Highways Department
The Government of the Hong Kong Special Administrative Region

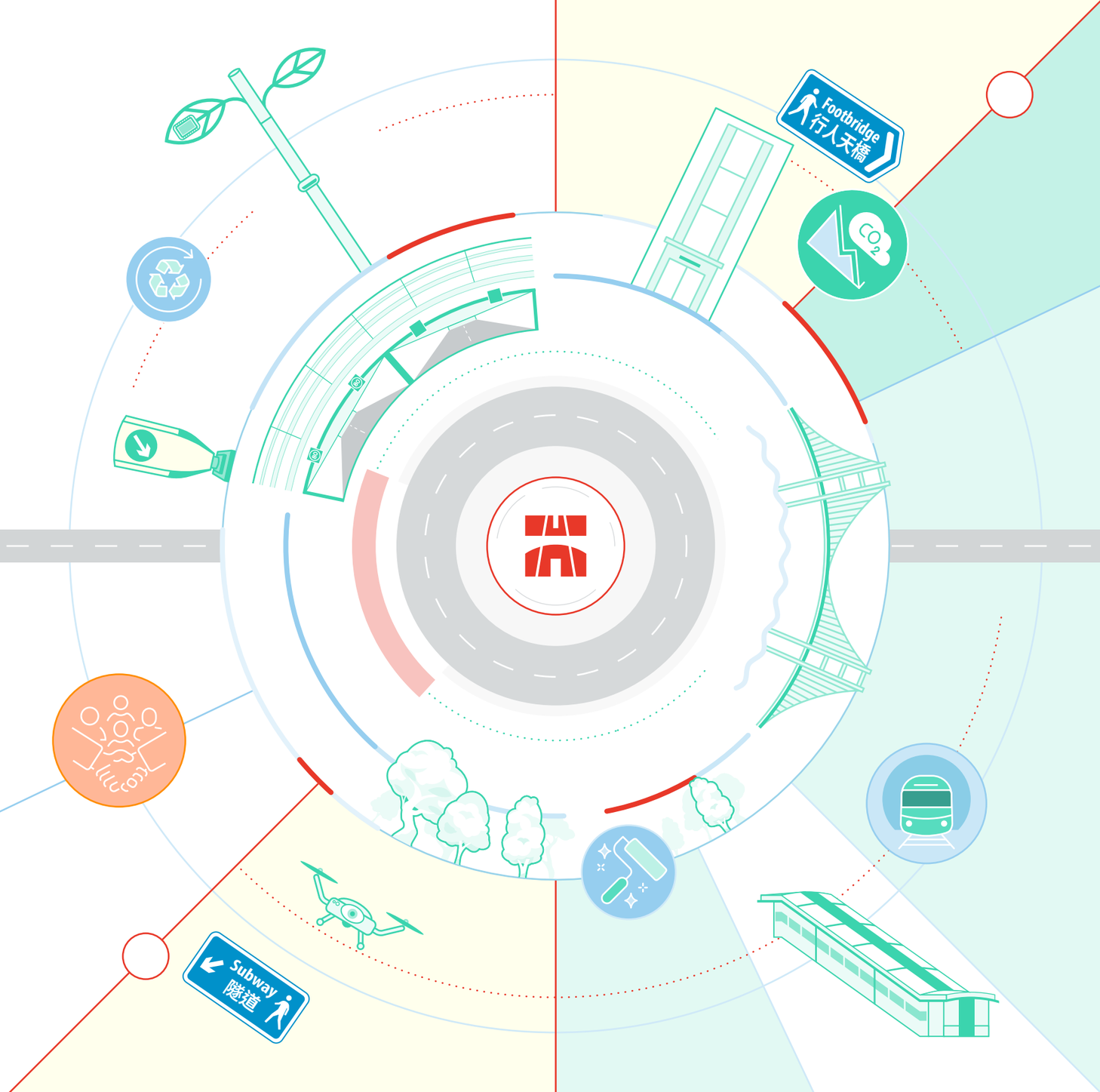
Environmental Report

2023/24

15 years+ 同心展關懷 caringorganisation

2022 Merit

HKGO 2023 - 2025



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Director's Message

I am pleased to present to you our Environmental Report 2023/24, showcasing our ongoing commitment to environmental management and detailing the achievements we made in the last year, as well as our environmental targets and initiatives for 2024/25.

Throughout 2023/24, we maintained our commitment to environmental sustainability by implementing various environmentally friendly initiatives across both infrastructure projects and our daily operations. In expanding and improving our road network, we made use of innovative construction equipment for enhanced energy efficiency and less on-site nuisance. Furthermore, we adopted Modular Integrated Construction (MiC) to enable greener construction by reducing waste and environmental impacts. To continue the development of a public transport system with railway as the backbone, apart from facilitating the delivery of railway projects proposed in the Railway Development Strategy 2014, we will also proactively take forward the new railway projects recommended in the Hong Kong Major Transport Infrastructure Development Blueprint, with a view to meeting Hong Kong's long-term transport and logistics demand. We also revitalized the streetscape of our community by undertaking comprehensive beautification works on highway facilities at selected busy locations, enhancing the walkability and aesthetics appeal of our urban spaces for both residents and visitors.

Driven by our dedication to sustainability and innovation, we actively researched and tested innovative technologies and environmentally friendly materials, including the application of Backpack Mobile Mapping System for boosting the surveying efficiency, and the site trials of eco-pavers with higher recycled glass content and bituminous paving materials with waste tyres.

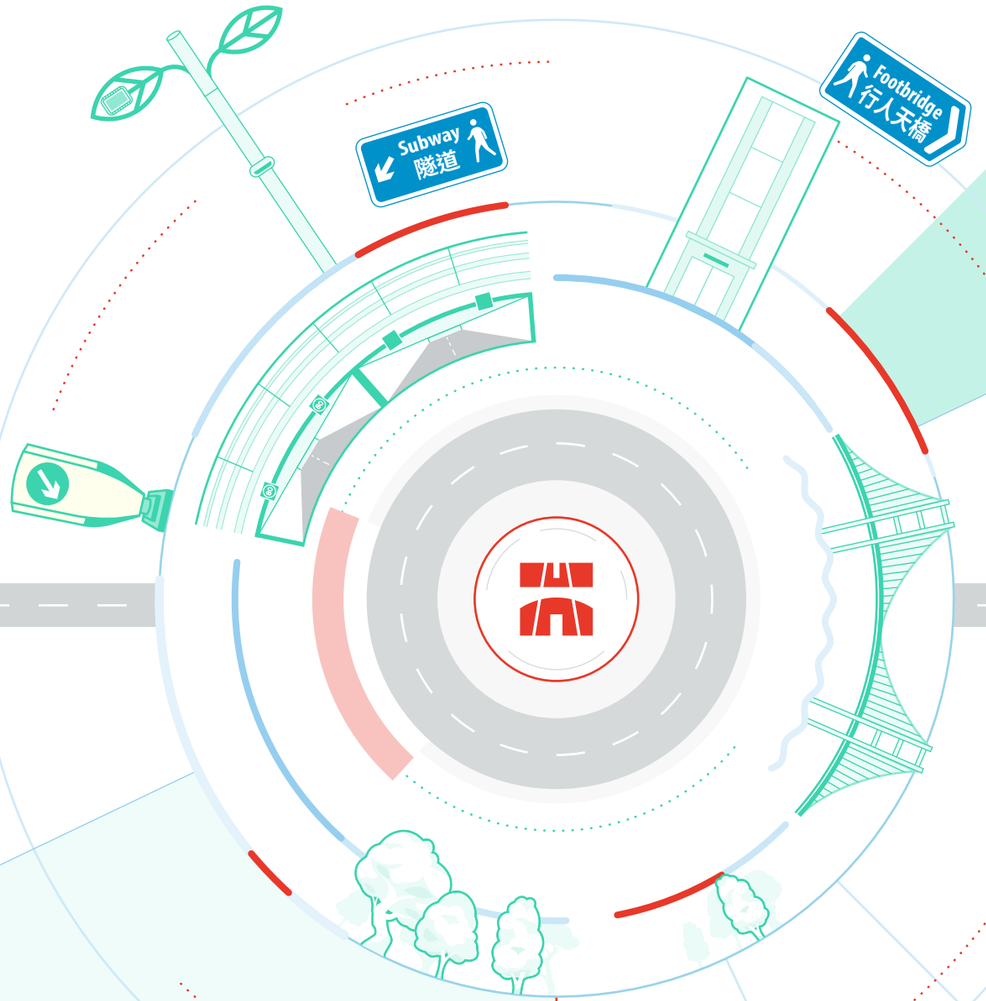
I am pleased to report that we fully achieved our environmental targets for 2023/24. This accomplishment, coupled with the recognition of our green management practices through numerous environmental awards, demonstrates our unwavering commitment to environmental excellence. Furthermore, we maintained our strong support for various green and charitable activities, raising awareness on environmental protection and social responsibility throughout our department.

I wish to express my heartfelt appreciation to all our colleagues for their professionalism, resilience and vital contributions over the past year. Moving forward, we reaffirm our commitment to providing high quality public services while upholding the principles of sustainability and making our community a greener and more pleasant place for all.

Tony YAU
Director of Highways

Introduction

This report highlights our efforts and initiatives in meeting our environmental responsibilities by making contributions to carbon reduction, environmental management, research and development, and stakeholder engagement during the year 2023/24. Our environmental performance has been well acknowledged through the receipt of several prestigious environmental awards. The report also documents our accomplishments in fulfilling the environmental objectives and targets for 2023/24, as well as the environmental targets set for 2024/25. In an effort to minimize paper usage, this report is published in English and Chinese on our website.



Department Profile

Who we are

We have an establishment of about 710 professionals across a range of disciplines, including engineering, surveying, landscaping and architecture. Additionally, another 1,790 staff members in other grades support the activities of the department.

We have

710
professional staff

1,790
staff in other grades

Expenditure

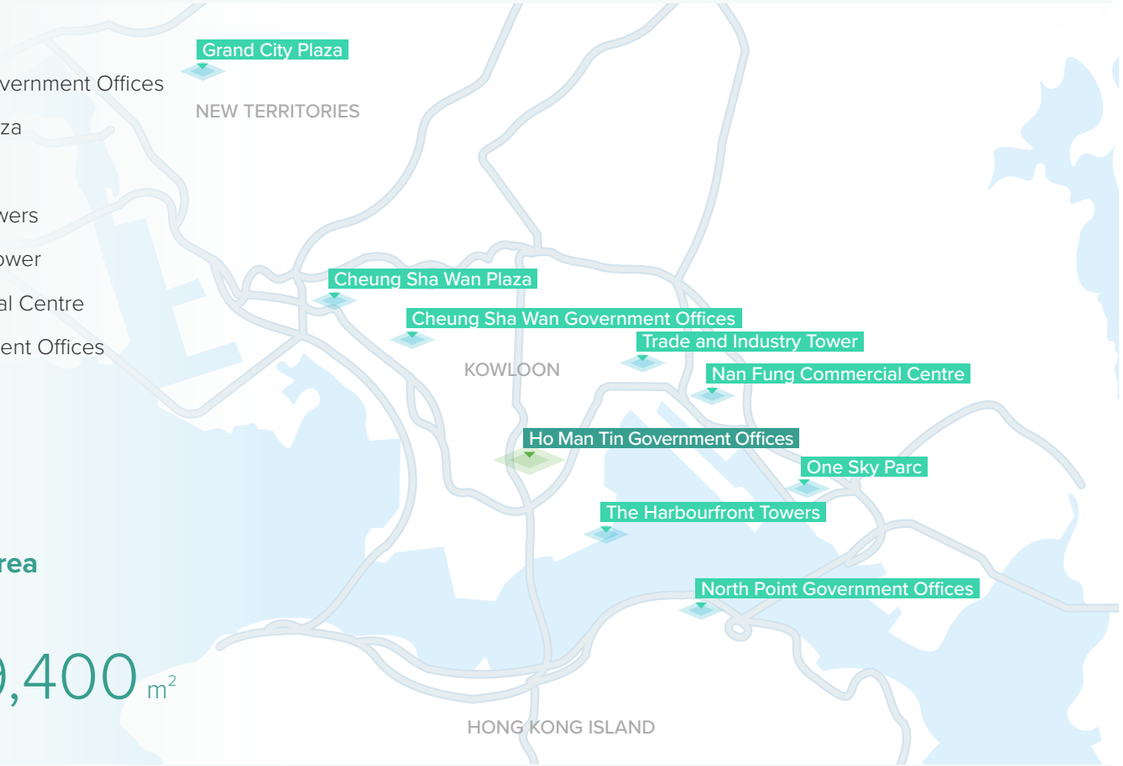
Total operating expenditure in the financial year 2023/24

HK$ 4,321 million

Where we are

The Headquarters of the Highways Department are located in Ho Man Tin Government Offices with sub-offices in:

- Cheung Sha Wan Government Offices
- Cheung Sha Wan Plaza
- Grand City Plaza
- The Harbourfront Towers
- Trade and Industry Tower
- Nan Fung Commercial Centre
- North Point Government Offices
- One Sky Parc



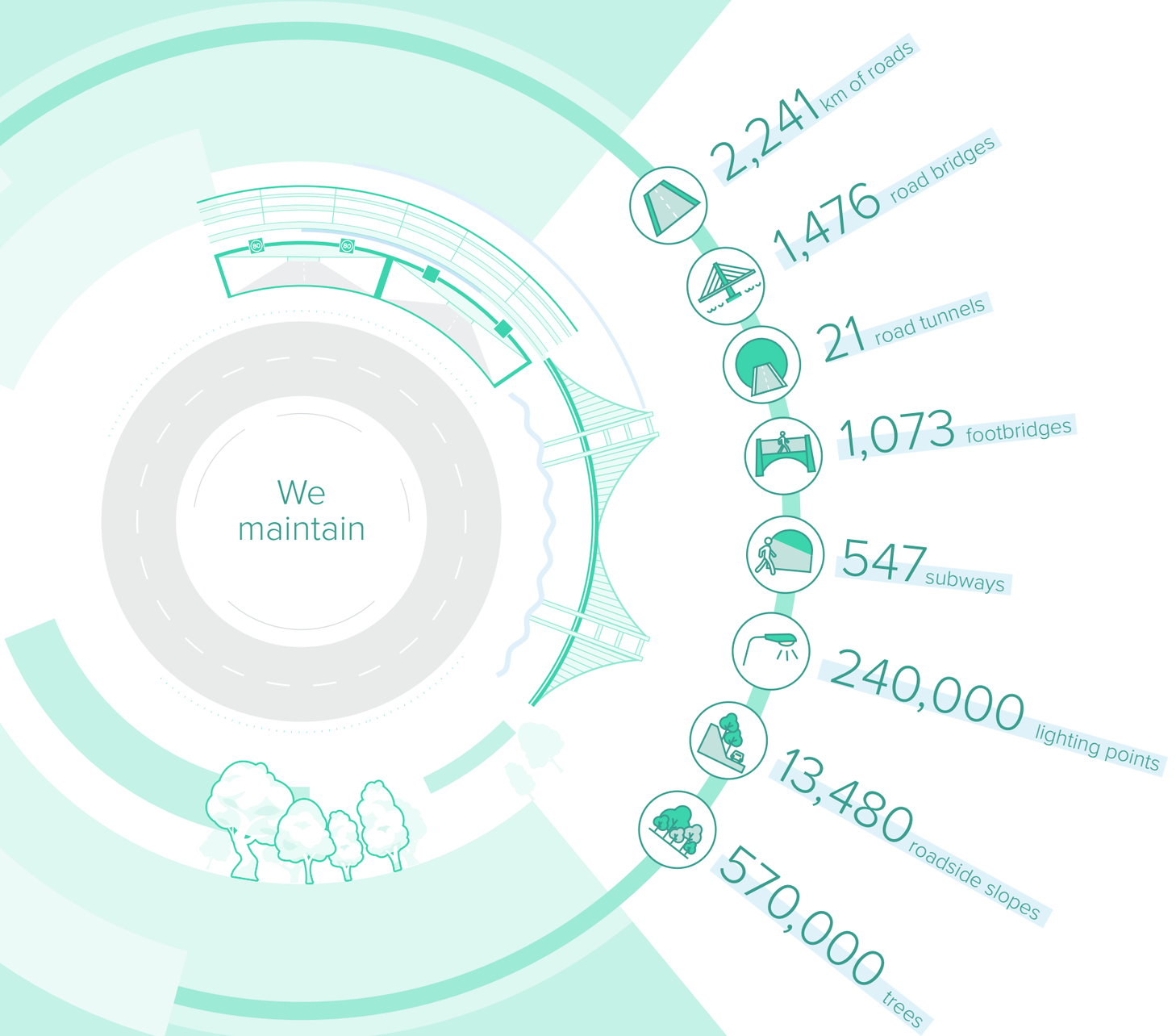
Total office floor area

29,400 m^2

Department Profile

What we do

- To expand and improve the road network of Hong Kong in order to meet the growth in traffic demand, serve new development areas and facilitate the movement of people and goods both within the territory and across the boundary and at the same time contribute towards sustainable development.
- To maintain the integrity of the road network with particular emphasis on safety and serviceability, and implement local road infrastructure works to facilitate and cope with the public and private sector developments.
- To provide infrastructure for pedestrians such as footbridges, lifts, covered walkways and escalators to enhance accessibility and connectivity of local destinations with a view to fostering a pedestrian friendly environment.
- To formulate plans for further development of the railway network in Hong Kong.
- To provide technical support and set standards for the construction and maintenance of the road network.
- To research into new materials, techniques and standards including environmentally friendly technologies, and evaluate their applicability in Hong Kong.



Department Profile

Vision and Mission

Our Vision

To develop and upkeep the road network as well as to plan and implement railway development to world-class standards.

