DESIGN MAGAZINE **SEPT 2024**

a journal on green architecture, design ideas, discovery and innovation

WHY Architecture Redefined US?...

OUR PRODUCT:

- design ideas
- energy & water savings
- biodiversity enhancement
- local-based global-reach

OUR PROMISE:

- innovation / ingenuity
- hypergreen / sustainability
- signature / style
- well-being / happiness
- cost control / viability

ECOARCHITECTURE & ECOMASTERPLANNING

Contact Us:

T. R. Hamzah & Yeang Sdn. Bhd. © 2024

8, Jalan 1, Taman Sri Ukay, 68000 Ampang, Selangor, Malaysia

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scan to view webpage

what others say about us?

..3rd party endorsement..

> .. wind, rain and sun in the minds of most architects, they are enemies, but what if buildings can utilise and respond to the conditions of the environment? what if the urban environment itself became a living, breathing organism? To Ken Yeang it is..

scan to view video

in "e² :design" Season 1 Episode 6
PBS documentary

Brad Pitt says

50+ years in designing the future

For the past 50 years, Hamzah & Yeang has built a unique approach for designing & delivering **ecology-focused architecture and urban schemes** as innovative, signature & deep sustainable solutions that **meet the UNSDG** (Sustainable Development Goals) for governments, companies, investors & individuals. Our talented team of designers have delivered innovative & signature ecological solutions based on our design guides and our extensive understanding of how key ecosystem factors operate to repair & regenerate our natural environment while adopting proven best practices. These are substantiated by credible metrics to transform the Planet at wherever locations we work. Our approach makes it easy for our clients to create and implement nature-based solutions that reduce human society's negative impacts on the environment.

Since START

1971 **pioneer research** on Ecological Design (Cambridge University) → resilient future

1976 **establishing of company**, over 5 decades of experience & dependability brought to benefit the development

Principals

Tengku Robert Hamzah

Ken Yeang (Dr. Dato')

Experience

over **50** years of experience
over **500** completed projects (since 1976)
over **800** projects in more than **10** countries

Differentiation

* **design innovation**
* **specialist in ecological design (pioneered since 1971)**
* **signature aesthetics**
* **over 70 design awards**
* **design happiness & well-being for human society**

Our values

quality in everything we do
we are committed to do work in the pursuit of excellence.

Our mission

'saving the planet by design':
design to fix the environmental crisis

Our vision

develop architectural and planning solutions to fight climate change to address the environmental crisis

Offices

global reach over **3** continents:

Malaysia:
T. R. Hamzah & Yeang Sdn. Bhd.
8, Jalan 1, Taman Sri Ukay
68000 Ampang, Selangor, Malaysia

UK:
Ken Yeang Design International Ltd.
4A Avery Row, London, W1K 4AL

China:
North Hamzah Yeang Architectural Engineering Design Co. Ltd.
Guide International Centre B-10F,
Nanbine Road 27 Beijing, 10055

see our website: https://trhamzahyeang.com/

what others say about us?

..3rd party endorsements..

Archute

"..a champion of the green design movement, Yeang was largely seen as a pioneer who was way ahead of his time.."

"..Ken Yeang has developed a distinctive architectural vocabulary that extends beyond questions of style.."

Lord Norman Foster
(British Architect, Foster & Partners)

RIBA
Royal Institute of British Architects

(1 November 2022)

"..Ken Yeang is an architect and ecologist with a wealth of experience in ecological design and planning for over 50 years. He has pioneered the field of biophilic design and his 'bioclimatic skyscraper', is a type of high-rise now used in various cities that performs as a passive low-energy building, designed according to the location's local climate.."

THE EDGE
MALAYSIA
BUSINESS & INVESTMENT WEEKLY
(City & Country | 12 December 2022)

"..The firm's ethos is "innovation, hyper-green, signature and people's happiness-focused design", which are its signature aesthetics and what make its work compelling.."

ARCHITECTURAL RECORD

"..probably no individual is more important in the development of ecodesign's theory and practice than the London and Kuala Lumpur-based architect Ken Yeang.."

"..Ken, how many of these have you built?.."
(at conference (UK) sponsored by Infosys)

"..a few.."

Ken Yeang

King Charles III

The Guardian

"..one of the 50 people who could save the Planet.."

our chief executive

..by a signature ecology-based approach supplemented by meticulous management..

KEN YEANG

AA Dip., PhD.(Cantab), APAM,
RIBA, FSIA, FAIA(Hon.),
D.Lit(Hon.)(Sheffield),
DSc(Hon.)(Taylors University),
Professor (Graham Willis Chair, Sheffield University),
Distinguished Plym Profesor (University of Illnois)

Personal Awards

2005 **WACA** (World Association of Chinese Architects) - Gold Medal Award
2011 **Merdeka Award** for the 'Environment' category
2011 **PAM** Gold Medal Award
2014 Design Master of **World Alliance of Sustainable Cities Design** (WSC)
2014 **MGBC Leadership in Sustainability Awards** 2014 for Excellence and Leadership in Sustainability
2015 **BCA-SGBC Green Building Individual Awards** - Green Architect Lifetime Achievement Award
2016 **Liang Sicheng Architecture Prize**, China
2016 **BUILD Award** 2016: Sustainable Building Awards - Best Green Architect
2016 Identified as the **40th Most Famous Architects of the 21st Century**
2022 Australian Institute of Architect - **Leadership in Sustainability Prize**
2023 **DOTY (Designer Of the Year) Lifetime Achievement Award (ACG Media)**
2024 **Frost & Sullivan Institute Visionary Leadership-** Best Practices Recognition for Environment in the APAC Region

Ken Yeang is an architect, ecologist and author known for his pioneering work in the field of sustainable architecture (since 1971). His work integrates ecology-based biophilic principles with architectural structures as Applied Ecology, promoting environmentally-positive ecological biointegration and outcomes. His work focuses on innovation in buildings that harmonises with nature. He carries out empirical research, designs, builds and writes (over 12 books published). He regards research as essential for advancing the field, designing to interpret in built form, building as 'life-scale' experiments, and writing to proselytise the ideas.

Yeang was trained at the Architectural Association (London). His Cambridge doctorate was published as Designing With Nature by McGraw-Hill (1985). He is a Fellow (Honorary) of Wolfson College (Cambridge), member of the RIBA, FAIA (Hon Fellow), Past-President Malaysia Institute of Architects, Singapore Institute of Architects (Fellow).

His built work includes: Mesiniaga (IBM) Tower (Malaysia), Suasana Putrajaya (Malaysia), Solaris Tower (Singapore), Great Ormond Street Children's Hospital Extension (London), Nitte University Masterplan (Mangalore, India), National Library (Singapore) and others.

His accolades include the Aga Khan Award, Prinz Claus Award, UIA Auguste Perret Award, LiangSiCheng Award (Architectural Society of China), Merdeka Award (Government of Malaysia), Gold Medal (Malaysia Institute of Architects) and others.

In recognition of his work, the Guardian named him one of the 50 people who could save the planet.

Receiving the Government of Malaysia Merdeka Award for the 'Environment' category (2011) from Prime Minister

positive action on climate change

why we do it?

we exist to fix the earth

SAVING THE PLANET

BY DESIGN

enable investors, developers & end users achieve their ESG aspirations & address the environmental crisis

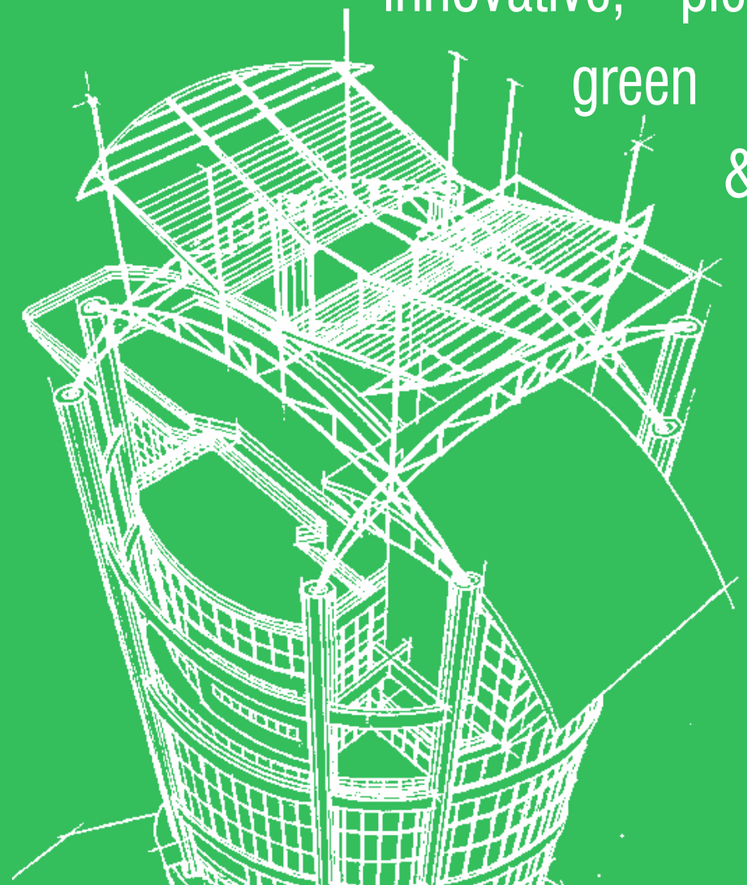
every line drawn must contribute to the betterment of the natural environment

what we do?

what we do that others do not?

..fixing the planet for future generations..

..we deliver **ecologically-authentic and signature 'super-green' architecture & masterplans** for environmentally-aware investors & developers, who want **signature designs** that are aesthetically unique, identifiably world class, innovative, pleasurable to use, super-green (beyond rating systems) & delivering our design **professionally** on time, on budget, that are durable & built with high quality..



- T. R. Hamzah & Yeang Sdn. Bhd. -

delivering the spirit of innovation

..by specialist expertise in low energy design..

what delights users?

•covered verandahway

pedestrian arcade are designed with 'songket' patterned fritted-glass canopy to enhance **pedestrians comfort**.

UNSDG 3

•central promenade

active public realm are designed with seating zones and planting areas as temporal event spaces that are shaded by the shadow of the **tower blocks**.

UNSDG 3, 11

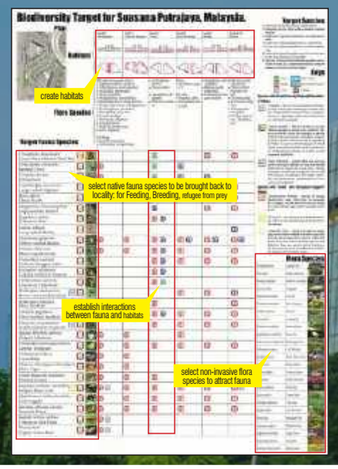
•balconies with planter boxes

protruding balconies with landscape planters are visible from beyond the vertical glass sun-shading, and create random patterns on the overall facade.

UNSDG 3, 11

what makes it sustainable?

•biodiversity matrix as basis of habitats creation



UNSDG 3, 13, 15

what makes it innovative?

•glass sun-shading

sunshade glazing assist in establishing **comfortable micro-climates** of the building's habitable spaces

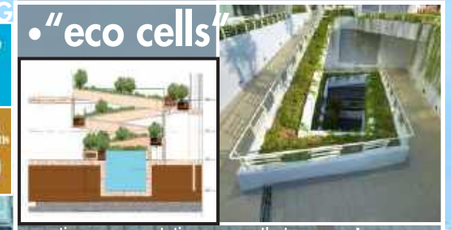
UNSDG 3, 8

•double-skin façade

crystalline diamond-like facade are presented by wraping the building with angled glass sun-shading

UNSDG 3, 8

•"eco cells"



continuous vegetation ramp that **connects green** from the ground level down to the basement level

UNSDG 6, 12

•natural daylighting

8 storey high central atrium with glass canopy above that provides maximum natural daylight to penetrate into the internal space and reducing energy usage

UNSDG 3, 11, 12

unique features:

Putrajaya 2C5 is a 2 towers of 14-storey mixed-commercial development in the city of Putrajaya, Malaysia which is completed in 2017.

the double-skin facade are designed with 1 clear glass layer and a fritted (in Malay 'Songket' pattern) glass layer with 50% opaque coverage that provide sun-shading to the internal spaces.

awards received

- *Bronze Award -Regional Holcim Awards 2011*
- *Silver Award -Green Building Index (GBI) 2014*
- *Winner -Cityscape Global Awards 2018/2019*
- *Winner - Malaysia GBC Best New Green Commercial Building 2020*

photo shows the public enjoyment of building during Independence Day

SUASANA PUTRAJAYA

PUTRAJAYA PRECINCT 2, MALAYSIA

delivering the spirit of innovation

..by biophilic vegetated healing skycourts..

