

Master Plan for 2021 The Chinese University of Hong Kong

香港中文大學二零二一年總體規劃藍圖

A Vision for 2021: An Unified "Axis + Web" Campus 二零二一年的規劃展望:一個"軸網一體"的校園

The New Campus Master Plan for CUHK is intended to provide not only an expansion and upgrading of campus space, to meet part of the increased space need of the Hong Kong Government-imposed 4 year undergraduate curriculum, but also to reinforce the status of the University as one of the leading Institution of the world, continue to compete with the top-tier research Universities world-wide, and to achieve "to bring together China and the West".

The existing greenery and serenity provides an ideal environment for scholarly pursuits, however, the quality of learning environment can be further enhanced by introducing friendly pedestrian flow with conscious preservation and protection of vegetation and heritage.

The master plan vision for 2021 is not merely to fulfill the increased need of spaces for various accommodations, but also to provide a long-term development framework for a unified campus based on the principle of sustainability.

The "Axis + Web" concept has been explored as the basic template for evolving the 2021 Master Plan.







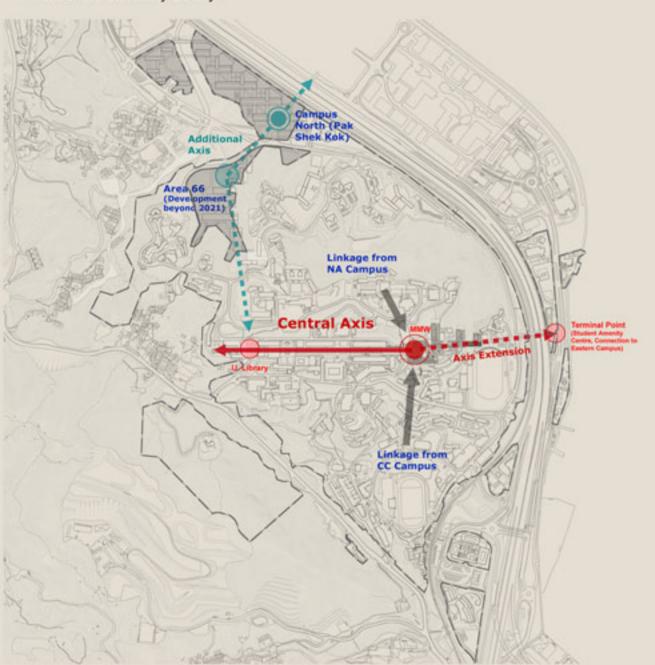
An Unified "Axis + Web" Campus 一個 "軸網一體" 的校園

The "Axis + Web" concept has been explored as the basic template for evolving the 2021 Master Plan:

Axis: Strengthen the Organization 軸線: 鞏固整體規劃

 The Mall, a major axis in the existing Central Campus of CUHK, can be further emphasized to express the University's identity and image. 設

- The Central Axis can be fostered by extending the Mall to the Eastern Campus.
- The Central Axis, which is a clearly defined east-west pedestrian concourse, can be designed with appropriate architectural language, landscaping design, lighting fixtures etc. to promote its character and identity.
- The axis serves as a direct route for pedestrian movement. One of the design concepts of the Central Axis is to facilitate a pleasant and friendly walking experience and the organization of great activities of educational and social activities.
- The design of the Central Axis, particularly the proposed extension of the Mall, shall harmonize with the terrain, environment and neighbourhood development.
- . The Central Axis, as a major feature in the Master Plan, allows easy navigation in the large campus.
- Additional Axis will be introduced to guide the future development in the northern part of the campus. The nodal
 point established between this new axis and the Mall will become the Central Node of the campus, located right
 in front of the University Library.



Axes 軸絡

The Mall, the Central Axis, remains the strongest axis of the university campus. It serves as the main pedestrian corridor for circulation among colleges. The axis shall be future extended to the proposed new developments, and continues to the Eastern Campus. The main pathway created in Area 39 (Pak Shek Kok) & Area 66 will become an addtional axis to connect the new development to the Central Campus. This axis can also be further extended to join the future developments at the other side of Tolo Highway.

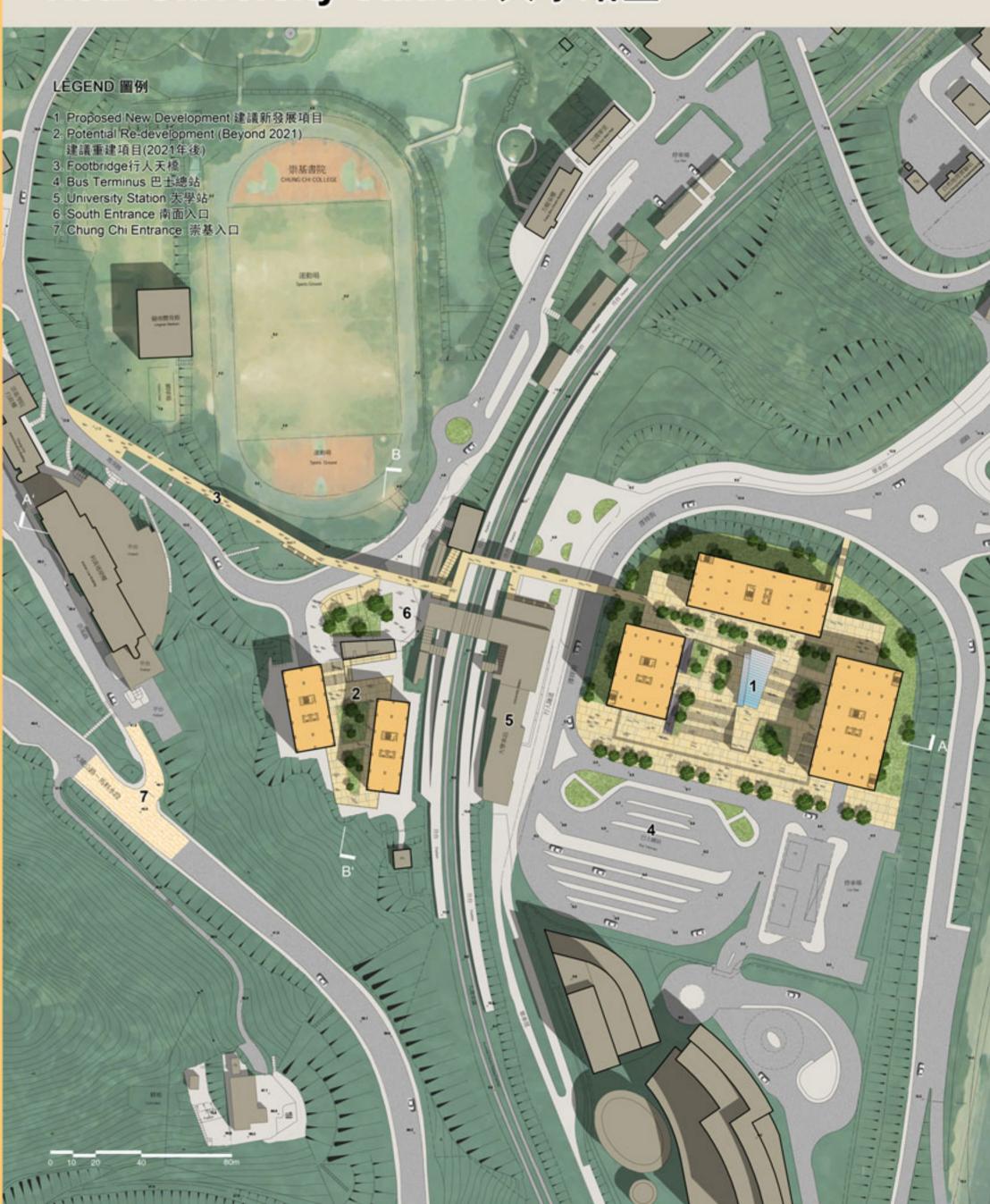
Nodes 匯聚點

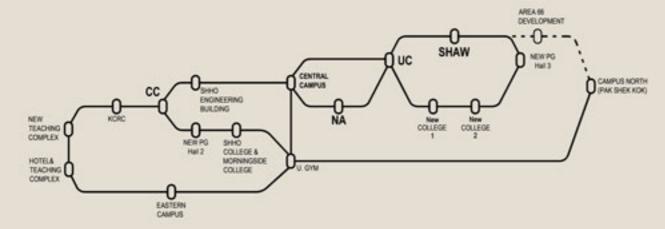
Addition of new paths will generate new activity nodes in the campus. Landscape and circulation enhancement will be provided to cater for the high pedestrian flow.

