ENVIRONMENTAL MANAGEMENT

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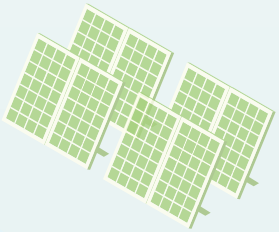
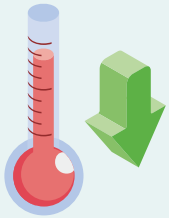




Environmental Considerations in

Improvement of Lion Rock Tunnel Project

Introduction

The Improvement of Lion Rock Tunnel (LRT) project is to rehabilitate the existing aged LRT with a view to extending its service life. The capacity of the tunnel and its connecting roads will also be enhanced to alleviate traffic congestion at the tunnel during peak hours and the traffic impact during maintenance, as well as to meet forecast escalated traffic demand.

Implementation Approach

As LRT is one of the most important routes linking Kowloon and the New Territories, a new tunnel tube would first be constructed between the two operating tunnel tubes for traffic diversion in order to maintain the existing busy traffic of LRT during the improvement works period. Upon its completion, the Kowloon-bound traffic will be temporarily diverted from the existing southbound tunnel tube to the new tunnel tube. The existing southbound tunnel tube will then be closed for expansion works to provide three-lane traffic while the northbound tunnel tube will remain in operation. After completion of the expansion of the existing southbound tunnel tube, it will be re-opened to accommodate Kowloon-bound traffic while the new tunnel tube will be reconfigured into a northbound tunnel for the Sha Tin-bound traffic. By then, both the northbound and southbound tunnel tubes of LRT will be capable to accommodate three-lane traffic. In addition to the staged construction works of the tunnel, widening of adjacent connecting roads will also be carried out in phases.

In order to minimize the environmental impacts and achieve sustainability during the construction and operation stages of the project, different schemes for tunnel alignment and road widening were developed and carefully assessed by taking into account various environmental considerations.

Typical tunnel section under the project

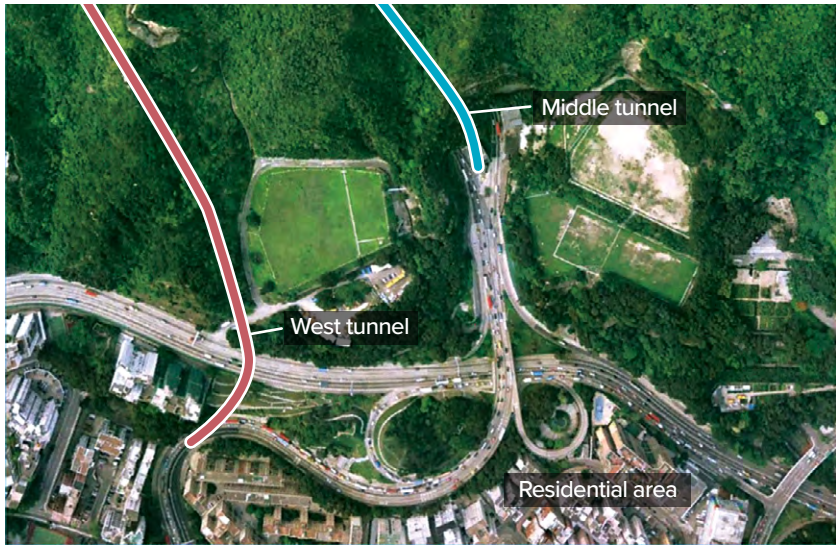
Environmental Considerations

Options of Tunnel Alignment

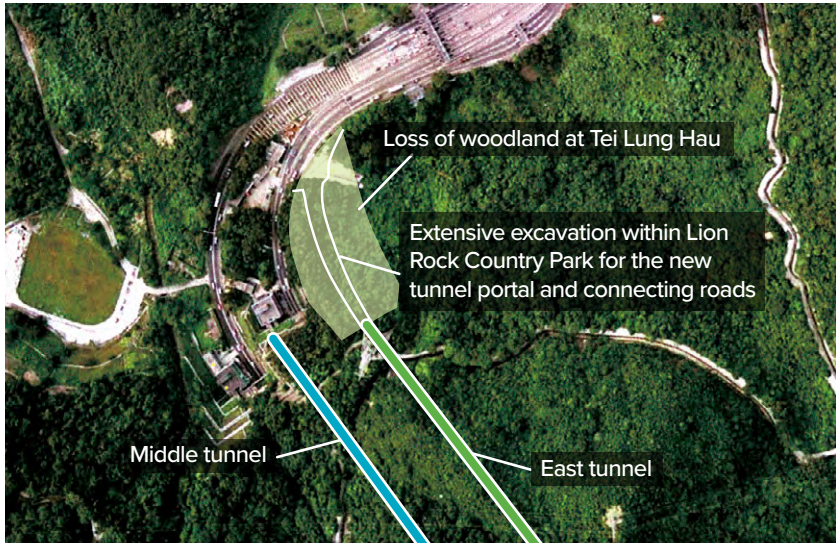
For the new tunnel tube to be constructed, three different options, namely the West Option (i.e. to the west of the existing LRT), East Option (i.e. to the east of the existing LRT) and Middle Option (i.e. in between the two existing tunnel tubes) had been explored. The Middle Option was eventually selected owing to the following environmental advantages.

Compared with the Middle Option, the West Option would comprise a much longer tunnel length due to the topographic condition, hence increasing the amount of construction and demolition (C&D) materials to be generated. Under the West Option, the portal of the new tunnel tube at the Kowloon side would also be very close to the nearby residential buildings, which would cause significant noise, air quality and visual impacts to the residents living in the vicinity.

As for the East Option, it would require extensive surface excavation within the Lion Rock Country Park (LRCP) at the Sha Tin side for the construction of the new tunnel portal and connecting roads. This would lead to much more tree felling and loss of woodland, making the East Option less favorable due to its high ecological impact.



The West Option



The East Option

Computer composed image of the Middle Option

The Middle Option has the shortest tunnel length and therefore with the least amount of C&D materials to be generated. The construction time of the Middle Option would be the shortest among the three alignment options, leading to the least noise and air quality impacts to the nearby residents during the construction stage. It also has the slightest visual and ecological impacts as it does not involve surface excavation within the LRCP.

