



DECARBONIZATION IN BUILDINGS – PRIORITIES AND SOLUTIONS

Canadian Trade Commissioner Service and Canada China Business Council

Greater China Network Cleantech Market Opportunity Webinar – HK Green Building Market (20 Aug 2020)

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OUR COMPANY

Headquartered in Hong Kong since 1972, Swire Properties is 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.



2019 Investment Properties: 25.6 million sq. ft.

- Hong Kong portfolio: 13.2 million sq. ft.
- Chinese mainland portfolio: 8.8 million sq. ft.
- U.S.A portfolio: 1.2 million sq. ft.
- Hotels: 2.4 million sq. ft.

SD PERFORMANCE



Rank **8th** globally
(DJSI World)
in 2019



Top Company
since 2018



Global Sector Leader
in Other (mixed-use
development) category
since 2017



'AAA' rating (2019)¹

The only HK and Mainland China
developer listed

FTSE4Good
(2017, 2018, 2019)

2017 Winners
2020 Shortlisted

¹ Disclaimer: www.swireproperties.com/sd/awards/mscidisclaimer.html

DRIVERS FOR CHANGE

Business Case for Low Carbon Transition



Resource Efficiency



Business Resilience



Future Regulatory Pressure

Mitigate Risks and Capture Opportunities

Dow Jones Sustainability Indices

TCFD

The Green Bond Principles

ADVANCING NET ZERO
Accelerating Uptake of Net Zero Carbon Buildings

BEC Low Carbon Charter

Global Climate Actions



United Nations Climate Change

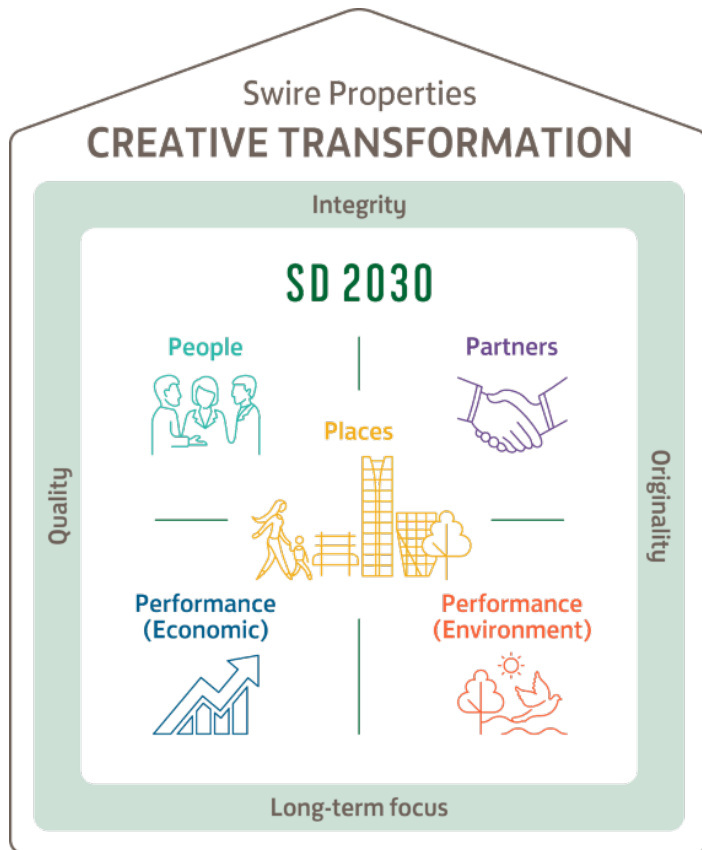


SCIENCE BASED TARGETS

SUSTAINABLE DEVELOPMENT (SD) 2030 STRATEGY

COMPREHENSIVE SD STRATEGY INTEGRATED INTO EVERY FACET OF BUSINESS OPERATIONS

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



OUR APPROVED SBT



For our global investment portfolios

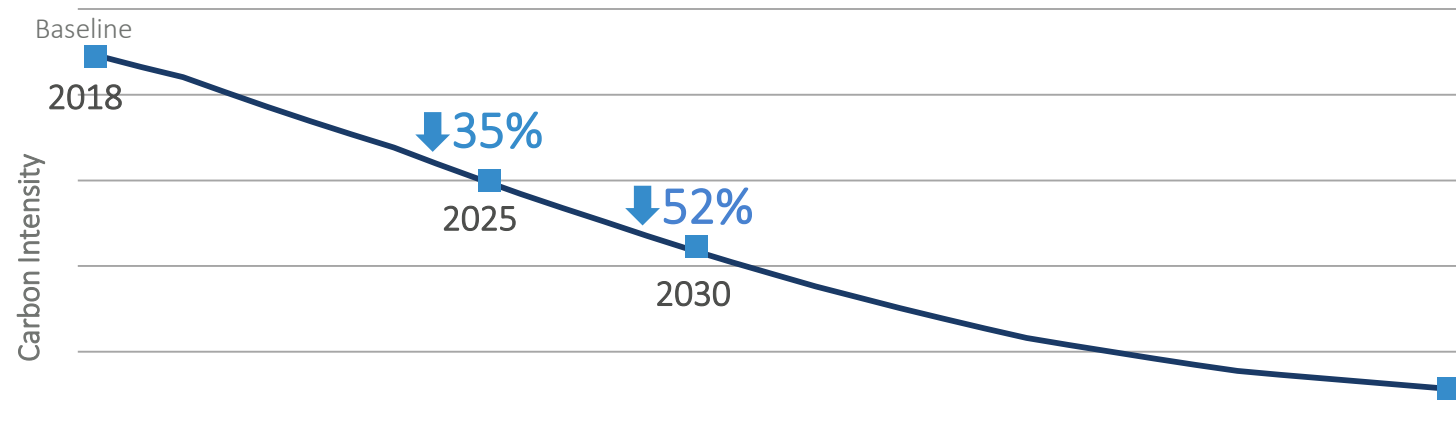
WE'VE HAD OUR SCIENCE-BASED TARGET APPROVED in 2019

Scope 1 & 2¹ GHG Intensity
 ↓ **35%** By 2025
 ↓ **52%** By 2030

Scope 3 GHG Intensity
 Downstream Leased Assets¹ Capital Goods²
 ↓ **28%** ↓ **25%**
 By 2030

¹ Baseline Year: 2018
² Baseline Year: 2016-2018

Long-term Decarbonisation Pathway (2°C Scenario)

