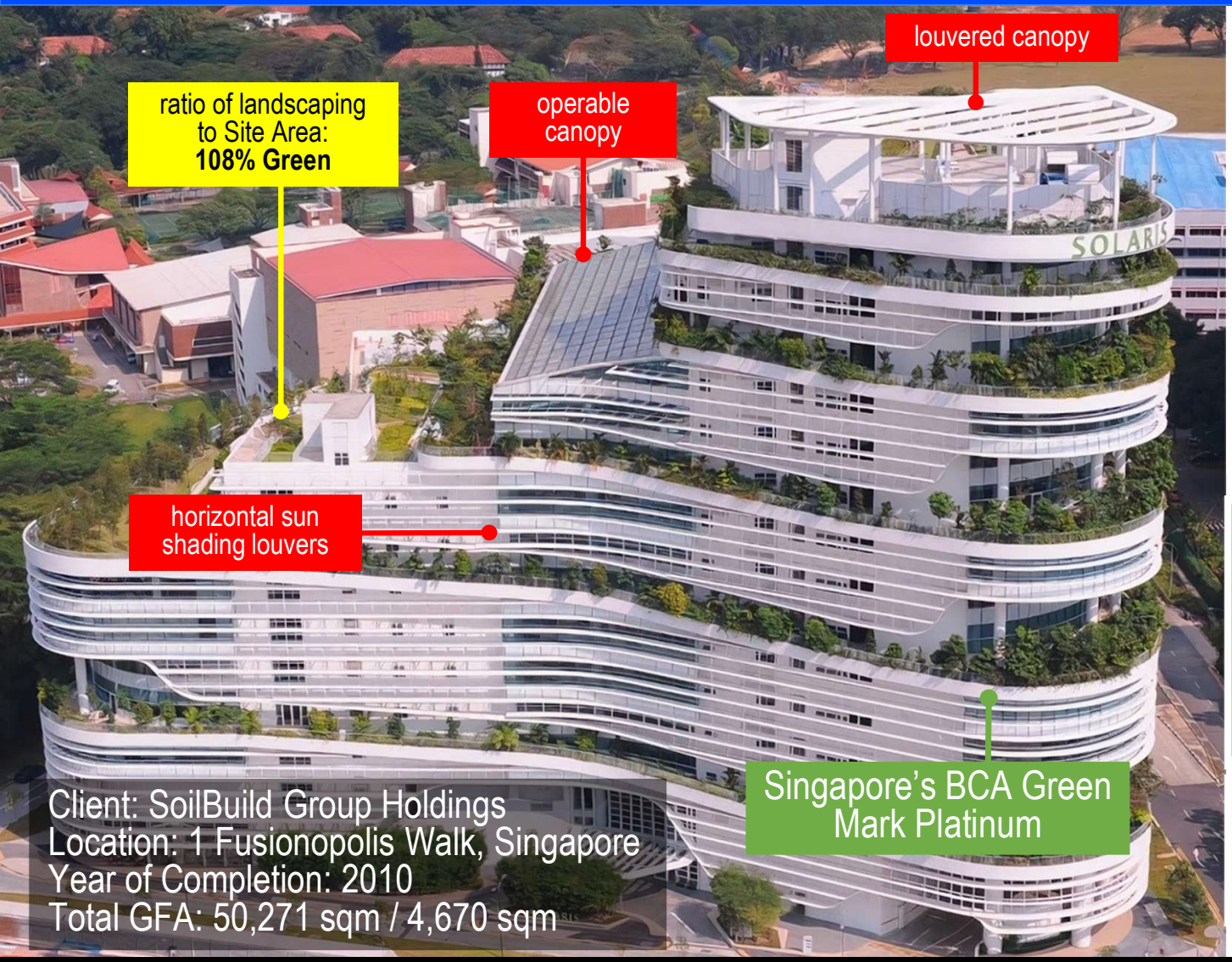




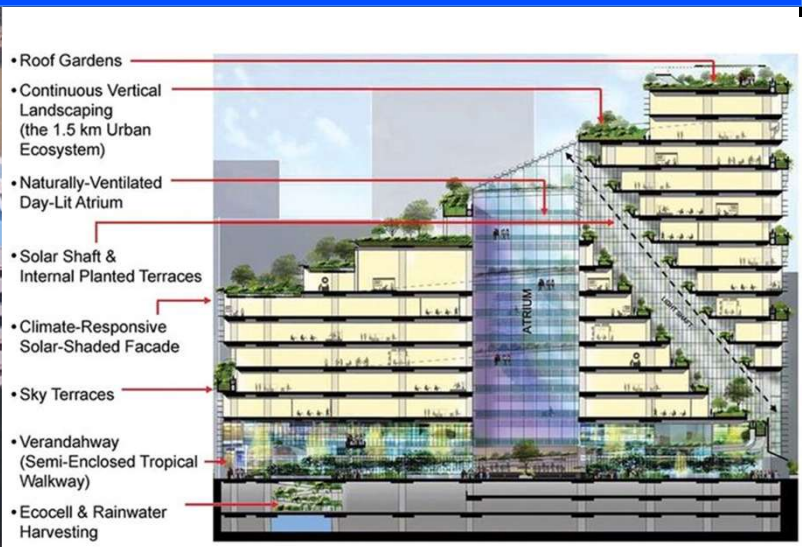
Client: SoilBuild Group Holdings
Location: 1 Fusionopolis Walk, Singapore
Year of Completion: 2010
Total GFA: 50,271 sqm / 4,670 sqm

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Solaris, One North (2012): the building saves over 15,000 cubic meters of water annually.