Web: Interconnecting Individual Elements 網絡:連結獨立元素

- The existing indirect pedestrian circulation shall be further improved by establishing a clearly identified pedestrian web, to encourage fewer use of vehicles within the campus.
- The movement web shall allow proper linkages between the fragmented developments in the Campus.
- Part of the existing pedestrian routes meander through the landscape which design can be reviewed to improve the walking experience. Landscaping design shall be integrated with the establishment of the web.
- Proper lighting shall be introduced, particularly for the circulation through the densely landscaped area, to ensure a secured campus environment.
- An effective signage system will be introduced to allow easy way-finding.
- The existing vehicular movement web shall be reviewed together with the proposed pedestrian movement web, ensuring a complete web of transportation has been established in the campus.
- The campus landscaping shall also be develope into a network, linking pedestrian accesses for all users and creating a hierarchy in pedestrian flow by the different levels of publicness.
- Planning guideline for environmental issues, building material, and colour coding provides a framework for future developments, forming another form of web by creating a coherent campus to the existing establishments.

Campus South 校園南 Near University Station 大學站區





Potential Areas for Development 建議發展區域

The following areas in the campus have been identified for (re)development. The design of these sites has been integrated with the Preliminary Master Plan framework to ensure a unified campus image can be established.

Proposed Developments for 2021 2021年建議規劃發展

Potential Developments Beyond 2021 2021年後規劃展望

				=-,	yond 2021 2021年後規劃展至
Campus North	The major proposed development at Campus North is area 39, which is now a virgin flat land. Two new colleges and two postgraduate halls are also proposed at campus north, where more flat land exists.	Teaching & Amenity Facilities	New Research Complex at Area 39 (Site 6)	Central campus North	Area 66 (Site C) The valley of private farmlands below Shaw College form part of the long-term strategy beyond 2021, as re-zoning from current R(C) to G/IC use and land resumption by Government on public use reasons would be necessary.
		Student Accommodation	Proposed location for 2 new colleges (Site 5) Postgraduate Hall 1 at the west of Area 39 (Site 6) Postgraduate Hall 3 opposite to Shaw campus (Site 7)		
					New area for student accommodation (Site D) The existing tennis courts in-between Area 39, Area 66 and staff quarter neighborhood is a potential land for development of student hostels.
		Parking	Parking structure at the east of Area 39 (Site 6)		
		Staff Quarters	New staff quarters next to existing staff quarter neighborhood (Site 4)		Extension of Benjamin Franklin Centre (Site A)
Central campus	The major proposed development at Central Campus is the Mall Extension, which strengthen the central axis of the campus. Another development at Central Campus is a new postgraduate hall which is close to the new Morningside College and SH Ho College, to create a new "College Spine".	Teaching & Amenity Facilities	Teaching facilities at Mall extension (Site 3)		The existing surface parkling can be decked over for additional student service facilities as an extension of existing Benjamin Franklin Centre.
		Student Accommodation	Postgraduate Hall 2 (site 2)		
		Parking	Parking structure at Mall Extension (Site 3)		
				South	Redevelopment of staff Quarters E & inter-University Hall (Site B) The existing 7-storey residential buildings next to KCRC university Station can be redeveloped to enhance the metropolitan quality of University entrance.
Campus South	The site at east of KCRC university station is a potential area of comprehensive development with integrated planning for the university entrance from KCRC for teaching facilities, parking structure and landscape for enhancing the University image.	Teaching & Amenity Facilities	Teaching Facilities at the east of KCRC University Station (Site 1)		
		Parking	Podium Parking at the east of KCRC University Station (Site 1)	Campu	and the second second

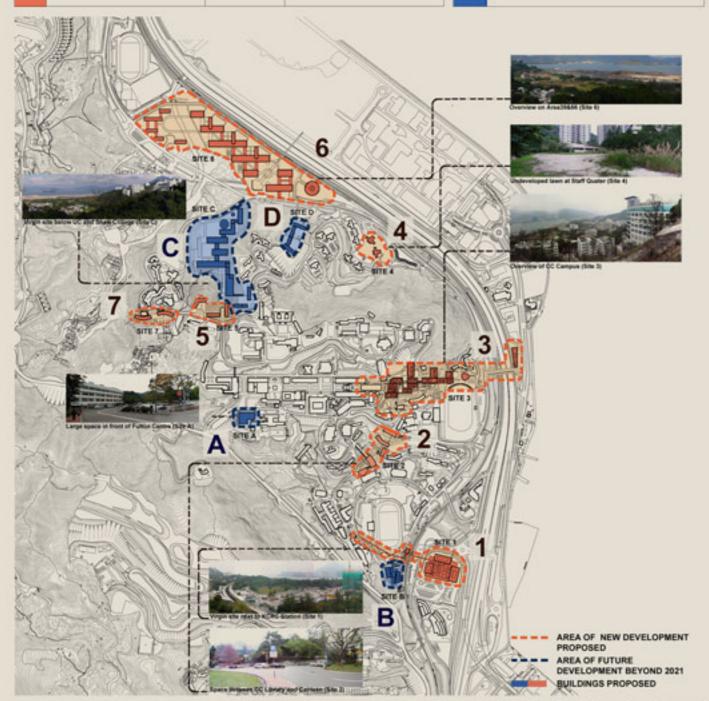
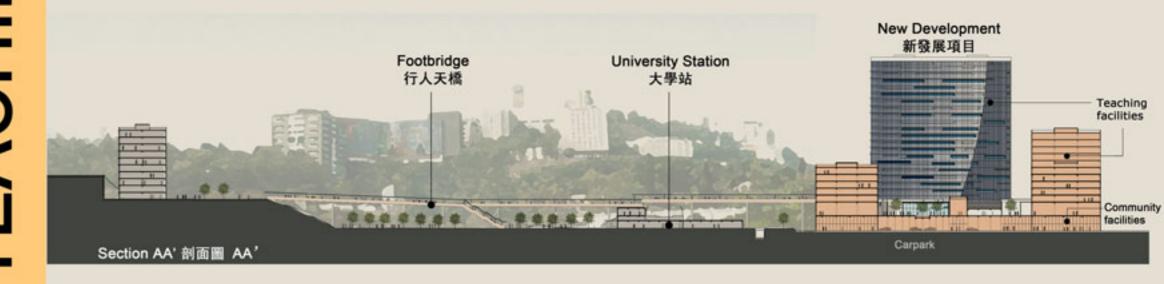


Diagram showing the potential sites for future development



With its convenience to the KCRC University Station, Campus South (at west of KCRC Station) has been developed since the establishment of the University in the 1960's. The area is characterized by Weiyuan Lake, the Lions Pavilion, a water stream and the sports field as well as various buildings and facilities of Chung Chi College.

