

A GREEN CAMPUS MASTER PLAN

THE CHINESE UNIVERSITY OF HONG KONG

World Sustainable Built Environment
Conference 2017 Hong Kong



Organisers:



International Co-owners:



Sustainable Buildings
and Climate Initiative
Promoting Policies and Practices for Sustainability



Global Alliance
for Buildings and
Construction

1. Introduction
2. Campus Master Plan
3. Green Buildings
4. Green Living
5. Achievements



1. INTRODUCTION



Organisers:



International Co-owners:



Over 50 Years of Campus Development

CUHK Today

1378 Facilities

- > 60% greenery coverage
- > 1 Graduate School
- > 160 Buildings
- > 8,000 Colleges
- > 28,000 students

Various Flora and Fauna:

- > 200 plant species
- > 130 bird species (~30% in HK)
- > 70 species of butterflies
- > 20 species of dragonflies

6,000 students

CAMPUS MASTER PLAN

Vision

To enable the University be an exemplar of sustainable development by balancing the enhancement of campus environment with the conservation of natural heritage.

- Provide leadership in sustainability through Education, Research, Knowledge Transfer & Community Outreach
- Promote, Respect and Connect People with Architecture & Nature
- Design ECO-HABITATS



Six Planning Precepts

1. Making a Sustainable Campus



2. A Pedestrian Friendly Campus



3. Green Living of College Life



4. Conserving Places of Value



5. A Landscape of Vital Importance



6. Places for Education and Research



Organisers:



International Co-owners:





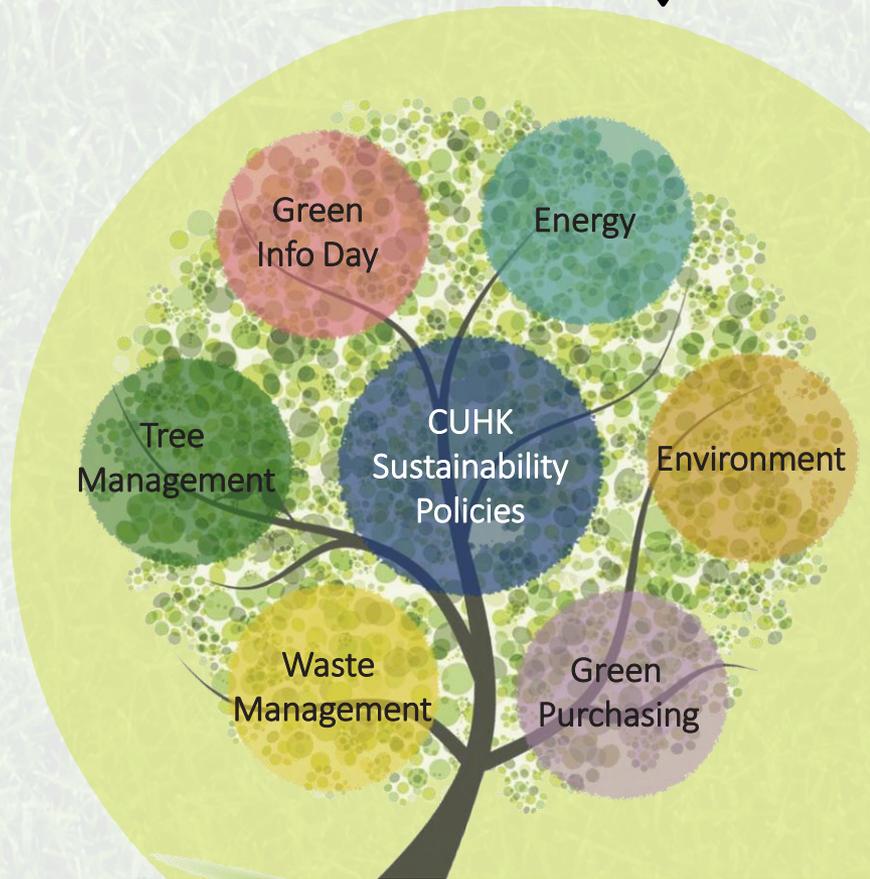
Sustainable
續綠
 中大
 Campus

Long Term Sustainability Targets (2005-25)

