

**LEGISLATIVE COUNCIL
PANEL ON DEVELOPMENT**

**PWP Item No. 711CL - Kai Tak Development - Infrastructure works for
developments at the southern part of the former runway and
Progress report on Kai Tak Development**

Follow-up Actions to Meeting on 28 April 2015

The Administration provides the supplementary information required by the Panel as follows:

- (a) *With respect to the Administration's advice in paragraph 27 of Enclosure 2 to the Administration's paper (LC Paper No. CB(1)759/14-15(03)) that a study confirming the technical feasibility and environmental viability of increasing office and housing supply in the Kai Tak Development ("KTD") had been completed, a copy of the study report*

The concerned Study confirmed the technical feasibility and environmental viability of the proposal of increasing the development intensity of KTD by an overall average of about 20% would not have significant impact on the capacity of the infrastructures, and the provision of other community facilities. The proposal would also not give rise to any unacceptable noise, air ventilation and visual impacts. A summary report outlining the proposal and the findings of the Study (English version only) is at **Annex 1**.

Based on the findings of the Study, for proposals which involve minor relaxation of the development parameters under the Kai Tak Outline Zoning Plan (OZP), the Government is making planning applications in stages seeking planning permission from the Town Planning Board (TPB). Up to date, TPB has approved proposals for the increase of about 166,000 metres (m²) of domestic Gross Floor Area (GFA) and about 80,000 m² of non-domestic GFA in KTD.

- (b) *Given that the Administration planned to provide a park at a site located between Kai Ching Estate and Tak Long Estate, the timetable for the construction and commissioning of the park; the site plan of the park*

An area of 3.2 hectares in the vicinity of Kai Ching Estate and Tak Long Estate in KTD has been earmarked for the development of a park to be delivered in phases by the Architectural Services Department and taken over by the Leisure and Cultural Services Department for management. Design of the phase 1 works of the park covering an area of about 1.6 hectares has been completed, and the consultation with the Kowloon City District Council and the Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission was conducted between 2010 and 2013. To complement the leisure facilities in the neighbouring housing estates (including a children's play area, table tennis tables, badminton courts, basketball courts and a 5-a-side soccer pitch), it is proposed that facilities such as fitness equipment for the elderly and landscaped areas would be also provided in the park. Funding required for the project will be sought in accordance with the established resource allocation mechanism. The location and layout plans of the park are at **Annex 2**.

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- (c) *With respect to the Administration's advice at the meeting that there were technical constraints that made it difficult to take forward a proposal to provide Shing Fung Road underground to enhance pedestrian accessibility in the concerned area, details of the technical constraints, with plans/drawings (including cross-section plans) showing how the installation of the relevant underground chilled water distribution pipes as part of the District Cooling System(DCS) provided/to be provided at the KTD area and/or other utility pipes would make the proposal not practicable*

The existing DCS plant rooms were built along the southern part of the former runway underneath an area, which was originally zoned as open space in the OZP No. S/K22/2. The area was subsequently rezoned to "Open Space (2)" in the OZP No. S/K22/4 to accommodate the proposed dual 2-lane road and the associated elevated landscaped deck relocated from the waterfront to the centre of the former runway, running above the DCS plant rooms. Under this circumstance, it is not possible to construct the proposed realigned Shing Fung Road at underground level as it will be in conflict with the existing underground DCS plant rooms, which span across the entire width of the road. Depressing the road to underground will also make its connection with adjoining roads (such as the Kai Tak Bridge) and the adjacent development sites (including commercial and residential developments and the Kai Tak Cruise Terminal (KTCT)) very difficult. A plan and cross-sections showing the constraints mentioned above are at **Annex 3**.

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- (d) *With respect to the concern on whether it was necessary to provide*

the proposed elevated landscaped deck cum noise barriers given the substantial construction costs involved, the justification for providing the elevated landscaped deck and its benefits to the local communities and pedestrians

According to the approved Kai Tak OZP, the area along the realigned Shing Fung Road is zoned as “Open Space (2)” to be developed in the form of a landscaped deck, which will serve as a public open space and a leisure walkway connecting the Metro Park to its north with the Kai Tak Cruise Terminal, Tourism Node and Runway Park to its south. Also, as stipulated in the approved Environmental Impact Assessment (EIA) report and the Environmental Permit (EP) in relation to the realignment of Shing Fung Road, noise mitigation measures are required in the form of an elevated landscaped deck integrated with roadside noise barriers to prevent the road traffic from causing adverse noise impact on the adjoining noise sensitive receivers, i.e. the residential developments.

- (e) *With plans/drawings including layout and cross-section plans, details on how the elevated landscaped deck would interface with the Environmental Friendly Linkage System*

The Kai Tak OZP has indicated that an Environmentally Friendly Linkage System (EFLS) for Kowloon East would run alongside the realigned Shing Fung Road in front of the commercial development sites. Whilst the mode and the way forward on the proposed EFLS will be subject to the outcome of a detailed feasibility study, which is subject to funding approval of Finance Committee, provisions have been made in the design of the elevated landscaped deck to allow adequate space for construction of the future EFLS and to cater for integration with a possible EFLS station, if required. A plan and cross-sections showing the interface between the elevated landscaped deck and the proposed EFLS (rail-based option) are at **Annex 3**.

- (f) *Details on how the elevated landscaped deck would be connected to the pedestrian facilities, the commercial and other major developments in the KTD area*

Lifts and staircases forming part of the elevated landscaped deck will be provided for connection with the proposed footpaths alongside the realigned Shing Fung Road leading to adjacent development sites. In addition, the design of the elevated landscaped deck will make provision for future possible extensions and connections that may be built under adjoining development projects including commercial developments. We have also

refined the design of the elevated landscaped deck to make provision for connection with the adjacent residential developments. A plan showing the pedestrian connectivity of the elevated landscaped deck is at **Annex 4**.

- (g) *Given that under the proposed design, noise barriers on the elevated landscaped deck would be installed at the side near the residential developments but not the side near the commercial developments, reasons for the Administration to adopt such a design; whether and how the design would mitigate the noise impact on the pedestrians using the elevated landscaped deck in future; estimated additional expenditure required for the installation of noise barriers at the side near the commercial developments*

As stipulated in the approved EIA report and the EP in relation to the realignment of Shing Fung Road, necessary noise mitigation measures in the form of an elevated landscaped deck integrated with roadside noise barriers are required to prevent the road traffic from causing adverse noise impact on the adjoining noise sensitive receivers, i.e. the residential developments. In accordance with the EIA Ordinance, neither commercial developments nor transient receivers (such as pedestrians on roadside footpaths) are noise sensitive receivers. Noise mitigation measures are not required and considered not necessary along the side of the realigned Shing Fung Road fronting the commercial developments in accordance with the EP, whereas such provision would otherwise increase the total project cost by about \$400 million in money-of-the-day (MOD) prices. Pedestrians on the elevated landscaped deck would be shielded off from the traffic noise and therefore would not be susceptible to any traffic noise impact.

- (h) *Whether the Administration would revise the relevant proposal to enable pedestrians/residents to travel between the elevated landscaped deck and the nearby residential developments; if yes, the details; if no, the reasons*

We have also refined the design of the elevated landscaped deck to make provision for connection with the adjacent residential developments. A plan showing the pedestrian connectivity of the elevated landscaped deck is at **Annex 4**.

- (i) *A detailed breakdown of the cost of the proposed project, including the provision for price adjustment and contingencies*

The detailed breakdown of the cost of the proposed project is

attached at **Annex 5**.

- (j) *Given that the provision for price adjustment and contingencies would represent a significant proportion of the estimated cost of the proposed project, justifications for the two expenditure items; how the amount of "provision for price adjustment" was worked out; with examples of the best and worst scenarios, whether and how the provision for price adjustment would be affected by the time taken to complete the proposed project*

(A) *Provision for contingencies*

The provision for contingencies is to make allowance for risks that may be encountered during the construction stage of a project. In September 2014 prices, the provision for contingencies under the proposed project is estimated to be \$420.9 million, which is about 10% of the estimated total cost of the works (i.e. \$4,209.4 million), and is considered appropriate given the nature of the works involved.