Our Mission

In order to enhance the long term prosperity and improve the living standards of the community, we are committed to:

expanding and improving the road network to meet the growth and change in transport needs, and development requirements;

maintaining the integrity of the road network;

providing high quality technical support for the planning, design, construction and maintenance of the road network; and

implementing and updating the Railway Development Strategy.

Environmental Goal

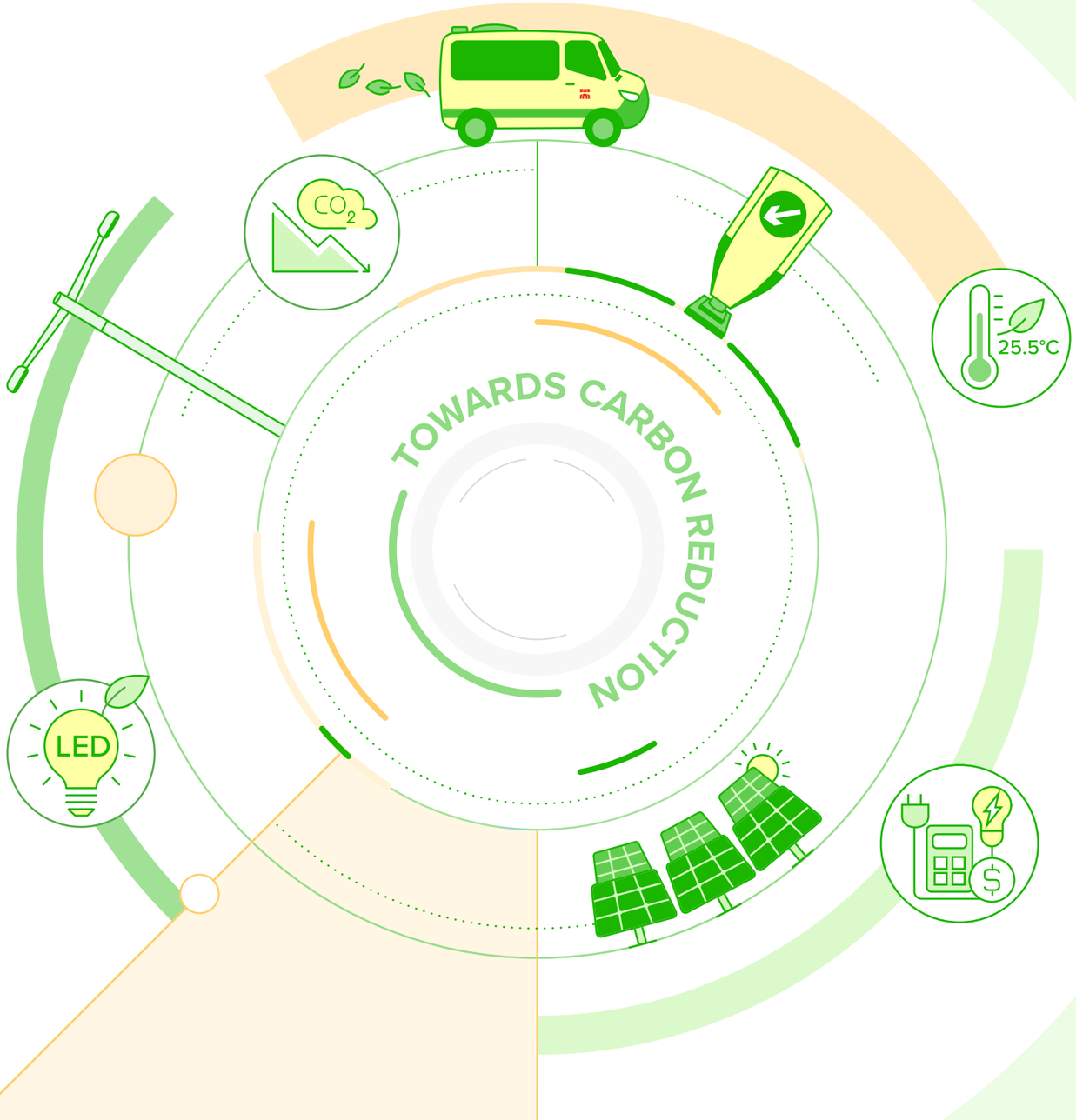
Our environmental goal is to accomplish public works efficiently and with due regard to the environment.

Management Policy

We maintain an Integrated Management System to meet the requirements of the International Standards ISO 9001 and ISO 14001. We incorporate quality and environmental considerations at all stages of our work in developing and up-keeping the road network as well as planning and implementing the railway system. In so doing, we are committed to:

- delivering high quality services to our community;
- identifying and controlling the environmental aspects at all stages of our work, using resources efficiently, minimising waste and preventing pollution as far as practicable;
- monitoring the performance of our service providers to ensure good quality of works and to prevent or mitigate potential environmental impacts arising from our projects;
- complying with relevant legal and other requirements;
- sustainable construction with due consideration to balancing environmental, social and economic needs; and
- wider adoption of innovative technologies and practices.

We improve our services through regular review of our Integrated Management System, its Management Objectives and Targets, and through identification of opportunities for continual improvement.



TOWARDS CARBON REDUCTION

Energy Saving in Public Lighting

Replacement of Illuminated Traffic Bollards (ITBs) with Omni-directional Non-illuminated Retro-reflective Traffic Bollards (O-NRTBs)

The "Hong Kong's Climate Action Plan 2030+" outlined the medium and long term work against climate change and carbon reduction objectives, with an aim to reduce Hong Kong's carbon emission by 65% to 70% by 2030 using 2005 as the base. To this end, we have introduced various measures to reduce energy consumption to help achieving the target.

To align with the objectives of reducing carbon intensity with the vision to further enhance the energy efficiency of public lighting in Hong Kong, we launched the Light Emitting Diode (LED) public lighting replacement programme in 2017/18 to replace the conventional road lights, gantry sign and roadside floodlights, and fluorescent tubes at footbridges and subways with LED luminaires. We aim to provide safe, high quality, reliable and sustainable public lighting services to the public.

Other than the LED public lighting replacement programme, we are implementing other energy saving measures in order to help further reduce the emission from electricity generation. One of them is the replacement of the conventional ITBs with O-NRTBs. Traffic bollards are installed at road junctions and refuge islands to provide a visual cue to the approaching vehicles and assist drivers in steering to the correct traffic lane. Conventional ITBs are illuminated by an internal light source for its body to be seen conspicuously at night time.

As one of the energy saving measures, we have introduced a new kind of traffic bollard, namely non-illuminated retro-reflective traffic bollards (NRTBs), which does not equip with an internal light source but retro-reflective sign plates that are highly visible when lighted by vehicle's headlights, rendering its legibility at night time. NRTBs have started replacing conventional ITBs at suitable locations since 2006. Recently, another new type of NRTB, namely O-NRTB, have been adopted for the replacement of existing ITBs located at the front side, the side facing the junction of refuge islands at T-road junctions and cross-road junctions since 2023. O-NRTBs, with retro-reflective panels on all its sides, provide an enhanced visibility for the drivers approaching from all directions, making them more effective in guiding traffic. With the completion of full-scale replacement of about 11,700 numbers of ITBs by NRTBs and O-NRTBs over the whole territory of Hong Kong by 2024, it is expected that an annual energy saving of about 1,080,000 kWh could be achieved.

Conventional ITB

NRTB

O-NRTB

Energy Saving in Office

Energy Saving Measures

We endeavour to reduce energy consumption in office and have promulgated the following measures:

Appoint Energy Wardens to monitor the usage of lighting equipment and to keep the illumination level to the minimum but acceptable level

Maintain air-conditioning temperature not lower than 25.5°C in hot seasons

Switch off lights during lunch or when staff are away for long periods

Switch off computer equipment and electric appliances when not in use

Encourage the use of staircase for inter-floor traffic

Monitor the electricity consumption of offices of the Highways Department with individual electricity meters installed

Since 2021, we have been exploring the feasibility of replacing lighting fittings with LED tubes at our offices to achieve a further reduction of energy consumption. The replacement of lighting fittings with LED tubes for the majority of our offices on 13/F of Nan Fung Commercial Centre has been completed in 2023/24 and the replacement exercise for the remaining offices at the same premise will be arranged tentatively in 2024/25. We are seeking the advice of Electrical and Mechanical Services Department for extending the lighting fitting replacement works to our department's other offices by phases.

Electricity consumption in 2023/24 with corresponding indirect gas emission figures:

Offices	Electricity Consumption (kWh) [Comparison with 2022/23]	Indirect Gas Emissions (kg) SO_2	NO_X	RSP
Cheung Sha Wan Plaza	10,558 [-2.79%]	20.17	12.25	0.63
Grand City Plaza	23,461 [2.30%]	44.81	27.21	1.41
Ho Man Tin Government Offices	884,995 [-0.65%]	1,690.34	1, 026.59	53.10
The Harbourfront Tower 1	69,204 [0.53%]	132.18	80.28	4.15
The Harbourfront Tower 2	13,843 [4.63%]	26.44	16.06	0.83
Trade and Industry Tower	676,700 [5.23%]	1,292.50	784.97	40.60
Nan Fung Commercial Centre	415,446 [-6.97%]	793.50	481.92	24.93
North Point Government Offices	160,805 [-5.29%]	307.14	186.53	9.65
One Sky Parc[1]	380,606 [N/A]	726.96	441.50	22.84

[1] Offices were progressively moved into One Sky Parc from 2020 to 2023, so no comparison was made.

Contribution to Reducing Emission

PV System at the covered walkway at Hong Chong Road near Hong Kong Polytechnic University

PV system at the covered walkway at Hong Chong Road near Hong Kong Polytechnic University

PV system at the footbridge at Chatham Road South near Hong Kong Science Museum

Promoting the Use of Renewable Energy on Highway Structures

To align with the objectives of achieving sustainable development and meeting the Green Energy Target of the Government, the Highways Department spares no effort to promote the use of renewable energy. We have installed photovoltaic (PV) systems at existing highway structures such as footbridges and subways, to promote the use of renewable energy as well as to raise the public awareness of the benefits of renewable energy.

The electricity generated by the PV systems is first supplied to the electrical facilities at the structures. The systems are also connected to the electricity grid to enhance supply reliability. If there is surplus electricity, the generated electricity will be exported to the grid for full uitilisation.

We have identified certain existing highway structures suitable for installation of PV systems. PV panels which convert sun light into electricity are installed on the roof of the suitable structures in order to optimize the use of the open spaces and increase the efficiency of light absorption. There are a wide range of considerations for identifying the suitable locations for installing the PV systems in Hong Kong's well-developed urban environment, such as the structural capacity of existing structures for adding PV systems on top, and the need to maintain continuous services of the structures for users.

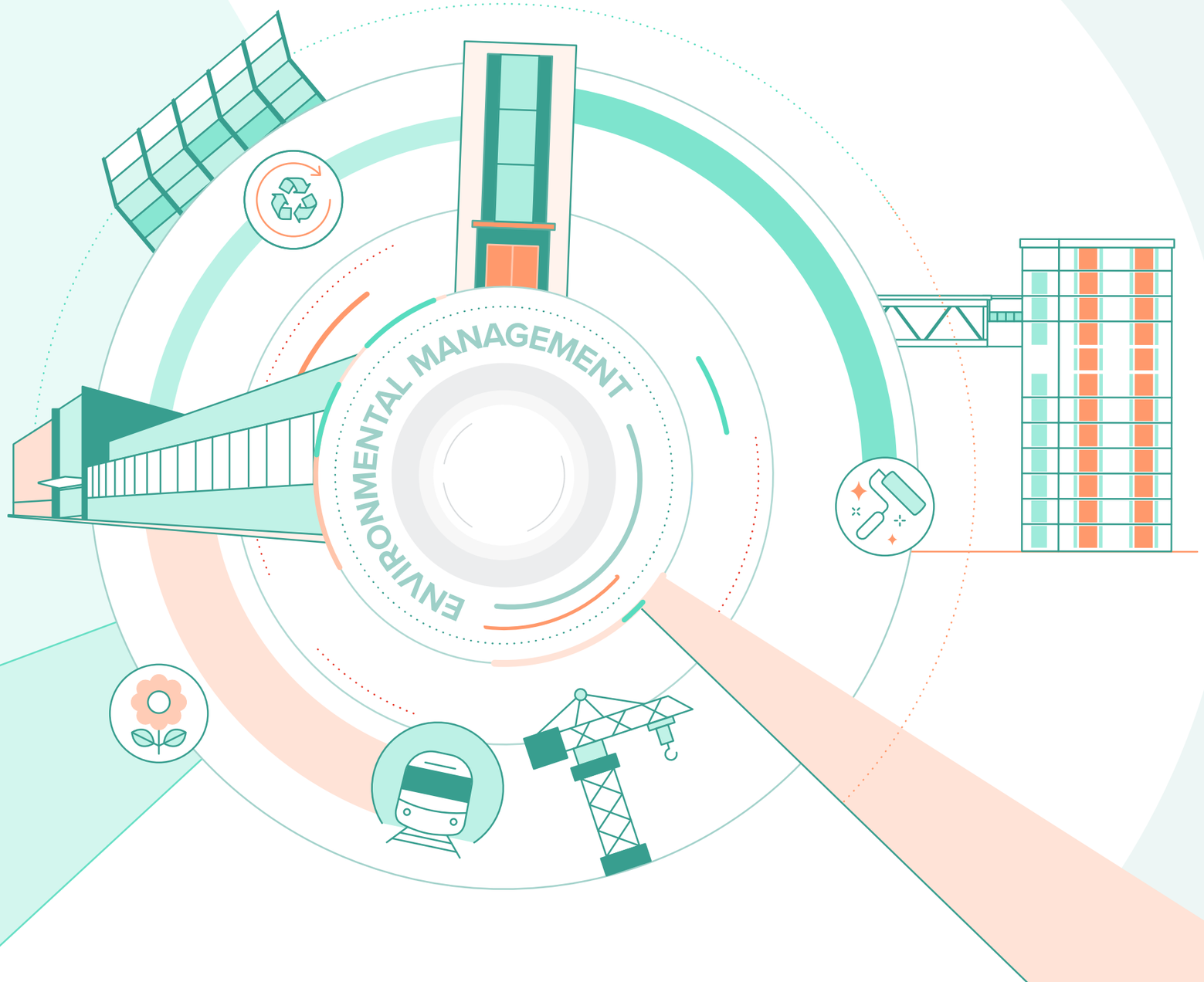
Following to the completion of PV systems installation on the roof of three existing subways in 2020 to 2022, another three PV systems are being installed on the roof of existing footbridges and covered walkway. Among which, the PV system installation at the covered walkway at Hong Chong Road and footbridge at Chatham Road South have been completed in 2023/24 while the remaining one at the footbridge at Gloucester Road is in progress for completion by 2024/25.

We will continue to explore opportunities to promote the use of renewable energy on different highway structures, with a view to achieving the Green Energy Target and striving towards carbon neutrality.

Contribution to Reducing Emission

Environmentally Friendly Vehicles

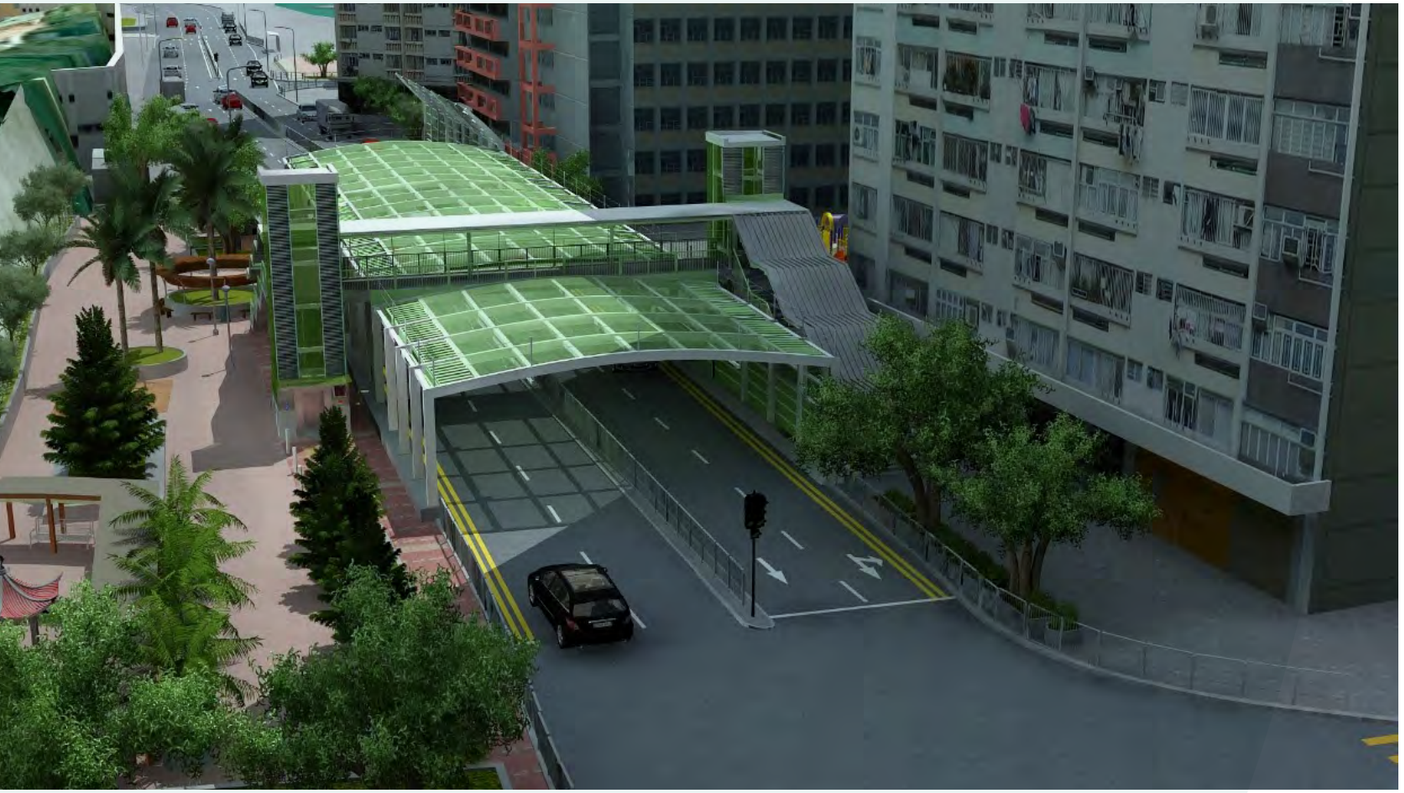
In 2023/24, we have replaced two large vans with environmentally friendly vehicle models approved by the Environmental Protection Department, which have exhaust emission standards more stringent than the prevailing statutory requirements. With less air pollutant release, the new vehicles could help contribute to better air quality which in turn protected the health and well-being of the community. In view of the latest government-wide policy of setting electric vehicles as standard for small and medium private cars in the government fleet, we will progressively replace the saloon cars in our fleet with electric vehicles.