BCA Green Mark Platinum

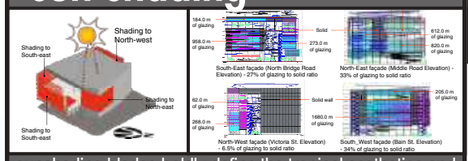
natural ventilated space

skycourt

what makes it innovative?

•sun-shading

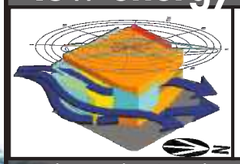
UNSDG

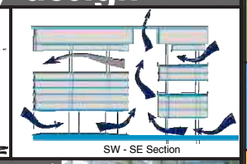


sunshading blades boldly define the tropical aesthetics and provide sunshading & anti-glare performance that gives the image of a **contemporary climatic-responsive built-form**

•low energy design

UNSDG





passive mode strategies used are assembled together as collective strategy for low energy and high comfort building.

what delights the users?

•public realm

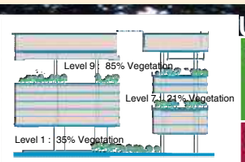
UNSDG

the Public Events Plaza is a **communal space** that becomes main focal point of the site and subsequently leading visitors to the main foyer and library.

what about the interiors?

•vegetated skycourts

UNSDG



Over 6,300 m² are designed as 'green space' that creates urban "skycourts" providing a **positive psychological effect on building users and improving general working environments**.

•green materials

UNSDG

use of **recycled and reused materials** (eg. carpet, wall fabrics and sustainable-forested local timber) contribute to an environmentally low impact design.

awards received

- *BCA Green Mark Platinum 2005*
- *Silver Award - 3rd SIA Façade Design Excellence Awards 2006*
- *Shortlisted in sustainability category -RICS Awards 2006*
- *First Prize - ASEAN Energy Efficiency Awards 2007*
- *Silver Award -BCA's Universal Design Awards 2007*
- *BCA Green Mark Platinum 2009*

unique features:

The Client wanted a cultural and tropical building to which the Architect responded with an open-to-the-sky naturally-ventilated civic plaza on the ground plane with opportunities for cultural activities and various 'outdoor' events. A rooftop 'bubble' designed to face the nearby waterfront was also popular with people for holding various functions.

NLB was the outcome of a winning competition scheme that underwent several design revisions before it was accepted by the Client.

NATIONAL LIBRARY

VICTORIA ST, SINGAPORE

unique features:

The Great Ormond Street Hospital is located in London, the building is the first "Excellent" BRE-rated hospital in the UK. A key feature of the hospital extension is the flue wall which is an energy efficient fabric and ventilation system expressed on the façade facing Guilford Street. The design solution establishes a sense of order, ease of use, comfort and inspiration to the campus, providing facilities befitting Great Ormond Street's status as the world's leading tertiary children hospital.

BREEAM "Excellent" rated

upper valve

thermal cooling flue

lower valve: mixed mode floors (3 floors)

delivering the spirit of innovation

..by mixed-mode glass-flue to reduce energy consumption in temperate climatic conditions..

what makes it innovative?

UNSDG

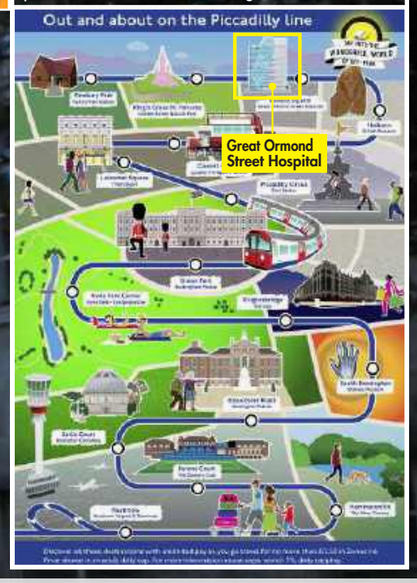
•the "flue wall"

Naturally ventilates the lower 3 floors during the mid-seasons (Spring & Autumn) and reduces annual energy consumption.

UNSDG

•featured building

Great Ormond Street Hospital is featured in a poster at the London Underground Station.



GREAT ORMOND STREET CHILDREN HOSPITAL EXTENSION

LONDON, UK

delivering hypergreen to increase local biodiversity

..by the 1.5km vertical linear park to increase local biodiversity..

BCA GreenMark Platinum

mid-level roof garden

upper level roof garden

spiral ramp as "Vertical Linear Park"

"Eco Cells"

what makes it innovative?

•experimental diagonal light shaft

Innovating environmental device is the "Solar Shaft" that cuts through the upper floors of Tower A to **allow daylight to penetrate into the deep interior spaces.**

UNSDG

•"eco cells"

"eco cell" is a device that **allows for vegetation, daylight, natural ventilation and rainwater harvesting** to extend into the car-park levels below.

UNSDG

•provision of ecosystem services

UNSDG

unique features:

The main ecological sustainable significance of the project is its 1.5 km long continuous perimeter landscaped ramp from the basement to roof garden, which demonstrating ecological nexus and connectivity. Furthermore, the vegetation has compensates cleared vegetation for construction on-site, which exceeding site footprint by 80%. These is how Solaris strives to enhance its site's existing ecosystems.

awards received

- *First Prize - Skyrise Greenery Awards 2009*
- *Platinum Rating - BCA GreenMark 2009*
- *Green GOOD DESIGN Award 2010*
- *Gold Medal - WACA Award 2011*
- *Gold Award -PAM Awards 2011*
- *Finalist - RAIA International Architecture 2012*
- *NPark Leaf Certificate Awards 2014*
- *AIA IR Design Awards 2014, Hong Kong*
- *FuturARC Green Leadership Award 2015*
- *FIABCI World Prix d' Excellence Awards 2016*

what delights users and public?

•roof gardens

UNSDG

sky-terraces at the corner of the building that forms interesting green landscapes and contributes **unique social meeting points** connected to nature.

•"vertical linear park"

UNSDG

the 1.5 km long continuous green ramp acts as an **ecological armature**. The spiral ramp expands into generous double-volume sky-terraces at the building corner.

•operable louvers over atrium

UNSDG

the automated operable louvers open to optimise ventilation in the atrium and automatically close to keep out the rain.

SOLARIS
ONE-NORTH, SINGAPORE

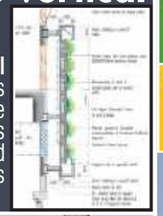
delivering hypergreen

..for phytoremediation and sequestering of aerial contaminants...

what makes it innovative?

•continuous vertical green wall

the **extensive vertical green walls** on façades act as **living habitats**. The large greenery components act as means of filtering and improving the building's ambient indoor air quality.



UNSDG

•solar shading

the building is clad with white aluminium panels, clear glass windows, and spandrels with horizontal blades that provides solar shading and anti-glare performance that gives the image of a contemporary climatic reponsive built form.

UNSDG

•renewable energy

an array of **photovoltaic panels** is installed on the building's uppermost roof area. The 234 m² PV array generates approximately 35.28KWh of electricity on site with all power generated feeding directly back into the municipal power grid.

UNSDG

unique features:

The DIGI Technology Operation Centre located in Malaysia's Subang High Tech Park was completed in 2010 and has since been awarded a GBI Gold rating. The Client's brief was to design a data centre with ecological features and is based on the 'IT Data Centre's Uptime Institute' Tier III platform with the possibility of scaling up to Tier IV security. A key feature of the DIGI Centre is a vegetated green wall that wraps around its four facades - meant to act as living habitats and as means of filtering and improving its ambient indoor air quality.

Green Building Index (GBI)-Gold

photovoltaic roof canopy

continuous green wall for ecological nexus

naturally ventilation to elevator lobby

what delights users and public?

UNSDG

•spacious interior with natural daylighting

the main office and circulation spaces are glazed using full-height Low-E curtain walls to provide maximum daylight penetration and enables energy efficient lighting systems within the spaces. Secondary rooms are also fitted with operable windows for natural ventilation and daylight.

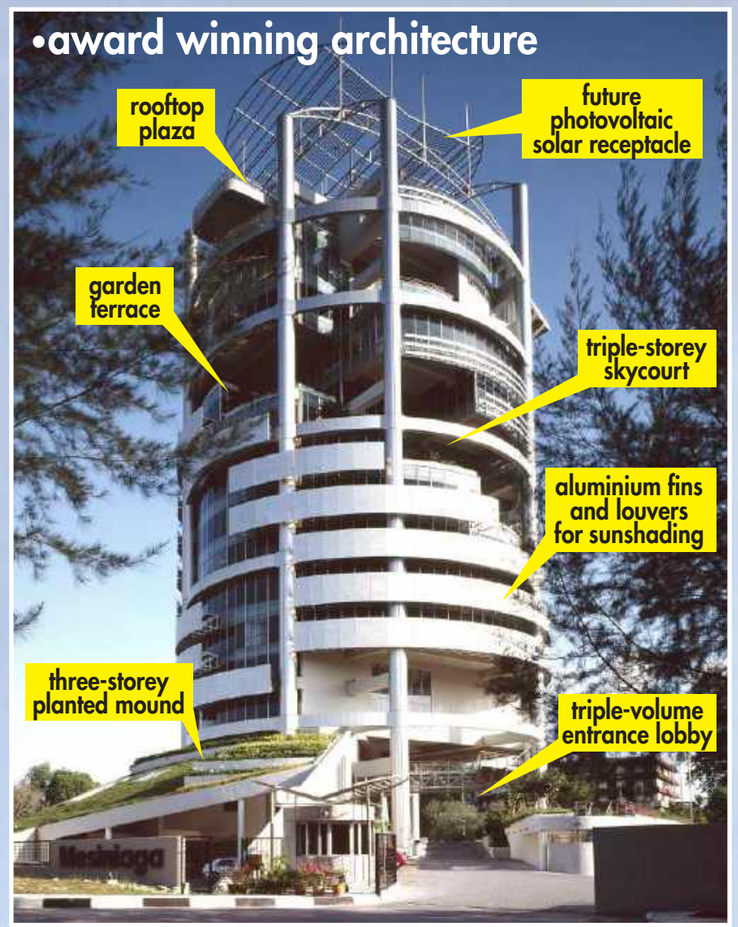
DIGI DATA CENTRE

SUBANG JAYA, MALAYSIA

delivering signature & recognizable icons

..by designing a legacy as a bioclimatic skyscraper..

what makes it significant?



The Aga Khan Award for Architecture

Aga Khan Award for Architecture 1996

signature features:

Menara Mesiniaga is one of our early buildings that launched our work in ecological design as low-energy (bioclimatic) architecture and which received the Aga Khan Award. The year was 1992, and the building marked the beginning, both literally as well as figuratively, a new era in our work on deep green design.

MENARA MESINIAGA

SUBANG, MALAYSIA

delivering iconic & distinctive aesthetic

..by modular roof units..

XIONG'AN STATION

BEIJING, CHINA

engendering happiness hormones

- ☑ dopamine
- ☑ serotonin
- ☑ oxytocin
- ☐ endorphins

bringing natural day light into the retail space

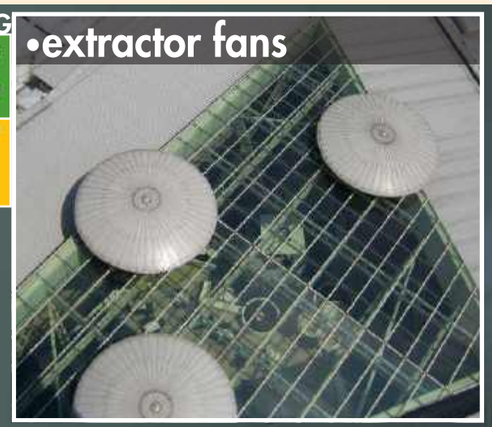
natural ventilated cool plaza

enhancing comfort & well-being

..by mixed-mode cooling for retail complex (no air-conditioning)..

what makes it innovative?