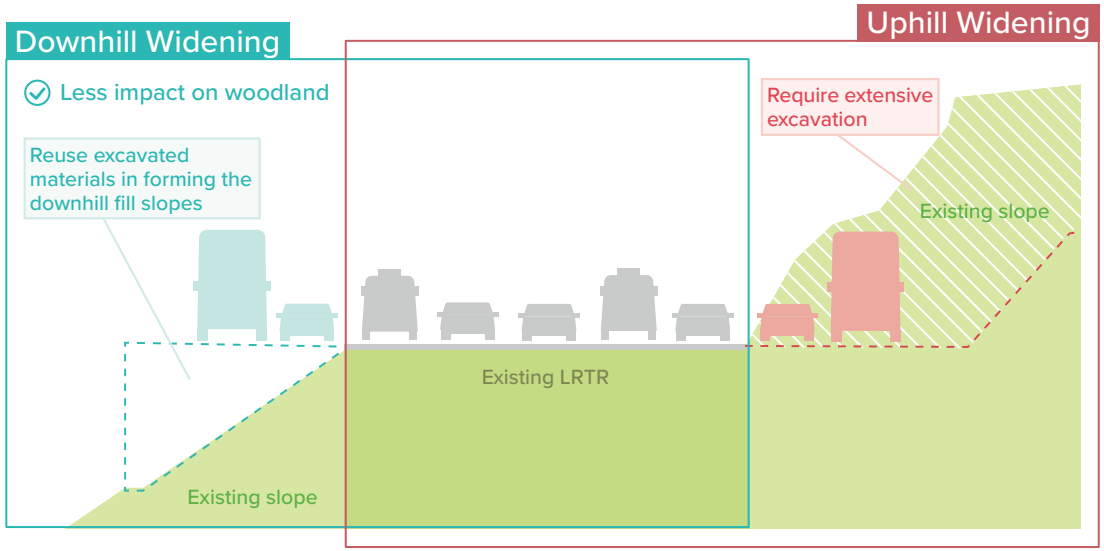
Options of Road Widening Works

As part and parcel of the project, the connecting roads will be widened to increase traffic capacity. The road widening works along Lion Rock Tunnel Road (LRTR) at Sha Tin side are proposed to be carried out at the downhill side (i.e. downhill widening). Comparing to the road widening works at the uphill side (i.e. uphill widening), downhill widening could minimize the extent of encroachment upon LRCP and avoid extensive excavation of the roadside slopes along LRTR.

Under the downhill widening approach, we have identified that the amount of woodland loss and number of trees to be felled would be much less than uphill widening. Downhill widening could also facilitate the reuse of the excavated materials in forming the downhill fill slopes with retaining walls. In contrast, excavation uphill would require partial closure of the nearside traffic lane of the southbound carriageway of LRTR, which would lead to serious traffic congestion, and in turn worsen the noise and air quality along LRTR. In view of the significant environmental benefits, downhill widening would be adopted for the road widening works at LRTR.

Preservation of Woodland and Country Park

By adopting a downhill widening scheme for LRTR, direct encroachment of the woodland of LRCP and natural habitats had largely been avoided. The footprint into LRCP is mainly located in developed areas and roadside woodlands of limited ecological value. Only 0.16 hectares of woodland in LRCP would be affected, mainly for the road widening works near World-wide Gardens which would have to be extended uphill to maintain suitable clearance of the residential blocks from the highway. A planting area of 0.25 hectares near LRTR would be provided for compensating the woodland loss.



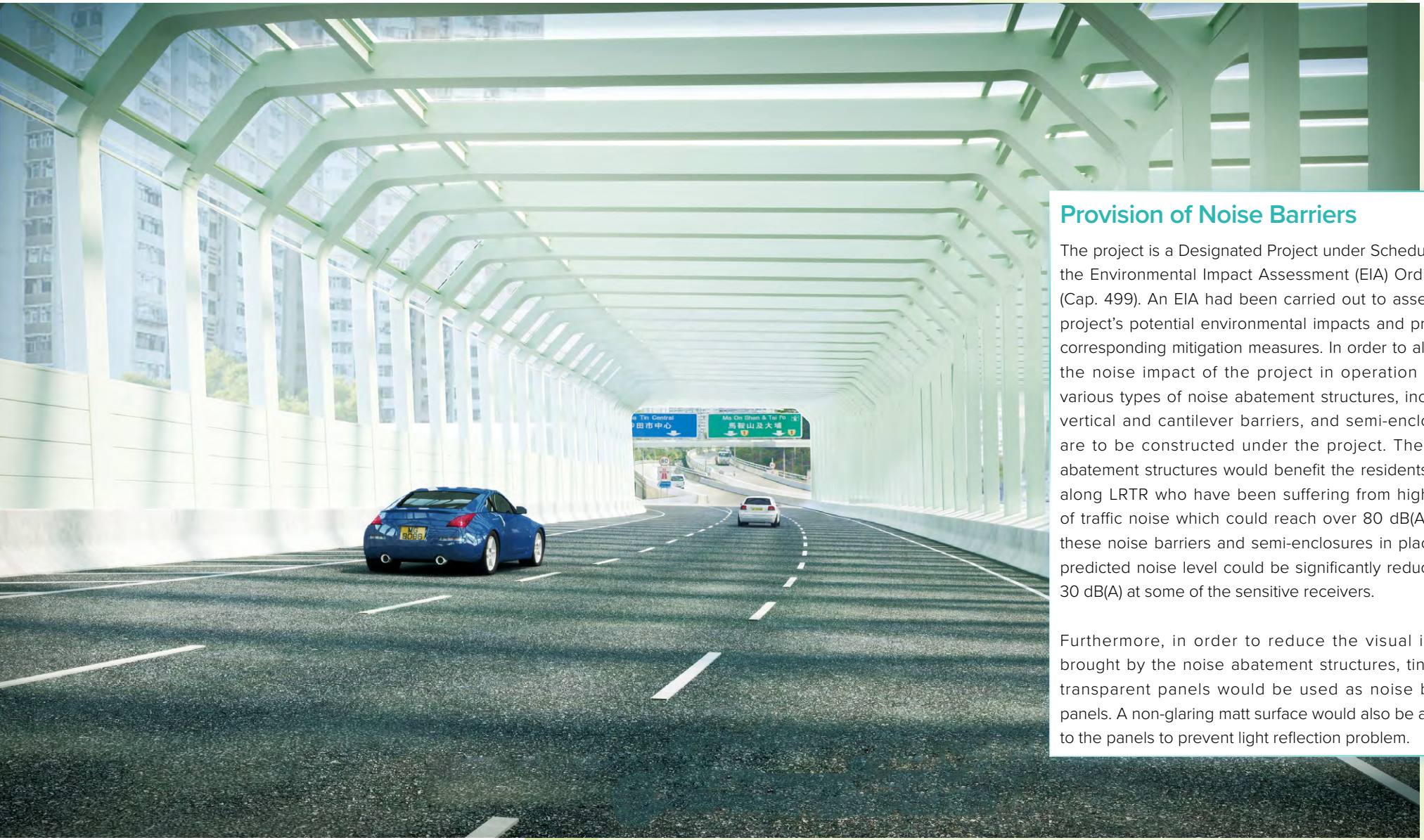
Downhill widening vs. Uphill widening

Woodland affected near World-wide Garden

Ancillary facilities such as the tunnel administration building (ADB), ventilation buildings and parking facilities will be re-located and re-built under the project. To avoid encroaching upon existing woodland and the LRCP, we would make full use of the paved area freed up after the implementation of free flow tolling system at LRT to accommodate the new ADB, bus lay-bys and the associated parking facilities for tunnel operation.

During public consultation, members of the public have raised concerns on the road widening works which would affect some of the facilities at the entrance to the Hung Mui Kuk (HMK) Barbecue Area. In order to address the concerns, we would take this opportunity to carry out improvement works for the access roads, staircases and vehicular entrance leading to the HMK Barbecue Area. Decorative screen hoardings would also be erected surrounding the future works sites to reduce associated visual impact.