Client: SoilBuild Group Holdings
Location: 1 Fusionopolis Walk, Singapore
Year of Completion: 2010
Total GFA: 50,271 sqm / 4,670 sqm



annual water savings

Items	Baseline	Proposed	Saving
1. Water Efficient Fitting	54,752 m^3/yr	42,970 m^3/yr	111,782 m^3/yr
2. Rain Water Harvesting Tank (RWHT) System	-	-3,105 m^3/yr	3,105 m^3/yr
3. AHU Condensate	-	-904 m^3/yr	904 m^3/yr
Total	54,752 m^3/yr	38,961 m^3/yr	15,791 m^3/yr

estimated annual energy & water savings

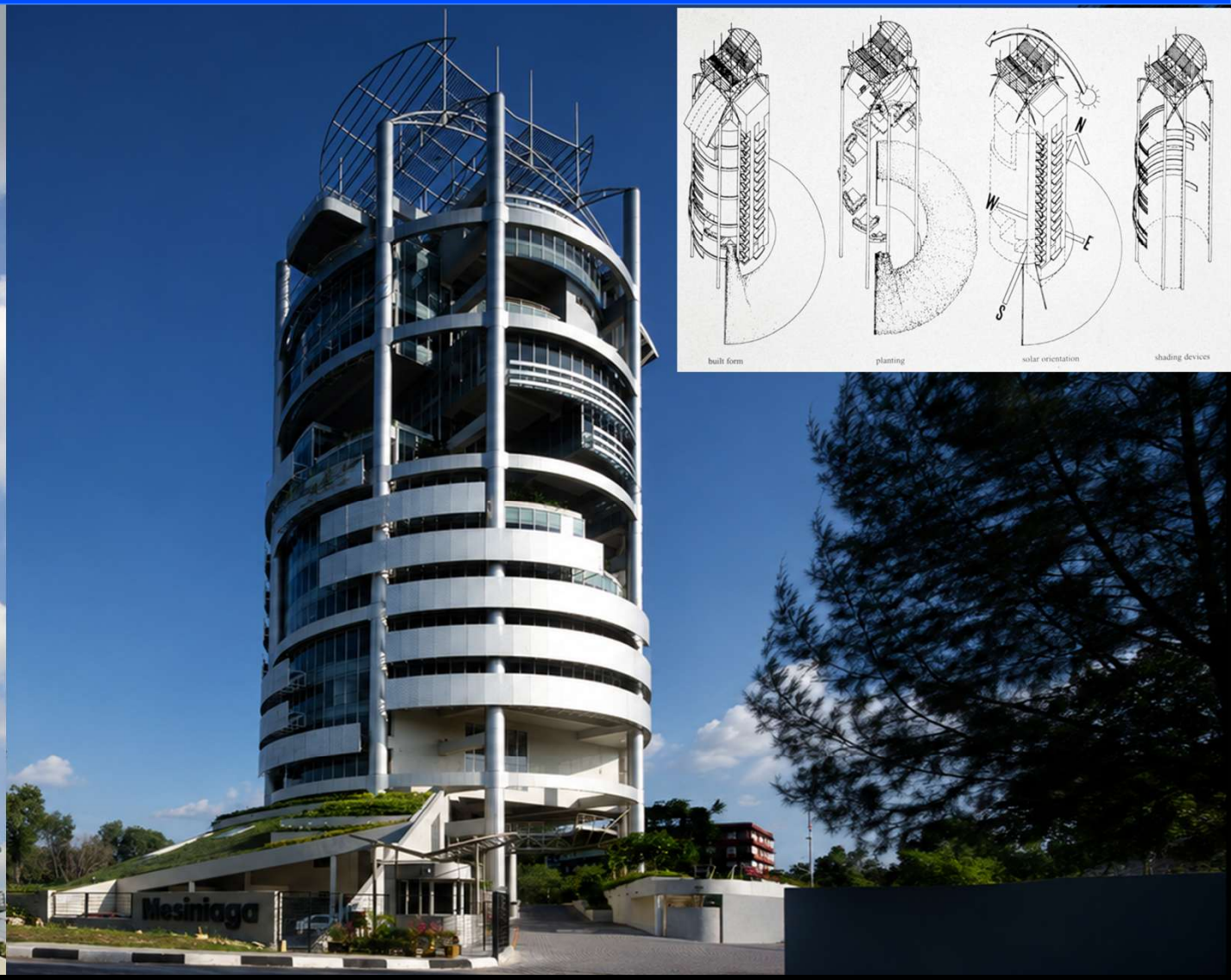
SGD 655,692 (energy) + SGD 36,335 (water) = SGD 692,047 (USD 530,000)

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Menara Mesiniaga (1992): first bioclimatic skyscraper in Malaysia



Menara Mesiniaga (1992) marked a new era in our work on deep green design, pioneering low-energy architecture and ecological innovation

