

Development of Lok Ma Chau Loop – Eastern Connection Road

Project Profile

(Prepared in accordance with Technical Memorandum on
Environmental Impact Assessment Process)

February 2024

Contents

1	Basic Information	1
1.1	Project Title	1
1.2	Purpose and Nature of Project	1
1.3	Name of Project Proponent	2
1.4	Location and Scale of Project and History of the Site	3
1.5	Number and Types of Designated Projects to be Covered by the Project Profile.....	3
1.6	Name and Telephone Number of Contact Person	4
2	Outline of Planning and Implementation Programme.....	5
2.1	Project Planning and Implementation	5
2.2	Project Timetable	5
2.3	Interactions with Other Projects.....	5
3	Possible Impacts on the Environment.....	7
3.1	Air Quality	7
3.2	Noise	7
3.3	Water Quality	8
3.4	Waste Management	8
3.5	Ecology	9
3.6	Cultural Heritage.....	10
3.7	Land Contamination.....	11
3.8	Landscape and Visual.....	11
3.9	Fisheries	12
4	Major Elements of the Surrounding Environment.....	13
4.1	Air Quality	13
4.2	Noise	13
4.3	Water Quality	13
4.4	Waste Management	14
4.5	Ecology	14
4.6	Cultural Heritage.....	15
4.7	Land Contamination.....	15

4.8	Landscape and Visual.....	15
4.9	Fisheries	16
5	Environmental Protection Measures to be Incorporated in the Design and any Further Environmental Implications.....	17
5.1	General	17
5.2	Air Quality	17
5.3	Noise	18
5.4	Water Quality	19
5.5	Waste Management	21
5.6	Ecology	22
5.7	Cultural Heritage.....	23
5.8	Land Contamination.....	23
5.9	Landscape and Visual.....	24
5.10	Fisheries	26
5.11	Further Implication	26
5.12	Severity, Distribution and Duration of Environmental Effects and Further Implications.....	26
6	Use of Previously Approved EIA Reports.....	27
6.1	Existing Available Data.....	27
6.2	Other References.....	27

Drawing

Drawing No.	Title
WDOTW-Z0127	Development of Lok Ma Chau Loop – Eastern Connection Road

Table

Table No.	Title
Table 6.1	Previously Approved EIA Reports Relevant to the Project

1 Basic Information

1.1 Project Title

- 1.1.1 Development of Lok Ma Chau Loop – Eastern Connection Road (hereinafter referred to as “the Project”)

1.2 Purpose and Nature of Project

- 1.2.1 The development of the Lok Ma Chau Loop (the Loop) was one of the ten major infrastructure projects for economic growth in Hong Kong announced in the 2007-08 Policy Address. In March 2008, the “Hong Kong-Shenzhen Joint Task Force on Boundary District Development” under the “Hong Kong/Shenzhen Co-operation Meeting” agreed to conduct a joint comprehensive study on the development of the Loop. A Planning and Engineering Study jointly undertaken by the HKSAR Government and Shenzhen Municipal People’s Government (SZMG) commenced in 2009 and completed in 2013.
- 1.2.2 In January 2017, the “Memorandum of Understanding on Jointly Developing the Lok Ma Chau Loop by Hong Kong and Shenzhen” (the MOU) was signed by the HKSAR Government and the SZMG, agreeing to jointly develop the Loop as the Hong Kong-Shenzhen Innovation and Technology Park (the Park), setting up a key base for scientific research, as well as relevant higher education, cultural and creative industries and other complementary facilities.
- 1.2.3 According to the MOU, the HKSAR Government is responsible for the construction of the infrastructure within the Loop (including site formation and infrastructural facilities) and the provision of supporting infrastructural facilities outside the Loop which are necessary to the development of the Loop and its surrounding areas. The Park will be developed in two phases. On 8 January 2021, the Finance Committee of the Legislative Council approved funding for Public Works Programme Item No. 7856CL “Development of Lok Ma Chau Loop – Main Works Package 1 (MWP1) – site formation and infrastructure works”. The site formation and construction of infrastructure works under MWP1 commenced in July 2021. The first batch of land parcels for building works of the Park was

handed over to the Hong Kong Shenzhen Innovation and Technology Park Limited (HSITPL) in December 2021.

- 1.2.4 MWP1 covered the site formation and infrastructure works for substantial part of the Loop, including site formation for the entire Park, major carriageways/footpaths/cycle tracks within the Park and those connecting to the areas on the west and southwest, etc. The project of Development of Lok Ma Chau Loop – Main Works Package 2 is needed for the provision of the remaining infrastructure and facilities to support Phase 2 development of the Park and strengthening the external transport link of the Park.
- 1.2.5 The Central Government promulgated in August 2023 the “Development Plan for Shenzhen Park of Hetao Shenzhen-Hong Kong Science and Technology Innovation Co-operation Zone”, setting out the development positioning of the Shenzhen Park. The Chief Executive has set out in the 2023 Policy Address that the HKSAR Government will render its full support and work with the Shenzhen Municipal Government to foster the synergistic development of the Hong Kong Park (i.e. the Park hereinbefore) and the Shenzhen Park. The Hong Kong Park will be developed in two phases from west to east. The preliminary planning for its first phase has been completed. The HSITPL will commence relevant planning works of the Phase 2 development.
- 1.2.6 To strengthen the external transport links of the Park, it is proposed to construct a link road between the eastern part of the Park and the Kwu Tung North New Development Area (KTN NDA) via the Ma Tso Lung area. The Project is also considered necessary for supporting Phase 2 development of the Park from traffic point of view.
- 1.2.7 A consultant is engaged to undertake the investigation and design on the Project. The consultancy commenced in December 2023 for completion within a study period of around 3 years. Outline implementation programme will be formulated under the consultancy.

