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Planning Department

Final Report

Agreement No. CE 61/2008(TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

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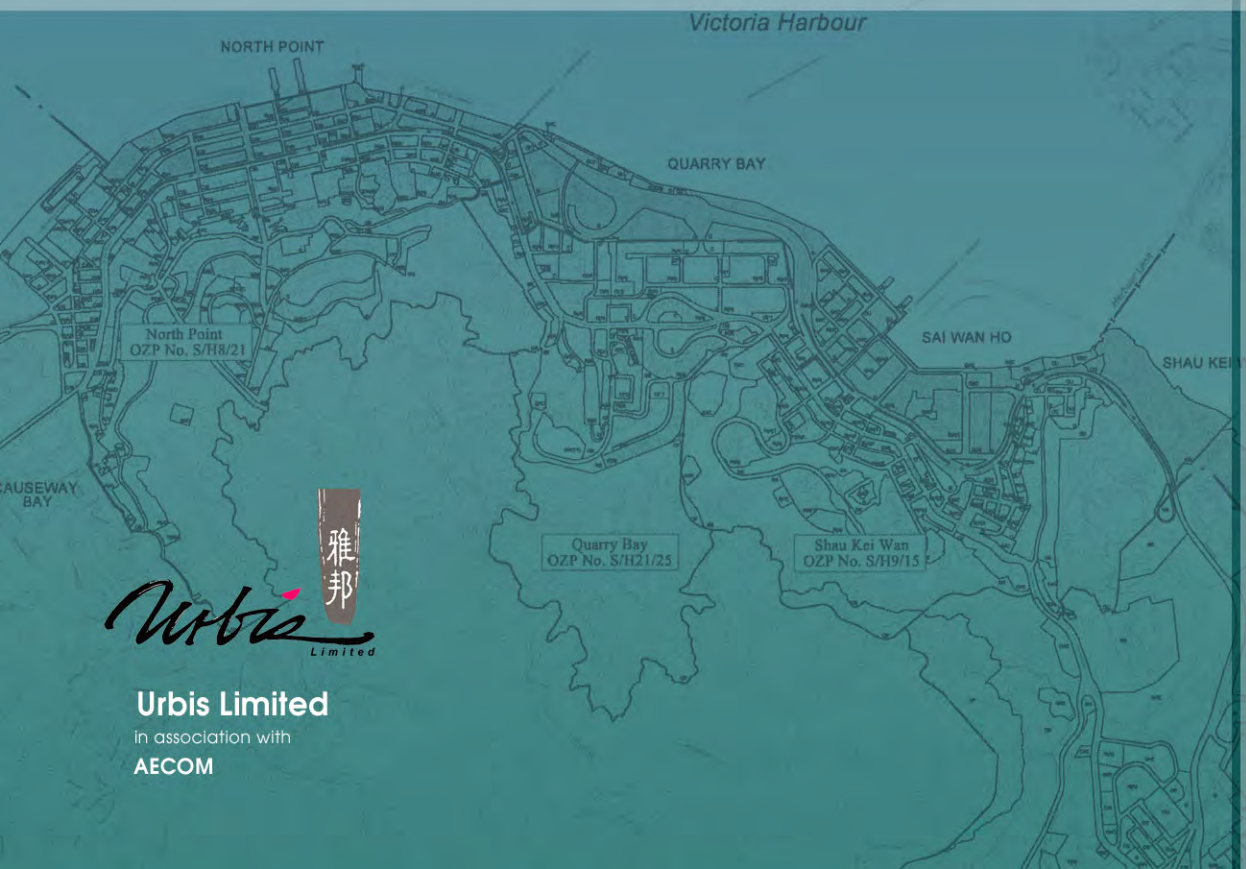

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1. INTRODUCTION AND BACKGROUND

1.1 Background

On 26 May 2005, the then Harbour-front Enhancement Committee (HEC) agreed to the approach of the Harbour Plan Review, which included undertaking of review studies for areas around the Victoria Harbour. The Hung Hom District Study, being one of the review studies, was carried out in December 2006 and completed in April 2008. Hong Kong Island East was identified as the next district for review and is the subject of this Study, and covers areas beyond the statutory limit of the Victoria Harbour.

Prior to the commencement of the Study, the Stage 1 Public Engagement Programme (PEP) was conducted in March/April 2009 to solicit initial views from key stakeholders on the major issues and key areas of concerns on enhancement of the Study Area as well as their visions, aspirations and suggestions on harbourfront enhancement. On 15 May 2009, the Study officially commenced with the overall objective of formulating a comprehensive plan for enhancement of the Hong Kong Island East. A Steering Group (SG) consisting of relevant government bureaux/departments was formed to oversee and monitor the progress of the Study.

1.2 Objectives of the Study

The overall objective of the Study is to formulate a comprehensive plan for enhancement of the Hong Kong Island East harbourfront areas focusing on connectivity, with a view to transforming it into an attractive, accessible, vibrant and sustainable waterfront for public enjoyment, whilst maintaining its economic functions.

The specific objectives of the Study are described as follows:

- To define the role of the Study Area in the overall harbour context;
- To identify all opportunities, constraints and key issues in relation to harbourfront enhancement;
- To improve waterfront accessibility;
- To recommend improvement of integration, accessibility and physical linkage;
- To examine the possibility of creating a continuous waterfront promenade with the provision of cycling facilities within the Study Area including the construction of a boardwalk underneath the Island Eastern Corridor (IEC);
- To create a harmonious built environment;
- To promote activities and achieve a sense of place;
- To identify key sites for enhancement within a coherent urban design framework;
- To establish a streetscape and landscape framework, quick-win solutions and temporary enhancement measures;
- To evaluate technical and environmental feasibility and sustainability of the enhancement proposals; and
- To recommend implementation strategies and programmes.

The proposed enhancement schemes seek to provide an indication of proposals that could be realised within the planning framework. It is to be emphasised that the outputs of the Study are conceptual in nature and may require refinement during the detailed design stage.

1.3 The Study Area

1.3.1 Location and Existing Conditions

The Study Area is confined to a portion of the urban area located at the harbour's edge in Eastern District. It covers about 200ha of land along the harbourfront of Hong Kong Island East stretching from the immediate east of the ex-Government Supplies Depot site in Oil Street eastward to Siu Sai Wan. For the purpose of description, the Study Area has been subdivided into a number of character areas (**Figure 1.1**) which reflect the existing Outline Zoning Plan (OZP) demarcations within the area (**Figure 1.2**). The main characteristics of each area are described below.

North Point: The character area comprises a major residential and commercial district, with a mix of office, commercial, hotel, recreational and residential uses. Several locations are currently occupied by temporary open-air car parks. Public access to the waterfront is restricted because of the existing private residential developments such as City Garden. A long area of

waterfront to the north of City Garden Road and Wharf Road is under private ownership. According to the latest planning brief of the ex-North Point Estate (ex-NPE) site endorsed by the Metro Planning Committee of the Town Planning Board (TPB) in January 2011, an at-grade public open space of not less than 15,000m^2 including a waterfront promenade with a width of not less than 20m and public landscaped walkways leading to the promenade should be provided at the site. The proposed developments should also be set back to provide a 3m-wide amenity planting strip around the site.

The ex-Government Supplies Depot site at Oil Street is zoned "Comprehensive Development Area" ("CDA"), which is planned for the development of a mix of uses (office/hotel/commercial, residential and public open space uses). The newly reclaimed land under the Central-Wan Chai Bypass (CWB) and IEC link is mainly zoned "Open Space" ("O") on the OZP. An at-grade landscaped walkway with a width of not less than 15m should be provided along Oil Street according to the planning brief of the ex-Government Supplies Depot site to connect the hinterland with the harbourfront. Opening up the waterfront in this area will create significant commercial and recreational interests through transformation of the area, with potential conversion of temporary uses beneath the IEC, transformation of the bus terminus in front of the North Point Ferry Piers, and incorporation of waterfront promenade proposal within the redevelopment scheme of the ex-NPE site. Opening up of the waterfront in this area has the potential to promote regeneration and facilitate the realisation of a waterfront promenade that is to be developed in conjunction with the redevelopment proposal associated with the ex-NPE site.

Quarry Bay: This character area is principally occupied by the Quarry Bay Park, the IEC and government, residential and commercial developments. Access to the waterfront along Hoi Yu Street is largely restricted by the presence of the IEC which dissects a significant portion of the character area at the waterfront. Access is also constrained through the presence of the Eastern Harbour Crossing (EHC), the EHC Ventilation Building, public utility installations and Government uses. The area, however, is largely zoned for open space use.

The EHC Tunnel Portal site falls within the boundary of the proposed Quarry Bay Park Phase II (Stages 2 and 3), and is currently occupied by a number of existing Government uses including the Food and Environmental Hygiene Department (FEHD) Transport Depot, Water Supplies Department (WSD) Maintenance Yard and Hong Kong Police Vehicle Pound. To the north of Hoi Yu Street, two sites are zoned "Other Specified Uses" ("OU") annotated 'Cultural and/or Commercial, Leisure and Tourism Related Uses', and a waterfront promenade with a general width of 10m is proposed along Hoi Yu Street. The Civil Engineering and Development Department (CEDD) is currently coordinating the development of a proposed 6-10m wide advance promenade along Hoi Yu Street with the Architectural Services Department (ArchSD) as the works agent. In this connection, part of the Hoi Yu Street waterfront area has been allocated to Leisure and Cultural Services Department (LCSD) for advance promenade development in September 2011. Improved pedestrian connections are likely to contribute to engendering conditions through which the waterfront and its environs could be enhanced and promoted as an activity hub.

The waterfront area adjacent to Lei King Wan located at the eastern edge of the Quarry Bay character area accommodates a popular café dining area (Soho East). This popular destination is nevertheless, separated from the existing waterfront promenade (i.e. Sai Wan Ho Harbour Park) by Tai Hong Street. Enhancement of pedestrian circulation spaces at the waterfront is envisaged to contribute significantly to the upgrading of the public realm.

Shau Kei Wan: This character area is dominated by public and private housing estates. There is an opportunity to create a continuous waterfront promenade and open space to link the Aldrich Bay Promenade with Quarry Bay Park. Continuity of access is currently blocked by the Marine Police Regional Headquarters and Marine Harbour Division located adjacent to Grand Promenade. The Shau Kei Wan Preliminary Treatment Works (PTW), the existing shipyards and the Shau Kei Wan Wholesale Fish Market to the east are currently situated adjacent to the Shau Kei Wan Typhoon Shelter. There is a potential to provide waterfront pedestrian continuity between the Shau Kei Wan Typhoon Shelter and Heng Fa Chuen through the development of a coastal walkway adjacent to the Hong Kong Museum of Coastal Defence. The character area contains a number of historic sites. The Redoubt of Lei Yue Mun Fort and the Eastern District Tourist Trail are major historical and recreational resources. These resources are supplemented by the Hong Kong Museum of Coastal Defence and Lei Yue Mun Park and Holiday Village, both of which are accommodated within former British military facilities.

Chai Wan: The western part of the character area is largely occupied by Heng Fa Chuen (a private residential development with an associated promenade under private ownership). The Chai Wan Public Cargo Handling Basin, a number of bus depots, the Government Logistics Centre, an oil depot, various Government uses and industrial buildings are located in the eastern part of the character area. Connectivity around the Cargo Handling Basin is poor. The extreme east of the character area has been developed for residential and sports uses, where accommodates the Siu Sai Wan Sports Ground and the up market residential estate (Island Resort).

1.3.2 Identification of Initial Interventions

The Study Area is multi-facetted, containing both new and older sites, with certain development and redevelopment opportunities and relatively 'self-contained' developments separated by main road corridors. The contextual analysis draws out the possibilities to better integrate and connect older and new areas, and maximise access to the waterfront and associated public and recreation/amenity uses. The wider area contains a rich tapestry of cultural mixes and incorporates an array of uses, economic activities and spaces. The Study Area is confined to a portion of the urban area located at the harbour's edge. The greatest opportunities arise at the waterfront where development can continue the momentum of change that has occurred with recently completed or planned projects, which have introduced new attractions (e.g. Aldrich Bay Park), retail and commercial developments.

The critical factor is not simply to install new developments but to identify a range of interventions that can promote regeneration and enhancement. At the same time, any new development needs to be properly conceived so that it will create interesting spaces and environments that help to activate and enhance the district.

An important factor and consideration addressed by the Study was to cater for certain visitor facilities that could both enliven waterfront sites and establish identifiable nodes of activity related to the public realm. Within this context, several potential key sites and interventions were identified at the outset of the Study that could play an important role in the future development, spatial integration and establishment of a clear identity for the Study Area. These comprise:

- A proposed IEC boardwalk and the potential refurbishment of North Point Ferry Piers;
- The potential adaptive redevelopment at the North Point Dangerous Goods Vehicular Ferry Pier site;
- The enhancement of the open area adjacent to the EHC Tunnel Portal together with the waterfront area north of Hoi Yu Street in Quarry Bay;
- The regeneration of the Marine Police Piers in Sai Wan Ho and their integration with the adjacent promenade;
- The enhancement of pedestrian connectivity between Shau Kei Wan and Heng Fa Chuen; and
- The adaptive re-use of Chai Wan Public Cargo Handling Basin and its environs.

Each of the above was considered in detail during the course of the Study to formulate an agreed set of proposals. Higher priority would be accorded to implementation of quick-wins such as streetscape enhancement with a view to improving the north-south waterfront connectivity with the hinterland and enhancing the pedestrian environment. A number of the conceptual proposals were accorded a visionary or long-term status given that specific conditions and institutional mechanisms would have to be in place to facilitate implementation. Particular emphasis, as highlighted above, was placed on connectivity to ensure that each site and existing activity nodes could be accessed through a network of pedestrian connections enhanced by a suite of streetscape enhancements and improvements.

These basic interventions in turn generated a number of complimentary and additional ideas and concepts that could serve to enhance and regenerate the Study Area. Whilst many of these were identified by the Study Team, others were identified during the PEP. All final recommendations described later in this report were endorsed by a majority of PEP respondents.

1.4 Preparation of the Final Recommended Enhancement Proposals

The formulation of the final recommended enhancement proposals described in this Final Report gave consideration to the following:

- The character and form of existing building developments and open spaces in the area and connectivity with the hinterland;
- Previous planning studies and briefs for various sites in the Eastern District;
- The requirements of the Protection of the Harbour Ordinance (PHO) and associated judicial reviews;
- The overall greening framework as identified by CEDD's Greening Master Plans (GMPs);
- Issues raised by the Eastern District Council (EDC);
- The long term relocation of various uses along the waterfront, such as the current Government uses at the EHC Tunnel Portal site, and the Marine Police Regional Headquarters in Sai Wan Ho; and
- Comments and suggestions received during the 3 stages of PEP of the Study.

1.5 Report Structure

The purpose of this report is to describe the process through which recommended enhancement proposals have been derived and to explain the design details of each concept. The report is structured as follows:

- **Chapter 2** outlines the methodology and evaluation process that was applied to the assessment of options derived during the course of the Study.
- **Chapter 3** summarizes the initial options generated during the Option Generation Stage of the Study.
- **Chapter 4** presents the findings and comments received from the Stages 2 and 3 PEP.
- **Chapter 5** summarizes the preferred option and the recommended option of the waterfront promenade proposal.
- **Chapter 6** outlines a description of the preferred option and final enhancement proposals recommended for the harbourfront connectivity and quick-win streetscape enhancement measures.
- **Chapter 7** describes the urban design and development framework that has been derived for the key sites setting out a vision for an approach to their realisation.
- **Chapter 8** complements Chapter 6 outlining a landscape framework for project realisation.
- **Chapters 9 - 15** details the findings of the preliminary technical assessments on various aspects including traffic, environmental, structural, waterworks, landscape and visual impact, sustainability and land requirements that have been undertaken to validate proposals.
- **Chapter 16** discusses the possible implementation strategies in connection with the realisation of the recommended proposals.
- **Chapter 17** provides a broad conclusion to the Study and highlights the benefits that could accrue from the implementation of short and long term conceptual proposals.

2. METHODOLOGY AND EVALUATION PROCESS

2.1 Introduction

The methodology applied to the formulation of enhancement proposals has focused on the achievement of study objectives and the resolution of problems and issues related to waterfront connectivity and accessibility. At the same time, a 3-stage PEP has been undertaken and the public comments received have been taken into account in the evaluation process.

As required by the Study Brief and as stated in the Baseline Review prepared at the outset of the Study, reference has been made to current planning standards, prevailing government policy and relevant studies and reports during the formulation process of harbourfront enhancement proposals. These references have also assisted in the evolution, assessment and selection of enhancement proposals. The principal references that have been utilised are described below.

2.2 Planning Context

2.2.1 Town Planning Board's Vision Statement for the Victoria Harbour

In recognition of the Victoria Harbour as a special public asset and part of the natural heritage of Hong Kong, the TPB in 1999 endorsed the Vision Statement for the Victoria Harbour, which set out the TPB's vision and goals for Victoria Harbour and its statement of intent on reclamation. The TPB's vision commits "To make Victoria Harbour attractive, vibrant, accessible and symbolic of Hong Kong - a harbour for the people and a harbour of life".

To realise this vision, the TPB set out the following goals:

- To bring the people to the Harbour and the Harbour to the people;
- To enhance the scenic views of the Harbour and maintain visual access to the harbourfront;
- To enhance the Harbour as a unique attraction for our people and tourists;
- To create a quality harbourfront through encouraging innovative building design and a variety of tourist, retail, leisure and recreational activities, and providing an integrated network of open space and pedestrian links;
- To facilitate the improvement of the water quality of the Harbour; and
- To maintain a safe and efficient harbour for the transport of people and goods and for the operation of an international hub port.

2.2.2 The Harbour-front Enhancement Committee's Harbour Planning Principles and Guidelines

As part of the Harbour Planning Review, the former HEC formulated a set of Harbour Planning Principles (HPPs), including a vision and a mission statement, which aim to serve as guidelines for all individuals and organizations in the planning, preservation, development and management of Victoria Harbour and its harbourfront areas.

Vision:

> "To enhance Victoria Harbour and its harbourfront areas to become an attractive, vibrant, accessible and sustainable world-class asset: a harbour for the people and a harbour of life".

Mission:

> "To realise the vision of the Victoria Harbour through effective and balanced utilisation of land and marine resources having regard to the Harbour Planning Principles and subject to an open and transparent public engagement process".

The 8 HPPs consist of the following:

- Preserving Victoria Harbour: Victoria Harbour must be protected and preserved for Hong Kong people and visitors as a special public asset, a natural and cultural heritage asset, and a driver for the creation of economic and social values.
- Stakeholder Engagement: All sectors of the community must be engaged at an early stage and on an on-going basis in the planning, development and management of Victoria Harbour and its harbourfront areas through transparent and inclusive consensus building processes.

- Sustainable Development: The planning, development and management of Victoria Harbour and its harbourfront areas should embrace the principles of sustainable development to balance and cater for the economic, social and environmental needs of all sectors of the present generation, without compromising the needs of future generations.
- Integrated Planning: Integrated and long-term planning, development and management of infrastructure, land and marine uses, and water quality is essential to ensure that Victoria Harbour and its harbourfront areas support and enhance the economic, environmental and social aspirations of Hong Kong.
- Proactive Harbour Enhancement: The planning, development and management of Victoria Harbour must proactively enhance the harbour and its harbourfront areas as Hong Kong's symbol of urban design excellence and Hong Kong's brand identity to the international community.
- Vibrant Harbour: It is essential to balance the use of the harbour to provide both a maritime and logistics hub for the safe and efficient passage of people and goods, and as a cultural and leisure facility. Both marine and land-side activities must cater to and balance with the aspirations of all sectors of the community.
- Accessible Harbour: Victoria Harbour must integrate with the hinterland in a comprehensive manner, including ample unrestricted and convenient visual and physical access for pedestrians, preferably at grade, to and along the Harbour as well as the harbourfront areas.
- Public Enjoyment: The planning, development and management of Victoria Harbour and its harbourfront areas should maximise opportunities for public enjoyment. Land required for and the impact from infrastructure developments, utility installations and land uses incompatible with the HPPs should be minimised.

To enable members of the public and relevant stakeholders to better understand the intentions and requirements of the HPPs, a set of Harbour Planning Guidelines (HPGs) were also developed and endorsed by the former HEC. Relevant approving authorities and advisory bodies are encouraged to make reference to the HPGs in considering and advising on development proposals in and around the Victoria Harbour. Individual project proponents are encouraged to comply with the HPGs as far as possible and practicable. The Guidelines are grouped under nine topic areas. These are summarised below:

- Public Engagement: form, level and detail of the public engagement exercise commensurate with the different nature/scale of the proposals; public engagement at early project stage and continuous engagement throughout implementation; and promoting public awareness of the Guidelines and provision of sufficient information for consultation.
- Land Use Planning: uses to promote vibrancy and diversity and to enhance public enjoyment such as open space with inviting focal features, retail, dining, recreation, leisure, cultural and tourism-related facilities; safe and efficient passage for people and goods; use of vacant land to maximize opportunities for public enjoyment; preservation of cultural heritage; relocation of incompatible land uses (including planned uses), and review of planned development intensity not in compliance with the HPPs when opportunities arise; and infrastructure and utility installations should not be constructed along the harbourfront as far as possible.
- Urban Design: Approaches are to focus harbourfront development at an appropriate density; stepped building height profile; diversity of building mass; Victoria Harbour as an important landmark; design of building mass to allow visual permeability; buildings of small footprint and avoid podium; undertaking of impact assessments; creation of visual corridor and breezeway; active street frontage; high quality street furniture and paving; and special lighting features.
- Landscaping: Emphasis is placed on landscape measures along harbourfront; the use of appropriate planting species; thematic planting; maximising vegetation; greening on roof/podium; and requirement of landscape proposals.
- Physical Linkage: the promotion of a traffic-free environment; continuous pedestrian at-grade access; integrated planning of transport infrastructure including marine-transport; improved pedestrian linkage; design of elevated or underpass linkage (lifts/escalators); and upgrading of existing linkages.
- Land Formation: overriding public need test for reclamation required to be satisfied with emphasis on minimal land formation and harbourfront enhancement.
- Harbourfront Management: public and private partnership; government management of the harbourfront area is to be promoted together with free usage of waterfront promenade and open spaces, and to avoid polluting the Victoria Harbour; and collaboration between Government and the community is also given emphasis.
- Sustainable Development: due consideration to economic, social and environmental aspects is to be given, taking into account long-term versus short-term benefits with reference to a sustainability assessment; and green building

principles are to be adopted where practicable together with the use of environmentally friendly materials and recycled water.

- Temporary Land Uses: the inclusion of temporary uses along the harbourfront should be considered where practical where these serve to enhance and activate the waterfront experience; short, fixed term temporary uses; temporary waterfront structures/advertising signs on open ground; quick-win enhancement; and landscape proposal for temporary development should also be promoted where applicable to the enhancement of the waterfront.

2.2.3 Hong Kong Planning Standards and Guidelines

The Hong Kong Planning Standards and Guidelines (HKPSG) is a reference source that provides recommendations on the scale, location and site requirements of various land uses and facilities. These are intended to establish threshold requirements in planning and urban design studies, and in development control. While all sections of HKPSG are clearly relevant to planning as a whole, several sections are particularly important for the current harbourfront feasibility study. Key guidelines that are relevant to proposal selection criterion are described below.

Recreation, Open Space and Greening

In late 1995, a study on leisure habits and recreational preferences of the people of Hong Kong was undertaken. As part of the aforementioned study, a survey was conducted which has identified a number of key trends:

- The most popular types of recreation and leisure habits are activities undertaken close to home, including going to playgrounds, walking, jogging and active sports such as swimming and badminton;
- There is a substantial demand for more passive open space near home as a result of an ageing population;
- There is a demand for a greater variety of recreation activities; and
- There is an increasing popularity for water sports.

The overall principles for recreation and open space planning are best evaluated by quantity, quality, good practice (i.e. to provide easy access, encourage optimum usage and enable complementary improvements to the environment) and vision. Open space planning, in particular, ideally requires careful planning and the application of an urban design and landscape process and framework at the outset with an overall vision for each urban district or planning area. This also applies to the provision of waterfront promenades within the Study Area.

General Design Guidelines for Open Space

Safety of users, legibility of entrance conditions, and confinement of noise impact are major requirements, together with the provision of adequate lighting, shaded sitting-out areas and quality open space furniture.

Special needs for the disabled and elderly should be considered, with barrier-free access for the disabled provided in accordance with the Buildings Department's Design Manual on 'Barrier Free Access, 1997' and Transport Department (TD)'s Transport Planning and Design Manual (TPDM).

Locational Guidelines for Recreation Facilities

Generally, good quality sites are required for recreation facilities. Wherever possible, sites for recreation facilities should be located close to major transport routes and interchanges as good access encourages use of the facilities. This is particularly important where a wide catchment area is served. Special arrangements may be necessary to ensure easy access for special groups such as the disabled.

Environmental issues are also to be considered, as the environmental quality of a site, such as the air and noise aspects, can affect its suitability for recreation use. Conversely, the proposed recreational use may create environmental problems for adjoining developments, for example, outdoor stadia and ball courts close to housing.

Recreation Facilities for the Elderly

With an ageing population and an increasing trend of elderly participation in recreation activities, there is a growing need to provide recreation facilities for the aged. Appropriate outdoor facilities such as fitness stations with equipment suitable for elderly use, Tai Chi areas with rain shelter and seating, etc. need to be incorporated in gardens and parks commonly frequented by the elderly. Certain integrated design principles need to be considered, including the provision of special equipment facilities, sufficient shaded sitting facilities to facilitate social integration, and free barrier access where necessary. These are contained in the handbook "Universal Accessibility - Best Practices and Guidelines" prepared by ArchSD, and Section 5.7 of Chapter 8 of the HKPSG "Universal Access for All".

Urban Design Guidelines for Hong Kong

To enhance the quality of built environment, the Planning Department completed a study on the "Urban Design Guidelines for Hong Kong" in 2003 and the "Feasibility Study for Establishment of Air Ventilation Assessment System" in 2005. Together, consideration of these issues in formulating enhancement proposals can help shape a better harbourfront environment in aesthetic and functional terms and at macro and micro levels. The guidelines have now been incorporated as Chapter 11 of the HKPSG.

Urban design in itself is concerned with place-making, the creation of spaces for movement, urban amenities and public realm, and the process for improving the overall cityscape. The guidelines state that in order to create a high quality, sustainable built environment in Hong Kong, due considerations should be given to urban design concepts and principles in the planning and development process. However, the guidelines are essentially advisory. In the context of the current harbourfront feasibility study which essentially encompasses the potential for new open spaces, cohesion of the waterfront, and landscape upgrading, the direction and concepts will be geared to enhance the positive attributes while improving and opening up new harbourfront and connective corridors. Key elements contained in the Guidelines to be considered in developing proposals are outlined below by type:

Natural

- Key attributes/components of natural setting;
- Direct and indirect impacts on physical and visual quality of natural landscape, cultural or socio-economic assets; and
- Compatibility with natural and landscaped setting.

Man-made

- Urban context;
- Contribution to the cityscape in terms of adding legibility and creating high-quality city environment;
- Visual impact and suitability of landmark features;
- Suitability and visibility of visual features;
- Compatibility with landscape and development pattern;
- Compatibility with overall height profile and massing;
- Contribution to the local character; and
- Compatibility with heritage setting.

In terms of harbourfront enhancement, the overall objectives are:

- The ability to bring people to the waterfront;
- Enhancement of scenic views and maintenance of visual access;
- Enhancement of the waterfront as a unique attraction; and
- Create a quality waterfront through encouragement of innovative design, leisure and recreational activities, and an integrated network of open space and pedestrian links.

In terms of the harbourfront relationship to the overall public realm, the overall objectives are:

- Street: provide for responsive and interesting frontage to make the pedestrian experience interesting and to enhance vitality at street level;
- Open space: provide for a balance of hard and soft landscape to meet functional requirements, maximize legibility and create focal landmark features;
- Streetscape: ensure high quality in terms of design, materials and construction; cater for the human scale and pedestrian oriented space in core areas; provide adequate pavement widths, with surfaces that are visually attractive and safe; and provide high quality street furniture to complement the area character;
- Heritage: create a suitable setting for heritage features which enhance cultural and historical continuity; and protect the setting and minimize negative impact of new development;

- View Corridors: integrate view corridors in the design of new layouts, and combine them with breezeways where possible formed by open spaces, amenity areas and low-lying buildings; and
- Air Ventilation: maintain sustainable urban design with special regard to building massing and height affecting or restricting air flow. Special consideration should be given to the introduction of 'gateways' for sea/land breezes on waterfront development sites.

In overview, the preceding key elements and objectives have been considered in the formulation of enhancement proposals presented later in this report.

Greening

Planning for a greener cityscape is fundamental to the success of the harbourfront, as it not only helps to define a new waterfront edge, but also can frame a new legible landscape and recreational framework.

The functions of 'greening' as set out in the HKPSG include, inter alia, the following:

- Greening functions as urban 'lungs' to offer visual and psychological comfort and relief, which are vital to the health and well-being of people in a high-density and congested environment;
- Greening adds human dimensions to a city where high-rise developments dominate in scale and proportion;
- Greening increases the permeability of space to maintain a balance of void and mass for visual contrast in the concrete cityscape;
- Greening defines space among buildings and can be used to delineate vistas to form interesting view corridors;
- Green buffers can screen unsightly views and soften harsh and degraded surroundings;
- Vegetation improves microclimate by, for instance, providing sun shades and windbreaks, absorbing heat and reducing the temperature of hard surface, and counteracting summer humidity;
- Landscaped earth bunds can be used as a form of traffic noise mitigation measure; and
- Conservation of existing vegetation and natural landscape is an important element of greening. Site selection for development should avoid areas of existing vegetation and natural landscape which are worthy of conservation.

In January 2011, the Buildings Department issued a Practice Note for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers under the provisions of the Sustainable Buildings Design Guidelines (APP-152). Aside from setting out a series of guidelines with respect to the layout, separation and height of new development, the guidelines also set out greening requirements respective to developments on sites of an area of more than two hectares and sites less than two hectares. The former are attributed with a greening requirement of some 30% whilst the latter are required to meet a minimum greening requirement of some 20%. Greening specifications are principally targeted at the "pedestrian zone" (i.e. horizontal spaces within a site and to a height of 15m).

As a principle, therefore, greening is viewed as integral to the creation of quality urban environment.

2.3 Public Views Solicited at the Stage 1 Public Engagement Programme

Apart from the above, public views solicited at the Stage 1 PEP ahead of the commissioning of the Study in March-April 2009 had served as ready inputs for the Study Consultants to prepare enhancement proposals. The Stage 1 PEP aims to solicit initial views from key stakeholders on the major issues and key areas of concern on enhancement of the Hong Kong Island East harbourfront areas as well as their visions, aspirations and suggestions on harbourfront enhancement. The major activities of the Stage 1 PEP included a brainstorming workshop, a questionnaire survey, a drawing campaign, and briefings to relevant parties and stakeholders.

Public views and suggestions received were analyzed in the following five major areas.

2.3.1 Role of Hong Kong Island East and the Overall Development Direction

Hong Kong Island East was generally considered as a residential district, with a satisfactory living environment. The public expected for a continuous waterfront promenade with the provision of cycling facilities and enhancement of pedestrian facilities connecting the Study Area with adjacent districts and the hinterland. In addition, they expected for more greening and enhancement of recreational and leisure facilities for public enjoyment.

Although a number of suggestions to enhance the local economy and promote tourism development were suggested from individuals, no strong public's preference on the roles for Hong Kong Island East was shown from the survey results.

2.3.2 Proposals on Enhancement Measures

In line with the overall development direction, the public suggested the following enhancement measures:

Provision of Recreational and Leisure Facilities

In addition to the provision of a continuous waterfront promenade with cycling facilities, the public suggested that associated recreational and leisure facilities should be provided along the promenade, such as jogging facilities, fishing facilities, recreational facilities for the aged, toilet and food kiosk.

Urban Design/Landscape Enhancement Measures

The public welcomed more greening and provision of green corridor from the hinterland to the harbourfront. Some also suggested a number of urban design/landscape enhancement measures for the Study Area, for example, beautification of IEC, provision of park with thematic design and enhancement of the industrial area by introducing green roof/vertical greening.

Cultural Heritage and Economy Enhancement Measures

Some individuals suggested measures to enhance the local economy and bring vibrancy to the harbourfront. In general, they suggested the provision of café/dining outlet/alfresco dining and flea market along promenade. Some in particular proposed enhancement measures to preserve cultural heritage and promote tourism, such as provision of water taxi/tourist cruise between North Point and Shau Kei Wan, provision of floating restaurant/stone boat/fishing village museum/sea food market.

2.3.3 Issues to be Examined

The public raised concern on the land and management issues of the promenade on private land. They identified the concerned areas including Heng Fa Chuen and the existing factories and godowns along the Chai Wan waterfront.

2.3.4 Implementation Strategy

The public concerned about the implementation programme of the enhancement proposals. Noting the constraints to implement the proposals, they suggested to identify potential sites for short-term/quick-win enhancement including:

- Provision of promenade on government land first as quick-win harbourfront enhancement scheme, for example vacant land between Taikoo Shing and Quarry Bay (at Hoi Yu Street); and
- Relocation of temporary car park at the ex-NPE site.

2.3.5 Other Aspects

Although the questionnaire survey results showed no strong adverse reaction on incompatible land uses/obsolete developments within the Study Area, it should be noted that these problems might create constraints to harbourfront enhancement. Further study on these problems to identify long-term mitigation measures is suggested. In addition, other issues including a) development density and building height; b) water quality of the harbour; and c) pollutants discharged from the industrial area should be taken into consideration in the Study.

2.4 Study Process and Methodology

The Study is divided into four stages, namely Baseline Review Stage, Option Generation Stage, Plan Consolidation Stage and Final Reporting Stage with an aim to formulate a comprehensive plan for enhancement of the Hong Kong Island East harbourfront areas. In order to formulate the enhancement proposals for the Study Area, a five-step process has been adopted: 1) identification of enhancement opportunities; 2) preliminary review on the feasibility of the proposals; 3) formulation of initial options; 4) consultation with stakeholders; and 5) formulation of preferred option and final recommended proposals.

2.4.1 Identification of Enhancement Opportunities

Enhancement opportunities were identified based on desktop analysis, and then further verified on site as part of an on-site design process. The Study consultant has a menu of desirable locations and standard solutions for typical enhancement opportunities e.g. waterfront promenade development, boardwalk development, streetscape improvement measures, improvement on pedestrian connectivity, footpath widening and enhancement of the public realm etc. Public comments

received at the Stage 1 PEP ahead of the commissioning of this Study were also taken into account in the identification of enhancement opportunities.

Statutory plans (i.e. OZPs) were investigated in the Baseline Review Stage with a view to identifying locations where there was a statutory planning intention to introduce enhancement opportunities on sites that are presently vacant or used for undesirable purposes and which represent major opportunities. Occasionally these are planned open space sites with a temporary alternative use at the moment.

Proposals documented in studies or works contracts by other parties were also examined to identify any relevancy or compatibility with committed or potential enhancement opportunities.

As part of the Study, a series of long-term/visionary concepts have been put forward with the goal to achieve an ultimate planning, urban design and landscape framework within the Study Area in a holistic manner. These also allow development of a more refined enhancement framework with planning and design measures not practical in the short or medium terms due to the lack of available land or having a conflict in function with the existing uses within the surrounding areas.

2.4.2 Preliminary Review on the Feasibility of the Proposals

Both the desktop survey and on-site design investigation process also underwent feasibility checks of the following to determine the general acceptability of the proposals in the Option Generation Stage. Specific issues that were examined included:

- Pedestrian flow lines and volumes;
- Pedestrian sightlines;
- Vehicular flow and volumes;
- Vehicular sightlines;
- Parking and loading/unloading bays;
- Emergency Vehicular Access (EVA);
- Ingresses, egresses and other forms of access;
- Street lighting;
- Benches, rain shelters, tourist signboards and other public amenities;
- Urban design features e.g. statues, monuments, fountains, form and arrangement of development and buildings of special interest;
- Existing plantings, unless these are to be replaced with better performing ones;
- Space available for other enhancement opportunities;
- Shade/sunlight exposure;
- Other adverse environmental conditions that are observable;
- Maintenance responsibilities;
- Land status, particularly when land resumption or changes to the existing layout are required;
- Pedestrian/vehicular traffic flow and volume during special events;
- Location plans of underground utilities;
- Location of public utility reserves; and
- Proposals by other parties that may be in conflict/overlapping with enhancement proposals. These may be determined as permanent or temporary constraints.

2.4.3 Formulation of Initial Options

The key criteria for selecting an enhancement proposal concerns its ability to maximise connectivity and/or accessibility to the harbourfront, and help create a harmonious, activated built environment that is beneficial at a local and regional scale. It is

essential that the initial enhancement proposals should assist in animating the harbourfront, and achieving a unique sense of place.

In the Option Generation Stage, an urban design and landscape framework was formulated with a view to addressing the following aspirations:

- The creation of a continuous promenade where practical and feasible;
- Improvements in pedestrian connectivity from the hinterland to the waterfront with emphasis on the physical enhancement of each route;
- The identification of key nodes and focal points and the range of uses that could be accommodated in these nodes/focal points;
- Enhancement of public space; and
- Streetscape enhancement measures.

A particular task as required under the Study Brief has been to identify specific enhancement measures that could be promptly implemented in the short term ("quick-win" proposals).

2.4.4 Consultation with Stakeholders

At the Stages 2 and 3 PEP, a number of statutory and advisory bodies and relevant stakeholders including the EDC, TPB, Planning Sub-Committee of the Land and Development Advisory Committee, harbour concern groups, shipyard operators, fish market operators, professional institutes and local residents were consulted on the enhancement proposals. Roving exhibitions with display panels and a 3D animated movie were held at Cityplaza and Shau Kei Wan MTR station concourse during the Stage 2 PEP to facilitate public understanding of the proposed options of the enhancement proposals. An engagement workshop was also conducted during the Stage 2 PEP, which served as a platform to solicit public comments and for participants to exchange views on the enhancement proposals. Apart from the above, additional public comments were received from the questionnaire survey and written submissions.

The Harbourfront Commission (HC) was consulted on the enhancement proposals in the course of the Study. Government representatives from the Study's SG also provided advice on the technical aspects of the enhancement proposals. These comments were taken into account in the incremental development of the enhancement options.

2.4.5 Formulation of Preferred Option and Final Recommended Proposals

The review of baseline conditions undertaken at the outset of the Study set out a contextual analysis that drew on the key issues and constraints within the Study Area, together with potential possibilities in the form of preliminary options of enhancement proposals to better integrate and connect older and new areas, and maximise access to the waterfront. On this basis and taking into account the responses from various Government bodies, issues raised during the Stages 2 and 3 PEP, and the objectives of the Study, the following opportunities were identified:

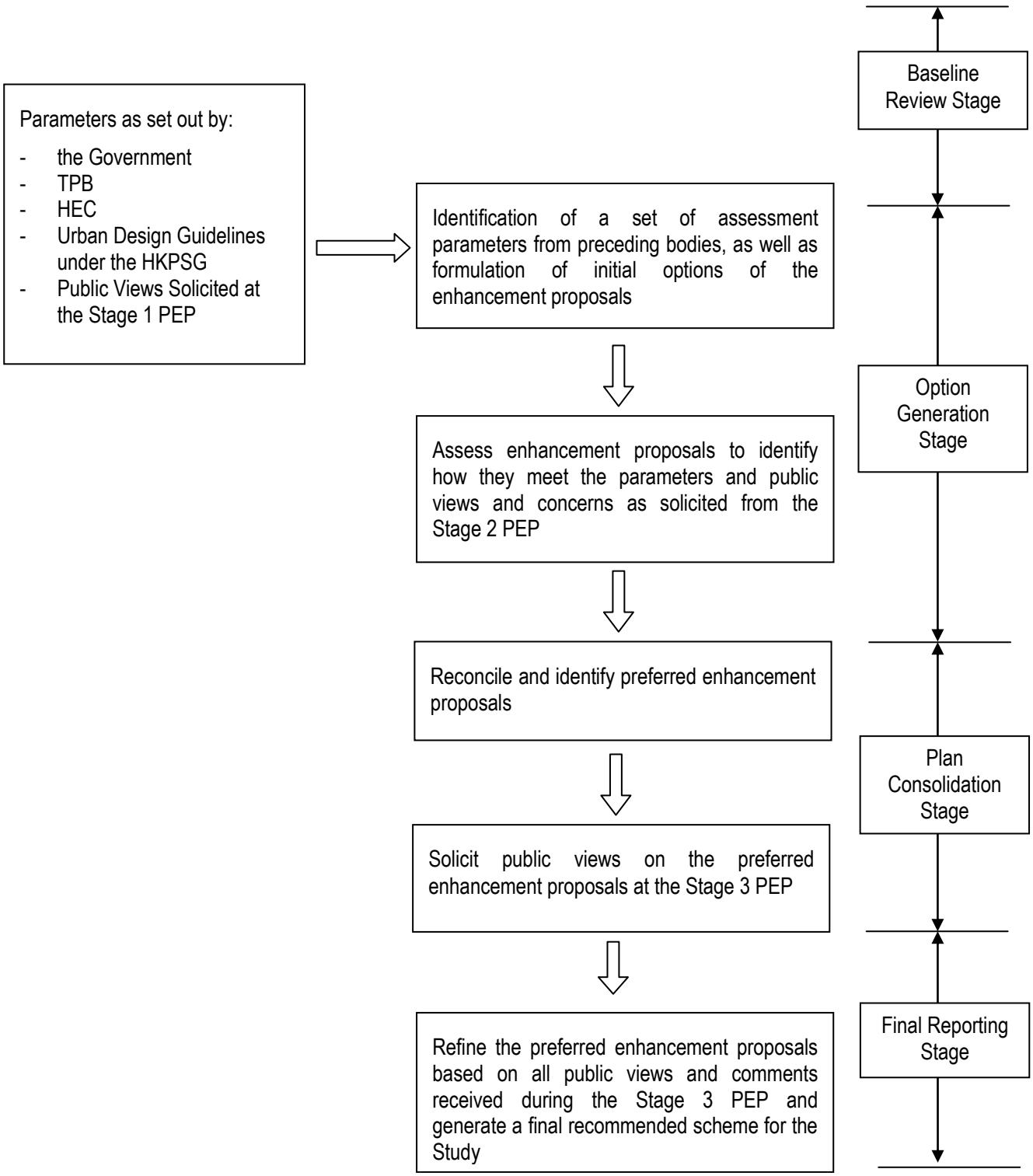
- Integration of harbourfront promenades and associated open spaces wherever feasible;
- The means to overcome problems of pedestrian connectivity by utilising alternative connecting routes that circumvent 'permanent' harbourfront obstacles;
- Enhancement of recreational and leisure facilities associated with the harbourfront;
- Enhancement of harbourfront accessibility from adjoining hinterland areas;
- Enhancement of landscape and streetscape associated with the harbourfront and streets providing connectivity to the waterfront;
- Improvement measures that can be beneficial to the local economy and tourism development;
- Interventions that can enhance the harbourfront experience through, where possible, the incorporation of existing piers and water bodies, and other marine uses such as landing steps into a comprehensive waterfront development strategy;
- Development of improved connections and spaces that serve to integrate heritage buildings, monuments and resources;

- Reduce or eliminate, as far as possible, adverse environmental conditions and impacts caused by existing utility installations along the harbourfront;
- Ensure that design proposals are in accordance with relevant planning standards, guidelines, ordinances, HPPs and HPGs, greening frameworks, and other related studies;
- Ensure compatibility with planning briefs for sites endorsed by TPB;
- Ensure that enhancement measures are technically feasible in broad terms and practical;
- Identify whether public concerns can be addressed by the enhancement proposals; and
- Ensure that proposals are in broad compliance with the provisions of the PHO.

The above opportunity categories were set out for each area (according to relevance) as a series of criterion to be utilized for the evaluation of the validity of initial options, and subsequently to formulate the preferred and recommended enhancement proposals.

The following flow chart depicts the study process described in this Section, which has been employed during the course of the assignment.

Study Process



3. SUMMARY OF INITIAL OPTIONS OF ENHANCEMENT PROPOSALS

3.1 Introduction

Pedestrian continuity along the waterfront of Hong Kong Island East was studied at the Option Generation Stage. Several areas were revealed to have a number of key deficiencies in the composition and form of the public realm. At the same time, it was apparent that there were a number of key issues that conspired against the realisation of meaningful regeneration and enhancement (e.g. the realisation of a holistic and continuous promenade along the harbourfront). It is clear that there are key challenges related to implementation that will require all concerned parties and government bureaux/departments to proactively and cooperatively come to grip with the issues and to devise innovative institutional mechanisms and solutions that are capable of providing for the implementation of enhancement proposals.

The following sections summarise the initial options that were devised to enhance connectivity to and along the waterfront.

3.2 Waterfront Promenade Proposals

For formulation of the initial options, a range of proposals were prepared for each of the defined character areas (**Figures 3.1 and 3.2**). The extent and coverage of proposals were generally constrained by the availability of land. A series of interventions and adaptive re-use of existing provisions were nevertheless identified to enhance the appearance of the area and promote connectivity.

3.2.1 Waterfront Connectivity between Oil Street and North Point Ferry Piers

Initial options for enhancing the waterfront connectivity between Oil Street and North Point Ferry Piers comprise:

- All pedestrian/waterfront circulation will fall back to the next closest street parallel to the direction of the waterfront, which will be City Garden Road and Wharf Road, given that access is prohibited by several existing developments along the harbourfront;
- The promenade alongside Provident Centre lies within a privately-owned residential development which is accessible to the public via two access points through a residential courtyard along Wharf Road;
- Removal of the boundary wall that separates the Provident Centre promenade from the Tong Shui Road Garden will enable the development of a physical connection between them; and
- Provision of a continuous boardwalk under the IEC, providing pedestrian connectivity at the harbour's edge between the proposed waterfront park under the Wan Chai Development Phase II (WDII) north of Oil Street and Tong Shui Road. This boardwalk could then be further extended to the east until it reaches the waterfront area of Hoi Yu Street in Quarry Bay. Alternatively, a continuous boardwalk could be constructed along the face of the existing seawall from City Garden to Tong Shui Road.

3.2.2 Proposed Waterfront Promenade along the Northern Boundary of the Ex-North Point Estate site

Since the demolition of the North Point Estate, the areas adjacent to the North Point Ferry Piers have been largely utilised for temporary car parking. The waterfront space abutting the Ferry Piers is currently under-utilised and requires refurbishment. Opportunities exist to properly upgrade and enhance the waterfront adjacent to the ex-NPE site to integrate the area as part of the overall waterfront connectivity enhancement scheme. This would involve and comprise the following:

- A 20m wide promenade incorporating retail/recreational uses along the harbourfront;
- A recreational cycle track incorporated into the proposed 20m wide promenade; and
- The proposed boardwalk under the IEC that will integrate with the proposed promenade.

3.2.3 North Point Dangerous Goods Vehicular Ferry Pier

Key elements of the proposal include the following:

- The pier structure could be partially opened up to promote continuity of the proposed boardwalk under the IEC;
- If a continuous connection cannot be achieved, the proposed boardwalk would link up with Java Road along one of the IEC slip roads that connect with Healthy Street West or Man Hong Street; and

- If either of the above options is infeasible for one reason or another (e.g. land ownership, implications of the PHO etc.), pedestrian circulation would be re-directed inland to Java Road.

3.2.4 Waterfront Promenade from Hoi Yu Street to Sai Wan Ho Harbour Park

This section of the waterfront comprises a proposed waterfront promenade along Hoi Yu Street, the existing Quarry Bay Park and Sai Wan Ho Harbour Park. The waterfront area north of Hoi Yu Street is not presently publicly accessible. A number of public utility facilities are located at the waterfront. These include an electric sub-station, a gas pigging station, a salt water pumping station and a ventilation building associated with the EHC. Remaining portions of land are mainly vacant. As a consequence, there is an opportunity to introduce waterfront open space supported by retail or other uses that could serve to activate the space. This could contribute to introducing a nodal point along the train of waterfront connections. The proposal will also significantly enhance an otherwise derelict vacant space into a usable and accessible waterfront destination space.

3.2.5 Sai Wan Ho Marine Police Regional Headquarters and Marine Harbour Division

The waterfront area to the north of Grand Promenade (a private residential development) in Sai Wan Ho is currently occupied by the Marine Police Regional Headquarters and Marine Harbour Division. An existing promenade located within Sai Wan Ho Harbour Park abuts Tai Hong Street which follows an east-west alignment west of the aforementioned pier structures for the Marine Police. Aldrich Bay Promenade is located to the east of the Marine Police piers. This consists of a well-established promenade comprising good quality hard and softscape. Connectivity along this section of the waterfront is interrupted by the Marine Police premises. A series of alternative connections have been investigated during the Option Generation Stage to achieve formal connections between the two waterfront areas. Options examined included the following:

- Reinforcing through landscape enhancement the current connection that exists along the pedestrian footpaths of Tai Hong Street and Tai On Street;
- A possible alternative circulation linkage between the two existing promenades via the current public transport interchange (PTI) of Grand Promenade;
- A possible elevated public walkway over the Marine Police premises. It does not, however, provide a link that would be readily accessible and convenient to all users; and
- The site search for an alternative site for the Marine Police premises is currently underway. Should a relocation site be identified, the strip of land adjoining the Marine Police piers would be opened up for the development of a waterfront promenade.

3.2.6 Aldrich Bay Promenade

Given that Aldrich Bay Promenade is well developed and is extensively utilised by the public as a popular waterfront space, no intervention is advocated. There is an opportunity to extend the Aldrich Bay Promenade eastward to the adjacent vacant land previously used for rehabus parking.

3.2.7 Shau Kei Wan Shipyards and Wholesale Fish Market

The waterfront area of Tam Kung Temple is currently occupied by a number of shipyards, Shau Kei Wan Wholesale Fish Market and Shau Kei Wan PTW. Two options to allow connectivity through this area are described below:

- Pedestrian circulation along the waterfront will be detoured to the footpath on Tam Kung Temple Road; and
- Shipyards can be considered for relocation so that the waterfront can be excised for public promenade. Simultaneously under this option, the water edge of the Shau Kei Wan Wholesale Fish Market and Shau Kei Wan PTW are proposed to be opened for public access.

3.2.8 Hong Kong Museum of Coastal Defence

The Hong Kong Museum of Coastal Defence is a discrete facility that abuts the harbour's edge. Public access to the waterfront can only be achieved through paid entry to the Museum. Various options were examined to identify the means to facilitate public access to the water edge. Principal initial options consist of the following:

- Construction of an elevated walkway (the "Sky Trail") along the hillside north of the Hong Kong Museum of Coastal Defence overlooking the harbour's edge; and

- As an alternative, the construction of a cantilevered boardwalk (the "Sea Trail") along rock outcrops at the shoreline to the north of the Museum site, just above the high-water mark**.**

3.2.9 Chai Wan Waterfront between Heng Fa Chuen and Chai Wan Public Cargo Working Area

The waterfront to the east of Heng Fa Chuen is at present occupied by various Government and industrial uses. It is not therefore possible in the foreseeable future to achieve public accessibility at the waterfront. At the same time, it has to be recognised that the waterfront within Heng Fa Chuen is under private ownership. As such, pedestrian circulation will be confined to the hinterland along Shing Tai Road and Chong Fu Road.

3.2.10 Chai Wan Public Cargo Working Area

Since the Chai Wan Public Cargo Working Area (PCWA) will continue to exist for operational needs, a footpath is proposed alongside the PCWA abutting Sheung On Street and Ka Yip Street to enhance connectivity along the waterfront and to improve the pedestrian environment. As a long-term/visionary concept, there is an opportunity to comprehensively redevelop the Chai Wan Public Cargo Handling Basin for recreational and tourism purposes and to perhaps utilise the water basin to accommodate the current shortfall in marine moorings. This would actively contribute to the regeneration of the area.

3.2.11 Chai Wan Public Filling Barging Point and Godowns

A public filling barging facility is presently located at the eastern side of the PCWA. The facility is intensively used and would be difficult to relocate at present. Relocation or closure in the medium to long term could contribute to opening up the eastern edge of the Chai Wan Basin for redevelopment.

3.2.12 Other Government Uses East of Chai Wan Public Cargo Handling Basin

There are some Government uses (Chai Wan PTW and Island East Refuse Transfer Station) along this part of the waterfront. Should these uses not be relocated, public accessibility to the waterfront is unlikely. Pedestrian circulation close to the waterfront will accordingly be confined to the footpaths abutting Sun Yip Street and Fu Hong Street.

3.2.13 Siu Sai Wan Promenade

The promenade is already well developed and is abutted by a series of quality open spaces. No intervention is considered to be required.

3.3 Pedestrian Circulation Network

A series of options were identified throughout the Study Area with a view to enhancing connectivity and promoting access to the harbourfront. The key interventions by geographical location are summarised below (**Figures 3.3 and 3.4**):

3.3.1 North Point: Linear Connectivity

King's Road and Java Road form the principal road corridors that run parallel to the waterfront. These are busy streets that contain a mixture of commercial, retail and residential establishments. The streets serve as a major part of the circulation network for pedestrians, vehicles and trams. Other major linear circulation streets located in North Point comprise the following:

- City Garden Road/Wharf Road between the ex-Government Supplies Depot site at Oil Street and Tong Shui Road; and
- Chun Yeung Street/Marble Road between North Point Road and Tin Chiu Street.

3.3.2 North Point: Connectivity to the Hinterland

Connectivity between the hinterland and waterfront is achieved through the streets running perpendicular to the waterfront. Some of the pedestrian corridors establish a direct and efficient connection between the waterfront and the Mass Transit Railway (MTR) stations. The major north-south connections in North Point are listed below:

- Oil Street: Although located outside the western boundary of the Study Area, the street does provide a major circulation route that connects and also interlinks with key east-west routes within the Study Area;
- Power Street: Provides a link to City Garden where pedestrians access to the waterfront can be achieved;
- Tin Chong Street: Also provides a link to City Garden where a pedestrian-only link to the waterfront is located;

- North Point Road: Connects to Provident Centre where a pedestrian-only route to the waterfront can be accessed;
- Tong Shui Road: The eastern footpath along the road will provide access to the proposed promenade at the ex-NPE site;
- Shu Kuk Street: Forms the principal north-south connector that links the urban core of North Point to the waterfront at the North Point Ferry Piers;
- Kam Hong Street: Will provide a connection to the proposed promenade at the ex-NPE site;
- Tin Chiu Street: Will also provide a link to the proposed promenade at the ex-NPE site;
- Man Hong Street: This route extends to Man Hong Street Playground from where a connection to the waterfront can be achieved;
- Healthy Street West: Provides a connection to Man Hong Street which in turn links to Java Road and the waterfront;
- Healthy Street East: Extends to the waterfront west of the North Point Fire Station;
- Model Lane: Provides a primary north-south connector, as it provides an important link to Quarry Bay MTR station that services hotel, office and government premises in the area; and
- Hoi Yu Street: Provides a potential connection to the proposed waterfront promenade west of Quarry Bay Park Phase I.

3.3.3 Quarry Bay: Linear Connectivity

The IEC provides a major physical barrier that constrains ready north-south access to and from the waterfront and, moreover, restricts east-west linear connectivity. The number of existing and possible east-west linear connections is limited. A major means of traversing the area is provided by the circulation routes that presently extend through Quarry Bay Park. The following major streets could potentially be enhanced to augment the quality of linear circulation routes that are presently provided through Quarry Bay Park:

- King's Road/Kornhill Road/Shau Kei Wan Road: These provide major connectors for pedestrians extending in an east-west direction between North Point, Quarry Bay and Shau Kei Wan;
- Hoi Chak Street: This extends to Hoi Tai Street and provides a connection to the western entrance of Quarry Bay Park Phase I; and
- Hoi Yu Street: Presents an opportunity to provide a connection to the future waterfront promenade to the west of Quarry Bay Park Phase I.

3.3.4 Quarry Bay: Connectivity to the Hinterland

Connection from the inland area to the Quarry Bay waterfront is heavily constrained by the IEC. Conversely, the Soho East in Lei King Wan provides users with a reasonably pleasant waterfront related circulation space (Sai Wan Ho Harbour Park). The major north-south connections in Quarry Bay include the following:

- A new route has been identified along the axis of Hoi Wan Street. This links with a proposed footbridge that extends over the IEC before descending to the future waterfront promenade north of Hoi Yu Street;
- The current footbridge to the north of Cityplaza Four Office Tower provides a major linkage from the hinterland to the waterfront;
- Tai On Street forms a principal at-grade pedestrian circulation route to the waterfront; and
- Tai Hong Street provides a northward pedestrian linkage to the existing promenade in Sai Wan Ho Harbour Park.

3.3.5 Shau Kei Wan: Linear Connectivity

The major linear corridors at Shau Kei Wan run along the IEC and the Aldrich Bay/Shau Kei Wan Typhoon Shelter. These streets provide linkages that enable the community to access the newer residential developments at Aldrich Bay and the older neighbourhoods located to the east towards A Kung Ngam. The major linear streets in Shau Kei Wan including the following:

- Shau Kei Wan Road: This aligns parallel to the IEC as the primary pedestrian circulation route. The road eventually turns northward and connects in an eastward direction with Shau Kei Wan Main Street East before aligning westward to Oi Lai Street;
- The Aldrich Bay Promenade is the most prominent and continuous linear connector in the Study Area. The promenade mainly runs alongside Oi Kan Road; and
- Other primary road corridors providing linear circulation routes include Aldrich Bay Road and Oi Shun Road.

3.3.6 Shau Kei Wan: Connectivity to the Hinterland

Connectivity to the Aldrich Bay waterfront is provided by several existing streets that are aligned perpendicular to the waterfront. The principal north-south connections in Shau Kei Wan include the following:

- Tai On Street provides a major pedestrian circulation route to the waterfront. Upon relocation of the Marine Police premises, Tai On Street will serve as a direct linkage to proposed promenade linking Sai Wan Ho Harbour Park and Aldrich Bay Promenade;
- Oi Tak Street: The completion of a new park (Aldrich Bay Park) adjacent to the street will serve to enhance the pedestrian experience;
- Oi Yin Street: Provides a major north-south connector that links the hinterland with the waterfront adjacent to Aldrich Bay Promenade; and
- A new north-south pedestrian circulation passageway is suggested to the east of Aldrich Garden (a residential development). The site is currently used for car parking and Government uses under temporary land allocations. It is currently zoned "O" on the OZP and it is envisaged that the site will eventually be developed as a publicly accessible open space.

3.3.7 Chai Wan: Linear Connectivity

Major pedestrian connections in Chai Wan are located around the Chai Wan Public Cargo Handling Basin and at the eastern end of the Study Area adjacent to Siu Sai Wan Sports Ground. The adaptive re-use and regeneration of existing godowns and industrial buildings in conjunction with the enhancement of the major connecting routes would contribute to enhancing the area and its overall ambience. The existing connectivity framework comprises the following:

- Wing Tai Road is the primary pedestrian corridor. At its east end, the road connects to Chai Wan Road and subsequently, Siu Sai Wan Road. The latter extends around the eastern end of Siu Sai Wan until it intersects with Sun Yip Street;
- Sun Yip Street is also identified as a significant linear pedestrian route leading to the Chai Wan PCWA;
- Due to their proximity to the Chai Wan PCWA, Sheung On Street and Ka Yip Street are considered as being an intrinsic part of the waterfront. Consequently any major future restructuring of the waterfront and adjacent land uses and developments should evolve the treatment and enhancement of these connectors; and
- Shing Tai Road provides an east-west connector that is parallel to the Heng Fa Chuen promenade. Given that the latter lies on private land, Shing Tai Road provides an important publicly accessible connector in the area.

3.3.8 Chai Wan: Connectivity to the Hinterland

Connection to the Siu Sai Wan waterfront and the Chai Wan PCWA is established with several existing streets that are aligned perpendicular to the waterfront. The north-south connections to the waterfront in Chai Wan are listed below:

- Chai Wan Road/Fung Yip Street forms the major connector from the hinterland to the waterfront via Sheung On Street Playground;
- Pedestrian circulation route through Chai Wan Park: Currently, there are a number of paths in the Park that lead to Tsui Wan Street in the north-eastern end of the Park. These make it possible to connect to Tsui Wan Street, and subsequently extend across Wing Tai Road to link with Sheung Ping Street; and
- Fu Yee Road: Provides a link from the existing PTI at the southern end of Fu Yee Road northwards to Siu Sai Wan Promenade.

3.3.9 Provision of Cycling Facilities

One of the Study objectives is to examine the possibility of the provision of cycling facilities within the waterfront area of Hong Kong Island East. The assessment has shown that the existing heavy vehicular traffic along the carriageways, insufficient space available, safety and physical constraints posed by existing developments, topography and land ownership pattern along the waterfront militate against the realisation of a continuous publicly accessible and secure cycle track that would conform to the current government standards. As such, the provision of cycling facilities has been confined to leisure park/promenades and where discrete spaces can be created. The Study has identified opportunities to introduce recreational cycle paths and facilities within waterfront spaces. Two principal locations where recreational cycling activity could be accommodated comprise:

- North Point Ferry Piers key site: A cycle path for recreational and leisure purpose is proposed along the full length of the 20m wide promenade of the ex-NPE site. This will provide some 400 – 500 linear metres of cycling space.
- Hoi Yu Street key site in Quarry Bay: The proposed recreational cycle route will generally be aligned along the waterfront promenade, which will offer a pleasant recreational riding experience for the users.

3.4 Urban Design Framework for Key Sites and Long-term/Visionary Concepts

3.4.1 Urban Design Approach

Urban design proposals for key sites specifically address the following:

- An urban design approach to the massing, composition and arrangement of development upon identified key sites within the Study Area; and
- Other broader enhancements that are suggested for the public realm that could materially enhance the future attractiveness of the Hong Kong Island East harbourfront.

The existing urban design character of the Study Area was studied in the Baseline Review Stage. The urban design approaches and design criteria identified provided the basis for the formulation of urban design proposals for the key sites. Two sites within the Study Area have been identified as key sites having potential for enhancement to create a quality waterfront. The initial development options for the two key sites are outlined below:

3.4.2 North Point Ferry Piers and the Adjoining 20m Wide Waterfront Promenade of the Ex-North Point Estate Site

North Point Ferry Piers (western and eastern piers) are located at the north end of Shu Kuk Street and Kam Hong Street. The piers are currently in operation and accommodate regular ferry services to Hung Hom, Kowloon City and Kwun Tong. A number of fish market booths are located at the entrance of western pier. A 20m wide promenade has been designated under the planning brief of the ex-NPE site. Apart from this, it is also specified that a central piazza be provided in front of the North Point Ferry Piers to provide a focal point for leisure activities. A total of three initial options were developed for the key site as follows:

Option 1: Theme: Promenade as Functional Circulation Corridor (**Figure 3.5**)

This option suggests a promenade with emphasis on a mixture of various retail uses, e.g. cafes and kiosks, within the 20m wide promenade set out in the planning brief of the ex-NPE site. It will primarily be a functional circulation corridor, whilst the western berth of the eastern pier could be partially converted into a leisure boat pier complemented with restaurants and commercial activities.

Option 2: Theme: Leisure and Recreation-themed Waterfront (**Figure 3.6**)

The 20m wide promenade will mainly comprise a walkway alongside the harbourfront, with the opportunity to incorporate a cycle track with a length of about 400m-500m for recreational and leisure purpose. This will run parallel to the pedestrian circulation area within the promenade. A full range of hard landscape elements will be incorporated into the promenade, e.g. special paving, seating benches, pedestrian lighting, safety guardrails, life buoys, and bespoke distinctive signage. Other recreational amenities will also be installed, e.g. children's playgrounds and elderly exercise equipment. Passive and flexible open space will be incorporated to accommodate informal activities (e.g. tai-chi) as well as special festivals/seasonal events. Under this option, the western pier will remain as a working ferry terminal, whereas the western berth of the eastern pier could be renovated and partially converted into a leisure boat pier with the inclusion of restaurants and commercial activities.

Option 3: Theme: Major Entertainment Hub (**Figure 3.7**)

The proposed boardwalk underneath the IEC is intended to form an extended activity deck from the ex-NPE promenade. Whilst the ex-NPE promenade maintains the functions of a walkway and a cycle track for recreational and leisure purpose, the boardwalk space will allow for the emphasis of various animated uses such as retail kiosks, cafes, restaurants, bars and coffee shops. Urban design elements will be incorporated into the promenade, e.g. special paving, seating benches, pedestrian lighting, safety guardrails, life buoys, distinctive signage as well as public arts in the form of wall decoration, paving engravings and sculptures. Both pier structures will be renovated and partially opened up to connect with the boardwalk. There will be opportunities to integrate current uses in both piers (e.g. fish market booths) onto the boardwalk. Apart from the leisure boat use, it is also suggested that restaurants, retail/commercial activities and/or entertainment uses etc. be adaptively incorporated into the available space in the pier structures. Publicly accessible landscaped areas and cafes are proposed on the rooftops of the ferry piers. The 20m wide waterfront promenade will be integrated with the proposed boardwalk, where most of the informal, passive and recreational activities are located.

3.4.3 Hoi Yu Street Site in Quarry Bay

The key site consists of two parts, viz the EHC Tunnel Portal site and the waterfront area of Hoi Yu Street to the north of the IEC. Currently, the EHC Tunnel Portal site is occupied by FEHD's Transport Depot, WSD's Maintenance Yard and Hong Kong Police Vehicle Pound. The waterfront area of Hoi Yu Street is largely vacant. There are utility installations including a salt water pumping station, an electricity substation, the EHC ventilation building and a gas pigging station. Coinciding with recommendations from this Study, a proposed footbridge alignment has been suggested along Hoi Wan Street to traverse the IEC to connect the hinterland with the harbourfront. A number of enhancement proposals including various leisure, recreational and entertainment facilities have been presented as initial options. These options are summarised below:

Option 1: Recreation-themed Waterfront (**Figure 3.8**)

This option suggests that the area will be designed with a focus for recreational uses. The EHC Tunnel Portal site is proposed to be developed as a park with hard-paved area and corresponding park elements. To improve connectivity to the waterfront, a public walkway is proposed to traverse the site towards the waterfront, starting at Hoi Wan Street and the west end of the existing Quarry Bay Park Phase II, turning into an elevated footbridge as it crosses the IEC. Special signage, public art displays, engravings, landscape furniture, unique lighting, incorporation of softscape etc. could add to the experience and character of the area.

The Hoi Yu Street waterfront site is proposed to accommodate a range of recreational activities. These are anticipated to include a jogging promenade, regular sitting areas, a children's playground, fitness/exercise equipment zones, elderly exercise areas, a tai-chi court etc. Under this option, an informal cycling route is envisaged to be aligned adjacent to the planting buffer area abutting the IEC. Cycling can then form one of the recreational components of the promenade. The two "OU" sites within the waterfront space are envisaged as developments which can accommodate cycle rental facilities and other uses that can serve to animate the waterfront edge (e.g. retail kiosks; eating places; places of entertainment, recreation, sports or culture etc).

Option 2: Cultural and Leisure-themed Waterfront (**Figure 3.9**)

Under this option, the waterfront promenade gives emphasis to the inclusion of cultural, leisure and commercial uses along the waterfront whilst improving pedestrian circulation from the hinterland to the harbourfront. The Hoi Yu Street waterfront site will be developed mainly as an open space with a new waterfront promenade to link up the existing waterfront promenade in Quarry Bay Park. Semi-mature trees and dense planting will be installed along Hoi Yu Street to create a sufficient peripheral planting buffer. Two short truncated linear footbridges will, following suggestions made by EDC, connect to the waterfront. As the EHC Tunnel Portal site located between the two footbridge sections is subject to adverse air quality given its proximity to the IEC, it is proposed to introduce intensive 'woodland' planting. Semi-mature trees and low-level planting are proposed to create a green transition from the hinterland to the waterfront. The transition space between the two footbridge sections within the woodland should be designed to discourage loitering.

Medium-scale structures are suggested for the two "OU" sites at the waterfront, accommodating a diverse range of cultural, leisure and tourism-related uses, e.g. exhibition or convention halls; markets; arts and crafts fairs; eating places; places of entertainment; and retail shops. It is proposed that the developments within the "OU" sites will be lower than the maximum building heights (35mPD and 25mPD for the two "OU" sites in the west and east respectively) stipulated in the Quarry Bay OZP. Accordingly the proposed developments will rise to approximately 3 storeys high. Green roofs and open passageways through the buildings will be utilised to promote the sustainability of the development proposals.

Option 3: Tourism and Entertainment-themed Waterfront (**Figure 3.10**)

Under this option, it is envisaged the EHC Tunnel Portal site will contain an indoor structure/facility for entertainment purposes. Uses could include a multi-purpose performance centre or an IMAX theatre. Given the concerns on air quality at the EHC portal, an interesting indoor use will greatly mitigate the air quality issue that would result from an outdoor space. It is also suggested that the proposed elevated walkway/footbridge connecting to the waterfront will be designed in an innovative and interesting manner. The use of linear standardized structures will be avoided. The design should be coordinated with the character and design of the proposed architecture and planting.

The Hoi Yu Street waterfront site will be developed in a similar way to that described under Options 1 and 2 above, with developments within the two "OU" sites incorporating tourism and entertainment facilities, shops and themed restaurants. A viewing deck can also be integrated within the development. Under this option, the proposed development will aim to achieve the maximum building height permitted under the Quarry Bay OZP (i.e. 5 – 6 storeys high). The scale of development will be compatible with its environs and the proposed entertainment facility at the EHC Tunnel Portal Site. The layout of the development will be designed to human scale with recreational uses and functions along the waterfront. Remaining areas will be greened and designed in such a way that a range of seasonal outdoor activities will be permitted. The option promotes and gives emphasis to performing arts and cultural functions tied in with commercial elements that will promote viability. Hard and soft landscape treatments will be designed to reflect these themes. This will also be laid out in such a way to reinforce a definable entertainment corridor that extends from the hinterland to the waterfront. Specific locations along the corridor and the waterfront can be designated for permanent or periodic display of public art.

3.4.4 Long-Term/Visionary Concepts

As previously identified, there are other sites within the Study Area that present opportunities for enhancement in the long term. There are factors, however, under current circumstances that constrain the immediate planning, development and realisation of what could occur in these sites. All existing uses and facilities at these sites require marine access, which render it difficult to identify suitable relocation sites. Whilst the government and the public understand the limitations, it is suggested that the potential of these identified sites be periodically reviewed. Each of the sites actually has significant potential and would cement the full and comprehensive realisation of the Study objectives per se. It is in this context that the proposals are retained as "Visionary Concepts" that could be implemented in the long term, which are outlined below.

North Point Dangerous Goods Vehicular Ferry Pier and the Surrounding Green Areas

North Point Dangerous Goods Vehicular Ferry Pier is located at the north end of Tin Chiu Street and Healthy Street West slip road. There are a number of open space, parks, playgrounds, sitting-out areas and sports courts in the vicinity of this area. These are divided by roads and are fragmented. Due to its operational need, the Ferry Pier would remain in the foreseeable future. As a visionary concept, it is possible that the Pier site could be redeveloped as an entertainment centre with recreational open space. North Point inherits a strong tradition of Chinese Opera and thus the theme of Chinese Opera could be incorporated into the open space. At the same time, flexible or demountable structures could be utilised to facilitate the hosting of various kinds of performing arts. Provision could also be made for an outdoor amphitheatre, a waterfront promenade that allows for the promotion of continuity of pedestrian movement along the harbourfront, and other recreational amenities such as seating and jogging.

There is also an opportunity to adaptively convert and refurbish the existing pier structures into other uses that can accommodate waterfront-related facilities, e.g. themed restaurants, bars and other related retail uses.

Quarry Bay: Transformation of Existing Marine Police Piers into Focal Point of Soho East

The area is currently occupied by the Marine Police Regional Headquarters and Marine Harbour Division. As a long term vision, it is possible that the existing pier structures are redeveloped and adaptively reused with the introduction of new uses including cafes, restaurants, fitness and exercise centres, and multi-purposes facilities for leisure purpose. The facilities could also contain life style and well-being uses, e.g. yoga/tai-chi/dance floor, youth learning centres, exhibition spaces, markets and similar retail uses etc. Realisation of the proposal would be contingent on the identification of a relocation site for the Marine Police, which would facilitate the development of a continuous waterfront promenade around the northern and eastern edges of Grand Promenade.

Chai Wan Public Cargo Handling Basin: Regeneration with Marine-themed Recreation and Leisure Uses

The Chai Wan PCWA presents an opportunity to create a leisure and recreational waterfront open space for the enjoyment of the public. The visionary concept envisages that the Basin could be converted into a major recreational, tourism and leisure area accommodating (amongst other facilities) hotels, service apartments on available peripheral sites. Adaptive regeneration

and re-use of existing developments is also anticipated. Future developments could also include ground-level commercial activity such as shops and restaurants, which would contribute to activating the area and providing an economic catalyst for regeneration. It is also possible that early initiatives would incentivise the conversion of factories and godowns into tourism and other accommodations. At the same time, the Basin could be utilised to address the profound shortage of private vessel moorings (tall ships could be moored in the area as tourist attractions). The provision of moorings would promote the development of on-shore support facilities which in turn would provide local business opportunities and employment. Overall the revitalisation and regeneration opportunities within the environs of the Chai Wan Public Cargo Handling Basin are presenting a "Visionary Concept".

3.5 Streetscape Enhancement and Landscape Framework for Major Pedestrian Corridors

3.5.1 Landscape and Streetscape Enhancement Approach

Landscape and streetscape enhancement proposals are two-fold in character:

- Landscape proposals and treatments for identified key sites inclusive of open spaces and recreational areas in each site.
- Landscape treatments and enhancement proposals for the public realm inclusive of the waterfront promenade, public open spaces and principal public roads throughout the site.

The existing landscape character of the Study Area has been analysed in the early stage of the Study. Arising from the proposals, open space is envisaged to provide areas for both passive and active recreation activities as well as adequate area for pedestrian circulation. A number of open spaces with landscape enhancement proposals within the Study Area will promote pedestrian movement and help reinforce visual and functional integration between the hinterland and the waterfront. The landscape enhancement proposal will become a major improvement item that will compliment the planning of a comprehensive pedestrian circulation network.

3.5.2 Streetscape Enhancement Strategies

Streetscape enhancement strategies are identified as follows:

3.5.2.1 Identification of Streets with Landscape Enhancements

Key circulation corridors recommended for landscape enhancement are identified based on the following rationale:

- Major existing circulation corridors with linear movement;
- Sensible connectivity from the hinterland to the harbourfront;
- Proximity to MTR stations;
- Spatially related to larger residential developments/estates;
- Centralised location in relation to existing urban core activities; and
- Opportunity to directly connect with existing and/or proposed open space and recreational focal points.

3.5.2.2 Landscape Palette (Figure 3.11)

To institute a formal set of design parameters governing the design of street furniture, amenity features, seating etc, a recommended landscape palette has been specifically generated for the Study Area. The key components of the palette are as follows:

- Street trees and structural planting to create generous three-dimensional landscape spaces;
- Distinctive low-level planting will gradually change from one character area to another as well as at key sites, focal points, green nodes and intersections for the purpose of distinguishing different district characters and identities;
- Seating, bus shelters, litter bins, lighting and signage columns;
- A diversity of paving materials that will create a sense of place and a coherent spatial definition amongst and within sub-areas;

- Public art in the form of paving, furniture and vertical treatments will be used to animate the public realm and provide a focus within public spaces;
- Provision of a general standard of lighting to create a night-time environment in response to issues of safety, security, pedestrian flow and traffic management; and
- The use of a combination of lighting types will contribute not only functionally, but also aesthetically to create various lighting moods and enhance the ambiance of the scheme across the proposals relating to activity.

3.6 Identification of Quick-Wins for Early Implementation

In the process of selecting streets for early implementation of the proposed enhancement measures, a number of factors have been considered. The criteria in selecting the 'Quick-Win' streets to receive priority for enhancement measures include the following:

- Potential benefits of enhancement measures to the nearby communities and potential users;
- Physical connection and proximity to the harbourfront;
- Ease of implementation of enhancement measures;
- The technical feasibility of potential street corridors and key sites;
- The importance of streets in relation to the local sub-districts;
- The spatial relationship of enhancement proposals with large residential estates and/or major transport nodes; and
- The difficulty and practicality corresponding to realistic phasing of implementation and budgetary limitations.

On the basis of the above criteria, 6 streets were selected during the Option Generation Stage of the Study as follows (**Figures 3.1 and 3.2**):

- North Point: Shu Kuk Street (north of Java Road);
- Quarry Bay: Hoi Yu Street (from Java Road to the underbelly of the IEC);
- Quarry Bay: Hoi Wan Street (north of Hoi Tai Street);
- Shau Kei Wan: Tai On Street (Oi Kan Road to Lei King Road);
- Shau Kei Wan: Oi Tak Street; and
- Chai Wan: Sun Yip Street (Siu Sai Wan Road to Fung Yip Street).

3.7 Air Ventilation Assessment

During the Option Generation Stage, an Air Ventilation Assessment (AVA) (Expert Evaluation) was conducted to assess the wind conditions and the impact of the initial enhancement proposals for key sites on the air ventilation of the environs. The findings of the AVA (Expert Evaluation) show that the impact of the proposals on air ventilation of the surrounding areas of the key sites will be minimal and that most of the existing wind corridors will be preserved. The AVA (Expert Evaluation) report is enclosed in **Appendix A**.

3.8 Overview

The proposals described above call for an assembly of interventions and actions that will contribute to the enhancement of Hong Kong Island East and provide a framework for the introduction of new development elements into the area to both improve connectivity and create a better and more coherent overall landscape framework. The landscape strategy, as formulated during the Option Generation Stage of the Study, has comprehensively addressed the public realm and set out the means through which specific enhancements within the Study Area could be designed and implemented. Design principles, objectives and rationales have been summarised in this chapter. The initial options of enhancement proposals were promulgated to the public during the Stage 2 PEP and their comments on the proposals are summarised in the following chapter.

4. ANALYSIS OF PUBLIC VIEWS COLLECTED DURING THE STAGES 2 AND 3 PUBLIC ENGAGEMENT PROGRAMME

4.1 Introduction

The Stage 2 PEP was undertaken in April–early July 2010 to solicit public views on the initial options of enhancement proposals with a view to assessing their general acceptability, the pros and cons of each option and identifying alternative enhancement proposals, if any. The major activities of the Stage 2 PEP included an engagement workshop, roving exhibitions, a questionnaire survey and a number of briefings to statutory and advisory bodies, stakeholders and local residents.

Taking into account the public comments received at the Stage 2 PEP, the preferred option was formulated and promulgated during the Stage 3 PEP undertaken in February–April 2011 to solicit further comments from the public and identify areas for refinement and improvement. Similar to the Stage 2 PEP, a number of briefings were arranged for statutory and advisory bodies as well as local residents. A questionnaire survey was also conducted to guage the public comments on the preferred enhancement proposals.

4.2 Analysis of the Public Views Collected on the Initial Options during the Stage 2 Public Engagement Programme

The public views collected during the Stage 2 PEP can be broadly divided into eight categories: overall study approach, waterfront promenade proposals, cycling and other facilities, key site, connectivity between the hinterland and the waterfront, implementation, public engagement approach and other issues.

4.2.1 Overall Study Approach

The public in general welcomed the objectives of the Study to formulate a comprehensive plan for enhancement of the Hong Kong Island East harbourfront areas. They expressed views in particular on the following aspects: 1) Study Area; 2) Comprehensive/Thematic Development Proposals for Sub-districts; and 3) Marine Use Plan.

Study Area

Some Eastern District Councillors were of the view that the Study boundary should be extended to cover Causeway Bay to the West and Siu Sai Wan at Cape Collinson to the East so as to formulate a comprehensive plan for the whole of the Hong Kong Island East area.

In relation to the improvement of the north-south waterfront/hinterland connectivity, the public identified a number of streets and sites located beyond the Study Area. In addition, in commenting on the proposed Sky Tail/cantilevered boardwalk between Shau Kei Wan and Heng Fa Chuen, there were requests that the proposed walkway be realigned to an area falling outside the Study Area to avoid penetrating the Heng Fa Chuen estate.

Comprehensive/Thematic Development Proposals for Sub-districts

Some Eastern District Councillors, residents of respective districts and harbour concern groups considered that the Study should focus more on how to enhance the uniqueness of each sub-district. Apart from the Hoi Yu Street and North Point Ferry Piers key sites, those in Shau Kei Wan and Chai Wan should be identified to enhance the district identity.

Marine Use Plan

The harbour concern groups and professional bodies opined that there was no overall plan for marine use in Hong Kong. While the current proposals focused on land based activities, there should be more discussions on land/water interface issue, and water activities under each option. In addition, water transport modes should be considered to connect each activity zone to the rest of the Hong Kong and Kowloon waterfront. Other marine issues such as the safety of vessels using the typhoon shelter and the water quality of the harbour should be addressed. This, however, was out of the scope of the Study and should, if there are defined issues, be addressed by others.

4.2.2 Waterfront Promenade Proposals

The Boardwalk Proposal and Protection of the Harbour Ordinance

In general, the public, the statutory and advisory bodies including the EDC, harbour concern groups and professional bodies welcomed the boardwalk proposal underneath the IEC on the condition that the proposal would not lead to further reclamation.

The questionnaire survey also indicated that 84% of the respondents agreed to the boardwalk proposal. The feedback on this aspect from various engagement activities is clear and consistent.

While there was a strong public support of the boardwalk proposal, the public was concerned that the PHO might have implications on the proposal. Indeed, the questionnaire survey indicated that slightly less than half of the respondents considered that there was an "overriding public need" in providing a continuous promenade along the waterfront. The issue of the PHO in regard to the IEC boardwalk proposal will be further discussed in Chapter 5 below.

Apart from the implications of the PHO on the proposal, assurances were sought on safety issues including a) the loading capacity of the boardwalk; b) the safety during storm/typhoon or high tide; c) fishing/cycling activities along the promenade that might affect the passers-by; d) provision of life-saving facilities, e.g. life jackets, life buoy and etc.; e) provision of security measures, e.g. closed circuit television (CCTV) and security guards; and f) provision of adequate emergency accesses at appropriate intervals. It was also suggested that the boardwalk be constructed with durable and erosion-resistant materials.

Other Waterfront Promenade Proposals

Whilst the expectation of the general public on the provision of a continuous waterfront promenade was appreciated, the residents of some districts opined that a continuous waterfront promenade was not necessary if it would infringe on private ownership rights. Some Eastern District Councillors, professional bodies and local residents considered that if it was cost-ineffective or technically infeasible, the Island East harbourfront promenade should have individual sections with district features and some portions might need to be diverted inland. Notwithstanding, the promenade should be considered a comprehensive system. Specific views with regard to the respective districts are summarised below.

North Point

The proposal of providing a 2-km long boardwalk under the IEC with a view to creating a continuous waterfront promenade in North Point was generally supported. There were suggestions that access points from the inland to the proposed boardwalk should be provided at suitable locations without involving land acquisition. In addition, some Eastern District Councillors suggested that the promenade enhancement proposal should be extended to Causeway Bay.

Sai Wan Ho

The elevated walkway proposal over the Marine Police premises was generally not preferred by the public due to the following reasons:

- Conflict with the operation of the Marine Police;
- Not user-friendly and possibility of it being under-utilised;
- Inconvenient to the elderly and the disabled; and
- Not cost-effective.

While the public was generally in favour of the relocation of the Marine Police premises in the long term, they considered the proposals of improving the interior of the Grand Promenade Public Transport Terminus and upgrading the existing pavements around Grand Promenade to improve the walking environment in the short term acceptable.

Some local residents also suggested that the existing MTR subway network should be extended to connect the Sai Wan Ho MTR Station with the proposed promenade to further enhance linkage.

Shau Kei Wan

The EDC, the local residents and the shipping and fishing operators in Shau Kei Wan were concerned that the suggestion of relocating the shipyards might affect their livelihood and the historical significance of Shau Kei Wan which was originally a fishing village. In addition, the shipyards were considered as important tourism assets of Hong Kong. There were suggestions that the shipyards be retained and incorporated into the conservation and tourism plan for Shau Kei Wan for further enhancement.

Heng Fa Chuen

The public in general would like to have a continuous waterfront promenade connecting Shau Kei Wan and Chai Wan. They welcomed the proposed Sky Trail/cantilevered boardwalk proposal.

However, almost all Heng Fa Chuen residents providing comments strongly opposed to the proposed connection at Heng Fa Chuen which would intrude on their private property. Due consideration and respect should be given to the Heng Fa Chuen residents who had the right to enjoy their existing peaceful living environment.

The alternative option of linking the Sky Trail/cantilevered boardwalk with Shing Tai Road in Heng Fa Chuen, which is a public road, was also considered not favourable by the Heng Fa Chuen residents for similar reasons mentioned above. In addition, the MTR Property Management pointed out that the vehicular and pedestrian traffic along the said road was heavy from time to time and the influx of more pedestrians might exert potential burden in terms of safety and maintenance.

Some Eastern District Councillors proposed alternative routes for the connection as follows:

- The alternative route could be diverted into the hinterland, passing through the Lei Yue Mun Park and Holiday Village, and connected to Chai Wan.
- Considering the unattractive waterfront environment at the Chai Wan PCWA and the surroundings, it is not necessary to connect the route to Chai Wan. The route could connect Shau Kei Wan with the Hong Kong Museum of Coastal Defence and Sai Wan Battery and end at the former Ming Tak Primary School.

Some Eastern District Councillors, the public and concern groups were also concerned about the conservation and safety issues regarding the proposed Sky Trail/cantilevered boardwalk including a) tree/shoreline/geology conservation issues; b) length and level of the route; c) building materials; and d) provision of adequate emergency accesses at appropriate distance.

Chai Wan

Given that there are existing industrial, warehouse and utility uses in the vicinity of the PCWA, the public and some Eastern District Councillors considered that the footpath enhancement proposal alongside the PCWA might not be attractive for public enjoyment. On the other hand, a comprehensive revitalization plan of the whole Chai Wan district was preferred to streetscape enhancement at certain locations.

Some Eastern District Councillors suggested that the proposed promenade should be extended eastward to Cape Collinson (Hak Kok Tau) and the Leaping Dragon Walk in Siu Sai Wan.

4.2.3 Cycling and Other Facilities

Provision of Cycling Facilities

Although there had been strong public request for a continuous cycle track along the waterfront within Island East in the Stage 1 PEP, the public, including the statutory and advisory bodies, expressed diverse views on the provision of such facilities in the Stage 2 PEP. Some were keen to have a continuous cycle track while others were concerned about possible safety issues and suggested that such activities should be restricted. Having considered the topographic limitations at certain areas and statutory requirements on the provision of a continuous cycle track along the promenade, some Eastern District Councillors and residents had the following views and suggestions:

- Since the cyclists would need to ride the bicycles in designated cycle tracks for safety reasons, which might result in a narrowing of and overcrowding on the pavement, there was no need for such a provision.
- Provision for a double decked promenade with elevated cycle track could provide a weatherproof walkway for the pedestrians underneath.
- While it was noted that only recreational cycle track was proposed at the two key sites, efforts should be made in looking into the feasibility of providing a purpose-designed cycle track along the waterfront promenade. If it was eventually proved to be infeasible, the constraints should be set out clearly.

Provision of Other Facilities

The public also had diverse views on the provision of fishing facilities along the promenade. Some Eastern District Councillors and the public were concerned about the safety and hygiene issues arising from fishing activities while others suggested that fishing area should be designated along the promenade for better management and supervision.

Some Eastern District Councillors and the public expressed concerns over the inadequacy of the following facilities: recreational facilities for the elderly and children (such as Chinese chess boards, benches, pavilions and elderly exercise areas); sports facilities (such as football and basketball fields); performance venues; rubbish bins; toilets; pet parks; and lawn.

4.2.4 Key Site

In addition to the proposed Key Sites, i.e. North Point Ferry Piers and Hoi Yu Street site in Quarry Bay, there were suggestions that more key sites could be identified for improvement to enhance district quality. Shau Kei Wan and Chai Wan were specifically cited. Views expressed are summarised below.

North Point

Two development options for North Point Ferry Piers, namely "Leisure and Recreation-themed Waterfront" and "Vibrant Entertainment Waterfront", were promulgated during the Stage 2 PEP. The questionnaire survey results indicated that the public had no particular preference on the options. In respect of the proposed development items under each development option, no significant preferences could be identified either.

While no preference on specific development options was observed, the public generally preferred low-rise and low-density development. They were also in favour of the incorporation of art and cultural facilities and recreational facilities for the elderly and children into the proposals. Moreover, they expressed concern that the proposed vibrant commercial development at the ferry piers might cause nuisance to nearby residents.

Some uses and developments suggested by the public are listed as follows:

- Chinese (Cantonese) opera performance venue;
- Sculptures with specific artistic features; and
- Provision of access points from the inland to the proposed boardwalk at suitable locations without involving land acquisition.

The public were also concerned about the following issues:

- Future development/redevelopment at the North Point Ferry Piers site should not impair the marine functions of the piers; and
- Hygiene problems caused by the seafood market at the North Point Ferry Piers.

Quarry Bay

No strong public views or preferences were observed from the survey and public engagement activities on the proposed development options and items for the Hoi Yu Street site in Quarry Bay.

On the other hand, it is clear that the public generally preferred low-rise and low-density development at the Hoi Yu Street site. They were also in favour of the provision of recreational facilities for children and elderly, fitness/exercise equipment zone, recreational cycle route, and festive/seasonal events. Some were concerned that the proposed commercial development might cause nuisance to nearby residents.

Although the public had no strong preference on the proposed provision of a public park or major entertainment facility at the EHC Tunnel Portal site (e.g. IMAX theatre, performance centre), they were in favour of more greening and iconic art and cultural development. While they welcomed an attractive, iconic elevated walkway connecting the waterfront and the EHC Tunnel Portal site, they were in favour of a more direct connection accessible to the elderly and disabled. Moreover, the proposed elevated walkway should be accessible to the disabled and escalators should be provided. Other alternative design and suggestions for the site included the following:

- A wide gently-sloping landscaped deck for pedestrians crossing the IEC;
- A subway across the IEC with the intention of enhancing connectivity between Taikoo Shing and Quarry Bay Park;
- A multi-purpose Eco-Park at the EHC Tunnel Portal site;
- If it was infeasible to relocate existing utility facilities along Hoi Yu Street, it was proposed that beautification works for these facilities be carried out to enhance the compatibility of these utility facilities with the surrounding environment;
- Proposed uses such as eating places at the site might generate traffic and as such adequate parking facilities should be provided; and
- The proposed cycle routes should be separated from pedestrian circulation spaces.

Potential Key Site - Shau Kei Wan

Given the cultural heritage and history of Shau Kei Wan, some Eastern District Councillors, local residents, district organizations, harbour concern groups, and professional bodies were of the view that Shau Kei Wan should be identified as a key site and that buildings, structures, areas or places which were of historical significance or cultural value such as those in relation to the evolution of the fishing village, the Japanese occupation of Hong Kong Island and the post-war era should be preserved and revitalized. In particular, the shipyards along the Typhoon Shelter, being an integral part of the fishing industry

which was once the primary source of economic development in Hong Kong and are still providing important maintenance services to fishing boats, should be retained and incorporated into the conservation and tourism plan for Shau Kei Wan for further enhancement. This would also help attract commercial activities to the area and create job opportunities, which in turn would have a positive effect on the economic development of the district.

The public also raised the following concerns/suggestions for the enhancement of Shau Kei Wan:

- Poor water quality and odour problem of the Shau Kei Wan Typhoon Shelter;
- Concern on fire safety of the Shau Kei Wan Typhoon Shelter as its entrance/exit in the east was too narrow for fishing boats and fireboats;
- Inadequate provision of sports facilities;
- Provision of display area for fishing boats and dragon boats;
- Safety and hygiene problems caused by fishing activities; and
- Provision of alfresco café, stone boat and recreational/leisure facilities.

Potential Key Site - Chai Wan

While there was a general support of streetscape enhancement proposals in Chai Wan, there were comments that the Study had failed to holistically plan for a larger area comprising the industrial/commercial hinterland, PCWA and the typhoon shelter. The PCWA presented a major opportunity for waterfront enhancement and for providing leisure uses in the long term. The Study should explore the possibility of enhancing the PCWA in a progressive manner to attract visitors and enhance businesses.

Other suggestions received included:

- Designation of display area for fishing boats and dragon boats;
- Provision of a movable bridge connecting the Chai Wan PCWA and the breakwater; and
- Provision of a watchtower on the Siu Sai Wan Promenade.

4.2.5 Connectivity between the Hinterland and the Waterfront

There is a general consensus from the public that streetscape enhancement should be considered as a priority lead project and that the proposal be implemented as soon as possible to enhance the waterfront/hinterland connection. Apart from beautifying the streetscape, there should be provision of various activities on these streets. In addition to the six streets for streetscape enhancement as proposed under the Study, the options proposed by the public are included in the following table:

Table 4.1 Public Suggestions of Streets for Enhancement

North Point	Quarry Bay	Shau Kei Wan	Chai Wan
• *Marble Road* • *Oil Street* • *Tong Shui Road* • *Healthy Street East* • *Man Hong Street*	• *Hoi Chak Street* • *King's Road (North Point to Quarry Bay section)* • *Pan Hoi Street* • *Shing On Street* • *Tai Cheong Street* • *Tai Fung Avenue* • *Tai Hong Street*	• *Church Lane* • *Factory Street* • *Hoi An Street* • *Hoi Ning Street* • *Nam On Street* • *Oi Lai Street* • *Oi Yee Street* • *Oi Yin Street* • *Tam Kung Temple Road* • *A Kung Ngam Road* • *Shau Kei Wan Main Street East*	• *Chong Fu Road* • *Ka Yip Street* • *Sheung On Street* • *Shing Tai Road* • *Fu Hong Street*

Apart from the above, some local residents in Sai Wan Ho/Lei King Wan suggested that the existing MTR subway network could be extended to connect the Sai Wan Ho MTR Station with the proposed promenade.

4.2.6 Implementation

Priority Lead Projects

The public in general have shown their support to the enhancement proposals and urged the government to implement the proposals as soon as possible. The following developments were cited as priority lead projects for which short-term (quick-wins) and long-term implementation plans should be formulated under the Study:

- Streetscape enhancement for north-south waterfront/hinterland connections;
- Provision of a boardwalk underneath the IEC;
- Provision of a waterfront promenade at Hoi Yu Street;
- Revitalization in Shau Kei Wan District; and
- Revitalization of Chai Wan PCWA.

Implementation Mode for the Two Key Sites

The questionnaire survey put forward two implementation modes for the development options of the two key sites, namely Government-led development and public-private partnership (PPP). 42% of the respondents agreed that the development should be led by the government while 40% were of the view that the development options should be implemented under a PPP. Other implementation modes suggested in the questionnaire survey and Public Affairs Forum include a) social enterprise; and b) government-led development committee/group (including Government officials, non-government organizations and social organizations).

While there was little discussion on the implementation mode in other engagement activities, and that the difference in percentages of respondents in support of Government-led development and PPP was not significant, no conclusion could be drawn on this aspect.

Other Issues

The public generally considered that private property rights and environmental concerns would be the major issues to be dealt with during the implementation process of waterfront enhancement. Further negotiation with governmental departments, property owners and environmental concern groups on matters relating to the relocation of public utilities, compensation and management, environmental protection measures etc. would be required.

4.2.7 Public Engagement Approach

The public, and in particular the affected residents and stakeholders, opined that they should be fully engaged during the options/proposals generation stage of the Study. In this regard, the Planning Department should adopt a proactive approach in engaging the public in the Plan Consolidation Stage. The engagement results should be made known to the public.

4.2.8 Other Issues

Design Competition

There were suggestions that design competitions for respective key sites/iconic development, e.g. Hoi Yu Street site and Sky Trail could be carried out.

4.3 Analysis of the Public Views Collected on the Preferred Option during the Stage 3 Public Engagment Programme

As stated previously, the preferred option of the enhancement proposals were formulated subsequent to the Stage 2 PEP. Thus the Stage 3 PEP was carried out with an objective to collect views of the public on the preferred option. Comments and written submissions from statutory and advisory bodies provided additional in-depth suggestions and recommendations related to the further refinement of the proposals.

The public views and suggestions were specifically concerned with the following: waterfront promenade proposals; key sites; connectivity between the harbourfront and the hinterland/streetscape enhancement; cycling, water taxi and other facilities; implementation; and public engagement.

4.3.1 Waterfront Promenade Proposals

Boardwalk underneath the Island Eastern Corridor

Similar to the findings of the Stage 2 PEP conducted in April to early July 2010, the public, statutory and advisory bodies (in particular the EDC), and professional bodies welcomed the boardwalk proposal underneath the IEC. The questionnaire survey also indicated that 66% of the respondents agreed to the boardwalk proposal. The feedback on this aspect from various engagement activities is clear and consistent.

On design aspect, there were suggestions that the boardwalk should be accessible to the elderly and disabled and more access points should be provided from the landward side such as Provident Centre and City Garden to the boardwalk.

Apart from the above, the public was concerned about the following issues:

- Safety concern during typhoon season or severe wave conditions; and
- Impact of air pollution generated by vehicular traffic of the IEC on the users of the boardwalk.

The Sky Trail along the Hillside of the Hong Kong Museum of Coastal Defence

Under the preferred option, the Sky Trail will terminate at a lookout point rather than connect with the existing waterfront promenade of Heng Fa Chuen as previously promulgated at the Stage 2 PEP in order to avoid intrusion of the Sky Trail upon private ownership right. Eastern District Councillors generally welcomed the revised proposal. The questionnaire survey also indicated that more than half of the respondents (54%) agreed to the Sky Trail proposal.

Other concerns/suggestions with regard to the Sky Trail proposal are as follows:

- The design should blend in well with the surrounding natural environment;
- Impact of the Sky Trail on the natural habitat;
- Security and safety issues;
- Provision of facilities for the disabled; and
- Busy lorry traffic at the Shau Kei Wan Wholesale Fish Market which is one of the proposed access points to the Sky Trail.

Extension of the Sky Trail to the East to Connect with Shing Tai Road

A number of Eastern District Councillors and Heng Fa Chuen residents were concerned about the proposal of possible extension of the Sky Trail to connect with Shing Tai Road as it would bring outsiders to the estate and hence generating nuisance, and security, safety, management and maintenance problems, and requested the Government to withdraw the proposal. While most of the written submissions received from Heng Fa Chuen residents raised strong objection, the questionnaire survey indicated that 38% of the respondents from Heng Fa Chuen agreed to the proposal. Some representatives of an advisory body also considered that the Sky Trail should avoid leading to a dead end at the proposed lookout point and the possibility of its further extension to enhance the waterfront connectivity should be explored.

Enhancement Measures for Shau Kei Wan Shipyard and Adjacent Waterfront

The questionnaire survey indicated that 73% of the respondents agreed with the enhancement measures for Shau Kei Wan shipyards and the adjacent waterfront. Given the cultural heritage and history of Shau Kei Wan as a fishing village, a political party suggested the provision of an exhibition venue to display fishing village tradition. Besides, some Eastern District Councillors, the local residents and professional bodies suggested an open space/a piazza be provided adjacent to Tam Kung Temple or in the proposed temporary heritage park for religious/festive events. It was also suggested that shipyard operators should be consulted on any enhancement measures/improvement work in the area.

Other Waterfront Enhancement Proposals

Sai Wan Ho and Shau Kei Wan

Eastern District Councillors and the public considered that the Marine Police Regional Headquarters at Sai Wan Ho should be relocated as soon as possible to make way for the development of a continuous waterfront promenade. They were also concerned about the poor water quality and odour problem of the Shau Kei Wan Typhoon Shelter.

Chai Wan

Some Eastern District Councillors considered that the connectivity between Chai Wan and Siu Sai Wan Promenade should be enhanced. In this connection, a political party suggested that a continuous waterfront promenade be provided from Chai Wan Typhoon Shelter to Siu Sai Wan Promenade, with designated fishing area and cycling facilities.

4.3.2 Key Sites

North Point Ferry Piers

The public in general welcomed the preferred enhancement proposals for North Point Ferry Piers. The questionnaire survey indicated that about 70% of the respondents agreed with the enhancement proposals.

Similar to the findings of the Stage 2 PEP, the public generally preferred low-rise and low-density development. Various suggestions on design, land use and transport aspects were received. There were also suggestions of preserving existing fresh water seafood stalls and providing mixed uses including a Cantonese Opera House at the ex-NPE site. Apart from the above, there were some public concerns on safety, hygiene and flooding issues, inconvenience caused to visitors patronizing the Harbour Cruise service and visual impact.

Hoi Yu Street Site in Quarry Bay

Eastern Harbour Crossing Tunnel Portal Site and Waterfront Area at Hoi Yu Street

Similar to the findings of the Stage 2 PEP, the public generally preferred low-rise and low-density development. More than 60% of the respondents of the questionnaire survey agreed with the proposals of "Indoor entertainment facility (multi-purpose performance centre or IMAX theatre) at the EHC Tunnel Portal site" and "Cultural, tourism and entertainment uses with shops and themed restaurants provided in low-rise buildings with recreational uses along the waterfront area at Hoi Yu Street".

Some Eastern District Councillors and local residents expressed concerns about the proposed tourism, cultural and entertainment uses at the Hoi Yu Street site and considered that such vibrant uses would affect the tranquility of the area, generate nuisance to the local residents and reduce the open space provision. They were also of the view that the Tunnel Portal site should be developed into a park for public enjoyment, and considered that the enhancement proposals should include elements that could improve the quality of life of the local residents. The structural feasibility of developing an indoor entertainment facility at the Tunnel Portal site was also a concern.

On the contrary, a political party supported the provision of an indoor performance venue at the Tunnel Portal site.

Notwithstanding the above, there were also suggestions for the Hoi Yu Street site:

- Transform the open area at the site into a meaningful and unique place with multiple uses such as outdoor conferences and exhibitions for public enjoyment; and
- Develop an artificial beach at the Hoi Yu Street waterfront.

Pedestrian Linkages

Some Eastern District Councillors were in favour of a direct walkway with escalators linking the Quarry Bay area with the site rather than the proposed iconic and wandering elevated walkway in order to shorten the walking distance. A professional body suggested that additional pedestrian linkages with Quarry Bay Park and Quarry Bay MTR station should be provided to enhance pedestrian accessibility to the harbourfront. In addition, a private developer suggested that Java Road be widened and a vehicular service road be provided to link up the site with Lei King Wan.

4.3.3 Connectivity between the Harbourfront and the Hinterland/Streetscape Enhancement

Harbourfront accessibility of the Hong Kong Island East should be enhanced. Nodal attractions/access points and vehicular access (if aimed for tourists) and supporting facilities could be provided along the harbourfront. The coverage of enhanced pedestrian linkages could be extended to the south of King's Road to bring more people to the waterfront. Directional signage at existing landmarks and MTR stations should also be erected to facilitate visitors to orientate themselves and for directing them to the waterfront.

The public in general welcomed the streetscape enhancement proposals. There were suggestions to include more streets in the enhancement proposals to further strengthen the pedestrian linkage between the hinterland and the waterfront, and one or a few of these roads/streets could be pedestrianized for multiple or flexible uses and activities.

Apart from the above, the following additional roads/streets for streetscape enhancement were suggested in order to further strengthen the pedestrian linkage between the hinterland and the waterfront:

- Oi Yin Street;
- Tung Hei Road;
- Shau Kei Wan Main Street;
- Tai Hong Street;
- Tai Cheong Street;
- Hong Cheung Street; and
- Shing Tai Road.

4.3.4 Cycling, Water Taxi and Other Facilities

Provision of a Continuous Cycle Track

While diverse views on the provision of a continuous track for cycling were received in the Stage 2 PEP, the Hong Kong Cycling Alliance and some Eastern District Councillors and Public Affairs Forum members requested for such provision along the waterfront for leisure, recreational and tourism purpose as well as serving as an environmental-friendly transport means during the Stage 3 PEP. The Hong Kong Cycling Alliance, in particular, opined that a continuous cycle track along the northern shore of Hong Kong Island would bring an integrated, vibrant, connected and accessible harbourfront, and allow ready access to all waterfront locations for different activities. They also considered that there should be no conflicts between the cyclists and the pedestrian traffic.