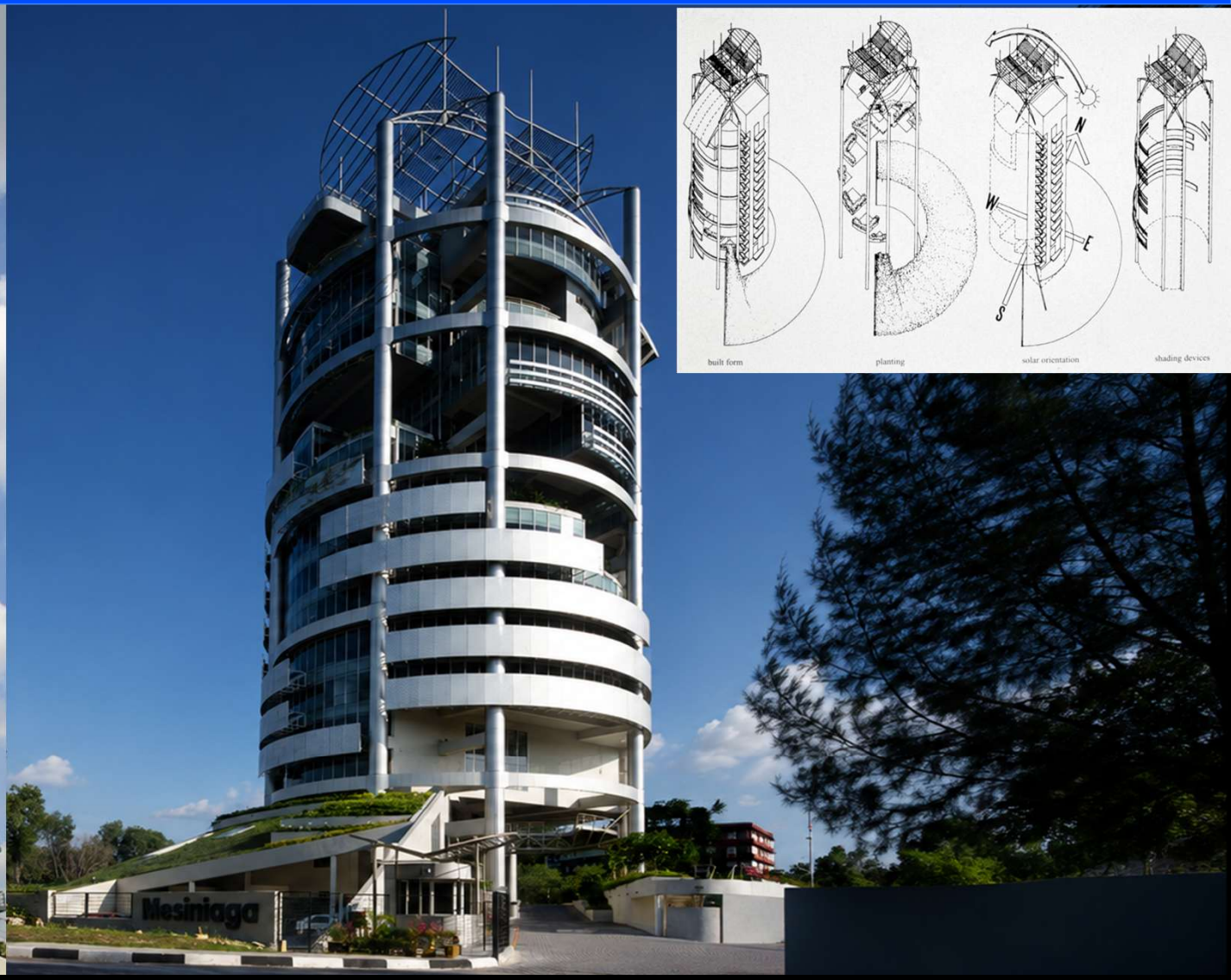


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Menara Mesiniaga, Malaysia: tower roof feature - a rooftop plaza.



Menara Mesiniaga (1992) marked a new era in our work on deep green design, pioneering low-energy architecture and ecological innovation



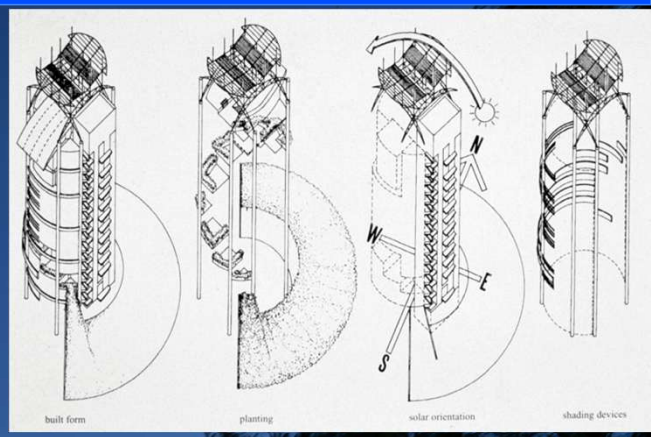
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Menara Mesiniaga (1992): skycourts - the stepping sky courts that spiral up the tower.



Menara Mesiniaga (1992) marked a new era in our work on deep green design, pioneering low-energy architecture and ecological innovation







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Menara Mesiniaga (1992): sunshading - external aluminum fins and louvers



Menara Mesiniaga (1992) marked a new era in our work on deep green design, pioneering low-energy architecture and ecological innovation

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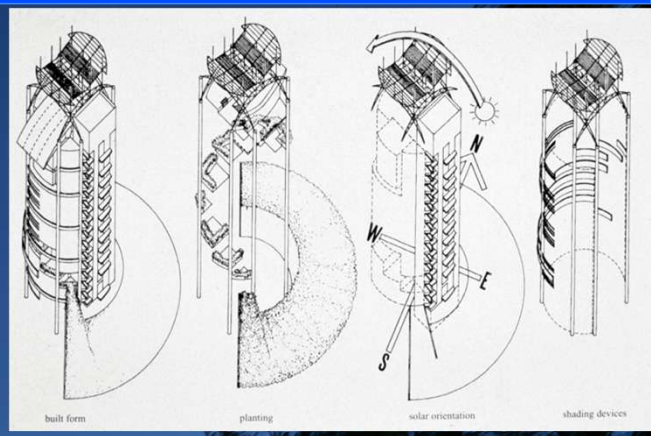
Menara Mesiniaga (1992): Awards - awarded the prestigious Aga Khan Award in 1996

rooftop plaza

Aga Khan Award for Architecture 1996

sky courts

aluminium fins and louvers for sunshading



Menara Mesiniaga (1992) marked a new era in our work on deep green design, pioneering low-energy architecture and ecological innovation

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Basis Bay Cyberjaya DC2 (2025): a net-zero energy data centre, first in Southeast Asia.



Client: Basis Bay Group
Location: Cyberjaya, Malaysia
Year of Completion: 2025
Total GFA: 56,080 sqft / 5,210 sqm



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Basis Bay Cyberjaya DC2 (2025): roof feature - PV panels that covers 50% of the total GFA