1.3 Name of Project Proponent

- 1.3.1 West Development Office (WDO), Civil Engineering and Development Department (CEDD) of the Government of the Hong Kong Special Administrative Region.

1.4 Location and Scale of Project and History of the Site

1.4.1 The Project includes construction of connection roads, connecting the eastern part of the Loop to the KTN NDA. The layout of the Project is presented at Drawing No. WDOTW-Z0127. The alignment of connection roads would be subject to further investigation and design.

1.4.2 The works of the Project include site formation, construction of roads and bridges, slope works and associated temporary works, and the works area covered is hereinafter referred to as “Project Site”. The scope and details of the infrastructure works would be subject to further investigation and design.

1.5 Number and Types of Designated Projects to be Covered by the Project Profile

1.5.1 The Project is classified as a Designated Project under the following categories under Part I, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO):

- *Item A.9 – A carriageway for motor vehicle fully enclosed by decking above and by structure on the sides for more than 100 m.*
- *Item I.1 – A drainage channel or river training and diversion works - (b) located less than 300m from the nearest boundary of an existing or planned - (vii) conservation area, i.e. temporary diversion/contraction of the old meander of Shenzhen River.*
- *Item Q.1 – All projects involving earthworks, dredging works and other building works partly or wholly in an existing or gazetted proposed country park or special area, a conservation area, an existing or gazetted proposed marine park or marine reserve, a site of cultural heritage, and a site of special scientific interest, except for items (a) to (o) under item Q.1.*

1.6 Name and Telephone Number of Contact Person

1.6.1 All enquiries regarding the Project can be addressed to:

Mr K C LEE (Chief Engineer / West 5)
West Development Office
Civil Engineering and Development Department
26/F, Tsuen Wan Government Offices
38 Sai Lau Kok Road
Tsuen Wan, New Territories
Tel.: 2417 6333
Fax: 2412 0358

2 Outline of Planning and Implementation Programme

2.1 Project Planning and Implementation

- 2.1.1 The Project Proponent (WDO of CEDD) or other parties will be responsible for implementing the proposed works, together with all the environmental mitigation measures, the environmental monitoring and audit requirements as specified in the approved Environmental Impact Assessment (EIA) Report of this Project.
- 2.1.2 The consultant employed by CEDD are responsible for undertaking the EIA study according to the Study Brief to be issued by the Director of Environmental Protection and responding on behalf of the Project Proponent on issues related to the EIA.
- 2.1.3 The construction works of the Eastern Connection Road (ECR) will be carried out by appointed contractors under various works contracts.

2.2 Project Timetable

- 2.2.1 The consultancy commenced in December 2023 for completion within a study period of around 3 years. Outline implementation programme will be formulated under the consultancy.

2.3 Interactions with Other Projects

- 2.3.1 The Project may have interactions with the following projects. The projects listed below should be reviewed during the EIA study to ensure all the latest projects available from the respective stakeholders are incorporated. Any cumulative impacts from these projects during both the construction and operation phases of the Project will be identified and addressed as appropriate.

- (a) Development of Lok Ma Chau Loop – Main Works Package 1;
- (b) Development of Hong Kong-Shenzhen Innovation and Technology Park at the Loop;

- (c) Cross-boundary Footbridge(s) in the Loop;
- (d) Kwu Tung North and Fanling North NDA;
- (e) The Northern Link and the proposed Northern Link Spur Line;
- (f) Development of San Tin Technopole;
- (g) Study on Ma Tso Lung Area and Other Sites in KTN NDA; and
- (h) Strategic Feasibility Study on the Development of Wetland Conservation Parks System under the Northern Metropolis Development Strategy.

3 Possible Impacts on the Environment

3.1 Air Quality

Construction Phase

3.1.1 The potential major source of air quality impact to the air sensitive receivers (ASRs) during construction phase of the Project would be the dust emissions generated from various construction activities including site formation, bridge, depressed road and underpass construction, slope works, as well as exhaust emissions from construction machinery and movement of construction traffic on unpaved haul roads. The potential odour impact associated with the temporary diversion/contraction of the old meander of Shenzhen River, if any, will also be reviewed and addressed in the EIA study.

Operation Phase

3.1.2 During the operation phase, major air pollution sources would be the vehicular emissions (i.e., Nitrogen Dioxide (NO₂), Respirable Suspended Particulates (RSP) and Fine Suspended Particulates (FSP)) induced by the Project, including the proposed road network, underpass and ventilation shaft (if any). In addition to vehicular emissions arising from the Project, cumulative air quality impact would be taken into account of the background concentration, the existing and planned road networks as well as industrial emissions, if any, within 500m of the site boundary.

3.2 Noise

Construction Phase

3.2.1 Potential noise impact on noise sensitive receivers (NSRs) during the construction phase would be associated with the use of Powered Mechanical Equipment (PME) for site formation, bridge, depressed road and underpass construction, as well as slope works.

