

A sustainable office building in Hong Kong



One Island East is the latest development in TaiKoo Place, Hong Kong's largest, single-owned business district. This 70-storey, triple Grade-A office building commands superlative views of the harbour and is within the immediate proximity of both TaiKoo and Quarry Bay Mass Transit Railway Stations and is the landmark of Island East.

Project Team

Developer

Swire Properties Limited

Architect

Wong & Ouyang (HK) Limited

Structural Consultant

Ove Arup and Partners
Hong Kong Limited

E&M Consultant

Meinhardt (M&E) Limited

Quantity Surveyor

Rider Levett Bucknall Limited

Landscape Architect

Hargreaves Associates

Lighting Consultant

L'Observatoire Internationale Inc.

Façade Consultant

Arup Façade Engineering
Hugh Dutton Associates

Traffic Consultant

MVA Hong Kong Limited

BIM Consultant

Gehry Technologies

Main Contractor

Gammon Construction Limited

Façade Contractor

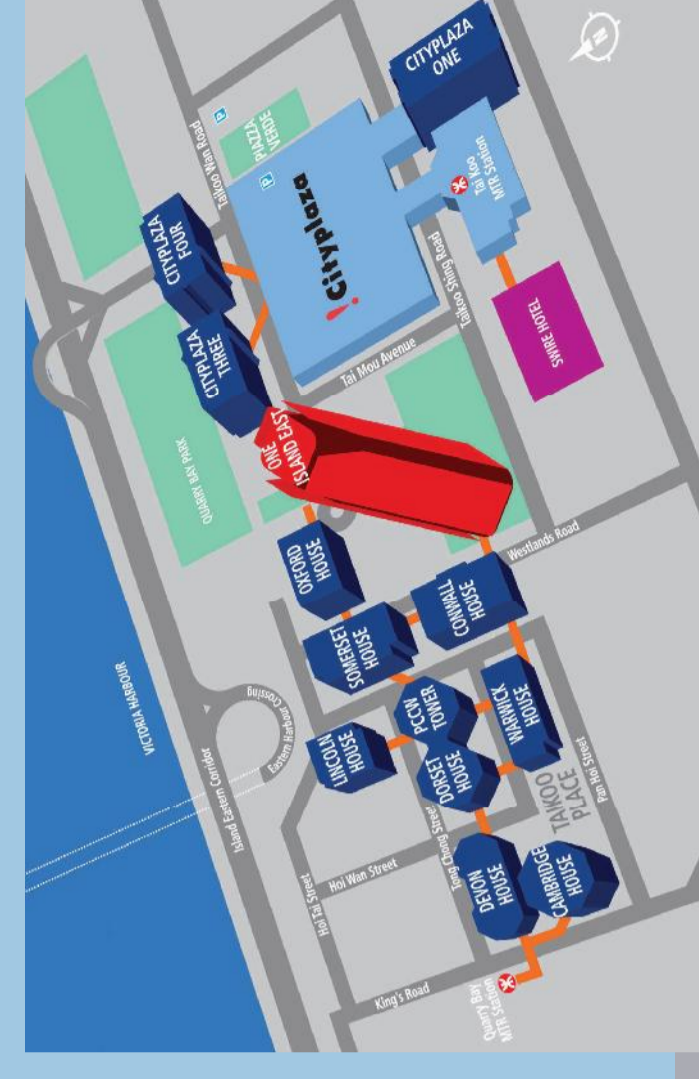
Josef Gartner & Co (HK) Limited

Building Services Contractor

Balfour Beatty E&M Limited



Typical Floor Plan



Location Plan

Facts

Total gross floor area (GFA)

Approximately 141,000 sq m

Typical floor plate area

Approximately 2,270 sq m

Building height

300 m

Finished ceiling height

Typical office floors with clear height of 2925mm

Clear height of the top floor of each zone is 3925mm

Access

- Served by Quarry Bay and TaiKoo Mass Transit Railway Station
- Accessible via Island East Corridor
- Over 50 bus routes

Number of zones

70 storeys in total with

four office zones:

Zone 1 (2/F – 16/F)

Zone 2 (17/F – 34/F)

Zone 3 (39/F – 54/F)

Zone 4 (55/F – 67/F)

