Inspiring Leadership Summit 2014

Ocean Financial Centre

19 May 2014

Prime Location in the Heart of CBD

4^{th} Generation Building on Site

- The site occupied by OFC has 999-year lease term commencing from 22 June 1862
- Site has been redeveloped 4 times:

1864
1^{st} Generation Ocean Building

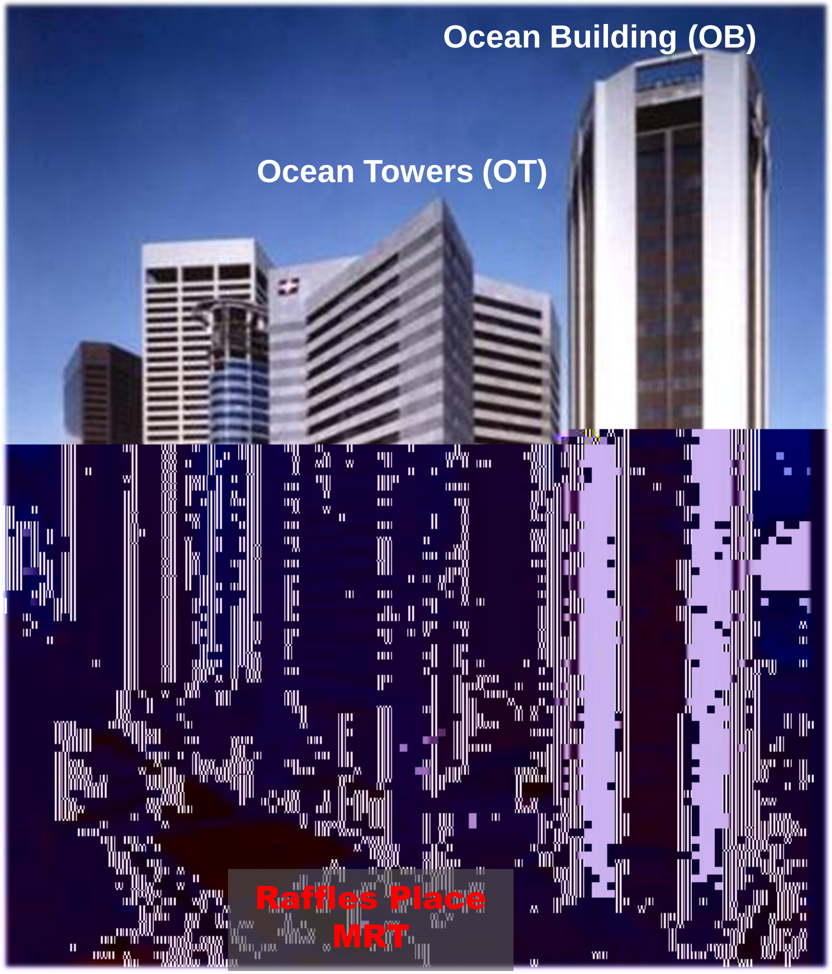
1923
2^{nd} Generation Ocean Building

1974
3^{rd} Generation Ocean Building

1992
Ocean Towers added

2011
4^{th} Generation Ocean Financial Centre

Issues Facing Ocean Building/Ocean Towers (c.2007)



Before redevelopment into Ocean Financial Centre

1) **Aging buildings (OB completed in 1974, OT 1992) and inability to compete with new buildings**
   - Low net lettable area efficiency (OT 69%, OB 75%)
   - Irregular / small floor plates
   - Obsolete plant & equipment; need to incur $25m capex to refurbish OT
   - Difficult to attract blue-chip tenants; may lose some anchor tenants to newer buildings (e.g. EY moved to One Raffles Quay)
2) **Coincided with Global Financial Crisis**
   - Capital rationing
   - Loan availability
   - Maintain profit / income

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Options & Long-Term Solutions

Unveiling the Ocean Financial Centre design in Oct 2007

Options Considered

- Redevelop or refurbish?
- Highest and best use?
- Include or exclude Ocean Towers for total / partial redevelopment?

Long Term Solutions

- Redevelop Ocean Building/Ocean Tower into a premier Grade A office building
- Engage world-renowned architect, *César Pelli,* to design the new iconic Ocean Financial Centre
- Participate in URA's Art & Lighting Incentive Schemes to increase the GFA by up to 4%
- Utilize additional GFA of 15% due to proximity to Raffles Place MRT Station
- Maximize total GFA to 1 million sf and building height to 245m (43-storey)