ENVIRONMENTAL MANAGEMENT

Sustainable Construction in
ROAD WORKS

Widening of Castle Peak Road – Castle Peak Bay Project



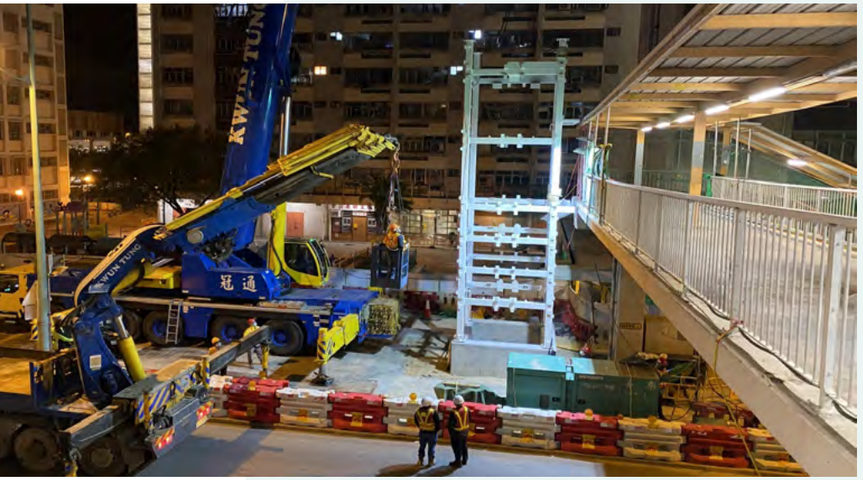
Computer composed image of noise semi-enclosures and footbridge

Introduction

The existing Castle Peak Road – Castle Peak Bay between Hoi Wing Road and Hong Kong Gold Coast Phase 1 is the main road connecting So Kwun Wat, Hong Kong Gold Coast, Cafeteria Bay, Castle Peak Bay and Sam Shing Hui. This project is to widen the above section of Castle Peak Road (about 1.9 km long) from single two-lane carriageway to a dual two-lane carriageway to cope with the future traffic demand. The project also involves the construction of a series of ancillary facilities, including two noise semi-enclosures and a section of noise barrier and two lifts for the existing footbridge near Ki Lun Kong Public Park. The project site is surrounded by densely populated residential buildings. Due considerations are given to address the potential environmental concerns and various measures are implemented to achieve sustainable construction.

The project layout

Widening of Castle Peak Road – Castle Peak Bay Project



Installation of prefabricated lift tower using mobile cranes

Adoption of Modular Integrated Construction (MiC) for Construction of Lift Tower

Two noise semi-enclosures and a section of noise barrier are to be constructed near Sam Shing Estate, Tuen Mun to mitigate the traffic noise impact on the nearby residents during the operation stage of the widened road. The two noise semi-enclosures would be constructed along the two sides of an existing footbridge. To provide necessary space for the noise semi-enclosures construction, the existing ramps of the footbridge would have to be demolished and lifts would be installed at the two ends of the footbridge to provide barrier-free access facilities for the local community.

MiC was adopted in the construction of the lift tower as a high-productivity construction method. Unlike the conventional lift tower construction in which various parts of the lift were installed on site one by one, MiC follows the principle of "factory assembly followed by on-site installation". Under the MiC construction method, self-standing modules, fully equipped with finishes, fixtures and fittings, are fabricated and assembled in the factory as much as possible, leaving minimal amount of installation work on site.

On the contrary, the conventional construction method is highly dependent on weather conditions as well as the progress of the preceding activities, and therefore prone to delays. To make things worse, the limited working space in the densely populated areas significantly restrains the productivity on site. In addition, extensive temporary works, which require greater cost and energy to erect, are also required to facilitate large amount of on-site installation work in the conventional construction method.

By adopting the MiC, sustainable construction could be effectively achieved in the following ways:

Reduced Wastage

With the precise simulation of the forthcoming installation processes in factory, MiC allows for early detection of potential clashes and interferences between different elements. Therefore, it could reduce abortive work and material waste during on site installation.

Increased Efficiency

MiC utilizes standardized components manufactured by standardized setup, making it easier to be replicated with less time and energy. In the case of lift installation, while the lift is being fabricated and assembled in the factory, underground utilities diversion, lift tower foundation works and lift pit construction could be carried out on site in parallel. The overall construction time is therefore reduced significantly.

Improved Safety and Productivity

As the prefabricated modules are assembled in factory, which is a safer and more controlled environment, the risk of accidents and injuries could be largely reduced. Besides, the productivity and the product quality could also be enhanced as the occupational safety and health of workers is greatly improved.

Reduced Environmental Impacts

The environmental impacts of fabrication process such as emission, waste disposal, etc. could be much more effectively controlled in the factory. With less amount of site works, the nuisances caused by the on-site installation works to the nearby residents and pedestrians could also be minimized.

Widening of Castle Peak Road – Castle Peak Bay Project

Temporary noise barriers erected at construction site

Temporary noise insulation screens used in road breaking works

Other Sustainable Measures Adopted

Temporary Noise Barriers

To minimise the noise nuisance caused to nearby residents by the construction works, temporary noise barriers were erected at construction sites near residential area such as Sam Shing Estate. In addition, noise monitoring had all along been carried out throughout the whole construction stage to make sure the noise levels are within allowable limit.

Road breaking operations were frequently carried out in this road-widening project, and some of them were in close proximity to the residential buildings. To further mitigate the noise impact arising from road breaking works, temporary noise insulation screens made from noise absorbing fabric were adopted to enclose the noisy equipment such as percussive breaker for reducing the noise.

These temporary noise barriers and insulation screens were portable and could be easily adjusted to suit various applications at different locations, allowing a quick and convenient deployment.

Reuse of Modified Containers

Reuse of materials was also adopted in this project to achieve sustainability. Modified containers were deployed at different workplaces of this project serving as temporary resting shelters, which were equipped with fan, bench and drinking water dispenser. These container shelters provided a safe and comfortable location for workers to take rest.

Apart from resting shelters, some of these modified containers were also used as temporary bus-stop shelters at the public road nearby. These bus-stop shelters were equipped with PV panels, fans and lights, providing a comfortable environment for passengers.

In summary, adoption of MiC in this project not only enhanced productivity, but also improved construction quality and works site safety. Various measures were implemented to mitigate the noise impact on the residential areas close to the works site. The project also reused modified containers as temporary shelters for different purposes, which further contributed to sustainable construction.

Modified container used as temporary bus-stop shelter

Modified container as resting shelter for workers

Sustainable Construction in
ROAD WORKS

Re-provisioning of Gascoigne Road Flyover and Demolition of Yau Ma Tei Carpark Building under Central Kowloon Route Project

Reprovisioning of Gascoigne Road Flyover

Introduction

The Central Kowloon Route (CKR) is a 4.7km-long dual 3-lane trunk road connecting east and west Kowloon, 3.9km of it being a tunnel underneath central Kowloon. It offers an alternative route to bypass the congested at-grade road network in central Kowloon area. Upon commissioning, the journey time between Yau Ma Tei and Kowloon Bay during peak hours is expected to reduce from 30 minutes to about 5 minutes.

The CKR tunnel section along Kansu Street passes through the foundation stratum of a section of the Gascoigne Road Flyover (GRF) and the Yau Ma Tei Carpark Building (YMTCB). To provide the required space for the tunnel construction, the concerned section of the GRF had to be reconstructed and shifted northward (i.e. re-provisioning of GRF). In addition, the YMTCB on which part of the GRF was founded had to be permanently demolished.

Some sustainable and innovative construction methods and equipment were employed in the CKR project, including the form traveller for re-provisioning of GRF and the use of hydraulic crusher for YMTCB demolition.

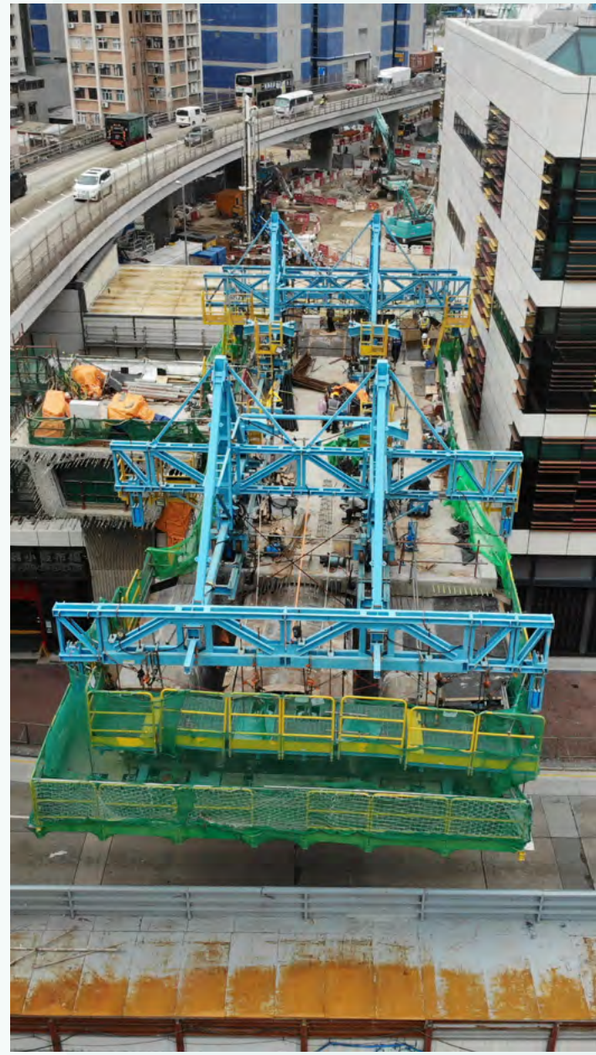
Re-provisioning of Gascoigne Road Flyover and Demolition of Yau Ma Tei Carpark Building under Central Kowloon Route Project

Adoption of Form Traveller Construction Method for Re-provisioning of GRF

Yau Ma Tei is one of the busiest districts in Hong Kong with heavy traffic flows. The reconstructed section of GRF spans across fives public roads, namely Canton Road, Battery Street, Reclamation Street, Shanghai Street and Temple Street. To minimize disturbances to the traffic flow and the neighborhood, the project team opted to adopt form traveller as the construction method for re-provisioning of GRF, rather than the traditional cast in-situ method.

The form traveller is a suspended working platform consisting of an upper frame mounted on the finished section of bridge deck and a hanging deck segment formwork for the bridge deck to be constructed. This setup allows for overhead construction activities spanning across existing roads with live traffic, eliminating the need for erecting temporary supports or scaffolding from the ground. The form traveller can slide along the top of the bridge deck, providing a working platform for construction of bridge deck. This significantly reduces disturbances to the heavily trafficked public roads below.

In addition, once the form travellers are set up on the bridge deck, the self-launching operation can be carried out by hydraulic jacks. This is more energy-efficient when compared with using heavy lifting machinery for erecting temporary supports from the ground. More importantly, the form travellers could be easily adjusted to fit nearly any type of bridge deck profile, allowing them to be reused from one works site to another. The reuse of form travellers substantially reduces the use of heavy metalwork and hence bring down the carbon footprint generated from the production of metal materials.



Bridge deck construction by form travellers

Quiet Demolition of Yau Ma Tei Carpark Building

Adoption of Hydraulic Crushers

The YMTCB was located at the heart of the densely populated Yau Ma Tei District, closely surrounded by residential developments. The nearest residential building was less than 20 meters away. Special measures had to be put in place to minimize the noise impact and disturbance to the neighborhood.

Traditionally, excavator-mounted breakers are usually used for building demolition because of their effectiveness and popularity in the construction industry. However, these breakers are notoriously noisy due to the percussive striking process of the breaker chisel.

To mitigate the noise impact to the local community, hydraulic crushers were used instead of the conventional hydraulic breakers for the building demolition works in the CKR project as far as possible. Unlike the breakers, hydraulic crushers operate without percussive actions, making them significantly quieter. This alternative method could achieve at least 20dB(A) noise reduction, as measured 7 meters away from the equipment, during the concrete breaking process. The crusher was also wrapped by sound-insulating canvas to further minimize noise level.

Hydraulic crusher mounted on excavator

Re-provisioning of Gascoigne Road Flyover and Demolition of Yau Ma Tei Carpark Building under Central Kowloon Route Project

Noise Mitigation Measures

To further reduce the noise impact on the surrounding community, several noise mitigation measures were implemented during the demolition works. First of all, temporary noise barriers were erected surrounding the works site to block and absorb noise. These barriers were made from sound-absorbing materials, such as acoustic panels and canvas. Provision of such acoustic enclosures could provide approximately 10 dB(A) noise reduction. Full acoustic covers to noisy machinery were also provided to suitable construction equipment to effectively cut down the noise level.

Moreover, comprehensive noise monitoring was implemented to ensure the compliance with the noise control requirements. Noise monitoring stations at strategic points around the demolition site were established to continuously measure noise levels. If the noise levels approached the permissible limits, immediate actions would be taken, such as temporarily halting the noise generating works and/or adjusting the use of equipment. With the above measures in place, the noise levels of the demolition works were kept in an acceptable range.

In addition to various noise control measures, the project team also engaged with the local community to keep them informed about the demolition schedule and the latest progress. Regular updates were provided to the community through newsletters and community meetings. A hotline was also established for the local residents to reach out or report any noise nuisance. This proactive communication approach helped maintain a good relationship with the local community and facilitate the prompt resolution of any concern raised.

Temporary noise barriers surrounding the demolition site

The YMTCB being demolished

Conclusion

The CKR project successfully demonstrated how sustainable development was promoted through adopting innovative construction methods and equipment for complex infrastructure project in dense urban environment. The use of form travellers for re-provisioning GRF minimized the disruptions to traffic flows on public roads and enabled material reuse. Moreover, the adoption of hydraulic crushers and comprehensive noise mitigation measures for demolishing the YMTCB greatly reduced noise impacts on the surrounding residential community. With foresight and careful planning, infrastructure projects can achieve engineering excellence while safeguarding environmental and social interests. This balances the needs for development and conservation, allowing Hong Kong to progress towards a more sustainable future.

Sustainable Construction in
ROAD WORKS

Lift and Pedestrian Walkway System between

Castle Peak Road and Kung Yip Street, Kwai Chung

The lift and pedestrian walkway system under the Kung Yip Street Project

Introduction

The topography of Hong Kong is characterized by its hilly terrain, with numerous residential and commercial developments situated upon elevated areas. The residents of these areas are therefore frequently required to navigate up and down the slopes during their daily commutes. To tackle this challenge, various "Hillside Escalator Links and Elevator Systems" (HEL) projects have been implemented by the Highways Department with the aim of enhancing the accessibility of these hillside areas and facilitating the movement of pedestrians, thereby reducing their reliance on road-based public transport. The Project “Lift and Pedestrian Walkway System between Castle Peak Road and Kung Yip Street, Kwai Chung” (“Kung Yip Street Project”) is one of the HEL projects.

Lift and Pedestrian Walkway System between Castle Peak Road and Kung Yip Street, Kwai Chung

The Kung Yip Street Project serves to connect the Shek Lei area, which is home to a population about 18,000 residents, with the Kwai Hing MTR Station. It consists of three footbridges and three lift towers with a total of five lifts for overcoming a vertical distance of more than 60 meters, equivalent to the height of a 20-story building. Under this project, a comfortable, convenient, safe, environmentally sustainable and barrier-free access would be provided to the community. By improving the walking environment between Shek Lei area and the nearby public transportation hub, the overall connectivity and pedestrian mobility within the district would be enhanced, while promoting walking as one of the non-motorized modes of transport.

In an effort to minimize the environmental impacts and promote sustainable development, the Kung Yip Street Project had adopted a wide range of environmentally friendly construction methods and equipment during the construction stage.

Modular Integrated Construction for Footbridge across Castle Peak Road

An innovative construction method, namely MiC was adopted for the construction of a footbridge spanning across Castle Peak Road. Unlike the conventional footbridge construction method, most of the footbridge components, including the structural steel frames, roof panels, drainage system, lighting, etc., were assembled in an off-site assembly yard. The following environmental benefits were brought by using MiC:

Original route (a staircase) connecting Kung Yip Street and Castle Peak Road

1

More Efficient Use of Resources

Assembly of the footbridge components in a more controlled environment allowed the project team to precisely measure and assemble the various structural and non-structural elements of the footbridge. As the assembly process was carefully planned and managed, the wastage of materials was minimized. Moreover, any offcuts or leftover of the footbridge components could be easily collected, sorted, recycled or reused, and therefore further minimizing wastage resulted.