Energy (per capita)	↓ 25%
Greenhouse Gas (per capita)	↓ 20%

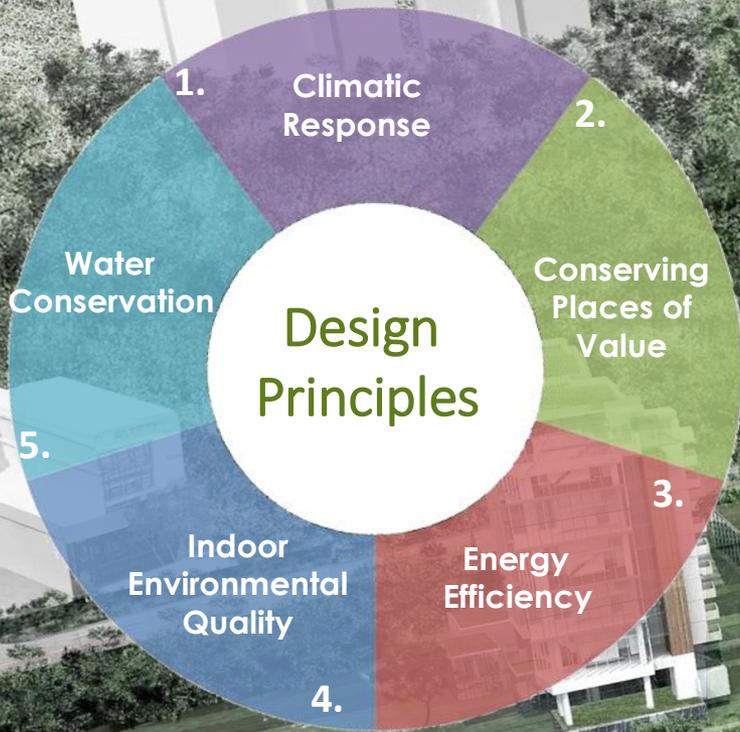
OUR GREEN TARGET

5-year Sustainability Targets (2012-17)		As at 2016
Energy (per capita)	↓ 8%	↓ 9.5%
Greenhouse Gas (per capita)	↓ 10%	↓ 19.2%
Waste to Landfill (per capita)	↓ 12%	↓ 14.5%
Paper Usage	↓ 50%	↓ 45.8%



3. GREEN BUILDINGS





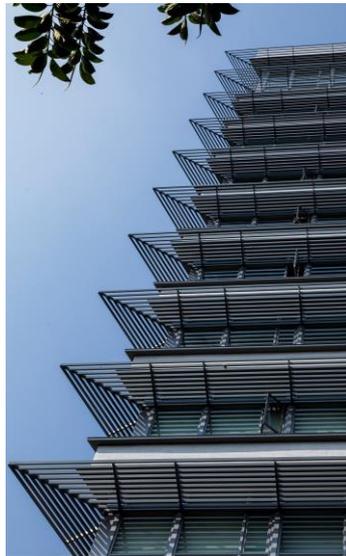
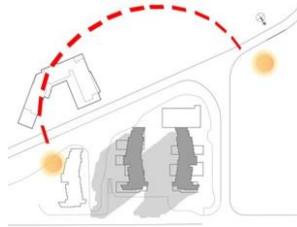
3.1 CLIMATIC RESPONSE

Permeability



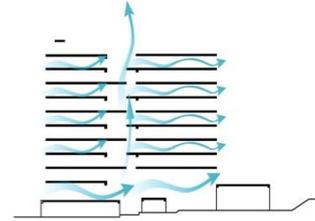
Yasumoto International Academic Park

Sun Shading



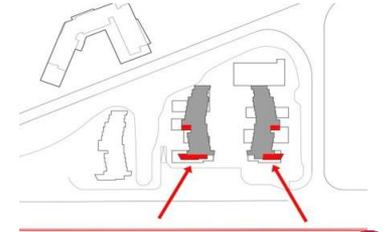
- HKIA Urban Design Award 2012
- MIPIM Asia Gold Award - BEST U Urban Regeneration
- HK-BEAM 2015 Platinum