Computer composed image of the proposed ancillary facilities



Provision of Noise Barriers

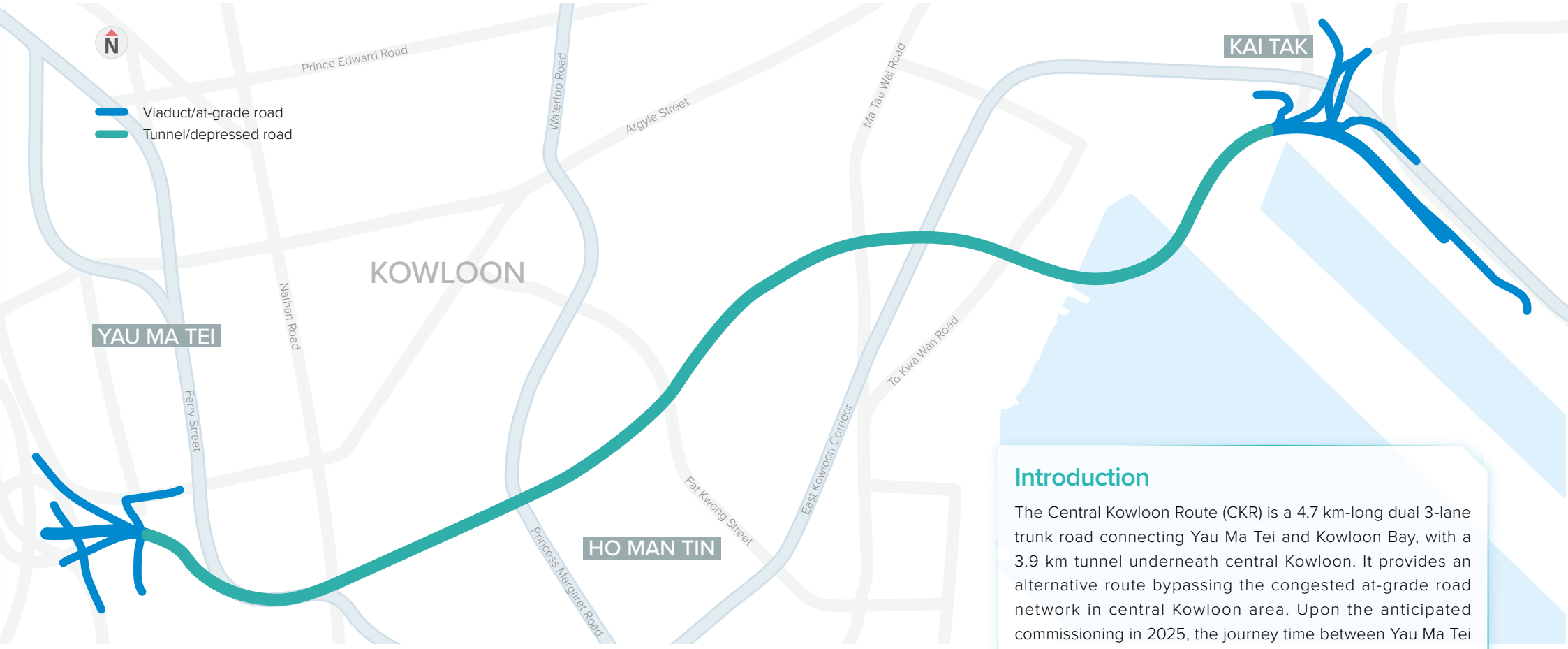
The project is a Designated Project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). An EIA had been carried out to assess the project's potential environmental impacts and propose corresponding mitigation measures. In order to alleviate the noise impact of the project in operation stage, various types of noise abatement structures, including vertical and cantilever barriers, and semi-enclosures are to be constructed under the project. The noise abatement structures would benefit the residents living along LRTR who have been suffering from high level of traffic noise which could reach over 80 dB(A). With these noise barriers and semi-enclosures in place, the predicted noise level could be significantly reduced by 30 dB(A) at some of the sensitive receivers.

Furthermore, in order to reduce the visual impact brought by the noise abatement structures, tinted or transparent panels would be used as noise barrier panels. A non-glaring matt surface would also be applied to the panels to prevent light reflection problem.

Computer composed image of the proposed noise abatement structures

Sustainable Construction in

Central Kowloon Route Project

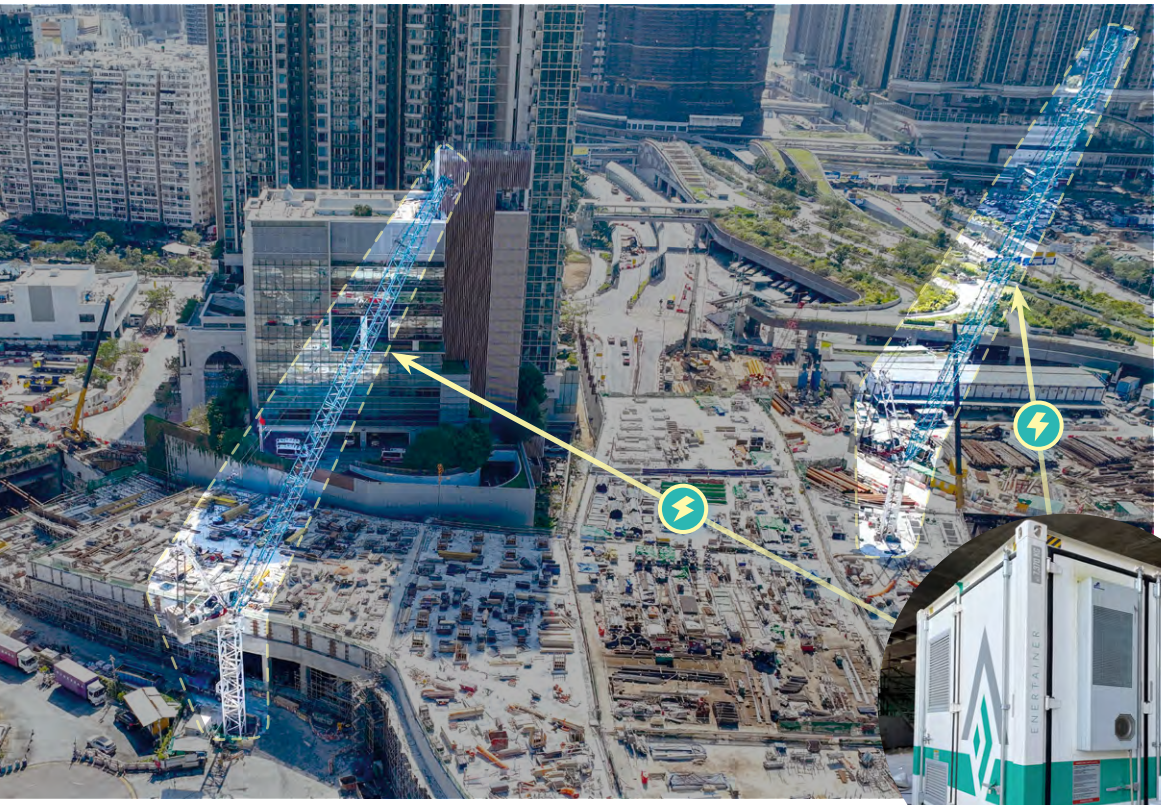


Alignment of the Central Kowloon Route

Introduction

The Central Kowloon Route (CKR) is a 4.7 km-long dual 3-lane trunk road connecting Yau Ma Tei and Kowloon Bay, with a 3.9 km tunnel underneath central Kowloon. It provides an alternative route bypassing the congested at-grade road network in central Kowloon area. Upon the anticipated commissioning in 2025, the journey time between Yau Ma Tei and Kowloon Bay during peak hour is expected to shorten from 30 minutes to about 5 minutes.

With an aim to promote sustainable development, environmentally friendly design, construction methods and equipment are adopted during the construction stage of the project.



