

# The Chinese University of Hong Kong Campus Master Planning: Stage 3 Stakeholder Engagement Activities – Specific Proposal

香港中文大學

校園發展計劃：第三階段持份者交流活動 - 具體建議



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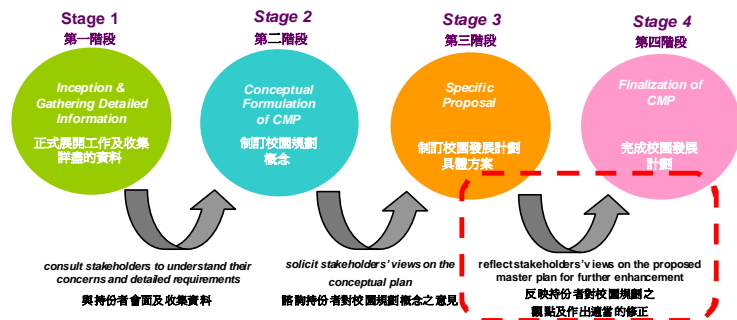
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## Introduction 引言

### Work Stages of CMP 校園發展計劃工作流程



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## Introduction 引言

### Stage 2 – Stakeholders' Engagement 第二階段持份者參與計劃 General Consensus 持份者普遍的期望

- Conserving the Places of Value**
  - elaborate the proposed assessment procedure with consideration of consultation process
- Places for Academic & Recreational Activity**
  - maintain the Central Campus as the major teaching and administrative centre, yet avoid overcrowding
  - locate research facilities relatively further away from the Central Campus
  - forming communities of academic disciplines to achieve physical proximity and obtain the benefits of interdisciplinary collaboration
- Enhancing College Life**
  - form a neighbourhood setting for the new and existing colleges
  - enhance linkage within and among colleges, particularly to enhance linkage to the Central Campus
  - maintain and enhance the identity of each college
  - provide more spaces for both resident and non-resident students for social gathering and interaction
  - provide more indoor or semi-open venues for learning and share of knowledge
- A Landscape of Vital Importance**
  - explore thematic planting, yet maintaining the existing bio-diversity of birds and plants
  - promote use of natural trails and preserve the existing natural environment
- A Pedestrian-Friendly Campus**
  - provide additional vertical links with proper integration with the buildings
  - provide new exit at northern edge of University Station, with appropriate entrance design to enhance the University's identity
  - provide a designated and safe cycling track and parking spaces at low-level precinct
  - provide centralized carpark on the fringe of campus, but with sufficient support of a comprehensive pedestrian network and improved shuttle bus service
  - improve shuttle bus service including reconfiguring the bus route
- Making a Sustainable Campus**
  - establish guidelines for new structures/buildings
  - promote greening and environmentally friendly building design
  - establish additional policies on the reduction of gas emissions and energy consumption



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**CAMPUS MASTER PLAN**  
校園發展計劃

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**Our Vision for 2021 二零二一年規劃展望**

- “To build most sustainably on what we now have, we must strengthen the academic core and the encircling colleges as palpable places in a fine hillside landscape and we should connect the whole composition with a lattice of pathways.” *Edward Cullinan*
- To maintain the CUHK campus as an ideal place for scholarly pursuits and to enhance the quality of life of the entire community by:
  - improving the *integration of learning, working, living, and social interaction*
  - creating a neighbourhood colleges to *strengthen the overall sense of community and identity* while accommodating new possibilities
- To formulate a planning framework to enable the evolution of the campus which *balances the need for future growth with preserving the lush, green and serene setting*

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**Six Planning Precepts**  
六項規劃原則

- 1 Conserving the Places of Value  
文化景貌保育
- 2 Places for Academic & Recreational Activity  
教研康體設施
- 3 Enhancing College Life  
校園生活添姿采
- 4 A Landscape of Vital Importance  
校園景觀
- 5 Creating a Pedestrian-Friendly Campus  
創建樂步健行校園
- 6 Making a Sustainable Campus  
可持續發展校園

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**Conserving the Places of Value**  
文化景貌保育

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Conserving the Places of Value 文化景貌保育

### Objectives 目標

- To establish a methodology to conserve and assess the Places with Cultural Significance, and the main criteria for evaluating the results of intervention
- To manage changes to best preserve or enhance the values, interpret or present the significances, and sustain the cultural resources for the long term cultural development of the campus



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Conserving the Places of Value 文化景貌保育

### Flow Chart For Assessment of Places with Cultural Significance 重要文化景貌評估流程圖

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    graph TD
      A["Proposed intervention on  
1. Architecture  
2. Cultural Landscape"] --> B["Assessment Mechanism  
• establish the 'List of Places with Cultural Significance' with reference to Stakeholders' views  
• conduct Preliminary Assessment by appropriate committee  
• appoint appropriate committee / specialist consultants to conduct Detailed Assessment"]
      B --> C["Proposed intervention to be proceeded"]
    
```

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Conserving the Places of Value 文化景貌保育

### Detailed Assessment 深入評估

The process of the Detailed Assessment:

```

    graph LR
      A["Detailed Assessment will be conducted by:  
•either appropriate committee or  
•specialist consultants"] --> B["Detailed Assessment will follow the international guidelines such as:  
•Burra Charter or  
•China Principles"]
      B --> C["Establishment of Conservation Plan:  
Set up Criteria for Detailed Assessment"]
      C --> D["Assessment on the implication of intervention based on the Conservation Plan"]
    