Communal facilities

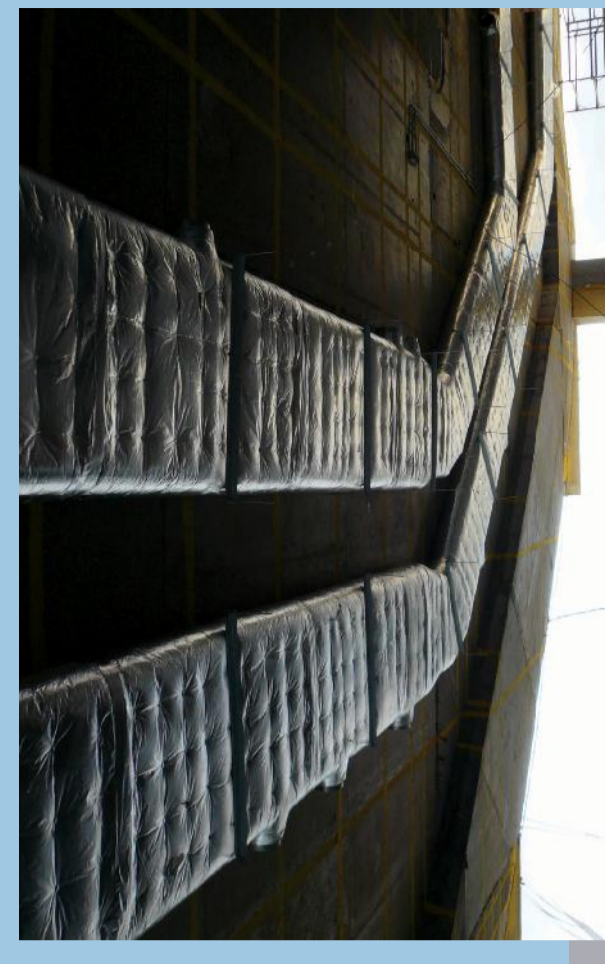
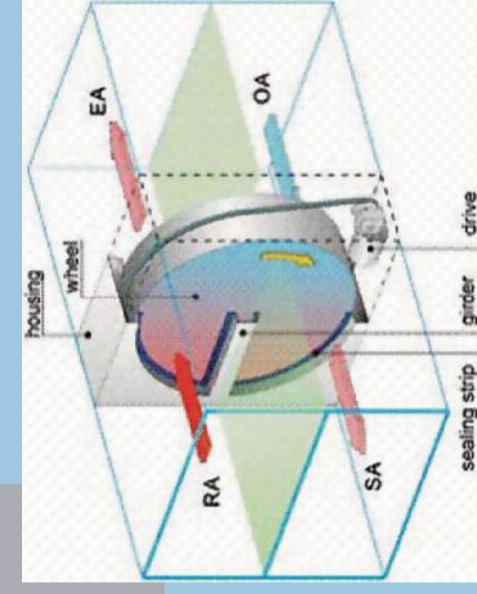
- Integrated with TaiKoo Place
- Covered walkway system
- Served by Cityplaza shopping centre
- Connected to the Island East Matrix fibre-optic data network

