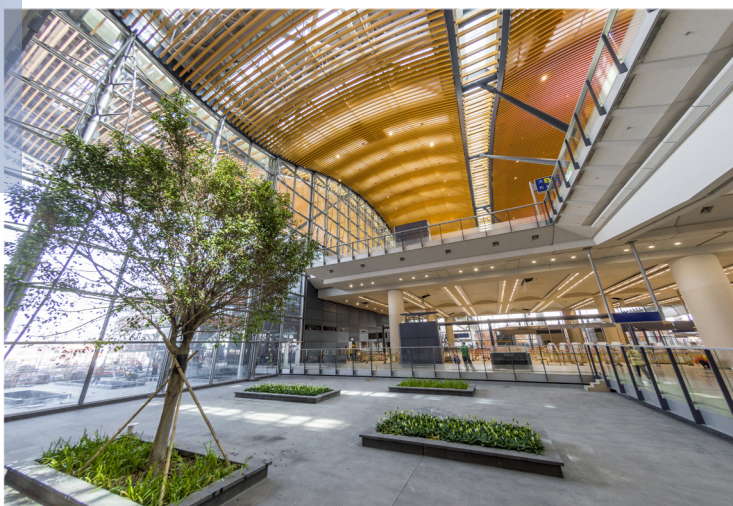


Passenger Clearance Building

The Passenger Clearance Building (PCB) is the landmark of the HZMB HKP. It houses the customs, immigration and quarantine facilities for passengers accessing Hong Kong via the HZMB. The 2-storey building, with the Arrival Hall on the ground floor and the Departure Hall on the first floor, covers a total floor area of over 90,000 m². The PCB and adjacent public transport interchanges are well connected so as to serve effectively as a transport hub.



▲ The PCB and public transport interchanges



▲ Glass facades, skylights and spacious environment of the PCB

Designed with abundant natural light, the PCB is an energy efficient and environmentally friendly infrastructure. Glass facades and skylights are extensively provided so that natural light could contribute to the internal illumination in daytime. The roof of PCB is designed with the concept of modularity, repetition and symmetry and in the form of a wave. It is supported by a few tree-like structural columns to create an enhanced sense of spaciousness at the Arrival and Departure Halls. With an aim to enable a good spatial adaptability and flexibility of the interior space, the column grids of PCB concourse area are widely spaced at 16.5 m x 21 m.



The PCB roof is made of pre-fabricated modules which are subsequently assembled on site leading to improved efficiencies in both design and fabrication processes. The roof's light colour aluminum cladding and baffle ceiling shading devices reduce heat gains while allowing natural light into the building. Sensors to automatically adjust artificial lighting according to daylight levels help reduce power consumption further. Porous pavement, as a key player in sustainability and low-impact urban



▲ Wavy roof design of the PCB

development, is adopted around the PCB area, making it the first public walkway maintained by our Department adopting porous pavers. An energy efficient District Seawater Cooling System (DSCS) with seawater chillers is adopted to provide air conditioning for the PCB and other buildings in HKP. The PCB also uses reclaimed water, instead of fresh water, for flushing. There is also a rainwater harvesting system for supplying water for irrigation purpose. The use of DSCS consumes less electricity and hence produces less greenhouse gases and contaminants to the environment, while the use of a reclaimed water system for flushing water supply, in addition to water saving, reduces the amount of treated effluent being discharged to the adjacent water body and thus benefits the water quality in the North Western Water Control Zone.



Police Base

The Police Base is a 2-storey building with an incident control tower situated at the south of the HZMB HKP to provide policing and surveillance services in the vicinity of the HKP and the HZMB Hong Kong Section.

◀ The Police Base

Fire Station cum Ambulance Depot

The Fire Station cum Ambulance Depot, also located at the south of the HZMB HKP, is a 2-storey building with an ancillary drill tower. It provides firefighting, rescue and ambulance services in the vicinity of the HKP and the HZMB Hong Kong Section.

▶ The Fire Station cum Ambulance Depot



For the design of these two buildings, light colour building roof and canopy are adopted to reduce thermal heat gain. To allow natural daylight to penetrate in order to bring down the lighting system's power consumption, glass facades and skylights are used as far as practicable. The consumption of electricity is further optimized with the use of occupancy sensors to automatically adjust the brightness of interior lightings. Green roof and green wall are delicately designed and constructed to provide additional thermal insulation as well as to enhance aesthetic effect.



▲ Green roof of the Police Base



▲ Green roof and wall of the Fire Station cum Ambulance Depot

Careful considerations have also been given on the choice of material, energy and water. The insulation materials used are free of chlorofluorocarbons and hydrochlorofluorocarbons, which are powerful greenhouse gases. To minimize energy consumption, photovoltaics panels are installed at the building rooftops to harvest renewable solar energy. The two buildings also adopt the energy efficient DSCS as the air-conditioning system and reclaimed water for flushing water supply.