Operation Phase

3.2.2 During operation phase, the major source of noise impact to the NSRs would be associated with the road traffic noise from both the existing and planned road networks. Additionally, noise emitted from the ventilation shaft for the underpass, if any, would affect both the existing and planned NSRs in the vicinity.

3.3 Water Quality

Construction Phase

3.3.1 The Project will involve various construction activities undertaken at various stages. The construction activities, which will likely have impact on water quality, include site formation, bridge, depressed road and underpass construction and slope works.

3.3.2 Potential impacts to water quality are due to discharge of surface run-off carrying suspended solids, fuel or soil spill from construction plants and wastewater generated from construction sites. Dredging works will be avoided or minimised. Should dredging works be required, assessment of the sediments in compliance with the Dumping at Sea Ordinance will be needed. The potential water quality impacts on the adjacent fishponds, water bodies and the old meander of Shenzhen River will need to be addressed.

Operation Phase

3.3.3 During the operation phase, potential water quality impact will be related to non-point source pollutants of stormwater surface run-off from the ECR.

3.4 Waste Management

Construction Phase

3.4.1 Potential wastes generated from construction activities will largely consist of Construction and Demolition (C&D) materials, chemical waste, general refuse. The quantities of wastes to be generated during construction largely depend on the programmes of various works packages requiring off-site disposal. Waste management on reuse and recycle of C&D materials will help in reducing quantities of wastes generated.

Operation Phase

3.4.2 During the operation phase, small amount of general refuse and chemical waste may arise from road maintenance.

3.5 Ecology

3.5.1 Part of the Project Site runs across the meander formed by the old meander of Shenzhen River and fishponds/wetlands of ecological significance. Furthermore, the strip of wetland sandwiched between the Loop and Lok Ma Chau, may serve as one key link between Hoo Hok Wai and Mai Po/San Tin wetlands for birds and other wildlife. The surrounding area is predominantly flat land with grasses and shrubs comprising mostly wetland, natural landscape, hilly terrain, woodland, agricultural land and fishponds.

3.5.2 Part of the Project Site at Ma Tso Lung locates near the fish ponds at the southern part of Hoo Hok Wai wetland. The surrounding area is predominantly flat land with grasses and shrubs comprising mostly wetland, natural landscape, hilly terrain, woodland, agricultural land and fishponds.

3.5.3 The potential ecological impact arising from the Project will be:

Construction Phase

- (i) Direct loss of habitats (such as fishponds, wetland and riparian habitats) and the associated flora and fauna resulting from land take for the ECR;
- (ii) Direct loss of inactive/less mobile/habitat-specific wildlife nesting/inhabiting in the affected area;
- (iii) Direct impacts to old meander of Shenzhen River courses as a result of construction discharge;
- (iv) Impacts to the surrounding habitats and associated wildlife due to physical disturbance of the habitats, increased human activities, changes in sediment dynamics and water quality, inappropriate storage or dumping of construction material and fire;
- (v) Impacts due to light, noise and vibration and impacts to the hydrology (e.g. ground water drawdown, dewatering of surface features, settlement of surface wetland etc.) of the wetland habitats in the vicinity; and
- (vi) Impacts to wildlife as a result of isolation and fragmentation of ecological habitats.

Operation Phase

- (i) Impacts to the surrounding habitats, water birds, bird flight-line and associated wildlife, due to increased human activities/disturbance, changes in sediment dynamics and water quality associated with the operation of the proposed project and associated infrastructure; and
- (ii) Impacts due to light, noise and impacts to the hydrology (e.g. ground water drawdown, dewatering of surface features, settlement of surface wetland etc.) of the wetland habitats in the vicinity.

3.5.4 Ecological impact assessment will be carried out in the EIA study to review and address the possible direct and indirect ecological impacts on the environment due to the implementation of the Project.

3.6 Cultural Heritage

3.6.1 The cultural and heritage impact may arise from the following:

- (i) Land take for both temporary and permanent facilities which may result in damage to, or loss of, archaeological remains and deposits, culturally significant features and changes to the physical coherence of historic landscape; and
- (ii) Construction works may result in damage to or loss of buried archaeological sites by:
 - disturbance through excavation at or near an archaeological site, topsoil stripping and the passage of heavy machinery on exposed and buried deposits;
 - change in the water table due to construction and development activities;
 - the burial of sites resulting in limitation on accessibility for future archaeological investigations (including surface survey and remote sensing techniques) and obscuring visible surface evidence;

- ground compaction due to construction activities or the weight of permanent filled materials may cause damage or distortion to buried archaeological remains, especially in soft alluvial deposits; and
- indirect impacts such as visual, vibration and noise intrusion on the setting and amenity of historic and cultural resources (e.g. grave sites and monuments and culturally or historically significant landscape features).

3.7 Land Contamination

3.7.1 While there are no extensive areas of contaminated land such as landfills in the Project Site, there is potential for the presence of residues from brownfield land uses such as open storage to create an adverse impact that will need to be cleaned up during the site formation phase.

3.7.2 The contaminated land impacts are likely to be related to the following:

- (i) Health risks to site workers;
- (ii) Disposal of contaminated soils, where encountered; and
- (iii) Potential health risks to future users of the Project Site.