(B) *Provision for price adjustment*

The provision for price adjustment is designed to meet inflationary price increase. On a regular basis, the Government Economist forecasts the trend rate of change in the prices of public sector building and construction output, based on which the price adjustment factors are derived for converting project costs at constant prices into MOD prices. As per established guidelines, we have derived the MOD estimates of the proposed project based on (i) the forecast yearly expenditure (in constant prices) and (ii) the Government's latest set of price adjustment factors for the period from 2015 to 2022, as shown below –

Year	\$ million (Sept 2014)	Price adjustment factor	\$ million (MOD)
2015 – 2016	78.5	1.05725	83.0
2016 – 2017	657.8	1.12069	737.2
2017 – 2018	1,319.0	1.18793	1,566.9
2018 – 2019	1,350.3	1.25920	1,700.3

2019 – 2020	827.7	1.33475	1,104.8
2020 – 2021	294.0	1.40483	413.0
2021 – 2022	103.0	1.47507	151.9
	4,630.3		5,757.1

The provision for price adjustment under the proposed project is the difference between the MOD project estimate and that in constant prices (i.e. \$5,757.1 million - \$4,630.3 million = \$1,126.8 million) as shown above.

Given the many unforeseen circumstances affecting the public sector construction prices and the implementation programme in the coming years, it would be difficult to provide examples of the best and/or the worse scenarios for calculating the provision for price adjustment.

The Government updates the price adjustment factors to be used in funding applications regarding capital works projects to the Public Works Subcommittee and Finance Committee on a half-yearly basis. Regular updates are also provided to Members on the latest set of price adjustment factors for converting the cost estimate of capital works projects.

(C) Whether and how the provision for price adjustment would be affected by the time taken to complete the proposed project

The provision of price adjustment is calculated through multiplying the forecast yearly expenditure (in constant prices) by the latest price adjustment factors for the corresponding financial years. As the price adjustment factors may vary from year to year (subject to whether and how much inflation or deflation would be predicted), the MOD project estimate could increase or decrease depending on the time taken to complete the proposed project. For the proposed project, we have adopted a tight timeframe for construction with a view to achieving early delivery of the development sites at the southern part of the former runway.

Summary Report on

Technical Feasibility and Environmental Acceptability of Increasing Office and Housing Supply in Kai Tak Development

1. Background

- 1.1 In the Policy Address 2013, the Government was committed to increase the housing and office supply in short to medium term by various means including an increase in the development intensity of Kai Tak Development (KTD). In July 2013, the Civil Engineering and Development Department was tasked to commission a study (the Study) to ascertain the technical feasibility and environmental acceptability of the proposal (the Proposal) of increasing the office and housing supply in KTD. The Study has been substantially completed and a summary depicting the proposal, planning intention, planning and various impact assessments is stated in the ensuing paragraphs.

2. The Proposal

- 2.1 The Proposal seeks to increase the office and housing supply in KTD by means of modifications to the land use zonings, plot ratios and/or building height restrictions of 43 no. of Sites, namely 1D2-3, 1E1-2, 1F1, 1G1(B), 1H1-3, 1K1-3, 1L1-3, 2A1-7, 2B1-6, 3A6, 3B1-4, 4A1-2, 4B1-4 and 4C1-4 (the Sites¹) in KTD. Locations of the Sites are shown in **Plan 1**.
- 2.2 For Sites 1D2 and 1D3 which are located in the North Apron area, it is proposed to relax the building height restriction of the two sites by 20m to facilitate the development of government offices so that the building footprint on G/F can be reduced allowing more opportunity for at-grade greening and enhance the natural lighting at pedestrian level. In addition, a 35-m wide ventilation corridor (including a 10-m pedestrian street) can be introduced between Site 1D3 and Site 1D4 to enhance the visual permeability, ventilation and streetscape. For Sites 1E1-2, 1F1, 1G1(B), 1H1-3, 1K1-3, 1L1-3, 2A1-6, and 2B1-6 which are located in the North Apron area, it is proposed to relax the building height restrictions by 20 m to allow the increase in maximum plot ratios, with the maximum site coverage remaining unchanged. For Site 2A7 in the North Apron area and Sites 3A6 and 3B1-4 in the South Apron area, it is proposed to change the land use zoning from “Government, Institution

¹ On the approved Kai Tak Outline Zoning Plan (OZP) No. S/K22/4, the Sites are zoned “Residential” (R), “Commercial” (C), “Comprehensive Development Area” (CDA), “Other Specified Uses” (OU) and “Government, Institution or Community” (G/IC).

or Community” (G/IC) to Commercial. For Sites 4A1-2, 4B1-4 and 4C1-4 which are located in the Runway Precinct, it is proposed to relax the building height restrictions by 10m-20m.

- 2.3 With the Proposal, it is anticipated that the domestic GFA to be developed at the Sites will be increased from about 1,060,000 m² to 1,290,000 m² (an increase of about 22%); and the Non-Domestic GFA to be developed at the Sites will be increased from about 620,000 m² to 1,050,000 m² (an increase of about 69%). The proposal is summarized in **Table 1**.

3. The Sites and the Surrounding Area

- 3.1 The Sites are Government land currently being vacant or occupied by temporary uses/works area. The locations of the Sites and characteristics of the surrounding areas are as follows:

3.1 Sites 1D2 and 1D3 are located at the northern fringe of the KTD near San Po Kong. They are bounded by Prince Edward Road East to the north and Road D1 to the south. To the west of these sites are a 10m wide pedestrian street and the Trade and Industry Tower under construction. The sites will be accessible from Road D1.

3.2 Sites 1E1-2 and 1F1 sites are located at the north apron area of the former Kai Tak airport, situated north of Station Square and west of Kai Ching Estate/Tak Long Estate. Sites 1E1 and 1F1 will be accessible from Road D1 while 1E2 will be connected to Shing Kai Road through Muk Chui Street.

3.3 Sites 1G1(B), 1I1-3, 1K1-3 and 1L1-3 are located at the north apron area of the former Kai Tak airport, and encompassed by the proposed Multi-Purpose Sports Complex (MPSC) in the West, Station Square of Kai Tak Station of Shatin to Central Link in the North and Kai Tak River in the East. The sites will be accessible from Roads L4 and L6 which connects to Roads D2 and D3.

3.4 Sites 2A1-7 and 2B1-6 are located at the north apron area of the former Kai Tak airport, and bounded by the proposed MPSC in the South, Road D1 in the North and Sung Wong Toi Park in the East. The sites will be accessible by Road L7, L16 and L9 which connects to Road D1 and the existing Olympic Avenue.

3.5 Sites 3A6 and 3B1-4 are located in the south apron area of the former Kai Tak airport. The proposed Central Kowloon Route bisects the area to Site 3A6 in the north and Sites 3B1-4 in the South facing the Kai Tak

Approach Channel. The sites will be accessible from Kai Fuk Road and Road L10 en route Road D4.

- 3.6 Sites 4A1-2, 4B1-4 and 4C1-4 are located in the runway area of the former Kai Tak airport and are surrounded by waterbody comprising Kai Tak Approach Channel and Victoria Harbour. To the south of these sites are the Kai Tak Cruise Terminal and the proposed Tourism Node development. The sites will be connected to Road D4.

4. Planning Intention of the Sites

The planning intentions of the Sites are listed below:

4.1 Sites 1D2 and 1D3

- 4.1.1 Sites 1D2 and 1D3 are zoned G/IC on the Kai Tak Outline Zoning Plan (OZP). Both sites are reserved to partially meet the re-provision need for the Wan Chai Government Offices Compound. Site 1D2 is planned for a Joint User Government Office whereas Site 1D3 is proposed to be developed as the Inland Revenue Tower.