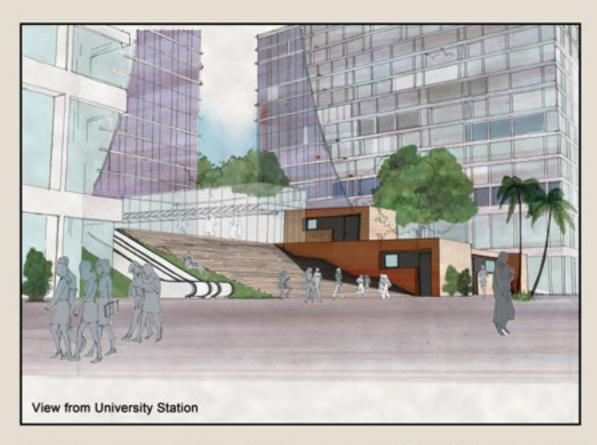
The vacant site at east of the KCRC University Station is proposed to be developed with a comprehensive teaching complex. This site is proposed for development due to the following reasons:

- It is a large site which allows sufficient space for development to meet the demand for the "3+3+4" curriculum reform;
- It is a flat site and thus site formation is minimized than those required in the main campus to save cost and time;
- Its close proximity to the KCRC Station and Bus Terminus allows convenient access and avoid overloading the existing road network in the main campus;
- Due to its proximity to the KCRC Station and Bus Terminus, the teaching complex can be designed for providing courses for CUHK Community College, subjected to the University's longterm strategic planning.

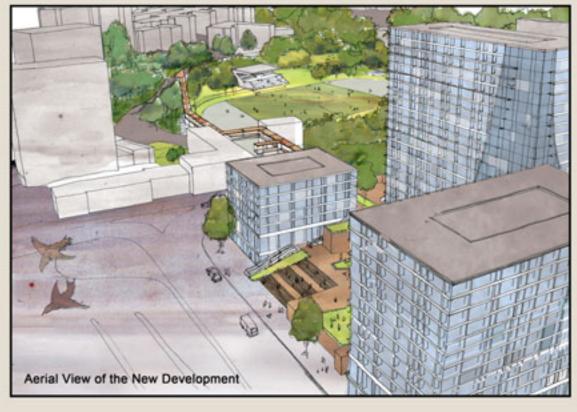


An elevated walkway is proposed to improve the connection between the bus terminus and the main campus. It will also extend to the teaching facilities of Chung Chi College, relieving the dense circulation of the existing narrow pavement. Road widening at that portion of Pond Crescent can be considered together with the design of this new walkway to achieve a safe and pleasant walking experience from KCRC Station to the Central Campus, via the planned Amenity Centre at Chung Chi College.





The development at east of University Station composes of 3 teaching blocks, which sit on the podium structure with carparking spaces. This structure will be designed with pleasant landscaped environment, providing an outdoor gathering space for students to enjoy. Supportive facilities, such as cafeteria, can also be provided in the complex for both students and public user.







Central Campus 中央校園

Mall Extension 百萬大道延展部分



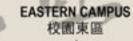
The Mall Extension 百萬大道延展部分 Section CC' 剖面圖 CC' East Entrance 東面入口

Dragon returning to the Sea 龍騰吐露: Extension of the Learning Axis 學習軸線的伸延

To strenthen the identity of the Central Axis of the Campus, the Mall is proposed to be extended and connected to the Eastern Campus.

The Mall is extended eastwards beyond the Choh-Ming Li Basic Medical Sciences Building by creating a Square in front of the Mong Man Wai Building from which a new Promenade of open courts and stepped accommodation cascades down the hill towards the Sir Philip Haddon Cave Sports Field.

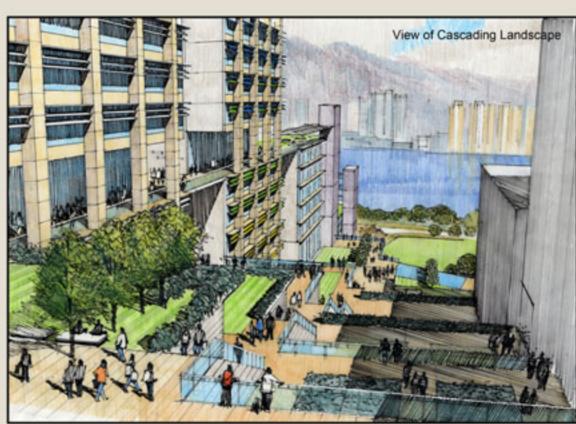
From the Square, there is level access through the proposed academic buildings alongside of the Promenade, into lifts connecting the different levels of open spaces. Similar to the University Library at the western end of the Central Mall, it is proposed to terminate the Promenade at the eastern end with another library building. This building will than be connected down to a raised podium by another connector building fronting the Sports Field and framed by the Jockey Club Postgraduate Hall. This podium, with car parking provision, will be the springboard for a future link to the Eastern Campus. This arrangement of new buildings forms a Promenade and provides a gateway to the Central Campus.



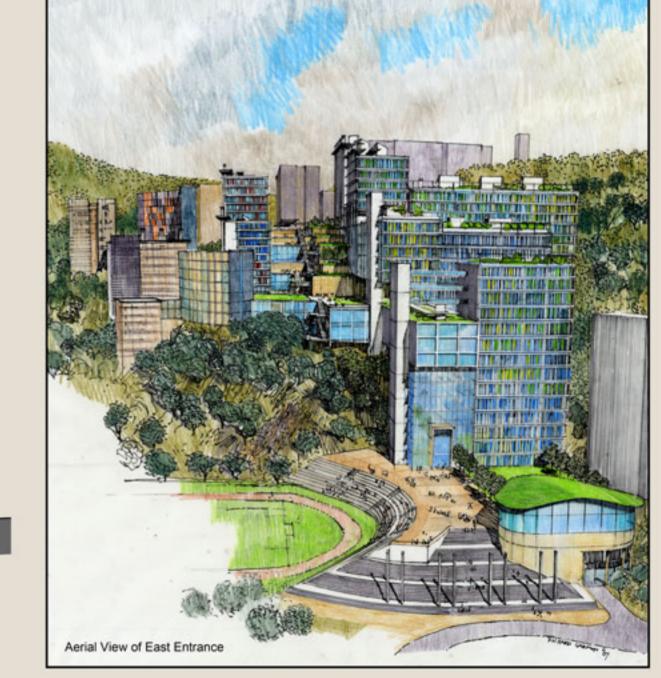


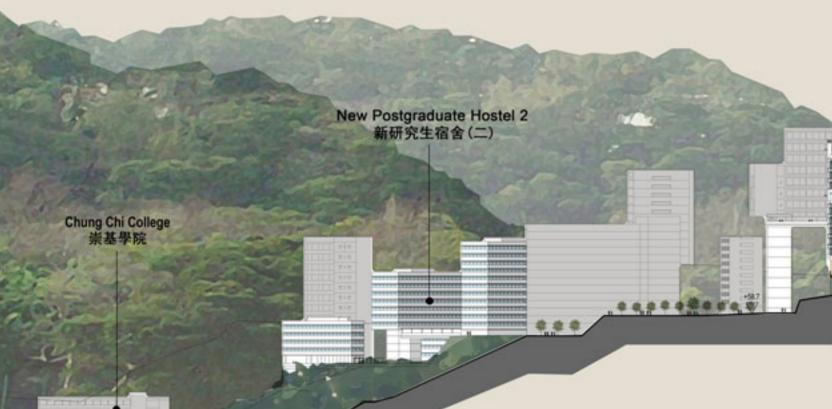
Mall Extension

百萬大道延展部分



New Asia College





Site-responsive Buildings 融和四周的建築設計

- The massing of the new buildings along the Promenade replicates the physical nature of the site, with taller and denser development to the north and lower buildings to the south.
- Gaps between the buildings and the open end allow visual connection along the Promenade, with views from the mountain slope to the east, the sea and estuary.
- The descent from the top of the Promenade down through the sequence of open courts is about 150 steps to the new library forecourt; as a comparison, the Spanish Steps in Rome is 138 in number.
- The courts are connected to the adjoining buildings as amenity spaces and benefit from the onshore breeze which channels through the Promenade.

