



恒生管理學院
HANG SENG
MANAGEMENT COLLEGE

Showcase of Green Campus Development in Hong Kong

A Case Review of Hang Seng Management College's Master Campus Expansion Plan



Organisers:



International Co-owners:



Sustainable Buildings and Climate Initiative



Global Alliance for Buildings and Construction

About HSMC



沛然環境評估
工程顧問有限公司



恒生管理學院
HANG SENG
MANAGEMENT COLLEGE



The **Hang Seng Management College (HSMC)** is a non-profit, self-financed university-level institution in Hong Kong

Acquired six pieces of land (Site A to F) adjoining the current parent building

Offers a wide range of undergraduate and taught postgraduate degree programmes



Not only a physical space for activities but also a **learning campus**

Communicate a sustainable future to young **generations**



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Master Campus Expansion Plan



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Promoting Policies and Practices for Sustainability



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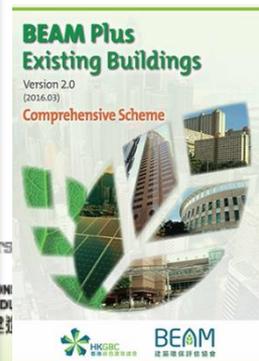
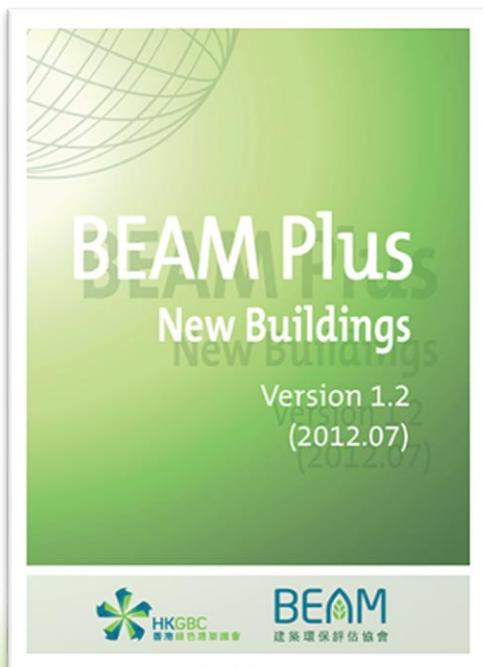
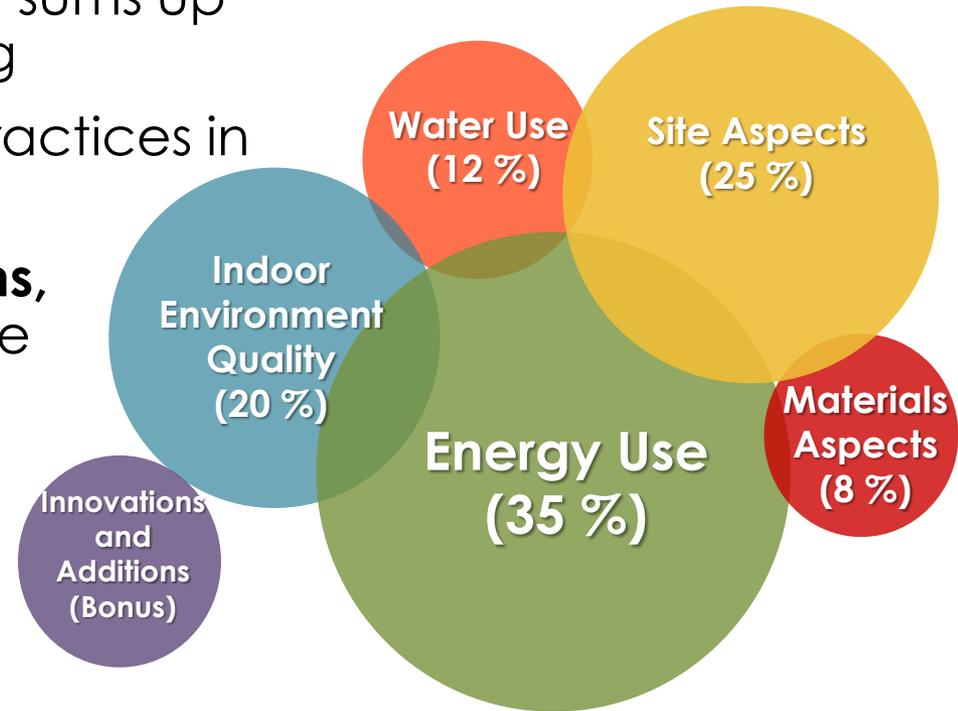
Master Campus Expansion Plan