4.2 Sites 1E1 and 1F1

- 4.2.1 These two sites are designated as “Other Specified Uses” (OU) and are intended primarily for mixed non-industrial land uses. Flexibility for development of residential or other uses, or a combination of compatible uses including commercial, residential, educational, cultural, and recreational and entertainment is allowed either vertically within a building or horizontally over a spatial area. Physical segregation has to be provided between the non-residential and residential portions within buildings to prevent non-residential uses from causing nuisance to the residents.

- 4.2.2 For Site 1F1, a special design requirement is incorporated such that the residential element should commensurate with the commercial element in form. The residential development could accommodate high quality hotel-like service apartment befitting the image of Kai Tak City Centre and premier commercial/office developments to its west and east. Retail frontage abutting the Station Square would also be provided. Provision of public passageway at the basement level of the developments is required to connect to the potential Underground Shopping Street (USS) system.

4.3 Site 1E2

- 4.3.1 The site is zoned “Commercial” (C) on the OZP. An iconic gateway twin-tower development is planned for this zone comprising two linked sites so as to anchor the vista towards the Station Square.
- 4.3.2 Non-building areas (NBAs) are imposed in the eastern part of the sites to create a wider pedestrian vista in the green corridor between the proposed commercial/office developments in these sites and the mixed use and public housing developments to their east. Another NBA in western part is imposed to maintain a breezeway from Kai Tak to San Po Kong as well as to allow a vehicular access serving the two linked sites. The area in between the two linked sites will remain as open space for a gateway plaza.
- 4.4 Sites 1G1(B), 1I1-3, 1K1-3 and 1L1-3
- 4.4.1 Sites 1G1(A) and 1G1(B) are intended for the Flat-for-Flat Scheme and Home Ownership Scheme under the management of the Urban Renewal Authority and Housing Authority respectively. Sites 1I1-3, 1K1-3 and 1L1-3 together with 3 other Sites 1H1-3 to the east of Kai Tak River are intended for Kai Tak Grid Neighbourhood development. The Grid Neighbourhood is intended primarily for medium-density residential developments based on a grid pedestrian street. The sites within Grid Neighbourhood are subject to special design control. The intention is to create a distinctive residential neighbourhood within urban street blocks of intimate scale. For Sites 1G1(B) and 1K1-3, retail frontages facing Station Square are to be provided to enhance vibrancy of the open space.
- 4.4.2 Residential developments in the Grid Neighbourhood area would comprise residential towers and low blocks to achieve diversity in building mass/form for a more interesting building height profile in the area. The low block shall not exceed six storeys or 25mPD (whichever is the less). Such variation of building heights would add interest to the local townscape and project a well-proportioned neighborhood environment.
- 4.4.3 Courtyard design for the residential developments has been proposed to enhance interaction in the neighbourhood and to achieve integrated community. In addition to two 20m wide visual corridors running through the Grid Neighbourhood, NBAs are designated alongside site boundaries abutting the pedestrian streets and Kai Tak River to provide wider vistas in such directions. They together with NBAs along other site boundaries will define the building envelopes for the alignment of residential blocks and thereby foster the courtyard design.
- 4.5 Sites 2A1-7 and 2B1-6

- 4.5.1 2A1 and 2A2 are zoned as “Comprehensive Development Area” (CDA). They are intended for commercial use and their dispositions and designs are required to be in harmony with the Preservation Corridor for Lung Tsun Stone Bridge. The eastern part of Site 2A1 is also subject to a lower building height restriction to provide a more open view towards the Kowloon City and the Lion Rock.
- 4.5.2 Sites 2A3 to 2A6 are zoned as C sites and are intended to form a belt of high quality office development. These developments will be served by the proposed Shatin to Central Link and are expected to meet Hong Kong’s long-term demand in office space.
- 4.5.3 Site 2A7 is originally zoned as G/IC site but with no designated use.
- 4.5.4 2B1 is zoned as CDA and is intended for residential use and their dispositions and designs are required to be in harmony with the Preservation Corridor for Lung Tsun Stone Bridge.
- 4.5.5 Sites 2B2 to 2B6 are zoned as R and are intended for medium to density and podium-free developments. Provision of ‘Shop and Services’ and ‘Eating Place’ in form of retail frontages not exceeding two storeys in height are to be provided to the North of MPSC to enhance vibrancy of the adjoining open space. Such uses will also be permitted on the ground floor of the residential buildings at the northern site boundary of the Sites which adjoins the USS to achieve synergy effect for the retail cluster.
- 4.6 Sites 3A6 and 3B1-4
- 4.6.1 Sites 3A6 and 3B1-4 are originally zoned as G/IC but with no designated use.
- 4.7 Sites 4A1 and 4B1-4
- 4.7.1 These sites are zoned “Residential” (R) on the OZP which are intended primarily for low-rise, low-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Board.
- 4.7.2 In order to maintain a wider vista and building gap, NBAs are designated in the sites along the boundary facing the landscaped elevated deck on the Central Boulevard of the Runway Precinct.
- 4.8 Sites 4A2 and 4C1-4

- 4.8.1 These sites are zoned as C and are intended to form a hotel belt along the waterfront of the Runway Precinct so as to support the tourism-related development at the nearby Tourism Node and Kai Tak Cruise Terminal.
- 4.8.2 In order to maintain a wider vista and building gap, NBAs are designated in the sites along the boundary facing the landscaped elevated deck on the Central Boulevard of the Runway Precinct.

5. Assessments of Proposal

Assessments were conducted to ascertain that the proposed increase in housing and office supply from the Sites would be achieved and that the planning intention, urban design concept, building height profile in the area and the overall quality of the townscape would all be maintained. Due consideration was also given to ensure that the capacity of the existing and planned engineering infrastructure and G/IC facilities would not be overstrained.

5.1 Planning Assessments

A planning assessment was completed to confirm that the Proposal could be achieved while the established planning intention and urban design concept mentioned in Section 5 above could be maintained. It was confirmed that the provision of open space as well as G/IC facilities would be adequate at the district level to cater for the Proposal. There would be no change or insurmountable constraints to any key development components such as MPSC, Preservation Corridor for Lung Tsun Stone Bridge Remnants, Kai Tak River, USS, Environmental Friendly Linkage System, Tourism Node, Station Square, Metro Park, Sung Wong Toi Park, etc. In addition, the minimum greening ratio (i.e. a minimum 30% of the total site area, 20% at the pedestrian level; and 20% of the total roof area) intended for the development sites in KTD could be maintained. Due regard was also given to the prevailing Harbour Planning Principles. The proposal would not jeopardize the intention to preserve the waterfront areas for public enjoyment.

5.2 Traffic Impact Assessment

Strategic territorial models and local area traffic models, with calibration against the baseline traffic, were employed to simulate the change in road traffic condition for the “with” and “without” proposal scenarios. In addition, a transport demand model was set up to estimate the traffic activities within the Area of Influence (AOI) and to determine the demand and requirement of the transport infrastructure, with due regard

to the latest planning data and assumptions including the demographic and land use data, socio-economic characteristics, highway infrastructure, railway network assumptions, etc. The change in traffic condition at 75 key road junctions (comprising 30 nos. within KTD and 35 nos. in the hinterland districts) was assessed. It is the findings of the traffic impact assessment that, with junction improvement project works as originally planned to support KTD, the road traffic impact brought about by the Proposal would be manageable.

5.3 Infrastructure Capacity Assessment

A comprehensive review on fresh/salt water supply, drainage and sewage infrastructure was completed which confirmed that the existing and planned infrastructure serving Kai Tak would have adequate spare capacity to cater for the additional demand brought about by the proposed increase in development intensity. Computational models confirmed that the existing water supply system together with the proposed Jordan Valley Freshwater Service Reservoir would be able to cater for the corresponding increase in freshwater and saltwater demand. Computational models also confirmed that the corresponding increase in sewage discharge to To Kwa Wan Primary Treatment Works and Kwun Tong Primary Treatment Works would be manageable. Nevertheless, a sewage pumping station newly constructed within KTD would be approaching the capacity limit. There should not be any noticeable drainage impact as the Proposal would not involve any change to the drainage system or the catchment characteristic of the Sites.