3.8 Landscape and Visual

3.8.1 The potential landscape and visual impacts arising from the Project may be as follows:

Construction Phase

- (i) Loss of landscape elements, e.g. fish-ponds, wetlands, shrubland, trees, natural stream course and natural topography;
- (ii) Loss of visual amenity due to the removal of landscape elements, e.g. trees; and
- (iii) Visual intrusion as a result of construction, such as open works/excavation, stockpiling/storage of materials and temporary works.

Operation Phase

- (i) Loss of landscape elements, e.g. fish-ponds, wetlands, shrubland, trees, natural stream course and natural topography;
- (ii) Visual intrusion and obstruction created by the ECR; and
- (iii) Loss of visual amenity due to the removal of landscape elements, e.g. trees.

3.9 Fisheries

3.9.1 Potential impacts from the Project may arise from the following:

Construction Phase

- (i) Temporary or permanent loss of fish ponds or areas for fisheries operation;
- (ii) Impacts on pond bund stability and hydrology (e.g. water seepage, impact on supply of irrigation water);
- (iii) Blockage of access to fish ponds; and
- (iv) Deterioration of water quality or degradation of the environmental conditions of the fish ponds.

Operation Phase

- (i) Blockage of access to fish ponds; and
- (ii) Degradation/deterioration of environmental conditions of fish ponds due to induced-water quality impacts from sewage and run-off from the Project.

4 Major Elements of the Surrounding Environment

4.1 Air Quality

4.1.1 The site of the study area is situated within rural village and agriculture area without industrial developments. Emissions from roads are the major source affecting the air quality in the area. The existing air sensitive receivers in the vicinity are the nearby village houses, Government, Institution or Community (G/IC) facilities and the planned air sensitive receivers will be the future developments in the Loop, Ma Tso Lung area and KTN NDA. The air sensitive receivers listed above are not exhaustive and will be further reviewed during the EIA study.

4.1.2 The impacts brought from the listed concurrent projects as mentioned in Section 2.3.1 will be further reviewed during EIA study.

4.2 Noise

4.2.1 The site is rural in character, mainly with scattered village houses in the area. The background noise environment is generally tranquil except for noise from traffic on existing roads, and fixed noise sources in the Loop.

4.2.2 The existing and planned noise sensitive receivers in the vicinity include, but not limited to, nearby village houses and future developments in the Loop, Ma Tso Lung area and KTN NDA.

4.3 Water Quality

4.3.1 The site is within the Deep Bay Water Control Zone according to Water Pollution Control Ordinance. The existing sensitive receivers include the old meander of Shenzhen River, fishponds at Hoo Hok Wai and old meander of Shenzhen River, and natural streams at Ping Hang and Ma Tso Lung.

4.4 Waste Management

4.4.1 Domestic waste from village houses, agricultural waste and the construction works in the Loop are the major sources of solid waste. It is anticipated that the addition of solid waste by the operation of the ECR is minimal.

4.5 Ecology

4.5.1 The Project Site partly falls within fishponds and wetlands of ecological importance which are under various zonings including the “Conservation Area” (“CA”), “Conservation Area (1)” “CA(1)”, “Green Belt” (“GB”) and “Other Specified Uses “OU” annotated “Other Specified Uses (Ecological Area)” (“OU(EA)”) on the approved Lok Ma Chau Loop Outline Zoning Plan (OZP) No. S/LMCL/2, the approved San Tin OZP No. S/YL-ST/8 and the approved Ma Tso Lung and Hoo Hok Wai OZP No. S/NE-MTL/3.

4.5.2 Furthermore, the Project Site falls within or is located near Deep Bay Wetland Outside Ramsar Site, Wetland Conservation Area (WCA) or Wetland Buffer Area (WBA), and mitigation wetlands and woodland.

4.5.3 The strip of wetland sandwiched between the Loop and Lok Ma Chau, may serve as a key link between Hoo Hok Wai and Mai Po/San Tin wetlands for birds and other wildlife. Changes in environment, air quality, noise, hydrodynamics, water quality as well as human disturbance could result in direct or indirect impacts to the ecology of the area. Ecological impact assessment will address such impacts on habitats and associated wildlife due to the implementation of the Project.

4.5.4 Fishponds, wetlands and woodlands are in the vicinity of the Project Site in Ma Tso Lung. Any potential impacts on the above and any other ecological resources will be fully addressed under the EIA study. While the ECR will be subject to further investigation and design, the statutory planning restrictions under the respective OZPs in relation to the ECR alignment and the guidelines and criteria for development within the Wetland Conservation Area and Wetland Buffer Area under TPB Guidelines No. 12C, in which the ECR alignment will fall upon, will be followed.

4.6 Cultural Heritage

- 4.6.1 In the area of 200m from the Project Site, there is one Grade 2 historic buildings, namely MacIntosh Fort (Ma Tso Lung).
- 4.6.2 Cultural heritage impact assessment (CHIA) will be conducted under the EIA Study. The CHIA will include the archaeological impact assessment to review and identify the archaeological potential of the Project Site, assess the archaeological impacts of the proposed development and propose mitigation measures with reference to the above-mentioned archaeological survey and relevant EIA report.
- 4.6.3 Findings of the archaeological study for the proposed ECR under the approved EIA report (Register No. AEIAR-176/2013) for the Development of Lok Ma Chau Loop will be reviewed taking into account the updated site situation.