Provision of Water Taxi Service

Although the questionnaire survey did not show an overwhelming support by the respondents for the water taxi proposal, professional bodies, the public and some Eastern District Councillors welcomed such proposal and suggested additional water taxi pick-up and drop-off points at Hoi Yu Street, Taikoo Shing, Heng Fa Chuen, Chai Wan and Siu Sai Wan. Apart from the above, the Rehabilitation Alliance Hong Kong considered that universal design/barrier-free water taxi facilities should be provided for the disabled.

Provision of Other Facilities

Apart from the above, the public suggested the provision of other facilities including pet park, designated fishing area, bicycle rental facilities, water sports centre, sitting out area, large lawn, retail/refreshment kiosks, Dai Pai Dongs, singing corners, rain shelter, water market, barbecue area and organic farm.

4.3.5 Implementation

Priority Lead Projects

The public in general have shown their support to the enhancement proposals and urged the Government to implement the proposals as soon as possible. The questionnaire survey attempted to rank the respondents' preference on the implementation priority of five key enhancement proposals. The result, in order of priorities, was as follows:

(1) Boardwalk underneath the IEC in North Point

(2) Sky Trail along the hillside of the Hong Kong Museum of Coastal Defence

(3) Streetscape enhancement proposals for the nine roads/streets

(4) Proposals for the North Point Ferry Piers

(5) Proposals for the Hoi Yu Street site in Quarry Bay

However, the difference in preference for the proposals was not significant.

Other Suggestions

A professional institute put forward the following suggestions on the implementation of the enhancement proposals:

- As the key site proposals are subject to involvement of private sector and the timing for implementation is very uncertain, some temporary leisure/culture/sports uses could be explored to bring some quick benefits to the users. An appropriate phasing proposal will be vital to its success;
- To create an identity for the Island East harbourfront, conventional (government-style) design and procurement of public facilities/amenities should not be adopted; and
- To set up a dedicated harbour agency to speed up the implementation process and to oversee the management of that section of the Victoria Harbourfront to ensure the overall consistence, linkage and attractiveness of the harbourfront.

4.3.6 Public Engagment

There were views that publicity should be stepped up to enhance awareness of the consultation activities and public opinion should be taken into account in finalizing the Study. The results of public consultation should also be made available to the public.

4.4 Overview

In summary, the public has shown their general support through the Stages 2 and 3 PEP.

Notwithstanding their general support of the initial options during the Stage 2 PEP, the public indicated that all enhancement proposals should be technically feasible and cost effective without interference to existing private property/land. In response, the feasibility of all proposals have been subject to relevant preliminary technical assessments (i.e. traffic, structural, environmental, etc.). The results of the assessments are summarised in the later chapters of the report. The comments received in the Stage 2 PEP had provided significant input to the formulation of the preferred option developed at the Plan Consolidation Stage.

With the public's views taken on board to refine the initial options to develop the preferred option, the public expressed their general support to the enhancement proposals during the Stage 3 PEP, which were manifested through the quantitative data that were obtained from the questionnaire survey.

Details of the preferred option and final recommendations of the enhancement proposals are described in Chapters 5 - 8.

5. PREFERRED OPTION AND FINAL RECOMMENDATIONS: WATERFRONT PROMENADE PROPOSAL

5.1 Introduction

The Stage 2 PEP was undertaken to solicit public views on the initial options of the enhancement proposals in April-early July 2010. Public comments received were utilised as part of the evaluation criteria used for the formulation of preferred option. The preferred option was then promulgated to the public during the Stage 3 PEP in February-April 2011, aiming to gather public comments with a view to refining the proposals to come up with the final recommendations of the Study.

The public in general supported the preferred option and interest was specifically focused on the impact and benefits that the proposals would have within individual districts. Comments and written submissions from statutory and advisory bodies provided additional in-depth suggestions and recommendations related to the further refinement of the proposals. In addition, quantitative data obtained from a completed questionnaire survey also helped to assess the general acceptability of the enhancement proposals. The findings of the Stage 3 PEP formed the basis for the formulation of final enhancement proposals.

As the preferred option and final recommendations of waterfront promenade proposals are quite similar, only the recommended proposals will be described and illustrated in detail in this chapter. Nonetheless, major refinements of the preferred option will be highlighted to facilitate public understanding of the formulation process of final recommendations.

5.2 Evaluation Criteria

In general, the recommended option of waterfront promenade proposal is strategised to utilise existing promenades and connect them together to create a continuous promenade along the waterfront. Proposals are specifically developed with a view to enhancing connectivity and accessibility to each proposed promenade to promote utilisation and activate the waterfront edge. In this respect, a series of evaluation criteria have been developed to assist in the selection of the major proposals that have been formulated under the Study and to ensure that the Study proposals make a positive and robust contribution to enhancing the harbourfront areas.

Over and above the broad planning principles/guidelines established in recent years for areas around the harbour including those in the HKPSG and HPPs/HPGs as formulated by the former HEC, more specific evaluation criteria have been prepared to assist the formulation of preferred and recommended waterfront promenade proposals. These specific evaluation criteria are as follows:

- Does the concept integrate existing harbourfront promenades and associated open space wherever feasible?
- Where there are 'permanent' harbourfront obstacles, does the concept present the most practical resolution to overcome problems of pedestrian connectivity by providing the best alternative connective routes?
- Do options include improvement measures that can be beneficial to the local economy and tourism development?
- Do promenade proposals incorporate existing piers and water bodies, and other marine uses such as landing steps, as means to extend the harbourfront experience?
- Do proposals establish improved connections and identity of heritage buildings, monuments and resources?
- Has the design proposal been generated in accordance with relevant planning standards, guidelines, ordinances, HPPs and HPGs, greening frameworks (e.g. CEDD's GMPs), and other related studies?
- Do enhancement proposals ensure compatibility with various planning briefs that have already been prepared by the Planning Department for certain sites within or in the immediate vicinity of the Study Area?

5.3 North Point Waterfront: Proposed Boardwalk underneath the Island Eastern Corridor

The preferred option of developing a continuous boardwalk/walkway underneath the IEC was generally supported by the public during the Stage 3 PEP. This was also put forward as the recommended option and no significant changes were made to this proposal.

The proposal eliminates the present absence of access to the harbour's edge from Oil Street to Tong Shui Road and from Healthy Street West to Hoi Yu Street created by pre-existing developments that prohibit access to the harbourfront. The proposed boardwalk will create an unimpeded pedestrian connection along the harbourfront within the western part of the

Study Area that will be accessible to the general public. The proposed alignment of the walkway is indicated in **Figures 5.1** and **5.2** and a perspective is depicted in **Figure 5.3**.

This boardwalk of approximately 2km in length will extend from the future waterfront park north of Oil Street proposed under the WDII eastward through the North Point Ferry Piers and North Point Dangerous Goods Vehicular Ferry Pier to Hoi Yu Street.

The walkway will be supported by the existing piers that provide protection to the existing columns supporting the IEC. Mountings will be fixed to the IEC piers to enable installation of the walkway. A general width of 5m is recommended for the boardwalk, which will be sufficient for the accommodation of street furniture including seating benches, balustrades and other streetscape amenities. Decorations and additional installations such as public art/sculptural displays are also proposed in conjunction with the boardwalk. The walkway and proposed features will not form an obstruction to any required inspection and maintenance works on the boardwalk, nor will they affect the structural integrity and stability of the IEC. A structural assessment of the IEC boardwalk is provided in Chapter 11 of this report. A clearance of 2m below the soffit and around the columns will be generally maintained.

The walkway will generally be located directly below the IEC, and, where feasible, aligned along the northern extent of the IEC piers to promote public proximity to the harbour. Where there are multiple slip roads crossing the underbelly of the IEC, and the headroom for pedestrian circulation is insufficient, the proposed boardwalk will be extended beyond the IEC structure and above the sea surface. This condition occurs near Tong Shui Road, where a small portion of the boardwalk of about 200m long and 3m wide will need to extend beyond the cover of the IEC. Given the confined area available on the piers associated with the slip roads, the width of this section of boardwalk will only be about 3m (**Figures 5.2 and 5.4**).

It is the Consultants' view that as the provision of boardwalk will not involve the formation of land or blockage of the sea, the issue of reclamation does not come into play. It is also arguable that the proposal responds to a public need, i.e. a desire for provision of access to the waterfront which is largely absent along the North Point waterfront. Correspondingly it is to be noted that the public response to the proposal has been generally positive. The implications of the PHO on the boardwalk proposal will be further discussed in Section 5.3.6 below.

5.3.1 Integration of the Proposed Boardwalk with the North Point Fireboat Pier

The existing fireboat pier at the North Point Fire Station presents another special condition for the proposed boardwalk underneath the IEC. During liaison with the Fire Services Department (FSD), FSD expressed their concern that the boardwalk may present two potential constraints to their operations: (a) water rescue operations; and (b) maintenance of an on-shore access point and land approach for inland/boardwalk rescue. To address their concern, it is proposed that a bascule or a swing bridge could be installed to overcome the problem of access during emergencies. Either manual or powered systems to operate the facility could be used during emergency conditions. Automated warning signals and gates will be turned on to stop public access during FSD's rescue operations. **Figure 5.5** provides an illustration of a suggested bridge system that could be put in place.

The principal access points to the proposed walkway are envisaged at the following locations (**Figure 5.2**):

- At the northern extent of Oil Street (on land reclaimed under the WDII project);
- At the northern extent of Tong Shui Road (access will utilise the existing public pier);
- At the North Point Ferry Piers at the end of Shu Kuk Street and Kam Hong Street (utilising existing piers with slight modifications to the structures); and
- At the waterfront north of Hoi Yu Street (The boardwalk transitions to an at-grade walkway within the Hoi Yu Street key site).

The separation between the proposed points of access will be no greater than 800m apart. This will ensure that FSD will have ready access to the walkway in the event of an emergency. The spacing will also allow convenient and flexible public access.

5.3.2 Marine Access Right

The provision of the boardwalk underneath the IEC will affect the marine access right of some private developments such as K. Wah Centre and Kodak House in North Point. If the private marine access needs to be retained for these developments, bascule or swing bridges could also be installed at appropriate locations so as to allow vessels to gain access to the existing piers adjoining their marine frontage. However, this would be subject to negotiation with the concerned owners upon implementation.

5.3.3 Integration of the Proposed Boardwalk with the 20m Wide Waterfront Promenade of the Ex-North Point Estate Site

As part of the North Point Ferry Piers key site development which will be presented in Chapter 7, the 20m wide waterfront promenade of the ex-NPE site will be directly integrated with the proposed IEC boardwalk. At specific points along the walkway, it is conceivable that lightweight demountable retail kiosks could be installed at strategic locations to activate the facility. Besides, sculptural elements and/or art displays could be incorporated along the walkway. It is also proposed that as a comprehensive approach to waterfront regeneration, pier structures should be renovated to correspond with the introduction of the boardwalk and other enhancement proposals.

5.3.4 Integration of the Proposed Boardwalk with the North Point Dangerous Goods Vehicular Ferry Pier

The North Point Dangerous Goods Vehicular Ferry Pier is likely to remain in operation in the foreseeable future. Whilst an alternative way to connect the Vehicular Ferry Pier is through the second/upper level of the structure of the pier, which has the best potential to incorporate the function of allowing pedestrian access through this area and continue until the boardwalk meets the proposed on-shore promenade beyond Hoi Yu Street, the preference is for the IEC boardwalk to continue at the same elevation just above sea level. Automatic gates are suggested to be installed to restrict public access when the dangerous goods vehicles board the ferry.

5.3.5 Safety and Security Issues

Other design parameters have been discussed during the Stages 2 and 3 PEP. As a result, there will be design measures to ensure public safety, e.g. the erection of warning signs during typhoon season and provision of sufficient lighting at night time. There were also suggestions that CCTV should be installed for monitoring purposes. It is anticipated that this may raise concerns on the issues of privacy, and the corresponding responsibility for monitoring, management and maintenance of CCTV. These issues would have to be addressed and taken on board by relevant agencies and departments.

Safety measures from a maritime perspective have also been investigated. Amongst other aspects, these included an historic assessment of vessel strikes to the present IEC support structures and the possible consequent risk of impacts on the boardwalk. The review concluded that the probability of such accident is extremely low and that measures to further enhance the safety of the IEC boardwalk could be introduced (e.g. the installation of marine lighting and illumination lights). It is envisaged that all such elements would be incorporated in the detailed design of the boardwalk.

5.3.6 Implications of the Protection of the Harbour Ordinance

Based on the findings of the PEP, the public in general support the boardwalk proposal. There is no other practical alignment option that will ensure a continuous, unimpeded harbourfront promenade between Oil Street and Hoi Yu Street.

The PHO was enacted to protect and preserve the harbour by establishing a presumption against reclamation in the harbour. Section 3 of the Ordinance provides:

(1) "The harbour is to be protected and preserved as a special public asset and a natural heritage of Hong Kong people, and for that purpose there shall be a presumption against reclamation in the harbour."

(2) "All public officers and public bodies shall have regard to the principle stated in subsection (1) for guidance in the exercise of any powers vested in them."

The Court of Final Appeal (CFA) Judgment handed down in January 2004 stated the following with regard to the condition of "Overriding Public Need":

> *In order to implement the strong and vigorous statutory principle of protection and preservation, the presumption must be interpreted in such a way that it can only be rebutted by establishing an overriding public need for reclamation ("the overriding public need test"). The statute, in conferring on the harbour a unique legal status, recognises the strong public need to protect and preserve it. The statute envisages that irreversible loss to the extent of the reclamation would only be justified where there is a much stronger public need to override the statutory principle of protection and preservation.*

Public need would also represent community need, and would include the economic, environmental and social needs of the community.

A need should only be regarded as overriding if it is a compelling and present need.

A compelling and present need goes far beyond something which is "nice to have", desirable, preferable or beneficial. But on the other hand, it would be going much too far to describe it as something in the nature of the last resort, or something which the public cannot do without. A present need takes into account the timescale of planning exercises, and that the need would arise within a definite and reasonable time frame.

Where there is a reasonable alternative to reclamation, an overriding need for reclamation would not be made out. All circumstances should be considered. The cost as well as the time and delay involved would be relevant. The extent of the proposed reclamation should not go beyond the minimum of that which is required by the overriding need. Each area proposed to be reclaimed must be justified.

The overriding public need test should be regarded as a single test and is a demanding one. To enable a public officer or body to be satisfied that the overriding public need test has been met, the materials in the case in question must be cogent and convincing. In the Joint Technical Circular No. 1/04 of the Housing, Planning and Lands Bureau and Environment, Transport and Works Bureau, it has set out in detail the requirements of the PHO and provides guidelines for planning proposals on the issue of reclamation. This circular has also outlined a series of questions to be used as a guideline in considering the need of reclamation. As part of the overriding public need test, three core questions are set out as the principle evaluation criteria in determining the merit of the project:

- Is there a compelling and present public need?
- Is there any reasonable alternative to reclamation?
- Is the proposed reclamation extent minimum?

Approaches to Demonstrating Compliance with the Court of Final Appeal Judgment

The emphasis of the Study is on opening up the harbourfront and introducing, as far as possible, a continuous promenade and pedestrian environment with improved accessibility to the waterfront. While this cannot be achieved in the short-term because of existing uses and obstacles along the harbourfront, a very significant initiative that forms part of the Study Brief is to examine the viability of extending a new promenade or harbour 'edge' below the IEC in the form of a "boardwalk" or "harbourfront walkway".

Assessments undertaken under the umbrella of this Study have shown the proposal to be viable and that it is capable of providing, in response to public demand, a continuous waterfront walkway or promenade between Oil Street and Hoi Yu Street (i.e. the extent of waterfront where such a condition does not exist and where the general public do not presently enjoy safe and secure access to the waterfront).

Form of Construction

The form of construction has been deliberately conceived to avoid the inclusion of foundations or any other structures within the harbour. It is intended that the boardwalk will be mounted on the dolphins that surround the supporting columns of the IEC. A series of fixtures will be inserted into the surface of the dolphins securing the walkway structure (the structure will be of galvanised steel. Balustrades will be fixed to either edge of the walkway to ensure public safety). The walkway will be prefabricated off site and will be craned into position from a lighter. The walkway will have a general width of some 5m, roughly the minimum width that will be required to permit:

- Safe and secure circulation for pedestrian in two directions, and
- Stationary viewing to the harbour at the northern edge of the walkway.

According to the CFA's judgment on the interpretation of PHO, reclamation, by definition, is 'any work carried out or intended to be carried out for the purposes of forming land from the sea-bed or foreshore.' Also, 'reclamation is practically irreversible. Once land is formed by reclamation, it cannot be undone and part of the harbour is lost forever.' In the case of the proposed boardwalk underneath the IEC, at no time will there be any requirement to physically reclaim any portion of the harbour. As such, the total water area within the harbour will not be diminished to any extent. Similarly water movement within the harbour will not be affected by the proposed structure as it will be located well clear of the water surface under all tidal conditions.

The typical condition will be that the walkway will be located directly beneath the IEC deck and as a consequence will not be generally observable. However, a short section (about 200m long and 3m wide) of the boardwalk near Tong Shui Road would need to be extended above the sea surface due to insufficient headroom under the slip road of the IEC (**Figures 5.2 and 5.4**). Again the structure of the walkway will be mounted on the dolphins that protect the IEC supporting columns. At no time will there be any requirement to mount structures within the harbour. Consequently physical reclamation of the harbour will be avoided and no impediment to water flow will occur.

PHO Compliance

Waterfront Accessibility

A continuous promenade along the Island East harbourfront forms the basis for the Hong Kong Island East study proposals. These are intended as part of wider Government initiated proposals to enliven and open up the harbour for the enjoyment of the public. As the harbour is increasingly becoming more important as a major leisure destination in Hong Kong, there is a growing demand for new publicly accessible waterfront open space and facilities. Harbourfront planning has recently become an integral component to the holistic planning framework of Hong Kong. The importance of the waterfront has also been emphasised by local residents and the Eastern District Councillors, as they continue to advocate a continuous waterfront promenade for public enjoyment. Under present conditions, there is no achievable safe and secure access to the waterfront from the urban area (although the public attempt access wherever an opportunity arises) and, moreover, no means to circulate along the harbour's edge from Oil Street to Hoi Yu Street (with the exception of some waterfront areas such as the area surrounding the North Point Ferry Piers). Consequently, the continuity of a pedestrian harbourfront can be argued as a "compelling and present need".

Avoidance of Land Formation

It is important to stress that what is proposed is not reclamation as such (i.e. no portion of the harbour is reclaimed and no impediment to the flow of water within the harbour is involved). Instead it is proposed that the IEC boardwalk will be constructed on an elevated alignment above the harbour under all tidal conditions. No new structure will be required to support the boardwalk.

Reasonable Alternatives

Under the provisions of judgements related to the PHO, there is a defined requirement to identify any reasonable alternative solutions to proposals within the harbour. As outlined earlier, much of the land abutting the waterfront lies in private hands. The consequent cost and length of time in acquiring this land and associated marine rights for redevelopment would be significant. Thus the 'inland' promenade option will face many challenges, some of which might be insurmountable. It is also likely that it would take many years to resolve (if at all) all land issues and to acquire the extent of private land required to achieve the development of a continuous waterfront. In such a condition, therefore, there is no feasible reasonable alternative that would effectively secure continuous access along the waterfront other than the IEC boardwalk as described earlier.

Minimising Impact

Should a proposed facility or development meet the above and other criteria, the PHO final judgement places strong emphasis on the "minimisation of impact". In other words, if a proven need can be established for a facility, then the extent of the facility should be at a scale that minimises its impact. This philosophy was implicit to the judicial review of WDII where the court accepted the "need" for reclamation to facilitate the construction of the CWB but found that the extent had not been minimised. As a consequence, the extent of reclamation was reduced and, as a result, was allowed to proceed.

The IEC boardwalk has accordingly been conceived as a facility that will meet an established public requirement. At the same time, the overall width has been maintained at a minimum and sustainable width that will be capable of providing safe and secure circulation at the waterfront (as noted above, a general width of 5m has been prescribed to allow pedestrian movement in two directions and passive viewing of the harbour, and for the short section of 200m near Tong Shui Road, its width would be about 3m). The impact is also further minimised by the elevated nature of the boardwalk, as it will be raised and clear from the water surface. Given its small scale and careful design, it is expected that the impact of the boardwalk on the harbour would be quite minimal.

Consultation with the Public and Various Stakeholders on PHO Issue

Public views on the need for a waterfront promenade are an essential part of the process of achieving consensus and validating the demand and need for a given facility. The Stage 2 PEP of the Study was undertaken in April-earlyJuly 2010. The PEP extensively involved the general public, interest groups and professional groups. A general consensus supporting the proposed IEC boardwalk was established. About 84% of the respondents of the questionnaire survey agreed with the proposal. No objection was received from harbour protection and conservation groups. Local communities have called for its earliest implementation.

The preferred enhancement proposals for the Hong Kong Island East harbourfront were presented to the public (and relevant statutory and advisory bodies) during the Stage 3 PEP in February-April 2011 to solicit further views and comments. The boardwalk proposal as presented was generally supported by the public.

The HC was also consulted on the proposal twice in December 2010 and August 2011. The Commission recognised that the proposals served to enhance accessibility to and along the waterfront without compromising the integrity of the harbour. This is a significant and meaningful endorsement as the Commission is charged with ensuring that all development proposals at the harbourfront areas follow HPPs and HPGs.

Proposed Proportionality Principle on Reclamation of Victoria Harbour

Apart from the requirements and judgment handed down by CFA as mentioned above, Society for Protection of the Harbour has recently issued a paper in regard to the Proportionality Principle on reclamation in Victoria Harbour. The Principle is as follows:

> *The greater the adverse impact of the reclamation on the harbour, the greater must be the justification; accordingly having established a public need, in deciding if such need overrides the importance of the harbour, the prime consideration is whether any enrichment of the public enjoyment of the harbour and any enhancement of the environmental, social and economic value of the harbour as a result of the reclamation would justify the loss and damage consequentially caused to the harbour.*

Based on the above Principle, the project proponent should show that "the reclamation is needed to enhance the value and public enjoyment of the harbour and that the gain will be of such importance that it overrides the permanent loss of that part of the harbour" and "whether the need for such enhancement is of greater public importance than the importance of the harbour". In other words, the extent of reclamation proposed to be implemented within the harbour should be assessed as a matter of proportion, quantity, magnitude, need and purpose. It is worth noting that the views of the Society with regard to harbour reclamation as discussed above have no basis in law at the moment.

The Proportionality Principle was introduced at the HC's meeting on 7 September 2011 after the completion of the 3-stage PEP of the Study. The Society clarified that the Principle would not add another level of test on top of the overriding public need test for reclamation within Victoria Harbour. On the contrary, it would make it easier to implement by lowering the threshold for those projects where the public and the harbour would benefit. As far as the proposed boardwalk underneath the IEC is concerned, if it was really found that the proposal constituted reclamation, it could be argued, as one of the justifications based on the Proportionality Principle, that the proposal would not significantly alter the character of the harbour but would facilitate public enjoyment of the harbour by providing convenient pedestrian access to the harbour's edge in North Point. As mentioned above, it is the Consultant's opinion that the proposed boardwalk is not considered as reclamation and is not likely to create a "disproportionate" impact on the harbour and its physical extent.

Conclusion

As noted above, the subject of the PHO in direct regard to the proposed boardwalk has been brought to the attention of the government, the public, statutory and advisory bodies, EDC, and local residents etc. during the course of the Study. Consultees have generally supported the boardwalk proposal and have, in some cases, pressed for its early construction.

The proposed boardwalk satisfies the requirement the PHO through:

- Providing a solution that avoids land formation or placing structures in the harbour;
- Utilising mostly the underbelly of the alignment of the IEC to satisfactorily accommodate the main part of the route, thus minimising any further visual and physical intrusion into the harbour;
- Responding to a proven public demand and overwhelming request for the facility; and
- Establishing that there is a lack of alternative to achieve satisfactory connectivity along the harbour's edge that would ensure a continuous, unimpeded harbourfront promenade between Oil Street and Hoi Yu Street.

In short, the proposed boardwalk provides a solution to the present shortage of linear and continuous waterfront connectivity at that harbour's edge in a manner that meets the provisions, conditions and intent established by the PHO and associated qualifying judgements. Nevertheless, the Government might have to seek further advice from an independent legal expert on the "legality" of the proposed boardwalk under the provisions of the PHO and the validity of the proportionality principle evinced by Society for Protection of the Harbour.

5.3.7 Connectivity with the Wan Chai Development Phase II

Investigation of providing enhanced connectivity westward towards Causeway Bay and WDII has revealed that the existing and proposed multiple slip roads associated with the IEC, and the CWB and its tunnel portal impose limitations on the possible extension of the proposed boardwalk under the IEC to the Causeway Bay Typhoon Shelter. A further assessment of the

physical and structural condition of the existing western section of the IEC and the future WDII slip road has been undertaken, and the result reveals that although the pedestrian headroom will be reduced at areas directly underneath the slip road, it is still at a sufficient height for the proposed boardwalk to be constructed that would be up to standard. The possible extension of the boardwalk will connect with future waterfront park and promenade open space proposed under WDII. The park will be constructed on a portion of the WDII reclamation area and will be connected further west to the Causeway Bay Typhoon Shelter. **Figure 5.6** provides an indicative illustration of the proposed boardwalk connection.

In essence, the possible on-shore 'extension' of the boardwalk will follow the shoreline of the reclamation area westward, and will be integrated into the waterfront park within WDII. This, combined with the waterfront connectivity proposed under this Study (i.e. IEC Boardwalk and Sky Trail), will achieve a continuous and comprehensive connection that spans through the Eastern Hong Kong Island. In examining the physical condition of the area, the soffit level of the IEC structure at the area directly above the boardwalk near the WDII reclamation area is presently at a level of +6.5mPD, while the level of the reclamation and the boardwalk will be at approximately +4.0mPD. This will leave a headroom of 2.5m where the boardwalk travels underneath the IEC structure within this location. The headroom will still be sufficient to meet the minimum headroom requirement of 2.3m for pedestrian walkways specified under the TPDM. In case the PHO is eventually confirmed not an issue for the portion of the boardwalk near Tong Shui Road, an alternative proposal by shifting the starting point of the boardwalk slightly seaward beyond the cover of the IEC to improve the pedestrian environment could be considered during the detailed design stage. The preliminary assessment of the headroom and physical levels of the slip road structures indicates that a connection to the IEC boardwalk to the west to link with the WDII reclamation area is structurally and physical feasible. Nonetheless, it should be noted that the road profile of the CWB, the level of the reclamation area and the headroom available to the proposed WDII waterfront park may be subject to future change as the design is refined during the implementation stage. A further assessment will be required should a decision be made to proceed with the proposed connection.

5.4 North Point Waterfront: Waterfront Connection through Provident Centre to Tong Shui Road Garden

The existing waterfront promenade at Provident Centre is open to the public. Whilst this is adjoined by Tong Shui Road Garden, the two open spaces are physically separated by the boundary wall of the Provident Centre. To further enhance the connectivity and pedestrian network along the North Point waterfront, it is proposed to link up this waterfront promenade with Tong Shui Road Garden by creating an opening at the boundary wall, which will allow continuity of access to link the existing promenade and open space with the proposed key site at the North Point Ferry Piers and the proposed 20m wide waterfront promenade of the ex-NPE site (**Figure 5.7)**. Although there is a slight level difference between the waterfront promenade of Provident Centre and Tong Shui Road Garden, this can be ameliorated by steps and accessible ramps within Tong Shui Road Garden. The management bodies and Incorporated Owners of Provident Centre will be further consulted during the implementation stage.

5.5 Quarry Bay Waterfront: Proposed Promenade Linking the IEC Boardwalk to Quarry Bay Park

This section of the waterfront in Quarry Bay area comprises a proposed waterfront promenade along Hoi Yu Street to connect with the boardwalk underneath the IEC on its western side, the existing Quarry Bay Park and Sai Wan Ho Harbour Park. There are currently a number of utility installations located at the waterfront area of Hoi Yu Street including a gas pigging station, a salt water pumping station, the EHC Ventilation Building and an electricity substation. From a planning perspective, the main thrust is to secure the excision of a 6m wide corridor along the harbourfront so that a continuous waterfront promenade can be created. To facilitate early public enjoyment of the harbour prior to the realization of the Hoi Yu Street key site proposals, an advance promenade along the waterfront area of Hoi Yu Street with a width of 6-10m to connect with Quarry Bay Park Phase I has commenced construction for completion by end 2012. In this connection, the New Hong Kong Tunnel Company Limited has voluntarily handed over a 90m long, 6m wide strip of land fronting the EHC Ventilation Building site for the development of the advance promenade.

At present, there are two private lots at the Hoi Yu Street waterfront. To realize a continuous waterfront promenade along Hoi Yu Street, the interface issue with possible private development should be addressed. It is also subject to the release of the waterfront land strip of the gas pigging station site owned by the Towngas Company. Otherwise, connectivity with Quarry Bay Park Phase I to the east will only be achieved via a 2m passageway to the south of the gas pigging station which will be developed under the advance promenade project as mentioned above (**Figure 5.1**).

5.6 Quarry Bay Waterfront: Harbourfront Connectivity along Tai On Street and Tai Hong Street

The Marine Police Regional Headquarters and the Marine Harbour Division currently occupy two piers and the adjoining strip of waterfront land at an important and strategic corner location along the Sai Wan Ho waterfront. No public access is allowed to

the site and the piers. After investigation of a range of options, it is now proposed that in the short term, pedestrian circulation will have to be maintained along the footpaths of Tai Hong Street and Tai On Street to provide a connection from Sai Wan Ho Harbour Park to Aldrich Bay Promenade. This connection will be reinforced and improved through the introduction of hard and soft landscape treatments. Paving patterns will be introduced to provide a delineation of the route. The connection could be further reinforced through the introduction of a coherent signage system. Safety measures such as additional lighting and bollards will be provided to strengthen the suggested route. Tree and shrub planting will be introduced where practicable to improve the pedestrian environment.

At the Option Generation Stage, an option to provide an elevated walkway across the Marine Police premises was suggested. However, during the Stage 2 PEP, this option was discussed and rejected as a viable option. Principal arguments against the option included:

- The connection was relatively clumsy involving level changes and created issues for the mobility impaired;
- The proposal induced a significant cost whilst covering a relatively short distance;
- There were perceived safety and security issues pertaining to the use and operation of the Marine Police premises; and
- The space available to install the walkway was limited.

The proposal was subsequently discarded. The at-grade option described earlier will therefore be retained for the present until such time as the Marine Police facilities are relocated. The successful relocation of Marine Police facilities will enable the development of a continuous promenade linking up Sai Wan Ho Harbour Park and Aldrich Bay Promenade and the potential adaptive re-use of the pier structures.

5.7 Shau Kei Wan Waterfront: Harbourfront Connectivity with Enhancement on Tam Kung Temple Road

It is proposed to extend the Aldrich Bay Promenade eastward to the adjacent vacant land which was previously used for rehabus parking. Taking into account the public comments received during the Stage 2 PEP, the existing shipyards along the Shau Kei Wan Typhoon Shelter and Shau Kei Wan Wholesale Fish Market will be retained. The nearest pedestrian circulation along the waterfront will be redirected to the footpath on Tam Kung Temple Road. The pedestrian environment of Tam Kung Temple Road will be enhanced by introducing traffic calming measure, street planting and paving improvement. Access to the busiest portion of the road servicing the Shau Kei Wan Wholesale Fish Market will be relocated to the present egress and the western extent will be paved with a common paving that will extend across the footpath.

To integrate with the extended waterfront promenade from Aldrich Bay, a temporary heritage park with a fishing theme is proposed at the existing temporary open-air car parking site adjacent to Tam Kung Temple, which is currently zoned "OU (Sewage Screening Plant)" and reserved for the future extension of the Shau Kei Wan PTW. There is no implementation programme for the extension at the moment. The proposed temporary waterfront heritage park will feature a demountable exhibition area (the intention is that this could be removed to another site if the area is eventually required for another purpose) that will incorporate exhibits highlighting local cultural heritage. In response to the public comments received during the Stage 3 PEP, the above-mentioned enhancement proposals have also been refined by incorporating a plaza in the temporary heritage park for religious/festive events. Other proposed enhancement measures for the Shau Kei Wan waterfront include façade treatment of the shipyards and the adjoining Shau Kei Wan PTW.

Subsequent to consultations with the local shipyard owners/operators and the EDC, it was evident from the feedback received that it would be expedient and less disruptive if the 'Facelift' is implemented incrementally in phases, i.e. short, medium and long term. The proposed enhancement measures by phases are described below.

Short Term/Phase 1 (**Figure 5.8**)

- Tam Kung Temple Road is proposed to employ traffic calming measures and streetscape enhancement that relates in character to the current "Shau Kei Wan Tourist Trail" as developed by the EDC. Paving improvements will commence on Tam Kung Temple Road from the road junction at the western extent of the shipyards and will incorporate improved footpaths and road paving.
- Façade treatments are proposed to be implemented on the exterior walls of the Shau Kei Wan PTW to improve the streetscape as well as to illustrate and represent the district's cultural heritage e.g. fishing and boating industry.

- Greening measures e.g. tree and shrub planting will be implemented where space is available along this portion of Tam Kung Temple Road. At the west entrance (southwest direction of the Tam Kung Temple), a significant Chinese-style gate structure is suggested to be erected to enhance sense of arrival and reflect the historic significance of the Tam Kung Temple.
- A minor change in vehicular circulation by converting the current egress to Tung Hei Road at the east boundary of the Shau Kei Wan PTW to ingress only is proposed. The design of this junction will be sufficient to allow for truck turning. For vehicles accessing to the shipyards, Shau Kei Wan Wholesale Fish Market and Bank of China building, signs will be erected to suggest the use of this new ingress. This will significantly lower vehicular traffic volume to the west part/narrowest part of Tam Kung Temple Road, which in turn will help create a more pedestrian-friendly street experience.
- In addition, it is suggested that an at-grade/street-level pedestrian crossing be added to connect from Shau Kei Wan Main Street East directly to Tam Kung Temple Road, spanning across Tung Hei Road (underneath the IEC structure) in order to improve harbourfront accessibility in this area between the waterfront and the hinterland.

Medium Term/Phase 2 (**Figure 5.9**)

- The traffic calming measures/streetscape enhancement measures proposed on Tam Kung Temple Road will be extended to the edge of the waterfront along the west side of the Shau Kei Wan PTW. Rustic-styled paving units redolent of traditional Chinese paving styles will be used consistently as the paving improvement to the footpaths and the roadway.
- As described above, the existing temporary fee-paying car parking site at the waterfront, which has been reserved for the future extension of Shau Kei Wan PTW, is proposed to be developed for public use as a temporary heritage park celebrating local heritage of Shau Kei Wan. The proposed temporary heritage park will be designed with elements to illustrate the district's history of the fishing/boating industry, e.g. a small demountable pavilion would incorporate artwork, display boards/signage and featured paving etc. Removable planters for trees and shrubs are proposed to provide shade and comfort for visitors to this area. In response to the public comments received at the Stage 3 PEP, a plaza will also be set aside and incorporated into the landscape design to allow for religious/festive events or voluntary recreational activities.

Long Term/Phase 3 (**Figure 5.10**)

- Paving improvements will continue with a new footpath along Tam Kung Temple Road to the east, connecting to the footpath outside of the Bank of China building and into the Hong Kong Museum of Coastal Defence. The driving surface along this portion of Tam Kung Temple Road, on the other hand, will remain as asphalt.
- The existing tree planter to the south of the Fish Market will remain, whilst a small portion of this area will be converted into a sitting-out area with benches. A Chinese totem will be erected in this area to symbolically terminate the Shau Kei Wan heritage trail and mark the commencement of the journey to more contemporary heritage items within the Hong Kong Museum of Coastal Defence.
- In response to the limited road width of Tam Kung Temple Road along the shipyards, enhancement proposals will be focused on improving the upper façade of the shipyard structures. Cultural arts and historic pictures of the fishing/boating industry will be selected and in display on the upper façade by using photographic paints (**Figure 5.11**). The actual design of the façade treatment will be further developed in detailed design stage in liaison with the shipyard operators.

5.8 Shau Kei Wan Waterfront: Proposed Sky Trail along the Hillside of the Hong Kong Museum of Coastal Defence

5.8.1 General Design Parameters

The topography of the Hong Kong Museum of Coastal Defence site presents limitations to pedestrian circulation along the harbourfront. The Museum also has an associated entrance fee, therefore a public walkway where visitors can freely wander into the 'paid zone' of the Museum may present an apparent, but not insurmountable, conflict.

As mentioned in Chapter 3 of this report, two initial options were identified to facilitate public access to the Shau Kei Wan waterfront, namely the Sky Trail (an elevated walkway) and the cantilevered boardwalk (along rock outcrops at the shoreline just above the high-water mark). Taking into account the potential impact on the natural coastline, the Sky Trail proposal has

been selected as the preferred option as well as the recommended option. The proposed Sky Trail will be approximately 600m long and 3m wide along the hillside (about 15-20mPD high) north of the Hong Kong Museum of Coastal Defence **(Figures 5.12 and 5.13)**. As this elevated walkway will not be a ground-level passageway, it will have no access conflict with the paid premises of the Museum. The possible alignment of the walkway would be preferably higher up along the slope and partially hidden among the vegetation. The Sky Trail will be sensitively designed such that it will not detract the historical and heritage value of the historical sites nearby and will blend in with the surrounding natural environment.

Under the preferred option, the Sky Trail will terminate at a lookout point rather than connect with the existing waterfront promenade of Heng Fa Chuen under private ownership as previously promulgated during the Stage 2 PEP. Whilst the revised proposal of Sky Trail was well received by the general public, residents in Heng Fa Chuen and some Eastern District Councillors objected to the proposal of extending the Sky Trail eastwards to connect with Shing Tai Road (a public road). They were concerned that the extension would bring in outsiders into the estate and hence generating nuisance as well as security, safety, management and maintenance problems. Apart from this, the extension would be subject to topographical constraints and interface with the private property of Heng Fa Villa. In addition, it would pass through part of the Museum which is currently not open to the public and may contain archaeological interest subject to investigation. In view of the above, it is proposed to terminate the Sky Trail at a lookout point under the recommended option.

During the Stage 2 PEP, a pedestrian connection of the Sky Trail to continue through Lei Yue Mun Park and the area around Holiday Village to connect to Chai Wan was suggested by the public. This suggestion had been considered but it was concluded that such proposal would not contribute to the objective of providing a continuous waterfront promenade as the proposed Sky Trail would then be diverted inland and will not be connected to Siu Sai Wan. Besides, there would not be any convenient pedestrian connection to any public transport.

There are many positive benefits that the Sky Trail can bring to the Hong Kong Museum of Coastal Defence. The Museum will potentially see a higher visitorship with the added attraction of the Sky Trail next to the premises of the Museum. Pedestrian linkage in this area, which has long been physically constrained by the steep topography of the Shau Kei Wan hillside, will be greatly enhanced, offering users a pleasant and environmentally friendly way of travelling the area on foot. The possibility of integrating the proposed Sky Trail with the Museum will be further explored at the detailed design stage.

5.8.2 Pedestrian Access to the Sky Trail

Connection at West Portal (Shau Kei Wan Wholesale Fish Market)

One of the proposed western connections to the Sky Trail could be linked through the boundary edge of the Shau Kei Wan Wholesale Fish Market that will connect users to the hillside and eventually linking with the proposed Sky Trail (**Figure 5.14**).

The option of connecting to the Sky Trail through the Wholesale Fish Market has been discussed with the Agriculture, Fisheries and Conservation Department (AFCD) and Fish Marketing Organization (FMO). Related issues of this connection have been reviewed and further design options have been formulated to resolve the operational constraints to the Shau Kei Wan Wholesale Fish Market. In particular, the major concerns from AFCD and FMO relating to the proposed walkway connection are as follows:

1) the potential loss of lorry parking spaces currently located along the edge within the Wholesale Fish Market;
2) potential impact on vehicular circulation spaces and fish market operations;
3) issues of security and public safety; and
4) management and maintenance/repair responsibilities of the proposed connection facilities.

Taking these concerns into account, two connective options were formulated. Option 1 proposed to create an at-grade footpath along the Wholesale Fish Market site and Option 2 proposed an elevated walkway to be constructed above the existing lorry/car parking spaces. Having considered the possible impacts of the two options on the operation of the Wholesale Fish Market and the existing vehicular parking spaces and circulation with the Market site, Option 2 was selected as the recommended option which is outlined below.

*Elevated Walkway Structure at the Shau Kei Wan Wholesale Fish Market (**Figure 5.14**)*

An elevated walkway could be constructed above the existing lorry/car parking spaces. Starting at the main entrance of the Wholesale Fish Market, a set of switchback staircases are proposed to take users up to the level of the walkway platform. The elevated walkway would then run parallel to the site boundary with enough height clearance for the vehicular parking spaces underneath (about 5 metres in elevation), which would subsequently lead to the staircases that link to the Sky Trail.

The main advantage of this option is that by creating a walkway that is elevated, the connectivity proposal will have minimal effect to the operations of the Wholesale Fish Market. Vehicular parking spaces will be able to be maintained at its current location underneath the elevated walkway. Circulation spaces will also be left unaffected by this option.

In terms of security and public safety, the level difference achieved by the elevated structure will create physical separation between the public users and the premises of the Fish Market. The only major downfall of this proposal would be the high-level of significantly visible physical elements that will be felt by nearby users such as the operators of the Fish Market. Relevant parties including Fish Market operators will be further consulted on the proposal during the detailed design stage.

Connection at West Portal (Hong Kong Museum of Coastal Defence)

An alternative to creating a connection through the Wholesale Fish Market is via an existing footpath within the Hong Kong Museum of Coastal Defence (**Figure 5.15**). The footpath will lead users up to the starting point of Sky Trail structure, where it will continue to travel along the hillside to the proposed lookout point.

To separate the paid museum area and the unpaid public area of the Sky Trail, automated gates or one-way turnstile gates can be used. The turnstile gates, in particular, can be used to allow museum users to exit out to the Sky Trail public area whilst restricting the public from freely entering the paid zone of the Museum. The use of turnstile and automated gates can also save resources on management of these posts. Special access in and out of these gates can also allow for emergency vehicles.

It is proposed that at the start point where the elevated Sky Trail meets the existing footpath along the service road of the Museum, a turnstile and a vehicular gate will be erected. The proposed turnstile will be a one-way exit gate for users of the Museum to exit out onto the publicly accessible footpath that connects to Tung Hei Road to the south, whilst restricting public access into the paid area of the Museum. An automated sensory system with a CCTV camera can be set up at the location of the vehicular gate for emergency/servicing vehicular access using the service road. That said, further investigation on the access arrangement will be conducted in consultation with concerned parties/departments including the LCSD/Museum and ArchSD during the detailed design stage.

5.8.3 Emergency Access to the Sky Trail

For emergency rescue access, apart from the proposed entrance points which will be the obvious emergency connections, a turnstile gate is proposed to be installed along the Sky Trail close to the staircase that leads to the torpedo launching area of the Museum. The Sky Trail will be connected to this staircase as the turnstile will be a one-way exit from the Museum to the publicly accessible Sky Trail. The turnstile gate will be locked with a communication device (speaker-phone or CCTV). The public, in needs of an emergency exit and medical assistance, can use the device to send request for medical help.

5.9 Chai Wan Waterfront: Proposed Footpath with Streetscape Enhancement along the Chai Wan Public Cargo Working Area

Currently, the Chai Wan waterfront is occupied by a number of Government/industrial uses including a petroleum and oil depot, a waste materials recycling compound, an open storage and a Government Logistics Centre at the corner adjoining the Chai Wan Public Cargo Handling Basin. Without removing or relocating these uses, a waterfront promenade will be interrupted and pedestrian circulation along the harbourfront will return to the footpath along Chong Fu Road, where the public will have little to no access to the harbourfront.

The Chai Wan PCWA, bounded by Sheung On Street to its west and south and Kai Yip Street to its east, is occupied by industrial cargo loading/unloading uses. Due to the closure of Kwun Tong and Cha Kwo Ling PCWAs, some of the affected cargo handling operators have been relocated to Chai Wan PCWA for their continued operation. Since the PCWA would continue to exist for operational needs, a footpath is proposed alongside the PCWA to enhance connectivity along the waterfront and improve the pedestrian environment.

5.10 Enhancement on Seaward Accessibility – Water Taxi Service

Currently, seaward access to the Eastern District within the Study Area is focused on a number of piers in operation. These include the North Point Ferry Piers, North Point Dangerous Goods Vehicular Ferry Pier and Sai Wan Ho Ferry Pier. Miscellaneous landing steps can also be found throughout the district. Based on the data on ferry usage from the Baseline Review Stage, it is not conclusive that there is a considerable rise in demand for ferry transport in this area, and the current ferry services as provided are sufficient. Therefore, in general, no new piers/landing steps are recommended within the Study Area.

However, taking into account the public comments received at the Stage 2 PEP, the concept of water-taxi is explored as a possible long term vision for tourism purpose, with a view to enhancing the accessibility from the seaward side to the harbourfront and making the harbour more vibrant. The proposed water taxi service would rely on private sector initiative, the provision of which would be subject to tourist demand. The possible area of coverage could extend from Central to the Hong Kong Museum of Coastal Defence in Shau Kei Wan, with potential to further extend to Chai Wan PCWA. Occasional 'stops' are envisaged at major tourist attraction points. Existing piers and/or landing steps can be utilised as pick-up and drop-off points. **Figure 5.16** provides an illustration of the proposed water taxi route.

5.11 Provision of Cycling and Other Facilities

5.11.1 Cycling Facilities

While there had been strong request for a continuous cycle track along the harbourfront in the Stage 1 PEP, there were diverse public views on such provision during the Stage 2 PEP held between April and early July 2010. Some were keen to have a continuous cycle track while others were concerned about public safety (the safety of both pedestrians and cyclists) and suggested that cycling activities should be restricted. During the Stage 3 PEP, requests for such provision not only as a leisure/recreational activity but also as an alternative means of transport were also received.

To meet public aspirations for an accessible, enjoyable and vibrant harbourfront, it is endeavoured to provide a wide range of choice of activities as well as to improve the accessibility and connectivity to and along the harbourfront. Given the limited space available between existing developments and the harbour and that no further reclamation is proposed, the Study Consultants has given the best effort to come up with a balanced proposal, providing a diversity of uses/facilities to meet various public needs with a view to promoting vibrancy of the waterfront.

Apart from the above, in formulating the enhancement proposals, relevant principles and guidelines such as the HKPSG, and HPPs and HPGs as formulated by the former HEC to guide the planning, preservation, development and management of the harbour and its harbourfront areas have been taken into account. According to the HPGs, a continuous promenade of adequate width should be provided along the entire harbourfront areas, as far as is practicable, to accommodate such leisure activities as strolling and jogging, pedestrian circulation, street furniture, tree planting and landscaping. Where the width of promenade permits and local circumstances are appropriate, provision of cycle track and associated facilities for recreation and leisure uses are encouraged.

The opportunity to create a continuous cycle track along the harbourfront of the Study Area has been thoroughly considered and discussed in the Study and public engagement processes. Technical standards for a designated cycle track, the physical conditions of the site including topography and land ownership pattern, safety issue and physical constraints posed by existing developments have been considered during the Study process. According to the HKPSG, a two-way segregated cycle track should be at least 3.5m wide with an additional 1m clearance from adjacent road. Given the limited widths of the proposed boardwalk under the IEC (about 5m on average) and Sky Trail (about 3m), it is considered not technically feasible to provide a segregated cycle track alongside the pedestrian walkway. A preliminary structural assessment also reveals that the spare structural capacity of the existing marine piles of IEC is not sufficient to support a standard cycleway after installing the proposed boardwalk. A combined use of cycle track and pedestrian walkway is not recommended for safety reasons. For the remaining areas covered by the Study, either the existing developments have been built right up to the waterfront or private property rights are involved, the feasibility of providing a waterfront cycle track could only be explored upon redevelopment. Notwithstanding such limitations, under the recommended option of enhancement proposals, a cycle track for recreational purpose is proposed in each of the two key sites, i.e. the North Point Ferry Piers waterfront promenade and Hoi Yu Street waterfront promenade.

5.11.2 Designated Fishing Areas

Diverse public views were received during the Stage 2 PEP with respect to the provision of designated fishing areas along the Hong Kong Island East harbourfront. While some members of the public argued for designated locations to be identified, others expressed concerns regarding public safety of designating specific fishing areas along the waterfront promenade and open spaces. In the Stage 3 PEP, the issue of designating fishing areas was also raised by some Eastern District Councillors.

In considering the provision of formally designated fishing areas, safety concerns would inevitably have to be considered. Although there are currently no statutory restrictions against fishing along the Hong Kong harbourfront, anglers should ideally take the necessary precaution and be conscientious of the safety of others around them. Although there are no "angling" designations/spaces currently being implemented in Hong Kong, this would not preclude designated fishing areas being identified to trial sections of the waterfront at the North Point Ferry Piers promenade and the Hoi Yu Street waterfront site. This

being said, the feasibility of implementing such a designation will require further investigation, which should be conducted separately at the detailed design stage.

5.12 Overview

This chapter has described the selection process and the refinements that have been made to the preferred option in response to the public comments received at the Stage 3 PEP to come up with the recommended option of waterfront promenade proposal. The boardwalk underneath the IEC and the Sky Trail along the hillside of the Hong Kong Museum of Coastal Defence are two major proposals as recommended for enhancing the harbourfront connectivity of the Hong Kong Island East.

Given the limited space available between existing developments and the harbour and that no further reclamation is proposed, efforts have been made to identify a balanced overall proposal that provides a diversity of uses/facilities that are capable of addressing a reasonably wide spectrum of public requirements, enhancing connectivity along the waterfront and, where possible, enhancing the quality of the experience of being at the harbour's edge and facilitating public enjoyment of the harbour.

6. PREFERRED OPTION AND FINAL RECOMMENDATIONS: HARBOURFRONT CONNECTIVITY AND QUICK-WIN STREETSCAPE ENHANCEMENT MEASURES

6.1 Principles of Identifying Quick-wins for Early Implementation

The preferred and recommended waterfront promenade proposals have been presented in the preceding chapter. According to the Study Brief, the Study Consultants are required to identify quick-win enhancement projects for early implementation.

The current pedestrian circulation pattern within the Study Area and with adjacent districts is disjointed and connections are limited. Pedestrian accessibility to the harbourfront will be enhanced by a continuous waterfront promenade along the shoreline. The promenade will connect the waterfront, and will be accompanied by new and improved pedestrian connections from the hinterland of the Eastern District. Based on the findings and the identified conceptual framework established in the previous stages of the Study, a hierarchy of pedestrian circulation has been outlined in Section 3.3. To further enhance the experience of travelling to the waterfront, a series of streets are selected to receive prioritised enhancements to improve connectivity from the hinterland to the waterfront.

In formulating the preferred and recommended proposals for enhancement of the accessibility to the waterfront, a number of basic principles were formulated to foster a convenient and publicly accessible harbourfront. Over and above the broad principles, a set of evaluation criteria have been adopted for the formulation of preferred option and final recommendation of the enhancement proposals at the waterfront area. Any pedestrian route should achieve and/or contribute most effectively to the following:

- Does the concept enhance harbourfront accessibility from adjoining hinterland areas?
- Does the concept suggest substantial enhancement of landscape and streetscape associated with the harbourfront and local connective street issue?
- Does it include improvement measures that can be beneficial to the local economy and tourism development?
- Does the identified connecting route link directly to PTI or a major transport node?
- Does the proposal establish identity of heritage buildings, monuments and resources, and/or present any cultural or physical significance to the local community usage?
- Has the design proposal been generated in accordance with relevant planning standards, guidelines, ordinances, HPPs and HPGs, greening frameworks (CEDD's GMPs) and other related studies?
- Does the enhancement proposal ensure compatibility with various planning briefs that have already been prepared by the Planning Department for certain sites within or in the immediate vicinity of the Study Area?

Apart from the above, considerations of the ease of implementation and management, visual benefits to be provided, the importance of streets in relation to the local sub-districts and to the nearby communities, and the practicality corresponding to realistic phasing of implementation and budgetary limitations have been taken into account in prioritizing the streetscape enhancement proposals.

6.2 Preferred Option and Final Recommendations: Streets Identified as Quick-Wins for Early Implementation of Enhancement Works

Taking into account the public comments solicited at the Stage 2 PEP, apart from the six selected roads/streets identified at the Option Generation Stage, three additional roads/streets across the Study Area were also selected as quick-wins for early implementation of enhancement works during the Plan Consolidation Stage of the Study. The selected nine roads/streets were generally well-received by the public during the Stage 3 PEP. Therefore they have all been taken on board as the final recommendations for streetscape enhancement (**Figure 6.1**). The locations and characters of each of the selected roads/streets are described below:

- North Point: Shu Kuk Street (north of Java Road) - Shu Kuk Street is identified as the principal north-south connector that links the hinterland (from King's Road) to the waterfront at the North Point Ferry Piers. This is central to the urban core and street activities in North Point, and its proximity to numerous MTR station exits also adds to its importance as a waterfront connector. There is an opportunity to adaptively reuse the existing North Point Ferry Piers as a key node linking to the proposed boardwalk underneath the IEC (**Figures 6.2 and 6.11**).

- North Point: Tong Shui Road - Starting from Oil Street eastward, there are continuous government and private developments that occupy the North Point waterfront, e.g. City Garden, Provident Centre, and schools etc. Tong Shui Road marks the first instance in the Study Area where currently the public can gain full access to the waterfront at all times. It runs from King's Road toward the waterfront, whilst its footpath links into the existing pier at the end of Tong Shui Road. This also marks the western boundary of the ex-NPE site, whereas a proposed promenade will be incorporated along the waterfront (**Figures 6.3 and 6.11**).
- North Point: Healthy Street East (north of King's Road) - Along this portion of North Point, numerous government and private office developments occupy the existing waterfront, e.g. North Point Government Offices, Kodak House etc. Healthy Street East as a north-south connector situates at the midst of these developments. It runs from King's Road toward the waterfront, passing through a roadside car parking area in between Kodak House and the North Point Fire Station north of Java Road (**Figures 6.4 and 6.12**). To avoid potential interface with existing underground utility pipes, street trees will be planted on self-contained raised planters which will prevent the tree root systems from interfering with the underground utilities. The exact design and configuration of the planters will be subject to further detailed design.
- Quarry Bay: Hoi Yu Street (from Java Road to the underbelly of IEC) - Hoi Yu Street runs primarily in the east-west direction that is parallel to the waterfront, whilst a shorter portion runs along the boundary line between North Point and Quarry Bay OZPs. The southern end of Hoi Yu Street intersects the eastern end of Java Road that turns into King's Road. Hoi Yu Street presents an opportunity to connect to the future waterfront promenade toward the east in Quarry Bay (**Figures 6.5 and 6.12**).
- Quarry Bay: Hoi Chak Street - Given the current morphology in this area, essentially the only identifiable linear linkage is Hoi Chak Street from the western boundary of Quarry Bay, running along Quarry Bay Park Phase II before turning southward to the Taikoo Place development. Turning east, it merges into Hoi Tai Street that extends to the western entrance of Quarry Bay Park Phase I. To the north, Hoi Chak Street intersects with Hoi Yu Street and its waterfront (**Figures 6.6 and 6.12**).
- Quarry Bay: Hoi Wan Street (north of Hoi Tai Street) - A new route is identified along the axis of Hoi Wan Street, which turns into a proposed footbridge extending above Quarry Bay Park Phase II and elevating over the IEC before it descends to the future waterfront promenade north of Hoi Yu Street (**Figures 6.7 and 6.12**).
- Shau Kei Wan: Tai On Street (Oi Kan Road to Lei King Road) - To the eastern boundary of Quarry Bay, Tai On Street is identified as a principal pedestrian circulation route to the waterfront. Currently, the northern extension of Tai On Street is a space open to the public. However, the compound of the Marine Police Regional Headquarters and Marine Harbour Division interrupts the waterfront continuity. It is noted that there is a separate process underway to investigate a relocation proposal for the Marine Police Headquarters. The intention is that the waterfront around the eastern and northern edges of Grand Promenade will be developed as a public promenade, which will complete the linkage between Tai On Street, the Aldrich Bay Promenade and the promenade at Sai Wan Ho Harbour Park, and eventually the waterfront promenade in Quarry Bay Park (**Figures 6.8 and 6.13**).
- Shau Kei Wan: Oi Tak Street - Oi Tak Street is an extension of Hoi An Street and the community core along Shau Kei Wan Road south of the Study Area. This route provides a relatively close distance to the waterfront. The site along the western side of Oi Tak Street is currently occupied by Aldrich Bay Park which has just been completed in April 2011. To this end, Oi Tak Street presents an opportunity for streetscape enhancement with the new park (**Figures 6.9 and 6.13**).
- Chai Wan: Sun Yip Street (Siu Sai Wan Road to Fung Yip Street) - Sun Yip Street has been identified as a linear pedestrian circulation route. It is a relatively short road (approximately 400m) that links up Siu Sai Wan Road to the Chai Wan Public Cargo Handling Basin and the waterfront in the east-west direction. The neighbourhood is completely occupied by industrial buildings, warehouses, and offices with no residential components until it connects eastward into Siu Sai Wan Road (**Figures 6.10 and 6.14**).

Table 6.1 provides a checklist of the proposed amenity features for each of the nine roads/streets identified for streetscape enhancement. The proposed enhancement works have taken into account the physical dimensions of space available to accommodate the proposed enhancement items, impact on the pedestrian and vehicular traffic and pick-up/drop-off activities, and the visual compatibility with the surrounding built environment. Neither reduction of traffic lanes nor effect on roadside parking, loading/unloading and building access will be resulted from the proposed streetscape enhancement measures at selected locations.

Table 6.1 Streetscape Enhancement – Checklist of Proposed Amenity Features

Pedestrian Corridor No.	Character Area	Street	Footpath Widening	Footpath Pavement Improvement	Trees Planted in Raised Planters	Trees Planted At-grade	Raised Shrub and Flower Planters	Median Planters	Street Furniture Proposal			
									Street Benches	Rubbish Bins	Pedestrian Street Lights	Information and Destination Signage
1	North Point	Shu Kuk Street (North of Java Rd)	Yes (Integration with future ex-NPE development)	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
2	North Point	Tong Shui Road	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
3	North Point	Healthy Street East (North of King's Road)	No	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes
4	Quarry Bay	Hoi Yu Street (from Java Road to the underbelly of IEC)	No	Yes	Yes	No	Yes	No	No	Yes	No	Yes
5	Quarry Bay	Hoi Chak Street	No	Yes	No	Yes	No	No	No	Yes	No	Yes

Table 6.1 Streetscape Enhancement – Checklist of Proposed Amenity Features (Cont'd)

Pedestrian Corridor No.	Character Area	Street	Footpath Widening	Footpath Pavement Improvement	Trees Planted in Raised Planters	Trees Planted At-grade	Raised Shrub and Flower Planters	Median Planters	Street Furniture Proposal			
									Street Benches	Rubbish Bins	Pedestrian Street Lights	Information and Destination Signage
6	Quarry Bay	Hoi Wan Street (North of Hoi Tai Street)	Yes (Incorporated with Hoi Yu Street key site proposal)	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
7	Shau Kei Wan	Tai On Street (Oi Kan Road - Lei King Road)	No	Yes	No	Yes	No	No	No	Yes	Yes	Yes
8	Shau Kei Wan	Oi Tak Street	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
9	Chai Wan	Sun Yip Street (Siu Sai Wan Road to Fung Yip Street)	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Yes

6.3 Streetscape Enhancement Measures

For the above nine roads/streets selected for early implementation of streetscape enhancement, a series of enhancement measures are proposed as follows (see Recommended Landscape Master Plan for major pedestrian corridors in **Figures 6.11-6.14**):

- Intensified streetscape greening strategies, with proposed trees in planters/planted at-grade, in order to create a continuous, interlocking tree canopy for increased shade and pedestrian comfort.
- Trees should be planted with a minimum interval of 5m. However, it is subject to detailed planting design and species selection. Tree planting should not impede lamp posts for optimised street lighting performance and public safety. Trees should be kept 5m away from lamp posts. It should also be noted that tree planting should refrain from interfering the sightlines of the drivers at road intersections and should not affect the existing run-in and run-out and loading/unloading facilities.
- Where space is available, a diversified array of low level planting (e.g. flowering shrubs) should be planted in linear, uninterrupted planters with a minimum width of 1m. Opportunities for central median planting shall also be explored and maximised.
- Where space is available, footpath pavement widening is proposed to allow planting of trees and low level flowering shrubs (footpath widening has been assessed and under no circumstances will this affect the existing traffic situations).
- The selection of plant species should be primarily referenced from the GMPs. These include (but not limited to) shrubs e.g. *Hibiscus rosa-sinensis, Alpinia zerumbet 'Variegata', Cordyline fruticosa 'Ti', Pittosporum tobira, Thryallis gracilis, Osmanthus fragrans, Russelia equisetiformis, Rhododendron spp., Chrysalidocarpus lutescens* and *Rhaphiolepis indica* etc, where they could be planted extensively in planters. These would provide an increased amenity value in the landscape. Where there is an interface issue with underground utilities, self-contained raised planters will be used.
- Pedestrianised paving details are suggested to add interest and highlight the designated connective elements to the waterfront.
- Additional street furniture, e.g. seating benches, rubbish bins, urban banners, etc. is suggested along the streets for public use. These urban design elements will also help create the notion of a liveable outdoor environment and a vibrant, diversified urban streetscape. The disposition of street furniture will require careful consideration as every street is unique. However, as a general rule of thumb, they should not be disposed in a manner that will hinder the pedestrian flow and distract the drivers from driving safely. The rubbish bins should avoid from locating within proximity to the street benches so as to minimize the nuisance of smell and pests.
- Pedestrian lightings should be spaced appropriately such that dark spot will not be created in the event of lamp failure. The Public Lighting Design Manual prepared by the Highways Department (HyD) should be referenced for the provision and arrangement of street lights, taking account of such factors as column height, luminaire design, lamp wattage and bracket length.
- Special signage should be added to the street that is unique to the waterfront of each of the sub-areas. Basic signage should include directional signs that lead the public to the waterfront as well as adjacent attraction points and landmarks within the sub-areas. When the street meets with a special attraction (e.g. North Point Ferry Piers key site/IEC Boardwalk), additional visitor information or historic/eco information signage should be erected at the junction to describe the attraction point with descriptive illustrations, images or messages. The signage should be strategically located at identified and accessible locations whilst refrain from impeding the pedestrian flow on the pavements.

6.4 Overview

Realisation of the streetscape enhancement proposals will require a combination of public and private interventions and actions. The successful implementation of the proposals will greatly improve the interconnectivity of areas within and adjacent to the Study Area and promote greater access to the waterfront. These early implementation opportunities/quick-wins are subject to design and will require various procedures and approvals to ensure full realisation of the proposals. The enhancement proposals will also be subject to more rigorous technical assessment to further ascertain the feasibility and impact on various aspects, in particular, impact on traffic conditions. Their priority will also be subject to further site investigations and refinement which should be conducted in the subsequent stages of detailed design.

7. PREFERRED OPTION AND FINAL RECOMMENDATIONS: URBAN DESIGN FRAMEWORK FOR KEY SITES

7.1 Urban Design Characteristics and Objectives

An analysis of the existing urban design character of the Study Area has been carried out in the Baseline Review Stage. In summary, the Study Area currently displays little in terms of a coherent open space pattern. The urban pattern is delineated primarily by the IEC. The development landscape is dominated by several large scale residential estates and commercial office developments. At present, these areas lack a distinctive identity and offer little in terms of physical continuity between the individual neighbourhoods that make up the Study Area.

The following principal objectives have been defined to foster an urban environment with good urban design quality:

- To establish place-making through establishing features for wayfinding, spatial definition, connectivity and accessibility through introducing a sensible and compatible built form that provides contrast and depth to the existing urban fabric, emphasizing variety of buildings and spaces that respond to and enhance a high quality public realm;
- To investigate a range of development options for prospective development sites to identify a preferred/recommended option for each site with the objective of ensuring that the development is appropriate to its development context;
- To create development strategies and forms within identified key sites that physically relate to the existing arrangement and composition of development of the surrounding areas; and
- To identify and create recognizable high quality focal points for local residents and visitors.

The Study Brief requires the urban design initiatives to focus on the enhancement of waterfront area. The urban design objectives directed at generating meaningful development and connectivity proposals are summarised as follows:

- Promote an urban design framework that produces a rational arrangement of development and uses that will create destination spaces;
- Provide an approach to urban design and implementation that ensures consistency in the quality and treatment of the built environment;
- Provide the public and visitors with a high quality waterfront that is activated by periodic activity nodes and attractions; and
- Make provision for enhanced accessibility to the waterfront.

7.2 Design Criteria

In formulating the urban design proposals for the identified key sites at the North Point Ferry Piers and Hoi Yu Street site in Quarry Bay, the following urban design criteria have been followed:

Sustaining a Mix of Uses and Forms: The places should have a mixture of uses and built forms, and as a consequence, generally embody a varied townscape. Due to the importance of the waterfront promenade and a number of prominent sites abutting the waterfront, mixed-use 'destination' areas will improve the vitality of the area and will extend hours of activity. Variations in building form within the development will assist in creating an interesting and rich townscape experience for visitors and for those who live and work in the Eastern District.

Accessibility: Currently, the Study Area is physically demarcated into different sub-districts or neighbourhoods due to the transport infrastructure and road system, and broad land ownership pattern. It is therefore important that there is an improvement in interaction and permeability between private and public areas. The potential development sites as well as the proposed general streetscape enhancement areas need to be accessible to all users through a connected series of developments, pedestrian crossings, underpasses and elevated walkways. It is also necessary to provide choice and to respond to natural connections and desire lines. Circulation should allow for walking and easy access to public transport, as opposed to reliance on cars as the prime mode of transport. Pedestrian movement should be promoted by achieving a safe and convenient route from the major transport nodes and major residential complexes to the waterfront promenade.

Encourage High Quality Development: The area must create a strong sense of place which draws people to the area to live, work and visit. Quality architecture together with the treatment of the public realm is a major factor in the achievement of this. The creation of a hierarchy of movement channels is essential as an underlying framework which binds together the mix of

uses. Good design must be used to indicate public and private streets which together provide a balance between vibrant activity and calm passive spaces. The design and layout of development should ensure that the street network is safe, secure, legible and accessible.

New development must be of a high quality and must seek to respond to local characteristics and views of the harbour as well as the waterfront promenade. Design character appropriate to the existing harbourfront setting will be the key to achieving the right development quality. The proposed schemes should relate in a contemporary fashion to the local context of the Eastern District through responsive form and materials. The public realm and its defining buildings will need to be consistent and of a high architectural standard.

Public art, bespoke street furniture and signage, effective and creative lighting, and consistent use of surfacing materials and planting are all essential elements in fostering a development with a sense of place and a unique identity.

Sustainable Development: The built form of the key sites will need to encompass principles of sustainable development. The siting and orientation of possible buildings should be carefully selected to maximize climatic opportunities (shelter, solar gain, air ventilation, etc). Development should integrate with the natural environment wherever possible by responding to the harbour and through the inclusion of quality landscape in both the public and private realm. The construction of buildings must use both tried and tested methods of achieving energy savings and innovation where possible. New buildings and development plots must be designed to be flexible with the capacity to adapt over time to accommodate new and different uses. Existing built structures such as ferry piers can in large part be revitalized with new people-oriented activities.

Legibility: Proposed development and the overall urban design approach need to create a logical and perceptible relationship of buildings and spaces. Legibility should be introduced through integrating a series of linked open spaces and activity centres within the development that tie into the existing streets and that can form a coherent extension to existing open space, retail and residential areas. This promotes a legible design framework based on strong links with the adjoining areas, and a coordinated pattern of nodes, landmarks and visual references.

Visual Permeability: The conceptual design for the general streets as well as the key sites should provide for a comprehensive pedestrian movement framework with a network of routes that are easy to comprehend. This should at the same time provide an organised context for different uses on adjoining sites, and provide for alternative means of circulation between major activity nodes. It is also important to preserve existing view corridors to and from the harbour.

Robustness: An appropriate level of robustness should be achieved through an informal extension of street and commercial activities at both a visual and physical level, along with the sustainable criteria set out above.

These criteria have formed the basis for an integral approach to urban design and the formulation of schemes proposed for the identified key sites throughout the Study.

7.3 Evaluation Criteria

With the visions and broad objectives for the urban design of the district as set out above, the rationale governing the identification of key sites for enhancement and place-making are as follows:

- The selected location contributes to the cityscape in terms of adding legibility and creating high-quality city environment;
- The selected location contributes positively with regard to suitability and visibility of visual features;
- The site is compatible with the existing landscape and development pattern;
- The site has the potential potent to contribute to the enhancement of local character;
- The selected location provides a sensible means through which connectivity to the waterfront can be achieved;
- The site has the potential to create a quality waterfront through innovative design, leisure and recreational activities, and an integrated network of open space and links;
- The site is aligned with major existing circulation corridors capable of providing direct linear connections or can provide connections to mass transit stations;
- It is spatially related to larger residential developments/estates;
- It represents a centralised location in relation to existing urban core activities; and
- It provides the opportunity to directly connect with existing and/or proposed open spaces and recreational focal points.

Based on the above criteria, North Point Ferry Piers and Hoi Yu Street site in Quarry Bay were identified as key sites with potential for enhancement to create a quality waterfront. As described in Chapter 4, initial options of enhancement proposals for the two key sites were presented to the public to solicit their comments during the Stage 2 PEP. To promote understanding of each option in cases where there are similarities in design and intent, hybrid options were derived to define separation from other more defined options. This was undertaken with the specific objective of ensuring that the public was aware of a distinction among the options.

As stated in Section 6.1, a specific and focused set of evaluation criteria were developed to assist the formulation of the preferred option and final recommendation of enhancement proposals at the waterfront area. The formulation of the final recommendation of the enhancement proposals of the key sites should, therefore, also make due reference to this set of evaluation criteria.

7.4 Initial and Preferred Options

The primary objective of the Urban Design and Landscape Master Plans for the Study Area is to establish place-making through urban design, wayfinding, spatial definition, continuity, connectivity and accessibility.

The aim of the development concepts for the Hong Kong Island East is to ensure attractive pedestrian continuity of the waterfront, and to take advantage of the key locations of the Eastern District waterfront that have potential to be transformed into attractive portals at the eastern gateway to the Inner Harbour. With the ultimate relocation of bad neighbourhood uses, the diversified forms of the harbourfront in the Eastern District will present an interesting waterfront feature. A variety of tourism attractions and facilities are proposed to draw visitors from the hinterland and other districts.

The overall objectives for the design of options are as follows:

- To provide a landscape framework integrated with urban design proposals to ensure a high quality, clean and healthy living environment;
- To promote the creation of visitor attractions of regional and international quality and to create “places of interest” containing a quality environment enhanced by landscape treatments;
- To provide high quality public open space and a continuous waterfront promenade; and
- To create a legible open space hierarchy, a variety of pedestrian environments and unimpeded circulation opportunities throughout the area.

In line with the concept and the urban design objectives, the Urban Design Plan for the Study Area is illustrated in **Figures 7.1** and **7.2**. Two sites within the Study Area have been identified as key sites for new/potential development or adaptive redevelopment. The sites have been studied in detail, and illustrations of the proposals for the sites have been incorporated as part of the Urban Design and Landscape Framework for the enhancement of streets and spaces associated with the waterfront. The following sections will further detail the development proposals for the two key sites as well as the evaluation process for selecting the preferred option.

7.5 North Point Ferry Piers and the Adjoining 20m Wide Waterfront Promenade of the Ex-North Point Estate Site

7.5.1 Existing Conditions

North Point Ferry Piers are located at the north end of Shu Kuk Street and Kam Hong Street. The pier structures are over 40 years old and are in need of refurbishment. The western pier currently houses a series of fish market booths. According to the planning brief of the ex-NPE site, a waterfront promenade of not less than 8,200m^2 with a width of not less than 20m is proposed. It has also suggested that a central piazza be provided in front of the North Point Ferry Piers to provide a focal point for leisure activities. The proposed waterfront promenade, landscaped walkways, central piazza and public open space at the western part of Site B (area bounded by Shu Kuk Street, Java Road and Tin Chiu Street) should be integrated to provide an interesting and accessible space for the enjoyment of the public.

7.5.2 Comparison and Evaluation of Initial Options Against Evaluation Criteria

Based on the consideration of the design and evaluation criteria, the three initial options for the North Point Ferry Piers generated in the Option Generation Stage were critically examined. While also taking into consideration of the public preference gathered from the Stage 2 PEP, a single development option was selected as the preferred option for the key site.

Each of the three initial options for the North Point Ferry Piers key site were examined to assess the pros and cons of each option, and the option with the largest upside overall was chosen as the preferred option. A summary of the comparison and evaluation process for the initial options are described as follows:

Accessibility and Connectivity – Connectivity will be enhanced under each of the three initial options with the proposal of a 20m wide waterfront promenade abutting the North Point Ferry Piers. In Option 3, the design of the renovated North Point Ferry Piers will include physical connection with the proposed boardwalk under the IEC. This option will further enhance the accessibility to the key site and create a better pedestrian environment. Therefore, it is considered that Option 3 will achieve a higher degree of connectivity and accessibility.

Level of Recreational and Leisure Activities – Although all three initial options have proposed facilities for leisure and recreational activities, Option 2 ("Leisure and Recreation-themed waterfront") would, in comparison, provide a higher level of emphasis in this regard. In Option 2, a large portion of the 20m wide waterfront promenade will be dedicated to providing leisure open spaces and reserved for casual leisure activities. It is, therefore, considered that Option 2 will provide the highest level of recreational and leisure activities out of the three initial options.

Improve Local Economy and Tourism Development – Option 3 has the highest potential to enhance the key site and transform it into a tourism attraction. The proposed waterfront retail and restaurants will make this option commercially viable, thereby improving the revenue stream of the ferry pier operators. The provision of waterfront promenade and the connection to the boardwalk will also create a vibrant scene capable of hosting festive activities and attract visitors to this area.

Enhancement of Existing Landscape Features and Provision of Quality Public Open Space – Landscape enhancement measures are proposed under all three initial options. In Options 2 and 3, greening and landscape features are further emphasized along the waterfront promenade with intensive and extensive landscaping such as trees and shrub planting. In Option 3, landscape features will also be provided at the proposed open space on the roof of the two ferry pier structures. To this extent, Option 3 is considered to provide the greatest enhancement to the landscape and open space characters of the key site.

Maximise Views to the Harbour – The proposal of the 20m wide publicly accessible waterfront promenade abutting the North Point Ferry Piers will offer the general public panoramic view of the Victoria Harbour. The experience is further enhanced under Option 3, with the proposed cafes and restaurants, offering visitors a unique waterfront dining experience with spectacular views of the Victoria Harbour.

Consideration of Environmental Impacts – All three initial options are focused on enhancing the physical environment such as landscape improvement and increased provision of open space. It is not anticipated that the enhancement proposals will cause any significant adverse environmental impact. Whilst Option 3 may generate a higher degree of noise and waste than Options 1 and 2 as a result of its entertainment-oriented nature, the impact is unlikely to be significant that would affect the nearby residents. Environmental impacts such as waste can be mitigated through proper management measures.

Public Preference and Comments – While no preference on specific development options can be observed from the result of the Stage 2 PEP, the public generally did not raise objection to the provision of vibrant uses/activities such as retail uses and waterfront dining facilities. Although some members of the public raised concerns that the commercial activities might cause nuisance to the nearby residents, the impacts could be mitigated by proper management measures. Recreational uses/facilities has also been incorporated in Option 3 to serve the local residents.

Compliance with Harbour Planning Principles and Guidelines – All three Initial options have complied with relevant HPPs and HPGs.

Using the above criteria and evaluation, a scoring system was devised to rate each of the initial options and the ratings were compared against one another. The ratings of each of the options are shown in the summary table below:

Table 7.1 Evaluation and Comparison of Initial Options for the North Point Ferry Piers Key Site

Evaluation Criteria	**Option 1** – Functional Circulation Corridor	**Option 2** – Leisure and Recreation-themed Waterfront	**Option 3** – Major Entertainment Hub
Accessibility and Connectivity	✓✓	✓✓	✓✓✓
Level of Recreational and Leisure Activities	✓	✓✓✓	✓✓
Improve Local Economy and Tourism Development	✓	✓✓	✓✓✓
Enhancement of Existing Landscape Features and Provision of Quality Public Open Space	✓	✓✓✓	✓✓✓
Maximise Views to the Harbour	✓	✓✓	✓✓✓
Consideration of Environmental Impacts	✓✓✓	✓✓✓	✓✓
Public Preference and Comments	✓✓	✓✓	✓✓✓
Compliance with Harbour Planning Principles and Guidelines	✓✓✓	✓✓✓	✓✓✓

After a thorough assessment and evaluation of the initial options for the North Point Ferry Piers key site based on a series of planning, landscape and urban design criteria, as well as the preferences and comments received from various stakeholders and local residents at the Stage 2 PEP, Option 3 was selected as the preferred option. The major features of this option are summarised in the subsequent section.

7.5.3 Preferred Option for North Point Ferry Piers Key Site – Option 3: Major Entertainment Hub

The preferred option for the North Point Ferry Piers is themed as a major entertainment hub (or themed as "Vibrant Entertainment Waterfront" as promulgated to the public during the PEP) with emphasis on the boardwalk and the renovated pier structures. The Ferry Piers and the adjoining boardwalk underneath the IEC will become the main activity area with provision of retail shops, cafes, seating benches, planting and art display. The existing ferry services at the two piers will be maintained with the western berth of the eastern pier for leisure boat use. Restaurants, commercial and entertainment uses will be integrated into the renovated piers which will become the new iconic landmark of Hong Kong Island East. Cafes will be provided on the rooftop of both piers which will also be landscaped for public access. Soft landscaped open space, walkway, civic plaza and recreational uses including fitness stations, elderly recreational facilities and cycling provisions for recreational and leisure purposes are proposed in the 20m wide promenade.

7.5.4 Final Recommendation for Key Site Enhancement

The preferred option for the North Point Ferry Piers key site was promulgated to the public during the Stage 3 PEP and the public comments received were generally positive. The enhancement proposal with the theme of "Vibrant Entertainment Waterfront" (i.e. Option 3 – "Major Entertainment Hub") is thus proposed to be adopted as the final recommendation for the key site (**Figure 7.3)**. The 20m wide promenade abutting the ferry piers will be enhanced by landscape and leisure amenity features, which will create a pleasant and green environment that will complement the proposal for the North Point Ferry Piers and the IEC boardwalk deck.

Inclusion of the Proposed IEC Boardwalk

One of the major advantages of the recommended proposal over the other design schemes is that the IEC boardwalk will be integrated with the North Point Ferry Piers, which will be renovated and refurbished to feature retail and dining facilities. The connection with the proposed boardwalk will offer immense potential in bringing the public to the harbour. The proposed boardwalk underneath the IEC will form an extended activity deck from the ex-NPE promenade **(Figures 7.3 and 7.4)**. Whilst not affecting the ferry services, the ticketing turnstiles and other operational functions, both pier structures are proposed to be physically connected to the proposed boardwalk to allow free flowing access between them. The proposed on-shore promenade will be directly integrated with the proposed IEC boardwalk at both piers as well as via Tong Shui Road public pier. The IEC boardwalk is proposed to be gradually widened between Tong Shui Road and Tin Chiu Street, creating an activity deck upon which light weighted kiosks or cafes could be located. The latter will contribute to animating this important circulation space. Whilst the boardwalk maintains the function of a walkway, these retail uses can filter onto the deck as corresponding outdoor activities. Streetscape elements e.g. seating benches and planting (mostly low-level planting and climbers) will be added to enhance the public enjoyment of the key site and the unique harbourfront experience at this area of North Point.

Conversion and Renovation to the Piers

The ferry pier structures are proposed to undergo major renovation to inject vibrancy and enhance the aesthetics of the structures. Restaurants, commercial and entertainment uses will be integrated into the renovated piers. Tourist souvenir shops and other retail uses can be located in kiosks on the boardwalk and/or incorporated within the pier structures. The rooftop of the ferry piers is proposed to accommodate landscaped area which would be accessible to the public. Cafes (link to possible restaurants underneath the rooftop) are also proposed on the rooftop. Whilst the existing ferry services at the two piers will be maintained, the western berth of the North Point Eastern Ferry Pier is proposed for leisure boat use. Seating and planting will be added to create a pleasant waterfront leisure and dining experience.

Waterfront Dining at the Piers

There are opportunities to expand and integrate current uses in both piers with the development of the boardwalk. For example, the existing fish market booths can be expanded and converted into a seafood-themed venue. The restaurants within the piers and the adjacent seafood vendors can potentially collaborate to offer visitors a unique waterfront dining experience where customers can purchase fresh seafood from the vendors and have it prepared in the restaurants at the piers.

Passive Use of the 20m Wide Promenade

The waterfront promenade will be integrated with the proposed IEC boardwalk via the North Point Ferry Piers. The 20m wide promenade will be designed with the specific objective of creating a pleasant and green environment. No retail uses will be provided as these facilities are already provided at the pier structures. The promenade will consist mostly of soft landscape open space, such as open lawn and tree planting, which is intended for informal and passive uses. A hard-paved area will be incorporated to provide circulation space. Public toilet facilities can be added at strategic locations along the promenade if necessary.

Central Piazza/Civic Plaza

Two civic plazas are proposed along the 20m wide promenade:

- A plaza located at the northern end of Shu Kuk Street that connects with the Western Ferry Pier; and
- An additional civic plaza at the northern end of Kam Hong Street that connects with the Eastern Ferry Pier.

These areas will incorporate hard-paved surfaces. Benches, trees and other plantings will be developed around the periphery of areas of hardscape. The plazas will provide a venue for festive/seasonal activities. A programme of events could be organised on a seasonal or annual basis.

Recreational Amenities

Restaurants, commercial and entertainment uses will form the main uses that will be located within the pier structures. The 20m wide promenade will include complementary features. A walkway will be aligned along the water edge within this Key Site. This will extend from Tong Shui Road to Tin Chiu Street. Children's playgrounds, elderly recreational facilities and public fitness stations are proposed as potential features that could be included at the promenade. These will be complimented by soft and hard landscape treatments. Subject to the detailed design at the implementation stage, a cycle track for recreational and leisure purpose is proposed at the promenade. To ensure public safety, special paving and bollards will delineate the cycling space from pedestrian circulation areas. Issues on pedestrian safety and cross traffic, the alignment of cycle track and provision of cycling-related facilities will be further investigated at the detailed design stage.

Public Art

Public art in the form of wall decorations, paving engravings and sculptures in the public realm contributes significantly to creating identity, character and visual interest. As such, it is proposed that a range of art features will be provided at the 20m wide promenade of the North Point Ferry Piers key site. Public art installations can additionally be placed on the rooftop of the pier structures and on the dolphins associated with the IEC and the boardwalk. It is proposed that the forms of public art shall be related to the culture of North Point and/or the history of the piers. Public design competitions could be organised to produce art works or local artists could be provided with a design brief to create bespoke features.

7.6 Hoi Yu Street Site in Quarry Bay

7.6.1 Existing Conditions

The key site comprises the EHC Tunnel Portal site and the waterfront area of Hoi Yu Street to the north of the IEC. Currently, the EHC Tunnel Portal site is occupied by FEHD Transport Depot, WSD Maintenance Yard and Hong Kong Police Vehicle Pound. While the waterfront area of Hoi Yu Street is largely vacant, a portion of the waterfront is currently occupied by public utilities including a salt water pumping station, an electrical substation, a ventilation building and a gas pigging station. A proposed footbridge has been suggested, linking Hoi Wan Street with the waterfront across the IEC. This is considered to be a vital connection if new areas of waterfront are to be opened up.

7.6.2 Comparison and Evaluation of Initial Options Against Evaluation Criteria

Based on the consideration of the design and evaluation criteria, the three initial options for the Hoi Yu Street site generated in the Option Generation Stage were critically examined. While also taking into consideration of the public preference gathered from the Stage 2 PEP, a single development option was selected as the preferred option for the key site. Each of the three initial options for the Hoi Yu Street site were examined to assess the pros and cons of each option, the option with the largest upside overall was chosen as the preferred option. A summary of the comparison and evaluation process for the initial options are described as follows:

Accessibility and Connectivity – Connectivity to the key site and the waterfront will be enhanced under all three options with the proposal of a pedestrian footbridge across the IEC. In Options 1 and 2, the footbridge will be of more conventional design, offering a more direct connection to the proposed EHC Tunnel Portal site and to the waterfront. Option 3, on the other hand, includes a bespoke designed feature footbridge and will offer pedestrians a more adventurous experience in travelling to the waterfront. The feature footbridge will become a special attractive and iconic feature of the site and the Quarry Bay area.

Level of Recreational and Leisure Activities – Although all three initial options have proposed facilities for leisure and recreational activities, Options 1 and 2 would provide a higher level of emphasis in this regard. In Options 1 and 2, a large portion of the circular EHC Tunnel Portal site will be dedicated to provide leisure open spaces and reserved for casual leisure activities. Therefore, it is considered that Options 1 and 2 would provide higher levels of recreational and leisure activities out of the three initial options.

Improve Local Economy and Tourism Development – Option 3 has the highest potential to enhance commercial potential of the key site and transform it into a tourism attraction. The proposed waterfront retail shops and restaurants will make this option commercially viable. The proposed iconic performance centre could potentially become a tourist attraction with its dynamic variety of functions and interesting architectural design.

Enhancement of Existing Landscape Features and Provision of Quality Public Open Space – Landscape enhancement measures are proposed under all three initial options. The proposed level of open space is higher in Options 1 and 2 with a leisure park/woodland planting at the EHC Tunnel Portal site. Option 3 proposes a landscaped waterfront promenade with retail and restaurant facilities, while at the circular EHC Tunnel Portal site, the proposed performance centre will be surrounded by landscaped open space and an open plaza.

Maximise Views to the Waterfront – The provision of a waterfront promenade at the Hoi Yu Street site, which is proposed under all three initial options, will provide uses with spectacular panoramic views of the Victoria Harbour. Option 3 will further enhance the harbourfront experience with emphasis on the provision of waterfront dining facilities. The proposed commercial development at the Hoi Yu Street waterfront that include several themed restaurants will offer visitors a unique waterfront dining experience with panoramic harbourfront views.

Consideration of Environmental Impacts – Since all the three initial options are focused primarily on enhancing the physical environment such as landscape, open space and the pedestrian atmosphere, impact on the environment is expected to be minimal. Due consideration to the air pollution generated from the nearby IEC and EHC has been accounted in all options and

adequate setbacks are prescribed for the proposed development to mitigate the environmental impact arising from the IEC and EHC. The proposal of an indoor performance centre under Option 3 is considered to be the most effective in minimizing the potential environmental impact on future users. In contrast to the proposal of leisure park/woodland planting for the EHC Tunnel Portal site under Options 1 and 2, the proposed indoor performance centre will be able to shield off majority of the air pollutants generated from the nearby IEC and EHC.

Public Preference and Comments – While no preference on specific development options can be observed from the result of the Stage 2 PEP, the public generally did not raise objection to the provision of vibrant uses/activities such as retail uses and waterfront dining facilities. To this end, Option 3 (Tourism and Entertainment-themed Waterfront) incorporating the above-mentioned uses/facilities together with waterfront promenade, recreational cycle track, open space for festive events etc. is considered the most desirable one that satisfies various public needs and aspirations.

Compliance with Harbour Planning Principles and Guidelines – All three initial options have complied with relevant HPPs and HPGs.

The result of the assessment has been put into a rating system for the purpose of comparison and selecting the most desirable option as the 'preferred option'. The result of the evaluation is shown in the following table:

Table 7.2 Evaluation and Comparison of Initial Options for the Hoi Yu Street Site in Quarry Bay

Evaluation Criteria	**Option 1** – Recreation-themed Waterfront	**Option 2** – Cultural and Leisure-themed Waterfront	**Option 3** – Tourism and Entertainment-themed Waterfront
Accessibility and Connectivity	✓✓✓	✓✓✓	✓✓✓
Level of Recreational and Leisure Activities	✓✓✓	✓✓✓	✓✓
Improve Local Economy and Tourism Development	✓	✓	✓✓✓
Enhancement of Existing Landscape Features and Provision of Quality Public Open Space	✓✓✓	✓✓✓	✓✓✓
Maximise Views to the Harbour	✓✓✓	✓✓✓	✓✓✓
Consideration of Environmental Impacts	✓	✓	✓✓✓
Public Preference and Comments	✓✓	✓✓	✓✓✓
Compliance with Harbour Planning Principles and Guidelines	✓✓✓	✓✓✓	✓✓✓

After a thorough assessment and evaluation of the initial options for the Hoi Yu Street site in Quarry Bay based on the aforementioned planning, landscape and urban design criteria, and with due regard to stakeholder preference and comments, Option 3 (Tourism and Entertainment-themed Waterfront) was selected as the preferred option. Items proposed under this option include an iconic performance venue, an elevated footbridge across the IEC and waterfront retail and dining facilities. The major features of this option are summarised in the subsequent section.

7.6.3 Preferred Option for Hoi Yu Street Key Site – Option 3: Tourism and Entertainment-themed Waterfront

The preferred option proposes a major indoor entertainment facility, such as multi-purpose performance centre or IMAX theatre at the EHC Tunnel Portal site, to create an attractive destination spot for visitors. This, together with the waterfront area at Hoi Yu Street, will form an entertainment hub in the Hong Kong Island East. More intensive uses including cultural, tourism and entertainment facilities with shops and themed restaurants are proposed with a height of 5 – 6 storeys for the "OU" site in the west and 3 – 4 storeys for the other "OU" site in the east. Recreational uses such as fitness/exercise equipment zones, elderly exercise areas, tai-chi courts and cycle track for recreational and leisure purposes are also proposed at the waterfront area. An elevated walkway with an innovative and artistic style in design to tie in with the development theme is proposed to improve access from the Quarry Bay area to the waterfront.

The Hoi Yu Street site presents a valuable opportunity for public-private partnership/collaboration (PPP/PPC) that can optimise the development opportunities afforded by the site's prime location. A collaborative scheme between the public and private sectors could potentially bring about tremendous opportunity to create innovative commercial developments that could most effectively utilise the site.

7.6.4 Final Recommendation for Key Site Enhancement

The enhancement proposals of the preferred option with the theme of "Tourism and Entertainment Waterfront" for the Hoi Yu Street key site were promulgated to the public during the Stage 3 PEP, which were then further refined with due regards to stakeholder preference and comments to come up with the final recommendations (**Figures 7.5 and 7.7**). While the preferred option was generally accepted by the public during the Stage 3 PEP, there were some concerns that the proposed tourism, cultural and entertainment uses at the Hoi Yu Street site would affect the tranquillity of the area and generate nuisance to the local residents. In this regard, the proposed facilities/uses will be sensitively designed to minimize adverse impacts on the local residents and surrounding areas.

Performance Venue/IMAX Theatre at the EHC Tunnel Portal Site

An indoor multi-purpose performance centre/IMAX theatre is proposed at the circular site abutting the EHC Tunnel portal. The proposed performance centre will be multi-functional in design and be capable of accommodating various facilities such as community theatre, dance hall, art studio, etc. The venue will be catered for a range of entertainment that can be enjoyed by the general public. The proposed facility will become a major magnet to attract the public to this otherwise passive area of Quarry Bay and providing a conduit to the waterfront **(Figures 7.5 and 7.6)**. The proposed performance facility will be sensitively designed to minimize any adverse impacts on the local residents, particularly those of Taikoo Shing, and also the surrounding areas.

An important issue is the identification of an appropriate operator for the facility, and the manner in which they will be funded. However, it is important that the design should be suitable and appropriate to context. To realise effective connectivity with the waterfront, it is also important that the facility should form a stepping stone to the water edge and provide an attractor that will encourage the public to circulate (via new footbridge connections) to the waterfront.

The performance centre is proposed to be maintained a setback distance of 50m from the IEC structure in order to minimize the environmental impact arising from the IEC. Extensive greening with trees and shrubs is proposed in this buffer zone and along the edges of the IEC/EHC to alleviate the environmental and visual impacts arising from the passing traffic. The rest of the outdoor area is proposed to incorporate flexible spaces for pedestrian circulation and an entrance plaza located at the proposed performance venue.

Improvement of Waterfront Accessibility

In line with the design criterion defined by the Study, it is essential that the proposed development be supported by a connective pedestrian system. Specifically it should address the issue of improving accessibility and connectivity between the hinterland and the waterfront. To this end, two individual footbridges linking the west end of the Quarry Bay Park Phase I with the EHC Tunnel Portal site, and ultimately spanning over the IEC to the waterfront are suggested. Additional linkage to the waterfront is also recommended at Hoi Wan Street. The footbridge alignment will be subject to detailed design at the implementation stage.

All new connecting routes, including the footbridges, will be designed with universal accessibility so that mobility impaired persons will have access to the waterfront and the proposed facilities. In keeping with current practice, lifts will be provided at each end of the proposed footbridges. The proposed walkways and footbridges will be designed with a consistent innovative architecture style (**Figure 7.8**). The feature footbridge network will enhance the overall interest and experience while creating an efficient and effective means of leading users to the harbourfront and will also provide photo opportunities. The footbridges

could also incorporate special signage, public art displays, engravings, landscape furniture, unique lighting, softscape etc. which would enhance the experience of using the footbridges.

Waterfront Promenade

At the waterfront area to the north of IEC and Hoi Yu Street, a new waterfront promenade to link up with the existing waterfront promenade in the Quarry Bay Park is proposed. Semi-mature trees and dense planting will be installed along Hoi Yu Street to create a sufficient buffer and green filter. To enhance the quality of open space and the pedestrian experience, other uses and landscape elements could be added along the connection route (e.g. special signage, public art displays, engravings, landscape furniture, unique lighting, incorporation of softscape).

Subject to the detailed design at the implementation stage, a cycle track for recreational and leisure purpose is proposed to be aligned along the linear space of the proposed promenade, offering users a pleasant and enjoyable outdoor experience. Special paving and bollards will delineate the cycling space from pedestrian circulation areas. Issues on pedestrian safety and cross traffic, the alignment of cycle track and provision of cycling-related facilities will be further investigated at the detailed design stage.

Tourism and Entertainment Facilities at "OU" sites

Development proposed at the two 'OU' sites along the waterfront will include cultural, tourism and entertainment uses with retail shops and themed restaurants to facilitate public enjoyment of the harbour views.

Given the surrounding environment and the physical presence of the performance venue, development at the western "OU" site is proposed to be 5 – 6 storeys high, while development at the eastern "OU" site is proposed to be 3 – 4 storeys high. The lower height profile will serve to achieve a harmonious waterfront environment with uses of compatible forms that will be at a human scale.

The scale of development will be strictly compatible with the surrounding environment and the proposed entertainment facility at the EHC Tunnel Portal site. The proposed commercial development will only occupy approximately 30% of the area within the "OU" sites so as to ensure that an optimum amount of open space will be provided for outdoor activities and greening. Uses such as cafes, restaurants, souvenir shops etc, and public uses/facilities such as toilet, management office, and informal performance/multi-purpose space will transform the waterfront area into an active and dynamic destination node in the Quarry Bay area.

Public Open Space and Recreational Amenities

The open area along the waterfront can also be used for various seasonal events such as arts and crafts fair, fun fair and a weekend flea market. Other major recreational uses are proposed to include a children's playground, fitness/exercise equipment zones, elderly exercise areas, tai-chi court etc. to cater for the needs of local residents. These active facilities will be placed at least 20m away from the IEC in compliance with the HKPSG to buffer any potential air quality impact arising from the IEC. Provision for small retail kiosks selling drinks and souvenirs are proposed at junctions and focal points.

Public Art

It is suggested to incorporate performing and cultural arts, and provision of public arts in the form of sculptural or graphic installations within the Hoi Yu Street key site. Art installations produced by members of the community can be displayed along the waterfront connectors. The walkways and footbridges as put forward under the scheme are proposed to adopt a creative and innovative architectural form to add visual interest. They could take on many forms. A vast array of structural and design approaches could be applied to generate a genuine landmark feature. It is recommended that a bridge architect is commissioned to design the bridge to ensure that the linkage can perform various functions (e.g. the incorporation of various art displays) as well as incorporating a design aesthetic that will convey a sense of uniqueness capable of establishing a feature associated with its environs.

7.7 Overview

This chapter has outlined the preferred option and presented the details of the recommended proposals for the two key sites. A series of design criteria were used to test against the initial options formulated during the Option Generation Stage of the Study, and public comments received at the Stages 2 and 3 PEP have been taken into account in formulating the final proposals for the two key sites. For the North Point Ferry Piers key site, the pier structures are proposed to be renovated and refurbished with integration of restaurants, commercial and entertainment uses. The proposed IEC Boardwalk will connect to the piers, which will become a major destination node accessible by foot and by sea. The proposed 20m wide waterfront promenade of the ex-NPE site will accommodate various kinds of recreational uses for public enjoyment. For the Hoi Yu Street

key site in Quarry Bay, an indoor entertainment facility (e.g. a multi-purpose performance centre or an IMAX theatre) is proposed at the EHC Tunnel Portal site, while at the Hoi Yu Street waterfront area, a waterfront promenade with recreational facilities and low-rise developments for accommodating cultural, tourism and entertainment uses with retail shops and themed restaurants are proposed. A feature footbridge is proposed to provide an iconic connection across the IEC. With the realisation of the enhancement proposals for the two key sites, vibrancy and points of interest will be added to the Island East waterfront. Moreover, the nearby residents will benefit from the new public facilities, while the dynamic features and design will attract visitors to the area.

8. FINAL RECOMMENDATION OF ENHANCEMENT PROPOSALS: LANDSCAPE TREATMENTS FOR MAJOR PEDESTRIAN CORRIDORS AND OPEN SPACES

8.1 Introduction

This chapter outlines the landscape planning and design proposals for the Study Area. From a landscape and visual standpoint, there are major opportunities to enhance the environment of the Hong Kong Island East harbourfront. There are also opportunities to enhance pedestrian movement and circulation through the district whilst also adequately satisfying open space requirements. A Landscape Master Plan illustrating the streetscape and landscape enhancement within the Study Area is depicted in **Figures 8.1 – 8.4**. This provides a framework to enhance the landscape quality of the Study Area.

Open space is envisaged to provide areas for both active and passive recreation activities as well as areas for pedestrian circulation. A number of open spaces within the Study Area promote pedestrian movement to the waterfront. Landscape treatments applied to each of the proposed landscaped corridors will help reinforce visual and functional integration between the hinterland and the waterfront. Open spaces with various sizes are suggested to cater for the benefit of the adjoining residential areas and all other possible users.

It should be noted that the landscape enhancement proposals under this chapter supplement the pedestrian circulation framework as described in Chapter 6, which recommended nine major roads/streets for quick-win enhancement measures. This chapter will describe the various possible measures, categorised by the nature of the enhancement type, that can potentially be applied to the overall Study Area. The suggested landscape enhancement measures will serve as an umbrella framework that can be equally applied to a majority of the public realm area.

8.2 Key Issues on Existing Landscape Character

The existing environs of the Study Area lack identity and uniqueness in its landscape features. The existing conditions and key issues of the Study Area are summarised as follows:

- Lack of/Poor landscape features to major pedestrian circulation corridors within the Study Area;
- No major landscaped open space nodes of local attraction;
- Poor and unpleasant linkage between adjoining areas and neighbourhoods;
- High level of spatial 'compartmentalisation' associated with the high-rise private enclaves and industrial uses. Greening measures are minimal in some areas; and
- Substantial physical separators, and occasionally grade-separated, road corridors which create poor interface between private and public areas.

8.3 Landscape Objectives

In response to the key issues observed, the Landscape Master Plan encompasses the following principal objectives as an attempt to address the following issues:

- To promote an integrated at-grade pedestrian oriented circulation streetscape with at-grade crossings in order to improve continuity of pedestrian movement along the waterfront and accessibility to the waterfront;
- To establish a network of open spaces providing a range of functions that are geared to enhance pedestrian circulation and to promote, where practicable, open space inter-linkage and continuity;
- To provide open space linkages between the existing high density residential areas to the waterfront;
- To develop recognisable high quality focal points for local residents and visitors;
- Where practicable, modify the current distribution and use of land to enhance the arrangement and functionality of open space provision, as well as to create a high quality waterfront that is activated by periodic activity nodes and attractions for the public and visitors;
- To provide both active and passive recreation activities for existing and future residents residing within the new development sites by providing large areas of soft landscape areas as an urban sanctuary;

- To provide an approach to landscape design and implementation that ensures consistent landscape treatments for promoting the creation of high quality waterfront that sympathetically integrates existing areas of Hong Kong Island East with the waterfront and identified development sites;
- To apply hard and soft landscape treatments that promote consistency and continuity in the treatment of spaces within the Study Area;
- To integrate with the design theme of CEDD's GMPs; and
- Reduce the physical and visual impact of major roads by introducing enhancement measures along transport corridors and buffer areas to mitigate negative environmental conditions.

8.4 Landscape Design Approach and Principles

The overall landscape strategy has sought to create a consistent and readable series of open space and destinations as well as suggest specific improvements to the public and private realms where relevant. Suggested design targets for the identified open spaces and streets that have been applied and adopted for the Landscape Master Plan are as follows:

8.4.1 Promenade Design and Enhancement

The existing configuration and management of the harbourfront open spaces and promenades in the Study Area is at present, not conducive to full user enjoyment. Amenity facilities are limited and public seating with shades is inadequate. This limits visitors' ability to rest and enjoy the panoramic harbour view.

The harbourfront must be designed to accommodate activities that can be enjoyed by all sectors of the community, and to facilitate enjoyment by improving features such as sitting areas, vantage points, cafe and dining areas, and kiosks to provide tourist items and necessities. It is suggested that existing waterfront areas should incorporate many of these treatments to create a vibrant and pleasant waterfront environment. The promenade is an ideal location for a range of activities, especially outdoor dining, informal entertainment and "fun" amusements.

Landscape design is provided as part of an overall framework to enhance promenade areas. Planting to provide shade is particularly important. To this extent, dense planting along the landward side of the promenade is proposed leaving clear space for circulation, maintenance and emergency access. Tree canopies should be interlocking. This will require tree planting with a minimum interval of 5m. Salt resistant shade trees such as *Hibiscus tiliaceus* should be comprehensively adopted. Where space permits, double rows of trees should be provided. This will further enhance shade and produce a cooling effect, which will be conducive to public enjoyment of the promenade.

It is proposed that the following general parameters be applied to the design of promenade spaces:

- Improved lighting, planting and connections will be promoted at the waterfront to enhance safety and shelter;
- Design of public space facing the waterfront should, wherever possible, provide views of the harbour. This will help to increase the value of the development as well as provide an important source of amenity;
- Tourism/recreation uses which can benefit from harbourfront access while balancing the needs of other uses;
- Tourist attractions located within designated 'places' which act as activity nodes;
- An improvement in pedestrian accessibility to the waterfront from public transport nodes;
- Continuity of harbourfront promenades to link tourism clusters;
- Integration of hinterland areas with the harbourfront, through improved visual, landscape and pedestrian linkages; and
- Creation of strong visual links to the harbourfront from hinterland activity nodes (e.g. parks and shopping, employment and residential areas).

8.4.2 Streetscape

Improvement to the physical streetscape conditions should be promoted throughout major corridors within the Study Area. Major corridors travelling in the north-south direction are proposed to be prioritised for streetscape enhancement as these corridors will connect residents living in more inland areas to the waterfront. The overall approach and guiding principles for streetscape improvement are described as follows:

- To visually consolidate and demarcate street blocks and building edges in defining a sense of proportion and comfort to public streets and spaces, consistent with the human scale;
- To maximise greenery and trees along streets and spaces in keeping with the overall landscape framework;
- To enhance visual and physical connectivity;
- To establish a high level of pedestrian permeability throughout the area, ensuring that all facilities, spaces and amenities are easily accessible. In the case of interfaces with private developments, this can be extended as appropriate through internal connecting pedestrian routes and strategic linkages;
- To promote interactive spaces with amenities for seating, people watching and contemplation within the public domain to encourage social interaction;
- To ensure that edges to major spaces, e.g. the EHC Tunnel Portal site in Quarry Bay, are not treated as blank facades but as an opportunity to provide an animated and exciting definition around the perimeter; and
- Reference to TPDM is made in order to ascertain the feasibility of the proposals without adversely affecting the vehicular and pedestrian traffic.