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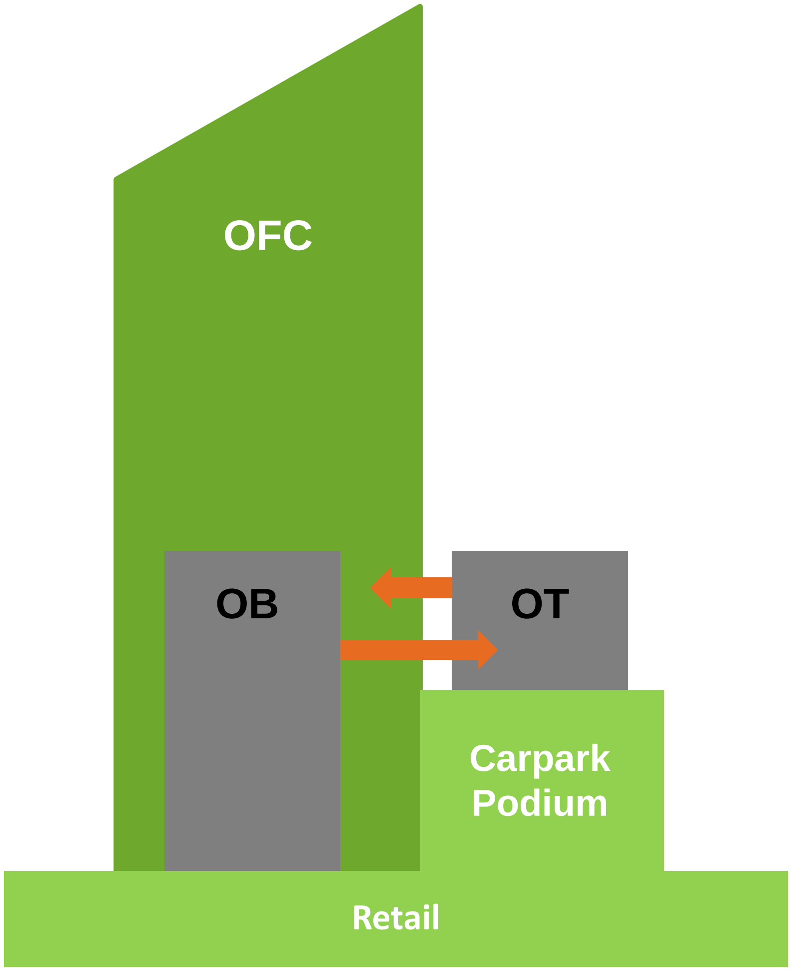
Strategy



Innovative Development Plan

Stage 1	Transfer existing tenants at Ocean Building to Ocean Towers
Stage 2	Demolish Ocean Building
Stage 3	Construct Ocean Financial Centre
Stage 4	Transfer existing tenants at Ocean Towers to Ocean Financial Centre
Stage 5	Demolish Ocean Towers
Stage 6	Construct car park podium

Key Benefits

1) Retain anchor tenants for Ocean Financial Centre (Drew & Napier, DMG, Verizon, iFast, etc. took up 220,000 sf or 25% of space in new building)
2) Continue to enjoy rental income from Ocean Towers during construction of Ocean Financial Centre
3) Shorten the development time frame
4) Capture the demand from upturn of market

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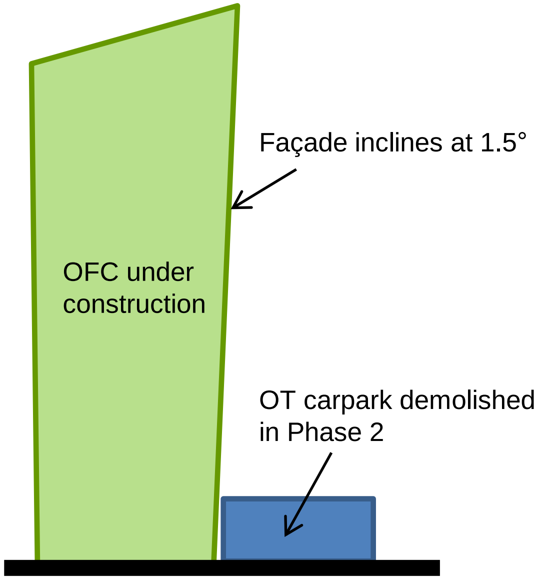
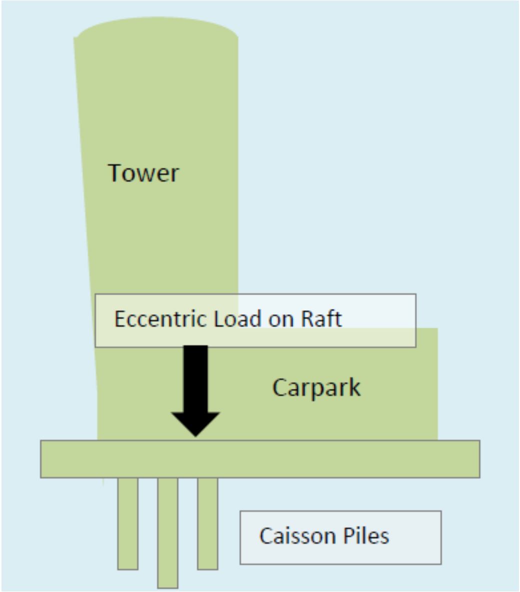
Key Challenges

- Securing approvals from authorities for simultaneous use of GFA for OT & OFC during reconstruction
- Tight & congested site
- Large floor plates of new building overlap into existing OT
- Existing separate foundations for OB & OT impose structural constraints
- Building is on top of Raffles Place MRT station
- Operation of OT & OFC at different stages requires careful planning and management (eg. handling of tenant complaints)



OFC overlapping into existing OT



Raft foundations of two existing basements stitched together and thickened by 3 to 4m to support the taller and heavier OFC

Ocean Financial Centre

A New Landmark at Raffles Place

- Completed the iconic Ocean Financial Centre in Apr 2011
- 43-storey with 885,000 sf NLA
- ~80% pre-committed to blue-chip tenants before completion
  (current occupancy: 99.1% as at Mar 2014)

ANZ BNP PARIBAS TRAFIGURA

DMG & Partners SECURITIES verizon

DREW & NAPIER STAMFORD LAW.