```



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### Places for Academic & Recreational Activity 教研康體設施



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Places for Academic & Recreational Activity 教研康體設施

### Objectives on Places for Academic & Recreational Activity 教研康體設施的規劃目標

The aim is to strengthen the presence of academic and recreational buildings in the following ways:

1. Preserve and enhance the identities and the usefulness of existing academic facilities
2. Strengthen connectivity between academic facilities, existing and new
3. Enhance the landscape and make the character of the places between them as important as the buildings themselves
4. Promote walking by providing vertical transportation devices where gradients are steep
5. Give priority to pedestrians over vehicles
6. Create faculty zones to achieve physical proximity and obtain the benefits of interdisciplinary collaboration

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Places for Academic & Recreational Activity 教研康體設施

**Potential Development Areas within the Main Campus**  
於校園本部具發展潛力的地方

- Site A - Romney Stores (Nissan Huts) 貯物庫
- Site B - Village Path 山村徑
- Site C - Academic Building 1 教研樓一座
- Site D - Open Car park outside John Fulton Centre 富爾敦樓旁停車場
- Site E - Arts and Humanities Hub 人文科學中心
- Site F - Staff Residences 教職員宿舍

**Future Potential Areas**  
未來具發展潛力的地方

- Site G - University Station Site 大學站旁的土地
- Site H - Area 39 (under Land Application) 39區

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Places for Academic & Recreational Activity 教研康體設施

**Site A: Romney Stores (Nissan Huts) – Indoor Sports Complex**  
貯物庫 室內運動綜合大樓

Notional Site Area: 5,290 m<sup>2</sup>  
Proposed Max GFA: 3,860 m<sup>2</sup>  
Proposed NOFA: 2,125 m<sup>2</sup>  
Plot Ratio: 0.4

Jockey Club Postgraduate Hall

Sir Philip Hadden Cave Sport Field

New Sports facility

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Places for Academic & Recreational Activity 教研康體設施

**Site A: Romney Stores (Nissan Huts) – Indoor Sports Complex**  
貯物庫 室內運動綜合大樓

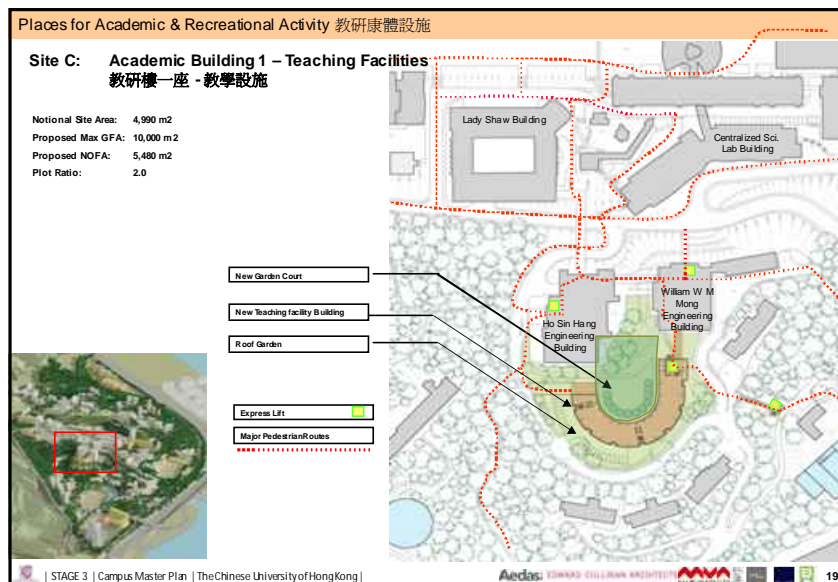
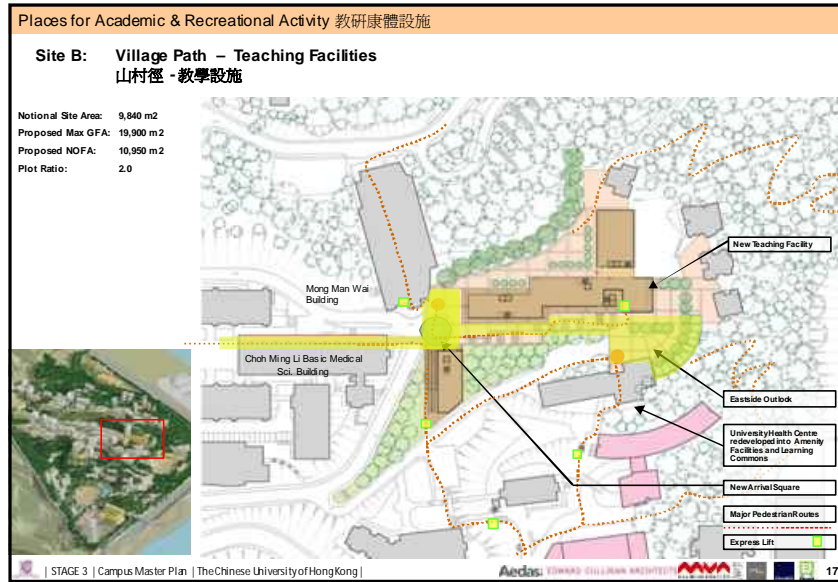
View from Sir Philip Hadden Cave Sport Field

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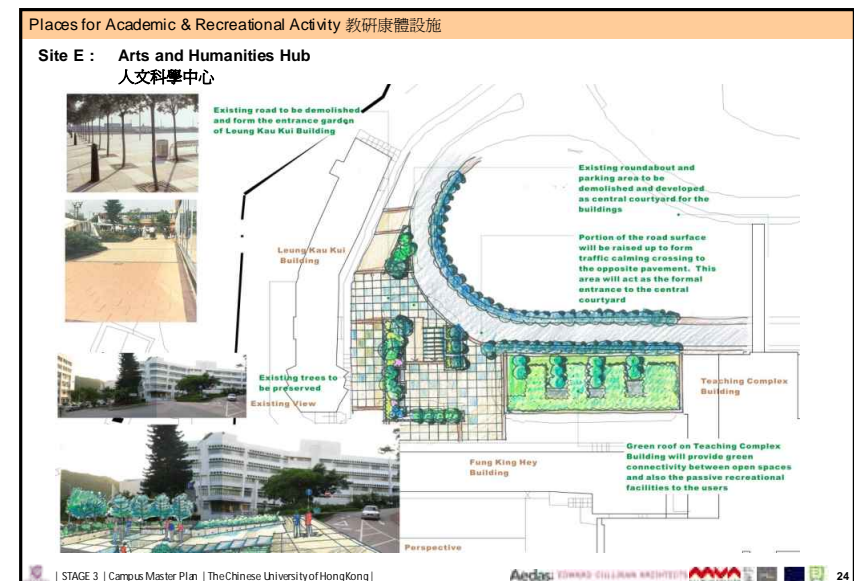
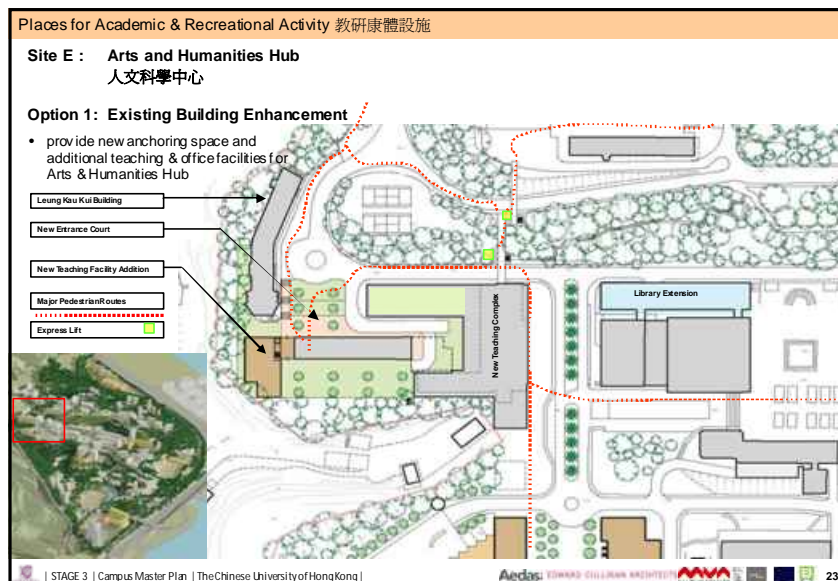
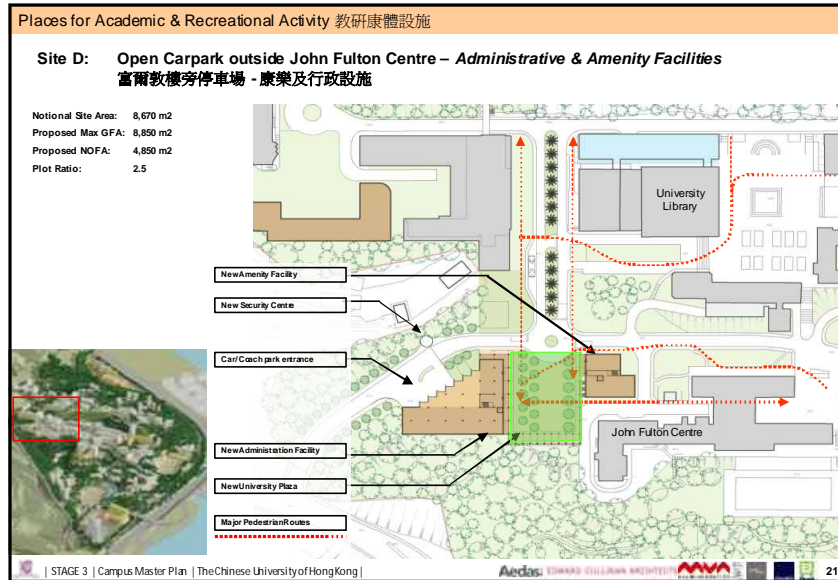




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Places for Academic & Recreational Activity 教研康體設施

**Site E : Arts and Humanities Hub  
人文科學中心**

**Option 2: Re-development**

- provide new anchoring space and additional teaching & office facilities for Arts & Humanities Hub

Leung Kau Kui Building

New Entrance Court

New Teaching Facility

Major Pedestrian Routes

Express Lift

New Building Complex

Library Extension

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Places for Academic & Recreational Activity 教研康體設施

**Site E : Arts and Humanities Hub  
人文科學中心**

**Option 2: Re-development**

View of new Arts & Humanities Hub looking east

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Places for Academic & Recreational Activity 教研康體設施

**Site D: Open Carpark outside John Fulton Centre – Administrative & Amenity Facilities  
富爾敦樓旁停車場 - 康樂及行政設施**

**Site E : Arts and Humanities Hub  
人文科學中心**

Site E

New Teaching Complex

Site D

View from Main Entrance at Tai Po Road

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Places for Academic & Recreational Activity 教研康體設施

**Site F: Staff Residences  
教職員宿舍**

New Staff Residential Block

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Places for Academic & Recreational Activity 教研康體設施

**Site F: Staff Residences 教職員宿舍**



View of new staff residences looking east

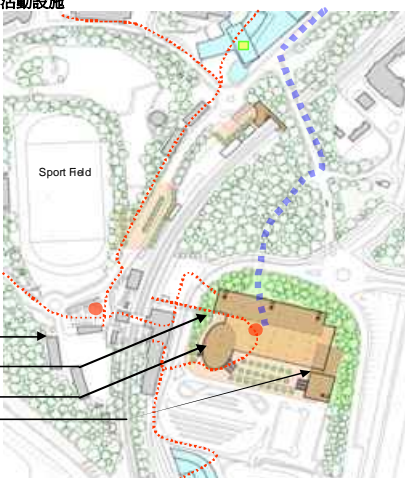


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Places for Academic & Recreational Activity 教研康體設施


**Site G: University Station Site – Facilities for teaching, continuing education & community events 大學站旁的土地 - 教學、專業進修教育及社區活動設施**

Notional Site Area: 13,180 m<sup>2</sup>  
Proposed Max GFA: 50,000 m<sup>2</sup>  
Proposed NOFA: 27,500 m<sup>2</sup>  
Plot Ratio: 3.79



Sport field


- Possible Location for relocated Clinic
- New Shuttle Bus Station
- Conference Facilities
- New Teaching Building
- Express Lift
- Major Pedestrian Routes



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Places for Academic & Recreational Activity 教研康體設施

**Site G: University Station Site – Facilities for teaching, continuing education & community events 大學站旁的土地 - 教學、專業進修教育及社區活動設施**



Facility for Teaching

Shuttle Bus Station & Car park

Conference and Community Facilities

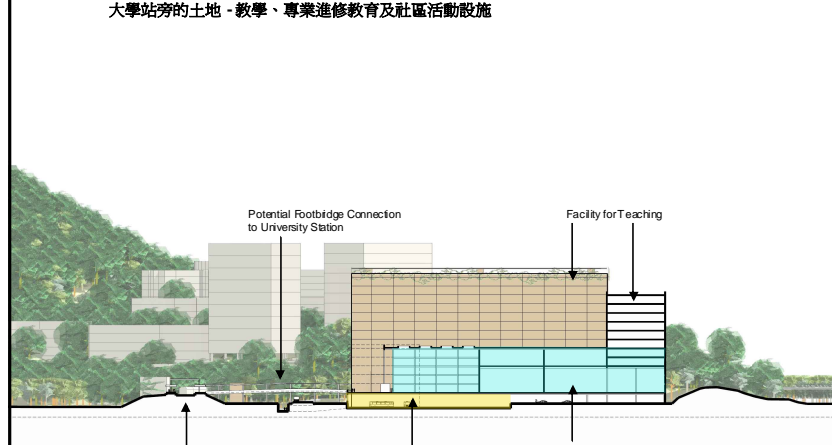
Connection to Campus

View of Site F looking west

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Places for Academic & Recreational Activity 教研康體設施

**Site G: University Station Site – Facilities for teaching, continuing education & community events 大學站旁的土地 - 教學、專業進修教育及社區活動設施**



Potential Footbridge Connection to University Station

Facility for Teaching

MTR Station

Shuttle Bus Station & Car park

Conference and Community Facilities

View of Site G looking north

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Places for Academic & Recreational Activity 教研康體設施

**Site G: University Station Site – Facilities for teaching, continuing education & community events**  
大學站旁的土地 - 教學、專業進修教育及社區活動設施



View from Tolo Harbour



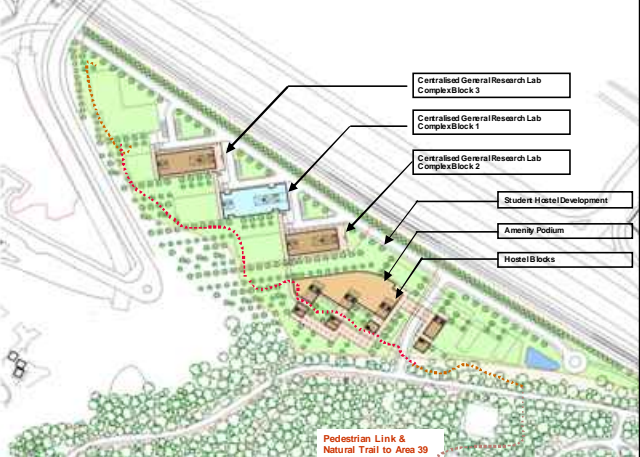
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Places for Academic & Recreational Activity 教研康體設施