2

Reduction of Temporary Works

Under MiC, most of the footbridge components were assembled in the assembly yard before they were moved to the final destination for installation. This eliminated the need of erecting heavy temporary platform over Castle Peak Road for on-site construction works under the conventional construction method. Large amount of materials, fuel and construction waste associated with the temporary working platform erection were therefore avoided using MiC.

Construction of "Footbridge 2" using MiC

Installation of "Footbridge 2" by mobile crane

Lift and Pedestrian Walkway System between Castle Peak Road and Kung Yip Street, Kwai Chung

Use of Prefabricated Steel Reinforcing Bars

In lieu of the conventional on-site fabrication of steel reinforcing bars (rebars), the Kung Yip Street Project widely adopted prefabricated steel rebars during construction. Most of the steel rebars were prefabricated in a highly automated off-site prefabrication yard under the List of Approved Steel Reinforcing Bar Prefabrication Yards administered by the Civil Engineering and Development Department. Processing rebars in a factory-like prefabrication yard helped enhance productivity, uplift quality, improve construction safety and promote environmental performance. The environmental benefits of using prefabricated steel rebars include:

More Efficient Use of Steel

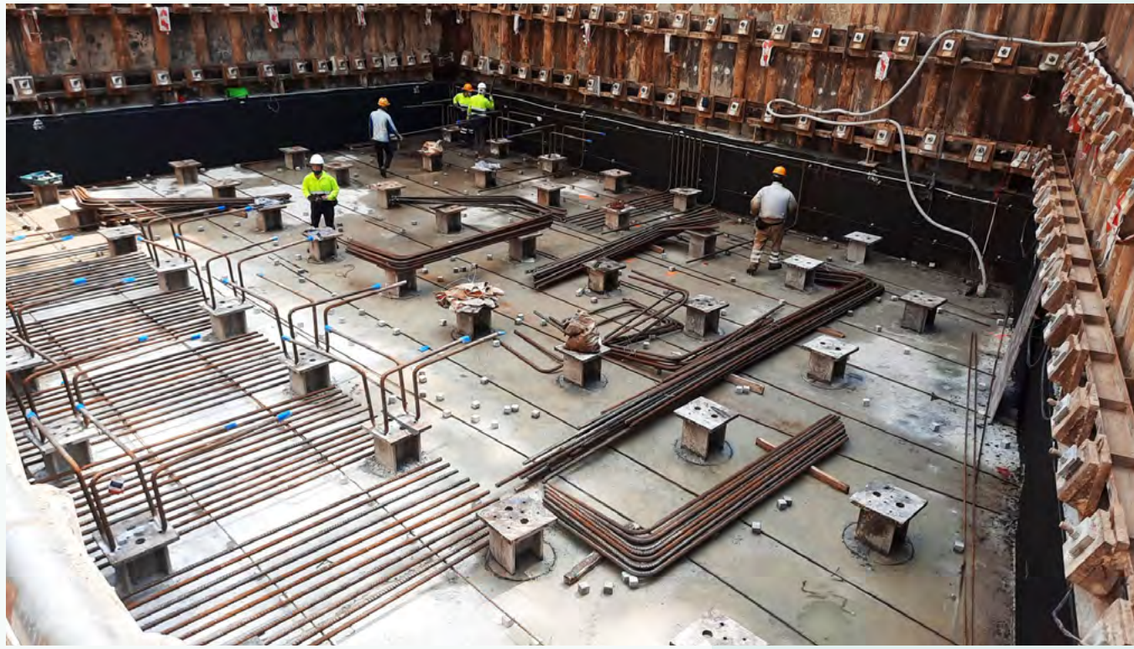
The prefabrication process was computer-monitored. Cutting and bending of rebars were precisely calculated to achieve the highest utilization rate. The wastage was therefore greatly reduced.

Improved Construction Site Environment

With the cutting and bending of rebars performed at the off-site prefabrication yard, the noise and dust generated from these processes were largely avoided at the construction site. This was particularly important to the Kung Yip Street Project as the project site area was in close proximity to the residential areas.

Reduction in Energy Consumption

In prefabrication yard, cutting and bending of rebars were performed by automated machinery in bulk, which was more energy efficient. This reduced the use of on-site machinery for cutting and bending of rebars individually.



Use of prefabricated steel reinforcing bars

Lift and Pedestrian Walkway System between Castle Peak Road and Kung Yip Street, Kwai Chung

Energy Storage Systems for Tower Cranes

Tower cranes are essential construction machinery for lifting and moving heavy materials and components for the construction of lift towers of over 40 meters high. However, the energy-intensive nature of tower cranes and their reliance on traditional diesel generators for providing high-power supply could cause significant environmental impacts. Therefore, the project adopted energy storage systems instead of traditional diesel generators given the following environmental benefits:

Energy Storage System for Tower Cranes

Reduced Greenhouse Gas Emissions

The use of diesel generators to power tower cranes inevitably resulted in the emission of greenhouse gases, such as carbon dioxide, which would be a direct contributor to the global challenge of climate change. However, by employing the energy storage systems in lieu of diesel generators to provide high power supply, tower cranes were able to operate while significantly reducing the greenhouse gas emissions, thereby mitigating the project's overall carbon footprint and environmental impacts.

Improved Air Quality

With the energy storage systems in place, the decreased use of diesel generators led to a remarkable reduction in various air pollutants, including particulate matter, nitrogen oxides and sulfur oxides. This strategic shift in power source for tower cranes helped improve the air quality within the immediate vicinity of the construction site.

Reduced Noise Pollution

The energy storage systems were quieter in operation as compared to diesel generators. This not only created a more pleasant work environment for workers, but also effectively minimized the noise impact on the nearby residential areas surrounding the construction site.

Tower crane for construction of lift tower

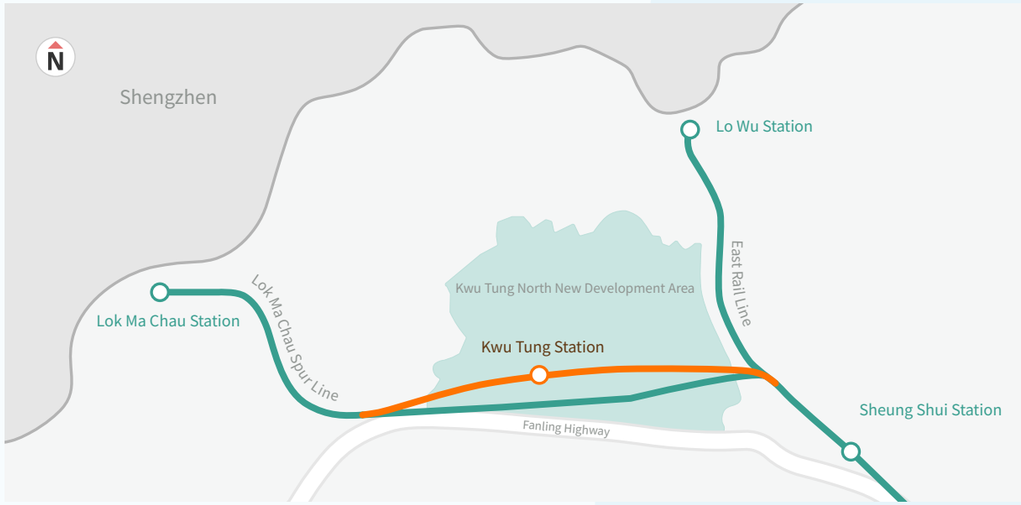
In summary, Kung Yip Street Project brings long-term environmental benefits to the community by providing a barrier-free pedestrian link which makes walking an environmentally friendly transport mode for the neighborhood residents. Short-term environmental impacts during the construction stage were effectively mitigated by adopting new construction methods and technologies, including MiC, prefabricated steel reinforcing bars and energy storage systems. The project has demonstrated our determination to achieve sustainable development while uplifting the quality of our infrastructure.

Sustainability in
RAILWAY DEVELOPMENT

Sustainable Design and Construction Method of

Kwu Tung Station

Computer composed image of the exterior of proposed Kwu Tung Station



Location of proposed Kwu Tung Station

Introduction

The Government has been developing a comprehensive public transportation system, including the railway system to provide efficient and convenient transportation services for citizens. The Kwu Tung Station project being Phase 1 of the Northern Link proposed in the Railway Development Strategy 2014, involves the construction of a new railway station on the existing Lok Ma Chau Spur Line of East Rail Line.

Located at the heart of the Kwu Tung North New Development Area, Kwu Tung Station will serve as an important transportation hub, bringing new development opportunities to the surrounding areas. After the commissioning of the Kwu Tung Station, local residents will be able to easily walk to the station and enjoy efficient, convenient, and low-carbon railway services. Kwu Tung Station will be the first new station in Hong Kong to be constructed on an operating railway tunnel, making it unprecedented. The main construction works of the station commenced in 2023, and targeted to be completed in 2027.

Sustainable Design and Construction Method of Kwu Tung Station

Sustainable Design of Kwu Tung Station

The design of Kwu Tung Station has obtained provisional “BEAM Plus” Gold certification. The average carbon emissions of the station will be reduced by approximately 20% compared to traditional designs. The project team will adopt the following designs to achieve sustainability.

Computer composed image of Kwu Tung Station's ground level lobby featured with skylights and high canopies

1

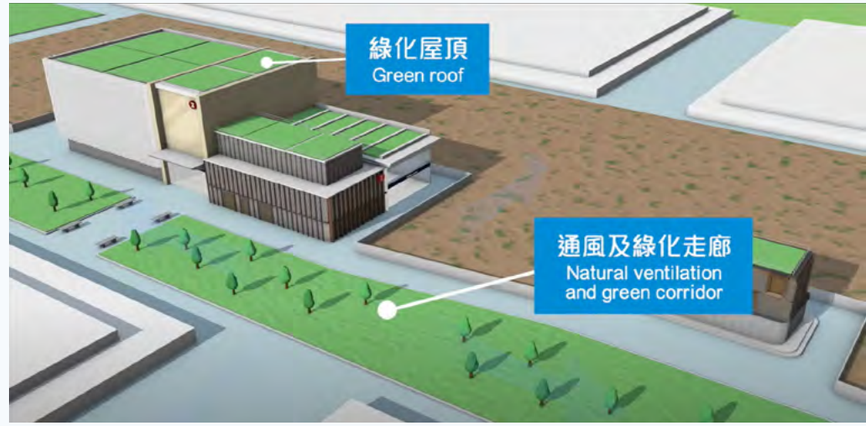
Natural Lighting and Ventilation

The design of ground level lobby of Kwu Tung Station maximizes the use of natural lighting and ventilation. The top of station features skylights and high canopies to introduce natural light into the interior, reducing artificial lighting and creating a comfortable environment. Additionally, the station's natural ventilation system connects the lobby to nearby green corridors, greatly enhancing air circulation. This design also helps to reduce energy consumption by minimizing the use of ventilation equipment.

2

Green Roof

Kwu Tung Station will have a green roof, which helps lower the temperature inside the station and mitigates the heat island effect on the surrounding environment. The green roof also provides space for planting vegetation, which enriches the ecological environment, absorbs carbon dioxide, and improves air quality.



Computer composed image of the green roof and green corridor of Kwu Tung Station

Sustainable Design and Construction Method of Kwu Tung Station

3

Utilization of District Cooling System (DCS)

Kwu Tung Station will use chilled water provided by DCS in the Kwu Tung North New Development Area for station air conditioning at underground concourse and platforms. Compared to traditional individual water-cooled air-conditioning systems using cooling towers, the DCS has a higher energy efficiency which could lower power consumption, and in turn decreasing carbon emissions.

4

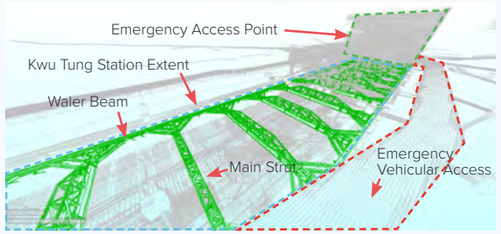
Energy-saving Strategies

Kwu Tung Station will also implement energy-saving strategies to further reduce energy consumption. For example the station will be equipped with a Comprehensive Energy Consumption Monitoring System with energy management functions to continuously monitor the energy consumption of different railway facilities such as the station and trains. Furthermore, the station will utilize energy-efficient lighting equipment such as LED lighting to reduce electricity consumption.

5

Application of Innovative Technology and Techniques

The Kwu Tung Station project utilizes Building Information Modelling (BIM) to facilitate design and construction. The construction of Kwu Tung Station involves large-scale underground excavation of about 10m deep. With the 3-dimensional computer models, the project team can clearly understand the structural layout and interconnections between each component of the excavation and lateral support system that needs to be installed during the excavation process. Through visualizing each step of construction process with the aid of BIM, the project team can also identify potential issues or conflicts in advance and hence reduce redundant work or wastage.

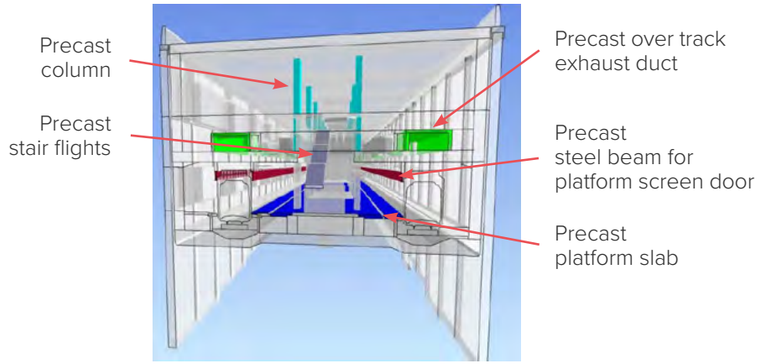


Building Information Model of the excavation and lateral support system for Kwu Tung Station

Actual view of the excavation and lateral support system for Kwu Tung Station

Sustainable Construction Method of Kwu Tung Station

Additionally, the project team proactively adopts innovative construction methods, including Design for Manufacture and Assembly (DfMA) to construct structural components such as over track exhaust ducts, platform slabs and stair flights of the station. Such method can help shortening construction time, improving the construction site environment and safety, while reducing environmental impacts, including less noise, waste, dust, and wastewater, thereby promoting sustainable development and environmental protection.



DfMA precast components of Kwu Tung Station

Sustainability in
RAILWAY DEVELOPMENT

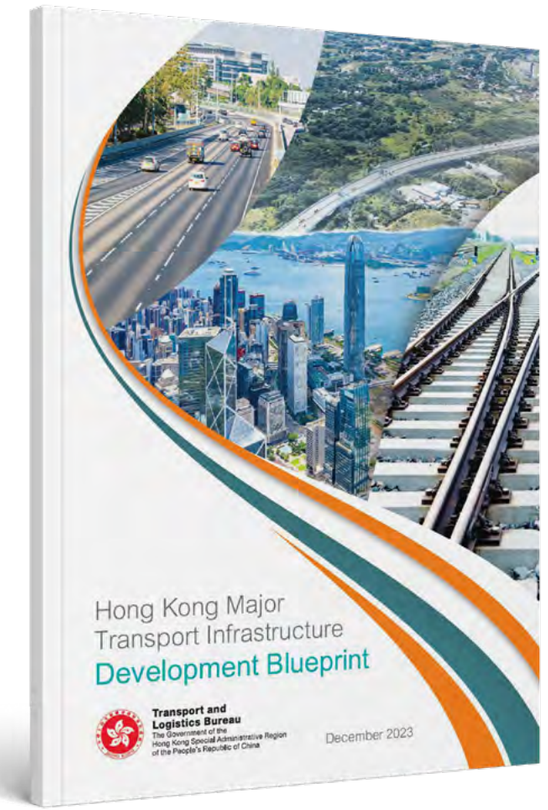
Development of Environmentally Friendly Railway System

Railway provides efficient and environmentally friendly public transportation service. To continue the development of a passenger transportation system centred on public transport with railway as the backbone, the Highways Department is taking forward new railway projects in a proactive and orderly manner.

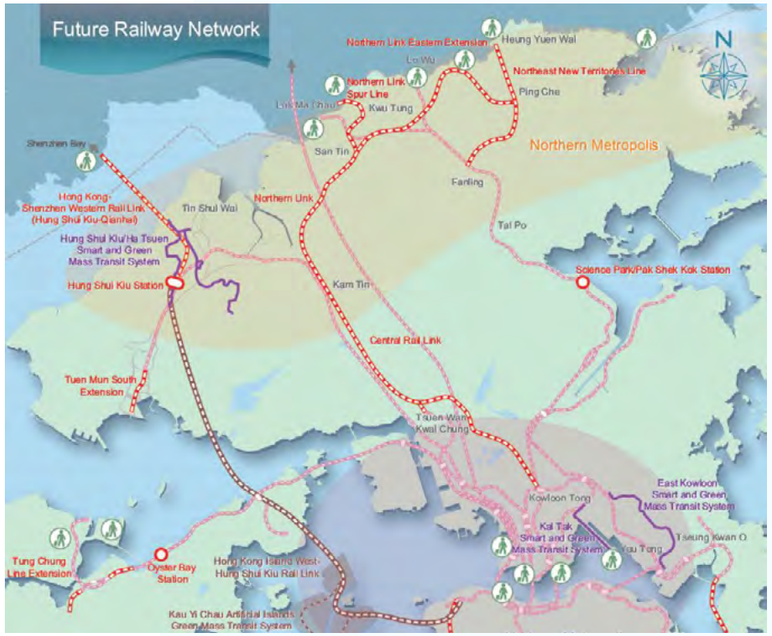
Hong Kong Major Transport Infrastructure Development Blueprint

In December 2023, the Government promulgated the Hong Kong Major Transport Infrastructure Development Blueprint ("Blueprint") to formulate a planning framework for the city's future transport infrastructure development and outline a forward-looking vision for strategic railway and major road networks, with a view to meeting Hong Kong's long-term transport and logistics demand up to 2046 and beyond.