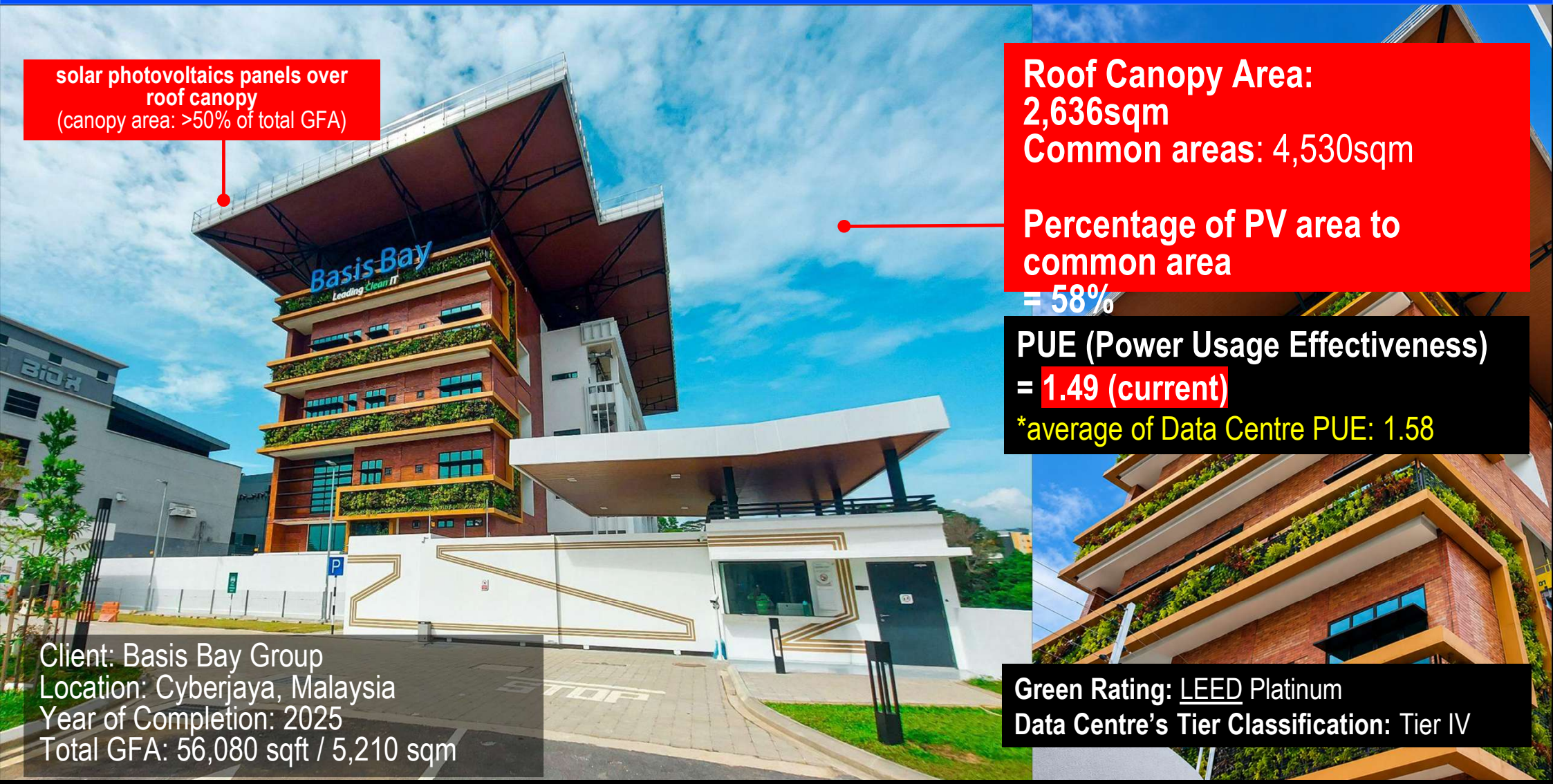
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Basis Bay Cyberjaya DC2 (2025): green wall - uses local biodiversity for the plantings



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Basis Bay Cyberjaya DC2 (2025): Power usage effectiveness is 1.49 (lower than average)



solar photovoltaics panels over roof canopy
(canopy area: >50% of total GFA)

Roof Canopy Area:
2,636sqm
Common areas: 4,530sqm

Percentage of PV area to common area
= 58%

PUE (Power Usage Effectiveness)
= 1.49 (current)
*average of Data Centre PUE: 1.58

Client: Basis Bay Group
Location: Cyberjaya, Malaysia
Year of Completion: 2025
Total GFA: 56,080 sqft / 5,210 sqm

Green Rating: LEED Platinum
Data Centre's Tier Classification: Tier IV

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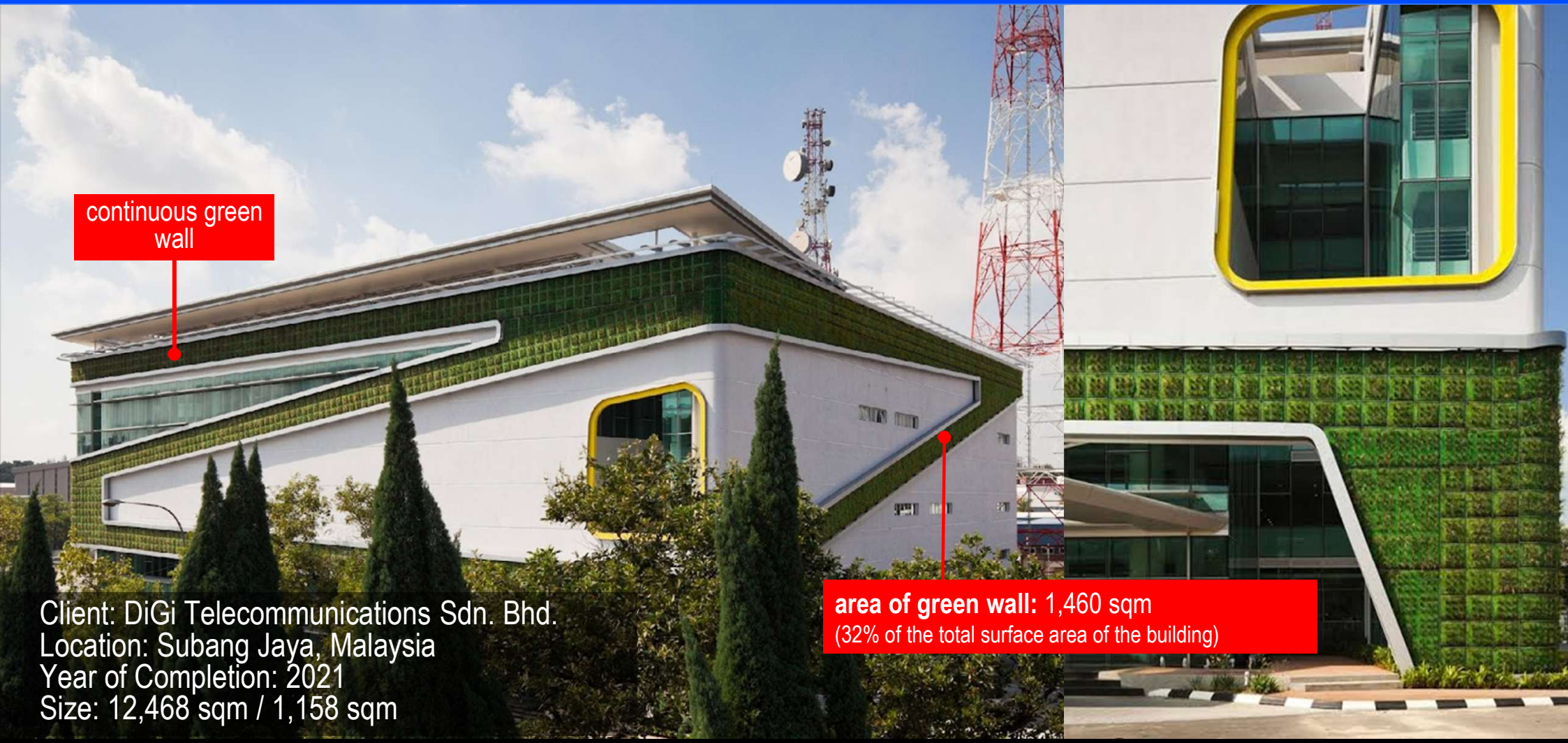
CelcomDigi Hub (previously Digi HQ) (2007): design for a ecological interaction