8.4.3 Open Space

Although a number of public parks and green open spaces are currently provided within the Island East area, many of these parks are disjointed and offer little sense of identity to the area. To elevate the level of continuity and improve the public realm of the area, enhancement of the existing open space framework is highly desirable. Improving existing parks and the erection of new parks and open spaces, as has been proposed in a number of the key proposals in this Study, will dramatically enhance the quality of life for local residents and visitors of the Island East area. In achieving a comprehensive, functional and vibrant open space framework, the following design and planning approach is proposed:

- To establish a strong sense of place through the promotion of locally distinctive character and culture, the incorporation of special streetscapes, mix of uses and sympathetic design and siting of public buildings that should come to symbolise local identity;
- To encourage diversity of type, character and scale of open space that can accommodate different levels of use for young and old alike, such as cafés within the North Point Ferry Piers, to meet local needs and encourage centres of activity;
- To introduce tangible design references related to the pedestrian level of activity which can enrich the public realm and open space and widen the urban sensory experience through the use of specific, articulated urban elements e.g. landmark corners, gateways, landscape focal points, decoration, artworks, landmarks, special landscape treatment, lighting and signage, street furniture and material selection within open spaces. These can be created as local focal points related to viewpoints at intervals along and towards the harbourfront;
- To maximise levels of use for the pier structures and commercial buildings/spaces through adaptability (e.g. use of podium garden);
- To maintain, reinforce and extend existing views from the hinterland to the harbour and also to provide visual interest and character along the waterfront;
- To ensure that facilities for cycles and their storage will be provided and confined within the promenade or related open space; and
- To ensure that the enhancement measures, where applicable, apply the universal accessibility approach as addressed in the “Design Manual: Barrier Free Access 2008” by the Buildings Department.

The following sections outline how the above have been applied to the overall open space and streetscape framework within the Study Area.

8.5 Landscape Palette

To improve the street character and enjoyment of the pedestrian linkages and general streetscape within the Study Area, a landscape design palette has been devised (**Figure 3.11**), with variations on some of the design elements serving to enhance visual variety and respond to different conditions. The recommended landscape palette is specifically geared for wider use

within the district. The main emphasis behind devising the palette is to institute a formal set of parameters governing the design of street furniture, amenity features, seating etc. The key components of the palette are summarised below:

- To promote street trees and structural planting along streets as well as the waterfront promenade in order to link spaces and to create a generous height and form for the proposed landscape treatments. This is essential in providing a public realm that is functional;
- A series of plant species will be selected. The mix of planting will gradually change from one character area to another to imply a continuous relationship between distinctive sub-districts. Special combination of planting types would be suggested for the identified key sites, focal points, green nodes and intersections for the purpose of distinguishing different district characters and identities;
- Seating will be used to encourage people to spend more time in the proposed spaces. Bus shelters, litter bins, lighting and signage columns will be planned and incorporated into the public realm. Care will be taken to avoid clutter, especially along the main thoroughfares. The design of street furniture will assist in the creation of a distinct identity;
- Paving Materials will be of consistent design. The design language will symbolically and visually link the streets and spaces through the use of common elements. Different paving materials will be used to emphasise the hierarchy of the street matrix. Paving materials will help to differentiate private spaces, semi-private spaces, as well as the public spaces. Access routes and pedestrian walkways, most notably the waterfront promenade will be more intimate in scale and be marked by a change in paving, a diverse range of planting approaches and the provision of seating and public art; and
- Public art is proposed to be used to animate the public realm and provide a focus to public spaces. Consideration will be given to the use of art within paving, furniture and elevational treatments. This presents an opportunity to encourage local artists, designers and craftspersons to embellish and enhance the public realm.

The application of the landscape design palette can help to engender an identity and a sense of place if implemented in a considerate manner. They can also serve to enhance the readability of spaces, define specific area functions and act as design references that can differentiate between different uses and areas.

8.6 Irrigation Methods

The proposed landscape enhancements such as tree and shrub planting will require regular irrigation in order to keep the proposed landscape features in pristine state. New tree planting and low level shrubs along footpath and at the medians can be irrigated through one of the following landscape irrigation methods (depending on the location of the planting):

- Automated Sprinkler System: Conventional sprinkler system controlled by timers can be used in watering large surface of planting features such as lawns and flower gardens, with minimal water loss. These can potentially be placed at open spaces with larger green areas.
- Leaky Pipe: Leaky pipes are often used to irrigate shrub and flower planters. In a leaky pipe system, water will flow continuously, at low pressure, out of a pre-drilled hose/pipe and into the soil bed of the planting.
- Bowser Trucks: At hard to reach areas such as median planters, a bowser truck is the ideal choice for irrigation. When used to water the median planters, a second worker would be stationed at the back of the tank to control the direction of the hose, which helps to water the planting more efficiently and minimise water loss.

8.7 Lighting

Lighting treatments are at the core of creating quality spaces. The proposed use of lighting is described below:

- Lighting will be utilised in response to issues of safety, security, pedestrian flow and traffic management. Lighting will also be used creatively to add drama by lighting important elevations, public buildings/structures and particular places, e.g. the renovated North Point Ferry Piers with additional recreation and retail uses;
- The provision of a general standard of lighting to create a safe night-time environment;
- The use of a lighting strategy should contribute not only functionally, but aesthetically to create various lighting moods across the property relating to activity;
- The use of a combination of lighting types and possibly light colour to enhance the ambience of the scheme; and

- Lighting will be introduced into the planting areas within the Study Area. The combination of treatments will serve to engender quality spaces and a distinctive night-time character for the Study Area.

8.8 Signage

Signage, like other types of landscape treatments, is important in assisting wayfinding and in establishing a high-quality district identity. Wayfinding signage is especially important due to the general lack of connectivity within the Study Area. It should be implemented in conjunction with general improvement of key pedestrian routes and streetscape enhancements. Pedestrian routes from the hinterland to the waterfront should be clearly indicated through strategically placed directional signage with indication of walking distance and time. Routes between public transport and activity nodes should also be clearly indicated.

New signage should be coordinated with existing signage to avoid redundancy and confusion. Government-accepted forms of signage for tourism and other directional purposes shall be utilised, in addition to bespoke feature signage that can be used as unique elements within the Study Area (**Figure 8.5**).

8.9 Overview

The proposals described above call for an assembly of interventions and actions that will contribute to the enhancement of Hong Kong Island East. It will provide a framework for the introduction of new development elements into the area to improve connectivity as well as create a better and more coherent overall landscape framework. The landscape strategy has addressed both the public and private realm and set out the means through which specific enhancements of the Study Area could be designed and implemented. Subsequent to completion of this Study, these need to be refined into detailed parameters that can be used to guide and govern the implementation of the landscape framework. During this process, various design competitions can be hosted and organized by the government, with the purpose of encouraging public participation as well as gathering public preferences.

9. TRAFFIC IMPACT ASSESSMENT

As part of the Study, preliminary technical assessments of recommended enhancement proposals as presented in the previous chapters were conducted to ascertain the prima facie technical and environmental feasibility of the proposals. In this connection, a preliminary traffic impact assessment (TIA) was carried out to evaluate the traffic impacts of the enhancement proposals on the surrounding road networks and pedestrian facilities in broad terms.

9.1 Data Collection

The starting point of the assessment was to collect and review study reports/documents and traffic data relevant to the Study Area. Site reconnaissance and surveys were conducted at major traffic corridors and walkways which were anticipated to be impacted most significantly by the enhancement proposals. The collected data was analyzed to determine the existing traffic conditions and identify the potential constraints of the proposals.

9.1.1 Traffic and Pedestrian Forecasting

The TIA included projecting future travel demands taking account of the background traffic growth, estimating additional traffic generation arising from the enhancement proposals and assigning trips to the roadway and pedestrian system for the design years of 2016 and 2021.

Establishment of Background Traffic Models

The latest Base District Traffic Models (BDTM) (HK2 AM and PM) developed by the TD in 2010 was used for producing "background" traffic forecasts of the design years 2016 and 2021 at the key traffic corridors to be affected by the enhancement proposals. In accordance with the Study Brief, the base year traffic model was required to validate against 2008 traffic conditions. The TD's HK2 BDTM models were last validated to the 2008 traffic conditions, providing a robust base year model to ensure that the existing traffic conditions were accurately replicated. The design year models of 2016 and 2021 for "background" traffic conditions were developed based on the validated base year models, taking into account future committed land uses, socio-economic factors, and highway and transport infrastructure projects. The highway and land use planning assumptions adopted in the projection of traffic forecasts are presented in **Table 9.1**.

Table 9.1 Committed Highway Projects and Land Use Developments Adopted in Future Traffic Forecasts

Year	Highway/Railway
2021	Central-Wan Chai Bypass
Year	**Land use**
2016	a. A 190-room-hotel development on 18 A Kung Ngam Village Road
	b. A 292-room-hotel development on 68 Hing Man Street
	c. Community Facility on Holy Cross Path
	d. Urban Renewal Authority (URA)'s residential/commercial project on Sai Wan Ho Street
	e. URA's residential/commercial project on Shau Kei Wan Road/Nam On Street
	f. Residential/Retail development on Chai Wan Road
	g. A hotel development on 29 Taikoo Shing Road
	h. Office redevelopment on 979 King' Road (Taikoo Place)
	i. Ex-North Point Estate site development

Estimation of Project Trip Generation and Attraction

In assessing the traffic impacts of the enhancement proposals, the primary focus was placed on the conceptual schemes for the North Point Ferry Piers site and Hoi Yu Street site in Quarry Bay as both involve land uses (e.g. retail shops, restaurants and performance venue) with significant trip generations and attractions.

The proposed developments in North Point Ferry Piers site also cover a 20m wide waterfront promenade with fitness stations, elderly recreational facilities and a cycling track for recreational and leisure purposes. The existing ferry services at the two piers will be maintained.

The Hoi Yu Street site comprises the open area of the EHC Tunnel Portal and the waterfront area of Hoi Yu Street to the north of IEC. An elevated walkway is proposed connecting the waterfront with the EHC Tunnel Portal site. The proposed developments include a multi-purpose performance centre/an IMAX theatre, recreational and leisure uses (e.g. elderly exercise area, tai-chi courts, and a recreational cycle track), low-rise developments accommodating retail shops, cultural, entertainment and tourism uses and themed restaurants.

For this TIA, the projected trips of the two key sites were estimated based on the trip data for similar land uses obtained from the 2006 Trip Generation Survey (TGS) conducted by TD. The development intensity of each key site is shown in **Table 9.2. Table 9.3** presents the adopted trip rates and respective trip projection.

Table 9.2 Trip Rates for Use in TIA

Development Type	Unit	Trip Generations (GEN) and Attractions (ATT) (PCU)			
		AM Peak		PM Peak	
		GEN	ATT	GEN	ATT
Retail/Commercial	(PCU/hr/100 m^2 GFA)	0.796	0.730	0.865	0.957
Performance Venue	(PCU/hr/10 Seats)	N.A.	N.A.	0.309	0.241

Source: 2006 Trip Generation Survey (TGS) conducted by TD

Table 9.3 Trip Generation and Attraction for the Enhancement Proposals by Key Site

Development Type	Volume/Intensity of Proposals	Trip Generations and Attractions (PCU)			
		AM Peak		PM Peak	
		GEN	ATT	GEN	ATT
North Point Ferry Piers					
Retail/Commercial (Café & Kiosk)	2,000 m^2	16	15	17	19
Hoi Yu Street Site in Quarry Bay					
Retail/Commercial (Shops and Themed Restaurants)	15,000 m^2	119	110	130	144
Performance Venue (or IMAX Theatre)	400 seats	0	0	12	10

Note: Estimation of the volume/intensity of proposals is made based on the existing building footprint/site area

Pedestrian forecasts of major walkway corridors being affected by the proposed developments were also estimated. Pedestrian traffic surveys at the "pinch points" on key corridors adjoining to the sites were collected in 2010 and these surveyed data were used to establish the base year situation. The base year flows were further developed to the future "background" flow using growth factors which were derived based on socio-economic planning data (e.g. population and employment) in the 2006-based Territory Population and Employment Data Matrix (TPEDM) released by the Planning Department. **Table 9.4** presents details of the growth factors.

In general, Quarry Bay district is forecasted to have a positive growth on employment but a negative growth on population while a negative employment growth and a positive population growth are projected in North Point district between 2010 and 2016. Starting from 2016, the population and employment growth in both districts will experience a slight decrease in the range of -3.6 to -3.8%. To be conservative, a positive growth rate of 0.5% per annum was adopted for forecasting the "background" pedestrian flows.

Table 9.4 Growth Rates of Pedestrian Forecasts Derived from TPEDM

Planning Data	Annual Growth Rate			
	2010-2016		2016-2021	
	North Point	Quarry Bay	North Point	Quarry Bay
Growth Rate Derived from Planning Data				
Population	3.6%	-2.7%	-3.6%	-3.8%
Employment	-0.8%	3.6%	-3.9%	-3.8%

Source: Derived from 2006-based TPEDM released by the Planning Department

Similar to the approach of modelling "project" vehicular traffic condition, the "project" pedestrian condition was estimated by adding the additional pedestrian trips arising from the proposed developments on top of the "background" traffic condition. The additional pedestrian trips were estimated based on in-house survey data collected at various relevant development types on the Island East. These rates had been endorsed and already used in the "Study on Pedestrian Subways and Related Traffic Improvement Measures in Causeway Bay". The adopted trip rates and the resultant pedestrian trip generations are summarised in **Tables 9.5** and **9.6** below.

Table 9.5 Adopted Trip Rates for Project Pedestrian Trips

Type	AM Peak		Noon		PM Peak	
	GEN	ATT	GEN	ATT	GEN	ATT
Retail (person/100m^2)	0.727	1.163	2.936	2.820	11.140	8.410

Source: The adopted trip rates are based on the trip rate survey conducted at various relevant development types on Hong Kong Island East (mainly Causeway Bay).

Table 9.6 Pedestrian Trip Generation and Attraction for the Enhancement Proposals by Key Site

Proposed Development Type	Volume/ Intensity of Proposals	Trip Generation and Attraction					
		AM Peak		Noon		PM Peak	
		GEN	ATT	GEN	ATT	GEN	ATT
North Point Ferry Piers							
Retail/Commercial (Café & Kiosk)	2,000 sq.m	15	23	59	56	223	168
Hoi Yu Street Site in Quarry Bay							
Retail/Commercial (Shops and Themed Restaurants)	15,000 sq.m	109	174	440	423	1,671	1,262
Performance Venue (1) (or IMAX Theatre)	400 seats	-	-	-	-	400	400

Note: (1) Events in Hong Kong are commonly conducted in the evening and hence only trip generations and attractions for the evening peak were analysed.

Considering that the shopping and entertainment pedestrian trips at noon were less than the evening peak based on the survey data, assessments were only conducted for the two normal commuter peak times, namely in the morning and evening.

Development of Project Traffic Models

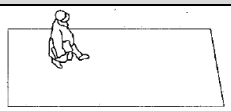
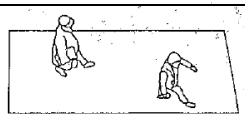
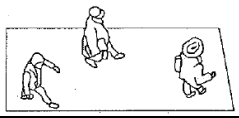
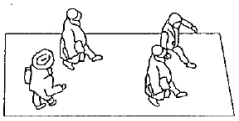
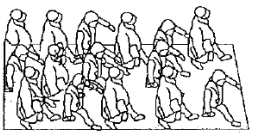
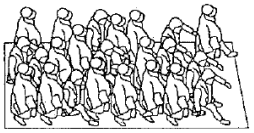
Project trip generations and attractions for the proposed land use activities for the two key sites were estimated. The estimated project trips together with the "background" traffic were combined to formulate the "project" traffic scenario to be used for capacity assessments of the existing roadway and pedestrian facilities.

9.1.2 Assessment Framework of Traffic/Pedestrian Impacts

Traffic assessments were conducted with the prime focus on capacity assessment and queue length analysis of several major road links/junctions to be affected by the enhancement proposals in close proximity to the sites. For pedestrian assessment, the performance of the critical pedestrian walkways affected by the proposed pedestrian enhancement schemes was assessed on the basis of the Level of Service (LOS). The associated impacts arising from the proposals on the existing on-street transport facilities including car-parking, loading/unloading and pick-up/drop-off points were reviewed and identified. Where necessary, mitigation measures were recommended to address the problematic locations.

In general, the Reserved Capacity (RC) is usually used to reflect traffic situations at signalized junctions. An RC ratio greater than 0% indicates that the junction is operating with spare capacity whereas an RC ratio smaller than 0% indicates the junction is overloaded. On the other hand, Demand-Flow-Capacity (DFC) is used for priority junctions and roundabouts. A DFC ratio < 0.85 indicates that the junction is operating with spare capacity and a DFC between > 0.85 and <1.00 means that the junction is approaching capacity. A DFC of 1.00 or over indicates that the junction is overloaded. For link flow assessment, a Volume-to-Capacity (V/C) ratio of higher than 1.2 explicates the onset of traffic delays on studied links. For pedestrian impact assessment, the assessment criteria is based on the LOS recommended in the Highway Capacity Manual 2000 as shown in **Table 9.7.** In general, a LOS at/above C will be achieved for planned pedestrian facilities during normal days.

Table 9.7 Walkway Assessment Framework

LOS	Condition	Diagram	Description
A	Ped. Space > 5.6m^{2+}/p Flow Rate > 16p/min/m		Pedestrians move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected and conflicts between pedestrians are unlikely.
B	Ped. Space > 3.7 – 5.6m^{2+}/p Flow Rate > 16 – 23p/min/m		There is sufficient area for pedestrians to select walking speeds freely, to bypass other pedestrians and to avoid crossing conflicts. At this level, pedestrians begin to aware of other pedestrians and to respond to their presence when selecting a walking path.
C	Ped. Space > 2.2 – 3.7m^{2+}/p Flow Rate > 23 – 33p/min/m		Space is sufficient for normal walking speeds and for bypassing other pedestrians in primarily unidirectional streams. Reverse-direction or crossing movements can cause minor conflicts, and speeds and flow rate are somewhat lower.
D	Ped. Space > 1.4 – 2.2m^{2+}/p Flow Rate > 33 – 49p/min/m		Freedom to select individual walking speed and to bypass other pedestrians is restricted. Crossing or reverse-flow movements face a high probability of conflicts, requiring reasonably fluid flow, but friction and interaction between pedestrians is likely.
E	Ped. Space > 0.75 – 1.4m^{2+}/p Flow Rate > 49 – 75p/min/m		Virtually all pedestrians restrict their normal walking speed frequently adjusting their gait. At the lower range, forward movement is possible only by shuffling. Space is not sufficient for passing slower pedestrians. Crossing- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity, with stoppages and interruptions to flow.
F	Ped. Space > 0.75m^{2+}/p Flow Rate varies p/min/m		All walking speeds are severely restricted, and forward progress is made only by shuffling. There is frequent, unavoidable contact with other pedestrians. Crossing- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.

Source: Highway Capacity Manual 2000, Transportation Research Board, United States

9.2 Traffic Assessments of Harbourfront Connectivity and Streetscape Enhancement Proposals

The harbourfront enhancement proposals aim to provide a continuous waterfront promenade along the Island East waterfront by integrating the existing promenade with the proposed boardwalk underneath the IEC with a general width of about 5m from Oil Street to Hoi Yu Street and by including an elevated walkway, the Sky Trail along the hillside of the Hong Kong Museum of Coastal Defense in Shau Kei Wan. The boardwalk underneath the IEC will also be integrated with the proposed 20m wide waterfront promenade of the ex-NPE site.

9.2.1 Streetscape Enhancement and Pavement Widening

To improve the north-south waterfront connectivity, the Study has identified 9 roads/streets for streetscape enhancement. **Figure 9.1** shows their locations. To achieve a greater effect of improvement, the following measures were considered:

- Planting street trees;
- Paving Improvement;
- Provision of Pedestrian-scale lights, information and destination signage, and other street furnitures; and
- Pavement widening.

In general, the planning principle of streetscape enhancement is to provide a spacious, convenient, pleasant and continuous walkway network adjoining the waterfront areas. Careful planning has been taken to minimize the need for a reduction in the current carriageway width and to avoid negatively affecting the existing vehicular traffic, bus stops, and on-street parking/loading/unloading activities. Also, an adequate carriageway width for EVA will be maintained. Of the identified 9 pedestrian corridors, no reduction in the number of traffic lanes except that minor reduction of the carriageway width is proposed at the two locations namely:

- Sun Yip Street (very minor reduction of carriageway width by 0.5m on each side for streetscape enhancement); and
- Oi Tak Street (very minor reduction of carriageway width by 0.5m on each side for streetscape enhancement).

Figure 9.1 shows the observed pedestrian flows during peak hours whereas **Figures 9.2** and **9.3** present pedestrian forecasts respectively for 2016 and 2021. Preliminary analysis on the existing traffic conditions based on the site geometric information and pedestrian survey data collected in 2010 was conducted and is presented in **Table 9.8**. Based on the analysis results, several pedestrian schemes are proposed and their traffic impacts are summarised in **Table 9.9**. In short, the overall walking environment of the identified streetscape corridors will still be at a LOS of A after the streetscape enhancement. In general, the walkway corridors will be improved in terms of accessibility and spacious environment, without compromising the existing operation of vehicular traffic, bus services and parking/loading/unloading activities.

The impact of reducing the width of the carriageways at Sun Yip Street and Oi Tak Street has been assessed in terms of road capacity and the results are presented in **Table 9.10.** The RC of the affected junctions are all at an acceptable level, indicating that the traffic impacts resulting from the landscape proposals are unlikely to be significant and would not adversely affect the adjacent road network system.

Table 9.8 Existing Traffic Conditions of the Major Pedestrian Corridors Identified for Streetscape Enhancement

Corridor No.	Area	Street	Footpath Location	Effective Footpath Width (the narrowest section in metre)	Existing Pedestrian Flows[1]		Design of Carriageway	Existing Traffic Issues
					AM Peak Hour	PM Peak Hour		
1	North Point	Shu Kuk Street (North of Java Road)	West/East	4.3/2.9	1,290/725	1,180/615	Single 2-lane Northbound (NB)	• Access to North Point Bus Terminus and North Point Ferry Piers. • Heavy bus traffic
2	North Point	Tong Shui Road	West/East	5.0/2.3	945/920	1,405/885	1 lane NB, 2-lane Southbound (SB)	• Parking site close to the southbound carriageway fronting the footpath in the east • Footbridge landing both on the footpath in the east and west • Heavy traffic and kerb-side activities
3	North Point	Healthy Street East (North of King's Road)	West/East	2.5/3.2	1,020/390	975/275	Single 3 to 4-lane	• Access to adjacent office/commercial towers and North Point Fire Station • Parking on the NB carriageway fronting the footpath in the west.
4	Quarry Bay	Hoi Yu Street	North/South	3.8/3.3	115/220	120/690	Single 4-lane	• Low traffic
5	Quarry Bay	Hoi Chak Street	West/East	3.2/4.0	345/225	195/290	Single 2 to 4-lane	• Medium traffic
6	Quarry Bay	Hoi Wan Street (North of Hoi Tai Street)	No designated footpath	N.A.[2]	1030/810	590/175	Single 2-lane	• Low traffic

Note: (1) The number has been rounded to nearest 5.
(2) Currently, there is no designated footpath on the section of Hoi Wan Street north of Hoi Tai Street.

Table 9.8 Existing Traffic Conditions of the Major Pedestrian Corridors Identified for Streetscape Enhancement (Cont'd)

Corridor No.	District Area	Street	Footpath Location	Effective Footpath Width (the narrowest section in meter)	Existing Pedestrian Flows(1)		Design of Carriageway	Existing Traffic Issues
					AM Peak Hour	PM Peak Hour		
7	Shau Kei Wan	Tai On Street (Oi Kan Road - Lei King Road)	West/East	2.6/6.6	585/855	485/600	2-lane SB, 1-lane NB	• Medium traffic • Pick-up/drop-off spaces for buses on the NB carriageway fronting the footpath in the west
8	Shau Kei Wan	Oi Tak Street	West/East	3.4/3.3	55/155	85/175	Single 2-lane	• Heavy loading/unloading activities • Existing on-street parking is fully utilized
9	Chai Wan	Sun Yip St reet (Siu Sai Wan Road - Fung Yip Street)	West/East	3.7/3.9	120/410	205/320	Single 2-lane	• Heavy loading/unloading activities • Existing on-street parking is fully utilized

Note: (1) The number has been rounded to nearest 5.
(2) Currently, there is no designated footpath on the section of Hoi Wan Street north of Hoi Tai Street.

Table 9.9 Streetscape Enhancement Proposals for Major Pedestrian Corridors

Corridor No.	Area	Street	Proposed Enhancements	Level of Services (LOS)				Positive Impact	Negative Impact
				Without Enhancements		With Enhancements			
				AM	PM	AM	PM		
1	North Point	Shu Kuk Street (North of Java Road)	• No traffic lane reduction. • Measures including paving improvement, intensified tree and shrub plantings, additional street furniture, lightings and strong identifiable signage where physical condition is feasible.	A	A	A	A	• To improve pedestrian connectivity to the waterfront areas.	• No negative impacts are anticipated.
2	North Point	Tong Shui Road	• No traffic lane reduction. • Alleviation of existing kerbside activities. • Other measures including paving improvement, intensified tree and shrub plantings, additional street furniture and strong identifiable signage where physical condition is feasible.	A	A	A	A	• To improve street management and circulation.	• No negative impacts are anticipated.
3	North Point	Healthy Street East (North of King's Road)	• No traffic lane reduction. • Measures including paving improvement, intensified tree and shrub plantings, additional street furniture, lightings and strong identifiable signage where physical condition is feasible.	A	A	A	A	• To improve pedestrian connectivity to the waterfront areas.	• No negative impacts are anticipated.
4	Quarry Bay	Hoi Yu Street	• No traffic lane reduction. • Measures including paving improvement, intensified tree and shrub plantings, additional street furniture and strong identifiable signage where physical condition is feasible.	A	A	A	A	• To improve pedestrian connectivity to the waterfront areas.	• No negative impacts are anticipated

Table 9.9 Streetscape Enhancement Proposals for Major Pedestrian Corridors (Cont'd)

Corridor No.	Area	Street	Proposed Enhancements	Level of Services (LOS)				Positive Impact	Negative Impact
				Without Enhancements		With Enhancements			
				AM	PM	AM	PM		
5	Quarry Bay	Hoi Chak Street	• No traffic lane reduction. • Measures including paving improvement, intensified tree and shrub plantings, additional street furniture and strong identifiable signage where physical condition is feasible. • Tree planting to be introduced at locations without affecting the existing kerbside, run-in/run-out and loading/unloading facilities.	A	A	A	A	• To improve pedestrian connectivity to the waterfront areas.	• No negative impacts are anticipated.
6	Quarry Bay	Hoi Wan Street (North of Hoi Tai Street)	• No traffic lane reduction. • Conversion of the existing plantation on both sides to provide footpath. • Prohibition of illegal parking activities. • Other measures including paving improvements, intensified tree and shrub plantings, additional street furniture, lightings and strong identifiable signage where physical condition is feasible.	-	-	A	A	• To provide designated walkways to improve pedestrian safety. • To avoid the conflict of the pedestrian and vehicular movement. • To provide direct pedestrian connection to the waterfront areas.	• The existing vehicular traffic arrangement remains. No negative impacts are anticipated.
7	Shau Kei Wan	Tai On Street (Oi Kan Road - Lei King Road)	• No traffic lane reduction. • Measures including paving improvement, intensified tree and shrub plantings, additional street furniture, lightings and strong identifiable signage where physical condition is feasible.	A	A	A	A	• To improve pedestrian connectivity to the waterfront areas.	• No negative impacts are anticipated.

Table 9.9 Streetscape Enhancement Proposals for Major Pedestrian Corridors (Cont'd)

Corridor No.	Area	Street	Proposed Enhancements	Level of Services (LOS)				Positive Impact	Negative Impact
				Without Enhancements		With Enhancements			
				AM	PM	AM	PM		
8	Shau Kei Wan	Oi Tak Street	• Very minor reduction of carriageway by 0.5m on both sides. • Measures including paving improvement, intensified tree and shrub plantings, additional street furniture, lightings and strong identifiable signage where physical condition is feasible.	A	A	A	A	• To improve pedestrian connectivity to the waterfront areas.	• Traffic assessment of the affected junctions was conducted (refer to Table 9.10) and the result indicated that the junctions would maintain an acceptable operational level even with the proposed streetscape enhancements.
9	Chai Wan	Sun Yip Street (Siu Sai Wan Road - Fung Yip Street)	• Very minor reduction of carriageway by 0.5m on both sides. • Measures will be limited to the footway. • The measures will include paving improvement, tree and shrub plantings, additional street furniture, lightings and strong identifiable signage where physical condition is feasible.	A	A	A	A	• To improve pedestrian connectivity to the waterfront areas.	• Traffic assessment of the affected junctions was conducted (refer to Table 9.10) and the result indicated that the junctions would maintain an acceptable operational level even with the proposed streetscape enhancements.

Table 9.10 Performance of Junctions Affected by Road Width Reduction under the Streetscape Enhancement Proposals in 2016 and 2021

Pedestrian Corridor.	Affected Junction	Type(1)	2016(2) without Streetscape Enhancement Proposal		2016(2) with Streetscape Enhancement Proposal		2021(2) without Streetscape Enhancement Proposal		2021(2) with Streetscape Enhancement Proposal	
			AM	PM	AM	PM	AM	PM	AM	PM
Sun Yip Street	Sun Yip Street/Fung Yip Street	P	0.11 (<10m)	0.11 (<10m)	0.11 (<10m)	0.11 (<10m)	0.11 (<10m)	0.11 (<10m)	0.11 (<10m)	0.11 (<10m)
	Sun Yip Street/Chai Wan Road	S	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)
Oi Tak Street	Oi Tak Street/Oi Kan Road	P	0.36 (<10m)	0.13 (<10m)	0.37 (<10m)	0.13 (<10m)	0.34 (<10m)	0.13 (<10m)	0.35 (<10m)	0.13 (<10m)
	Oi Tak Street/ Oi Shun Road	S	>50% (<20m)	>50% (<20m)	>50% (<20m)	>50% (<20m)	>50% (<20m)	>50% (<20m)	>50% (<20m)	>50% (<20m)

Note: (1) S = Signal Controlled Junction
P = Priority Junction
(2) Figures represent 'Reserve Capacity" (RC) for signal controlled junctions and "Design Flow to Capacity" (DFC) ratio for priority junctions.
(3) The figure in bracket shows the maximum average queue.

9.2.2 Traffic Calming Measures on Tam Kung Temple Road in Shau Kei Wan

To enhance the pedestrian connectivity along the waterfront and to avoid affecting existing activities in Shau Kei Wan, the western section of the existing Tam Kung Temple Road associated with Oi Lai Street is proposed to be close to vehicular traffic (except for emergency and service vehicles). Upon its completion, the subject road section will provide a continuous pedestrian connection between the proposed temporary heritage park in the west and the Hong Kong Museum of Coastal Defence in the east.

The existing open-air temporary car park site at Tam Kung Temple Road, which serves mainly for coach parking and is now running on a quarterly basis, has been reserved for the future expansion of the Shau Kei Wan PTW. There is, however, no programme for such an expansion at this stage. For the planning purpose of this Study, the temporary parking site will be integrated into the Shau Kei Wan enhancement proposals, subject to review once the plan for the expansion of the PTW is affirmative. **Figure 9.4** presents the access arrangement of Shau Kei Wan PTW facility. The western section of Tam Kung Temple Road will become a restricted road limiting vehicular access to that of special vehicles serving the PTW only. Vehicular access to the restricted road is proposed to be controlled by automated retractable bollards which can be remotely controlled to allow vehicles with permit to access to the treatment plant. Permits can also be issued to vehicles which require access to the existing landing step adjacent to the PTW to cater for the limited marine traffic that is currently in operation.

Figure 9.5 presents the proposed traffic arrangement. In general, the existing operation of the junction at Oi Lai Street and Tam Kung Temple Road will be improved due to the introduction of traffic calming measures for Tam Kung Temple Road. The junction of Tam Kung Temple Road and Tung Hei Road will need to be converted from currently serving southbound traffic flows to serving northbound traffic flows. This is to allow traffic travelling along eastbound and westbound of Tung Hei Street to access Tam Kung Temple Road. The junction of Tam Kung Temple Road, Tung Hei Street and A Kung Ngam Village Road will remain as is, as there are no changes proposed to the current junction's geometric features.

A capacity assessment of the junctions immediately adjoining the subject road has been conducted based on the traffic flow of 2008, 2010 and 2021 as shown in **Figures 9.6 to 9.11**. In **Table 9.11**, the operation levels of the subject junctions are all well below the capacity of the base year and design years, indicating that the proposed traffic calming measures and associated traffic re-arrangement will not incur significant traffic impacts.

Table 9.11 Performance of Assessed Junctions in 2008, 2016 and 2021 for the Proposed Traffic Calming Measures of Tam Kung Temple Road and Associated Traffic Re-arrangement

No.	Junction	Type(1)	2008(2)		2016(2)		2021(2)	
			AM	PM	AM	PM	AM	PM
JSKW-1	A Kung Ngam Village Road/Tung Hei Road/Oi Lai Street	S	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)	>50% (<30m)
JSKW-2	Tam Kung Temple Road/Tung Hei Street	P	0.29 (<10m)	0.20 (<10m)	0.29 (<10m)	0.23 (<10m)	0.25 (<10m)	0.20 (<10m)

Note: (1) S = Signal Controlled Junction
P = Priority Junction
(2) Figures represent 'Reserve Capacity" (RC) for signal controlled junctions and "Design Flow to Capacity" (DFC) ratio for priority junctions.
(3) The operations of the studied junctions are forecast to be improved in general in 2021. This is attributed to the completion of CWB which would improve the overall performance of transport network in the nearby waterfront areas.
(4) The figure in bracket shows the maximum average queue.

9.3 Traffic Assessments of Key Sites

9.3.1 North Point Ferry Piers Site

Existing Traffic Condition

The existing road network in the Area of Influence (AOI) of the North Point Ferry Piers site is shown in **Figure 9.12**. The site is located at the northern end of Shu Kuk Street and Kam Hong Street. Abutting to its immediate south is a public transport terminus. The site is conveniently accessible by taxi/bus. Currently, there are a total of 15 bus routes serving the site. The site is also located in close proximity to the existing MTR North Point Station with only a 5-10 minutes walking distance from the nearest station entrance/exit on Java Road. **Figure 9.13** shows the existing public transport and pedestrian facilities.

Currently, Java Road is a single 4-lane primary distributor connecting to the site via several local roads including Shu Kuk Street, Kam Hong Street and the harbourfront. **Figure 9.14** shows the existing traffic circulation routings. Java Road is now carrying heavy traffic particularly during commuter peaks. The traffic on the local roads in the vicinity of the site is comparatively low.

Future Vehicular Traffic Condition

A total of 6 major junctions in the vicinity of the site have been included in traffic capacity assessments. Locations of the assessed junctions are indicated in **Figure 9.15.** The base year and future projected conditions of 2016 and 2021 are estimated using the traffic models as discussed in Section 9.1.1. The traffic forecasts are shown in **Figures 9.16 - 9.21**. The results of the junction capacity analysis are summarised in **Table 9.12.**

In accordance with the assessment framework set out in Section 9.1.2, all junctions are anticipated to be operating below capacities in all design years, indicating that the resultant traffic impacts of the proposed developments are minimal.

Table 9.12 Performance of Assessed Junctions in 2008, 2016 and 2021 for the North Point Ferry Piers Site

No.	Junction	Type[1]	2008[2]		2016[2]		2021[2]	
			AM	PM	AM	PM	AM	PM
JNP-1	Tong Shui Road/North Point Estate Lane[5][6]	P[5]	0.02 (<10m)	0.02 (<10m)	>50% (<20m)	>50% (<20m)	>50% (<20m)	>50% (<20m)
JNP-2	Tong Shui Road/Java Road	S	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<50m)	>50% (<50m)	>50% (<50m)
JNP-3	Shu Kuk Street/Java Road	S	>50% (<40m)	>50% (<40m)	>50% (<50m)	>50% (<50m)	>50% (<50m)	>50% (<50m)
JNP-4	Kam Hong Street/Java Road	S	>50% (<40m)	>50% (<40m)	>50% (<50m)	>50% (<50m)	>50% (<50m)	>50% (<50m)
JNP-5	Tin Chiu Street/Java Road	S	>50% (<30m)	>50% (<20m)	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<40m)
JNP-6	Tin Chiu Street/Marble Road [3]	P	0.38 (<10m)	0.33 (<10m)	0.48 (<10m)	0.42 (<10m)	0.46 (<10m)	0.39 (<10m)

Note: (1) S = Signal Controlled Junction
P = Priority Junction
(2) Figures represent 'Reserve Capacity" (RC) for signal controlled junctions and "Design Flow to Capacity" (DFC) ratio for priority junctions.
(3) Operations of some junctions are forecast to be improved in 2021. This is attributed to the completion of CWB which would improve the overall performance of transport network in the nearby waterfront areas. The negative population and employment growths between 2016 and 2021 in North Point district also account for a slight reduction of traffic flows.
(4) The figure in bracket shows the maximum average queue.
(5) Government's plan for the junction improvement work at JNP-1 is to allow additional right turning movement from North Point Estate Lane. Such junction improvement has been taken into account in this Study.
(6) Government's plan for converting the junction of JNP-1 (Tong Shui Road/North Point Estate Lane) to become a three – arm signalised junction has been adopted in this Study.

Future Pedestrian Traffic Condition

The traffic impacts of increased pedestrian flows resulting from the proposed key site developments have been assessed at pinch locations along major pedestrian arrival/dispersal routes. Such pinch points include walkways and footbridges and their locations are shown in **Figure 9.22**. Anticipated pedestrian flows and LOS analysis results for each of the design years 2016 and 2021 are presented respectively in **Tables 9.13** and **9.14**. The results show that all identified pedestrian corridors will operate at the LOS level of A, indicating that the resultant pedestrian traffic impacts of the proposed developments are minimal.

Table 9.13 Pedestrian Forecasts of Major Corridors for the North Point Ferry Piers Site

No.	Pedestrian Corridor	2010[1]		2016		2021	
		AM	PM	AM	PM	AM	PM
1	In the West of Shu Kuk Street	1,290	1,180	1,535	1,470	1,570	1,500
	In the East of Shu Kuk Street	725	615	1,810	1,480	1,830	1,495
2	In the West of Tong Shui Road	945	1405	975	1,450	1,000	1,485
	In the East of Tong Shui Road	920	885	1,110	1,110	1,135	1,135
3	North Point Ferry Piers (at the West)	1,560	1,315	1,625	1,375	1,665	1,405
	North Point Ferry Piers (at the East)	220	425	245	455	250	470
4	In the West of Kam Hong Street	905	590	1,895	1,350	1,920	1,365
	In the East of Kam Hong Street	435	400	1,090	915	1,105	925

Note: (1) Survey data
(2) The pedestrian forecasts for the ex-NPE site provided by TD have been adopted in this Study.
(3) The number has been rounded to nearest 5.

Table 9.14 Level of Service of Major Corridors for the North Point Ferry Piers Site

No.	Corridor	Width (m)		2010		2016		2021	
		2010	2016 -2021	AM	PM	AM	PM	AM	PM
1	In the West of Shu Kuk Street	4.3	4.3	A	A	A	A	A	A
	In the East of Shu Kuk Street	2.9	2.9	A	A	A	A	A	A
2	In the West of Tong Shui Road	5	5	A	A	A	A	A	A
	In the East of Tong Shui Road	2.3	2.3	A	A	A	A	A	A
3	North Point Ferry Piers (at the West) (1)	20	20	A	A	A	A	A	A
	North Point Ferry Piers (at the East) (1)	20	20	A	A	A	A	A	A
4	In the East of Kam Hong Street	3.2	3.2	A	A	A	A	A	A
	In the West of Kam Hong Street	4.5	4.5	A	A	A	A	A	A

Note: (1) The proposed 20m-wide promenade of the ex-NPE site
(2) The pedestrian forecasts for the ex-NPE site provided by TD have been adopted in this Study when calculating the LOS of major corridors for the North Point Ferry Piers Site.

Existing Public Transport Terminus

The existing operation of the bus terminal to the south of the Pier will be relocated and integrated into the future PTI at the ex-NPE site development. For this Study, the North Point Ferry Piers key site development will reconcile the future PTI design and the overall ex-NPE site development. The provision of existing public transport services will basically not be affected. Nevertheless, the public transport services should be subject to future review and investigation, taking account of the combined service demands arising from the key site, ex-NPE development and other adjacent future developments.

9.3.2 Hoi Yu Street Site in Quarry Bay

Existing Traffic Condition

The existing road network in the AOI of the Hoi Yu Street Site in Quarry Bay is shown in **Figure 9.23**. The site is located in close proximity to the existing EHC Portal and is bounded by Hoi Wan Street to the west and Hoi Tai Street to the south. Hoi Wan Street is the only vehicular access to and from the EHC Tunnel Portal site and is a single-2 lane carriageway currently accommodating low traffic volumes. Illegal parking/loading/unloading activities on the kerbsides are frequent. **Figure 9.24** shows the existing traffic circulation routings. Vehicular access to the waterfront area is via Hoi Yu Street.

The site is considered to be well served by rail service with the MTR Quarry Bay station being located within a 5-10 minutes walking distance. Another MTR station at Taikoo is also conveniently accessible to the site via the existing footbridge network. **Figure 9.25** presents the existing public transport and pedestrian facilities.

Future Vehicular Traffic Condition

A total of 7 major junctions have been identified for traffic capacity assessments. Locations of the assessed junctions are indicated in **Figure 9.26**. The base year traffic and future project conditions of 2016 and 2021 are estimated using the traffic models as discussed in Section 9.1.1. The traffic forecasts are shown in **Figures 9.27 - 9.32**. The results of the junction capacity analysis are summarised in **Table 9.15.**

In accordance with the assessment framework set out in Section 9.1.2, all junctions are anticipated to be operating below capacities in all the design years except for the junction of Hoi Yu Street/Hoi Chak Street (JQB-1) which is forecast to exceed its capacity both in 2016 and 2021 with the values of DFC over 0.85. Plans for improving the operation performance of the subject junction is considered by the Government with the junction being converted into signal control and the right turning traffic from Hoi Chak Street to Hoi Yu Street being banned. With the implementation of the above-mentioned improvement schemes, the operation of the problematic JQB-1 junction will be improved to an acceptable operation level.

In short, with the proposed improvements, all junctions are expected to be operated at acceptable levels and it is reasonable to consider that the traffic impacts of the proposed developments onto the surrounding transport network are not significant.

Table 9.15 Performance of Assessed Junctions in 2008, 2016 and 2021 for the Hoi Yu Street Site in Quarry Bay

No.	Junction	Type[1]	2008[2]		2016[2]		2021[2]	
			AM	PM	AM	PM	AM	PM
JQB-1	Hoi Yu Street/Hoi Chak Street	P	0.79 (<30m)	0.44 (<10m)	>0.85 (<60m)	0.73 (<20m)	>0.85 (<60m)	0.70 (<20m)
		S[5]	-	-	>50% (with improvement) (<30m)	>50% (with improvement) (<20m)	>50% (with improvement) (<30m)	>50% (with improvement) (<20m)
JQB-2	Hoi Chak Street/Hoi Tai Street/ Hoi Kwong Street/Finnie Street	S	>50% (<30m)	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<40m)
JQB-3	Finnie Street/King's Road	S	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<50m)	>50% (<40m)	>50% (<40m)
JQB-4	Hoi Wan Street/Hoi Tai Street	P	0.23 (<10m)	0.33 (<10m)	0.35 (<10m)	0.42 (<10m)	0.36 (<10m)	0.44 (<10m)
JQB-5	Hoi Tai Street/Westlands Road	P	0.14 (<10m)	0.09 (<10m)	0.19 (<10m)	0.12 (<10m)	0.12 (<10m)	0.07 (<10m)
JQB-6	King's Road/Pan Hoi Road	P	0.49 (<10m)	0.49 (<10m)	0.57 (<10m)	0.55 (<10m)	0.53 (<10m)	0.59 (<10m)
JQB-7	Westlands Road/King's Road/Yau Man Street	S	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<40m)	>50% (<40m)

Note: (1) S = Signal Controlled Junction
P = Priority Junction
(2) Figures represent 'Reserve Capacity" (RC) for signal controlled junctions and "Design Flow to Capacity" (DFC) ratio for priority junctions.
(3) Operations of some junctions are forecast to be improved in 2021. This is attributed to the completion of CWB which would improve the overall performance of transport network in the nearby waterfront areas. The negative population and employment growths between 2016 and 2021 in Quarry Bay district also account for a slight reduction of traffic flows.
(4) The figure in bracket shows the maximum average queue.
(5) The current priority junction JQB-1 is forecast to be overloaded in 2016 and 2021. The Government has a proposal to convert it into a signal junction. Compared to the existing junction geometry, the proposed improvement scheme will ban the traffic from Hoi Chak Street right turning to Hoi Yu Street eastbound carriageway. The proposed improvement scheme has been taken into account in the junction assessment.

Future Pedestrian Traffic Condition

The traffic impacts of the increased pedestrian flows due to the proposed developments have been assessed at pinch locations along major pedestrian arrival/dispersal routes. Such pinch points include walkways and footbridges and their locations are shown in **Figure 9.33**. Anticipated pedestrian flows and LOS analysis results for each of the design years, namely 2016 and 2021 are presented respectively in **Table 9.16** and **Table 9.17**. The results show that all identified pedestrian corridors will operate at the LOS level of A, indicating that the resultant pedestrian traffic impacts of the proposed developments are minimal.

Table 9.16 Pedestrian Forecasts of Major Corridors for the Hoi Yu Street Site in Quarry Bay

No.	Pedestrian Corridor	2010[1]		2016		2021	
		AM	PM	AM	PM	AM	PM
1	In the West of Hoi Wan Street	1,030	590	1,120	1,315	1,145	1,330
	In the East of Hoi Wan Street	810	175	880	890	910	920
2	In the North of Hoi Yu Street	115	120	175	710	180	710
	In the South of Hoi Yu Street	220	690	280	1295	285	1315
3	In the West of Hoi Chak Street	345	195	415	790	420	790
	In the East of Hoi Chak Street	225	290	285	885	290	890
4	Cityplaza Footbridge	1,760	1,450	1,870	2,240	1,915	2,280

Note: (1) Survey data
(2) The number has been rounded to nearest 5.

Table 9.17 Level of Service of Major Corridors for the Hoi Yu Street Site in Quarry Bay

No.	Corridor	Width (m)		2010		2016		2021	
		2010	2016 -2021	AM	PM	AM	PM	AM	PM
1	In the West of Hoi Wan Street	N.A.	4(1)	-	-	A	A	A	A
	In the East of Hoi Wan Street	N.A.	4(1)	-	-	A	A	A	A
2	In the North of Hoi Yu Street	3.8	3.8	A	A	A	A	A	A
	In the South of Hoi Yu Street	3.3	3.3	A	A	A	A	A	A
3	In the West of Hoi Chak Street	2.5	2.5	A	A	A	A	A	A
	In the East of Hoi Chak Street	3.2	3.2	A	A	A	A	A	A
4	Cityplaza Footbridge	5	5	A	A	A	A	A	A

Note: (1) Proposed provision of footpaths at the expense of the existing plantation.

9.3.3 Parking Requirements

The whole development vision is to create a pleasant and relaxing pedestrian environment in the two key sites. To accomplish this, visitors are encouraged to use public transport services. Therefore, an integrated pedestrian network system linking the EHC Tunnel Portal site and the waterfront area of Hoi Yu Street is proposed in the current scheme. Regarding the loading/unloading activities for retail uses, adequate (but not excessive) loading/unloading bays to meet the operational needs will be provided for such purposes.

The parking and loading/unloading facilities for the two key sites were estimated in accordance with their land use components, with reference to the HKPSG and suggestions from similar projects. The details are shown in **Table 9.18** below. Given no parking standards are stipulated for performance venues, the parking provisions recommended in a similar project have been adopted.

Table 9.18 Parking and Loading/Unloading Requirements for the Two Key Sites

Land use	Land use Intensity*	Parking			Loading/Unloading		Design Standards
		Car	Motorcycle	Coach	Truck	Car/Taxi	
North Point Ferry Piers Site							
Retail/Commercial GFA (m^2)	2,000	7	1	0	2		(1)
Hoi Yu Street Site							
Retail/Commercial GFA (m^2)	15,000	50	5	0	13		(1)
Performance Venue (seats)	400						
• *Minimum Provisions*		5	1	1	1	1	(2)
• *Recommended Addition on top of Minimum Provisions*		15	2	0	1	1	
• *Desirable Provision*		20	3	1	2	2	

Note: (1) HKPSG –1 car space per 300m^2 GFA; 1 loading/unloading bay for goods vehicles for every 1,200m^2 GFA; motorcycle provision is estimated to be 10% of car space provision.
(2) Final Traffic Impact Assessment Report under an assignment on "Facilitating the Preparation of the Technical Feasibility Study Report for Multi-purpose Stadium Complex at Kai Tak, Kowloon City District" – 1 car space per 82 seats; 1 coach space per 500 seats.

For the North Point Ferry Piers site, the parking and loading/unloading facilities are desirable to integrate with the proposed development at the ex-NPE site for coordinated planning. Further assessment on the parking and loading/unloading requirements will be conducted at the detailed design stage.

For the Hoi Yu Street Site, the parking and loading/unloading facilities are proposed to be constructed underground, with one under the performance venue at the EHC Tunnel Portal site and another two under the "OU" sites at the waterfront. Hoi Wan Street, which has a width of 9.6m, will be the vehicular access to the performance venue parking site. The vehicular access to the car parking areas at the waterfront site will be via Hoi Yu Street.

9.3.4 Cycling

A cycle track for recreational and leisure purposes is proposed in each of the two key sites, i.e. the North Point Ferry Piers waterfront promenade and Hoi Yu Street waterfront promenade. It is possible that the proposed 20m wide promenade along the northern boundary of the ex-NPE site adjoining the North Point Ferry Piers can incorporate recreational cycling space along its full length of about 400-500m. Apart from the proposed cycle track along the Hoi Yu Street waterfront promenade, related

cycling facilities such as cycle rental stations/shops could also be located within one of the "OU" sites. Bike racks could also be integrated with other promenade furniture at the two key sites. This being said, the provision of cycle tracks and related cycling facilities at the two key sites is subject to detailed design at the implementation stage, taking account of pedestrian safety and cross traffic issues.

9.4 Conclusion

The preceding sub-sections have outlined the potential traffic and pedestrian circulation impacts of the major recommended enhancement proposals and the possibility of the inclusion of recreational cycling facilities to enhance the overall experience for the community and visitors to the area. Based on the above preliminary traffic assessments, it is evident that the resultant impacts of the development proposals on the surrounding traffic and pedestrian networks will be minimal whilst the streetscape enhancement proposals will help improve pedestrian accessibility to the waterfront.

10. ENVIRONMENTAL ASSESSMENT

10.1 Introduction

The objective of undertaking an environmental assessment is to provide a broad evaluation of environmental impacts arising from enhancement proposals to ascertain their prima facie environmental feasibility. As per the requirement of the Study Brief, the assessment conducted is preliminary in nature and follows a broad-brush approach. In the event that the proposals might have any potential environmental impact on the sensitive uses, further environmental studies should be conducted. Further quantitative environmental data should also be studied and evaluated during the detailed design stage.

To recap, the purpose of the Hong Kong Island East Harbour-front Study is to formulate a comprehensive plan for the enhancement of the Hong Kong Island East harbourfront areas. As such, it is expected that following the implementation of the enhancement measures as recommended by the Study, positive environmental aspects could be brought to the Island East harbourfront which will facilitate public enjoyment of the harbour.

10.2 Baseline Conditions

The Study Area (North Point, Quarry Bay, Shau Kei Wan and Chai Wan) consists predominantly of residential uses with mixed commercial/industrial uses, educational institutes and "Government, Institution or Community" (G/IC) uses. A main transport corridor, namely the IEC, traverses the Study Area and marine facilities including ferry piers and landing steps are also available.

Air Quality: The Study Area is characterized by high density residential development and commercial/G/IC uses. Existing pollution sources are mainly vehicle traffic emissions. Marine emissions from the piers and chimney emissions from the industrial uses in Chai Wan area are also sources of air pollution. The major air pollutant levels recorded in the monitoring station of the Environmental Protection Department (EPD) at the Eastern District in 2010 are summarised in the table below. In general, the monitoring data complies with the EPD Air Quality Objectives (AQOs).

Table 10.1 Major Air Pollutant Levels at the Eastern District in 2010

Air Pollutants	2010 Annual Concentration ($\mu g/m^3$)	Air Quality Objective ($\mu g/m^3$)
Nitrogen Dioxide	59	80
Respirable Suspended Particulates	43	55
Sulphur Dioxide	8	80

Noise: The main noise source in the Study Area is from vehicular traffic, particularly from that of the IEC.

Water Quality: There is no natural surface water in the Study Area other than Victoria Harbour which lies to the north of the Study Area.

Waste Management: Existing waste management issues relate to general refuse from residential properties, commercial wastes and construction wastes from on-going construction projects within the Study Area.

Terrestrial Ecology: The Study Area is predominately developed with the exception of the area in the vicinity of Hong Kong Museum of Coastal Defence which is largely undeveloped. The scrubland and man-made habitats are in the form of landscaped areas and planters etc.

Marine Ecology: The marine habitats within the Assessment Area are of low ecological value. There are no ecological sensitive receivers, such as Sites of Special Scientific Interest, Marine Parks and/or Reserves and other areas of ecological importance or conservation interest, in and within the immediate vicinity of the Study Area.

10.3 Harbourfront Connectivity Enhancement

One of the specific objectives of the Study is to examine the possibility of creating a continuous promenade with a view to improving connectivity along the waterfront. As most sections of the proposed pedestrian walkway can make use of existing segregated waterfront promenades, enhancements works will only involve the construction of some sections of the walkway to connect the segregated promenades together. The pedestrian walkway is proposed along the existing waterfront and its construction will generally have a positive impact on the physical environment of the Island East waterfront.

All relevant environmental protection legislations including the Air Pollution Control Ordinance (Cap. 311), the Noise Control Ordinance (Cap. 400), the Water Pollution Control Ordinance (Cap. 358) and the Waste Disposal Ordinance (Cap. 354) as well

as recommendations stated in Chapter 9 of the HKPSG relating to environment issues and other practice notes, if any, will be followed during the construction and operation phases.

Implications of Environmental Impact Assessment Ordinance (EIAO) (Cap. 499)

For the section under the IEC, the boardwalk will be supported by columns placed at the existing IEC dolphins. Therefore, no dredging/reclamation activities will be required for the foundation works of the boardwalk. For the proposed Sky Trail along the hillside of the Hong Kong Museum of Coastal Defence, one of its proposed connections will be in the form of an elevated walkway through the Shau Kei Wan Wholesale Fish Market. Although "Wholesale Fish Market" is a designated project under the EIAO (Cap. 499), the Shau Kei Wan Wholesale Fish Market was constructed and had been commissioned before the EIAO came into operation on 1 April 1998. Therefore, it will be considered as an "exempted designated project" under Section 9(2) of the EIAO. Future works proposed for an exempted project will not require an Environmental Impact Assessment (EIA) submission unless the proposed works are considered as a "material change". As the proposed Sky Trail access will not affect the normal operation and functions of the Fish Market and given the proposed walkway structure is small in scale, it is considered that the proposed connection with the Sky Trail will not constitute a "material change" to the Fish Market and will not warrant an EIA submission. This being said, further investigation of the above issues will be carried out in the detailed design stage of the Sky Trail project.

Construction Phase

Representative air and noise sensitive receivers (ASR and NSR) for the construction phase of the waterfront promenade are identified and listed in **Table 10.2** and shown in **Figure 10.1**.

Table 10.2 Details of Sensitive Receivers during Construction Phase

ASRs / NSRs	Description
ASR1 / NSR1	Hong Kong Baptist Church Henrietta Secondary School
ASR2 / NSR2	Provident Centre
ASR3 / NSR3	Ex-North Point Estate Site
ASR4	ICAC North Point Headquarters
ASR5 / NSR4	North Point Fire Services Married Quarters
ASR6	North Point Government Offices
ASR7	Quarry Bay Park Phase II
ASR8 / NSR5	Canossa College
ASR9	Quarry Bay Park Phase I
ASR10	Fireboat Alexander Grantham Exhibition Gallery
ASR11 / NSR6	Lei King Wan
ASR12 / NSR7	Les Saisons
ASR13	Aldrich Bay Promenade
ASR14 / NSR8	Aldrich Bay Government Primary School
ASR15	Hong Kong Museum of Coastal Defence
ASR16 / NSR9	Lingnan Secondary School
ASR17 / NSR10	Heng Fa Chuen
ASR18	Heng Fa Chuen Playground
ASR19	Siu Sai Wan Sports Ground
ASR20 / NSR11	Island Resort
ASR21	Siu Sai Wan Promenade

The construction activities involve landscape enhancements and some building works with small to medium-scale structures only. Minor dust and noise impacts are expected during the construction phase. No cumulative construction noise impacts on nearby NSRs are expected due to the limited and small scale nature of the construction activities. Cumulative dust impacts from the construction of the CWB in the North Point area are present. However, in accordance with the findings of the approved EIA Report for the WDII and CWB (2008), the air quality level at the North Point waterfront is well below the AQOs. The AQOs are summarised in **Table 10.3**.

Table 10.3 Hong Kong Air Quality Objectives

Pollutant	Concentration (μg/m³)(1) Averaging Period				
	1 Hour(2)	8 Hours(3)	24 Hours(3)	3 Months(4)	1 Year(4)
Sulphur Dioxide, SO_2	800	-	350	-	80
Total Suspended Particulates, TSP	-	-	260	-	80
Respirable Suspended Particulates, RSP(5)	-	-	180	-	55
Nitrogen Dioxide, NO_2	300	-	150	-	80
Carbon Monoxide, CO	30,000	10,000	-	-	-
Photochemical Oxidants (as ozone (6))	240	-	-	-	-
Lead	-	-	-	1.5	-

Notes: (1) Measured at 298 K and 101.325 kPa (one atmosphere)
(2) Not to be exceeded more than 3 times per year
(3) Not to be exceeded more than once per year
(4) Arithmetic means
(5) Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10 μm or less
(6) Photochemical oxidants are determined by measurement of ozone only

In order to comply with the AQOs at ASRs at all time, the requirement of the Air Pollution Control (Construction Dust) Regulation will be adhered to during the construction phase. Also, noise mitigation measures such as adopting quiet powered mechanical equipment, movable noise barriers and temporary noise barriers are recommended to minimize the noise impacts on NSRs during normal daytime working hours. With the implementation of appropriate dust suppression measures and noise mitigation measures, no adverse residual air quality or noise impacts are expected. The environmental impacts arising from the enhancement proposal during construction phase would be insignificant. It is also expected that there will not be significant cumulative environmental impacts even with other planned/committed developments taken into account.

Operational Phase

During the operational phase, the proposed land uses/facilities such as sitting areas, playgrounds, recreational cycling provisions, tai-chi and other recreational facilities, kiosks and dining facilities along the proposed waterfront promenade are considered as ASRs. The proposed temporary heritage park (about 0.2 ha) to the west of the Shau Kei Wan PTW is also considered as an ASR. A comprehensive analysis of the environmental impacts on these ASRs has been conducted. It is suggested that the above-mentioned planned air sensitive uses should be located as far as possible from the existing potential air pollution sources including sewage treatment facilities, tunnel vent shafts, and marine vessel berthing locations, etc to minimize the potential air quality impacts on ASRs. To assess the exact extents of the potential air quality and to determine any necessary environmental mitigation measures, a detailed air quality impact assessment is recommended to be undertaken at the detailed design stage for any proposed air sensitive use which is close to major air pollution source(s), to confirm the compliance with all relevant air quality standards if there is no other relevant previous study or the general air quality guidelines (e.g. recommended buffer distance) in Chapter 9 (Environment) of HKPSG could not be met or not applicable.

The proposed land uses/facilities along the waterfront promenade are not air pollutant emission sources. Air quality impact arising from the operation phase is not expected. It is therefore unlikely that the harbourfront connectivity proposal would contribute to the cumulative air quality impacts at the concerned areas. The proposed land uses/facilities are also not considered as NSRs. It is not expected that the existing noise sources and potential noise nuisance arising from other planned developments within the Study Area and its surrounding area would cause significant impact on them. Although the operation of retail shops, kiosks, cafes and restaurants along the waterfront may cause some neighbourhood noise, this could be mitigated by placing these facilities as far away as practicable from the existing NSRs. Since the potential noise impact at the operation phase is anticipated to be negligible, it is also unlikely that it will contribute significantly to the cumulative noise impacts at the concerned areas. The findings of the preliminary environmental assessment focusing on the air quality and risk

aspects are summarised below:

Area 1: North Point (from Oil Street to Hoi Yu Street)

Representative planned ASRs in the North Point area are listed in **Table 10.4**.

Table 10.4 Planned Air Sensitive Receivers in the North Point Area during Operational Phase

ASRs	Description
PASR1	Civic Plaza
PASR2	Kiosks on the proposed boardwalk
PASR3	Sitting areas and recreational uses (including fitness stations and elderly recreational facilities) along the proposed 20m wide promenade of ex-NPE site/boardwalk underneath the IEC
PASR4	Publicly accessible landscaped areas and viewing deck on rooftop of the North Point Ferry Piers
PASR5	Cafes on rooftop of the North Point Ferry Piers

The potential air quality emission sources in North Point include odour emission from North Point PTW; road traffic emissions from open roads such as the IEC and King's Road; emissions from the ventilation shafts of the planned CWB tunnel; and marine emissions of ferries manoeuvring to and berthing in the North Point Ferry Piers.

At present, North Point PTW provides screening and grit removal to the incoming sewage and the effluent is then discharged to Victoria Harbour via outfall. After the completion of the Harbour Area Treatment Scheme (HATS) Stage 2A, the effluent from North Point PTW will be intercepted and conveyed to Stonecutters Island Sewage Treatment Works for further treatment and final disposal. Potential odour emissions are expected from the inlet pumping station and grits storage areas. However, all these facilities are enclosed with a deodorization system to treat odorous gases collected from the enclosed area. Odourous gas is ventilated to the deodorization system before emitting to the atmosphere. In accordance with the findings of the air quality impact assessment presented in the HATS Stage 2A EIA Report approved by the EPD on 30 October 2008 under the EIAO, with the implementation of proposed odour mitigation measures at North Point PTW, no adverse odour impacts are expected outside the site boundary of North Point PTW. Hence, adverse odour impacts on the planned ASRs are not anticipated.

The major sources of traffic emissions include open road sections of existing and planned roads especially from the IEC and King's Road; and ventilation shafts of the planned CWB tunnel. Standby ventilation fans ensure zero portal emission of CWB tunnel during the tunnels operation. The major air pollutants are NO_2 and RSP. Given that the time horizon of the proposed harbourfront development is likely to coincide with the operational phase of the WDII and CWB, the findings of the WDII and CWB EIA are applicable to this Study. According to the findings of the approved EIA Report for WDII and CWB (approved by the EPD on 11 December 2008), the air quality level at North Point waterfront will be well below the AQOs after taking into account the emissions from ventilation shafts and portal emissions.

The emissions from marine vessels to the North Point Ferry Piers and the proposed café/restaurant establishments at the piers will also be air pollution sources affecting the air quality of the proposed ASRs in the Study. Any proposed air sensitive uses including sitting areas and recreational uses should be located as far as possible from the berthing locations of the piers to minimize the potential air quality impacts on ASRs. To assess the exact extents of the potential air quality and to determine any necessary environmental mitigation measures, a detailed air quality impact assessment is recommended to be undertaken at the detailed design stage for any proposed air sensitive use which is close to major air pollution source(s), to confirm the compliance with all relevant air quality standards if there is no other relevant previous study or the general air quality guidelines (e.g. recommended buffer distance) in Chapter 9 (Environment) of HKPSG could not be met or not applicable.

Although there are a number of industrial buildings including Wing Wah Industrial Building, Tung Chong Factory Building, Tung Kin Factory Building, Lok's Industrial Building and Cheong Lee Building, no chimney has been identified in North Point. Therefore, air quality impacts due to chimney emissions on the planned ASRs in this area are not anticipated.

Potential risks to pedestrians due to the transportation of dangerous goods via the North Point Dangerous Goods Vehicular Ferry Pier are addressed below.

The North Point Dangerous Goods Vehicular Ferry Pier is one of the landing points for road tankers/trucks which deliver dangerous goods for consumption on Hong Kong Island. It provides a scheduled vehicular ferry service between Kwun Tong and North Point, private chartered ferries from Tsing Yi and on-demand services to Mui Wo. Dangerous goods vehicles enter the Ferry Pier from the Java Road entrance and wait for boarding at the dedicated waiting area. Dangerous goods vehicles that

disembark from ferries leave the Ferry Pier immediately via an exit at Java Road. Separate entrance and exit access points are provided for increased safety at the pier. Additionally, no hazardous substance is stored permanently within the Ferry Pier.

Moreover, pedestrians are unlikely to stay at the proposed pedestrian linkage for a long period of time. There is also a boundary wall around the dangerous goods vehicle parking area, thus in the event of a fire, pedestrians will have sufficient time to escape. Management methods such as the introduction of traffic light system/automatic gate at the junction of truck access and the IEC boardwalk will facilitate and ensure the safety of pedestrian traffic across the Dangerous Goods Vehicular Ferry Pier. Taking these factors into account, a person being exposed to physical risk is considered to be acceptable in terms of Hong Kong Risk Guidelines.

Area 2: Quarry Bay (from Hoi Yu Street to Tai On Street)

Representative planned ASRs in the Quarry Bay area are listed in **Table 10.5**.

Table 10.5 Planned Air Sensitive Receivers in the Quarry Bay Area during Operational Phase

ASRs	Description
PASR6	Cultural, tourism and entertainment facilities with shops and themed restaurants at the waterfront area of Hoi Yu Street
PASR7	Multi-purpose performance centre/IMAX theatre at the EHC Tunnel Portal site
PASR8	Sitting areas and recreational uses such as fitness/exercise equipment zones, elderly exercise areas, tai-chi courts etc. along the proposed waterfront promenade of Hoi Yu Street

The potential air quality emission sources in Quarry Bay include odour pollution from the Shau Kei Wan Typhoon Shelter; road traffic emissions from open roads such as the IEC and King's Road; emission from the ventilation shafts and portals of the EHC; and emissions from marine vessels manoeuvring to and idling in the Marine Police Regional Headquarters and Marine Harbour Division Piers.

Potential odour emissions are expected from the nearby Shau Kei Wan Typhoon Shelter, where the water quality in the typhoon shelter has been polluted by sewage discharges and sediments deposited on the seabed in the vicinity of storm outfalls. These sediments are likely to contain high concentrations of organic matters. Due to the obstruction of breakwaters, these sediments cannot be easily flushed away by tidal flows and they accumulate on the seabed. Odour problems are likely to be as a result of these sediments and the presence of exposed odourous slime on the seawalls during low tide conditions. It is worth noting that this problem intensifies during the summer season.

Odour nuisance from the Shau Kei Wan Typhoon Shelter is an existing environmental problem. Until the odour issue at the Shau Kei Wan Typhoon Shelter is resolved, any planned air sensitive uses including sitting areas and recreational facilities should be placed as far as possible from the typhoon shelter to minimize the potential odour impacts on ASRs.

The major sources of traffic emissions in Quarry Bay include open road sections, especially the IEC and King's Road and ventilation shafts and portals of the EHC. According to the EHC EIA Final Report (extracted from Kai Tak EIA Final Report which was approved by the EPD on 4 March 2009), 30% of the tunnel emissions come from the portal, with the remainder emitted at the ventilation exhaust building. The major air pollutants are NO_2 and RSP.

In view of the air quality concern, it is proposed that the buffer distance between the planned air sensitive uses and the traffic emission sources will follow the recommendations stipulated in Chapter 9 of the HKPSG, i.e. air sensitive receivers should be located at least 20m from the IEC as shown in **Table 10.6** below. Planned air sensitive uses should also be located as far as possible from the ventilation shafts and portals of the EHC to minimize the potential air quality impacts on the ASRs. To minimise the impact of the EHC emissions and IEC vehicle emissions on the public health, it is proposed to construct a multi-purpose performance centre/IMAX theatre at the EHC Tunnel Portal site to offer the public an enclosed indoor venue that will shield the public from exposure to the traffic emissions. To assess the exact extents of the potential air quality and to determine any necessary environmental mitigation measures, a detailed air quality impact assessment is recommended to be undertaken at the detailed design stage for any proposed air sensitive use which is close to major air pollution source(s), to confirm the compliance with all relevant air quality standards if there is no other relevant previous study or the general air quality guidelines (e.g. recommended buffer distance) in Chapter 9 (Environment) of HKPSG could not be met or not applicable.

Table 10.6 Buffer Distance for Active/Passive Recreational Uses in Open Space extracted from the HKPSG

Pollution Sources	Parameter	Buffer Distance	
		Active	Passive
Road and Highways	*Type of Road*		
	Trunk Road and Primary Distributor	> 20 m	3 – 20 m
	District Distributor	> 10 m	< 10 m
	Local Distributor	> 5 m	< 5 m

The emissions from marine vessels at the Marine Police Regional Headquarters and Marine Harbour Division Piers are also pollution sources affecting the air quality of the Study Area. Any planned air sensitive uses should be located as far as possible from the berthing locations of the piers to minimize the potential air quality impacts on ASRs.

Although there are a number of industrial buildings in Quarry Bay including Wah Ha Factory Building, Cheung Wah Industrial Building and Zung Fu Industrial Building, no chimney has been found in operation within 200m of the proposed harbourfront development, thus meeting the suggested buffer distance (minimum 200m) between the industrial chimney and the subject site as stated in the HKPSG.

Area 3: Shau Kei Wan (from Tai On Street to Pak Sha Wan)

Representative planned ASRs in the Shau Kei Wan area are listed in **Table 10.7**.

Table 10.7 Planned Air Sensitive Receivers in the Shau Kei Wan Area during Operational Phase

ASRs	Description
PASR9	Sitting areas and a public open plaza in the proposed temporary heritage park at Tam Kung Temple Road
PASR10	Sitting areas along the proposed waterfront promenade extended from Aldrich Bay

The potential air quality emission sources in Shau Kei Wan include odour emission from Shau Kei Wan Typhoon Shelter, Shau Kei Wan PTW, shipyards, Shau Kei Wan Wholesale Fish Market; and road traffic emissions from open roads such as the IEC.

Shau Kei Wan PTW is in a similar operation mode as the North Point PTW. The proposed temporary heritage park is about 25m to the west of the Shau Kei Wan PTW. Potential odour emissions from the inlet pumping station and grits storage areas are expected. Shau Kei Wan PTW has been modernised under the HATS Stage 1 Project. Since these odour-emitting facilities are enclosed with a deodorization system to treat odourous gases collected from the enclosed area, it is expected that odour impacts on the proposed temporary heritage park at Tam Kung Temple Road have been alleviated to a large extent. In order to avoid any potential residual odour impacts on ASRs, air sensitive uses including sitting areas and open plaza are recommended to be located as far as possible from the Shau Kei Wan PTW.

Similar to Quarry Bay, potential odour emissions are expected from the nearby Shau Kei Wan Typhoon Shelter. Other odour emission sources include the existing shipyards and Wholesale Fish Market at Tam Kung Temple Road. The major sources of traffic emissions will be from nearby existing roads, particularly from the IEC. The major air pollutants are NO_2 and RSP. It is recommended that any planned air sensitive uses should be located as far as possible from the above-mentioned emission sources to prevent any adverse air quality impacts.

No industrial emissions were identified in Shau Kei Wan. Although there are a number of industrial buildings and factories in Shau Kei Wan including Centro-Sound Industrial Building, Len Shing Industrial Building, and Manson Industrial Building, no chimney has been identified. Air quality impacts due to chimney emissions on the proposed ASRs in this area are not anticipated.

The existing Shell Liquefied Petroleum Gas (LPG) Depot near Heng Fa Chuen is a “Potential Hazardous Installation” (PHI). The proposed Sky Trail along the hillside of the Hong Kong Museum of Coastal Defence does not fall within the consultation zone of the existing Shell LPG Depot. The proposed alignment of the Sky Trail has been configured to keep a distance from the LPG Depot and is shielded by topographical features. Therefore, the potential impact of the LPG Depot to users of the Sky Trail would be insignificant.

Area 4: Chai Wan (from Pak Sha Wan to Siu Sai Wan Road)

Representative planned ASR in the Chai Wan area is listed in **Table 10.8**.

Table 10.8 Planned Air Sensitive Receiver in the Chai Wan Area during Operational Phase

ASRs	Description
PASR11	Sitting area on the proposed footpath along the Chai Wan PCWA

There are an oil and petroleum depot as well as a waste materials recycling compound at the Chai Wan waterfront between Heng Fa Chuen and the Chai Wan PCWA. These facilities, in terms of storage quantity and fuel type, are not classified as PHI. Other potential air quality emission sources impacting on the planned ASR in Chai Wan include odour emissions from the Chai Wan PCWA, Island East Refuse Transfer Station and Chai Wan PTW; road traffic emissions from open roads such as the IEC, Wing Tai Road and Siu Sai Wan Road; and emissions from industrial buildings in Chai Wan.

Odour emissions are expected from the Chai Wan PCWA. The water quality in the basin has been polluted by sewage discharges and sediments deposited on the seabed in the vicinity of storm outfalls in the past. These sediments may contain high concentrations of organic matters and may cause odour problems. Odour nuisance associated with the PCWA is an existing environmental problem. Mitigation in the form of localized dredging and in-situ treatments to alleviate the potential odour impacts might be considered. These odour mitigation measures have also been proposed and tested for other infrastructure projects in Hong Kong.

Other potential odour emissions are expected from the nearby Island East Refuse Transfer Station and Chai Wan PTW. It is noted that the tipping hall of the refuse transfer station is fully enclosed and provided with an exhaust ventilation system with an odour removal unit. The tipping hall is also maintained with negative air pressure which prevents odorous gas from escaping beyond the entrance. This measure will assist in mitigating adverse odour impacts from the refuse transfer station. The treatment facilities in the Chai Wan PTW are in the enclosed structures/buildings. A deodorizing unit is also provided for the inlet pumping station to mitigate adverse odour impacts from the PTW.

The major sources of traffic emissions are from the open road sections of the existing roads especially from the IEC, Wing Tai Road and Siu Sai Wan Road. The major air pollutants are NO_2 and RSP which may pose potential air quality impacts on the planned air sensitive uses. Any planned air sensitive uses are recommended to be located as far as possible from the traffic emission sources to prevent any adverse air quality impacts.

No marine emissions have been found in Chai Wan. There are a few industrial buildings with chimneys in Chai Wan. Emissions from chimneys are expected but the impact is limited as these buildings are not located in the vicinity of the area where the key enhancement proposals have been put forward.

10.4 Environmental Concern on the North Point Ferry Piers Key Site

Introduction

The key site is situated in North Point which is a major residential and commercial district and contains a mix of office, retail, recreational and residential uses. It comprises the North Point Ferry Piers and the proposed 20m wide waterfront promenade of the ex-NPE site. Apart from the provision of a 20m wide promenade along the northern boundary of the ex-NPE site, the section of the proposed boardwalk underneath the IEC from Tin Chiu Street to Tong Shui Road will serve as an extended activity deck from the ex-NPE promenade. The ferry piers and the adjoining boardwalk underneath the IEC will become the main activity area and include the provision of retail shops, cafes, seating benches, plantings and art displays. In accordance with the HKPSG, only passive recreational uses are permitted to be located under a flyover. Therefore, active recreational uses have not been proposed on the boardwalk.

The construction and operation of the proposed developments such as the retail uses, boardwalk underneath the IEC, cycling and other recreational facilities will follow all relevant environmental protection legislation including the Air Pollution Control Ordinance (Cap. 311), the Noise Control Ordinance (Cap. 400), the Water Pollution Control Ordinance (Cap. 358) and the Waste Disposal Ordinance (Cap. 354) as well as recommendations stated in Chapter 9 of the HKPSG related to environment issues and other practice notes, if any.

Construction Phase

Minor dust and noise impacts are expected during the construction phase of this key site. Since both types of impacts are limited and the construction works are small in scale, no adverse residual air quality and noise impacts are expected on nearby

sensitive receivers (including Provident Centre, ex-NPE site and ICAC North Point Headquarters) with the implementation of good site practices, and appropriate dust suppression and noise mitigation measures.

Operational Phase

The air quality of the planned land uses and the boardwalk are likely to be influenced primarily from vehicular traffic emissions from the IEC. In order to prevent any adverse air quality impacts on the future sensitive users of the boardwalk and ASRs such as retail shops and open air café, a setback distance of at least 20m from the IEC is recommended so as to comply with the recommendations in the HKPSG.

Emissions from marine vessels are also air pollution sources affecting future air quality. It is recommended that ASRs including alfresco dining and landscape areas on the rooftop of the piers, sitting and public open areas should also be located away from potential air pollution sources including the marine berths.

Another air polluting source is the ventilation shafts of the CWB. Given that the time horizon of the proposed key site development would likely coincide with the operational phase of the WDII and the CWB, the findings of the WDII and CWB EIA are applicable. In accordance with the findings of the approved EIA Report for the WDII and the CWB, the air quality level at the North Point waterfront is well below the AQOs after taking into account emissions from the ventilation shaft and the portal. Therefore, no adverse air quality impacts from these sources on the proposed land uses are anticipated. The traffic noise from the IEC will not affect the proposed land uses as retail and recreational uses are not considered as noise sensitive receivers. Hence, no adverse environmental impacts are expected on the proposed land uses.

The proposed land uses will be a considerable distance from the nearby residential developments and noise impacts from the operation of the proposed developments are not expected. The discharges from these proposed developments will all be connected to the public sewer. Therefore, the operation of these retail shops, open air cafés and boardwalk are not expected to pose environmental impacts on the nearby sensitive receivers and adverse environmental impacts caused by the enhancement proposals during the operational phase are not anticipated.

10.5 Environmental Concern on the Hoi Yu Street Site in Quarry Bay

Introduction

The Hoi Yu Street site in Quarry Bay comprises the EHC Tunnel Portal site and the waterfront area to the north of the IEC and Hoi Yu Street.

The construction and operation of the proposed multi-purpose performance centre/IMAX theatre at the EHC Tunnel Portal site as well as the cultural, tourism and entertainment facilities including retail shops, themed restaurants and recreational uses at the waterfront area of Hoi Yu Street will follow all relevant environmental protection legislation including the Air Pollution Control Ordinance (Cap. 311), the Noise Control Ordinance (Cap. 400), the Water Pollution Control Ordinance (Cap. 358) and the Waste Disposal Ordinance (Cap. 354) as well as recommendations stated in Chapter 9 of the HKPSG relating to environment issues and other practice notes, if any.

Construction Phase

It is expected that the foundation and building works for the multi-purpose performance centre/IMAX theatre will have potential dust and noise impacts on the nearby existing parks and school (including Quarry Bay Park and Canossa College) during the construction phase. Appropriate dust suppression measures as stated in the Air Pollution Control (Construction Dust) Regulation and noise mitigation measures such as use of quiet powered mechanical plants and construction method, installation of noise barriers and restriction of noisy construction activities during the examination period of schools should be implemented to minimize adverse environmental impacts. As regards the proposed developments at the waterfront area of Hoi Yu Street, in view of the limited scale of works, no adverse construction impacts are anticipated with the implementation of good site practices and dust suppression measures as stated in the Air Pollution Control (Construction Dust) Regulation.

Operational Phase

With respect to the proposed multi-purpose performance centre/IMAX theatre at the EHC Tunnel Portal site, any fresh air intakes should be at a higher level and located as far away as possible from the IEC and the EHC Tunnel Portal. Although air quality is one of the environmental concerns, the EHC Tunnel Portal site presents an opportunity for the development of an exciting activity node that serves as a focal point connecting the hinterland with the waterfront.

There are other sensitive uses including restaurants, retail kiosks and an arts display venue proposed at the waterfront. Given its proximity to the IEC, appropriate buffer distances as recommended in the HKPSG (at least 20m) will be allocated between the proposed air sensitive uses (including the fresh air intakes) and the IEC. In addition, any planned air sensitive uses

including sitting areas, fitness/exercise equipment zones, elderly exercise areas, cycling facilities, tai-chi courts, etc. should be located as far as possible from the EHC ventilation shaft to minimize potential air quality impacts on the ASRs.

The proposed land uses will be a considerable distance from the nearby residential developments, thus noise impacts from the operation of the proposed developments are not expected. The discharges from restaurants proposed at the waterfront will be connected to public sewers. Adverse noise and water pollution impacts caused by the enhancement proposals during the operational phase are not anticipated.

10.6 Conclusion

The construction and operation of the proposed waterfront promenade and its associated uses and the planned uses and facilities in the two key sites are not considered as a designated project under EIAO and will adhere to all relevant environmental protection legislation as well as the recommendations stated in Chapter 9 of the HKPSG related to environment issues and other practice notes, if any.

With the implementation of appropriate dust suppression and noise mitigation measures, no adverse residual air quality and noise impacts are expected on the ASRs and NSRs during the construction phase.

The proposed land uses/facilities along the waterfront promenade and at the two key sites are not considered to be air quality emission sources and noise impacts on the existing and potential NSRs will also be limited. Given the inclusion of a certain minimum setback distance between the proposed land uses/facilities and the existing sensitive receivers, adverse air quality and noise impacts are not anticipated during the operational phase. Any discharges from the proposed restaurants etc. will be properly connected to public sewers. Water pollution impacts are also not expected with the implementation of the enhancement proposals.

During the operational phase, it is recommended that any planned air sensitive uses should be located as far as possible from the existing air pollution sources including sewage treatment facilities, tunnel ventilation shafts, marine vessel berthing locations and the typhoon shelter, etc. to minimize potential air quality impacts on the ASRs. To assess the exact extents of the potential air quality and to determine any necessary environmental mitigation measures, a detailed air quality impact assessment is recommended to be undertaken at the detailed design stage for any proposed air sensitive use which is close to major air pollution source(s), to confirm the compliance with all relevant air quality standards if there is no other relevant previous study or the general air quality guidelines (e.g. recommended buffer distance) in Chapter 9 (Environment) of HKPSG could not be met or not applicable.

11. STRUCTURAL ASSESSMENT

11.1 Structural Impact of Proposed Boardwalk underneath the Island Eastern Corridor and Related Concerns

The proposed boardwalk with a mean width of 5m will rest on the existing IEC structures. The structural capacity/integrity of the existing IEC is important, as the boardwalk structure will be in close proximity to the marine environment. The structural form of the proposed boardwalk has to consider not only the durability, but also the constructability under the existing IEC.

The existing IEC is a precast pre-stressed U-beam slab superstructure rested on reinforced concrete piers/portals. The span length is approximately 30m. The foundation for the existing IEC consists mainly of marine bored piles with all of the pile caps located above high tide sea level.

11.1.1 Special Structural Conditions of the Proposed Boardwalk underneath the Island Eastern Corridor

The structural capacity of the existing IEC substructure (piers, pile caps and piles) together with the planned CWB structure has been studied. The remaining/reserved structural capacity of the pile caps of the existing marine board piles is considered to offer an adequate structural support to the IEC boardwalk. For the existing marine bored piles, the remaining/reserved structural capacity ranges from 5% to 45% and the proposed boardwalk is recommended to be rested on pile caps directly above existing marine bored piles. The support of the proposed boardwalk will solely rely on the foundations of the existing IEC, with a view to avoiding the need for additional marine piles/dolphins. Hence, the structural members of the proposed boardwalk will be fixed/tied onto the existing IEC pile caps/piles **(Figures 11.1 and 11.2)**.

The spacing of the piers along the existing IEC is approximately 30m. This will dictate the span length of the proposed boardwalk structure. The proposed uncovered boardwalk will require around 10% to 15% of the structural capacity of the existing marine bored pile. A single pile may not be sufficient to support the proposed boardwalk at each end of the span. A transverse transfer structure will thus be provided to distribute the load equally onto 2 existing marine bored piles. The remaining structural capacity of the existing marine piles will adequately accommodate the proposed boardwalk. Although the necessity of additional marine piles will be subject to existing structural conditions, a further structural condition survey is recommended.

The support of the proposed boardwalk will solely rely on the foundation of the existing IEC with a view to avoiding additional marine piles/dolphins. As a result, the existing structural condition and the structural capacity/integrity of the existing IEC foundation (piers, pilecaps, tie beams and piles) bearing the additional boardwalk must be examined and verified. A survey on the structural condition of the IEC is recommended to be carried out for this purpose. Although no evidence was found during the preliminary analysis of the IEC structure, in the case of insufficient capacity of the existing IEC or excessive structural deterioration found on the existing pile caps/piles, additional marine piles will be required for the proposed boardwalk support tied into the IEC foundation.

The proposed boardwalk will be rested on the existing pilecaps which are above the high tide level. Hence, the risk of the boardwalk being affected by the uplift force of ocean waves is expected to be minimal. The existing berthing dolphins will be kept at their current position to protect the IEC and the proposed boardwalk against potential ship impacts. The proposed boardwalk is recommended to be kept clear of the existing dolphins by a minimum of 1.5m; otherwise the dolphins will have to be relocated to maintain this clearance. This clearance is endorsed for the maximum lateral movement of dolphins in case of ship impact. As the proposed boardwalk will almost entirely be under the existing IEC and behind the existing berthing dolphins, the risk of a boat strike for the proposed boardwalk is unlikely to be greater than that for the existing IEC.

Due to the close proximity of the proposed boardwalk to the marine environment, steelwork is the recommended structural material for the construction of the boardwalk. Due consideration will be given to the material durability, span length and ease of construction under the existing IEC.

The galvanization of the structure will be salt and erosion resistant and will ensure a prolonged life for the boardwalk. Additional protective coatings plus on-going maintenance and inspections are required to maintain the upkeep of its condition and to prolong the life span of the structure. The period during which the protection paint system will be effective is generally shorter than the design life of the structure. Maintenance is often required at more frequent intervals because of fading, chalking, contamination, wear and tear, or for aesthetic or other reasons. Additional protective paint coatings plus on-going maintenance and inspections will also be required throughout the life span of the structure. For the use of coating materials under local conditions, the advice of the manufacturers should be sought and followed. The guarantee time of the performance specification is usually shorter than the durability range. Painting systems could be tested in accordance with ISO 4628 for

durability. The durability and sustainability issues have to be addressed in the preliminary design of the proposed boardwalk as it requires a detailed design for the in-depth investigation.

With a view to facilitating future inspections and maintenance for the IEC, the proposed boardwalk should have a minimum 2m clearance from the existing IEC deck soffit in most locations. For the structural connection between the proposed boardwalk and the existing IEC substructure, proper access will be provided for future IEC inspections and maintenance.

The proposed boardwalk under the IEC will be designed to accommodate the pedestrian live load in accordance with the *Structures Design Manual for Highways and Railways* (*HyD, 2006*). Initial assessments have estimated that with a pedestrian intensity LOS of C (which equates to a flow rate of 23 – 33 persons per minute per metre), it will generate a maximum total of 8,000 persons on the boardwalk structure at any one time. This will generate a loading force of 1.78 kPa, which falls within the loading capacity of the proposed boardwalk structure that will be designed and constructed to accommodate a capacity of 5 kPa, as recommended in the *Structures and Design Manual for Highways and Railways*. Loading weight from the proposed retail kiosks will add to the loading force, however, these are expected to be within the loading capacity of the boardwalk structure. Nonetheless, these occasional/intermittent kiosks are recommended to be put directly above the existing marine bored piles to minimise the structural impact on the proposed boardwalk. During festive events such as the Chinese New Year fireworks and Chinese National Day fireworks, it is anticipated that the boardwalk may attract large surge of visitors. Proper pedestrian flow and crowd control measures will be imposed to limit the number of boardwalk users to ensure safety.

The proposed boardwalk is considered to be subject to insignificant effects with respect to all forms of aerodynamic excitation (aerodynamic susceptibility parameter $P_b < 0.04$) in accordance with the *Structures Design Manual for Highways and Railways* (HyD, 2006) and *Design Rules for Aerodynamic Effects on Bridges* (BD 49/01). However, the long span length will likely impose adverse aerodynamic impacts on the boardwalk (such as excess vibration and acceleration) that could affect the comfort of pedestrians. The actual impacts have to be further studied, as it requires a corresponding response to the detailed design of the boardwalk proposal.

Pursuant to table 4 of the *Port Works Design Manual: Part 1 – General Design Considerations for Marine Works* published by the CEDD, the extreme sea level in the 100 year return period is +3.5mPD, which is the top of the existing pilecap shown on the as-built drawings. To limit potential impacts from small vessels onto the span of the boardwalk, a 50kN impact load should be designed in accordance with part 8 of BS6349.

With regards to fire risk concerns, all the materials of the proposed boardwalk should be incombustible. Spacing of on-shore access points to the proposed boardwalk should be less than 330m, or otherwise fire hydrants should be provided, in accordance with HyD's Technical Circular No. 4/2010 (Fire Mains and Hydrants on New Trunk Roads and Elevated Highway Structures).

The detailed interface arrangement and survey analysis for the interface between WDII and the proposed boardwalk should be addressed.

With a view to facilitating its straightforward construction, the boardwalk should be designed as a simple support over a span between 2 existing piers of IEC. Prefabrication will be undertaken as much as possible, taking advantage of mechanised welding and early painting under factory-controlled conditions. The prefabricated steel structure could be delivered and erected by a barge span-by-span working underneath the existing IEC. Generous tolerances for on-site connections should be allowed because of the difficulties associated with working in a marine environment.

In view of the issues mentioned above, it is considered that further assessment should be carried out to ascertain the structural feasibility of the proposed boardwalk prior to proceeding to the detailed design.

11.1.2 North Point Dangerous Goods Vehicular Ferry Pier

The existing North Point Dangerous Goods Vehicular Ferry Pier rises to 2 storeys with the main deck at an elevation of +4.121mPD and the upper deck at +8.998mPD. The pier is rested on 457mm square prestressed concrete piles and on 406mm square piles.

The structural condition and the structural capacity/integrity of the existing structures have to be further assessed/reviewed and verified in response to the revised design loading condition and detailed design of the enhancement proposal including the proposed boardwalk. In the event of poor conditions of the existing structures, further strengthening or modification works should be carried out. Additional marine pilecaps could strengthen the structure of the North Point Dangerous Goods Vehicular Ferry Pier. To ascertain whether this would be necessary, a detailed structural survey should be conducted.

With a view to facilitating an adequate structural depth for the proposed boardwalk, it is recommended to connect the proposed boardwalk with the structure of the North Point Dangerous Goods Vehicular Ferry Pier. Alternatively, the proposed boardwalk

could be designed to be structurally isolated from the existing pier. The adjacent existing IEC pile caps/piles (piers 77 & 78) may provide certain support for the proposed boardwalk.

11.2 Structural Concerns for Identified Key Sites

11.2.1 North Point Ferry Piers and the Adjoining 20m Wide Waterfront Promenade of the Ex-North Point Estate Site

The existing North Point (West) Ferry Pier was built in 1977 and comprises 1 storey with the main deck at +3.854mPD and the roof at +9.154mPD. The existing North Point (East) Ferry Pier was firstly built in 1961 and then modified in 1983. It has 2 storeys with the main deck at +3.816mPD, upper deck at +6.712mPD, and the main roof at +9.912mPD. The existing piers have a typical beam and slab structural form with columns at 4.572m - 5.0m column spacing. The piers are rested on 450mm square pre-stressed concrete piles and on 1.295m to 1.981m square pedestals. It is recommended to connect the boardwalk at the same level as the main deck level of the North Point (East & West) Ferry Piers.

For the adaptive reuse of the ferry piers, the structural condition and capacity/integrity of the existing structures have to be further assessed/reviewed and verified in the preliminary design, in response to the revised design loading conditions and the detailed design of the proposed enhancements including the proposed boardwalk. In the event the existing structure is in a poor structural condition, further strengthening or modification works should be carried out. Additional marine pile caps could strengthen the structure of the North Point Ferry Piers and to ascertain whether this would be necessary, a detailed structural survey should be conducted at the detailed design stage.

Alternatively, the proposed boardwalk could be designed to be structurally isolated from the existing piers. The adjacent existing IEC pilecaps/piles (piers 64, 65, 68, & 69) may provide certain support for the proposed boardwalk.

11.2.2 Hoi Yu Street Key Site

Visibility and sightlines should be further reviewed in view of the proposed dense planting to avoid impacting upon road users. Dense planting should be 500mm away from the kerb line, and the crown should be at least 5.1m high.

The proposed performance centre/IMAX theatre and feature footbridge will be in close proximity to the existing EHC and MTR tunnels. These existing tunnels are sensitive to the adjacent vibration and groundwater table fluctuation. A preliminary assessment of the structural levels shows that, in general, the underground depth of the MTR and EHC tunnels should be sufficient and will not be significantly affected by the construction of the proposed performance centre/IMAX theatre structure. The structural impacts on the tunnels due to the proposed structures and their envisaged construction activities should be further reviewed in the detailed design stage, as it requires investigating the corresponding design of the enhancement proposal.

The feature footbridge should be equipped with a roof and lift/ramp for the disabled in accordance with the *Structures Design Manual for Highways and Railways* (HyD, 2006). The maximum gradient of the footbridge/ramp should be 1:12. For the excess span length, an intermediate support/pier is expected. In case there is a pier at the central median, the visibility and sightline should be further reviewed to avoid affecting road users. The sightline issues could be resolved by the design of a special long span footbridge to avoid any support on the central median, although this would incur a much higher construction and maintenance cost.

Given the close proximity of the marine environment, the durability issue has to be addressed in the design of the proposed feature footbridge. The long span length will likely impose adverse aerodynamic impacts on the footbridge (such as excess vibration and acceleration) that could affect the comfort of pedestrians. This will be further studied in the detailed design stage.

11.3 Structural Concerns for Sky Trail

The Sky Trail consists of a proposed elevated walkway located adjacent to the shoreline at the northern extent of the site of the Hong Kong Museum of Coastal Defence. The trail would be constructed at approximately 15-20mPD. Supported by a series of spaced columns, the walkway will be constructed with light-weight steel/galvanised iron with chromatic treatments, and be made of durable materials that are suitable and tolerant to the salt spray condition.

The proposed Sky Trail will be designed to accommodate the pedestrian live load in accordance with the *Structures Design Manual for Highways and Railways* (HyD, 2006). Initial assessments estimate that with a pedestrian intensity LOS of C (which equates to a flow rate of 23 – 33 persons per minute per metre), a maximum total of 1,000 persons will be on the structure at any one time. This will generate a loading force of 0.93 kPa, which will fall within the loading capacity of the proposed Sky Trail structure that will be designed and constructed to accommodate a capacity of 5 kPa, as recommended in the *Structures Design Manual for Highways and Railways* (HyD, 2006). The Sky Trail should also be equipped with ramps that are disabled-friendly in

accordance with the above-mentioned Design Manual. The maximum gradient of the bridge/ramp should be 1:12. The temporary access on the slope/natural terrain will likely be a constraint on the construction works. Hence, the Sky Trail is recommended to be composed of prefabricated/precast components. They could be simply delivered to and erected on site manually or with the use of light size mechanised cranes.

11.4 Conclusion

This chapter has outlined the special structural conditions of the proposed boardwalk under the IEC and structural concerns for the identified key sites and the Sky Trail. It recommends the proposed boardwalk and Sky Trail to be constructed of a structural steelwork material that will be durable against the surrounding terrain, helping to prolong the life of the structures. Detailed structural surveys are also recommended to be carried out to ensure the structural integrity of existing features and determine whether existing features have sufficient capacity and are not subject to structural deterioration.

12. WATERWORKS ASSESSMENT

12.1 Waterfront Connectivity Features

The purpose of this Waterworks Assessment (WA) is to review and assess adverse impacts on the existing and proposed freshwater and saltwater supply systems, if any, arising from the recommended enhancement proposals for the Study Area.

Cost effective mitigation measures will then be proposed to mitigate any identified adverse impact. With the recommended mitigation measures, it will demonstrate that the proposed developments would not cause adverse impact to the freshwater and saltwater supplies on the surrounding areas.

12.2 Existing Water Supply Systems

Area 1 – North Point (**Figure 12.1**)

There is an existing 150mm diameter freshwater main running adjacent to the North Point Ferry Piers. This water main conveys fresh water to the North Point Ferry Piers and the adjacent public toilet.

Area 2 – Quarry Bay (**Figure 12.2**)

There are existing freshwater and saltwater mains with sizes ranging from 40mm to 300mm diameter running along Hoi Yu Street and Hoi Wan Street respectively. These water mains convey freshwater and saltwater to the nearest buildings, Quarry Bay Park and nearby landscape areas.

Area 3 – Shau Kei Wan (**Figure 12.3**)

There are existing freshwater and saltwater mains with sizes ranging from 80mm to 400mm diameter running along Oi Lai Street and Tam Kung Temple Road. These water mains convey freshwater and saltwater supplies to nearby buildings and leisure facilities maintained by Leisure and Cultural Services Department, such as Aldrich Bay Government School, Aldrich Bay Promenade, Tam Kung Temple, Po Leung Kuk Community College, etc.

Area 4 – Chai Wan/Heng Fa Chuen (**Figure 12.4**)

There is an existing 450mm diameter freshwater main running along Shing Tai Road. This water main conveys freshwater supplies to Heng Fa Chuen.

12.3 Water Demand of Proposed Developments

Development Schedule

The proposed land uses/facilities/landscape areas generating water demand are specified in **Table 12.1** below:

Table 12.1 Development Schedule

Description		
North Point	**Floor Area (m^2)#**	**No. of Visitors/Users per day**
Commercial/Retail (excluding Food and Beverage)	1,400	1,540
Food and Beverage	600	660
Landscape Area requiring irrigation (20m wide waterfront promenade of the ex-NPE site)	8,000	-
Quarry Bay	**Floor Area (m^2)**	**No. of Visitors/Users per day**
Commercial/Retail (excluding Food and Beverage)	10,500	5,250
Food and Beverage	4,500	2,250
Multi-purpose Performance Theatre/IMAX Theatre (Capacity: 400 seats)	-	2,400
Landscape Areas Requiring Irrigation		
Hoi Yu Street Waterfront site	2,000	-
Area surrounding Multi-purpose Performance Theatre/IMAX Theatre	3,000	-
Public Toilet for Multi-purpose Performance Theatre/IMAX Theatre *	**Sanitary Type**	**No. of Sanitary Facilities**
	Water Closet	15
	Urinal	10

Shau Kei Wan	Floor Area (m^2)	No. of Visitors/Users per day
Temporary Heritage Park at Tam Kung Temple Road	2,000	1,200
Landscape Area requiring irrigation	500	-
Public Toilet*	**Sanitary Type**	**No. of Sanitary Facilities**
	Water Closet	15
	Urinal	10

** Numbers of sanitary facilities are subject to further review during detailed design phase.*
#The estimation of the floor area is derived from the existing building footprint/site area.

Unit Demand

The water demand for the proposed developments has been estimated based on unit demand figures with reference to Departmental Instruction No. 1309 (by the Water Supplies Department), Plumbing Engineering Services Design Guide (by The Institute of Plumbing) and National Technical Measures for Design of Civil Construction – Water Supply and Drainage (by China Institute of Building Standard Design and Research). The unit demands and assumptions are listed as follows:

Potable (fresh) water unit consumption for commercial/retail	= 100 litre/head/day
Flushing (salt) water unit consumption for commercial/retail	= 70 litre/head/day
Potable (fresh) water unit consumption for multi-purpose performance centre/IMAX theatre	= 5 litre/user/show for Audience = 40 litre/user/day for Actor/Actress/Staff
Daily consumption for kitchen	= 0.5m^3/m^2/day
Irrigation	= 1.5 litre/m^2/time
Daily water consumption of sanitary fitments	= no. of fitments x frequency of usage/hour x consumption (L) per usage x operation hour per day

Table 12.2 - Water Demand Estimate for Proposed Developments

Area 1 – North Point

Commercial/Retail			
No. of Person	=	1,540	persons
Portable Water Unit Consumption for Retail	=	100	litre/head/day
Flushing Water Unit Consumption for Retail	=	70	litre/head/day
Daily Potable Water Consumption	=	154	m^3
Daily Flushing Water Consumption	=	108	m^3
Food and Beverage			
Assumed GFA= 2000 x 0.3	=	600	m^2
UFA = GFA x 0.8 = 600 x 0.8	=	480	m^2
Kitchen Area = UFA/3 = 480/3	=	160	m^2
Daily Consumption for Kitchen = 160 x 0.5	=	80	m^3
Assume Potable to Flushing Ratio	=	2:1	
Daily Potable Water Consumption	=	53	m^3
Daily Flushing Water Consumption	=	27	m^3
Landscape Area			
Irrigation Area	=	8,000	m^2
Average Daily Water Consumption = 1.5 x 8000 x 2 (Assume irrigation two times per day) (Assume irrigation is not required in Spring and Summer)	=	24	m^3
Total Daily Potable Water Consumption	=	**231**	**m^3**
Total Daily Flushing Water Consumption	=	**135**	**m^3**

Area 2 – Quarry Bay

Commercial/Retail			
No. of Person	=	5,250	persons
Potable Water Unit Consumption for Retail	=	100	litre/head/day
Flushing Water Unit Consumption for Retail	=	70	litre/head/day
Daily Potable Water Consumption	=	525	m^3
Daily Flushing Water Consumption	=	368	m^3
Food and Beverage			
Assumed GFA= 4,500 x 0.3	=	1,350	m^2
UFA = GFA x 0.8 = 1,350 x 0.8	=	1,080	m^2
Kitchen Area = UFA/3 = 1,080/3	=	360	m^2
Daily Consumption for Kitchen = 360 x 0.5	=	180	m^3
Assume Potable to Flushing Ratio	=	2:1	
Daily Potable Water Consumption	=	120	m^3
Daily Flushing Water Consumption	=	60	m^3
Multi-purpose Performance Centre/IMAX Theatre			
Audience	=	2,400	persons
Staff (assumed)	=	30	persons
Daily Potable Water Consumption = 5 x 2400 + 40 x 30	=	13	m^3
Daily Flushing Water Consumption (for public toilets) = (*Note: see breakdown in the table appended below*)	=	13	m^3
Landscape Area			
Irrigation Area	=	5,000	m^2
Average Daily Water Consumption = 1.5 x 5000 x 2	=	15	m^3
(Assume irrigation two times per day)			
(Assume irrigation is not required in Spring and Summer)			
Total Daily Potable Water Consumption	=	**673**	**m^3**
Total Daily Flushing Water Consumption	=	**441**	**m^3**

Public Toilets for Multi-purpose Performance Centre/IMAX Theatre (use of flushing water)

	No. of fitment	Frequency of Use (usage/hour)	Consumption (L/usage)	Operation Time (hour/day)	Daily usage (m^3/day)
Water Closet	15	12	7.5	8	11
Urinal	10	6	4.5	8	2
				Total:-	13

Area 3 – Shau Kei Wan

Heritage Park			
Public Toilets (*Note: see breakdown in the table appended below*)			
Daily Potable Water Consumption	=	10	m^3
Daily Flushing Water Consumption	=	13	m^3
Landscape Area			
Irrigation Area	=	500	m^2
Average Daily Water Consumption = 1.5 x 500 x 2	=	2	m^3
(Assume irrigation two times per day)			
(Assume irrigation is not required in Spring and Summer)			
Total Daily Potable Water Consumption	=	**12**	**m^3**
Total Daily Flushing Water Consumption	=	**13**	**m^3**

Public Toilets for Temporary Heritage Park

	No. of fitment	Frequency of Use (usage/hour)	Consumption (L/usage)	Operation Time (hour/day)	Daily usage (m^3/day)
Potable Water					
Water Closet	15	12	5	8	7
Urinal	10	6	5	8	2
				Total:-	10 (roundoff figure)
Flushing Water					
Water Closet	15	12	7.5	8	11
Urinal	10	6	4.5	8	2
				Total:-	13

12.4 Proposed Water Supply Systems

To meet the demand of the future development within the Study Area, new branch of water mains will be necessary for conveying freshwater and saltwater to the new facilities, such as commercial/retail/food and beverage/multi-purpose performance centre/irrigation points, etc.