Sustainable Features

Energy Efficient HVAC Systems



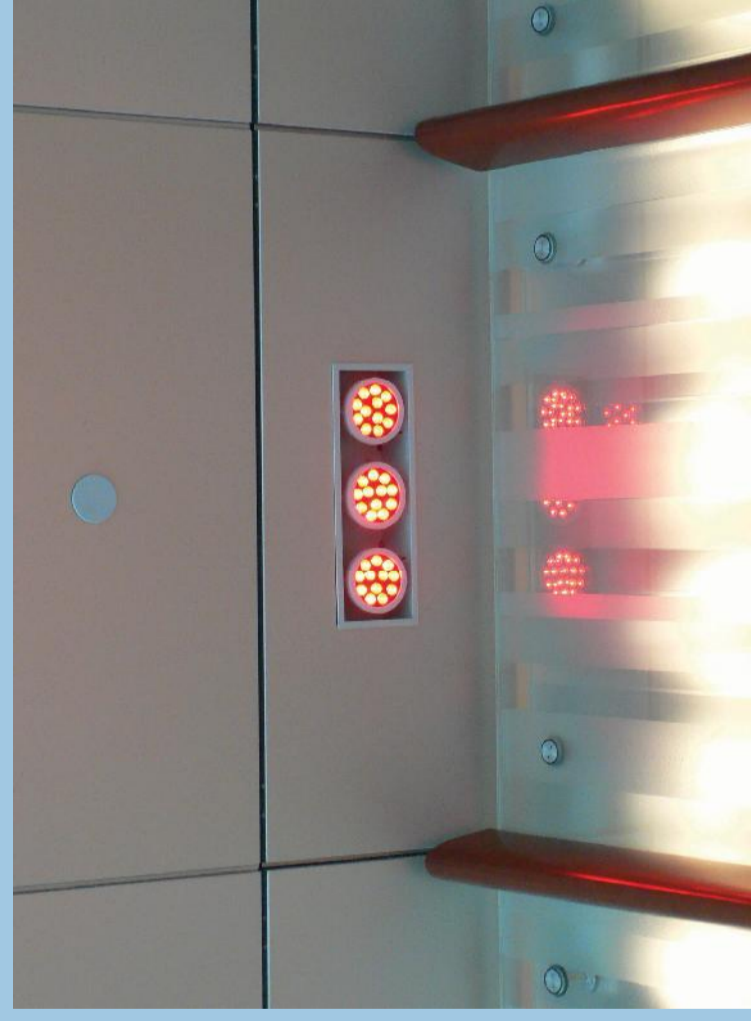
Energy recovery from cool exhaust air by heat wheel to pre-treat incoming hot fresh air