**Site H: Area 39 - Research Lab & Student Hostels (under Land Application)**  
39區 - 研究綜合大樓及學生宿舍

Research Facilities:  
Notional Site Area: 3.57ha  
Proposed Max GFA: 89,250 m<sup>2</sup>  
Proposed NOFA: 61,360  
Plot Ratio: 2.5


Student Hostels:  
300 students per block



Centralised General Research Lab Complex Block 3  
Centralised General Research Lab Complex Block 1  
Centralised General Research Lab Complex Block 2  
Student Hostel Development  
Amenity Podium  
Hostel Blocks

Pedestrian Link & Natural Trail to Area 39

View from Tolo Harbour



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Places for Academic & Recreational Activity 教研康體設施

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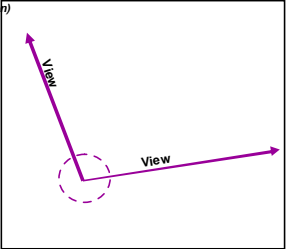
View of Area 39 looking east




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Places for Academic & Recreational Activity 教研康體設施

**Site H: Area 39 - Research Lab & Student Hostels (under Land Application)**  
39區 - 研究綜合大樓及學生宿舍

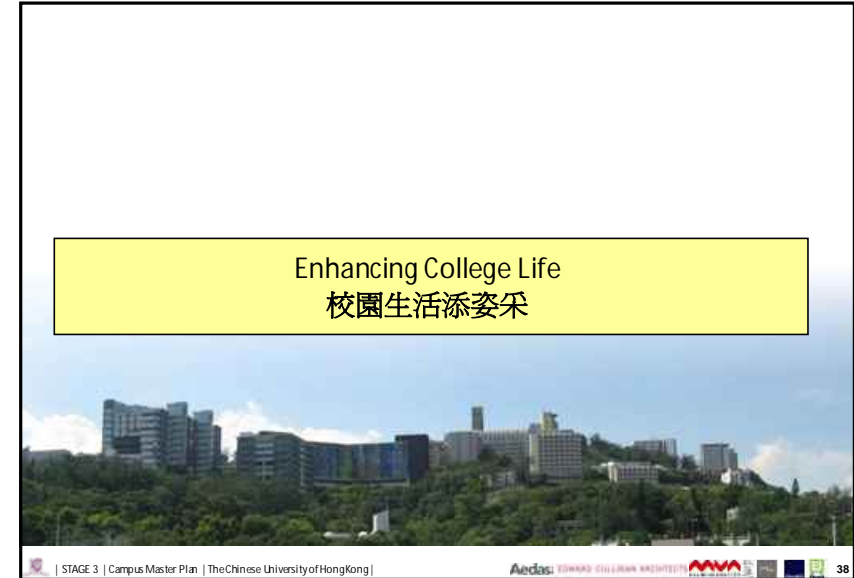


View



View of Area 39 from Shaw College

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Enhancing College Life 校園生活添姿采

**Objectives on Enhancing College Life**  
校園生活上的規劃目標

**To strengthen the identity of the individual colleges, giving each a further sense of being a distinctive place**


1. Preserve and enhance the existing characteristics of the colleges
2. Encourage social interaction by enhancing the landscape and valuing the spaces between buildings
3. Strengthen pedestrian routes between colleges and the campus core
4. Establish neighborhood settings for the existing & new colleges to enhance sharing of facilities

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Enhancing College Life 校園生活添姿采

- **Opportunity for individual Colleges to contribute to the Masterplan within college boundaries**
  - Chung Chi College
  - New Asia College
  - United College
  - Shaw College
  - Enhancement of College Identity
  - Potential Location for New Facilities
- **Recommendations for Facilities for College Neighborhood**

*All recommendations are based on each Colleges' own Planning and Resources considerations*



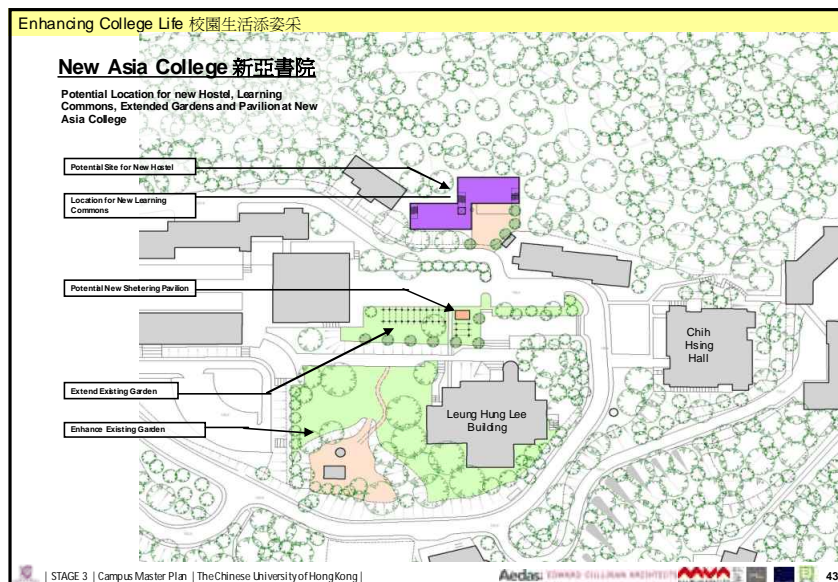
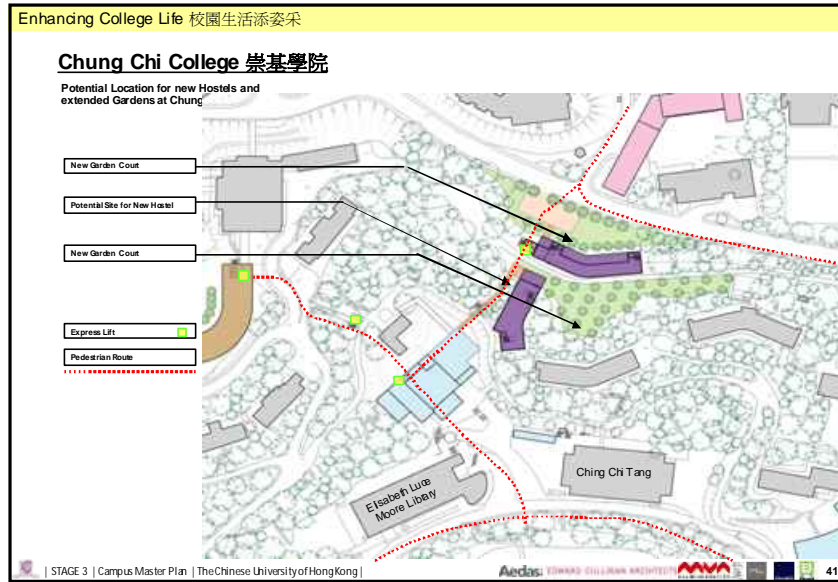
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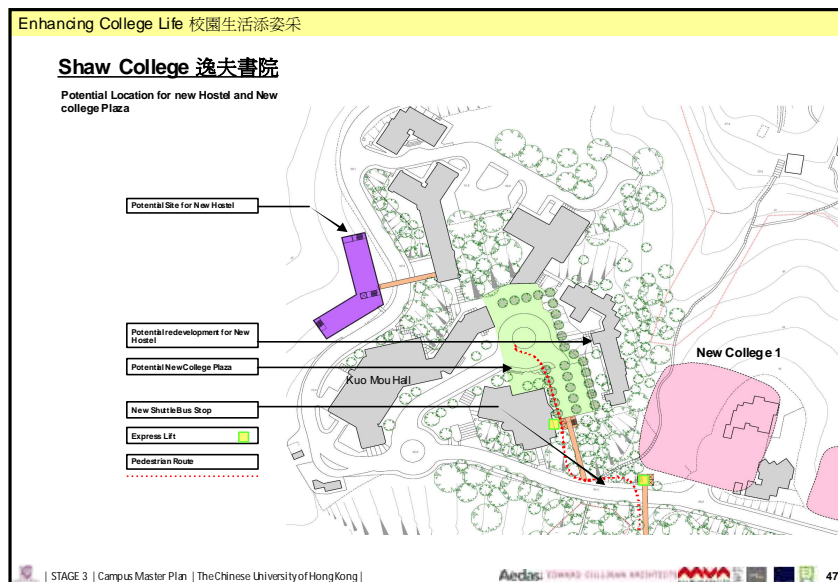
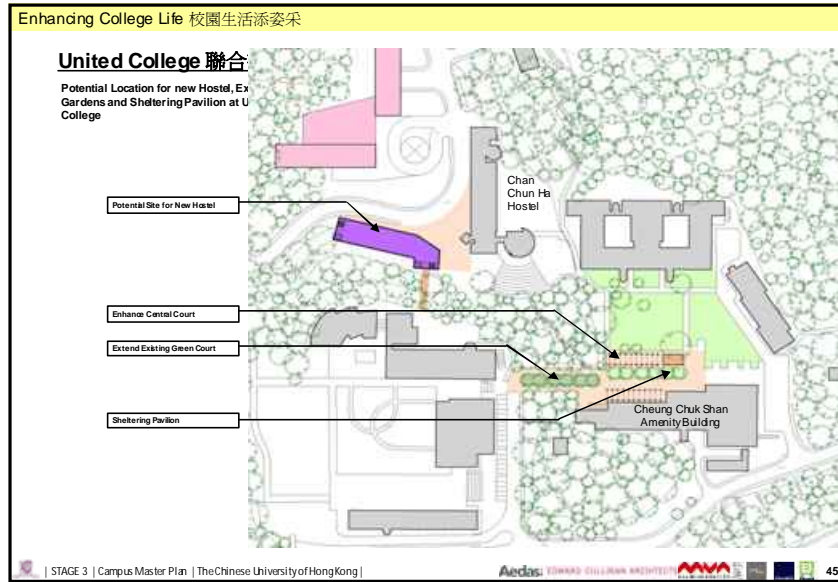


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Enhancing College Life 校園生活添姿采

### College Neighbourhood 鄰里區

- 5 new colleges have been established to cater for the increase intake of undergraduate students
- Two Neighbourhood Zones are proposed:
  - Low-level Precinct - Morningside College and S. H. Ho College form a college neighbourhood with the existing Chung Chi College
  - High-level Precinct - Lee Woo Sing College and two new colleges form a college neighbourhood with the existing New Asia College, United College and Shaw College

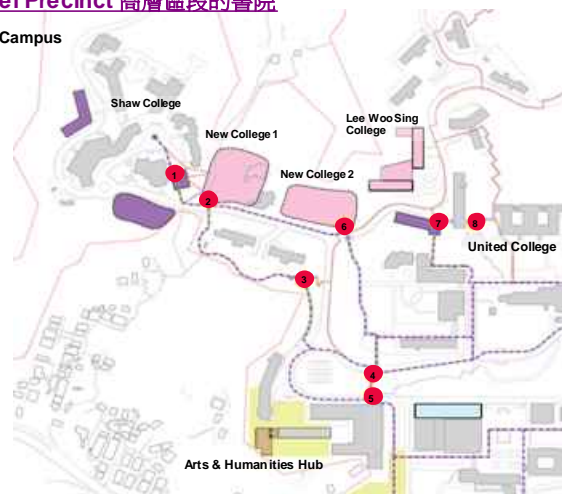


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Enhancing College Life 校園生活添姿采

### Colleges at High-level Precinct 高層區段的書院

#### Pedestrian Links to Central Campus



- Express lift from Shaw College to Campus Circuit West
- Express lift from New College 1 to new path at rear of Residence 3 & 4
- Express lift from path at rear of Residence 3 & 4 to Residence Road
- Express lift from United Road to bridge
- Express lift from bridge to Central Avenue
- Express lift from New College 2 to new bridge link with United College
- New Express lift in new potential hostel at United College
- Existing lift from Chan Chun Ha Hostel to United College

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Enhancing College Life 校園生活添姿采




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Enhancing College Life 校園生活添姿采

### Learning Commons 學習開放空間

#### New learning spaces to accommodate:

- Changing curriculum demands
- More collaborative learning, problem solving, managing information, knowledge generation, etc.
- Changing student demographics and increased numbers & diversity
- Decreasing cost of technology and increasingly widespread use of new technologies




Learning Commons at ECA's Centre for Mathematical Sciences, Cambridge

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Enhancing College Life 校園生活添姿采

**Learning Commons 學習開放空間**  
Shifting Paradigms in Universities

Old Paradigm	New Paradigm
Knowledge is presented objectively to students	Knowledge is (co)-constructed by individuals and groups
Education process - timetabled by institution & controlled by a teacher	Learning occurs at a time and a place convenient to the learner
Students dependent on institution to guide them through their study	Students independent and have greater choice what they study
Education process - timetabled by institution & controlled by a teacher	Learning occurs at a time and a place convenient to the learner

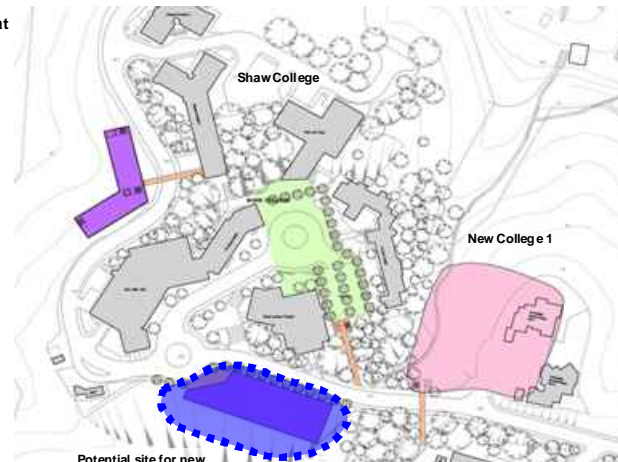


Semi-outdoor learning space at Singapore Management University

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Enhancing College Life 校園生活添姿采

**Learning Commons 學習開放空間**  
Learning Commons at High-level Precinct

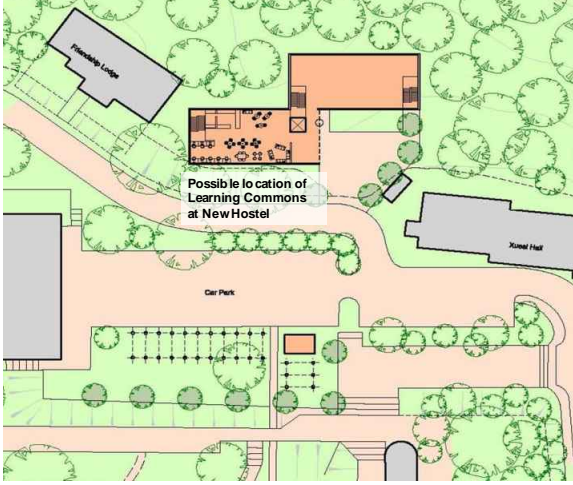


Potential site for new Learning Commons / Amenity Facilities


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Enhancing College Life 校園生活添姿采

**Learning Commons 學習開放空間**  
Learning Commons at New Hostels



Possible location of Learning Commons at New Hostel



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Enhancing College Life 校園生活添姿采