5.4 Environmental Review

An environmental review (ER) was completed which confirmed that the findings of the approved Schedule 3 Environmental Impact Assessment Report on KTD were still valid.

For the air quality impacts attributable to vehicular/marine traffic and commercial/industrial activities, impacts at the representative air sensitive receivers (ASRs) have been evaluated by comparing the changes in NO₂, RSP and SO₂ concentrations. ASRs were identified based on the guidelines in Annex 12 of the *Technical Memorandum on Environmental Impact Assessment Process* (TMEIAP). The background concentrations for air pollutants were predicted by the PATH model. EMFAC-HK model was used to determine the vehicle emission factors of NO_x and RSP under Base Case Scenario and Ultimate Scenario. CALINE4 model was used to simulate line sources including open road emissions within the study area. ISCST3 model was used to simulate point, area and volume sources emissions within the study area. The emission rates from the cruise ships were

calculated based on the approach stipulated in *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, Final Report, April 2009* by the United States Environmental Protection Agency (USEPA). The predicted concentration changes of NO₂, RSP and SO₂ at most of the ASRs would be well below the USEPA Significant Impact Levels except for the 24-hr average NO₂ concentration concerning Sites 3A6, 3B3 and 3B4. Given that Sites 3A6, 3B3 and 3B4 had been proposed for commercial developments with central air-conditioning, it was therefore recommended in the Study as a mitigation measure to position the fresh air intakes of the central air-conditioning system at locations with acceptable air quality.

For the traffic noise impact assessment, reference was made to the guidelines in Annex 5 of TMEIAP and the standards stipulated in Chapter 9 of the *Environment of the Hong Kong Planning Standards and Guidelines* (HKPSG). The worst case traffic noise levels at the façades of noise sensitive receivers (NSRs) were predicted based on the forthcoming 15-year traffic data and checked against the HKPSG standard, i.e. the maximum allowed road traffic noise level expressed in terms of L_{10(1-hr)} at 1m away from typical noise sensitive façades for different noise sensitive receivers. These criteria were applied to NSRs relying on openable windows as a primary means of ventilation. The potential road traffic noise impacts were assessed based on the worst case traffic flows in 2036. With noise mitigation measures originally planned for KTD, it was confirmed that the predicted worst case noise levels at the Sites would fulfill the noise criterion of 70 dB(A). For the existing and planned NSRs within the surrounding areas and/or KTD, the increase in overall traffic noise levels due to the Proposal would be less than 1.0 dB(A). Hence, further mitigation measures are not required.

5.5 Air Ventilation Impact Assessment

An air ventilation assessment (AVA) was completed with the use of Computational Fluid Dynamics models covering KTD and the surrounding areas. For sites in Area 3 locating south of the Grid Neighbourhood, it was recommended that controls in site coverage and building height would be required in preserving the wind corridor hence the ventilation performance of sites in Areas 1K and 1L. There would be insignificant impact on air ventilation to the surrounding areas if the proposed mitigation measures are in place. A microclimate air ventilation assessment was also carried out for Sites 1D2 and 1D3 zoned for G/IC use. The assessment on Sites 1D2 and 1D3 confirmed that the proposed developments would enhance the natural ventilation in the neighborhood. The reduction in building footprint of the proposed developments would improve the permeability and local velocity ratio of

air ventilation. The AVA concluded that the air ventilation performance in Kai Tak and adjoining areas with the proposed increase in development density of KTD would be comparable to the “without proposal” scenario.

5.6 Visual Impact Assessment

A visual impact assessment was completed to confirm that the visual composition, obstruction, permeability and visual elements/resources would mostly remain unchanged with the Proposal. It was concluded that the visual impact brought about by the proposed increase in the development intensity of the Sites would be insubstantial to slight.

According to the approved OZP, a stepped height concept has been generally recommended in the urban design framework for the KTD. Within the North Apron area including the Grid Neighbourhood, the building heights rise gradually from the waterfront located south of the Sites towards the inland areas to the Kai Tak City Centre. The overall building height also gradates from the landmark tower within the “CDA(1)” site towards the northeast and southwest directions. The proposed changes of building height in North Apron (Areas 1D, 1E, 1F, 1K and 1L) are considered generally compatible with the developments in the vicinity and coherent with the building height profile in the Kai Tak City Centre. In addition, the undulating building height profile in the Runway Precinct (i.e. Area 4A, 4B and 4C) would be maintained under the Proposal.

A separate visual impact assessment was also undertaken to evaluate the visual impact of the minor relaxation of building height restrictions at Sites 1D2 and 1D3. Based on the analysis, the minor relaxation of building height restrictions can allow more set back of building frontage from the site boundary for improved visual amenity. The minor relaxation of building height restrictions is thus considered to be acceptable in terms of visual impact.

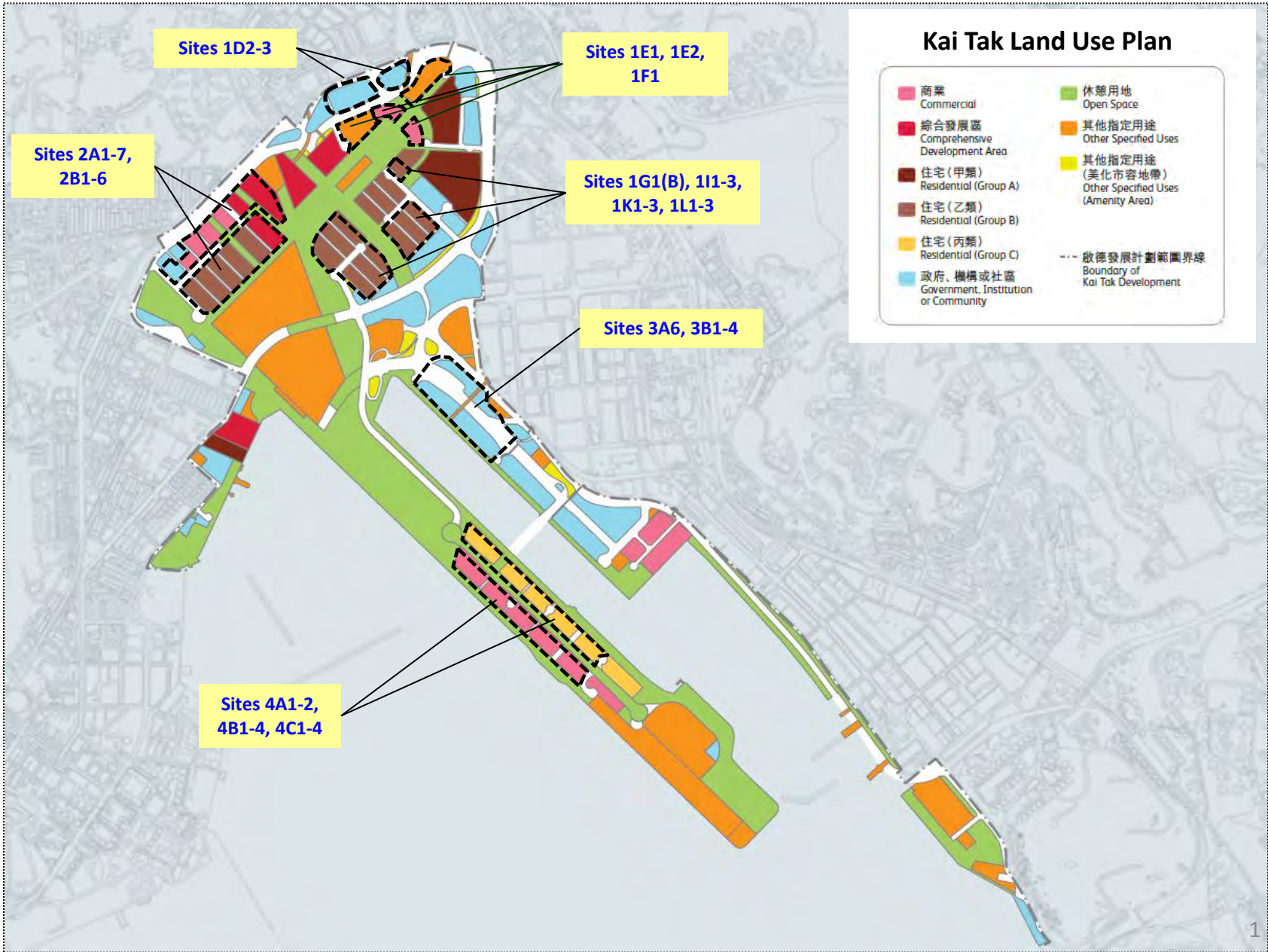
6. **Conclusion**

7.1 The Proposal will facilitate the increase of Domestic GFA by 230,000 m² and Non-Domestic GFA by 430,000 m² which will contribute towards meeting the community’s imminent housing and office demand.