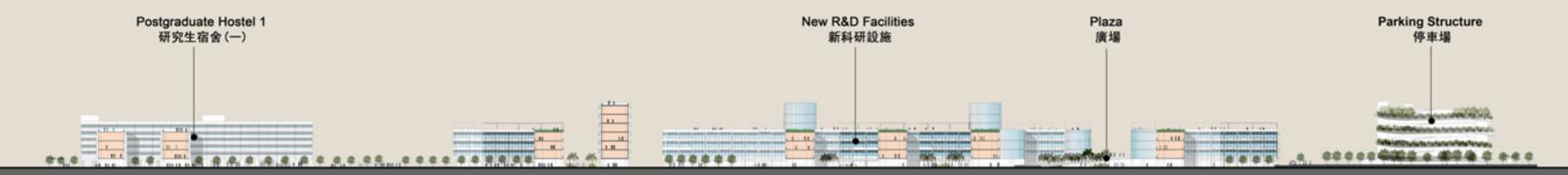
Sectional Perspective of Mall Extension



Campus North 校園北

Pak Shek Kok (Area 39) 白石角(39區)

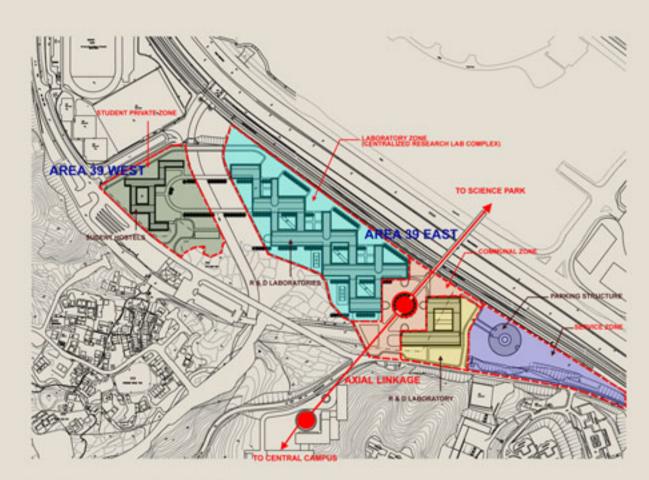


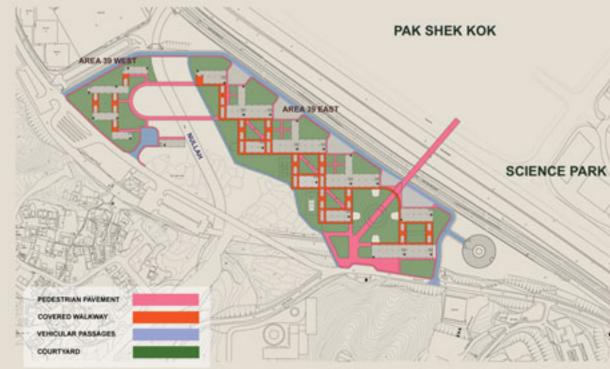


Section EE' 剖面圖 EE'



Section FF' 剖面圖 FF'





Planning Ideas for Area 39 39區規劃概念

Most of the other buildings proposed are on hillsides with various inclinations, and contain within themselves the means of access up and down those hillsides. However, Area 39 is on the flat land beside the KCRC railway and Tolo Highway. Therefore, our strategy for the design of these buildings is different.

The academic buildings have been laid out as a series of diagonally linked collegiate courtyards, running all the way from an iconic green-planted covered car park at the arrival point in the east, to the Post-graduate Hostel 2 round a crescent path in the Area 39 West.

The Complex is a series of low rise academic blocks orientated north-south, with interconnecting open courts and bridge links, vehicular and service access along the perimeter, parallel with to Tolo Highway.

The north-south blocks house teaching and research labs, offices and support facilities. The bridge links are open breezeways with 'pods' for breakout/study rooms, toilets and other student uses. The ground floor is intended to be as permeable as possible for circulation from one colonnaded court to another. It also allows for the green landscape to flow through; from the heavily planted formal courts to the informal green swath alongside the existing nullah.

Vehicular Connection 交通連結

The whole complex at Area 39 East is proposed to be served mainly by a new service road running alongside the KCRC railway. This new road is connected to the Campus Circuit North.

Emergency Vehicular Access (EVA)
Emergency Vehicular Access (EVA) is designed as a loop around the whole complex. The EVA design is designed in accordance with the statutory requirements.

Parking Spaces

An iconic green planted covered car park structure is designed to centralize all parking spaces for encourage a vehicle-free campus environment.

Pedestrian Connection 行人連結

Within Area 39 East

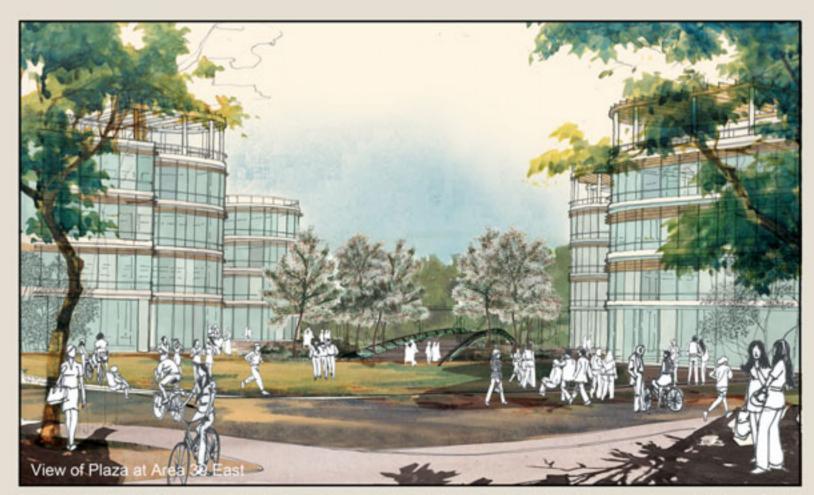
The academic courtyards of the blocks are connected to provide a comfortable, calming, cool and weather-proof environment for students and staff to enjoy the

Connection to Central Campus

Pedestrian connection is proposed to be enhanced when Area 66 has been completed after 2021.

Connection to Future Developments at Pak Shek Kok

It is proposed to provide an elevated walkway crossing the Tolo Highway to connect Area 39 to the future developments at Pak Shek Kok.



On the roofs of the buildings, shaded arcades on the north side are for resting in, and give access to the roof gardens. On top of these arcades, photo-voltaic cells are placed to provide a part of the buildings' electricity, and solar water heating panels are installed to supply all the hot water required in the building. On top of the breezeways, grey-water is collected for flushing and for gardening use. The remainder of the roof area are covered in paving for ambling or partying on, as well as plantings to enjoy and return oxygen to the air, both laid over a thickly insulated roof slab



Each courtyard will have its own unique character whilst contributing to the composition as a whole, making a cool well-shaded connecting route from one end to the other. The courtyards have stands of palm trees and others vegetation to provide shade. To aid further cooling, the east and west sides of the courtyard are partially open to allow the breeze to flow through.

LANDSCAPE DESIGN 園林設計

The quality of the natural landscape plays a major role in the success of the University, providing the University with the attractive image associated with a green campus as an oasis of learning away from the bustle of the city.

Overall Objectives

整體目標

The master plan for campus greening is in multi-scale. The macro scale of campus greening is to achieve a network of green areas within the campus, linked by pedestrian accesses for all users. The main trail peripherizes the campus, with branches infiltrate into the heart of central campus and colleges. Hence, creating a hierarchy of pedestrian flow in different levels of publicness.

A complete trail for visitors is aimed to achieve:

- · An alternative pathway for students between lessons.
- A network of green spaces both locally benefits the colleges, and as a whole inter-weave the entire campus.

