

Low Carbon Construction - Energizing Kowloon East Office

Texts on screen:

Energizing Kowloon East Office

Green Temporary Office Building

(Main entrance of the building is shown on screen.)

(Two layout plans on G/F and 1/F are shown on screen.)

The following introduce the project background and the space usages:

The Energizing Kowloon East Office (EKEO) Temporary Office is located near the junction of Hoi Bun Road and How Ming Street in close proximity to both Kai Tak Development and the business areas within Kowloon East. It is a two-storey 1,200 m² floor area building which can accommodate 20 staff and 50 visitors out of an area of 3,600 m² underneath the Kwun Tong Bypass. With the joint efforts of the Civil Engineering and Development Department and the Architectural Services Department, the building of EKEO was completed in just six months, taking three months on design and a further three months for construction.

On one side of the EKEO building, there are office facilities around a central courtyard; and on the other side, there is an Information Kiosk comprising a briefing area, conference rooms, interpretive set-ups including models and information panels.

Apart from providing an efficient workspace for the professional EKEO team in Kowloon East, the building also serving as a venue for hosting public engagement activities and receiving visitors. The Information kiosk accommodates exhibition panels, models and video programmes about Energizing Kowloon East and Kai Tak Development Area.

Texts on screen:

Key Sustainable Features

Ultra Low Embodied Carbon

Low Energy Consumption

Low Water Footprint

Waste Minimization

Quality Site Office Environment

Green Operation

Sustainable Development Showcase / Green Education

Ultra Low Embodied Carbon

Standardized Used Freight Containers

Modular Structural Steel Members

Easily Disassembled and Reused

Maximize use of prefabrication

(the structural steel members of the building structure is shown on screen)

Passive Design

Minimize solar heat gain by:

Built underneath Kwun Tong Bypass

Optimize window to wall ratio

Insulated envelope

Nature Daylighting

Nature ventilation

(A general outlook of the building structure is shown on screen)

Low Energy Consumption

High efficient T-5 Lamps + Task Lights

Daylight and occupancy sensors

High efficiency air-conditioner

(two lighting fittings installed in internal environment are shown on screen)

Water Conservation

low flow and/or sensor tap

low flow urinal

dual flush toilet

Rainwater recycling

(the diagram on how to handle the rainwater on site and two images of water conservation devices are shown on screen)

Summary

Energy Saving

33% reduction in annual energy consumption

57% reduction in fresh water consumption

22% reduction in flushing water demand

69% construction waste reused

50% building materials are prefabricated

Enhanced universal accessibility

Achieved BEAM Plus Platinum (Provisional)

(An internal circulation area of the building is shown on screen)

The following elaborates more on the Design and Construction Features:

This temporary office building is a champion of sustainability by using a raft of integrated green building technologies and features, lean construction methods and low embodied energy materials to become Hong Kong's first low carbon temporary

office. It revitalises a piece of unattractive land on a site under the Kwun Tong Bypass; helps reduce EKEO building's energy footprint with passive environmental design; adopts modular construction approach by using recycled freight containers and other steel structures, which can also be easily dismantled and reused elsewhere in future; uses paving blocks made from recycled aggregate, glass and fly ash from power plants; uses new highly efficient technologies/designs such as air-cooled variable refrigerant volume air conditioners, T5 fluorescent tubes, daylight sensors to deliver savings in energy use; and uses dual flush toilets and low-flow taps, and harvesting rainwater for irrigation to conserve water.

The innovative and green EKEO building is the first temporary office building which is provisionally given the Building Environmental Assessment Method (BEAM) Plus Platinum rating endorsed by the Hong Kong Green Building Council in Hong Kong, demonstrating various environmental benefits:

1. Energy Saving
 - About 33% or 48,500kWh/year reduction of annual energy consumption
 - About 37% reduction in peak electricity demand

2. Water Conservation
 - About 57% or 805,000L/year reduction in fresh water consumption by harvesting rainwater for irrigation
 - About 22% or 51,600L/year reduction in flushing water demand by using low flow urinal and dual flush toilets

3. Waste Reduction
 - About 69% or 10,500kg of construction waste will be recycled or reused
 - About 50% of building materials are prefabricated

Texts on screen: Construction process

The construction process of EKEO Temporary Office from March to May 2012 was captured into a 1.5 minutes video from site formation, construction of modular structure to completion of building fabric and building services systems.

Source of information: http://www.ekeo.gov.hk/en/quick_wins/ekeo/index.html