7.2 Various assessments have confirmed that the Proposal will neither generate nor be susceptible to adverse traffic and environmental impacts. Furthermore, the capacity of planned engineering infrastructure would not be exceeded. The visual impact assessment with conceptual landscape design and air ventilation assessment have demonstrated that

there would be no adverse visual and ventilation impact to the surrounding development.

**Civil Engineering and Development Department
May 2015**



Annex 1

Table 1 – Proposed Increase in Development Intensity

Site Reference No.	Site Area (m ²)* (about)	Land Use Zoning		Maximum Plot Ratio			Maximum Building Height (metres above Principal Datum)			Change in Gross Floor Area (m ²) (about)
		Existing	Proposed	Existing	Proposed	% Increase	Existing	Proposed	% Increase	
1E1	17,127	Mixed Use(3)	Mixed Use(3)	7 (Domestic: 4.75 Non- domestic: 2.25)	8.2 (Domestic: 6.0 Non- domestic: 2.2)	17%	100	120	20%	20,552
1F1	16,235	Mixed Use(2)	Mixed Use(2)	7 (Domestic: 5.0 Non- domestic: 2.0)	8.1 (Domestic: 6.1 Non- domestic: 2.0)	16%	125/150	145/170	13-16%	17,859
1D2	8,768	G/IC	G/IC	-	-	-	100	120	20%	-
1D3	9,859	G/IC	G/IC	-	-	-	60	80	33%	-
1E2	14,139	C(6)	C(6)	6	7.2	20%	100	120	20%	16,967
1G1(B)	5,710	R(B)2	R(B)2	5	6.0	24%	80	100	25%	5,710
1I1	8,780	R(B)2	R(B)2	4.5	5.5	22%	100	120	20%	8,780
1I2	9,314	R(B)2	R(B)2	4.5	5.5	22%	100	120	20%	9,314
1I3	10,149	R(B)2	R(B)2	4.5	5.5	22%	100	120	20%	10,149
1K1	9,719	R(B)2	R(B)2	4.5	5.5	22%	110	130	18%	9,719
1K2	9,700	R(B)2	R(B)2	4.5	5.5	22%	110	130	18%	9,700

Site Reference No.	Site Area (m ²)* (about)	Land Use Zoning		Maximum Plot Ratio			Maximum Building Height (metres above Principal Datum)			Change in Gross Floor Area (m ²) (about)
		Existing	Proposed	Existing	Proposed	% Increase	Existing	Proposed	% Increase	
1K3	11,265	R(B)2	R(B)2	4.5	5.4	20%	110	130	18%	10,139
1L1	7,318	R(B)2	R(B)2	4.5	5.4	20%	100	120	20%	6,586
1L2	9,482	R(B)2	R(B)2	4.5	5.4	20%	100	120	20%	8,534
1L3	8,803	R(B)3	R(B)3	3.5	4.2	20%	50/100	50/120	20%	6,162
2A1	19,750	CDA(3)	CDA(3)	5.0	6.0	20%	80	100	25%	19,750
2A2	6,270	CDA(4)	CDA(4)	4.5	5.2	16%	70	90	29%	4,389
2A3	5,968	C(3)	C(3)	4.5	5.7	27%	70	90	29%	7,162
2A4	6,555	C(3)	C(3)	4.5	5.5	22%	60	80	33%	6,555
2A5	7,112	C(3)	C(3)	4.5	5.2	16%	60	80	33%	4,978
2A6	3,976	C(3)	C(3)	4.5	5.5	22%	60	80	33%	3,976
2A7	5,974	GIC	C(6)	-	6.0	-	30	80	167%	35,844
2B1	13,828	CDA(5)	CDA(5)	5.0	6.4	28%	110	130	18%	19,359
2B2	12,008	R(B)1	R(B)1	5.0	6.1	22%	100	120	20%	13,209
2B3	11,210	R(B)1	R(B)1	5.0	5.7	14%	85	105	24%	7,847
2B4	11,386	R(B)1	R(B)1	5.0	5.9	18%	85	105	24%	10,247
2B5	11,386	R(B)1	R(B)1	5.0	5.7	14%	85	105	24%	7,970

Site Reference No.	Site Area (m ²)* (about)	Land Use Zoning		Maximum Plot Ratio			Maximum Building Height (metres above Principal Datum)			Change in Gross Floor Area (m ²) (about)
		Existing	Proposed	Existing	Proposed	% Increase	Existing	Proposed	% Increase	
2B6	11,003	R(B)1	R(B)1	5.0	5.7	14%	85	105	24%	7,702
3A6	13,200	GIC	C(6)	-	6.0	-	45	100	122%	79,200
3B1	6,700	GIC	C(5)	-	5.8	-	45	80	78%	38,860
3B2	6,800	GIC	C(5)	-	5.8	-	45	80	78%	39,440
3B3	9,200	GIC	C(5)	-	5.8	-	45	80	78%	53,360
3B4	9,200	GIC	C(5)	-	5.8	-	45	80	78%	53,360
4A1	13,524	R(C)	R(C)	3	3.4	13%	65/80	80	0%	5,410
4B1	9,578	R(C)	R(C)	3	3.8	27%	55	65	18%	7,662
4B2	9,050	R(C)	R(C)	3	4.4	47%	55	75	36%	12,670
4B3	9,704	R(C)	R(C)	3	3.9	30%	65	75	15%	8,734
4B4	9,694	R(C)	R(C)	3	3.7	23%	55	65	18%	6,786
4A2	12,784	C(4)	C(4)	4	5.0	25%	45	55	22%	12,784
4C1	9,481	C(4)	C(4)	4	5.0	25%	45	55	22%	9,481
4C2	9,771	C(4)	C(4)	4	5.9	48%	55	65	18%	18,565
4C3	10,956	C(4)	C(4)	4	5.0	25%	45	55	22%	10,956
4C4	10,694	C(4)	C(4)	4	5.0	25%	45	55	22%	10,694

*Site areas are subject to detailed survey

Site Area 面積

Total 32,000 sq.m approx.

大約總面積: 32,000 平方米

Phase 1 一期

16,500 sq.m approx.