In micro scale, certain green areas can be improved to enhance college identity and campus experience. Some suggestions on alternating existing landscapes are listed as follows:

- Intensify the University Identity at the Mall and the Entrances
- · Strengthen the Colleges' Identity
- . Enjoy the Natural Landscape

Specific Objectives

具體目標

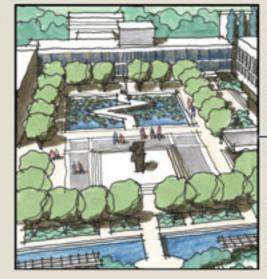
The Campus Master Plan shall devise a spatial framework setting out a visual and physical language for the land-scape:

- Elements in the landscape should be used to organize outdoor spaces rather than just to fill them or leave as leftover space.
- The landscape should offer a hierarchy of different types and choices of spaces; formal settings for social gatherings and organised activities; and more informal and intimate spaces for study, discourse, contemplation, relaxation and recreation.
- Each green space, however large or small, should have a clear function, responding to and serving the buildings which in turn marks and addresses the space.
- Each college should cultivate a distinct landscape character through the use of its outdoor spaces, planting, materials and clear points of focus.
- The diverse landscapes of the colleges should be connected together into an overall composition for easy navigation.
- Theme-specific plant selection. Plant species selection should reflect the proposed architectural style of buildings, and relates to the existing characteristic of the University.
- The establishment of the landscaping framework shall take full account of the requirements of site users, balancing the aesthetic considerations with key functionality and maintenance concerns, such as durability, slip resistance, and ease of repair etc. Appropriate landscape treatments should also be applied on the stabilised slopes within the site area.

Intensifying the University Identity at the Mall 百萬大道突顯大學形象

CUHK is always well known of having extensive natural landscape resources. It is found that such resources could be further improved and strengthened to stand out CUHK among other universities in terms of campus environment. Improved campus environment can also supports the academic success of CUHK in the future.

The Mall, as a Central Axis of the Campus, has long been recognized as a major feature in the existing campus planning representing the University.



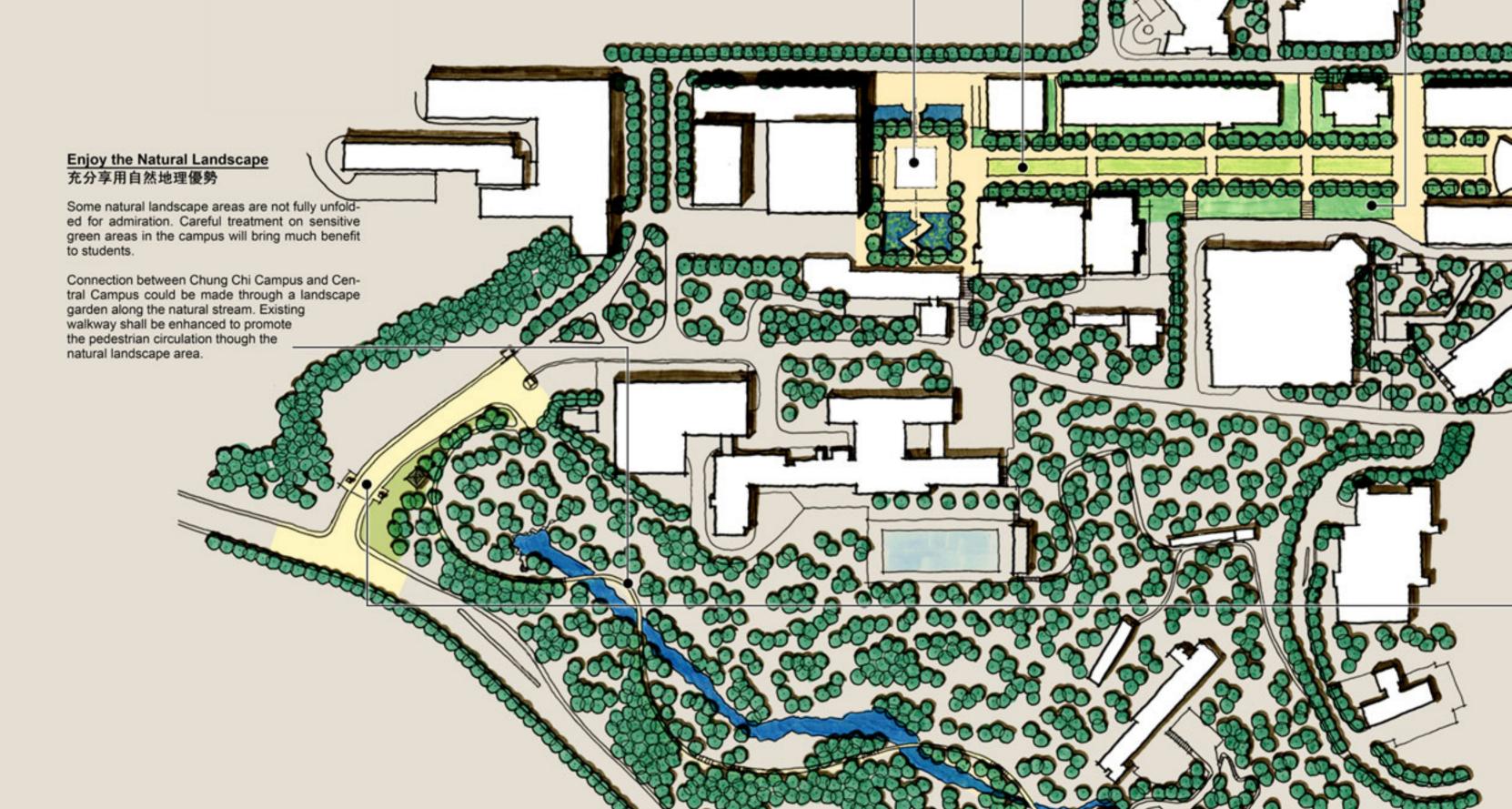
The area in front of the University Library is proposed with a new featured landscape to create a sense of place.



Hard landscape in Central Campus could be softened by enhancing the greenery along the Mall. Deteriorated pavement shall be replaced, enhancing the image of Campus.



The plantings provides shades to students and improves the walking experience. Pocket spaces are introduced along the Mall to encourage students interaction in open spaces.



UNDERGRADUATE HOSTELS 本科生舍堂

PROPOSED LOCATION OF NEW COLLEGES NEXT TO SHAW CAMPUS

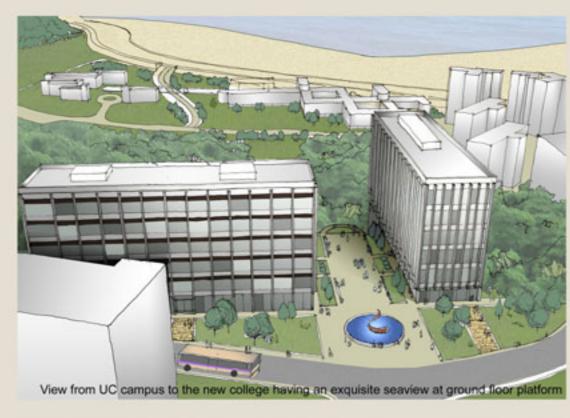
毗連逸夫校園之兩座新書院

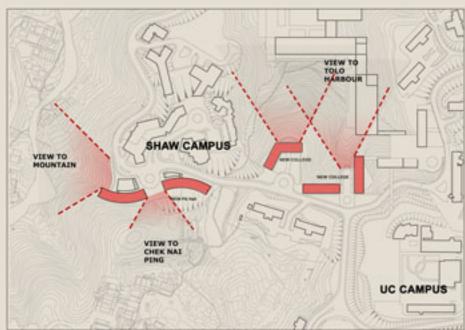
Two new colleges are proposed to be located at the area in-between UC Campus and Shaw Campus. The campus buildings will align with the natural contour to achieve the best juxtaposition. Higher pedestrian flow is anticipated. Connection of UC campus to Shaw campus will be strengthened.

Student Plaza and Opened-up Seaviews 廣場設計造就吐露景觀

More soft and hard landscape will be introduced to achieve pedestrian friendly campus. Open plazas will be inhabited with sculptures highlighting the image and identity of the colleges, like the Shaw Terrace which is a very good example.

Sightseeing spots or pavilions will be incorporated into the landscape of these campuses. Buildings and landscape are carefully planned so as to compose exquisite views from the piazzas to Tolo Harbour and the mountain. The goal is to achieve a low-density, neverenclosed campus with opened-up views to the existing natural assets of CUHK.