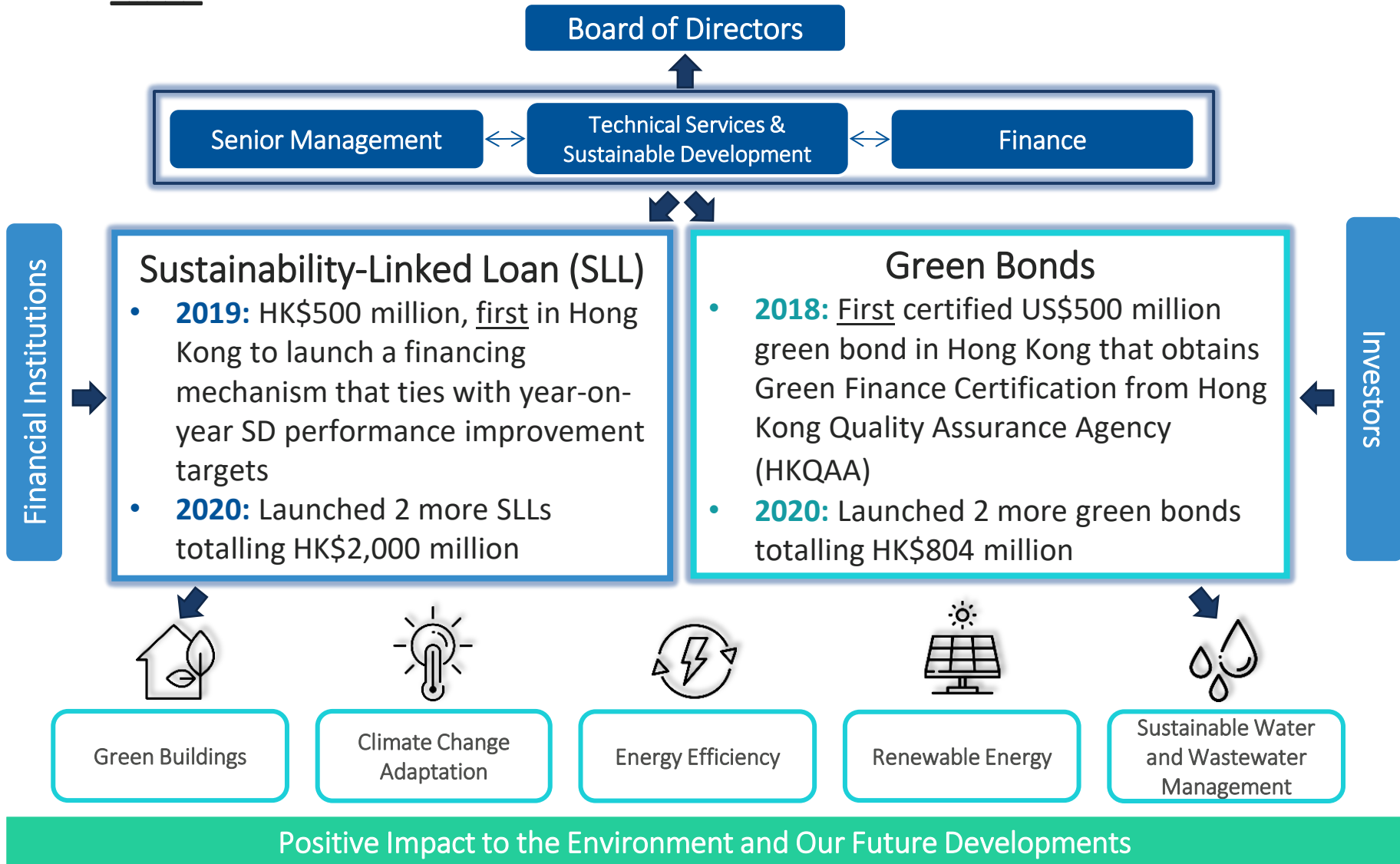


SDG 13 Climate Action

We are responding to Climate Change with initiatives on mitigation, adaption, and resilience that align with **SDG13**: take urgent action to combat climate change and its impacts

Scope 1 emissions are direct greenhouse gas (“GHG”) emissions from sources that are owned or controlled by Swire Properties, such as emissions from natural gas, diesel and town gas burned onsite.
 Scope 2 emissions are indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by Swire Properties.
 Scope 3 emissions are all indirect emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions.

GREEN FINANCING



Our Green Bond Reports (2018 & 2019)





SCOPE 1 & 2 – MITIGATION STRATEGIES

DEEP DECARBONIZATION STRATEGIES

Equipment Operation and Upgrading

- Equipment operating at rated condition
- Chiller and boiler replacement
- Replacement of low efficiency equipment
- Variable speed drive
- New equipment technology (e.g. EC Plug Fan)

Retro-commissioning and Monitoring Based Commissioning

- Chiller and pump operation sequence optimization
- Control logic review
- Fresh air supply and control
- AHU pressure and VAV minimum flow reset
- Automatic lighting control

Digital Solutions and Modern Technology

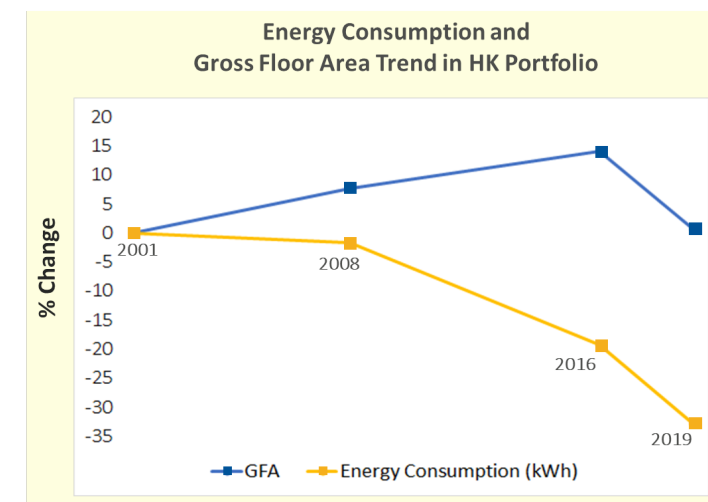
- Smart meters & IoT sensors
- Big data analysis
- Cloud computing
- AI & Machine Learning
- Predictive maintenance