The Government's green policy is a key driver for the successful incorporation of a host of environmentally friendly features in the planning, design and construction stages of the PCB, Police Base and Fire Station cum Ambulance Depot. These green features have not only brought significant environmental benefits to all users in the HZMB HKP, but also helped conserve the environment as a whole.



▲ Photovoltaics panels of the Police Base

CENTRAL KOWLOON ROUTE

The Central Kowloon Route (CKR) is a 4.7 km-long, dual 3-lane trunk road linking Yau Ma Tei Interchange in West Kowloon and the road network at Kai Tak Development and Kowloon Bay in East Kowloon, forming a trunk route through Central Kowloon. The CKR will provide an alternative express route to relieve the traffic congestion on the major east-west corridors.

Apart from the reduction of carbon dioxide emission brought by the enhancement of traffic efficiency, the CKR can also bring environmental benefits in the vicinity through provision of noise mitigation measures and more green landscape to the community.



▲ Alignment of CKR

Environmental Benefits

The CKR provides an alternative express route for the traffic to bypass the congested road network in Central Kowloon thus shortening the journey time between West Kowloon and Kowloon Bay to around 5 minutes. The relief of traffic congestion can substantially reduce the emission of Carbon Dioxide (CO₂), Nitrogen Oxides (NO₂) and Respirable Suspended Particulates (RSP) from vehicles.

The major part of CKR is in the form of tunnel. By diverting the traffic underground, the number of vehicles on surface roads can be reduced. Air pollution and noise nuisance caused by vehicles can thus be effectively controlled and minimized. The exhaust in the tunnel will be processed by an air purification system. It is estimated that 80% of NO₂ and RSP will be removed and the noise nuisance will be minimized by the silencer.

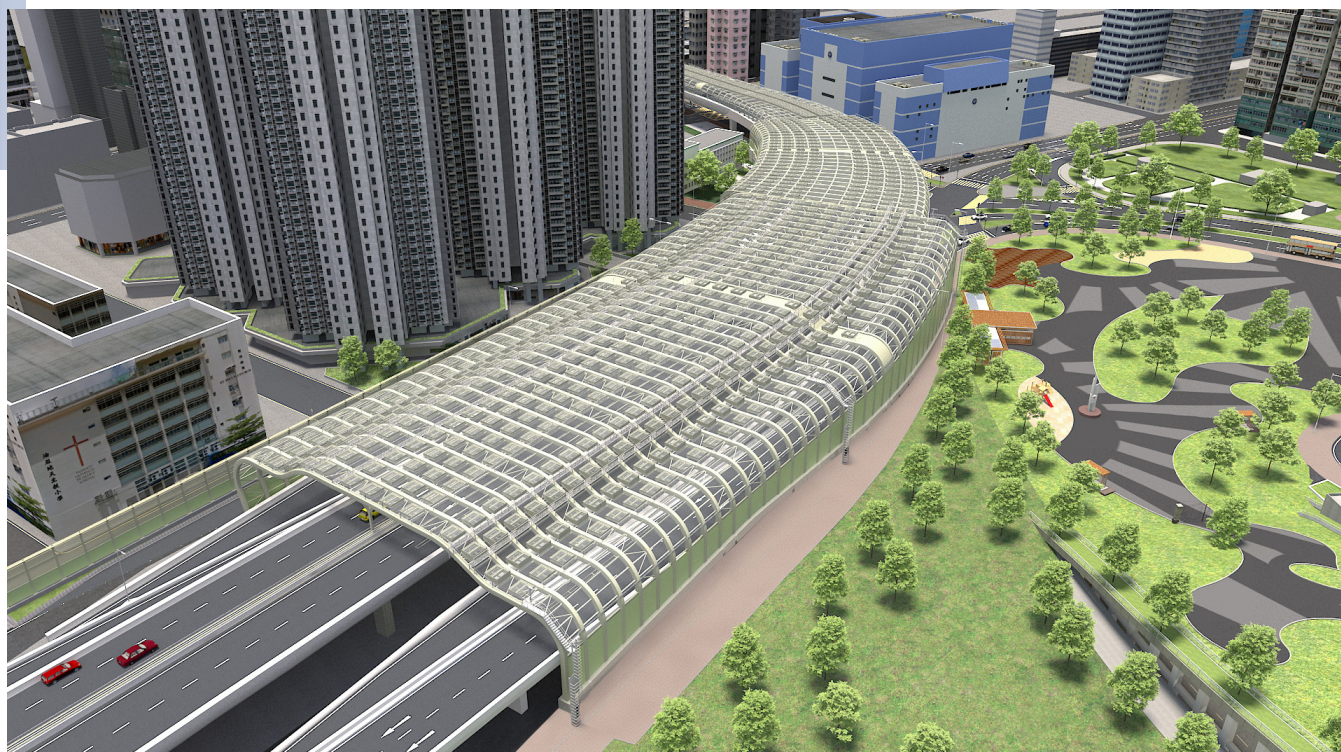


To reduce the environmental impacts, a landscaped deck of about 20,000 m² will be provided to cover the western tunnel portal of CKR at Yau Ma Tei. The green landscaped area will be open for public use as sitting out area.

