

Design Criteria and Action Checklist on Sustainability and Green Issues for New Capital Projects

The Consultant should refer to the **Recommendations** in the **CUHK Campus Master Plan (CMP)** available in the University CMP website: <http://www.cuhk.hk/cmp.en/> and its updates. Design the new building(s) based on the following criteria and implement action checklists to ensure highest environmental sustainability of the design scheme both technically and aesthetically. These criteria and action checklists are not meant to be exhaustive and subject to review/update as and when necessary.

A sustainable design must be compatible with the existing architectural language and heritage of the campus.

Recommendation 1 – A landscape of vital importance

Design Criteria

1. Complying with Campus Tree Preservation Policy – “first avoidance, then minimization, and lastly compensation”.
2. Protection of existing greenery in accordance with prevailing codes of practice, guidelines, and statutory requirements.
3. Transplantation and compensatory planting to be carried out and completed within the project site.

Action

Action Checklist

1. All landscape related design and inspection works to be carried out by professional landscape architect.
2. Conduct tree survey of their locations, size, species and health condition, particularly to identify and protect trees of rare species, memorial value, and > 500Ø in diameter at breast height (DBH).
3. Design building to avoid tree felling/transplantation as much as possible.
4. Design building to utilize/enhance the existing landscape.
5. Provide green roof garden; vertical greening; and landscaped piazza/podium/atrium.
6. Consult EMO on maintenance requirements.
7. Develop tree compensation plan including landscaping proposal and location of compensatory/transplanted trees

8. Any design or work relating to **indigenous woodland**?
 - Maximize ecological potential, taking into account the requirement of all avian habitats
 - Incorporate new trails
 - Observe the University Landscape Management Plan for protection of indigenous woodland on the campus
9. Any design or work relating to **screening/buffer plantation woodland**?
 - Visual mitigation to screen unsightly utilities or slope works
 - Check health condition of existing plantations
 - Replace with native species on non-designated for future development areas
 - Carry out design work in conjunction with new campus development within the existing buffer plantation woodland
10. Any design or work relating to **amenity plantation woodland**?
 - Protect the amenity plantation woodland
 - Assess the effect to the woodland due to any work nearby
 - Carry out design work at new road junctions and new developments to generate visual accents
 - Ensure the composition of plantation taking account of the requirements of avian habitats
11. Any design or work relating to **ornamental planting**?
 - Design landscape for new developments, plazas and courtyards incorporating lawn spaces to enhance existing features
 - Sub-soil drainage to remove excess water
12. Seek University Building Committee and Campus Landscape Enhancement Committee endorsement
13. Seek DLO approval.
14. Execute the endorsed tree compensation and landscape plan.
15. Report completion to relevant authorities upon completion.

Recommendation 2 – A pedestrian-friendly campus

Design Criteria

Action

1. Developing a walking Campus – as part of the new building, develop a comprehensive vertical pedestrian linkage system including footbridges, vertical lifts, shortcut footpaths etc. in promoting pedestrian campus.

Action Checklist

1. Assess the need of pedestrian transportation system in the building relating to the development of a pedestrian campus as a whole.
2. Incorporate the required systems into the building design.
3. Identify specific users and the general public.
4. Ensure connectivity with other pedestrian transportation system in the vicinity. Any covered walkway?
5. Any design or work relating to platform of MTR University Station?
6. Any design or work relating to cycle track?
7. Any design or work relating to Park & Ride?
8. Any design or work affecting/enhancing bus route?
9. Take every opportunity in construction works to widen and/or realign roads and pavements.

Road & Pavement Widening/Realignment

10. Improve gradients for wheelchairs.
11. Consider outdoor barrier free access provisions, like:
 - Tactile route
 - Audio guide for road crossing etc.
12. Evaluate the operation and maintenance costs.
13. Seek University authority endorsement.
14. Campus wide consultation.

Recommendation 3 – Conserving places of value

Design Criteria

1. The University aims to conserve Places of Cultural Significance: historical, memorial, architectural excellence, special function, etc.
2. Refer List of Places with Cultural Significance and its updates before commencement of design and work.