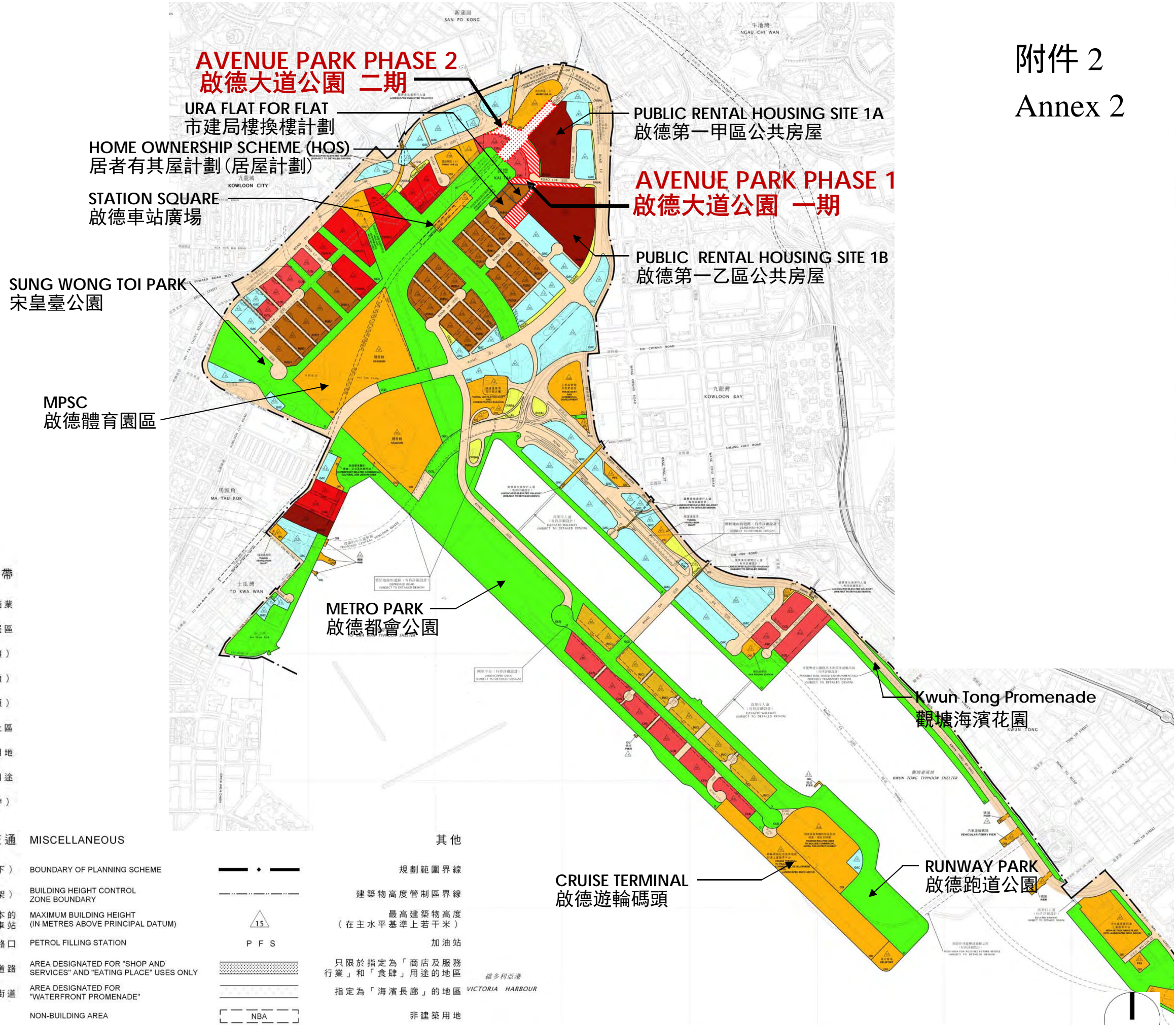
大約總面積: 16,500 平方米

Phase 2 二期

15,500 sq.m approx.

大約總面積: 15,500 平方米

圖例 NOTATION	
ZONES	地帶
COMMERCIAL	商業
COMPREHENSIVE DEVELOPMENT AREA	綜合發展區
RESIDENTIAL (GROUP A)	住宅 (甲類)
RESIDENTIAL (GROUP B)	住宅 (乙類)
RESIDENTIAL (GROUP C)	住宅 (丙類)
GOVERNMENT, INSTITUTION OR COMMUNITY	政府、機構或社區
OPEN SPACE	休憩用地
OTHER SPECIFIED USES	其他指定用途
OTHER SPECIFIED USES (AMENITY AREA)	其他指定用途 (美化市容地帶)
COMMUNICATIONS	交通
RAILWAY AND STATION (UNDERGROUND)	鐵路及車站 (地下)
RAILWAY AND STATION (ELEVATED)	鐵路及車站 (高架)
RAIL-BASED ENVIRONMENTALLY FRIENDLY TRANSPORT SYSTEM AND STATION	以鐵路為本的環保運輸系統及車站
MAJOR ROAD AND JUNCTION	主要道路及路口
ELEVATED ROAD	高架道路
PEDESTRIAN PRECINCT / STREET	行人專用區或街道
MISCELLANEOUS	其他
BOUNDARY OF PLANNING SCHEME	規劃範圍界線
BUILDING HEIGHT CONTROL ZONE BOUNDARY	建築物高度管制區界線
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	最高建築物高度 (在主水平基準上若干米)
PETROL FILLING STATION	加油站
AREA DESIGNATED FOR "SHOP AND SERVICES" AND "EATING PLACE" USES ONLY	只限於指定為「商店及服務行業」和「食肆」用途的地區
AREA DESIGNATED FOR "WATERFRONT PROMENADE"	指定為「海濱長廊」的地區
NON-BUILDING AREA	非建築用地



LOCATION PLAN 位置平面圖

Kai Tak Avenue Park - Phase 1
啟德大道公園 一期

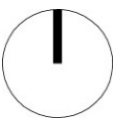
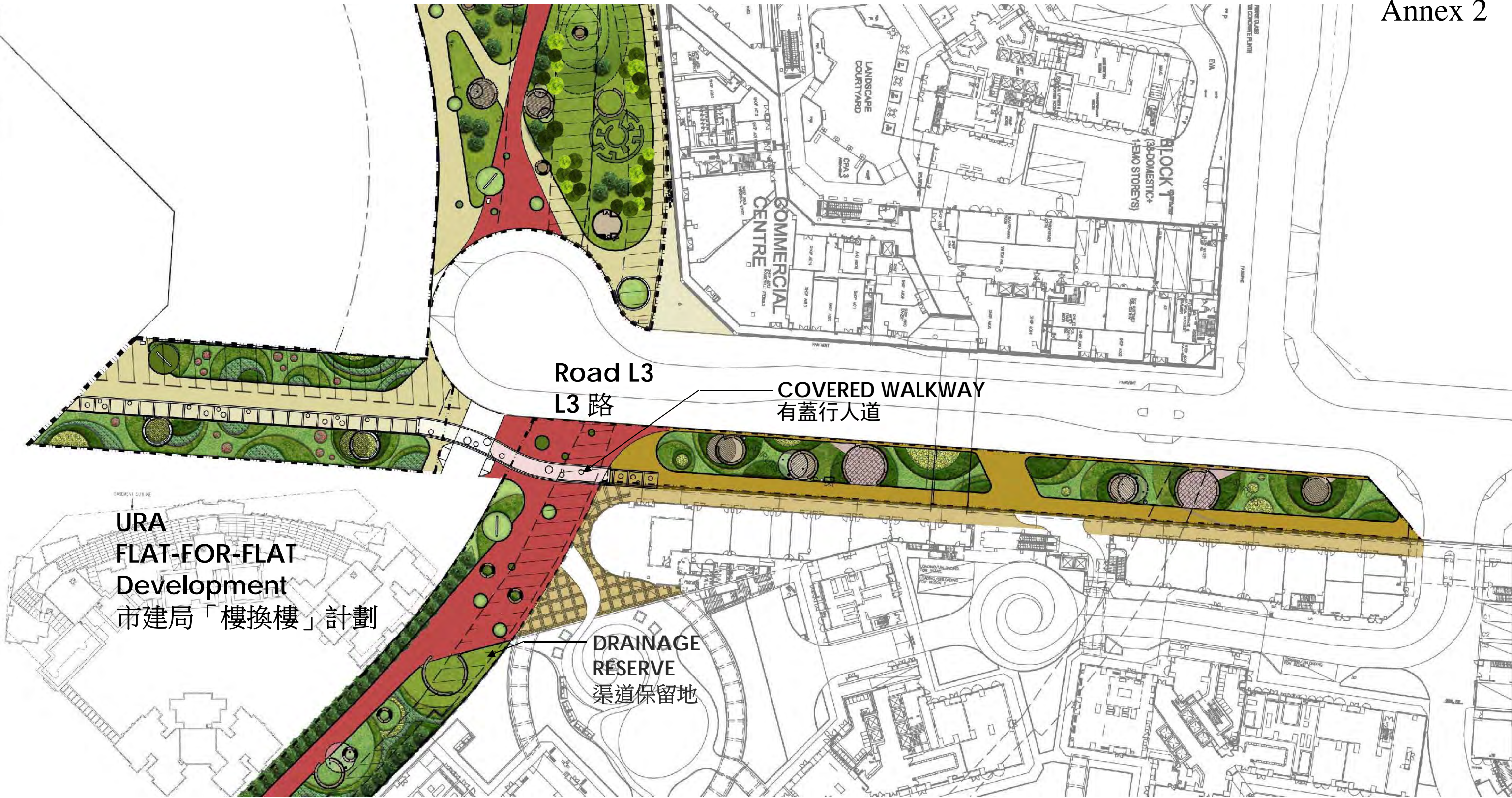