Natural Ventilation



An Integrated Teaching Building

Noise Mitigation



- FuturArc Green Leadership Award 2013
- Green Building Award 2014, HKGBC- Merit



Organisers:



International Co-owners:



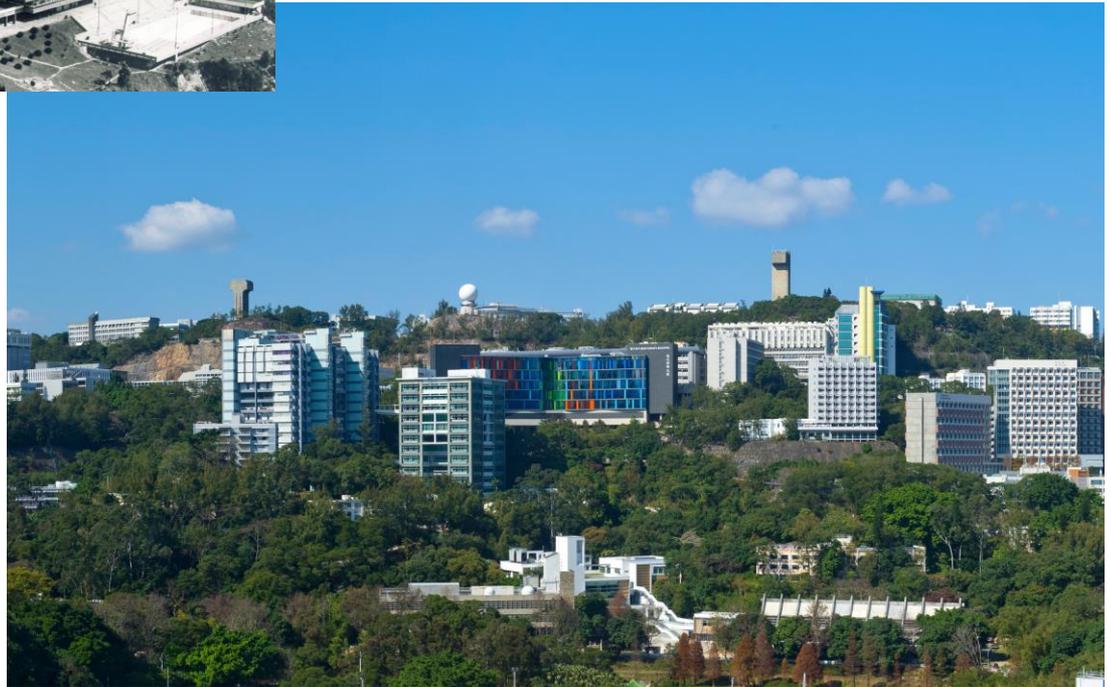
3.2 CONSERVING PLACES OF VALUE



1970s

- Preserving the Campus Landscape and Feature Towers
- Enriching the Campus Greenery

2016



結合傳統與現代
融會中國與西方

*To Combine
Tradition with Modernity
To Bring Together
China and the West*



International Co-owners:



Preserving our History & Collective Memory

University Mall & Garden preserved in Library Extension

2012



During Construction

1983



Before Renovation



Innovative Basement Design



Organisers:



International Co-owners:



A Landscape of Vital Importance

Preserving Wei Yuan Lake 未圓湖 Genius Loci for Chung Chi College

The luxuriant campus is home to over 200 plant species including over one third of all tree species in Hong Kong.