4.7 Land Contamination

- 4.7.1 The existing environment in the Project Site includes rural land uses such as agriculture and villages and may include brownfield land uses such as open storage. The main expected contaminants from the land uses in the Project Site are from by-products from the brownfield land uses, which may include loading, unloading and storage of goods, fuel storage and transfer, maintenance of equipment and vehicles. Land contamination assessment will be carried out under the EIA study to formulate appropriate contamination assessment plans and remediation action plans, if necessary.

4.8 Landscape and Visual

- 4.8.1 Landscape and visual impacts are likely to result from the ECR, including impacts on possible significant/higher sensitivity landscape resource along the Project Site falling within the Wetland Conservation Area and Wetland Buffer Area in the San Tin, Ma Tso Lung and Hoo Hok Wai areas, with possible higher sensitivity landscape resources such as natural streams, fishponds, agricultural lands, wetlands and woodlands.

4.9 Fisheries

- 4.9.1 Some of the fishponds within the “Conservation Area (1)” zone in Hoo Hok Wai under the approved Ma Tso Lung and Hoo Hok Wai OZP No. S/NE-MTL/3 might be affected by the ECR.
- 4.9.2 Fishery impact assessment shall be carried out in the EIA study. The impacts on the affected fish ponds would be assessed and appropriate mitigation measures would be identified to address any impacts on the affected fish ponds, if such encroachment by the ECR alignment is not avoidable.

5 Environmental Protection Measures to be Incorporated in the Design and any Further Environmental Implications

5.1 General

5.1.1 The EIA study will investigate those environmental impacts and propose the appropriate mitigation measures with the explicit intention that all proposals would be environmentally acceptable. The residual impacts, if any, would be confined within allowable limits. Environmental monitoring and auditing of potential impacts that may arise from the works of the Project would be provided for the construction and operational phases. Subject to the findings of the EIA study, mitigation measures will be incorporated in the design and construction of the Project.

5.2 Air Quality

Construction Phase

5.2.1 In order to prevent adverse impacts on air quality, the control measures stipulated in the Air Pollution Control (Construction Dust) Regulation should be implemented wherever applicable, to limit the dust emissions from the Project Site. Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and Air Pollution Control (Fuel Restriction) Regulation shall be followed to control the exhaust emissions from construction equipment. Mitigation measures, including but not limited to the following, will be considered:

- (i) stockpiles of dusty materials will not extend beyond site boundaries;
- (ii) in the process of material handling, any material which has the potential to create dust will be treated with water or sprayed with a wetting agent where practicable;
- (iii) any vehicle with an open load compartment used for transferring dusty materials off-site will be properly fitted with side and tail boards and cover;
- (iv) stockpiles of sand and aggregate will be enclosed on three sides and water sprays will be used to dampen stored materials and when receiving raw material;

- (v) the site will be frequently cleaned and watered to minimise fugitive dust emissions;
- (vi) motorised vehicles on site will be restricted to a maximum speed of 15 km/hr and shall be confined to designated haul roads which will be surfaced with hardcore; and
- (vii) to connect construction machinery to main electricity supply and avoid the use of diesel generators and diesel-powered machinery as far as practicable to minimise air quality impacts arising from the operation of construction machineries.

Operation Phase

5.2.2 The proposed mitigation measures to improve the air quality within the Project Site are to be considered as follows:

- (i) Vehicular emissions from open roads
 - provide adequate buffer distance, tree planting and dense shrub plantation, where appropriate, to separate the pedestrians and heavily trafficked roads; and
 - allow sufficient buffer distance from any nearby air sensitive receivers.
- (ii) Emissions from the underpasses
 - allow sufficient buffer distance of the portals and ventilation shaft, if any, from any nearby air sensitive receivers.

5.3 Noise

Construction Phase

5.3.1 In order to mitigate adverse noise impacts, the following mitigation measures will be considered:

- (i) Plant operated on site should be well-maintained and serviced regularly;
- (ii) Subject to the working constraints such as power supply, safety and obstruction of proposed works, mobile plant will be sited as far away from the nearby NSRs (such as residential developments, educational institutions, hospitals, clinics, elderly care centres and the like) as practicable;

- (iii) Noise activities will be planned and scheduled to be undertaken during appropriate time periods to minimise potential noise impacts at nearby NSRs;
- (iv) Materials stockpiles and other massive structures (such as temporary site offices) will be effectively utilised, where possible, to screen noise from construction activities;
- (v) Noisy plants or processes will be replaced by quieter alternatives where possible. Silencers or mufflers on construction equipment should be utilised and be properly maintained during the construction works;
- (vi) Quieter construction methods and quieter construction equipment shall be considered at early planning stage and shall be adopted during construction works where applicable (e.g. non-explosive chemical expansion agent to replace traditional excavator mounted breaker); and
- (vii) Where necessary, temporary and movable noise barriers and enclosures will be employed to minimise noise impact to NSRs.

Operation Phase

5.3.2 In planning and design of the Project, the separation distance between the sensitive land uses and major roads will be maximised as far as practicable so as to minimise the impacts from road traffic noise. Direct mitigation measures at source such as use of noise barriers/enclosures and open-textured (low noise) road surfacing should be adopted wherever practicable. The extent of direct mitigation measures required to alleviate the road traffic noise impact will be investigated in the EIA study.