UNSDG



extractor fan

TTDI PLAZA

KUALA LUMPUR, MALAYSIA

owner's comment:
"we are living in paradise!.."
- Mr. R -

enabling health, well-being & happiness

..beyond user satisfaction..

engendering happiness hormones

- ☑ dopamine
- ☑ serotonin
- ☑ oxytocin
- ☑ endorphins

sliding corner doors to enhance ventilation

entrance

living area

swimming pool between living & sleeping area

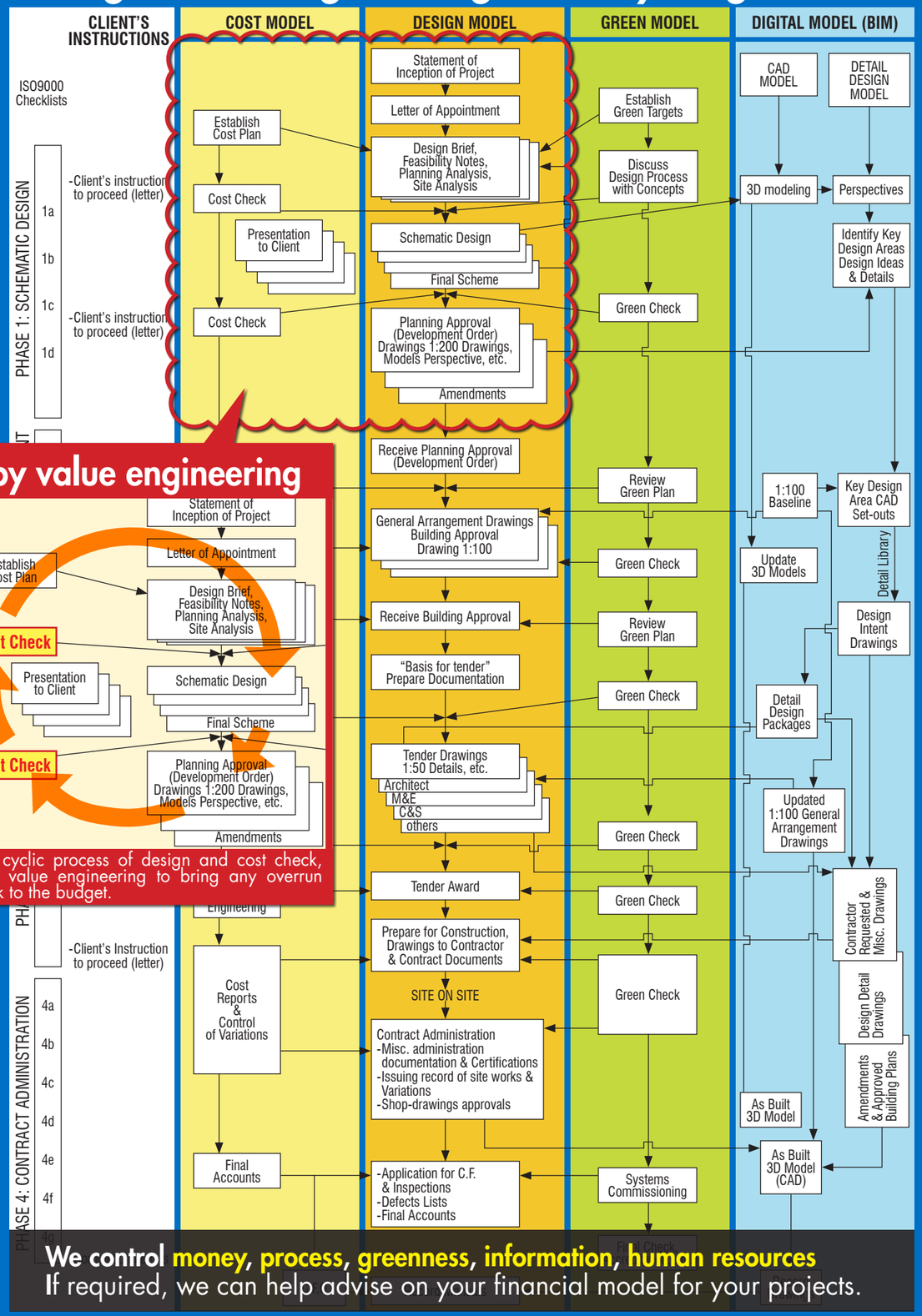
promonade to sleeping areas

R HOUSE

JOHOR BAHRU, MALAYSIA

effecting cost control

..through value engineering at every stage..

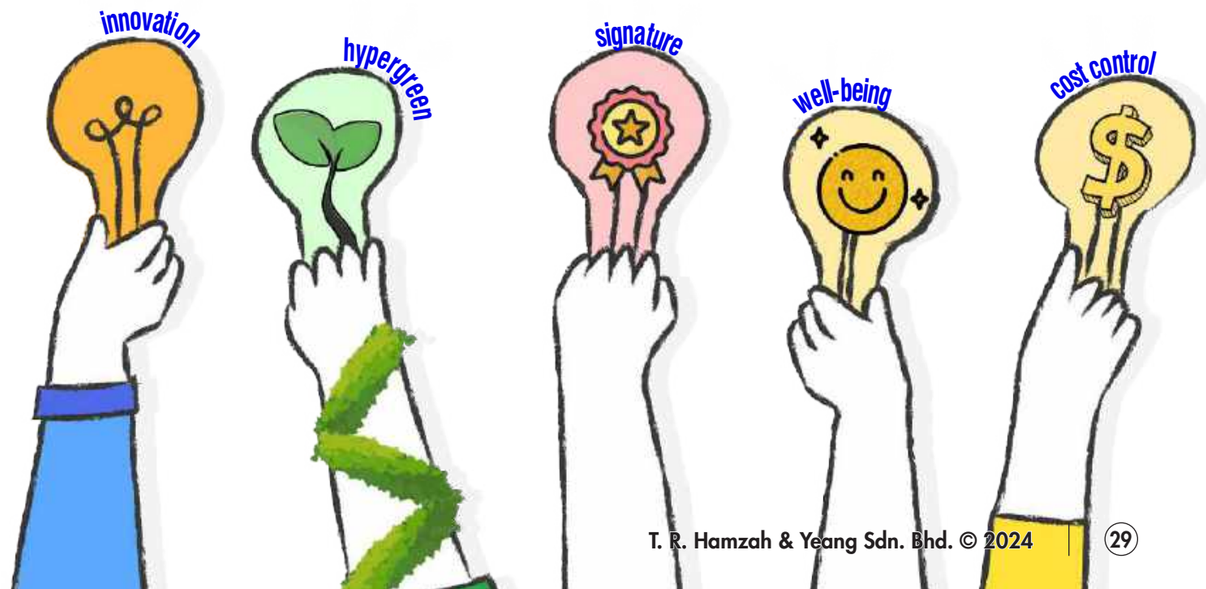


We control money, process, greenness, information, human resources
If required, we can help advise on your financial model for your projects.

our promise

..these are the benefits you get from us..

- innovation — ingenuity
- hypergreen — sustainability
- signature — style
- well-being — luxury
- cost control — viability



our system

how we do it?

ecological design

..model systems as basis for ecological design..

The approach to designing for humanity's sustainable future must be **nature-based** through an **ecology-driven** approach by the biomimicry of ecosystems attributes. This is achieved through the emulation (imitation), replication (reproduction), augmentation (collaboration) and enhancement (optimise) of ecosystem properties where the built environment is recreated as a human-made ecosystem.

Ecological design is the seamless & benign biointegration of these 5 key design factors into a whole as *human-made (constructed) ecosystems* to achieve a benign nature-to-nature interface:

• nature
(ecosystems & biogeochemical cycles)

- ecomimicry
- biogeochemical cycles
- abiotic constituents
- biotic constituents
- habitats
- species
- biodiversity
- ecosystem conservation & regeneration
- biomes
- biosphere
- habitats repair

NPEI (Net Positive Ecological Impact)

• human society
(well-being & happiness)

design to engender release of chemicals in brain

- social
- economic
- political
- institutional
- cultural
- biophilic
- ecologically-responsible behavior
- ecologically-responsible diet
- green spaces for human health, well-being & happiness

NWHHS (Net Well-being, Healthy & Happy Society)

• built systems & infrastructures
(zero wastes and emissions)

- infrastructures
- artefacts
- buildings (zero carbon materials)
- design for recycling & reuse
- carbon capture systems
- smart systems
- smart grids
- large-scale electricity storage
- hydrogen production (without emitting carbon)
- low embodied energy & carbon neutral construction operations
- sustainable production systems (incl. food)
- society's technological systems

NZW/E (Net Zero Waste / Emissions)

• energy systems
(clean renewable energy/carbon neutral design)

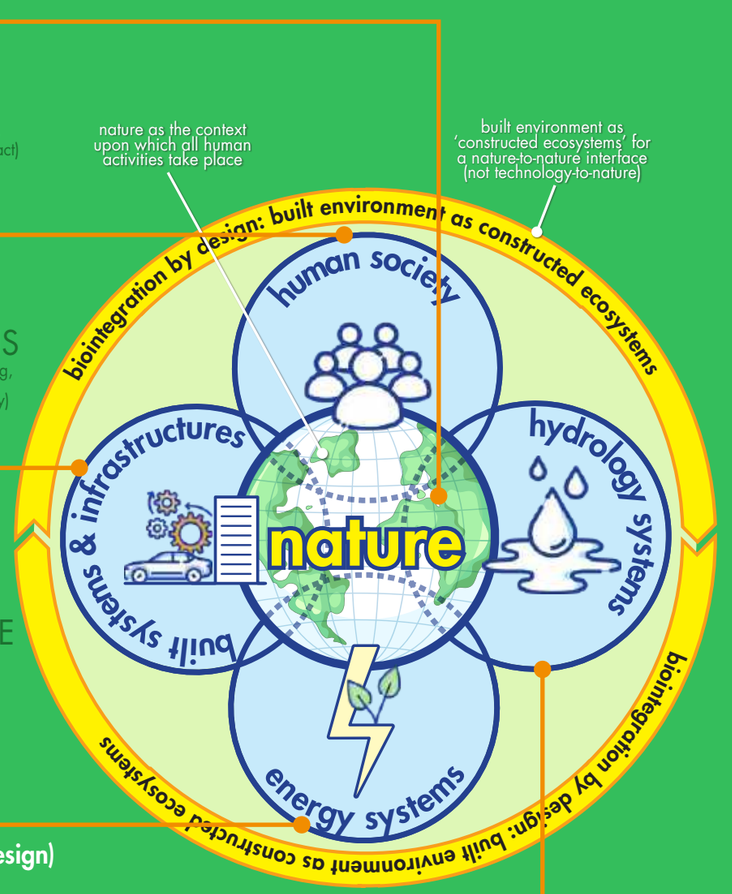
- renewable sources: ambient & on-site energy (solar, wind, water, geothermal)
- passive-mode systems
- mixed-mode systems
- smart full-mode systems
- productive-mode systems
- surplus energy storage systems
- biofuels
- battery & storage systems
- hydrogen production

NSE&ZC (Net Surplus Energy & Zero Carbon)

• hydrology systems
(water management & conservation)

- rainwater harvesting (rainfall, dew, snow)
- ground water recharging
- waterways (seas, lakes, rivers)
- water reuse & recycling
- desalination
- water conservation
- bioswales
- sustainable drainage
- 'sponge-city' concept

NZW (Net Zero Water)

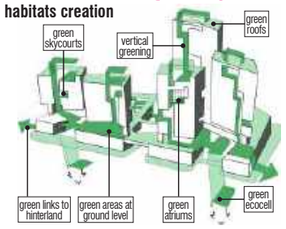
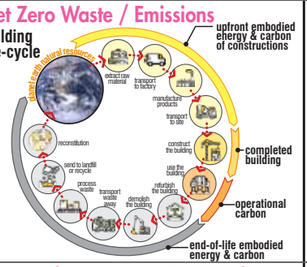
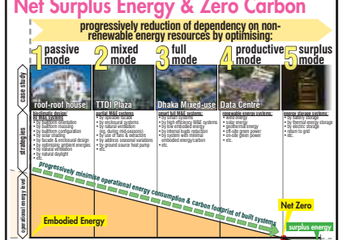
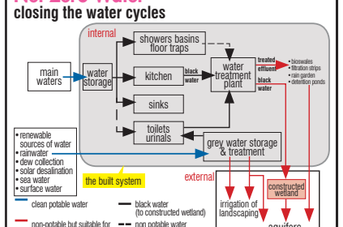


scan to refer to Fact Sheet: Frequently Asked Questions: "What is Ecological Design"

ecological design factors

how our ecological design factors align with AIA Framework for Design Excellence & the UNSDG