Tower cranes on CKR work site

ESS unit on site

Energy Storage System (ESS) for Tower Cranes

Tower crane is a crucial machinery for large-scale construction works. Due to the intermittent high power demand, tower cranes are conventionally equipped with high-power diesel generators as power supply. Since the generators run continuously throughout the day, it would cause considerable air and noise pollutions. To improve the environmental performance, the CKR project team adopts the ESS solution which is a battery system specially designed for equipment with transient high power demand to replace the generators on site. The ESS installed for tower cranes is connected with the electricity supply of the works site which would charge the ESS during the periods of low power demand. The stored electricity would be discharged when there is high power demand. By eliminating on-site diesel combustion, the annual fossil fuel consumption is reduced by 35,000 litres, which is equivalent to 55 tonnes of carbon dioxide emission. With the use of ESS, the noise level on site is also reduced by 12 dB(A). Moreover, as the ESS does not consume energy when it is fully charged or during stand-by mode, the energy efficiency of ESS could be higher than 80% while traditional generators only have an energy efficiency of around 40%. In view of the environmental benefits above, the ESS is considered more environmentally friendly than the traditional diesel-powered generators for providing power to tower cranes.

ESS

Energy efficiency of ESS

>80%

Reduced

35,000 L

on-site fossil fuel combustion

≈ **55 tonnes** of CO_2 emission

Reduced

12 dB(A)

on-site noise level

Innovative Design and Construction for Underwater Tunnel Cofferdam

Traditionally, for underwater tunnel built by cut-and-cover method, temporary seawall are constructed to form a cofferdam which is an enclosed structure in water. To provide a firm foundation for the seawall, the soft marine mud in the seabed will be replaced by sand fill. This process requires extensive dredging operation and disposal of a large amount of soft marine mud. In addition, substantial backfilling of the entire cofferdam is necessary to create a dry working environment for subsequent diaphragm wall construction and excavation.

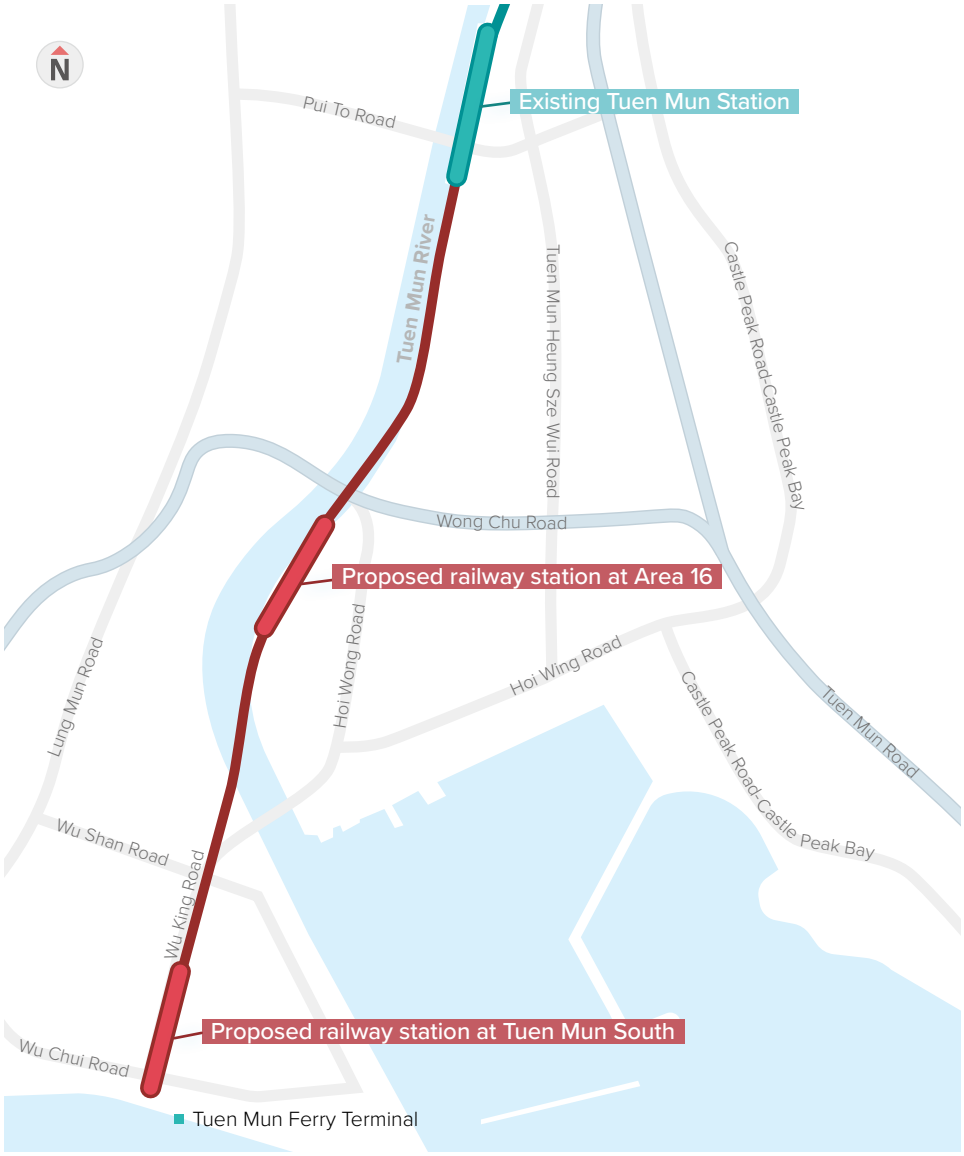
For the CKR cut-and-cover underwater tunnel section at Kowloon Bay, the project team adopts innovative ideas to optimize the traditional cofferdam construction. The revised cofferdam design features a double-wall system comprising the inner clutched pipe pile wall and the outer sheet pile wall. Instead of backfilling the entire cofferdam space to create dry working area as in the traditional way, backfilling is now only required within the space between the two layers of wall. A marine platform is then erected on top of the two layers of walls. This scheme significantly reduces the extent of temporary reclamation area and the need for fill materials, thus minimizing the disturbance to the seabed and the environmental impact to the marine ecosystem. The adoption of the pipe pile wall approach significantly reduces about 50% of the amount of marine sediment to be dredged or excavated. To further enhance the project's sustainability, modular strutting has been deployed in erecting the excavation lateral support to facilitate the reuse of steel materials in different phases of excavation, and even other projects after completion of the works. The reuse of steel materials significantly reduces carbon footprint generated from the material production and transportation processes.

The underwater tunnel at Kowloon Bay under construction

The construction process of the underwater tunnel is simulated in the following 360° VR video:

Sustainable Design for

Tuen Mun South Station



Alignment of Tuen Mun South Extension project

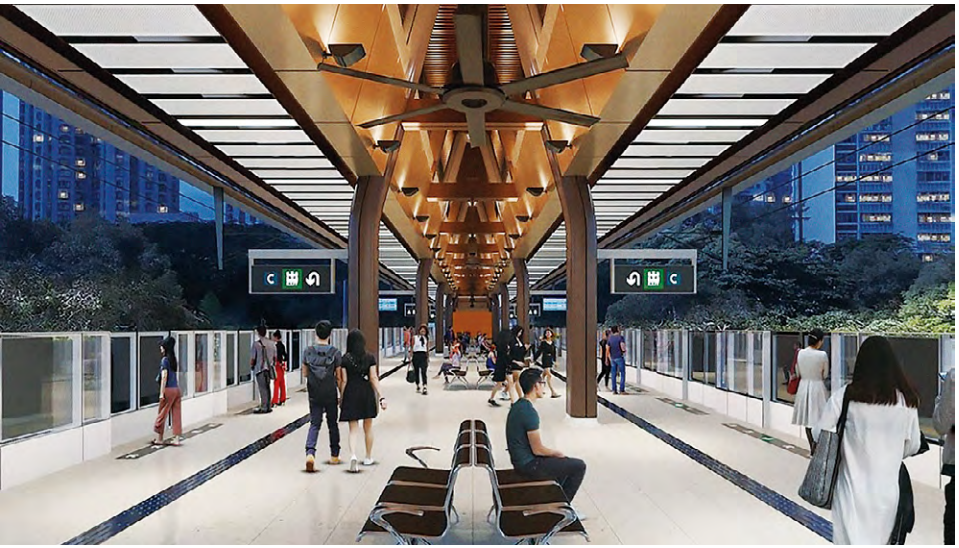
Introduction

The Government has been developing a comprehensive public transport system comprising different means of transport of which railway, a type of clean transport, forms the backbone of the system. With a view to contributing towards energy saving and emission reduction in railway operations, initiatives on sustainable design have been adopted under the Tuen Mun South Extension (TME) project, in particular, at the Tuen Mun South (TMS) Station, to promote sustainability and carbon reduction.

