

Webinar: Climate Change Mitigation: What can you do right now?

Achieving an ambitious emission targets in building management

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ACHIEVING AN AMBITIOUS EMISSIONS TARGET

Dr. Raymond Yau – General Manager, Technical Services and Sustainable Development

February 22, 2022

Green Council – Webinar on Climate Change Mitigation: What can you do right now?

Swire Properties Established in 1972



We are a leading developer, owner and operator of office, retail, hotel and residential properties, with a particular focus on mixed-use investment developments in Hong Kong, Chinese Mainland and Miami, U.S.A., with a presence in Singapore.

June 2021

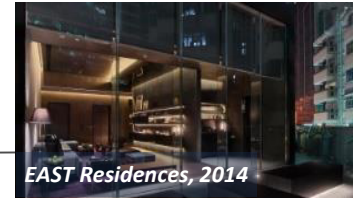
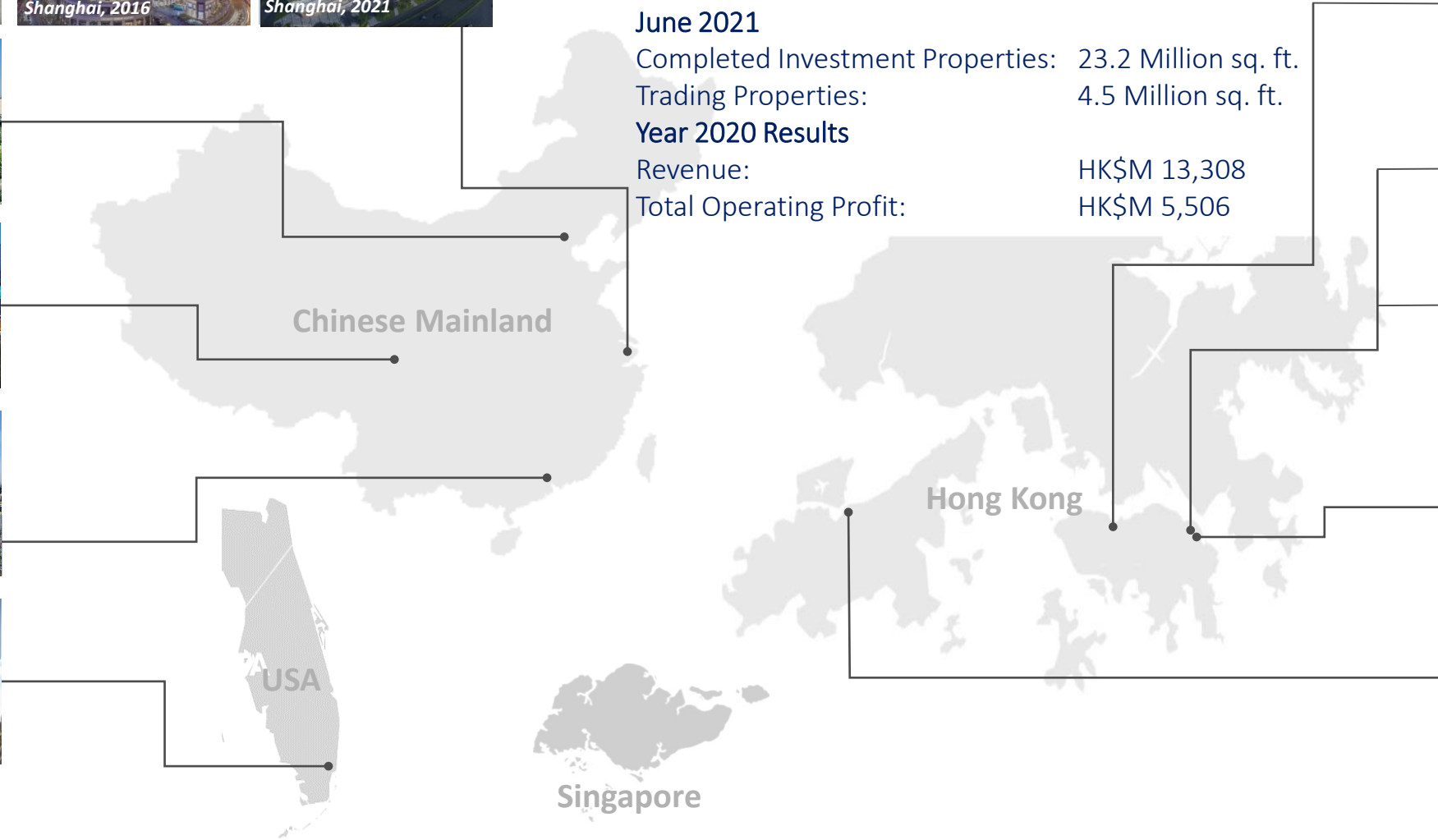
Completed Investment Properties: 23.2 Million sq. ft.

Trading Properties: 4.5 Million sq. ft.


Year 2020 Results

Revenue: HK\$M 13,308

Total Operating Profit: HK\$M 5,506



PERFORMANCE AMONGST TOP SD LEADERS


 Hang Seng Corporate
Sustainability Index
Series Member 2021-2022



Top Company
since 2018



Global Sector Leader
since 2017¹

Member of
**Dow Jones
Sustainability Indices**
 Powered by the S&P Global CSA

Ranked 7th Globally
 Sole Constituent from HK
 in DJSI World (since 2017)



'AAA' rating (since 2018)²



Sustainability Yearbook
 Member 2022
S&P Global

2017-2022



FTSE4Good
 2016-2021



2017 Winner
 (Energy Management Initiative Award)
 2020 Finalist
 (Project of the Year – Retrofit)



ASHRAE Technology Awards
 2018,2019 Regional Award
 2021 Global First Place
 (Commercial Buildings – EBCx)

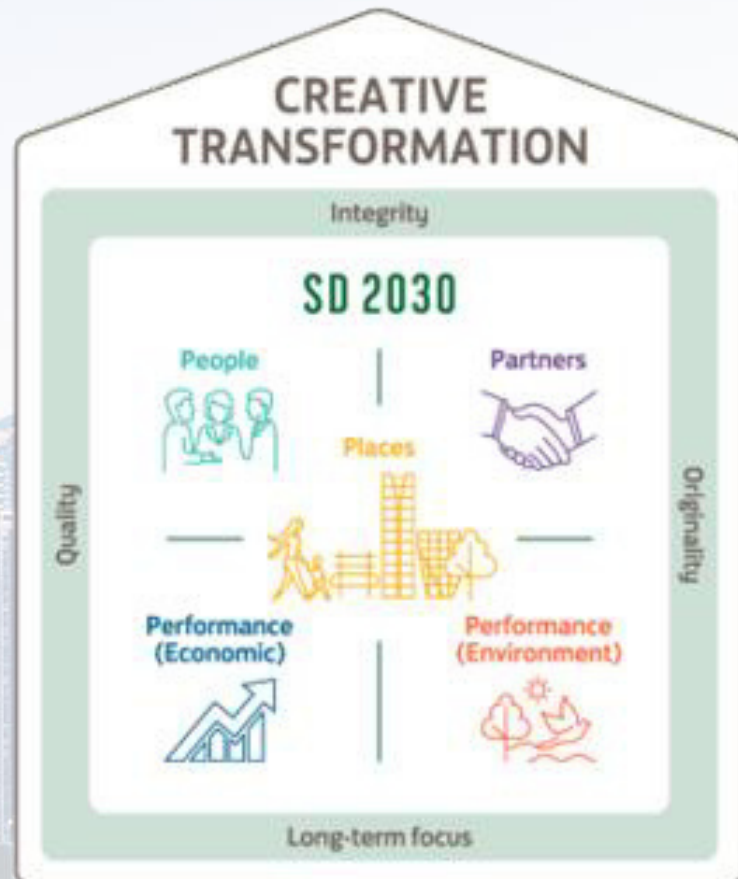
¹ Mixed-use development category

² Disclaimer: www.swireproperties.com/sd/awards/mscidisclaimer.html

SUSTAINABLE DEVELOPMENT (SD) 2030 STRATEGY

ESG STRATEGY ALIGNED WITH U.N. SUSTAINABLE DEVELOPMENT GOALS

SD Vision: “To be the leading SD performer in our industry globally by 2030”