Dual AHU and ring duct for efficient and reliable A/C

Low heat transmission curtain wall system

Energy Efficient Lighting

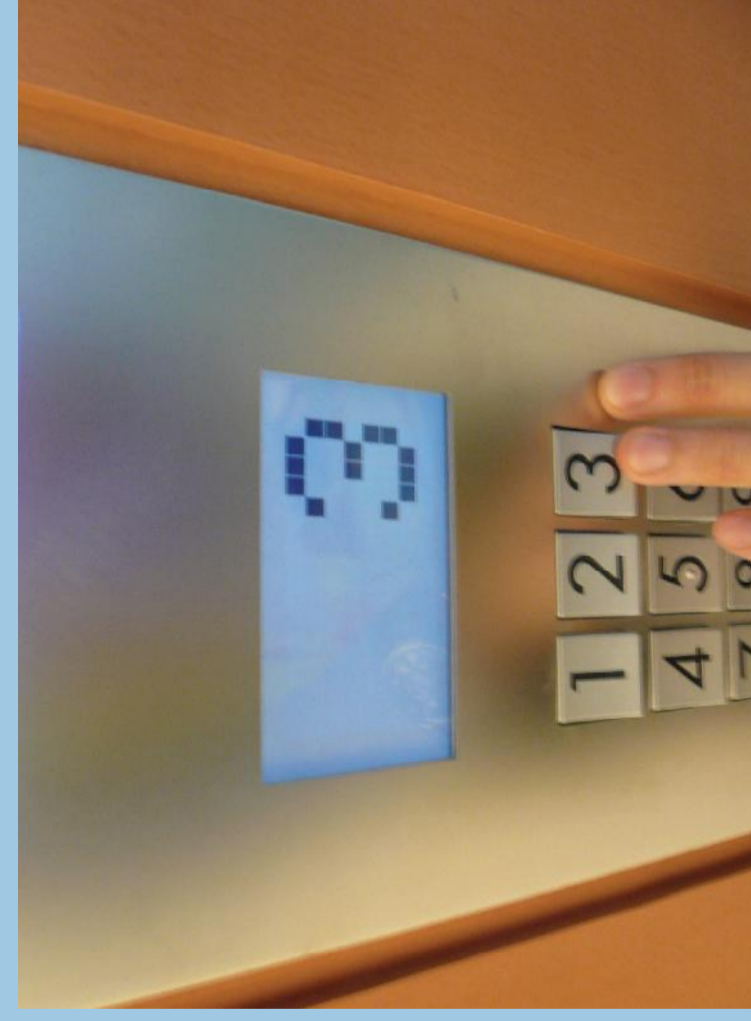


Flexible light box design in office area with adjustable illumination level

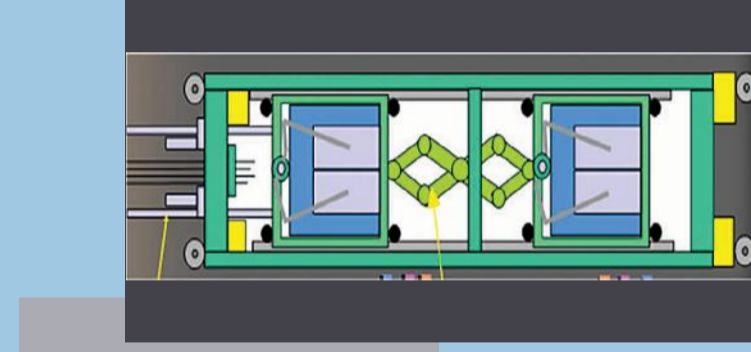


Energy efficient LED light fittings are substantially used for more than 85% of decorative lightings

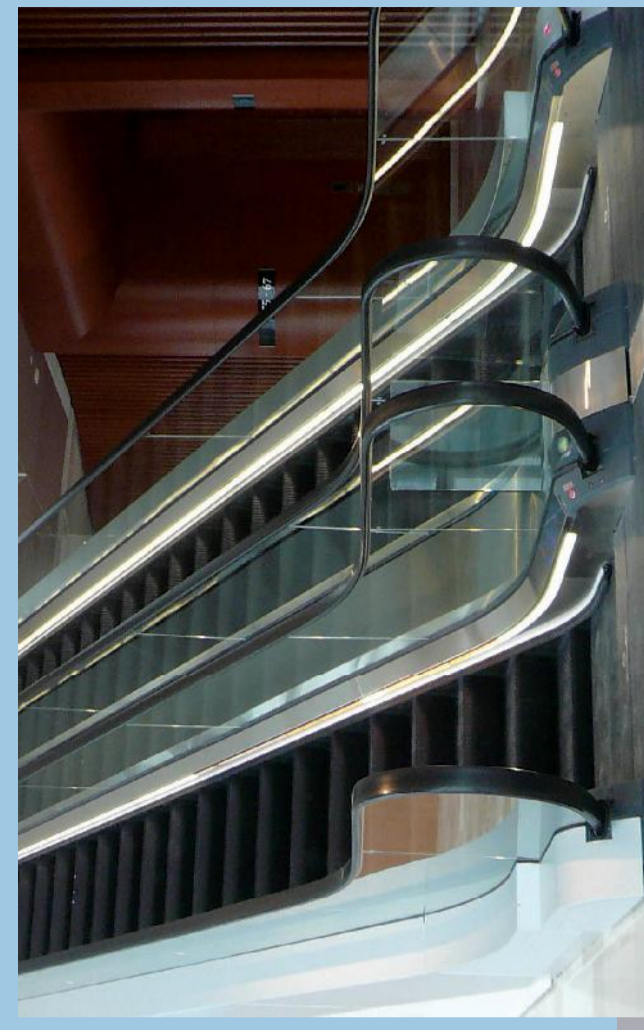
Energy Efficient Lifts and Escalators



Intelligent lifts and zoning system (Miconic 10)



Double decked shuttle lift (instead of two lifts) are used for energy saving



Dual speed escalators

Water Conservation



Seawater cooling tower (instead of fresh water cooling tower is used)