**Learning Commons 學習開放空間**  
Learning Commons at Anchoring Space

- University Health Centre – to be converted into Learning Commons, intergraded with the new Plaza, Eastside Outlook, at the end of Clinic Road
- Possible site for relocation of University Health Centre :  
- Carpark adjacent to Staff Quarters E & Interuniversity Hall



Flexible outdoor space at Eastside Outlook at Clinic Road



Flexible Learning Space at ECA's St John's College, UK

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A Landscape of Vital Importance 校園景觀

**Objectives on Campus Landscape 校園景觀規劃目標**

To create a 'Green and Humanistic Landscape Framework for CUHK'

**Landscape Strategy 景觀規劃策略**

1. Promote the enjoyment of the landscape and visual amenity of the surroundings
2. Enable active experience of the natural campus context
3. Encourage social interaction by providing high quality landscape for gathering, study and knowledge sharing
4. Strengthen sense of belonging and community

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A Landscape of Vital Importance 校園景觀

**1. Enjoying the Landscape & Visual Amenity 觀賞校園景觀及環境**

Current Conditions	Opportunities
<p><b>Greenery as the Backdrop of Campus, providing a rich visual amenity to the University community</b></p> <ul style="list-style-type: none"> <li>• Natural Context: Tai Po Kau Nature Reserve &amp; Tolo Harbour</li> <li>• Greenery of Campus: 60% of campus area comprising slopes, landscaped areas and roof gardens</li> <li>• Landscape Zoning                             <ul style="list-style-type: none"> <li>- Indigenous Woodland</li> <li>- Screening/Buffer Plantation Woodland</li> <li>- Amenity Plantation Woodland</li> <li>- Ornamental Planting</li> </ul> </li> <li>• Habitat for Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>• maximize visual amenity with greenery</li> </ul> <p>New Asia Pavilion</p> <p><small>Photo by Professor Cheung Chan Fai</small></p> <ul style="list-style-type: none"> <li>• greening strategy on different landscape zones</li> </ul>

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A Landscape of Vital Importance 校園景觀

### Greening Strategy of Landscape Zone

校園綠化區域策略：

- 1. Indigenous Woodland**
  - high ecological and amenity value
  - protected with limited development
- 2. Screening / Buffer Plantation Woodland**
  - mainly exotic fast-growing species
  - relatively low ecological and preservation value
- 3. Amenity Plantation Woodland**
  - contribute to the visual and scenic quality of the core campus area
  - protected with limited development
- 4. Ornamental Planting**
  - contribute to scenic and visual quality of the campus
  - low ecological value

1 2 3 4

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A Landscape of Vital Importance 校園景觀

## 2. Experience the Natural Context 觀賞及體驗自然環境

Current Conditions	Opportunities
<ul style="list-style-type: none"> <li>Most of the open spaces and pedestrian linkages concentrate close to the core buildings and roadside pavement, providing few occasions for the university members to enjoy and experience the natural context.</li> <li>existing trails are identified within the indigenous woodland zone and buffer/screening plantation zones.</li> </ul>	<ul style="list-style-type: none"> <li>promote <b>natural trails</b> for enjoying nature on the Campus</li> <li>provide alternative mode of transportation</li> <li>improve the connectivity throughout the campus</li> <li>Potential Natural Trail 1: from United College to Area 39</li> <li>Potential Natural Trail 2: from Eastern Plaza to Postgraduate Hall 1</li> </ul>

Alumni's Trail

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A Landscape of Vital Importance 校園景觀

**Potential Natural Trail 1: from United College to Area 39**

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A Landscape of Vital Importance 校園景觀

**Potential Natural Trail 2: from Eastern Plaza to Postgraduate Hall 1**

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A Landscape of Vital Importance 校園景觀

### 3. Encourage Interaction & Provide High Quality Landscape 鼓勵交流及提供高質素環境

Current Conditions	Opportunities
<ul style="list-style-type: none"> <li>The size and number of the existing open spaces are insufficient</li> <li>The outdoor social interaction activities were limited by the scattered pattern of the destination open spaces.</li> </ul>	<ul style="list-style-type: none"> <li>To establish a <b>open space network</b> connecting new and existing open spaces: these can be further integrated with semi-outdoor / indoor spaces to form a larger network for social interaction</li> <li>To integrate individual spaces associated with existing and potential buildings together: this "plaza" or "courtyard" will contribute to the <b>genus loci</b> of a building group with similar character</li> <li>To reinforce local distinctiveness with <b>distinct open character and thematic planting</b></li> <li>The character of open spaces shall <b>respond to the adjacent academic uses</b> and <b>adapt to any change within the adjacent land use</b></li> </ul>

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A Landscape of Vital Importance 校園景觀

### Open Space Network Plan 休憩空間網絡

Proposed New Open Spaces:

- Site A: Romney Stores
- Site B: Village Path
- Site C: Academic Building No.1
- Site D: Open Car Park outside John Fulton Centre
- Site E: Arts & Humanities Hub
- Site G: University Station Site
- Site H: Area 39

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A Landscape of Vital Importance 校園景觀

**Site A: Romney Stores**

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A Landscape of Vital Importance 校園景觀