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Ocean Financial Centre

Comparison of Ocean Financial Centre & Ocean Building / Ocean Towers

Buildings	Ocean Building	Ocean Towers	Ocean Building / Ocean Towers	Ocean Financial Centre	Improvement
GFA (sf)	537,000	348,000	885,000	1,033,000	148,000 (+17%)
NLA (sf)	402,000	239,000	641,000	885,000	244,000 (+38%)
NLA Efficiency	75%	69%	72% (average)	86%	+14%
Completion	1974	1992	1974 / 1992	2011	Brand new
Building Height (storey)	29	27	28 (average)	43	15 (+54%)
Average Floor Plate (sf)	18,000	12,000	15,000 (average)	22,000	7,000 (+47%)

- Divestment to Keppel REIT for 99-year period
- Divestment generated a total gain of $877 million in 2011
- Contributed 64% of KLL record net profit of $1.37 billion in 2011

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Green Features at Ocean Financial Centre

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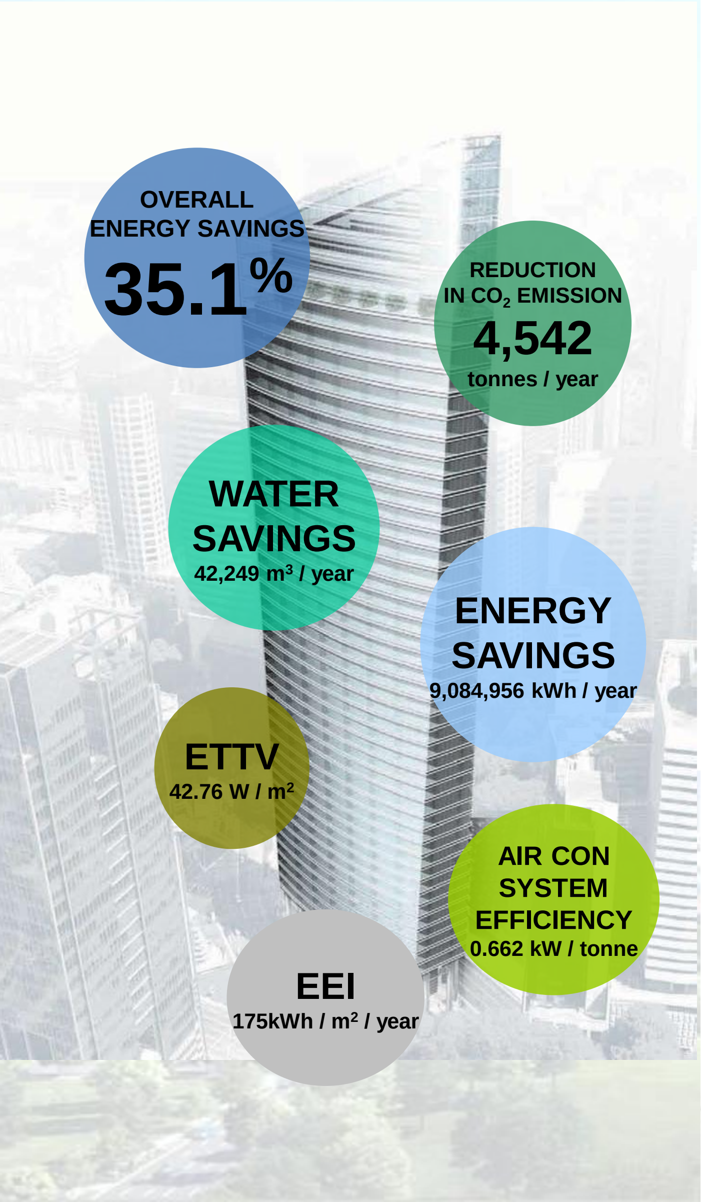
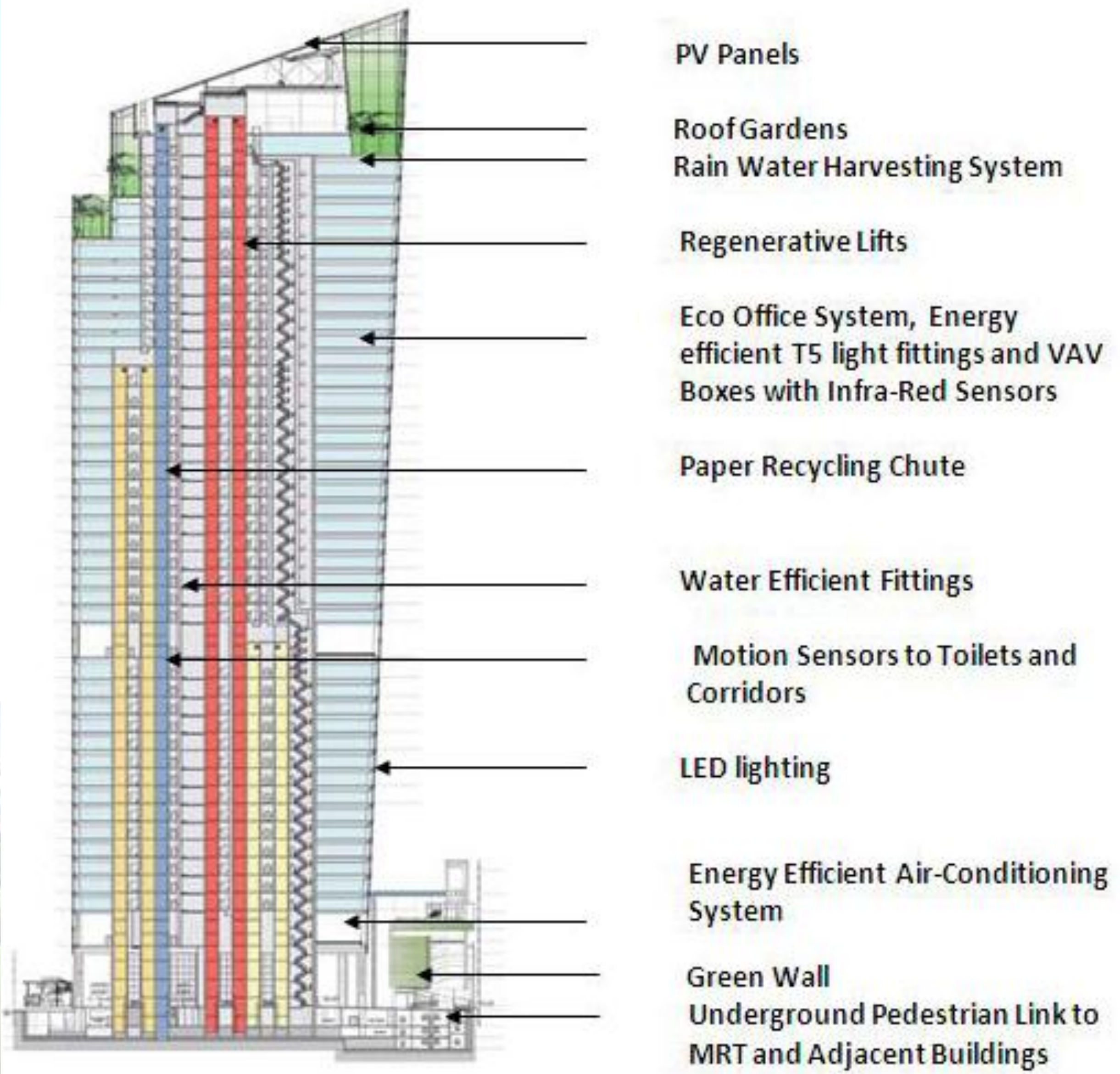
Summary of Key Green Features