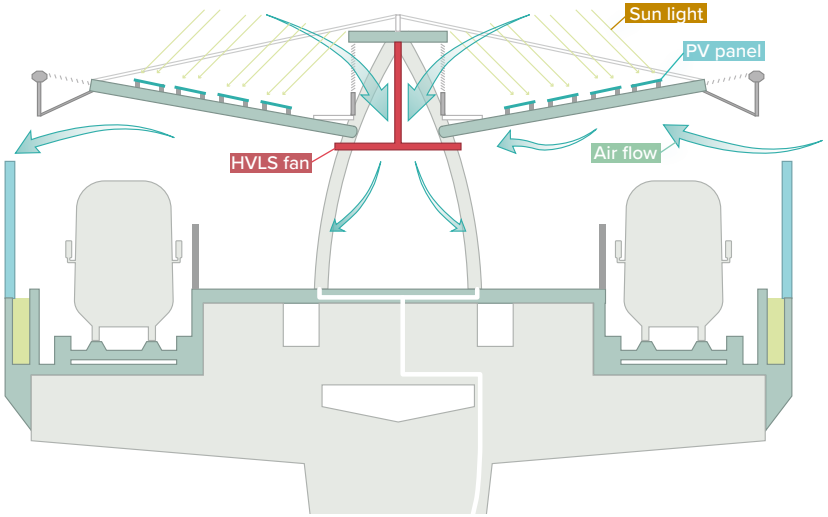
The Tuen Mun South Station

The proposed TME project is one of the seven recommended railway schemes in the Railway Development Strategy 2014. It extends the existing Tuen Ma Line from Tuen Mun Station southwards by about 2.4 km to improve railway access to the community to the south of the Tuen Mun town centre. The Government invited the MTR Corporation Limited (MTRCL) to carry out detailed planning and design of the TME Project in May 2020. Construction of the TME project by the MTRCL commenced in September 2023 and targeted for completion in 2030.

The project involves the construction of two new stations including the TMS Station, which is an elevated terminus near Tuen Mun Ferry Terminal. With Light Rail and bus stops nearby, this new station allows interchange between Tuen Ma Line and other public transport facilities to promote the use of railway as the main mode of public transport, which helps relieve traffic congestion in the area.



Computer composed image of TMS Station platform area with high-volume low-speed fans



Cross-ventilation at the platform area of TMS Station

Sustainable Design of Tuen Mun South Station

The environmentally friendly features adopted by the TMS Station, such as making good use of natural lighting and ventilation, not only provide the local community with a sustainable railway station, but also enhance the functionality and aesthetic appearance of the station.

Natural Ventilation

The TMS Station adopts cross-ventilation design with sustainable features that promote effective air circulation between the station and the surrounding environment to reduce energy consumption and space required for accommodating ventilation plants. The station will be equipped with high-volume low-speed (HVLS) mechanical fans that could effectively ventilate the platform area to enhance passenger's comfort level.

Natural Daylight and Lighting Control

The platform roof canopy of the TMS Station is designed to allow natural daylight penetration into the platform area which would reduce the need of artificial lighting, and hence the associated energy consumption. In addition, there will be an automatic daylight responsive lighting control to ensure the design illuminance levels are provided at all situations.

Renewable Energy

Photovoltaic (PV) panels will be installed at the rooftop of the TMS Station to generate electricity. With the adoption of renewable energy, the energy consumption required for the operation of the TMS Station could be further reduced.

Walkable City

Walkway Covers for Enhancing Walkway Environment

Background

The Government strives to create a pedestrian-friendly environment, thereby encouraging citizens to walk more and rely less on motorised transport so as to develop Hong Kong into a "Walkable City". The objectives are to encourage citizens to adopt a healthy lifestyle, enhance community interaction and build an age-friendly environment, etc. which are instrumental to the sustainable development of Hong Kong.

The Highways Department has been playing an active role in taking forward projects related to the concept of "Walkable City", particularly walkway cover projects. In view of the increasing ageing population, we hope to build an age-friendly community as soon as possible, so as to facilitate access by the elderly and people in need, and to prevent them from being exposed to adverse weather while walking along the frequently-used walkways.

Walkway cover at Chui Kwan Drive, Tung Chung

Development of Walkway Cover Projects in the Territory

The Government announced in the 2016 Policy Address (PA) to provide covers for walkways connecting to major public transport facilities and invited the 18 District Councils to submit proposals on the alignment of the walkway covers. Currently, the construction of walkway covers in Islands, Kowloon City, Kwai Tsing, North, Sai Kung, Sham Shui Po, Southern, Tuen Mun, Yau Tsim Mong and Yuen Long Districts with a total length of about 1.5 km has been completed. Those in Sha Tin, Tai Po and Tsuen Wan are under construction, with the rest in planning or design stages.

It was also announced in the 2019 PA that the Government would gradually provide covers for walkways connecting to public hospitals. The construction of walkway covers for three public hospitals has commenced for completion in phases starting from end-2024.