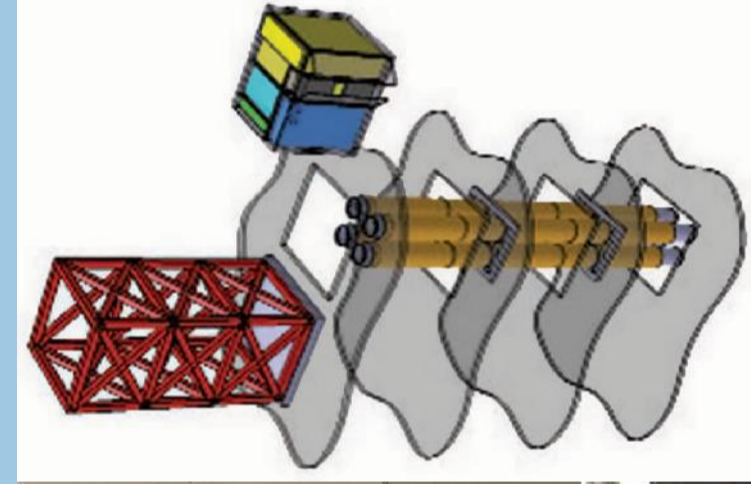
Dual flush mechanism for toilets

Recycle rainwater for flushing and irrigation purposes



Sustainable Features

Modular and Standard Design

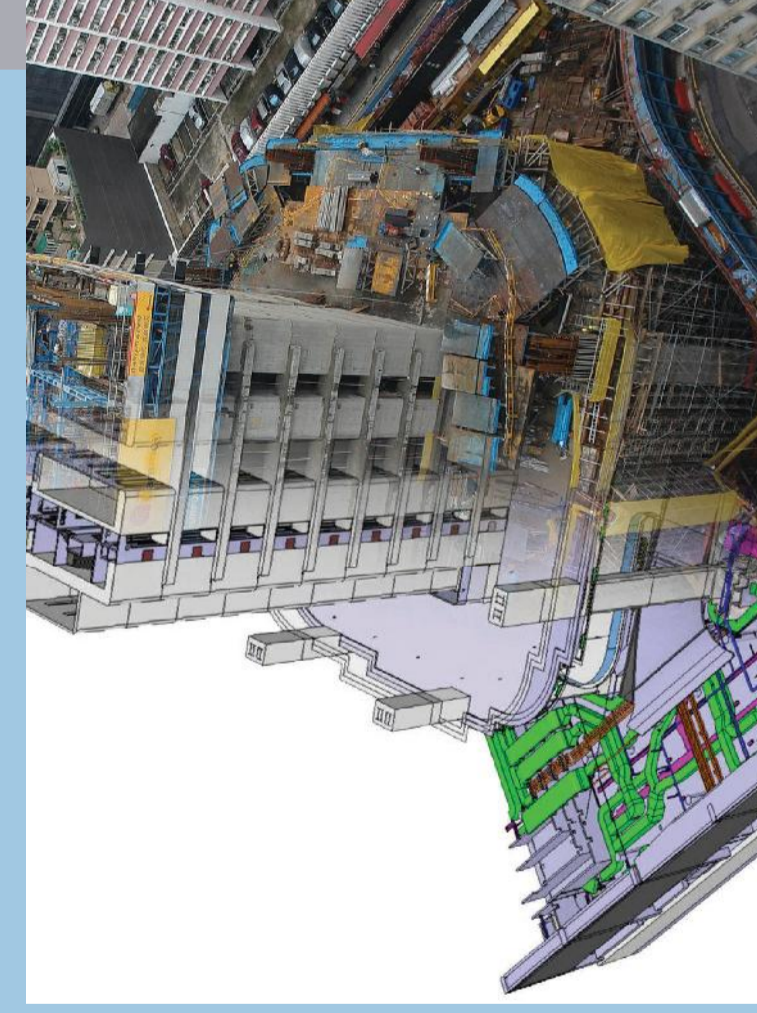


Pre-cast staircases

Pre-fabricated air handling units and components



Efficient New Technologies

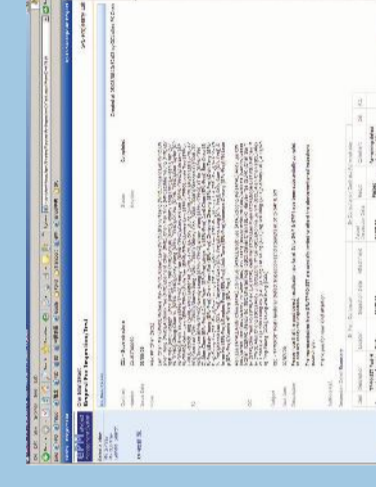


Building Information Model BIM allows detail design accuracy reduces material wastage