Consultation with WSD will be required during the detailed design phase in order to confirm the connection points of water supply pipelines and the feasibility of conveying freshwater and saltwater from the existing pipelines from hydraulic point of view.

The proposed alignments of new water supply systems and the associated connection points at North Point, Quarry Bay and Shau Kai Wan are shown in **Figures 12.1, 12.2 and 12.3** respectively.

12.5 Conclusion

The total freshwater and saltwater demands for each development site are summarised as follows:

North Point			
Total Daily Potable Water Consumption	=	**231**	**m^3**
Total Daily Flushing Water Consumption	=	**135**	**m^3**
Quarry Bay			

Total Daily Potable Water Consumption	=	**673**	**m^3**
Total Daily Flushing Water Consumption	=	**441**	**m^3**
Shau Kei Wan			
Total Daily Potable Water Consumption	=	**12**	**m^3**
Total Daily Flushing Water Consumption	=	**13**	**m^3**

There are existing freshwater and salt water mains running in/within the vicinity of the proposed development sites. To meet the future water demand, new branch of water mains and/or waterworks facilities will be necessary for conveying freshwater and saltwater to the new facilities. There are several lead-in points for freshwater, saltwater and irrigation supplies. The lead-in points will be installed for tapping off for future connection to the new premises.

Based on the recommended option of enhancement proposals, neither diversion nor alteration of existing water mains and/or waterworks facilities will be required for the proposed developments. In this regard, no adverse impact on the existing water mains and/or waterworks facilities is envisaged.

Consultation with WSD will be required during the detailed design phase in order to confirm the connection points of water supply pipelines and the feasibility of conveying freshwater and saltwater from the existing pipelines from hydraulic point of view.

The exact alignment of new water mains and locations of the lead-in points are subject to the final development layout and the detailed design.

13. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

13.1 Introduction

This chapter aims to assess the landscape impacts of the enhancement proposals on the landscape character and resources of the Study Area and the visual impacts of the enhancement proposals from visual sensitive receivers. Mitigation measures are also proposed to minimize the landscape and visual impacts of the enhancement proposals. Since the enhancement proposals are conceptual in nature, further assessment will be required in the detailed design stage.

13.2 Landscape Character Areas

The paragraphs below provide the following:

- The identification of definable landscape character areas (LCAs) that prevail within the Study Area;
- The current landscape characteristics prevailing within each LCA; and
- The material extent to which proposals will impact on each LCA.

The boundary of each LCA has been defined with reference to the Landscape Value Mapping Study undertaken by Urbis Limited for the Planning Department in 2005. The boundary of each LCA is defined by the physical morphology and landscape character. Each LCA is also defined as a specific Landscape Character Type (LCT) that reflects the principal landscape typology of each LCA. A total of 11 LCAs have been identified and are depicted at **Figure 13.1**.

13.3 Assessment Methodology

LCA impact appraisals are not objective but rather, are based upon a structured and systematic evaluation of predicted impacts, informed by professional judgement and experience. Impacts against specific proposals on a LCA have been assessed against two principal criteria, namely:

- Sensitivity of the LCA; and
- Magnitude of the Impact.

The preliminary assessment identifies the 'sensitivity' of a LCA in terms of its quality, rarity, maturity, reversibility and value. Each category is assessed qualitatively according to whether they would have a low, moderate or high influence on the character of the area.

The magnitude of the impact of the proposal is subsequently assessed based on its scale of impact to the core value and character of the given LCA. It also takes into account the change of character and the existing qualities of the LCA. The significance of impacts is then assessed based on the sensitivity of the LCA as well as the magnitude of the impact as a result of the proposal. The significance of impacts is measured as 'Substantial', 'Moderate', 'Slight' or 'Insubstantial' which is shown in **Table 13.1**.

LCA 1: North Point Waterfront Residential Area

Description of Landscape Character: This coastal urban landscape is located upon a historic land formation of flat relief and is largely developed as medium and high-rise housing set within a network of streets and open spaces. It also includes some existing redevelopments. Residential developments include Provident Centre and City Garden which are residential estates on the coast situated around amenity spaces. The ex-NPE site is also located within the LCA. The site contains a limited number of mature trees retained from the former housing estate. The site is abutted by the North Point Ferry Piers which are currently of low landscape character and value. The existing estates are effectively separated from the sea by the elevated IEC which runs along the coast in the sea. Existing vegetation is characterised by street tree planting and amenity planting within small sitting-out areas and public open spaces. Other features in this landscape include a public ferry pier (Tong Shui Road Pier) and amenity open space. Generally, this is a varied landscape of large-scale urban elements which has a character that is enclosed and reasonably coherent. Within LCA 1, there are no significant landscape features.

Condition and Management: The LCA is of moderate condition possessing a partially intact pattern of topography with built and natural landscape features. In terms of management, enhancement of existing resources would be desirable.

Sensitivity of LCA 1: The sensitivity of the LCA is assessed below by each of the criterion cited above:

- Quality: Low – At its landward side, the LCA is predominantly dominated by medium and high-rise housing developments of medium quality. The IEC is a dominating feature at the harbourside. Only intermittent small-scale open spaces and amenity tree planting are currently located within the LCA. These are not significant and are not of sufficient scale to create a major impact on the physical quality of the area. In addition, the majority of the amenity planting/street trees are in moderate conditions and are of common species. None of the amenity planting/street trees within the LCA are of any cultural significance. The area is under progressive redevelopment which will result in improvement over time. At present, however, the quality of the area is considered to be low;
- Rarity: Low – The LCA is characterised by medium and high-rise housing developments frequently found within the Eastern District. The limited landscape treatments are of a similar style and composition to those found elsewhere in the urban area. The rarity of the area is therefore considered to be low;
- Reversibility: High – The LCA is located upon a historic land reclamation that is largely dominated by man-made features and imported soft and hard landscape treatments. No unique man-made features or landscape treatments are located within the LCA. No declared monuments or graded historical buildings are located within the LCA. The extent of reversibility is accordingly considered to be low;
- Maturity: Moderate – The developments within this LCA consist of a range of new and old buildings. The latter are in a poor or degraded condition and have no perceptible heritage value. No Old and Valuable Trees (OVTs) have been identified within the LCA. Most landscape treatments are contemporary and are not mature. The maturity is therefore considered to be medium or moderate; and
- Value: Low – The physical conditions prevailing within the LCA indicate a condition of low value. Thus any enhancement measure introduced will, depending on its scale ad quality, serve to enhance the area.

With consideration to the above, the overall sensitivity of LCA 1 is therefore considered to be *low*. The relative impacts of the proposed enhancement measures are discussed below in terms of the degree of change.

Magnitude of Impact: The enhancement measures proposed within the LCA (street planting, promenade development, ferry pier upgrading and the proposed boardwalk) will materially enhance the amenity and landscape quality of the area (**Figures 5.1, 5.3, 5.4, 6.2, 6.3, 7.3, 7.4, and 8.1**). Visual and physical accessibility to the harbour would be enhanced through the inclusion of the proposed boardwalk underneath the IEC. This would cover a small proportion of the water within the harbour. As noted elsewhere, however, the enhanced accessibility to the harbour and enhanced amenity would more than compensate for the apparent loss of visually perceptible water within the harbour. To this extent, the overall magnitude of impacts of the proposed measures is considered to be *small* and generally positive in character. Positive attributes are particularly ascribable to the proposed enhancement of the waterfront and the existing ferry piers.

Significance of Impact: The subject LCA is considered to be of *low* sensitivity and as mentioned, the proposal is considered to have a *small* magnitude of impact during both construction and operation phases. The significance of impact is thus considered to be *insubstantial* during both construction and operation. The impacts during operation, nevertheless, are considered to be *moderately positive* in nature.

LCA 2: North Point Urban Area

Description of Landscape Character: The area is intensively urbanised and the landscape is characterised by medium and high-rise buildings, high building densities, older building stock and land uses which include a mixture of residential and commercial developments above retail outlets, as well as some older industrial and storage premises (due for redevelopment at Oil Street) and public utilities near the waterfront. A heritage structure (the building in which the Royal Hong Kong Yacht Club was formerly located) is located close to Oil Street on Electric Road. The urban form is defined by a regular orthogonal pattern of wide and medium width streets, resulting in limited spatial diversity within the LCA. Notable buildings include Citicorp Building, Sea View Estate and Harbour Heights. Existing vegetation consists of limited amount of street tree planting and amenity planting within roadside amenity areas and public open spaces. Other features in this landscape include roads and tramways; a quay at the water edge; the elevated highway of the IEC; and amenity open space. Generally, this is a landscape of large-scale elements which is varied, enclosed and frenetic. Within LCA 2, there are no significant landscape features.

Condition and Management: The LCA is of moderate condition possessing a partially intact pattern of topography with built and natural landscape features. In terms of management, enhancement of existing resources would be desirable.

Sensitivity of LCA 2: The sensitivity of the LCA is assessed by the following criteria:

- Quality: Low – The LCA is characterised by old and new medium and high-rise buildings developed to high building densities. Old building stock is also present within the LCA. Landscape treatments within the LCA are limited to tree

planting and low level amenity planting within roadside amenity areas and public open spaces. The majority of the amenity planting/street trees are in moderate condition and are of common species. None of the amenity planting/street trees within the LCA are of any cultural significance. The combination of the physical components indicates a LCA of low quality;

- Rarity: Low – The LCA is dominated by a mixture of old and new residential and commercial buildings identified in many areas on Hong Kong Island e.g. Sai Wan Ho, Wan Chai and Causeway Bay, etc. There are no features that are sufficiently distinctive to warrant the LCA being ascribed as rare. The rarity value of the LCA is therefore considered to be low;
- Reversibility: High – The LCA is located on an established land formation and a small portion of the original foothills of Hong Kong Island. The area is largely dominated by man-made features and nominal imported landscape treatments. The redevelopment projects within the LCA also indicate that the LCA is tolerant to change. The area is undergoing progressive redevelopment and is likely to be of high reversibility;
- Maturity: Moderate – Whilst it was previously stated that elderly building stocks are located within this LCA, very few of them are considered to be of significant heritage value (except for the former club house of the Royal Hong Kong Yacht Club). New developments which form part of the character of the LCA are also identified in the area. No OVTs are identified within the LCA. The maturity of the LCA is accordingly considered to be moderate; and
- Value: Low – The quality and rarity of this LCA is low. Whilst a number of old buildings are present in the LCA, they are rarely properly maintained and have no significant heritage value. Landscape treatments are sparse and of limited quality. The value of the LCA is therefore considered to be low.

Based on the above, the sensitivity of LCA 2 is considered to be *low*.

Magnitude of Impact: The enhancement measures proposed within the LCA are limited to streetscape enhancement which will materially enhance the amenity and landscape quality of the area (particularly with respect to the proposed streetscape enhancement measures and enhanced connectivity) (**Figure 6.3**). Given the small scale of the proposed enhancement measures, the overall magnitude of impact of the proposed measures is considered to be *small*. The enhancement measures, however, will have a *positive* impact on the character and value of concerned areas.

Significance of Impact: The subject LCA is identified to have a *low* level of sensitivity and the proposal is considered to have a *small* magnitude of impact during construction whilst having a positive impact during its operation. The significance of impact within the LCA is therefore considered to be *insubstantial* during construction and *slightly positive* during operation.

LCA 3: North Point Waterfront Urban Fringe

Description of Landscape Character: This coastal urban landscape is characterised by a miscellaneous mixture of features broken by existing developments. Existing developments and landscape features include North Point Government Offices, North Point Fire Station, North Point Police Station, ICAC Headquarters Building, and commercial developments such as Kodak House and Harbour Plaza. Other commercial developments have opened in recent years with more in prospect. These developments are separated from the sea by the elevated IEC which runs along the coast in the sea. This prohibits formal public access to the waterfront. Existing vegetation is characterised by limited street trees and amenity planting. Other features in this landscape include highways infrastructure, flyovers and junctions, as well as streets, roads and a quay. Generally, this is a varied landscape of large-scale elements which is enclosed and somewhat incoherent. Within LCA 3, there are no significant landscape features.

Condition and Management: The LCA is of a low to moderate condition possessing a partially intact pattern of topography with built and natural landscape features. In terms of management, enhancement of existing resources would be desirable as the area is sparse in provision.

Sensitivity of LCA 3: The sensitivity of the LCA is outlined below:

- Quality: Low – The LCA is characterised by large-scale commercial and institutional establishments. Whilst the LCA has a frontage to the Victoria Harbour, the harbourfront is dominated by the IEC. Existing vegetation within the LCA is limited to tree and shrub planting in small-scale open space and amenity planting at roadside. Whilst the built quality of the area is gradually being improved and enhanced, landscape treatments remain sparse. The majority of the tree and shrub planting are in moderate condition and are of common species. None of the vegetation within the LCA is of cultural significance. The overall quality is therefore considered to be low;
- Rarity: Low – The LCA is dominated by man-made features which can be identified in many areas on Hong Kong Island. The landscape treatments are common to Hong Kong and are not unique;

- Reversibility: High – The area is located on an established land formation. The built environment is subject to incremental change. At present, a limited landscape regime is located within the LCA;
- Maturity: Low – Notable developments within the LCA are relatively new e.g. ICAC Headquarters Building and North Point Police Station, etc. These were developed within the last decade. No declared monuments or graded historical buildings are identified within the LCA. No OVTs have been identified within the LCA. The area is therefore of a contemporary character and of low maturity; and
- Value: Moderate – The character and composition of the built environment within the LCA are of mixed quality. Incremental improvement of imported landscape resources and the built environment is likely to promote the progressive enhancement of the LCA. The value of the LCA is considered moderate for the present.

The above indicates that LCA 3 is generally *low* in sensitivity. The introduction of enhancement measures is likely to induce positive improvement.

Magnitude of Impact: The enhancement measures proposed within the LCA will materially enhance the amenity and landscape quality of the area (**Figures 6.4 - 6.6, 6.12 and 8.1**). Visual and physical accessibility to the harbour would be enhanced through the inclusion of the proposed boardwalk underneath the IEC. As noted in the context of LCA1, whilst the proposed boardwalk would cover a small proportion of water within the harbour, the enhanced accessibility to the harbour and enhanced amenity would more than compensate for the apparent loss of visually perceptible water within the harbour. This is particularly true of this LCA, given that the public currently enjoys little formal accessibility to the waterfront and is negatively impacted by the IEC. Given the small scale of the proposed enhancement measures, the magnitude of impact would be considerably *small*. The overall magnitude of the proposed measures, once implemented and in operation, is considered to be *positive* to the character and value of the LCA.

Significance of Impact: The LCA is considered to be of *low* sensitivity and the proposal is considered to have a *small* magnitude of impact. The significance of impact is therefore considered to be *insubstantial* upon the subject LCA during construction. This being said, it should be noted that the impacts are considered to be *slightly positive* during operation.

LCA 4: Quarry Bay Transportation Corridor

Description of Landscape Character: This linear landscape lies on the coast of Victoria Harbour and forms a major transportation infrastructure corridor consisting of elevated and at-grade roads, embankments, bridges, three major highway junctions and the EHC Tunnel Portal. This landscape also includes Quarry Bay Park which runs along the eastern waterfront which is connected to Taikoo Shing by footbridges. The numerous structures are at different levels, making the landscape a fairly complex one. Existing vegetation comprises predominantly amenity planting and managed grassland in park areas and roadside median strips. Other features in the landscape include the tunnel ventilation building and the sea wall along the coast of Victoria Harbour. Generally, this is a complex landscape of large-scale elements which has a character that is rather fragmented and frenetic. This LCA comprises one of the seven vantage points established around Victoria Harbour identified by the *Urban Design Guidelines for Hong Kong*. Quarry Bay Park is considered to be the only significant landscape feature within LCA 4.

Condition and Management: The LCA is of moderate condition possessing a partially intact pattern of topography with built and natural landscape features. In terms of management, enhancement of existing resources would be desirable.

Sensitivity of LCA 4: The sensitivity of the LCA is assessed below:

- Quality: Moderate – LCA 4 is largely dominated by large-scale infrastructure e.g. the IEC and the EHC. The qualitative negative impact of these is significantly mitigated by Quarry Bay Park which is a high quality open space located within the LCA. Existing vegetation within the LCA comprises predominantly amenity planting, managed planting and grassland in park areas and roadside median strips. Much of the planting is mature and of good quality. This being said, none of the vegetation within the LCA is of rare species or any cultural significance;
- Rarity: Moderate – Although the LCA contains many large man-made infrastructural features, Quarry Bay Park is one of the few large-scale open spaces directly fronting the Victoria Harbour and is of relative rarity. The uniqueness of the park is considered to warrant a moderate rating;
- Reversibility: Low – The LCA falls within a contemporary land formation developed to accommodate the existing park and major infrastructure. Reversibility is considered to be low, given the importance of these features and their function. The present functions within the LCA are unlikely to be subject to change, thus reversibility is considered to be low;

- Maturity: Moderate – Quarry Bay Park is an established open space within the Eastern District enjoyed by members of the public and visitors. This being said, no declared monuments or graded historical buildings are identified within the LCA. No OVTs are identified within this LCA although the planting within the park has matured well within a relatively short period of time; and
- Value: High – Whilst the LCA contains highly visible man-made features, it also contains a unique waterfront park. The overall value of the LCA is therefore considered to be high.

The above indicates that the sensitivity of LCA 4 is considered to be *moderate*. This predominantly results from the presence of the waterfront park within the LCA.

Magnitude of Impact: The enhancement measures proposed within the LCA will materially enhance the amenity and landscape quality of the area (**Figures 6.6, 6.7, 6.12 and 8.2**). These are mainly included within the northern areas of the LCA and are principally comprised of a combination of entertainment facilities (located adjacent to the EHC Tunnel Portal) and dining, tourism and cultural facilities and a new promenade located at the waterfront north of Hoi Yu Street (**Figures 7.5 - 7.7)**. Visual amenity and connectivity will also be enhanced through the introduction of landscape enhancement measures and the proposed elevated walkway. The latter will ameliorate limited waterfront connectivity. Whilst the scale of the proposed enhancement measures for the Hoi Yu Street key site is relatively larger than the enhancement measures proposed for the previous LCAs, the enhancement measures proposed within LCA 4 will not detract the core value and character of LCA 4. Overall, the magnitude of impact of the proposed measures is considered *intermediate* during construction. The magnitude of impact during operation, however, will be *positive* to the enhancement of the character and value of the LCA.

Significance of Impact: As stated above, the LCA has a medium sensitivity whilst the proposed enhancement measures are considered to have an intermediate impact. The significance of impact to LCA 4 is therefore considered to be *moderate* during construction and *substantially positive* during operation.

LCA 5: Sai Wan Ho Residential Area

Description of Landscape Character: This landscape borders Victoria Harbour to the north and is bounded by the IEC in the south. It has been largely developed as high-rise housing set within a network of streets and open spaces. Major residential developments include Aldrich Garden, Les Saisons, Lei King Wan and Grand Promenade. Existing vegetation is characterised by street trees and amenity planting within public open spaces and at roadsides, including waterfront promenades running along Sai Wan Ho and Aldrich Bay. Other features in this landscape include Marine Police Regional Headquarters and Marine Harbour Division, Sai Wan Ho Ferry Pier, the road network, schools, and the Eastern Magistracy. Generally, this is a varied landscape of large-scale elements which has a character that is enclosed and only moderately coherent. Within LCA 5, there are several significant landscape features including Sai Wan Ho Harbour Park, Sai Wan Ho Playground, Lei King Wan Sitting-out Area, Aldrich Bay Promenade and the recently completed Aldrich Bay Park, all of which are designated open spaces.

Condition and Management: The LCA is of moderate condition possessing a partially intact pattern of topography with built and natural landscape features. In terms of management, enhancement of existing resources within the public realm and at the waterfront would be desirable.

Sensitivity of LCA 5: The sensitivity of the LCA is assessed below:

- Quality: Moderate – LCA 5 is largely dominated by well-maintained high-rise residential developments of reasonable quality. A number of institutional establishments are also identified within the area. As stated above, the LCA also features established open spaces at the waterfront e.g. Sai Wan Ho Harbour Park, Aldrich Bay Promenade and Aldrich Bay Park, albeit in a fragmented manner. Existing vegetation within the LCA comprises predominantly amenity planting, managed planting and grassland in park areas and roadside median strips. Much of the planting is of good quality. This being said, none of the vegetation within the LCA is of any cultural significance or of rare species. Overall, the area is considered to be of moderate quality given that there is room for the introduction of enhancement measures;
- Rarity: Moderate – The existing waterfront promenades provided at Sai Wan Ho Harbour Park and Aldrich Bay Promenade are some of the few waterfront promenades provided within the Eastern District that are of good quality;
- Reversibility: Low – The area consists of a man-made built environment that has been progressively developed and enhanced. The existing promenades and parks have provided important public realm features that are likely to be retained and enhanced. Reversibility is therefore considered to be low;
- Maturity: Moderate – The above-mentioned waterfront promenades are established open spaces enjoyed by members of the public and visitors. Notable residential developments within the LCA, including Grand Promenade and Les

Saisons, were developed within the last decade. No OVTs and declared monuments/graded historical buildings are identified within the LCA; and

- Value: Medium – The composition and content of the elements within the LCA (particularly the public realm treatments) make a significant contribution to the character and value of the area. The value is accordingly considered to be moderate. The aggregate of the above suggests the LCA of an overall moderate rating.

The sensitivity of LCA 5 is therefore considered to be *moderate*.

Magnitude of Impact: The streetscape enhancement measures proposed within the LCA will materially enhance the visual amenity, landscape quality and connectivity of the area (**Figures 6.8, 6.9, 7.13, 8.2 and 8.3**). Given the proposed enhancement works are considerably limited in scale, it is anticipated that the proposal will have a *small* magnitude of impact. The overall magnitude of impacts of the proposed measures, however, are considered to be positive to the character and value of the LCA, providing an overall material improvement of the amenity and quality of the area.

Significance of Impact: The sensitivity of the LCA 5 is considered to be *medium* and the magnitude of impact of the proposal is considered to be *small*. More importantly, the proposed enhancement measures will not detract from the core value and character of the LCA. Instead, they aim to promote and enhance the value and character of the LCA. Therefore the significance of impact of the proposal on LCA 5 is considered to be *slight* during construction and *slightly positive* during operation.

LCA 6: Shau Kei Wan Urban Area

Description of Landscape Character: This area is intensively urbanised and the landscape is characterised by medium and high-rise buildings, high building densities, older building stock and land uses which are a mixture of residential and commercial developments above retail outlets. An industrial area is located at the northeast of the LCA. The urban form is defined by a regular orthogonal pattern of wide and medium width streets, resulting in limited spatial diversity within the LCA. The main route through this area is the Shau Kei Wan Road. Landmark buildings include the Tam Kung Temple adjacent to the Shau Kei Wan typhoon shelter and the nearby shipyards that are of degraded appearance. An area of waterfront land to the west of the shipyards near Tam Kung Temple is currently occupied by an open-air fee-paying car park under short term tenancy. The space at the waterfront is largely barren and degraded and is of low quality and landscape value. Existing vegetation in the LCA consists of limited street trees and amenity planting within roadside amenity areas and pockets of public open spaces. Generally, the LCA constitutes a fairly simple landscape of large-scale elements which are enclosed, moderately coherent and of limited overall value. Significant landscape features located within LCA 6 include the Tam Kung Temple (Grade 1 historical building).

Condition and Management: The LCA is of moderate condition possessing a partially intact pattern of topography with built and natural landscape features. In terms of management, enhancement of existing resources within the public realm at the waterfront would be desirable to promote quality spaces and destinations. The conditions of the public realm at the waterfront should be attractive so as to provide a destination space of real amenity value to the public.

Sensitivity of LCA 6: The sensitivity of the LCA is assessed below:

- Quality: Low – The LCA is predominantly characterised by old and new medium and high-rise buildings of high development density. Old building stocks are identified within a proportion of the LCA. These are in need of rehabilitation/revitalisation. Whilst a number of open spaces are provided within the LCA, they are fragmented by infrastructure e.g. the IEC and pedestrian footbridges. The LCA also features an industrial landscape comprising the Shau Kei Wan PTW and the adjacent shipyards that are located at its northern extent. As described above, the majority of the vegetation within this LCA is limited to tree planting and amenity planting within roadside amenity areas and public open spaces. The majority of the vegetation is in a moderate condition and consists of common species. Except for the *Ficus virens* on Shau Kei Wan Main Street East, none of the vegetation in the area is of cultural significance. There are also a number of derelict spaces. The overall quality is therefore considered low;
- Rarity: Low – The LCA is dominated by a mixture of old and new residential and commercial buildings that exist in many areas on Hong Kong Island e.g. Sai Wan Ho, Wan Chai and Causeway Bay, etc. This development character is by no means unique and therefore the rarity of the LCA is considered low;
- Reversibility: Low – The LCA is largely dominated by man-made features. The redevelopment projects (e.g. the urban renewal project at the corner of Shau Kei Wan Road and Nam On Street by Hong Kong Housing Society) within the LCA also indicate that the LCA is tolerant to change. Features with historical significance that warrant conservation include the Tam Kung Temple and the identified OVT;

- Maturity: Moderate – Whilst it was stated previously that aged buildings stocks are located within this LCA, very few of them are considered to be of significant heritage value (except for the Tam Kung Temple which is a Grade 1 historical building). New developments which form part of the character of the LCA are also identified in the area. The *Ficus virens* located on Shau Kei Wan Main Street East is the only registered OVT within the LCA; and
- Value: Low – The presence of old building stock is to a degree offset by the qualitative benefit of the historic temple and OVT. The majority of the old building stock is, however, showing signs of dilapidation. This does not positively contribute to the value and character of the LCA. On balance, the aggregate value for the LCA is considered low.

The sensitivity of LCA 6 is therefore considered to be *low*.

Magnitude of Impact: The proposed enhancement of Shau Kei Wan waterfront, including extension of Aldrich Bay Promenade, provision of a temporary heritage park, facade treatment of the shipyards and the adjoining Shau Kei Wan PTW, and improvement to the pedestrian environment of Tam Kung Temple Road by street planting, paving improvement and introduction of traffic calming measures will materially enhance the amenity and landscape quality of the area (**Figures 5.8 – 5.11 and 8.3**). These initiatives are mainly located within the northern areas of the LCA and will constitute a material enhancement of visual amenity and connectivity. Given the scale of the proposed enhancement measures is relatively small, the magnitude of impact of the proposal is therefore considered to be *small*.

Significance of Impact: Given the assessments in relation to the magnitude of the impact and sensitivity of the LCA, it is considered that the impact of significance on the subject LCA will be *insubstantial* during construction. It should, however, be emphasised that the impact on the subject LCA during operation is considered to be *slightly positive* in that it materially enhances the amenity of the area.

LCA 7: Shau Kei Wan Typhoon Shelter

Description of Landscape Character: This typhoon shelter landscape is enclosed to the west, south and east by the urban areas of Sai Wan Ho and Shau Kei Wan and to the north by breakwaters. The landscape resource consists predominantly of the area of water itself and related marine features. The latter includes breakwaters, quays, and large groupings of fishing boats and sampans, as well as moored pleasure vessels. The numerous vessels in the typhoon shelter create a fairly colourful landscape which is intensified when the shelter is full. The encircling breakwaters and numerous vessels in the typhoon shelter create a varied landscape of small-scale elements, which has a character that is very enclosed and moderately coherent. There are no significant landscape features within LCA 7.

Condition and Management: The LCA is of low to moderate condition possessing a varied topography artificially engendered by vessels moored within the typhoon shelter. Management of landmark fringes would serve to promote quality edges to the waterfront and to enhance the attractiveness of the typhoon shelter landscape.

Sensitivity of LCA 7: The sensitivity of the LCA is addressed below:

- Quality: Moderate – The LCA is predominantly characterised by the vessels moored within the typhoon shelter and marine-related features. As described above, the vessels create an interesting landscape of small-scale elements which are considerably coherent. No vegetation is located within this LCA. The quality of this LCA is considered moderate;
- Rarity: Low – The LCA is dominated by the typhoon shelter which can be found in a number of locations at the Victoria Harbour. The rarity of LCA 7 is considered low;
- Reversibility: Low – The LCA is largely characterised by the vessels and the marine-related features. The marine-related features are man-made features unlikely to be relocated;
- Maturity: High – Shau Kei Wan was historically a fishing village, therefore the provision of the typhoon shelter therefore has a strong cultural heritage connection to this regard. Maturity is accordingly considered high; and
- Value: Moderate – Given the historical background of the Shau Kei Wan as a fishing village, the typhoon shelter has a strong historical connection. Taking into account the above-mentioned ratings in respect to quality, rarity, reversibility and maturity, LCA 7, however, is considered moderate in value.

The above assessments indicate an average value of *moderate* being ascribable to the LCA. The overall sensitivity of LCA 7 is considered *medium*.

Magnitude of Impact: Given that the proposal is largely confined to the south of this LCA, it will have *negligible* impact to the integrity of the subject LCA.

Significance of Impact: The LCA is identified to have a *medium* sensitivity. The proposal will have *negligible* impact to the integrity of the subject LCA during construction and operation. The proposal is therefore likely to have an *insubstantial* impact on this LCA during both construction and operational phases.

LCA 8: Hong Kong Museum of Coastal Defence and Lei Yue Mun Park and Holiday Village

Description of Landscape Character: The landscape comprises a ridge of lowland rising to 188mPD which runs from the foothills of Mount Parker to the coast. It is divided into two by the IEC which traverses through it in a deep cutting. Development close to the coast and specifically located in the Study Area comprises the Hong Kong Museum of Coastal Defence, a museum developed in a former coastal defence fort. The Museum is recognisable by its white tensile canopy which stretches over an original gun emplacement. Development at the southeast of the LCA is the Lei Yue Mun Park and Holiday Village which accommodated former British military facilities and has since become a recreational area. Other features in the landscape include engineered slopes, highway infrastructure, winding access roads and a service reservoir. Generally, this is a varied landscape of moderate scale elements which has a character that is both open and somewhat fragmented. Within LCA 8, significant landscape features include a number of historic buildings related to the old Lei Yue Mun Fort.

Condition and Management: The LCA is of moderate to good condition possessing a partially intact pattern of topography with built and natural landscape features. The inclusion of the proposed Sky Trail will serve to facilitate enhanced access. Its inclusion will have a moderate impact on existing landscape resources. Periodic structural maintenance will be required. Access will be achieved from the proposed Sky Trail, thus the overall impact will be slight.

Sensitivity of LCA 8: The sensitivity of the LCA is assessed by the following criteria:

- Quality: High – The LCA features extensive tree cover and a moderate to significant diversity of land uses which are provided by the range of museum related facilities on site. Whilst the majority of the vegetation consists of common species with little cultural significance (save for the OVTs mentioned below), given the large extent of the tree cover, the overall quality of the LCA is considered high;
- Rarity: High – The area features an extensive tree cover and contains a number of unique features (e.g. heritage buildings) that enhance the diversity of the landscape. A LCA of such diversity is considered relatively rare within the northern extent of the Eastern District of Hong Kong Island and is therefore rated as high;
- Maturity: High – The LCA features a number of historical buildings related to the Lei Yue Mun Fort. A number of OVTs are also identified within LCA 8. These include seven *Ficus microcarpa*, one *Scolopia saeva*, one *Eucalyptus cinerea*, two *Celtis sinensis* and one *Casuarina equisetifolia* located within Lei Yue Mun Park. The maturity of the LCA is accordingly rated as high;
- Reversibility: Moderate – The number of historical buildings and OVTs limit the reversibility of LCA 8, albeit that the current functions within the area have allowed a degree of the original appearance of the area to be restored. Consequently moderate reversibility is considered as an appropriate rating; and
- Value: High – The Hong Kong Museum of Coastal Defence and Lei Yue Mun Park and Holiday Village are considered as an LCA of medium quality. The maturity and rarity of this LCA are considerably high. The reversibility of the LCA is considered moderate. To this end, the value of this LCA is considered medium.

The above assessments indicate an average high rating. The sensitivity of LCA 8 is therefore considered *high*.

Magnitude of Impact: The design measures proposed within the LCA are confined to the northern coastal slopes which fall gradually to the sea. The proposed Sky Trail will be located on the contour at approximately 15-20mPD. This will ensure that there is no adverse physical impact on the heritage features contained within the LCA.

Trees and shrubs will require to be lopped to facilitate construction of the Sky Trail. Landscape management will be implemented to ensure recovery of affected species and plant material will be generally trained over the Sky Trail to shroud its overall structure. The intention is to promote integration of the structure with the prevailing landscape regime. Construction of footings to support the Sky Trail will require slight modification of the slopes adjacent to the Museum of Coastal Defence. Spacing of the footings will be at approximately 25m. Upon maturation of remedial planting, impacts upon slopes will be largely imperceptible. It should be noted that none of the OVTs will be impacted by the proposed Sky Trail, given the OVTs identified within LCA 8 are located within Lei Yue Mun Park which is distant from where the Sky Trail will be located upon.

The initiatives proposed under the Study are mainly located within the northern areas of the LCA and will constitute a material enhancement of visual amenity and connectivity. The Sky Trail is to be comprehensively integrated with the existing landscape and topographical context (**Figures 5.13 and 8.3**). Whilst minor clearance of shrubs and some lopping of trees will be required during construction, subsequent remedial planting and management of the natural landscape will serve to materially enhance

the appearance of areas along the extent of the Sky Trail. The integrity of the LCA in its present condition will therefore be largely retained and, over time materially enhanced. To this end, the magnitude of impacts of the proposed Sky Trail will be *small.*

Significance of Impact: As stated above, the subject LCA is identified to have a high sensitivity and the Sky Trail proposal is considered to have a small impact on the LCA during construction. The proposed Sky Trail will, however, have negligible impact upon the LCA during operation. The feature will, as with similar features in India and Australia, be significantly integrated with the existing planting regime. The significance of impacts induced by the proposal is therefore considered to be *moderate* during construction and *insubstantial* during operation. This being said, the proposed Sky Trail is also anticipated to have a *positive* impact on the amenity and landscape quality of the area.

LCA 9: Heng Fa Chuen

Description of Landscape Character: This low-lying urban landscape is entirely developed as medium-rise private housing of homogenous appearance established on a land formation. There are approximately 50 residential towers of a similar height, of which approximately 20 are located on a huge podium above the Heng Fa Chuen MTR depot and shopping mall. Others lie on the eastern side of Shing Tai Road next to the coast. Existing vegetation is characterised by street trees and amenity planting within small sitting-out areas and roadsides. Other features in this landscape include Lingnan Secondary School, a seawall and a promenade. Generally, this is a relatively varied landscape of large-scale elements which has a character that is both enclosed and moderately coherent. There are no significant landscape features within LCA 9.

Condition and Management: The LCA is of moderate condition possessing a partially intact pattern of topography with built and natural landscape features. The area is subject to a management regime that ensures a consistent landscape character and appearance. Large parts of the LCA are not publicly accessible.

Sensitivity of LCA 9: The sensitivity of the LCA is assessed by the following criteria:

- Quality: High – As described above, the LCA is dominated by an existing medium-rise housing development. Whilst the housing blocks are homogenous in appearance, they are of reasonable quality and well-maintained. A waterfront promenade subject to private management also features within LCA 9. The majority of vegetation is considerably well-maintained and of reasonable condition. None of the vegetation within the LCA is of cultural significance;
- Rarity: Low – The LCA features a residential estate of homogenous appearance with open space provision, which can be frequently found in Hong Kong. Rarity is therefore considered low;
- Maturity: Low – Although the area accommodates an established residential estate, it has little heritage. No declared monuments or graded historical buildings are located within the LCA. Also, no OVTs are identified within the LCA. The area is therefore of low maturity;
- Reversibility: Low – The functions and utility of the area is firmly established. Reversibility is therefore unlikely and is accordingly rated as low; and
- Value: Moderate – Although the area features a considerably high quality residential estate with open space provision, the LCA is low in terms of rarity and maturity. To this end, LCA is considered to have a moderate value.

Given the above assessments, an overall moderate rating is apparent. The sensitivity of LCA 9 is considered *medium*.

Magnitude of Impact: None of the key sites and waterfront connectivity proposals are located within this LCA. The integrity of the present landscape character is retained as no interventions are proposed within the LCA. It is therefore expected that the impact on the character of the subject LCA will be *negligible*.

Significance of Impact: The subject LCA is considered to have a medium sensitivity. No perceptible impacts that would materially alter its character will occur. Therefore, the significance of landscape impacts to this LCA are considered *insubstantial* during construction and operation phases.

LCA 10: Chai Wan Cargo Handling Basin

Description of Landscape Character: This coastal urban landscape area is entirely developed, which is mainly occupied by industrial uses, cargo handling, storage and Government uses. These are all located around the cargo handling basin on the coast. The landscape is characterised by large homogenous warehouses, godowns and medium-rise industrial buildings with extensive areas of open container storage with almost no vegetation. Other features in this landscape include wharfs around the cargo handling basin, loading bays, a bus depot, a Government logistics centre and the sea wall adjoining Lei Yue Mun. Generally, this is a simple landscape of large-scale elements which has a character that is both enclosed and only moderately coherent. There are no significant landscape features within LCA 10.

Condition and Management: The LCA is of poor condition possessing a substantially degraded pattern of varied topography with built and natural landscape features. Significant management would be required to enhance and improve the physical character and amenity of the LCA.

Sensitivity of LCA 10: The sensitivity of the LCA is assessed by the following criteria:

- Quality: Low – As described above, the LCA is characterised by a homogenous landscape comprising large-scale industrial elements e.g. warehouse, godowns, cargo handling basin and bus depot, etc. The green coverage within the LCA is limited and there is little vegetation. The majority of the vegetation is in a moderate condition and includes common species. None of the vegetation in the area is of cultural significance;
- Rarity: Low – The LCA features an industrial area which can be found in other areas within Hong Kong such as Kwun Tong and Wong Chuk Hang;
- Maturity: Low – Although the area is an established industrial area, the area has no historical or cultural significance. The LCA features no declared monuments, graded historical buildings or OVTs;
- Reversibility: Low – The area features well-established man-made features. Given that the LCA is likely to see progressive upgrading and rehabilitation, reversibility is likely to be low; and
- Value: Low – The area features an industrial area of poor quality. An LCA of such could be found elsewhere in Hong Kong. There are no elements of historical significance within the LCA. Limited vegetation and no OVTs are located within the LCA.

Given the above assessments, the overall rating for the LCA is low. The sensitivity of LCA 10 is correspondingly considered *low*.

Magnitude of Impact: The proposed footpath alongside the cargo handling basin and streetscape enhancement will enhance the amenity and landscape quality of the area (**Figures 6.10, 6.14 and 8.4**). Visual amenity and connectivity will also be enhanced through the introduction of the landscape enhancement measures. Given the limited scale of the proposals, it is anticipated that it will have a *small* magnitude of impact.

Significance of Impact: The subject LCA is considered to have a *low sensitivity*. The proposals suggested within the LCA are considered to have *small* impact *during construction*. Subsequent to the implementation of the enhancement measures, no perceptible impacts will occur that would materially alter its character. Instead, the streetscape within the LCA will be positively enhanced. To this end, the significance of impact to LCA 10 will be *insubstantial* during construction and *slightly positive* during operation.

LCA 11: Siu Sai Wan Residential Area

Description of Landscape Character: This low-lying flat landscape lies on the coast of the Tathong Channel. It is largely developed as high-rise housing within a network of streets and open spaces. The circular Siu Sai Wan Road connects different residential estates. Island Resort is a high-rise mixed retail/private residential development located at the water edge. Other high-rise developments set in front of the extensive re-graded lower slopes of Pottinger Peak include Fullview Garden, Cheerful Garden and Harmony Garden. Existing vegetation is characterised by street trees and amenity planting within roadside amenity and public open spaces. Other features within the landscape of the area include the Siu Sai Wan Sports Ground, Chai Wan Swimming Pool, Siu Sai Wan Road Garden and Siu Sai Wan Promenade. Generally, this is a varied landscape of large-scale elements which has a character that is both generally enclosed and colourful.

Condition and Management: The LCA is of moderate condition possessing a partially intact pattern of topography with built and natural landscape features. In terms of management, enhancement of existing resources would be desirable.

Sensitivity of LCA 11: The sensitivity of the LCA is assessed by the following criteria:

- Quality: Moderate – LCA 11 is largely dominated by well-maintained high-rise residential developments of reasonable quality. A number of institutional establishments e.g. schools are located within the area. As stated above, the LCA also features established open spaces at the waterfront (e.g. the Siu Sai Wan Promenade). Existing vegetation within the LCA is largely limited to street planting and vegetation within managed open spaces. The majority of the vegetation is in a moderate condition and of common species. None of the vegetation in the area is of cultural significance;
- Rarity: Low – The existing Siu Sai Wan Promenade is one of the few waterfront promenades provided within the Eastern District. This being said, LCA 11 is largely dominated by man-made features which are frequently found in other areas on Hong Kong Island;

- Reversibility: Low – As above, the LCA is largely dominated by man-made features e.g. residential developments which can be identified in many areas in Hong Kong. These are unlikely to change in function and reversibility will be low;
- Maturity: Low – The above-mentioned waterfront promenade is an established open space enjoyed by members of the public and visitors. Residential developments within the LCA are predominantly developed in the 1990s and early 2000s. No OVTs and declared monuments/graded historical buildings are identified within the LCA. The relative modernity of the area means that a low maturity value is ascribable; and
- Value: High – The built environment, sports and open space provision are all important features of the area and consequently it is considered that a high value rating should be ascribed.

On average, a low to moderate rating results from the above assessment. The sensitivity of LCA 11 is considered to be *medium*.

Magnitude of Impact: None of the key site and waterfront connectivity proposals are located within this LCA. It is therefore expected that the impact on the character of the LCA will be *negligible*.

Significance of Impact: Whilst it is stated above that the LCA is of medium sensitivity, no enhancement proposals have been suggested for the LCA and therefore no perceptible impacts will occur that would materially alter its character. The landscape impact on this LCA will be *insubstantial* during construction and operation phases.

13.4 Landscape Resources

Whilst the preceding section has specifically addressed the landscape character of the Study Area, this section provides a broad assessment of the landscape and visual impacts of the recommended enhancement proposals that have been developed for the Study Area. The assessment has addressed the realisation of proposals during construction and operation phases. As the proposals are conceptual in nature, impacts may alter when the designs are developed and the projects are implemented. The assessment includes the following:

- methodology;
- brief introduction to the areas and proposals;
- the identification of potential landscape and visual impacts during the construction and operation stages and assessment on their magnitude and potential residual significance;
- brief recommendations on mitigation measures and implementation programmes; and
- a conclusion to summarise the magnitude and significance of the impacts caused by the enhancement proposals.

13.5 Methodology

Appraisal of landscape and visual impacts is not an objective science but is based upon a structured and systematic evaluation of predicted impacts, informed by professional judgement and experience. Landscape and visual impacts against specific proposals have been assessed against three principal criteria, namely:

- Locations of the landscape resources (the physical components of the landscape) (**Figure 13.2**);
- Impacts on visually sensitive receivers (VSRs) (those people who will see the completed project) (**Figure 13.3**); and
- Consistency with published landscape planning policy.

The preliminary assessment identifies the 'significance' of landscape and visual impacts at a general qualitative level. The significance of impacts is assessed based on the sensitivity of the resources and characters of VSRs as well as the magnitude of the impact. The distance of views, the size of VSR groups, the change of character and the existing qualities of the views have been taken into account in assessing the magnitude of visual impact. The significance of impacts is measured as 'Substantial', 'Moderate', 'Slight' or 'Insubstantial' which is shown in **Table 13.1**.

Table 13.1 Relationship between Sensitivity and Impact Magnitude in Defining Impact Significance

	Large	Moderate	Moderate / Substantial	Substantial
Magnitude of Impact	Intermediate	Slight / Moderate	Moderate	Moderate / Substantial
	Small	Insubstantial / Slight	Slight / Moderate	Moderate
	Negligible	Insubstantial	Insubstantial	Insubstantial
		Low	Medium	High
		Sensitivity		

The two key sites identified in the Study have been regarded as Visual and Landscape areas for the purposes of the landscape and visual impact assessment. Their locations and urban design proposals are depicted in **Figures 7.1, 7.3 and 7.5**. The figures in Chapters 5 to 8 present the recommended option of enhancement proposals with photomontages illustrating the visual impacts of the improvement works as well as the proposed landscape enhancement measures.

13.6 North Point Ferry Piers

13.6.1 Introduction

North Point Ferry Piers are located at the north end of Shu Kuk Street and Kam Hong Street. The pier structures are old and somewhat dilapidated. The west pier currently houses a series of fish market booths. A 20m wide temporary waterfront promenade at the Eastern Lot of the ex-NPE site has been opened for public use in 2010.

The planning brief of the ex-NPE site specifically requires a 20m wide promenade to be provided along the waterfront. This requirement has been adopted in the recommended option. **Figures 7.3 and 7.4** show the design and facilities proposed at the North Point Ferry Piers key site. Soft landscaped open space, walkway, civic plazas and recreational uses including fitness stations, elderly recreational facilities and a cycle track for recreational and leisure purposes are proposed in the 20m wide promenade. Low and high level planting will also be provided. High level planting will be used to provide shade and shelter as well as visual screen at the southern edge of the promenade to soften its interface with the proposed future development of the ex-NPE site.

Under the recommended option, the North Point Ferry Piers will maintain its existing ferry services whilst the western berth of the North Point Eastern Ferry Pier is proposed for leisure boat use. Renovation and refurbishment of the ferry piers with integration of restaurants, commercial and entertainment uses is proposed. Cafes will be provided on the rooftop of both piers which will also be landscaped for public access.

As described earlier in this report, it is proposed to construct a boardwalk underneath the IEC. This will extend on an east to west alignment north of the proposed promenade adjacent to the existing ferry piers. The boardwalk will be accessible from the ex-NPE promenade. The boardwalk and the ferry piers will be the main activity area with provision of retail shops, cafes and art display as well as present an opportunity of integrating the existing fish market stalls at the western pier. Benches will be provided to allow the public to enjoy harbour views. Planting (mostly low-level planting and climbers due to the exposed location) will be provided to soften and enhance the visual appearance of the boardwalk.

13.6.2 Landscape Impacts

At present, the site at the North Point Ferry Piers and the adjacent bus terminus is, as noted above, largely devoid of any tree planting and has no significant landscape features. The major landscape resource areas (LRs) located at the North Point Ferry Piers key site are as follows:

- LR1: An open area to the immediate south of the entrance of the North Point Ferry Piers. The area presently contains intermittent tree and shrub planting;
- LR2: Tree planting on both sides of Shu Kuk Street near the pier; and

- LR3: The water body of Victoria Harbour abutting land areas contained within the key site.

LR1: Open area south of the entrance of the North Point Ferry Piers with tree and shrub planting

Sensitivity of LR1: The sensitivity of the landscape resource is assessed with respect to the following criteria:

- Quality: Low – A cluster of *Aleurites moluccana* in tree pits are located at the open area south of the entrance of the North Point Ferry Piers. A number of semi-matured trees of different species including *Dypsis lutescens*, *Callistemon viminalis*, *Archontophoenix alexandrae* and *Caryota mitis* are also identified in planters in the area. Whilst the cluster of *Aleurites moluccana* are considered to be of moderate quality, the vegetation in the planters are showing signs of being neglected. None of the species identified above is considered as rare species. Also, none of the vegetation in the area is of cultural significance;
- Maturity: Medium – The *Aleurites moluccana* cluster is considerably matured. The trees in planters, however, are only semi-matured;
- Rarity: Low – The planting species identified in the subject open area are all commonly found in Hong Kong. The tree and shrub planting are also considerably small in scale;
- Reversibility: High – All planting species identified are exotic to Hong Kong. All tree and shrub planting identified in the subject open area are man-induced. As above, the extent of planting is limited; and
- Value: Low – Whilst the LR1 is of reasonable maturity, it is a man-induced landscape resource and is commonly found in Hong Kong. The identified vegetation cluster is of varied quality and also small in scale.

Given the above assessments with respect to the quality, maturity, rarity, reversibility and value, the sensitivity of LR1 is considered to be *low*.

Magnitude of Impact: Under the recommended option, the open area will be enhanced by improving its existing physical condition. New measures will include the introduction of new paving, sitting areas, and provision of space for public art displays. Tree and shrub planting are proposed to enhance the quality of greening at the open area and along the waterfront promenade adjacent to the North Point Ferry Piers. Existing tree planting will be retained and incorporated as part of the landscape regime. No trees will be felled or transplanted within the site. Semi-mature species will be utilised on day one which will engender a sense of completeness. There will be no perceptible impacts on the existing landscape regime (i.e. the impacts will be insubstantial). The new measures will materially enhance a largely neglected area and will have a significant positive impact. To this end, the magnitude of impact will be *negligible.*

Significance of Impact: Given the LR is only comprised of intermittent tree and shrub planting, it is considered that the sensitivity of the subject LR will be *low*. The magnitude of impact introduced to the landscape resources are considered to be *negligible* as no trees will be felled. The significance of impact during construction will therefore be *insubstantial*. During operation, given that the proposal will enhance the landscape regime at the subject open area, it is considered the significance of impact to the subject LR will be *moderately positive*.

LR2: Tree planting on Shu Kuk Street

Sensitivity of LR2: The sensitivity of the landscape resource is assessed with respect to the following criteria:

- Quality: Medium – LR2 comprises a few *Ficus benjamina* in tree pits along the northern end of Shu Kuk Street. *Ficus benjamina* is not considered as a rare species. The identified *Ficus benjamina* also have no cultural significance. Overall, they are of moderate condition;
- Maturity: High – Whilst the *Ficus benjamina* are considered matured, they are not registered OVTs;
- Rarity: Low – *Ficus benjamina* is commonly found in Hong Kong. The line of street trees is also considerably small in scale;
- Reversibility: High – *Ficus benjamina* is exotic to Hong Kong. The *Ficus benjamina* identified at Shu Kuk Street are man-induced. The extent of planting is limited; and
- Value: Low – Whilst the LR2 is of reasonable quality and maturity, it is a man-induced landscape resource. The identified species is common. The subject street planting is also relatively small in scale.

Given the above assessments with respect to the quality, maturity, rarity, reversibility and value, the sensitivity of LR2 is considered *low*.

Magnitude of Impact: Shu Kuk Street is proposed for streetscape enhancement in the Study (**Figure 6.2**). Enhancement of the streetscape regime along Shu Kuk Street is considered important as the street provides an important direct link to the North Point waterfront and the key site. Existing street trees will be retained and new trees and shrub planting will be added to enhance the landscape features and pedestrian environment. Hard and softscape enhancement measures will also be introduced. These include the provision of enhanced paving, benches and signage (i.e. directional and information signage). The improvement measures will, overall, induce a positive landscape impact, given that the existing landscape regime will be largely unaffected and ultimately the character area will be materially and positively enhanced. To this end, the magnitude of impact is considered *negligible.*

Significance of Impact: The sensitivity of LR2 is *low*. The magnitude of impact is considered *negligible.* Existing trees will be protected with proprietary measures during construction. It is anticipated that the significance of impact on the LR will be *insubstantial* during construction. Once the soft and hard landscape works have been completed, the protection will be removed. As stated above, the existing trees will be retained. The additional planting proposed as part of the recommended enhancement will also augment and enshrine the overall quality of LR2. It is therefore considered that the significance of impact to the subject LR will be *moderately positive* during operation.

LR3: Victoria Harbour

Sensitivity of LR3: The sensitivity of the landscape resource is assessed with respect to the following criteria:

- Quality: Low – The extent of Victoria Harbour within the subject study area is, by and large, dominated by the IEC. Numerous reclamation works have also been carried out at the Victoria Harbour since the 19th century. Therefore, the quality of Victoria Harbour as a landscape resource has been significantly compromised. No existing vegetation has been identified as part of this LR;
- Maturity: High – The Victoria Harbour is of significant historical importance to the development of Hong Kong;
- Rarity: High – The Victoria Harbour is widely considered as a unique landscape feature and resource to Hong Kong;
- Reversibility: Medium – The water edge of the Victoria Harbour is currently dominated by a range of man-made features which are highly reversible. The water body of the harbour itself, however, is of low reversibility; and
- Value: Medium – Whilst the Victoria Harbour is considered to be a highly valuable landscape resource to the general public, the portion of the Victoria Harbour that will be impacted by the proposal is largely compromised by the existing IEC.

Given the above assessments with respect to the quality, maturity, rarity, reversibility and value, the sensitivity of LR3 is considered *medium*.

Magnitude of Impact: The proposed boardwalk will straddle a body of water along its length at a general width of about 5m (**Figure 5.3**). In this sense, the amenity and landscape value of the sea is partially compromised over the length of the boardwalk. The flow of water, however, will not be compromised by the development of the boardwalk. The boardwalk will provide wider public access and proximity to the harbour. Thus, given the limited magnitude of the extent to which the sea will be covered and is already covered at this point by the IEC, the level of impact to the sea as a landscape resource is anticipated to be *intermediate.*

Significance of Impact: As stated above, the subject LR is medium in sensitivity whilst the magnitude of impact introduced to the subject LR is considered intermediate. The construction of the boardwalk will not directly impact on the flow of water of the Victoria Harbour. The existing area abutting the ferry piers is currently largely devoid of trees and softscape. The proposed improvement works at the ferry piers and in conjunction with the provision of the 20m wide promenade of the ex-NPE site will significantly improve the landscape quality of the area. These measures, which will include tree and shrub planting along the waterfront area, will ultimately provide a pleasant, verdant and publicly accessible space. Thus, in short, the public will enjoy significantly enhanced amenity without significant impact on existing landscape resources. The impact of all measures will ultimately be an insubstantial negative impact with an overall beneficial impact on the appearance and quality of the subject LR. To this end, it is considered that the significance of impact to the subject LR will be *moderate* during construction and *slightly positive* during operation.

13.6.3 Visual Impacts

The principal VSRs within close proximity of the North Point Ferry Piers key site include the following:

- VSR1: Government office towers to the east of the North Point Ferry Piers and K. Wah Centre, ICAC Headquarters and Kodak House;

- VSR2: Residential buildings to the south of the North Point Ferry Piers, between Shu Kuk Street and Tin Chiu Street and along Java Road; and
- VSR3: Occupants of flats along the eastern portion of Provident Centre.

Construction Impacts

Hard and Soft Landscape Treatments: The construction process of the 20m wide promenade and streetscape enhancement will be carefully phased and planned to minimise the level of visual impact. The majority of the construction works involve mainly low level works such as paving, low walls and shrub planting which their potential visual impacts will be minor. The higher level works such as tree planting and street light installation will also have minor impacts. During construction, areas within which works take place will be surrounded by bespoke decorative hoardings. This will mitigate adverse low level visual impacts. All principal VSRs with direct sight of works areas will perceive slight/moderate visual impacts when construction takes place. The duration of impact is anticipated to not exceed one and a half years. Areas are expected to open up incrementally as and when works are completed which will produce incremental enhancement of the area and existing landscape resources.

Boardwalk and Pier Enhancement: A similar level of visual impact will be felt during the pier enhancement works and the construction of the IEC boardwalk. Direct views will be partially blocked by the IEC which will shield direct views to the works being undertaken below the highway. There is also a fairly significant distance between the VSRs and the likely area in which works will take place. At the same time, works are not expected to be overly intrusive as the major sections of the boardwalk will be pre-fabricated off site and ultimately craned into position with the use of a lighter. As with landscape measures, bespoke decorative hoardings will be employed to mitigate low level visual impacts. The visual impact of pier enhancement works will similarly not be significant and is also likely to be of slight/moderate impact. The duration of impact is anticipated to not exceed one year, given that the work on site is either relatively simple and that fabrication will be undertaken off site. Installation will not be complicated nor will be of long duration.

Operational Impacts

Hard and Soft Landscape Treatments: The proposed design has been conceived in a manner that will be compatible with the present on-site surroundings and character. The measures will also form a positive adjunct to future development at the ex-NPE site. From day one of operation, the new paving, street furniture and tree and shrub planting will improve the visual quality of the area from near and medium distances, which will be appreciated by users of the promenade and passers-by. The use of semi-mature trees will ensure that this effect is achieved from the outset. The increased levels of paving co-ordination and street furniture sophistication together with new tree and shrub planting will provide a positive visual benefit upon completion of construction work. No sensitive negative impacts are therefore anticipated.

Boardwalk: The proposed continuous boardwalk under the IEC will largely be imperceptible from high level visual receptors but be perceptible from the level of the promenade and around the environs of the ferry piers (**Figures 5.3, 5.4 and 7.4**). Thus the visual environment and views to the harbour will experience a moderate impact. This impact, however, will be significantly compensated through the greater visual access to the harbour via the boardwalk. Instead of a restricted view to the harbour that is partially obscured by the structure of the IEC, users of the boardwalk will be able to enjoy clear and unimpeded views. Similarly, it is intended that the structure of the boardwalk will be of a lightweight but durable structure that will be edged by transparent glass balustrades. Thus the limited extent of structure and the visual permeability of associated balustrades will avoid the realisation of an obtrusive structure that would otherwise impact significantly to views to the harbour from the existing shoreline. In short, whilst an impact to the visual environment will arise, this is anticipated to be of an acceptable magnitude.

Pier Structures: The renovation and refurbishment of the existing pier structures will improve the value and quality of views from key visual receptors, creating a generally positive impact. The measures will provide a significant enhancement of the visual character of the area and transform the ferry piers into a positive visual asset.

In overview, the operational impacts of the proposed works are anticipated to be largely positive except for a degree of obstruction by the boardwalk structure. However, the latter impact could be partially mitigated through the application of appropriate design measures to enhance visual porosity of the boardwalk. The benefits of the boardwalk are likely to outweigh the negative visual impact.

The proposed interventions will ultimately instil a positive enhancement of the waterfront and its visual environment, albeit that slight/moderate impact will occur during construction. The long term impact will be slight. The magnitude of change will be beneficial and moderately positive in significance as the currently degraded area will be regenerated by the proposed enhancement measures.

13.7 Hoi Yu Street Key Site in Quarry Bay

13.7.1 Introduction

The key site consists of two parts, the open area at the EHC Tunnel Portal and the waterfront area at Hoi Yu Street, which are separated by the IEC. The recommended option for the Hoi Yu Street key site envisages that the EHC Tunnel Portal site could accommodate an indoor structure/facility, such as a performance centre or an IMAX theatre. Given the concerns on air quality at the EHC Tunnel Portal site, an interesting indoor use will greatly mitigate the air quality issue that would pertain to a conventional open space. The proposed elevated walkway with innovative artistic design would provide an additional connection from the hinterland to the waterfront. The design of the elevated walkway will enhance the visual appearance of the structure and promote the walkway as an iconic element of the district.

The proposed waterfront promenade to the north of Hoi Yu Street will provide for recreational uses such as exercise areas and a cycle track for recreational and leisure purposes to cater for the need of local residents. Semi-mature trees and dense planting will be installed along Hoi Yu Street to create a sufficient buffer and green filter. Low-rise developments incorporating cultural, tourism and entertainment uses with retail premises and themed restaurants are proposed at the waterfront.

Figure 7.6 shows the photomontages of the Hoi Yu Street key site at the aerial view and the pedestrian view from Hoi Tai Street to the proposed performance centre/IMAX theatre at the EHC Tunnel Portal site.

13.7.2 Landscape Impacts

Landscape resources within the waterfront area at Hoi Yu Street are presently minimal. The landscape resources presently located within the key site principally lie at the edges of the EHC Tunnel Portal site adjacent to the abutting road network and the existing landscape buffer area located between the Hoi Yu Street waterfront site and the IEC. Views to the key site are partially obscured by high and low level planting and the numerous low and high level road structures.

Two landscape resources have been identified within the key site:

- LR4: Tree planting around the periphery of the EHC Tunnel Portal site; and
- LR5: Landscape buffer at the southern edge of the Hoi Yu Street waterfront site.

LR4: Tree planting around the periphery of the EHC Tunnel Portal site

Sensitivity of LR4: The sensitivity of the landscape resource is assessed with respect to the following criteria:

- Quality: High – A number of mature trees of significant height including *Melaleuca quinquenervia* and *Araucaria heterophylla*, etc. are located around the perimeter of the site. Shrub planting e.g. *Acacia auriculiformis* is also identified. The vegetation identified is generally in good condition. None of the identified species are considered rare and of cultural significance;
- Maturity: Medium – The vegetation identified at the periphery of the EHC Tunnel Portal site is considerably matured;
- Rarity: Low – All species of vegetation identified at the periphery of the EHC Tunnel Portal site is commonly found in Hong Kong;
- Reversibility: High – The species of vegetation identified at the periphery of the EHC Tunnel Portal Site are all exotic to Hong Kong; and
- Value: Medium – Whilst the LR4 is of reasonable quality and maturity, it is a man-induced landscape resource. The identified planting species are common in Hong Kong. LR4 is also relatively small in scale.

Given the above assessments with respect to the quality, maturity, rarity, reversibility and value, the sensitivity of LR4 is considered *medium*.

Magnitude of Impact: The existing trees are proposed to be retained and will form a visual screen to development proposed within the site. As most of the existing trees are located on the outer edges of the site, it is not anticipated that development within the site will necessitate their removal. The interior of the site is currently clear and has no planting associated with it. As a result, it is not anticipated that there will be any impacts on the LR during construction. Given the existing LR will remain largely unchanged, it is thus considered the magnitude of impact to be *negligible*.

Significance of Impact: During construction, the trees will be protected by proprietary measures. As a result, impacts on LR4 are anticipated to be *insubstantial.* During operation, the site will benefit from the existing mature trees. The landscape regime will be augmented by the planting of trees and shrubs in conjunction with the development of a multi-purpose indoor facility on

the site. As a consequence, the proposed development will provide for beneficial positive enhancement of the site and the volume and extent of landscape resources accommodated upon it. To this end, it is considered the significance of impact during operation to be *moderately positive*.

LR5: Landscape buffer at the southern edge of the Hoi Yu Street waterfront site

Sensitivity of LR5: The sensitivity of the landscape resource is assessed with respect to the following criteria:

- Quality: Medium – A number of *Eucalyptus camaldulensis*, *Macaranga tanarius* and *Leucaena leucocephala* are planted at the southern edge of the Hoi Yu Street waterfront adjacent to the IEC. Some shrubs comprising *Nerium oleander* and other self-seeded vegetation are also found along the southern boundary of the site. The remaining part of the site consists of a hardstanding that has been cleared and is devoid of landscape resources. Overall, the identified species are not uncommon in Hong Kong. They are also of little cultural significance. Overall, the conditions of the vegetation are considered moderate;
- Maturity: Medium – The *Eucalyptus camaldulensis* identified along the southern edge of the Hoi Yu Street waterfront site are considered immature. The *Macaranga tanarius* and *Leucaena leucocephala*, however, are considered matured;
- Rarity: Low – LR5 comprises both native and exotic species that are commonly found in Hong Kong;
- Reversibility: High – As mentioned above, *Eucalyptus camaldulensis*, *Leucaena leucocephala* and *Nerium oleander* are exotic to Hong Kong. On the other hand, *Macaranga tanarius* is a native species. Apart from the self-seeded vegetation and weed, the identified trees are man-induced at their current locations as part of the landscape buffer to the adjacent IEC; and
- Value: Low – Whilst LR5 is of reasonable quality and maturity, it is a man-induced landscape resource. The identified planting species are common in Hong Kong. LR5 is also relatively small in scale.

Given the above assessments with respect to the quality, maturity, rarity, reversibility and value, the sensitivity of LR5 is considered to be *low*.

Magnitude of Impact: Development proposal for the site does not envisage removal of existing trees. Retention of the planting will provide visual buffer along the edge of the site that will serve to mitigate possible visual impacts that may be experienced from the users of the IEC and residents and occupants at high level within development at the northern edge of Taikoo Shing. During construction, the existing landscape resources will be incorporated as part of the proposed landscape regime that will be developed in conjunction with mixed-use development at the waterfront site. As no removal or transplantation of the existing trees is anticipated, landscape impacts are considered to be *negligible.*

Significance of Impact: Again, the trees will be protected during construction which will cause a minor impact on the amenity provided by the trees. The introduction of additional planting will augment the current regime and produce positive landscape impacts. Thus, impacts on landscape resources will be *insubstantial* during construction.

During operation, the landscape regime will be augmented, where practicable, with semi-mature species which will provide a *moderately positive* and beneficial impact by enhancing the present extent and quality of landscape resources on-site.

13.7.3 Visual Impacts

Views to the proposed developments at the EHC Tunnel Portal site and at the Hoi Yu Street waterfront site are likely to be partially observed by a number of adjacent developments (mostly from high level locations given the maturity of the existing landscape and intervening highway structures). Principal VSRs located within close proximity to the Hoi Yu Street key site include the following:

- VSR4: Occupants of the lower floors of office developments along Hoi Tai Street, including the Chinachem Exchange Square, Lincoln House, Somerset House and the DCH Commercial Centre (most of these receptors, however, will have views blocked by high and low level planting within proximity of the key site);
- VSR5: Occupants of flats at high level in the northwestern part of Taikoo Shing; and
- VSR6: Occupants of office developments to the west of the key site including the Eastern Harbour Centre, and The Hong Kong and China Gas Company Ltd.

Construction Impacts

The significance of visual impacts will be greater when experienced in conjunction with a number of developments of significant scale within the Hoi Yu Street key site and the concomitantly longer duration of the construction process. During construction, the principal visual impacts will be associated with the development of the indoor entertainment facility at the EHC Tunnel Portal site, the proposed elevated walkway across the IEC and the waterfront related uses at the Hoi Yu Street waterfront site.

EHC Tunnel Portal Site: The development of the proposed low-rise indoor entertainment facility will require the use of tower cranes. The tower cranes will be in place for the majority of the construction period and will only be removed once topping off has been completed and the indoor fit out commences. It is anticipated that this condition will be in place for between 1.5 to 2 years. This impact will constitute a moderate to substantial visual impact on VSRs during the period. Once the cranes have been removed, the magnitude of visual impact will diminish significantly. The building structures constructed on-site will constitute the remaining visual impact and will only be observable from high level VSRs of the adjacent buildings as the existing landscape within the environs of the site and surrounding its edges will provide a degree of visual mitigation. The planting of more trees that can grow to significant height (should there be adequate space) could also provide additional mitigation. At the level of pedestrian circulation, views to the site would require to be mitigated through the use of bespoke hoardings. At the initial stages of construction, these would mitigate adverse views to construction works (and site offices etc.) at the level of pedestrian circulation. The installation of tower cranes and the gradual building out work occurring on-site would bring construction into greater visual prominence. At this stage, impacts would be of a moderate/substantial magnitude but would still fall within acceptable limits.

Landscape and Paving Treatments: The erection of street furniture, tree and shrub planting and other works associated with proposed landscape enhancements of the public realm within the vicinity of the IEC and the Hoi Yu Street promenade are not anticipated to have significant adverse visual impact. Semi-mature plants will be installed during construction. Works are proposed to be undertaken in a series of phases to limit the degree of impact at any one time. Areas will be opened up once works have been completed. Works areas will be screened from view with the use of bespoke hoardings which will be designed to be re-locatable as work moves from one stage to another. The construction and implementation of public realm works are anticipated to be completed within 5 months to 1 year. Incremental phasing of works will mean that visual impacts are only likely to be of a slight/moderate impact.

Footbridge: The new elevated connection to the waterfront will need to avoid creating impacts on traffic flow during the construction and installation phase. On-site enabling works are proposed to be confined to essential locations where the supports for the bridge structures will be located. These locations will be visually isolated and delineated with bespoke hoardings. Enabling works are therefore only expected to create an insubstantial to slight impact. The footbridge superstructure will be fabricated off site and will be craned into position when traffic volumes on the IEC are low. Consequently, visual impacts are expected to be insubstantial during the construction period.

Hoi Yu Street Waterfront Site: The waterfront has been designated for the cultural, tourism and entertainment uses with shops and themed restaurants as well as for the development of a waterfront promenade and provision of recreational uses. Development will commence with the construction of the low-rise buildings and temporary site works buildings. Existing landscape resources will be protected with proprietary protection measures. Views to the site at pedestrian level will be mitigated with the use of bespoke hoardings. This will mitigate low level visual impacts at the early stage of construction. High level receptors in close proximity to the site will, however, be able to observe works on-site. However, only few visual receptors will have direct visual access to the site. Site works will become more visually apparent once tower cranes are installed on site. At this stage, moderate visual impacts will become apparent to high level visual receptors and passing pedestrians. Once buildings are topped out and cranes are removed (after an estimated 1 to 1.5 year period) and greening and ground level finishes are installed, impacts will reduce to an insubstantial/slight magnitude. The level of impact will reduce further with the installation of on-site high and low level planting which will generally enhance the visual appearance of the site and further mitigate the impact of development.

Operational Impacts

EHC Tunnel Portal Site: The proposed multi-purpose performance centre/IMAX theatre is intended to be developed within the site without removal of or impact on existing mature trees. Additional on-site planting will further contribute to the visual mitigation of the facility. Correspondingly, it is suggested that the chromatic finishes applied to the facility are conceived to further mitigate visual impacts. During operation, the proposed facility will only be perceptible to high level receptors given the density of high level planting within and around the site. The addition of the supplementary measures suggested earlier will further mitigate visual impacts. Pedestrians using Hoi Wan Street and Hoi Tai Street and users of Quarry Bay Park will all perceive partial views to the facility (**Figure 7.6**). Views will be partially blocked by the current mature planting regime and other suggested planting measures implemented in conjunction with the facility as well as existing road and related structures.

As it is intended that the facility should be of a robust architectural quality and that greening and other mitigation will be applied to the structure, visual impacts are consequently anticipated to be of an insubstantial/slight magnitude.

Landscape and Paving Treatments: The introduction of paving enhancement within the environs of the EHC Tunnel Portal site and Hoi Yu Street waterfront area will greatly enhance the visual environment and its amenity value. As a consequence, such negative visual impacts are unlikely.

Footbridge: The footbridge is proposed to create a unique district feature. The bridge will be perceptible from a limited number of high level visual receptors. Direct views to most potential receptors within the environs of the proposed pedestrian bridge will be significantly obscured by the existing planting regime. Users of the IEC will also perceive brief views of the structure as they proceed along the highway. These views are, however, transient and not of the same magnitude as a fixed visual receptor. A specialist bridge architect should be commissioned to ensure that an aesthetically pleasing design is produce, which in turn will ameliorate the visual impact of the structure. It is anticipated that under this condition, the visual impact would be insubstantial.

Hoi Yu Street Waterfront Site: More intensive uses including cultural, tourism and entertainment facilities with shops and themed restaurants are proposed with a height of 5-6 storeys for the "OU" site in the west and 3-4 storeys for the other "OU" site in the east. Distant views of the developments will only be partially perceptible from high level due to the planting regime located within the environs of the site. The augmentation of that regime with semi-mature plant species will further mitigate visual impacts. At the pedestrian level, the building developments will be clearly perceptible. A section plan on **Figure 7.7** shows that the developments at the waterfront site would not generate significant adverse visual impact on the VSR5. Nevertheless, with the application of a quality architectural approach to design and the use of greening and quality façade finishes, the buildings should exude positive visual attributes. The introduction of hard and soft landscape treatments around the developments within the waterfront site will similarly enhance the quality of the space and introduce a marked improvement over and above its present condition. With the above measures in place, it is anticipated that the visual impacts will be of low magnitude and insubstantial/slight in nature with generally positive beneficial impacts.

A number of new facilities and attractions proposed for the Hoi Yu Street key site will serve to enhance the amenity and character of the area. The key proviso with respect to the introduction of new facilities is that they are well-designed and well-integrated with the environment. The proposed enhancement of the public realm will also improve the visual environment and the general amenity of the area. It is proposed that the whole project of Hoi Yu Street key site will be implemented during a similar time scale to ameliorate protracted impacts to the community. The operational impacts from day one are considered to be of low insubstantial/slight with generally positive 'large' favourable and beneficial impacts. The visual impact is expected to be at a low level with the mitigation provided by the presently dense planting regime and proposed future planting. At the same time, there will be no impact upon existing landscape resources. The present planting regime will instead be positively augmented by the planting proposals envisaged in conjunction with each of the interventions outlined above.

13.8 Waterfront Connectivity: Boardwalk underneath the Island Eastern Corridor and Sky Trail

13.8.1 Boardwalk underneath the IEC

The boardwalk underneath the IEC will be constructed of steel/galvanised iron. Subtle chromatic treatments will be applied to ensure that the structure will blend in with its environs. The structure will be supported by the existing pier structures that presently support the IEC. Sections will be fabricated off-site and will be craned in by lighters once enabling works are completed. It is anticipated that the works could be completed within twelve months. The construction and post-construction landscape and visual impacts are described below.

Landscape Impacts

As the boardwalk will be constructed underneath the IEC and over the sea, the construction and operation of the structure will not have a direct interface with the existing landscape regime inland. Thus, landscape resources on land will be unaffected and no negative impacts will occur. Only one landscape resource is impacted by the proposed boardwalk:

- LR6: Harbour-side Landscape Resources

LR6: Harbour-side Landscape Resources

Sensitivity of LR6: The sensitivity of the landscape resource is assessed with respect to the following criteria:

- Quality: Low – The harbour-side landscape resources are, by and large, comprised of the columns, pile caps and other structural elements associated with the existing IEC. The structural elements are brutalistic in nature. At present, the LR is devoid of vegetation;

- Maturity: Medium – The IEC was constructed in the 1980s. Victoria Harbour as a whole, however, has important historical significance;
- Rarity: Medium – As described earlier under LR3, Victoria Harbour is considered a unique feature of Hong Kong. This being said, harbour-side landscape resources that are dominated by brutalistic road infrastructure are not uncommon in Hong Kong e.g. the Kwun Tong By-pass;
- Reversibility: High – LR6 is dominated by man-made features, thus it is considered highly reversible; and
- Value: Medium – Whilst Victoria Harbour is considered as a highly valuable landscape resource, LR6 is largely dominated by brutalistic man-made features that are associated with the IEC. The subject LR is not rare and is considered highly reversible.

Taking into account the above assessments with regard to the quality, maturity, rarity, reversibility and value, the sensitivity of LR6 is considered *medium*.

Magnitude of Impacts: The proposed boardwalk will straddle a body of water along its length at a general width of about 5m (**Figure 5.3**). As stated earlier, the amenity and landscape value of the sea is partially compromised over the length of the boardwalk. The flow of water, however, will not be compromised by the development of the boardwalk. The boardwalk will provide wider public access and proximity to the resources of the harbour. During construction, appropriate environmental measures will be implemented to mitigate the potential pollution generated from the construction works to minimise its potential impact on the water body of Victoria Harbour. Given the limited extent to which the sea will be covered and is already covered by the IEC at this point, the level of impact on the sea as a landscape resource is anticipated to be *intermediate.*

Significance of Impact: The sensitivity of LR6 is considered to be at the medium level. The magnitude of impact is at the intermediate level. As such, the significance of impacts is considered *moderate* during construction. This being said, the proposed boardwalk and associated enhancement measures will ameliorate the brutalistic environment fostered by the IEC structure. To this end, it is considered its magnitude of impact *substantially positive* during operation.

Visual Impacts

Key visual receptors in close proximity to the proposed boardwalk will include the following:

- VSR 9: Users and workers circulating in waterfront areas south of the IEC (there are however limited vistas as public access to areas adjacent to the IEC is restricted and limited);
- VSR 10: Occupants of the lower floors of developments adjacent to the IEC (only limited views will be possible) and areas adjacent to the North Point Ferry Piers; and
- VSR 11: Distant views across the Harbour from the eastern edge of the Kowloon Peninsula (e.g. Hung Hom). The proposed boardwalk is not likely to be significantly perceptible from Kowloon. The visual impacts that might arise during construction and operation are likely to be similarly imperceptible.

Views from passing vessels are also not considered significant or measurable, as these are transient and do not constitute fixed vistas.

Construction Impacts

The construction of the boardwalk underneath the IEC will incorporate techniques that seek to minimise visual and physical impacts and avoid impacts on the passage of vessels. The piers protecting the columns that support the IEC will be adapted as supporting structures. The circulation decks will be craned in from vessels/lighters. At certain locations where the clearances beneath the IEC are insufficient, a cantilever arrangement is proposed to be employed. This condition will occur at the interchanges near Tong Shui Road in North Point. There is unlikely to be significant direct public views to the construction works as these will be largely obstructed by the existing IEC structures.

Direct views to the works being undertaken below the highway deck will be partially blocked by the IEC. There is also a significant distance between the VSRs and the likely works area. At the same time, the works are not expected to be overly intrusive as the major sections of the boardwalk will be pre-fabricated off-site and ultimately craned into position with the use of a lighter. The most significant visual impacts will occur when the walkway decks are hoisted into position and fixed onto their mountings. These works will not be of long duration.

Bespoke decorative hoardings will be employed to mitigate low level visual impacts. The visual impact of pier enhancement works will similarly not be significant, hence the subject area will likely to have slight and moderate visual impact. The duration

of impact is anticipated not to exceed one year, given that the preparation and installation work on-site is relatively simple and also that fabrication works will be undertaken off-site.

Operational Impacts

During the operational phase at day one, the walkway will generate visually positive impacts with a general enhancement of public amenity. The introduction of hard and softscape combined with other treatments proposed in conjunction with the scheme (**Figures 5.3 and 5.4**) will materially enhance the visual environment beneath and adjacent to the IEC. In later years, the progressive enhancement and improvement of the boardwalk will further enhance the visual environment created by the facility.

In summary, there will be no adverse landscape and visual impacts resulting from the proposed boardwalk underneath the IEC. Consequently, the impacts arising from the operation of the boardwalk would be largely 'favourable' with only slight/moderate visual impact.

13.8.2 Sky Trail along the hillside of the Hong Kong Museum of Coastal Defence

To enhance the pedestrian connectivity at Shau Kei Wan, an elevated walkway, namely "Sky Trail", is proposed along the hillside north of the Hong Kong Museum of Coastal Defence (**Figure 5.13**). The elevated structure of the trail will be mounted on periodic foundations that will be generally established along the 15-20mPD contour. This will avoid the walkway rising above the level of the coastal ridgeline and will ensure that the structure will sit below the majority of the general tree canopy. This arrangement is advocated with the purpose of mitigating the visibility of the trail.

The walkway will be constructed with light-weight steel/galvanised iron and will be sensitively designed to blend in with the surrounding natural environment. The walkway will be abutted by a series of transparent balustrades. The structure will be supported by a series of columns, the spacing of which will be as wide as is technically feasible to mitigate visual impacts and the magnitude of excavation that will be required for column foundations.

The magnitude of landscape resources and visual impacts that are anticipated in conjunction with the realisation of the project is outlined below:

Landscape Impact

One landscape resource has been identified within the vicinity of the proposed Sky Trail:

LR7: Existing Trees at the Shau Kei Wan Hillside

Sensitivity of LR7: The sensitivity of the landscape resource is assessed with respect to the following criteria:

- Quality – Medium: LR7 is the moderately wooded coastal slopes that include a combination of self-seeded and man induced planting. Trees and shrubs such as *Leucaena leucocephala*, *Macaranga tanarius* and *Dimocarpus longan* can be identified within the subject landscape resources. The wooded slope is considerably extensive. The species identified are not uncommon in Hong Kong. The subject LR, in general, has little cultural significance. Overall, the condition of the subject vegetation is moderate in condition;
- Maturity – High: The majority of the trees and shrubs located on the subject wooded slope are matured;
- Rarity – Low: The vegetation identified on the wooded slope comprises both native and exotic species that are commonly found in Hong Kong;
- Reversibility – Medium: *Leucaena leucocephala and Dimocarpus longan* are exotic to Hong Kong whilst *Macaranga tanarius* is a native species to Hong Kong. As above, the wooded slope is considerably extensive; and
- Value – Medium: Whilst LR7 is of reasonable quality and maturity, the planting species which it is comprised of are commonly found in Hong Kong.

Given the above assessments with respect to the quality, maturity, rarity, reversibility and value, the sensitivity of LR7 is considered to be *medium*.

Magnitude of Impact: During the construction phase, a number of minor landscape impacts will occur. A number of mature or semi-mature trees will need to be lopped to enable the construction of the Sky Trail structure. The proposal will, however, seek to ensure that existing trees will form a canopy which will drape above the walkway to create shading. Trees adjacent to the walkway structure will be largely retained and conserved. The proposed Sky Trail alignment will not impact upon old and valuable trees.

It is proposed that the walkway be prefabricated off-site. Once foundations for the supporting columns have been put in place, the columns and superstructure will be individually craned into place from a lighter that will be moored at the coast. The use of cranes will ensure speed of operation and that impacts on trees are minimised.

Impacts on landscape resources will be restricted to the area that will be required to be cleared for construction works including the construction of footings for support columns. This will require the clearance of plant material in each affected area. Removal of major vegetation such as trees will be avoided. The precise locations of trees will be determined by a topographic survey from which, an optimal positioning of columns will be established to minimize impact on trees as far as practicable. Remedial planting will be installed to compensate impacts caused by construction and to bolster the present landscape regime. Landscape management measures will also be undertaken to enhance the quality of existing planting. The planning intention is that the structure is progressively enveloped with a backcloth of planting that will be naturally augmented over time. Overall, the magnitude of impact on the existing landscape resources during the construction phase at the coastal hillside of the Museum is anticipated to be *intermediate*.

During the operational phase at year one, landscape resources affected by the construction of support columns will progressively recover. Remedial and additional planting measures will be under establishment. At the end of year one, planting measures should be fairly well established and will begin to mature. At year ten, a mature landscape will be developed to the extent that the walkway will be partially enveloped by vegetation. At this point, the impact on the LR should be minimized.

Significance of Impact: The subject LR is considered to be of medium sensitivity. Whilst the magnitude of impact of the proposal is considered to be intermediate at the construction stage, it is anticipated that with the proposed mitigation measures, the magnitude of impact will be significantly reduced to *negligible* at the operational stage. The significance of impact to the LR is therefore considered to be *moderate* at the construction stage. At the operational stage, however, the walkway will form an integrated component of the visual and physical landscape and the significance of impacts will be *insubstantial* as the facility unfolds as a discrete yet iconic element that will provide users with a unique experience and unrivalled views across the harbour.

Visual Impact

Key visual receptors within close proximity of the proposed Sky Trail will include the following:

- VSR 7: Visitors and workers circulating within the northern confines of the Hong Kong Museum of Coastal Defence; and
- VSR 8: Occupants of flats along the western face of Heng Fa Villa.

The Sky Trail structure is unlikely to be significantly perceptible from Lei Yue Mun and East Kowloon given the distances involved. Visual impacts during construction and operation are likely to be largely imperceptible. Views from passing vessels are also not considered to be significant as these are transient and are not fixed vistas. As a broad estimation (subject to confirmation at the detailed design stage), site preparation works and fabrication of the structures will require approximately six months. A further three months will be required for the craning in of structure and making good. Subject to detailed design, the works are anticipated to be implemented in three stages (see below). The construction and post-construction visual impacts are described below.

Construction Impacts

As outlined above, it is proposed that the construction of the Sky Trail will utilise techniques that will endeavour to minimise impacts on the current physical environment and landscape regime (e.g. wide spacing of columns, construction at an elevation that ameliorates impacts on trees etc). Works areas will be at isolated locations and will generally be hidden by the present extent of tree cover. Site offices could be located within Lei Yue Mun Park in a discrete location not directly observable by VSRs. Site facilities will be surrounded by bespoke hoardings that will be designed to blend in with their surroundings. During the first 6 months of the construction programme, it is unlikely that significant visual impacts will occur. Impacts are likely to be confined to the movement and operation of plant around the works areas. A small number of persons are likely to be exposed to views of the preparation works. Visitors to the Hong Kong Museum of Coastal Defence and employees within the Museum will only experience transitory views. This will be similarly applicable to the visitors at the Lei Yue Mun Fort east of the Museum site. The residents of Heng Fa Villa have their principal aspect towards the sea and views are only likely to be experienced from a small number of residents. The initial preparation works are likely to be imperceptible from East Kowloon and Lei Yue Mun. As a consequence, visual impacts during the initial works stage are anticipated to be slight/moderate.

The most significant visual impacts will occur when the walkway decks are hoisted into position during the second stage of the construction programme. However, it is not anticipated that the construction work will be of long duration (around 3 months). Long distance receptors in Lei Yue Mun and East Kowloon will be able to see the craning in of the prefabricated sections of the

Sky Trail. Visitors to the Museum of Coastal Defence and Lei Yue Mun Fort and workers within the Museum will experience periodic views of crane heads as structures are hoisted to their location. Overall, visual impacts are anticipated to be slight/moderate during the second stage of the construction programme.

The third stage will consist of fitting out and finalisation of works. This will include the installation of landscape enhancement measures and planting remediation to compensate for the impact of works during construction. As the intensity of works at this stage of work will be considerably lower than at previous stages, the impacts to visual receptors will be of low magnitude. Long distance receptors will be unlikely to be subject to adverse impacts. Thus, visual impacts are likely to be of slight magnitude at this final stage of construction.

Operational Impacts

During the operational phase, the visual impact of the Sky Trail will be improved after the removal of the cranes and other heavy machinery principally required during the construction. Landscape planting previously affected by the construction of the Sky Trail will recover and gradually mature. New remedial and enhancement planting (particularly around the base of columns) will also progressively mature. The vegetation will form as a canopy that would partially cover the Sky Trail structure from the views of some of the nearby visual receptors. As the surrounding landscape resources reach full maturity, the structure of the Sky Trail will be increasingly less exposed and consequently its visual impact will remain slight and insubstantial.

13.9 Overview

In view of the above, the insertion or upgrading of landscape treatments envisaged in conjunction with the key sites are generally considered to have positive impacts. At the same time, the measures will provide a positive impact on the LCAs. Where there are impacts (generally during the construction stage), these are considered to be slight or of insubstantial significance and would be improved over time with the respective landscape enhancement measures recommended in the proposals. **Table 13.2** summarises the baseline conditions, degree of sensitivity, magnitude of impact and impact of significance of the affected LCAs and LRs. A summary of degree of impacts to key VSRs is also provided in **Table 13.3.** Overall, it is considered that the residual landscape and visual impacts of the implementation and operation of the recommended enhancement proposals for the Hong Kong Island East waterfront will be acceptable and will over time, serve to promote positive enhancement of the area.

Table 13.2 Summary of Baseline Conditions, Degree of Sensitivity, Magnitude of Impact and Impact of Significance of the Affected Landscape Character Areas and Landscape Resources

	Baseline Condition	Degree of Sensitivity	Magnitude of Impact	Impact of Significance	
				During Construction Phase	During Operation Phase
Landscape Character Areas					
LCA 1: North Point Waterfront Residential Area	Moderate	Low	Small	Insubstantial	Moderately Positive
LCA 2: North Point Urban Area	Low/Moderate	Low	Small	Insubstantial	Slightly Positive
LCA 3: North Point Waterfront Urban Fringe	Low/Moderate	Low	Small	Insubstantial	Slightly Positive
LCA 4: Quarry Bay Transportation Corridor	Moderate	Medium	Intermediate	Moderate	Substantially Positive
LCA 5: Sai Wan Ho Residential Area	Moderate	Medium	Small	Slight	Slightly Positive
LCA 6: Shau Kei Wan Urban Area	Low/Moderate	Low	Small	Insubstantial	Slightly Positive
LCA 7: Shau Kei Wan Typhoon Shelter	Moderate	Medium	Negligible	Insubstantial	Insubstantial

LCA 8: Lei Yue Mun Park and Holiday Village	Good	High	Small	Moderate	Insubstantial
LCA 9: Heng Fa Chuen	Moderate	Medium	Negligible	Insubstantial	Insubstantial
LCA 10: Chai Wan Cargo Handling Basin	Poor	Low	Small	Insubstantial	Slightly Positive
LCA 11: Siu Sai Wan Residential Area	Moderate	Medium	Negligible	Insubstantial	Insubstantial
Landscape Resources					
LR1: Open area south of the entrance of the eastern ferry pier with tree and shrub planting	Poor	Low	Negligible	Insubstantial	Moderately Positive
LR2: Tree Planting on Shu Kuk Street	Poor	Low	Negligible	Insubstantial	Moderately Positive
LR3: Victoria Harbour	Moderate	Medium	Intermediate	Moderate	Slightly Positive
LR4: Tree planting around the periphery of the EHC Tunnel Portal site	Moderate	Medium	Negligible	Insubstantial	Moderately Positive
LR5: Landscape Buffer at the southern edge of the Hoi Yu Street waterfront site	Poor/Moderate	Low	Negligible	Insubstantial	Moderately Positive
LR6: Harbour-side Landscape Resources	Poor	Medium	Intermediate	Moderate	Substantially Positive
LR7: Existing Trees at the Shau Kei Wan Hillside	Moderate	Medium	Intermediate	Moderate	Insubstantial

Table 13.3 Summary of Visual Impacts to Key Visually Sensitive Receivers

VSR No.	Key Visually Sensitive Receivers (VSRs)	Degree of Visibility of Source(s) of Visual Impact (Full, Partial, Glimpse)	Approx. Distance Between VSR & Nearest Source(s) of Impact	Magnitude of Impact (Low, Medium, High)	Receptor Sensitivity (Low, Medium, High)	Receptor Number (Very Few, Few, Many, Very Many)	Impact Characteristic during Construction Phase	Impact Characteristic during Operation Phase
North Point Ferry Piers Key Site								
1	Government office towers to the east of the North Point Ferry Piers site including the K. Wah Centre, ICAC Headquarters and the Kodak House	Full	50m	Low	low	Few	Slight	Slight

2	Residential buildings to the south of the North Point Ferry Piers site, between Shu Kuk Street and Tin Chiu Street along Java Road	Partial	50 - 60m	Low	Medium	Few	Medium	Slight
3	Occupants of flats along the eastern portion of Provident Centre	Partial	20- 30m	Low	Medium	Few	Medium	Slight
Hoi Yu Street Key Site in Quarry Bay								
4	Occupants of the lower floors of office developments along Hoi Tai Street, including the Chinachem Exchange Square, Lincoln House, Somerset House and the DCH Commercial Centre	Full	30 - 40m	Medium	Medium	Few	Medium	Medium
5	Occupants of higher level flats at the northwestern part of Taikoo Shing	Partial	80-100m	low	low	Few	Medium	Slight
6	Occupants of office developments to the west of the key site including the Eastern Harbour Centre, and The Hong Kong and China Gas Company Ltd.	Partial	80-100m	low	low	Few	Medium	Slight
Sky Trail								
7	Users and workers circulating within the northern confines of the Hong Kong Museum of Coastal Defence	Partial	10-20m	Low	low	Few	Slight	Slight
8	Occupants of flats along the western face of Heng Fa Villa	Partial	80-100m	Medium	Medium	Many	Medium	Moderate
Boardwalk underneath the IEC								
9	Users and workers circulating in waterfront areas south of the IEC	Partial	20m	Low	Low	Few	Medium	Slight
10	Occupants of the lower floors of developments adjacent to the IEC	Partial	20 – 30m	Low	Low	Few	Slight	Slight
11	Distant views across the Harbour from the eastern edge of the Kowloon Peninsula	Partial	600 – 800m	Low	Low	Very Few	Slight	Slight

14. BROAD SUSTAINABILITY ASSESSMENT

14.1 Background

In accordance with the Study Brief, the Consultants are required to perform a sustainability assessment for the enhancement proposals with references taken from the CASET. The assessment has been carried out based on the sustainability framework established by the Government. This assessment reviews the set of guiding principles and sustainability indicators against the enhancement proposals as described in this report. The review process has given considerations to the sustainability aspects and features of the recommended enhancement proposals presented in this Study and assessed performance of the proposals when viewed from a sustainability standpoint. It also identifies opportunities to introduce new features or enhance existing sustainability aspects as part of the improvements.

14.1.1 Existing Situation

The Study Area itself, while representing an extensive and built-up district, is to some extent in transition. Commercial office blocks that have traditionally been located in the Central District of Hong Kong Island, continue to expand towards the east. Older uses adjacent to the harbourfront are giving way to new and comprehensively designed areas of both a commercial and residential nature, which provide a framework for new waterfront open space. In the Quarry Bay area, the Quarry Bay Park establishes a green frontage to the harbour, but the North Point/Quarry Bay area as a whole is significantly constrained in both visual and physical terms by the IEC. Further to the east, the Shau Kei Wan and Chai Wan areas have large sections of existing promenade, although continuity is constrained by both existing and natural uses in certain parts.

From a physical and landscape planning perspective, there are limited practical opportunities to introduce major changes to the land use structure. The greatest opportunities to procure a strong and coherent identity arise at the harbourfront where a number of key sites will play an important role in future development, spatial integration, and establishment of focal and activity nodes. Planning alternatives should be based on:

- The existing planned pattern of zoned uses and development parameters set out in the relevant OZPs;
- Opportunities that exist for potential changes of uses in waterfront locations;
- Major planned or potential development or recreational nodes/focal points;
- New pedestrian connections in relation to the “OU (Comprehensive Recreational Development Area)” zoning for the hillside area where the Hong Kong Museum of Coastal Defence is located;
- The degree to which certain “OU” or “G/IC” uses can be re-sited (e.g. the current “OU” site west of Tam Kung Temple in Shau Kei Wan currently reserved for the future expansion of the Shau Kei Wan PTW);
- The potential for upgrading of certain existing uses, in particular the ferry piers and existing industrial areas;
- The programme of implementation for designated open space areas;
- The ability to ultimately incorporate a planned promenade link in conjunction with the IEC, with regard to the limitations as imposed by the PHO;
- The potential for streetscape and landscape enhancements;
- Opportunities to improve harbourfront accessibility from the marine side;
- Potential economic gain as a result of redevelopment of the waterfront areas; and
- Potential gain in mobility for the general public as a result of improvement in connectivity along the waterfront.

The above issues and considerations have been utilised and translated in the enhancement measures.

14.1.2 Site Limitations and Constraints

Given the overall vision for Victoria Harbour and the anticipated role and nature of more sustainable harbourfront areas, it is apparent that the Hong Kong Island East harbourfront and its immediately adjacent areas currently contain some limitations and constraints that add to the challenge of achieving sustainable development:

- Lack of physical interconnectivity between sub-districts and major nodes along the waterfront;

- Poor direct public access to and from the waterfront;
- Lack of attractions/magnets at the waterfront to attract public uses, draw visitors and retain their interest;
- Lack of pleasant open space where the public can congregate;
- Lack of vibrant activities to stimulate and promote the use of waterfront spaces; and
- Incompatible land uses at the waterfront hindering further implementation of enhancement measures.

In summary, the Hong Kong Island East harbourfront area fails to fully capitalise on its privileged location to attract nearby residents, local visitors and tourists to participate and fully utilise the area. It is lacking in terms of attractions, facilities, public and pedestrian access, new business opportunities and generally does not provide a user-friendly experience. The area would therefore be currently assessed as a poor performer in sustainability terms. However, it possesses good potential for significant improvement.

14.2 Proposed Land Uses and Infrastructure Development

The recommended enhancement proposals presented in this report will greatly improve the physical conditions of the Hong Kong Island East waterfront. From a sustainability point of view, significant improvements in many categories of sustainability indicators are apparent within the enhancement proposals. Some examples of the main aspects and improvements, which are relevant to the future sustainable status of the area, include:

Improved Linkage

- Emphasising the key links alongside the waterfront and between the hinterland of the Eastern District and the waterfront by streetscape enhancement.

Increased Open Space/Community Resources

- Introduction of new open space and special interest uses within the dangerous goods vehicular ferry pier site in North Point (as a visionary concept);
- Open space at the waterfront area of Hoi Yu Street key site in Quarry Bay;
- Introduction of new uses at the EHC Tunnel Portal site;
- Improved pier structures;
- Initiating animated recreational uses along the waterfront of the Chai Wan Public Cargo Handling Basin (as a visionary concept);
- The overall net increase in high quality open space will benefit the nearby residents; and
- The provision of iconic features to promote a sense of community.

Improved Pedestrian Connections

- Provision of convenient linkages from the hinterland to the waterfront;
- Integration of designated open space areas through improved pedestrian connections;
- Introduction of a continuous boardwalk underneath the IEC which connects North Point to Quarry Bay alongside the harbourfront;
- Improvements of the existing waterfront promenades by linking them with new promenade sections; and
- Recommendation of a pedestrian route, in the form of a Sky Trail, along the hillside of the Hong Kong Museum of Coastal Defence.

Relocation of Incompatible Land Uses

- The exploration of an alternative site to relocate the Marine Police Regional Headquarters in Sai Wan Ho (currently being explored by Government); and
- Adaptive redevelopment of various industrial uses in the vicinity of the Chai Wan Public Cargo Handling Basin (as a visionary concept).

Greening and Landscape Improvements

- Landscaping and soft planting areas are proposed in many locations along the waterfront and at the two key sites;
- Integration of designated parklands through landscape treatments;
- Use of planting along road margins, pedestrian ramps and footbridges;
- The number of significant landscape features will be increased/enhanced; and
- Substantially increase in greening should provide cooling as well as localised ecological micro habitats.

Environmental Improvements

- The visual amenity will be enhanced by streetscape enhancement, façade treatments of the existing shipyards and provision of a temporary heritage park in Shau Kei Wan;
- Increased cultural and heritage exposure;
- Increased provision of open space and facilities for cultural and heritage provision;
- A greater number of cultural and heritage related events could be held in new public spaces; and
- The events and activation of areas would promote a sense of community.

Increased Employment and Business Opportunities

- The new tourism, leisure and entertainment related facilities such as the multi-purpose performance centre/IMAX theatre, and commercial and retail developments will offer new employment opportunities;
- Similarly, there should be a net increase in economic activity arising from the increased tourism and business activities and increased numbers of cultural and heritage related events; and
- The anticipated increase in business activity suggests that there would be a positive economic return.

14.3 Summary of Findings of Broad Sustainability Assessment

Subsequent to a qualitative analysis of the aspirations, the positives and the negatives of the design proposals, a CASET model run was conducted for the urban design proposals of the two key sites at the North Point Ferry Piers and Hoi Yu Street in Quarry Bay, as well as waterfront connectivity proposals of the boardwalk underneath the IEC and the Sky Trail. The CASET model has resulted in systematically chosen sustainability indicators that present relevance to each enhancement proposal. The following summarises the effects of each of the above enhancement proposals on the selected sustainability indicators.

14.3.1 North Point Ferry Piers Key Site (Figure 14.1)

Relevant Economic and Environmental Indicators

The CASET model has generated a series of economic and environmental indicators to broadly assess environmental and economic sustainability of the urban design proposal of the North Point Ferry Piers. Whilst these economic and environmental indicators may be assessed quantitatively and/or qualitatively, given that the Study is currently at conceptual planning stage, only a qualitative assessment could be undertaken at this point. Quantitative assessment of the indicators will likely be undertaken at the detailed design stage when more details are available. The economic and environmental indicators generated are as follows:

- *Carbon dioxide emissions per year* – The construction activities resulted from the revitalisation of the North Point Ferry Piers will contribute to additional carbon dioxide emission due to the machineries used. However, given the proposal is minimal in scale, the construction will not extend over a significant period of time. At the operation stage, additional restaurants, cafes, commercial, retail and entertainment uses within the ferry piers will add to carbon dioxide emissions. Nonetheless, the proposed greening measures on the roof of the piers and on the 20m wide landscaped waterfront promenade will help to minimise these emissions. It is therefore unlikely that the proposal will cause any significant detrimental impacts on levels of carbon dioxide emissions per year.
- *Cost-benefit* – The proposed restaurants, cafes, commercial, retail and entertainment uses at the North Point Ferry Piers are expected to generate a significant increase in economic returns. The proposed enhancement of the North Point Ferry Piers will also have a positive effect on the ridership of the cross harbour ferry.

- *Fixed capital* – The proposal will be an investment that is likely to generate future income stream by increasing employment opportunities, enhancing business opportunities and encouraging tourist activities by improving the amenity of Victoria Harbour. The Island East business environment is also likely to benefit from the proposed revitalisation of the North Point Ferry Piers and the waterfront promenade in the long term.
- *Open space shortfall* – The open space shortfall is expected to alleviate as a result of the proposal. The additional open space at the 20m wide waterfront promenade will provide nearby residents a place of leisure and will be counted as part of the district's provisions for public open space.
- *Significant landscape features (area)* – Whilst the subject site is located at a prominent waterfront location, it does not contribute to the landscape significance of Victoria Harbour at the moment. The proposed 20m wide waterfront promenade and the adjacent North Point Ferry Piers will provide ample green open space with significant landscape features such as trees, low level shrubs and general softscape elements.
- *Travel speed* – The proposed 20m wide waterfront promenade could act as an alternative walking route which would improve the travel speed of pedestrians. Appropriate management measures should also be undertaken, such that the construction activities of the proposal will not disrupt the vehicular traffic within the district. As demonstrated in the TIA in Chapter 9, the resultant traffic impacts of the proposed developments are expected to be minimal.
- *Travel distance* – Workers and local residents may benefit from this alternative walking route as it will likely shorten the walking distance between waterfront locations.
- *Unemployment rate* – Given that new commercial and retail elements are proposed for the ferry piers, it is expected that the proposal will generate new employment opportunities and alleviate the unemployment rate within the retail and commercial sectors. Workers in the construction industry will also benefit as the proposal involves renovation of existing pier structures and integration of the piers with the proposed boardwalk underneath the IEC.

Removed Indicators

Other than the indicators discussed above, several indicators were initially selected by the CASET but were subsequently manually removed. The removed indicators and the reasons of removal are summarised below:

- *Construction waste* – The proposal does not involve large-scale demolition and will only have negligible construction waste impacts.
- *Criteria air pollutants and toxic air pollutants* – The proposal is basically non-polluting in nature and will have minimal impacts on air quality.
- *Energy consumption* – Energy consumption is low as the proposal does not involve artificial ventilation and only requires artificial lighting for a limited period of time.
- *Freight costs* – The proposal does not involve freight operation, thus it will have minimal impacts on freight costs.
- *Freshwater supplied and consumed* – The proposal has little impact on freshwater supply and consumption and by and large, has no relevance to this indicator.
- *Marine eco-value* and *toxic air pollutants* – The proposal is basically non-polluting in nature. It is foreseeable that it will have very limited impacts on the Marine eco-value and generate limited toxic air pollutants.
- *Municipal waste* – Given the nature and scale of the proposed uses/facilities, it is not expected that a significant amount of municipal waste will be generated.
- *Significant landscape features (point)* – No significant landscape features exist within proximity of the subject site.

Social Checklist

In addition to the economic and environmental indicators discussed above, an analysis to assess potential social impacts arising from the proposal has been conducted based on the social checklist approach adopted in the CASET system. Given the proposal is small in scale, the social impacts generated are likely to be confined within the concerned district and no significant territorial impact is expected. The proposed enhancement of the North Point Ferry Piers is envisaged to have a positive impact on the following social aspects:

- The proposal is likely to have a positive impact on *family relationships and functioning.* The provision of open space at the waterfront will provide a venue for family activities and hence, improve relationship between family members.

- The proposed enhancement of the ferry piers and associated waterfront promenade is likely to elevate people's *sense of belonging and involvement* within the community by providing them with a publicly accessible open space area that could be utilized for a number of community functions and activities.
- The proposal will augment *the quality and provision of open spaces and leisure facilities* by expanding the recreation facilities along the waterfront which are easily accessible to the public. Recreational cycling provisions will provide public users an extended area of recreational activities along the Victoria harbourfront. The proposal will therefore *enhance the variety of recreational facilities* available to the community members.
- As discussed above, the provision, quality and variety of recreational facilities will be improved as a result of the proposal which might also positively contribute to the *physical and mental well-being* of the public. The pleasant setting of the waterfront will provide a relaxing and stress-reducing environment that will help revive the mental state of health of the users.
- Given the increased provision of open space and recreational facilities, it is expected that people's participation in sports and recreational activities will be increased as a result of the proposal. The 20m wide waterfront promenade will encourage people to jog, walk and cycle given the picturesque setting of the Victoria Harbour.