Client: DiGi Telecommunications Sdn. Bhd.
Location: Subang Jaya, Malaysia
Year of Completion: 2021
Size: 12,468 sqm / 1,158 sqm

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CelcomDigi Hub (2007): green wall - 1,460 sqm of continuous green wall / 32% of vertical building area



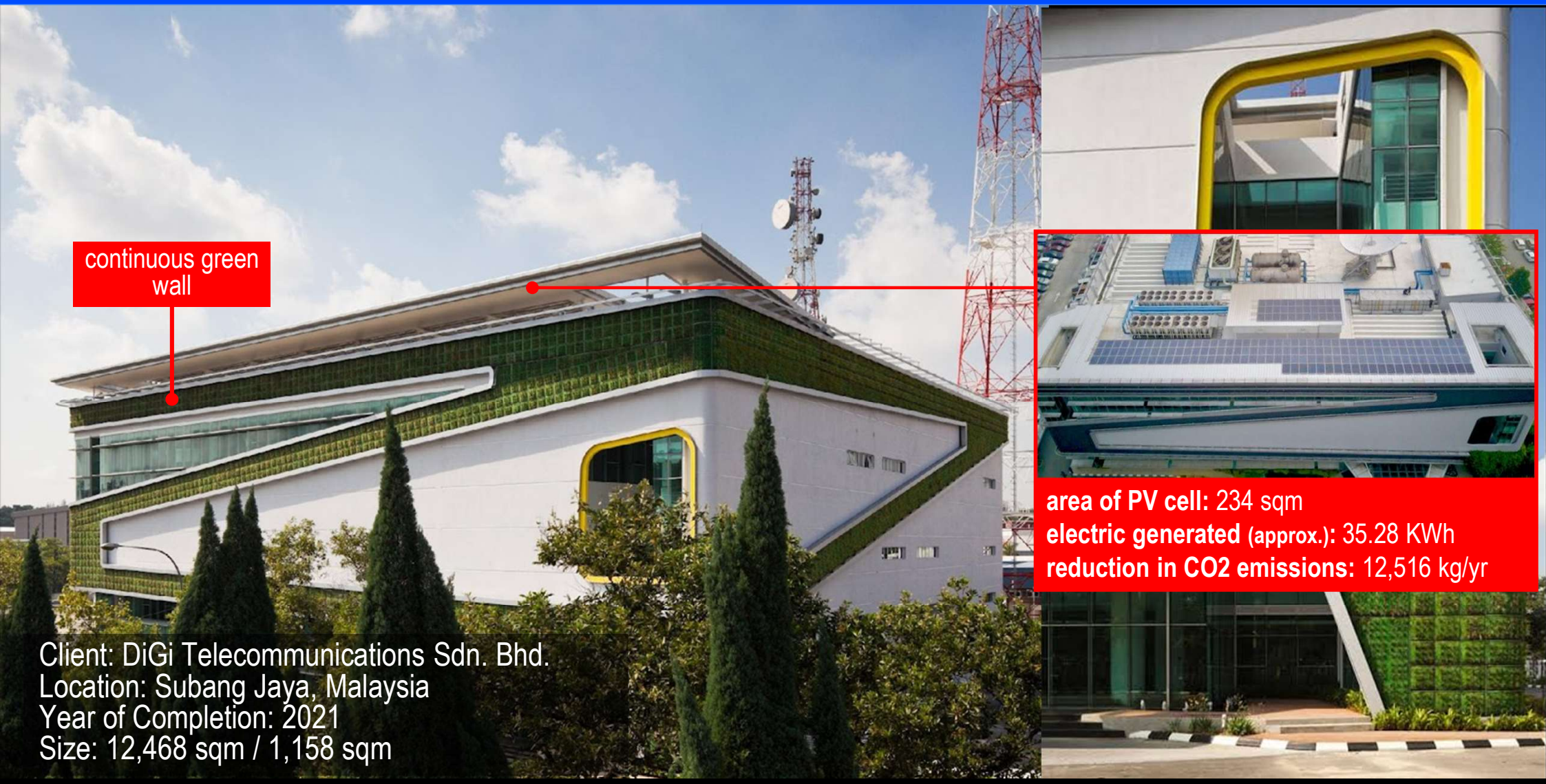
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CelcomDigi Hub (2007) - green certification: GBI Gold with Power Usage Effectiveness of 1.5 and Building Energy Intensity of 120kWh/m2/yr (lower than the standard required at 135kWh/m2/yr)