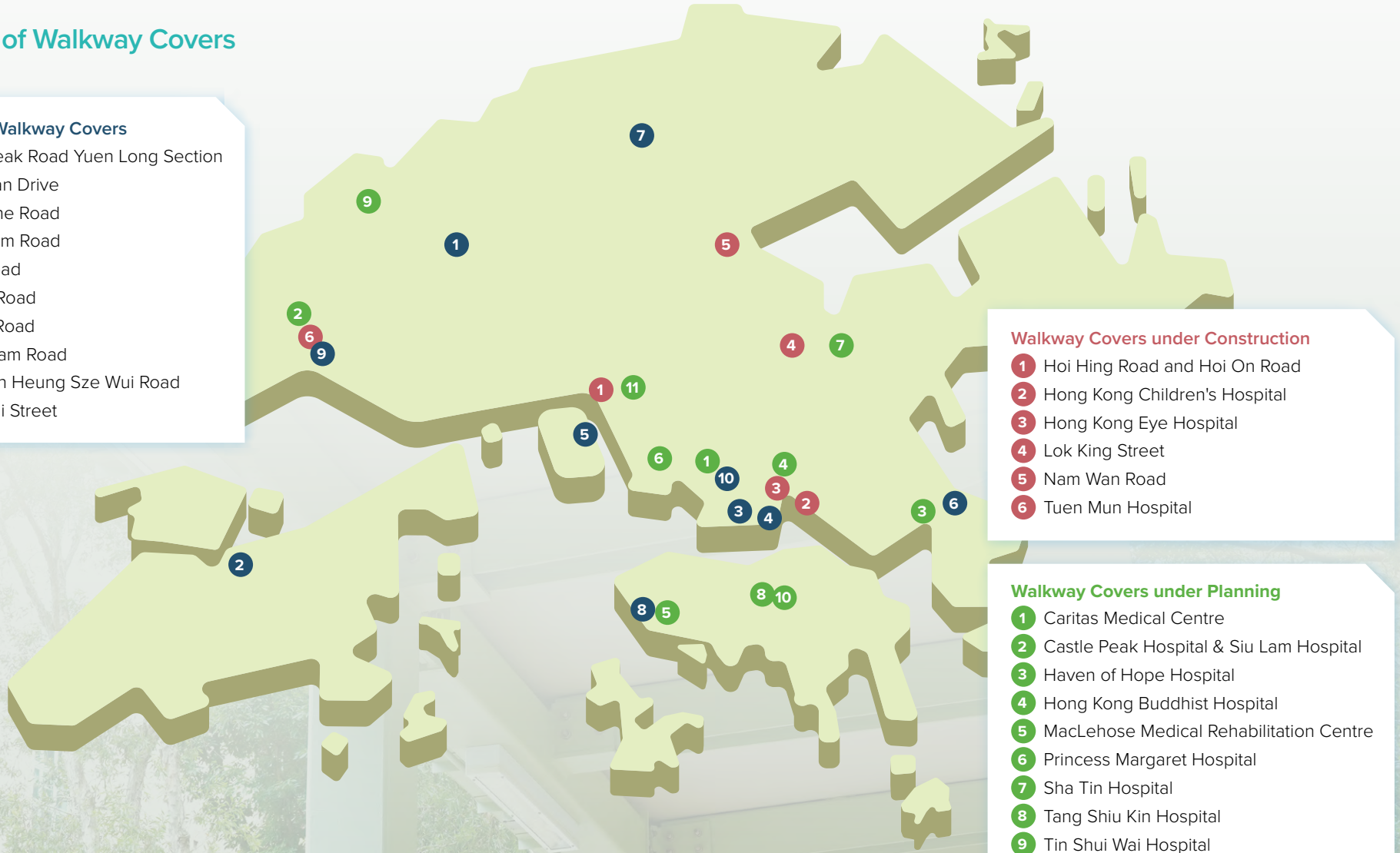
Walkway cover at Tuen Mun Heung Sze Wui Road

Woh Chai Street

Po Ping Road

Hung Hom Road

Locations of Walkway Covers



Completed Walkway Covers

1. Castle Peak Road Yuen Long Section
2. Chui Kwan Drive
3. Gascoigne Road
4. Hung Hom Road
5. Liu To Road
6. Ngan O Road
7. Po Ping Road
8. Pok Fu Lam Road
9. Tuen Mun Heung Sze Wui Road
10. Woh Chai Street

Walkway Covers under Construction

1. Hoi Hing Road and Hoi On Road
2. Hong Kong Children's Hospital
3. Hong Kong Eye Hospital
4. Lok King Street
5. Nam Wan Road
6. Tuen Mun Hospital

Walkway Covers under Planning

1. Caritas Medical Centre
2. Castle Peak Hospital & Siu Lam Hospital
3. Haven of Hope Hospital
4. Hong Kong Buddhist Hospital
5. MacLehose Medical Rehabilitation Centre
6. Princess Margaret Hospital
7. Sha Tin Hospital
8. Tang Shiu Kin Hospital
9. Tin Shui Wai Hospital
10. Tung Wah Eastern Hospital
11. Yan Chai Hospital

Benefits

Making Walkway Enjoyable and Promoting Healthy Lifestyle

Walking is a form of physical exercise that can yield health benefits. However, given the sub-tropical climate in Hong Kong with hot and humid summers as well as frequent rainstorms and occasional typhoons, navigating along walkways under these unfavourable weather conditions can hardly be a pleasant experience. Commuters and residents may therefore prefer more comfortable means of travel by using motorised transport.

The provision of covered walkways connecting to major public transport facilities and hospitals not only fosters a pedestrian-friendly environment, but also promotes walking as a form of sustainable urban mobility. With pedestrian environment significantly improved with better weather protection by reducing the chance of getting wet or excessively exposed to direct sunlight, people would be more motivated to cover their first or last mile by walking along sheltered walkways.

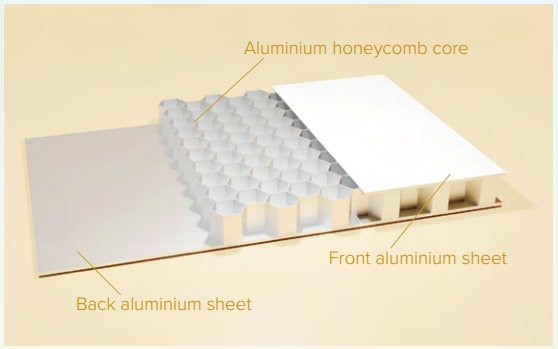
Reducing Reliance on Motorised Transport

With the enhancement of pedestrians' experience by provision of walkway covers, people would be more willing to walk to their destinations instead of taking motorised transport. The need for motorised transport for short commuting would be reduced. This helps relieve traffic congestion and reduce air pollution, which in turn achieve energy saving, carbon reduction and sustainable and livable environment.

Reducing Heat Island Effect

Given the high development and population density at built-up urban areas such as Mong Kok and Kwun Tong, these urban areas suffer most from the heat island effect in the summer. Worse still, extreme hot weather is expected to be more frequent in Hong Kong due to global climate change. It would be uncomfortable or even harsh for elderly people to move around.

Apart from sheltering pedestrians, walkway covers also help mitigate the heat island effect by the shading provided, and hence reduce the ambient temperature in the surrounding area creating a more comfortable pedestrian environment. In selecting the type of cover materials, we take into account of site specific factors such as sunlight, surrounding environment and landscaping arrangement, and shielding already provided by existing buildings. Normally, opaque materials such as aluminum honeycomb panels are selected, given its hexagonal cellular core structure which makes the panel a good heat insulator, thereby lessen the amount of heat absorbed by the road pavements and nearby structures. In areas which require ambient sunlight to bring out a sense of openness underneath the cover, transparent cover panels such as laminated tempered glass panels would be selected. Low-emissivity coating will also be applied on glass panels for reducing the ultraviolet light transmitted to the walkways.