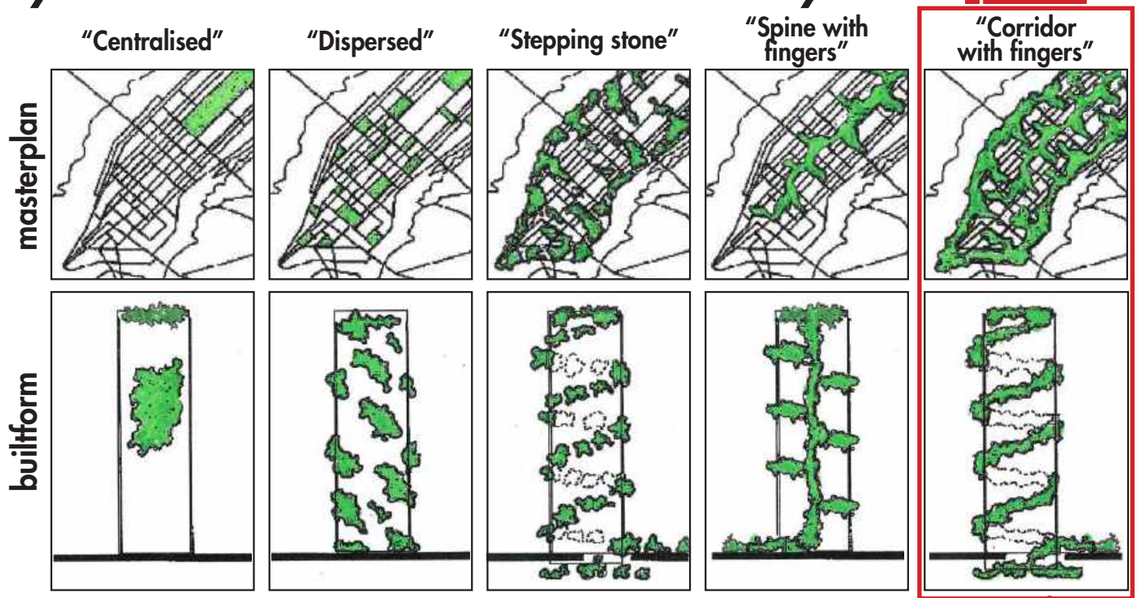
level of relevance: high · medium · low

TRHY Design Factors \ AIA Framework for Design Excellence		Integration	Equitable Communities	Ecosystems	Water	Economy	Energy	Well-being	Resources	Change	Discovery	United Nations Sustainable Development Goals
NATURE	Net Positive Ecological Impact habitats creation 	high	med	high	high	low	med	med	high	high	low	
HUMAN SOCIETY	Net Well-being, Healthy & Happiness 	high	high	high	high	high	high	high	high	med	med	
BUILT SYSTEMS & INFRASTRUCTURES	Net Zero Waste / Emissions 	high	med	med	med	high	high	high	high	med	med	
ENERGY SYSTEMS	Net Surplus Energy & Zero Carbon 	high	med	med	high	high	high	high	med	low	low	
HYDROLOGY CYCLES	Net Zero Water closing the water cycles 	high	med	med	high	low	med	med	high	med	low	

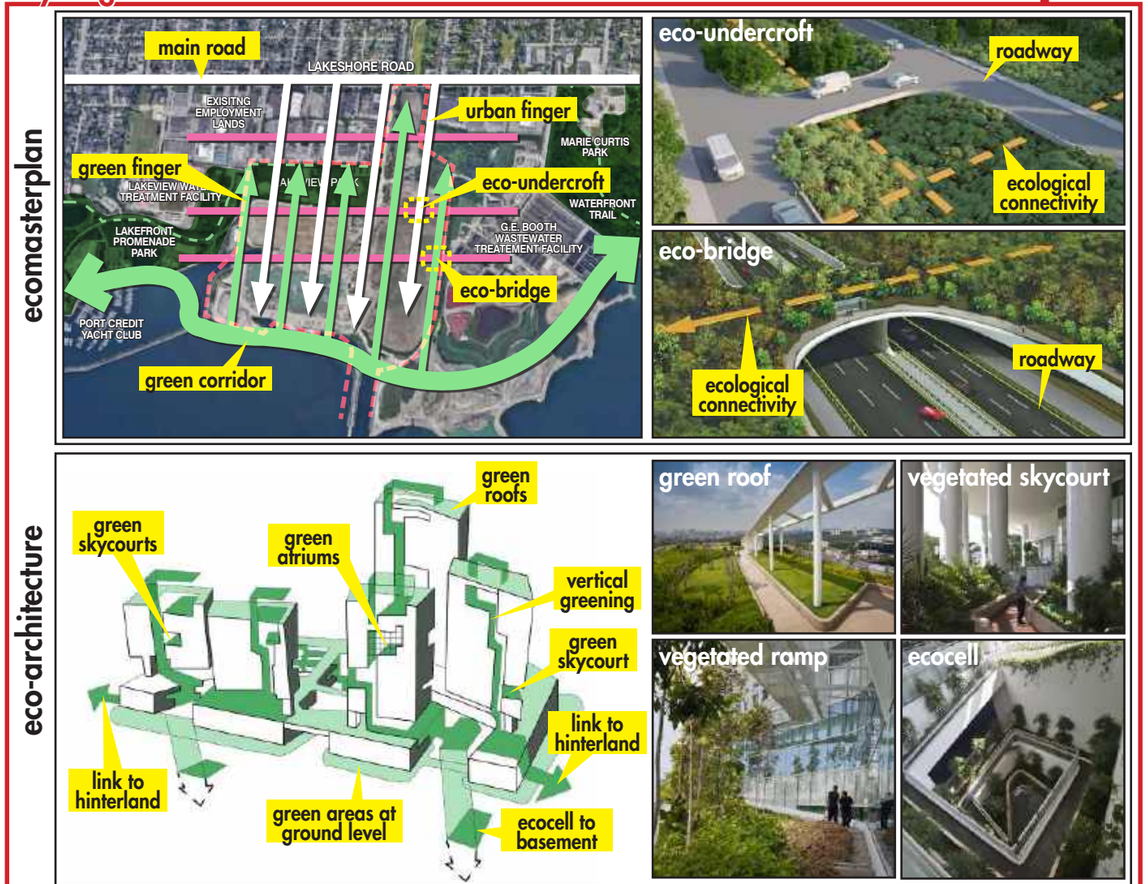
the consturcted ecosystem

..creating habitats as "patches" within built systems to enhance local biodiversity..

preferred

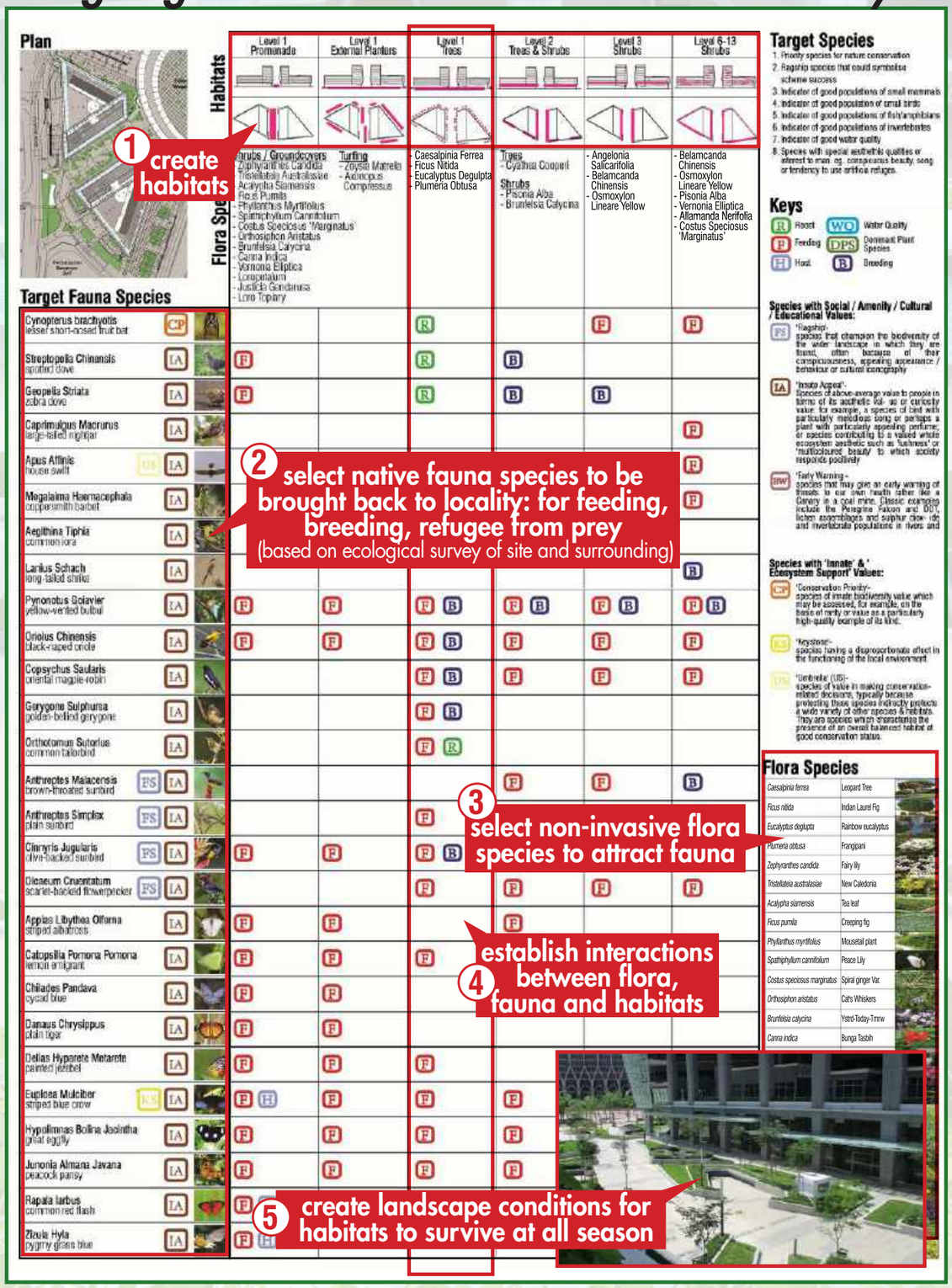


by augmentation



increasing local biodiversity

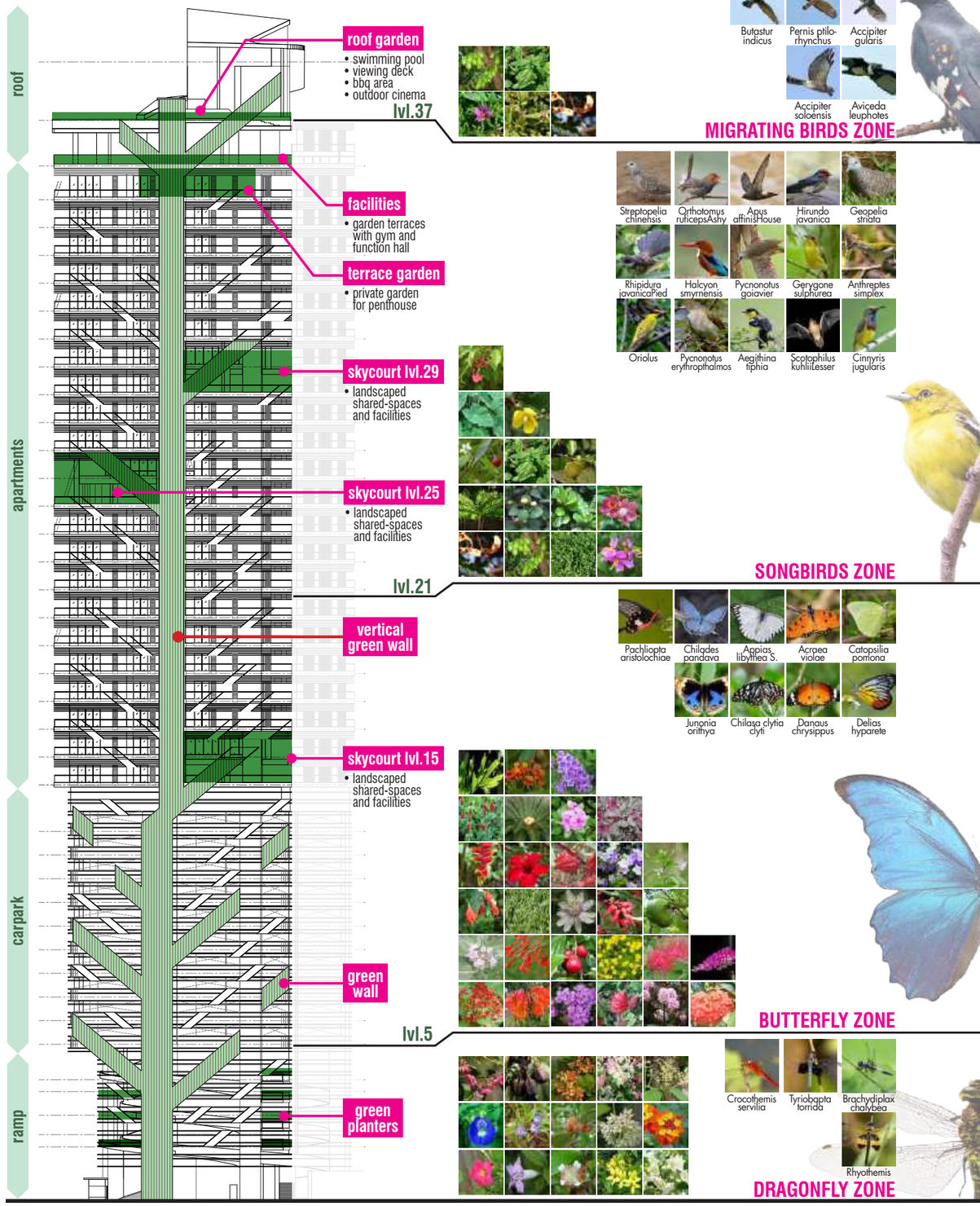
..using for Biodiversity Targets Matrix for designing habitats to enhance local biodiversity..



creating habitats in builtform

..identify flora species to attract the fauna species..