5.4 Water Quality

Construction Phase

5.4.1 In order to prevent adverse impacts on water quality, the site practices outlined in ProPECC PN 2/23 “Construction Site Drainage” and “Recommended Pollution Control Clauses for Construction Contracts” issued by EPD should be followed as far as practicable as below:

- (i) Surface run-off from the construction sites will be directed into storm drains via adequately designed sand/silt removal facilities

- such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers will be provided on site to properly direct stormwater to such facilities;
- (ii) Silt removal facilities, channels and manholes will be maintained and the deposited silt and grit will be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times;
 - (iii) Open stockpiles of materials on site will be avoided or where unavoidable covered with tarpaulin or similar fabric during rainstorms. Measures will be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system;
 - (iv) Manholes (including any newly constructed ones) will always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;
 - (v) Where possible, works entailing soil excavation will be minimised during the rainy season (April to September);
 - (vi) Final earthworks surfaces will be well compacted and hydroseeding following completion to prevent erosion;
 - (vii) All vehicles and plant will be cleaned before they leave the construction site to ensure that no earth, sediments or debris is deposited by them on roads;
 - (viii) During construction works, adequate portable proper toilets will be provided for the use of site staff. These will be provided by a licensed contractor, who will be responsible for appropriate disposal and maintenance of the effluent;
 - (ix) All fuel tanks and chemical storage shall be sited on sealed areas and provided with locks. The storage areas shall be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled oil, fuel and chemicals from reaching the receiving waters. Drainage from oil filling points and any areas where fuels and lubricants are used will be connected to storm drains via a petrol interceptor; and
 - (x) Construction works at fish ponds should be conducted only after dewatering process. The drained water generated from the

dewatering of fish ponds should be temporarily stored in appropriate storage tanks or containers for reuse on-site as far as possible. Any surplus drained water should be tankered away for disposal at the sewage treatment works in a controlled manner. No direct discharge of drained water to the stormwater drainage system is allowed.

Operation Phase

- 5.4.2 During operation phase, proper drainage systems with sand/silt and oil/grease traps should be installed, maintained and cleaned at regular interval to minimize ingress of pollutants to the stormwater system.

5.5 Waste Management

Construction Phase

- 5.5.1 The following measures will be implemented to reduce the generation of waste and provide good control on waste management:

- (i) Use waste haulier authorised or licensed to collect specific category of waste;
- (ii) Waste haulier should obtain the necessary registration and licences under the Waste Disposal Ordinance and the Waste Disposal (Chemical Waste) (General) Regulation from the Environmental Protection Department;
- (iii) Nomination of an approved person, such as site manager, to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility, of all waste generated at the site;
- (iv) Separation of chemical wastes for special handling and appropriate treatment at a licensed facility;
- (v) A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites);
- (vi) In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills, and control fly-tipping, a trip-ticket system shall be implemented by the Contractor, in accordance with the contract and the requirements of DEVB TC(W) No. 6/2010

"Trip Ticket System for Disposal of Construction and Demolition Material";

- (vii) A Waste Management Plan (WMP) shall be prepared and this WMP shall be submitted to the Engineer for approval. The WMP will be in accordance with ETWB TC(W) No. 19/2005 "Environmental Management on Construction Sites";
- (viii) Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse of recycling of materials and their proper disposal;
- (ix) Any unused chemicals or those with remaining functional capacity shall be recycled;
- (x) Use of reusable non-timber formwork to reduce the amount of C&D material; and
- (xi) Proper storage and site practices to minimise the potential for damage or contamination of construction materials.

Operation Phase

5.5.2 As the Project is used for the road traffic, a small amount of waste generation is expected from maintenance works. As such, it is anticipated that waste impact in the operation of ECR would be minimal.

5.6 Ecology

5.6.1 The Project may cause changes to the ecological conditions of the area. In view of this, an ecological impact assessment shall be carried out to assess the impacts.

5.6.2 The mitigation measures that are to be implemented to address the impacts on air quality, noise and water quality may also help to address any ecological impacts identified under the Ecological Impact Assessment.

5.6.3 In order to preserve the ecological function of habitats, fauna or sites of ecological value, the following mitigation measures will be implemented subject to the recommendations of the ecological impact assessment:

- (i) Avoiding or minimising any direct impact/disturbance to any habitats and associated wildlife identified of ecological importance such as wetland as far as possible and compensating any

unavoidable habitat/wetland loss and disturbance of significant adverse ecological impact;

- (ii) Avoiding or minimising development activities with high levels of unpredictable noise near the sensitive area;
- (iii) Avoiding or minimising development activities with strong light and use of outdoor artificial lighting; and
- (iv) Careful planning of the construction programme to minimise disturbances to wildlife with seasonal pattern.

5.7 Cultural Heritage

5.7.1 Impacts to cultural heritage site should be avoided as far as practicable. Subject to the findings of the EIA study, appropriate mitigation measures should be proposed to minimise both of direct and indirect impacts, which should also be incorporated in the design for the construction and operation of the Project, where appropriate. In case impacts are unavoidable, mitigation measures to minimise the direct impact on standing heritage resources will be implemented. These measures include preserve the sites with cultural heritage interest by record (a full cartographic and photographic record before and during removal) before removal when preservation *in situ* is not possible.

