The University of Hong Kong

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Hong Kong

- Special Administrative Region of China
- Population: 7 million
- Land area: 1,000 km² (40% “country park”)
- Tropical climate
- Economy: 87% services
- Major financial center, regional headquarters, shipping/logistics hub
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- Comprehensive, English language university, founded 1911
- 10 Faculties, 22,000 students (13,000+ full time), 7,500 staff
- 98+ buildings, built 1911-2005
- Talloires Declaration—1990 (original signatory)
- Energy management: 1991
- Sustainability goals: 2005

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Sustainability @ HKU

Main Campus

• Energy audits...building retrofitting
• New recycling program...broader waste mgmt issues & improved efficiency
• Water conservation: new low-flow fixtures... gray/stormwater recycling systems
• Carbon footprint analysis . . .
• Food services . . .
• Transportation . . .

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Research, Teaching, Outreach

• Increasing relevant coursework: Business & Economics, Law, Community Medicine, Media & Communications, International & public affairs . . .
• (new) Initiative on Clean Energy & Environment: a multi-faculty collaboration on clean energy development: Engineering, Architecture, Sciences, Business & Economics
• (new) Kadoorie Institute: focal point for sustainability research & teaching
• (new) Lung Fu Shan Environmental Education Centre: community focus
• (new) Student conference: Asian Youth Climate Summit—July 16-19, 2008
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Centennial Campus

- Transition to 4-year curriculum in 2011-12
- Student body to increase by 40%
- Increase in international student admissions to 20% of the total
- 200 New faculty appointments
- New management structures
- Major campus expansion

Elevation of the Centennial Campus
The Lily Pond

Vegetations permeates into interiors of learning commons

Clear bamboo cane to 3m

Courtyard

Water Feature

Moot Court

Stairs lead to Law Faculty
Energy-efficient A/C & Renewables

- Naturally ventilated common areas for tower open stairs, podium elevator lobbies (save AC energy)
- Spilled air ventilated or borrowed ventilation concept for internal environment of tower corridors (save AC energy)
- Low energy displacement AC design for learning commons, and auditorium areas (save AC energy)
- Chilled water storage system (save AC energy, reduce nos. of chiller, transformer and reduce electricity demand cost)
- Under-floor Air-conditioning (for Learning Commons, Lecture Centre and Classrooms (save AC energy)
- New Wind Turbine Technology
- Photovoltaic Cells
- Solar Water Heating
- Harness energy from freefall motion of elevators Capturing Free Falling Energy from Water
- Waste Food Digester for Bio-gas Generation

Environmentally Responsive Facades

- Maximum use of Natural Daylight
- Sun Shading System responds to changing conditions
- High performance glass blocks out heat while retaining transparency
Prefabricated Construction: Reduction of Construction Waste

Water Conservation and Recycling

- Grey water and storm water harvesting in the Centennial Campus for irrigation and cooling tower makeup purpose
- Grey water recycled from adjacent student hostels will also be used in the Centennial Campus

Monitoring and Display of Energy use Temperature, Energy Consumption, Carbon Footprint, etc

Material Selection – Green, Recycled/Recyclable Materials

Light Pipe System (for Faculty Tower common corridor)
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Current Challenges

- Hong Kong heavily dependent on fossil fuels to meet electricity needs
- Limited, albeit growing, professional awareness of green design, architecture, construction methods
- Wider HK community: limited, albeit growing, awareness of environmental/sustainability issues
- Space constraints, high utilization of existing buildings driving high workload for facilities staff
- Top-down administrative tradition
- Campus efforts generally not student driven
- Leadership, faculty & staff focused on Centennial Campus development, transition to 2012 curriculum & related issues

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