Preserving Habitats

CUHK is home to variety bird species



Minimizing Tree Removal

Tree preservation during development



Organisers:



International Co-owners:



Adaptive Reuse of Existing Buildings in College Development

- Conversion of a 3-storey staff residence to a Student Learning Centre at Shaw College



Ya Qun Lodge in the 1990s



Student Learning Centre in 2013

- Conversion of vintage guesthouse, the former United College president's residence (1970s), to a gymnasium for a new college



Guesthouse in the 1970s



Gymnasium at Wu Yee Sun College in 2014

3.3 ENERGY EFFICIENCY

1. Building Technology

Daylight/Motion Sensors to control lighting & AC



2. Building Technology

Energy Efficient LED lighting fittings

3. Roof Garden

Green roof as insulation layer



4. Zero Carbon

Charging Points for Electric Vehicles

5. Bioclimate

Wind turbines for street lighting



6. Reducing GHG

Water-cooled Chiller System

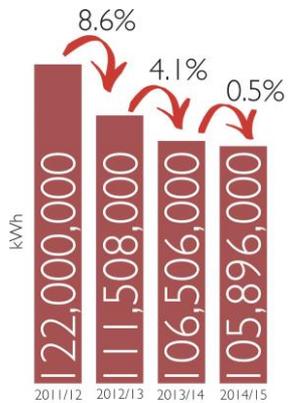
7. Renewable Energy

Solar Hot Water Panels & Photovoltaic Panels in student hostels



8. District Cooling

To maximise efficiency of chillers in building clusters



CUHK Total Electricity Consumption (excluding canteens, staff residences and new buildings)



Organisers:



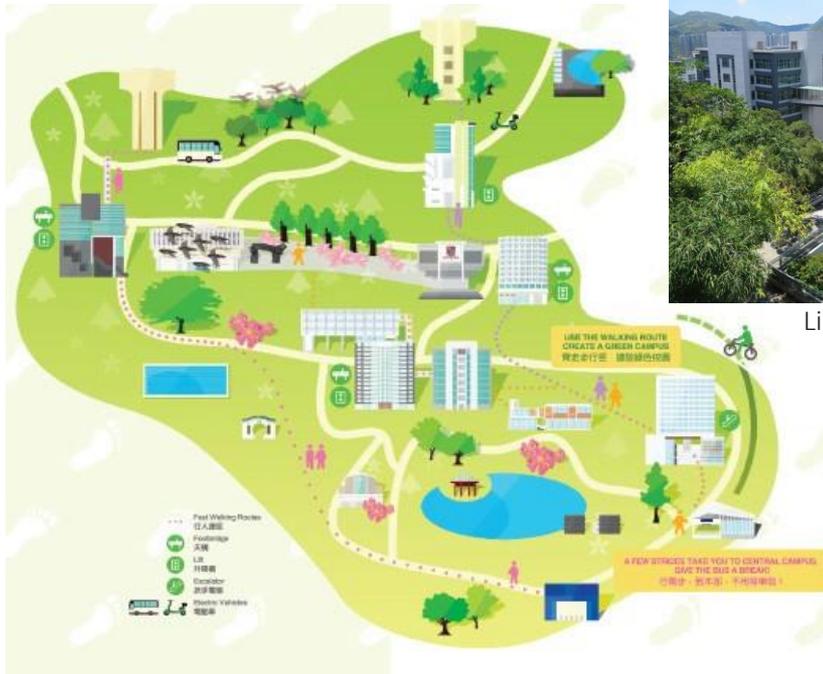
International Co-owners:



3.3 ENERGY EFFICIENCY - REDUCING GHG

Pedestrian-Friendly Campus

- Enhanced connectivity promote Walking Campus
- Vertical Links in CUHK's hilly campus