5.7.2 Mitigation measures to avoid impact on archaeological deposits should be proposed according to the result of the CHIA, such as rescue excavation prior to the commencement of construction works, archaeological watching brief during construction to preserve the deposits by record or other measures.

5.7.3 Findings of the archaeological study for the proposed ECR under the approved EIA report (Register No. AEIAR-176/2013) for the Development of Lok Ma Chau Loop will be reviewed taking into account the updated site situation.

5.8 Land Contamination

5.8.1 Subject to the identification of any contaminated land, mitigation measures will be determined with reference to EPD's documents such as "Guidance

Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management”, “Guidance Note for Contaminated Land Assessment and Remediation”, and “Practice Guide for Investigation and Remediation of Contaminated Land” during the EIA study.

5.9 Landscape and Visual

Construction Phase

5.9.1 The following general mitigation measures will be implemented to alleviate the impacts in the construction stage:

- (i) Implementation of erosion control mechanisms during construction phase so that construction equipment, construction works and the landscape is protected if heavy rains occur;
- (ii) Measures should be taken to store and use construction equipment and building materials where they are not visually intrusive, or easily washed away or where they produce less dust;
- (iii) Damaged vegetation and trees, not ear-marked for removal, should be rectified, repaired or replaced, using the same species, size and form, to the original condition prior to the commencement of works;
- (iv) Minimisation of light pollution techniques to be implemented. This includes having more lights with focused beams rather than energy wasting, floodlighting which might impact on the nighttime character of the area;
- (v) Hydroseeding of slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character;
- (vi) Haul roads should be rehabilitated at the earliest opportunity for compatibility with their existing surrounding landscape or planned surrounding landscape;
- (vii) Protection and preservation of grassland mosaic. This will include screening off the grassland mosaic areas as no-go areas during the construction phase; and
- (viii) Preservation of trees, landscape treatment on affected fishponds and/or wetlands should be considered during the construction phase.

Operational Phase

5.9.2 The following general mitigation measures are to be considered for the operation stage:

- (i) A variety of woodland, shrubland-grassland screening vegetation should be used to soften the form of the proposed earthworks and integrate any components of designated projects into the existing landscape context;
- (ii) Protection and preservation of grassland mosaic. This will include building fire-safety precautions around burial sites and also building in erosion control measures where necessary, such as where visitor traffic volume would cause problems;
- (iii) Establishment of vegetation on slopes helps to integrate the artificial slopes into a more natural landscape;
- (iv) Establishment of trees as visual barrier is necessary at various locations. Evergreen trees and shrubs with a dense foliage should be used;
- (v) To minimise the visual impact of noise barriers, they should have a non-reflective finish. They should also be tinted and shaped for blending into the surrounding landscape;
- (vi) Colour, texture and shape of retaining walls should blend in with the character of the surrounding landscape;
- (vii) The form of all highway-associated structures that have a similar engineering function should be compatible with each other to avoid visual clutter;
- (viii) Compensatory/buffer/screen/roadside planting should be considered; and
- (ix) Landscape design for man-made slopes, retaining walls and natural terrain hazard mitigation works should be considered to mitigate permanent landscape impacts.

5.10 Fisheries

- 5.10.1 Good site practices for the control of construction site run-off shall be fully implemented to minimise impacts on water sources for fish ponds in the vicinity of the Project Site.
- 5.10.2 Impacts on the affected fish ponds should be assessed with appropriate mitigation measures to address any impact on the affected fish ponds.

5.11 Further Implication

- 5.11.1 Further environmental implications should be studied in details in the environmental impact assessment stage.

5.12 Severity, Distribution and Duration of Environmental Effects and Further Implications

- 5.12.1 Subject to the EIA findings, effective mitigation measures will be identified to ensure that the environmental impacts induced by the Project are acceptable. The severity, distribution and duration of environmental effects such as beneficial and adverse effects; short and long term effects; secondary and induced effects; and cumulative effects will be considered and addressed in the EIA, where applicable.

6 Use of Previously Approved EIA Reports

6.1 Existing Available Data

- 6.1.1 An EIA study brief No. ESB-238/2011, had been issued in December 2011 by the Director of Environmental Protection, covering the scope of ECR prepared under the Planning and Engineering Study referred in paragraph 1.2.1 of this Project Profile.
- 6.1.2 With a view on foreseeable variation on the planning circumstances and wider strategic infrastructure situation around the Loop development, the proposal of ECR was voluntarily excluded from the above EIA for the Development of Lok Ma Chau Loop, and was therefore not included as a Designated Project under the Environmental Permit No. EP-477/2013.
- 6.1.3 The approved EIA report (Register No. AEIAR-176/2013) for the Development of Lok Ma Chau Loop is considered relevant and would be referred to in the EIA study for Development of Lok Ma Chau Loop – Eastern Connection Road.

6.2 Other References

- 6.2.1 The previously approved EIA reports of projects that are of relevance to the Project are listed in **Table 6.1**.