BUSINESS AMBITION FOR 1.5°C  

SCIENCE-BASED TARGETS (SBT)

LONG-TERM DECARBONISATION ALIGNED WITH 1.5°C PATHWAY



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



Scope 1 & 2
Absolute GHG Emissions

↓ **25%** By 2025

↓ **46%** By 2030
2019 base year

1.5°C

2019
Swire Properties'
SBT (2°C-aligned
Decarbonisation
Pathway)
Approved

2020
Committed to
Business Ambition
for 1.5°C

**BUSINESS
AMBITION FOR 1.5°C**

2021
Swire Properties'
SBT (1.5°C-aligned
Decarbonisation
Pathway)
Approved in Sep
2021

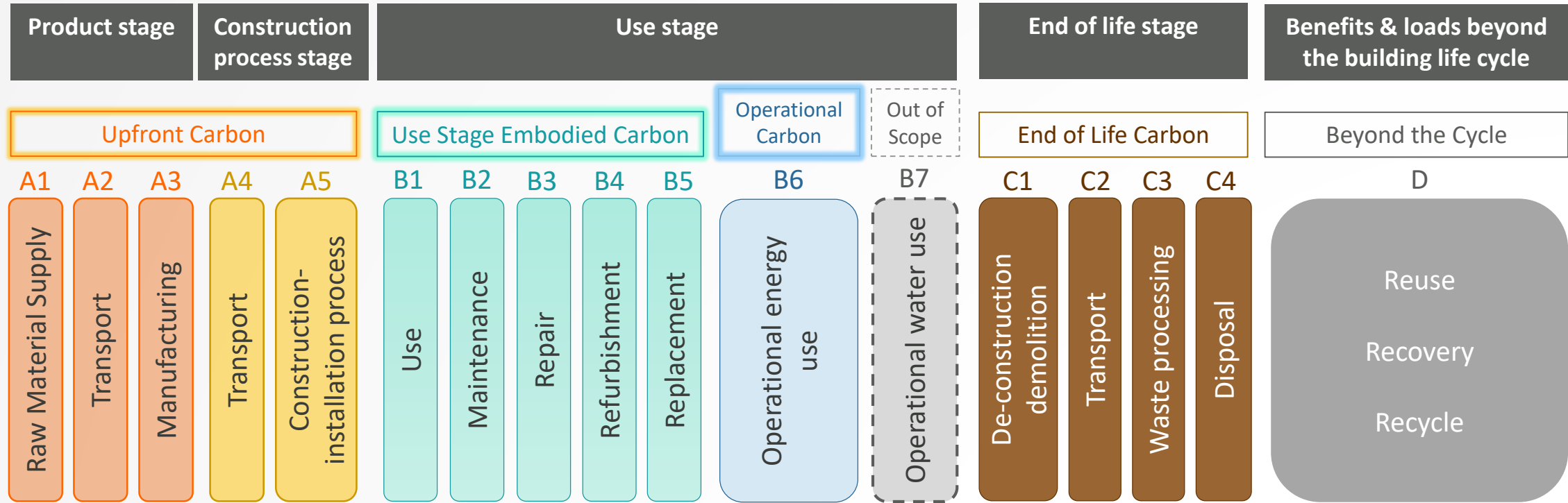
Scope 3

Downstream Leased Assets – GHG Intensity	Capital Goods – GHG Intensity
↓ 28% By 2030 2018 base year	↓ 25% By 2030 2016-2018 base year

1st real estate developer in Hong Kong and the Chinese Mainland to have an approved 1.5°C-aligned SBT paving way to net-zero emissions by 2050



MANAGING WHOLE LIFECYCLE CARBON EMISSIONS OF BUILDINGS



WORLD GREEN BUILDING COUNCIL

BRINGING EMBODIED CARBON UPFRONT REPORT

LINKAGE WITH SD2030 STRATEGY



Scope 3 – Capital Goods



Sustainable Procurement Targets and Green Specifications



Scope 1&2 Scope 3 – Downstream Leased Assets

Water Reduction Targets

Waste Diversion & Recycling Targets for Demolition & Construction Waste

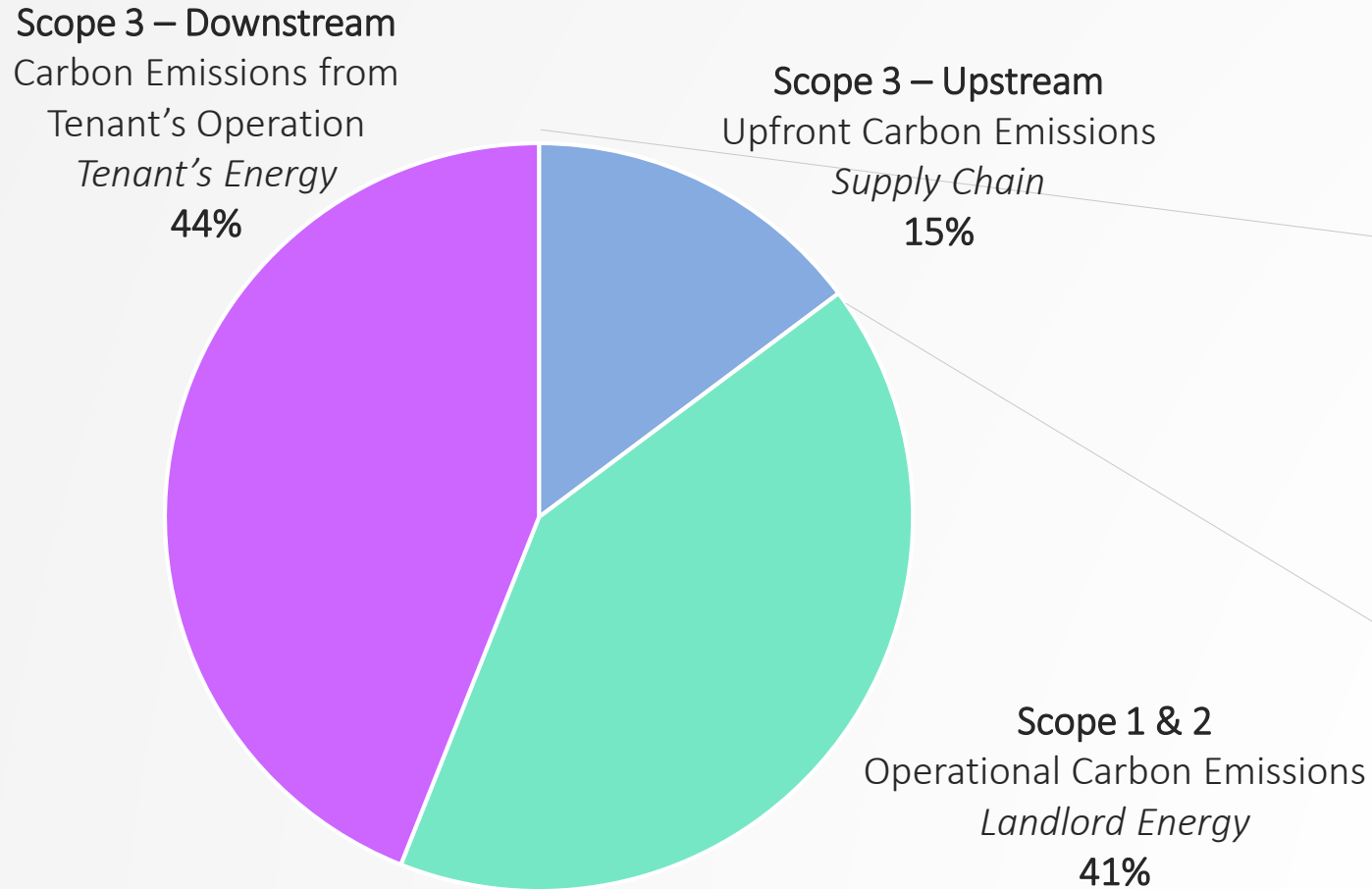
Waste Diversion & Recycling Targets for Commercial Waste

