

Hennessy Centre Redevelopment

The redevelopment project at 500 Hennessy Road by Hysan Development Company Limited is at the forefront of global environmental and energy standards. It is the first building in Hong Kong pre-certified at the highest Platinum level under the Leadership in Energy and Environmental Design Core and Shell (LEED-CS) program by the U.S. Green Building Council. The project also obtained a provisional certificate at the highest rating of Platinum standard granted by Hong Kong's Building Environmental Assessment Method (BEAM).

When completed at the end of 2011, the 36-story mixed-use office and retail building, with 4 additional levels of basement, and a Gross Floor Area totaling around

66,500 square meters, will be a green landmark in the heart of bustling Causeway Bay, a prime commercial district recognized for its vibrancy. It will also be the future northern gateway to Hysan's portfolio of commercial and residential buildings in the Causeway Bay area.

GREEN FEATURES AND SUSTAINABLE TECHNOLOGIES

Hong Kong's highly built-up environment is convenient and efficient, but also presents environmental concerns. It is particularly challenging to find a genuine environmental solution for a high-rise building in a high density location. Located in the heart of Causeway Bay with an extremely high pedestrian flow, the new building will use less energy, and will provide a healthy and productive indoor environment that emphasizes the use of natural light and fresh air, as well as enhance ventilation in the district.

BUILDING MASSING AND ENVELOPE

- There will be several large openings at lower levels of the building, acting as "urban windows" to enhance natural air ventilation and improve the microclimate in the neighbourhood. They will also lessen the wall effect and help retain good visual permeability. In addition, these openings will provide green spaces to mitigate the heat island effect.
- **The orientation** of tower disposition is carefully considered to reduce heat gain and undesirable glares in a passive and cost effective way. The longitudinal sides of the rectangular tower will face north and south, while the shorter transverse sides will face east and west to minimize the effect of low-angle sun glare. The northern seaview can be captured without much heat gain from the north. The tower core will be located at the south to minimize heat gain from that direction.



PROJECT DETAILS

LOCATION

Hong Kong

NAME

Hennessy Centre Redevelopment

DEVELOPER

Hysan Development Company Limited

DESIGN ARCHITECT

Kohn Pedersen Fox Associates PC

PROJECT ARCHITECT

Dennis Lau & Ng Chun Man Architects & Engineers (HK) Limited

SIZE

4,435 m² (total site area)

2,188 m² (total vegetated area)

66,500 m² (total GFA)

TYPE

Commercial

BUILDING DETAILS

36-story mixed-use office and retail

4-story basement retail carpark

RATINGS

Pre-Certified at the highest Platinum level under the Leadership in Energy and Environmental Design Core and Shell (LEED-CS) program by the U.S. Green Building Council

Provisional Certificate at the highest rating of Platinum standard granted by Hong Kong's Building Environmental Assessment Method (BEAM).

- **The high performance curtain wall system** with sunshades and low-emissivity double-glazing will allow sufficient visible light entering the building while reducing unwanted solar heat gain and exterior noise at the same time. Careful considerations were made to obtain a balance between optimal views and best use of natural light on one hand, and keeping energy consumption low on the other.
- **The light shelf** at the building façade will introduce daylight deep into the inner zones of the office floors.
- **Natural vents** integrated into the curtain wall design will allow natural ventilation at perimeter zones of office floors and save air-conditioning energy when the right outdoor environmental conditions permit. Such vents will also provide a healthier environment for staff working off hours or contractors doing fitting out, or when natural ventilation is most desired for occupants' health.

ENERGY EFFICIENCY

- **Total enthalpy recovery wheels** will be installed at the primary air units. The energy hidden in the exhaust air could be recovered to pre-cool the incoming fresh air, so as to reduce the building cooling load.
- **The passenger sensing control system** will change the escalators to energy saving mode by using variable frequency drive during period with lower usage.
- **Evaporative cooling towers** instead of air-cooled chillers will be adopted for the building.
- **Free cooling**, i.e. using of outside air for direct-cooling of office floors, will also be available when the right climate conditions exist.
- **CO₂ fresh air demand control** will provide energy saving and better indoor air quality. Premises with population that vary greatly can benefit from the use of this sensor technology because they can provide the exact amount of ventilation air needed, not the large quantity that would otherwise be required without this detection system.
- **Advanced building commissioning** will verify and ensure that the building is designed, constructed and calibrated to operate as intended.
- **The regenerative drive** will feed energy usually lost during lift braking back to the building for further use.

- **Energy simulations** for different HVAC designs are to be carried out to ensure that the systems adopted are highly energy efficient.

GREENERY

- **Green roofs** are to be provided at different levels of the building, which will help mitigate the heat island effect, as well as retain rainwater for plant irrigation. Green roof is also a practical solution for providing greenery in a high density urban context, where on-grade greenery space is hardly available in practice.

WATER EFFICIENCY

- **The rainwater harvesting system** will allow the use of rainwater for landscaping and other uses.
- **Potable water use reduction** will be available through water saving devices and rainwater reclamation.

OTHER NOTABLE GREEN INNOVATIONS

- **Sustainable construction** with recycling of construction waste and extensive use of environmental material, system formworks and prefabrication.
- **Recycling and sorting facilities** are to be built-in for building users.

COST AND BENEFITS

By incorporating green features and innovation, the construction cost for Hennessy Centre redevelopment will be increased by about five percent. This cost increase will be offset by savings in the main contract awarded.

For more information, visit www.AsiaBusinessCouncil.org