The proposal is unlikely to have an impact on the following social aspects:

- The opportunities of elderly, children, youth, women and low income group;
- The safety net;
- The will and ability of the disadvantaged, the poor and the unemployed to achieve self-reliance;
- Disproportionately greater adverse health effects to vulnerable groups in the community;
- Archeological sites or buildings of cultural heritage;
- The waiting time for public rental housing;
- The rental level in the private housing market;
- The average living space per person;
- The number of people residing in inadequate housing; and
- Access of people of a working age to post-secondary education or above.

Other Non-quantifiable Issues

In addition to the economic and environmental indicators and social impacts discussed above, the proposal may have some non-quantifiable economic, social and/or landscape impacts as follows:

- *Economic issues* – The introduction of commercial, retail and dining facilities will benefit the commercial viability of the cross harbour ferry operation and provide an excellent platform to explore business opportunities in a pleasant and user friendly environment. Small shops and cafes/restaurants proposed on the piers will provide new business opportunities. Involvement of private sector in developing and enhancing the condition of the concerned area to entice a higher patronage to business/retail establishments could be mutually beneficial.
- *Social issues* – From a social equality point of view, the proposed uses/facilities will serve the general public and provide equal opportunities and gains to all races, genders, ages and social groups. Furthermore, the proposed public spaces will help to promote interaction between different groups of people and create a more diverse and vibrant community by offering them a platform for public and community forums and events.
- *Landscape issues* – The streetscape enhancement measures to major pedestrian corridors will enhance connectivity and allow easy access to the public. Principal open space will be provided on the proposed 20m wide waterfront promenade abutting the North Point Ferry Piers. The proposed promenade will include various landscape features to create a pleasant and enjoyable green environment at the waterfront that will be enjoyed by locals and tourists.

First Sustainable Development (SD) Strategy Checklist

The following SD strategies have been taken into account in formulating the urban design proposal of the North Point Ferry Piers key site:

- *Provision of quality open space* – A 20m wide waterfront promenade along the northern boundary of the ex-NPE site is proposed, which will provide a quality open space to facilitate public enjoyment of the harbour.
- *Environmental quality* – The proposed waterfront promenade and IEC boardwalk will prove to be valuable assets to the future development of community infrastructure in North Point. Connectivity between neighborhoods and residential developments will be enhanced within the Island East area.
- *Retention of heritage structures* – The revitalisation of the ferry piers and its surrounding areas will help conserve them and provide the community with a recreational destination. The proposed promenade with the inclusion of civic plazas will provide a venue for various community activities and serve as a focal point for the local residents to stimulate social interactions by hosting public festive events.

Although the proposed revitalisation of the North Point Ferry Piers involves the establishment of eating and retail outlets which consume energy and generate solid waste, it is not a large-scale project and is therefore unlikely to have a significant impact on the territorial long-term strategies on solid waste management and renewable energy.

14.3.2 Hoi Yu Street Key Site in Quarry Bay (Figure 14.2)

Relevant Economic and Environmental Indicators

The CASET model has generated a series of economic and environmental indicators to broadly assess the environmental and economic sustainability of the urban design proposal of the Hoi Yu Street site in Quarry Bay. Whilst these economic and environmental indicators may be assessed quantitatively and/or qualitatively, as previously mentioned, given that the Study is currently at conceptual planning stage, only qualitative assessments can be made at this point. A quantitative assessment of the indicators should be undertaken at the detailed design stage when more details are available. The economic and environmental indicators generated are as follows:

- *Carbon dioxide emitted per year* – With the provision of an indoor multi-purpose performance centre and retail establishments along the Hoi Yu Street waterfront, the proposal is expected to contribute to a slight increase in carbon dioxide emissions. Nonetheless, the greening measures will be able to minimize the potential impacts. Carbon dioxide emissions are also expected to increase during the construction phase. However, given the proposal is not large in scale, it is unlikely that it will contribute to a significant high level of carbon dioxide emissions.
- *Cost-benefit* – The enhancement of the Hoi Yu Street key site will attract more visitors to the area which will benefit nearby shops and business. The rise in revenue generated by the new establishments will over time recover part of the construction cost. The Eastern District community will also benefit from the variety of facilities to be provided.
- *Excessive noise* – During the construction phase, noise sensitive receptors nearby will inevitably be subject to some noise impacts as a result of the construction activities. However, given the proposal is relatively small in scale, it is unlikely that the construction noise nuisance will extend over a long period of time. A slight rise in noise level is expected as a result of the provision of cultural, tourism and entertainment uses with shops and themed restaurants at the waterfront, which may also affect the nearby residents. As such, any proposed development at the waterfront will be sensitively designed to minimize adverse impacts on the local residents and surrounding areas.
- *Fixed capital* – The proposal will be an investment that is likely to generate future income from increasing employment and business opportunities and promoting tourism activities by enhancing the vitality of the harbourfront area. The Island East community will benefit from the proposal given the improved amenity along the harbourfront area. The proposed entertainment and commercial establishments will also promote growth in those industries.
- *Open space shortfall* – The provision of open space in the district and local area will be positively affected by the addition of the proposed waterfront promenade and landscaped areas. The proposed area for leisure and recreational uses will contribute to the overall supply of open space in the Eastern District and to the nearby Quarry Bay residential communities.
- *Significant landscape features (area)* – No significant landscape features can be identified at the key site which is currently in barren state. It is not expected that the landscape value of the site will be adversely affected during the construction stage. The construction period is also unlikely to extend over a long period of time in view of the proposed scale of development. The provision of a waterfront promenade with various landscape features at the key site will create a pleasant green environment for the enjoyment of local residents and visitors. Irreversible detrimental impacts on any existing landscape feature at the key site is not anticipated.

- *Travel distance* – The pedestrian connectivity in the area will be enhanced by providing an elevated walkway linking the Quarry Bay area with the waterfront. Thus the distance of certain trips will be shortened. The nearby residents will benefit from the improved pedestrian network. Given the subject site is not well-connected to the existing pedestrian network within the district at the moment, it is unlikely to cause inconvenience to the community or pedestrians within the district during the construction stage of the proposed elevated walkway.
- *Travel speed* – As a result of the enhanced pedestrian connectivity, some trips as described before may be shortened. The proposal will improve travel speed by providing alternative walking routes and alleviate the congestion at the existing pedestrian network. The community members of Quarry Bay are most likely to be benefited from the enhanced pedestrian network as part of the proposal. As the subject site is, to a certain extent, disconnected from the existing pedestrian network within the district, it is unlikely that the proposal will have direct adverse impact on the travel speed of the pedestrians. Also, as the construction activities will be confined within the subject site, it is unlikely that the proposal will have significant adverse impacts on the travel speed of the vehicular traffic. In addition, as demonstrated in the TIA in Chapter 9, the traffic impacts of the proposed developments on the surrounding transport network are not significant.
- *Unemployment rate* – The proposed multi-purpose performance centre at the EHC Tunnel Portal site and cultural, tourism and entertainment uses with shops and themed restaurants at the waterfront north of Hoi Yu Street will provide employment opportunities. The need for maintenance and security staff will also augment employment opportunities.

Removed Indicators

In addition to the indicators discussed above, several indicators listed below were initially selected but were subsequently removed manually for the following reasons:

- *Construction waste* – The proposal does not involve large-scale demolitions and is therefore unlikely to generate a significant amount of construction waste.
- *Criteria air pollutants and toxic air pollutants* – The proposal is non-polluting in nature. It will have minimal impacts on air quality.
- *Energy consumption* – The proposal is, by and large, recreational, leisure and entertainment in nature. It is therefore unlikely to consume a significant amount of energy.
- *Freshwater supplied and consumed* – The proposal is localised in nature and is unlikely to have a significant impact on the freshwater supply.
- *Local freshwater* – The subject site is not near any local freshwater body.
- *Marine water quality* – The sewage should be treated to an acceptable level before it is discharged. It is therefore expected that the proposal will have a minimal impact on the marine water quality.
- *Marine eco-value* – Given the marine water quality is unlikely to be impacted as a result of the proposal, the proposal is also unlikely to have any significant impact on the marine eco-value.
- *Municipal waste* – Whilst the proposed commercial establishments may generate a certain amount of municipal waste, the proposal will have a minimal impact on the generation of municipal waste, given that it is largely of a tourism and entertainment in nature.
- *River water quality* – No river is located within proximity to the subject site.
- *Significant landscape feature (point)* – The subject site is not located within proximity to any existing significant landscape feature.
- *Terrestrial eco-value* – The proposal is not located within proximity to areas with significant terrestrial eco-value.

Social Checklist

Given the proposal is small in scale, the social impacts generated are likely to be confined within the concerned district and no significant territorial impact is expected. The proposed upgrading of the key site at Hoi Yu Street, Quarry Bay is envisaged to have positive impacts on the following social aspects:

- The proposal's impact on *family solidarity* is likely to be positive. The provision of open space at the waterfront will provide a venue for family activities and hence, improve relationship between family members. A vibrant waterfront environment is potentially an ideal setting for family outings, which can forge relationship among family members.
- It is expected that the proposal will have a positive impact on *community cohesion*. The proposed multi-purpose performance centre, which will be utilized as a local community theatre/hall, will facilitate the interaction/bonding of various community members. Similarly, the proposed enhancement of the Hoi Yu Street site and associated waterfront promenade will elevate people's sense of belonging to society and their involvement within the community by providing them with a publicly accessible open area that could be utilised for a number of community functions and activities.
- The proposal will increase *the level of provision, quality and variety of recreational and cultural facilities* by expanding the recreational facilities along the waterfront which are easily accessible to the public. The proposed recreational cycling provisions at the Hoi Yu Street key site will provide public users an extended area of recreational activities along the Victoria Harbour.
- The *physical and mental well-being* of the community might also be enhanced as a result of the proposal. The public will be able to enjoy the landscaped open space and the proposed recreational facilities along the waterfront of Hoi Yu Street that blend in with the greater open space network of the Quarry Bay Park Phases I and II (Stage 1). Furthermore, the picturesque setting of the waterfront will provide a relaxing and stress-reducing environment that will aid in reviving the mental state of health for its users. The proposed multi-purpose performance centre/IMAX theatre will also provide a variety of entertainment uses to the general public.
- As a result of the increase in the provision of open space and recreational facilities, it is expected that people's participation in sports and recreational activities will be increased. The creation of a continuous waterfront connection will also encourage more users to travel between areas on foot, which will promote a healthier lifestyle. Given the proposed multi-purpose performance centre is located within close proximity to existing residential developments, the nearby residents are more likely to participate in cultural activities hosted at the proposed venue.

It is unlikely that the proposal of the Hoi Yu Street key site will have an impact on the following social aspects:

- The opportunities of elderly, children, youth, women and low income group;
- The safety net;
- The will and ability of the disadvantaged, the poor and the unemployed to achieve self-reliance;
- Disproportionately greater adverse health effects to vulnerable groups in the community;
- Archeological sites or buildings of cultural heritage;
- The waiting time for public rental housing;
- The rental level in the private housing market;
- The average living space per person;
- The number of people residing in inadequate housing; and
- Access of people of working age to post-secondary education or above.

Other Non-quantifiable Issues

Besides the economic and environmental indicators and social impacts outlined above, the urban design proposal for the Hoi Yu Street site may have the following non-quantifiable economic, social and landscape impacts:

- *Economic issues* – The enhancement proposals for each of the sub-areas will significantly increase business and employment opportunities as well as visitorship to the area. Enhancement proposals such as the multi-purpose performance centre/IMAX theatre at the EHC Tunnel Portal site will serve to activate surrounding areas which, at present, are largely dormant. The proposed indoor entertainment facility will enjoy steady revenues from ticket sales. To further increase the commercial viability of the area, a potential element of PPP/PPC could be introduced. The result of a successful PPP/PPC, where the private enterprises are involved in developing and enhancing the condition of the proposed area to entice higher patronage to business/retail establishments, could be mutually beneficial. This will infer a positive net economic gain for the planning area and, possibly, the wider district.

- *Social issues* – The proposed multi-purpose performance centre is considered a valuable asset to the future development of community infrastructures by providing a platform for various public events and activities. The performance centre will host a variety of community events and will be a focal point for the nearby community to stimulate social interactions within the neighbourhood. From a social equality point of view, the proposals featured in this Study will serve the general public and provide equal opportunities and benefits to all races, genders, ages and social groups. Furthermore, the proposed public spaces will help to promote interaction between different groups of people and create a more diverse and vibrant community environment.
- *Landscape issues* – By opening up more areas at the waterfront of the Hoi Yu Street site, the Quarry Bay community will benefit from the additional public open spaces and recreational areas situated in a pleasant waterfront environment.

First SD Strategy Checklist

From a sustainable urban planning and design point of view, the proposed enhancement measures will improve and expand the existing quality of open space and landscape elements. Linkages to the waterfront will be provided to enhance connectivity and allow easier access for the public. The barren waterfront area will be revitalized and provide a green open space and recreational destination for the community members.

Whilst some commercial and retail establishments are put forward as part of the enhancement proposal for the key site, they are minimal in scale and are unlikely to have a significant impact on the long-term territorial strategies in relation to solid waste management and renewable energy.

14.3.3 Sky Trail (Figure 14.3)

Relevant Economic and Environmental Indicators

The CASET model has generated a series of economic and environmental indicators to broadly assess the environmental and economic sustainability of the proposed Sky Trail. Whilst these economic and environmental indicators may be assessed quantitatively and/or qualitatively, as previously mentioned, given that the Study is currently at conceptual design stage, only qualitative assessments can be made at this point. A quantitative assessment of the indicators should be undertaken at the detailed design stage when more details are available. The economic and environmental indicators generated are as follows:

- *Cost-benefit* – The proposed Sky Trail will provide a new tourist attraction and is also likely to generate employment opportunities in the construction and recreational management industries. From a local perspective, the proposal is expected to promote tourism activities within the Shau Kei Wan area and enhance the business opportunities within the Eastern District as a residual effect of the enhanced tourism activities.
- *Fixed capital* – The proposal will augment the fixed capital, given that it is an investment which is likely to generate future income stream by increasing employment opportunities, enhancing business opportunities and promoting tourism activities through the introduction of this new potential tourist attraction. The Eastern District will benefit as a result of the enhanced tourism activities and its residual economic return.
- *Unemployment rate* – The construction of the Sky Trail will create a significant amount of employment opportunities to the construction industry. During its operation, the Sky Trail will also require regular maintenance and management that will provide job opportunities for engineering, construction and management professionals to become specialty staff members of the Sky Trail project.
- *Open space shortfall* – The proposed Sky Trail will provide a waterfront open space along the hillside of Shau Kei Wan. The proposal therefore will increase the open space provision for public enjoyment and alleviate the usage burden of existing open spaces within Shau Kei Wan and the Eastern District.
- *Significant landscape features (area)* – The proposed Sky Trail, as a major landscape feature, is likely to significantly augment the area of significant landscape features within Shau Kei Wan and the Eastern District. The proposal will open up the hillside landscape for public enjoyment and enhance the attractiveness of the area. Whilst the construction of the Sky Trail will inevitably lead to tree removal due to the heavy vegetated landscape, appropriate tree compensatory measures will be undertaken to minimise the affected areas.

Removed Indicators

Other than the indicators discussed above, several indicators as selected by the CASET were subsequently removed manually for the following reasons:

- *Construction waste* – The proposal does not involve large-scale demolition. The proposal is also limited in scale. It is therefore considered that the proposal will have negligible impacts on construction waste.
- *Energy consumption* – Energy consumption is considered insignificant as it does not involve artificial ventilation and only requires artificial lighting for a limited period of time.
- *Freshwater supplied and consumed* – This indicator is not related to the proposal.
- *Landfill capacity* – No large-scale demolition will be carried out as part of the proposal. No significant impact on the landfill capacity is expected.
- *Managed marine habitat* – No known managed marine habitat can be found in the immediate surroundings of the subject area.
- *Managed terrestrial habitat* – No significant managed terrestrial habitat is located within proximity to the proposed Sky Trail.
- *Marine eco-value* – The proposal is non-polluting in nature. It is unlikely that it will have significant impact on Marine eco-value.
- *Municipal waste* – Not much municipal waste will be expected as a result of the implementation of the Sky Trail project.
- *Significant landscape features (point)* – No significant landscape feature exists within proximity of the subject area.
- *Significant terrestrial eco-values* – No significant terrestrial eco-values exists within the subject area.

Social Checklist

Given the proposal is small in scale, the social impacts generated are likely be confined within the concerned district and no significant territorial impact is expected. The proposed Sky Trail is envisaged to have a positive impact on the following social aspects:

- Family outings could strengthen *family solidarity and relationship*. The Sky Trail will provide an additional attraction within the area for family outings. The Sky Trail, to a certain extent, will be beneficial to family resilience as well as family functioning.
- The proposed Sky Trail is expected to augment the *community's sense of belonging, social cohesion and networking* as it will add identity to this particular area of Shau Kei Wan which is physically constrained and difficult to access at the moment. The Sky Trail will elevate a sense of belonging for local residents by improving the local pedestrian connectivity to adjoining neighbourhoods with an iconic symbol that is innovative and unique. The theme of cultural heritage will be further highlighted with the connectivity proposal to link with several heritage establishments nearby.
- The proposal is also likely to improve the *physical and mental well-being* of the public. The proposal is non-polluting in nature. It is not located within proximity to any major source of air or noise pollution. The public will be able to enjoy scenic views and the hillside atmosphere along the proposed Sky Trail. The panoramic setting of the waterfront will provide a relaxing and stress-reducing environment that will help to revive the mental state of health for its users. Recreational activities on the Sky Trail such as walking will help to encourage a healthier lifestyle for the local residents.
- The introduction of the proposed Sky Trail will not only enhance *the provision of open space* within the district but will also offer quality open space where its users can enjoy unrivalled scenery of the harbour.
- It is expected that the Sky Trail will have a positive impact on people's participation in sports and recreational activities. The scenic setting will attract the community to participate in an active and healthy lifestyle.

It is unlikely that the proposed Sky Trail will have an impact on the following social aspects:

- The opportunities of elderly, children, youth, women and low income group;
- The safety net;
- The will and ability of the disadvantaged, the poor and the unemployed to achieve self-reliance;
- Disproportionately greater adverse health effects to vulnerable groups in the community;
- Archaeological sites or buildings of cultural heritage;

- The waiting time for public rental housing;
- The rental level in the private housing market;
- The average living space per person;
- The number of people residing in inadequate housing; and
- Access of people of working age to post-secondary education or above.

Other Non-quantifiable Issues

Other than the above-mentioned economic, environmental and social impacts, the proposal is envisaged to have the following non-quantifiable economic, social and landscape impacts:

- *Economic issues* – Locally, it is envisaged that the connectivity proposal will offer incentives for potential business starters to consider the Island East area for their business, which in turn will enhance the vibrancy and robustness of the Shau Kei Wan area. The proposed Sky Trail will serve to activate the existing commercial establishments near the waterfront. Nearby establishments such as retail shops and eating places in Shau Kei Wan will benefit from the visitors/users of the Sky Trail. The Hong Kong Museum of Coastal Defence will also benefit from the potential increase in visitorship.
- *Social issues* – From a social equality point of view, the proposal will serve the general public and provide equal opportunities and benefits to all races, genders, ages and social groups. The proposed public space will help to promote interaction between different groups of people and create a more diverse and vibrant community environment.
- *Landscape issues* – The Sky Trail will improve the environment of the district by providing an excellent open space at the harbourfront and enhancing the pedestrian connectivity in the Eastern District. Whilst the construction of the Sky Trail may inevitably lead to the removal of some trees, the Sky Trail will be designed with great care to minimise the impacts on the existing vegetation and landscape resources. The proposal will also open up the landscape for public enjoyment and promote environmental awareness.

First SD Strategy Checklist

From a long-term strategic viewpoint, the proposal will not only contribute to the economic viability and social vibrancy as discussed above, but will also improve the urban living space. The Sky Trail will augment the living quality of the Island East community by providing an excellent open space at the harbourfront and enhancing the pedestrian connectivity in the Eastern District. The Sky Trail will become an iconic feature in the Shau Kei Wan area. It is expected that the proposal will have minimal impacts in terms of social waste management and renewable energy in long term.

14.3.4 Waterfront Boardwalk underneath the Island Eastern Corridor (Figure 14.4)

Relevant Economic and Environmental Indicators

The CASET model has generated a series of economic and environmental indicators to broadly assess the environmental and economic sustainability of the proposed boardwalk underneath the IEC. These economic and environmental indicators may be assessed quantitatively and/or qualitatively. However, given that the Study is currently at conceptual design stage, only qualitative assessment could be undertaken at this point. Quantitative assessment of the indicators should be undertaken at the detailed design stage when more details are available. The economic and environmental indicators generated are as follows:

- *Carbon dioxide emitted per year* – The proposal is expected to contribute to a decrease in annual carbon dioxide emissions. The proposed boardwalk underneath the IEC will offer a pleasant walking environment and encourage the public to walk. Residents living near the proposed boardwalk may particularly switch their transport mode from a carbon-generating transport mode to walking and reduce the carbon footprint as a result. The construction will, to a certain extent, contribute to additional emissions of carbon dioxide. Nonetheless, given the boardwalk is limited in scale, the emission of carbon dioxide as a result of its construction is likely to be not significant.
- *Cost-benefit* – The cost-benefit of the proposal is likely to be positive as the amenity of the waterfront area and the Eastern District is likely to be enhanced as a result. The upgrading of the environs of the Victoria Harbour will also attract visitorship and bring positive economic returns. The proposal will also enhance the connectivity of the Hong Kong Island East.

- *Fixed capital* – The proposal will be an investment that is likely to generate future income stream by increasing employment opportunities, enhancing business opportunities (e.g. retail kiosks) and encouraging tourism activities. The proposal is likely to enhance the economic viability of the tourism industry and the business environment of the Eastern District in the long term.
- *Unemployment rate* – The construction work of the IEC boardwalk will provide employment opportunities to the construction industry. The boardwalk will also require regular maintenance, offering opportunities for engineering and construction professionals to become specialty staff of the boardwalk. The need for security staff for the boardwalk will also increase employment opportunities.
- *Open space shortfall* – The proposed 2km-long boardwalk will provide open space spanning from North Point to Quarry Bay for public enjoyment.
- *Significant landscape features (area)* – Whilst the subject site is located at the waterfront, there are no significant landscape features nearby, thus the proposal is unlikely to have a significant impact on any significant landscape feature.
- *Travel distance* – The provision of the boardwalk will provide an alternative route travelling east-west along the harbourfront from North Point to Quarry Bay and is likely to reduce the travelling distance of trips along the waterfront area. The North Point community is likely to benefit from this proposal. Given the boardwalk is not located within an existing urban area which is within reach to pedestrians, the construction of the proposed boardwalk is unlikely to increase the travel distance of the pedestrians. As the subject area underneath the IEC does not form part of the existing pedestrian and vehicular networks and as the construction activities will be mainly confined within the subject area, the construction of the boardwalk is unlikely to have a negative impact on the travel distance within the district.
- *Travel speed* – The additional pedestrian route provided by the boardwalk can alleviate the burden of the existing pedestrian path within the district. The travelling speed of pedestrians within the district is likely to increase as a result. The construction of the proposed boardwalk is also unlikely to have an adverse impact on the travelling speed within the district, given that it is not located within an existing urban area. As mentioned previously, the subject area underneath the IEC does not form part of the existing pedestrian or vehicular networks, thus it is unlikely that the travel speed within the district will be affected during the construction period.

Removed Indicators

Other than the indicators discussed above, several indicators were initially selected by the CASET which were subsequently removed manually. The removed indicators and reasons for removing them are provided below:

- *Construction waste* – The proposed works do not involve large-scale demolition. Given the boardwalk is limited in scale, it is likely to have negligible impacts on construction waste.
- *Criteria air pollutants and toxic air pollutants* – The proposal is non-polluting in nature. It is unlikely to have significant impacts on air quality.
- *Energy consumption* – Energy consumption is considered insignificant as the proposal does not involve artificial ventilation and only requires artificial lighting for a limited period of time.
- *Excessive noise* – The proposal is not a perceived as a major source of noise pollution.
- *Freight cost* – The proposal does not involve any freight operation.
- *Freshwater supplied and consumed* and *Income differential* – The two indicators are not relevant to the proposal.
- *Landfill capacity* – The proposal will not generate a significant amount of waste. No significant impact on the landfill capacity is expected.
- *Local freshwater* – No source of local freshwater exist within the vicinity of the proposal.
- *Managed marine habitat* – No known managed marine habitat can be found in the immediate surroundings of the subject site.
- *Marine eco-value* – The proposal is non-polluting in nature. It is unlikely that it will have significant impact on marine eco-value.
- *River water quality* – No river is in close proximity to the proposed boardwalk.

- *Managed terrestrial habitat* – No significant managed terrestrial habitat is located within proximity to the boardwalk underneath the IEC.
- Municipal waste – Not much municipal waste will be expected as a result of the implementation of the boardwalk proposal.
- *Significant landscape features (point)* – No significant landscape features (point) exist within proximity of the boardwalk.
- *Significant terrestrial eco-values* – No significant terrestrial eco-value exist in the area.

Social Checklist

Given the proposal is small in scale, the social impacts generated are likely to be confined within the concerned district and no significant territorial impact is expected. The proposed boardwalk underneath the IEC is envisaged to have a positive impact on the following social aspects:

- Family outings could strengthen family relationship. The proposed boardwalk will provide an additional attraction within the area for family outings, which in turn would strengthen *family solidarity*.
- The proposed boardwalk is expected to enhance the *sense of belonging* for the North Point and Quarry Bay communities by giving the area an iconic symbol that is innovative and unique. Residents will be able to take pride in the boardwalk structure while the vibrancy of the nearby area will be further augmented with the influx of visitors to the area.
- The proposed leisure open space of the boardwalk will improve the *physical and mental well-being* of public users who can enjoy the waterfront atmosphere along the proposed boardwalk. The picturesque setting of the waterfront will provide a relaxing and stress-reducing environment that will help to revive the mental state of health of its users. Recreational activities on the boardwalk such as jogging and walking will help to encourage a healthier lifestyle for the local residents.
- The *provision, quality and variety of recreational facilities* are likely to improve within the district. The proposed boardwalk will offer users more space for a variety of leisure activities such as jogging and sitting in a pleasant waterfront setting.

It is unlikely that the proposed boardwalk will have an impact on the following social aspects:

- The opportunities of elderly, children, youth, women and low income group;
- The safety net;
- The will and ability of the disadvantaged, the poor and the unemployed to achieve self-reliance;
- Disproportionately greater adverse health effects to vulnerable groups in the community;
- Archaeological sites or buildings of cultural heritage;
- The waiting time for public rental housing;
- The rental level in the private housing market;
- The average living space per person;
- The number of people residing in inadequate housing; and
- Access of people of working age to post-secondary education or above.

Other Non-quantifiable Issues

Other than the above-mentioned economic, environmental and social impacts, the proposal is envisaged to have the following non-quantifiable economic, social and landscape impacts:

- *Economic issues* – The boardwalk will serve to activate the existing commercial establishments near the waterfront. Nearby hotels and restaurants will benefit from the proximity of the future attraction of the boardwalk. This waterfront connectivity proposal will also offer incentives for potential business starters to consider the Island East area.

- *Social issues* – From a social equality point of view, the proposal will serve the general public and provide equal opportunities and benefits to all races, genders, ages and social groups. The proposed public space will help to promote interaction between different groups of people and create a more diverse and vibrant community environment.
- *Landscape issues* – The boardwalk will improve the living quality of the Island East community by providing an open space at the harbourfront and enhancing pedestrian connectivity in the Eastern District. The boardwalk will become an iconic feature for the Island East District.

First SD Strategy Checklist

From a long-term perspective, the proposed boardwalk positively adheres to the sustainable urban planning and design practice by:

- *Enhancing the provision of quality open space* – The boardwalk and its proposed use as a walking and jogging trail will enhance the provision of quality open space within the Eastern District and also promote and encourage outdoor activities and a healthier lifestyle.
- *Improving the visual and landscape quality* – The proposed boardwalk will be an iconic landscape feature within the district. It will also enhance the visual appearance and landscape cohesiveness of the harbourfront within the Eastern District.

Given that nature of the boardwalk, it is not expected that it will have significant impacts in terms of long-term solid waste management or renewable energy.

14.4 Public Engagement Programme

An important aspect of sustainable development is transparency and the need for early and thorough consultations with various stakeholders. This is essential in order to ensure that the proposed enhancement measures correctly identify the needs and aspirations of various parties and meet their expectations within practical limits.

The 3-stages PEP of the Study has been completed. The Stage 1 PEP was undertaken in March–Apirl 2009 ahead of the Study to solicit initial views from key stakeholders on their visions, aspirations and suggestions on harbourfront enhancement. The Stage 2 PEP was conducted in April–early July 2010, in which the initial options of the Study proposal were presented to the general public, statutory and advisory groups, to seek their respective comments on the proposals. The Stage 3 PEP was held in February–April 2011 which further sought public comments and views on the preferred enhancement proposals. The PEP findings have been summarised in Chapters 2 and 4 of this report. The PEP reports summarise the comments received and record the responses of the Consultants and the Planning Department. The activities of the PEPs resulted in a series of fruitful comments, which the Consultants along with the Planning Department have carefully considered and incorporated into the preferred option and the recommended option.

14.5 Conclusion

The recommended enhancement proposals will improve major aspects of daily life for local residents in the Hong Kong Island East area and the harbourfront area in particular. It is important for the proposed developments to be implemented in a phased manner with a clear programme so as not to completely disrupt on-going activities and overwhelm current users of the area.

Key issues such as access to the harbourfront, linkage to important elements within the area and to adjacent areas, pedestrian convenience and safety, environmental aspects, activities, visitor, tourist and community facilities, employment, business opportunities and open space areas will all be enhanced. This will have a significant impact on the sustainability of the Hong Kong Island East harbourfront and is in accordance with the agreed development strategies to create a connective and pedestrian friendly waterfront. Although some adverse environmental impacts are inevitable during both the construction and operation stages, including construction waste, dust, air pollutants, noise, water consumption, waste production, and impacts on local marine water quality through storm water runoff, mitigation measures and best management practices will be implemented to minimise the anticipated environmental impacts.

Based on the sustainability criteria, principles and indicators generated from the CASET model, the recommended developments and connectivity features are expected to make the Study Area more sustainable, user friendly and responsive than the existing situation. Having conducted the assessment using CASET and examined the major indicators in the CASET system, it is concluded that the proposed enhancement of the Island East waterfront will have significant positive impacts on sustainability levels in the following areas:

- Economic return;
- Leisure and cultural vibrancy;
- Community infrastructure;
- Social and mental health;
- Physical health and hygiene;
- Social cohesion and community identity;
- Preservation of cultural heritage; and
- Local and inter-neighbourhood mobility.

15. ENHANCEMENT PROPOSALS: LAND REQUIREMENT ASSESSMENT

15.1 General

Generally speaking, the enhancement proposals recommended under the Study emphasise on improvement to pedestrian circulation and waterfront connectivity. Given the fully developed urban morphology of the neighbourhoods within the Study Area, enhancement proposals are suggested mainly on existing road corridors and public open spaces. **Figures 15.1** and **15.2** show the land status of the Study Area, including Private Land Lot, Government Land/Government Land Allocation and Short Term Tenancy.

To allow early public participation and facilitate building public consensus on the Study proposals, a 3-stage PEP has been undertaken. While the expectation of the general public on the provision of a continuous waterfront promenade was appreciated, some residents of the district were of the view that a continuous waterfront promenade was not necessary if it would infringe on private ownership rights. Some Eastern District Councillors, professional bodies and local residents considered that if a continuous promenade was proven to be cost-ineffective or technically unfeasible, individual sections with district features could be diverted inland.

15.2 Private Land Issue

Two pieces of land at the waterfront area of Hoi Yu Street are zoned "OU" which are planned for the development of cultural, commercial, leisure and tourism uses. Part of the "OU" site in the western part of the waterfront area together with the adjoining area zoned "O" on the OZP is under private ownership. It comprises two private lots, one of which is currently occupied by a temporary oil depot. It will be necessary to address the interface issues of the future development of the "OU" site and the proposed waterfront promenade with the possible private development.

15.3 Marine Access Right

The provision of the boardwalk underneath the IEC will affect the marine access right of some private developments, such as K. Wah Centre and Kodak House, in North Point. If the private marine access needs to be retained for these developments, bascule bridges could be constructed at appropriate locations of the boardwalk to allow access of the vessels to the existing piers adjoining their marine frontage, but this would be subject to negotiation with the concerned owners upon implementation.

15.4 Impact on Existing Uses

Apart from the above land issues, it should be noted that some of the recommended enhancement proposals suggest the provision of public passageway through existing uses/will affect the existing uses. These are listed as follows:

- Possible public passageway through the North Point Ferry Piers and the North Point Dangerous Goods Vehicular Ferry Pier in the form of a boardwalk;
- Potential public passageway in the form of an elevated walkway through Shau Kei Wan Wholesale Fish Market to connect with the Sky Trail;
- Potential public passageway along the entry footpath of the Hong Kong Museum of Coastal Defence to connect with the Sky Trail;
- Proposed connection between the existing waterfront promenade at Provident Centre and Tong Shui Road Garden;
- Marine access to the existing fireboat pier at the North Point Fire Station;
- Proposed temporary heritage park at the existing open-air temporary car parking site in Shau Kei Wan; and
- Proposed introduction of traffic calming measures in Tam Kung Temple Road.

For these enhancement proposals to be realisable, financial and technical feasibilities are essential factors that require careful considerations. However, priority should be placed in responding to the public aspiration in creating an accessible harbourfront and strong commitment from various departments within government will be necessary to achieve this objective.

16. IMPLEMENTATION, MANAGEMENT AND MAINTENANCE

16.1 Institutional Framework

A number of factors must be considered as part of the formulation of an appropriate institutional framework within which to implement the enhancement proposals outlined in the Study. This involves considerations as to the appropriate co-ordination and resource allocation mechanisms within Government, and the possible potential role for the private sector in implementing and maintaining certain types of improvement and enhancement works. A degree of public private integration is desirable given the number of major corporations that are established within the area.

Under the existing framework, each relevant Government department adopts a specific role with regard to the completion of individual tasks associated with the enhancement proposals implementation. It is proposed that commercial/retail developments will be implemented by the private sector and managed and overseen by individual Government departments (i.e. those involved in implementation), or non-governmental organisations based upon the current practice adopted by the Government. It is also proposed that private sector developers should be involved in this process.

The appropriate institutional framework to be adopted for the purpose of implementation will ultimately depend upon the objectives of Government in relation to the scheme and the extent to which it can effectively utilise available resources. If the scheme is seen as having an important role in the long-term development of the Hong Kong Island East harbourfront, and if a policy decision is reached that the scheme should be proactively implemented to secure benefits for the residents of the Eastern District and the wider visitor catchment, then a modified approach to the existing framework could be considered that encourages greater involvement by the private sector in the provision of public facilities/amenities by incorporating them as part of the adjacent private property development packages. This approach will involve policy support and requires the concerned bureaux/departments to initiate the proposal and obtain the necessary approval at policy level. If, however, this is not the case, then the existing framework may be adequate. This would infer that government would be responsible for the entire development and maintenance of the public realm (i.e. waterfront areas promenades etc.).

Table 16.1 outlines the tentative implementation, management and maintenance roles for the enhancement proposals included in this Study. The implementation of most of the enhancement proposals including the boardwalk and the Sky Trail could be taken forward by the Government under existing mechanism. Their implementation would be subject to funding and resource availability. The proposed 20m wide promenade along the northern edge of the ex-NPE site will be implemented by the developer and handed over to the Government for management and maintenance. Involvement of private sector in the implementation of the two key sites at the North Point Ferry Piers and Hoi Yu Street would be further examined after the conclusion of the Study. The proposed framework for implementation of the proposals and their subsequent management and maintenance will still be subject to further agreement by concerned parties/departments.

16.2 Overall Approach

There are two overlapping approaches to implementation and maintenance:

- The Government takes full control of implementation and maintenance of elements within the public realm whilst the private sector implements associated enhancement projects adjoining private sites; or
- The Government takes overall planning and development control of implementation, but certain identified sites can be put out for tender, with leisure, recreational and cultural facilities to be constructed and administered by a private developer.

The overall approach should reflect a need to overcome fundamental dichotomy. Some of the most dynamic and interesting waterfront projects in world cities have evolved through predominantly private orchestration of uses within a pedestrian environment, so that leisure and recreation are linked closely with commercial facilities including cafes, shops and restaurants, and might include 'festival marketplaces' which facilitate points of attractions, visual and activity foci. However, this aspect has been difficult to achieve in Hong Kong, where commercial sites and open spaces are separately demarcated. In the past, there has been a virtual inability to house commercially oriented recreational uses around the harbour, with open space sites largely given over to low-key passive and active recreation. Introducing the private sector to harbourfront projects is therefore an innovative way to meet the objectives of a vibrant and diverse harbour, with a prominent and interesting range of destinations.

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Table 16.1 Tentative Implementation, Management and Maintenance Agents (Schedule of Responsibilities)

Major Proposal	Nature	Potential Implementation Agency	Potential Management Agency	Potential Maintenance Agency
IEC Boardwalk	Public leisure	Public	Public	Public
Opening Boundary Wall between Provident Centre and Tong Shui Road Garden	Improve waterfront continuity	Public	Public	Public
Sky Trail	Public leisure	Public	Public	Public
Key Site No.1: North Point Ferry Piers				
North Point Ferry Piers	Leisure and retail	PPC	PPC	PPC
20m Wide Waterfront Promenade	Enhancement of public circulation and improvement to public open space	Private Developer	Public	Public
Key Site No. 2: Hoi Yu Street Site in Quarry Bay				
Public Performance Venue/IMAX Theatre	Development of cultural and entertainment facility	PPC	PPC	PPC
Feature Pedestrian Footbridge	Improve pedestrian circulation across IEC from Quarry Bay area to the waterfront	Public	Public	Public
Hoi Yu Street Waterfront	Leisure, recreational, commercial, retail and entertainment	PPC	PPC	PPC
Shau Kei Wan Heritage District				
Temporary Heritage Park	Public leisure and cultural	Public	Public	Public
Traffic Calming Measure on Tam Kung Temple Road	Enhancement of the public realm and pedestrian environment	Public	Public	Public
Shipyard Façade Improvement	Enhancement of the public realm and pedestrian environment	Private (Shipyard tenants)	Private (Shipyard tenants)	Private (Shipyard tenants)
Shau Kei Wan Preliminary Treatment Works – Façade Treatment	Enhancement of the public realm and pedestrian environment	Public	Public	Public
Proposed Footpath alongside Chai Wan PCWA	Provide safe and enhanced pedestrian access around the PCWA	Public	Public	Public
Streetscape Enhancement	Improve connectivity to the waterfront, enhancement of the public realm	Public	Public	Public

Note: The proposed implementation, management and maintenance framework as tabulated above is tentative only, which is subject to further agreement by concerned parties/departments.

16.3 Strategic Priorities and Delivery Mechanisms

With the increasing recognition of the Victoria Harbour as a special public asset and part of the natural heritage of Hong Kong, the TPB endorsed the Vision Statement for the Victoria Harbour in 1999, which set out the TPB's vision and goals for Victoria Harbour. In preparing statutory plans and considering development proposals covering the waterfront areas, the TPB gives due regard to the Vision Statement for the Victoria Harbour. Apart from this, the HPPs formulated by the former HEC provide guidance on the sustainable planning, preservation, development and management of the Victoria Harbour and its harbourfront areas. Relevant approving authorities and advisory bodies are encouraged to make reference to the HPGs formulated by the former HEC in considering and advising on development proposals in and around the Victoria Harbour. Individual project proponents are also encouraged to comply with the HPGs as far as possible and practicable. In addition, the Urban Design Guidelines (Chapter 11) of the HKPSG are relevant to harbourfront design with the objective to promoting Hong Kong's image as a world class city and to enhance the quality of our built environment. It is necessary to accord harbourfront both a priority and a special status. It is also important that plans, when they are developed, become reality. This requires:

- Effective public engagement and stakeholder participation;
- Mechanisms to relocate inappropriate uses where necessary, feasible and cost-effective;
- Disposal of designated harbourfront sites by tender, with clear objectives and parameters for development; and
- The need to consider a sensible interpretation of the PHO so that opportunities to sculpt the harbourfront profile and improve access are not missed.

16.3.1 Merits

There are a number of aspects that require further studies and resolutions in ascribing responsibility between Government and private sector initiatives. It is likely that private sector involvement in implementation could inject merits for the following:

- Lead Time: It is likely that the private sector would be able to respond quickly in order to implement proposals;
- Focus: Private developers should be able to focus more directly on linking planning, design, management and delivery;
- Vibrancy: There is a capacity to explore the design and commercial possibilities of place-making through private sector skills in terms of a well designed and robust critical mass of uses;
- Funding: There is the possibility for the private sector to inject sufficient funds in order to accelerate the momentum of projects. It might also allow for provision of endowments to steer management, maintenance and programme of projects. Tenders could be based on the best use of funds;
- Ability to Deliver Product: This will depend on co-ordination and the effectiveness of liaison with the appropriate authorities over land along the harbourfront;
- Long-term Sustainability: Private involvement in both implementation and maintenance should facilitate the provision of facilities outside those of passive and active recreation, which are in both the public and visitor interest, and would achieve long-term economic benefits; and
- Value for Money: Capital endorsement injections and other forms of private sponsorship could help to diversify uses rather than wait for government funding allocations to develop designated opportunity areas.

16.3.2 Shortcomings

A number of shortcomings need to be addressed to achieve private sector participation:

- Design guidelines and associated mechanisms are currently insufficient to deliver the appropriate 'quality' planning and urban design product. These need to embody clear environmental and place-making goals that cannot be compromised by more functional priorities. Prevailing planning mechanisms must be in tune with the achievement of stated urban design objectives.
- In cases where existing uses are incompatible with new harbourfront initiatives, there is a traditional reluctance to buy-out or re-locate these uses which might discourage private sector investment.
- There are virtually no existing heritage features alongside the harbourfront or older buildings suitable for conversion to new uses by the private sector, which might establish a strong landmark identity.

- Upgrading of connections between the hinterland and the waterfront are primarily associated with public channels, and there is little incentive for private involvement in this process.

The Government would be responsible for the arrangement of land servicing and provision of engineering infrastructure. It is considered that the programming relating to the disposal of development rights associated with the private property developments should be carefully formulated, with the programming relating to the provision of the necessary infrastructure to be appropriately matched.

Preparation for the disposal of individual sites should be undertaken in parallel with the processing of the relevant town planning procedures such that the land sale programme could commence on completion of the planning procedures.

Under a conventional arrangement, the infrastructure projects to serve the redeveloped waterfront areas will be included into the Resource Allocation Exercise (RAE). The detailed design would then proceed after successful inclusion in the RAE. The construction of the necessary infrastructure will be programmed, taking account that these new developments are to be implemented in phases.

Nevertheless, to short-cut this process, the private sector should be encouraged to participate in implementation. This could involve combining the development of elements of the public realm with the implementation and development of key development sites (i.e. North Point Ferry Piers and Hoi Yu Street key sites).

As for implementation by the public sector, projects primarily include:

- Construction of the boardwalk under the IEC;
- Construction of the Sky Trail along the hillside north of the Hong Kong Museum of Coastal Defence; and
- The streetscape enhancement proposals for the nine major pedestrian corridors.

Private sector improvements can be financed by different methods depending on the type of improvements and relationships with private development. Some improvements may be performed on a cost-reimbursable basis. Improvements that benefit multiple parties may benefit through cost sharing arrangements between developers. Coordination of the works and sharing of costs would be advantageous in this case. Similar to implementation, the management and maintenance of works will be by the implementing parties, private sector or public sector.

16.4 Public-Private Partnership/Collaboration Approach

As mentioned above, involvement of private sector in the implementation of the two key sites at the North Point Ferry Piers and Hoi Yu Street would be further examined after the conclusion of the Study. In this regard, the Hoi Yu Street site in Quarry Bay, in particular, has already been identified as one of the target harbourfront sites having potential for its implementation through a PPP/PPC approach. A collaborative scheme between the public and private sector may bring enhanced opportunities to create innovative developments that could best exploit their location and to ensure their effective integration with the hinterland. The Government has stated that it intends to promote the strategies of PPP/PPC in the future projects. The Government will also have the responsibility of inserting suitable clauses in tender documents to the private sectors to stipulate various requirements such as opening hours of waterfront areas and minimum area of public open space with a view to safeguarding public interests. For the PPP/PPC to work, it would rely on the ingenuity of the Government to devise an effective strategy for such an approach.

16.4.1 Definition and General Features

In recent meetings by the Harbour Business Forum, the notion of the said PPP/PPC has been discussed as a “Public Private Co-operation”. Essentially, a traditional form of PPP/PPC can be defined as “an arrangement where the public sector contracts to purchase quality services from the private sector on a long-term basis so as to take advantage of private sector management skills and disciplines by having private sector capital at risk” (Farrands, S. (2010), The Future of PPCs in Hong Kong, Harbour Business Forum). Whilst there are various forms of PPP/PPC, they all in similar way adopt the key features such as:

- Private sector responsibility is to be outlined at the early stage by a statutory body or a designated Task Force;
- Provision of a service: Providing facilities and services for the benefit of the public. However, some services will require an infrastructure/built structure for them to be carried out within;
- Emphasis on “output” instead of “inputs”: when developing a PPP/PPC, the government should focus on the desired “output”, e.g. initial setting out of level of services to be provided by the private sector; it will then be up to the private sector to devise the best way to meet the set “output”;

- Service-and-payment structure: the PPP/PPC should be structured to incentivise the private sector on the basis that payment only comes with a satisfactory level of services that are required to be provided; and
- Long term in nature: more documentation and contractual issues are to be set out and developed up front, e.g. output specifications, initial design, complex tender documents and possibly a public sector comparator to assess value for money.

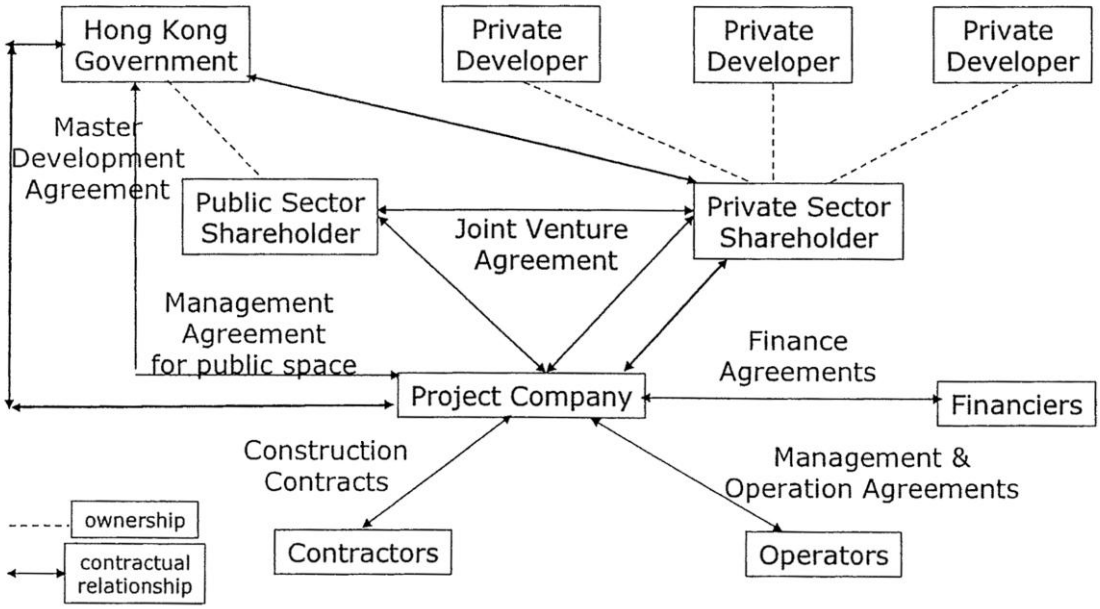
16.4.2 Advantages of PPP/PPC

There are a certain number of advantages provided by the adoption of PPP/PPC. It is important to monitor the tendering process through the PPP/PPC to ensure that these advantages are being maximised:

- **Private sector innovation and experience**: one of the main reasons for the success of PPP/PPC has been the ability of the government to take advantage of the private sector's innovation and experience to deliver either difficult projects which are beyond the expertise of the government, or more efficient and better designed projects. This is because the private sector is asked to deliver an outcome instead of being given a full design to build, and it allows the private sector much greater flexibility in scope to use all their available resources to deliver the project in its quickest and most efficient way.
- **Optimal risk allocation**: PPP/PPC provides a mechanism for allocating risk to the entity best capable to deal with any associated risks, through properly drafted project documents. This helps alleviate a shortcoming with the traditional procurement procedure where risk is disproportionally allocated to the contractor in general which may discourage the private sector to participate.
- **Value for money**: the two advantages as noted above optimise value for money in PPP/PPC projects, e.g. there is no need to include a risk premium in the price of the project; if the private sector is responsible for operation of the project for a period of time, the cost of operation will be factored into the design, which leads to a better selection of quality materials as well as increased operational efficiencies; PPP/PPC projects often deliver better outcomes for the public through additional services being offered by the private sector to make their bid for the project more attractive; research has also shown that PPP/PPC is generally delivered on-time and on-budget more often than traditionally procured projects.
- **Reduced government resources**: by engaging the private sector to assist in delivering projects, there is less burden on Government resources e.g. Government funds and Government employees.
- **Increased efficiency**: PPP/PPC generally delivers greater efficiency through quicker completion time, decreased capital costs or higher operational efficiencies.

16.4.3 Possible PPP/PPC Mechanism and Associated Key Features

Victoria Harbour is one of Hong Kong's greatest assets. A recent report by the Task Group on Management Model for the Harbour-front under the former HEC has advocated the wider application of PPP/PPC in harbourfront development and management in Hong Kong. The following diagram illustrates a possible mechanism that may be adopted for the Hoi Yu Street harbourfront development. This is a similar model in comparison to the development of the Hong Kong Asia Word-Expo in Lantau Island.



Source: Farrands, S. (2010), The Future of PPCs in Hong Kong, Harbour Business Forum

Several key features of this possible PPP/PPC mechanism are observed:

- As was the case of the development of Asia World-Expo, a joint venture can be agreed and formed between the government and the developers from the private sector;
- The government will enter into a master development agreement with the project company and its sponsors, granting it the development rights including right to occupy and use the land for development and to operate the specified facilities that are to be developed. If the site is to be developed in phases, the government and the project company can also enter into separate development agreements in relation to each phase to specify the exact scope of development and development obligations according to each phase;
- The government can enter into a management agreement with the project company whereby the developer will be engaged to manage and operate the public space, including the promenade that is to be developed;
- The project company will enter into financial agreements. Depending on the financiers' requirements, the government as part of the shareholder may be requested to be a party to the financial agreements. Alternatively, the government may also elect to provide funding for such project;
- The project company will enter into a construction contract for the proposed development. Likewise, if the overall development is to be carried out in phases, there can be multiple construction contracts that relate to each development agreement. The agreements for various phases can be individually tendered to ensure competitiveness without sacrificing the quality of the development and its services during operation stage; and
- The project company will enter into management agreements to engage operators, e.g. operators to operate commercial buildings, retail components etc.

16.4.4 Potential Issues

Even though PPP/PPC-driven developments have been observed with success worldwide, this is a relatively uncommon mode of development in Hong Kong. As there are various development/construction practices unique to Hong Kong, potentially, there may be issues arising for the Hoi Yu Street key site development as outlined below:

- Size of potential sites: some areas proposed for development may be too small to be developed separately from the rest of the sites as a PPP/PPC project;
- All sites may not be ready for development at the same time: the required land around the waterfront area may not be completely available simultaneously due to various issues such as land acquisition (if required), provisioning of public access through privately-owned site etc. However, it is not atypical to tender out all sites at the same time with individual parcels of land to be released in phases.

In the recent political climate, there is a potential for heavy public criticism that a piece of developable land in a prime location be given to a single developer. This may instigate negative speculations even though there may be a lack of evidence. There are certain possible ways to alleviate this effect:

- Form a joint venture between the government and more than one private developer;
- The government can own 50% of the shares in the project company and have veto rights in relation to major decisions but no voting rights (to avoid management deadlock in fear of the government failing to vote for the best interest of the project company);
- Each developer has an obligation to make financial contribution and be jointly and severely liable for the development of the project; and
- The developers will need to select among themselves a developer to lead the development and operation of the sites on behalf of the project company or engage an external operator to operate the sites.

16.4.5 Conclusion

In summary, there are many PPP/PPC options available and the above structure is merely a potential option that can be adopted for the Hoi Yu Street key site. There have been many other options, with varying degrees of private sector participation discussed in other occasions such as the report issued by the Task Group on Management Model for the Habour-front as mentioned above.

The newly established HC is a non-statutory body responsible for coordinating the planning, design and development of harbourfront areas. With membership comprising the Secretary for Development and other relevant Head of Departments, it is in a leading position to resolve conflicts among various Government objectives and some incompatible land uses of harbourfront sites. On this basis, a non-statutory body is viewed as the best option in the short term. However, it is noted from the Task Group report to consider a statutory authority to lead the PPP/PPC for harbourfront developments in the longer term.

16.5 Priority of Implementation

In terms of priority of implementation, streetscape enhancement proposals for major pedestrian corridors can be identified as quick-wins for improving the connectivity between the hinterland and the waterfront and enhancing the pedestrian environment. The proposals of the two key sites could be realized after exploring the feasibility of PPP/PPC. Other more complicated proposals, including the boardwalk and the Sky Trail, require further detailed design, technical assessments and engineering feasibility studies. In particular, further investigation of resolution of relevant technical issues, such as compliance with the PHO in relation to the boardwalk proposal, impact on private property and marine access rights are required.

16.6 Estimate of Cost and Revenue

The cost of construction and implementation of each of the proposals such as the IEC boardwalk and Sky Trail will be difficult to ascertain at this conceptual planning stage. The cost of the enhancement projects could vary rather significantly depending on the use and application of different construction and treatment materials. The constant rise and fall of essential construction materials will inevitably impact the overall cost of the IEC boardwalk and Sky Trail proposals. The cost of the streetscape enhancements will depend largely on the detailed design and the final choice of physical materials. It is therefore suggested that the assessment of the cost of the proposals should be conducted during the detailed design stage, when more precise details are formulated for each of the project items.

Revenue sources of the enhancement proposals are expected to be largely generated from the retail/commercial developments proposed at the two key sites. Food and beverage facilities and retail shops located at the North Point Ferry Piers and the Hoi Yu Street waterfront will generate a considerable amount of revenue. The proposed enhancement of the North Point Ferry Piers will also raise the ridership of the cross harbour ferry, hence generating higher revenues for the ferry operators and improving the quality of the ferry service. Retail establishments and restaurants adjacent to the selected streets treated with enhancements are also likely to experience an increase in business due to the higher footfall of the selected streets. Overall, the enhancement proposals will become attractions to the general public and visitors, hence benefiting the economy of the Island East harbourfront area as a whole.

16.7 Overview

This chapter has briefly highlighted the institutional framework and implementation mechanisms that will be available to the government in realising the proposals contained in this report. Whilst some of the proposals clearly lend themselves to private

sector involvement, interventions in the public realm are probably better suited for implementation by government. As noted, there may also be circumstances where the opportunity for PPP/PPC may exist.

The desired institutional framework for the purpose of implementation, management and maintenance will ultimately depend on the overall initiative of the Government in relation to the scheme. Opportunities to incorporate private enterprises in the implementation of the development proposals should be explored. Recommendations for relevant parties/Government agencies to implement, manage and maintain each of the key design proposals have been suggested and should be recognized as the tentative framework.

17. CONCLUSION

The development of connectivity and waterfront enhancement and regeneration proposals for the Hong Kong Island East waterfront and its immediate hinterland has been an extremely challenging exercise. Access to the waterfront is almost comprehensively compromised by high and low level highways and private ownership of waterfront sites that are not accessible to the public. Whilst the Hong Kong Island East is well served by public transport and mass transit railway, its waterfront area is not well provided with good quality hard and soft landscape treatments that would promote uses and engender conditions that could be regarded as a quality public realm.

It is apparent that the Study Area is experiencing a gradual transition in terms of the uses and functions that it accommodates. Industrial functions and uses have progressively disappeared over recent years. A number of areas within the Study Area have or are being cleared for redevelopment. These offer new opportunity spaces to foster the regeneration of Hong Kong Island East and its environs as well as to provide new destinations and facilities that will benefit the local population. The eastern extent of the Study Area is topographically challenging which has called for the provision of new and innovative means of allowing people to circulate in an east-to-west direction. The Study Area has a rich cultural heritage associated with it, including Shau Kei Wan which was originally a fishing village, Tam Kung Temple, and the Hong Kong Museum of Coastal Defence with a number of historic buildings previously occupied by the Japanese during the World War II.

The above-mentioned conditions and changes will inevitably bring with them new challenges and opportunities, all of which are likely to contribute to the regeneration of the Study Area.

Taking into account the public comments received at the 3-stage PEP, the enhancement proposals of the Hong Kong Island East harbourfront have been finalized and presented in this report, which will provide a conceptual planning framework with the following public benefits:

- The creation of a continuous waterfront promenade integrated with the surrounding urban parks and waterfront developments;
- Improvement to connectivity and accessibility to the waterfront;
- The provision of public facilities that can be enjoyed by visitors and the population living and working in the Hong Kong Island East;
- The introduction of new commercial uses, waterfront attractions and facilities that can reinforce a multi-faceted, diversified and vibrant neighbourhood;
- An enhancement of the character of the district through landscape and façade treatment, streetscape enhancement, planting, and improvement of pedestrian linkages; and
- Proposals directly responding to public aspirations will foster future collaboration between public and private sectors.

Upon the realization of the recommended proposals, it is believed that a vibrant, accessible and quality waterfront for the Hong Kong Island East will be created for public enjoyment.

LEGEND

Study Area Boundary

OZP Boundary

Waterfront Interlinkage with Adjacent Areas

Character Area 1:
North Point

Character Area 2:
Quarry Bay

Character Area 3:
Shau Kei Wan

Character Area 4:
Chai Wan

NORTH

0 100 200 300 400 500m

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

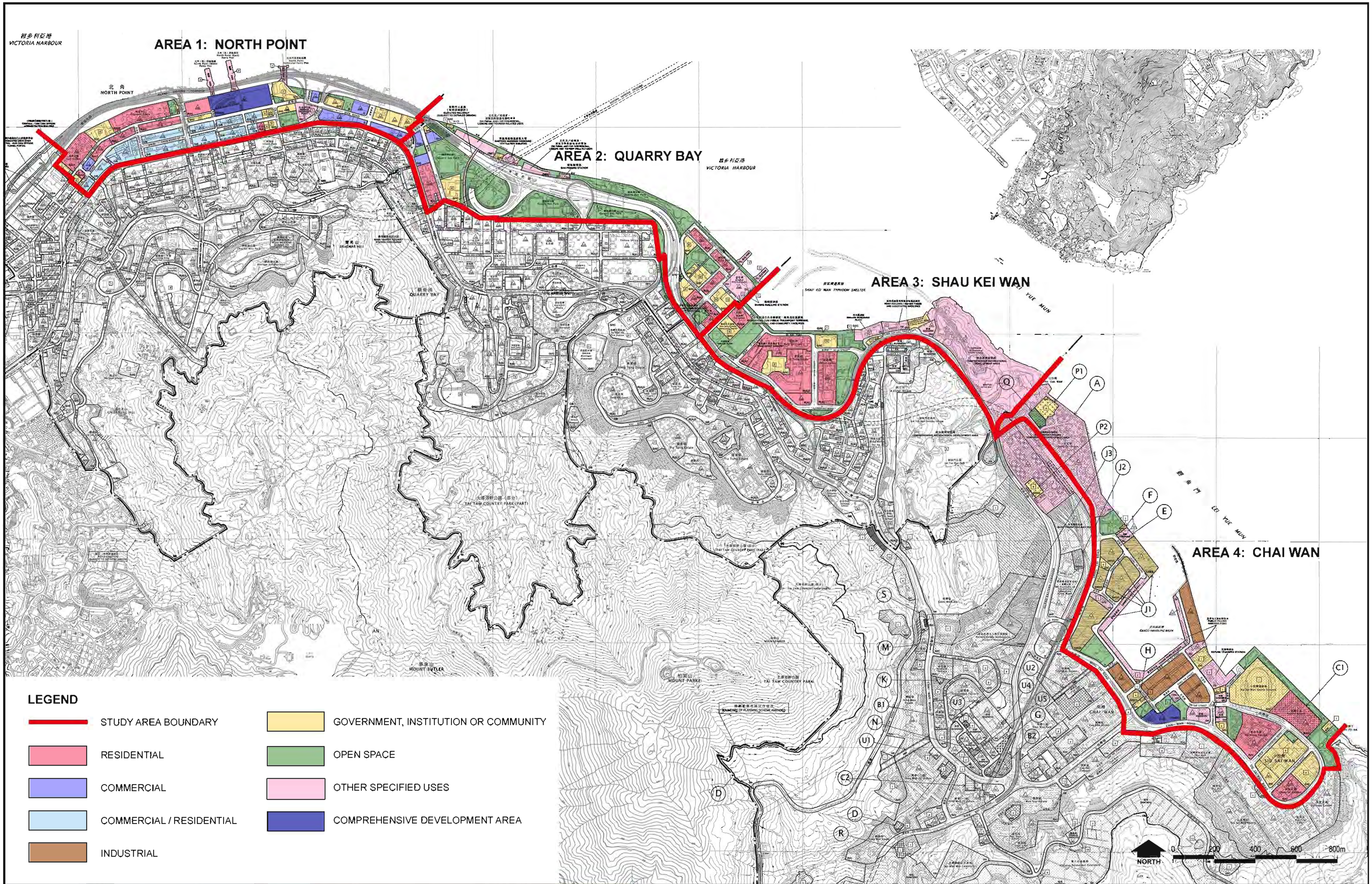
雅邦 Urbis Limited

AECOM

Title

Hong Kong Island East Study Area - Character Areas

Scale	Date	Figure No.
As Shown	March 2012	1.1



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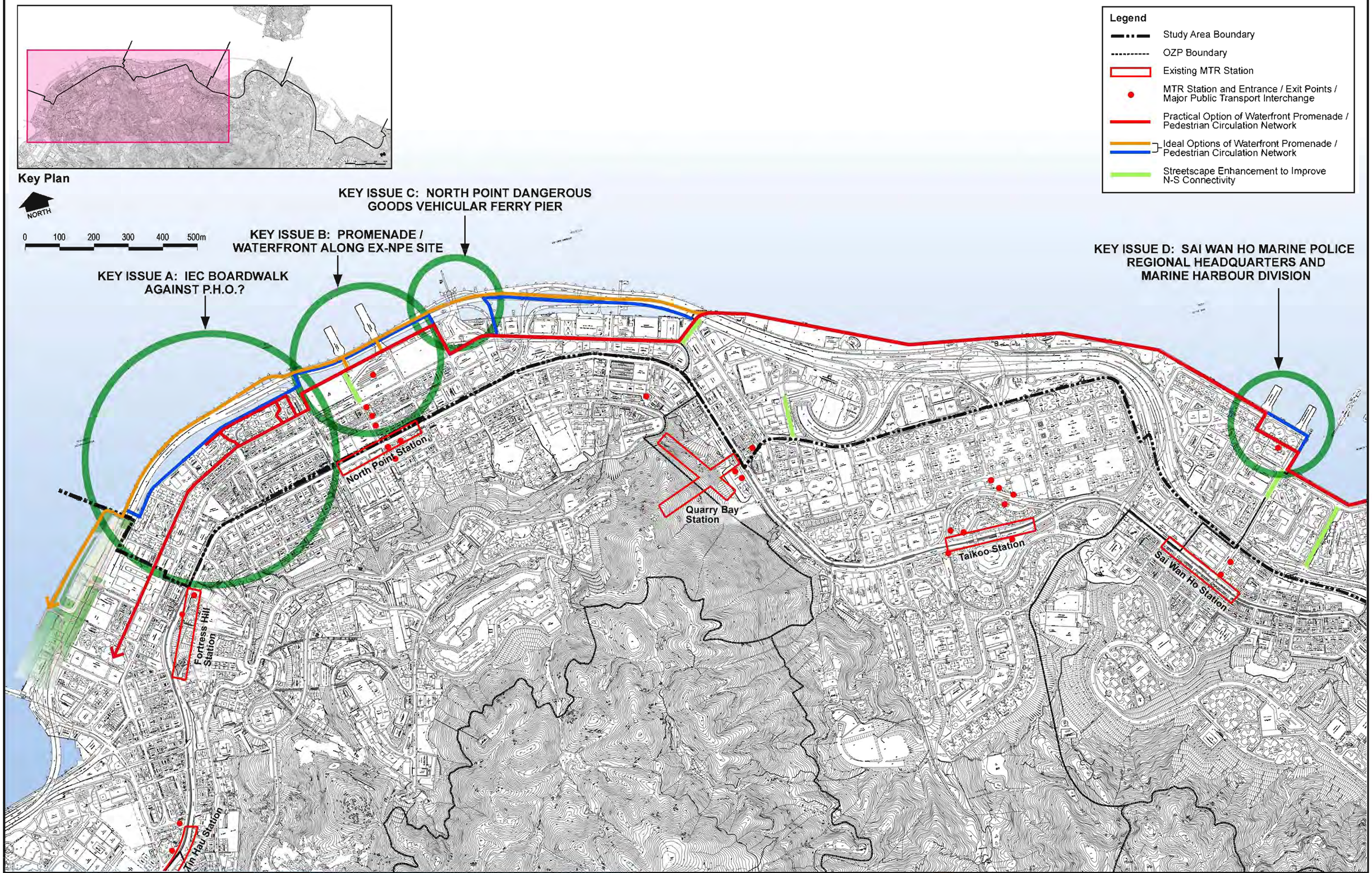
AECOM

Title		
Current Statutory Plans: Designated Land Use		
Scale: As Shown	Date: March 2012	Figure No. 1.2

Key Plan



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Title: Initial Waterfront Promenade Proposal / Pedestrian Circulation Network with Key Issues - North Point and Quarry Bay

Scale	Date	Figure No.
As Shown	February 2012	3.1

Key Plan

NORTH

0 100 200 300 400 500m

KEY ISSUE E: SHAU KEI WAN SHIPYARDS AND WHOLESALE FISH MARKET

KEY ISSUE F: HONG KONG MUSEUM OF COASTAL DEFENCE

KEY ISSUE G: CHAI WAN WATERFRONT BETWEEN HENG FA CHUEN AND CHAI WAN PUBLIC CARGO HANDLING BASIN

KEY ISSUE H: CHAI WAN PUBLIC CARGO HANDLING BASIN

KEY ISSUE I: CHAI WAN PUBLIC FILLING BARGING POINT RAMP AND GODOWNS

KEY ISSUE J: OTHER "G/IC" AND "OU" USES EAST OF CHAI WAN PUBLIC CARGO HANDLING BASIN

Legend

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Practical Option of Waterfront Promenade / Pedestrian Circulation Network
- Ideal Options of Waterfront Promenade / Pedestrian Circulation Network
- Streetscape Enhancement to Improve N-S Connectivity

Heng Fa Chuen Station

Shau Kei Wan Station

Sai Wan Ho Station

Chai Wan Station

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbis 雅邦 Limited

AECOM

Title: Initial Waterfront Promenade Proposal / Pedestrian Circulation Network with Key Issues - Shau Kei Wan and Chai Wan

Scale	Date	Figure No.
As Shown	March 2012	3.2

Key Plan

NORTH

0 100 200 300 400 500m

Legend

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Existing Public Open Space
- Planned or Potential Open Space*
- Pedestrian Circulation Route
- Historical Building

Note: "Planned or Potential Open Space" refers to an area that is either proposed as future open space zoned 'O', and / or open space zoned 'O' that is under construction.

North Point Station

Quarry Bay Station

Taikoo Station

Sai Wan Ho Station

Fortress Hill Station

Tin Hau Station

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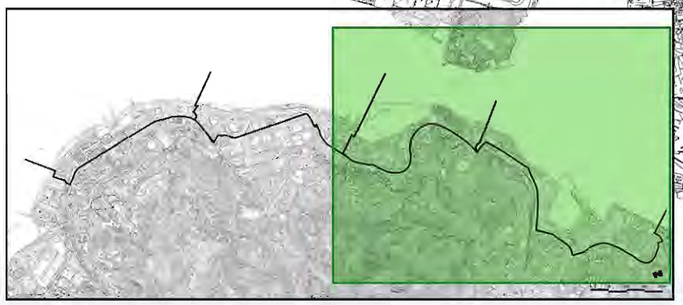
AECOM

Title

Initial Option: Pedestrian Circulation from the Hinterland - North Point and Quarry Bay

Scale	Date	Figure No.
As Shown	February 2012	3.3



Key Plan

Legend

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Existing Public Open Space
- Planned or Potential Open Space*
- Pedestrian Circulation Route
- Historical Building

Note: "Planned or Potential Open Space" refers to an area that is either proposed as future open space zoned 'O', and / or open space zoned 'O' that is under construction.

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

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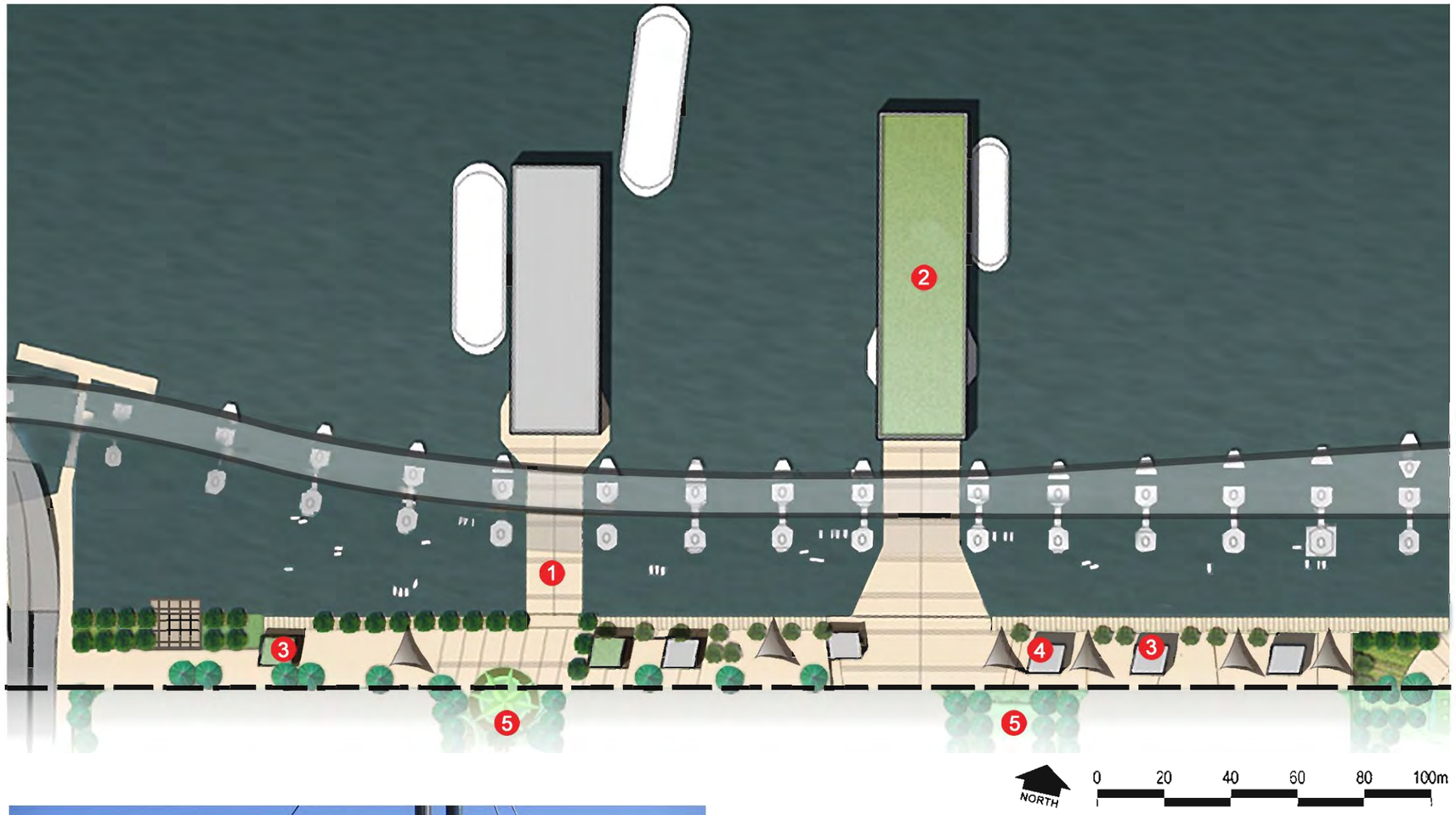
AECOM

Title

Initial Option: Pedestrian Circulation from the Hinterland - Shau Kei Wan and Chai Wan

Scale	Date	Figure No.
As Shown	February 2012	3.4



Legend

1. North Point Ferry Piers - Cross Harbour Ferry Civic Plaza
2. Tourist Boat Pier and Restaurants
3. Outdoor Café / Bar
4. Tourist Centre
5. Possible Future Inland Green Links to Connect Piers to the Hinterland

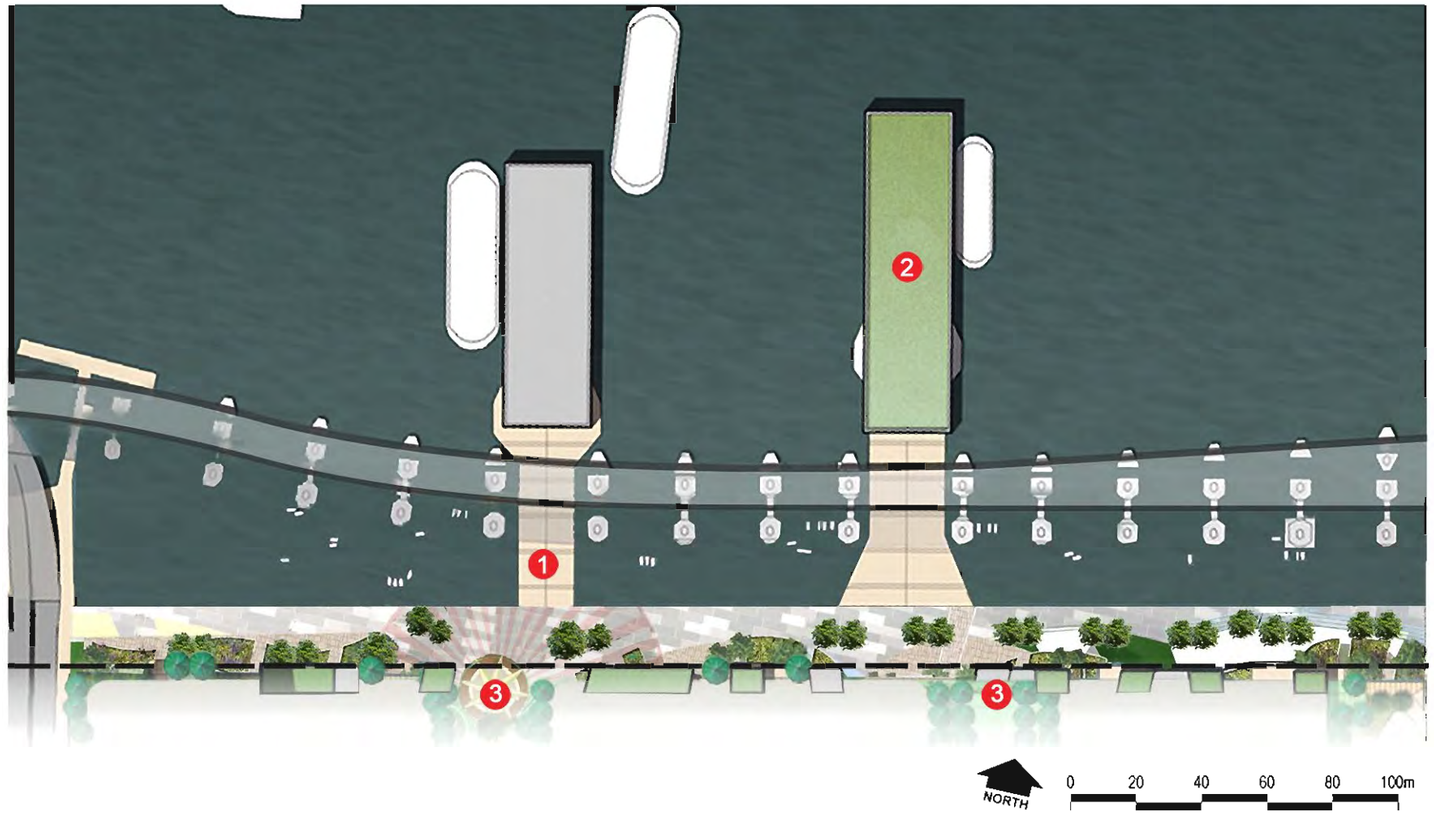
— — — 20 Metres Wide Waterfront Promenade

NORTH 0 20 40 60 80 100m

Design Objectives:
Functional Circulation Corridor

Option 1: Introduction of retail uses along proposed promenade

Lining the waterway is a pedestrian friendly promenade and a colourful kaleidoscope of restaurants, outdoor cafés and bars, enticing users a closer experience to the water's edge.



Legend

1. North Point Ferry Piers - Cross Habour Ferry Civic Plaza
2. Tourist Boat Pier and Restaurants
3. Possible Future Inland Green Links to Connect Piers to the Hinterland

— — — 20 Metres Wide Waterfront Promenade

Design Objectives: Leisure and Recreation-themed Waterfront

Option 2: Provide a 20m wide waterfront promenade with uses of walking, cycling, seating, planting, playgrounds and elderly exercise areas.



Street furniture and hard and soft landscape enhancement should be introduced to provide continuity in the character and quality of the waterfront environment

Flexible open space should be incorporated in the overall design of the promenade reserved for casual, informal activities such as Tai-Chi and various types of street performances. These flexible open spaces can also accommodate festival/seasonal events such as market fairs.

Corresponding retail and dining uses, e.g. cafés, restaurants, kiosks, coffee shops, bars etc. forms the background along the waterfront promenade within the future development of Ex-North Point Estate site.

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

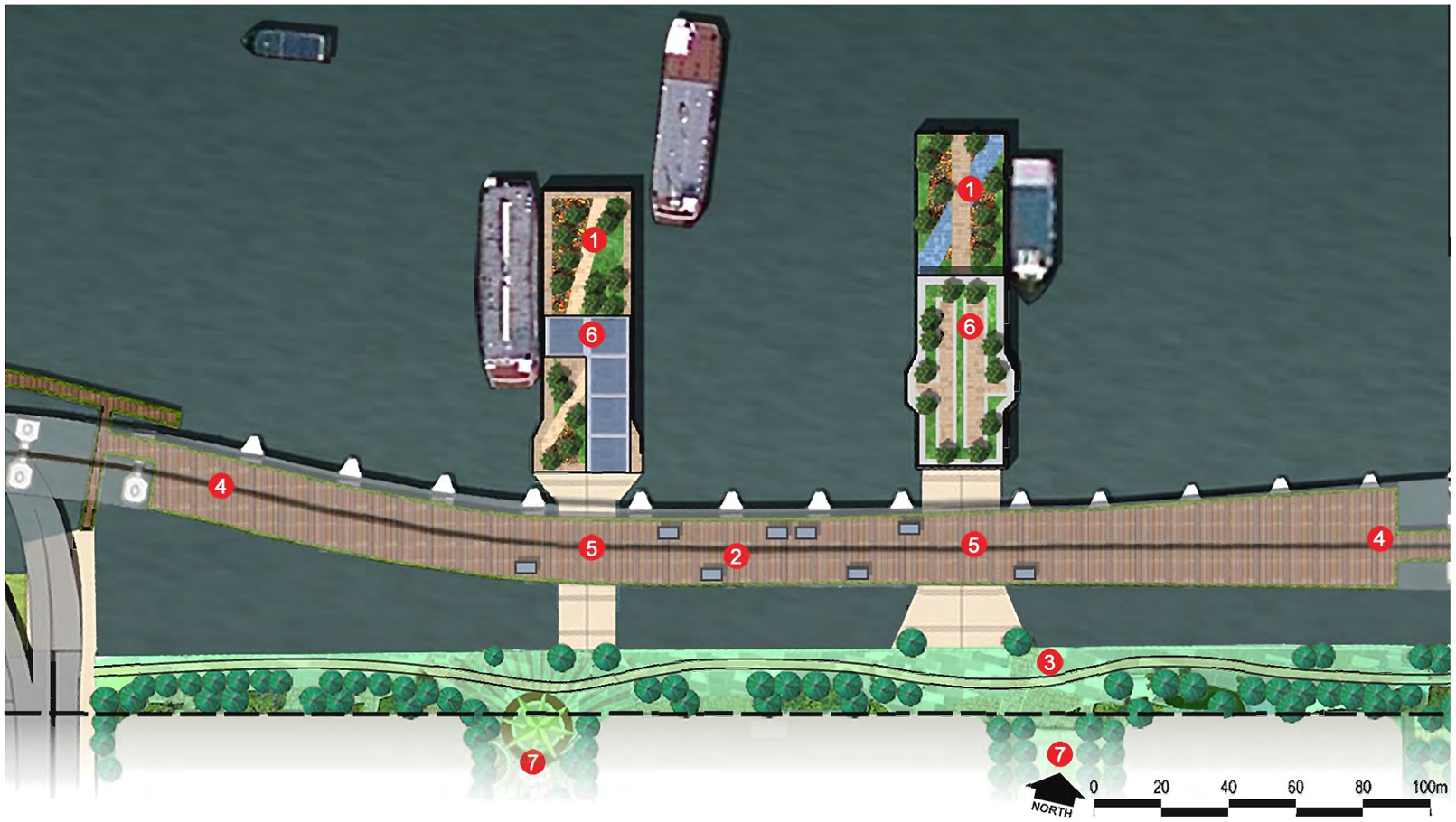
Planning Department

Urbis Limited 雅邦

AECOM

Title: North Point Ferry Piers Key Site - Option 2

Scale: As Shown | Date: February 2012 | Figure No. 3.6



Design Objective:
Major Entertainment Hub
(or themed as " Vibrant Entertainment Waterfront")

Legend

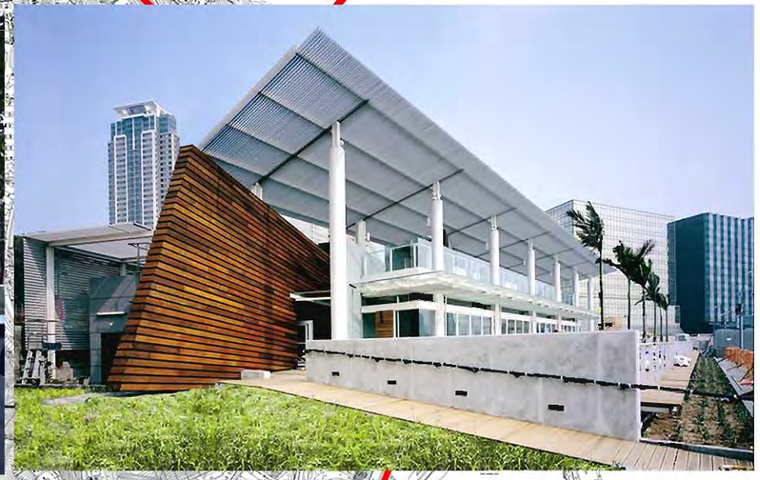
1. Rooftop Outdoor Café / Bar
2. Kiosks on the Boardwalk
3. 20m Wide Promenade with Extensive Softscape and Open Space
4. Proposed Boardwalk for Improved Waterfront Accessibility
5. Extension of Boardwalk through the Pier Structures
6. Rooftop Landscape Areas Accessible to the Public
7. Possible Future Inland Green Links to Connect Piers to the Hinterland

— — — 20 Metres Wide Waterfront Promenade

Indicative photomontage of the proposed IEC Boardwalk which is envisaged to become North Point's major activity area at the waterfront

OPTION 1: RECREATION-THEMED WATERFRONT

Waterfront Retail



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Planning Department

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AECOM

Title: Hoi Yu Street Key Site - Option 1

Scale	Date	Figure No.
As Shown	March 2012	3.8

OPTION 2: CULTURAL AND LEISURE-THEMED WATERFRONT WITH CONVENTIONAL FOOTBRIDGE LINKAGES

CULTURAL AND LEISURE FACILITIES WITH RETAIL AND RESTAURANTS

FEATURE BRIDGE

VIEWING POINT

CYCLE ROUTE

WOODLAND

CULTURAL AND LEISURE FACILITIES WITH RETAIL AND RESTAURANTS

OU

OU

ISLAND EASTERN CORRIDOR

HOI YU STREET

QUARRY BAY PARK

Quarry Bay Park Phase II

QUARRY BAY PARK

Quarry Bay Park

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

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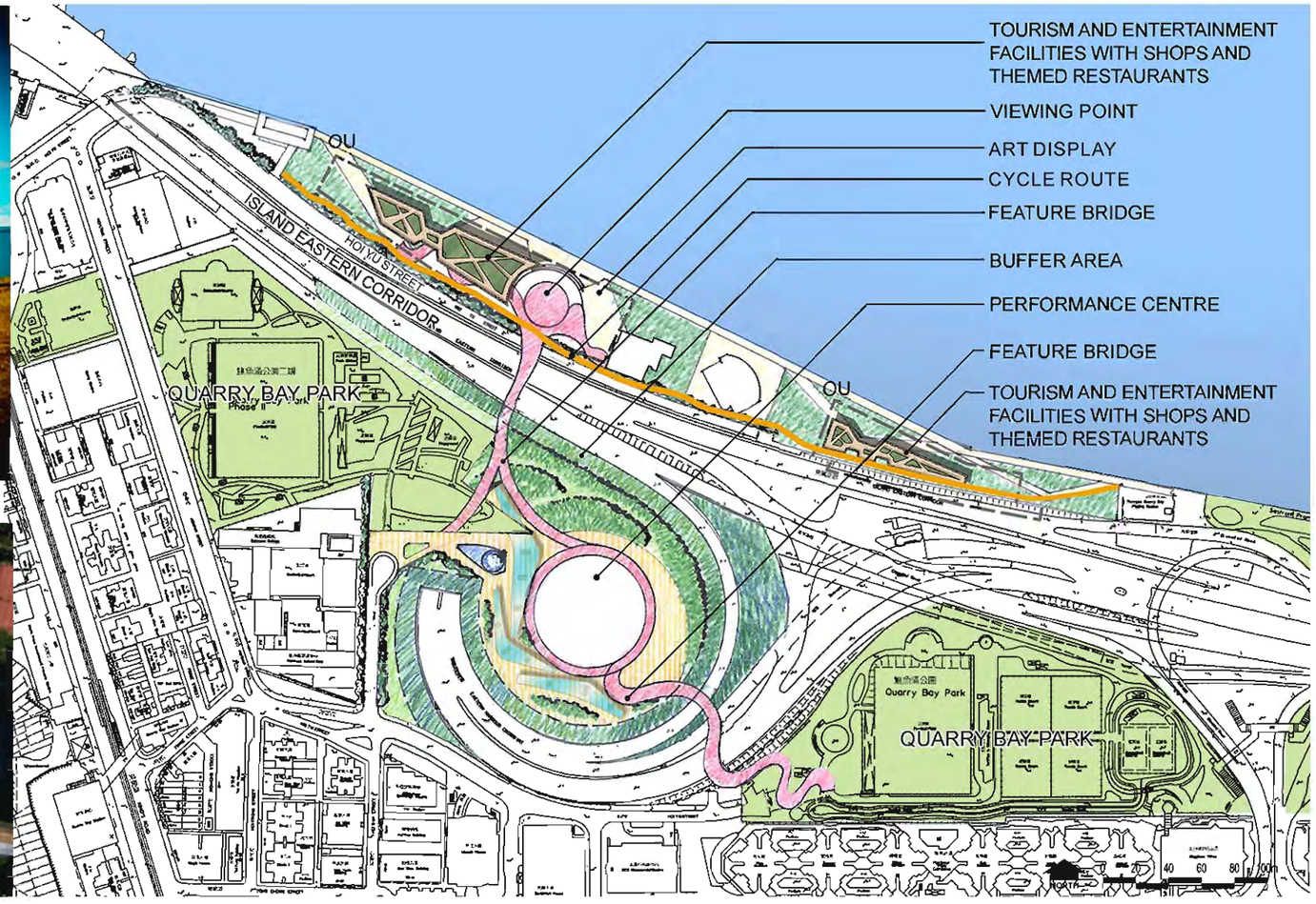
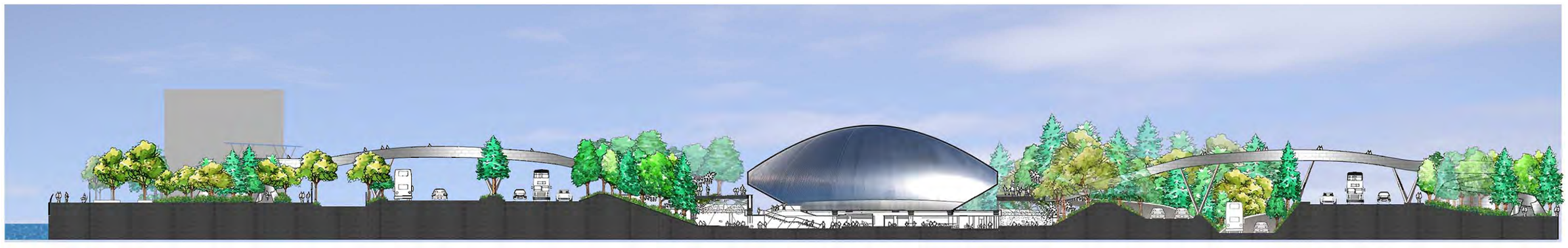
AECOM

Title: Hoi Yu Street Key Site - Option 2

Scale: As Shown | Date: March 2012 | Figure No. 3.9

OPTION 3: TOURISM AND ENTERTAINMENT-THEMED WATERFRONT WITH ICONIC FOOTBRIDGE





Harbour | Proposed tourism and entertainment facilities and open space along Hoi Yu Street site | The IEC | Proposed IMAX or performance centre at the EHC Tunnel Portal with iconic bridge to improve accessibility to the harbourfront | Multiple slip roads to the IEC | Connection to Quarry Bay Park

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Title: Hoi Yu Street Key Site - Option 3

Scale	Date	Figure No.
As Shown	March 2012	3.10

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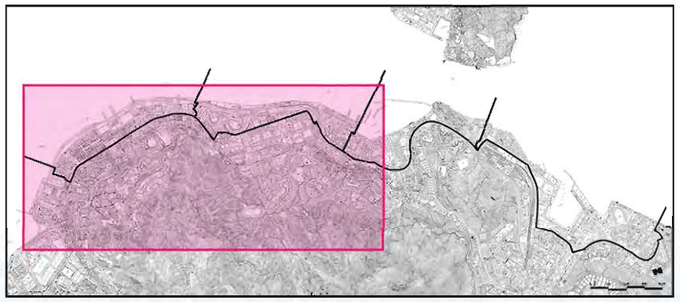
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

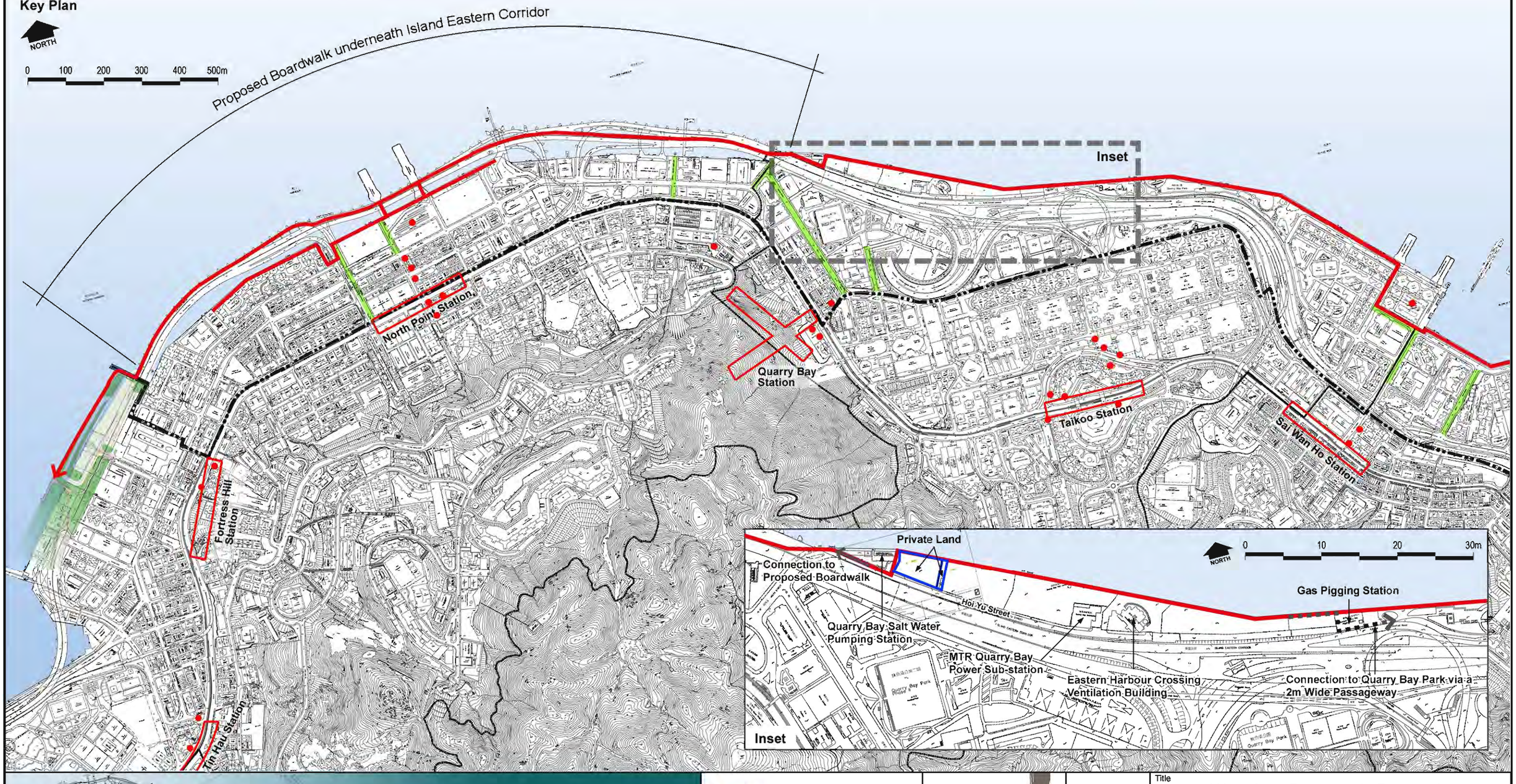
Title

Landscape Palette with Urban Design Elements

Scale	Date	Figure No.
As Shown	February 2012	3.11



Key Plan



Legend

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Recommended Option of Pedestrian Circulation
- Streetscape Enhancement to Improve N-S Connectivity

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

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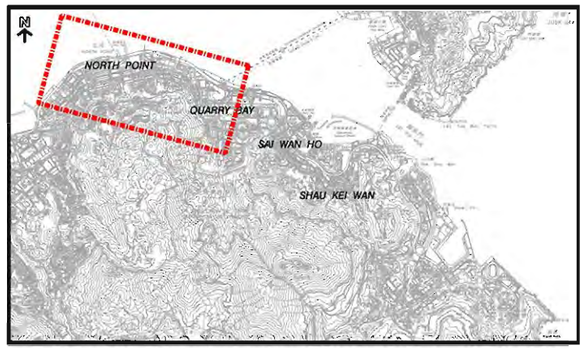
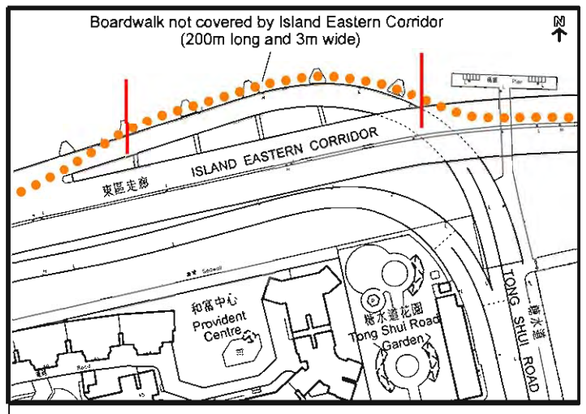
AECOM

Title: Waterfront Promenade Proposal - Recommended Option (North Point and Quarry Bay)

Scale	Date	Figure No.
As Shown	March 2012	5.1





Bascule bridges could be constructed at appropriate locations of the boardwalk to allow access of the vessels to the existing piers adjoining their marine frontage

Legend

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- Extent of the Boardwalk
- Proposed 20m wide Waterfront Promenade of the ex-North Point Estate Site
- Connection Point between the Hinterland & the Boardwalk

N

North Point Dangerous Goods Vehicular Ferry Pier

Private Pier of K. Wah Centre

Private Piers of Kodak House

North Point Fireboat Pier

North Point Ferry Piers

Tong Shui Road Public Pier

Proposed boardwalk underneath the Island Eastern Corridor

Connect to the proposed waterfront park under the Wan Chai Development Phase II project

Oil Street

Fortress Hill Station

Tong Shui Road

Shu Kuk Street

Kam Hong Street

North Point Station

Hoi Yu Street

Quarry Bay Station

SCALE

METRES 100 0 100 200 300 400 500 600 700 800 METRES

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

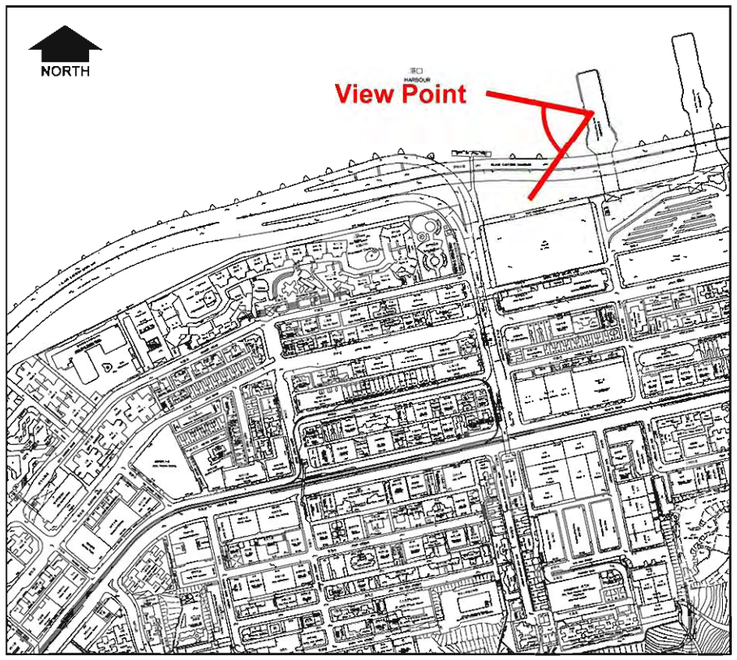
Planning Department

AECOM

Title: Proposed Boardwalk underneath the Island Eastern Corridor

Scale	Date	Figure No.
As Shown	February 2012	5.2

IEC: Existing Conditions



Option 1

Flooring

Sculptures

Chromatic Treatment

Roofscape

Greening

Option 2

Flooring

Sculptures

Chromatic Treatment

Roofscape

Greening

Option 1 (Hard Surface)

Option 2 (Recycled Material)

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

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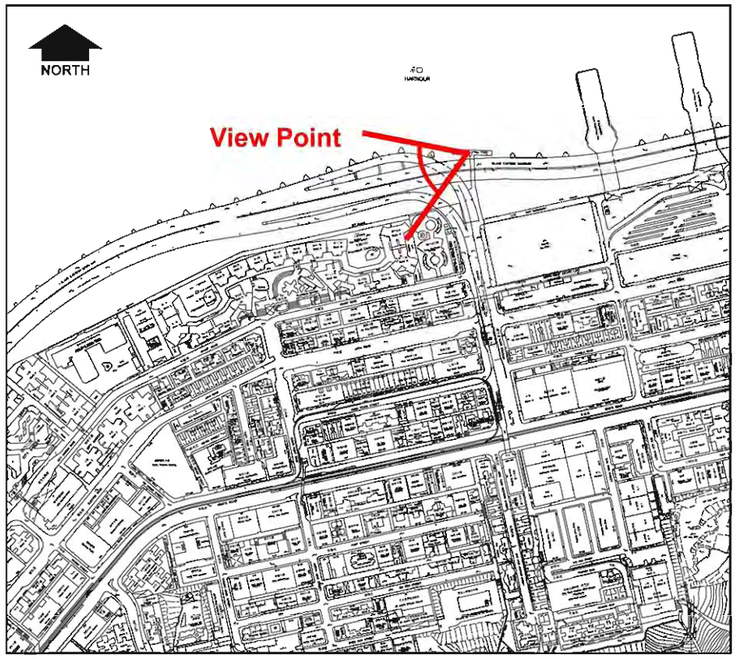
AECOM

Title: Proposed Boardwalk underneath the Island Eastern Corridor: General Condition

Scale	Date	Figure No.
As Shown	February 2012	5.3

IEC: Existing Conditions



Option 1

Flooring

Sculptures

Chromatic Treatment

Roofscape

Greening

Option 2

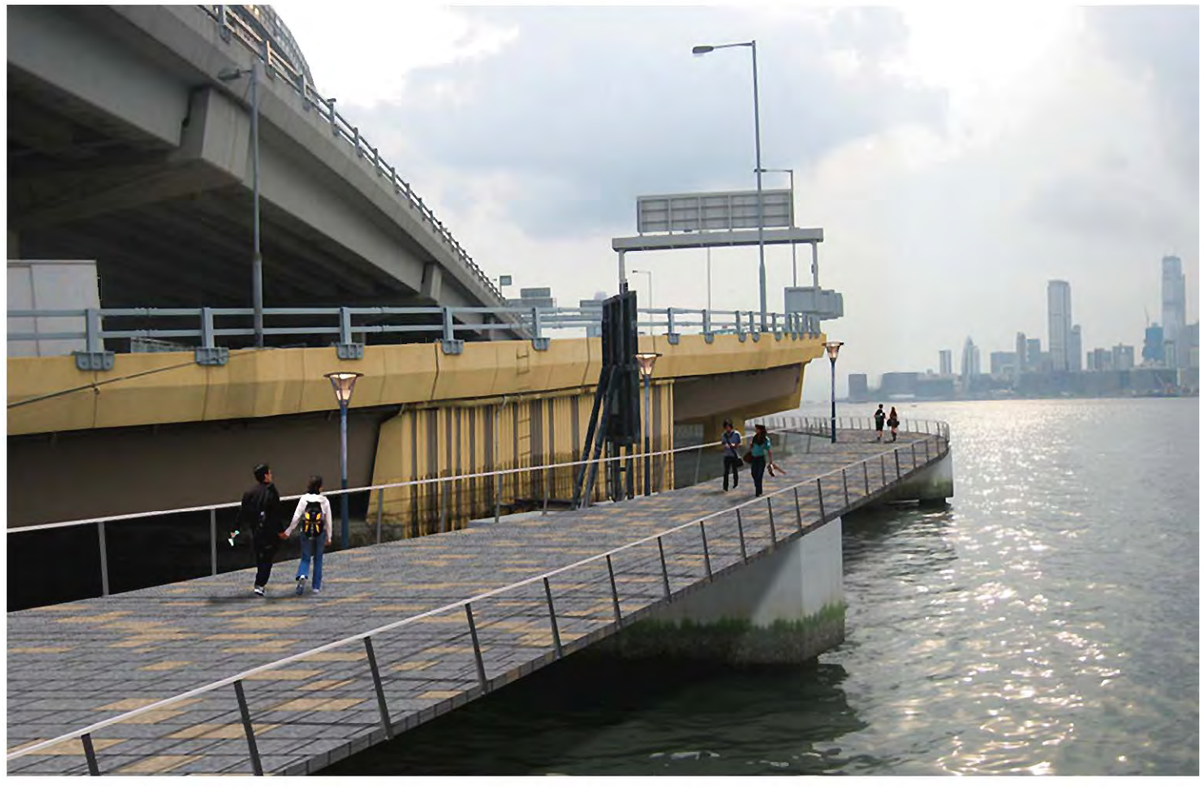
Flooring

Sculptures

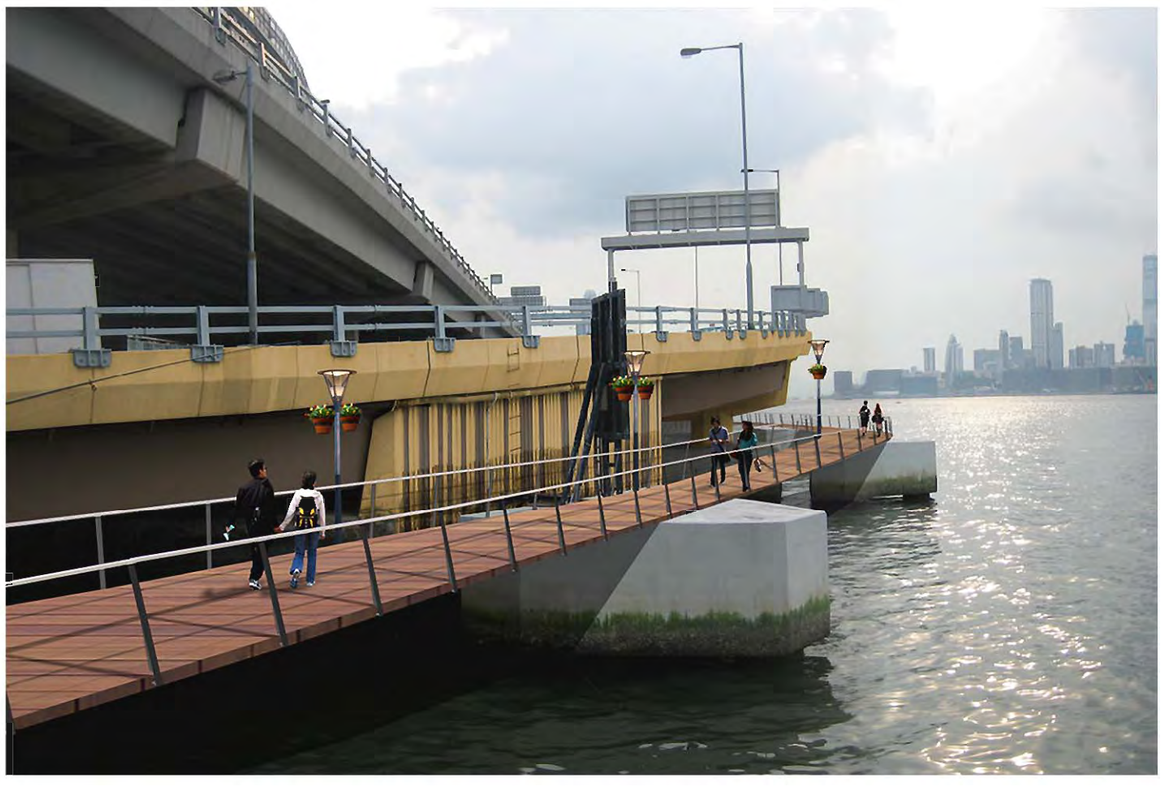
Chromatic Treatment

Roofscape

Greening

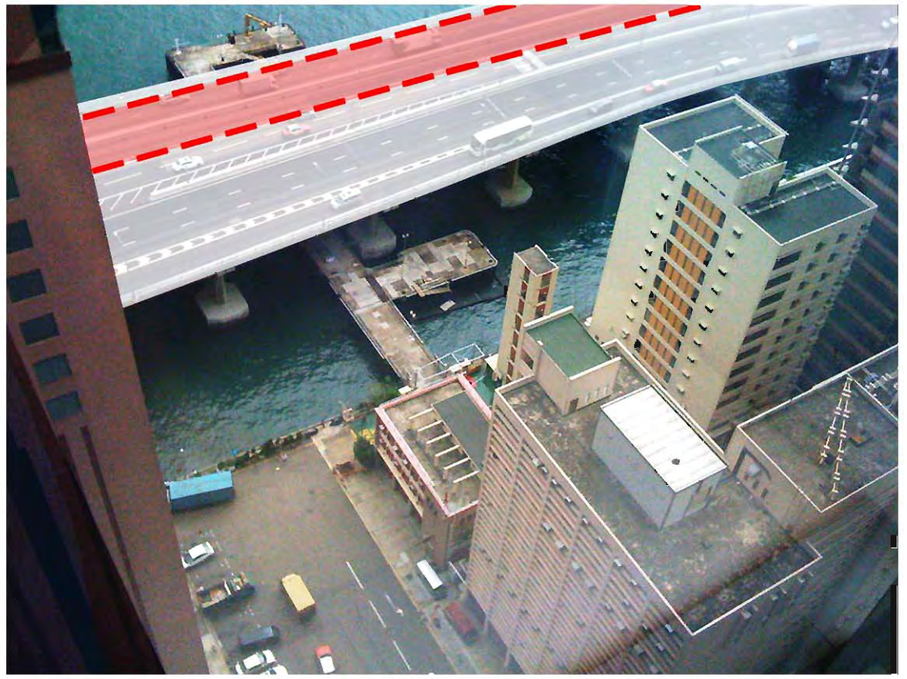


Option 1 (Hard Paving)



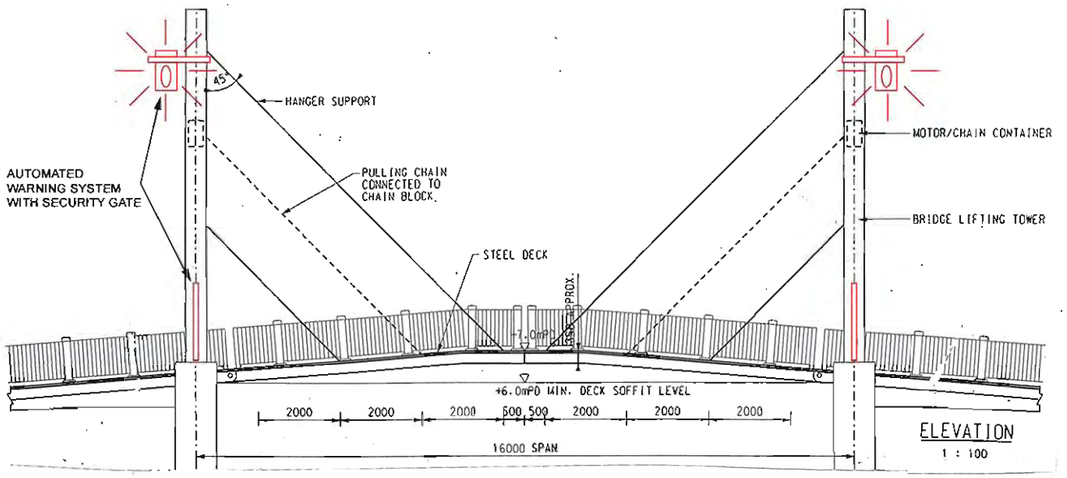
Option 2 (Composite Timber)

Possible Alignment of IEC Boardwalk



Possible IEC Boardwalk in Relation to North Point Fire Station and Fireboat Pier

Photomontage of Possible Bascule Bridge

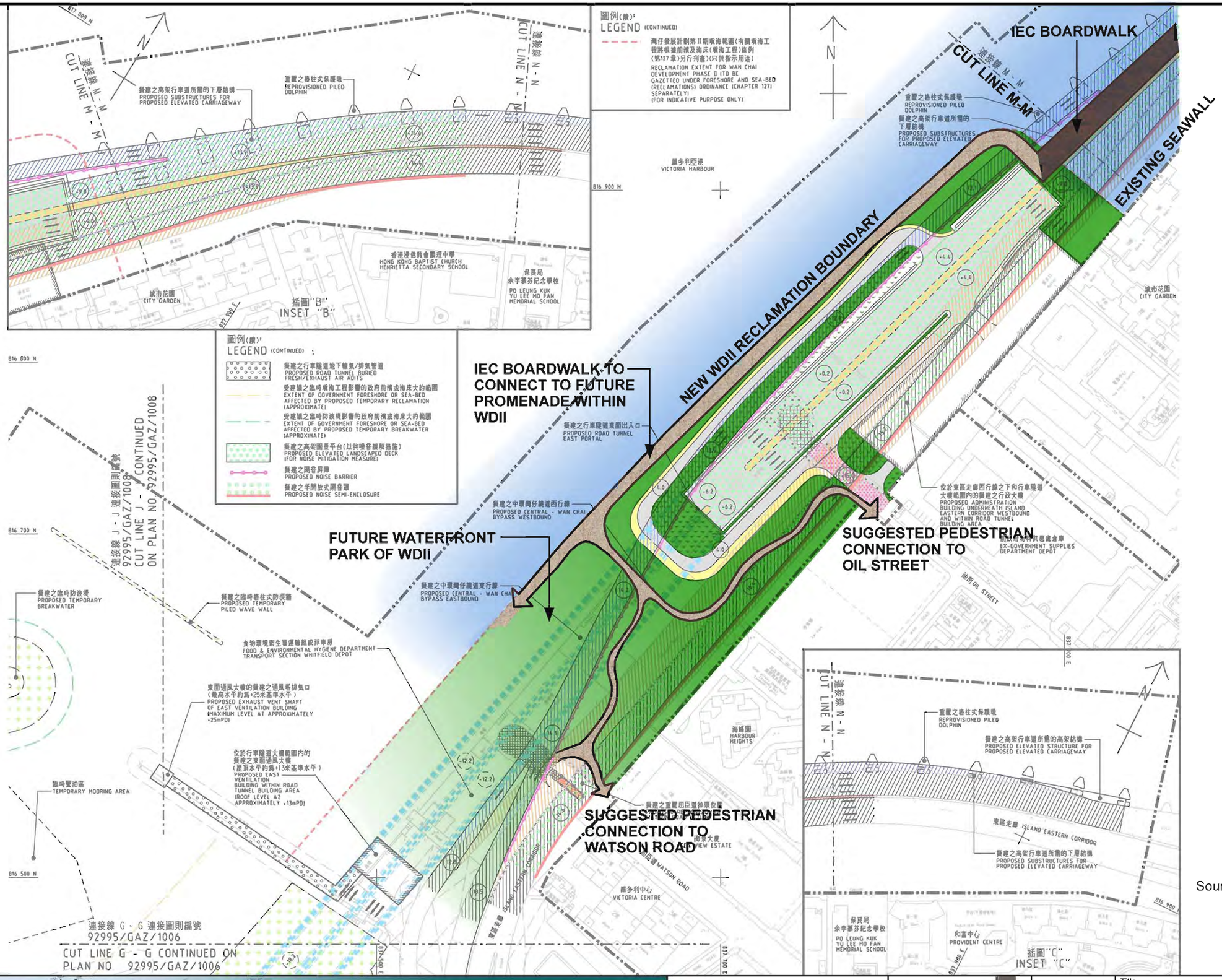


Example of a Bascule Bridge

POSSIBLE OPTIONS:

- Bascule / Swing Bridge with warning sirens / signals for public to give ways to FSD equipment.
- Physical / vertical separation from boardwalk to pier with adequate headroom for both pedestrian movement and fireboat access.