BS EN 15978:2011

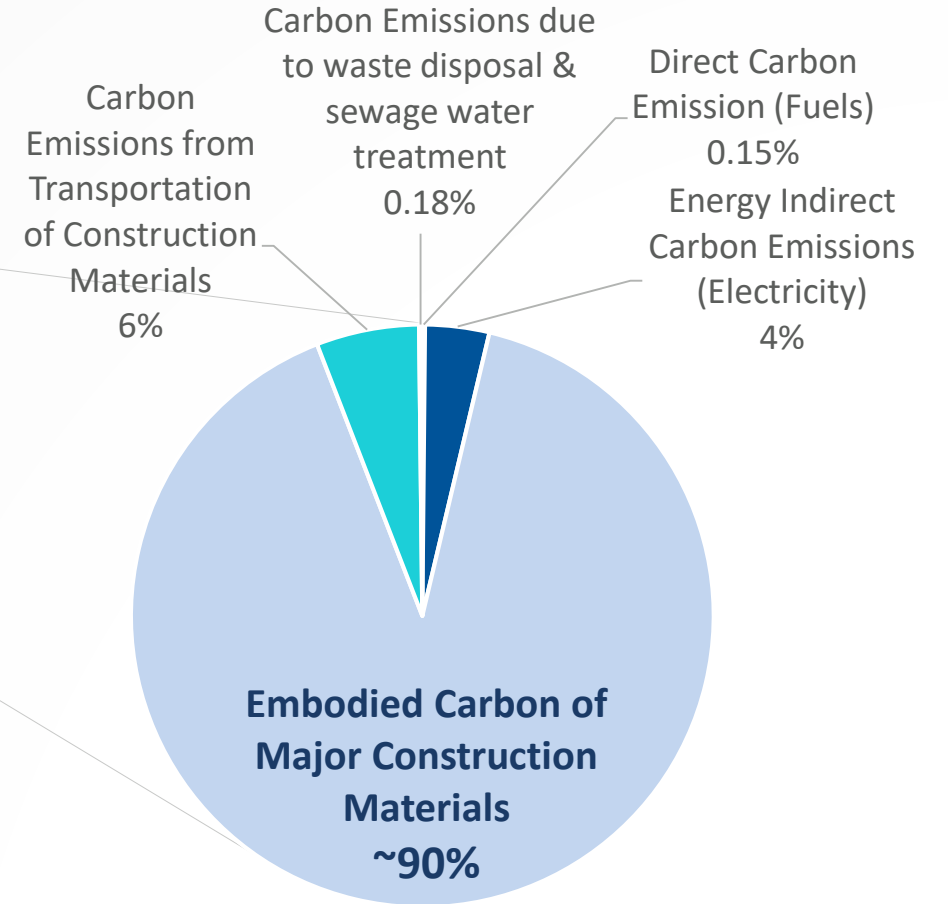
Green Financing (Green Bonds, Green Loans and Sustainability-linked Loans)

UPFRONT EMBODIED CARBON VS WHOLE LIFE CYCLE EMISSIONS

Estimated Whole Life Cycle Carbon Emissions of a Building in HK



Cradle-to-site Carbon Emissions of One Taikoo Place (Case Study)

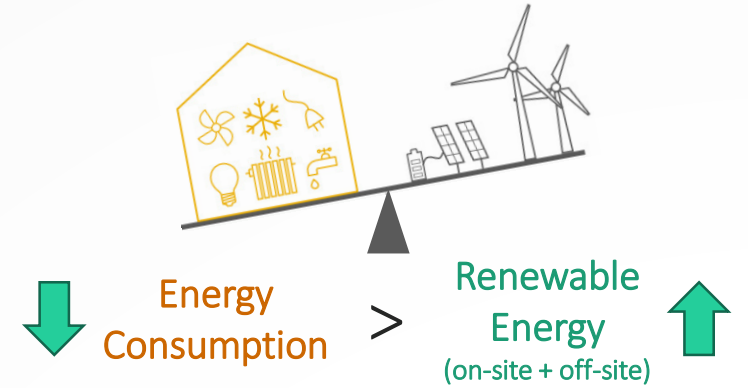


NOTE:

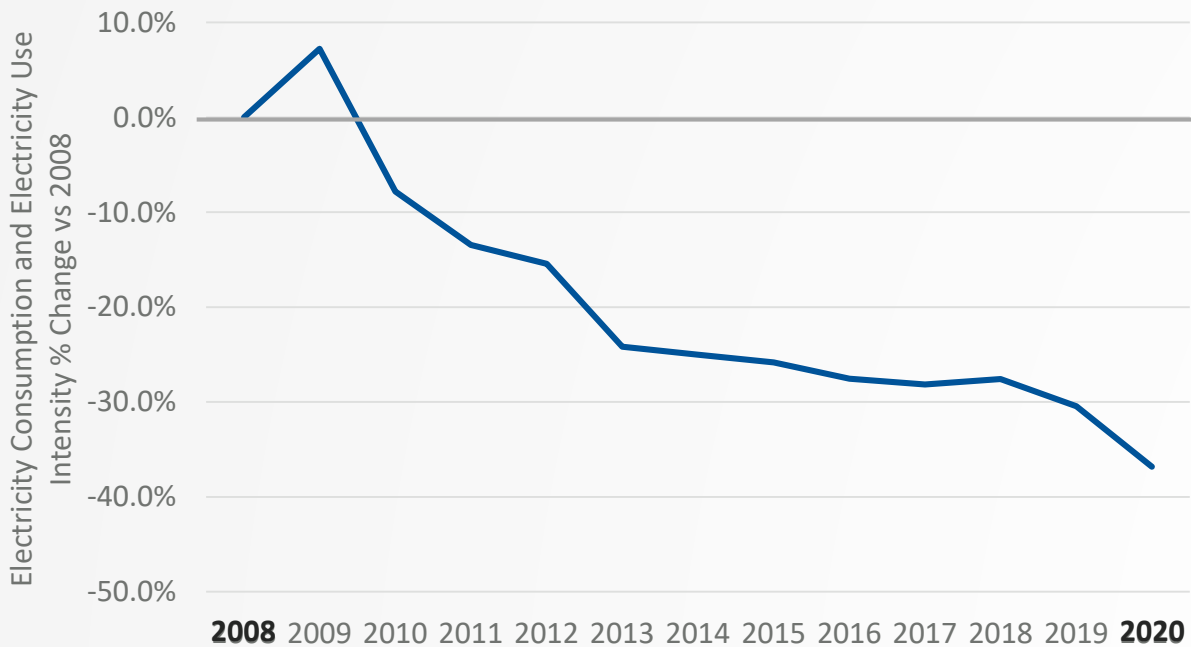
- Operational emissions were estimated based on a 50-year life cycle
- The estimation excludes embodied carbon emissions of building services equipment and refurbishment, retrofit and fit-out projects in the 50-year life cycle