MASTER LAYOUT PLAN 總平面圖

Kai Tak Avenue Park - Phase 1
啟德大道公園 一期



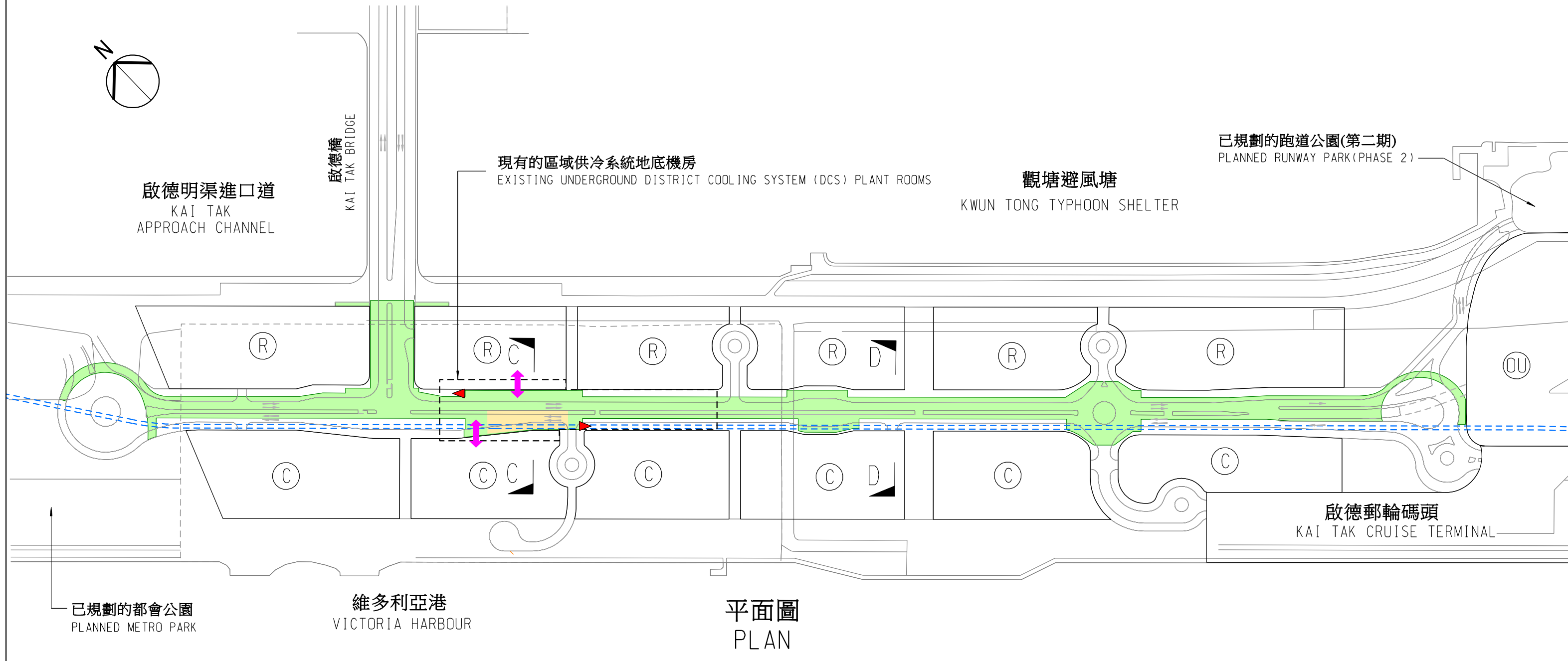
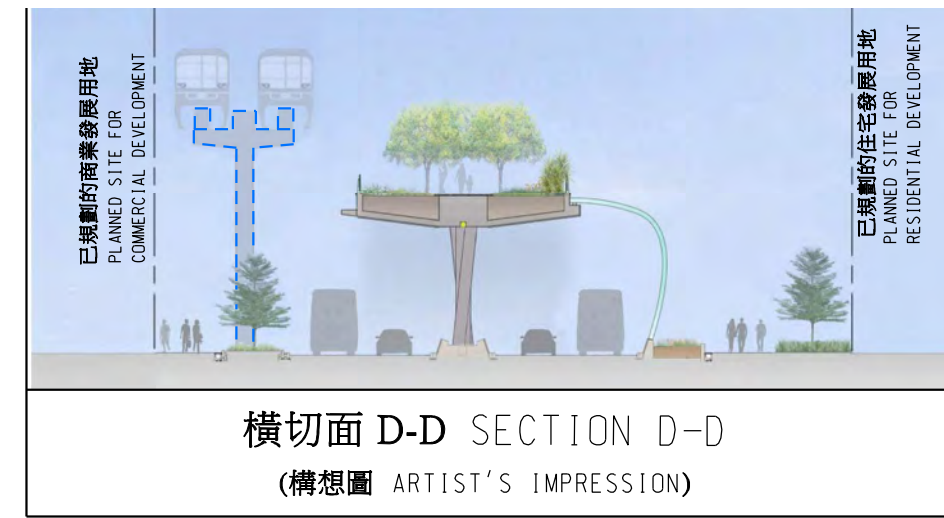
AREA A- Plaza/ Open Space 甲區 -廣場 / 休憩用地





AREA C- RECREATIONAL PLAYGROUND - 遊樂場區

- 圖例:**
LEGEND:
- 擬建的園景平台界限與隔音屏障結合
PROPOSED LIMIT OF LANDSCAPED DECK INTEGRATED WITH NOISE BARRIER
 - 預留予可能的環保連接系統高架車站
PROVISION FOR POSSIBLE ELEVATED ENVIRONMENTALLY FRIENDLY LINKAGE SYSTEM (EFLS) STATION
 - 可能的環保連接系統的走線
POSSIBLE ALIGNMENT OF EFLS
 - Ⓡ 已規劃的住宅發展用地
PLANNED SITE FOR RESIDENTIAL DEVELOPMENT
 - Ⓒ 已規劃的商業發展用地
PLANNED SITE FOR COMMERCIAL DEVELOPMENT
 - ⓪ 已規劃的旅遊中樞
PLANNED TOURISM NODE
 - ▲ 擬建的樓梯
PROPOSED STAIRCASE
 - 預留予可能與商業 / 住宅發展連接的高架行人通道
PROVISION FOR POSSIBLE ELEVATED PEDESTRIAN CONNECTION WITH COMMERCIAL / RESIDENTIAL DEVELOPMENT



圖則名稱 drawing title KZ908
 工務計劃項目第 7711CL 號
 啟德發展計劃 - 前跑道南面發展項目的基礎設施工程
 PWP ITEM NO. 7711CL
 KAI TAK DEVELOPMENT - INFRASTRUCTURE WORKS FOR DEVELOPMENTS AT THE SOUTHERN PART OF THE FORMER RUNWAY