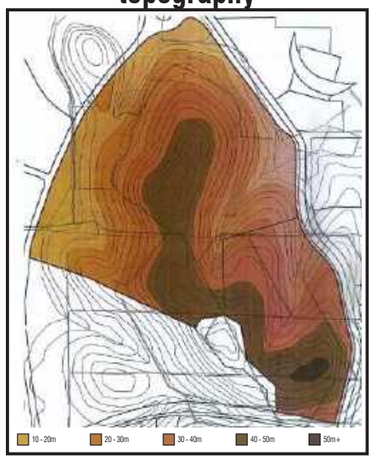
create habitats within builtform | select non-invasive flora species to attract fauna | select native fauna species to be brought back to locality



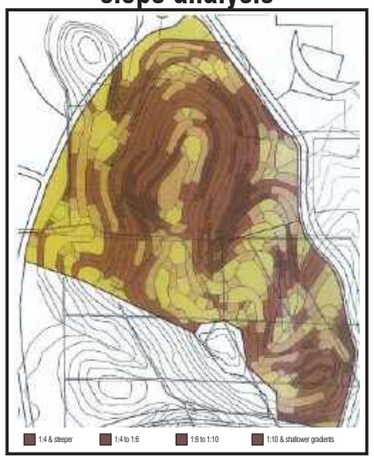
conserving the site's ecology

..by using the ecological land-use method to preserve the site's ecology..

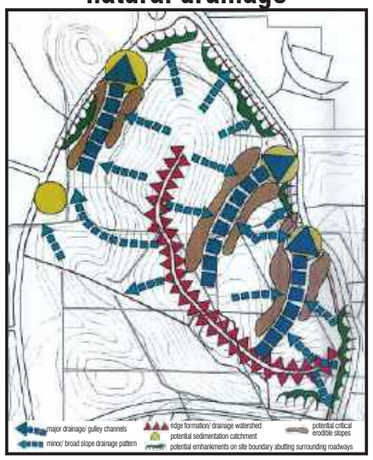
topography



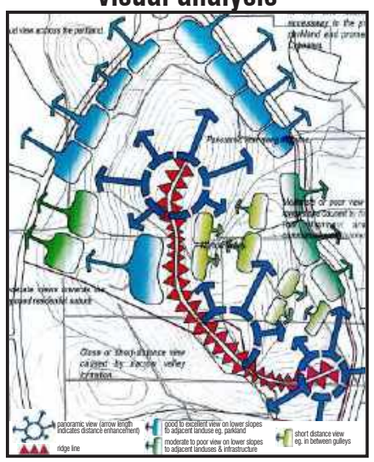
slope analysis



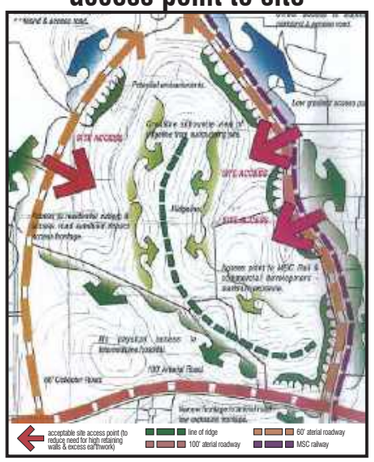
natural drainage



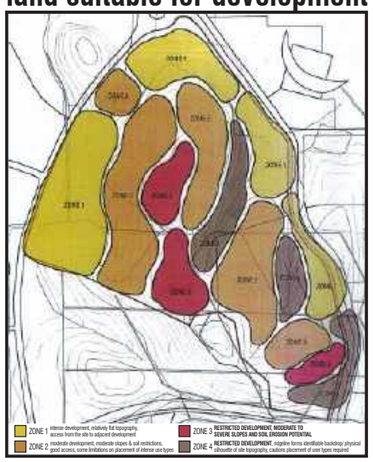
visual analysis



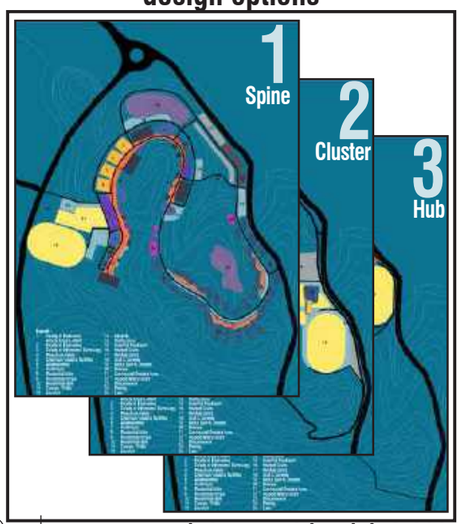
access point to site



land suitable for development

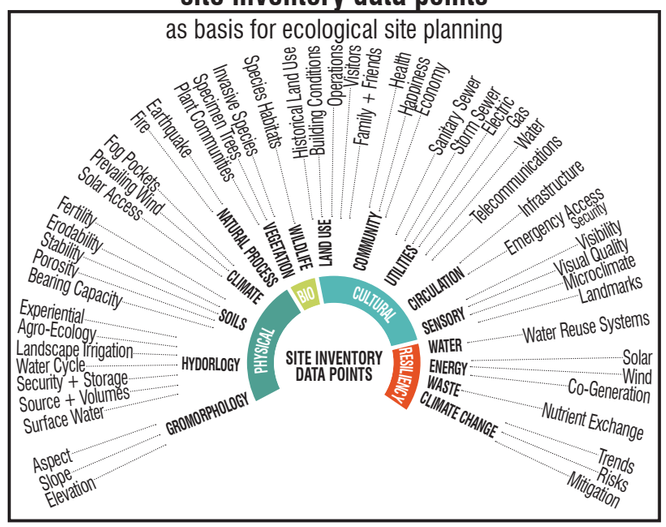


design options



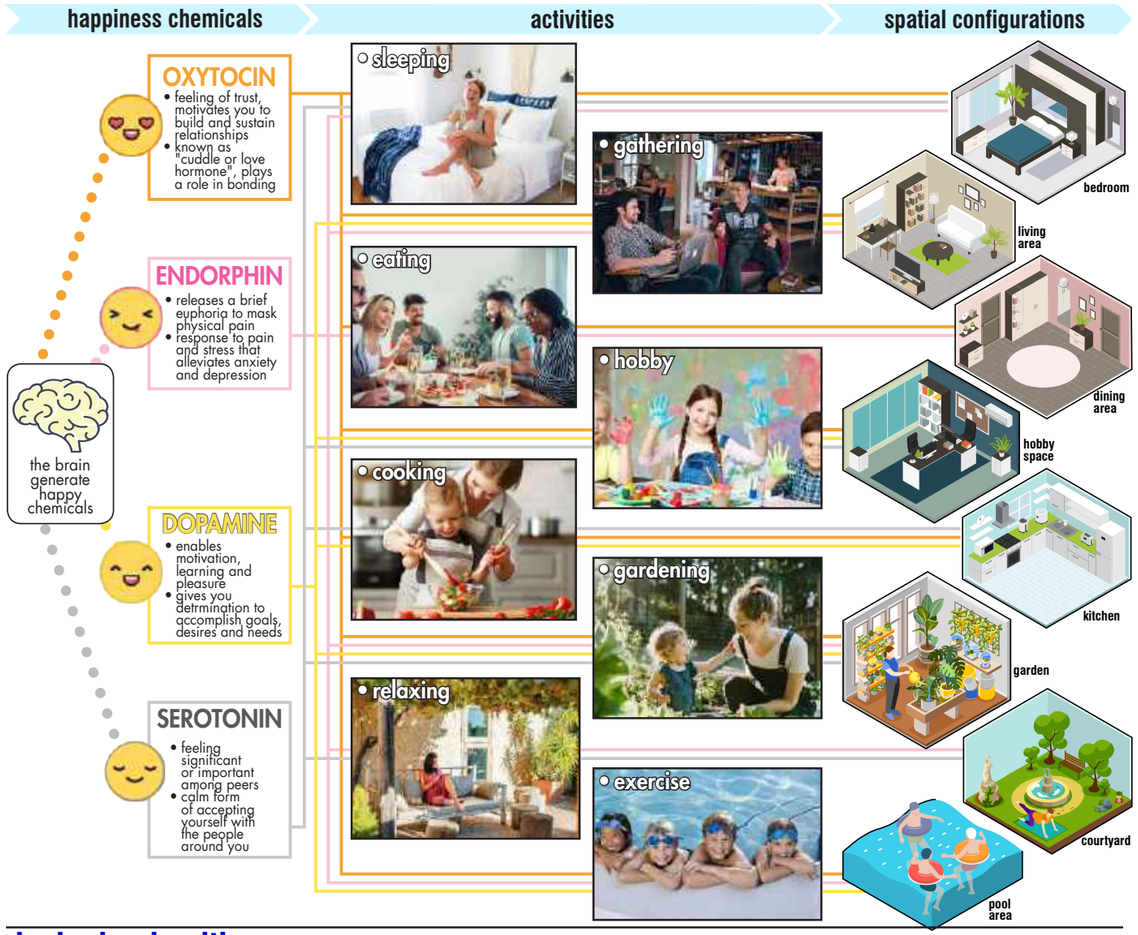
site inventory data points

as basis for ecological site planning

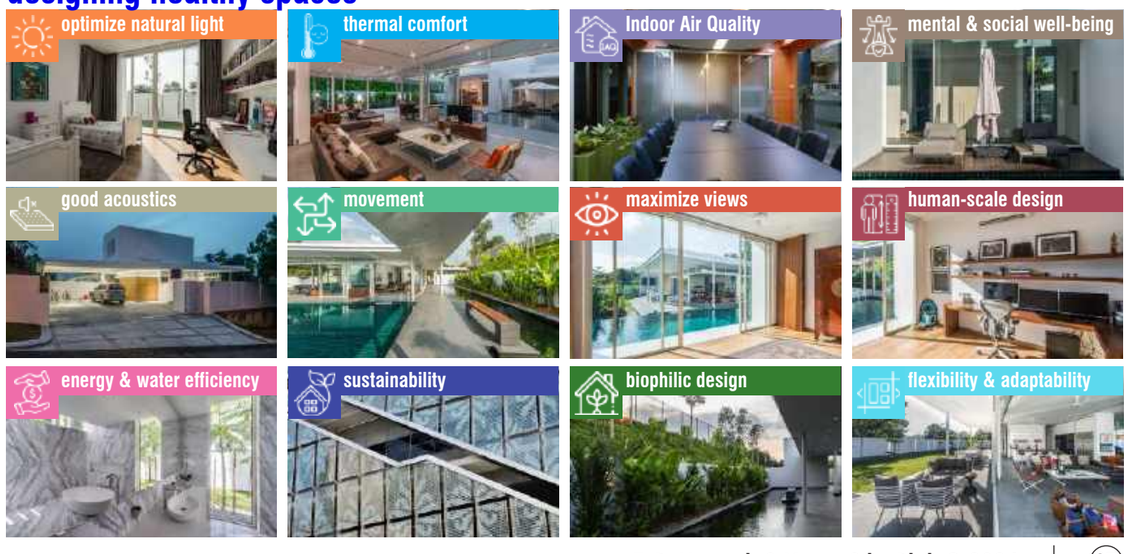


design for users health, happiness & well-being

..by enabling activities & creating spaces..



designing healthy spaces

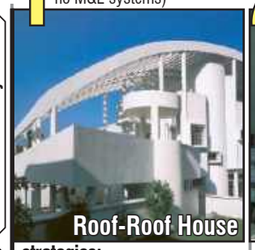


designing for Net Zero / Surplus Energy

..by progressive operational energy reduction..

designing for near net zero energy & carbon
by progressively reduce operational energy, carbon emissions & dependency on non-renewable energy resources by optimising:

1 passive-mode (bioclimatic design/ no M&E systems)



strategies:
- by builtform orientation
- by builtform massing
- by builtform configuration
- by solar shading
- by facade & enclosural design
- by optimising ambient energies
- by natural ventilation
- by natural daylight
- etc.