SCOPE 1 & 2 EMISSIONS – PATHWAY TO 2030

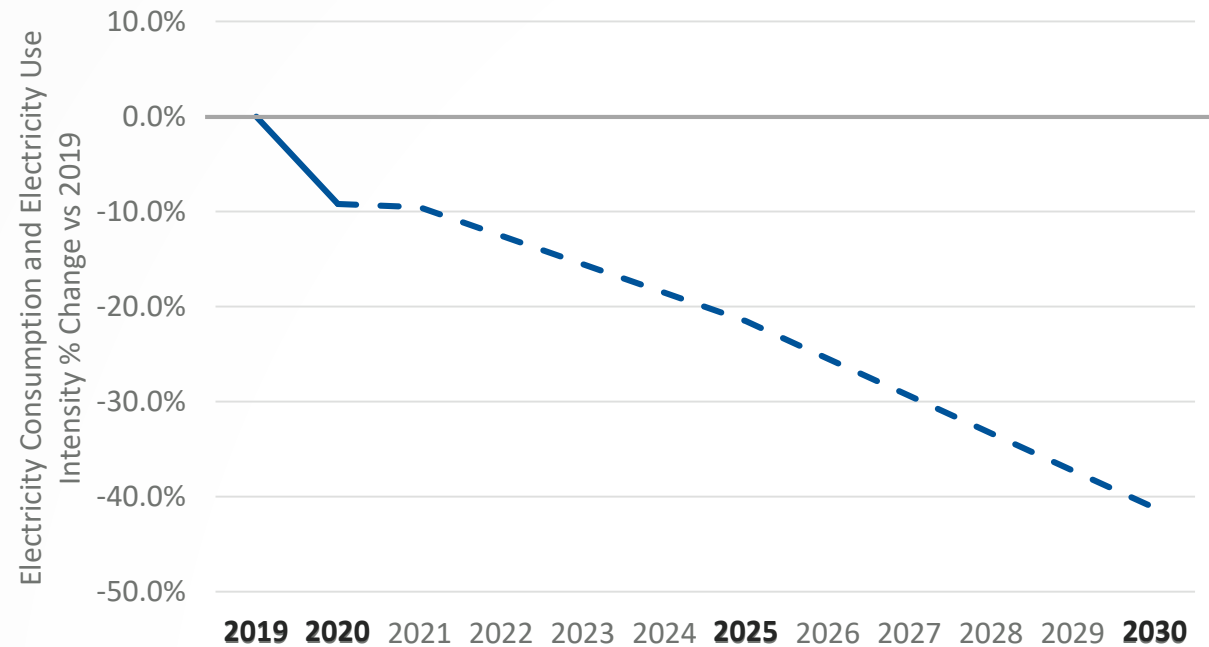
- From 2008 to 2020 we have already reduced our Investment Portfolio's EUI by ~37%
- To achieve our SBT 1.5°C targets, from 2019 to 2030 we would need to further reduce energy consumption



Historical Trend



Projected Trend



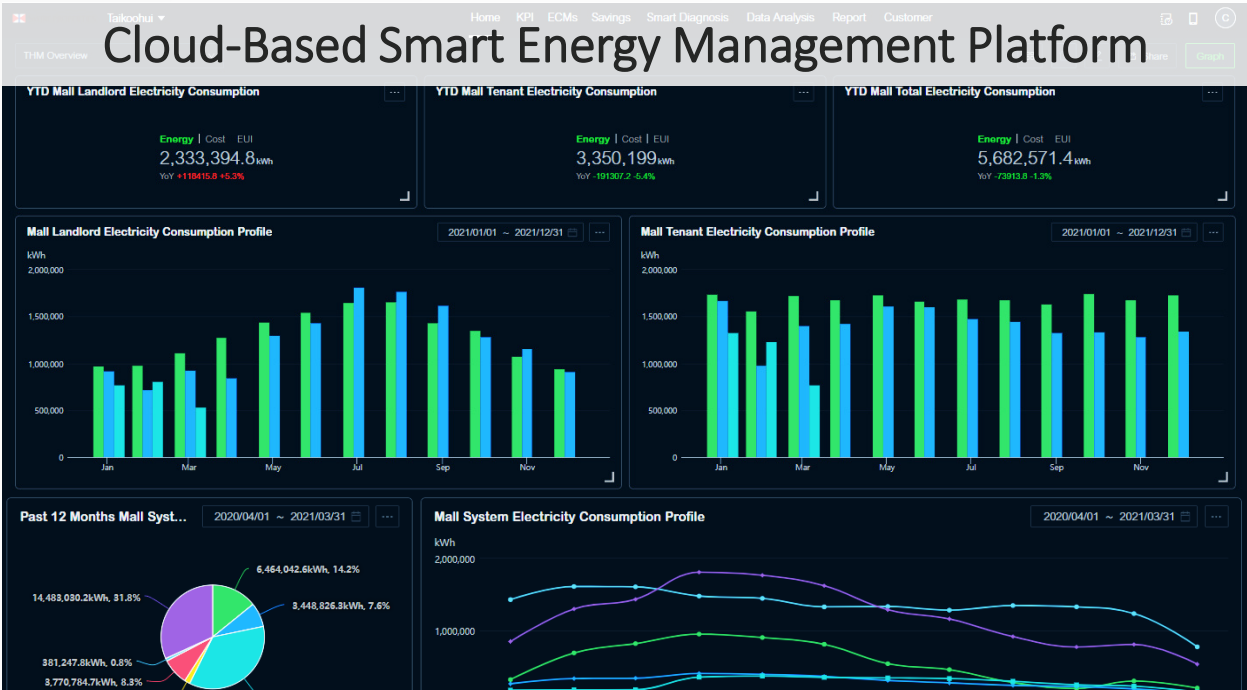
The above EUI and GFA encompasses all of Swire Properties investment portfolio (office, retail, hotel, apartment, and restaurant)