Artist's impression of the landscaped deck at Yau Ma Tei ▶



Apart from the landscaped deck, noise barriers and noise enclosures will also be provided for the slip roads connecting the Yau Ma Tei Interchange as well as a section of Gascoigne Road Flyover near Prosperous Garden. These noise mitigation measures can significantly relieve traffic noise and benefit more than 1,600 dwellings in Yau Ma Tei, including around 900 dwellings of the Prosperous Garden. The noise enclosures for Gascoigne Road Flyover with spanning up to 66 m and height up to 20 m covering a number of viaducts and at grade roads will be the largest steel frame noise enclosure in Hong Kong.



▶ **Artist's impression of the noise enclosure at Gascoigne Road Flyover**

SHATIN TO CENTRAL LINK

Sustainable Design and Construction Methods of Admiralty South Overrun Tunnel

The South Overrun Tunnel at Admiralty is one of the major works of the Shatin to Central Link (SCL). The overrun tunnel is constructed by drill and blast method of width varying from 8 m to 17.7 m.

The project team has re-designed the tunnel profile by standardising the horse-shoe geometry in order to minimize the excavation volume as well as the use of temporary tunnel shutters. A unique side-wall formwork plus a single crown formwork have been adopted to suit all the varying profiles.



A travelling steel shutter is employed in the construction of the tunnel lining which can minimize the use of traditional timber formworks and scaffoldings. This technique also mitigates the safety risks related to heavy lifting operations, plants mobilisation and working at height within the congested tunnel environment.

◀ Travelling steel shutter

Greening Measures at Hong Kong Park Ventilation Building

The ventilation building is located near the Hong Kong Park at Supreme Court Road. After considering the operational and spacial requirements, greening measures are carefully deployed to minimize potential visual impacts to the adjacent developments and help to blend in the ventilation building with the surrounding environment. Vertical climbers and shrub planting are adopted along the building facade as far as practicable to soften the building structures. In addition, tree planting on the traffic island at Supreme Court Road is adopted as screening effect so as to enhance the landscape and visual quality of the surrounding environment.



▲ Vertical greening at Hong Kong Park Ventilation Building



▲ Tree planting on the traffic island at Supreme Court Road

ENRICHING OUR URBAN CANVAS - THEMATIC DESIGN ON HIGHWAY STRUCTURES



Flyovers, footbridges, tunnels and subways are common infrastructure features that form part of Hong Kong's urban fabric through which we navigate every day. To foster a more interesting and pedestrian friendly streetscape, we have applied thematic designs to some of these features since 2017. Facades of highway structures are converted into canvas to showcase the unique historic and cultural background of local districts and to strengthen the relationship of these urban spaces with the community.

Implementation

The thematic and chromatic designs not only bring an artistic touch to existing structures but also outline hidden stories inspired by the local history as well as the special interest of the environment and ecology in the vicinity.

Highway structures in selected locations are first identified and evaluated, followed by the collaboration between our professional landscape architects and engineers, contractors and artists to produce the site specific designs.



Special Thematic Design

Memories in Bloom – Causeway Bay

The design aims to capture the sense of place inspired by the majestic Old and Valuable Trees in the Victoria Park and the Hong Kong Central Library. Leaves of *Ceiba pentandra* and blossom of *Delonix regia* are painted onto the columns, soffit and abutment of the flyover.



City Transformation – Tsim Sha Tsui

The design for the abutment wall under Kowloon Park Drive at Hai Phong Road showcases the significant historic landmarks of Tsim Sha Tsui. The graphics that resemble blue and white porcelain wares provoke a sense of nostalgia while highlight the development and transformation of Kowloon Peninsula.



Bamboo Sensation – Wong Tai Sin

Wong Tai Sin district is renowned for its strong local Chinese character and the iconic Wong Tai Sin Temple. The bamboo theme adopted here is made reference to the large bamboo grove that originally surrounded the area, which is commonly known as Chuk Yuen. The festive red graphic is inspired by the historical Chinese bamboo paintings by the renowned scholar Su Shi.

Celebration of Seasons - Fo Tan

The pattern of flower blossoms, fruits, changing leaf colour, birds and butterflies indicates the seasonal changes on this 300 m long wall painting to celebrate the vibrant and dynamic landscape.