Renewable Energy

- On & off-site renewable energy
- PV panel installation
- Waste-to-energy trigeneration






Passive Design

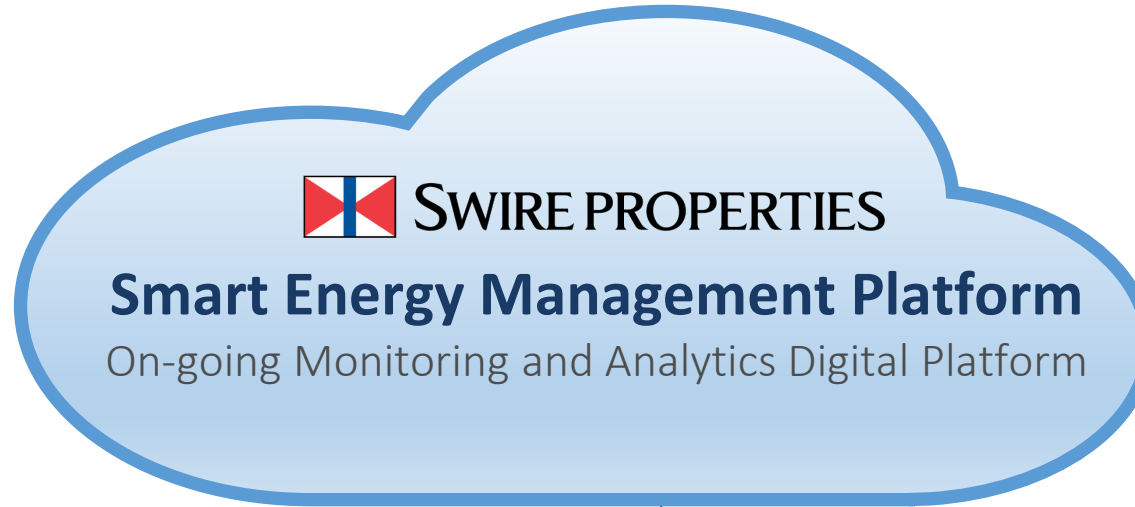
- High performance façade
- Green roof



ESTABLISHING ON-GOING MONITORING AND ANALYTICS DIGITAL PLATFORM

Utilize

-  Internet of Things
-  Big Data Analysis
-  Artificial Intelligence
-  Cloud Computing
-  Cybersecurity



Enable

-  Decarbonisation
-  Deeper Energy Saving
-  Increase Operational Efficiency
-  Smarter Operation
-  Preventive Maintenance
-  Decrease Operation Cost
-  Optimize Human Resources

Open and flexible, secured centralised platform
Providing global coverage, real-time, accurate and actionable insights



SCOPE 1 & 2: INVESTMENT IN RENEWABLE ENERGY

Installation of Solar Photovoltaic (PV) Panels



INDIGO, Beijing



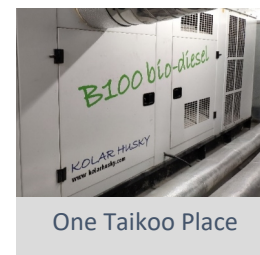
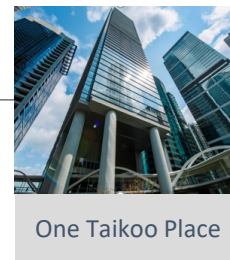
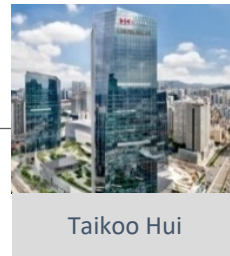
Taikoo Li Sanlitun, Beijing