- Block A: S H Ho Academic Building
- Block B: Sports and Amenities Centre
- Site C: HSMC Plaza
- Block D: Lee Quo Wei Academic Building
- Site F: HSMC Jockey Club Residential Colleges
- Block M: Academic and Administration Building
- Block N: Academic and Administration Building

BEAM Plus

- A **single performance label** that sums up the overall qualities of a building
- It embraces a range of good practices in **whole building life cycle**
- It is aligned with **local regulations, standards and codes** of practice



NETS:

BE



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Master Campus Expansion Plan



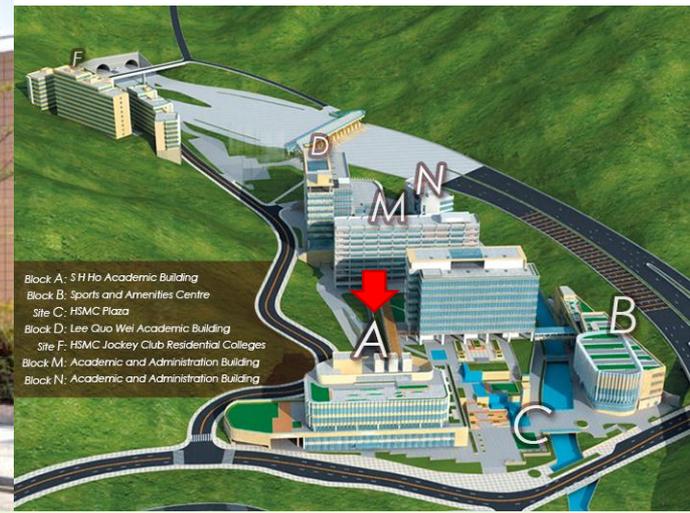
恒生管理學院
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Block A - S H Ho Academic Building (Completed Sep 2012)

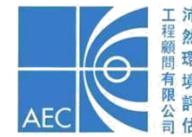
- 24 Classrooms & 2 Computer Rooms
- Central Library, Conference Hall, Language and Multi-media Laboratories, etc.



PLATINUM
鉑金級
HKGC
BEAM Plus
綠建環評



Master Campus Expansion Plan



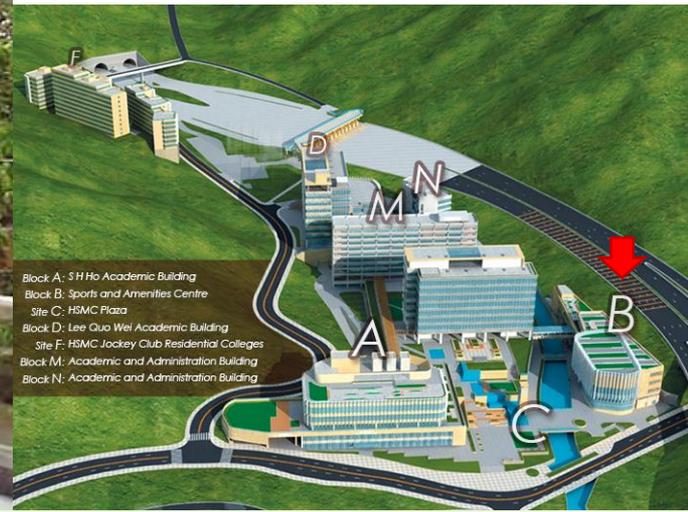
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Block B - Sports and Amenities Centre (Completed Oct 2013)