Linked Bridges

Green Transport

- Exhausted-free Electric Vehicles



CyclingTrack - 1.4km cycling track



3.4 INDOOR ENVIRONMENTAL QUALITY

Natural Daylight

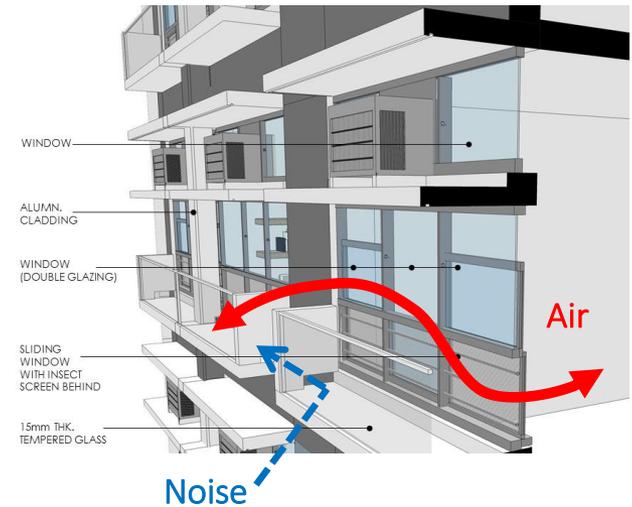


Indoor Air Quality



- Flexible A/C zoning CO2 sensors
- Green Purchasing No/ Low VOC furniture

Acoustics & Ventilation



3.5 WATER CONSERVATION

Water Recycling System

- Saves 547,000 m³ water a year
- equivalent to 218 Olympic swimming pools
- for irrigation, street cleaning & A/C cooling

Swimming pool as water recycling tank (1,400m³/Yr)

Water Saving Fixtures



Dual flush W.C. cistern



Infra red sensor

Recycled Water for Irrigation



Organisers:



International Co-owners:



Global Alliance for Buildings and Construction

4. GREEN LIVING



HONG KONG
2017
WORLD Sustainable Built Environment Conference

Organisers:
CONSTRUCTION INDUSTRY COUNCIL
建造業議會

HKBBC
香港綠色建築協會

International Co-owners:

SBE Series

CIB

iISBE

UNEP Sustainable Buildings and Climate Initiative

FIDIC

Global Alliance For Buildings and Construction

4.1 GREEN LIVING

Year-End Hostel Check-out



回收物品：衣架 | 文具 | 電器 | 衣服 | 枕頭被單 | 廚具
 Collecting Items: Hangers / Stationery / Electrical Appliances / Clothes / Pillow, bed sheets / Kitchenware

退宿

HOSTEL FREECYCLING

回收

參與書院及宿舍：新亞 (志文、學思)
 崇基 (明華、神學樓)
 國際生宿舍第一、二、三座

Participated Hostel: New Asia (Grace Tien Hall / Xuesi Hall)
 Chung Chi (Ming Hua Tang / Theology Building)
 I-house 1 & 2 & 3

收集日子：即日起至退宿日
 Collection Period: Until the last day of Hostel Check-out

聯絡 Contact: 倩婷 Alice (5160 9042)

主辦單位：CU X Rubbish & CU Happy Corner & 新亞學生會 NASU (協辦)

所收集的物資，將於

下學年之學期初以時分
 交換形式派發予
 中大學生。

All the collected items will
 be distributed to CUHK students
 using CU Time Credit to exchange.

- 注意事項：(1) 請清潔乾淨所有物資
- (2) 恕不接受食物，請和好友
 分享或放於pantry共享
- Reminders: (1). Please Make Sure the Stuff is CLEAN.
- (2). Food is NOT accepted. Please SHARE
 with your friends or at the pantry

Hostel Smart Meter

Energy Consciousness Living

- Students can understand their consumption pattern and plan their suitable usage better



College Farms & Waste Recycling



Food Waste Composting Machines
 Food waste is transported to 5 composting machines on campus.
 Capacity: ~200 kg food waste per day



Compost generated is used for landscaping and farming



Organisers:



International Co-owners:



4.2 GREEN EDUCATION

Museum of Climate Change

Permanent Exhibition



Themed Exhibition



Knowledge Sharing



香港中文大學
The Chinese University of Hong Kong

捐助機構
Funded by:



香港賽馬會慈善信託基金
The Hong Kong Jockey Club Charities Trust
同心 同力 同輝 RIDING HIGH TOGETHER

WORLD'S FIRST AND FOREMOST CLIMATE CHANGE MUSEUM
全球第一所氣候變化博物館



CUHK Jockey Club
Initiative
Gaia
Think Global
Act Local

香港中文大學賽馬會
地球係行動



Organisers:



International Co-owners:



4.3 GREEN BEHAVIOUR

Green Office Programme (GO!)