Table 6.1 – Previously Approved EIA Reports Relevant to the Project

Register No.	Project Title	Date of Approval	Aspect of Relevance
AEIAR-176/2013	Development of Lok Ma Chau Loop	25 Oct 2013	<ul style="list-style-type: none">• Nature of the Project• Proximity in location
AEIAR-175/2013	North East New Territories New Development Areas	18 Oct 2013	<ul style="list-style-type: none">• Proximity in location

- End -

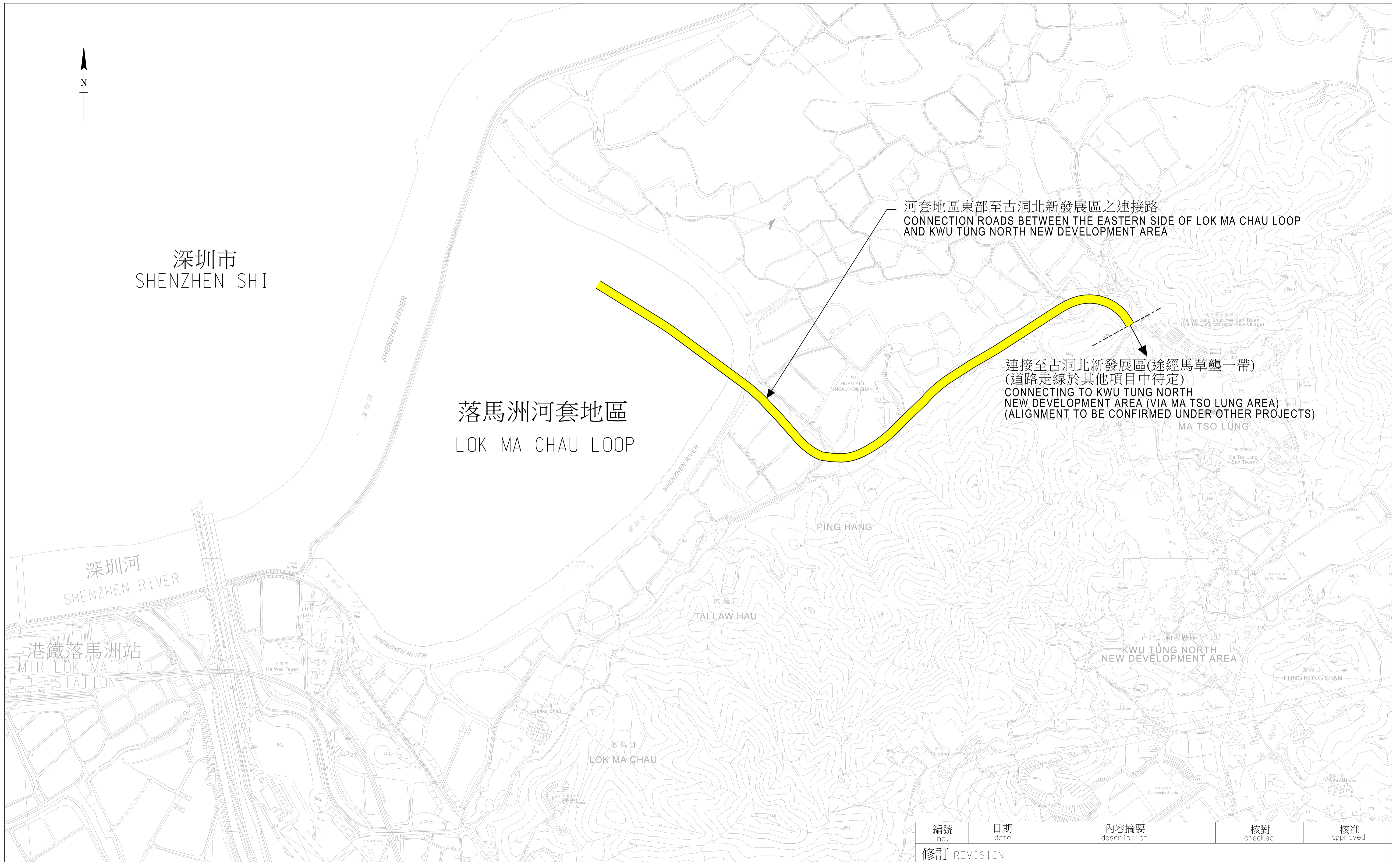


深圳市
SHENZHEN SHI

落馬洲河套地區
LOK MA CHAU LOOP

河套地區東部至古洞北新發展區之連接路
CONNECTION ROADS BETWEEN THE EASTERN SIDE OF LOK MA CHAU LOOP
AND KWU TUNG NORTH NEW DEVELOPMENT AREA

連接至古洞北新發展區(途經馬草壟一帶)
(道路走線於其他項目中待定)
CONNECTING TO KWU TUNG NORTH
NEW DEVELOPMENT AREA (VIA MA TSO LUNG AREA)
(ALIGNMENT TO BE CONFIRMED UNDER OTHER PROJECTS)



編號 no.	日期 date	內容摘要 description	核對 checked	核准 approved
-----------	------------	---------------------	---------------	----------------

修訂 REVISION

圖則名稱 drawing title

落馬洲河套地區發展 — 東面連接道路
DEVELOPMENT OF LOK MA CHAU LOOP — EASTERN CONNECTION ROAD

繪圖 drawn T.W.YIU	簽署 initial	日期 date 31.01.24	項目編號 item no.	辦事處 office 西拓展處 WEST DEVELOPMENT OFFICE
核對 checked W.T.LAU	簽署 initial	日期 date 31.01.24	比例 scale 1 : 10000(A3)	
核准 approved K.S. CHAN	簽署 initial	日期 date 31.01.24	圖則編號 drawing no. WDOTW-Z0127	