Views to Tolo Harbour and surrounding mountains are maximized.

Green space is arranged so as to compose the best view to Tolo harbour and the mountain at pedestrian level.

POSTGRADUATE HALLS 研究生宿舍

To purse as a world-famous comprehensive research university, it is anticipated that the demand of post-graduate hostels will be increased.

NEW POSTGRADUATE HALL OPPOSITE TO SHAW CAMPUS 位於逸夫校園對面之新研究生宿舍

A new postgraduate hall is propsed at the location opposite to Shaw campus. The undulating blocks align with the existing contour to minimize the disturbance to the environment. A new plaza is proposed in front of the hostel blocks to strengthen the identity of the college.

Viewing platforms and pavilions are planned to achieve the best views towards the mountain on the west and the downwards the old village of Chek Nai Ping.



College Spine 書院群

Another "College Spine" will be established along Campus Circuit West. Traditional colleges (UC and Shaw) combine with new colleges to form a linear continuum of habitation. Open plazas and widened pathway will be proposed to cater for a pedestrian friendly environment and to cope with the increased pedestrian flow between Shaw and UC.

- C

PEDESTRIAN FRIENDLY CAMPUS 行人網絡之優化

Due to the site constraints in road widening and the principle of sustainable development, the CUHK campus shall be planned with a pedestrian friendly web to allow pleasant walking experience from place to place.

In fact, the University has already promoting walking instead of taking shuttle buses of by recommending a walking trail from the KCRC Station to the Central Campus, where with level difference of approximately 130m. The idea of pedestrian friendly campus can be further improved by the "Axis and Web".



絡絡

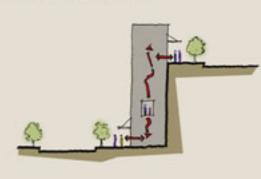
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PEDESTRIAN WEB 行人脈絡

There are some specific devices which are essential to form a complete network of the pedestrian "Web".



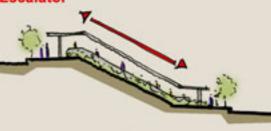
2. Vertical Transportation

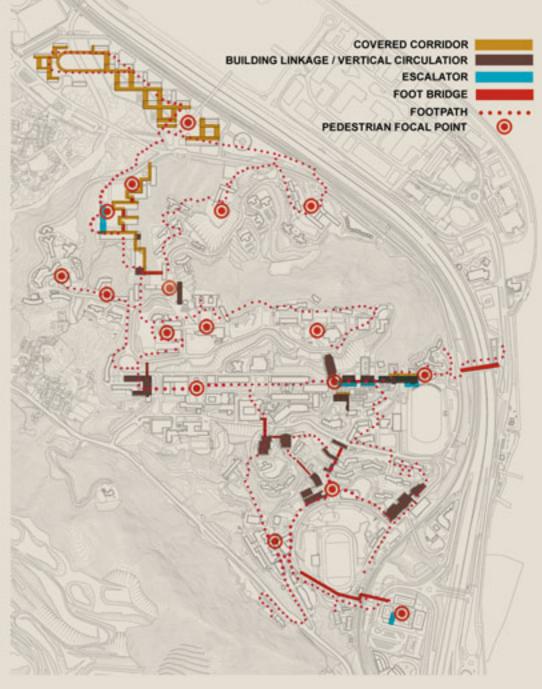


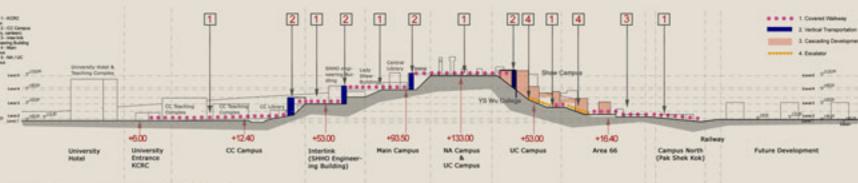
3. Cascading development



4. Escalato





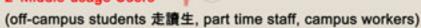


PEDESTRIAN ZONES 行人專區

There are several physical factors, such as hilly landscape, keen competition of space with vehicles, and insufficient mechanical means of vertical pedestrian traffic, hindering the development of a complete pedestrian traffic circuit in terms of master planning. To tackle the problem, we will first identify the different users of the campus.

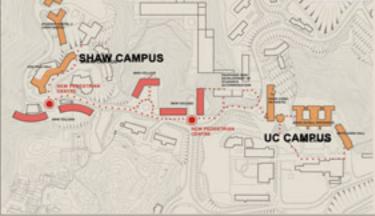












NEW POSTGRADUATE HALL @ CHUNG CHI CAMPUS NORTH 位於崇基校園北(眾志堂及圖書館附近)之研究生宿舍

The site selected for developing one of proposed new colleges is at north of Chung Chi College, adjacent to existing Hua Lien Tang and Ming Hua Tang which are low-rise hostels of Chung Chi College.

The site is bounded at north by the University Avenue and at south by the proposed plaza next to the Chung Chi Tang (the canteen) and Elisabeth Luce Moore Library and planned new Amenity Centre of Chung Chi College.

College Spine 書院群

Siting next to the Morningside College and S.H. Ho College, the three new colleges are arranged to form a new "College Spine", which enhances students' interaction and also allows sharing of facilities.





Apart from providing hostels and whole-person education for the increased number of postgraduates, this New Postgraduate Hall also acts as an important vertical connector in the campus.

PROPOSED NEW PG HALL @ PAK SHEK KOK CAMPUS 位於白石角校園之新研究生宿舍

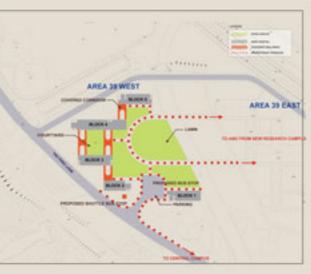
The residential blocks are interconnected together, with a courtyard proposed between Block 3 & 4. For a coherent and integrated planning for the entire Area 39, the five residential blocks planned at Area 39 West are also orientated in north-south direction, similar to the planning of Area 39 East.

Peripheral Vehicular Traffic 校園繞道

The exisitng Yau King Lane will be extended to serve the Post-graduate Hostel, and it is planned under CEDD project PWP item No. 658CL (Part) GN 6572. This extended Yau King Lane will connect to the existing Campus Circuit North.

A new shuttle bus stop is proposed to be provided at the main entrance of the complex.





Pedestrian Traffic 宿生園徑
Landscaped pedestrain footpaths are
planned to connect the Post-graduate
Hostel and the Research Complext at Area
39 East crossing the nullah, to ensure convienent and direct access is allowed.

3 Low-usage Visitors

(holiday visitors, visiting guests, by-pass pedestrians).

Pedestrian Zones

Zone A - G are the central locations of the pedestrian activities in the campus . The zones are occupied by different types of pedestrian at different moments.

Pathways for different user groups will join and interweave with each other to become a pedestrian traffic network which could be incorporate into the vehicular traffic planning, as well as other planning system

Enhancement of Vehicular Access 優化自行車徑

It is proposed, subject to detailed study, that new shuttle bus routeings will be developed that are a combination of the existing circular routes that connect the hostel and University Station to Central Campus.

This is shown indicatively on the right which also gives an indication of frequency; and, the proposed bus route passes close to most of the existing parking areas and should provide adequate transport service such that private car usage can be reduced.