Roof Farming



CU Green Buddies Eco-Tour



Cross-strait Green Campus Consortium

- CUHK, National Central University, Nanjing University, Beijing Normal University, Zhejiang University, National Cheng Kung University



Organisers:



International Co-owners:



Global Alliance for Buildings and Construction

4.3 GREEN BEHAVIOUR

Love Food Hate Waste



- 5 Food Waste Composting Machines
- Capacity: 200kg of food waste/day
- Recycle 21t waste to 4t compost
- Reduce 26% food waste since 2013

Green Student Society (SO Green!)



Hostel Check-Out Recycling



Green Photo Day & Congregation



Organisers:



International Co-owners:



5. ACHIEVEMENTS



WORLD BE
2017
Sustainable Built Environment Conference

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建造業議會

HKIBC
香港綠色建築協會

International Co-owners:

SBE SERIES

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FIDIC

Global Alliance For Buildings and Construction

ACHIEVEMENTS

2016

- **Green Building Award 2016, HKGBC** Merit Award - Green Building Leadership
- **FuturArc Green Leadership Award 2016** Merit Award (Institutional) - Library Extension

2015

- Recognised as **Hong Kong Green Organisation, HKAEE**

2014

- **Green Building Awards 2014 for 4 CUHK projects**

🏆 **2009 & 2014 Gold Awards by HKAEE**
(Sectoral Award - Public Organization and Utilities)

2013

- **FuturArc Green Leadership Award 2013**
WINNER (Institutional) - An Integrated Teaching Building

2012

- Merit Award of the Commendation Scheme on Source Separation of Commercial and Industrial Waste from EPD
- Various years of Class of Excellence, WasteWi\$e Label & EnergyWi\$e Label, HKAEE



Organisers:



International Co-owners:



GREEN ACHIEVEMENTS (HK BEAM Assessment)

Platinum rating for 5 new building projects
Gold rating for 3 new building projects
Provisional Gold rating for 3 new building projects



An Integrated Teaching Building



HKJC Postgraduate Halls



CW Chu College



University Library Extension



Yasumoto International Academic Park



Organisers:



International Co-owners:



Together **We** Can Make A **DIFFERENCE!**

Management Committees: Campus Master Plan, Sustainability Policies & Programmes

Strategic Planning
Committee Campus
Planning Committee
Campus Planning and Building
Committee Committee on Campus
Sustainability
Campus Landscaping Enhancement Committee Standing
Committee on Campus Geo-technical Matters

Student Organizations

United College - Environmental Protection
Society Shaw College - Shaw Greening
S.H. Ho College - Green Life Promotion Team
WuYee Sun College - WYS Green Team
Lee Woo Sing College - Green Life
Ambassador
Programme Green World(Facebook)
Green Post
CUHK Agricultural Development Group
Environmental Science Society
CU x Rubbish
CU 拎

Presentation by Campus Development Office, CUHK 2017.
Materials courtesy of the CUHK Colleges, CDO, CPSO, CPR, ISO.

Colleges & Administrative Units

Chung Chi College - Campus
Environment Committee New Asia College -
Committee on Environmental Protection
United College - Environment Committee
Shaw College - Environmental Sustainability
Committee
S. H. Ho College - College Office
C. W. Chu College - Committee on Hostel Building
Management Wu Yee Sun College -
Campus Environment Committee
Lee Woo Sing College - Campus Sustainability
Committee Business Office Bursary - Centralized
Tender Page of green product
Information Technology
Services Centre Computer Equipment
Acquisition with green specification

Execution Offices: Green Policies, Building Projects, Sustainability Schemes & Programmes

Campus Development Office
Campus Planning and Sustainability Office
Estates Management Office Information Services Office
Institute of Environment,
Energy and Sustainability CUHK
Jockey Club Initiative Gaia and
Museum of Climate Change