2 mixed-mode (partial M&E systems)

strategies:
- by operable facade
- by enclosural systems
- by natural ventilation (eg. during mid-seasons)
- by use of fans & extractors
- by address seasonal variations
- by ground source heat pump
- etc.

3 full-mode (smart full M&E systems)

strategies:
- by smart systems
- by high efficiency M&E systems
- by low embodied energy
- by internal loads reduction
- by system with minimal embodied energy/carbon
- etc.

4 productive-mode (renewable energy systems)

strategies:
- wind energy
- solar energy
- geothermal energy
- off-site green power
- on-site green power
- etc.

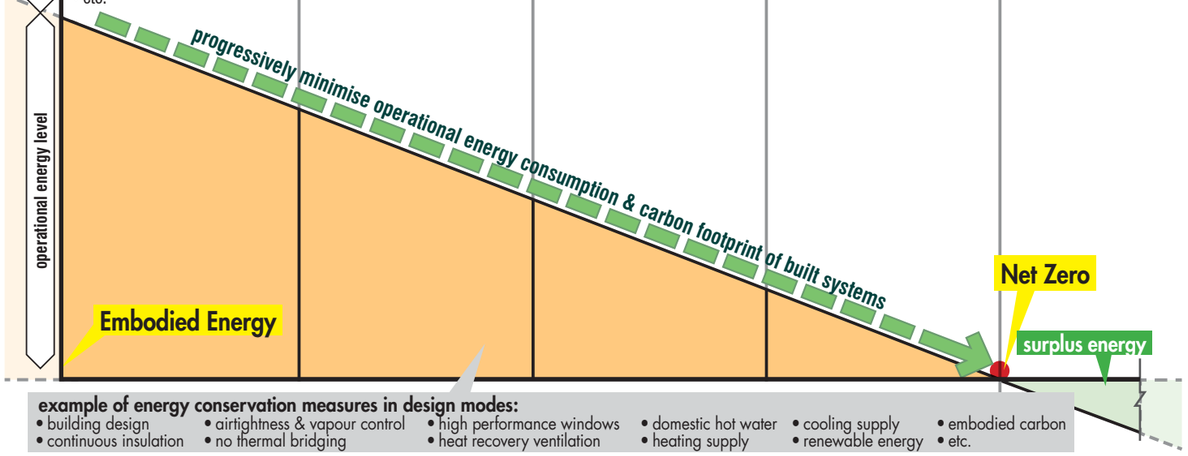
5 surplus-mode (energy storage systems)

strategies:
- by battery storage
- by thermal energy storage
- by electric storage
- return to grid
- etc.

case study

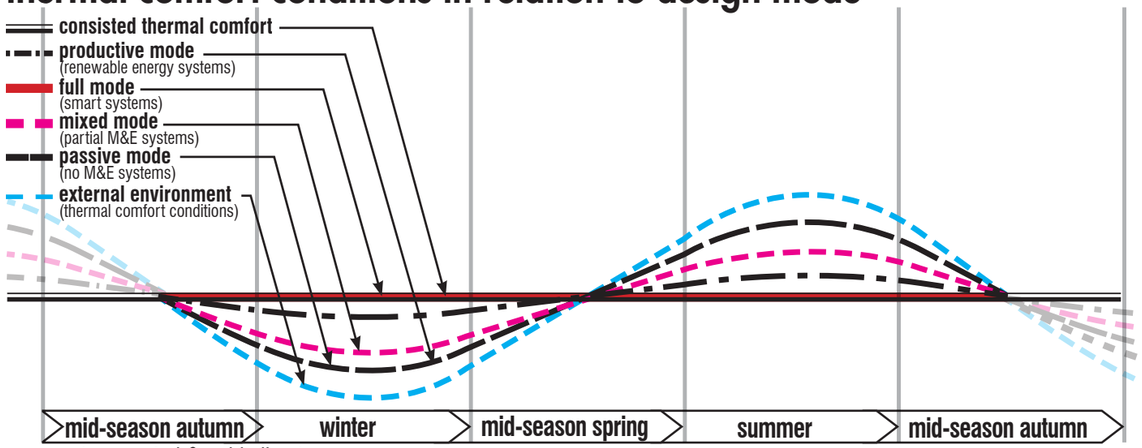
strategies

operational energy level



example of energy conservation measures in design modes:
- building design
- airtightness & vapour control
- high performance windows
- domestic hot water
- cooling supply
- embodied carbon
- continuous insulation
- no thermal bridging
- heat recovery ventilation
- heating supply
- renewable energy
- etc.

thermal comfort conditions in relation to design mode

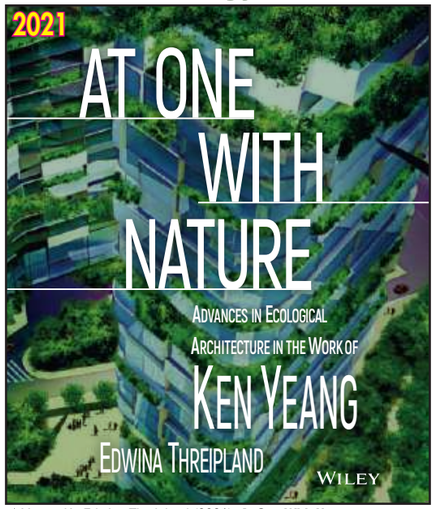


season: temperated & cold climates

delivering thought leadership and on-going research

..to benefit your project..

..over 16 ecology-based research publications authored by Dr. Ken Yeang..



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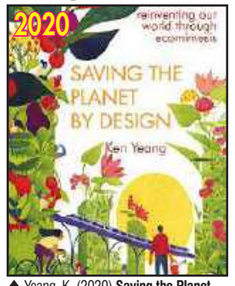

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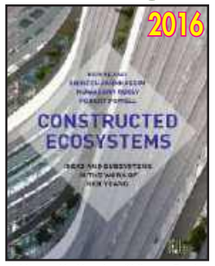

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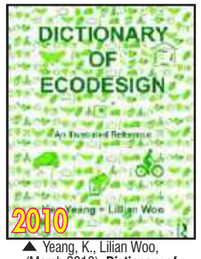

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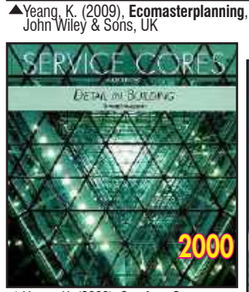

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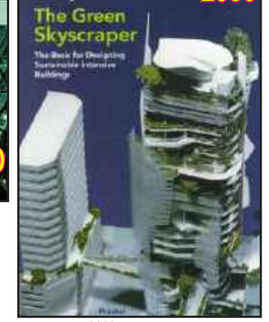

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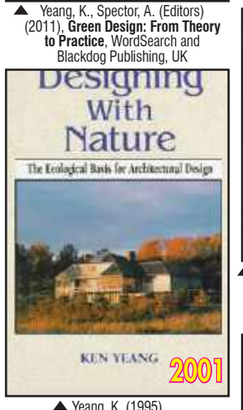

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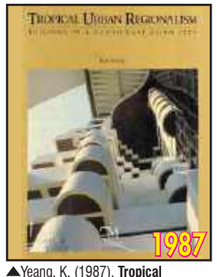

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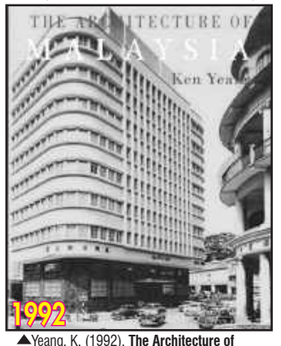

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aaq
Architectural Association Quarterly

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available at www.amazon.com

benefits to your project

what you get from us?

a high-value product

..by sustainable design..

well-designed, refined, elegant and exquisitely beautiful

design that gives the **highest level of pleasure**

exclusiveness of product that many others cannot have or enjoy

product possession for you as **reward of their personal success**

possession of well-designed exclusive product as **proof of financial standing**

product possession as **recognition of status**

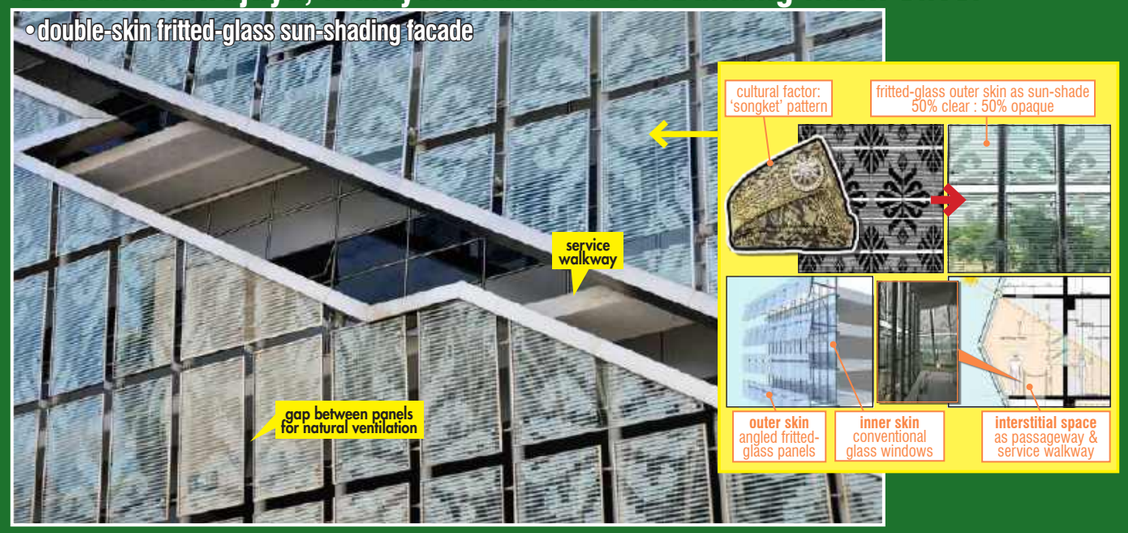
privileges and services accompanying the designed product

functional rationale for ownership of designed product

designing for energy & water reduction

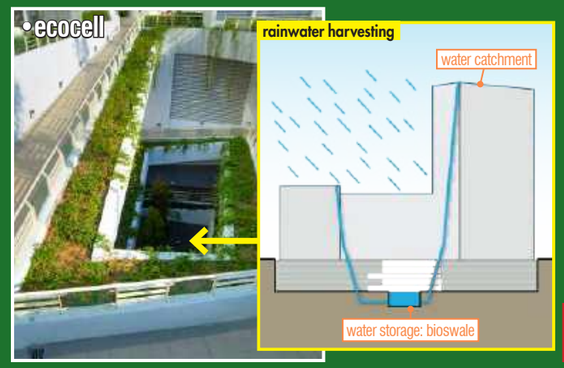
..by sustainable design..