Roof-Top Solar Panels

Largest PV cell area in office buildings: 400 sqm

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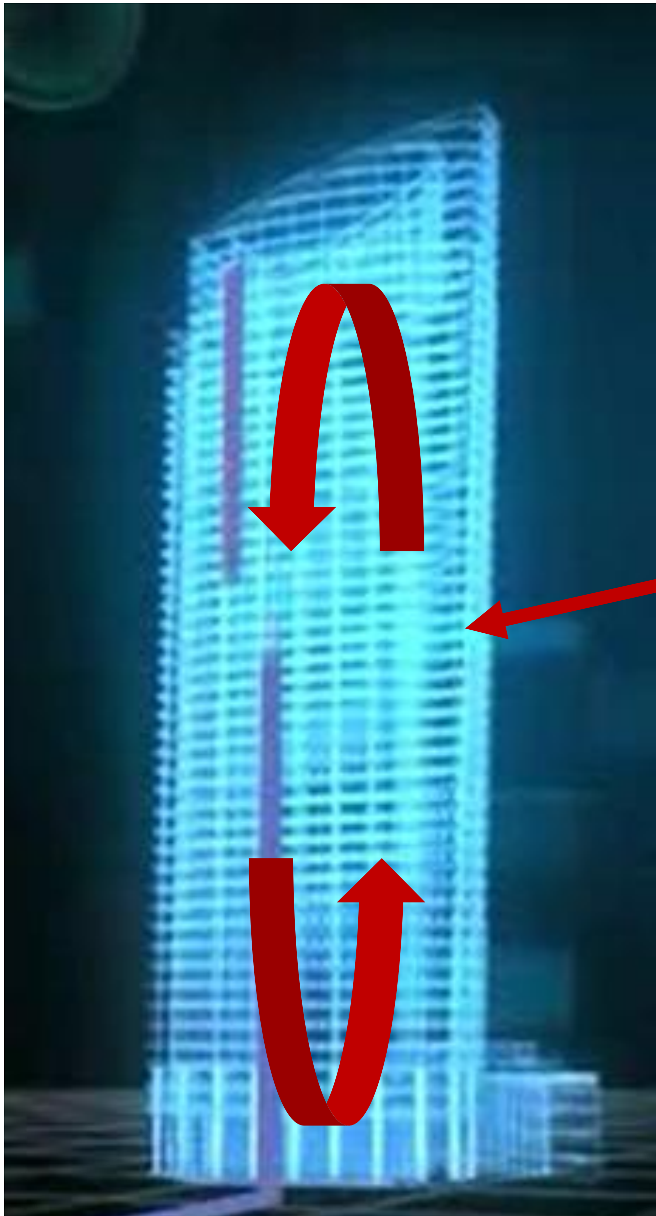
Hybrid Chilled Water System