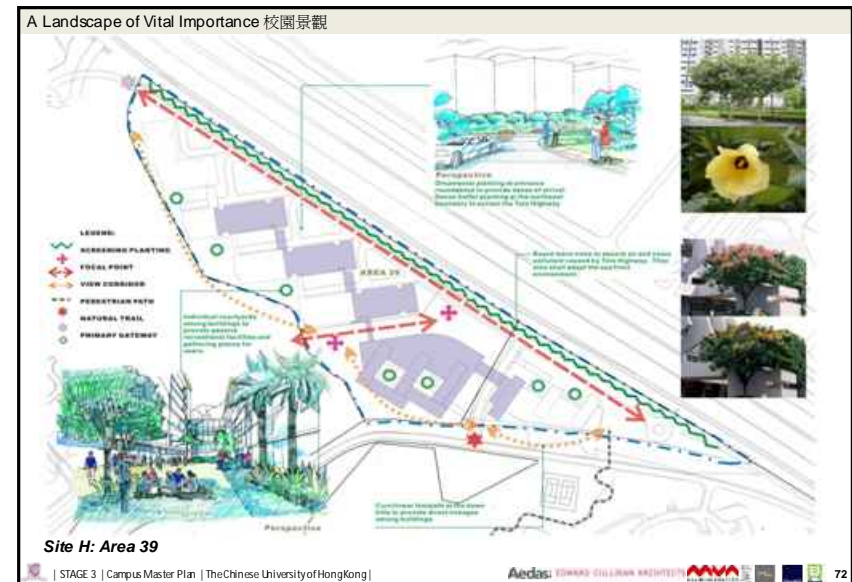
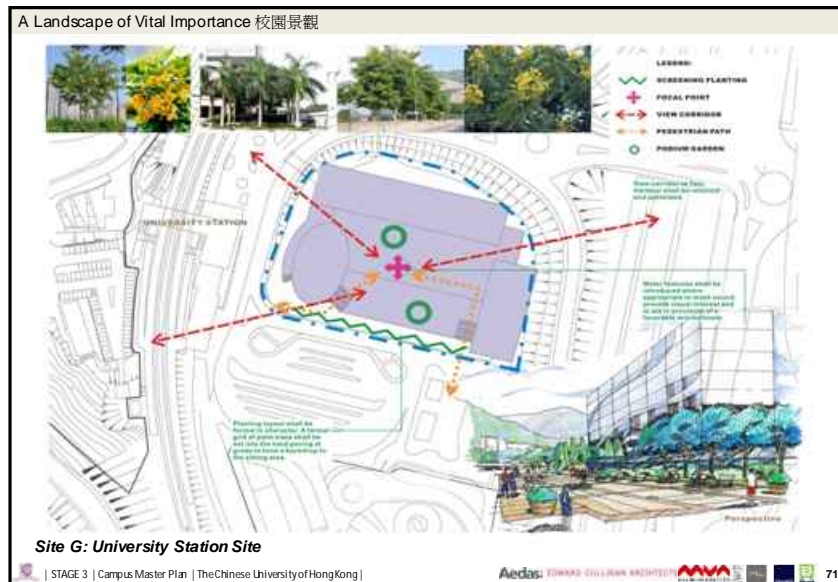
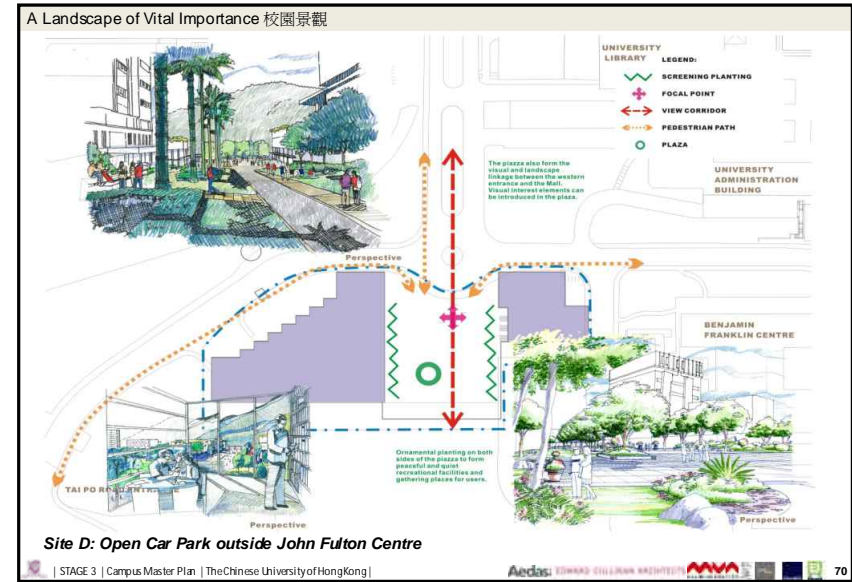
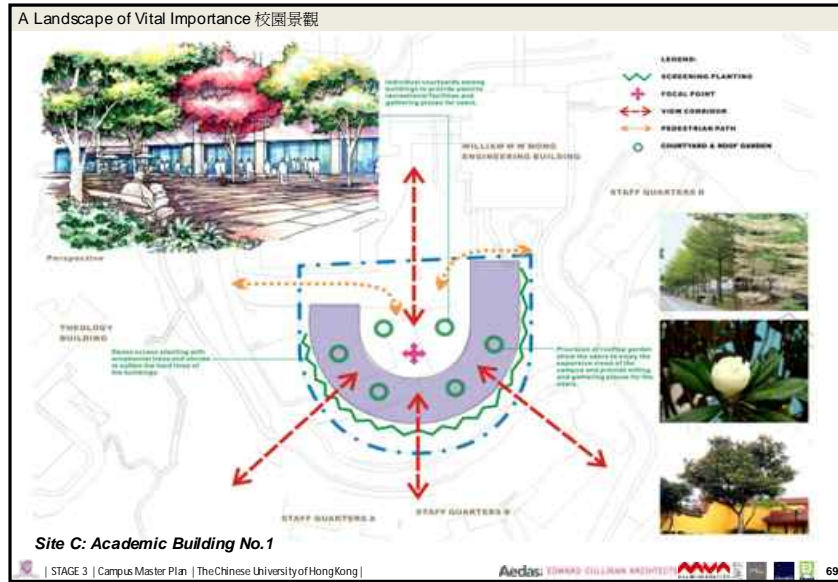
**Site B: Village Path**

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# The Chinese University of Hong Kong Campus Master Planning: Stage 3 Stakeholder Engagement Activities – Specific Proposal

香港中文大學

校園發展計劃：第三階段持份者交流活動 - 具體建議





A Landscape of Vital Importance 校園景觀

### 4. Strengthen Belonging & Community 提升歸屬感及社群意識

Current Conditions	Opportunities
<ul style="list-style-type: none"> <li>Many places with cultural and historical importance provide a sense of belonging and community to the stakeholders</li> <li>The focus on entrances is also important in enhancing the sense of belonging and community</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate landscape treatment is recommended to enhance open spaces by renovating existing landscape elements whilst maintaining their own characteristics</li> <li>Form 'gateway' into the campus through special landscape treatment</li> </ul>



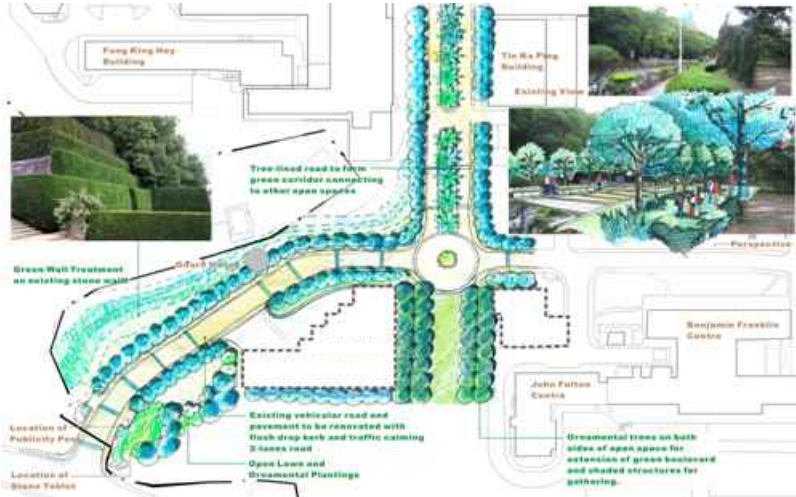
Extracted from The Way - The Chinese University Culture Trail



Enhancement at Eastern Entrance

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A Landscape of Vital Importance 校園景觀



**Enhancement of Main Entrance at Tai Po Road**

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A Landscape of Vital Importance 校園景觀



**Enhancement of Station Road Plaza**

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**Creating a Pedestrian-Friendly Campus**  
 創建樂步健行校園



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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### Objectives 目標

**Overall**


- Detailed surveys carried out on traffic, pedestrian and bus movement.
- Assessed existing, 2012 and 2021 needs & proposed road and pedestrian network sustainability.

**Pedestrians**

- Reduce reliance on buses by improving connectivity and maximizing vertical links to reduce need to walk up stairs.
- Provide new walkways/bridges and vertical connections, especially in the new developments, to develop a network supporting the Pedestrian Friendly Campus ideal.

**Vehicles**

- Review circulation and give priority to pedestrians. Wherever possible, separate vehicular traffic and pedestrians.
- Promote connectivity to Area 39 from the station but also provide good linkage to the Central Campus.
- Centralise visitor car parking areas on the fringes of the campus to reduce non-essential vehicular trips.

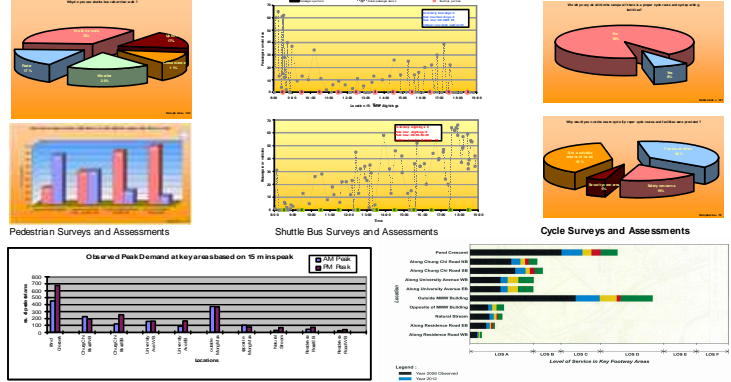


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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### Traffic Survey 交通調查


Surveys have been conducted at late Sept 08 to mid Oct 09 to collect pedestrian and vehicular traffic data. Based on the data, current, 2012 and 2021 traffic demands are assessed to determine the pedestrian and vehicular traffic issues of existing network.



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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### 2021 Pedestrian Network



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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### Existing Pedestrian Issues 現有的行人問題


- Pond Crescent
- Shuttle bus stop at Station Road

**Existing Problems**

- Footway capacity inadequate
- Conflicts between pedestrian and vehicles at the junction area of Pond Crescent and Chung Chi Road.
- Not enough space at Shuttle bus stop

**Improvement**

- Make Pond Crescent one-way anti-clockwise to simplify traffic movements
- Enable footway widening with better crossings
- Provide new bus bay to increase bus pick up capacity and reducing waiting for passengers



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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### 2012 Pedestrian Issues 於2012面對的行人問題

- 1 - Shuttle bus stop at Station Road**
- 2&3 - New Pedestrian Routes at East Side of Campus**
  - Divert pedestrian demand at east of Pond Crescent - Express lifts at New Integrated Teaching Buildings and Pentecostal Mission Hall Complex.
  - Developing Village Path is important to fully connect the pedestrian route to the mall
- 4 - New Pedestrian Route through Student Amenity Centre**
  - Redeveloping Academic Building No.1 is essential to reinforce the route
  - Establish express lift near Staff Quarters G
- 5 - New Colleges at Residence Road**
  - More demand on Residence Road footways (although the road capacity adequate for the demand)
  - Express lifts and bridges are provided to separate students and vehicles
  - Secondary route at rear of Residence 3 & 4

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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### 2021 Pedestrian Issues 於2021面對的行人問題

- 1 - New PTI at Site G**
  - Demand due to increase in students (Estimation of total population in 2021 is about 27,000)
  - Conflict between pedestrians and buses at the Shuttle bus stop.
  - Move shuttle bus stop to new PTI at Site G
  - More queuing area, safer and covered
- 2 - Pedestrian Route at East Side**
  - Integrate vertical linkage in Morningside College to University Health Centre, potentially converted for amenity use
  - Vertical linkage will be integrated in Village Path to facilitate people traveling to the mall
- 3 - More Natural Trails**
  - To develop two more natural trails as alternative means of transport.
  - Provide pleasant alternative to buses
  - Promote exploration of the environment