Suasana Putrajaya, Malaysia: rated Green Building Index Silver



design for reduction of energy consumption

Items	Purpose	Reference	Proposed
1. Passive Design • Fritted-glass double-skin façade • Roof & skylight	reduce heat gain - OTTV (Overall Thermal Transfer Value) - RTTV (Roof Thermal Transfer Value)	<32.81 W/m² <19.15 W/m²	**21.67 W/m²** **14.35 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.	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	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	reduce energy consumption - PLEI (Plug Load Energy Intensity)	72.40kWh/yr/m²	**40.40 kWh/yr/m²**
Low Energy & Carbon Neutral Systems • passive-mode, mixed-mode, full-mode, productive-mode	encourage enhancement of building EE performance & reducing CO_2 emission **- BEI (Building Energy Intensity)**	<150kWh/yr/m²	**136.8 kWh/yr/m²**



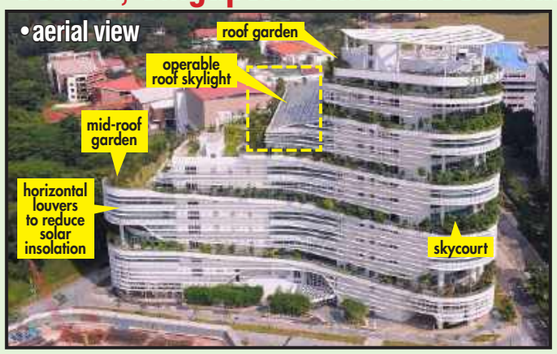
design for reduction of water consumption

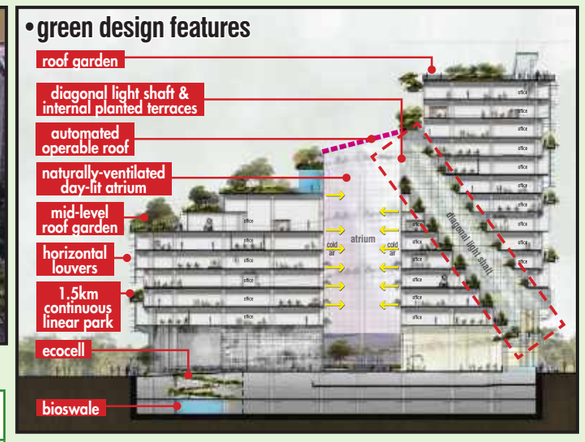
Items	Reference	Proposed
1. Water Efficient Fitting • water regulator or flow controller • minimize water flow rate for toilet fittings	55,477 m³/yr	**32,990 m³/yr** (40.5% reduction)
2. Rain Water Harvesting Tank (RWHT) System • harvest rainwater for landscape irrigation	-	**11,000 m³/yr**
3. Condensate Water Recovery System • harvest clean water for landscape irrigation	-	**6,000 m³/yr**
Total non-potable water harvested		**17,000 m³/yr**
Total Landscape irrigation demand		**30,879 m³/yr**
Non-potable water harvested for landscape irrigation	>50.00%	**55.05%**

designing for energy & water cost savings

..by mixed-mode low energy design..

Solaris, Singapore: rated Green Mark Platinum





annual energy savings

Items	Reference (kWh/year)	Proposed (kWh/year)	Energy Saving (%)
1. AHU and FCU Fans	2,861,445	1,313,582	54.09%
2. Split Cooling Unit	5,142	3,959	23.01%
3. Mechanical Fans	699,874	239,405	65.79%
4. Chilled Water Pumps	239,501	98,954	58.68%
5. Domestic Pump	43,538	43,538	0%
6. Exterior Lighting	191,389	65,207	65.93%
7. Office Receptacle	1,845,844	1,845,844	0%
8. Retail Receptacle	41,012	41,012	0%
9. Water Heater	17,328	17,328	0%
10. Lifts	647,623	582,855	10%
11. Interior Lighting	2,348,283	1,410,837	39.92%
Total	**8,940,979**	**5,662,521**	**36.67%**
Cooling Load Reduction	**1,998.55 tons**	**1,667.65 tons**	**16.56%**

The light-shaft cuts through the building block allows day-light to penetrate deep into the building's interior spaces to reduce internal artificial lighting load and provide a spatial & visual link from the atrium and internal floors to the ground level.

The low-energy mixed-mode atrium has an operable glass-louver sky-light with sensors that will open for natural ventilation and automatically close in event of inclement weather.

designed for water savings

Items	Reference (m³/yr)	Proposed (m³/yr)	Saving (m³/yr)
1. Water Efficient Fittings	54,752	42,970	111,782
2. Rainwater Harvesting System	-	-3,105	3,105
3. AHU Condensate Collection	-	-904	904
Total	**54,752**	**38,961**	**15,791**

estimated annual energy & water savings

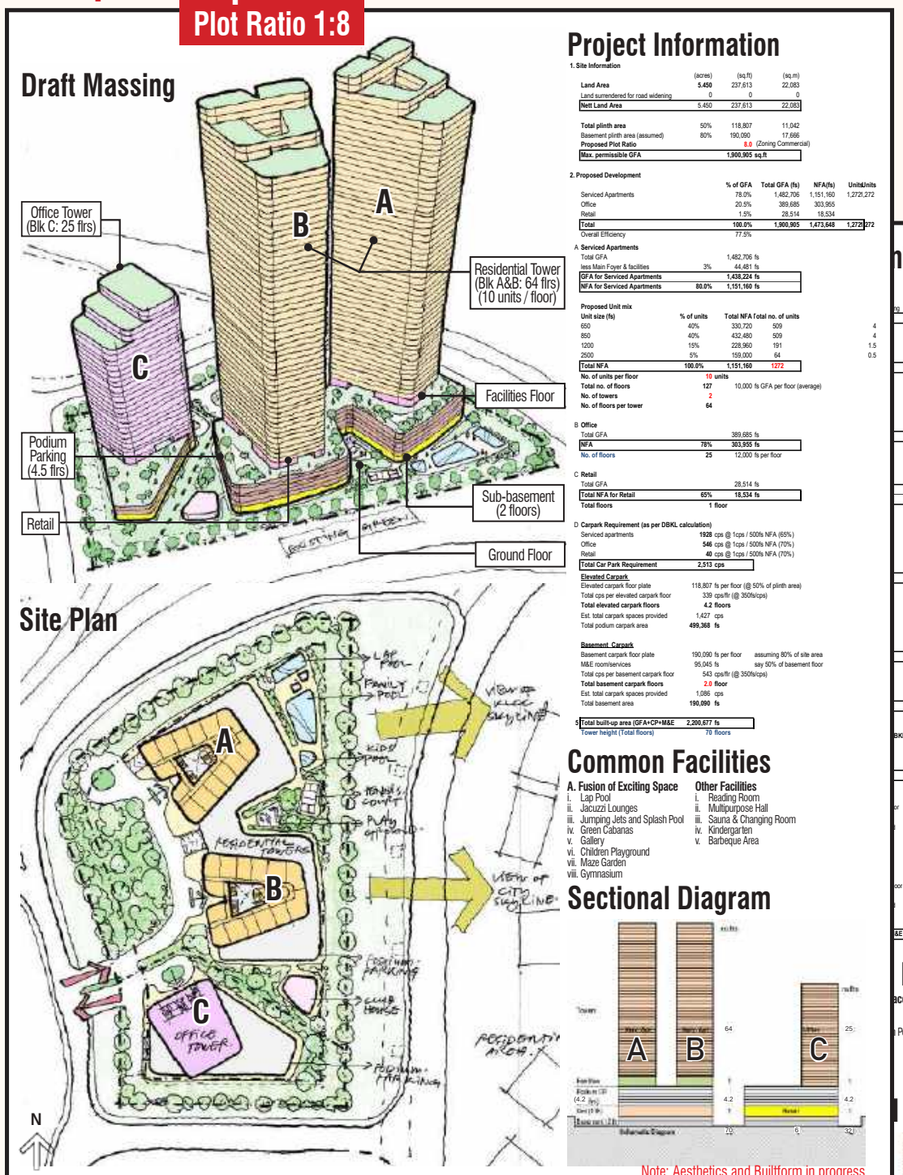
SGD 655,692 + SGD 36,335 = SGD 692,047 (USD 530,000)
(energy) (water)

unique method for rapid delivery of design solutions

..by the "Basis for Design" approach..

examples:

Option 1
Plot Ratio 1:8



Project Information

1. Site Information

	(acres)	(sq.ft)	(sq.m)
Land Area	5.450	237,613	22,083
Land surrendered for road widening	0	0	0
Nett Land Area	5.450	237,613	22,083
Total plinth area	50%	118,807	11,042
Basement plinth area (assumed)	80%	190,090	17,666
Proposed Plot Ratio		8.0 (Zoning Commercial)	
Max. permissible GFA		1,900,905 sq.ft	

2. Proposed Development

	% of GFA	Total GFA (fs)	NFA(fs)	Units&Units
Serviced Apartments	78.0%	1,482,706	1,151,160	1,272,272
Office	20.5%	389,685	303,955	
Retail	1.5%	28,514	18,534	
Total	100.0%	1,900,905	1,473,648	1,272
Overall Efficiency	77.5%			

A Serviced Apartments

Total GFA		1,482,706 fs	
less Main Foyer & facilities	3%	44,481 fs	
GFA for Serviced Apartments		1,438,224 fs	
NFA for Serviced Apartments	80.0%	1,151,160 fs	

Proposed Unit mix

Unit size (fs)	% of units	Total NFA	Total no. of units	
650	40%	330,720	509	4
850	40%	432,480	509	4
1200	15%	228,960	191	1.5
2500	5%	159,000	64	0.5
Total NFA	100.0%	1,151,160	1272	

No. of units per floor	10 units	
Total no. of floors	127	10,000 fs GFA per floor (average)
No. of towers	2	
No. of floors per tower	64	

B Office

Total GFA		389,685 fs
NFA	78%	303,955 fs
No. of floors	25	12,000 fs per floor

C Retail

Total GFA		28,514 fs
Total NFA for Retail	65%	18,534 fs
Total floors		1 floor

D Carpark Requirement (as per DBKL calculation)

Serviced apartments	1928 cps @ 1cps / 500fs NFA (65%)
Office	546 cps @ 1cps / 500fs NFA (70%)
Retail	40 cps @ 1cps / 500fs NFA (70%)
Total Car Park Requirement	2,513 cps
Elevated Carpark	
Elevated carpark floor plate	118,807 fs per floor (@ 50% of plinth area)
Total cps per elevated carpark floor	339 cps/flr (@ 350fs/cps)
Total elevated carpark floors	4.2 floors
Est. total carpark spaces provided	1,427 cps
Total podium carpark area	499,368 fs
Basement Carpark	
Basement carpark floor plate	190,090 fs per floor assuming 80% of site area
M&E room/services	95,045 fs say 50% of basement floor
Total cps per basement carpark floor	543 cps/flr (@ 350fs/cps)
Total basement carpark floors	2.0 floor
Est. total carpark spaces provided	1,086 cps
Total basement area	190,090 fs
Total built-up area (GFA+CP+M&E	2,200,677 fs
Tower height (Total floors)	70 floors

Common Facilities

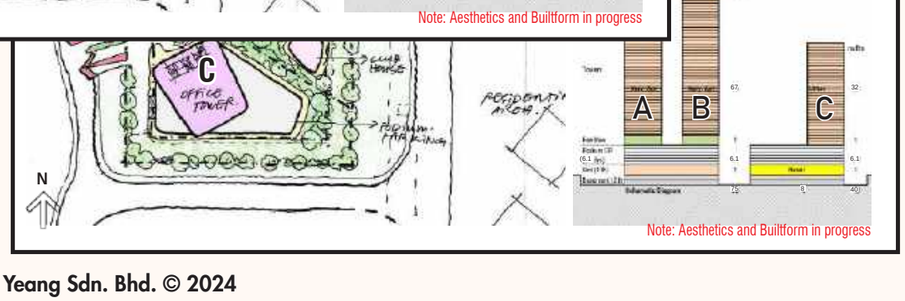
A. Fusion of Exciting Space
i. Lap Pool
ii. Jacuzzi Lounges
iii. Jumping Jets and Splash Pool
iv. Green Cabanas
v. Gallery
vi. Children Playground
vii. Maze Garden
viii. Gymnasium

Other Facilities
i. Reading Room
ii. Multipurpose Hall
iii. Sauna & Changing Room
iv. Kindergarten
v. Barbeque Area

Sectional Diagram

Note: Aesthetics and Builtform in progress

Option 2
Plot Ratio 1:10



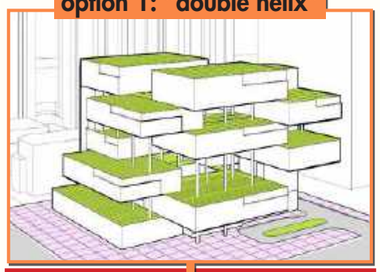
Note: Aesthetics and Builtform in progress

choice of builtform & aesthetic options

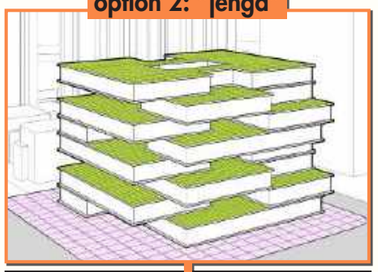
..as innovative design solutions..