<u>Only Office Building</u> in Singapore to use Hybrid Chilled Water System

Hybrid

District Cooling Supply (DCS)

In-house Chiller Supply

Energy savings: *3.58 million kWh/year*

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Centralised Paper Recycling

- Promotes conservation habit
- Up to **334 tonnes** of waste paper per year
- **5,685 trees** being saved per year

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Green Savings and Benefits

Energy Savings: ***9.08 million kWh*** *per year*

equivalent to powering 1600 homes in a year

Water Savings: ***42,249 m³*** *per year*

equivalent to 17 Olympic sized swimming pool

Operations Cost Savings: ***$2.63 million*** *per year*

Carbon Reduction: ***4,542 tonnes*** *per year*

equivalent to 22,000 trees saved annually

Blue Chip Tenants

ANZ
verizon
GAZPROM
BNP PARIBAS
STAMFORD LAW.
DREW & NAPIER

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Skyrise Greening at Ocean Financial Centre

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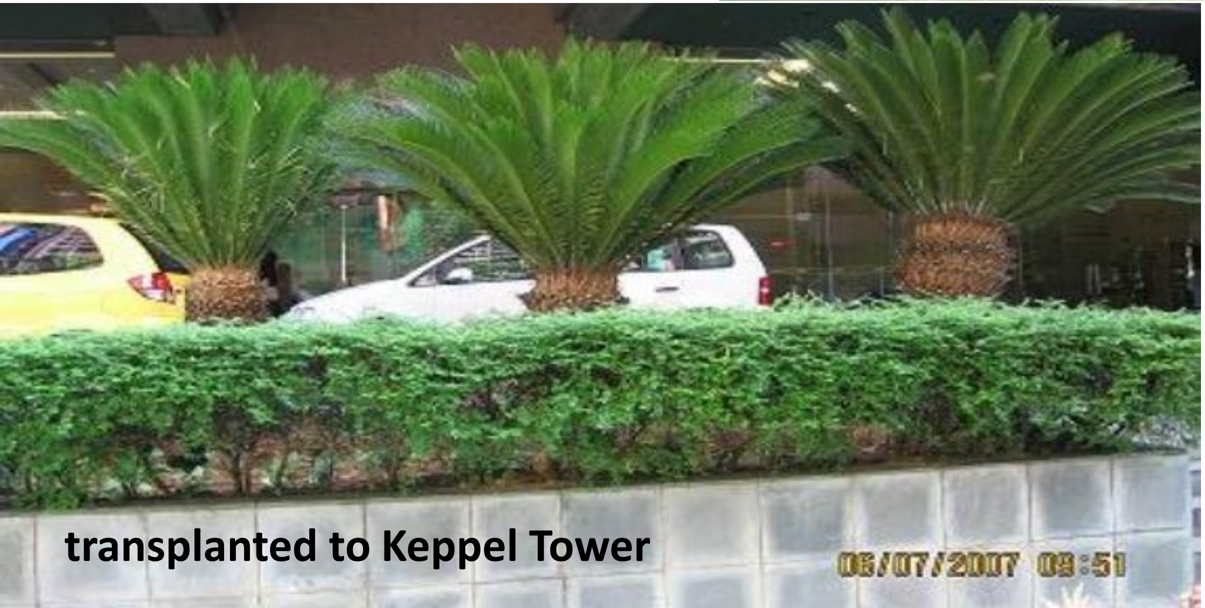
Roof Garden at old Ocean Building (1974 – 2007)