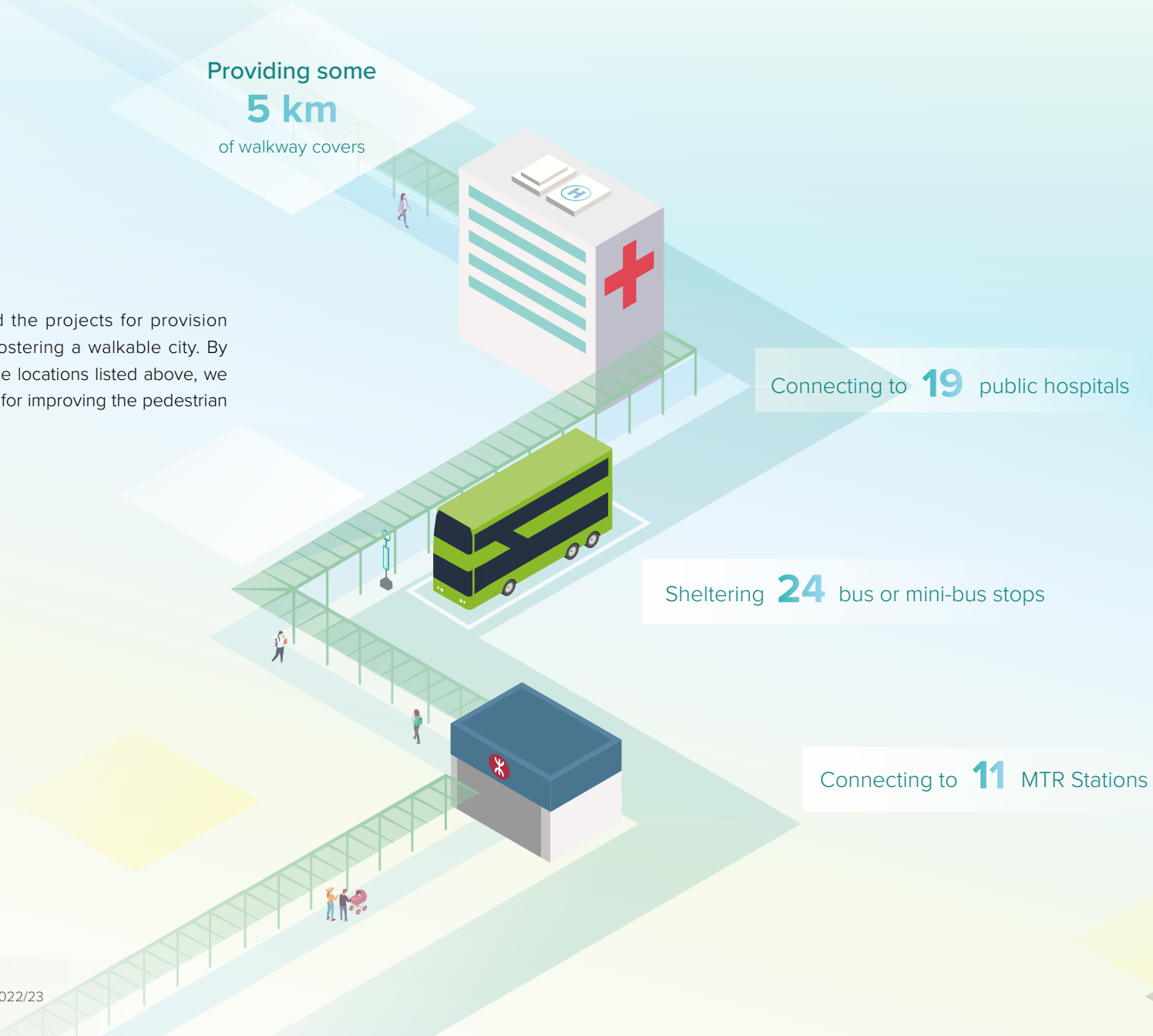


Aluminium honeycomb panel

Walkway cover with laminated tempered glass panels

Our Goals

We spare no effort to take forward the projects for provision of walkway covers with a view to fostering a walkable city. By completing the walkway covers at the locations listed above, we target to achieve the following goals for improving the pedestrian environment in Hong Kong.



Saving a Stonewall Tree - HYD CW/1

Stonewall tree HYD CW/1

The Highways Department is currently responsible for the maintenance of around 130 stonewall trees (SWTs). Inspection, monitoring survey, risk assessment and pruning operation are carried out regularly to ensure public safety. A multi-disciplinary working group for SWTs management is set up to pursue the long term healthy growth of SWTs, in which landscape architects provide arboricultural expertise, surveyors provide surveying support for monitoring displacement of SWTs, structural engineers advise on the support system while geotechnical and civil engineers advise on geotechnical and stonewall maintenance issues.

The SWT (HYD CW/1), located on a slope between Bonham Road and Hospital Road, is a *Ficus microcarpa* (榕樹). It is listed in the Register of Old and Valuable Trees and under the maintenance of our Department. The tree was infected by Brown Root Rot Disease (BRRD) which could lead to swift deterioration in tree health. Although the crown of this tree remained in good form, partial decay at its roots had been observed. If such condition was not properly addressed, the decay at its roots would worsen and eventually cause collapse of the whole tree.

Root tissue severely affected by Brown Root Rot Disease

In order to tackle the declining structural condition and health of the tree, we had adopted a multi-disciplinary approach with the use of technology to bolster the maintenance plan for this valuable tree.

The actions under the maintenance plan include:

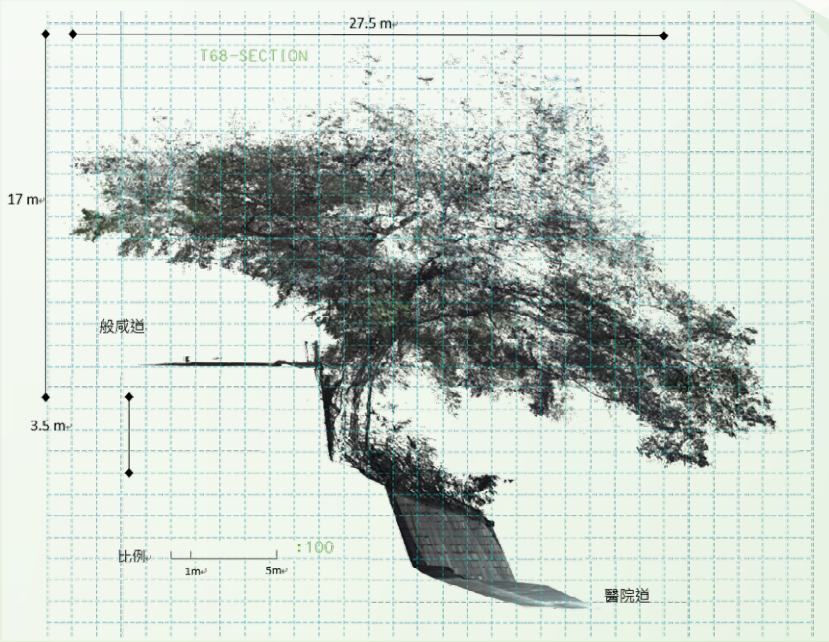
Applying fungicide to prevent the spread of BRRD to surrounding vegetation;

Engaging external tree expert to provide advice on the use of soil amendment (Biochar) and biological amendment (Trichoderma) to improve the health and structural condition of the tree;

Building point cloud models and conducting regular surveys to monitor the tree crown size and possible displacement;

Conducting tree pruning operations to reduce the weight of the tree canopy; and

Installing tree support system to provide physical support for stabilising the tree.



Point cloud model to monitor the size of tree canopy

Monitoring survey to track tree displacement

Tree support system with tree ties connecting to concrete blocks

With the collaborative support from District Councils, green groups, local residents and various government departments, the strengthened tree maintenance plan was successfully implemented to maintain the tree in an acceptable condition and at the same time safeguard public safety. This has successfully demonstrated an example of harmonious coexistence of people and the stonewall tree.

Signage made of upcycled wood to tell the story on saving the tree

This project has received the Meritorious Award under the “Excellence in Partnership Category” of the “Civil Service Outstanding Service Award Scheme 2022” organized by the Civil Service Bureau. The award not only recognised our Department's outstanding achievements on environmental management and sustainable development, but also boosted our morale and confidence in tackling any difficult tasks ahead to strive for continual enhancement of our service.