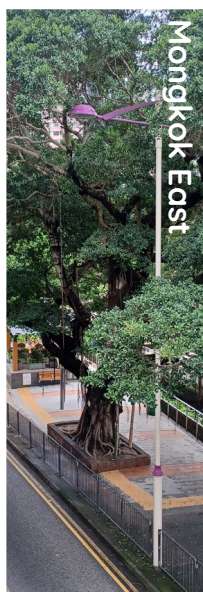
Hide and Seek - Tin Shui Wai

Tin Shui Wai used to have a continuous stretch of fish ponds where people worked in gei wai and enjoyed the scenery of the setting sun. Nowadays, the large wetland area still attracts various species of wildlife and migratory birds, which is featured in this thematic design to demonstrate the harmony of people and nature.

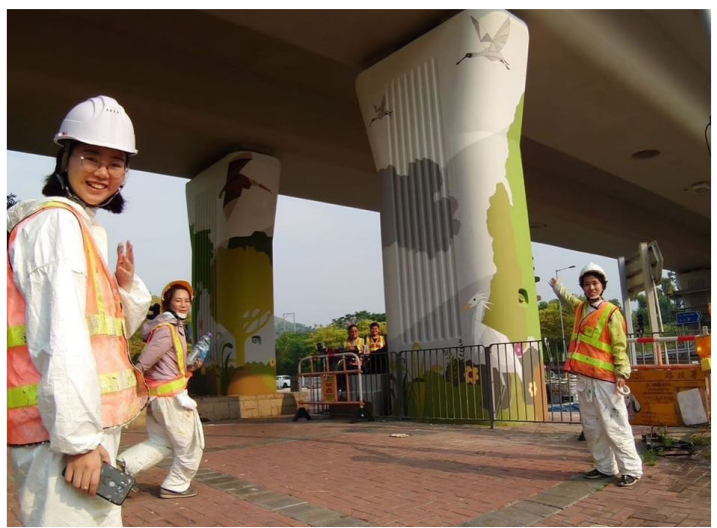


Thematic and Chromatic Design of Street Furniture

Specific design is extended to streetscape elements, such as lamp poles and pillar boxes, with a view to unifying the local character and built environment. Colour/thematic scheme adopted for selected street lights also facilitates wayfinding to nearby MTR stations.



We have enjoyed working as a team in overcoming constraints and challenges encountered during the design and works implementation. Next time when you are walking past one of these thematic designs, take a minute to look up and enjoy! You may discover some hidden stories in our community.



GREEN OFFICE MANAGEMENT

Resources Saving: Water, Paper and Waste Recycling

In support of the Government's drive to save natural resources, we are committed to making every endeavour to practise the "green office" concept in different aspects of our day-to-day operation. In addition to energy saving as mentioned in the previous chapter titled Clear Air Charter, we have been making our best effort to put in place a series of green policies and measures to promote the environmental awareness of our staff.

Paper Saving

To align with the green office initiative, we will continue with the following measures on paper saving:

- ▶ Photocopy/print documents only when it is unavoidable and both sides of paper should be used;
- ▶ Encourage the use of recycled paper and reuse of paper office items;
- ▶ Exclude leader page for outgoing fax documents;
- ▶ Send unclassified documents without envelopes;
- ▶ Use emails for communication as far as practicable and adopt electronic templates of letterheads, memoranda and forms to avoid frequent re-printing for adjustment; and
- ▶ Put up single-sided paper collection box (yellow box) and a waste paper recycling box (green box) near the photocopiers.

In 2020, we consumed 19,265 reams of paper and 100% of which were recycled paper.

Auditing: Environmental and Carbon

Annual Environmental Audit

We conduct annual environmental audits in all 22 offices located in different premises with a view to maintaining the impetus of green measures in housekeeping. The objectives of conducting annual environmental audits are:

- ▶ to assess compliance with the green housekeeping guidelines;
- ▶ to identify non-compliance and recommend remedial actions;
- ▶ to promote good environmental management; and
- ▶ to increase staff awareness of green management and occupational safety and health initiatives.

Our offices continued to comply with the green housekeeping guidelines. We have also taken the opportunity to share among the offices the green management best practices.

Carbon Audit

Carbon audit was conducted for Ho Man Tin Government Offices by the Building Management Office in 2020 to monitor the effectiveness of greenhouse gas emission reduction effort. The relevant data are being studied by Building Management Office.

Water Saving

To maximise water conservation, we have adopted the use of dual-flush toilets, automatic low flow water taps and sensor type urinals. These components can effectively control the duration of water flow and keep the water flow at low level.

Waste Recycling

We treasure waste with recycle value by taking the following measures over the years:

- ▶ Place the separated recyclables into recycling bins for collection by cleansing contractors or local recyclers;
- ▶ Collect computer printer toners and ink cartridges for refilling and recycling; and
- ▶ Put up recycling boxes to collect used paper, CDs, plastic bottles, aluminium cans and rechargeable batteries for recycling.