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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

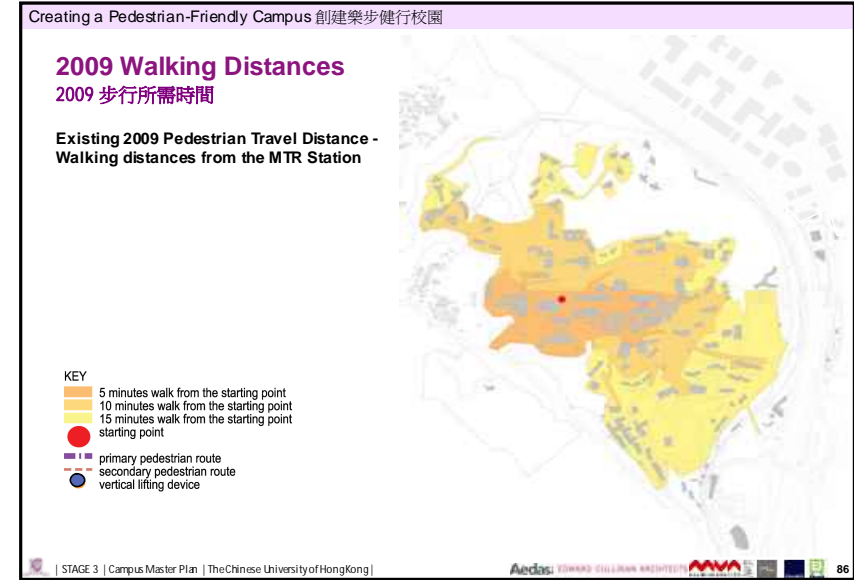
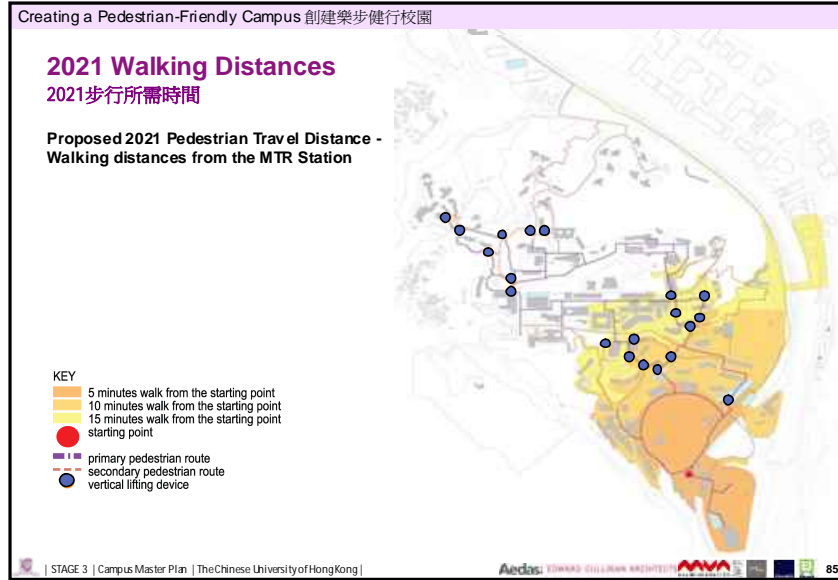
### 2009 Walking Distances 2009 步行所需時間

Existing; 2009 Pedestrian Travel Distance - Walking distances from the MTR Station

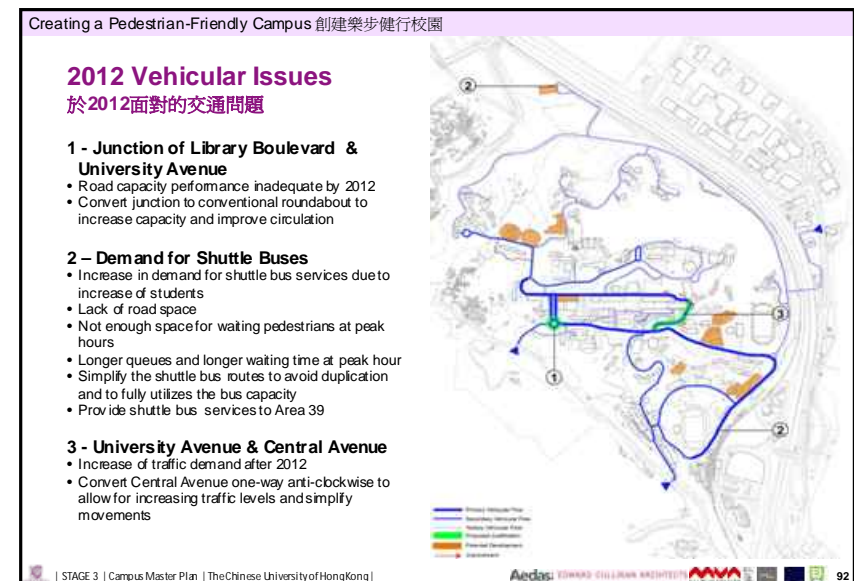
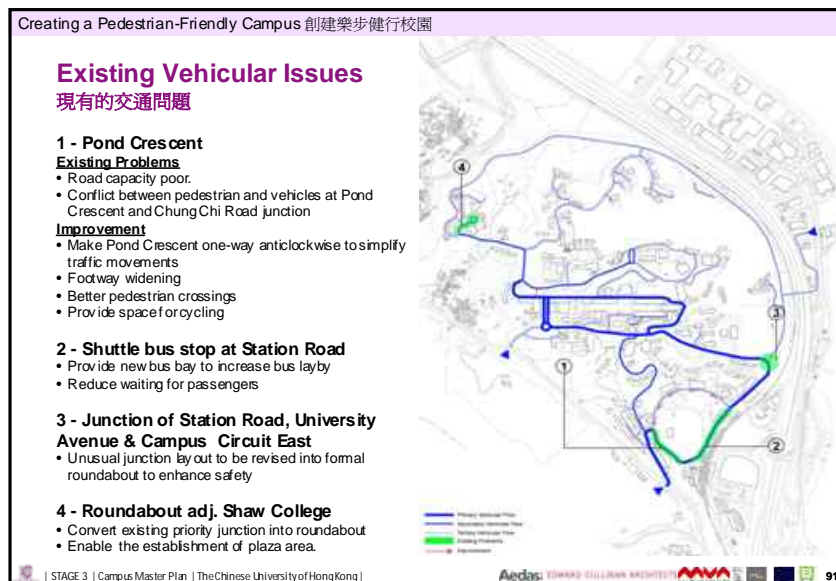
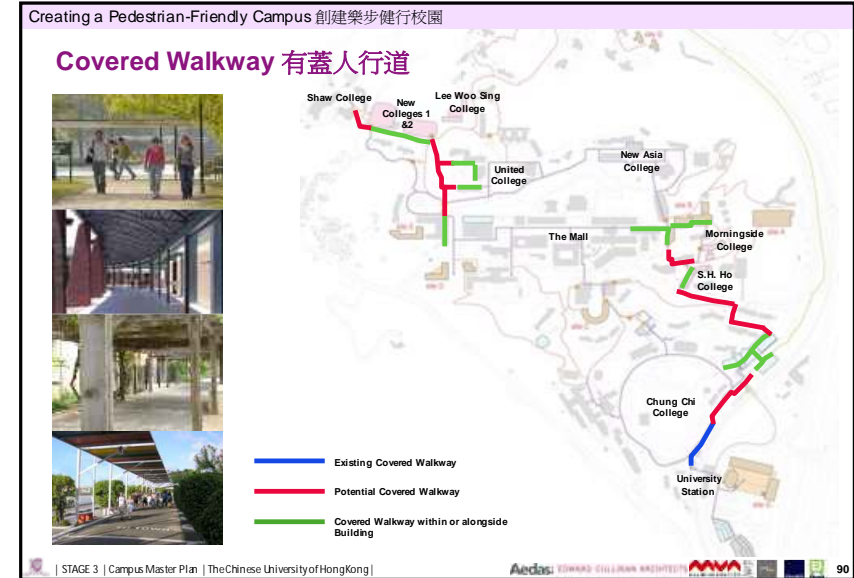
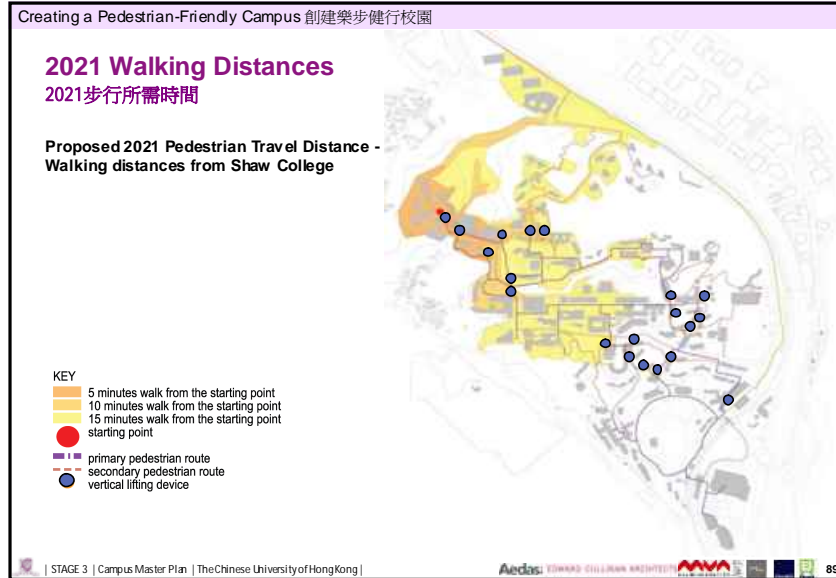
KEY

- 5 minutes walk from the starting point
- 10 minutes walk from the starting point
- 15 minutes walk from the starting point
- starting point
- primary pedestrian route
- secondary pedestrian route
- vertical lifting device

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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### 2021 Vehicular Issues 於2012面對的交通問題

- 1 - New PTI at Site G**
  - Not enough boarding space for buses, long queues and long waiting times at existing shuttle bus station
  - New road link between Site G and main campus
  - New PTI can be established in Site G to solve the traffic issues in Station Road
  - Existing shuttle bus stop area can be developed into a plaza
  - Involves land issues with Government to build the road
- 2 - 'Park n Ride' car parks**
  - Provide 'Park n Ride' car park at the campus periphery for students & visitors to use and to reduce carriageway capacity



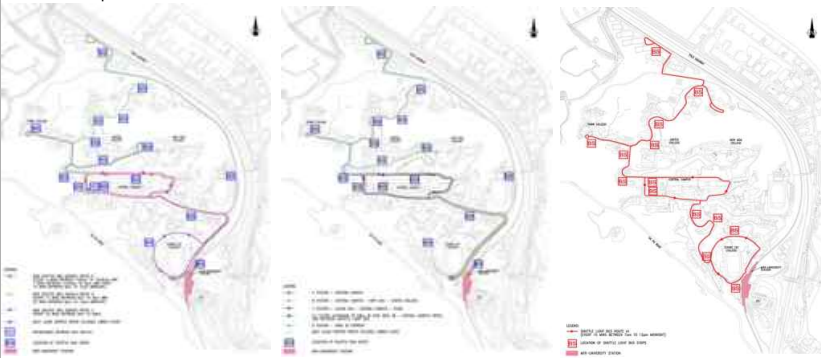
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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### Shuttle Bus Services 穿梭校巴服務

To reconfigure shuttle bus services:

- avoid duplication of services
- better utilization of existing sources to cope with the increasing demand of services
- reduce pollution



Bus & Walk Strategy Option      Comprehensive Bus Strategy Option      Proposed Shuttle Light Bus Routes

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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### Mass Transit Assessment 運輸系統評估

Vehicle type	Fuel	Emissions	Costs	Reliability	Advantages	Disadvantages	Examples in use	Main Manufacturers	Notes and Recommendation for CUHK
Low emission diesel (Euro V in 2009)	Diesel	Normal As low as possible for a diesel engine	Purchase: HK\$2.0-2.5M Operating: Highest	Good	<ul style="list-style-type: none"> <li>Wide choice of models</li> <li>Low risk</li> <li>Parts and support easy to obtain</li> </ul>	<ul style="list-style-type: none"> <li>Noise</li> <li>Air pollution</li> <li>Future of price increases</li> </ul>	<ul style="list-style-type: none"> <li>Common</li> </ul>	<ul style="list-style-type: none"> <li>Alexander-Denno</li> <li>Volvo</li> <li>MAN</li> <li>Infiniti Hino</li> <li>Mercedes-Benz</li> <li>Yanzhou</li> </ul>	<p>Euro V emission requirement will be adopted in Europe in 2010, and already some manufacturers are offering Euro V compliant engines. At the time of writing no Asian Euro V engines were available in Hong Kong.</p> <p>Recommendation: Consider</p>
Hybrid Electric	Diesel or Gas	Low Lower than normal diesel	Purchase: HK\$3.5-4.0M Operating: Lower than diesel	Unclear	<ul style="list-style-type: none"> <li>Quiet</li> <li>Less pollution</li> <li>Good hill climbing ability</li> <li>Can recover energy through regenerative braking</li> </ul>	<ul style="list-style-type: none"> <li>Battery charging required overnight on some models</li> <li>Charging apparatus may be needed</li> <li>Maintenance programme</li> </ul>	<ul style="list-style-type: none"> <li>Park Island, Hong Kong</li> <li>Newcastle, UK</li> <li>New Zealand</li> <li>London, UK</li> </ul>	<ul style="list-style-type: none"> <li>Alexander-Denno</li> <li>Volvo</li> <li>Designline</li> </ul>	<p>Diesel engine charges a battery, which then powers electric motors. Storing energy in the battery means that in power demand no idling and accelerating are not placed on the engine, consequently the engine can be smaller and run at its most efficient constant speed to charge the battery.</p> <p>Recommendation: Preferred</p>

Notes on purchase costs: Costs are for 40-60 seat buses. China or Eastern Europe based builders may be able to offer lower prices - not just due to lower costs but also due to larger production runs. Diesel bus prices are based on Western European manufacturers offering Euro V compliant engines.

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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

### Cycle Track 單車徑

**Existing Problem**

- No cycle link is provided
- Students cycling on road causes safety concern.
- International moves to promote cycling

**Improvement**

- Well designed route to connect Station to Area 39.
- Better cycle parking.
- Develop cycling culture and advocates group

**Consideration**

- Infrastructure cost
- Interest in cycling
- Safety concerns
- Environmental Impacts - trees



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## Making a Sustainable Campus 可持續發展校園



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Making a Sustainable Campus 可持續發展校園


### Objective on Campus Sustainability 校園可持續發展規劃目標

To create ‘A model for a sustainable campus that reduces energy use, minimises waste and reduces the dependency on transport’ for CUHK

The sustainability framework refers to overall reductions in and benchmarks for energy consumption across the campus, as well as providing design guidelines for the sustainable development of individual buildings.



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Making a Sustainable Campus 可持續發展校園