transplanted to Keppel Tower

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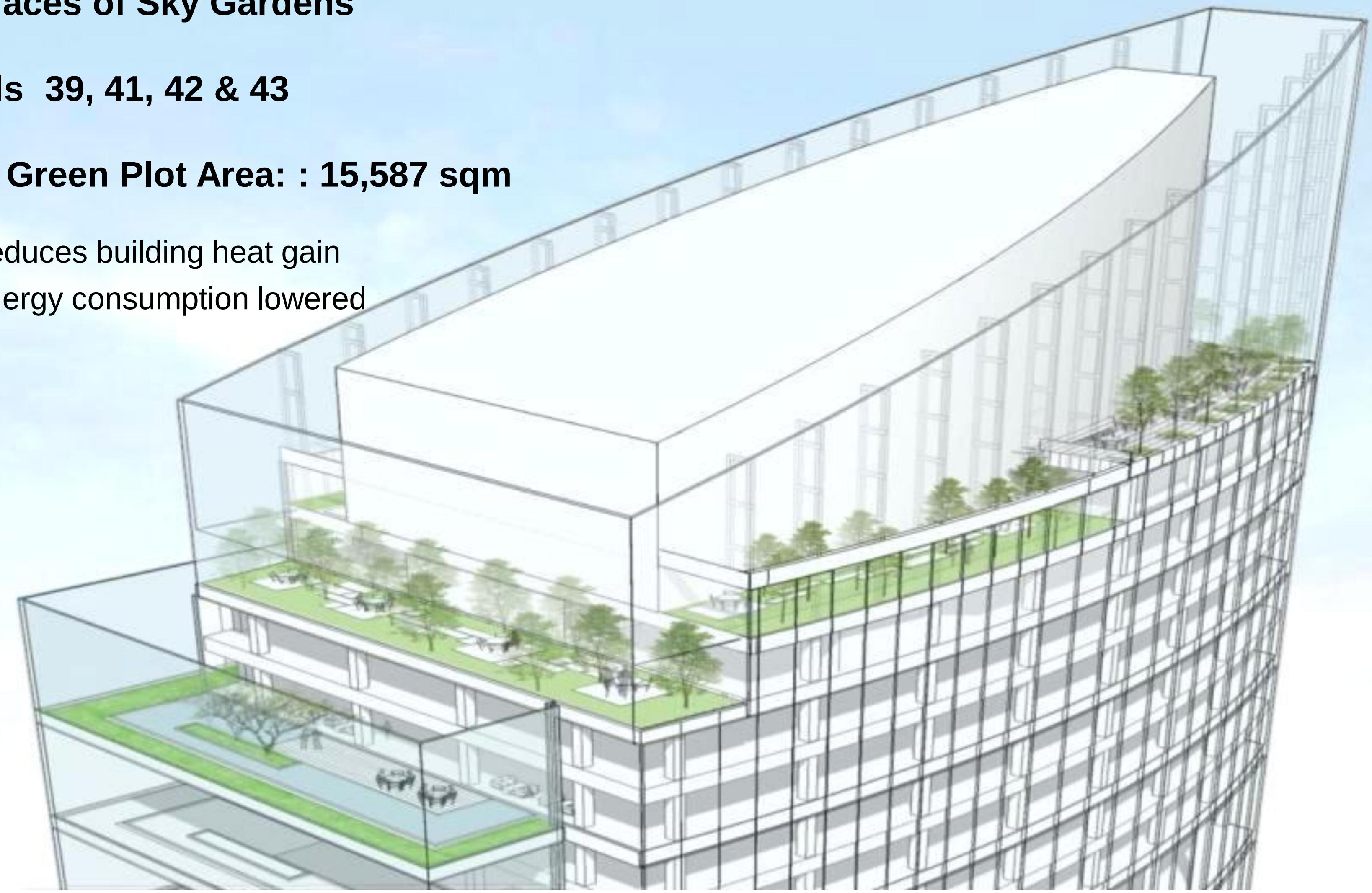
Sky Gardens

4 terraces of Sky Gardens

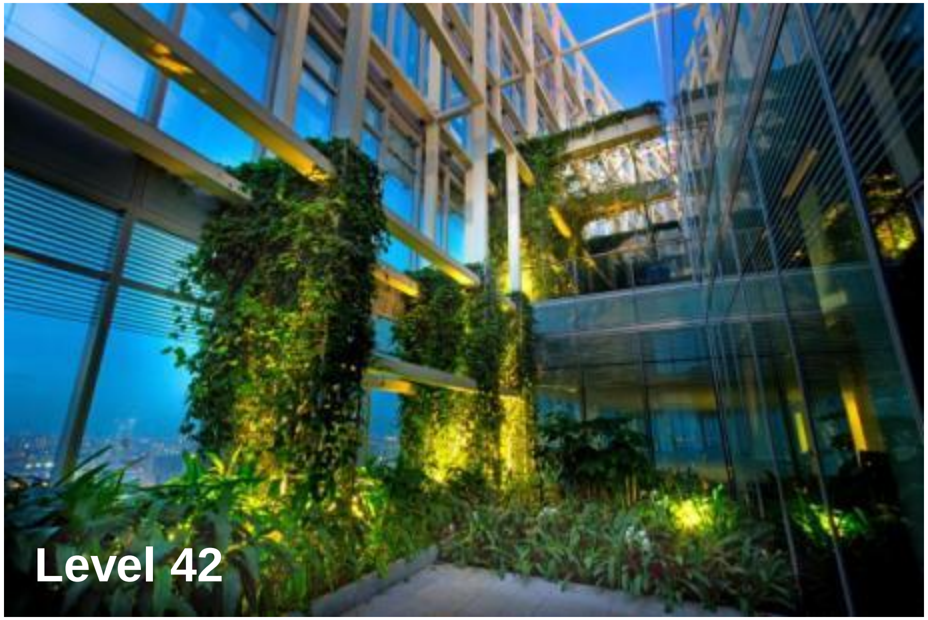
Levels 39, 41, 42 & 43

Total Green Plot Area: : 15,587 sqm

- Reduces building heat gain
- Energy consumption lowered



Sky Gardens



What's Unique about our Green Wall?