The followings are major subjects essential to the improvement of the entire vehicular network:

- 1 Improve the existing road network;
- 2 Review the parking locations and minimize surface parking lots:
- 3 Enhance shuttle bus routings, location of bus stops and bus schedules;
- 4 Introduce bicycle links at appropriate locations;
- 5 Create a pedestrian friendly campus and reduce the reliance of using vehicles





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Parking Areas 車輛停泊地區

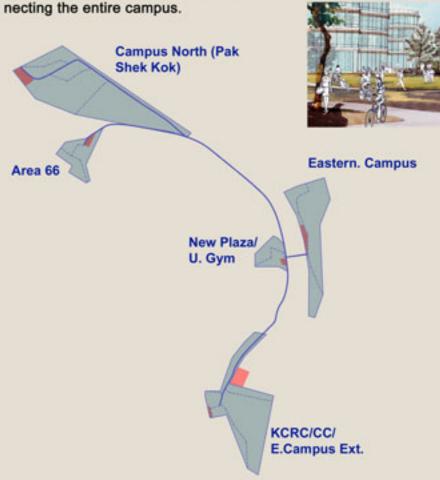
- New parking structures are proposed to be built along the edge of the campus.
- Within the campus, parking areas will be located under podium or underground.





Bicycle Link 腳踏車徑

In the master planning, new bicycle track is proposed to link up the KRCR station, Chung Chi College and new areas (Area 39 & Area 66), as the Campus Circuit East and North is relatively flat and thus suitable for bicycle riding. The bicycle tracks can potentially be developed into a system conjugating with the pedestrian network, connecting the entire campus.





Intensifying the University Identity at the Entrances 校園入口加強大學形象

Main entrance is the icon for a university. It is suggested that the main entrance areas, such as the Four Pillars and the Chung Chi Gate, could be expanded with enhanced land-scaping design to intensify the University identity.



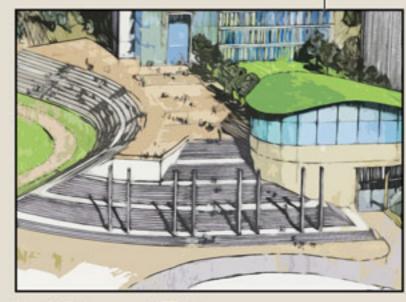
University Entrance 校園正門

De-cluttering obstructive street furniture and shrub, opening the view to the entrance. "Pedestrian-friendly" road surface and welcoming lawn enhance image of entrance.



Chung Chi Entrance 崇基入口

Similar de-cluttering as for main entrance at Tai Po Road, perceptive echo is generated. Existing pavilion is also removed.



North Entrance 北面入口

Use of the pillars and entrance road surface as entrance motifs marks the new point of arrival. Enlarged pillars reflect the scale of this monumental new public space.



South Entrance 南面入口

Connection to Chung Chi College uphill is created by the addition of walkway next to the CC sports field. Proposed tensile canopies are to provide shading and weather protection.



East Entrance 東面入口

With water featrues and board walkway, the new welcoming plaza enhances the identity of the complex and the University.

The Concept of Sustainable and Green Campus 可持續綠化校園概念

Building Form and Orientation 建築物形式和座向

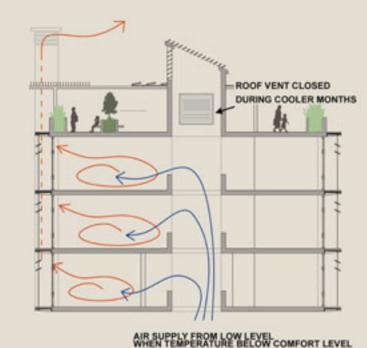
As the site of Mall Extension benefits from a north-east easterly prevailing wind, buildings within the Mall extension are orientated East-West which minimizes the solar exposure to the façades but yet maximizing natural ventilation to supplement the mechanical systems to environmentally 'controlled' areas.

The roof forms of buildings will be arranged to harness the prevailing onshore winds. The stepped court will be shaded by suitable tree species, supplementing the existing vegetation.

Sustainable Architectural Design 可持續建築設計

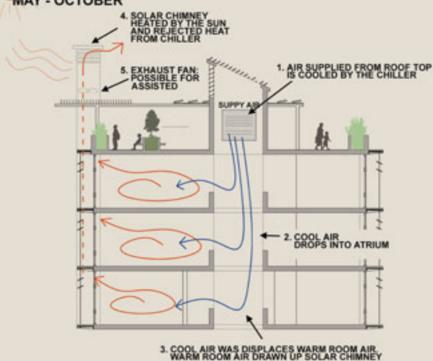
As an integrated part of the architectural vocabulary, a number of elements have been explored to reduce solar gain and promote passive air movement:

PASSIVE VENTILATION NOVEMBER - APRIL





MECHANICALLY COOLED VENTILATION MAY - OCTOBER

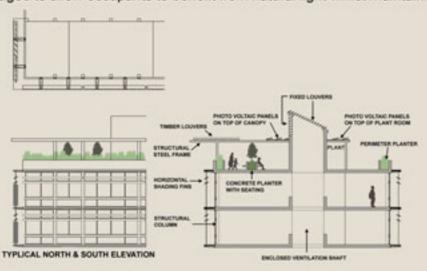


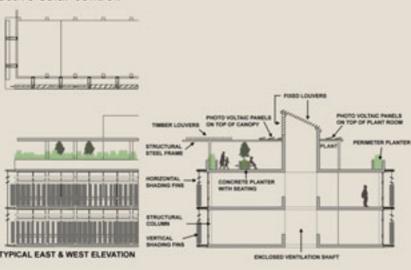
Shaded Courts and Breezeways 遮蔭的內庭和通風廊

Benefits from a north-east easterly prevailing wind, the effects are heightened by its coastal location. To utilise natural ventilation, reduce the reliance on air-conditioning for thermal comfort in buildings in Hong Kong. Air movement is promoted by low level openings facing the Mall, and opposing high level openings under the roof canopy. To optimise the flow of air during the months when a cooling benefit can be achieved. Ventilation system to operate with the mechanically cooled system being supplemented with the natural ventilation system when permitted by external temperatures.

Natural light VS Diffused & Reflected Daylight 自然光VS散開及反射的日光

To maximise the availability of natural daylight to the new buildings, which will also reduce the energy demand. Indirect daylight will be encouraged to allow occupants to benefit from natural light whilst maintaining effective solar control.





Double Skin Facades 雙層玻璃幕牆

The south, west, and east elevations are particularly vulnerable to solar gain. Northern facades will also benefit from solar protection during summer. These elevations are protected with an additional layer of external solar screens to reduce the impact of solar energy. Careful design of these facades will ensure that views out from the interiors will not be interrupted by the shading and be well day lit through out the year.



CAMPUS HERITAGE PRESERVATION

As CUHK campus has been developed for almost five decades, some existing buildings are getting more than 40 years old. Although the age of a building does not represent its heritage value, more attention should be paid to the older buildings in the identification process.

THE PRESERVATION METHODOLOGY

1. Heritage Identification

The campus built assets would fall into category of heritage if:

- (a) It acquires a long history itself
- (b) It contributes to the University Image and Identity
- (c) It contributes to the College Image and Identity
- (d) It acquires memorial value
- (e) It possesses special architectural style

2. Heritage Classification

(i) Site

The combined works of human and of nature having a special value for their beauty.

Examples: Beauty of the Weiyuan Lake

(ii) Complex

Groups of buildings or areas with special value from architectural, urbanistic, aesthetic, historic or socio-cultural point of view.

Examples: The Mall and the buildings aligning to it

(iii) Building with Architectural Merits
A permanent building with distinctive
architectural merits and that represent
a stage of development in urbaniza-

Examples: Chung Chi Tang of triangular architectural form

(iv) Memorial

Buildings, structures, sculptures and places with special artistic, archaeological, historical and ethnological interests.

Examples: -Benjamin Franklin Complex being the first building of CUHK

(v) Icon

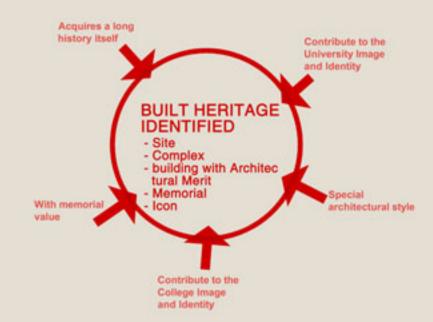
Buildings with permanence quality in contributing to the establishment of the image and identity of the University or College.