Taikoo Hui, Guangzhou



Combined PV system and green roof
One Taikoo Place, Hong Kong



On and Off-site RE
Procurement Strategy
and Roadmap

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

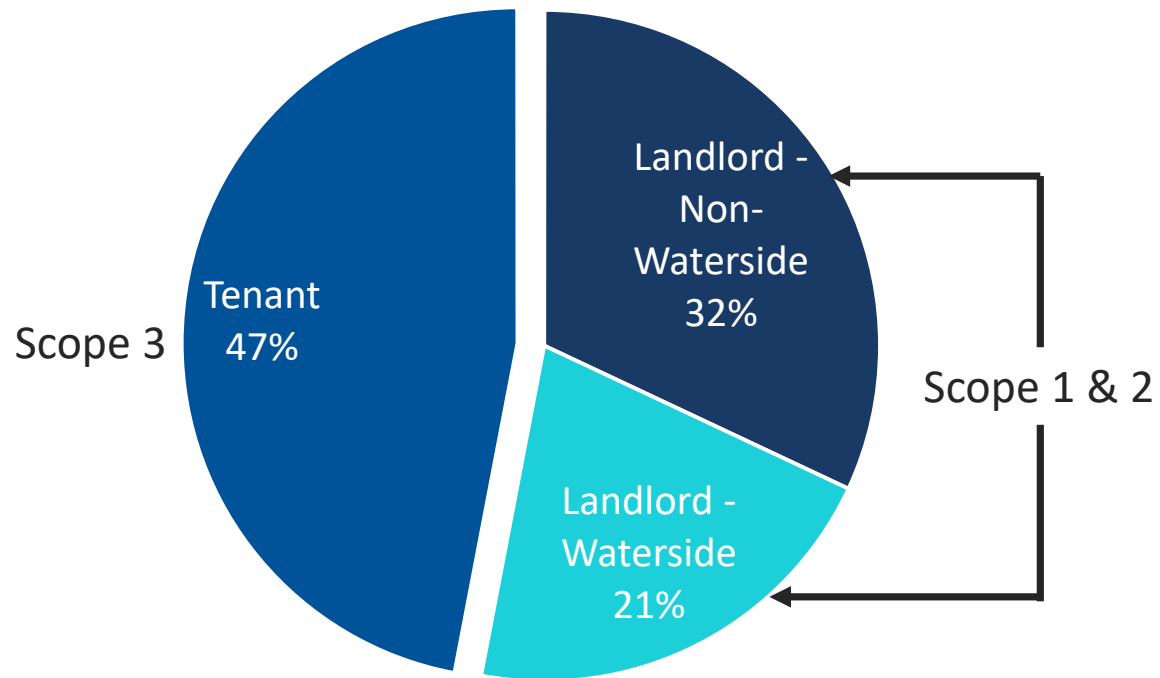


SCOPE 3 – DOWNSTREAM LEASED ASSETS MITIGATION STRATEGIES

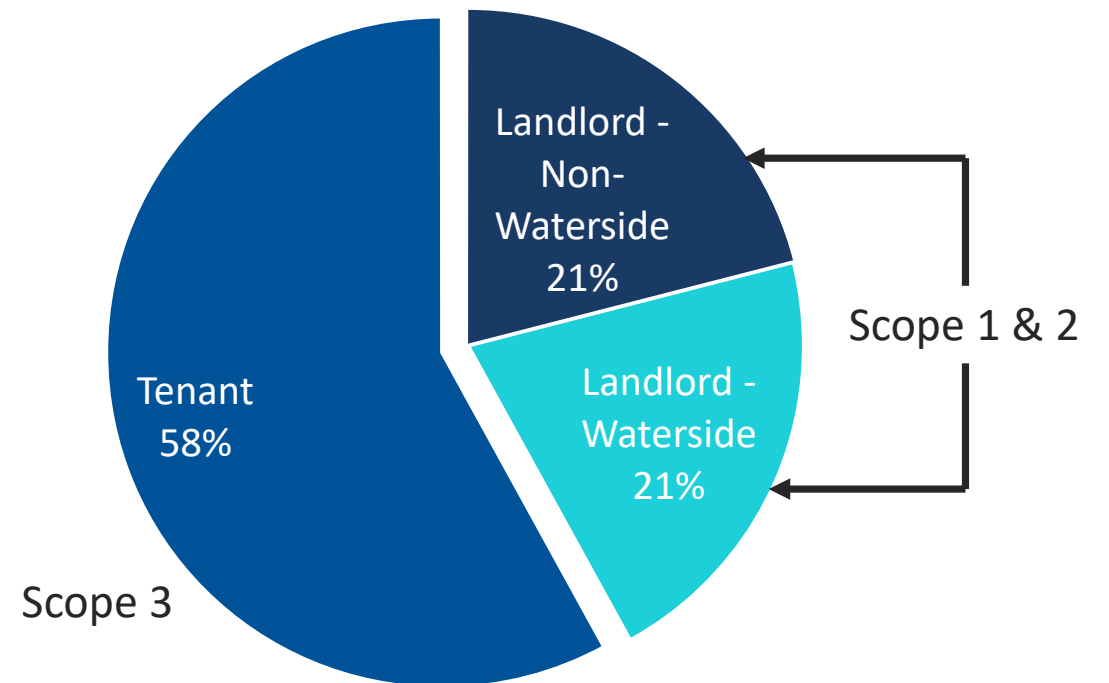
SCOPE 3 – DOWNSTREAM LEASED ASSETS

BREAKING DOWN ENERGY CONSUMPTION

**Typical Office
Landlord-Tenant Energy Split**



**Typical Mall
Landlord-Tenant Energy Split**



SCOPE 3: DOWNSTREAM LEASED ASSETS – TENANT ENGAGEMENT

Energy and Carbon Reduction Strategies:



Free energy audits for tenants

8.6m kWh

potential energy savings
identified in **free energy audit**
(in 5.3m sq. ft. of tenanted space)



Green Kitchen Initiative

75%+

F&B tenants
recycle food waste



Tenant energy optimisation
program

(Source of Photo: <https://www.se.com/hk/en/work/products/product-launch/poweritag/>)

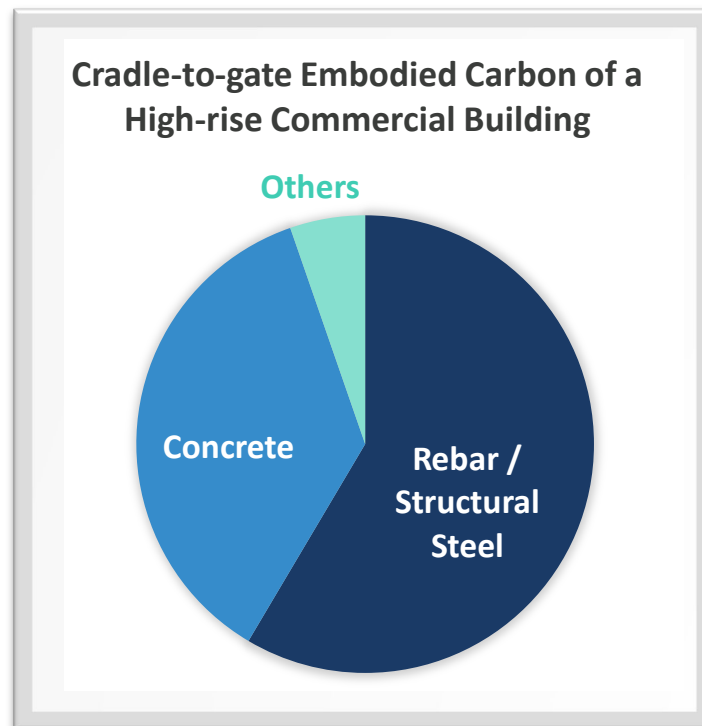


SCOPE 3 – CAPITAL GOODS MITIGATION STRATEGIES

CASE STUDY – REDUCE EMBODIED CARBON EMISSIONS FROM PROJECTS DEVELOPMENT

In partnership with a university partner, we completed a pilot study to measure:

- Carbon emissions from construction activities
- Embodied carbon from major construction materials used



The embodied carbon in the building's **concrete, rebar and structural steel**

contributes to nearly **90%** of **One Taikoo Place's** total carbon emissions.



One Taikoo Place, Hong Kong



CASE STUDY – REDUCE EMBODIED CARBON EMISSIONS FROM PROJECTS DEVELOPMENT

Energy and Carbon Reduction Strategies :

- Material selection and building design
 - Procure construction materials with lower embodied carbon wherever applicable



Concrete: with 25% - 35% Pulverised Fly Ash (PFA) as cement substitute



Rebar / structural steel: more recycled steel content (e.g. >20%), and adopt low carbon production method

- More efficient use of materials through structural optimisation

- More efficient construction equipment and processes





THE WAY FORWARD

THE WAY FORWARD