Organisers:

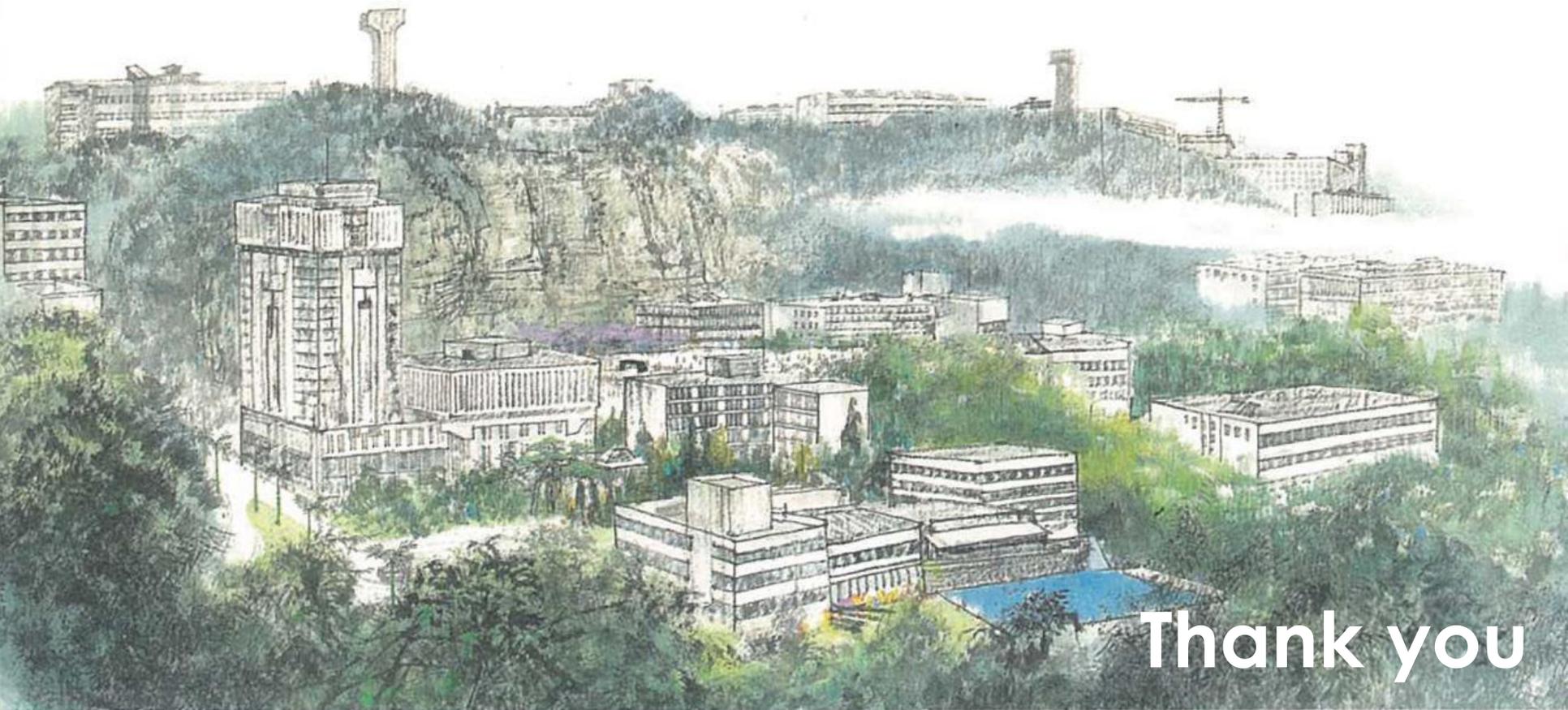


International Co-owners:





香港中文大學
The Chinese University of Hong Kong



Thank you



Organisers:



CONSTRUCTION
INDUSTRY COUNCIL
建造業議會



HKGBC
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SBE
SERIES

International Co-owners:



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