Examples: -Chapel in CC Campus reassuring the identity of the religionbased college ritual

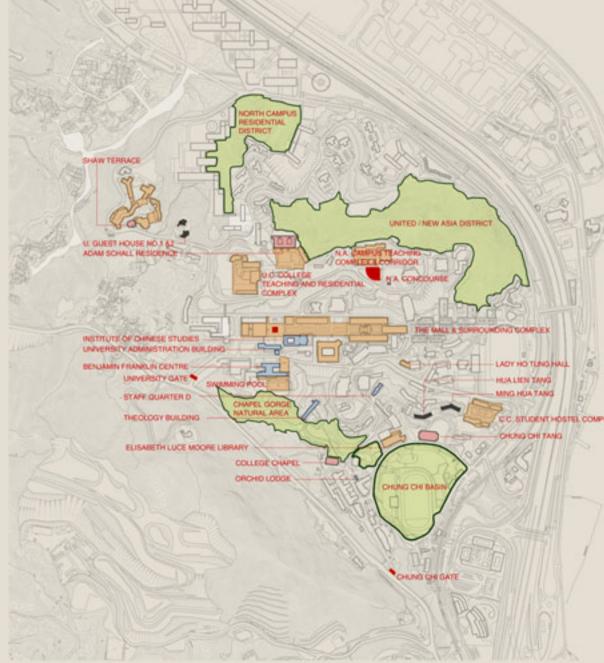
3. Conservation Methodologies

- Adaptive reuse
- Partial preservation;
 Urban re-planning;
- Consultation with geographical, biological experts









North Campus

NATURAL HERITAGE









Green Roof / Sky Garden and Water Evaporation 綠化的屋頂 / 空中花園和水份蒸發

Careful recycling of rain water integrated within the green roofs can be designed to increase cooling of the building structure via evaporation and help to reduce mechanical cooling loadGreen roofs and/or Sky Gardens will be designed for all new developments in the Campus. Accessibility will be ensured to encourage the students and staff to enjoy the open but yet shaded landscaped spaces.

Interior Cool 'Pools' 室內冷卻 '池'

This system will be supplemented with the use of solar powered absorption cooling. Compared with mechanical chillers, absorption chillers have a low coefficient of performance. However they can substantially reduce operating costs as they are powered by low grade heat.

Vehicular Free Campus 無車輛的校園

Promoting a vehicular free campus:

- Enhance pedestrian connections within the campus to promote a pedestrian-friendly campus;
- Centralized the parking spaces as practical as possible at the edge of campus;
- Promote the use of sustainable transport system to reduce the emission of pollutants from the vehicles;

Night Time Cooling 晚間冷卻

The buildings are designed with narrow floor plates or internal atria to take advantage of the use of natural ventilation to harness the flywheel effect of the building mass and moderate the building temperature. Care will be taken to reduce solar gain to the building with self shading to window areas and the use of green roofs and building shading to protect the building from solar gain.

Thermal Mass 熱質量

When night time temperatures are sufficiently low, the structural and thermal qualities of concrete can be used to provide the mass for the thermal. To off-set the production of carbon dioxide in the cement content of concrete, a proportion of fuel ash, a waste product from power stations, can be used as a substitute.

Energy Efficient Building Service 有效能源屋宇設備

- 'Sea'- source heat pumps
- Evaporation pools and planting at building roofs for cooling;
- Solar collectors or integrated PV panels for water heating system, carpark lighting and external lighting;
- Solar powered absorption cooling;
- Energy-saving light bulbs, motion sensors and energy-efficient air-conditioning system

Structural Strategy 結構性的策略

The buildings proposed for the Mall Extension are of a frame construction on a grid of 1.5M for flexibility. Storey height should be designed to accommodate alternative future uses.

For the proposed new buildings near Tolo Highway, the building orientation and the façade treatment can be designed to minimize the noise impact to the users. Noise survey can be conducted to recommending noise barriers in accordance with the requirements of the Environmental Protection Department.

Waste Minimisation 減小廢物

- Design for Longevity/ Low Maintenance
- Waste as a Resource Materials and Energy
- Design for Water Conservation, Recycling and Harvesting

Design Beyond EAST and WEST

超越東和西的設計

Hong Kong is a city fusing Chinese tradition with Western customs. It is this blend of old and new, and living fusion of East and West, that gives Hong Kong its own unique character. East, having its root in ancient culture and West, having its root in modern culture, when combined, both will become rich. To explore CUHK into a east west cultural and educational junction globally, rather than an existing culture that has clearly defined, 'Design beyond East and West' can be considered as a new culture that we need to aspire to and can also be considered as a new way of designing or a new philosophical approach to design:

- Through Landscape Design
- Through Architectural Principles
- Through New Techniques - Through Building Use





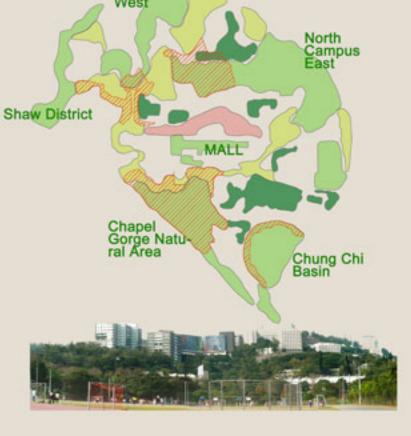


The campus consists of much scenic beauty which is mostly contributed by the green natural landscape. Such natural resources should be regarded as the heritage of the university, and should be strategically preserved. According to previous studies, the natural landscape is divided into four major zones in terms of degree of preservation and potential for develop-

- 1. Full Protection Zone
- 2. Contigent Preservation Zone
- 3. Limited Open Development Zone
- 4. Improvement Zone

Areas for birds' dwelling are also included in the preservation plan:

Avian Habitat



WORK PROGRAMME

To provide an efficient and quality master planning and design, it is essential to have a good project management system in place. The Integrated Management System (IMS) adopted will be based on procedures that we have developed over many years of design and operations on various types of projects.

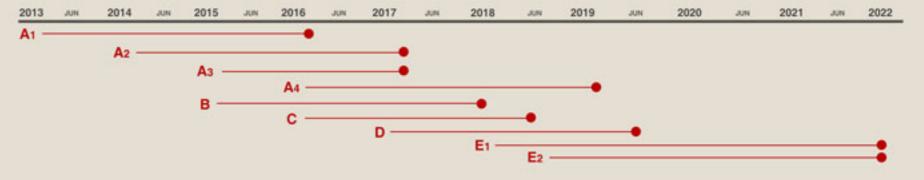


A. Inception Workshops (Stage 2a-DCMP)

- Workshop I Gathering Information from CUHK
- Workshop II -Establishment of Relationship Diagrams and SOA with CUHK
- B. Scheme Development Workshops (Stage 2b-DCMP)
- Workshop III- First Presentation of DCMP
- Workshop IV Second Presentation of DCMP
- C.Scheme Finalization Workshops (Stage 2c-DCMP)
- Workshop V Third Presentation of the Refined DCMP



The proposed developments in the Campus Master Plan are targeted to be implemented into five stages:



Stage A1 (2013-2016): Mall Extension Phase 1 & Improvement Stage B (2015-2018): 2 New Colleges and Post-graduate Hostel 1 Works to University Entrance Stage A2 (2013-2016): Mall Extension Phase 2, new East En-

trance to Central Campus & Improvement to Road Connections Stage A3 (2013-2016): Mall Extension Phase 3 & Improvement Works to Chung Chi Entrance

Stage A4 (2013-2016): Mall Extension Phase 4

Stage C (2016-2018): Staff Quarter & Post-graduate Hostel 2 & 3

Stage D (2017-2019): Campus South & South Entrance Stage E1 (2018-2022): Area 39 East Phase 1 (including the parking

Stage E2 (2018-2022): Area 39 East Phase 2