Sample of Fireboat



Source: Highways Department, Gazette Plan No. 92995/GAZ/1007 (23 July 2007), Central and Wan Chai Bypass and Island Eastern Corridor Link

Agreement No. CE 61/2008 (TP)

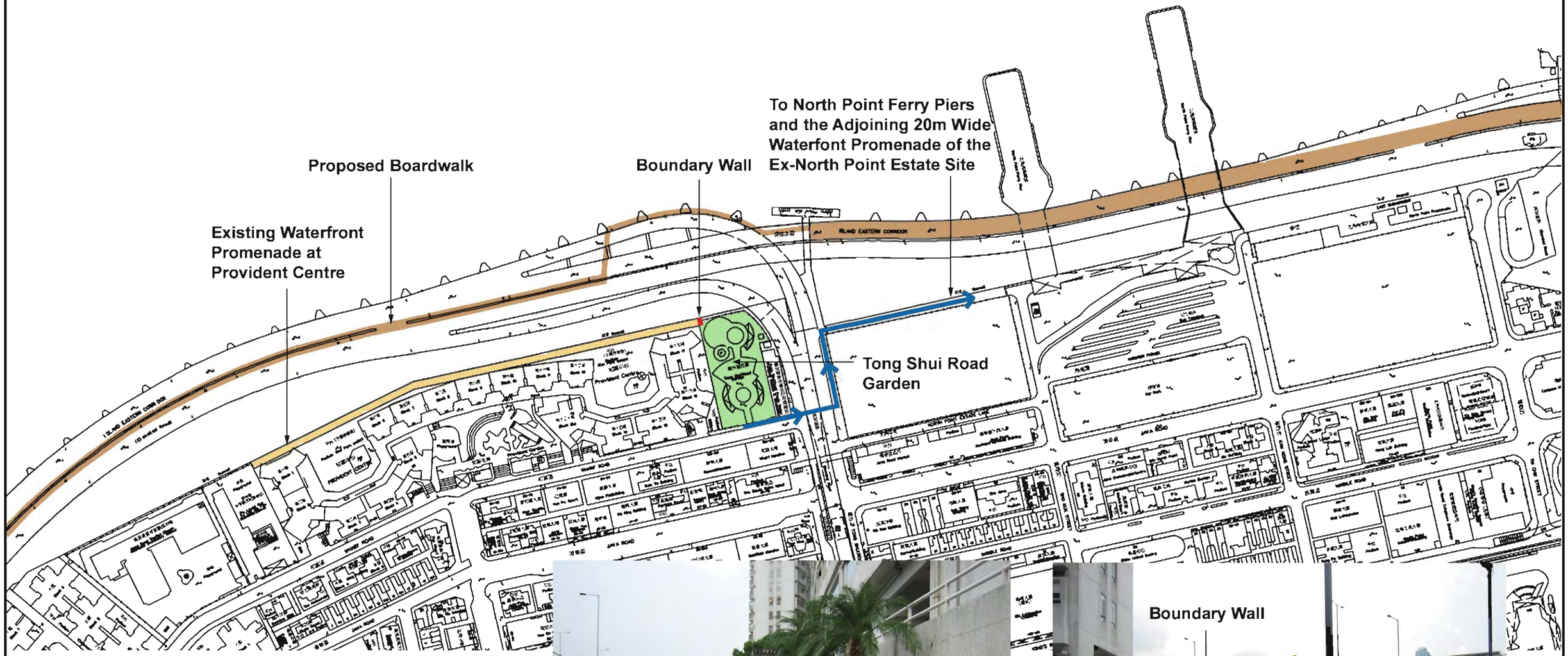
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

AECOM

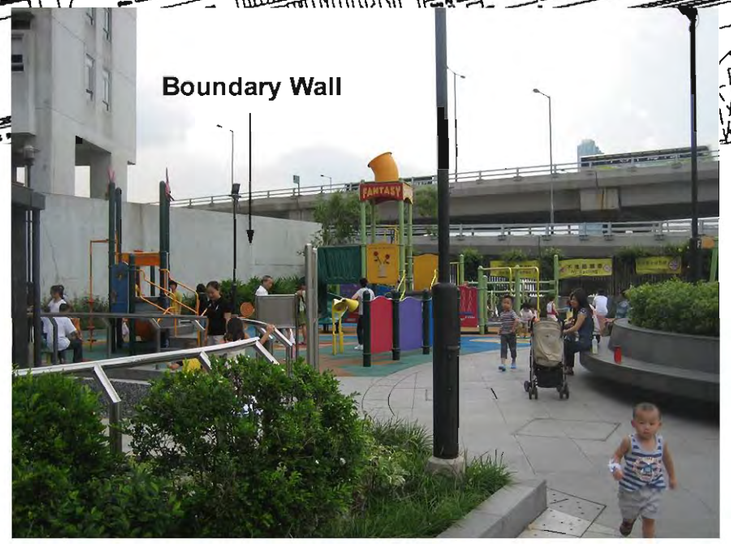
Title: Waterfront Promenade Connection to the Proposed WDII Waterfront Park

Scale	Date	Figure No.
As Shown	February 2012	5.6



As a secondary connection aside from the proposed boardwalk under the Island Easten Corridor, an existing waterfront promenade at Provident Centre can be linked with the adjacent public open space of Tong Shui Road Garden by creating an opening at the boundary wall that separates the two open spaces.

Existing Waterfront Promenade at Provident Centre



Tong Shui Road Garden

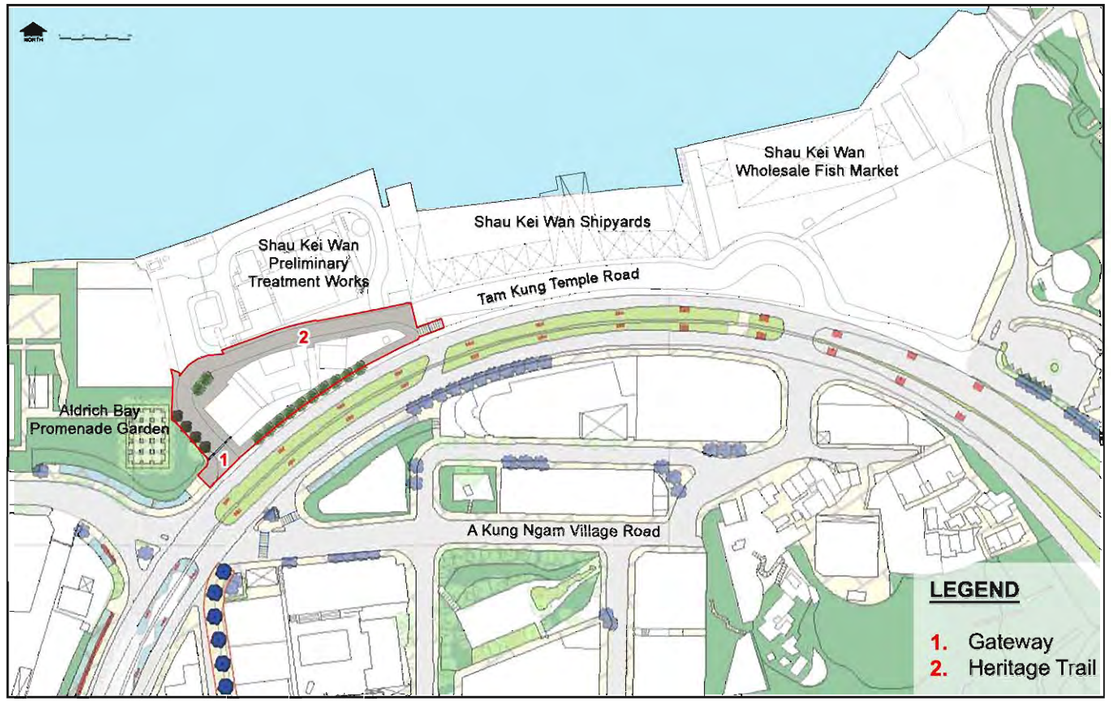
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

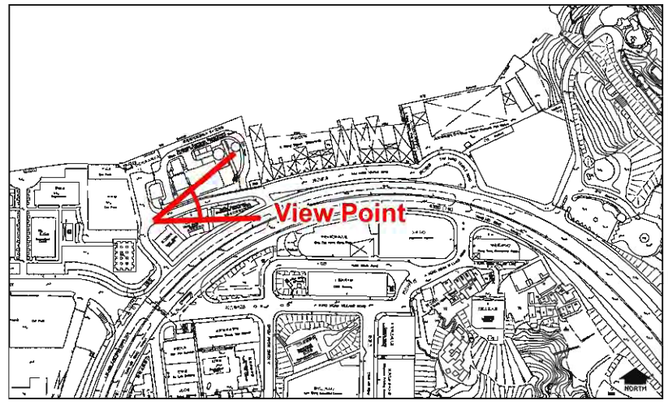
Title: Opening of Boundary Wall between Provident Centre and Tong Shui Road Garden

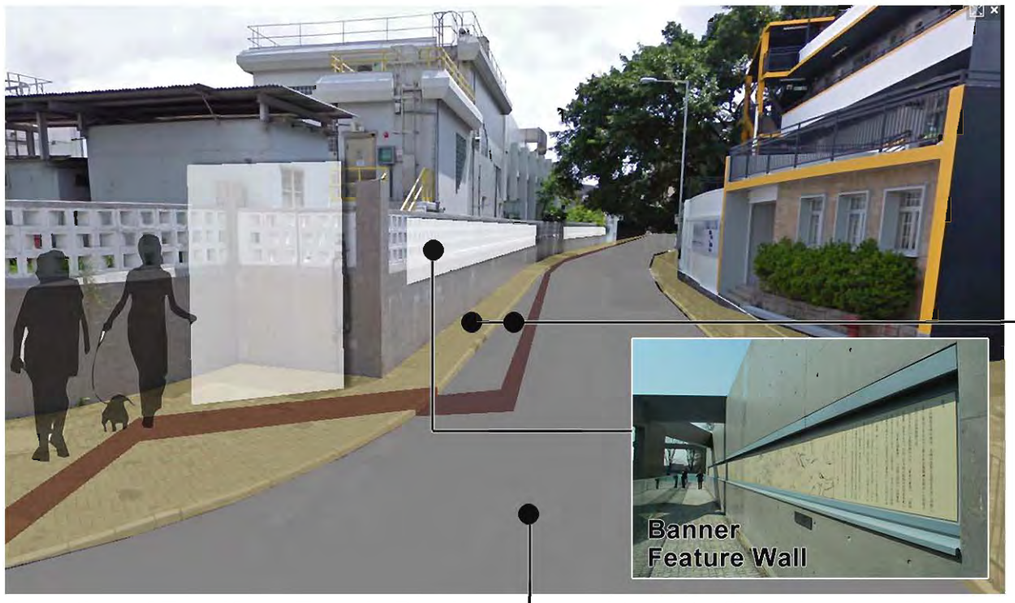
Scale: As Shown | Date: February 2012 | Figure No.: 5.7



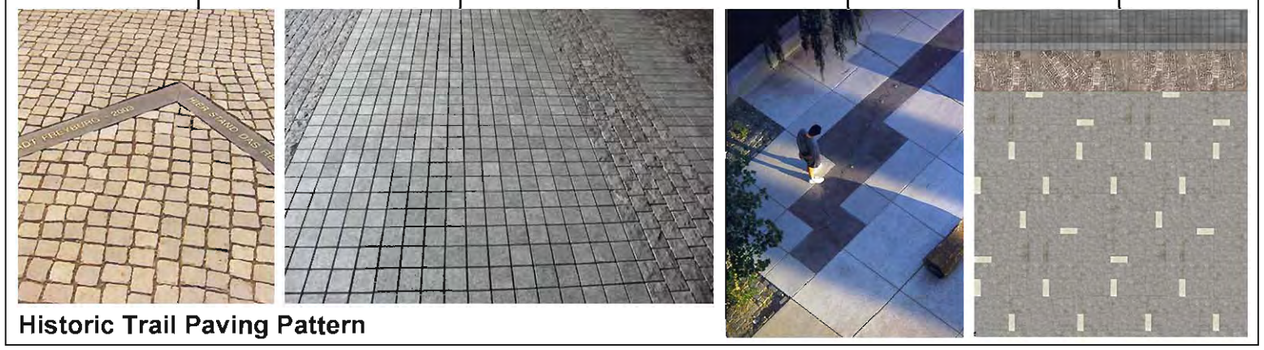
Shau Kei Wan Shipyards and Adjacent Waterfront

Key Plan

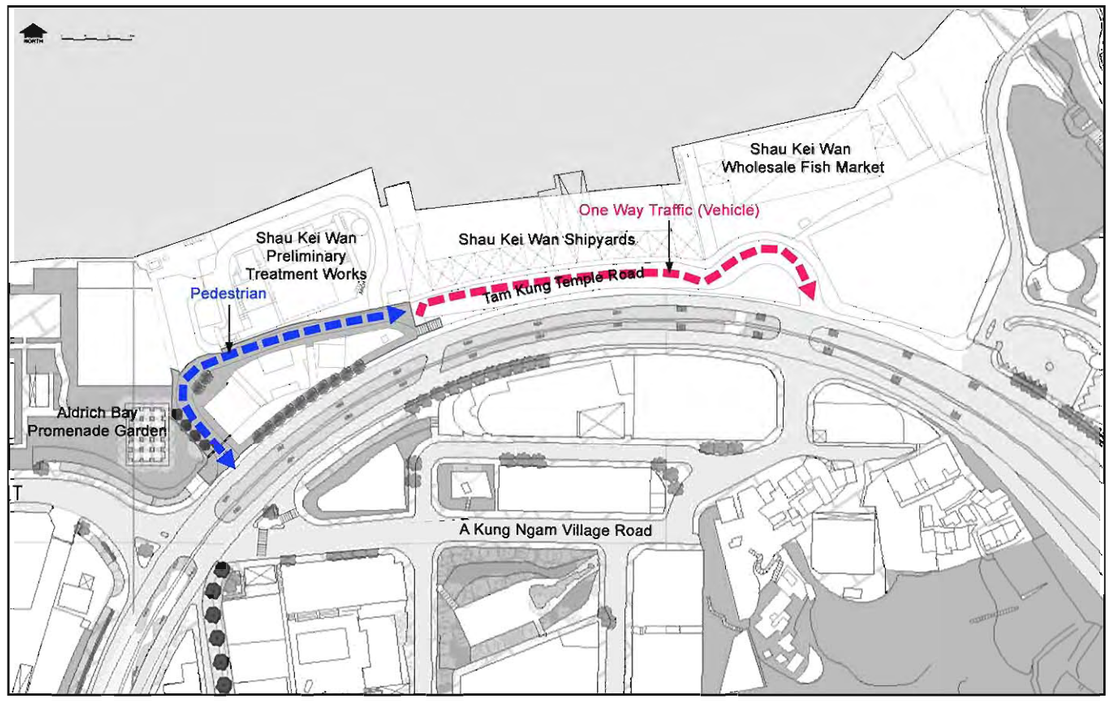




A portion of Tam Kung Temple Road is proposed to be traffic calmed and treated with banners and heritage displays



Historic Trail Paving Pattern



The proposed pedestrian trail will close off the western portion of Tam Kung Temple Road. Traffic will be diverted to the eastern portion.

Phase 1 of the enhancement of Shau Kei Wan waterfront includes the implementation of a pedestrian trail that will be treated and decorated to highlight the cultural heritage element of Shau Kei Wan

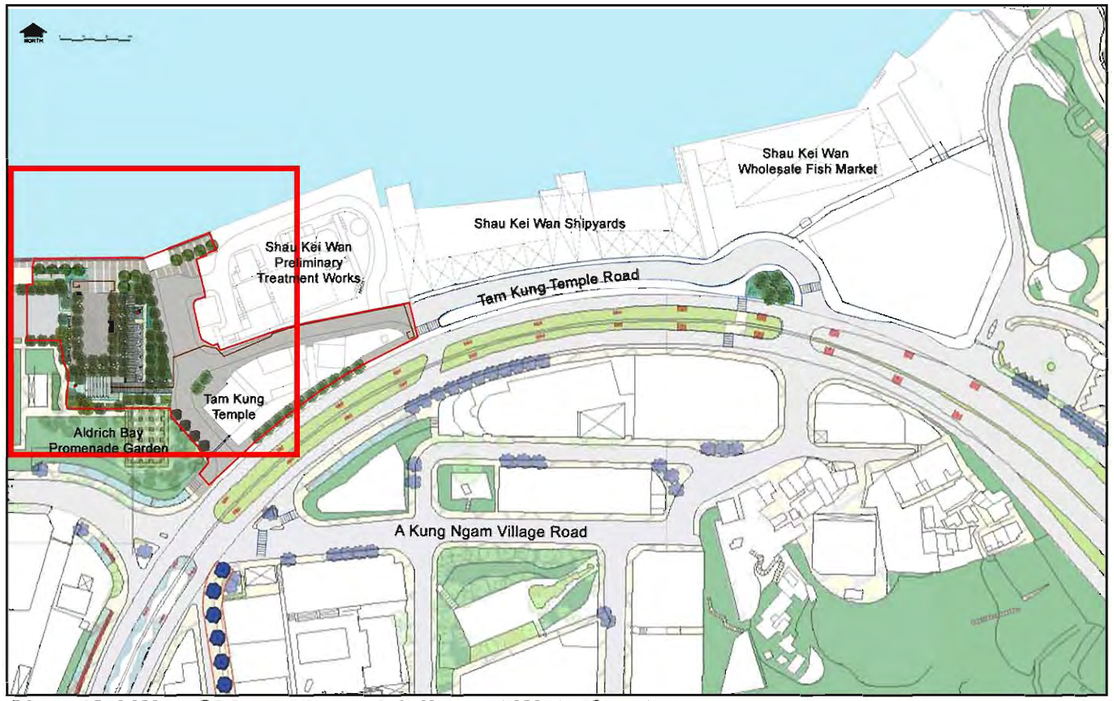
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Waterfront Promenade: Enhancement of the Shau Kei Wan Shipyards and Adjacent Waterfront - Phase 1

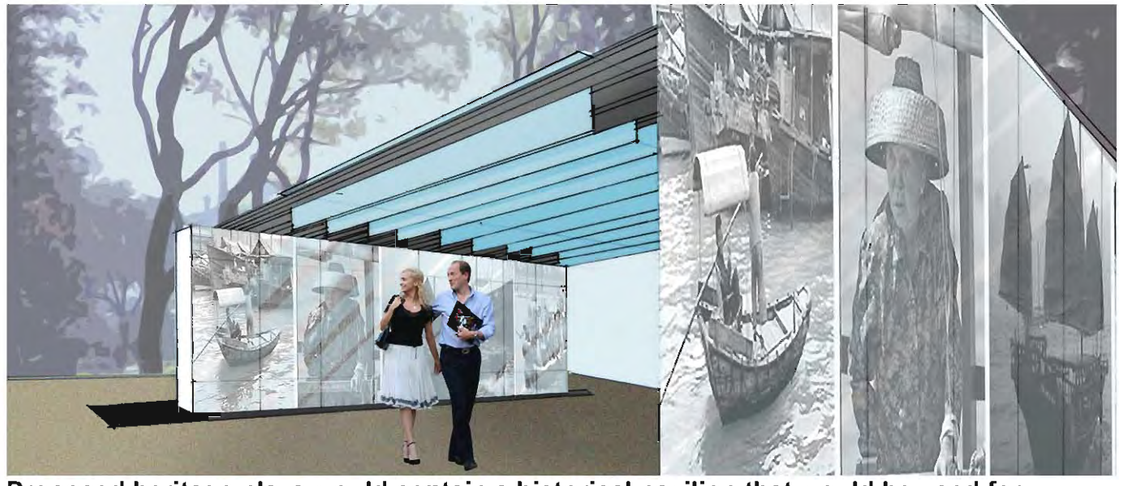
Scale	Date	Figure No.
As Shown	February 2012	5.8



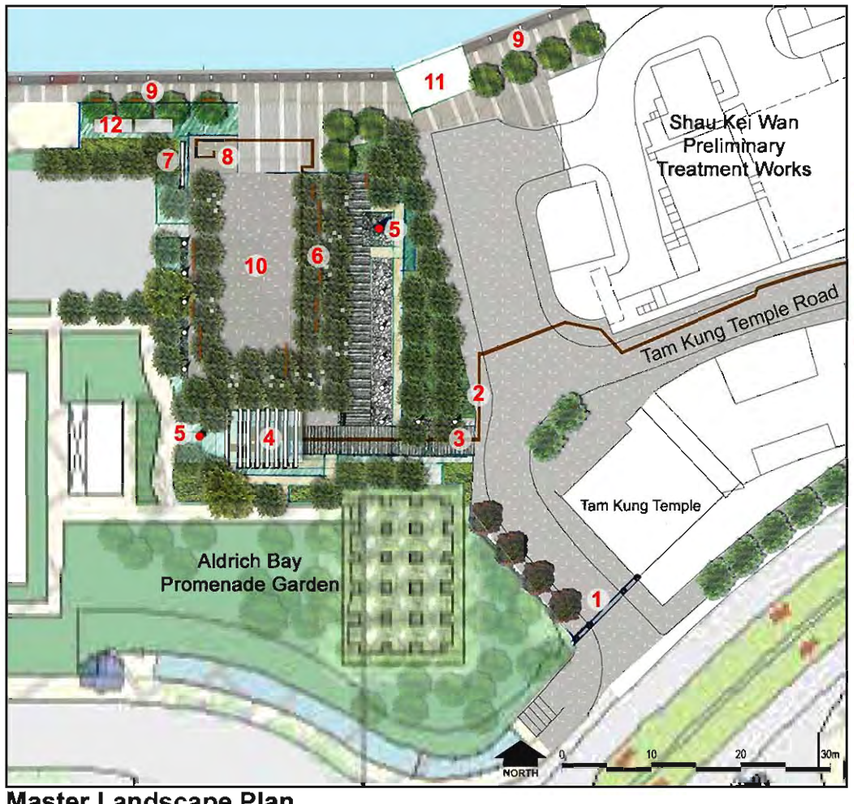
Shau Kei Wan Shipyards and Adjacent Waterfront

Key Plan

Proposed photographic displays of fisherman's heritage at the proposed temporary heritage park



Proposed heritage plaza would contain a historical pavilion that would be used for displaying cultural and historical artifacts representing the history of Shau Kei Wan



Master Landscape Plan

LEGEND

1. Gateway
2. Heritage Trail
3. Arrival Plaza
4. Historical Pavilion
5. Sculpture
6. Sitting Area
7. Feature Wall
8. Seaside Plaza
9. Promenade
10. Event Plaza
11. A Kung Ngam Water Selling Kiosk
12. Shelter

Sculptural elements can be created within the proposed temporary heritage park

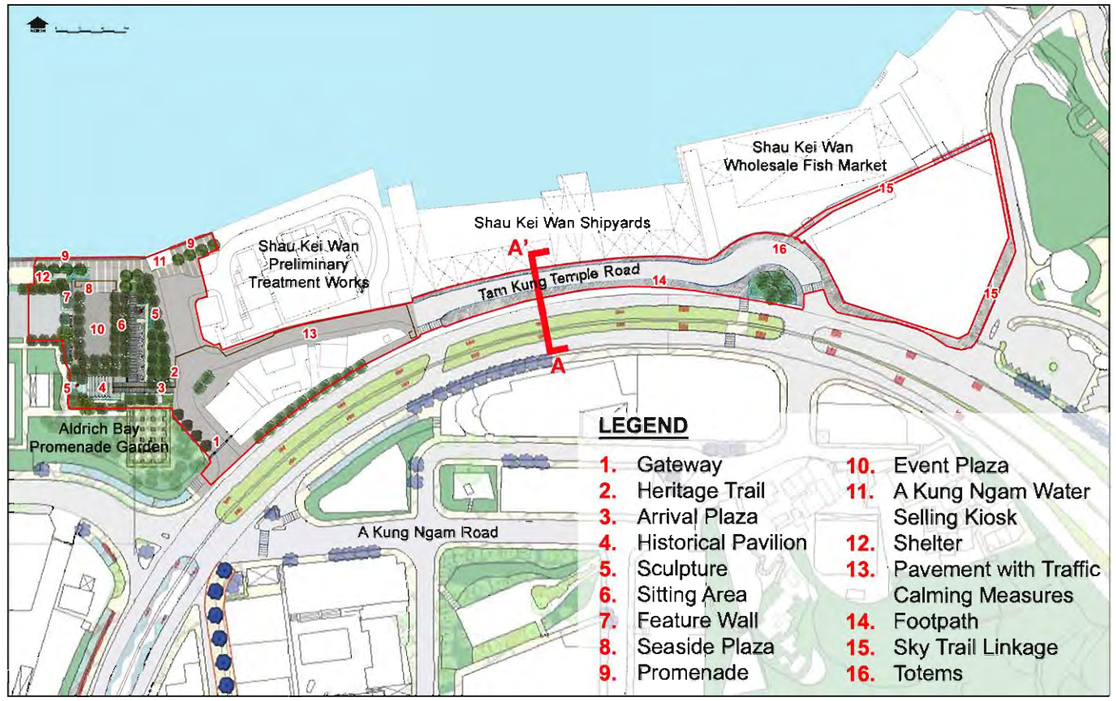
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

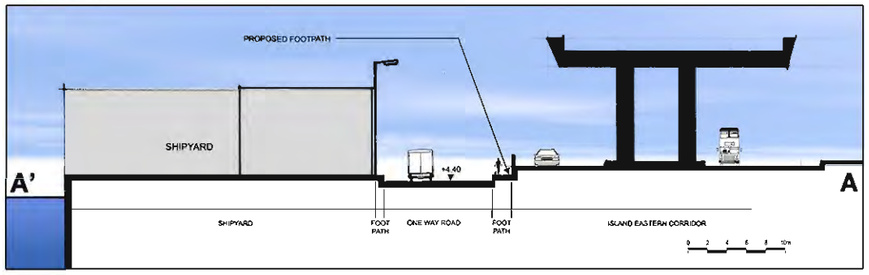
Title: Waterfront Promenade: Enhancement of the Shau Kei Wan Shipyards and Adjacent Waterfront - Phase 2

Scale	Date	Figure No.
As Shown	March 2012	5.9



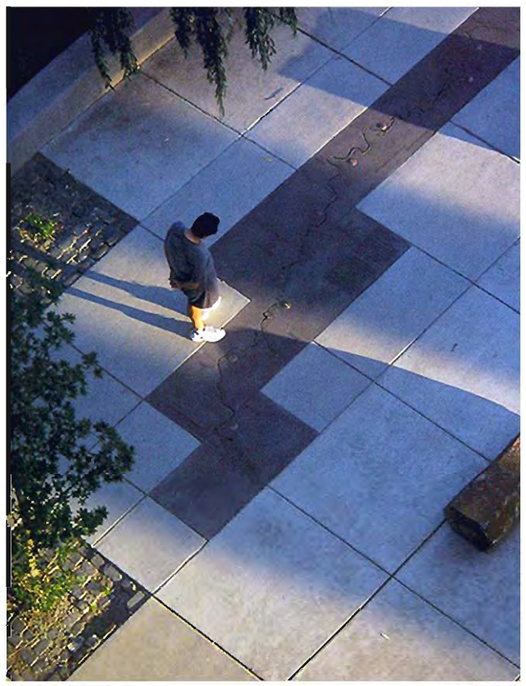
Shau Kei Wan Shipyards and Adjacent Waterfront

Key Plan



Section

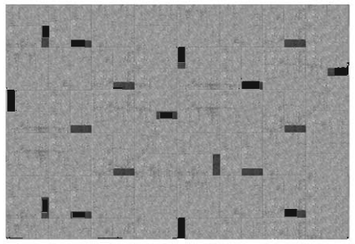
Proposed sculptural totem and traditional gateway structures will signal the point of arrival and highlight the cultural heritage character of the Shau Kei Wan waterfront.



Paving of the proposed heritage trail can incorporate intuitive patterns that will guide users along the proposed heritage trail and to other destinations along the waterfront.

Application of Materials:

Paving Pattern: Metal



Paving Pattern: Granite

Historical Pavilion: Glass

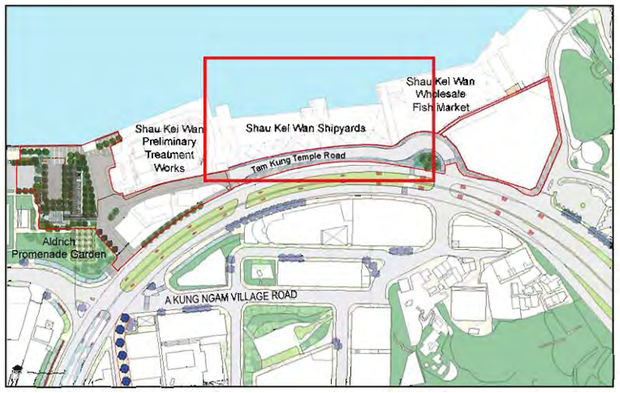
Street Furniture: Wood

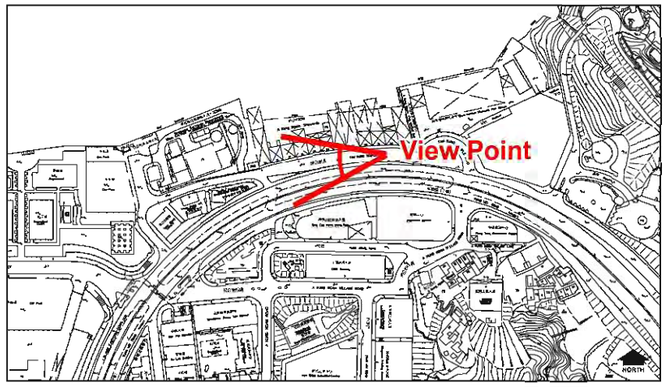
Sculptural Elements: Bronze

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study
Planning Department
Arbis Limited
AECOM

Title: Waterfront Promenade: Enhancement of the Shau Kei Wan Shipyards and Adjacent Waterfront - Phase 3

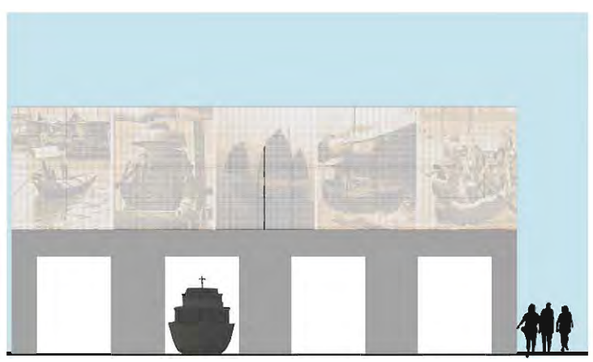
Scale	Date	Figure No.
As Shown	February 2012	5.10



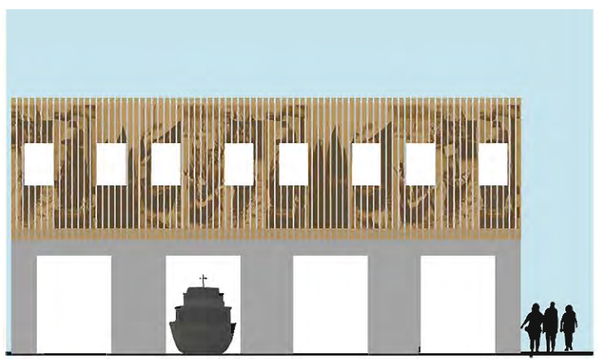


Key Plan

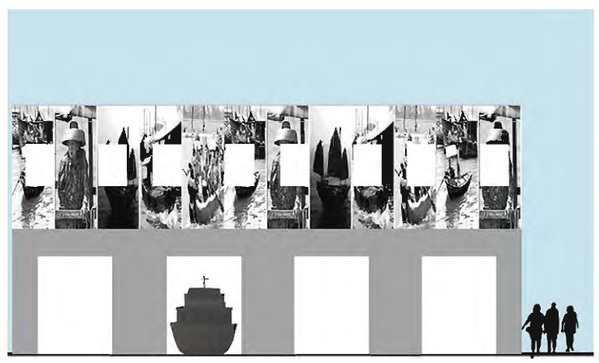
To promote the fishing heritage of the Shau Kei Wan area, the exterior façades of the shipyards can be treated with photographic spray painting that highlights the cultural history of the area.



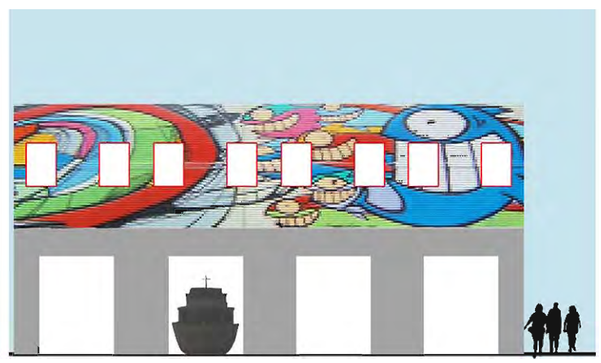
Shipyards Façade Treatment:
Canvas or Metal Grill with Colour Painted



Shipyards Façade Treatment:
Metal Sheet with Colour Painted



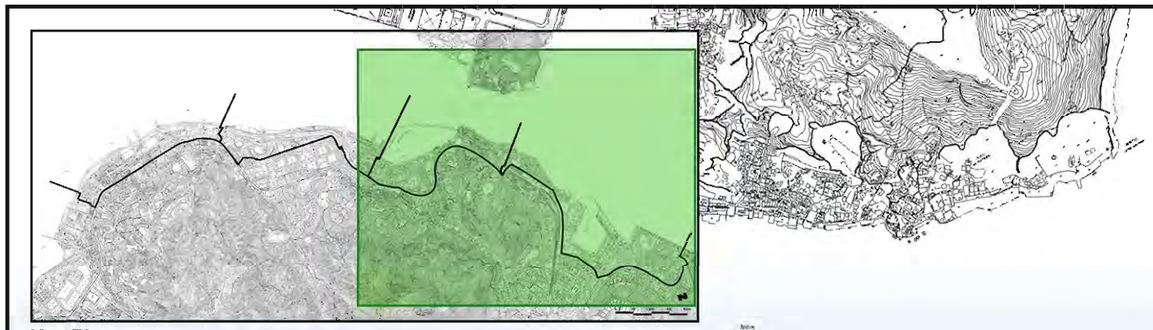
Shipyards Façade Treatment:
Colour Painted



Shipyards Façade Treatment:
Colour Painted

Title: Proposed Façade Treatment of Shau Kei Wan Shipyards

Scale	Date	Figure No.
NTS	February 2012	5.11



Key Plan

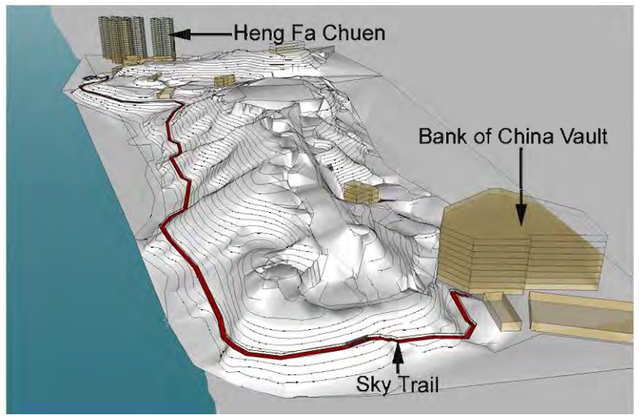
Agreement No. CE 61/2008 (TP)

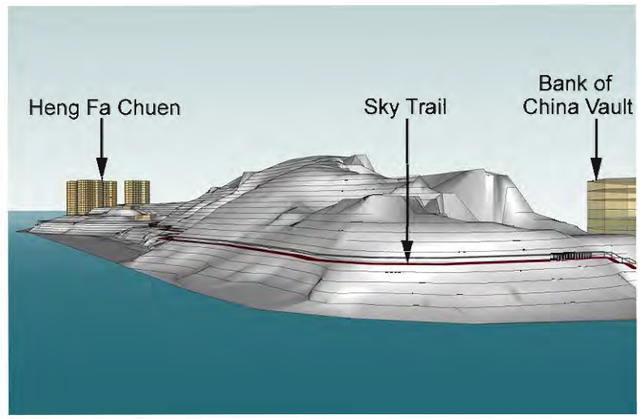
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

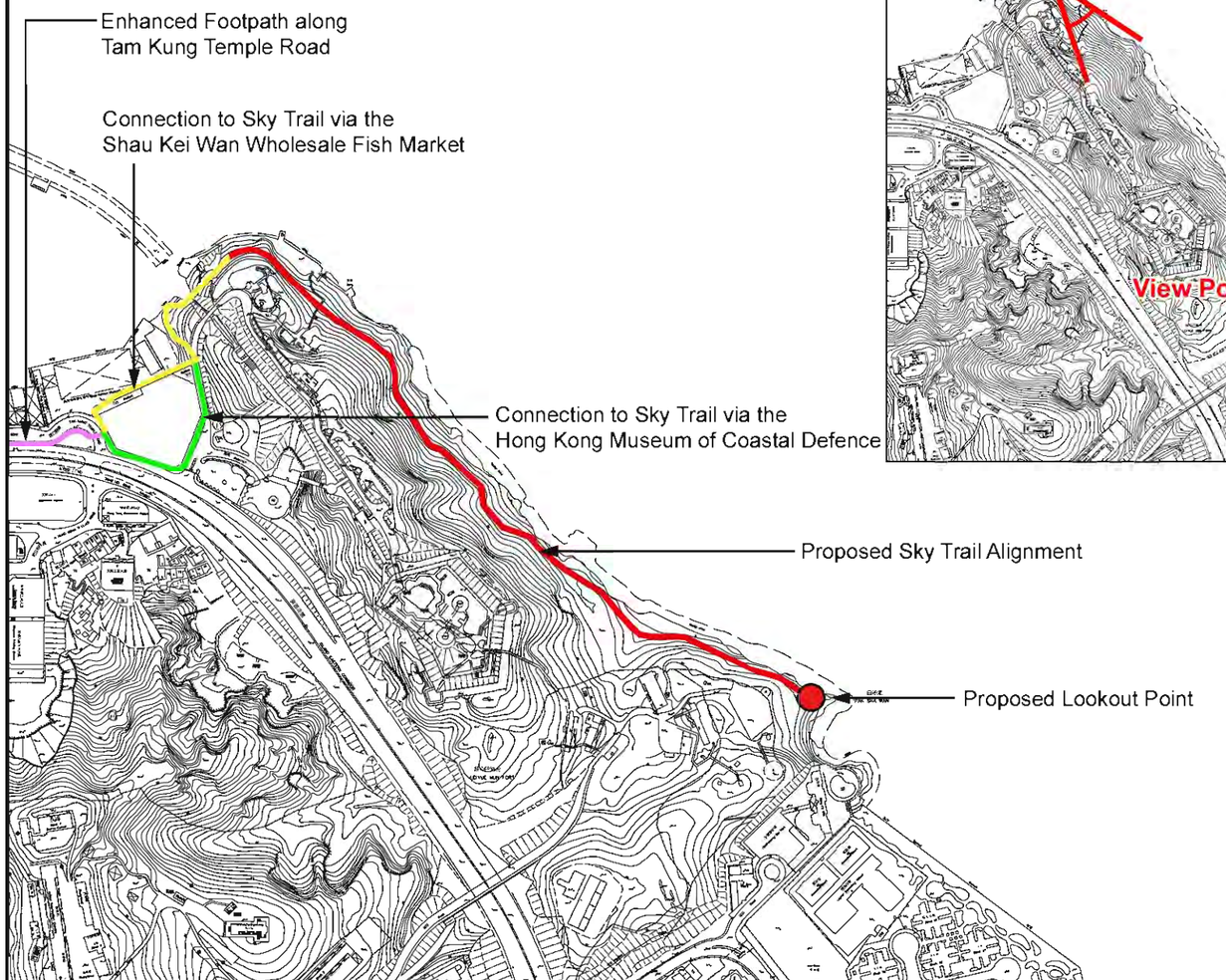
Title: Waterfront Promenade Proposal - Recommended Option (Shau Kei Wan and Chai Wan)

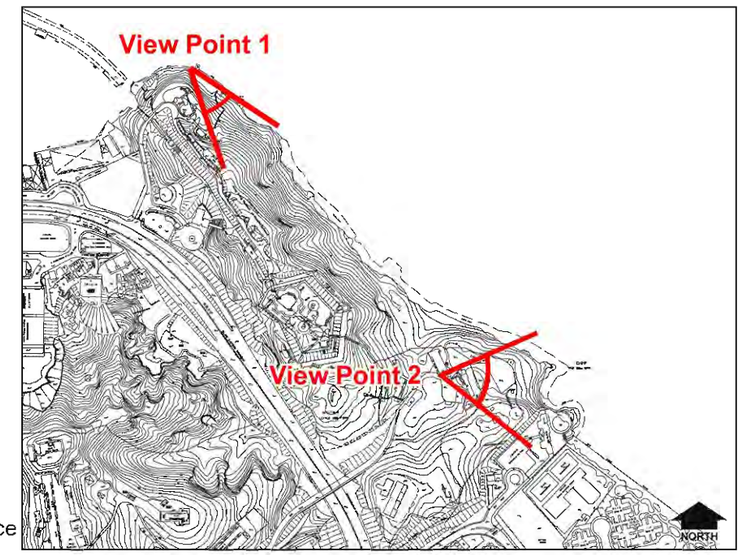
Scale	Date	Figure No.
As Shown	February 2012	5.12





Possible Elevated Walkway ("Sky Trail")





View Point 1

View Point 2

An Elevated Walkway in the Mid-Level of Wooded Hillside

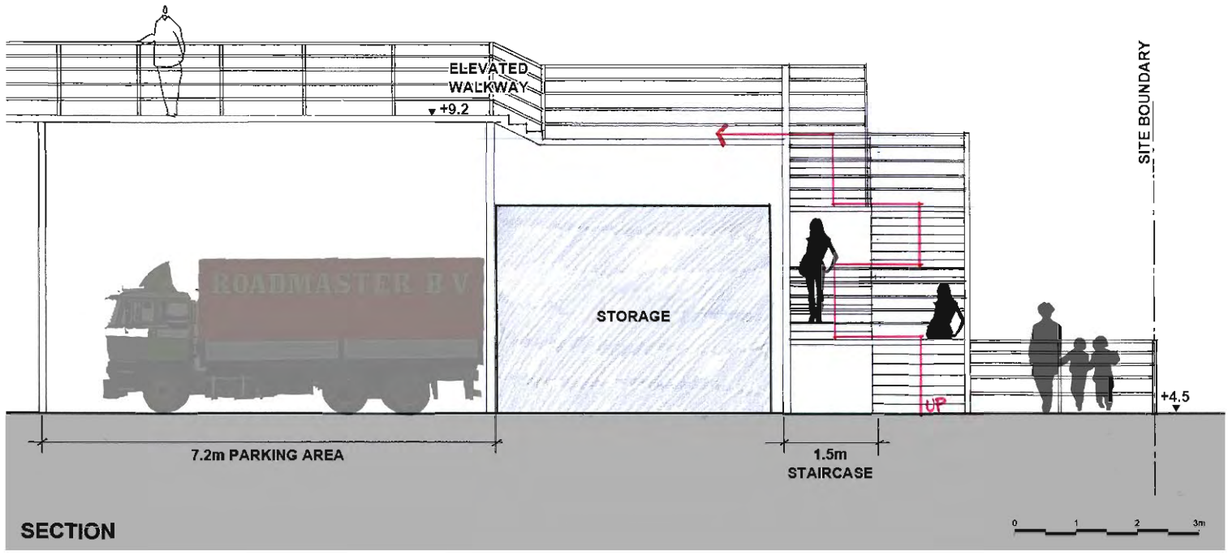
Planning Department

Arbis Limited 雅邦

AECOM

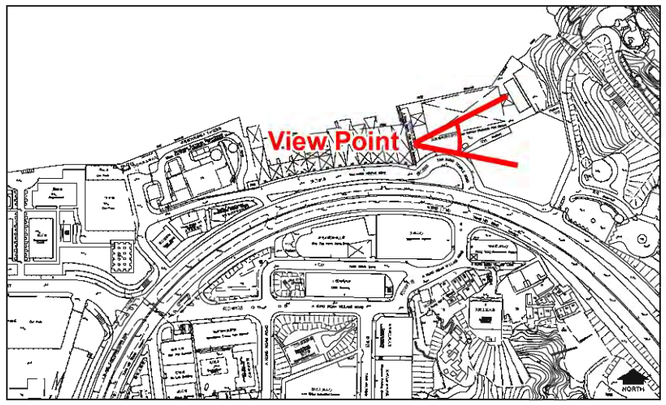
Title: Waterfront Promenade: Sky Trail along the Hillside of the Hong Kong Museum of Coastal Defence

Scale	Date	Figure No.
As Shown	February 2012	5.13

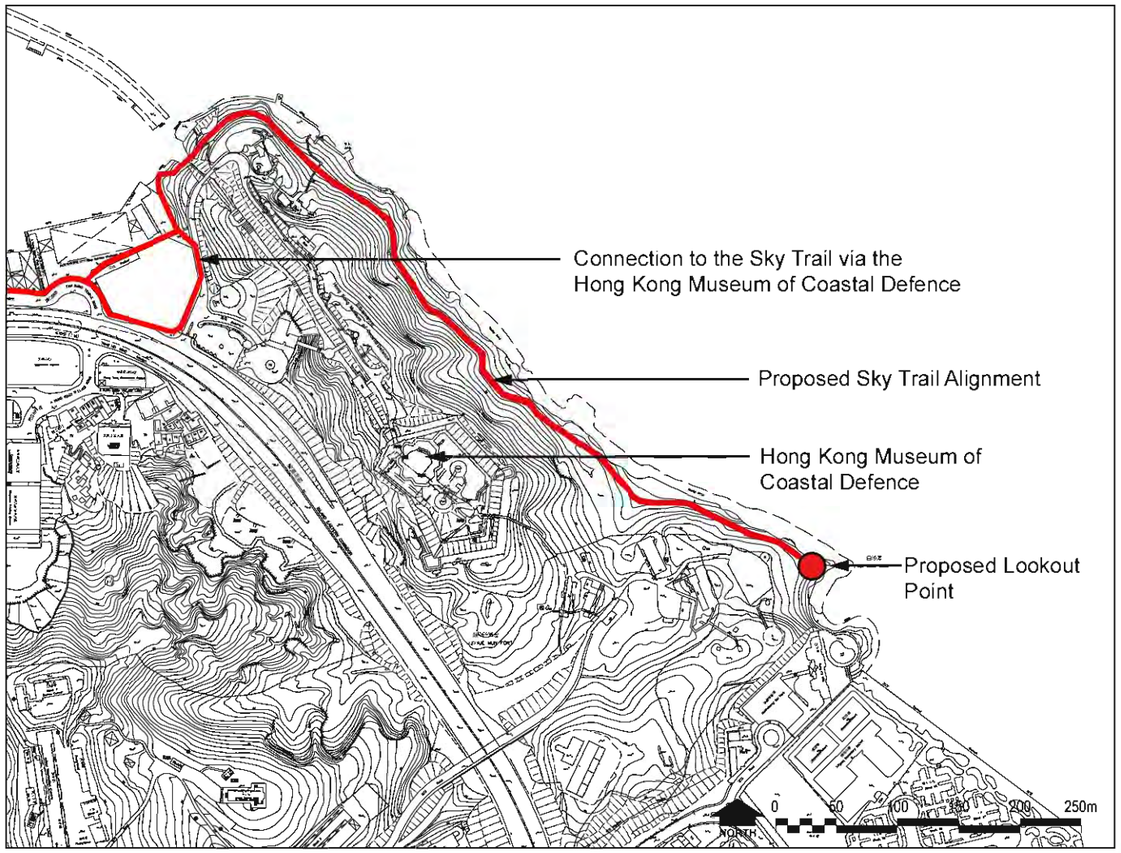


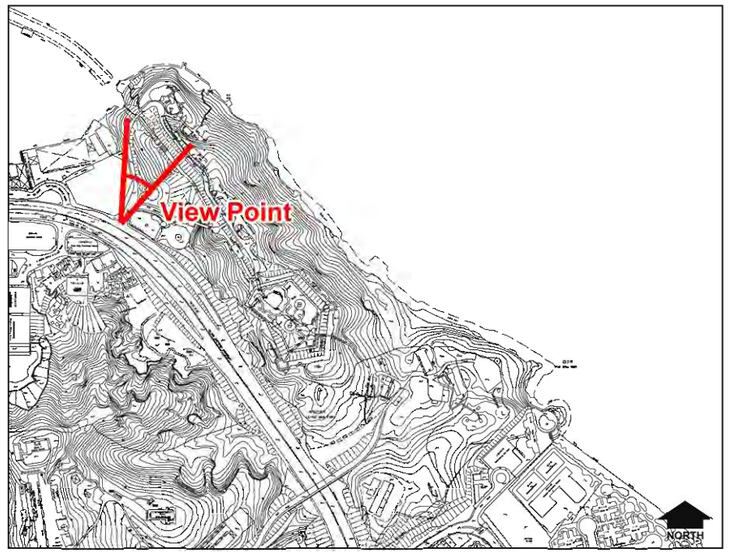
ELEVATED WALKWAY WITH SWITCH BACK STAIRCASE

Photomontage of Elevated Walkway through the Shau Kei Wan Wholesale Fish Market



To minimize the impact that the waterfront connectivity proposal would have on the operation of the Shau Kei Wan Wholesale Fish Market, an elevated walkway structure is proposed above the premises of the Fish Market. As shown in the illustration, circulation and parking area will be maintained under the elevated walkway which will lead to the proposed Sky Trail.





Photomontage

Another option for connection to the Sky Trail is via an existing footpath within the Hong Kong Museum of Coastal Defence. The footpath will subsequently lead up to the Sky Trail.

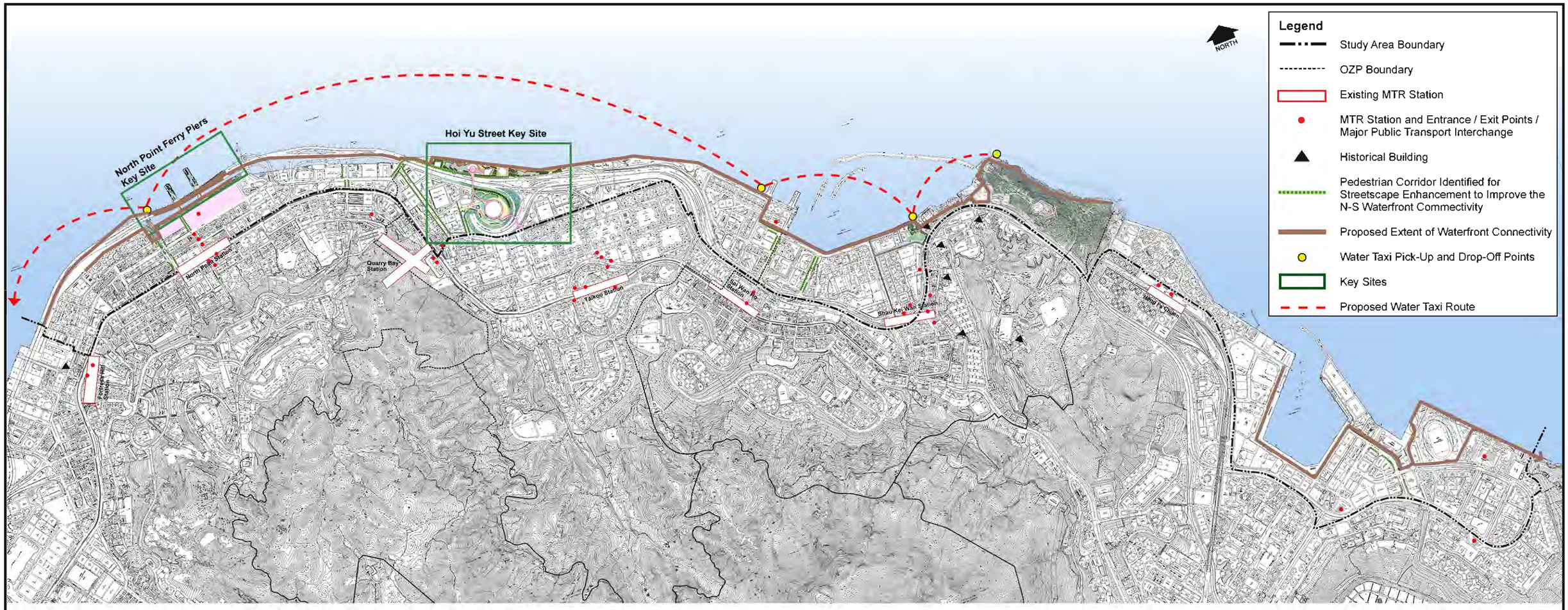
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Connection to the Sky Trail via the Hong Kong Museum of Coastal Defence

Scale	Date	Figure No.
As Shown	February 2012	5.15



Proposed Water Taxi with Pick-Up and Drop-Off at Key Attraction Sites along the Island East Waterfront.

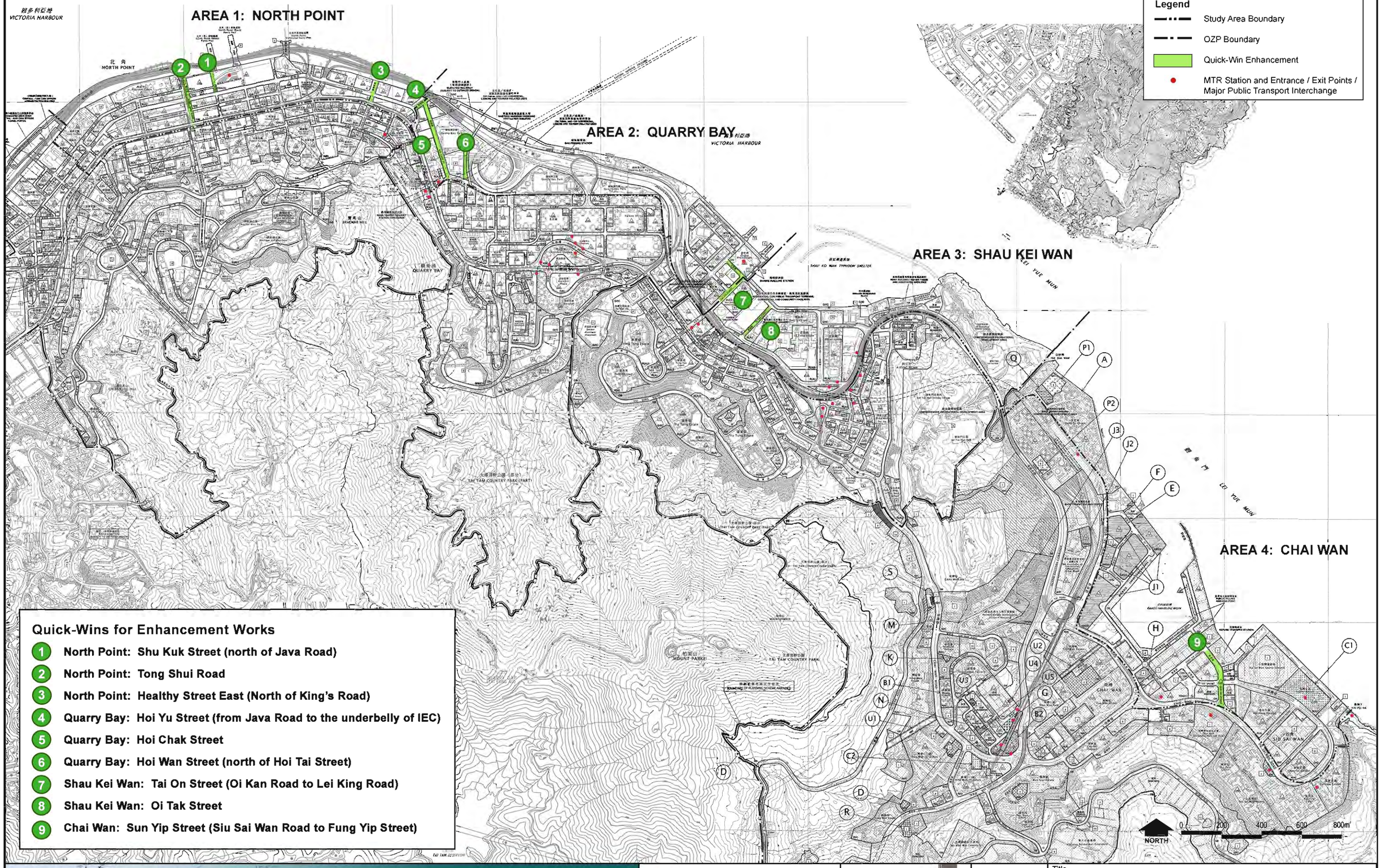
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Proposed Water Taxi Route

Scale	Date	Figure No.
As Shown	February 2012	5.16



Legend

- Study Area Boundary
- OZP Boundary
- Quick-Win Enhancement
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange

Quick-Wins for Enhancement Works

1. North Point: Shu Kuk Street (north of Java Road)
2. North Point: Tong Shui Road
3. North Point: Healthy Street East (North of King's Road)
4. Quarry Bay: Hoi Yu Street (from Java Road to the underbelly of IEC)
5. Quarry Bay: Hoi Chak Street
6. Quarry Bay: Hoi Wan Street (north of Hoi Tai Street)
7. Shau Kei Wan: Tai On Street (Oi Kan Road to Lei King Road)
8. Shau Kei Wan: Oi Tak Street
9. Chai Wan: Sun Yip Street (Siu Sai Wan Road to Fung Yip Street)

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbis Limited 雅邦

AECOM

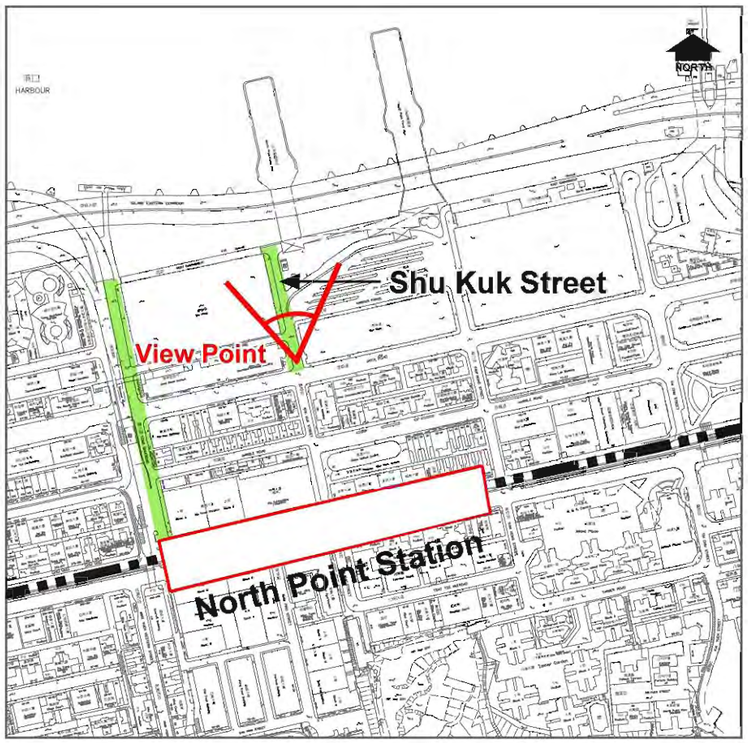
Title: Identification of Quick-Wins

Scale	Date	Figure No.
As Shown	March 2012	6.1

Streetscape Enhancement

- Reprovision/Relocation of PTI to Ex-North Point Estate Site
- Pavement Improvement to Integrate with the Future Ex-North Point Estate Development
- Existing Road Width to be Maintained
- Intensified Tree and Shrub Planting
- Additional Street Furniture, e.g. Street Benches, Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

Existing (Shu Kuk Street)



Key Plan

Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

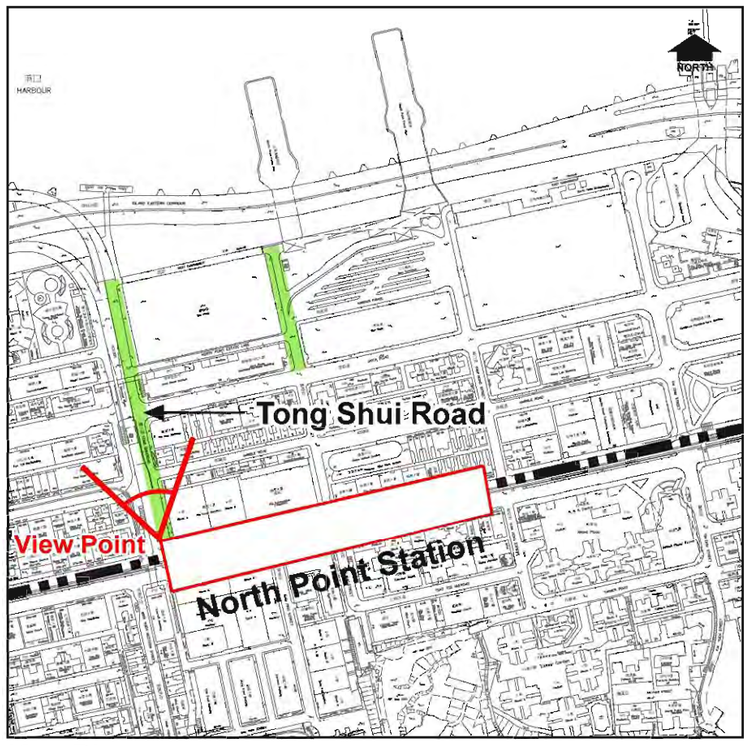
Title: Streetscape Enhancement: North Point - Shu Kuk Street

Scale	Date	Figure No.
As Shown	February 2012	6.2

Streetscape Enhancement

- Existing Road Width to be Maintained
- Low Level Shrub Planters to be Introduced without Affecting Visibility of the Drivers

Existing (Tong Shui Road)



Key Plan

Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Urbis Limited 雅邦

AECOM

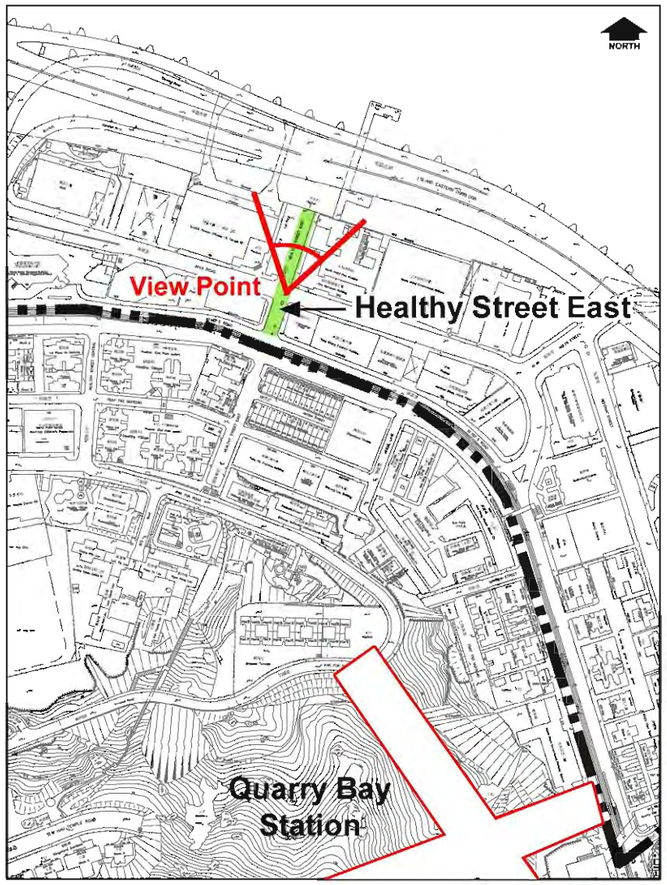
Title: Streetscape Enhancement: North Point - Tong Shui Road

Scale	Date	Figure No.
As Shown	February 2012	6.3

Streetscape Enhancement

- Pavement Improvement
- Intensified Tree and Shrub Planting
- Additional Street Furniture, e.g. Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Existing Road Width to be Maintained
- Existing Parking/Loading/Unloading Facilities to be Maintained

Existing (Healthy Street East)



Key Plan

Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbis Limited 雅邦

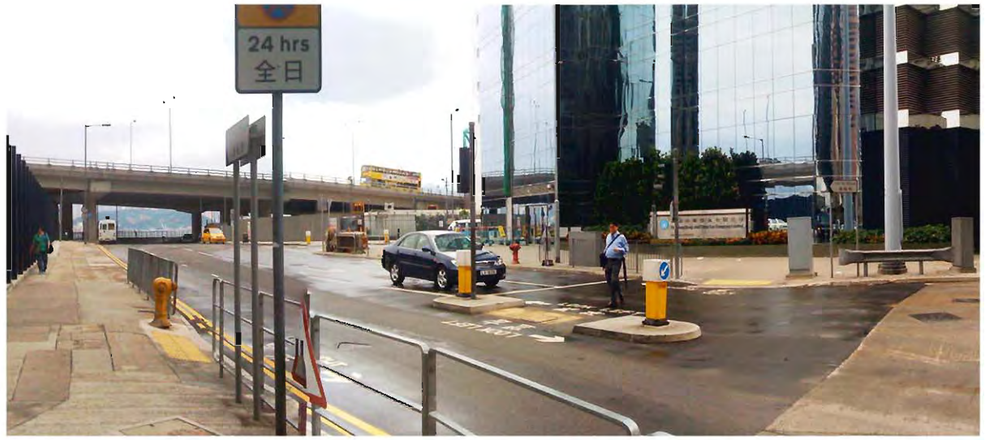
AECOM

Title: Streetscape Enhancement: North Point - Healthy Street East

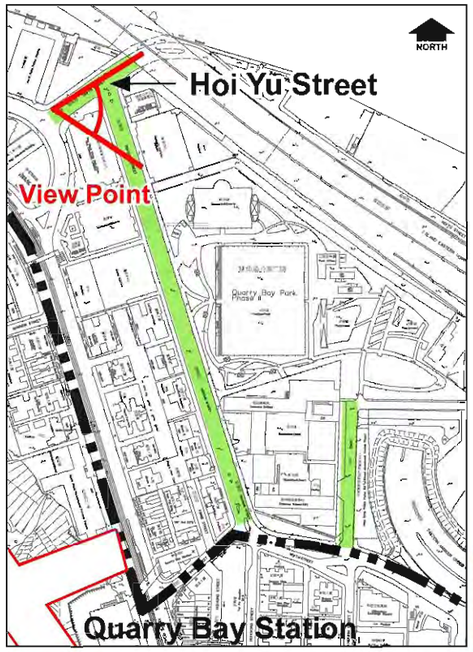
Scale	Date	Figure No.
As Shown	February 2012	6.4

Streetscape Enhancement

- Intensified Tree and Shrub Planting
- Additional Street Furniture, e.g. Rubbish Bins, Information and Destination Signage
- Operation of the J/O Hoi Yu Street / Hoi Chak Street and the J/O Hoi Yu Street / Java Road would still Operate below Capacity (R.C. of >50%) with the Implementation of the Proposal



Existing (Hoi Yu Street)



Key Plan

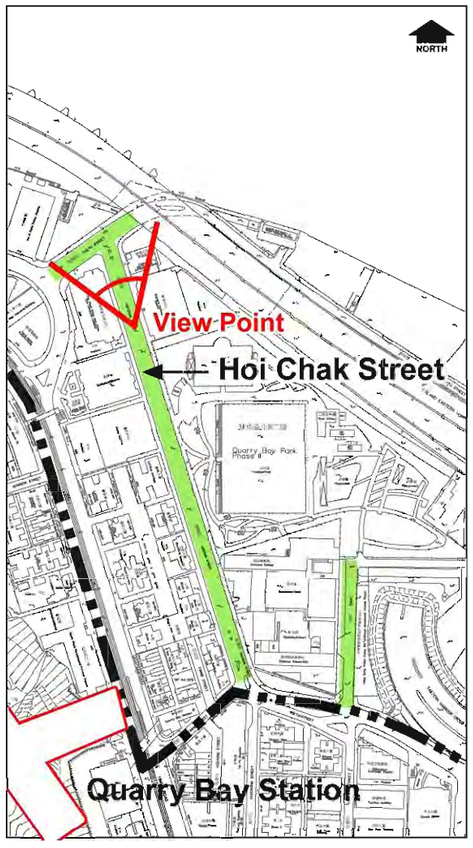
Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Streetscape Enhancement

- Pavement Improvement
- Intensified Tree and Shrub Planting
- Additional Street Furniture, e.g. Rubbish Bins, Information and Destination Signage
- Existing Road Width to be Maintained
- Operation of Existing Run-in/Run-out and Loading/Unloading Facilities to be Retained
- Tree Planting to be Introduced at Locations without Affecting the Existing Kerbside and Turn-in/Turn-out

Existing (Hoi Chak Street)



Key Plan

Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

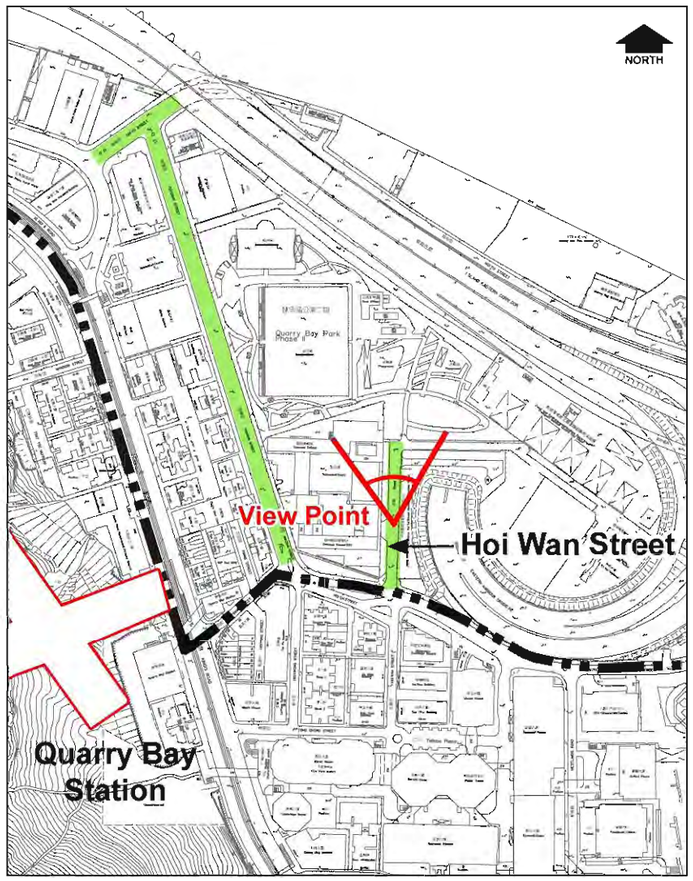
Title: Streetscape Enhancement: Quarry Bay - Hoi Chak Street

Scale	Date	Figure No.
As Shown	February 2012	6.6

Streetscape Enhancement

- Pavement Improvement to Incorporate with the Quarry Bay Key Site
- Intensified Tree and Shrub Planting
- Additional Street Furniture, e.g. Street Benches, Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

Existing (Hoi Wan Street)



Key Plan

Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

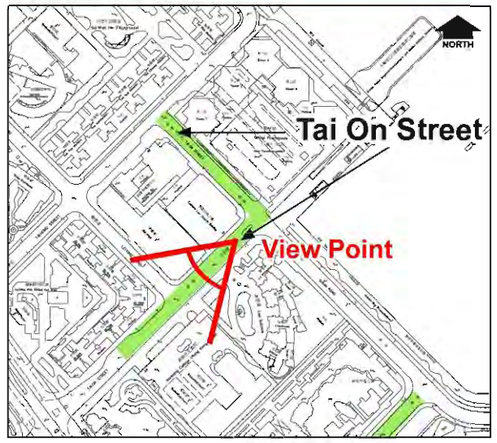
Planning Department

Title: Streetscape Enhancement: Quarry Bay - Hoi Wan Street

Scale	Date	Figure No.
As Shown	February 2012	6.7

Existing (Tai On Street)

- Pavement Improvement
- Additional Street Furniture, e.g. Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.
- Existing Road Width to be Maintained
- Tree Planting at Locations without Affecting Existing Operation of Bus Stops and Turn-in/ Turn-out



Key Plan

Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Wilbis Limited 雅邦

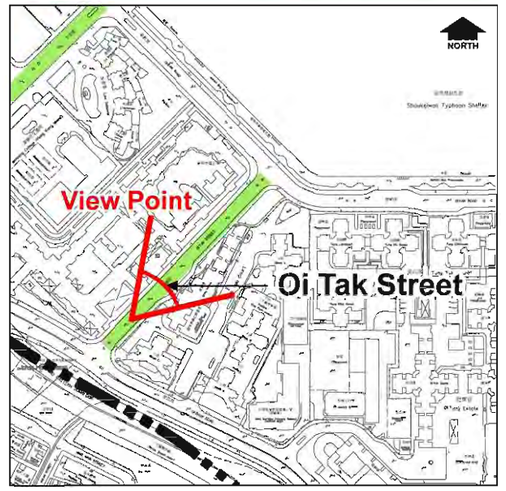
AECOM

Title: Streetscape Enhancement: Shau Kei Wan - Tai On Street

Scale	Date	Figure No.
As Shown	February 2012	6.8

Existing (Oi Tak Street)

- Pavement Improvement
- Minor Reduction of Existing 9m-wide Carriageway by 0.5m Each Side for Tree Plantation
- Intensified Tree and Shrub Planting
- Additional Street Furniture, e.g. Street Benches, Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc
- The Operation of the Vicinity Junctions is Virtually Unchanged With and Without the Proposed Enhancement



Key Plan

Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

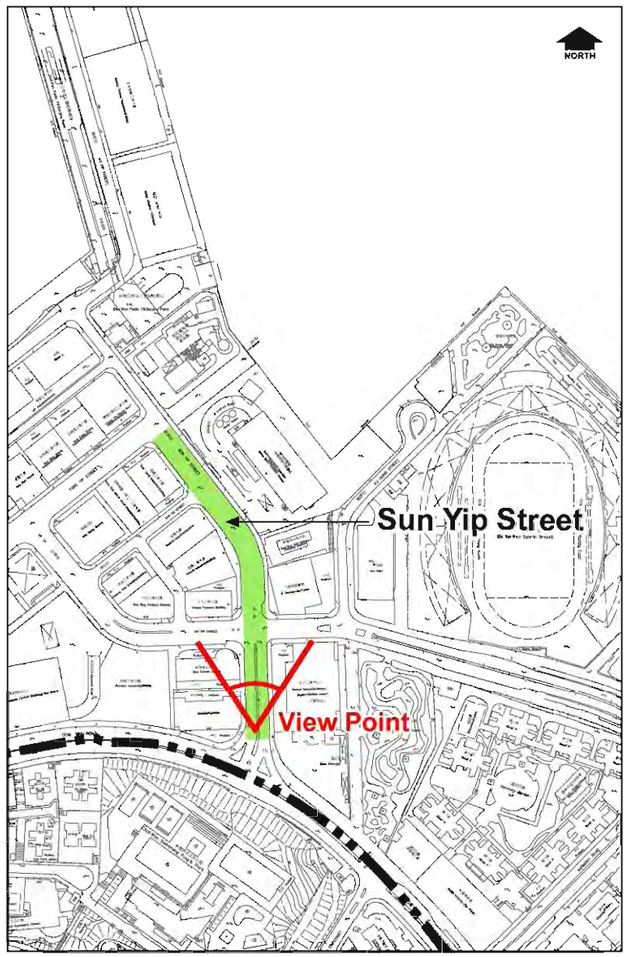
Planning Department

Title: Streetscape Enhancement: Shau Kei Wan - Oi Tak Street

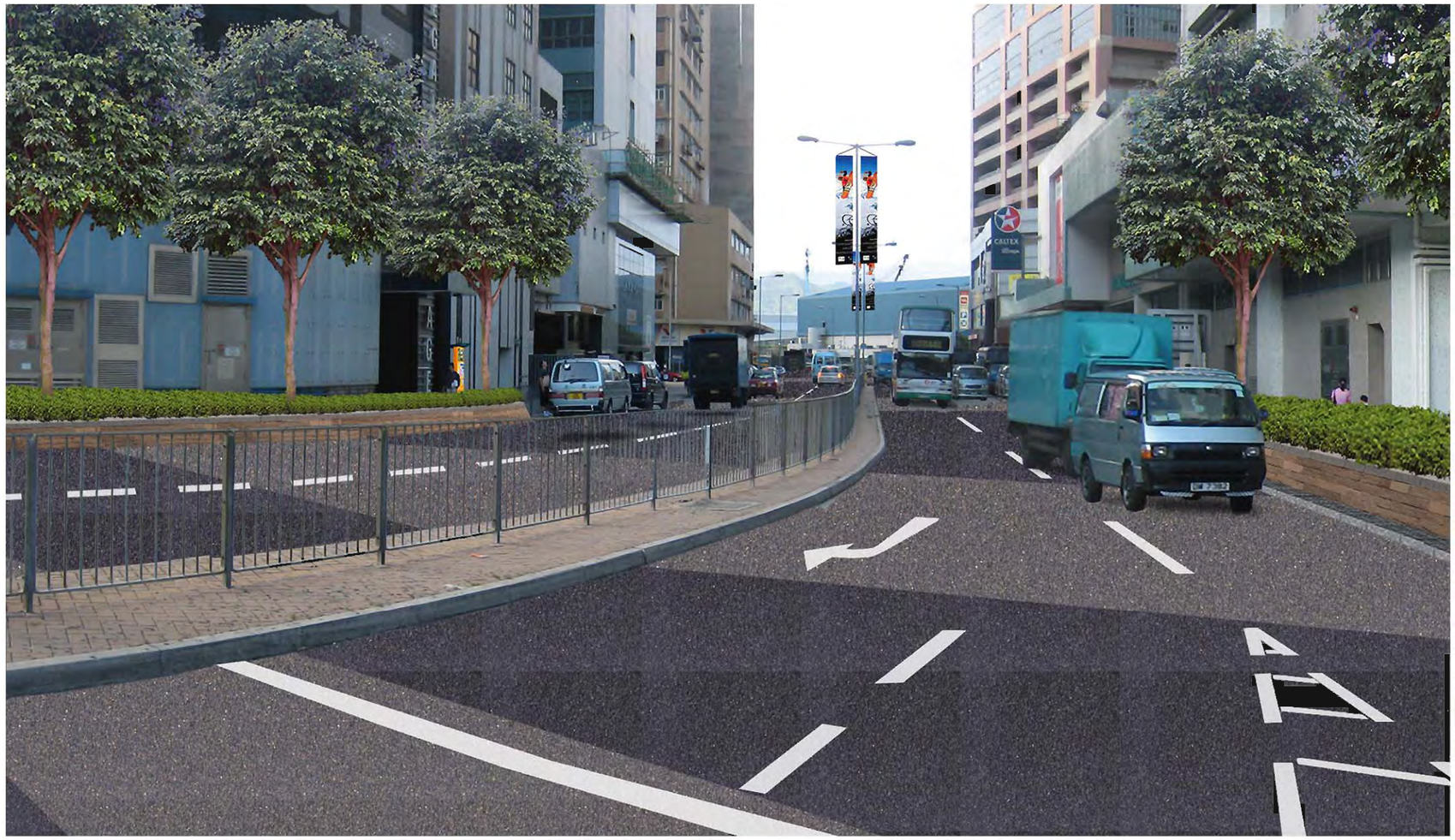
Scale	Date	Figure No.
As Shown	February 2012	6.9

- Minor Reduction in Carriageway Width by 0.5m on Each Side for Tree Planting (Operation Level at Junction Remains the Same With and Without the Proposed Enhancement)
- Pavement Improvement
- Intensified Tree and Shrub Planting
- Additional Street Furniture, e.g. Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

Existing (Sun Yip Street)

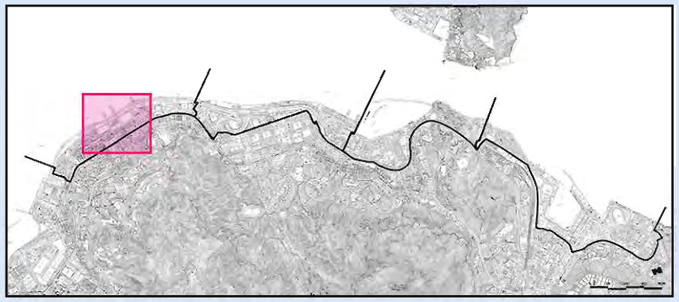


Key Plan



Proposed Enhancement

*Indicative photomontage, details of enhancement will be subject to further study in the detailed design stage



Key Plan

LEGEND

- Low Level Shrub Planter
- Tree Planted in Raised Planters
- Tree Planted At-grade
- Pavement Improvement

TONG SHUI ROAD

Proposed Streetscape Enhancement
- At-grade Tree Planting to be Introduced where Pavement Condition Permits
- Low Level Shrub Planters to be Introduced without Affecting Visibility of the Drivers

SHU KUK STREET

Proposed Streetscape Enhancement
- Intensified Tree and Shrub Planting
- Pavement Improvement to Integrate with the Future Ex-North Point Estate Development
- Additional Street Furniture, e.g. Street Benches, Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

Ex-North Point Estate Site

SHU KUK STREET

TONG SHUI ROAD

North Point Station

NORTH

0 20 40 60 80 100m

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

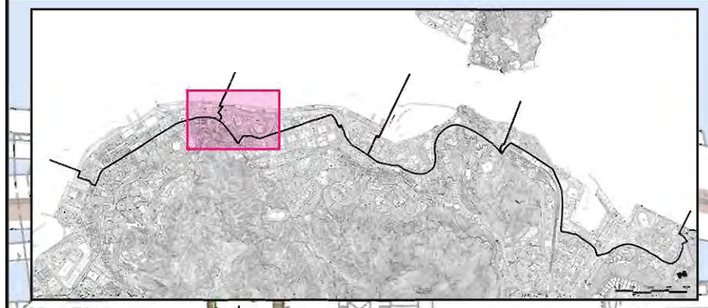
Planning Department

Title: Landscape Master Plan of Major Pedestrian Corridors: Tong Shui Road and Shu Kuk Street

Scale: 1:2500 @ A3

Date: February 2012

Figure No.: 6.11



Key Plan

LEGEND

- Low Level Shrub Planter
- Tree Planted in Raised Planters
- Tree Planted At-grade
- Pavement Improvement

HEALTHY STREET EAST

HOI YU STREET

HOI CHAK STREET

HOI WAN STREET

Quarry Bay Park Phase II

Quarry Bay Station

NORTH 0 20 40 60 80 100m

HOI YU STREET

Proposed Streetscape Enhancement
- Intensified Tree and Shrub Planting
- Pavement Improvement
- Additional Street Furniture, e.g. Rubbish Bins, Information and Destination Signage

HEALTHY STREET EAST

Proposed Streetscape Enhancement
- Intensified Tree and Shrub Planting
- Pavement Improvement
- Additional Street Furniture, e.g. Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage

HOI CHAK STREET

Propopsed Streetscape Enhancement
- Intensified Tree and Shrub Planting. Tree Planting to be Introduced at Locations without Affecting the Existing Kerbside and Turn-in / Turn-out
- Pavement Improvement
- Additional Street Furniture, e.g. Rubbish Bins, Information and Destination Signage

HOI WAN STREET

Proposed Streetscape Enhancement
- Intensified Tree and Shrub Planting
- Pavement Improvement to Incorporate with the Quarry Bay Key Site
- Additional Street Furniture, e.g. Street Benches, Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

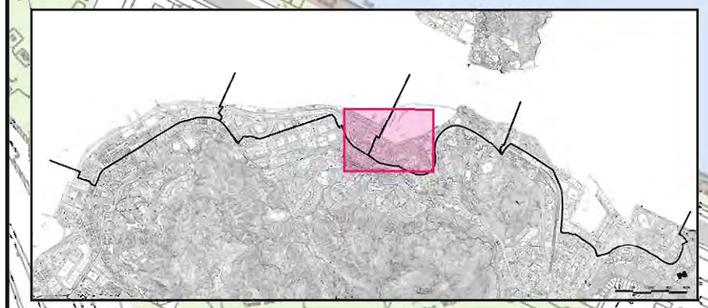
Planning Department

Arbis Limited 雅邦

AECOM

Title: Landscape Master Plan of Major Pedestrian Corridors: Healthy Street East, Hoi Yu Street, Hoi Chak Street and Hoi Wan Street

Scale	Date	Figure No.
1:2500 @ A3	February 2012	6.12



LEGEND

- Tree Planted in Raised Planters
- Tree Planted At-grade
- Pavement Improvement

TAI ON STREET

TAI ON STREET

OI TAK STREET

Sai Wan Ho Station

ALDRICH BAY

NORTH 0 20 40 60 80 100m

TAI ON STREET

Proposed Streetscape Enhancement
- Intensified Tree and Shrub Planting. Tree Planting at Locations without Affecting Existing Operation of Bus Stops and Turn-in / Turn-out
- Pavement Improvement
- Additional Street Furniture, e.g. Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

OI TAK STREET

Proposed Streetscape Enhancement
- Intensified Tree and Shrub Planting
- Minor Reduction of Existing 9m-wide Carriageway by 0.5m Each Side for Tree Planting
- Pavement Improvement
- Additional Street Furniture, e.g. Street Benches, Rubbish Bins, Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

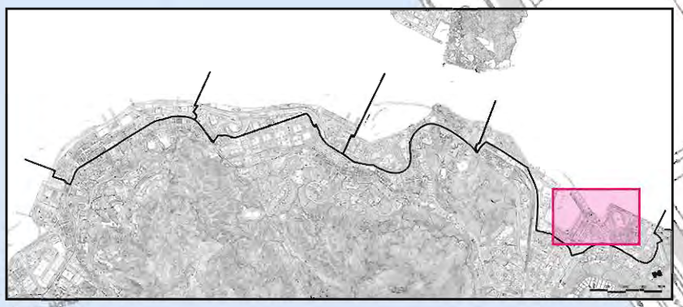
Planning Department

Arbis 雅邦 Limited

AECOM

Title: Landscape Master Plan of Major Pedestrian Corridors: Tai On Street and Oi Tak Street

Scale	Date	Figure No.
1:2500 @ A3	February 2012	6.13



Key Plan

LEGEND

- Tree Planted in Raised Planters
- Pavement Improvement

SUN YIP STREET

Proposed Streetscape Enhancement

- Intensified Tree and Shrub Planting
- Minor Reduction in Carriageway Width by 0.5m on Each Side for Tree Planting (Operation Level at Junction Remains the Same with or without the Proposed Enhancement)
- Pavement Improvement
- Additional Street Furniture, e.g. Pedestrian Street Lights, Information and Destination Signage
- Strong Identifiable Signage and Iconic Elements, e.g. Banners etc.