- ✓1st to implement Vertical Greenery screening for Carparks in CBD
- ✓"Au Natural" filtration system for vehicular emissions
- ✓"3D-enhanced" Greenwall
- ✓Proprietary "Lift, Tilt, Lock" pots system for enhanced safety
- ✓1-to-1 exact pot identification for the whole wall of 57,000 pots
- ✓Digital "Pixelation" ability
- ✓Fully automated 2-in-1 Irrigation and Fertilizer System
- ✓Efficient LED night lighting

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Green Wall Information

2 years of design & planning

Accelerated **15** weeks of installation

18,500 Man-hours to complete

25 species of plants

Total area: **2,125** sqm

Total pots: **56,968**

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Green Wall Lighting

"Cities at Night" lighting effect - Evening

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A New World Record!

13th September 2013

World's Largest Vertical Garden

Total Length – 110 m

Total Height – 19 m

Total species of plants – 25

Total planting pots – 56,968

Total verified area – 2,125 sqm
(8 tennis court)

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Safety Awards

Keppel Group Safety Innovation Award

- **2011** – Keppel Group Safety Innovation Award – Gold – Automatic Dust Trapper Mist Spray
- **2012** – Keppel Group Safety Innovation Award – Bronze – Customizable Safety Hatch Cover for openings
- **2013** – Keppel Group Safety Innovation Award – Gold – Tower Crane Proximity Sensors

WSH AWARDS

MOM Workplace Safety & Health Award

- **2011** – Ministry of Manpower Workplace Safety and Health – Performance Award for OFC
- **2012** – Ministry of Manpower Workplace Safety and Health – Developer's Award for OFC
- **2013** – Ministry of Manpower Workplace Safety and Health – Performance Award for OFC

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Urban Planning at Ocean Financial Centre

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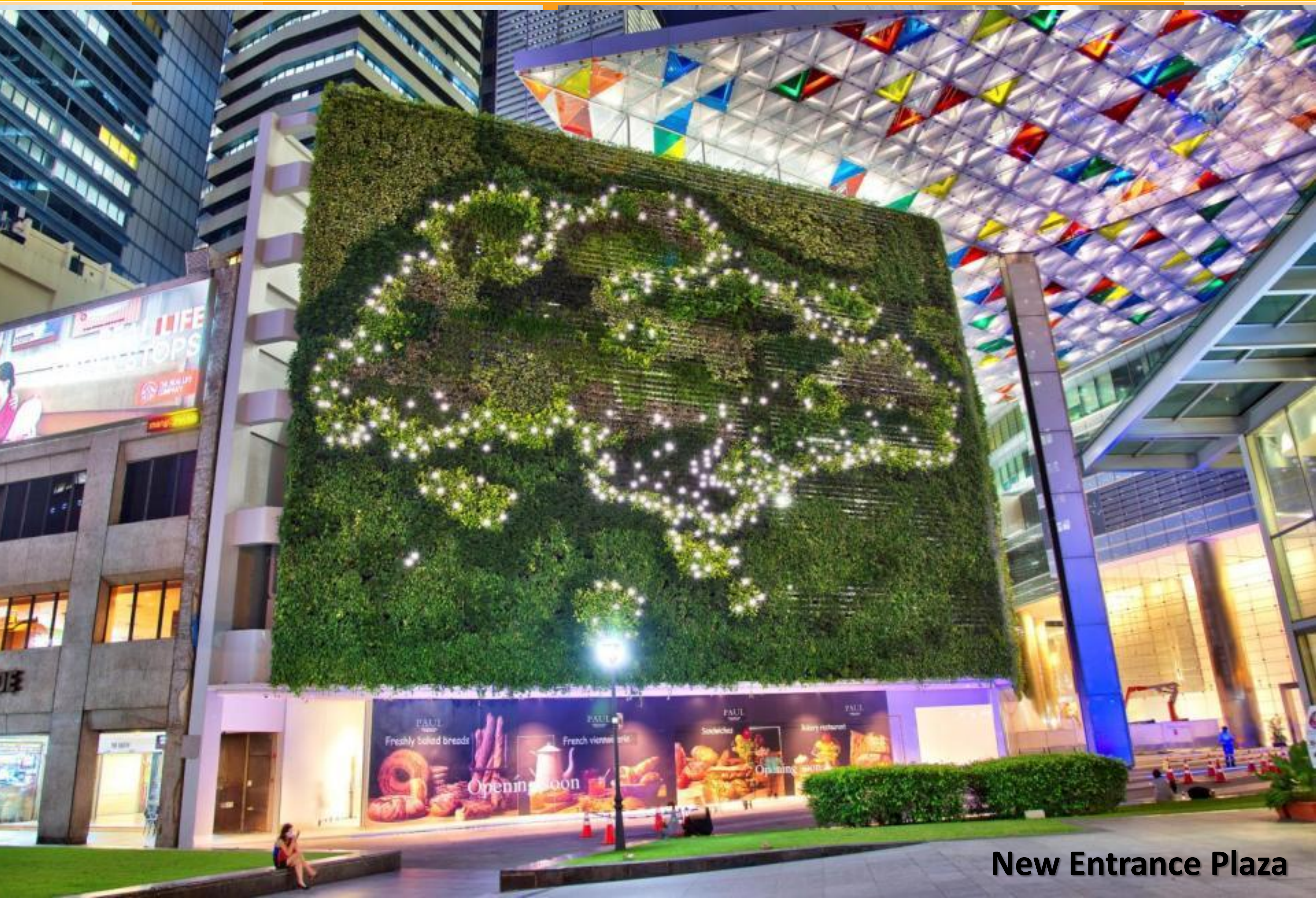
Covered Plaza Opening Out to Raffles Place Green