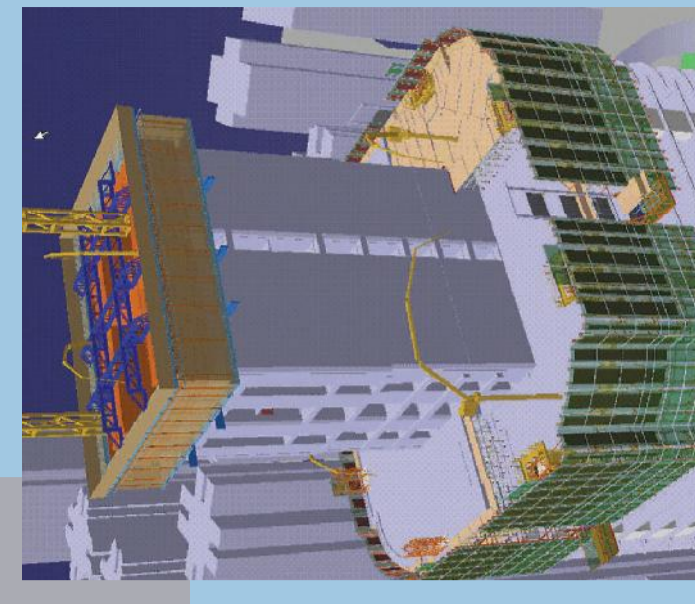
BIM provides new analysis and simulation tools are available to directly optimize life cycle energy efficiency



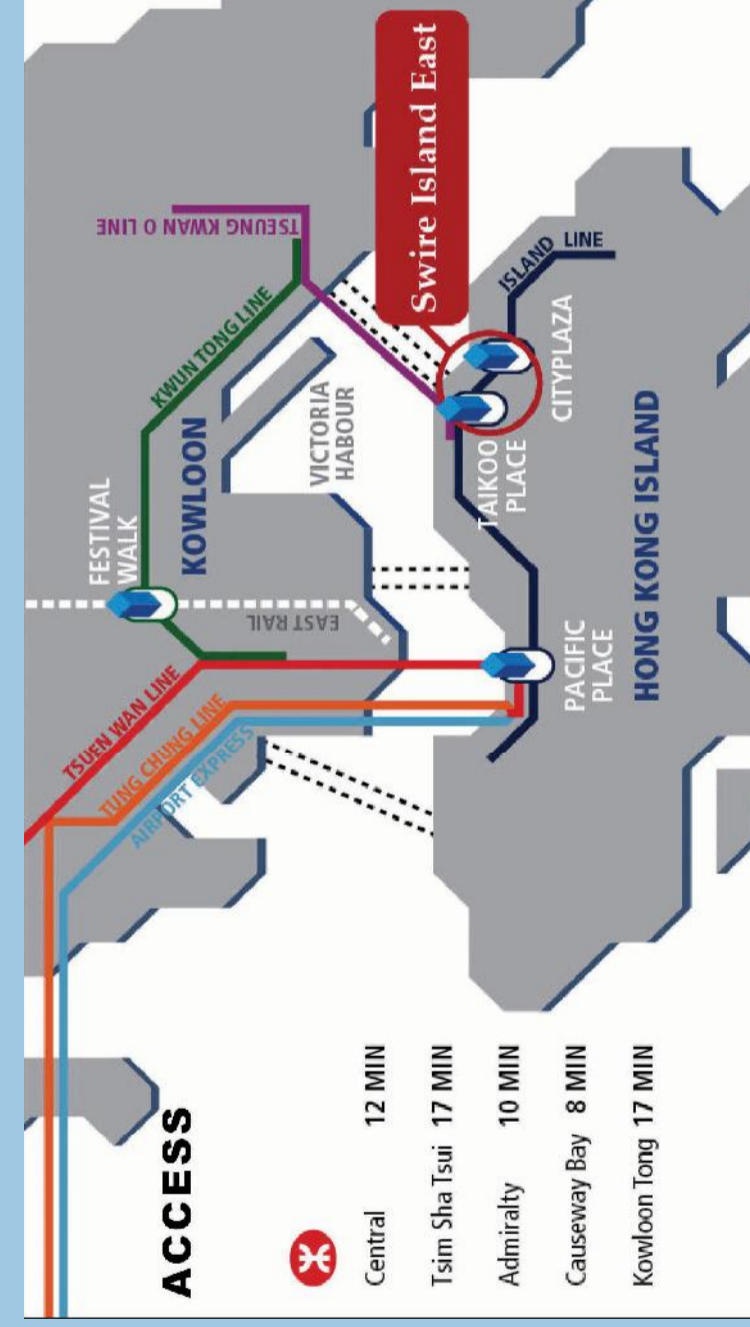
BIM simulates virtual construction process simulation enables optimized building lifecycle planning



e-Project management system



Enhancing the Community



Covered walkway network; Served by 2 Mass Transit Railway Stations & over 50 bus routes