Photo of representatives of the Highways Department

Photo of team members among different government departments taken in front of the stonewall tree

Hong Kong Flower Show 2023

Prize presentation ceremony of the Hong Kong Flower Show 2023

After the longing three years, the Hong Kong Flower Show had returned to the Victoria Park on 10 – 19 March 2023. Same as the years before the pandemic, the Highways Department was invited to join this festive event and put up a display. Our theme for this year was "The Highways Wonderland", and with that we had won the Grand Award for Design Excellence (Landscape Display) under the category of Displays Section (Local).

The Highways Wonderland

The Highways Wonderland

To attract smiling kids and families to the venue, we brought a mini theme park to the Flower Show. We turned those commonly seen but easily forgotten roadside elements, such as traffic cones, tyres, traffic signs and road markings into the main attractions of our display.

The 4 m-tall traffic cone balloon and 2.6 m-tall tyre arch were the focus of the display which offered a photogenic spot for the audience. If you were one of the guests of our wonderland, you must have seen kids running under the giant traffic cone balloon with laughter as if it was a gateway of a miniature magical castle.

To echo with the giant balloon features, we also selected flowering plants that are in puffy feel with ball-shaped and joyful colours, such as *Handroanthus chrysotrichus* (黃花風鈴木), *Dendranthema morifolium* (乒乓菊), *Brassica oleracea* (羽衣甘藍) and *Helianthus annuus* (向日葵), and complemented with the theme flower – *Hydrangea macrophylla* (繡球花). Our visitors enjoyed this mini theme park and filled their cameras with gorgeous photos.

Our aim for the display was not only to be attractive to visitors, but also to be environmentally friendly. Therefore we deployed 3Rs (Reduce, Recycle and Reuse) thoroughly in our design.

向日葵
Helianthus annuus

繡球花
Hydrangea macrophylla

羽衣甘藍
Brassica oleracea var acephala

Lightweight balloon arch used in the display

Recycling of Materials

Apart from the giant balloons which were chosen to match with the ball-shaped theme flower – *Hydrangea macrophylla* (繡球花), another photogenic and playful item in our wonderland was the car displays that were made up of recycled tyres and steering wheels. These abandoned materials were dressed up by colourful paints and blossom flowers, and transformed into photogenic and playful features of our mini theme park.

Car display made up of recycled materials

Reduction of Carbon Footprint

Unlike the former displays in previous flower shows, we did not build any structure nor massive metal framework this time. Instead, we chose to use lightweight items such as the giant balloons. As a result, our design did not involve extensive industrial production and erection of metal framework, but at the same time still be able to create the spatial quality that visitors could enjoy.

黃花風鈴木
Handroanthus chrysotrichus

圓葉刺軸櫚
Licuala orbicularis

鍾花櫻花
Cerasus campanulata

Reuse of Display Plants

Before the setting-up of display, we had already planned for the reuse of plants after the 10-day display period. Trees and shrubs including *Handroanthus chrysotrichus* (黃花風鈴木), *Cerasus campanulata* (鍾花櫻花) and *Licuala orbicularis* (圓葉刺軸櫚) were transplanted to the slopes maintained by our Department in Tin Shui Wai and became part of our cityscape. Other shrubs such as *Brassica oleracea* (羽衣甘藍) were given to non-government organisations for their replanting campaign so that plants could be treasured again. By beneficially reusing these plants elsewhere, we aspired to provide them with a "happily ever after" ending just like the stories of fairy-tale characters in actual theme parks.

Green Office Management

Resources Saving: Water, Paper & Waste Recycling

In support of the Government's drive to save natural resources, we are committed to making every endeavour to pursue 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 Towards Carbon Reduction, we have been making our best efforts to put in place a series of green policies and measures to promote the environmental awareness of our staff.

Water Saving

100% of toilets in HMTGO were installed with **water saving devices**

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.

Paper Saving

In 2022/23, we consumed **21,805 reams of paper** and **100%** of which were recycled paper

To align with the green office initiatives, we would continue with the following measures on paper saving:

Photocopying/Printing
Photocopy/print documents only when it is unavoidable and both sides of paper should be used

Use of Paper
Encourage the use of recycled paper and reuse of paper office items

Use of Electronic Means
Use e-mails for communication as far as practicable and adopt electronic templates of letterheads, memoranda and forms to avoid pre-printing for adjustment

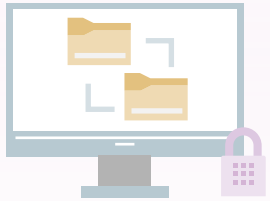
Handling of Fax Machines and Faxes
Exclude leader page for outgoing fax documents

Delivery/Circulation of Documents
Send unclassified documents without envelopes

Proper Recycling
Put up a single-sided paper collection box (yellow box) and a waste paper recycling box (green box) near photocopiers

New measure on paper saving:

To enhance efficiency in preserving and managing government records, the Government announced in the Policy Address Supplement published in October 2019 the full implementation of Electronic Recordkeeping System (ERKS) by end-2025. To this end, we have been promoting staff's awareness of paper saving during the focus group meetings and training sessions. Staff are encouraged to adopt a wider use of emails or other electronic means in business communication, in order to foster a digital workplace culture that maximises the value of ERKS and minimises manual efforts in records management.



Waste Recycling

16,604 kg waste paper were collected for recycling

In 2022/23, 16,604 kg of waste paper including ordinary paper and other paper (e.g. newspaper, carton paper or booklets) were collected and delivered to local recyclers by the government-appointed contractor.

We treasure waste with recycling 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 laser printer toners and ink cartridges for refilling and recycling

Put up recycling boxes to collect used paper, CDs, plastic bottles, aluminium cans and rechargeable batteries for recycling

Special Measures to Cope With Poor Air Quality

To increase staff awareness on air quality, we reminded our staff when the Air Quality Health Index has reached or is forecasted to reach the "very high" or "serious" health risk categories. A set of precautionary measures for reference by front-line staff and their supervisors were provided with the reminders. The measures included conducting risk assessment of outdoor work for workers performing heavy manual work and actions to reduce outdoor physical exertion and time of staying outdoor, especially in areas with heavy traffic.

Indoor Air Quality Certification

In 2003, EPD launched the Indoor Air Quality (IAQ) Certification Scheme to promote and commend good IAQ management practice.

Up to 2022/23, HMTGO has been awarded the Good Class IAQ Certificate consecutively for 19 years. In the past year, North Point Government Offices and Trade and Industry Tower attained Excellent Class IAQ, while Cheung Sha Wan Government Offices and our offices in Nan Fung Commercial Centre attained Good Class IAQ. We would continue our efforts in maintaining good indoor air quality in order to safeguard the health of building users and increase productivity of our staff.

IAQ Certificates of our offices

Green Advice

We have adopted various measures to enhance environmental awareness of staff through the provision of green advice:

Re-circulate environmentally related departmental guidelines regularly through e-mail and the intranet

Display posters to promote economic use of resources and green housekeeping measures

Review and assess compliance with the green housekeeping guidelines during the environmental audit

Invite staff to put forward suggestions on green management through the Staff Suggestions Scheme

Extend the green office concepts to daily life through activities such as recycling of used red packets and empty moon cakes/candy cans

Environmental Audit and Carbon Audit

Annual Environmental Audit

We conduct annual environmental audits in all 25 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

to increase staff awareness of green management and occupational safety and health initiatives

Audit results showed that 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 2022/23 to monitor the effectiveness of greenhouse gas emission reduction efforts. The relevant data are being studied by the Building Management Office.

As revealed from previous audit results, the total net greenhouse gas emission over the last few years was generally in a downward trend. We would continue to implement green management best practices with a view to further reducing our carbon footprint.