### Current Structure 現行架構

**Policy Making**

The University Steering Committee on Environment (USCE) continues to promote environmental awareness and champions new initiatives.



**Implementation**

The University Safety and Environment Office coordinates relevant offices such as the Estates Management Office, the Campus Development Office and the Transport Unit in implementing environmental projects.




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Making a Sustainable Campus 可持續發展校園

### Sustainability underway 現行工作

**Already CUHK has made significant progress:**

- Current Policies include:
  - Environmental Policy
  - Tree Preservation on Campus
  - Policy on recycling
- building electricity use fell by ~10% from 2000-2005 to 260kWh/m<sup>2</sup>
- new building projects follow *HK BEAM & Building Energy Code*
- annual carbon audits & sustainability monitoring record progress
- substantial recycling and waste reduction programs (ISO 14000)
- use of recycled materials in paving (Eco-Glass blocks)
- rainwater storage at Wei Yuen Lake
- low energy appliance and sensor controls installed
- environmentally friendly bio-pesticides
- reduced waste building practices
- preservation of biodiversity (particularly bird & butterfly species)



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Making a Sustainable Campus 可持續發展校園

### Recommendation for Sustainable Campus 對可持續發展校園的建議

#### Towards a Low Carbon Campus

Target to be established by CUHK:

- Reduction in energy use per student
- Reduction in annual greenhouse gas (GHG) emission per student



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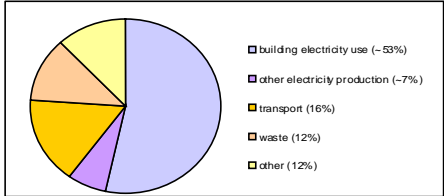
Making a Sustainable Campus 可持續發展校園

### Reference for Consideration 參考資料

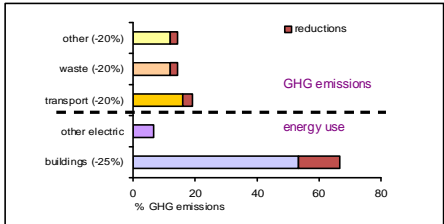
Hong Kong, as a member of APEC, is working towards a 25% reduction in energy use by 2030.

For greenhouse gas (GHG) emissions in Hong Kong:

- 60% comes from the production of *electricity* of which 89% is used to power *buildings*
- 16% comes from *transport*
- 12% comes from *waste*
- 12% comes from other uses



Hong Kong Greenhouse Gas emissions



Possible reductions in energy use & GHG emissions at CUHK

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Making a Sustainable Campus 可持續發展校園

### How to become a Low Carbon Campus? 怎樣成為低碳校園?

1. Enforce current policies on sustainability
2. Identify energy efficiency potential in existing and new buildings
  - sustainable building design
  - appoint a qualified assessor to guide building design towards the highest viable Green Star™ ratings
3. Minimize waste and resource consumption
4. Commission a Renewable Energy Feasibility Study to include the viability of on-site power generation (CCHP) and the production of on-site alternative fuels (Biogas)



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Making a Sustainable Campus 可持續發展校園



### Making a Low-carbon Building

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Making a Sustainable Campus 可持續發展校園

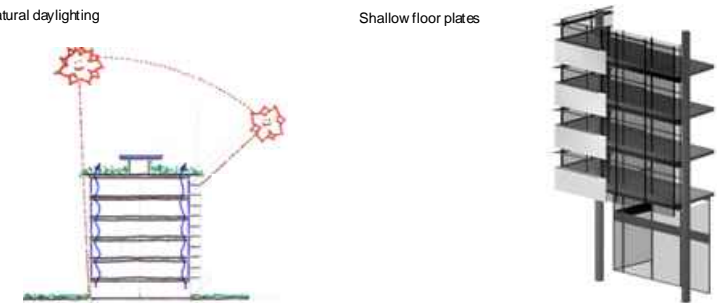
### Sustainable Building Design:

#### Shading

- North-south building orientation
- Deep eaves and balconies
- Vegetation for shading & evaporative cooling
- Covered walkways and colonnades
- Natural daylighting

#### Natural Ventilation

- Breezeways, courtyards, colonnades, balconies & atria
- Large openings for cross-ventilation
- High ceilings for good air circulation
- Doubleskin facades for stack effect cooling
- Shallow floor plates




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Making a Sustainable Campus 可持續發展校園

#### Planted roofs

- For biodiversity
- For rainwater attenuation
- For solar insulation
- To reduce Heat island effect
- For an attractive "5<sup>th</sup> elevation"



#### Materials

- Lightweight structures
- Night time cooling & insulated thermal mass
- Design for longevity & conserve buildings where possible
- Build using recycled / recyclable materials




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Making a Sustainable Campus 可持續發展校園

### Energy

- Energy efficient appliances** to minimise energy demands
- Movement / daylight sensors** to reduce demand on artificial lighting
- Rooftop **photovoltaics, solar water heaters and wind turbines** may supplement the University's energy demands through micro-generation
- Sea or Lake source heat pumps** may help to stabilise internal temperatures.
- "**Mixed-mode**" services strategy to combine air conditioning with natural ventilation to provide comfort cooling for occupied main internal spaces
- Improve building management** to increase efficiency
- Intelligent energy metering**



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Making a Sustainable Campus 可持續發展校園

### Design Performance Benchmarking - Green Star™

The master plan recommends using the Australian **Green Star™** rating scheme for holistic building performance.

The scheme is more **geographically appropriate** to Hong Kong's climate than LEED (USA) or BREEAM (UK).


A **5 star Green Star™** rating for all new buildings will be an internationally recognised mark of sustainable design achievement.

#### Reducing

The target energy reduction can be greater than the basic Green Star scoring scheme.

#### Reporting

Greenhouse gas emissions & reductions should be reported according to the Hong Kong Environmental Protection Department guidelines.



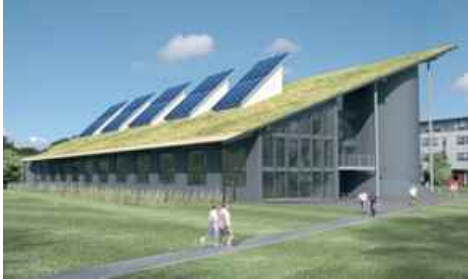

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Making a Sustainable Campus 可持續發展校園