SUN YIP STREET

SUN YIP STREET

NORTH 0 20 40 60 80 100m

Agreement No. CE 61/2008 (TP)

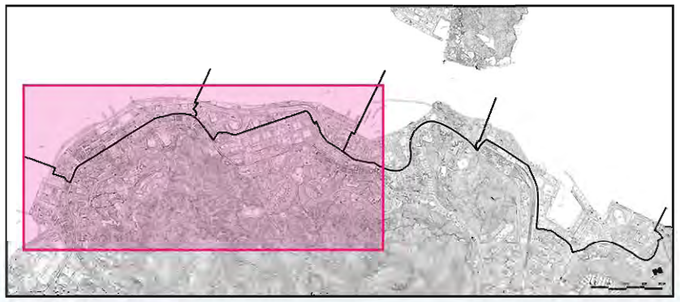
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

AECOM

Title: Landscape Master Plan of Major Pedestrian Corridors: Sun Yip Street

Scale	Date	Figure No.
1:2500 @ A3	February 2012	6.14



Key Plan

NORTH

0 100 200 300 400 500m

LEGEND

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Historical Building
- Existing / Potential View Corridor towards the Harbour
- Pedestrian Linkage
- Proposed Extent of Waterfront Connectivity
- Major Landscape Features
- Water Taxi Pick-Up and Drop-Off Points
- Key Sites

Open Space Network:

- Existing Public Open Space
- Planned or Potential Open Space
- Green Belt

North Point Ferry Piers Key Site

Ex North Point Estate Site

North Point Station

Hoi Yu Street Key Site

Quarry Bay Station

Taikoo Station

Sai Wan Ho Station

Fortress Hill Station

Tin Hau Station

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

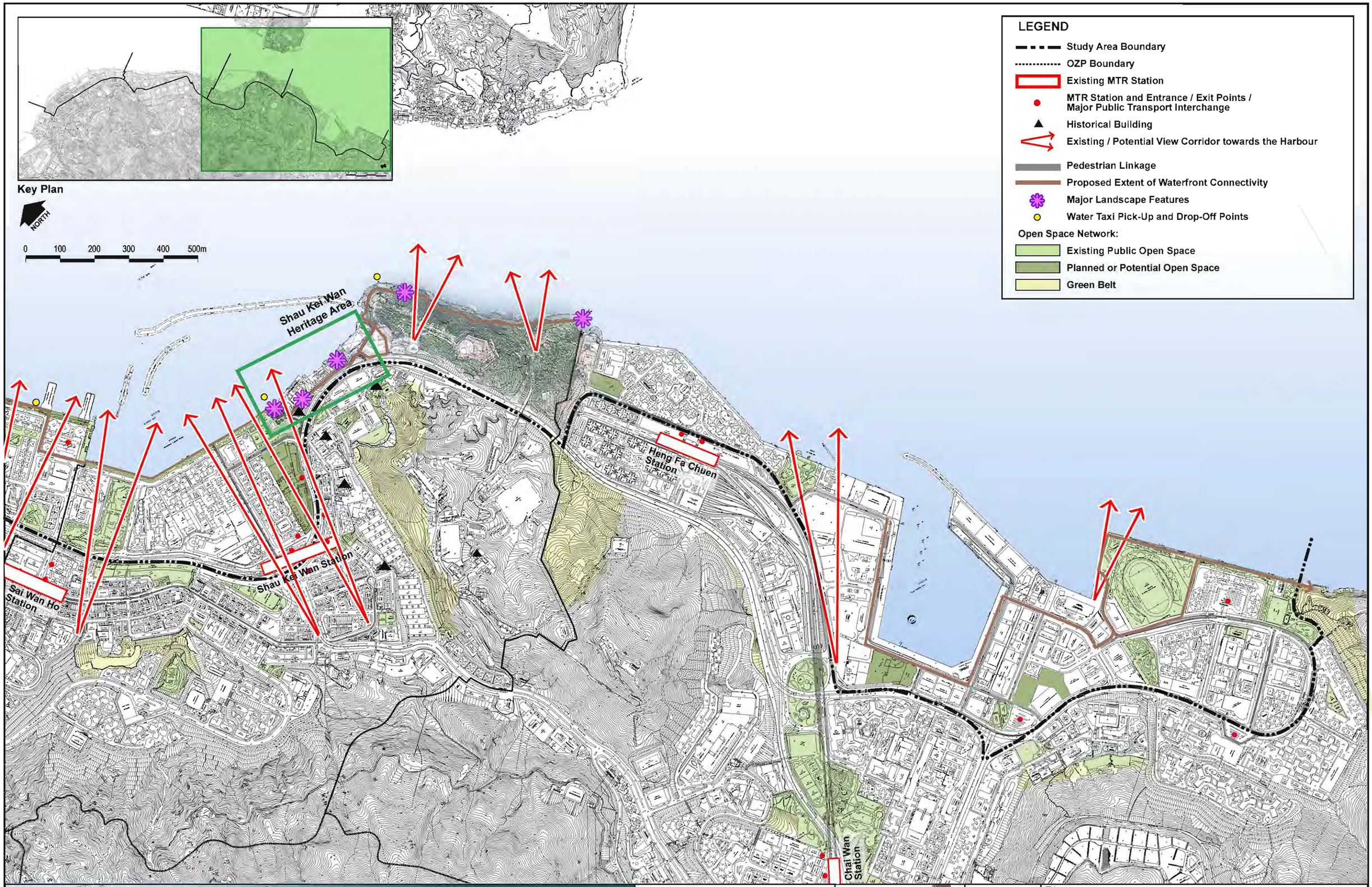
Urbis Limited 雅邦

AECOM

Title

Urban Design Plan -
North Point and Quarry Bay

Scale	Date	Figure No.
As Shown	February 2012	7.1



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Urbis 雅邦 limited

AECOM

Title: Urban Design Plan - Shau Kei Wan and Chai Wan

Scale	Date	Figure No.
As Shown	February 2012	7.2

RECOMMENDED OPTION: VIBRANT ENTERTAINMENT - THEMED WATERFRONT

Indicative Plan

Legend

1 Civic Plaza

2 Information Kiosk

3 Tensile Shelter

4 Proposed Boardwalk for Improved Waterfront Accessibility

5 Extension of Boardwalk through the Pier Structures

6 Retail Kiosks on the Boardwalk

7 Rooftop Cafes and Landscape Areas Accessible to the Public

8 Viewing Deck

9 Covered Walkway

Recreational Cycle Track

20m Wide Waterfront Promenade

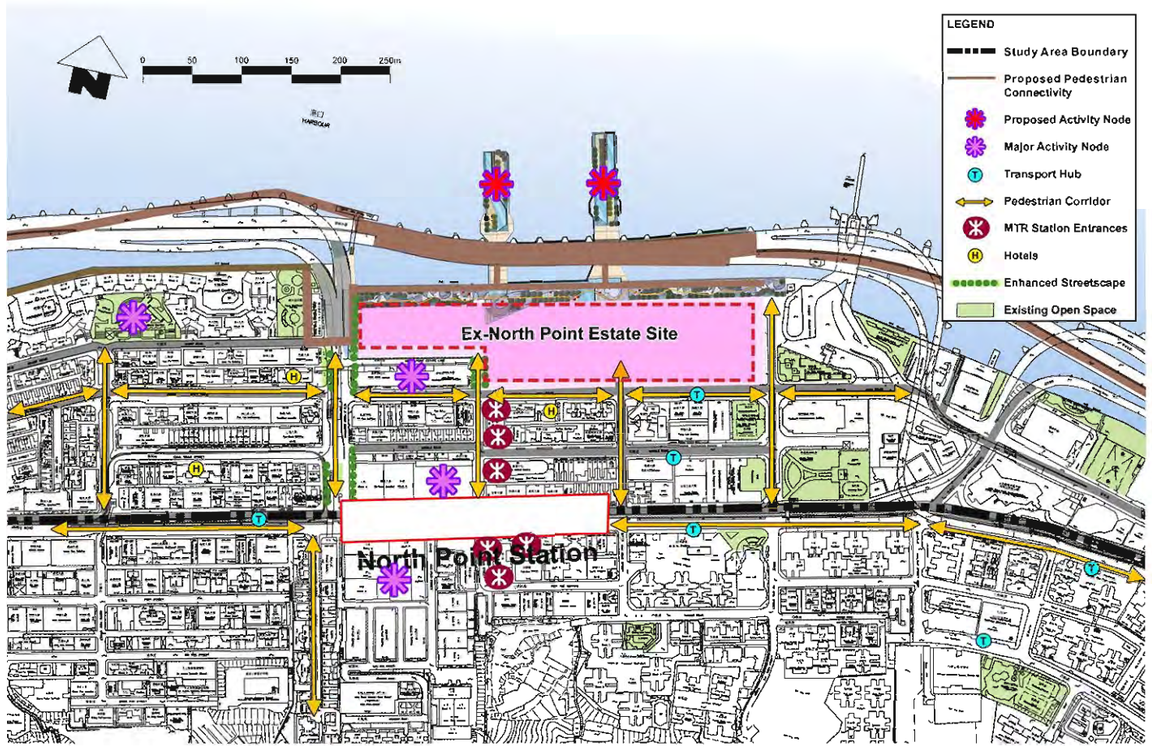
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

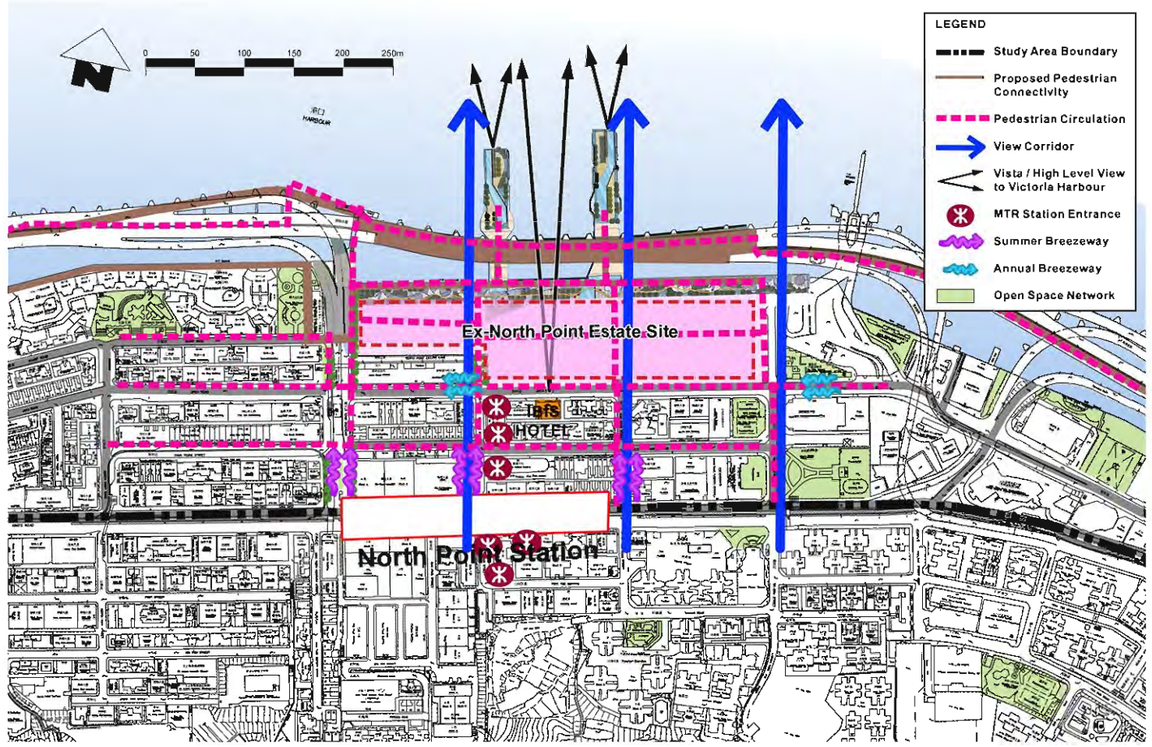
Planning Department

Title: North Point Ferry Piers Key Site - Recommended Option

Scale: As Shown | Date: February 2012 | Figure No.: 7.3

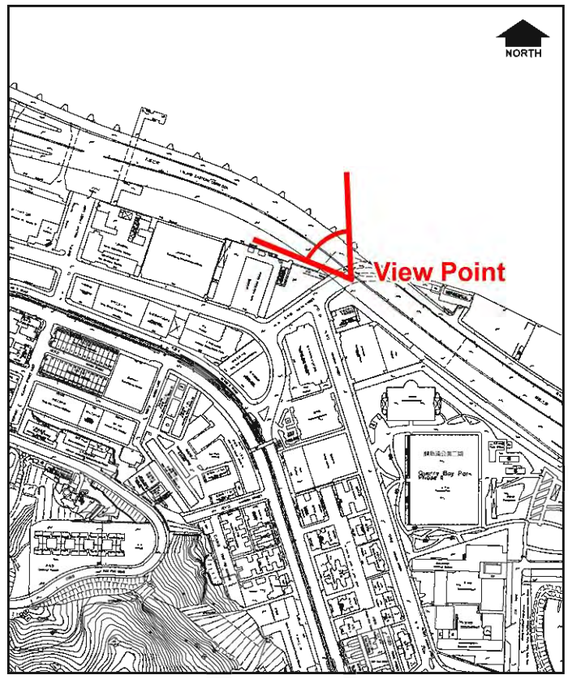


Activity Nodes, Transport Nodes and Pedestrian Corridors at North Point Ferry Piers Key Site



Breezeways, View Corridors, Vistas and Pedestrian Circulation at North Point Ferry Piers Key Site

Possible animated activity deck with additional array of diversified uses.



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

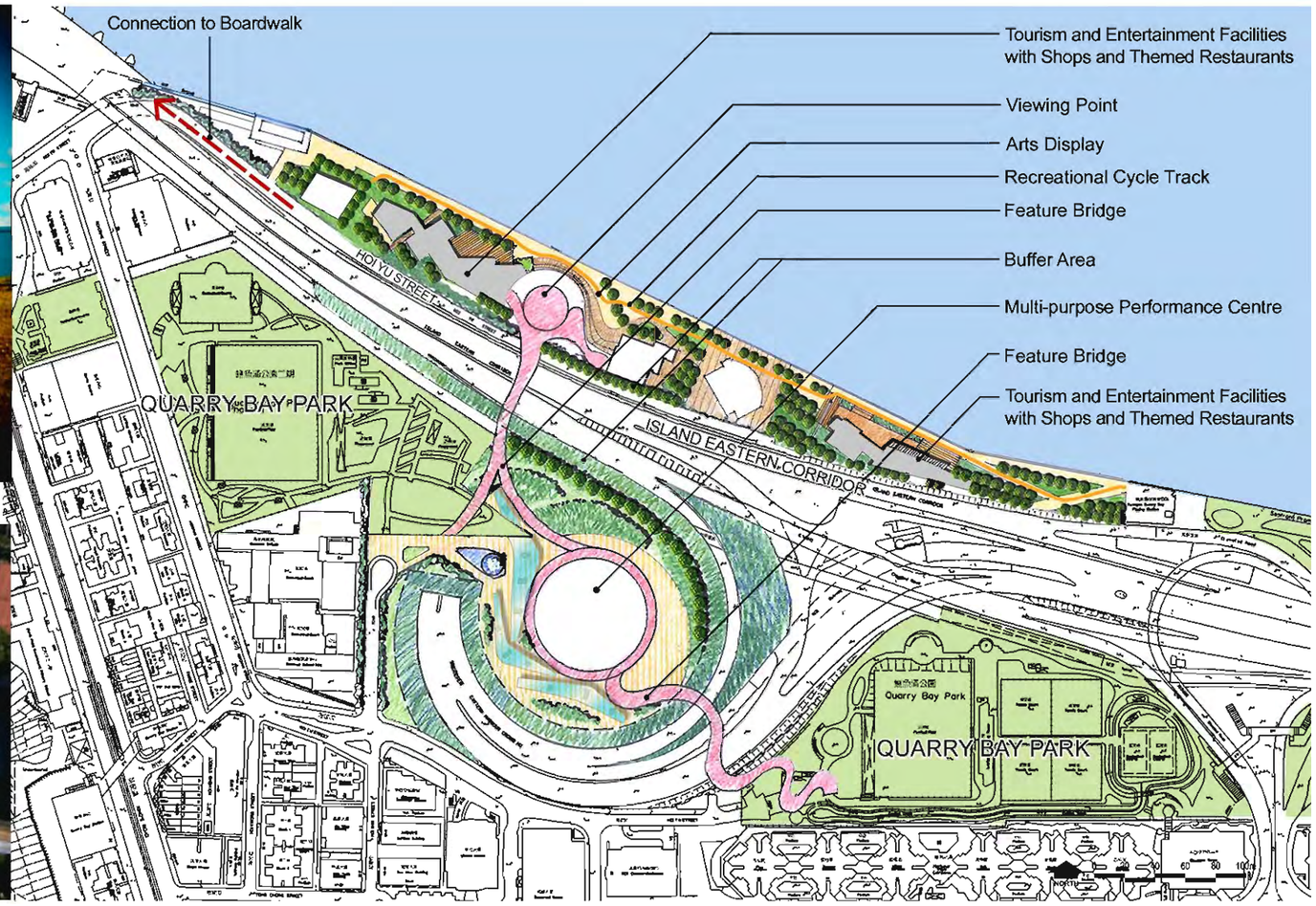
Urbis Limited 雅邦

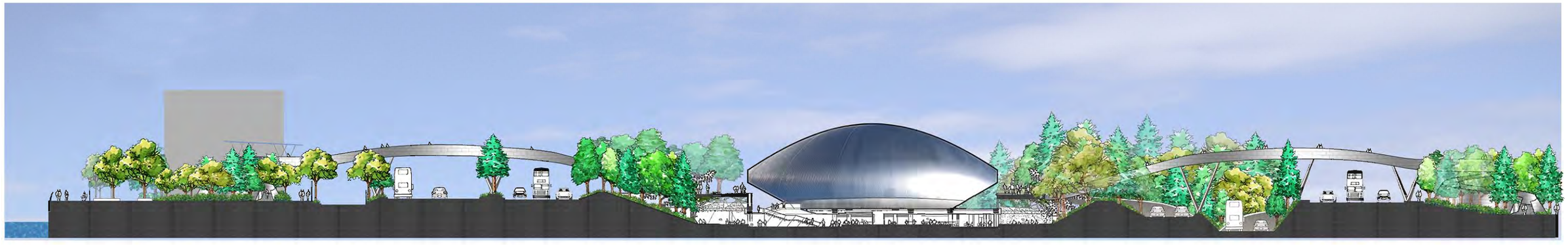
AECOM

Title: Urban Design Plan - North Point Ferry Piers Key Site

Scale	Date	Figure No.
As Shown	March 2012	7.4

RECOMMENDED OPTION: TOURISM AND ENTERTAINMENT-THEMED WATERFRONT





Harbour | Proposed tourism and entertainment facilities and open space along Hoi Yu Street key site | The IEC | Proposed IMAX or performance centre at the EHC Tunnel Portal with iconic bridge to improve accessibility to the harbourfront | Multiple slip roads to the IEC | Connection to Quarry Bay Park

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

AECOM

Title: Hoi Yu Street Key Site - Recommended Option

Scale: As Shown | Date: March 2012 | Figure No.: 7.5

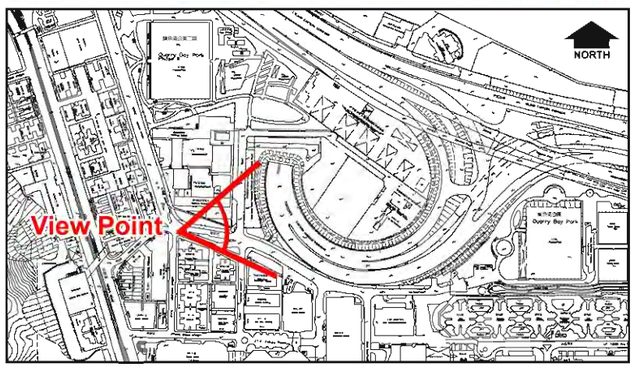
RECOMMENDED OPTION: TOURISM AND ENTERTAINMENT-THEMED WATERFRONT

EXISTING

PROPOSAL

EXISTING

PROPOSAL



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

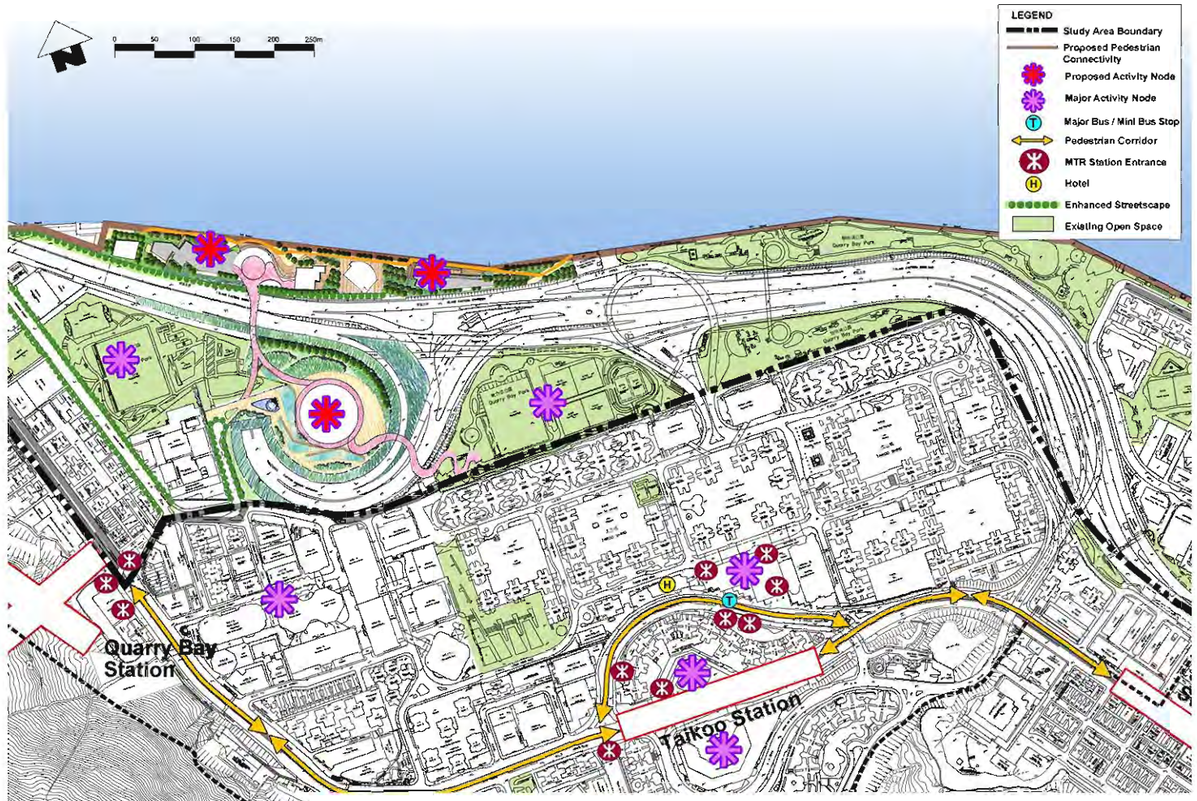
Planning Department

Arbis 雅邦 Limited

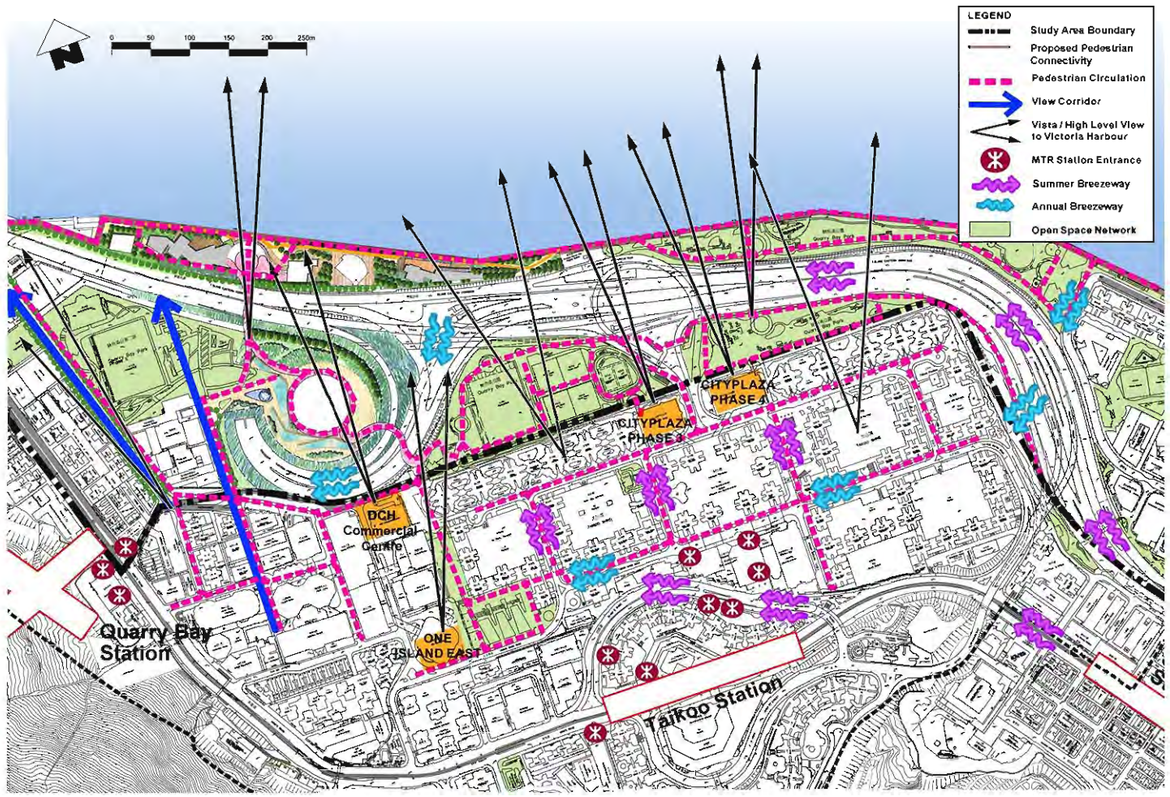
AECOM

Title: Hoi Yu Street Key Site - Recommended Option

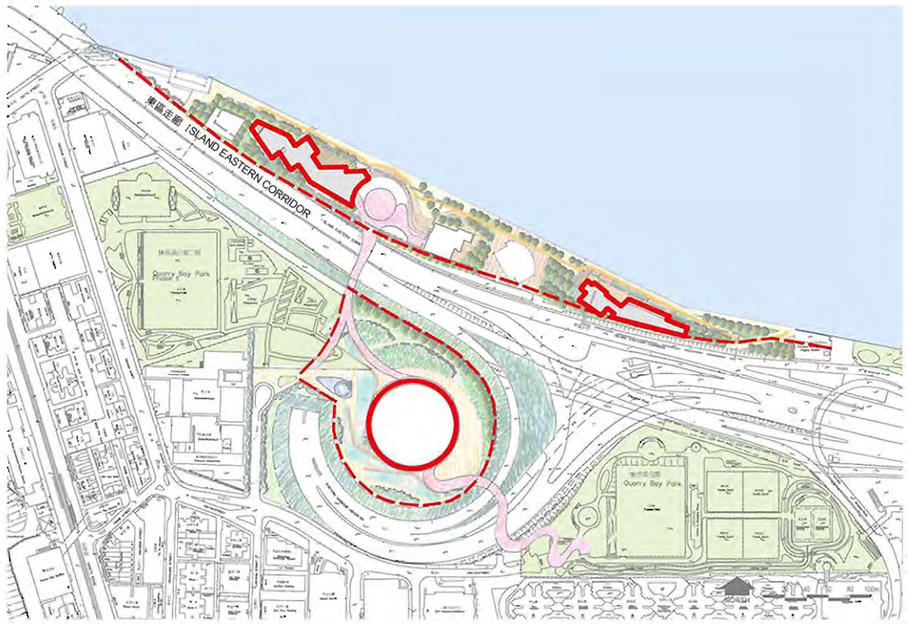
Scale: As Shown | Date: February 2012 | Figure No.: 7.6



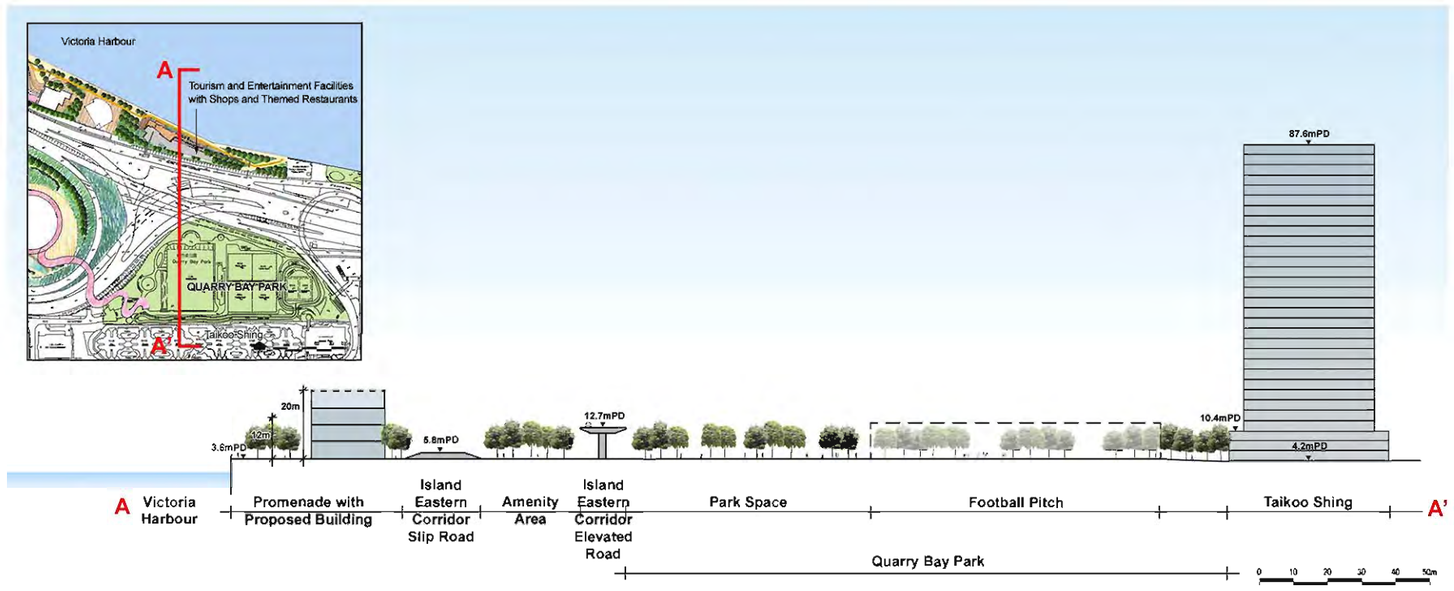
Activity Nodes, Transport Nodes and Pedestrian Corridors at Hoi Yu Street Key Site



Breezeways, View Corridors, Vistas and Pedestrian Circulation at Hoi Yu Street Key Site



Indicative plan to illustrate proposed development locations within key site



Typical section across Hoi Yu Street key site in Quarry Bay

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

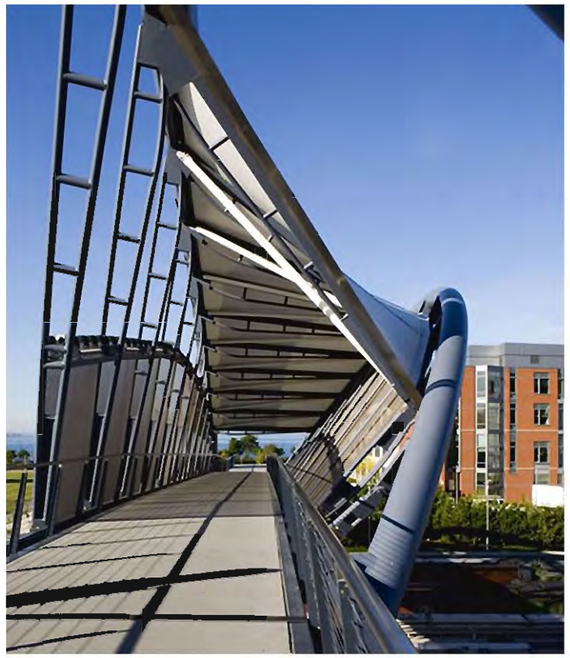
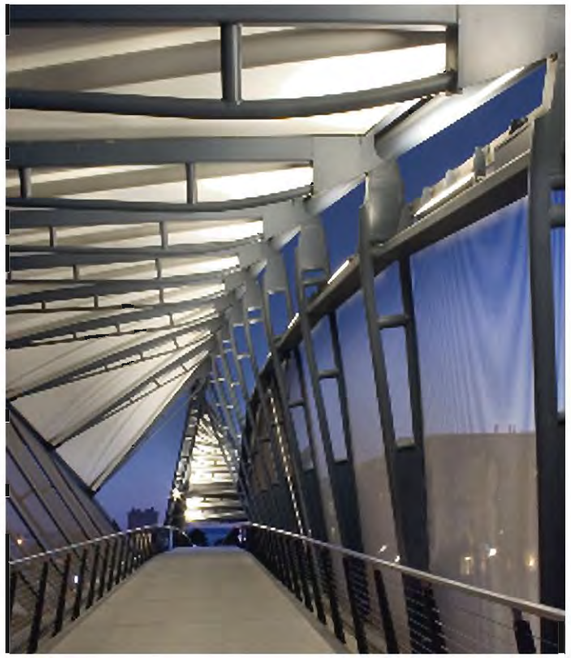
Planning Department

Urbis Limited

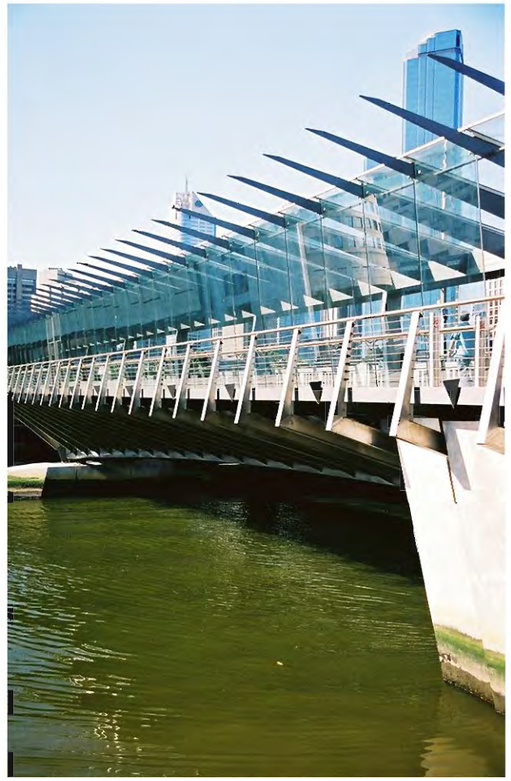
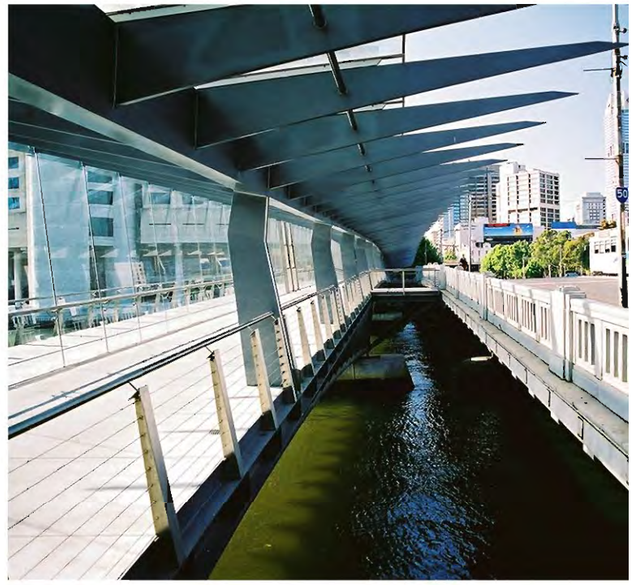
AECOM

Title: Urban Design Plan - Hoi Yu Street Key Site

Scale: As Shown | Date: February 2012 | Figure No.: 7.7



Quarry Bay: Proposed Feature Bridge

Feature bridges can adopt various architectural forms and detail that render them as strong and symbolic reference points associated with cities or neighbourhoods. The shape form and alignment can be configured in numerous interesting ways to fit with local requirements and design preferences.

Key Plan

0 50 100 150 200 250m

Ex North Point Estate Site

North Point Station

Fortress Hill Station

VICTORIA HARBOUR

HARBOUR

LEGEND

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Historical Building
- Existing / Potential View Corridor to and from the Harbour
- Enhanced Streetscape
- Pedestrian Linkage
- Major Landscape Features
- Proposed Extent of Waterfront Connectivity

Open Space Network:

- Existing Public Open Space
- Planned or Potential Open Space
- Green Belt
- Proposed Recreational Cycle Track

Healthy Street East

Shu Kuk Street

Tong Shui Road

Flooring

Sculptures

Chromatic Treatment

Roofscape

Greening

Computer-generated illustrations showing general streetscape enhancement measures, landscape concept and hard and soft landscape treatment at selected streets in North Point. Character areas and major landscape feature area at North Point Ferry Piers key site are also being indicated.

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

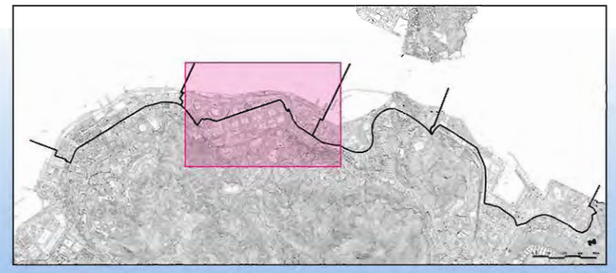
Wilbis 雅邦 Limited

AECOM

Title

Landscape Master Plan - North Point

Scale	Date	Figure No.
As Shown	January 2012	8.1



Key Plan

LEGEND

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Existing / Potential View Corridor to and from the Harbour
- Enhanced Streetscape
- Pedestrian Linkage
- Major Landscape Features
- Proposed Extent of Waterfront Connectivity

Open Space Network:

- Existing Public Open Space
- Planned or Potential Open Space
- Green Belt
- Proposed Recreational Cycle Track

Quarry Bay Park

Quarry Bay Park Phase 1

Quarry Bay Park Phase 2

Quarry Bay Station

Taikoo Station

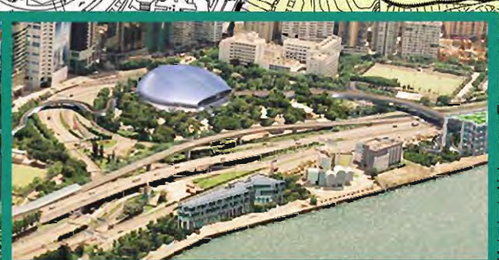
Sai Wan Ho Station

ALDRICH BAY

LEI YUE MUN

Hoi Yu Street

Hoi Wan Street



Computer generated illustrations showing general streetscape enhancement measures and hard and soft landscape treatment at selected streets in Quarry Bay, as well as illustrating its character areas at the major landscape feature area e.g. Hoi Yu Street key site.

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Urbis Limited 雅邦

AECOM

Title: Landscape Master Plan - Quarry Bay

Scale: As Shown

Date: February 2012

Figure No.: 8.2

Key Plan

0 50 100 150 200 250m

LEGEND

- Study Area Boundary
- OZP Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Historical Building
- Existing / Potential View Corridor to and from the Harbour
- Enhanced Streetscape
- Pedestrian Linkage
- Major Landscape Features
- Proposed Extent of Waterfront Connectivity

Open Space Network:

- Existing Public Open Space
- Planned or Potential Open Space
- Green Belt

LEI YUE MUN

ALDRICH BAY

Shelter

Shau Kei Wan Station

Tai On Street

Oi Tak Street

Computer-generated illustrations showing general streetscape enhancement measures, landscape concept and hard and soft landscape treatment at selected streets in Shau Kei Wan. Major landscape features are suggested to form a unique character area around the shipyard area as illustrated.

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

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AECOM

Title: Landscape Master Plan - Shau Kei Wan

Scale: As Shown

Date: March 2012

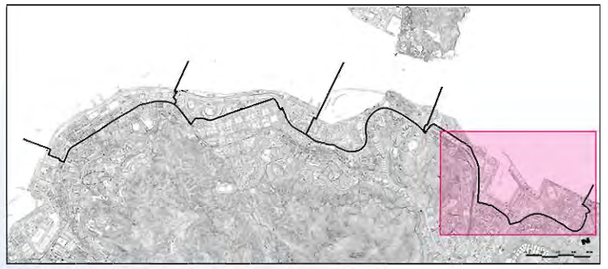
Figure No.: 8.3

Heng Fa Chuen Station Entrance

Sun Yip Street

Sheung On Street

Computer-generated illustrations showing general streetscape enhancement measures and hard and soft landscape treatment at selected streets in Chai Wan. Due to difficulties in relocating existing bad neighbourhood uses at the waterfront, there is no identified major landscape key features proposed for Chai Wan waterfront.



Key Plan

LEGEND

- Study Area Boundary
- Existing MTR Station
- MTR Station and Entrance / Exit Points / Major Public Transport Interchange
- Existing / Potential View Corridor to and from the Harbour
- Enhanced Streetscape
- Pedastrian Linkage
- Proposed Extent of Waterfront Connectivity

Open Space Network:

- Existing Public Open Space
- Planned or Potential Open Space
- Green Belt

N

0 50 100 150 200 250m

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbio 雅邦 Limited

AECOM

Title: Landscape Master Plan - Chai Wan

Scale	Date	Figure No.
As Shown	February 2012	8.4

Visitor Information and Maps

Visitor Information and Maps

Directional Signage

Pavement Inlay Signage

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

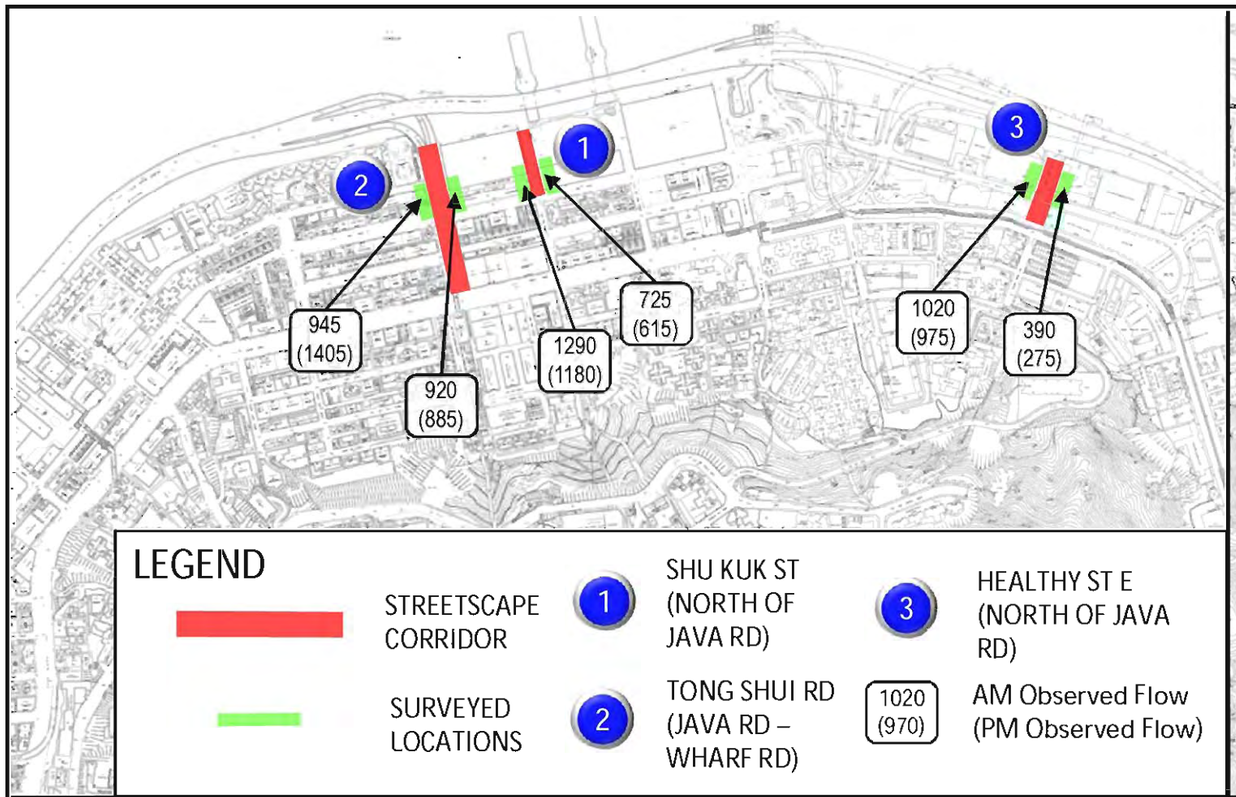
Planning Department

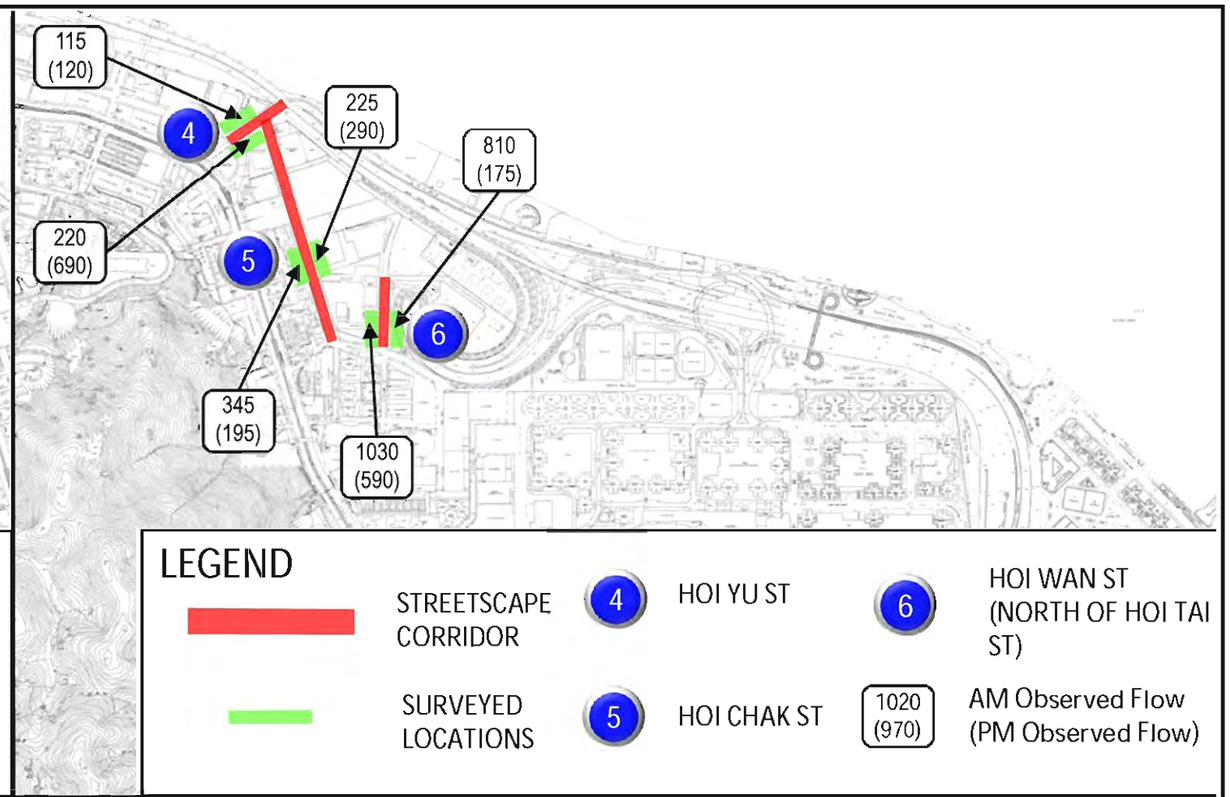
Urbis Limited 雅邦

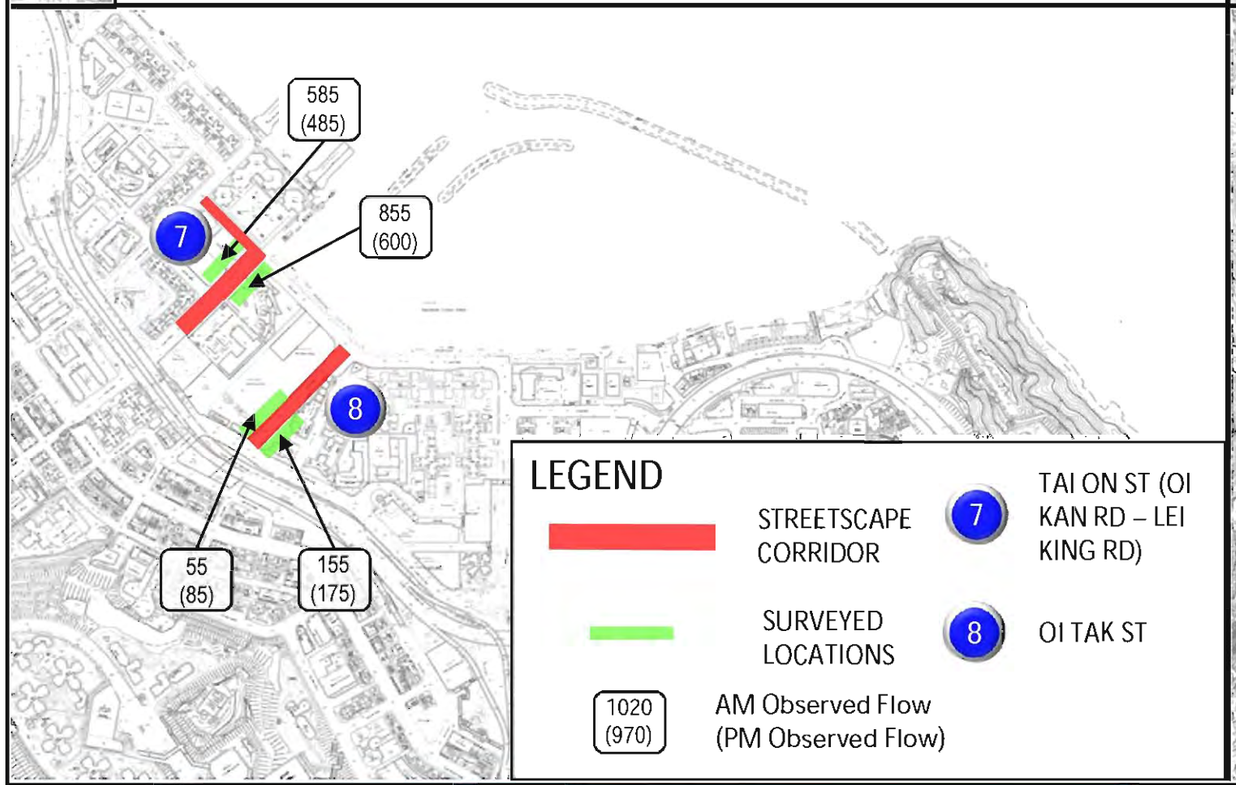
AECOM

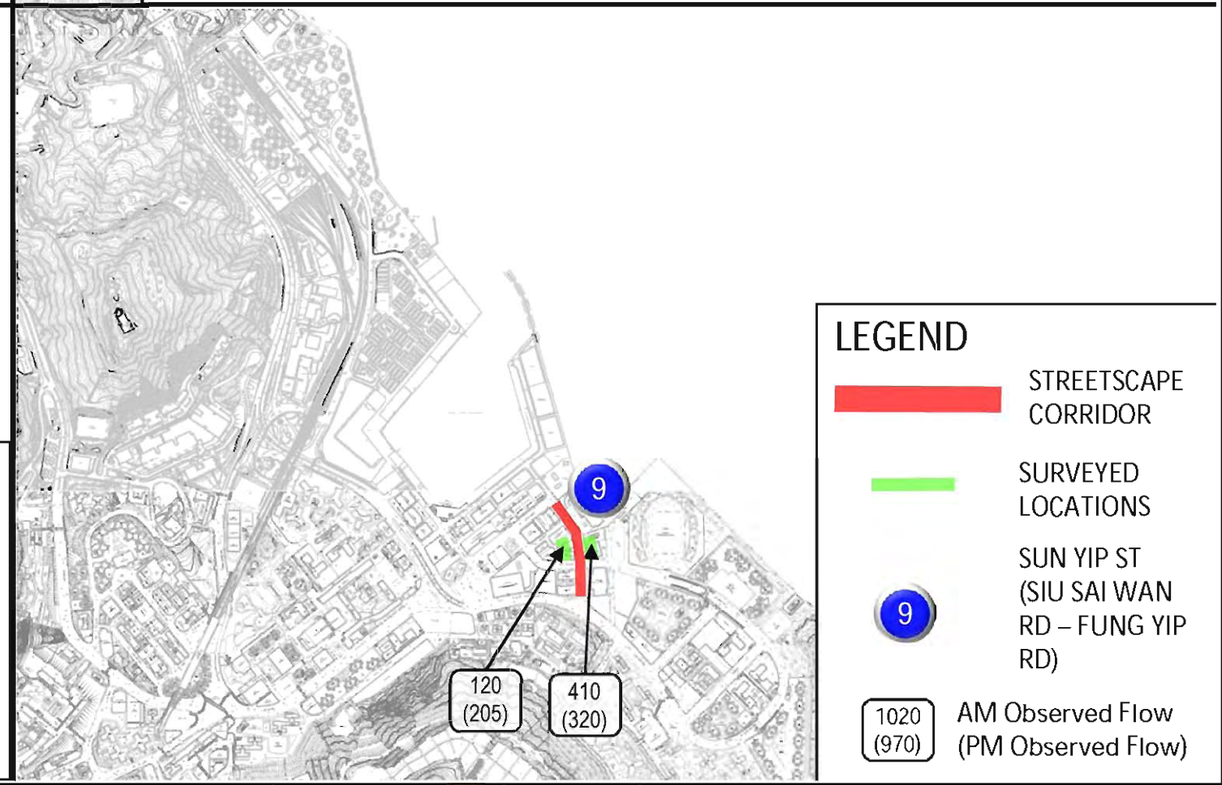
Title: Possible Signage Strategy for Placemaking and Way Finding

Scale	Date	Figure No.
As Shown	February 2012	8.5









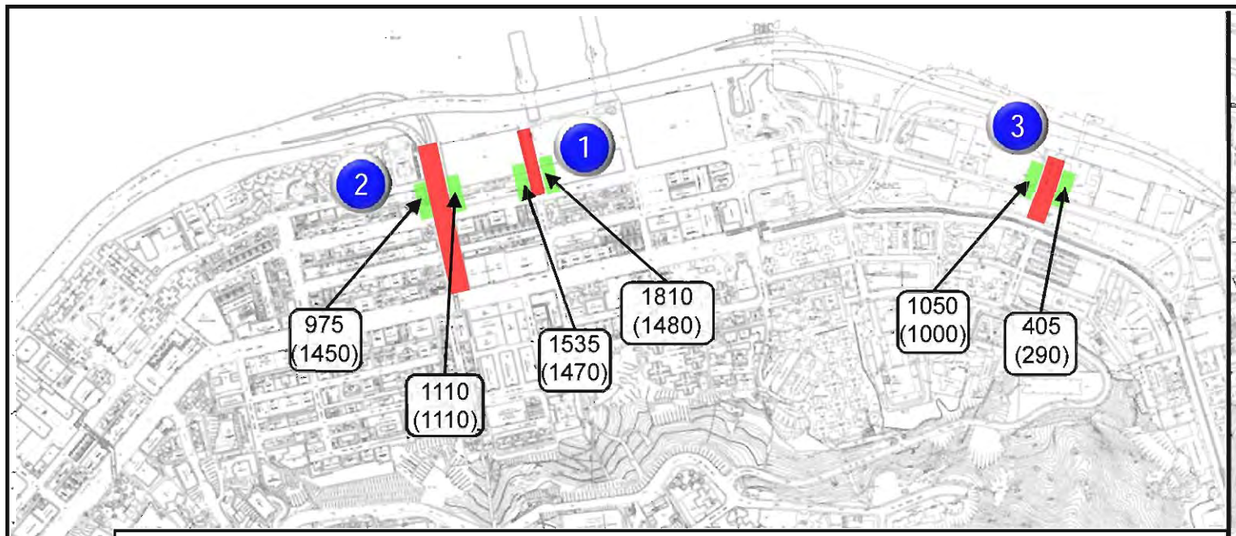
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

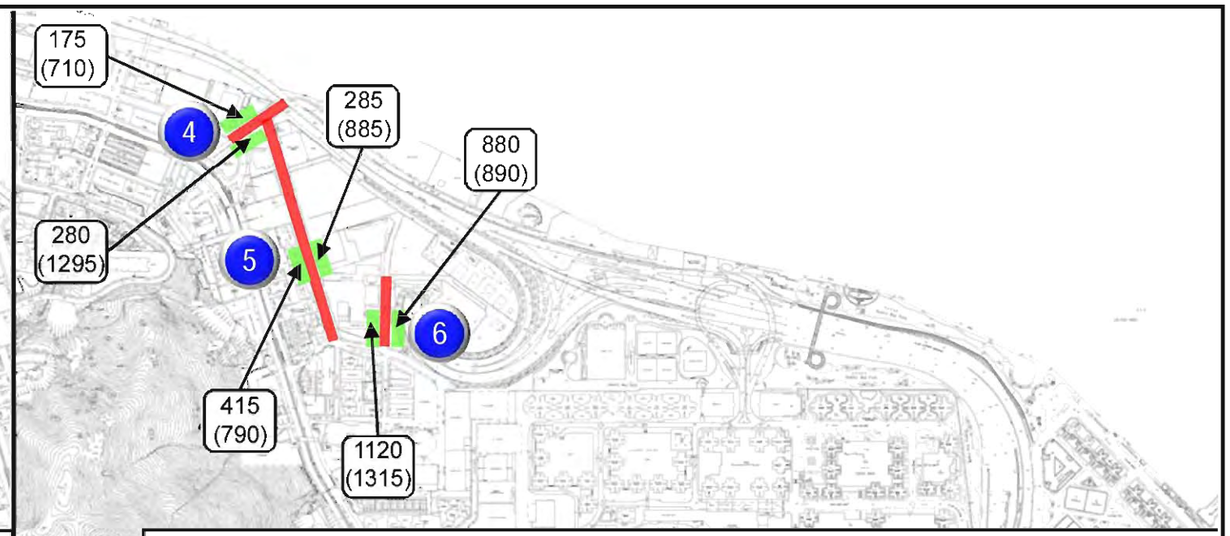
Title: Streetscape Pedestrian Corridors and Surveyed Locations

Scale	Date	Figure No.
As Shown	February 2012	9.1



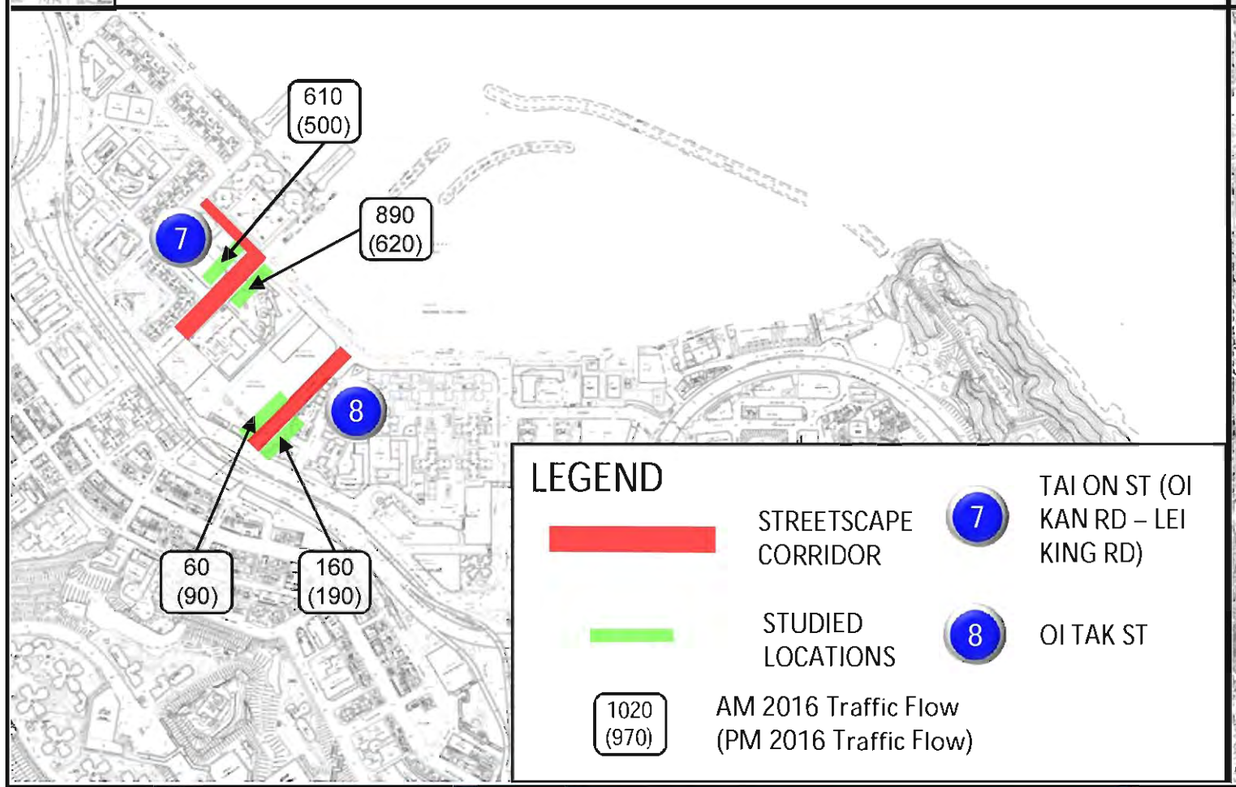
LEGEND

- STREETSCAPE CORRIDOR
- STUDIED LOCATIONS
- 1 SHU KUK ST (NORTH OF JAVA RD)
- 2 TONG SHUI RD (JAVA RD – WHARF RD)
- 3 HEALTHY ST E (NORTH OF JAVA RD)
- 1020 (970) AM 2016 Traffic Flow (PM 2021 Traffic Flow)



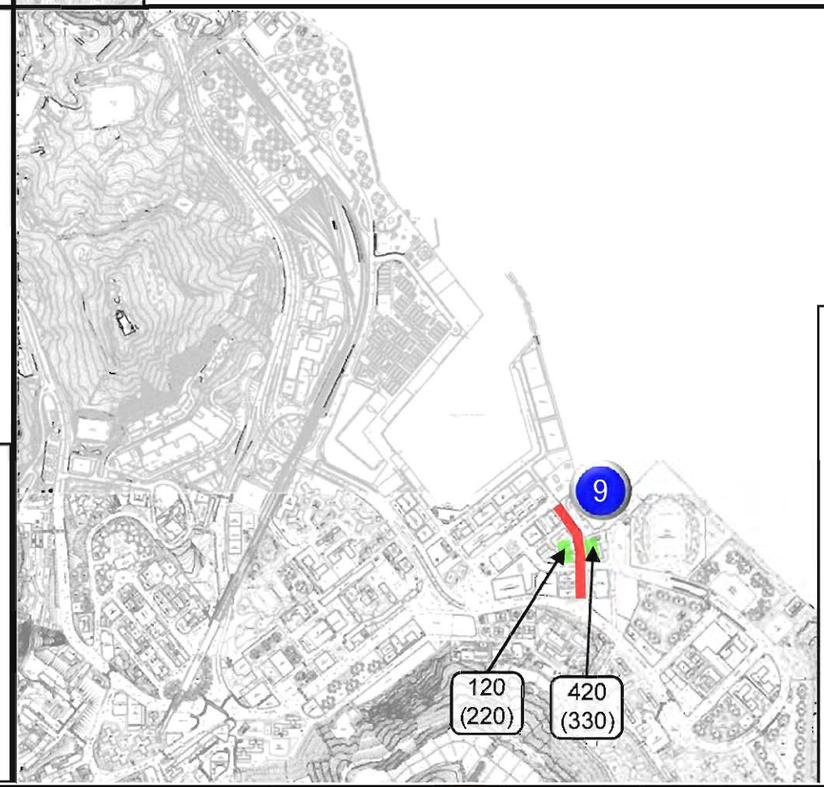
LEGEND

- STREETSCAPE CORRIDOR
- STUDIED LOCATIONS
- 4 HOI YU ST
- 5 HOI CHAK ST
- 6 HOI WAN ST (NORTH OF HOI TAI ST)
- 1020 (970) AM 2016 Traffic Flow (PM 2016 Traffic Flow)



LEGEND

- STREETSCAPE CORRIDOR
- STUDIED LOCATIONS
- 7 TAI ON ST (OI KAN RD – LEI KING RD)
- 8 OI TAK ST
- 1020 (970) AM 2016 Traffic Flow (PM 2016 Traffic Flow)



LEGEND

- STREETSCAPE CORRIDOR
- STUDIED LOCATIONS
- 9 SUN YIP ST (SIU SAI WAN RD – FUNG YIP RD)
- 1020 (970) AM 2016 Traffic Flow (PM 2016 Traffic Flow)

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

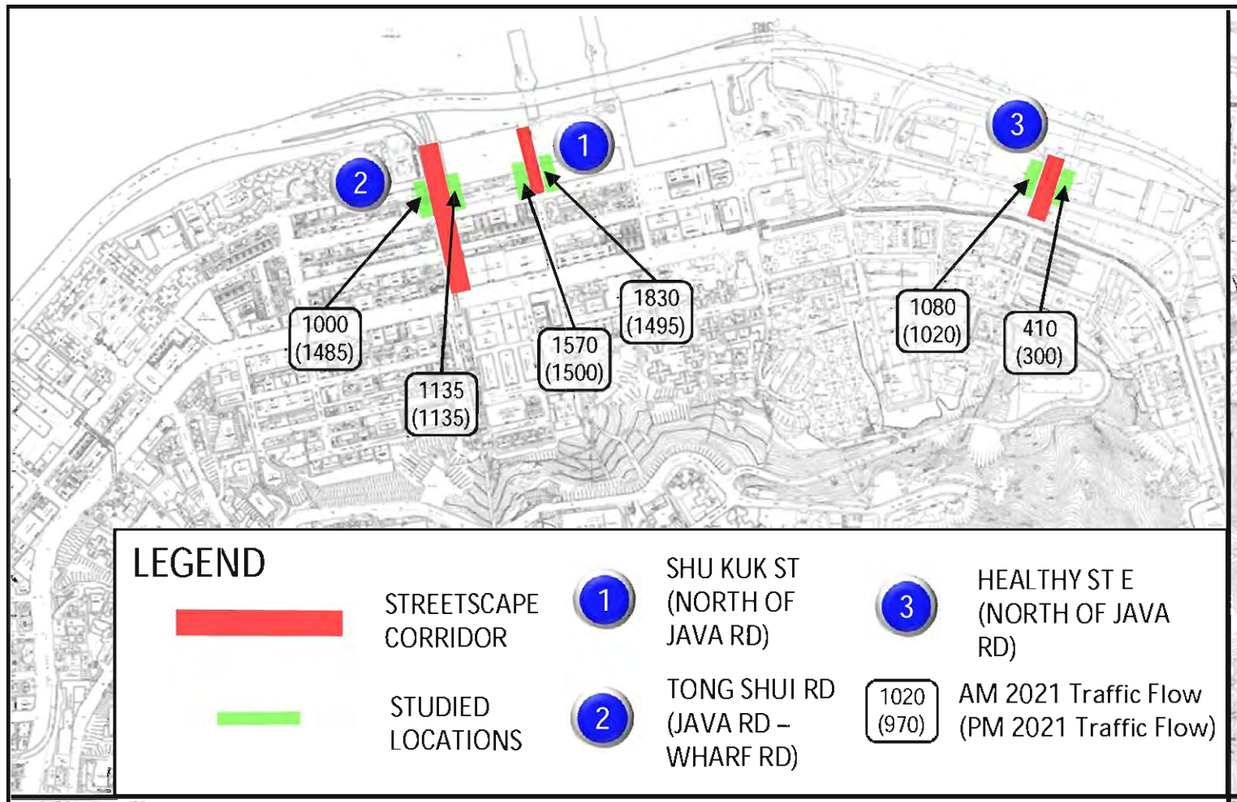
Planning Department

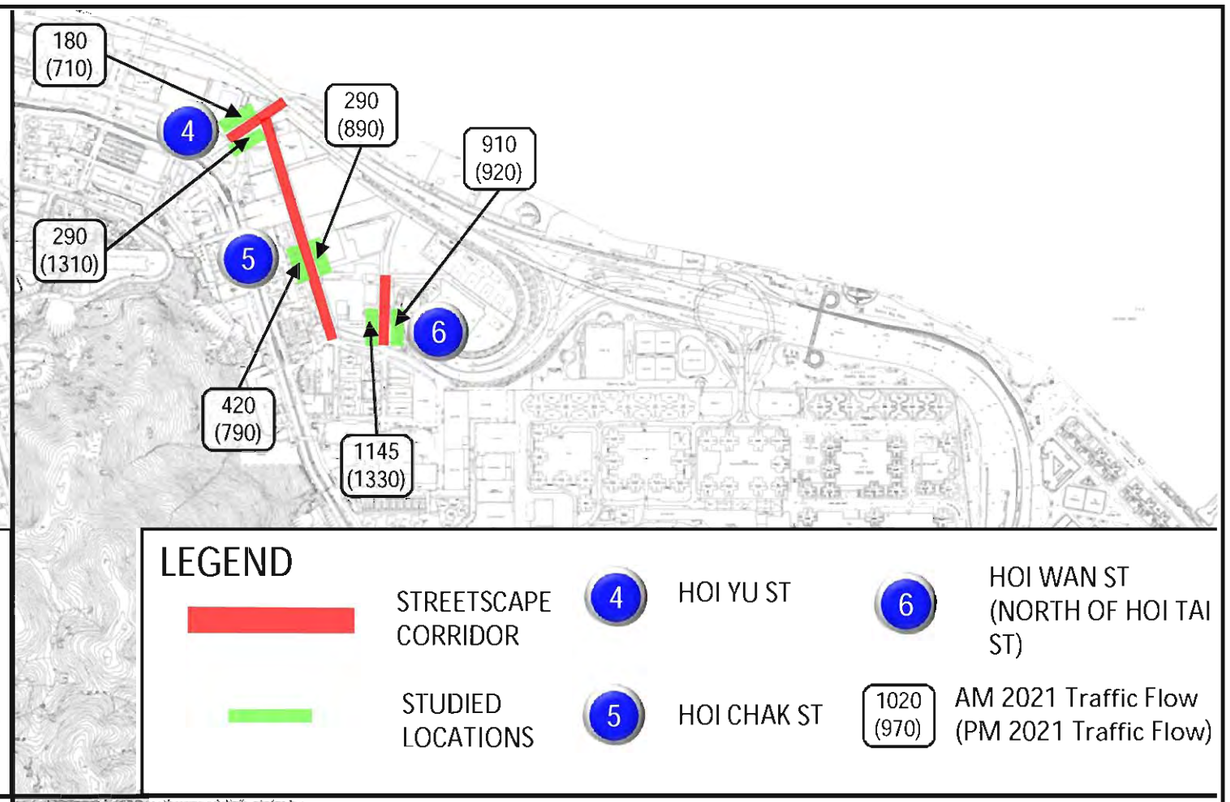
Arbis Limited 雅邦

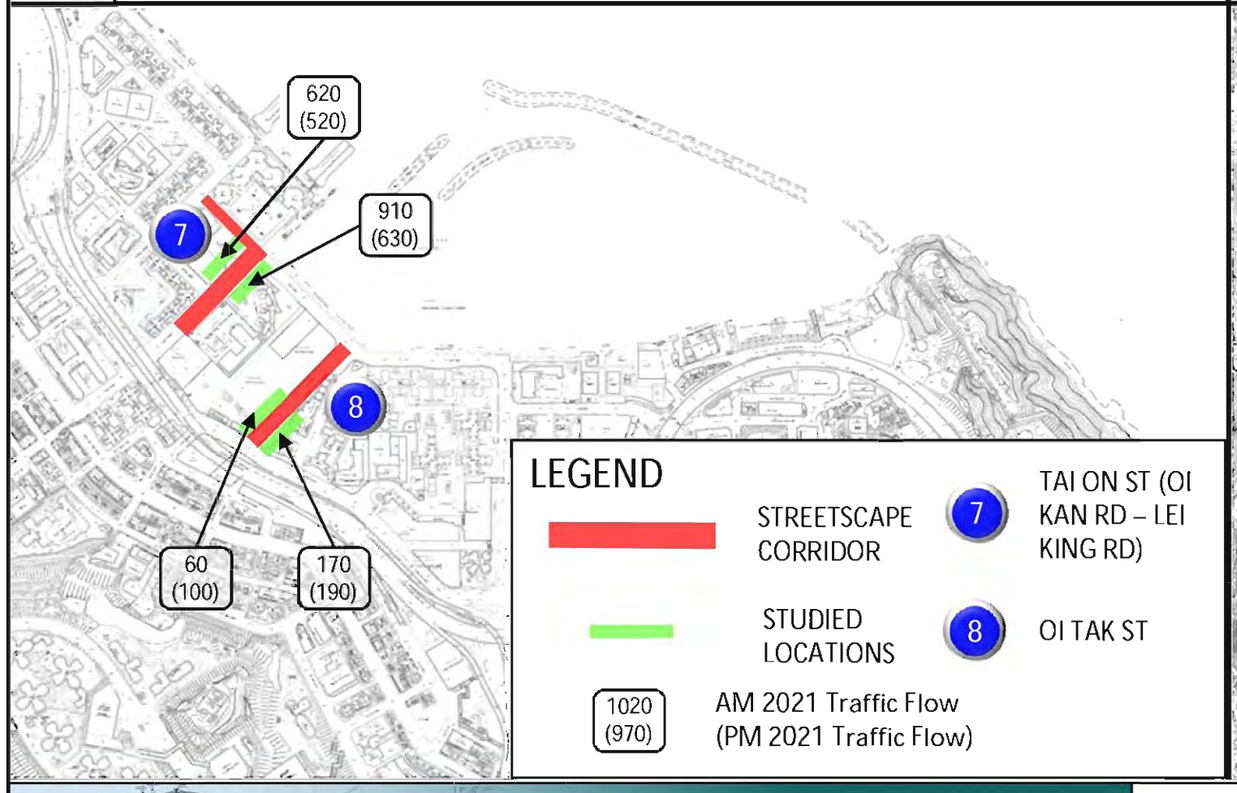
AECOM

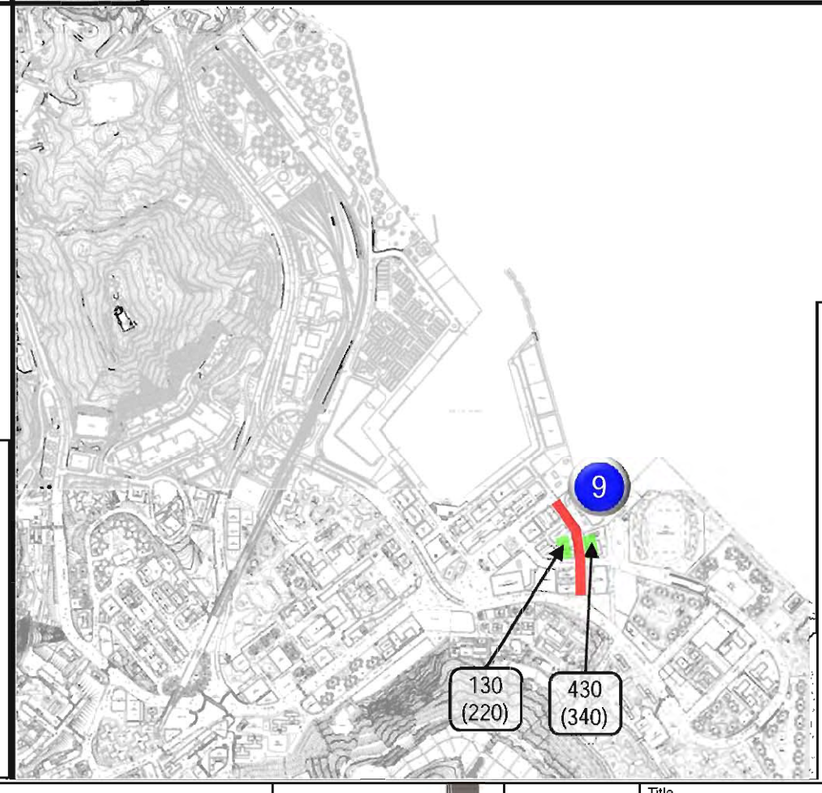
Title: Streetscape Pedestrian Corridors and 2016 Pedestrian Traffic Forecasts

Scale	Date	Figure No.
As Shown	February 2012	9.2









Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Streetscape Pedestrian Corridors and 2021 Pedestrian Traffic Forecasts

Scale	Date	Figure No.
As Shown	February 2012	9.3

Shau Kei Wan Preliminary Treatment Works

Tam Kung Temple

Aldrich Bay Promenade Park

ARCH

NORTH

0 10 20 30m

LEGEND

Restricted Access to Shau Kei Wan Preliminary Treatment Works

Automated Retractable Bollards

1. Gateway
2. Heritage Trail
3. Arrival Plaza
4. Historical Pavilion
5. Sculpture
6. Sitting Area
7. Feature Wall
8. Seaside Plaza
9. Promenade
10. Event Plaza
11. A Kung Ngam Water Selling Kiosk
12. Shelter

Examples of Automated Retractable Bollards

Restricted Access to Shau Kei Wan Preliminary Treatment Works will be permitted to special vehicles. Retractable bollards are proposed which will be automated to control access of vehicles to the traffic calmed area and to the treatment works.

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

AECOM

Title: Restricted Access to Shau Kei Wan Preliminary Treatment Works

Scale	Date	Figure No.
As Shown	February 2012	9.4

LEGEND

1. Gateway
2. Heritage Trail
3. Arrival Plaza
4. Historical Pavilion
5. Sculpture
6. Sitting Area
7. Feature Wall
8. Seaside Plaza
9. Promenade
10. Event Plaza
11. A Kung Ngam Water Selling Kiosk
12. Shelter

SHAU KEI WAN WHOLESALE FISH MARKET

SHAU KEI WAN SHIPYARDS

SHAU KEI WAN PRELIMINARY TREATMENT WORKS

TAM KUNG TEMPLE ROAD

TUNG HEI ROAD

JSKW-2

OI LAI STREET

A KUNG NGAM VILLAGE ROAD

JSKW-1

LEGEND

TRAFFIC ROUTES

INTRODUCTION OF TRAFFIC CALMING MEASURES

STUDIED JUNCTIONS

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

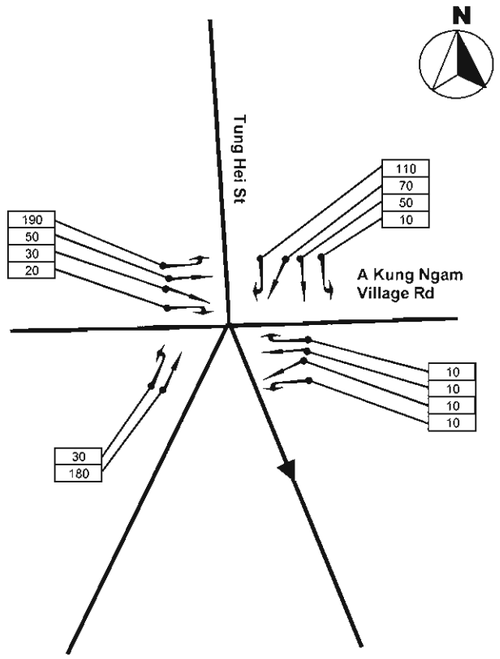
Arbis Limited 雅邦

AECOM

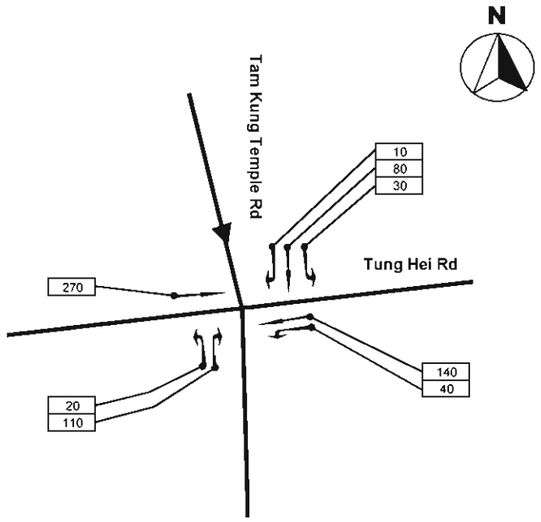
Title

Proposed Traffic Arrangement for Shau Kei Wan Waterfront

Scale	Date	Figure No.
As Shown	March 2012	9.5



JUNCTION JSKW-1



JUNCTION JSKW-2

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

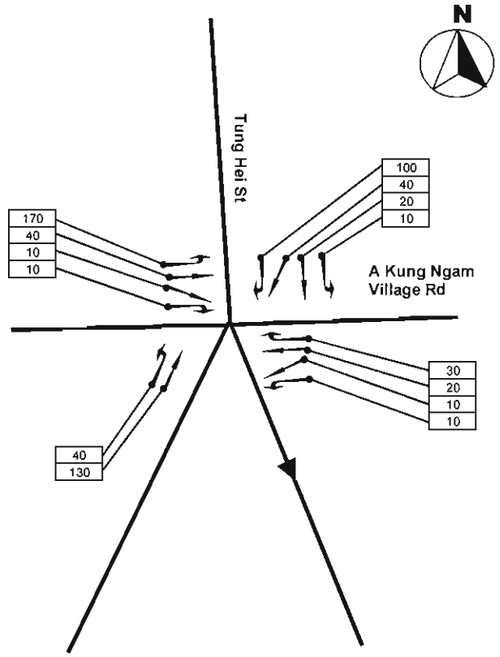
Planning Department

AECOM

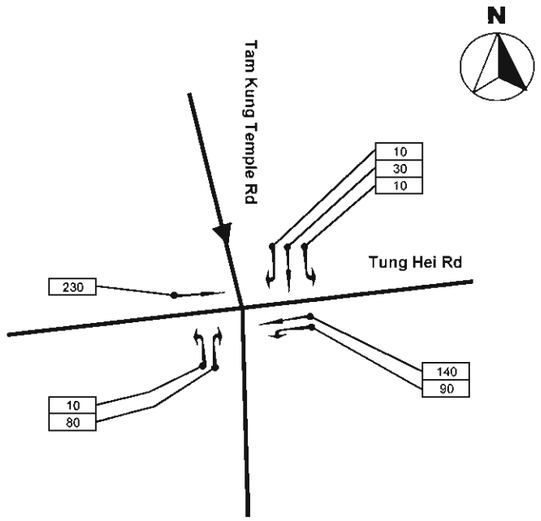
Title

2008 Peak Hour Traffic Flows
at the Studied Junctions (AM) in Shau Kei Wan

Scale	Date	Figure No.
N/A	February 2012	9.6



JUNCTION JSKW-1



JUNCTION JSKW-2

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

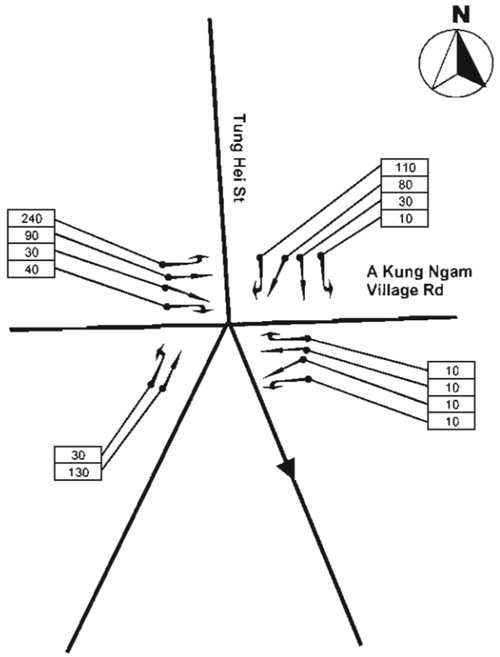
Planning Department

AECOM

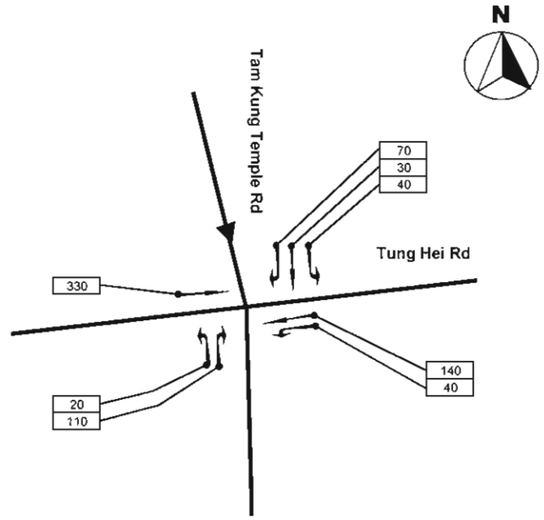
Title

2008 Peak Hour Traffic Flows at the Studied Junctions (PM) in Shau Kei Wan

Scale	Date	Figure No.
N/A	February 2012	9.7



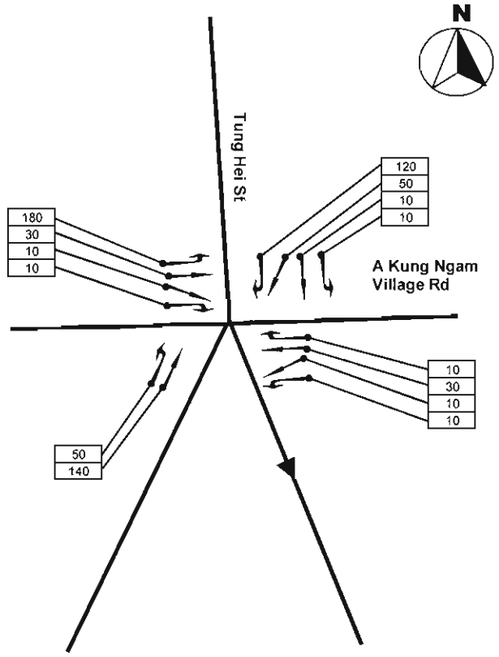
JUNCTION JSKW-1



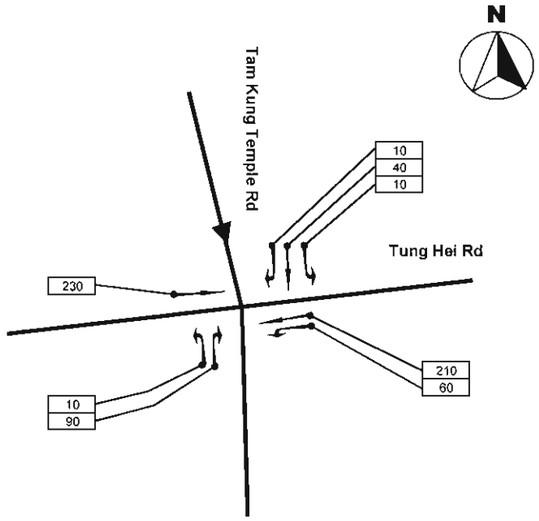
JUNCTION JSKW-2

Title: 2016 Projected Peak Hour Traffic Flows at the Studied Junctions (AM) in Shau Kei Wan

Scale: N/A | Date: February 2012 | Figure No.: 9.8



JUNCTION JSKW-1



JUNCTION JSKW-2

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

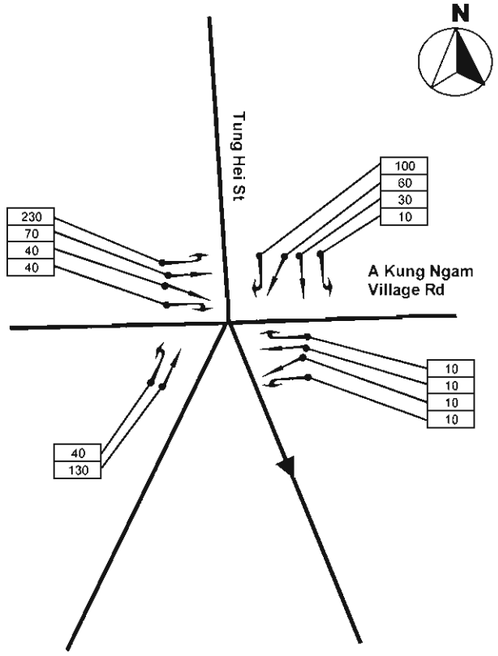
Planning Department

AECOM

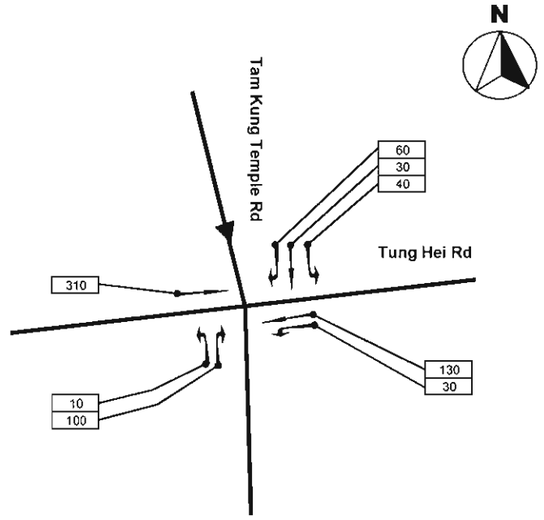
Title

2016 Projected Peak Hour Traffic Flows at the Studied Junctions (PM) in Shau Kei Wan

Scale	Date	Figure No.
N/A	February 2012	9.9



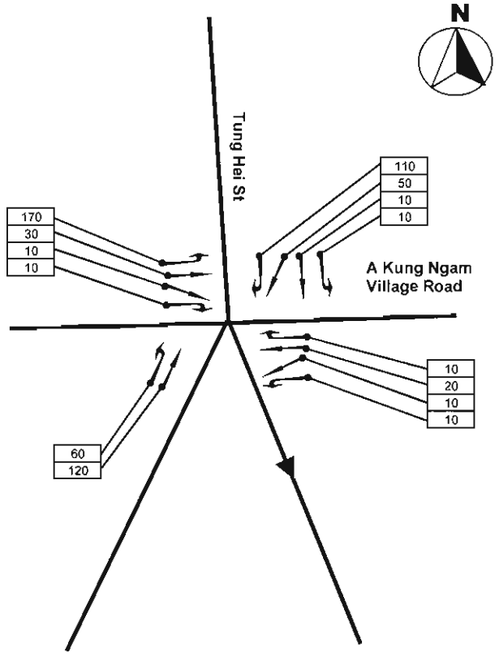
JUNCTION JSKW-1



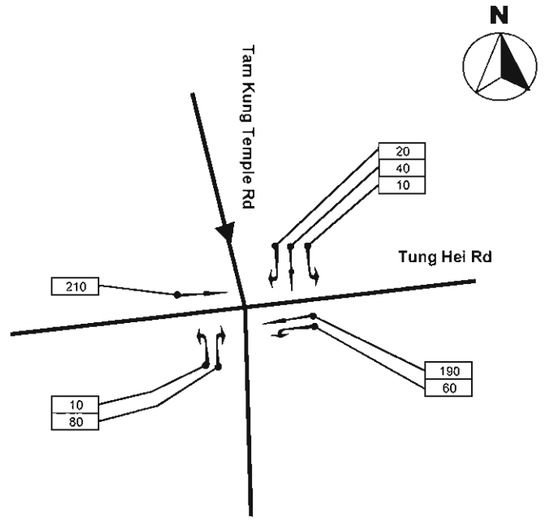
JUNCTION JSKW-2

Title: 2021 Projected Peak Hour Traffic Flows at the Studied Junctions (AM) in Shau Kei Wan

Scale: N/A | Date: February 2012 | Figure No.: 9.10



JUNCTION JSKW-1



JUNCTION JSKW-2

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

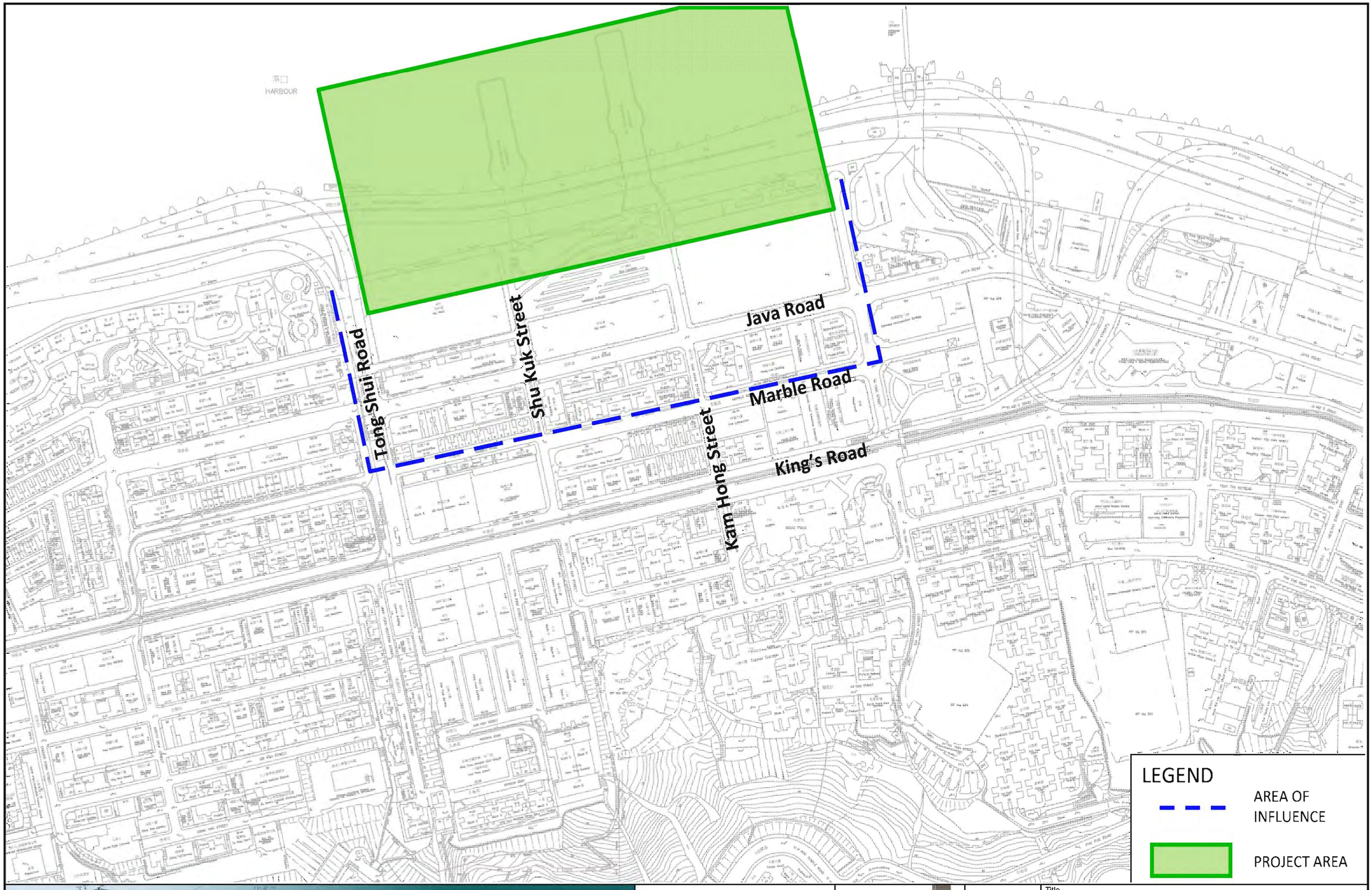
Planning Department

AECOM

Title

2021 Projected Peak Hour Traffic Flows at the Studied Junctions (PM) in Shau Kei Wan

Scale	Date	Figure No.
N/A	February 2012	9.11



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title

Existing Road Network and Area of Influence for North Point Ferry Piers Key Site

Scale	Date	Figure No.
1: 3000 @ A3	March 2012	9.12

HARBOUR

Java Road

Marble Road

King's Road

Tong Shui Road

Shu Kuk Street

Kam Hong Street

North Point

LEGEND

- MTR STATION
- MTR STATION EXIT/ENTRANCE
- PUBLIC TRANSPORT TERMINUS
- PEDESTRIAN FACILITIES (FOOTBRIDGE)
- PROJECT AREA

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbis Limited 雅邦

AECOM

Title

Existing Public Transport Facilities and Pedestrian Facilities for North Point Ferry Piers Key Site

Scale	Date	Figure No.
1:3000 @ A3	February 2012	9.13

HARBOUR

Java Road

Marble Road

LEGEND

AREA OF INFLUENCE

TRAFFIC ROUTES

PROJECT AREA

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

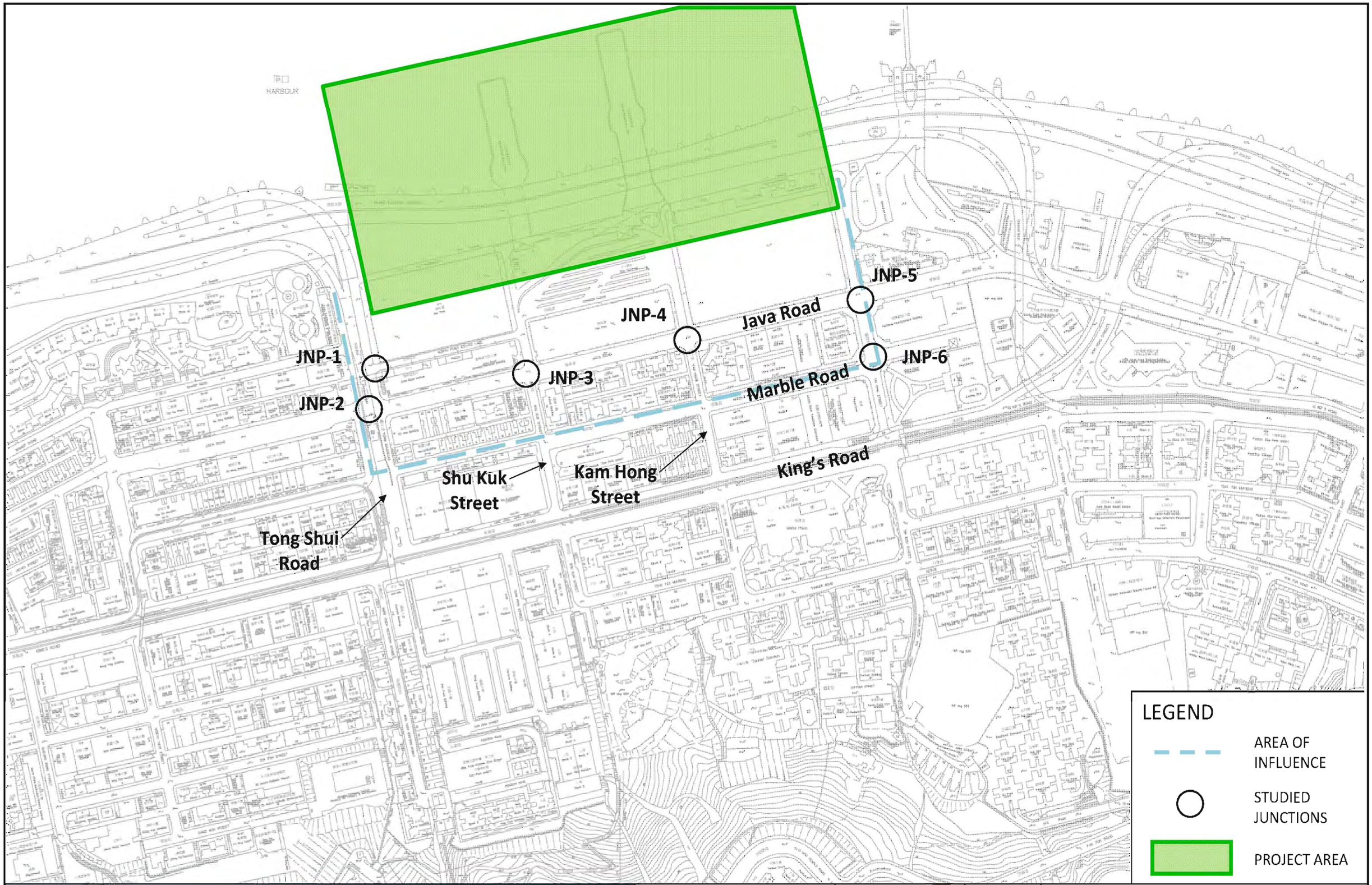
Arbis Limited 雅邦

AECOM

Title

Traffic Circulation Routings for North Point Ferry Piers Key Site

Scale	Date	Figure No.
1: 3000 @ A3	January 2012	9.14



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

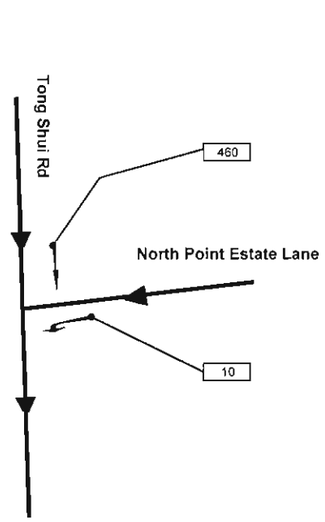
Arbis Limited

AECOM

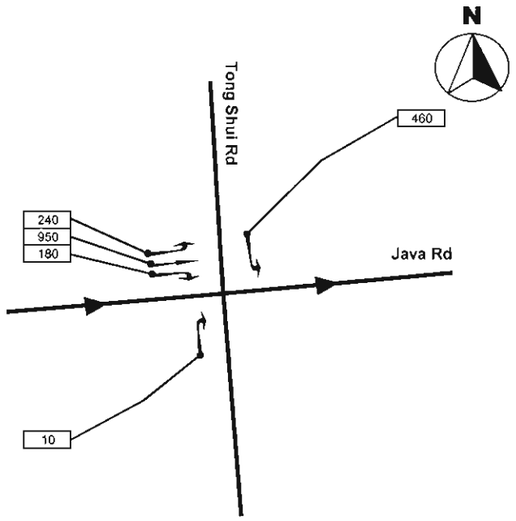
Title

Locations of Studied Junctions for North Point Ferry Piers Key Site

Scale	Date	Figure No.
1: 3000 @ A3	February 2012	9.15



JUNCTION JNP-1



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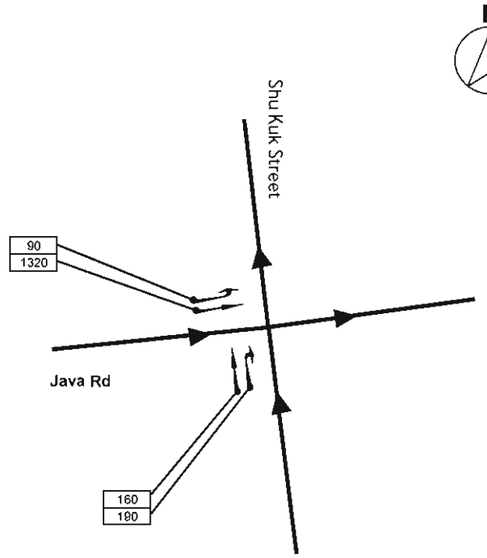
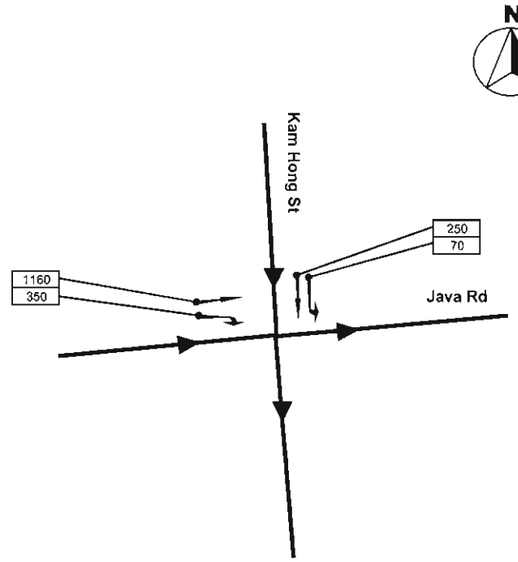
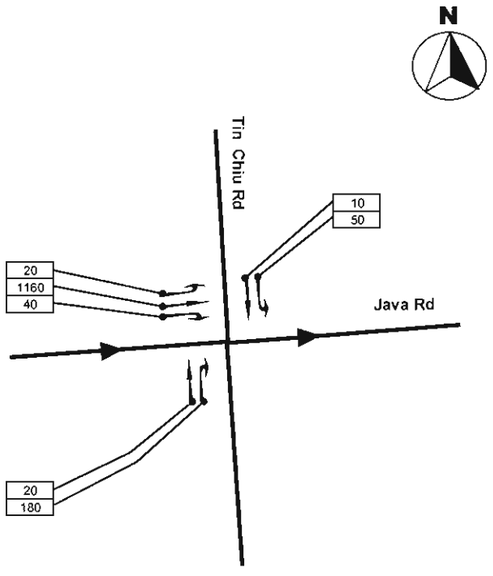


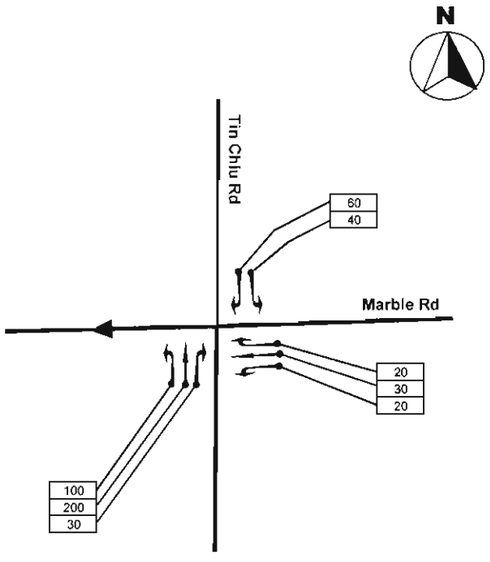
JUNCTION JNP-3



JUNCTION JNP-4



JUNCTION JNP-5

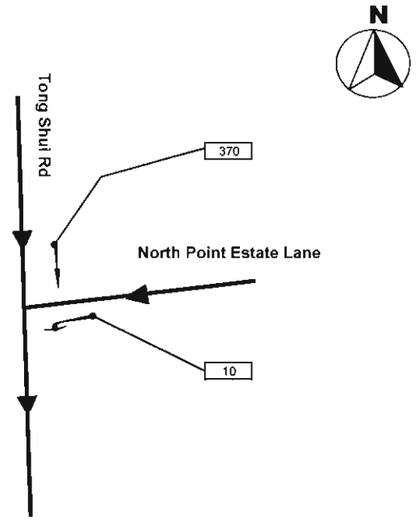


JUNCTION JNP-6

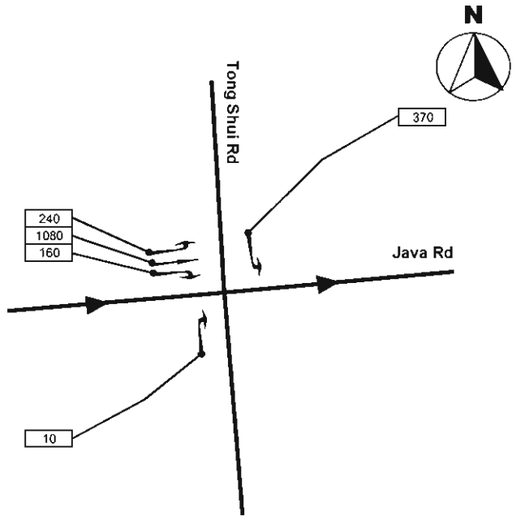
Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study
Planning Department
AECOM

Title: 2008 Peak Hour Traffic Flows at the Studied Junctions (AM) for North Point Ferry Piers Key Site

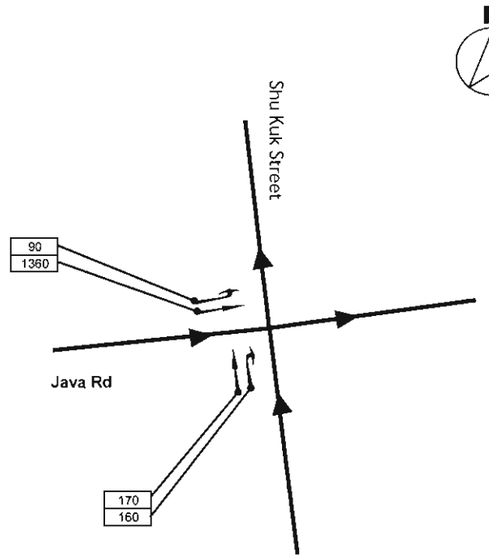
Scale: N/A | Date: February 2012 | Figure No.: 9.16