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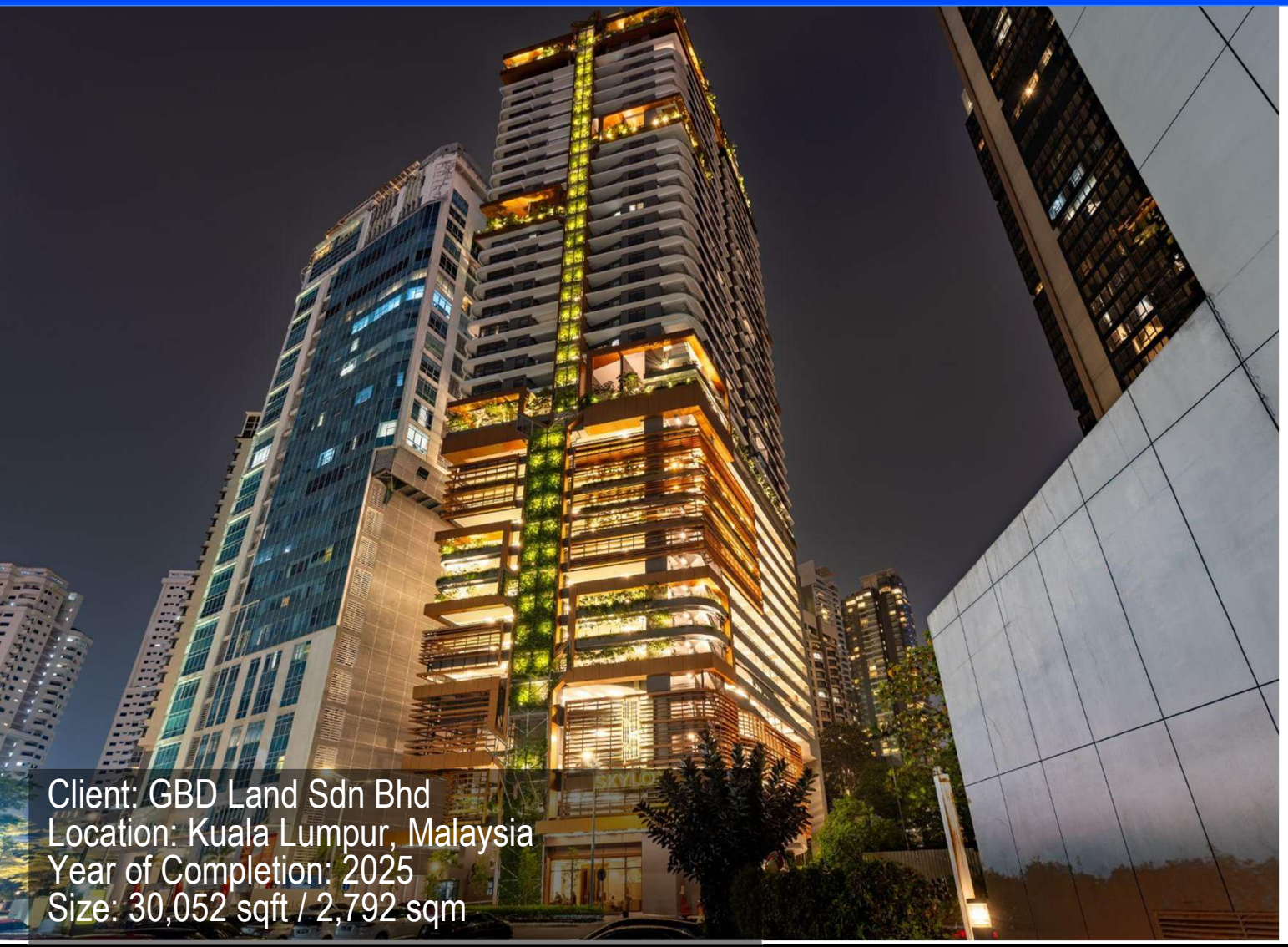
CelcomDigi Hub (2007): area of photovoltaics cells and reduction in CO2 emissions



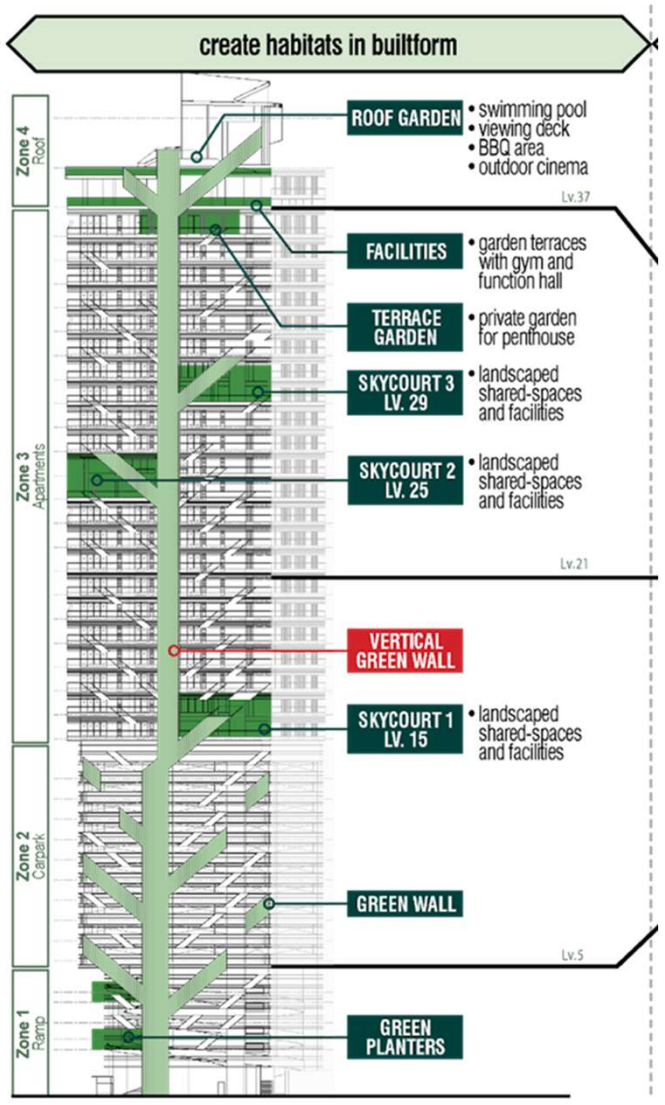
area of PV cell: 234 sqm
electric generated (approx.): 35.28 KWh
reduction in CO2 emissions: 12,516 kg/yr

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Skylon Residence (2025): design for vertical biodiversity enhancement



Client: GBD Land Sdn Bhd
Location: Kuala Lumpur, Malaysia
Year of Completion: 2025
Size: 30,052 sqft / 2,792 sqm