MANAGING EXISTING BUILDINGS

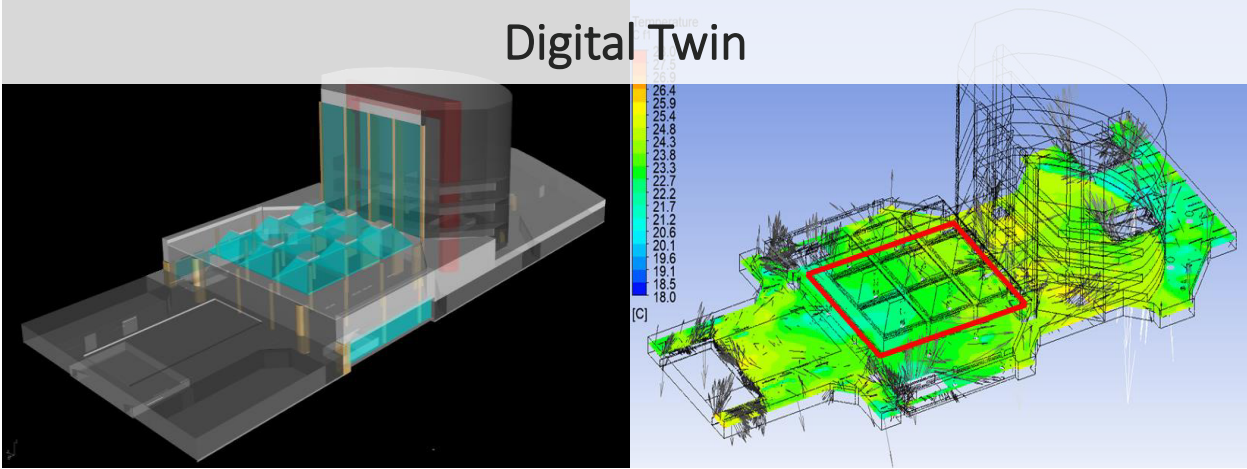


Equipment Replacement & Upgrading
e.g. EC Motor Plug Fans – estimated >7.5M kWh savings

Digitizing Technical Services



MBCx & Collaboration with Tsinghua University
since 2016, identified ~19M kWh savings



RESPONDING TO CHINA'S ACTION PLAN

PHOTOVOLTAIC, ENERGY STORAGE, DIRECT CURRENT, FLEXIBLE POWER (光儲直柔)

The State Council
The People's Republic of China

SPROPS to pilot a DC Microgrid
Implementation of Pilot: 2022

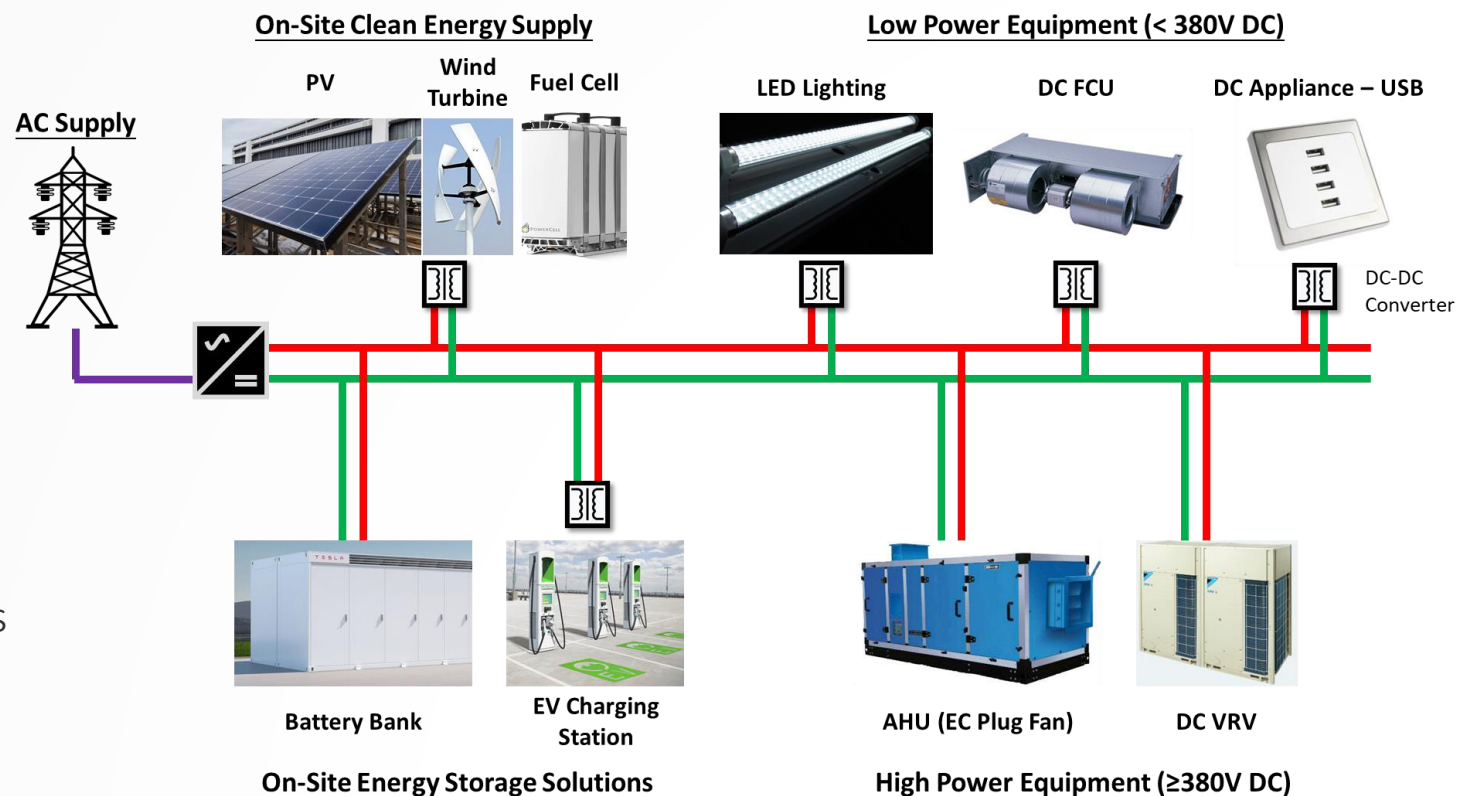
ACTION PLAN FOR CARBON DIOXIDE PEAKING BEFORE 2030

October 26, 2021

Section 4.(c)

“We will work deeply to promote the use of renewable energy in buildings, and expand the integration of photovoltaics into buildings.”

“We will increase proportion of buildings' energy consumption on electricity, and construct buildings integrating photovoltaic power generation, energy storage, DC power distribution, and flexible power consumption.”



INVESTMENT ON RENEWABLE ENERGY

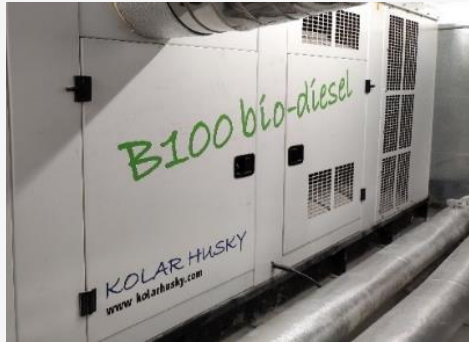
Onsite Renewable Energy Generation



135,500 kWh

One Taikoo Place, Hong Kong

HK's 1st
bio-diesel powered
tri-generation and absorption chiller
system in commercial building



200,000 kWh

INDIGO, Beijing



32,700 kWh

Taikoo Hui, Guangzhou

Offsite Renewable Energy Procurement



~57,690,000 kWh

Taikoo Hui, Guangzhou

Sourced offsite 100% renewable
electricity since Jul 2021



~40,700,000 kWh

Sino-Ocean Taikoo Li Chengdu
& The Temple House, Chengdu

Sourced offsite 100% renewable
electricity since 2020 and 2021
respectively



- 28% of our Chinese Mainland landlord's electricity is sourced from renewable electricity
- Reducing ~35,450 tCO₂e/year