In addition to projects that are currently under planning, design and construction, the Blueprint has recommended the implementation of three railways, namely the Hong Kong-Shenzhen Western Rail Link (Hung Shui Kiu-Qianhai), the Central Rail Link and the Tseung Kwan O Line Southern Extension, and the two railways which will serve the eastern developments of the Northern Metropolis, namely the Northern Link Eastern Extension and the Northeast New Territories Line.



Development of Environmentally Friendly Railway System



The Major Transport Infrastructure Development Blueprint

Environmental Benefits of the Expanded Railway Network

Railway can save land, minimise the reliance on road traffic and reduce the use of energy. It will also help curbing roadside pollutant emissions. In 2024, our railway system carried an average of about 5.1 million passengers every day, which account for about 44% of all trips made on public transport each day. With the implementation of these railway projects, the railway share in the public transport patronage would further increase, and a reduction in road-based transport emission is expected. As people switch from road-based transport to railway, this would translate into environmental benefits amounting to a reduction in roadside air pollutants by some 66 tonnes of nitrogen oxide per year, and 160,000 tonnes of green house gases per year.

Smart and Green Mass Transit Systems

In addition to developing large-scale transport infrastructure, the Government recommends introducing smart and green mass transit systems (SGMTS) as an efficient feeder service to connect nearby railways and major public transport interchanges in areas with limited space or lower transport demand. The Government suggests implementing SGMTS in East Kowloon, Kai Tak, and the Hung Shui Kiu/Ha Tsuen (HSK/HT) New Development Area (NDA).

The SGMTS is a transportation system that combines environmentally friendly and smart technologies to improve transport efficiency, safety and convenience. In contrast to heavy rail systems, the SGMTS has a medium-to-low carrying capacity and is characterized by its energy efficiency, intelligence, and user convenience.

The SGMTS prioritises the adoption of energy-efficient technologies to reduce energy consumption, thereby promoting environmentally sustainable and efficient transportation. By integrating new technologies, the system will facilitate real-time monitoring of traffic conditions and passenger demand, leading to smarter traffic management and responsive service adjustments. This not only enhances the convenience of the transportation system but also minimises carbon emissions and reduces congestion, contributing to cleaner air and a healthier urban environment. Moreover, the provision of real-time information to passengers will improve their commuting experience, encouraging greater use of public transport and further supporting the reduction of private car usage. With the above environmental benefits, SGMTS can help foster a more sustainable future for our communities.

The Highways Department is now actively taking forward a number of new railway projects, such as Tung Chung Line Extension, Tuen Mun South Extension, Kwu Tung Station, Hung Shui Kiu Station and the East Kowloon SGMTS, according to the planned timeline, with a view to enabling the public to enjoy a more interconnected, efficient and environmentally friendly commuting system as early as possible.

Streetscape Beautification Works
at Three Selected Locations

1 **The Outlying Islands Ferry Pier**
Central

2 **Lo Tak Court**
Tsuen Wan

3 **Tsuen Nam Road**
Tai Wai

Background and Objectives

In early 2023, the Highways Department (HyD) collaborated with the Task Force on District Governance to enhance the environmental hygiene and the cityscape of Hong Kong. The objective was to create a clean and livable environment by focusing on streetscape beautification. The beautification works aimed to improve the aesthetics of public spaces, promote placemaking, and revitalize the streetscape and neighborhoods. Three locations were selected for pilot street beautification works: the Outlying Islands Ferry Pier in Central, Lo Tak Court in Tsuen Wan and Tsuen Nam Road in Tai Wai. These locations were chosen due to their high pedestrian flow and popularity among residents and tourists.

Streetscape Beautification Works at Three Selected Locations

1

Streetscape Beautification Works at
the Outlying Islands Ferry Pier in Central

The Outlying Islands Ferry Pier in Central is a vital transportation hub, connecting major islands and the Kowloon Peninsula. It is also one of the most valuable tourism assets in Hong Kong, thanks to its strategic location and proximity to the beautiful Victoria Harbour and various commercial and cultural facilities. To enhance the image and appeal of this important transportation node, we have undertaken a comprehensive beautification project for the area.

Before the transformation, the Outlying Islands Ferry Pier faced several issues. Due to prolonged usage, many streetscape facilities including the pavement had started to age, and the paint on the walkway cover had begun to peel off. This provided a good opportunity to undertake a thorough renovation. The piers also lacked a distinct identity that could effectively reflect and promote the unique tourism characteristics and cultural heritage of the destination islands including Lamma Island, Cheung Chau and Peng Chau. The pedestrian experience along the pier square was also rather ordinary and lacked visual interest, necessitating a revitalization to attract both locals and tourists.

To address these issues, a remarkable transformation was implemented on Piers 4, 5, and 6 with high pedestrian flow. Each pier was assigned a specific theme to represent its corresponding island. Pier 4, known as "Island Vibe," was designed to immerse passengers in the fishing culture of Lamma Island, featuring a light blue color scheme. Pier 5 adopted the theme of "Joyful Celebration" to capture the festive spirit of Cheung Chau, incorporating thematic stickers depicting the iconic "Ping On Bun" and the sail of windsurfer Lee Lai-shan. Pier 6, named "Secret Garden," highlighted Peng Chau's industrial history, with thematic stickers representing its leather factory and natural landscape, creating a relaxing atmosphere. The renovated painting works on the covered walkways connecting the piers together with the thematic stickers, have helped establish a distinct identity for each pier area.

Before beautification



After beautification





Streetscape Beautification Works at Three Selected Locations

1

Before beautification

After beautification

Furthermore, the pedestrian experience was greatly enhanced through the introduction of a thematic paving pattern featuring dynamic geometric lines and patterns. This not only added visual interest but also created a more engaging and immersive environment for visitors. The old and dirty pavement was replaced, giving a refreshing and rejuvenated feel to the pier. Additionally, the thematic manhole covers, showcasing the Victoria Harbour's skyline, became popular spots for capturing photos, further enhancing the overall experience. These improvements have made the pier an inviting destination for both locals and tourists, encouraging them to explore and connect with the islands' rich heritage and tourism offerings.

Streetscape Beautification Works at Three Selected Locations

2

Streetscape Beautification Works at
Lo Tak Court, Tsuen Wan

The location of Lo Tak Court in Tsuen Wan was formerly the site of Ho Pui Village, which was demolished in the 1960s. The theme of 'Tsuen Wan Walled Village' is inspired by the unique historical, cultural and architectural features of the old walled village in Tsuen Wan. A set of new paving design, thematic wallpaper design on HyD's structures, thematic manhole covers and featured paving plates have been created to highlight the traditional features and bring the historical scene to life.

The original condition of the pavers in Lo Tak Court was dilapidated with mixed paving patterns. The new paving design has adopted a dynamic paving pattern with selected colors that match with its surroundings, adding a vibrant atmosphere to Lo Tak Court. Also, the paving design for the area with scattered planters creates subdivided zones that visually aligned those scattered planters and improved the spatial arrangement of the area.

Before beautification

After beautification

Before beautification

After beautification

Streetscape Beautification Works at Three Selected Locations

The dilapidated and scattered planters were refurbished through repainting and application of thematic wallpapers that created a scene of looking into the room from the village courtyard throughout the area, while the design of lamp post thematic wallpaper extracted the feature of brick walls, tile roofs and decorative ceilings of the old village. These thematic wallpapers visually linked up the elements within the area and added a distinct cultural hue to Lo Tak Court.

Before beautification

After beautification

Original cast iron manhole cover

Thematic manhole cover

Featured paving plate

Further, the existing manhole covers were replaced by thematic manhole covers and featured paving plates that illustrated the surrounding natural environment (such as Tree Cotton, red whiskered bulbul and pallas's squirrel) to echo with the thematic design of adjacent footbridge at Tai Ho Road.

Thematic design of the footbridge at Tai Ho Road

Streetscape Beautification Works at Three Selected Locations

3

Streetscape Beautification Works at
Tsuen Nam Road, Tai Wai

Tai Wai MTR Station has always been an important station on the MTR East Rail Line, and with the opening of Tuen Ma Line and the extension of East Rail Line to Admiralty Station, it has become an important interchange station for the railway network, leading to an increase in pedestrian flow on the streets around Tai Wai MTR Station. In view of this, we have renovated the footpath along Tsuen Nam Road adjoining Tai Wai MTR Station with new paving design, thematic manhole covers and featured paving plates, new planter and thematic wallpaper design on HyD's structures in the vicinity.

In the past, the pavers were in earthy tones which could be mundane to daily users. The new paving design has adopted a brighter color scheme, yet still cohered with the adjoining footpaths. The stripe pattern was designed to address the layout of existing structures and pedestrian's daily movement, as well as providing rhythmic walking experience to pedestrians.

Before beautification

After beautification

Before beautification

After beautification

Streetscape Beautification Works at Three Selected Locations

Original cast iron manhole cover

Thematic manhole cover

Featured paving plate

Thematic manhole covers and featured paving plates were also installed along with the new paving pattern to enhance the overall design. The design of thematic manhole covers and featured paving plates adopted an “Urban River” theme, which depicts common scenes of egrets in the nearby Shing Mun River. The thematic manhole cover is not only a beautified version of the original cast iron cover, the orientation and margin treatment were also adjusted. So that the manhole covers could be better aligned and integrated with the paving design, which enhanced the overall tidiness of streetscape.

Thematic manhole cover integrated with paving design

On the other hand, the newly built curved planter with lush planting have replaced part of the original railings surrounding the roundabout. Apart from achieving the traffic management purpose of original railings, the simple curved planter with selection of plantings in different shades of green has enhanced the overall aesthetics appeal of the environment.

Replace existing railings into planter (before)

Replace existing railings into planter (after)

Streetscape Beautification Works at Three Selected Locations

Outcome and Way Forward

The beautification efforts in the three aforementioned locations have yielded successful results, with positive feedback from social media, contributing to the integration of street facilities with the surrounding environment while optimizing community landscapes and infusing vitality into the city. Our designs have encouraged residents to visit these areas and admire the transformed streetscapes. Moving forward, it remains crucial to continue striving for the beautification and enhancement of streetscapes, ensuring the walkability and livability of our urban spaces for both residents and visitors in the future.

Thematic manhole covers become a popular photo spot

The beautified seating area being more attractive to residents

Adding fun to the lift with thematic stickers

Planter wall becomes a resting place

Hong Kong Flower Show 2024

The Hong Kong Flower Show, organized annually by the Leisure and Cultural Services Department (LCSD), is a vibrant celebration of horticulture in the city. HyD actively participates in this festive event almost every year and consistently delivers a visually stunning and immersive display. The Hong Kong Flower Show 2024 was held from 15 to 24 March 2024 at Victoria Park. Our theme for this year was “Enchanted Journey - Joyful Inheritance”, and our display booth was honored to receive the Grand Award for Design Excellence (Landscape Display) under the category of Displays Section (Local).

Prize presentation ceremony of the Hong Kong Flower Show 2024

Enchanted Journey - Joyful Inheritance

Enchanted Journey - Joyful Inheritance

The HyD's display booth, in line with this year's theme of the whole event 'Floral Joy Around Town', incorporated the elements of "wood" and "birds" into its design. Colorful lines representing the road network were interwoven to showcase the department's projects, namely the "Succeed Sustain Slopescape – Phased Replacement of Senescent Acacia" and the "Thematic Design of Highway Structures." As visitors journeyed through the tunnels and roads adorned with blossoming flowers, they immersed themselves in the lively atmosphere that these projects have brought to the streets of Hong Kong. Visitors could explore road facilities and infrastructure projects closely related to their daily living, while also enjoying the fun of travelling through the road network and experiencing the convenience it provides.

Hong Kong Flower Show 2024

Adorable railway display with succulent plants

Foxgloves along the booth

Eye-catching Bougainvillea in the middle

The wooden horses are favoured by both children and adults

Blossoms in Guangzhou Cherry attract visitors to take photos

The planting design incorporated this year's theme flower, *Angelonia spp.* (香彩雀), along with other vibrant flowers like Delphinium (飛 燕草), Foxgloves (毛地黃), and Bougainvillea (簕杜鵑), creating a delightful and colorful floral landscape. The design concept was to bring joy and a sense of delight to visitors, evoking heartfelt smiles. During the show, it was observed that not only did the theme flowers capture attention, but the Guangzhou Cherry (廣州櫻), Pom Pom Mum (乒乓菊), and succulent plants (多肉植物) we chose also attracted many people due to their adorable appearances. Additionally, wooden horses made from recycled materials became a highlight, drawing the attention of many children.

Our display not only appealed to visitors visually, but also prioritized environmental sustainability. To achieve this, we had incorporated various eco-friendly elements into our design.

The lighting effect at night

Hong Kong Flower Show 2024

Welcoming paving pattern at the entrance paved with eco-pavers

Use of Eco-pavers

At the main entrance of our display, eco-pavers were used to form a pathway with a welcoming and directive pattern, showcasing the harmonious integration of nature and hardscape elements as well as our commitment to sustainability and promoting the use of environmentally friendly paving materials.

The vibrantly painted wooden horses crafted from the recycled tires and wood

Recycling of Materials

Within the enchanted journey, an interesting display of wooden horses crafted from recycled tires and wood awaited visitors. These forgotten materials, once discarded, were given a new life through vibrant paints and blossoming flowers. These transformed creations became captivating and joyful attractions within our display.

The wooden horses provided unforgettable fun for kids

Hong Kong Flower Show 2024

The circular wood bench

Wood Recycling and Upcycling

To promote "Succeed Sustain Slopescape – Phased Replacement of Senescent Acacia" initiative, we have proactively utilized recycled yard waste generated through the programme. These waste materials were transformed into upcycled wood planks and boards, which were used to make wood decorations and furniture in our display, including wooden horses, decorative skyline sculpture, seats and bench, and plant name plates. By embracing wood recycling and upcycling, we not only reduced waste, but also creatively crafted interesting wooden furniture and resting spots for visitors.

The decorative skyline sculpture

Plant name plates

Wood log seats

Potted flowers in good condition were given away to the public

Large shrubs were transplanted to the slopes maintained by our department

New Life of the Display Materials after the Show

After the 10-day display period of the exhibition, we embarked on a mission to give a second life to the beautiful plants and furniture featured in our display. Potted flowers in good condition were collected by the volunteers of LCSD and given away to the public. Other trees and large shrubs including *Handroanthus chrysotrichus* (黃花風鈴木), *Prunus yunnanensis 'Guangzhou'* (廣州櫻) and *Bougainvillea spectabilis* (簕杜鵑) were transplanted to the slopes maintained by our department and became part of our roadside landscape.

Furthermore, the wood furniture and decorations used in the display found a new purpose through donation to the non-government organisations. For example, the circular wood bench is now placed in the Urban Forestry Education Centre in Nam Cheong for the enjoyment of the general public. Through these endeavors, we breathed new life into these plants and wood items, offering them a meaningful and sustainable future.

The circular wooden bench was placed in the Urban Forestry Education Centre

Green Office Management

Resources Saving: Water, Paper & Waste Recycling

To align with the Government's initiative to conserve natural resources, we are dedicated to fully embracing the green office concept across various facets of our daily operations. Apart from the energy-saving efforts previously discussed, we are actively implementing a range of green policies and measures aimed at promoting sustainability and enhancing our staff's environmental awareness.

Water Saving

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

To enhance water conservation, we have adopted dual-flush toilets, automatic low-flow faucets, and sensor-operated urinals. These equipment efficiently regulate the duration of water flow and maintain it at a minimal level. All of the toilets in HMTGO were installed with water saving devices.

Paper Saving

In 2023/24, we consumed **20,309 reams of paper** and **100%** of which were recycled paper

To align with the green office initiative, 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

Green Office Management

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, the ERKS are being rolled out in different offices by phases. 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 maximizes the value of ERKS and minimises manual efforts in records management.

Waste Recycling

In 2023/24, **27,804 kg** of waste paper and **658** printer toners and ink cartridges were collected for recycling

To treasure waste with recycling value, we would continue taking the following measures to promote waste recycling:

Place separated recyclables into recycling bins for collection by cleansing contractors or local recyclers

Put up recycling boxes to collect other recyclables such as rechargeable batteries for recycling

Green Office Management

Special Measures to Cope With Poor Air Quality

To raise staff awareness about air quality, we notify our colleagues when the Air Quality Health Index reaches or is expected to reach the "very high" or "serious" health risk categories. Along with these notifications, we provide a set of precautionary measures for front-line staff and their supervisors for their reference. These measures include conducting risk assessments for outdoor work, particularly for those engaged in heavy manual work, and planning to minimize outdoor physical exertion and reduce time spent outdoors, especially in high-traffic areas.

Indoor Air Quality Certification

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

By 2023/24, HMTGO has received the Good Class IAQ Certificate for 20 consecutive years. In the year, both the North Point Government Offices and Trade and Industry Tower achieved Excellent Class IAQ, while the Cheung Sha Wan Government Offices and our offices in Nan Fung Commercial Centre obtained Good Class IAQ. We will continue our commitment to maintaining high indoor air quality to protect the health of building occupants and enhance staff productivity.