- 6-lane Indoor Swimming Pool, Indoor Sport Hall, Gymnasium
- Canteen



PLATINUM
鉑金級
HKGC
BEAM Plus
綠建環評



Master Campus Expansion Plan



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Block D - Lee Quo Wei Academic Building (Completed Sep 2013)

- 26 Classrooms & 2 Computer Room, Training Centre & Studio
- Offices for Schools/Department



Master Campus Expansion Plan



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Site F - HSMC Jockey Club Residential Colleges (Completed Sep 2015)

- 3 blocks of residence halls
- About 400 student quarters accommodating 1,200 students



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Green Campus Features



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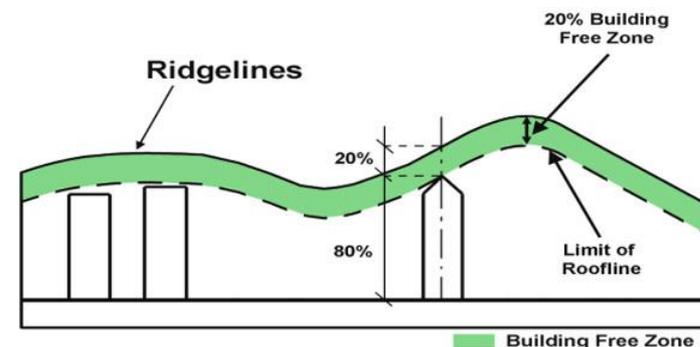


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Site Planning and Design

- **Proactive approach** to achieve greater integration of site planning and design issues.
- To comply 100% of items of the **Urban Design Guidelines** in HK Planning Standard and Guidelines (HKPSG).

Visual Corridor to ridgeline of Tate's Cairn and greenery



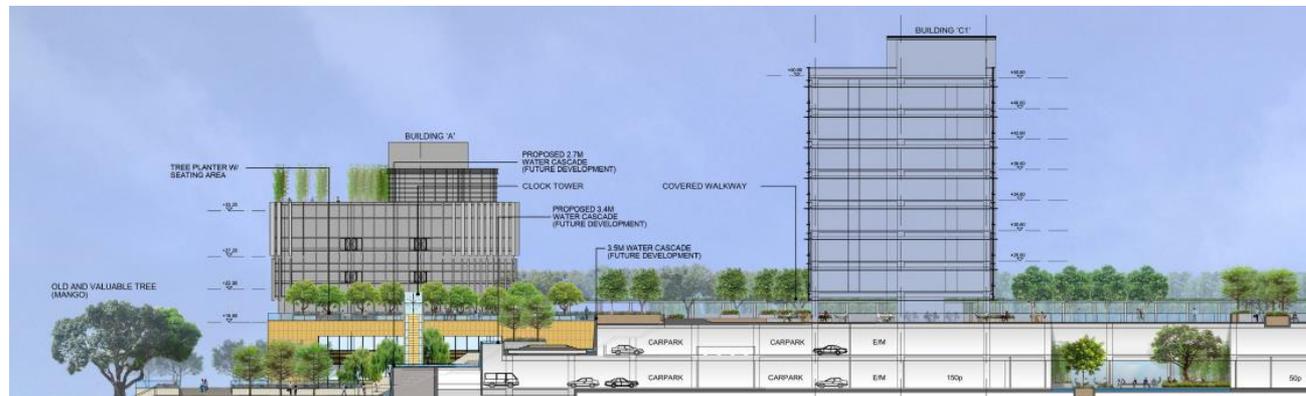
Stepping Down Design



Site Planning and Design

Greenery Coverage > 30% for all sites

- Extensive greenery **more than the statutory requirement** for site **ecological value** and its **social value**
- Well blended with different **recreation provisions for socialization**
- **Bamboo** which is **fast-growing, highly adaptable** and good at **CO2 absorption** was selected as the major species