NEW PROJECTS

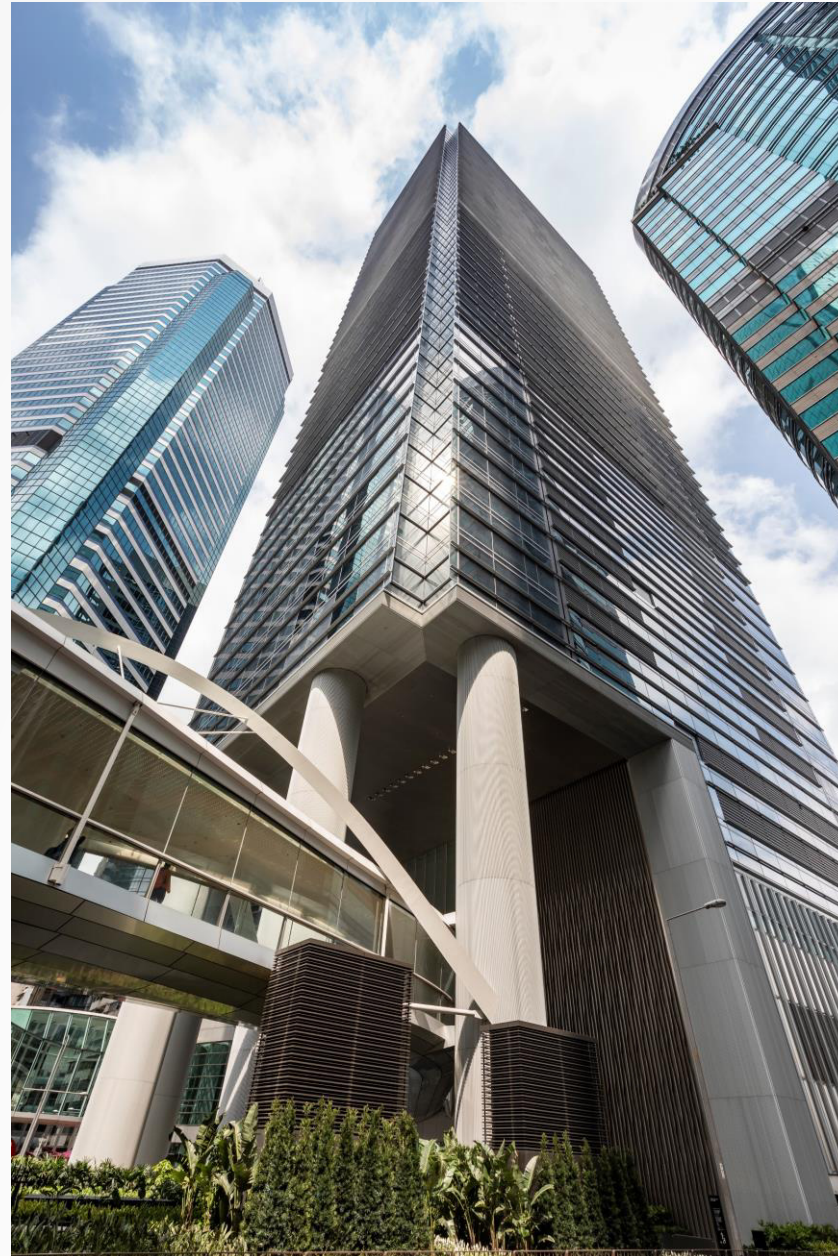
ONE TAIKOO PLACE

Selected Features

- Waste-to-Energy (Tri-generation CCHP)
- PV System and Greenery Integration
- EC Plug Fan AHU System
- Energy Recovery / Free Cooling
- AI Chiller Plant Control
- High Performance Façade & Permeability Design

Achieving

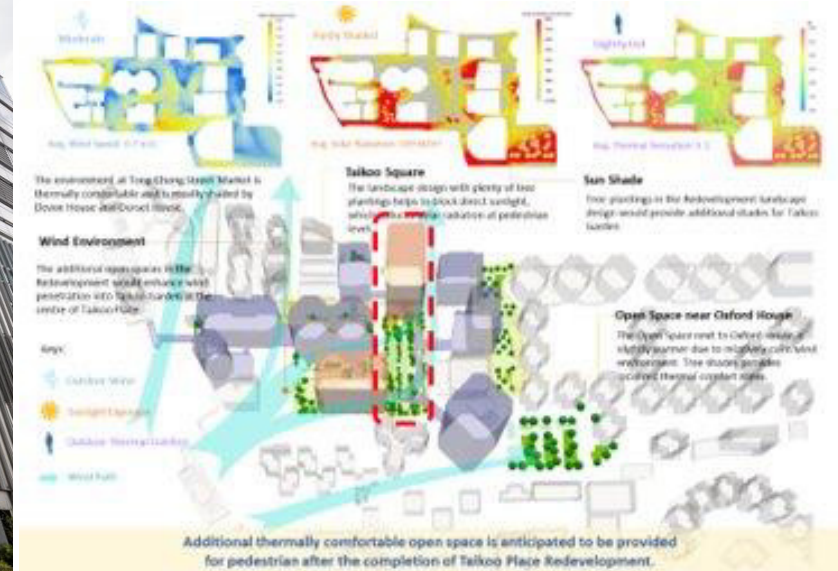
- **33%** Saving compared to BEAM Plus (based on BEC Code 2012)
- **28%** Saving compared to LEED (based on ASHRAE 90.1 2007)



Active Design



Passive Design



EMBODIED CARBON



Measured Carbon Emissions from:

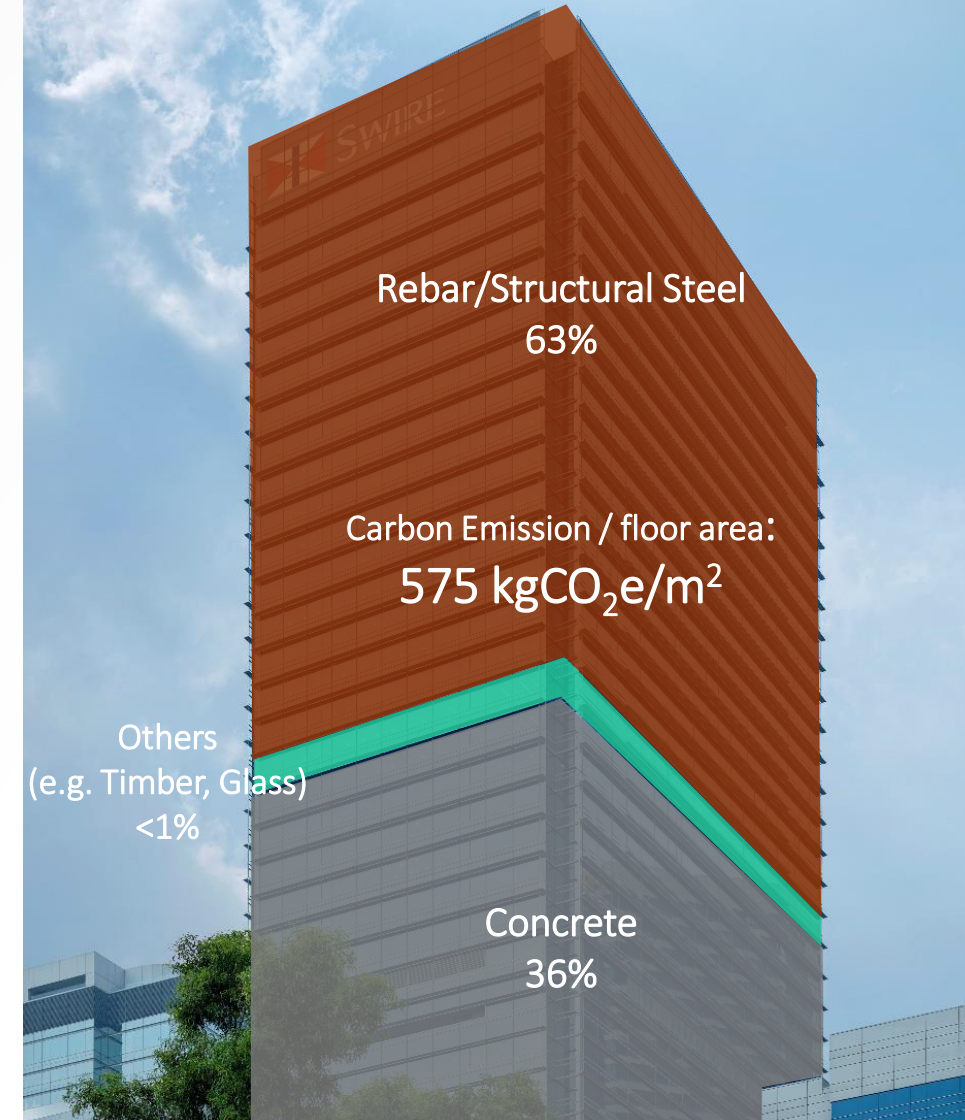
- Major construction materials used
- Transportation of construction materials from factory to site
- Onsite construction activities

Automatic Measurements of Carbon Emissions from Building Materials and Construction for Sustainable Structural Design of Tall Commercial Buildings
<https://sd.swireproperties.com/2020/pdf/en/IPC2020-hkust-swire-properties-academic-paper.pdf>

Management Strategies

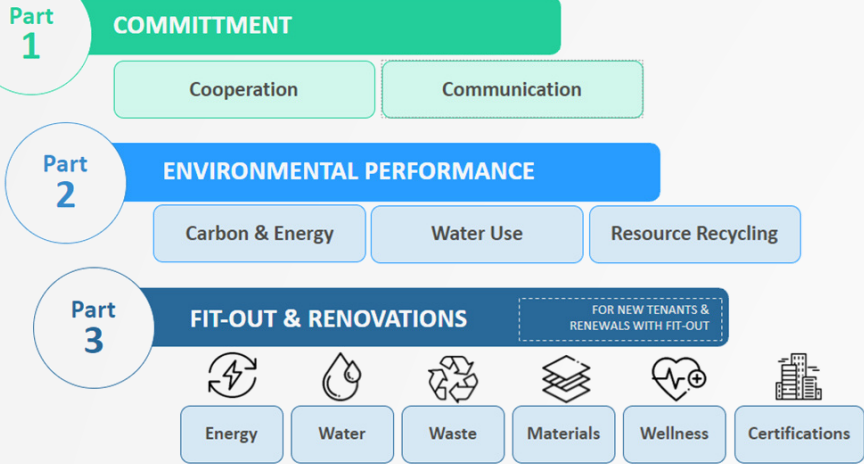
- Procure construction materials with **lower embodied carbon** wherever applicable
 - **Concrete:** 25% - 35% PFA as cement substitutes
 - **Rebar / structural steel:** more recycled steel content, and EAF steel that can adopt up to 100% of recycled steel)
- More efficient use of materials through **structural optimisation and design**
- Introduced **low-carbon procurement specifications**
- Specified **performance-based targets** on embodied carbon
- Early **electrification** of construction sites

Cradle-to-site Embodied Carbon of One Taikoo Place (For Construction Materials)



TENANT ENGAGEMENT

Green Performance Pledge (for Office)

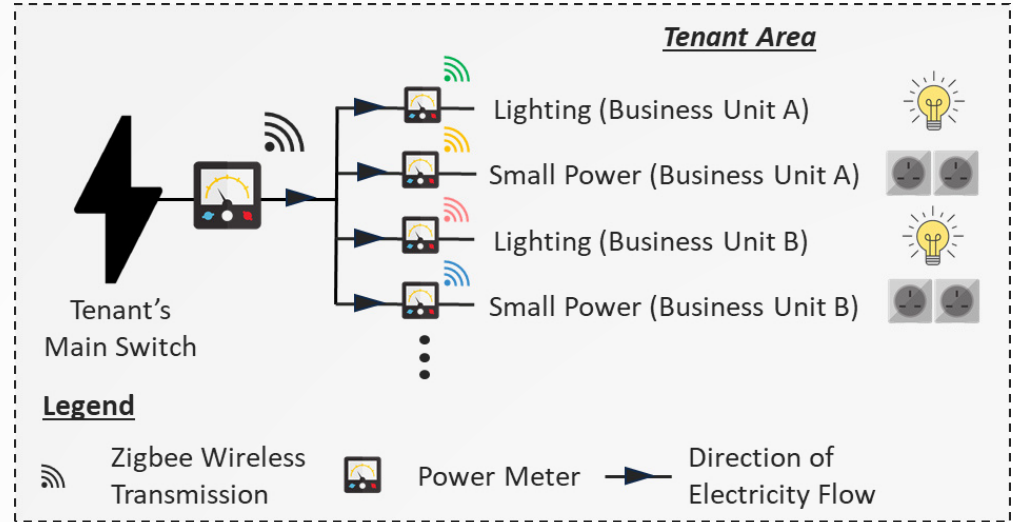


2025 Target:

50%

of office tenants in wholly-owned portfolios sign the Green Performance Pledge to jointly improve environmental performance

Tenant Power Metering System



Green Kitchen Initiative



45 F&B tenants recognised with **Green Kitchen Awards**

Smart Waste Reduction



10 office tenants
5 SPROPS teams
260+ Spare-it scales

CLIMATE ADAPTATION AND RESILIENCE

FUTURE-PROOFING OUR GLOBAL ASSETS

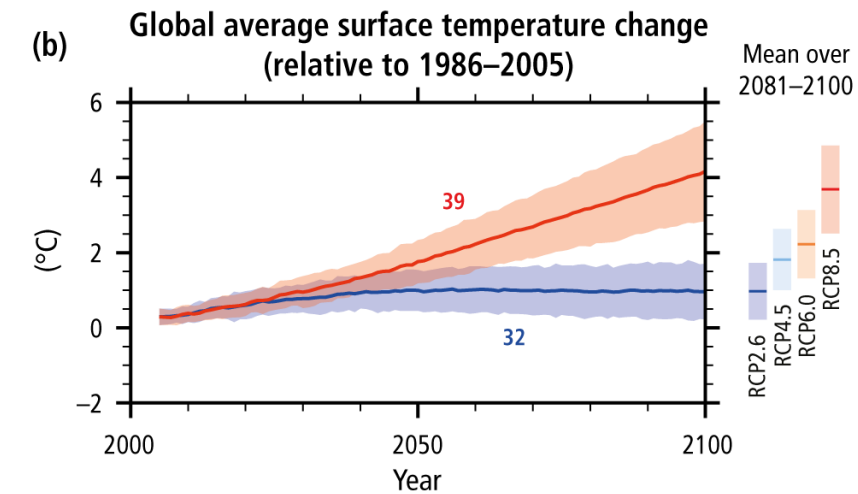
Physical Risks

- Completed physical risk assessment on global assets with **4 climate scenarios**¹
 - RCP 2.6**
 - RCP 4.5**
 - RCP 6.0**
 - RCP 8.5**
- Overall **low to moderate** level of risk of flooding, heat stress, water stress, and extreme wind
- Identified **short and medium-term** measures for individual buildings that will mitigate risks and building resilience