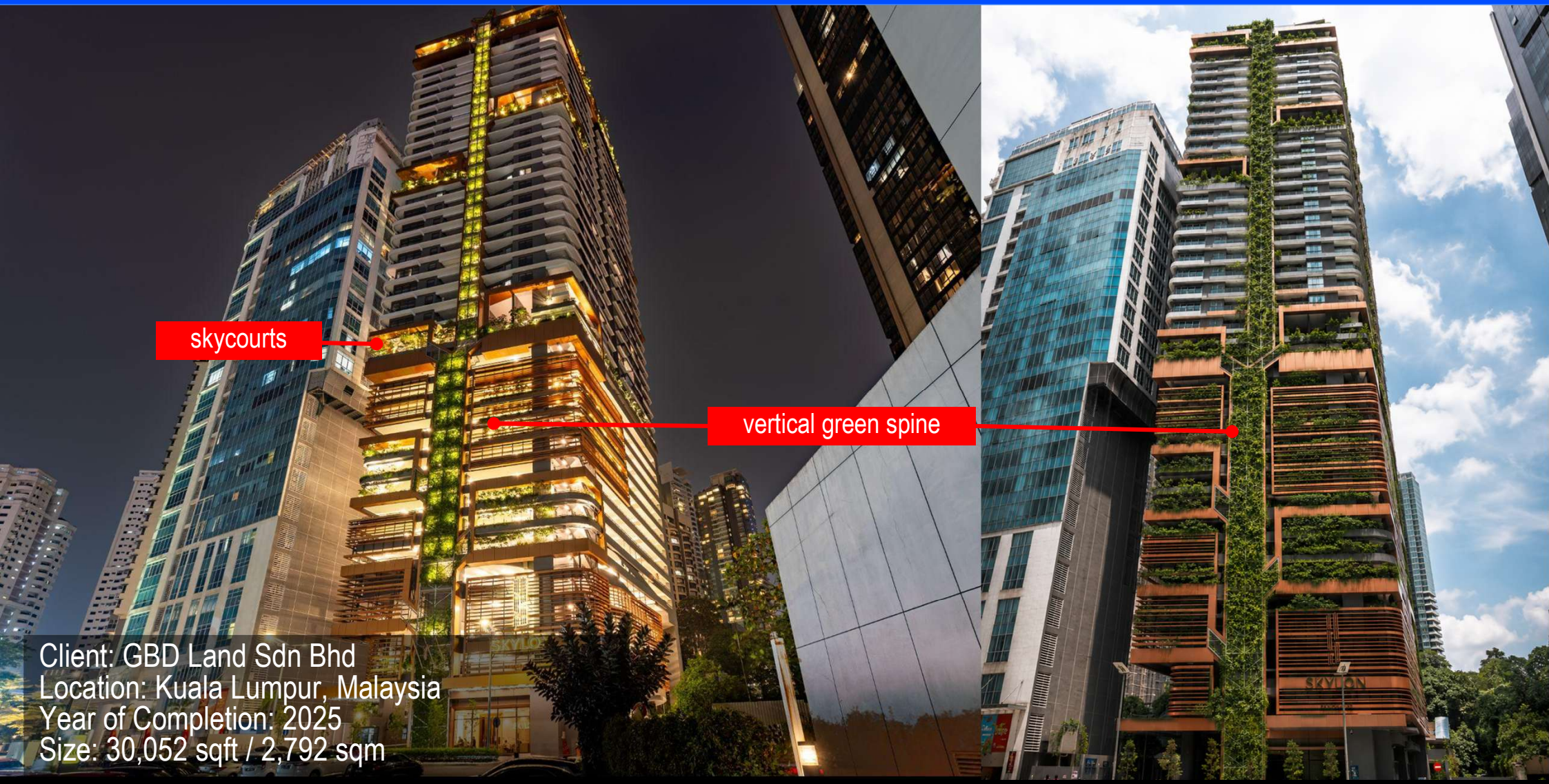
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Skylon Residence (2025): skycourts - open shared spaces with landscape, biodiversity & residents facilities



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Skylon Residence (2025): green feature - a vertical green spine up to 38 storeys/floors.



Client: GBD Land Sdn Bhd
Location: Kuala Lumpur, Malaysia
Year of Completion: 2025
Size: 30,052 sqft / 2,792 sqm

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Mewah Oils Factory (2005): design for green industrial with continuous green ramp

Client: Mewah-Oils Sdn. Bhd.
Location: Klang Industrial Park, Selangor, Malaysia
Year of Completion: 2005
GFA: 207,291 sqft / 19,257 sqm



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Mewah Oils Factory (2005): design for green industrial with continuous green ramp

Client: Mewah-Oils Sdn. Bhd.
Location: Klang Industrial Park, Selangor, Malaysia
Year of Completion: 2005
GFA: 207,291 sqft / 19,257 sqm





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Guthrie Pavilion (1997): design for a climate-responsive pavilion



Palm leaves

wide-span canopy structure

Client: Guthrie Property Development Holding Sdn. Bhd.
Location: Shah Alam, Selangor, Malaysia
Year of Completion: 1997
Size: 60,988 sqft / 5,665 sqm

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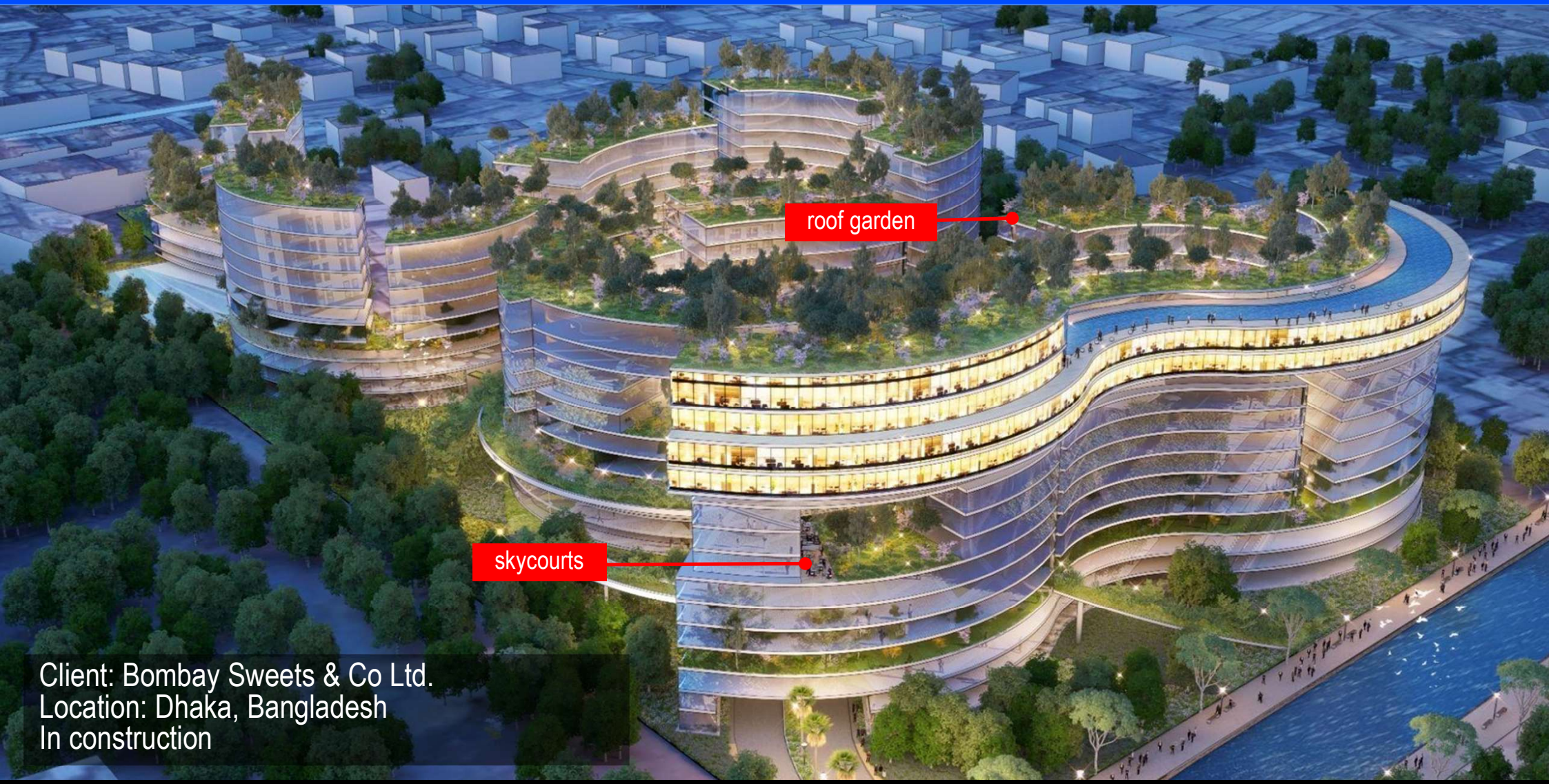
Mixed-Use Development, Dhaka, Bangladesh: designing for a sustainable masterplanning