Site Planning and Design



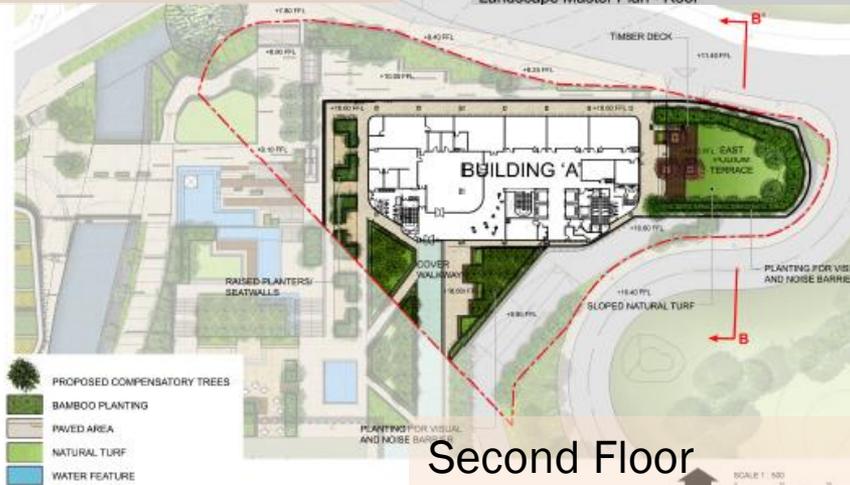
Ground Floor
Green Area: 605m²

HANG SENG MANAGEMENT COLLEGE, SHATIN, N.T.
Landscape Master Plan - Ground Floor



Roof Floor
Green Area: 338m²

HANG SENG MANAGEMENT COLLEGE, SHATIN, N.T.
Landscape Master Plan - Roof



Second Floor
Green Area: 806m²

HANG SENG MANAGEMENT COLLEGE, SHATIN, N.T.
Landscape Master Plan - Second Floor

Building Materials



Rapidly Renewable Materials - Bamboo

- Required 3-7 Years for Maturity
- 20 times faster than some of the trees species hardwood flooring
- Does not have to replanted after each harvest
- Equally as durable as hardwood