New Entrance Plaza

Retail Annex & Direct Connection to MRT Station

OCEAN COLOURS

SHINKANSEN
Lunch On The Fast Track

PAUL

WOO'S RICE BOX

Cedele

STARBUCKS

FRESH +

Retail annex along underground pedestrian network linking OFC directly to Raffles Place Interchange MRT Station

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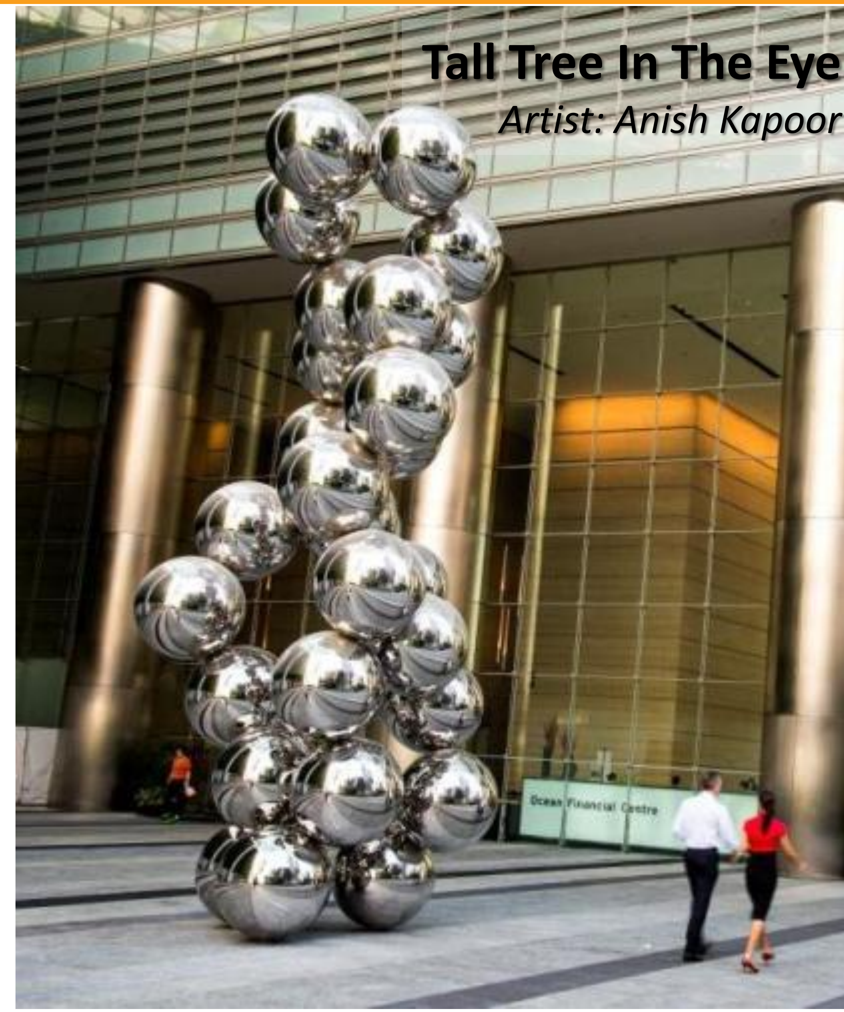
Art in Ocean Financial Centre

Singapore Soul
Artist: Jaume Plensa



Tall Tree In The Eye
Artist: Anish Kapoor

School of Fish
Artist: Jane Cowie

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Awards & Accolades

- **1st BCA Green Mark Platinum** awarded for high-rise office building in Singapore's Central Business District (2008)

- **1st** high-rise office development **in South East Asia** to be conferred with **LEED Platinum** Pre-Certification, Core & Shell (2009)

- **Best Developer – Green Development (Future) Award (2009)**
  Cityscape Asia Real Estate Awards

- **Best Green Development Award (2011)**
  South East Asia Property Awards

- **World's Best Commercial High Rise Development (2012)**
  International Property Awards

- ***World's Largest Vertical Green Wall (2013)***
  Guinness World Record

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Questions to consider

Q1. Elevated to eco icon status, the Ocean Financial Centre is the first high rise office development in Southeast Asia to be conferred the prestigious Platinum Level LEED-CS certification under the US Leadership in Energy and Environment Design (LEED) Green Building Rating System. How was the idea of complementing green sustainability and profitability addressed on the project?

Q2. There were many considerations when deciding to redevelop the Ocean Financial Centre amidst the aftermath of the Asian Financial Centre in 2008. Thinking unboxed, how/what would you have done differently on the redevelopment of the building?

Q3. What are some learning points from the case study that can be adapted or implemented for other Business Units across Keppel Group?

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