Action

Action Checklist

1. Identify cultural significance nearby/places of value that may be affected by the project.
2. Consult guidelines issued by the University in this regards or its updates.
3. Design to avoid effect to any places of value in the vicinity.
4. Assess and set up measures to enhance the conservation for places of value.
5. Assess and set up measures in protecting places of value in the vicinity.
6. Consult EMO on maintenance requirements.
7. Seek relevant authorities' endorsement.
8. Campus wide consultation
9. Implementation of the endorsed plan and report deviations if any.

Recommendation 4 – Making a sustainable campus

Design Criteria

1. Aiming for a Low Carbon Campus – Reduce 25% of the total campus energy demand and 20% Greenhouse Gas (GHG) emissions (per student) by 2025 from the 2005 base figures.
2. Optimizing efficiency in land use – freeing up existing sites to achieve a better utilization of land use for better operational efficiencies.

Action

Action Checklist

1. Aim to achieve the Platinum rating or above of “Hong Kong Building Environmental Assessment Method” (HK-BEAM) as per the “BEAM Credit Summary Template” extracted from the Guidebook of the BEAM published by the BEAM Society and its updates.
2. Complying with Building Energy Codes issued by EMSD for mechanical and electrical service installations. The design should be of energy consciousness with innovative idea on cost effectiveness and energy efficiency measures. Adoption of Energy Efficient Features and Renewable Energy Technologies as in ETWB Technical Circular (Works) No. 16/2005 dated 30/11/2005; Development Bureau TC No. 5/2009; and Environmental Bureau CM 2/2009, including:-
 - Insulating building envelope to prevent excessive thermal heat gain/loss;
 - Providing condensate water recycling system for irrigation, air-conditioning make-up purpose;
 - Collection of rain water for flushing/irrigation;
 - Considering District Cooling System if situation permitted;
 - Drainage system to suit the Campus grey water treatment system.
3. Adopt the following in design:

Energy

- Natural lighting in indoor lighting design
- High efficiency lighting fittings (T5 tubes, compact fluorescent lamps and LED lamps)
- Motion sensor control for common area (toilets, plant room and corridor)
- Minimize the electric load from equipment and appliance (use timer control)
- LED “EXIT” sign

Water

- Automatic faucet with spray tap
- Water efficiency shower head
- Automatic urinal flusher

4. Adopting environmental friendly construction practices-
 - Reusable metal hoarding
 - Sorting of construction wastes
 - Prefabrication to reduce construction wastes
5. Complying with all relevant statutory requirements and its updates and practice notes etc. on sustainability and green issues, i.e. Sustainable Building Design Guidelines to be issued by the Buildings Department.
6. Barrier Free Access for all people with disability.
7. Coordinating with and monitoring contractors for participating into Considerate Contractors Site Award Scheme by DEVB
8. Referring to CDO Good Practices Guidelines in architectural detailing and material selection for sustainability and compatibility.
9. Consult EMO on maintenance requirements.

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List of Place of Cultural Significance CUHK

Central Campus:

1. The University Mall and adjacent buildings including:
 - University Library
 - Science Centre and University Emblem
 - Institute of Chinese Studies
 - University Administration Building
 - the Gate
 - the Beacon
2. 4 Chinese pillars at the University main entrance

Chung Chi Campus:

1. The College Chapel
2. Chung Chi Tang
3. Ying Lin Tang
4. Hua Lien Tang
5. Ming Hua Tang
6. Weiyuan Lake
7. Lingnan Stadium & Athletic Field
8. 校園牌樓雙楹 near MTR station
9. 2 Chinese pillars at the Chung Chi entrance at Tai Po Road
10. Bridge at Alumni trail

New Asia Campus:

1. New Asia College Water Tower
2. the Statue of Confucius
3. New Asia Pavilion
4. the New Asia Amphitheatre
5. Ch'ien Mu Building

United Campus:

1. United College Water Tower
2. Adam Schall Residence and lawn area in front of the building
3. Sculpture Garden

Shaw Campus:

1. College Sign and Mural

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