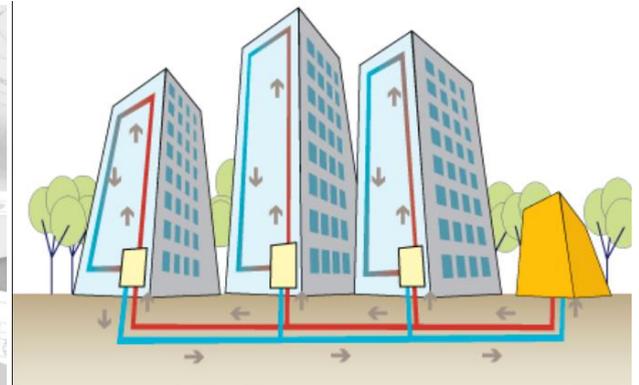
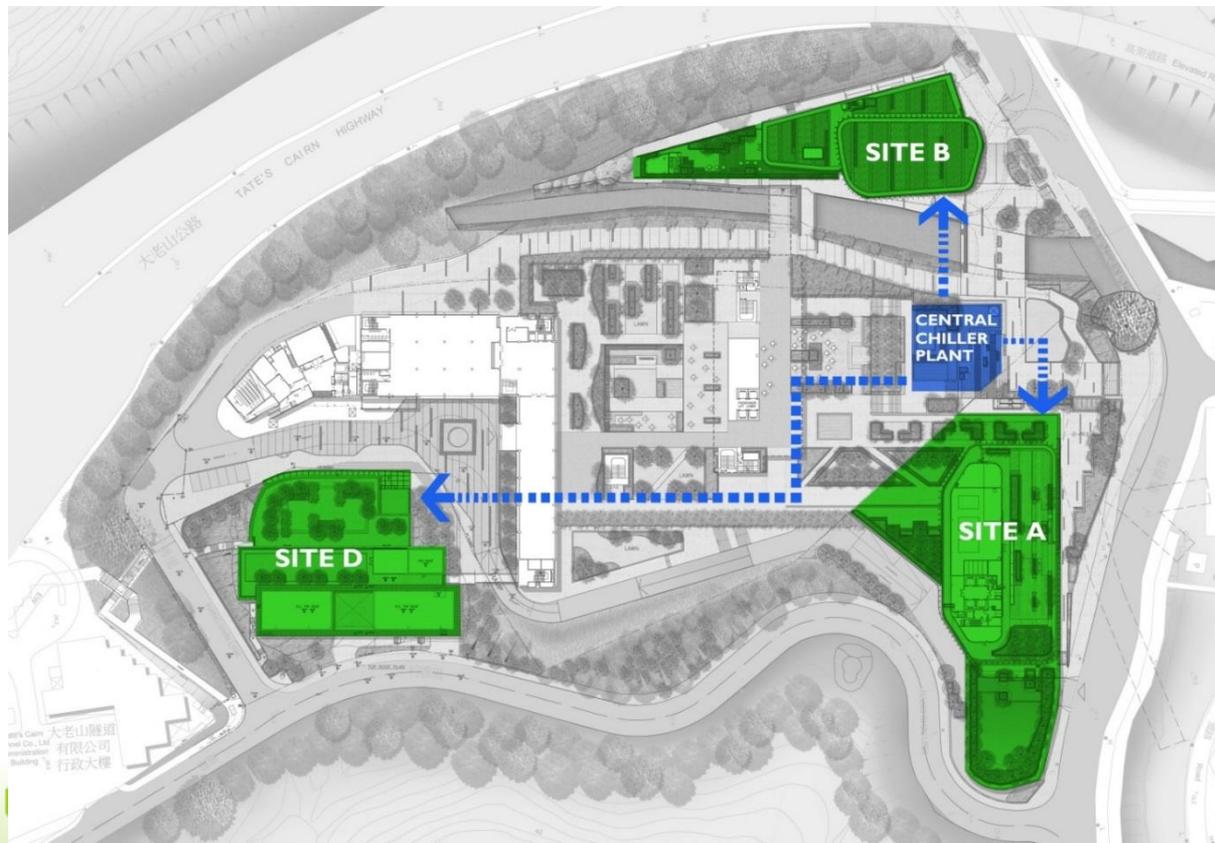
Bamboo Veneer-25%
Solid Bamboo-24%



Energy Efficiency

District Cooling System (DCS)

- Operate at the **higher efficiency of the mix of chillers** (with different cooling capacity) when the actual usage is less
- **Minimized noise and vibration** caused by cooling or heating equipment

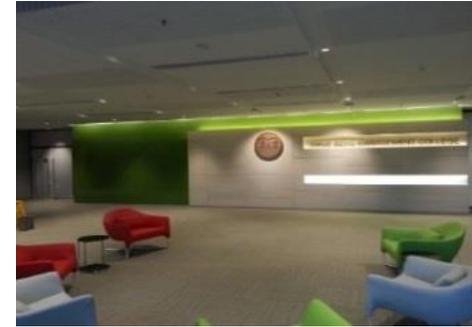


Energy Efficiency

Chilled ceiling air conditioning system (Block D)

Minimal space & parts are required

- **No Fan Coil Units, Supply / Return air ductwork** are required.
- **Minimal space (100mm)** is required for ceiling panels installation
- Improve floor height



Active control of fresh air supply with no return air

- **Fresh air supply** is essential to the system operation. Sufficient supply of fresh air ensures that air quality will be excellent
- **Prevents cross infection** and the spread of disease due to no return air strategy