builtform options

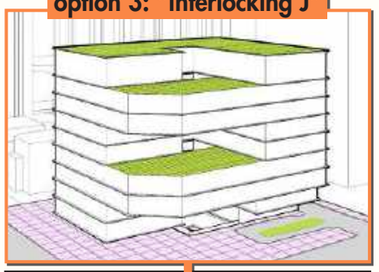
option 1: "double helix"



option 2: "jenga"



option 3: "interlocking J"

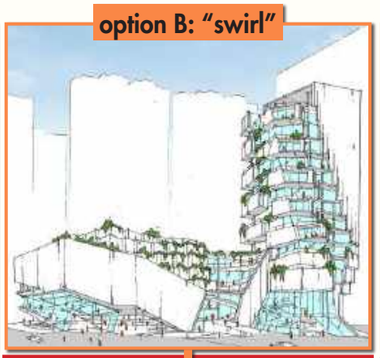


preferred

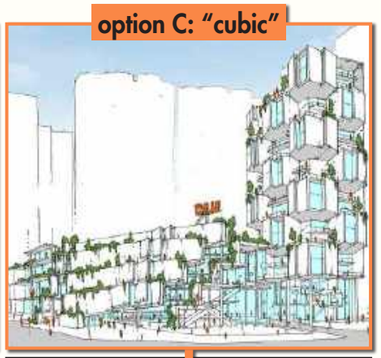
aesthetic options

option A: "lattice"

option B: "swirl"



option C: "cubic"

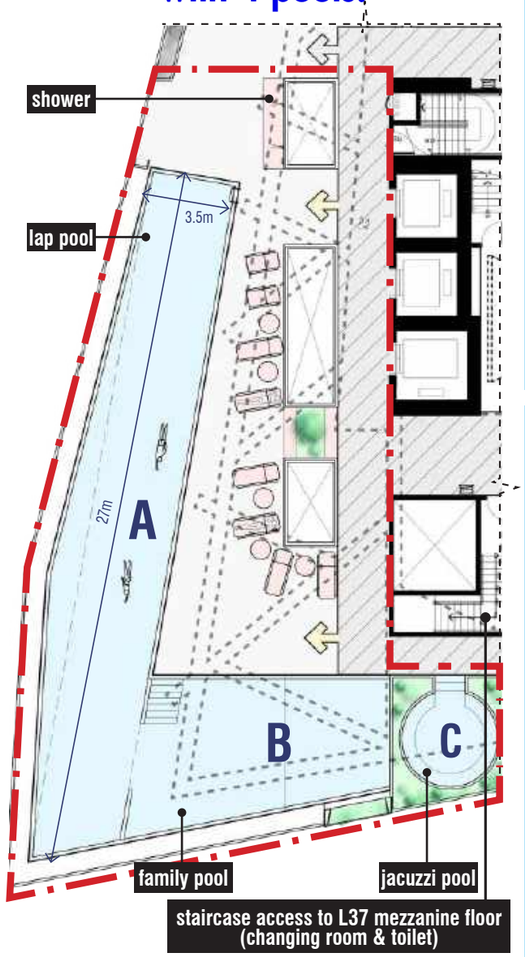


selected by Client

design themes to enable effective marketing

..ideas & options..

example of the rooftop of a luxury apartment with 4 pools:



Opt 1: "Caribbean, Calypso"


sun deck chairs


palm trees


sunbeds & umbrellas


drums

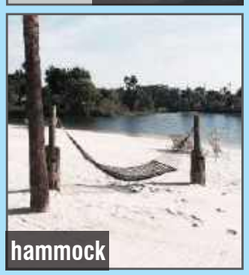
tropical & fun

Opt 2:"Copacabana, Ipanema"


umbrella


sunbed & beach blanket


surfboards


hammock

calm & relaxing

Opt 3: "Santa Monica, California"


exercise area


sun deck chair

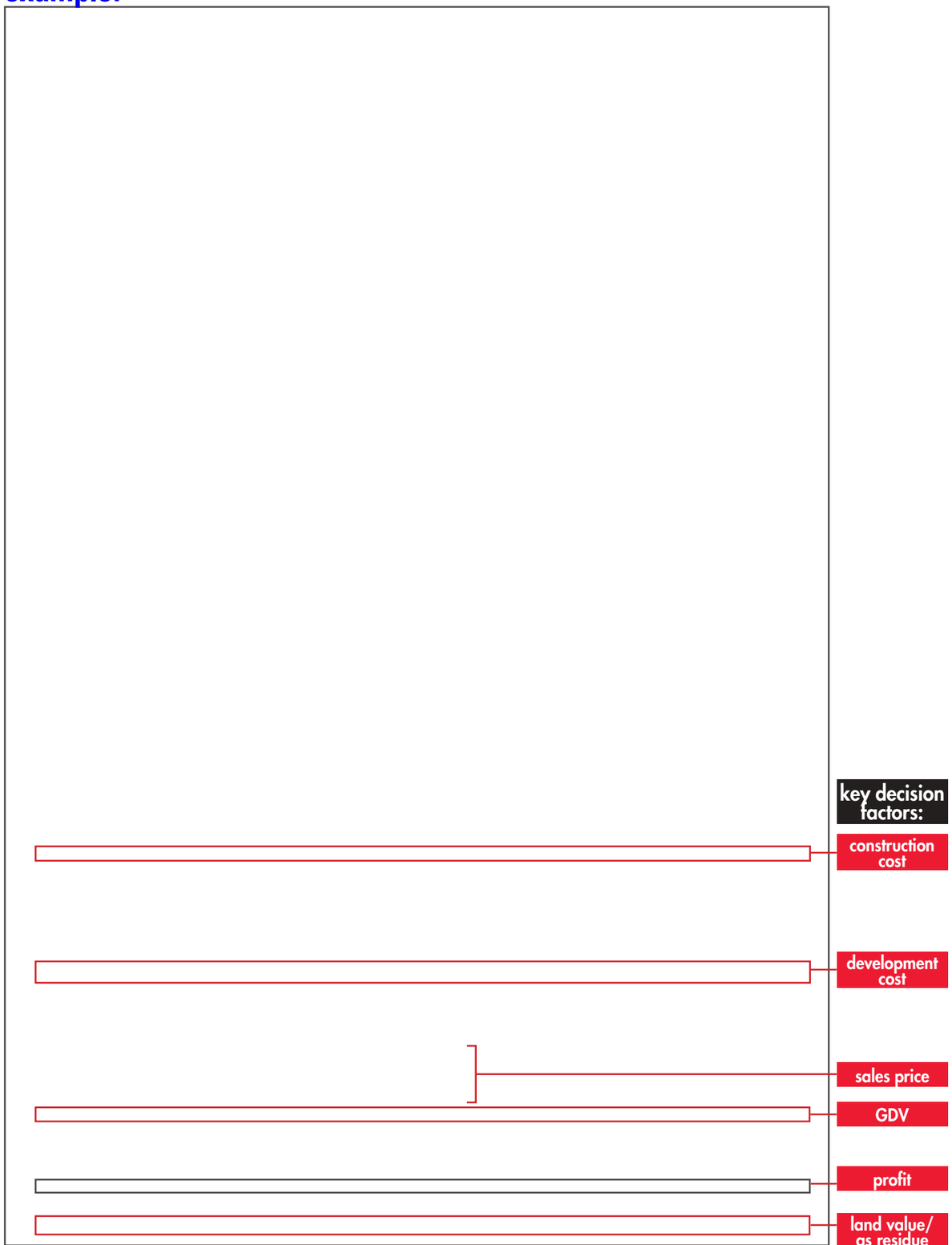

roller skates

lively & energetic

commercial viability

..financial modeling as basis for design..

example:



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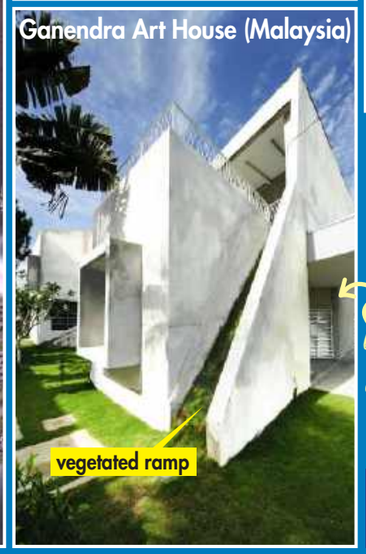
• masterplan • architecture • interior •

hypergreen

innovation

signature



well-being & happiness

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award-winning experiences that benefit your project

..over 70 awards in 25 years..

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

2022 Australian Institute of Architect- **2022 Leadership in Sustainability Prize**
2021 **The Edge Malaysia-PAM Green Excellence Award** (Honorary Mention) - Putrajaya Suasana (2C5)
2021 **PAM** Gold Medal Award: Commercial (High Rise) Category- Putrajaya Suasana
2020 **ASA Gold Medal**
2020 **Global Forum on Human Settlements** (supported by UN Environment Sustainable Development) Planning and Design for Putrajaya Suasana
2020 **Global Forum on Human Settlements** (supported by UN Environment Sustainable Development) Outstanding Contribution
2020 **Malaysia Green Building Council** Best Research
2018 **Malaysia Green Building Council** Best Commercial Building - Putrajaya Suasana
2017 **Cityscape Award** for Putrajaya Suasana
2016 **Liang Sicheng** Architecture Prize, China
2016 **FIABCI** World Prix d' Excellence Awards: Solaris (Fusionopolis)
2016 **PAM** Award Commendation: Single Residential - R-House
2015 **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 IR** Design Awards, Hong Kong: Solaris, Fusionopolis
2014 **NPark Leaf** Certificate Awards: Solaris, Fusionopolis
2013 **MGBC** Excellence & Leadership in Sustainability Award

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

2013 **ARCASIA** Award: Honorary Mention, Industrial Building - DIGI
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 **WACA Gold Medal Award**: Solaris (Fusionopolis)
2011 **LEEDS** Platinum status on the pre-certification: Spire Edge, India
2011 **PAM** Gold Medal Award: Solaris (Fusionopolis)
2011 **PAM** Award Commendation: Ganendra Art House
2011 **Merdeka Award** for the 'Environment' category
2011 **Fast Company**, March Issue: TOP 10 Most Innovative Architect Firm
2010 **Green Good Design** Awards - Solaris (Fusionopolis)
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 **MARTRADE** Export Excellence Award: Winning Entry - Solaris
2007 **ASEAN** Energy Efficient Building Awards: 1st prize-'New & Existing' buildings
2007 **BCA Singapore** Silver Award: Universal Design
2006 **Lynn Beedle Award** (Council of Tall Buildings and Urban Habitat)
2006 **Royal Institute of Chartered Surveyors** (RICS) Award
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
2005 **World Association of Chinese Architects** (WACA): Gold Medal Award
2001 **Hunter Douglas** Competition (Open), Malaysia: Winning Entry
2000 **Beijing World Science & Trade Centre** Competition (Invited): Winning Entry
2000 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

meeting HH The Aga Khan (second left) at the Aga Khan Award for Architecture Ceremony in Marrakesh, Morocco. Ken Yeang received an Aga Khan Award

our ambition & goals

what defines us?

our ethos

..makes us what we are today..

management excellence:
our vision, mission, strategy, goals & action

saving the planet by design
"Vision is the art of seeing what is invisible to others."
- Jonathan Swift 1667-1745

to delivering the best & most advanced ecological design world-wide
designing to connect the human-made built environment seamlessly with the natural environment by nature-to-nature biointegration

by adopting a holistic nature-based approach

by creating innovative state-of-the-art solutions that are:
- functional (it 'works')
- makes people happy (enhance health & well-being)
- meet criteria (cost, time, quality, legislative)
- aesthetically fulfilling (beautiful and signature)
- hypergreen (sustainable)

by quick, efficient, timely & neat delivery

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NHY Architectural Engineering Design Co. Ltd.
(8 branches in China) (Contact: Y. Z. Song - CEO)
B-10, Guidu International Centre, Nanbine Road 27, Beijing
86 10 6342 7165 | board@nhydesign.com

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