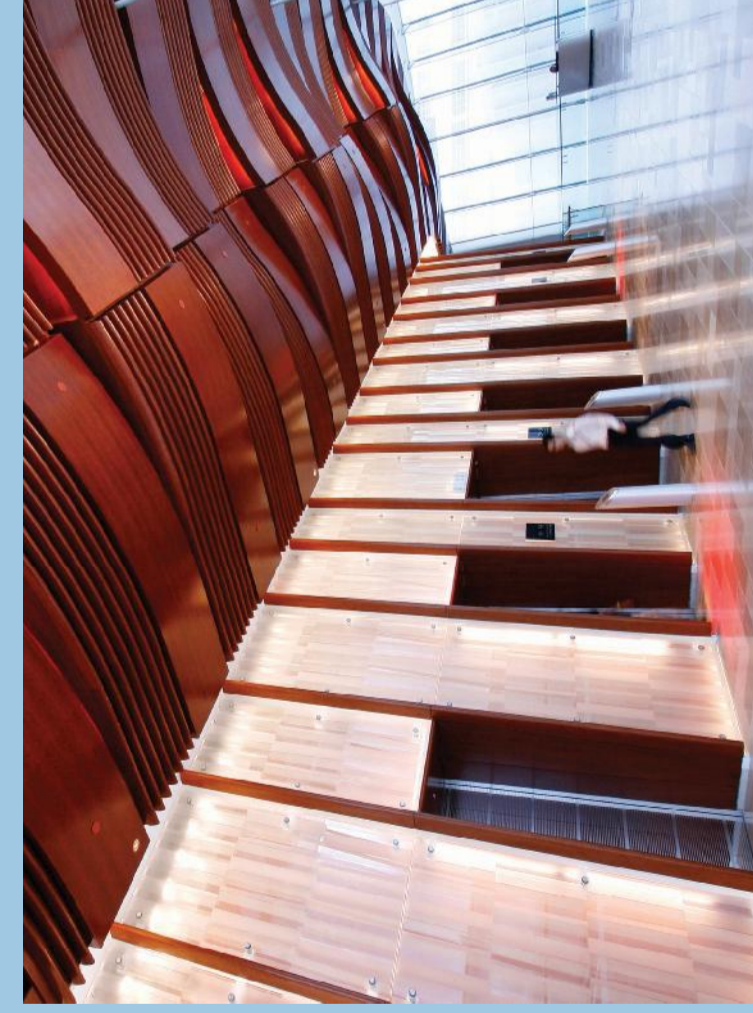
75% of development area is landscaped



Roof Garden for tenants' amenity

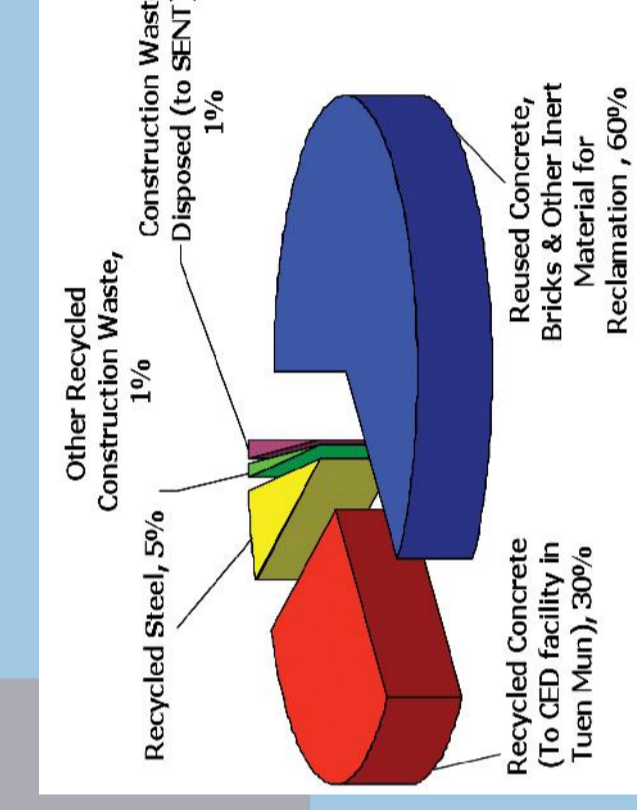


Material Efficiency

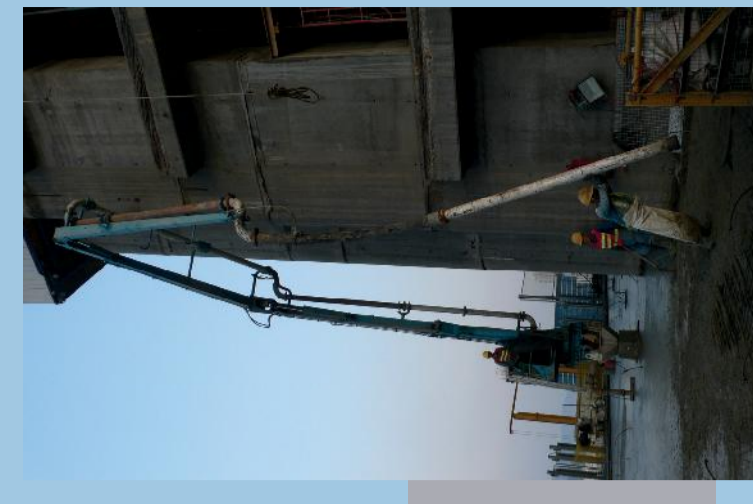


Sustainable timber panel conserves forests

99% of demolition waste was reused or recycled



Grade 100 High Performance Concrete reduces material use and CO₂ emissions



Assessment & Awards

HKBEAM assessment

Site aspects:

- Convenient pedestrian access to main stream public transport
- Provide recreational facilities with garden area up to 30% of the site and a Roof Garden
- Noise barriers during construction
- Significant noise reduction by using Concrete Crusher for demolition work

Energy aspects:

- Flexible lighting design and LED lighting
- Energy efficient lifts and dual speed escalators
- Energy efficient chillers, ventilation systems, variable speed drive and heat wheel

Material aspects:

- Modular and standardized design
- Sustainable forest products
- Waste management system
- 99% of construction and demolition waste was reused
- No use of ozone depleting refrigerants

Good indoor air quality:

- IAQ Parameters (CO₂, NO₂, O₃, RSP, VOC, HCHO, Rn) at typical floors fulfill Environmental Protection Department's IAQ Objective "Good" class
- CO₂ sensor to optimize the fresh air quantity