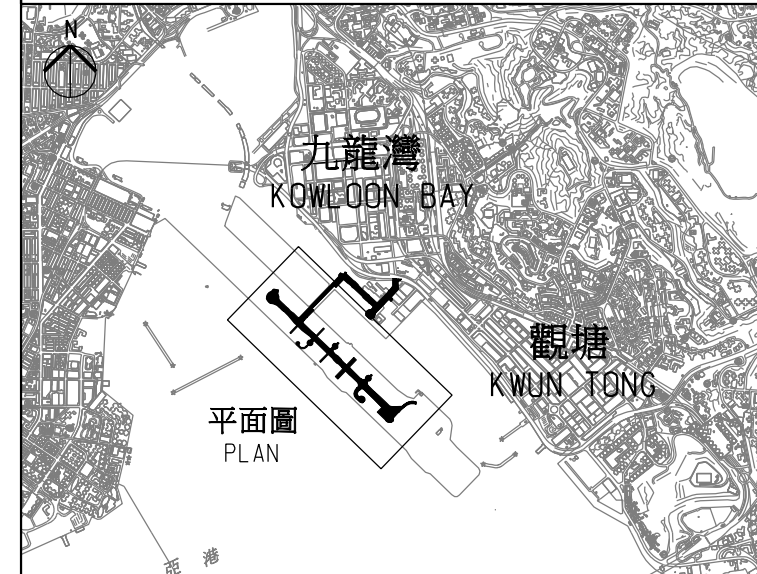
橫切面 C-C SECTION C-C
(構想圖 ARTIST'S IMPRESSION)

圖則名稱 drawing title KZ927

工務計劃項目第 7711CL 號
啟德發展計劃 - 前跑道南面發展項目的基礎設施工程

PWP ITEM NO. 7711CL

KAI TAK DEVELOPMENT - INFRASTRUCTURE WORKS FOR DEVELOPMENTS AT THE SOUTHERN PART OF THE FORMER RUNWAY



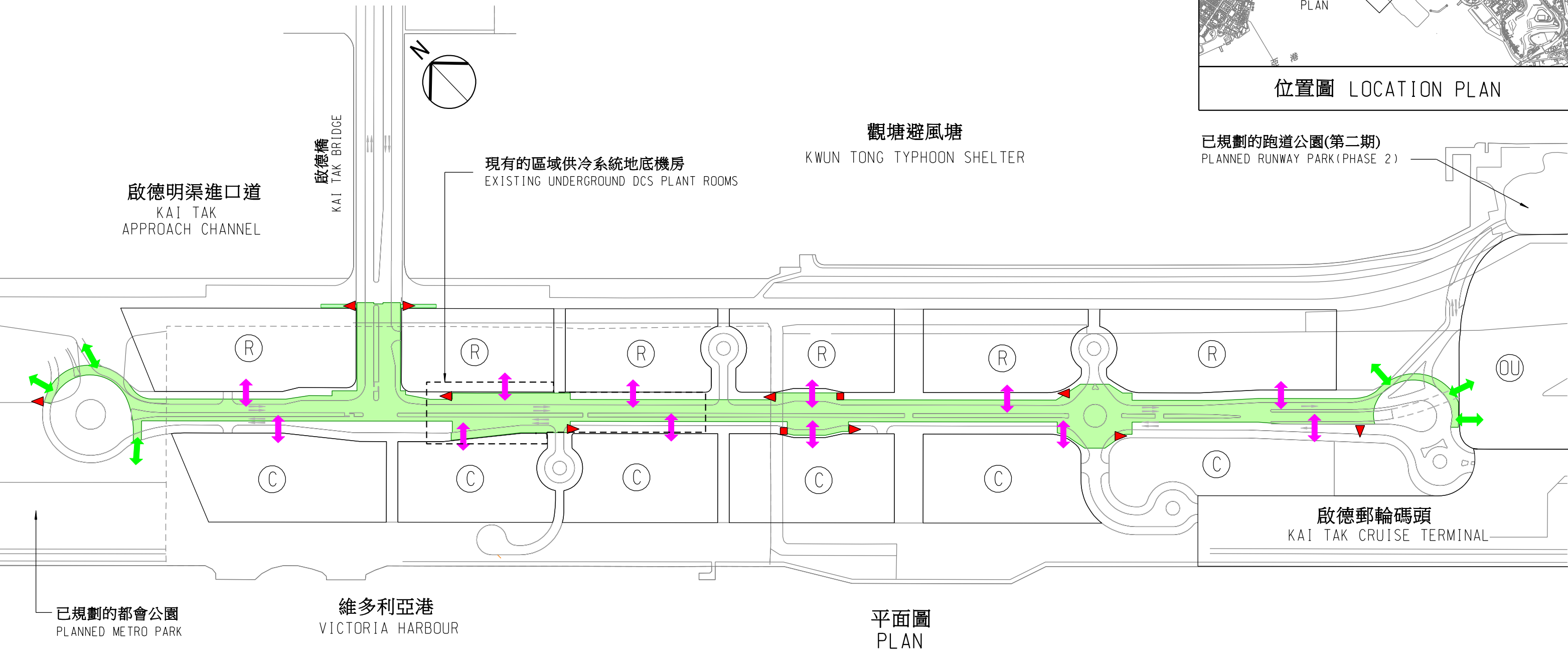
位置圖 LOCATION PLAN

已規劃的跑道公園(第二期)
PLANNED RUNWAY PARK (PHASE 2)

圖例:

LEGEND:

- 擬建的園景平台界限與隔音屏障結合
PROPOSED LIMIT OF LANDSCAPED DECK INTEGRATED WITH NOISE BARRIER
- 可能與商業 / 住宅發展連接的高架行人通道
POSSIBLE ELEVATED PEDESTRIAN CONNECTION WITH COMMERCIAL / RESIDENTIAL DEVELOPMENT
- 可能與將來的休憩用地 / 旅遊中樞連接的行人通道
POSSIBLE PEDESTRIAN CONNECTION WITH FUTURE OPEN SPACE / TOURISM NODE
- R 已規劃的住宅發展用地
PLANNED SITE FOR RESIDENTIAL DEVELOPMENT
- C 已規劃的商業發展用地
PLANNED SITE FOR COMMERCIAL DEVELOPMENT
- OU 已規劃的旅遊中樞
PLANNED TOURISM NODE
- 擬建的升降機
PROPOSED LIFT
- 擬建的樓梯
PROPOSED STAIRCASE



平面圖
PLAN

圖則名稱 drawing title KZ909

工務計劃項目第 7711CL 號
啟德發展計劃 - 前跑道南面發展項目的基礎設施工程

PWP ITEM NO. 7711CL
KAI TAK DEVELOPMENT - INFRASTRUCTURE WORKS FOR DEVELOPMENTS AT THE SOUTHERN PART OF THE FORMER RUNWAY

We estimate the cost of the proposed works to be \$5,757.1 million in MOD prices, broken down as follows –

		\$ million
(a)	Road construction	678.5
	(i) Roads, associated footpaths and pedestrian streets	316.4
	(ii) Vehicular underpass	121.8
	(iii) Improvement to road junctions	6.4
	(iv) Drainage, sewerage, water mains and ancillary works	233.9
(b)	Elevated landscaped deck	982.3
	(i) Foundations	503.9
	(ii) Superstructures	410.8
	(iii) Lifts and staircases	67.6
(c)	Roadside noise barriers	230.4
	(i) Foundations	88.0
	(ii) Superstructures	142.4
(d)	Supporting Underground Structure	1,753.6
	(i) Foundations	774.3
	(ii) Earthworks	259.4
	(iii) Tunnel structures	719.9
(e)	Landscaping works	102.6
	(i) On elevated landscaped deck	41.3
	(ii) Roadside and at-grade	61.3
(f)	Environmental mitigation measures and EM&A programme	57.5
(g)	Consultants' fee for	35.9
	(i) contract administration	16.6
	(ii) management of resident site staff	15.4
	(iii) independent environmental checker service	3.9
(h)	Remuneration of resident site staff	368.6
(i)	Contingencies	420.9

	Sub-total	4,630.3	(in September 2014 prices)
(j) Provision for price adjustment		<u>1,126.8</u>	
	Total	<u>5,757.1</u>	(in MOD prices)