	Traditional A/C	Chilled Ceiling
Heat Transfer Mechanism	Mainly Convection	Mainly Radiation
Cooling Source Distribution	Concentrated (Air Grilles)	Evenly Distributed (Ceiling Panels)
Temperature	Not Even	Even
Air Movement	Strong near Grilles	Mild
Room Air	Recirculated	Once Through
Thermal Comfort Level	Acceptable	High

Water Efficient Device

+

Rainwater & Grey Water Recycling

Rainwater
Cooling Tower Condensate Water
Grey Water Collected



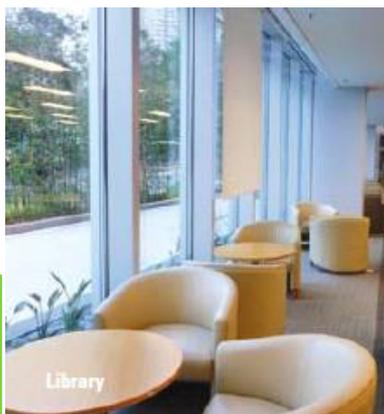
Cleansing Water + Irrigation Water

- Rainwater recycling: reduce fresh water consumption for irrigation by 26.4%
- Greywater recycling: offers fresh water saving of 28.3%



Pleasant Indoor Environment

Natural Daylight & Glare Control



- Orientate in North-South direction to maximize daylight, reduce heat gain and reliance of artificial lighting
- Reduces the transmissions of solar radiation from direct sun rays
- Utilizes natural daylight
- Provides protection against glare
- Allows a view to the outside
- Protect privacy
- Optimize comfort in the workplace

Pleasant Indoor Environment

Acoustic Design

- Partition with excellent sound insulation and absorption performance is used
- Environmental-friendly Acoustics Panels are installed
- Vibration isolator, spring and neoprene are installed in vibration sources for exhaust mitigation



Operation and Maintenance Green Education



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Promoting Policies and Practices for Sustainability



Capacity Building & Monitoring



Working Group on Energy Conservation and Sustainability

- Formed in 2015
- Implementation of practical measures on **energy conservation and sustainability** by engaging **staff and students**
- Campus Development and Management Office, Information Technology Services Centre, Student Affairs Office, Vice-President (Organisational Development)'s Office and student representatives



Management Tools

- **Building management system (BMS)** for management of lighting system and MVAC system
- **Energy audit, carbon audit and waste audit** to assess the building performance and identify opportunities for improvement



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Green Education and Outreach



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Food Waste Recycling Scheme and Rooftop Farming

- The food waste will be delivered to a composter for processing
- The treated food waste will then be used as the organic fertilisers and applied on the organic farm on the roof top of the Sports and Amenities Centre



Education Events & Community Outreach

- In Jul 2015 “HSMC Symposium on Sustainability and Bamboo” was held in collaboration with UNESCO-APEID with around 300 participants
- Greening Workshop, Organic Planting Day, Visits on Organic Farm, green campus tour, etc.



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Lessons Learnt



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Lessons Learnt

Tailor-made Thinking



Organisers:



International Co-owners:



Lessons Learnt



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Tailor-made Thinking



People Considerations



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Promoting Policies and Practices for Sustainability



Lessons Learnt

Tailor-made Thinking



People Considerations



Green Living Campus



Lessons Learnt

Tailor-made Thinking



People Considerations



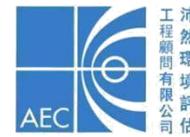
Green Living Campus



Capacity Building



Conclusion



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Innovations

Green Design Features



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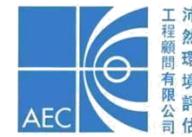


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Innovations

Green Design Features

Integration

Learning & Living Mission of Education



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Innovations

Green Design Features

Integration

Learning & Living
Mission of Education



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Thank you

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