### UK Experience: ECA's Warwick University Digital Laboratory

**BREEAM Excellent**  
Completed in 2008, the building achieved the highest rating – the UK equivalent of a **Green Star 5 or 6 Star** rating. The scoring considered management, energy, pollution, transport, land use, ecology, materials & water.

**Low carbon footprint:**  
The building uses just 19.21 kgCO<sub>2</sub>/m<sup>2</sup>.  
(This is an approximate **84% reduction** from a typical UK office building which uses ~125 kgCO<sub>2</sub>/m<sup>2</sup>.)


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Making a Sustainable Campus 可持續發展校園

### UK Experience: ECA's Warwick University Digital Laboratory

**How was this achieved?**

- Photovoltaic panels** provide on-site energy production
- Highly efficient light fittings, LEDs & sensors**
- Combined Cooling Heat & Power (CCHP)**
- "Living Roof"** brings 13 grass species & biodiversity to the site, and reduces rainwater run-off
- North-facing orientation** maximises natural daylighting & minimises solar heat gain
- Enhanced insulation** minimises heating loads
- Flexible & adaptable** to future wall / floor / services changes (e.g. demountable mezzanine floors)
- High thermal mass floors & under-slab labyrinth** provide temperature stability & support natural ventilation
- Reinforced grass vehicle surfaces & natural soakaways** attenuate rainwater run-off
- Water-efficient fittings, controls & management** (e.g. infrared flushing controls & leak detection systems)
- Water quality assessments** during construction ensured against site contamination



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Making a Sustainable Campus 可持續發展校園





### Making a Low-carbon, Low-Waste, Low Emission Campus

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Making a Sustainable Campus 可持續發展校園

### Transport

- A pedestrian friendly campus
- More energy-efficient buses & simplified bus network
- Park n Ride to reduce private car use
- Cycle Track & secure cycle storage

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Making a Sustainable Campus 可持續發展校園

### Water

- Water storage** to retain rainwater on and around buildings
- Water reservoirs** to gather from natural hill streams
- Water recycling** to use grey water (or sea water) in WCs
- Water attenuation** to reduce storm surges
- Water conservation** through efficient and aerated fittings
- Water cooling** to draw air over internal & external pools
- Water efficient appliances** in all new buildings





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Making a Sustainable Campus 可持續發展校園

### Waste & Resources

- Recycle & reuse** day-to-day materials to reduce landfill
- Reduce construction waste**
- Source building materials responsibly and locally**

Expanding the on-site **Combined Cooling Heat & Power (CCHP)** plant will avoid the significant transmission losses associated with centralised power supply, whilst using surplus heat for heating or absorption cooling.

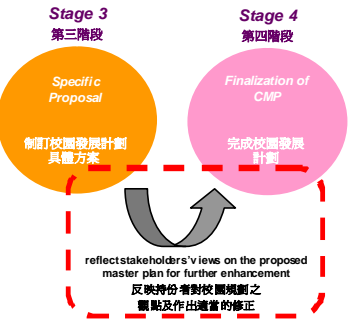
**Biogas** may represent a feasible energy source, making gas and power out of biological waste



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The next steps

### Finalization of Masterplan 完成校園發展計劃



- The masterplan will now be *further refined* to following the comments received from the Stage 3 events
- The masterplan will then remain a *'Live' document*, evolving to acknowledge gradual changes in the development of the Campus
- The masterplan will serve as a *guide* for future development within the University, by providing planning guidelines on the potential of each Development site for future architects
- The masterplan will contain information to *support the implementation process* for each development, including funding, phasing and environmental impact.

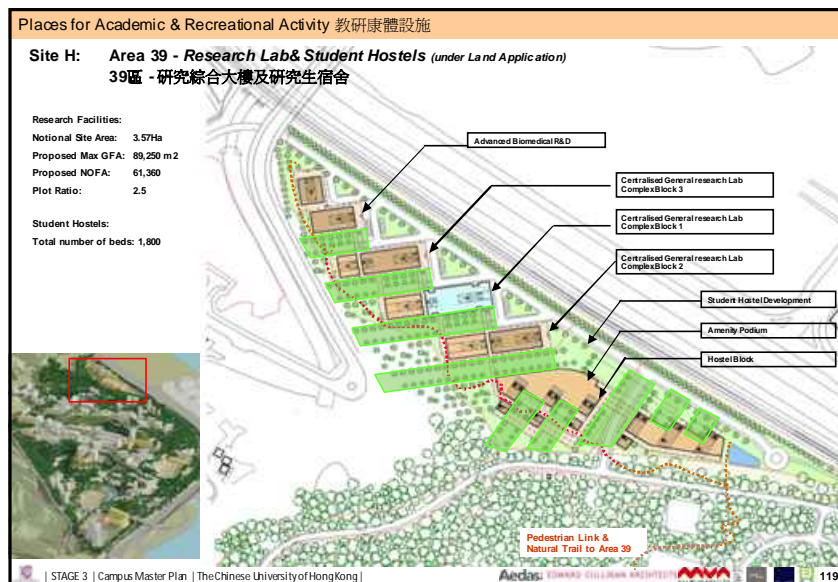
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The Chinese University of Hong Kong  
Campus Master Planning: Stage 3 Stakeholder Engagement Activities – Specific Proposal

香港中文大學

校園發展計劃：第三階段持份者交流活動 - 具體建議





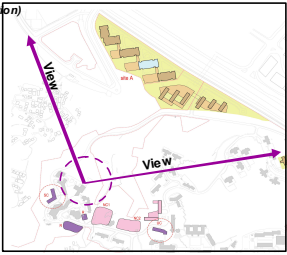

# The Chinese University of Hong Kong Campus Master Planning: Stage 3 Stakeholder Engagement Activities – Specific Proposal

香港中文大學

校園發展計劃：第三階段持份者交流活動 - 具體建議

Places for Academic & Recreational Activity 教研康體設施


Site H: Area 39 - Research Lab & Student Hostels (under Land Application)  
39區 - 研究綜合大樓及研究生宿舍

View of Area 39 from Shaw College


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Creating a Pedestrian-Friendly Campus 創建樂步健行校園




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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

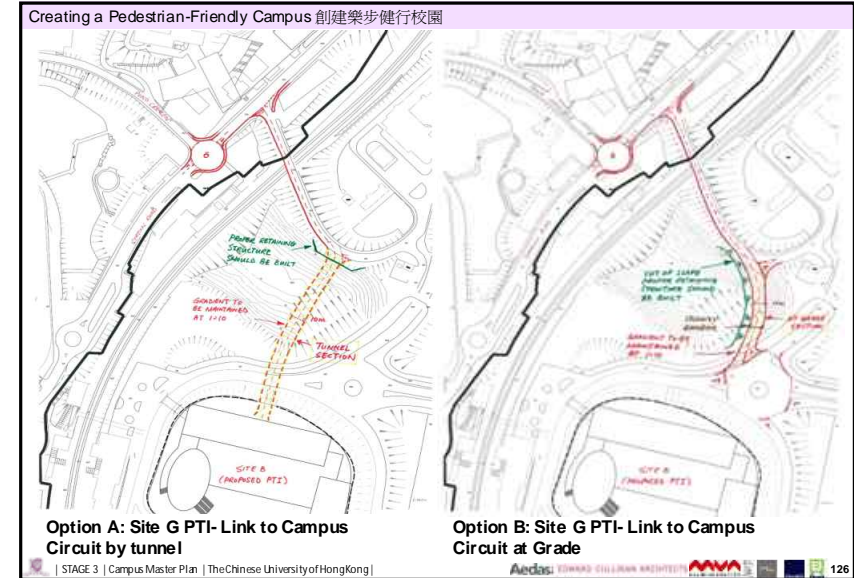
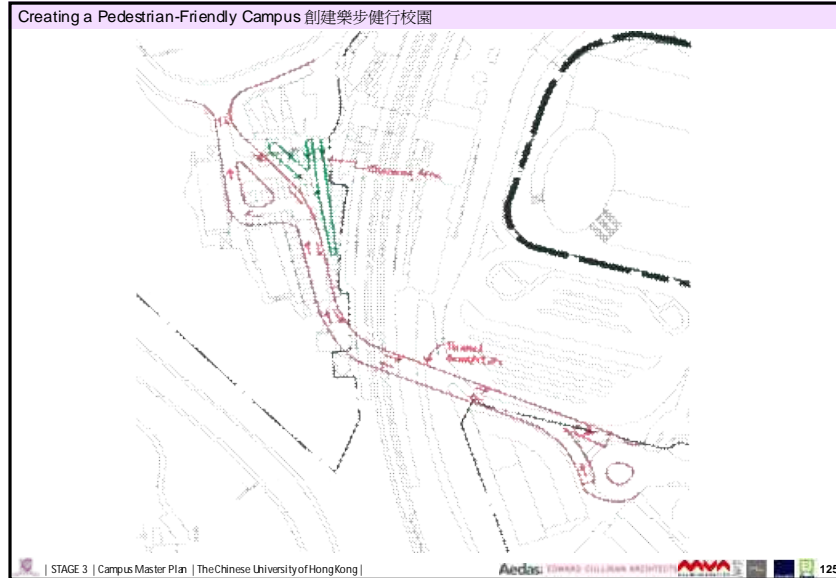


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Creating a Pedestrian-Friendly Campus 創建樂步健行校園



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Creating a Pedestrian-Friendly Campus 創建樂步健行校園

**Bus Departures**

	Departures per hour (2-way)		
	2008	2012	2021
Forecast 1 - Existing style of operation maintained (no enhancement)	78	108	152
Forecast 2: Existing bus service with improved pedestrian network	--	104	144
Forecast 3: 'Comprehensive' network and, 10% shift to walking	--	100	140
Forecast 4: 'Bus+Walk' network and, 30% shift to walking	--	90	130

**Bus Resources**

	Number of buses		
	2008	2012	2021
Forecast 1 - Existing style of operation maintained (no enhancement)	18	25	35
Forecast 2: Existing bus service with improved pedestrian network	--	22	33
Forecast 3: 'Comprehensive' network and, 10% shift to walking	--	20	30
Forecast 4: 'Bus+Walk' network and, 30% shift to walking	--	15	25

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