IAQ Certificates of our offices

Green Office Management

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 such as 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

circulate flimsies of outgoing letters/memo through e-mail instead of hardcopy

Green Procurement of General Goods and Services

To contribute to sustainable development, we have all along taken into account environmental considerations in our procurement process. We adhere to the green specifications for the procurement of general goods and services established by the Environmental Protection Department (EPD) as far as practicable. In 2023, our total value of purchase of such goods and services with EPD's green specifications adopted was about HK$ 8.7 million. The major categories of green procurements were inks/toner cartridges, computer equipment, digital cameras, and clothing and textile products. We will continue to select goods and services that are better for the environment comparing to conventional products, thereby promoting sustainable development.

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

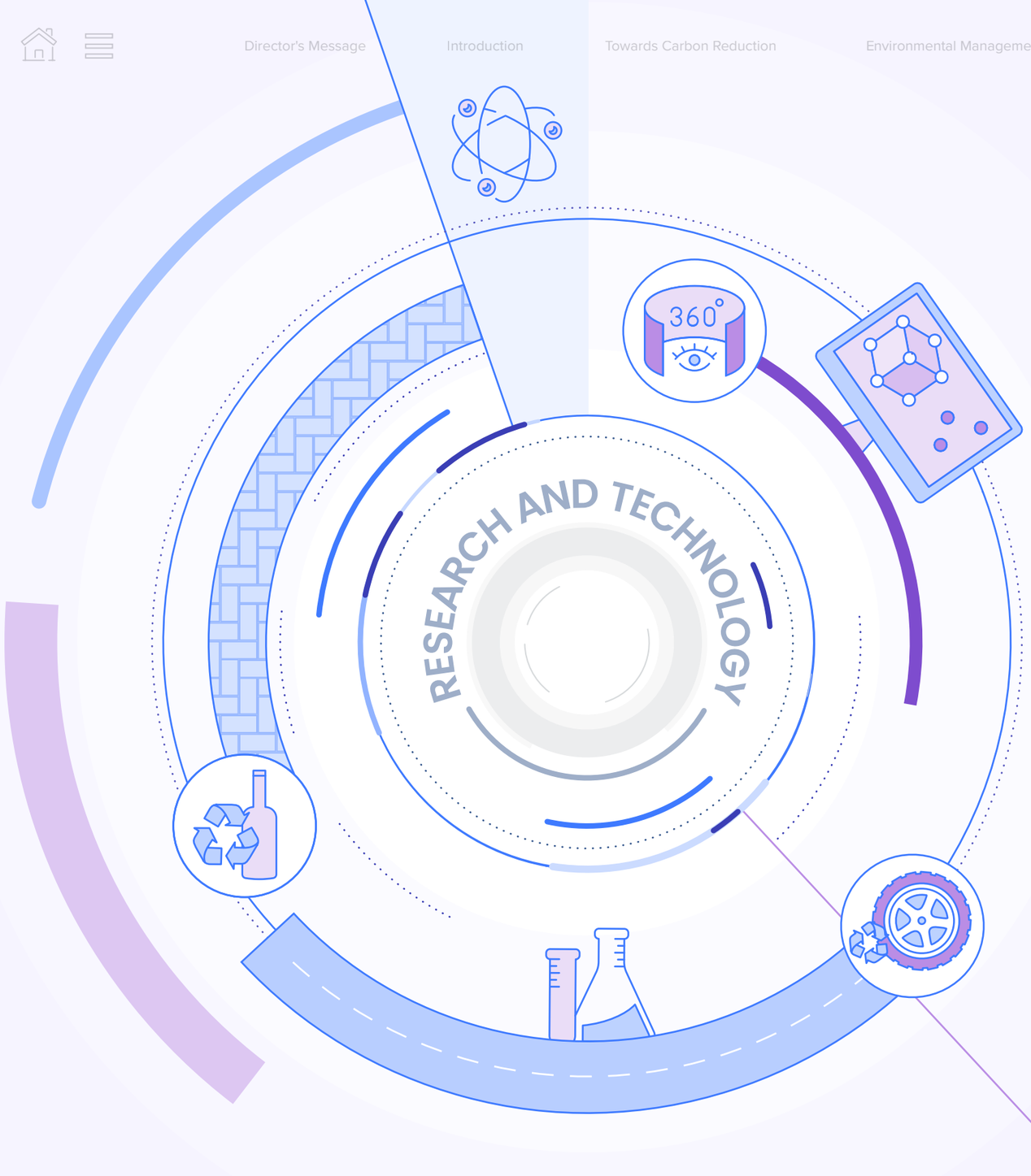
to increase staff awareness of green management and occupational safety and health initiatives

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 2023/24 to monitor the effectiveness of greenhouse gas emission reduction efforts. The relevant data are being studied by the Building Management Office.

Based on previous audit findings, the total net greenhouse gas emissions have shown a general decline over the past few years. We will continue to adopt best practices in green management to further minimize our carbon footprint.



RESEARCH AND TECHNOLOGY

Application of Backpack Mobile Mapping System

Laser Scanning Survey for Generating 3-dimensional (3D) Point Cloud

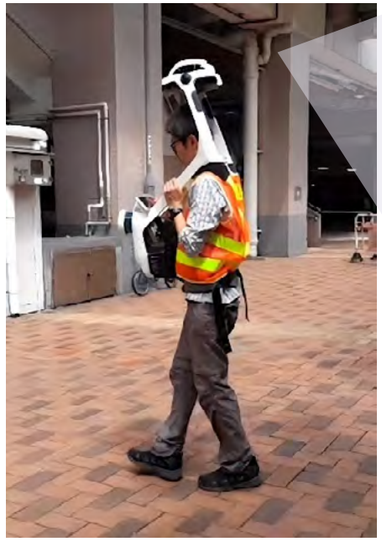
We continually strive to adopt new technologies that enhance work efficiency and reduce carbon footprints. In 2023, we introduced the Backpack Mobile Mapping System (MMS), a portable and wearable device utilizing the Simultaneous Localization and Mapping (SLAM) algorithm laser scanning technologies for efficient and large-scale data collection. This system outperforms the traditional Terrestrial Laser System (TLS) in terms of efficiency and mobility.

During data collection process, our survey officers may wear the portable Backpack MMS to collect spatial data as our officers move around, eliminating the need for occupying space for setting up survey stations like the traditional TLS method and hence reducing disturbance to the public. With the two built-in laser scanners, the Backpack MMS is capable of measuring up to 600,000 points per second with centimeter-level accuracy for engineering applications. Its SLAM algorithm also enables operation in Global Navigation Satellite System-denied areas like areas covered by dense vegetation and indoor area, making it adaptable to various environments. Since its introduction, the Backpack MMS has been utilized for different applications, such as stonewall tree survey, record survey, topographic survey and existing condition modelling (ECM).

Environmental Benefits

The adoption of the Backpack MMS does not only improve operational efficiency, but also reduces carbon emission in data acquisition. The traditional TLS is a bulky equipment, which requires extra personnel for equipment setup. Due to its stationary nature, multiple visits are often required when using the TLS to capture all necessary data, leading to increasing vehicle usage, fuel consumption and in turn carbon emissions. In contrast, the Backpack MMS, with the streamlined workflow and its simultaneous scanning capability, enables a single operation to collect the required data, thereby eliminating the need for additional manpower and energy consumption. The system also features with greater flexibility and mobility, allowing fast data collection within a day. As a result, vehicle-related carbon emissions could also be minimized.

With the use of the Backpack MMS, photos and point cloud data are stored digitally and can be published on a web-based Geographic Information System (GIS) for further inspection. This allows our colleagues to directly work on the 3D data through the GIS platform, thereby reducing the reliance on paper-based survey plans.



Backpack MMS in operation

ECM formed from the point cloud model

Point cloud model captured by the Backpack MMS

Point cloud model of Aberdeen Tunnel Toll Plaza

Point cloud model of a stonewall tree

Eco-pavers with Increased Recycled Glass Cullet Content

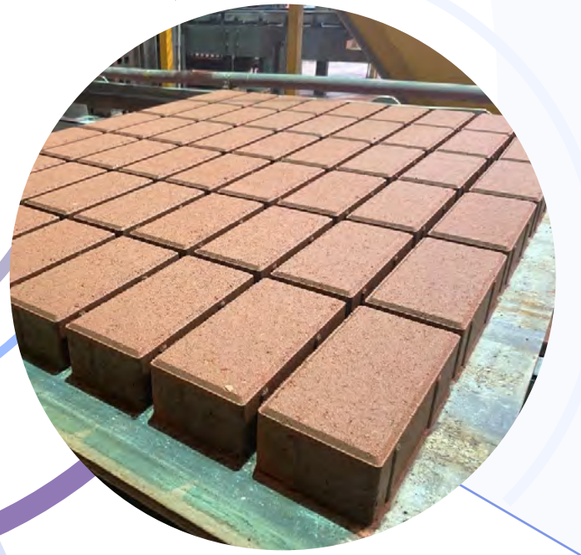
Waste glass bottles

Utilized about

2,200 tons

of recycle glass

for producing eco-pavers in 2023



Eco-paver with recycled glass cullet

We are committed to developing environmentally friendly paving materials for footways. Since 2004, the use of recycled aggregates, which are crushed concrete or rocks generated from construction or demolition works, in concrete pavers (eco-pavers) has been mandated. From 2010, we have taken a further step by requiring the inclusion of recycled glass cullet, comprising 20% to 25% by weight of the total aggregates in eco-pavers used in our road maintenance contracts. In 2023, approximately 2,200 tons of recycled glass, equivalent to over 4.4 million discarded glass bottles, were utilized.

To promote further utilization of recycled glass cullet, we completed the site trials of eco-pavers with recycled glass cullet content of 30% to 35% by weight of the total aggregates in 2023. With satisfactory results from these trials, the use of eco-pavers with higher glass cullet content was mandated in the road maintenance contracts starting from 2024.

Eco-pavers decrease the reliance on natural resources such as river sand by incorporating recycled aggregates and recycled glass cullet. This approach not only conserves significant amounts of raw materials but also helps reduce the amount of municipal solid waste. Furthermore, the use of eco-pavers contributes to lower carbon emissions. The production process of eco-pavers is more energy-efficient, requiring less energy compared to traditional materials, which makes them a more sustainable choice from the outset.

Rubberized Bituminous Pavement Materials

Site trial of rubberized bituminous pavement materials at Tung Chau Street

The disposal of waste vehicle tyres has posed a significant challenge for decades in Hong Kong. As a contribution to addressing this issue while delivering both environmental and engineering benefits, we collaborated with the Hong Kong Polytechnic University (PolyU) and completed two feasibility studies on the use of rubberized bituminous pavement materials in Hong Kong road network. The studies concluded and confirmed the technical feasibility of incorporating crumb rubber into conventional bituminous pavement materials, and the recyclability of the rubberized bituminous pavements at the end of their service lives.

To evaluate the performance of rubberized bituminous pavement materials in public roads, we commenced a site trial programme in 2021. Following the successful trial ended in 2023, where 42 trial road sections had been laid with these materials, an additional 18 road sections were laid with these materials in 2024. We are now embarking on a new study with PolyU aiming at increasing the proportion of crumb rubber and optimizing the production process of rubberized bituminous pavement materials, making them more environmentally friendly for wider application.

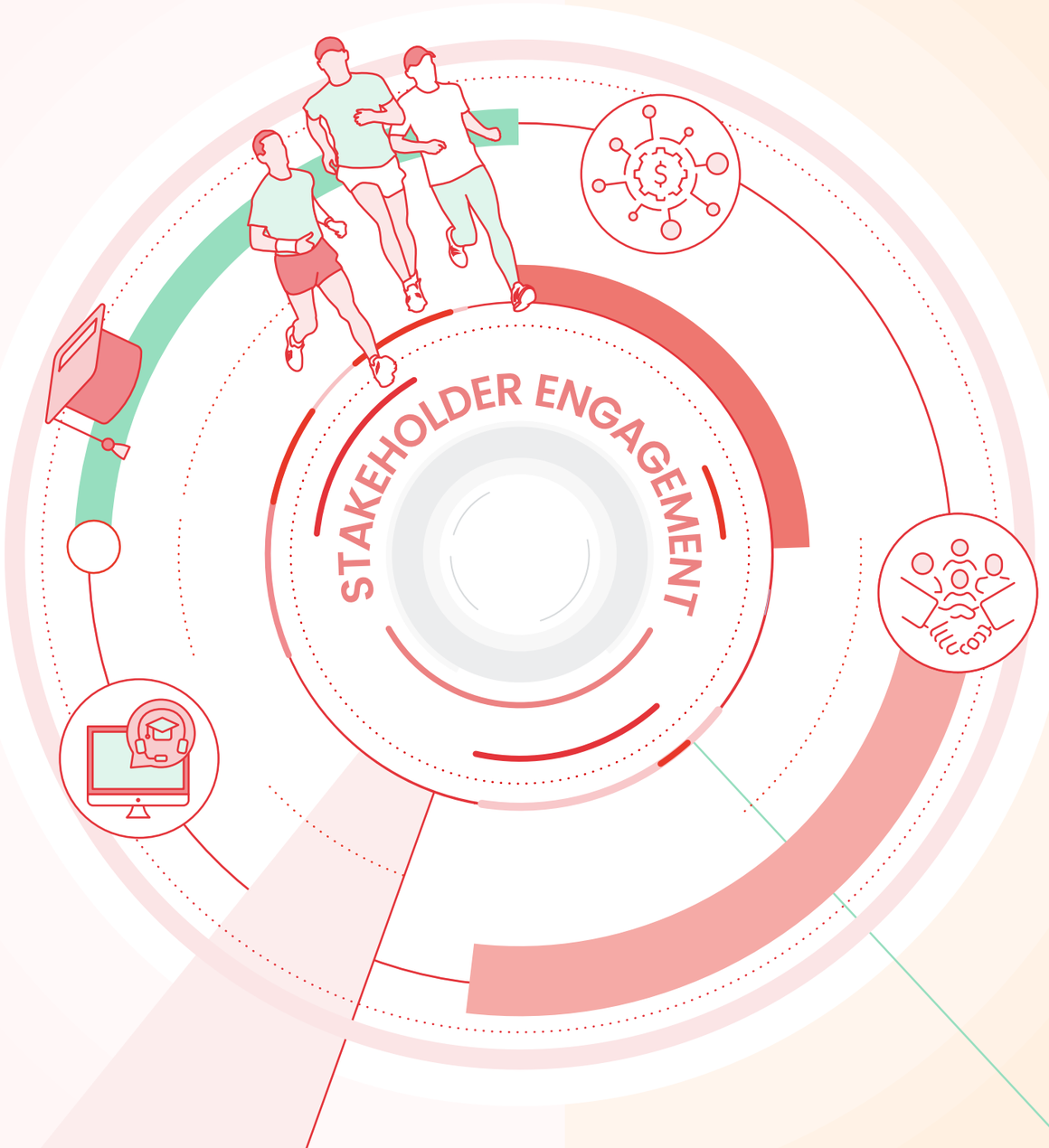
Waste tyres

Ground recycled crumb rubber

Crumb rubber modified bitumen in laboratory

Rubberized bituminous pavement

60
road sections have been completed



STAKEHOLDER ENGAGEMENT

Our Staff

Green Training

We place emphasis on the adequacy of training provided to our staff for their effective discharge of duties. To keep abreast with the latest knowledge in environmental management, we continued to arrange various green training programme in 2023/24 to different users.

225 staff members attended

48 courses arranged

1,455 training hours

Covering staff in **12** offices

Anti-corruption Training

We attach great importance to staff members' conduct, integrity and ethics. Anti-corruption training such as Integrity Management Workshops and its refresher courses were regularly arranged to raise awareness among our staff. In 2023/24, we arranged 5 training sessions with 333 staff members attended.

5 training sessions

333 staff members attended

4 Certification Programmes

1. Preparatory Course and Examination for ISA Certified Arborist
2. Training Programme and Recertification for ISA CA / CA Municipal Specialist Qualification
3. Training Programme and Recertification for ISA CA / CA Municipal Specialist Qualification - Mulching and Its Benefit
4. Training Programme and Recertification for ISA CA / CA Municipal Specialist Qualification - Water and Soil Management and Tree Nutrition

9 Workshops

1. Half-day Refresher Training Course on Detecting, Reporting and Preventing Unlawful Taking of Water
2. Occupational Health and Safety in Arboriculture
3. Occupational Health and Safety in Arboriculture, Tree Identification, Proper Tree Planting, and Tree Management and Protection
4. Operation of Drone for Tree Risk Assessment
5. Sustainable Development Workshop
6. Tree Identification and Proper Tree Planting
7. Tree Management and Protection
8. Tree Pruning and Use of Chainsaw
9. Workshops on Occupational Health and Safety in Arboriculture

8 Seminar/Webinars

1. CIC Global Construction Sustainability Forum and Exhibition 2023
2. Identification of Pests and Diseases and their Impact on Trees
3. Individual Tree Risk Assessment : Explanatory Notes for Form 2
4. Prevention of Heat Stroke at Work in a Hot Environment
5. Proper Tree Care and Management
6. Strategies of Tree Protection and Management during Construction
7. The 13th Annual International Arboriculture Summit - Hong Kong
8. Water Resources Management Conference 2023 in Hong Kong

27 Experience Sharing Sessions

1. A More Durable Bituminous Surfacing Material - Highly Modified Stone Mastic Asphalt
2. Application of Polymer Modified and Highly Modified Resurfacing Materials for Resurfacing Works
3. Being an Engineer with the Water Authority of Shenzhen Municipality
4. Deep Cement Mixing - The Experience in Tung Chung East Reclamation and Challenges Ahead
5. How to Mitigate the Impacts of Capital Works Projects on Historic Buildings / Structures and Archaeological Sites, Striking a Balance between Heritage Conservation and Development?
6. Implementation of Eco-shoreline to Promote Biodiversity in Tung Chung East
7. Innovative Design of the Integrated Basement and Public Infrastructure Works in West Kowloon Cultural District
8. Introduction of Wildlife Friendly Measures in Lantau Development Projects
9. Lantau Conservation Fund
10. Marine Infrastructure - Breakwaters
11. Measures for Timely Completion of Improvement to Dongjiang Water Mains P4 in Sheung Shui and Fanling
12. Moving Mobility Forward: The Latest Development of Smart Mobility in Hong Kong
13. On-site Chlorine Generation Plants at Water Treatment Works
14. Photovoltaic Renewable Energy System at Subway NS100A, Kwai Fuk Road
15. Preservation and Maintenance of Retaining Features with Stone Wall Trees
16. Emergency Works, Emergency Openings and Related Environmental Mitigation Measures
17. Provision of 3D Fabrication System for Waterworks Spare Parts
18. Development of BIM in Landslip Prevention and Mitigation Programme
19. Re-thinking the Landscape Potentials of Polders
20. Sewerage Upgrading Works in Urban Environment
21. Sharing on Delegation to Shanghai - Smart Technologies for City Developments and Tunnelling
22. Sharing on Overseas Professional Training Scholarship Scheme - MSc in Hydrology and Water Resources Management
23. Sustainable Use of Water Resources by Water Reuse
24. Trial Application of Glass Fiber-Reinforced Polymer (GFRP) Rebars
25. Use of Digitial Technologies for Rock Mass Discontinuity Survey
26. Water Trunk Loss Management in Kowloon
27. Widening of Tai Po Road (Sha Tin Section)

Our Staff

Green and Charity Activities

In 2023/24, we remained actively involved in a variety of green activities and charitable events. These activities not only created opportunities for our colleagues and their families to connect with nature but also increased their environmental awareness and responsibility. By taking part in healthy and enjoyable outdoor activities, our colleagues could rejuvenate their minds, enhance their productivity and overall well-being.