Client: Bombay Sweets & Co Ltd.
Location: Dhaka, Bangladesh
In construction

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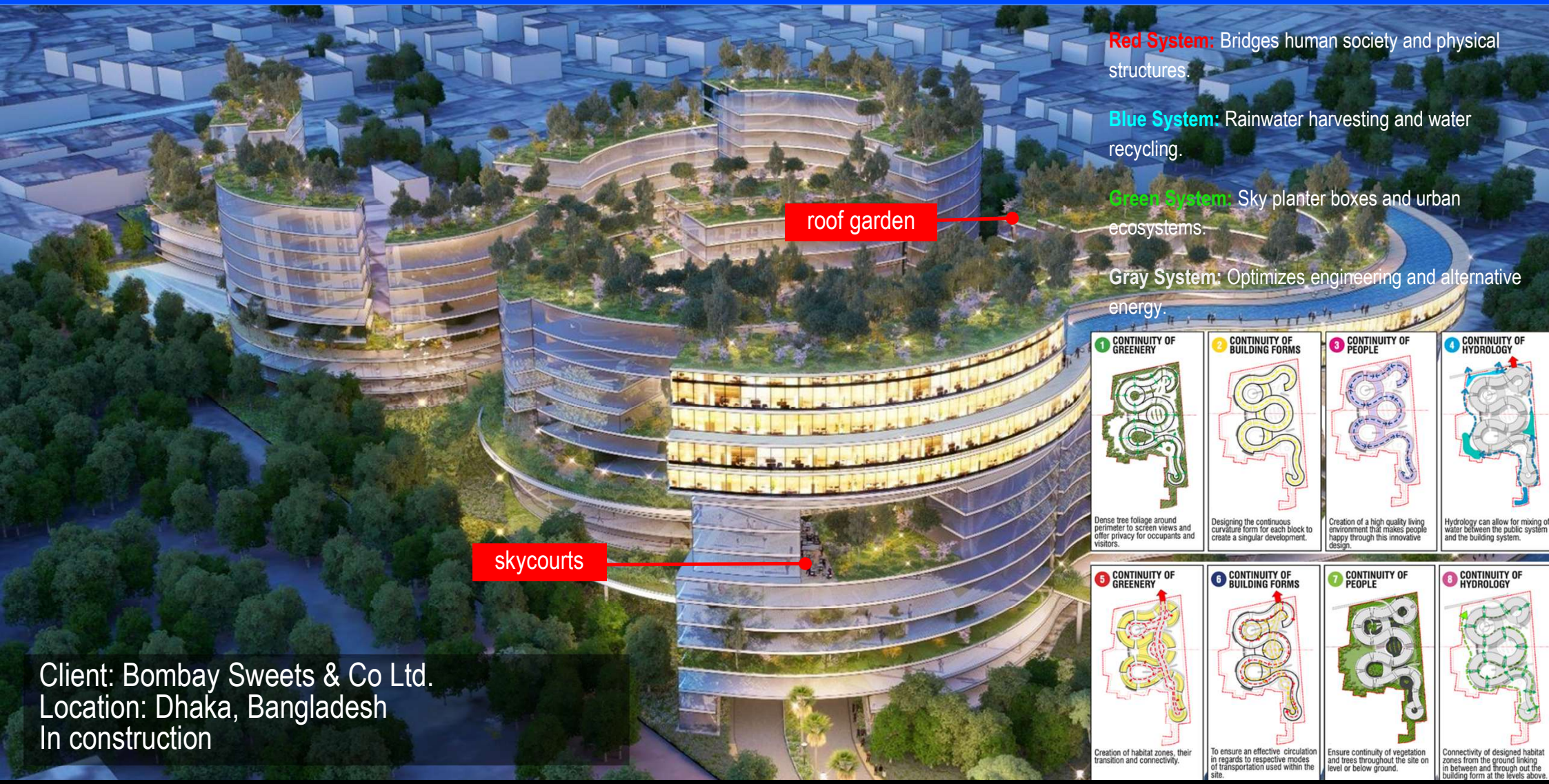
Mixed-Use Development Green Design features : roof gardens and sky courts on 8 blocks



Client: Bombay Sweets & Co Ltd.
Location: Dhaka, Bangladesh
In construction

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Mixed-Use Development: fours infrastructure layers namely the red, blue, green and gray



Client: Bombay Sweets & Co Ltd.
Location: Dhaka, Bangladesh
In construction

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