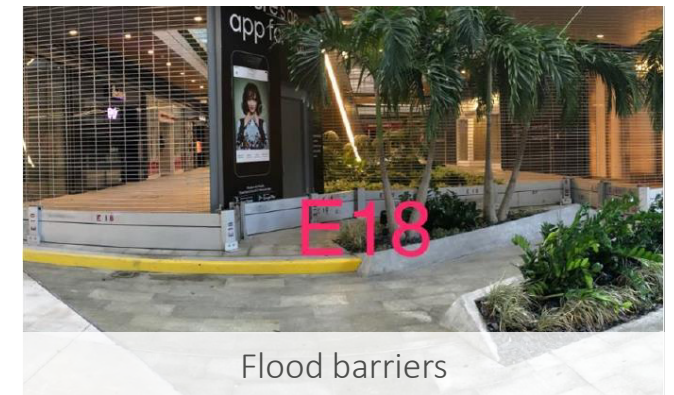
Transition Risks

- Identified global and regional regulatory, technological and market risks and opportunities in the transition to a low carbon economy
- Working to prioritize risks and opportunities to enhance business strategy and risk management

¹ IPCC — Intergovernmental Panel on Climate Change

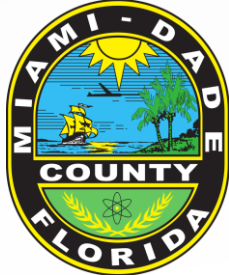


Ejector wells; electric and gas-powered sump pumps



Flood barriers

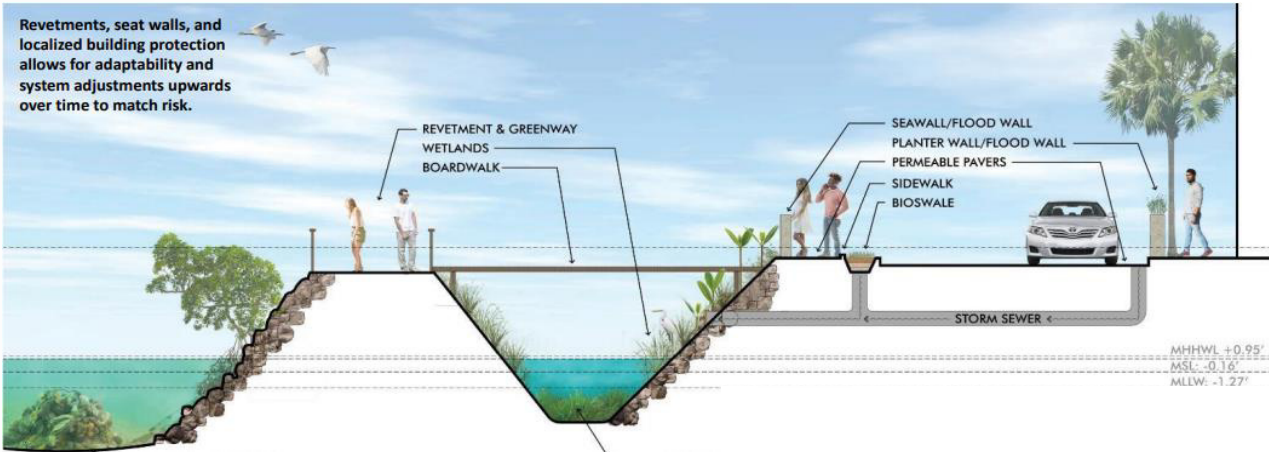
PUBLIC-PRIVATE PARTNERSHIP FOR ENHANCING CITY AND ASSET-LEVEL RESILIENCE



Hurricane Damage and Resilience Measures



Preserving Miami's coastline



We proposed a **promenade system design** that uses nature-based solution to provide **climate resilience** for coastal areas on **flooding and superstorm**.

Also, some additional **social, access, and economic opportunities** to the **community**.

GREEN SUSTAINABLE FINANCE JOURNEY

2018

2019

2020

2021

1st certified green bond (US\$500M) in Hong Kong issued under Green Bond Framework



Green Buildings



Renewable Energy



Energy Efficiency



Sustainable Water and Wastewater Management



Climate Change Adaptation

1st sustainability-linked loan (HK\$500M) in Hong Kong with interest rate indexed against Y-O-Y sustainability performance improvement:

- i) Energy reduction
- ii) Listing on DJSI World

~30%

of our current bond and loan facilities come from green financing as of 2021

Launched four more green bonds (totalling HK\$1,934M) and secured a HK\$1B green loan facility

Launched three more sustainability-linked loans (totalling HK\$3B)

2025 & 2030 TARGET:

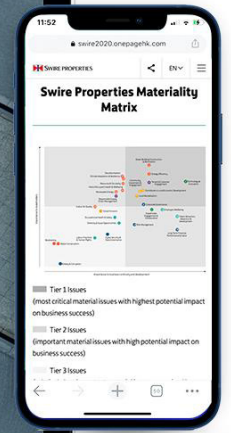
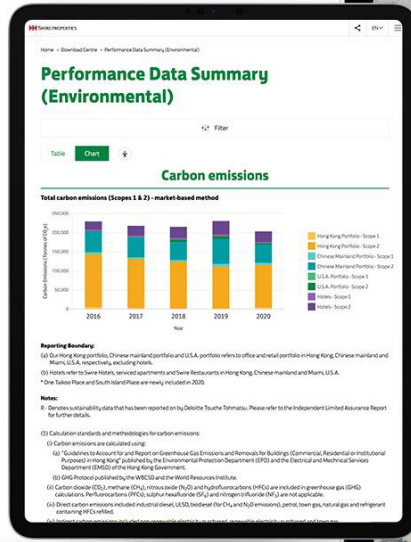
- Achieve a minimum of **50%** and **80%** of bond and loan facilities from green financing respectively

Named a Top 10 company globally for our green bond reporting work, by **Climate Bonds** INITIATIVE

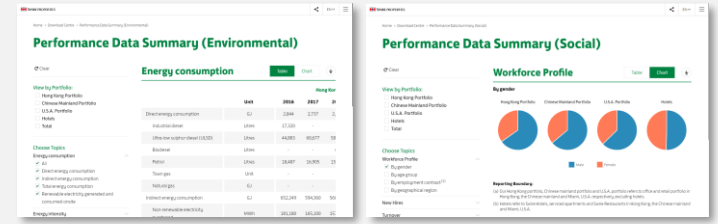




Sustainable Development Report 2020



Interactive data charts in web-based Performance Data Summary



TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Read our 3rd Climate-related Financial Disclosures



sd.swireproperties.com

DECARBONIZING SWIRE PROPERTIES