Total donation amount in 2023/24

$64,200

OXFAM Trailwalker 2023

Lifewire Run 2023

Standard Chartered Hong Kong Marathon 2024

Our Staff

Green and Charity Activities

We continued to support a range of green events organized by various non-governmental organizations. We played an active role in sharing information about these events and encouraged our colleagues to participate in these meaningful activities that promote a shift towards a greener lifestyle and offer support to those in need.

Voluntary Services

Our colleagues and their family members have shown great enthusiasm for participating in volunteer services during their free time to give back to the community. Throughout the year, our Volunteer Team took part in numerous voluntary initiatives in collaboration with various organizations.

In 2023/24, we had completed 16 voluntary projects contributing a total of 933 voluntary work hours with 293 volunteer attendances.

933 voluntary work hours

16 voluntary projects

293 volunteer attendances

Preparing and distributing meal boxes to grassroots families

Flag selling event

Gift donating events to children of low incomes families and the elderly

Marathon event support services

The Industry

The Construction Industry Caring Organisations Scheme Logo

Construction Industry Caring Organisations Scheme

We offered our longstanding support to corporate social responsibility initiatives and promoting the positive image of the construction industry. In 2023/24, we continued to join the Construction Industry Caring Organisations Scheme under the Construction Industry Council.

The award of Construction Industry Caring Organisations logo recognises our commitment in “Serving the Industry” and "Serving the Community” in the past six years.

Industry Activities

To encourage the development of the engineering and construction industry and facilitate knowledge sharing, we established strong ties with the industry by supporting a variety of industry activities. This included technical site visits to our projects for professional bodies and academic institutions, as well as recreational events hosted by the organizations in the industry.

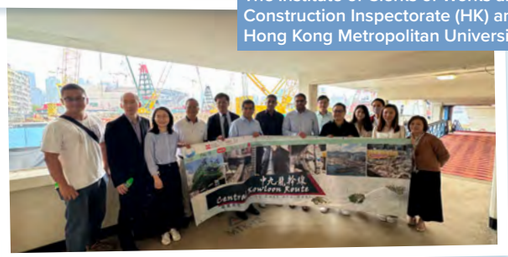
Technical Visits for Various Organizations

Hong Kong Institute of Construction

The Hong Kong Institution of Engineers (Civil Division)

The Industry

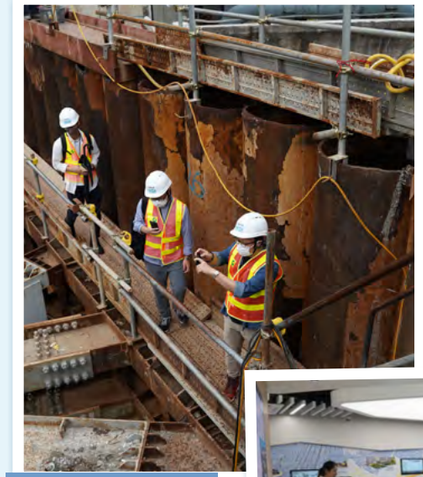
The Institute of Clerks of Works and Construction Inspectorate (HK) and Hong Kong Metropolitan University



Institute of Vocational Education (Tsing Yi)

The University of Hong Kong

Technological and Higher Education Institute of Hong Kong



Urban Renewal Authority

Institution of Civil Engineers - Hong Kong Association

The Industry

Recreational Activities

Shoreline cleanup on activity

Construction Industry Basketball League 2023

Construction Industry Happy Run 2024

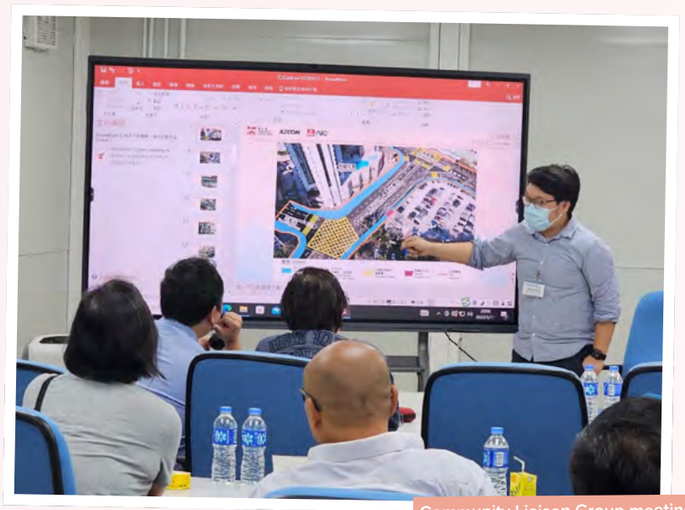
Construction Industry Sports Day and Charity Fun Day 2023

The General Public

We are committed to engaging with the community as well as fulfilling our social responsibilities. By fostering collaborative exchanges between our project teams and stakeholders, we ensure effective delivery of project information to the public and understanding of their needs and concerns. Through these engagements, we have strengthened our connections with key stakeholders, enhancing our relationships and building trust within the community.

Public Consultation

Site visit and meeting with members of District Council

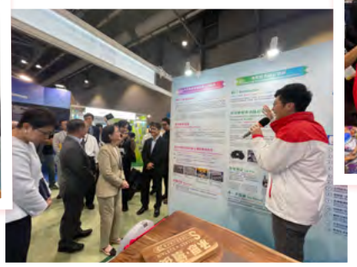


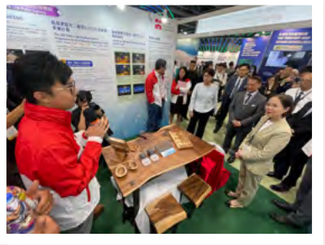
Community Liaison Group meetings

The General Public

Community Outreaching

Eco Expo Asia 2023

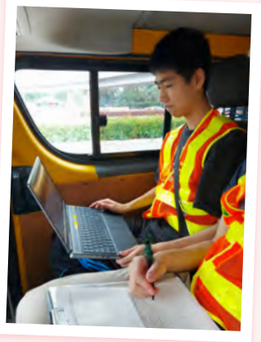


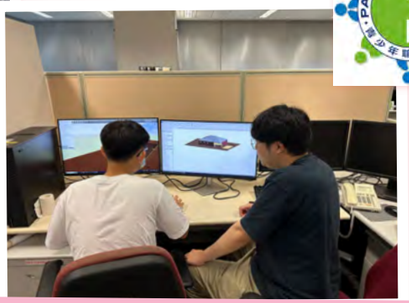


Construction Industry Safety Week Carnival 2023

Career talk at S.K.H. Holy Trinity Church Secondary School

Volunteer Service at Food Angel





Supporting Youth Work Explorer Program of Child Development Initiative Alliance

Site visit for St. Louis School Transport Society

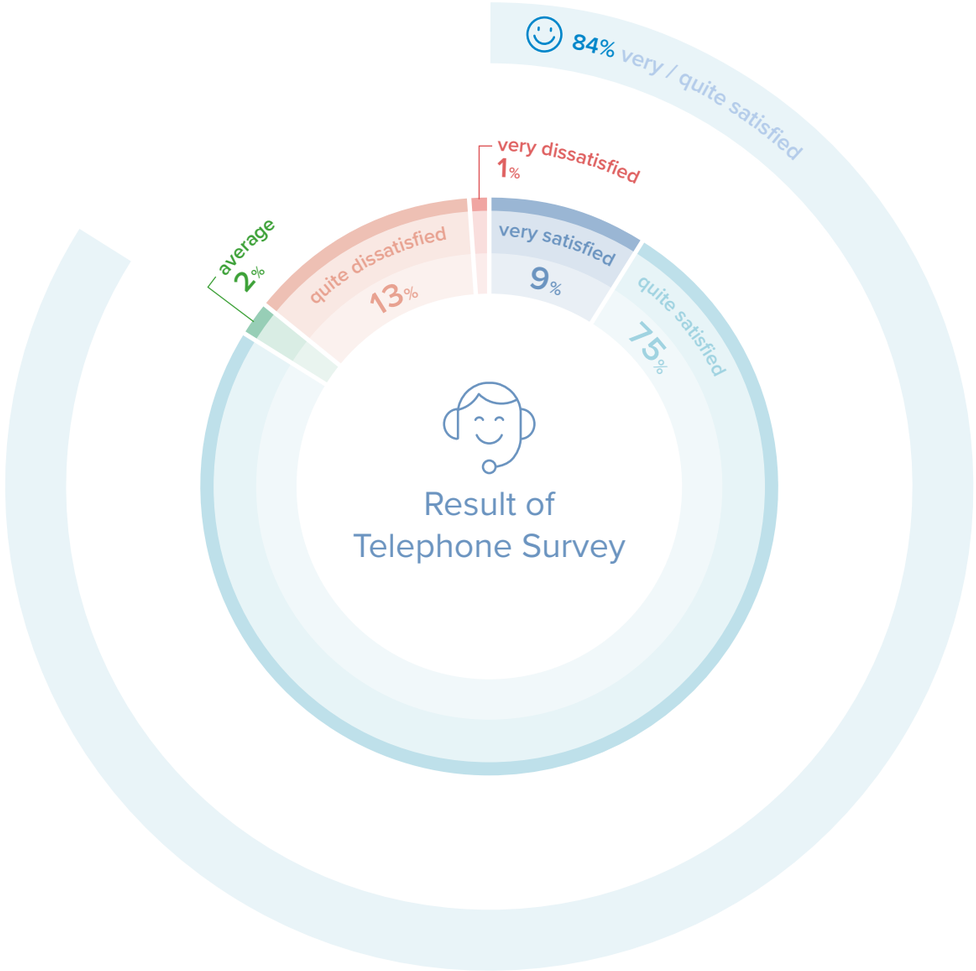
The General Public

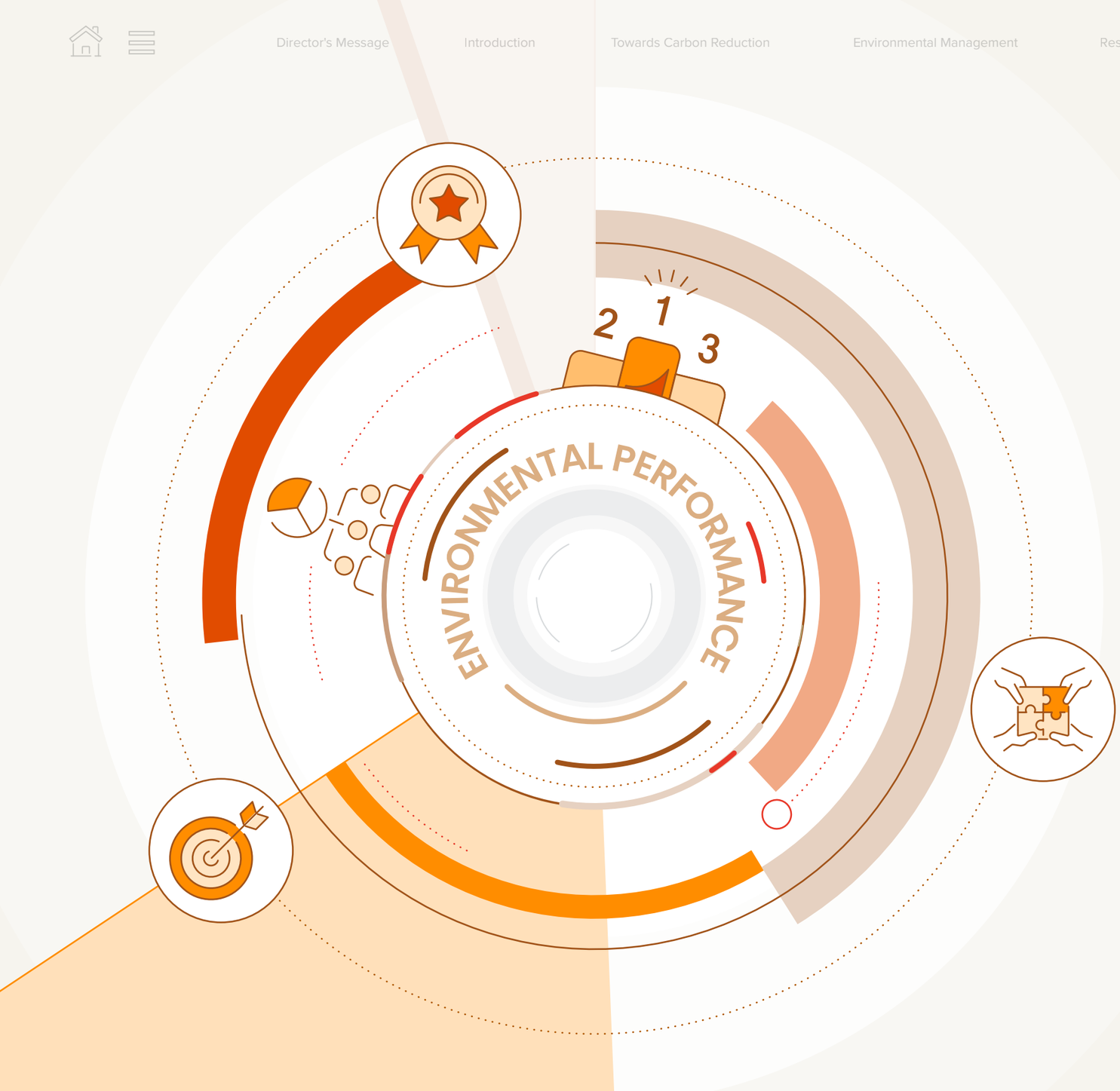
Customer Satisfaction Measurement 2023

To continually improve our services and develop effective communication strategies with the public, we regularly conduct a biannual customer satisfaction measurement exercise. This includes telephone surveys and customer liaison group discussions to assess the public satisfaction on the services offered by the Highways Department.

The latest exercise was conducted in late 2023 to keep track of the public's perception on our services performance and to identify areas for further improvement. The results of telephone survey were released in early 2024 which revealed that the overall public satisfaction continued to maintain at a high level. About 84% of the respondents claimed that they were satisfied with the overall performance of our department. As another important part of this exercise, we organized several customer liaison group discussions to gather qualitative feedback on our service pledges. This open and interactive platform allowed members of the public to share their detailed opinions on our pledge items, helping us to gain a better understanding of their expectations on our performance.

The results of this exercise allow us to conduct a comprehensive evaluation of our performance, and determine suitable measures to improve our services and performance in order to meet the ever-rising public expectation.





ENVIRONMENTAL PERFORMANCE

Awards

Environmental Awards and Recognition

1 Hong Kong Awards for Environmental Excellence 2022

Merit Award

3 CIC Sustainable Construction Award

Bronze Award, Merit Award x2

5 Considerate Contractors Site Award (CCSA)

Silver Award, Merit Award x4

4 Outstanding Environmental Management and Performance Award (OEMPA)

Silver Award, Bronze Award, Merit Award x2

6 The Hong Kong Green Organisation Certification Scheme

Wastewi$e Certificate

Excellent Level, Good Level x2

Energywi$e Certificate

Excellent Level, Good Level x2

1 Hong Kong Green Awards 2023

Bronze Award

2 UNSDG Achievement Awards Hong Kong

Recognised Project x2

Hong Kong Awards for Environmental Excellence 2022

We are glad to announce that our Department has been awarded the Certificate of Merit in Public and Community Services Sector under the Hong Kong Awards for Environmental Excellence (HKAEE) 2022. This esteemed award, organized by the Environmental Campaign Committee and the Environment and Ecology Bureau, and in conjunction with other nine local organizations, recognizes the achievements of the companies and organizations with outstanding performance in environmental management and sustainability practices.

We have all along been exploring and implementing various environmental initiatives in our public works projects and routine maintenance works for achieving sustainable development, such as LED replacement programme for the public lighting system, adopting innovative air purification system for tunnel ventilation system, recycling and upcucling of felled trees, etc. All these environmental initiatives have demonstrated our strong commitment to enhance community well-being while attaining sustainability.