- Indoor air pollutant levels in carparks satisfy stipulated requirements set out in Environmental Protection Department's proPECC PN 2/96
- Room Air Distribution in accordance to ASHRAE 112-1990
- Thermal comfort tests on typical office floors, fluctuation of air temperature within +/- 1°C

Other aspects:

- Use of rainwater in flushing and irrigation, dual flush mechanism, automatic water tap
- Maximum use of natural lighting
- Provision for access for disabled persons
- BIM system to facilitate construction and maintenance stage



Concrete Crusher reduces demolition noise



Variable speed drive and energy efficient chillers



Movable external pedestal paving system



Good indoor air quality



Automatic water tap sensors

Other Awards

- **AIA BIM TAP Award** for Design/Delivery Process Innovation using BIM
– Awarded to One Island East and Gehry Technologies – Asia
- **The 2007 Hong Kong Awards for Industries:**
Technological Achievement Award by development and application of Grade 100 High Performance Concrete - Awarded to Gammon Construction Limited
- **Construction Industry Safety Award Scheme 2007/08**
– Building Sites (Private Sector) Category Silver Prize (Contractor)
Awarded to Gammon Construction Limited
– Building Sites Category Silver Prize (Subcontractor)
Awarded to Balfour Beatty E&M Limited
- **The Lighthouse Club Safe Subcontractor Award 2006 Champion**
Awarded to Wai Shun System Formwork Co. Ltd.