Receiving the award is indeed a recognition for our ongoing efforts and commitment to environmental excellence. We are dedicated to continuing these initiatives and exploring new ways to contribute to the community development and the environment, pursuing a sustainable future for Hong Kong.

Awards

CIC Sustainable Construction Award

Construction Industry Council (CIC) introduced its first Sustainable Construction Award in 2018 and this award acknowledges exemplary sustainability practices among organizations and professionals, particularly focusing on the younger generation in the construction industry. In CIC Sustainable Construction Award 2023, the Highways Department received a Bronze Award and a Merit Award under the Project Owner (Public Sector) category for the innovative inclined lift system at Wo Tong Tsui Street and the Central Kowloon Route project respectively. Our contractor of Contract No. HY/2014/20 also received a Merit Award under the Contractor in New Works category.

Bronze Award - Project Owner (Public Sector)
Highways Department
by the Construction Industry Council

Merit Award - Project Owner (Public Sector)
Major Works Project Management Office, Highways Department
by the Construction Industry Council

Merit Award - Contractor in New Works
Build King - SK ecoplant Joint Venture
by the Construction Industry Council
Contract No. HY/2014/20

Awards

Considerate Contractors Site Award (CCSA) and Outstanding Environmental Management and Performance Award (OEMPA)

As always, we have actively engaged in promoting construction site safety and environmental management practices through our participation in various campaigns, including the CCSA scheme. It was jointly organized by the Development Bureau and Construction Industry Council to recognize construction sites with good site safety and environmental performance, as well as considerate attitude towards the neighborhood and the public.

In 2023/24, our construction contracts received five CCSA and four OEMPA awards, including one Silver and four Merit Prizes from CCSA, and one Silver, one Bronze and two Merit Prizes from OEMPA. Furthermore, two of our subcontractors received the Model Subcontractor Award, including one Bronze and one Merit Prizes.

Winner of CCSA (New Works) Silver Prize and OEMPA Silver Prize

Contract No. HY/2020/07
"Widening of Castle Peak Road between Kwun Tsing Road and Hoi Wing Road"

Winner of CCSA (New Works) Merit Prize and OEMPA Bronze Prize

Contract No. HY/2019/13
"Central Kowloon Route – Buildings, Electrical and Mechanical Works"

Winner of CCSA (New Works) Merit Prize and OEMPA Merit Prize

Contract No. HY/2018/02
"Central Kowloon Route – Kai Tak East"

Winner of CCSA (New Works) Merit Prize and OEMPA Merit Prize

Contract No. HY/2020/09
"Provision of Universal Accessibility Facilities at Footbridges, Elevated Walkways and Subways – Package 4 Contract 2"

Winner of CCSA (Repair, Maintenance, Alteration and Addition) Merit Prize

Contract No. 05/HY/2018
"Management and Maintenance of Expressways and High Speed Roads in New Territories, Kowloon East and Hong Kong Island 2019 – 2025"

Awards

OEMPA Silver Award

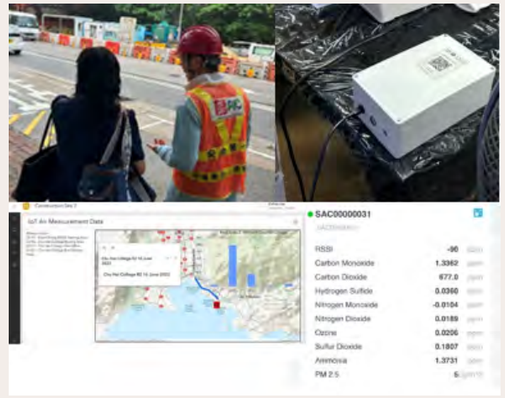
OEMPA Silver Award was granted to Contract No. HY/2020/07 for its excellent environmental performance. The contractor, in corporation with Hong Kong Chu Hai College, introduced an Internet of Things (IOT) air quality sensor to monitor the air quality nearby the construction site. In addition, movable noise enclosure was erected for road breaking works which could reduce the noise level by up to 20dB(A). To achieve sustainable development, solar powered LED light and electric vehicle were used to reduce carbon emissions. In addition, yard waste was delivered to Y·Park to promote recycling into useful materials. Moreover, recyclable items such as expired helmets was sent to GREEN@COMMUNITY (「綠在區區」) to reduce disposal at landfill.

Solar powered LED

Electric vehicle

Movable noise enclosure

Internet of Things (IOT) air quality sensor



Awards

Environmental Promotion Campaign on Construction Site

We collaborate closely with our contractors to consistently enhance our environmental performance at project sites. We also encourage them to engage in a variety of environmental promotion campaigns and activities, such as the Hong Kong Green Organization Certification, Hong Kong Green Awards and United Nations Sustainable Development Goals (UNSDG) Achievement Awards Hong Kong.

The Hong Kong Green Organization Certification Scheme

The Hong Kong Green Organization Certification scheme motivates its members to pursue continuous improvement in particular environmental areas. The scheme includes two types of Environmental Labels, namely, Wastewi$e and Energywi$e Labels, which are granted to well-performing contractors in recognition of their efforts to reduce waste and save energy. In 2023/24, Contract Nos. HY/2018/08 and HY/2020/07 attained the Excellent Level and 07/HY/2021 attained the Good Level in Wastewi$e Label. For Energywi$e Label, Contract Nos. HY/2018/08 and HY/2020/07 attained the Excellent Level and 05/HY/2017 attained the Good Level.

Wastewi$e Certificate

by the Hong Kong Green Organisation Certification scheme

Excellent Level
HY/2018/08

Excellent Level
HY/2020/07

Good Level
07/HY/2021

Energywi$e Certificate

by the Hong Kong Green Organisation Certification scheme

Excellent Level
HY/2018/08

Excellent Level
HY/2020/07

Good Level
05/HY/2017

Awards

Hong Kong Green Awards 2023

The Hong Kong Green Awards, organized by the Green Council, is another prestigious environmental award in the construction industry, that acknowledges companies demonstrating outstanding achievements in green management and sustainable procurement. In Hong Kong Green Awards 2023, our Contract No. HY/2021/06 was granted Bronze Award in the category of Environmental, Health and Safety Award (Large Corporation).

Bronze Award
Environmental, Health and Safety Award (Large Corporation)
by the Green Council
Contract No. HY/2021/06

UNSDG Achievement Awards Hong Kong

United Nations Sustainable Development Group (UNSDG) Achievement Awards Hong Kong

The UNSDG Achievement Awards Hong Kong is also organized by the Green Council, which recognizes organizations with exceptional performance on their business practices and sustainability projects that meet UNSDGs. Our Contract Nos. HY/2014/20 and HY/2020/07 were awarded as the Recognized Projects under UNSDG Achievement Awards Hong Kong 2023.

Recognised Project
UNSDG Achievement Awards 2023
by the Green Council
Contract No. HY/2014/20

Recognised Project
UNSDG Achievement Awards 2023
by the Green Council
Contract No. HY/2020/07

Environmental Objectives and Targets

Achievement in 2023/24

1.4.2023 – 31.3.2024

Objective	Target	Achievement (as at 31.3.2024)
Reducing the energy consumption in public lighting	To replace 14,000 lighting points with LED lights.	Replaced 23,200 lighting points with LED lights.
Saving electricity consumption in HyD Offices	To continue implementing housekeeping measures and best practices for energy saving.	Housekeeping measures and best practices for energy saving are being continuously implemented. Comparing with the baseline in 2018/19, electricity consumption of HyD offices in 2023/24 has achieved the saving target. The electricity consumption will be monitored closely with a view to achieving the 6% saving target by 2024/25.
Adopting measures in water conservation	To continue implementing measures in water conservation and exploring the appropriate installation of latest water saving devices in HyD offices.	Measures in water conservation are being adopted continuously.
Improving indoor air quality	To continue up-keeping the indoor air quality at or above Good Class level in HyD offices.	HyD offices' air quality attained the Excellent Class or Good Class.
Carrying out carbon audit and implementing measures to reduce greenhouse gas emission	To continue carrying out carbon audit annually. To explore energy conservation opportunities by identifying our major emission source from the carbon audit result.	Carbon audit was arranged by the Building Management Office of Ho Man Tin Government Offices in 2023/24.
Encouraging the use of recycled paper	To upkeep percentage usage of recycled paper at 98% or above of the total paper consumption.	All consumed papers were recycled paper.
Setting target in reducing photocopying paper consumption	To maintain the consumption of photocopying paper per staff member at a level not exceeding the consumption level of 2022/23.	The consumption of photocopying paper per staff member in 2023/24 was lower than the consumption level of 2022/23.
Promoting the wider use of recycled materials	To use paving blocks containing recycled glass materials for at least 98% of the newly laid concrete paving block pavements.	All of the newly laid paving block pavements used paving blocks containing recycled glass materials.
Reducing dust emission	To include a particular specification clause for dust emission reduction in all capital works contracts of MWPMO to be tendered during the year of 2023/24.	All 6 capital works contracts tendered in 2023/24 have included the dust emission reduction particular specification clause.

Environmental Objectives and Targets

Achievement in 2023/24

1.4.2023 – 31.3.2024

Objective	Target	Achievement (as at 31.3.2024)
Adopting site office equipment with energy saving labels and water efficiency labels	To include particular specification clauses for using site office equipment with energy saving labels and water consuming appliances with WSD water efficiency labels in all the Engineer's site offices (excluding those using existing premises) of capital works contracts of MWPMO to be tendered during the year of 2023/24.	All 3 applicable capital works contracts tendered in 2023/24 have included the particular specification clauses for using site office equipment with energy saving labels and water consuming appliances with WSD water efficiency labels.
Using environment-friendly vehicles in capital works projects	To procure at least two electric or hybrid electric vehicles of approved types under each capital works contract of MWPMO to be tendered during the year of 2023/24.	All 5 applicable capital works contracts tendered in 2023/24 have procured at least two electric or hybrid electric vehicles of approved types.
Adopting energy efficient features and renewable energy technologies	In all capital works consultancy agreements of MWPMO for which invitation to submit Technical and Fee Proposals during the year of 2023/24 to include requirements for the consultants: (i) to identify opportunities to utilize energy efficient features and renewable energy technologies; and (ii) to assess carbon footprint of the road work project during design stage with carbon assessment tool, such as "CIC Carbon Assessment Tool", and to provide recommendations on measures to reducing carbon footprint.	All 3 consultancy agreements tendered in 2023/24 have included the requirements (i) and (ii).
Green roof and/or green wall at the Engineer's site office	To include a particular specification clause for construction of green roof and/or green wall in all capital works contracts of MWPMO to be tendered during the year of 2023/24 with the Engineer's site office (excluding those using existing premises) exposed in sunlight.	All 2 applicable capital works contracts tendered in 2023/24 have included the particular specification clause for construction of green roof and/or green wall.
Promoting the use of renewable energy on highway structures	To install photovoltaic panels on existing and new highway structures.	PV panels have been installed on selected existing and new highway structures.
Encouraging the use of electric-powered plants/equipment in construction sites in capital works contracts	To use electric-powered plants/equipment in construction sites in capital works contracts of MWPMO and Works Division.	10 applicable capital works contracts have used electric-powered plants/equipment in construction sites.

Environmental Objectives and Targets

Looking Ahead
for 2024/25

1.4.2024 - 31.3.2025

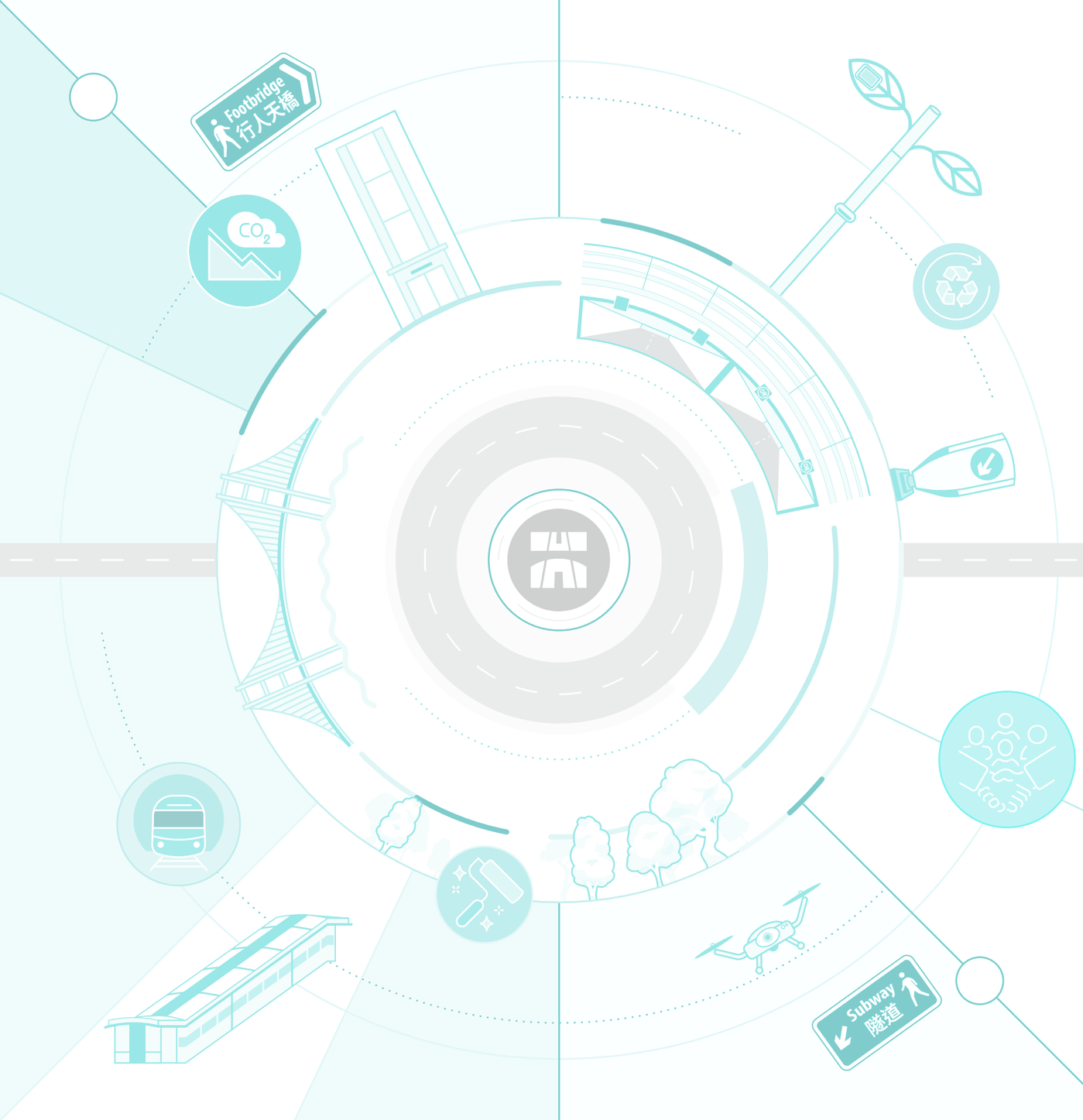
Objective	Target
Reducing the energy consumption in public lighting	To replace 14,000 lighting points with LED lights.
Saving electricity consumption in HyD Offices	To continue implementing housekeeping measures and best practices for energy saving and to achieve the 6% saving target comparing with the baseline in 2018/19.
Adopting measures in water conservation	To continue implementing measures in water conservation and exploring the appropriate installation of latest water saving devices in HyD offices.
Improving indoor air quality	To continue upkeeping the indoor air quality at or above the Good Class level in HyD offices.
Carrying out carbon audit and implementing measures to reduce greenhouse gas emission	To continue carrying out carbon audit annually. To explore energy conservation opportunities by identifying our major emission source from the carbon audit result.
Encouraging the use of recycled paper in the Department	To upkeep percentage usage of recycled paper at 98% or above of the total paper consumption.
Setting target in reducing photocopying paper consumption	To maintain the consumption of photocopying paper per staff member at a level not exceeding the consumption level of 2023/24.
Promoting the wider use of recycled materials	To use paving blocks containing recycled glass materials for at least 98% of the newly laid concrete paving block pavements.
Reducing dust emission	To include a particular specification clause for dust emission reduction in capital works contracts to be tendered in 2024/25.

Environmental Objectives and Targets

Looking Ahead
for 2024/25

1.4.2024 - 31.3.2025

Objective	Target
Adopting site office equipment with energy saving labels and water efficiency labels	To include particular specification clauses for using site office equipment with energy saving labels and water consuming appliances with WSD water efficiency labels in site offices (excluding those using existing premises) of capital works contracts to be tendered in 2024/25.
Using environment-friendly vehicles in capital works projects	To procure at least two electric or hybrid electric vehicles of approved types under capital works contracts to be tendered in 2024/25.
Adopting energy efficient features and renewable energy technologies	In capital works consultancy agreements for which invitation to submit Technical and Fee Proposals in 2024/25 to include requirements for the consultants: (i) To identify opportunities to utilize energy efficient features and renewable energy technologies; and (ii) To assess carbon footprint of the road work project during design stage with carbon assessment tool, such as "CIC Carbon Assessment Tool", and to provide recommendations on measures to reducing carbon footprint.
Green roof and/or green wall at the Engineer's site office	To include a particular specification clause for construction of green roof and/or green wall in capital works contracts to be tendered in 2024/25 with site office (excluding those using existing premises) exposed in sunlight.
Promoting the use of renewable energy on highway structures	To install photovoltaic panels on suitable existing highway structures.
Encouraging the use of electric-powered plants/equipment in construction sites in capital works contracts	To use electric-powered plants/equipment in construction sites in capital works contracts.



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