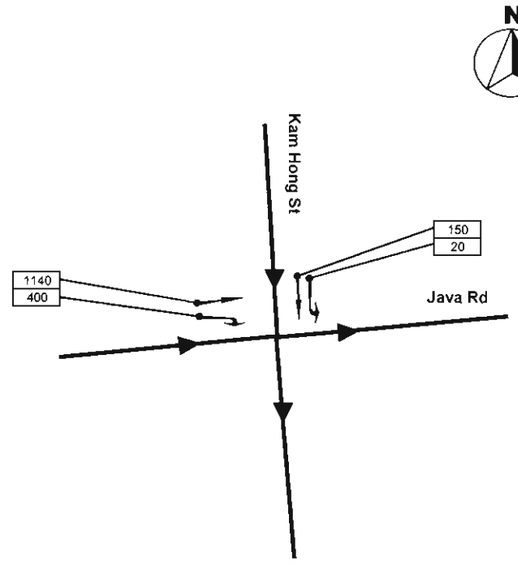
JUNCTION JNP-1



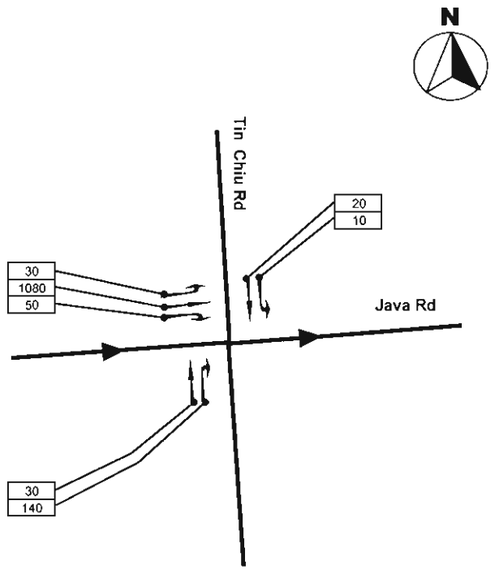
JUNCTION JNP-2



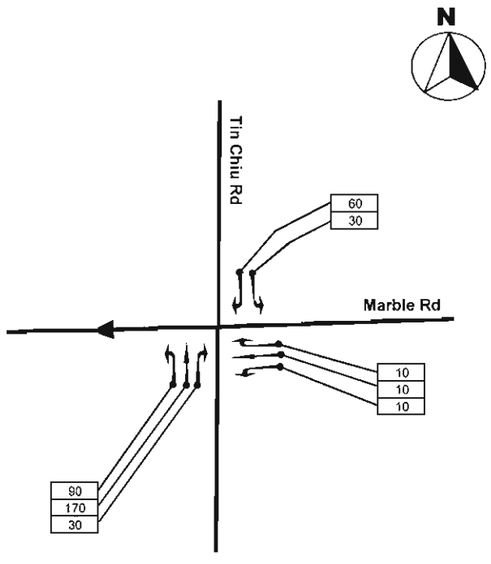
JUNCTION JNP-3



JUNCTION JNP-4



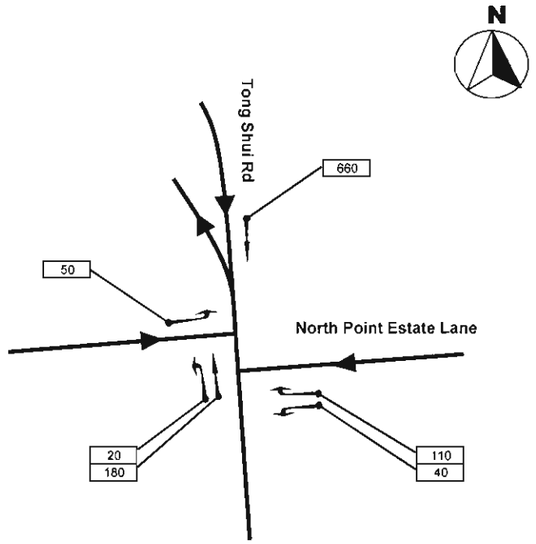
JUNCTION JNP-5



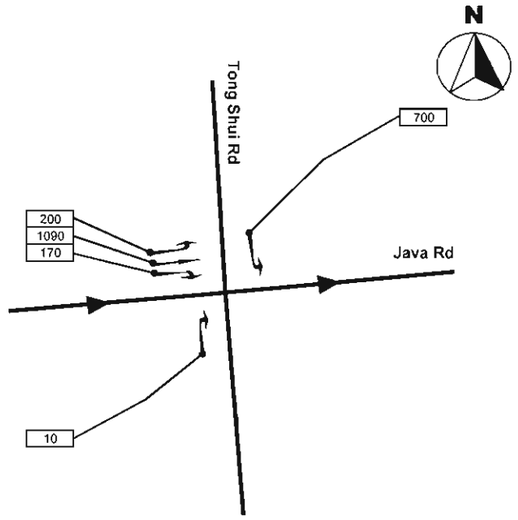
JUNCTION JNP-6

Title: 2008 Peak Hour Traffic Flows at the Studied Junctions (PM) for North Point Ferry Piers Key Site

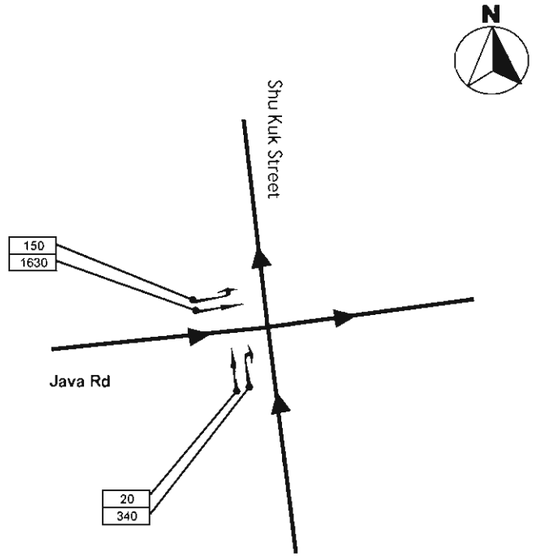
Scale: N/A | Date: February 2012 | Figure No.: 9.17



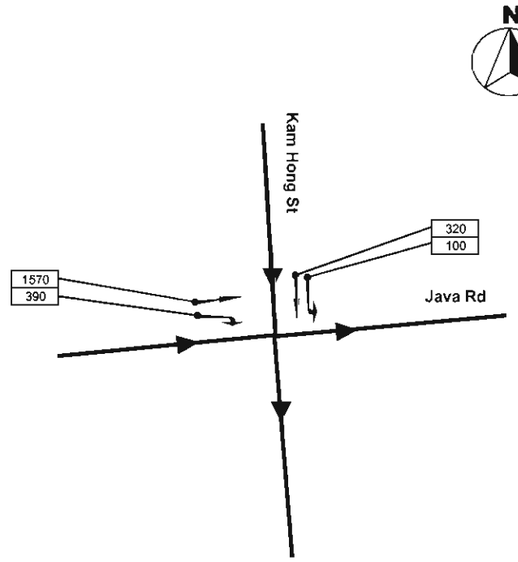
JUNCTION JNP-1



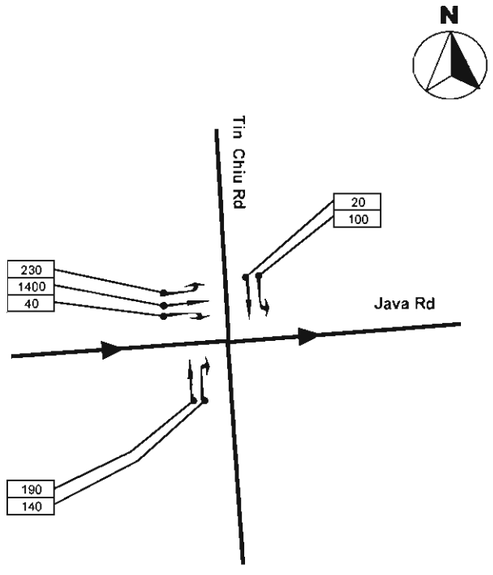
JUNCTION JNP-2



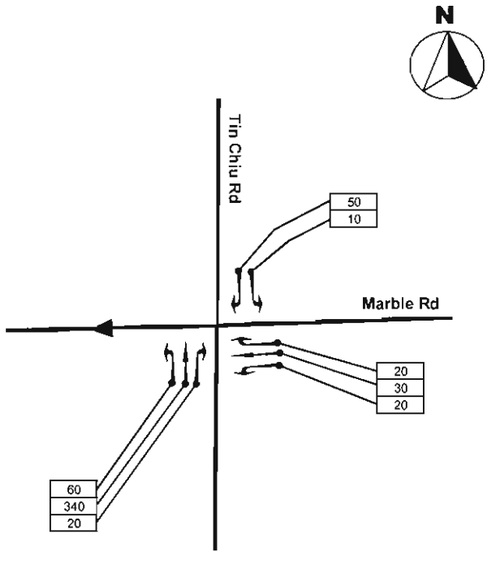
JUNCTION JNP-3



JUNCTION JNP-4



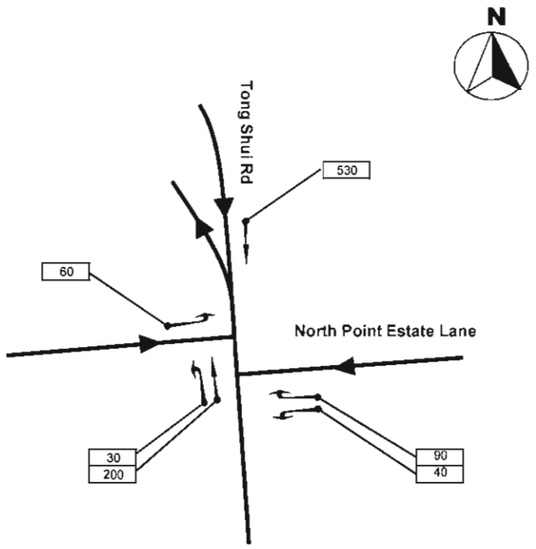
JUNCTION JNP-5



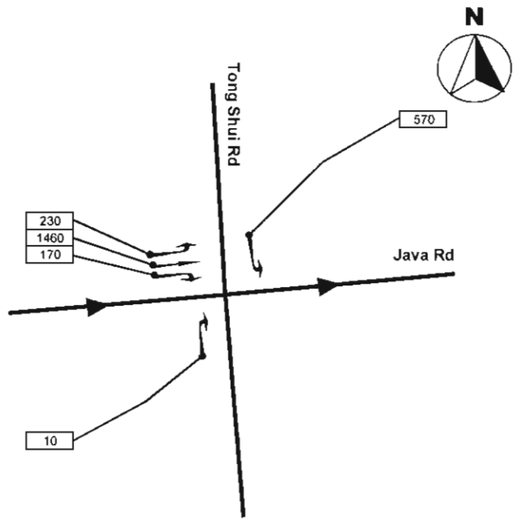
JUNCTION JNP-6

Title: 2016 Projected Peak Hour Traffic Flows at the Studied Junctions (AM) for North Point Ferry Piers Key Site

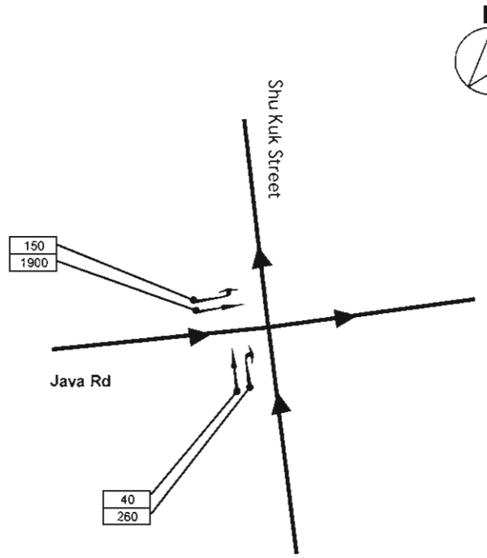
Scale	Date	Figure No.
N/A	February 2012	9.18



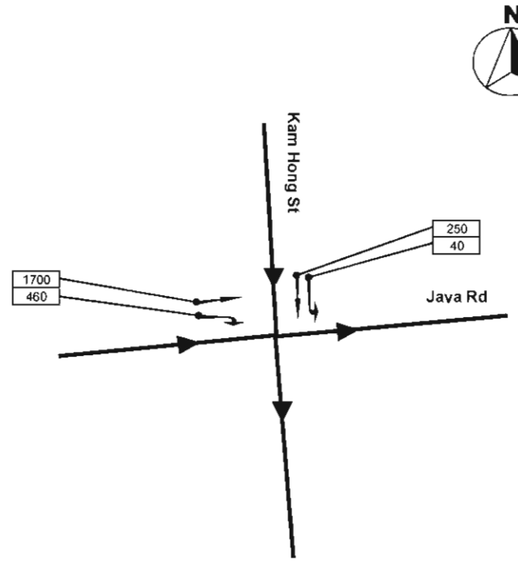
JUNCTION JNP-1



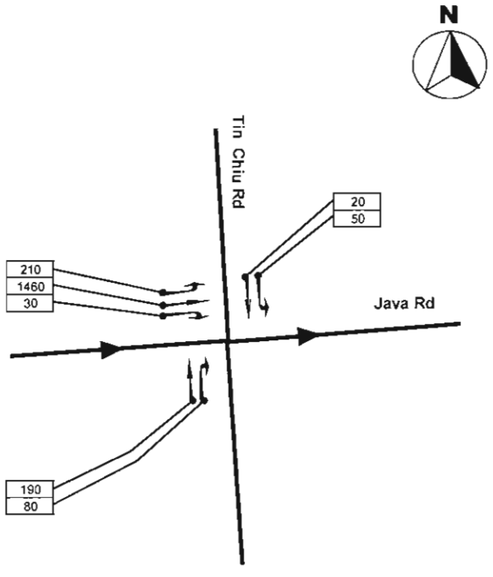
JUNCTION JNP-2



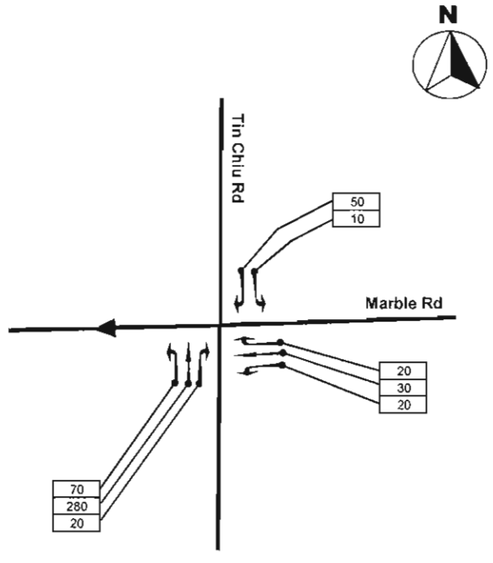
JUNCTION JNP-3



JUNCTION JNP-4



JUNCTION JNP-5



JUNCTION JNP-6

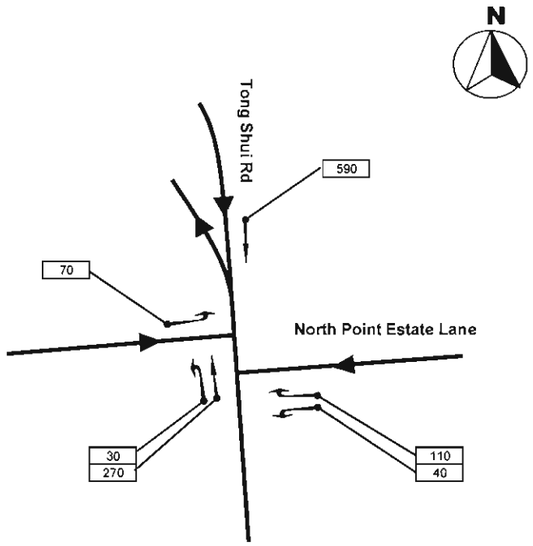
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

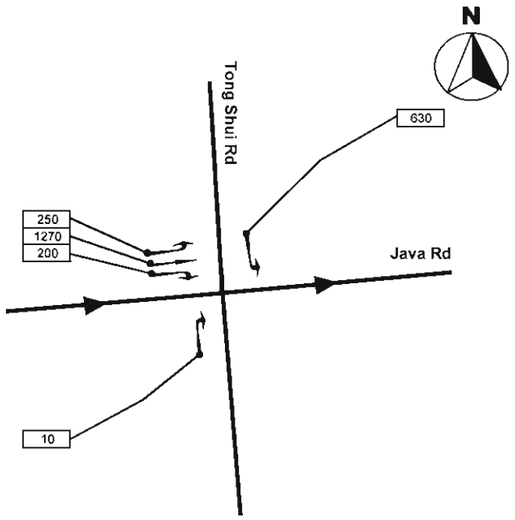
Planning Department

Title: 2016 Projected Peak Hour Traffic Flows at the Studied Junctions (PM) for North Point Ferry Piers Key Site

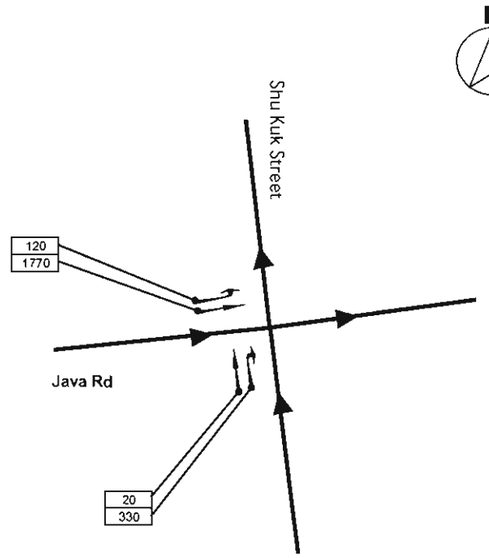
Scale: N/A | Date: February 2012 | Figure No.: 9.19



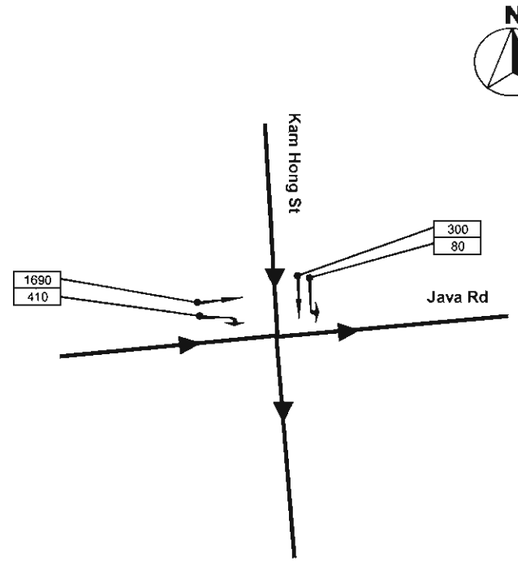
JUNCTION JNP-1



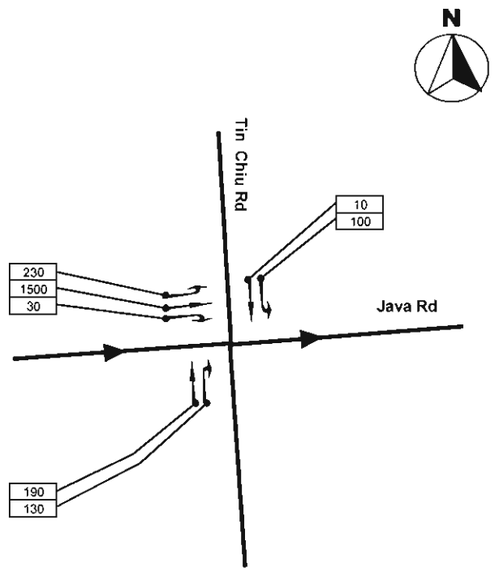
JUNCTION JNP-2



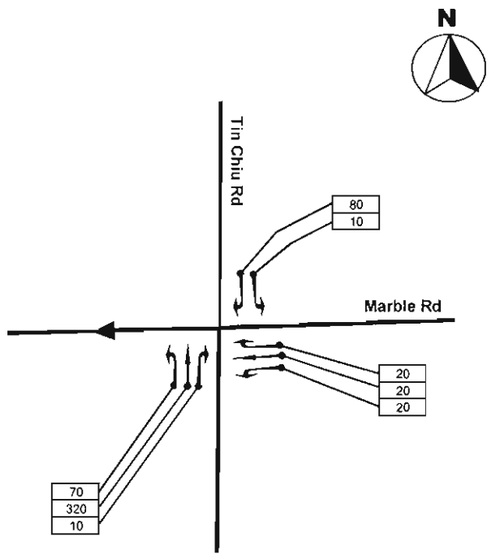
JUNCTION JNP-3



JUNCTION JNP-4



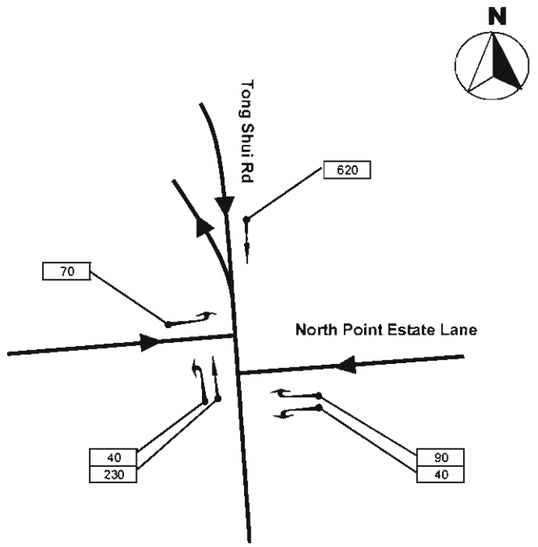
JUNCTION JNP-5



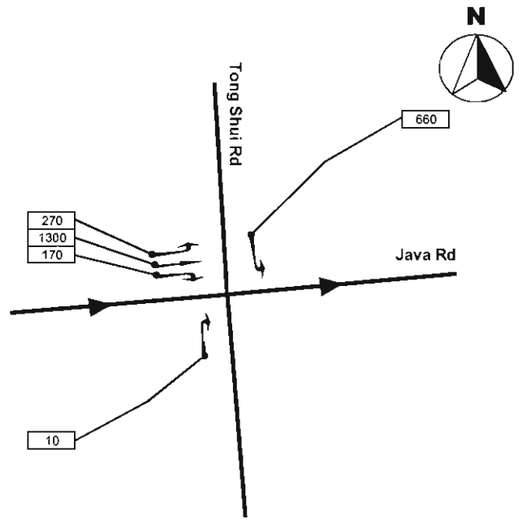
JUNCTION JNP-6

Title: 2021 Projected Peak Hour Traffic Flows at the Studied Junctions (AM) for North Point Ferry Piers Key Site

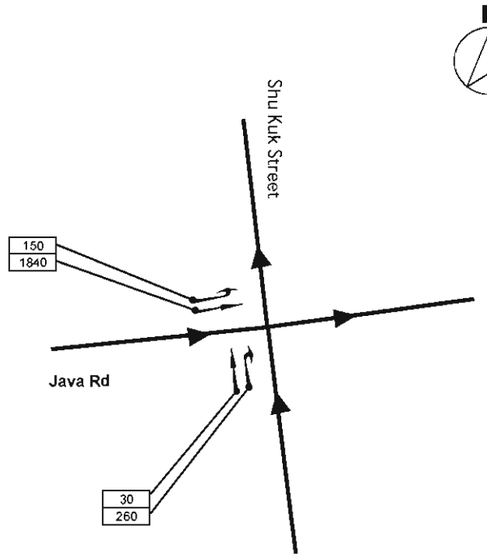
Scale	Date	Figure No.
N/A	February 2012	9.20



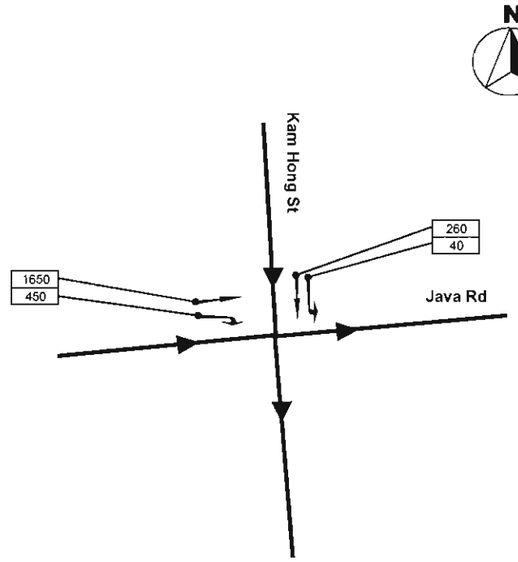
JUNCTION JNP-1



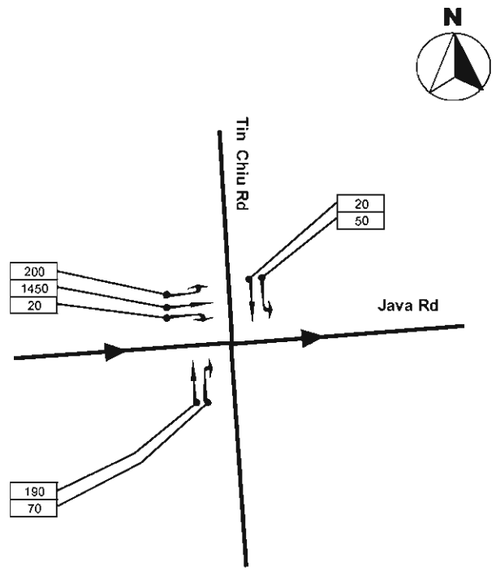
JUNCTION JNP-2



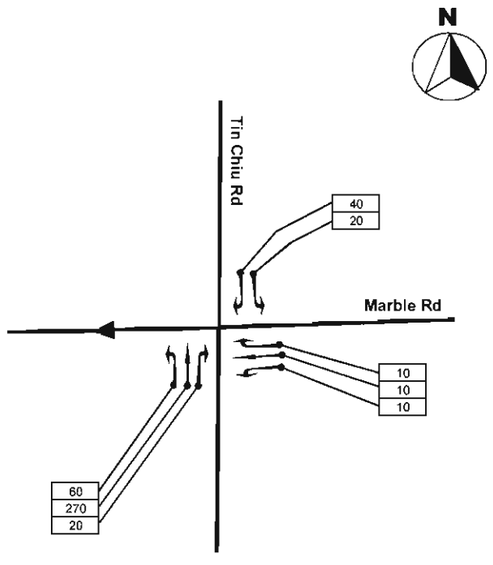
JUNCTION JNP-3



JUNCTION JNP-4



JUNCTION JNP-5

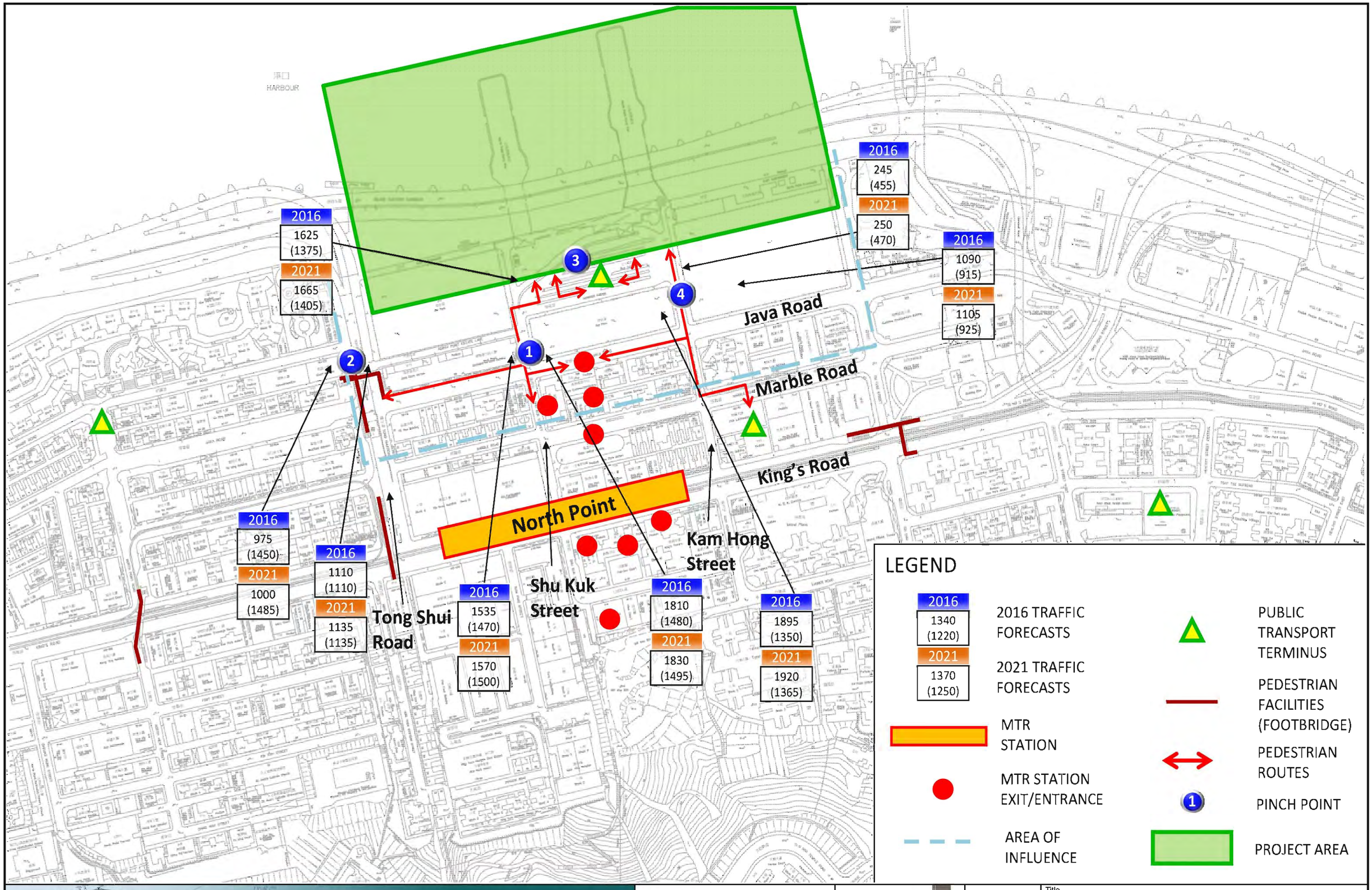


JUNCTION JNP-6

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study
Planning Department
AECOM

Title: 2021 Projected Peak Hour Traffic Flows at the Studied Junctions (PM) for North Point Ferry Piers Key Site

Scale	Date	Figure No.
N/A	February 2012	9.21



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbis Limited 雅邦

AECOM

Title: Pedestrian Forecasts and Pinch Points on Pedestrian Desire Corridors for North Point Ferry Piers Key Site

Scale	Date	Figure No.
1: 3000 @ A3	February 2012	9.22

Hoi Yu Street
Hoi Chak Street
King's Road
Hoi Wan Street
Hoi Tai Street
Island Eastern Corridor

LEGEND
AREA OF INFLUENCE
PROJECT AREA

Agreement No. CE 61/2008 (TP)
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title
Existing Road Network and Area of Influence for Hoi Yu Street Key Site

Scale 1: 3500 @ A3
Date March 2012
Figure No. 9.23

King's Road

Island Eastern Corridor

Quarry Bay Park

LEGEND

AREA OF INFLUENCE

TRAFFIC ROUTES

PROJECT AREA

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title

Traffic Circulation Routings for Hoi Yu Street Key Site

Scale	Date	Figure No.
1: 3500 @ A3	January 2012	9.24

Hoi Yu Street

Hoi Chak Street

King's Road

Hoi Wan Street

Hoi Tai Street

Quarry Bay

Island Eastern Corridor

Tai Koo

TYT

LEGEND

AREA OF INFLUENCE

MTR STATION

MTR STATION EXIT/ENTRANCE

PUBLIC TRANSPORT TERMINUS

PEDESTRIAN FACILITIES (FOOTBRIDGE)

PROJECT AREA

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbis Limited

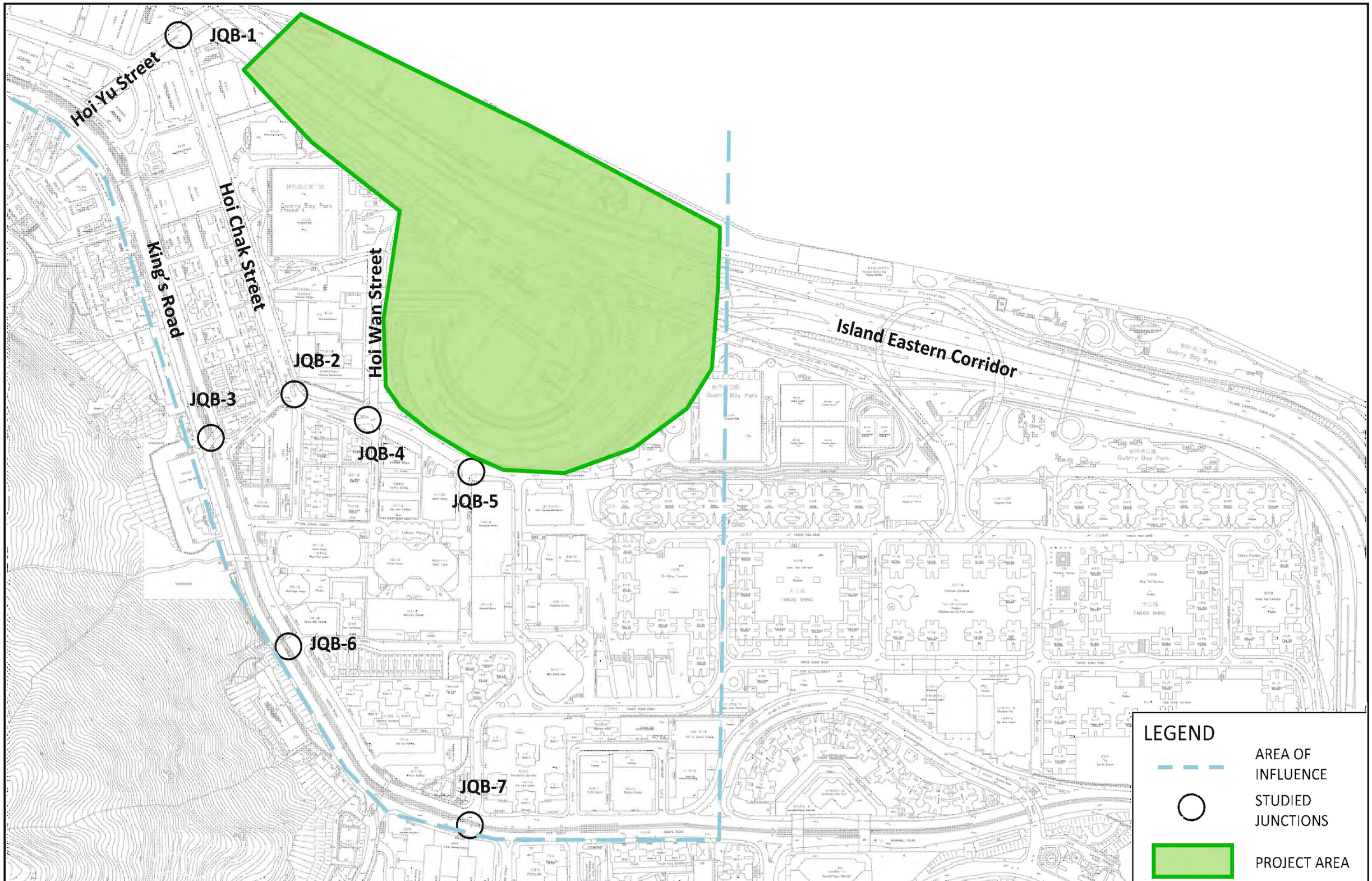
AECOM

Title: Existing Public Transport Facilities and Pedestrian Facilities for Hoi Yu Street Key Site

Scale: 1: 3500 @ A3

Date: March 2012

Figure No. 9.25



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

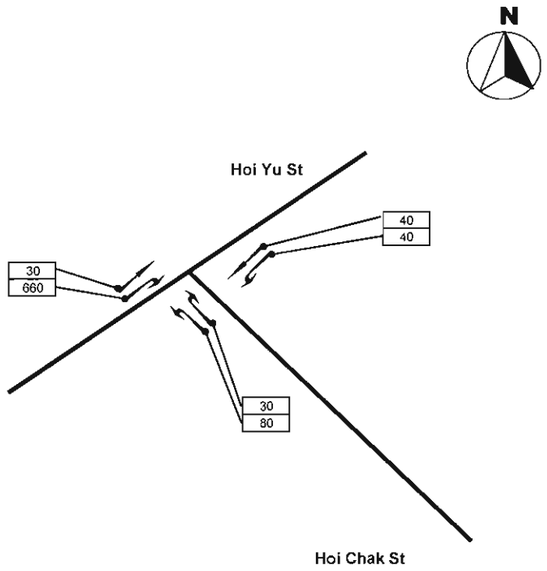
Planning Department

Title: Locations of Studied Junctions for Hoi Yu Street Key Site

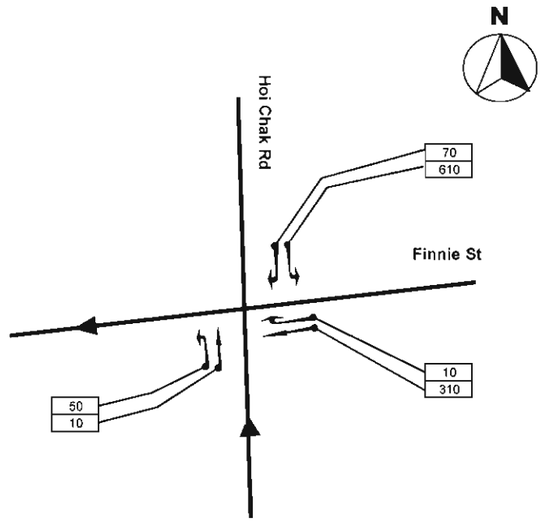
Scale: 1: 3500 @ A3

Date: February 2012

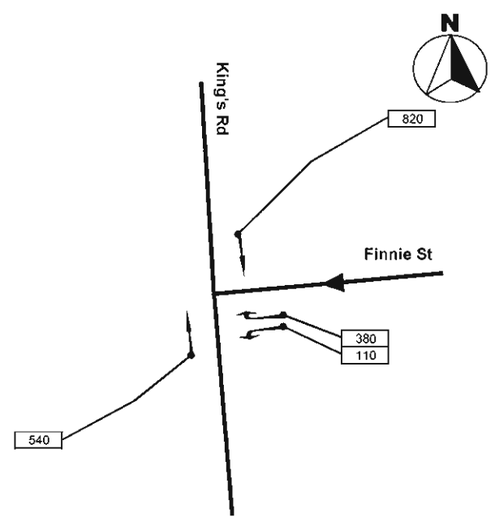
Figure No. 9.26



JUNCTION JQB-1



JUNCTION JQB-2



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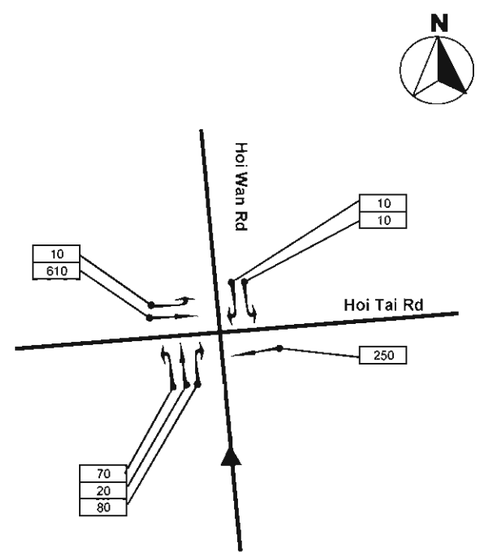

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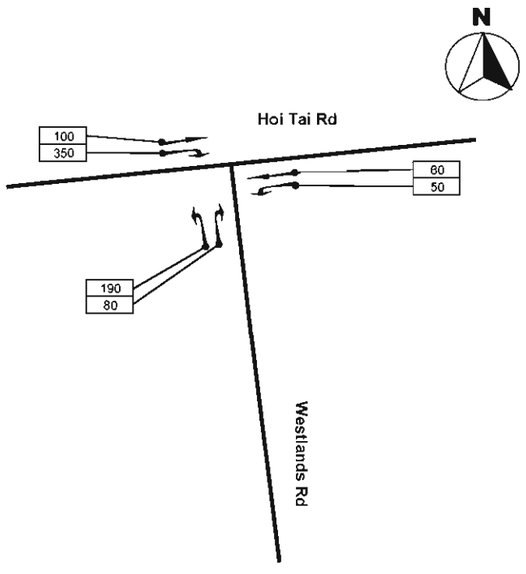

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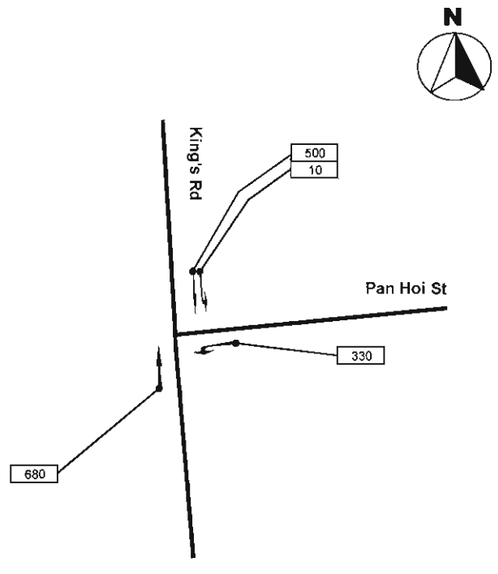

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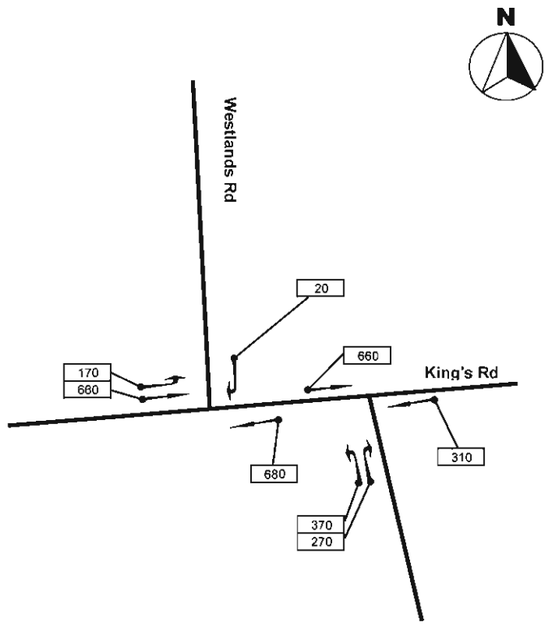
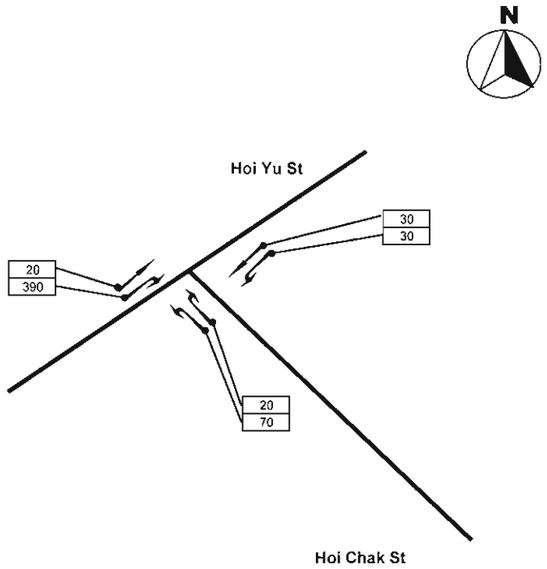
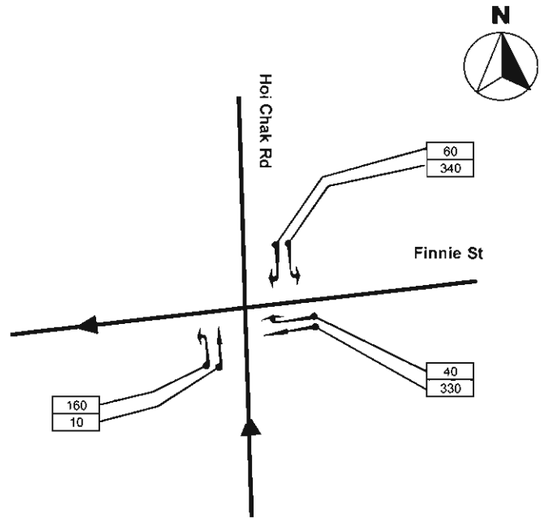


JUNCTION JQB-7



JUNCTION JQB-1



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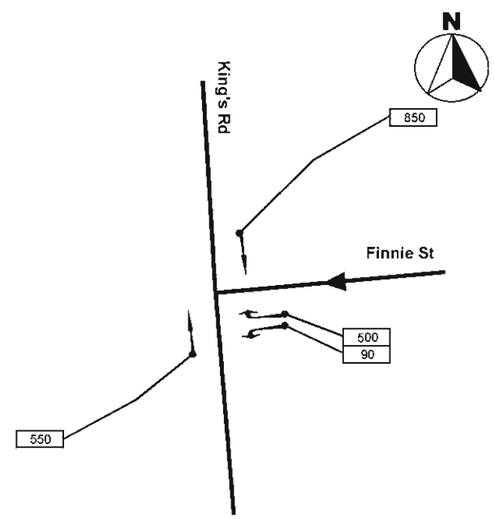
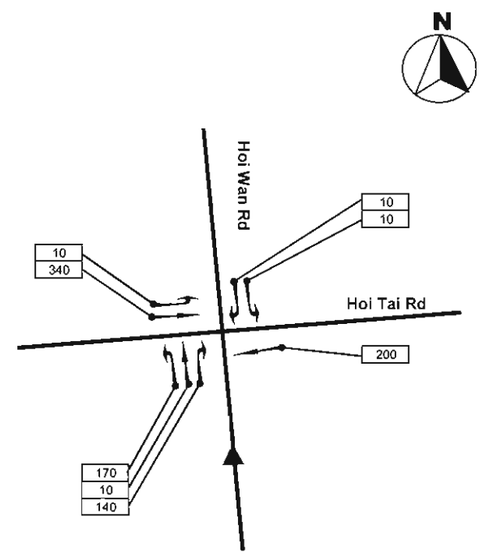


JUNCTION JQB-3



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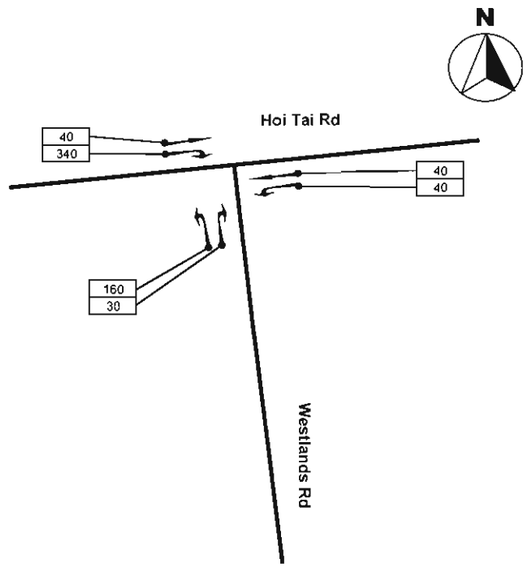
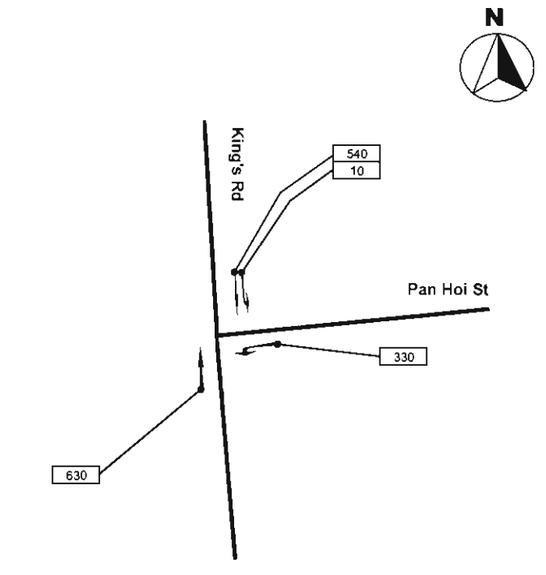
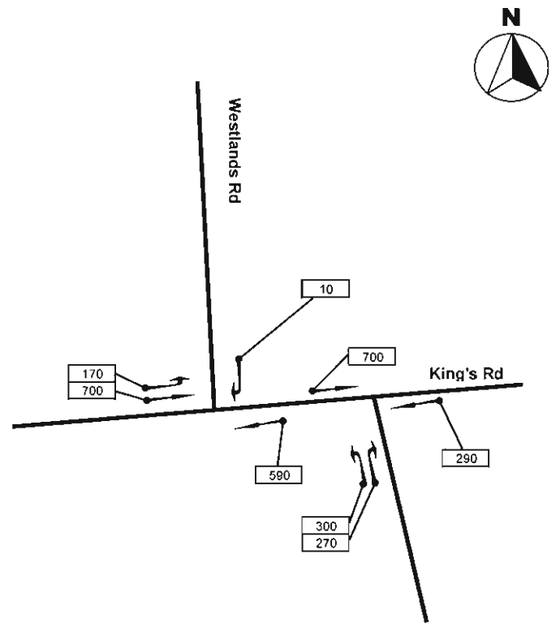


JUNCTION JQB-5



JUNCTION JQB-6



JUNCTION JQB-7

Agreement No. CE 61/2008 (TP)

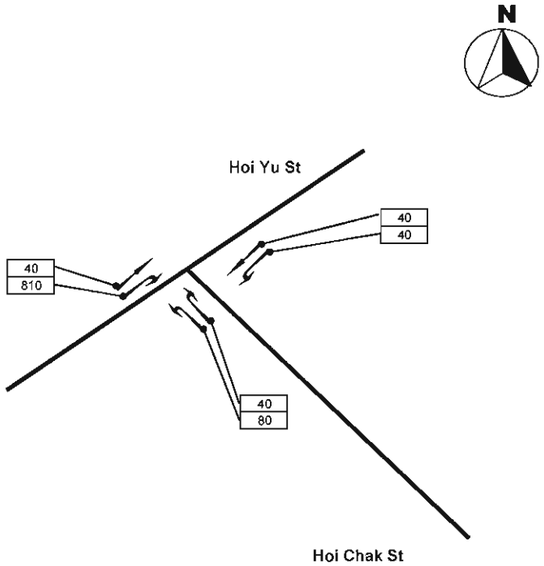
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

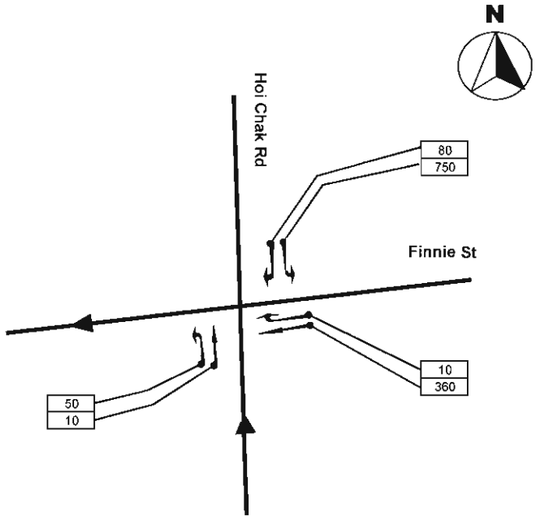
AECOM

Title: 2008 Peak Hour Traffic Flows at the Studied Junctions (PM) for Hoi Yu Street Key Site

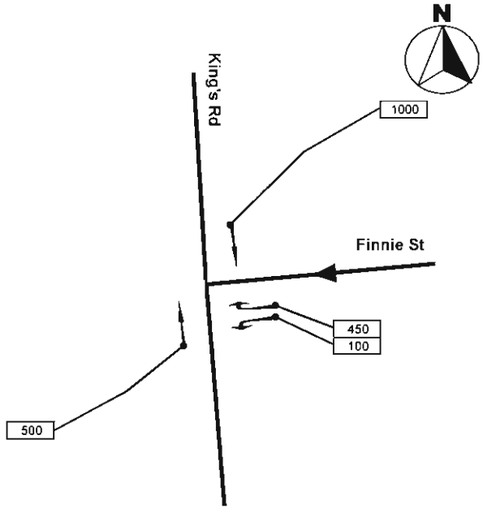
Scale	Date	Figure No.
N/A	February 2012	9.28



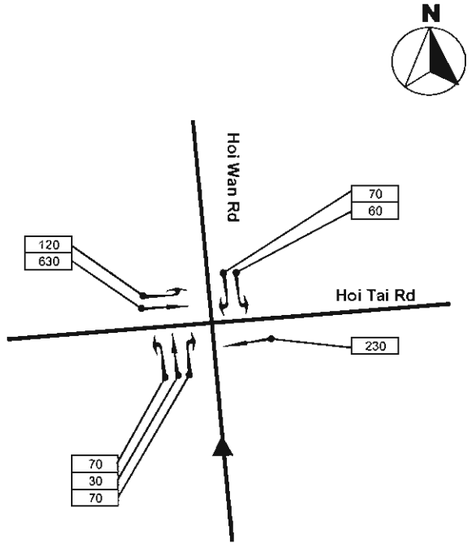
JUNCTION JQB-1



JUNCTION JQB-2



JUNCTION JQB-3



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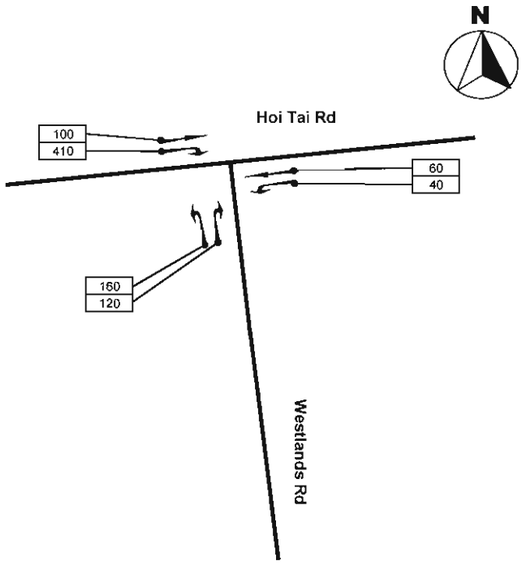
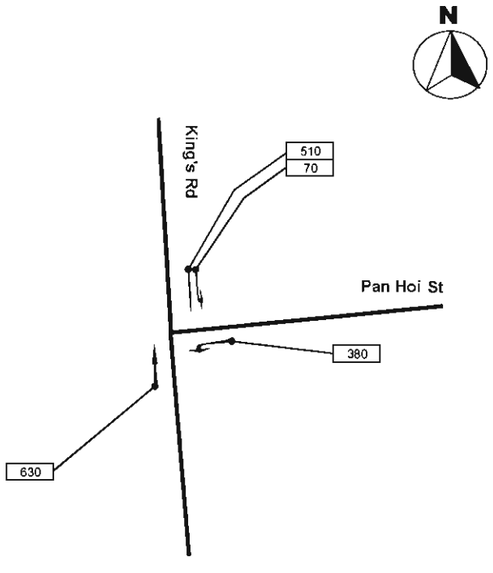
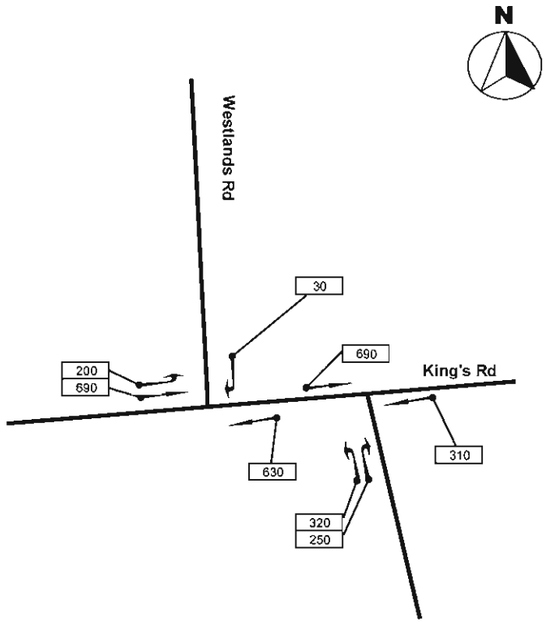


JUNCTION JQB-5



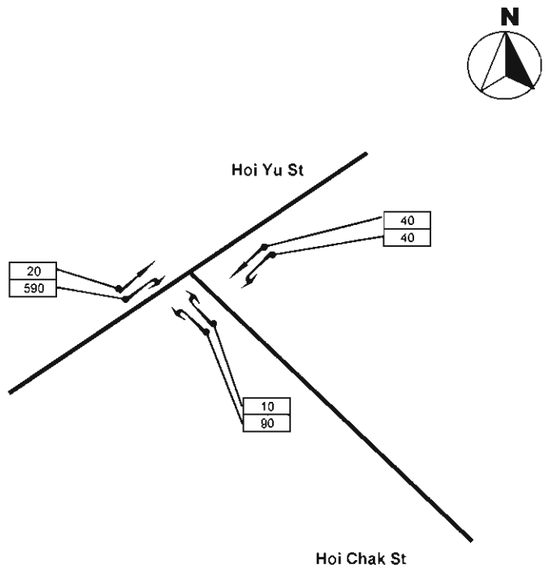
JUNCTION JQB-6



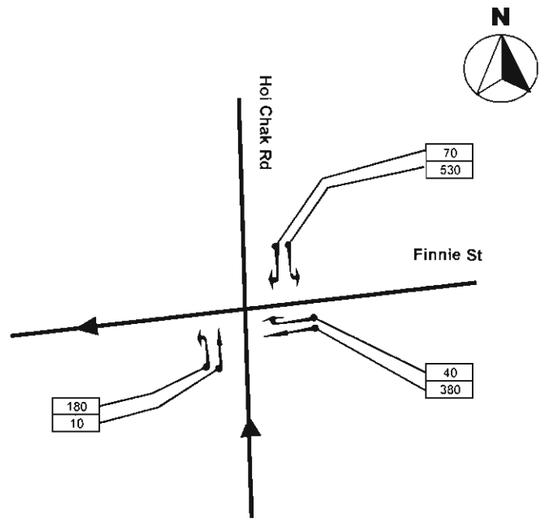
JUNCTION JQB-7

Title: 2016 Projected Peak Hour Traffic Flows at the Studied Junctions (AM) for Hoi Yu Street Key Site

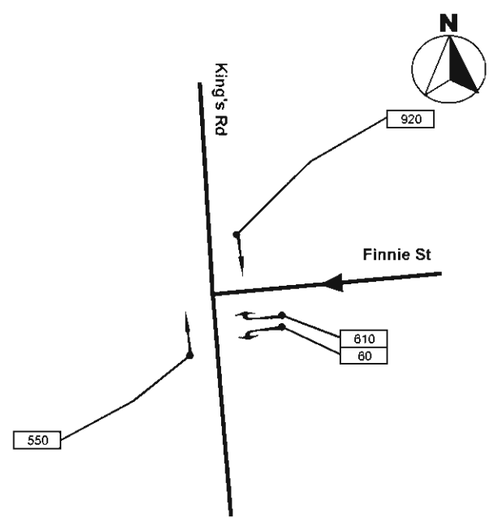
Scale: N/A | Date: February 2012 | Figure No.: 9.29



JUNCTION JQB-1



JUNCTION JQB-2



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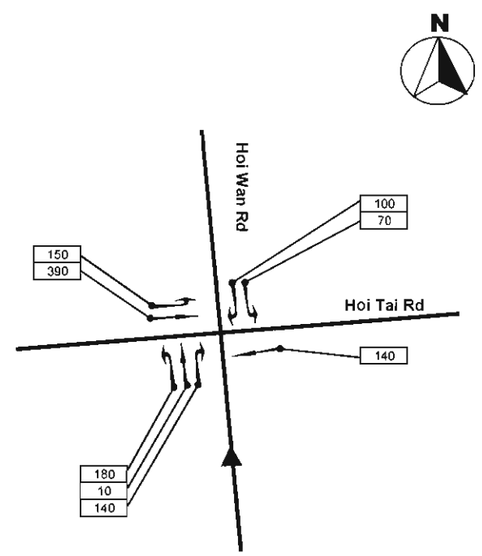

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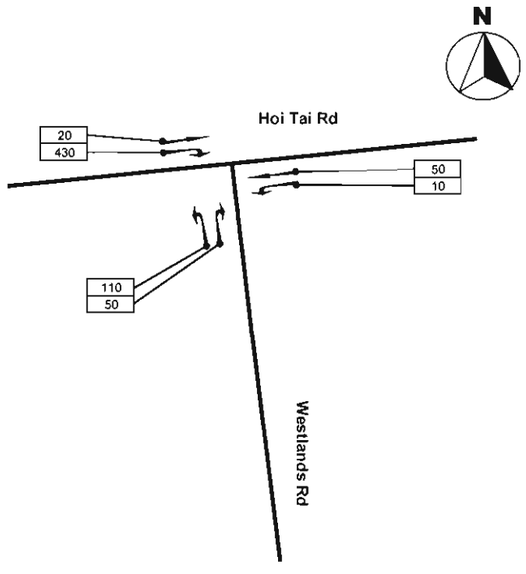

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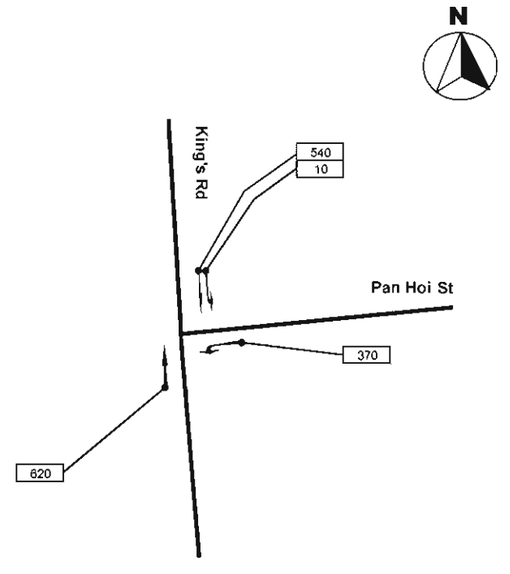
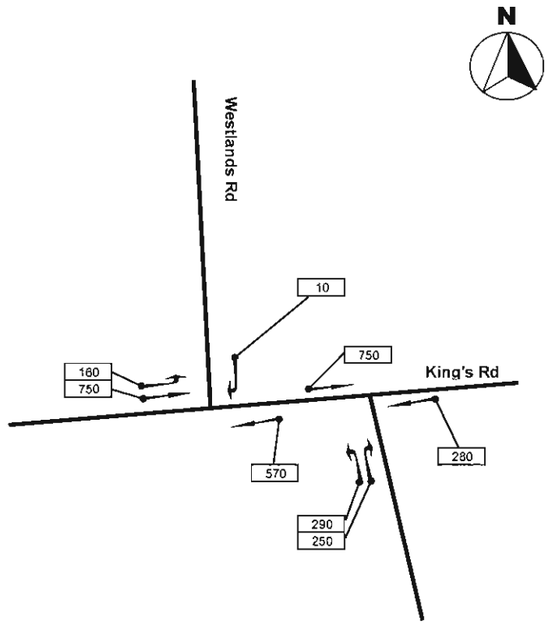


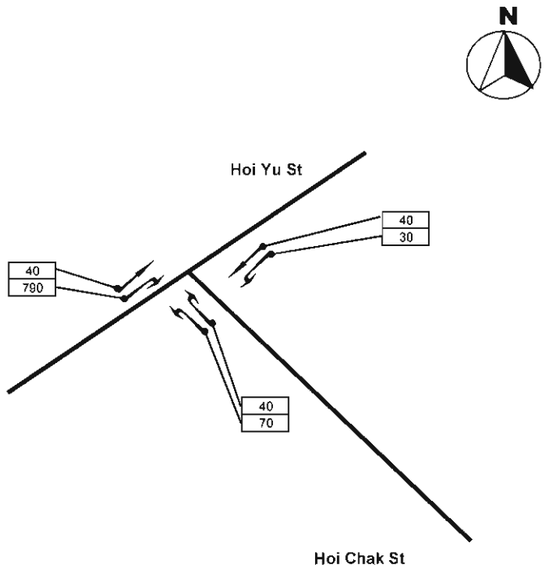
JUNCTION JQB-6



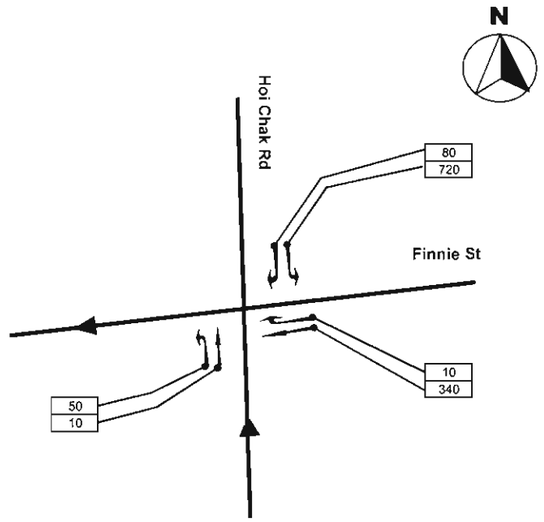
JUNCTION JQB-7

Title: 2016 Projected Peak Hour Traffic Flows at the Studied Junctions (PM) for Hoi Yu Street Key Site

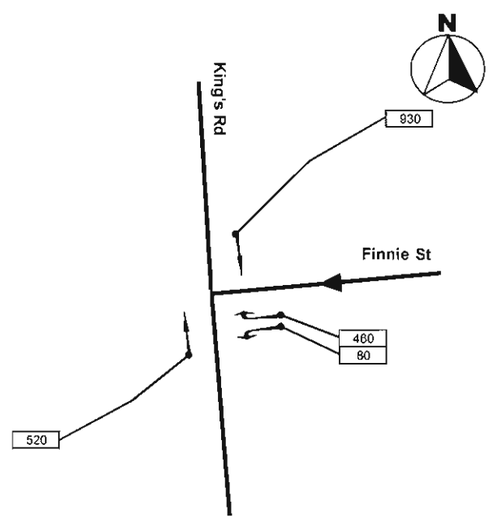
Scale	Date	Figure No.
N/A	February 2012	9.30



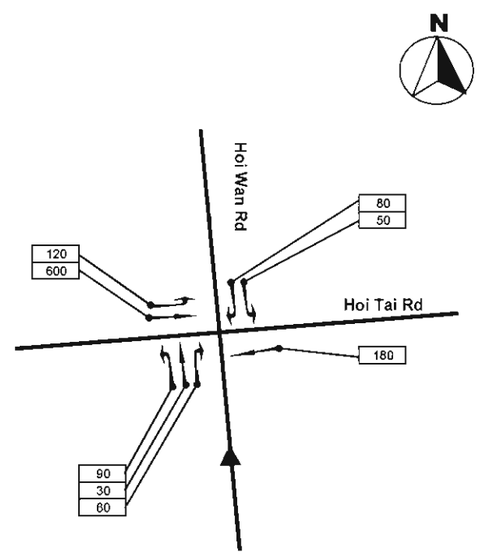
JUNCTION JQB-1



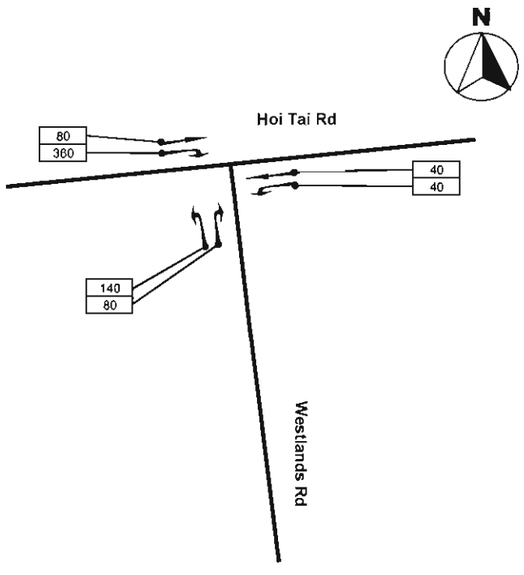
JUNCTION JQB-2



JUNCTION JQB-3



JUNCTION JQB-4



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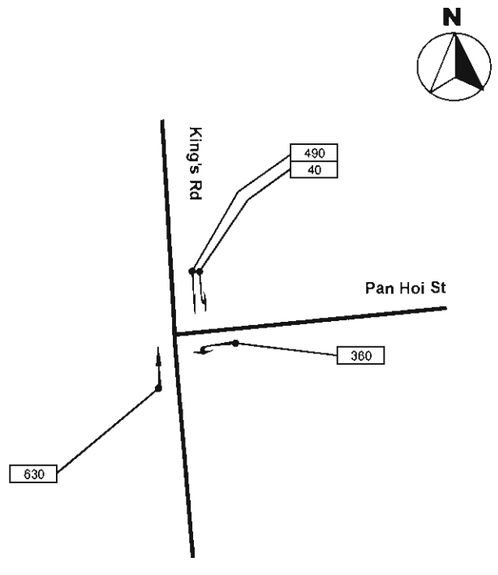
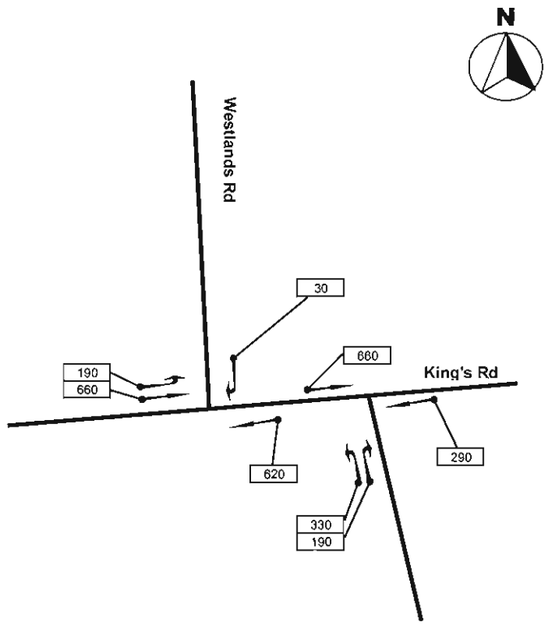


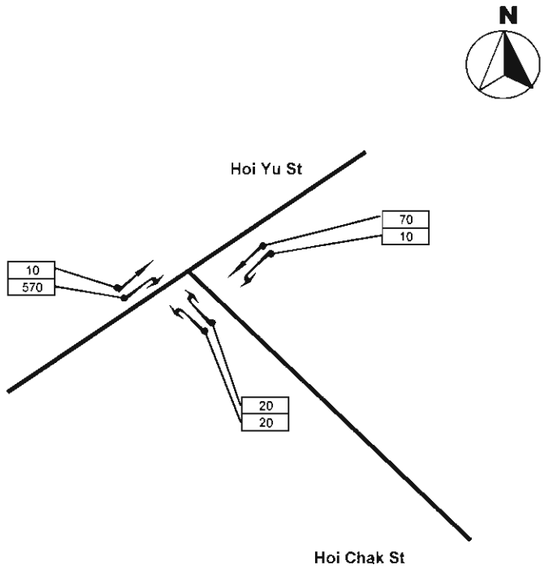
JUNCTION JQB-6



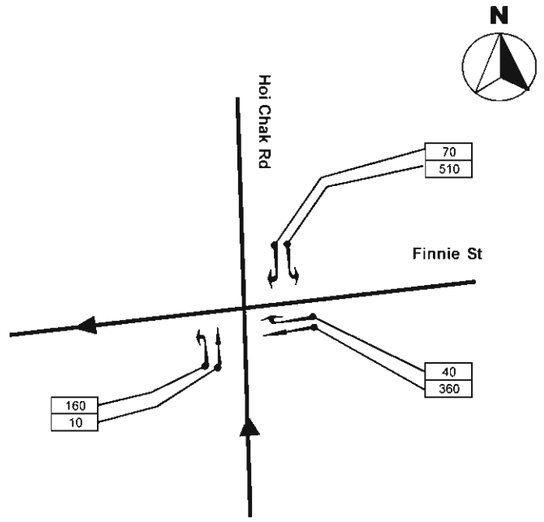
JUNCTION JQB-7

Title: 2021 Projected Peak Hour Traffic Flows at the Studied Junctions (AM) for Hoi Yu Street Key Site

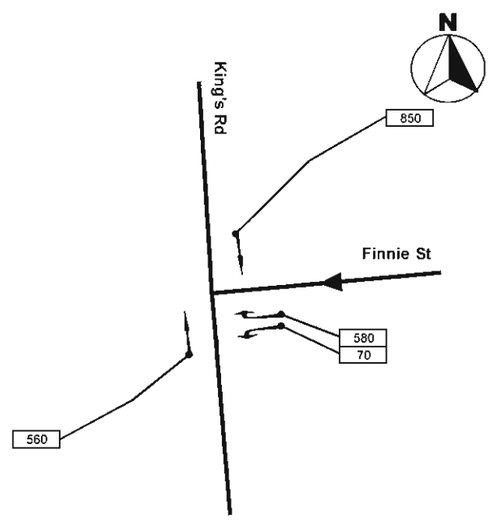
Scale	Date	Figure No.
N/A	February 2012	9.31



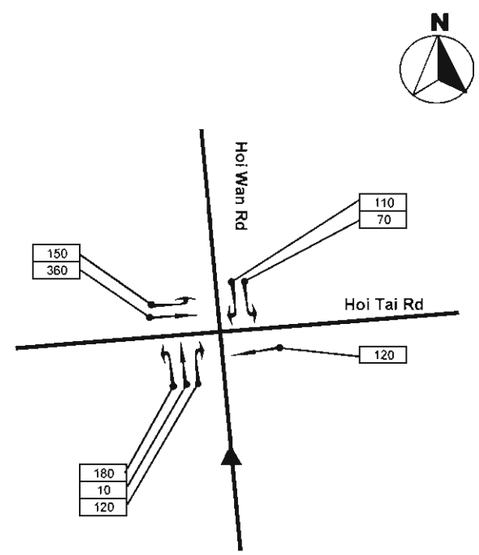
JUNCTION JQB-1



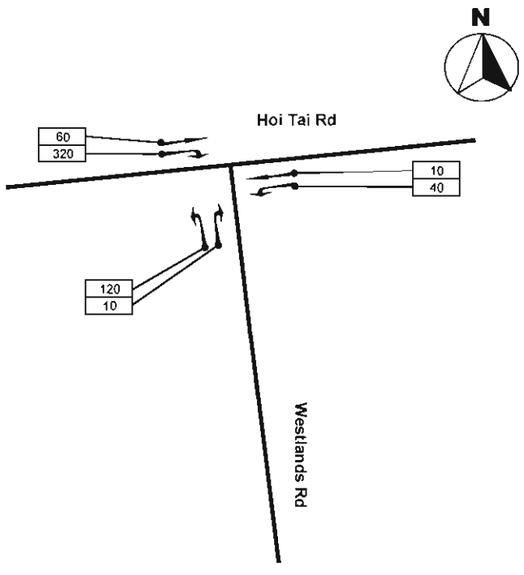
JUNCTION JQB-2



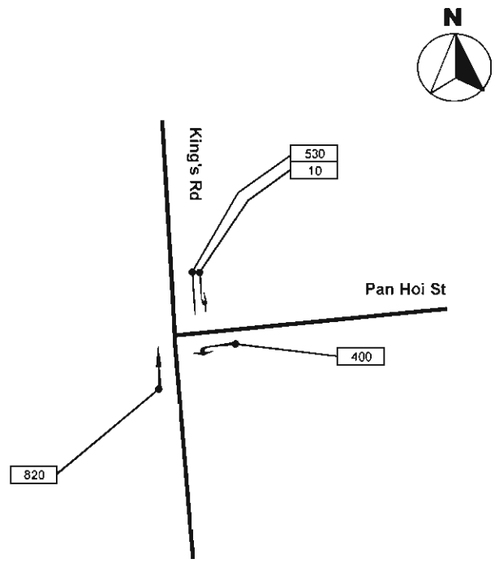
JUNCTION JQB-3



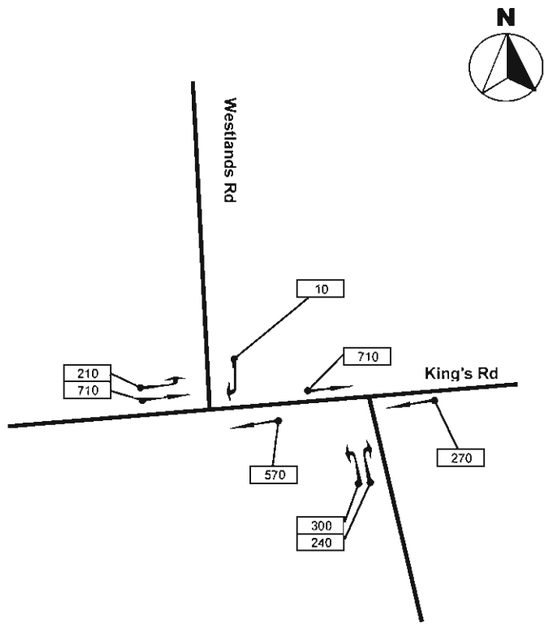
JUNCTION JQB-4



JUNCTION JQB-5



JUNCTION JQB-6



JUNCTION JQB-7

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

AECOM

Title: 2021 Projected Peak Hour Traffic Flows at the Studied Junctions (PM) for Hoi Yu Street Key Site

Scale	Date	Figure No.
N/A	February 2012	9.32

2016
280
(1295)
2021
285
(1315)

2016
175
(710)
2021
180
(710)

2016
285
(885)
2021
290
(890)

2016
415
(790)
2021
420
(790)

2016
1120
(1315)
2021
1145
(1330)

2016
880
(890)
2021
910
(920)

2016
1870
(2240)
2021
1915
(2280)

Quarry Bay

Tai Koo

1 2 3 4

LEGEND

2016
1120
(1310)
2021
1150
(1330)

2016 TRAFFIC FORECASTS

2021 TRAFFIC FORECASTS

AREA OF INFLUENCE

MTR STATION

MTR STATION EXIT/ENTRANCE

PUBLIC TRANSPORT TERMINUS

PEDESTRIAN FACILITIES (FOOTBRIDGE)

PEDESTRIAN ROUTES

1 PINCH POINT

PROJECT AREA

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Pedestrian Forecasts and Pinch Points on Pedestrian Desire Routes for Hoi Yu Street Key Site

Scale: 1: 3500 @ A3

Date:

Figure No. 9.33

LEGEND

Study Area Boundary

Area 1: North Point

Area 2: Quarry Bay

Area 3: Shau Kei Wan

Area 4: Chai Wan

No.	Description	Type
1	Hong Kong Baptist Church Henrietta Secondary School	ASR & NSR
2	Provident Centre	ASR & NSR
3	Ex-North Point Estate Site	ASR & NSR
4	ICAC North Point Headquarters	ASR
5	North Point Fire Services Married Quarters	ASR & NSR
6	North Point Government Offices	ASR
7	Quarry Bay Park Phase II	ASR
8	Canossa College	ASR & NSR
9	Quarry Bay Park Phase I	ASR
10	Fireboat Alexander Grantham Exhibition Gallery	ASR
11	Lei King Wan	ASR & NSR
12	Les Saisons	ASR & NSR
13	Aldrich Bay Promenade	ASR
14	Aldrich Bay Government Primary School	ASR & NSR
15	Hong Kong Museum of Coastal Defence	ASR
16	Lingnan Secondary School	ASR & NSR
17	Heng Fa Chuen	ASR & NSR
18	Heng Fa Chuen Playground	ASR
19	Siu Sai Wan Sports Ground	ASR
20	Island Resort	ASR & NSR
21	Siu Sai Wan Promenade	ASR

NORTH

0 100 200 300 400 500m

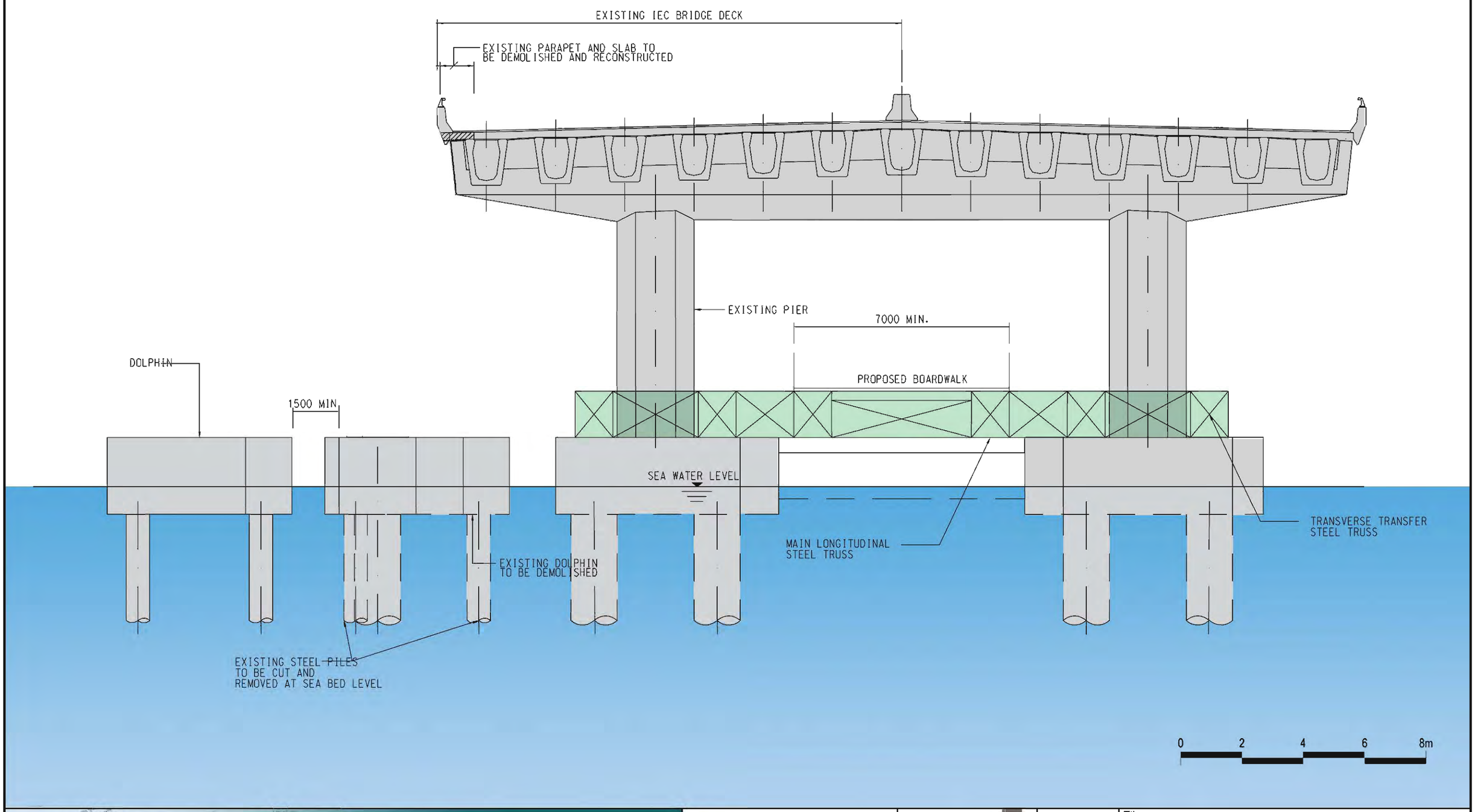
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Locations of Sensitive Receivers

Scale: As Shown | Date: February 2012 | Figure No.: 10.1



Agreement No. CE 61/2008 (TP)

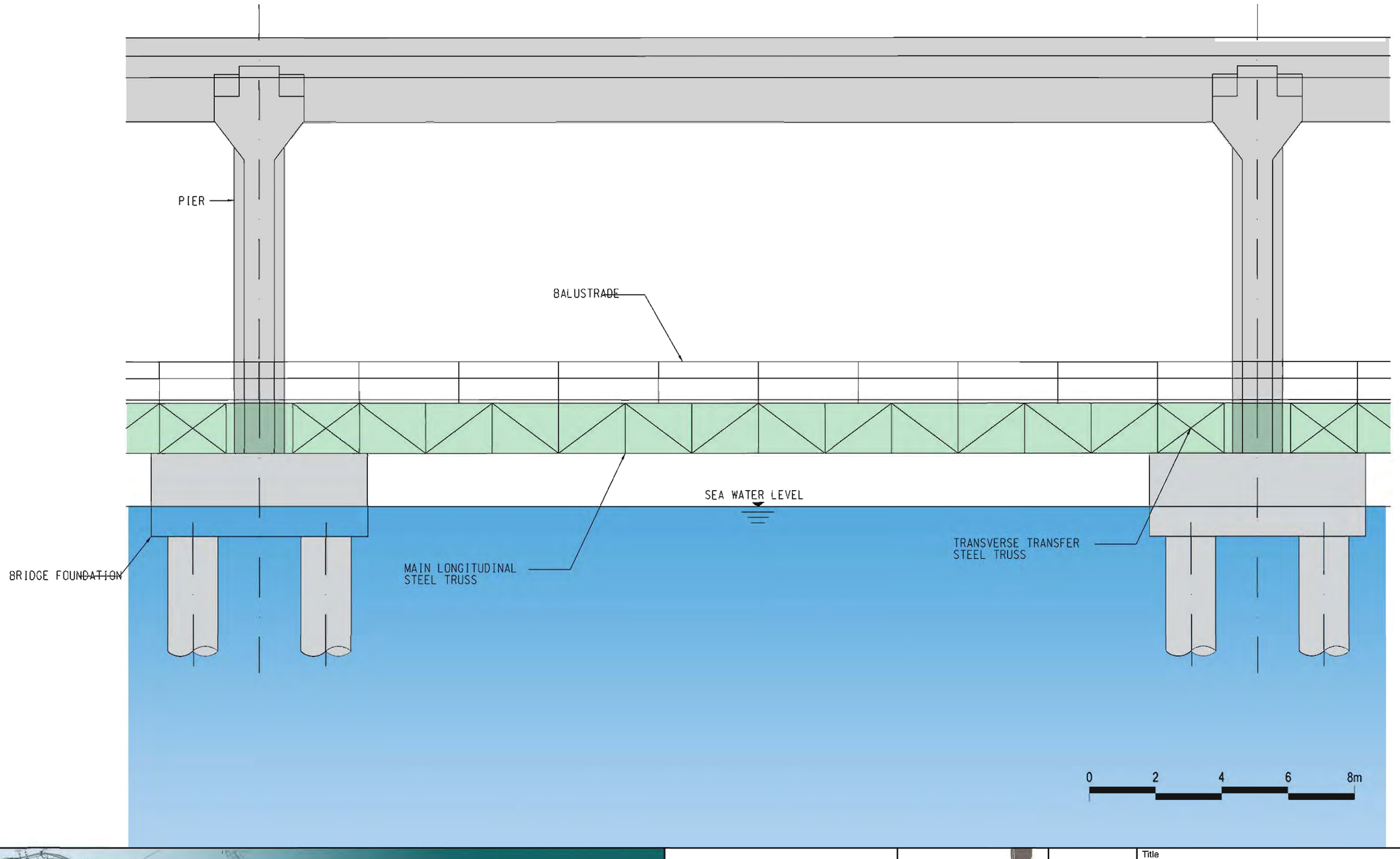
Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title

Typical Section: Proposed Boardwalk Underneath the Island Eastern Corridor

Scale	Date	Figure No.
As Shown	February 2012	11.1



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

AECOM

Title: Typical Elevation: Proposed Boardwalk Underneath the Island Eastern Corridor

Scale	Date	Figure No.
As Shown	February 2012	11.2

NOTES:

1. PROPOSED WATERWORK SCHEMES REQUIRE APPROVAL FROM WATER AUTHORITY DURING DETAILED DESIGN PHASE.
2. EXACT ALIGNMENTS OF THE PROPOSED PIPELINES TO BE DETERMINED IN THE DETAILED DESIGN PHASE.
3. PLEASE REFER TO RELEVANT ARCHITECTURAL FIGURES WITH REGARD TO THE PROPOSED PLANNING LAND USE, URBAN DESIGN AND LANDSCAPE FRAMEWORKS.

LEGEND:

ø150	EXISTING 150mm DIAMETER FRESH WATER SUPPLY PIPELINES
ø150	EXISTING 150mm DIAMETER SALT WATER SUPPLY PIPELINES
ø150	PROPOSED 150mm DIAMETER FRESH WATER SUPPLY PIPELINES
ø150	PROPOSED 150mm DIAMETER SALT WATER SUPPLY PIPELINES
①	PROPOSED OUTDOOR CAFE/BAR
②	PROPOSED ROOFTOP LANDSCAPE AREA
③	PROPOSED BOARDWALK WITH KIOSKS
④	PROPOSED PROMENADE
⑤	PROPOSED INLAND GREEN LINKS TO CONNECT PIERS TO THE HINTERLAND

838650 E
838800 E
838950 E
838500 E
817350 N
817200 N
817050 N
N
ISLAND EASTERN CORRIDOR
EAST EMBANKMENT
WEST EMBANKMENT
NORTH POINT ESTATE LANE
SHU KUK STREET
JAVA ROAD
KAM HONG STREET
SIN CHU STREET
Vehicular Ferry Pier
North Point Ferry Pier
Bus Terminus
Car Park
Basketball Court
Tin Chiu Street Playground
Football Field
Kids' Road Playground
Municipal Services Building
Java Road Market
Java Commercial Centre
Ibis North Point
Wharf Mansion
The South China Hotel
Shu Kuk Building
Hong Lok Building
Maple Garden
Harbour Parade
Shu Road Garden
0 10 20 30 40 50
METRES
1 : 1500

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arbis Limited 雅邦

AECOM

Title: Waterworks Assessment: North Point

Scale	Date	Figure No.
As Shown	February 2012	12.1

839800 E

840000 E

840200 E

N

NOTES:

1. PROPOSED WATERWORK SCHEMES REQUIRE APPROVAL FROM WATER AUTHORITY DURING DETAILED DESIGN PHASE.
2. EXACT ALIGNMENTS OF THE PROPOSED PIPELINES TO BE DETERMINED IN THE DETAILED DESIGN PHASE.
3. PLEASE REFER TO RELEVANT ARCHITECTURAL FIGURES WITH REGARD TO THE PROPOSED PLANNING LAND USE, URBAN DESIGN AND LANDSCAPE FRAMEWORKS.

LEGEND:

- ø150 — EXISTING 150mm DIAMETER FRESH WATER SUPPLY PIPELINES
- ø150 — EXISTING 150mm DIAMETER SALT WATER SUPPLY PIPELINES
- ø150 — PROPOSED 150mm DIAMETER FRESH WATER SUPPLY PIPELINES
- ø150 — PROPOSED 150mm DIAMETER SALT WATER SUPPLY PIPELINES
- (1) PROPOSED PERFORMANCE CENTRE
- (2) PROPOSED TOURISM AND ENTERTAINMENT FACILITIES WITH SHOPS AND RESTAURANTS
- (3) PROPOSED VIEWING POINT
- (4) PROPOSED FEATURE BRIDGES

FRESH WATER SUPPLY TO ENTERTAINMENT FACILITIES

FRESH WATER SUPPLY TO ENTERTAINMENT FACILITIES

ISLAND EASTERN CORRIDOR

EXISTING PARK

816800 N

816600 N

HOI CHAK STREET

HOI TAI STREET

EASTERN HARBOUR CROSSING

FRESH AND SALT WATER SUPPLIES TO PERFORMANCE CENTRE

EXISTING PARK (QUARRY BAY PARK)

Quarry Bay Park

0 20 40 60 80 100

METRES : 2000

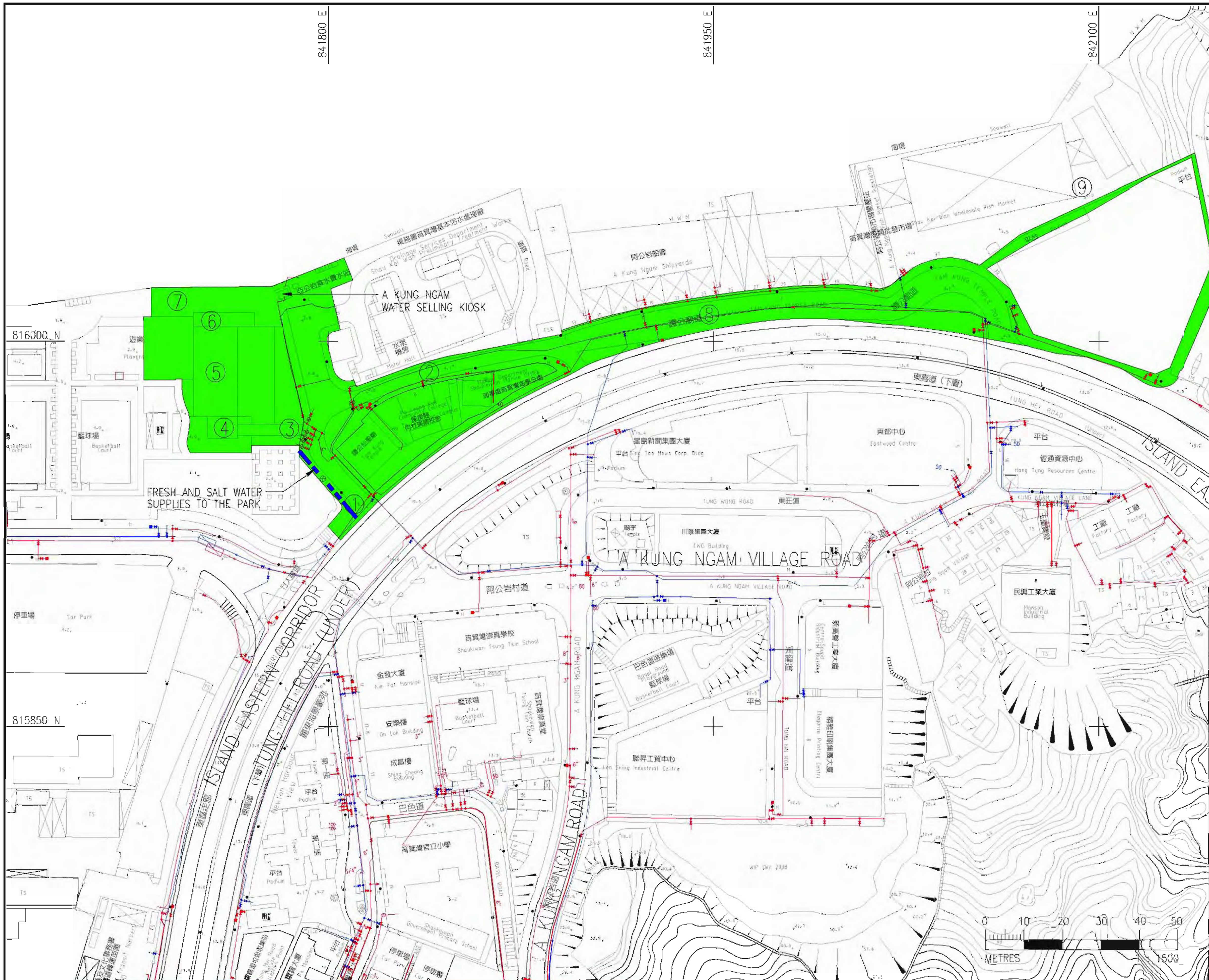
Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Waterworks Assessment: Quarry Bay

Scale	Date	Figure No.
As Shown	January 2012	12.2



NOTES:

1. PROPOSED WATERWORK SCHEMES REQUIRE APPROVAL FROM WATER AUTHORITY DURING DETAILED DESIGN PHASE.
2. EXACT ALIGNMENTS OF THE PROPOSED PIPELINES TO BE DETERMINED IN THE DETAILED DESIGN PHASE.
3. PLEASE REFER TO RELEVANT ARCHITECTURAL FIGURES WITH REGARD TO THE PROPOSED PLANNING LAND USE, URBAN DESIGN AND LANDSCAPE FRAMEWORKS.

LEGEND:

ø150	EXISTING 150mm DIAMETER FRESH WATER SUPPLY PIPELINES
ø150	EXISTING 150mm DIAMETER SALT WATER SUPPLY PIPELINES
ø150	PROPOSED 150mm DIAMETER FRESH WATER SUPPLY PIPELINES
ø150	PROPOSED 150mm DIAMETER SALT WATER SUPPLY PIPELINES

1. PROPOSED GATEWAY
2. PROPOSED HERITAGE TRAIL
3. PROPOSED ARRIVAL PLAZA
4. PROPOSED HISTORICAL PAVILION
5. PROPOSED EVENT PLAZA
6. PROPOSED SEA SIDE PLAZA
7. PROPOSED PROMENADE
8. PROPOSED FOOT PATH
9. PROPOSED SKY TRAIL LINKAGE

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Urbis Limited 雅邦

AECOM

Title: Waterworks Assessment: Shau Kei Wan

Scale	Date	Figure No.
As Shown	February 2012	12.3

NOTES:

1. PROPOSED WATERWORK SCHEMES REQUIRE APPROVAL FROM WATER AUTHORITY DURING DETAILED DESIGN PHASE.
2. EXACT ALIGNMENTS OF THE PROPOSED PIPELINES TO BE DETERMINED IN THE DETAILED DESIGN PHASE.
3. PLEASE REFER TO RELEVANT ARCHITECTURAL FIGURES WITH REGARD TO THE PROPOSED PLANNING LAND USE, URBAN DESIGN AND LANDSCAPE FRAMEWORKS.

LEGEND:

ø150	EXISTING 150mm DIAMETER FRESH WATER SUPPLY PIPELINES
ø150	EXISTING 150mm DIAMETER SALT WATER SUPPLY PIPELINES

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Ove Arup & Partners Hong Kong Limited 雅邦

AECOM

Title: Waterworks Assessment: Chai Wan (Heng Fa Chuen)

Scale	Date	Figure No.
As Shown	January 2012	12.4

LEGEND

Study Area Boundary

OZP Boundary

1-11 Landscape Character Areas (LCAs)

Area 1: North Point

Area 2: Quarry Bay

Area 3: Shau Kei Wan

Area 4: Chai Wan

1 North Point Waterfront Residential Area

2 North Point Urban Area

3 North Point Waterfront Urban Fringe

4 Quarry Bay Transportation Corridor

5 Sai Wan Ho Residential Area

6 Shau Kei Wan Urban Area

7 Shau Kei Wan Typhoon Shelter

8 Hong Kong Museum of Coastal Defence & Lei Yue Mun Park & Holiday Village

9 Heng Fa Chuen

10 Chai Wan Cargo Handling Basin

11 Siu Sai Wan Residential Area

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Urbis Limited 雅邦

AECOM

Title: Locations of Landscape Character Areas

Scale: As Shown | Date: February 2012 | Figure No.: 13.1

LEGEND

- Study Area Boundary
- OZP Boundary
- 1 Landscape Resource

Area 1: North Point

Area 2: Quarry Bay

Area 3: Shau Kei Wan

Area 4: Chai Wan

LANDSCAPE RESOURCES

1. Open area south of the entrance of the North Point Ferry Piers with tree and shrub planting
2. Tree planting at Shu Kuk Street
3. Victoria Harbour
4. Tree planting around the periphery of the EHC Tunnel Portal site
5. Landscape buffer at the southern edge of the Hoi Yu Street waterfront site
6. Harbourside landscape resources
7. Existing trees at the Shau Kei Wan hillside

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

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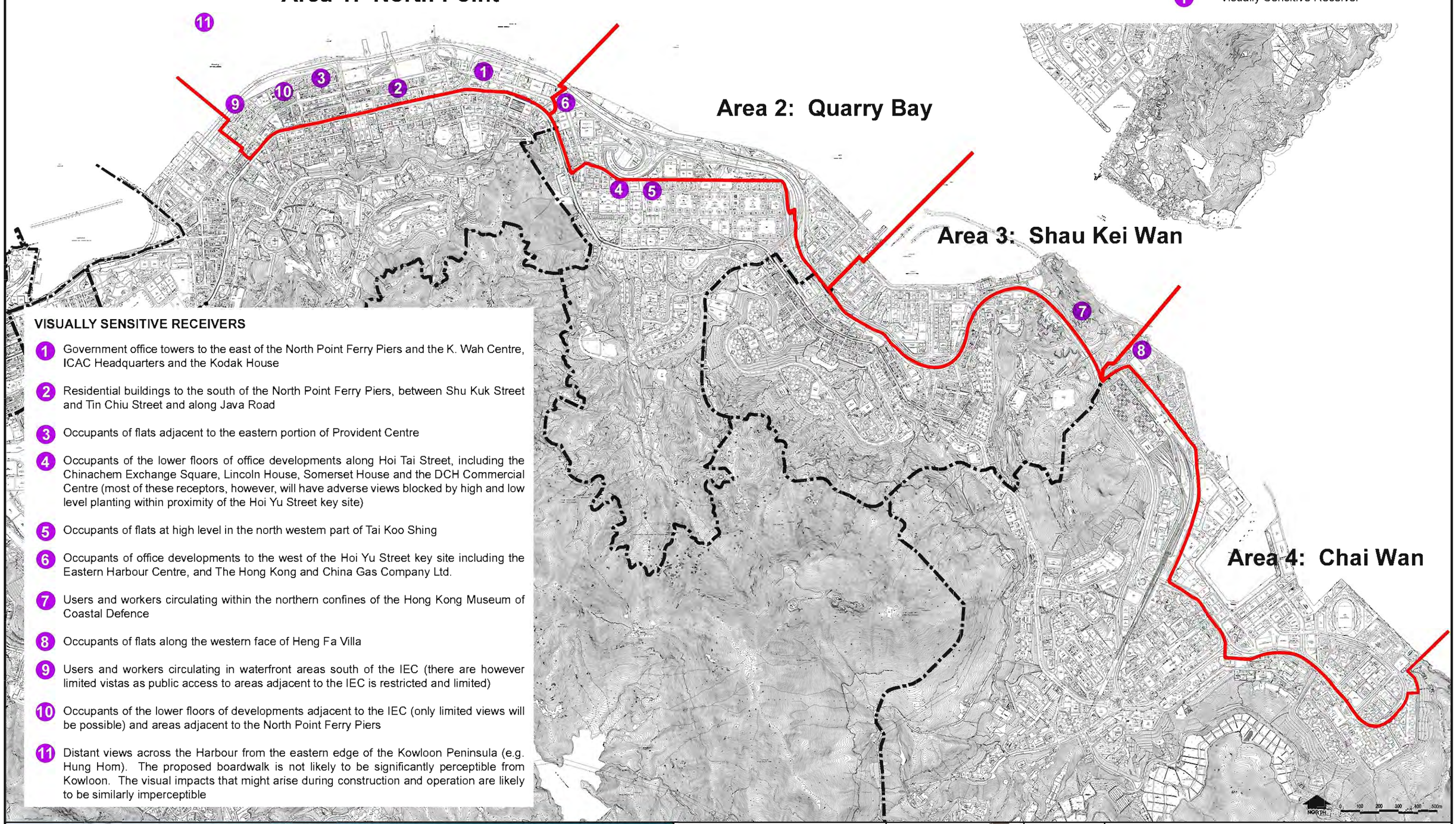
AECOM

Title: Locations of Landscape Resources

Scale	Date	Figure No.
As Shown	January 2012	13.2



VISUALLY SENSITIVE RECEIVERS

1. Government office towers to the east of the North Point Ferry Piers and the K. Wah Centre, ICAC Headquarters and the Kodak House
2. Residential buildings to the south of the North Point Ferry Piers, between Shu Kuk Street and Tin Chiu Street and along Java Road
3. Occupants of flats adjacent to the eastern portion of Provident Centre
4. Occupants of the lower floors of office developments along Hoi Tai Street, including the Chinachem Exchange Square, Lincoln House, Somerset House and the DCH Commercial Centre (most of these receptors, however, will have adverse views blocked by high and low level planting within proximity of the Hoi Yu Street key site)
5. Occupants of flats at high level in the north western part of Tai Koo Shing
6. Occupants of office developments to the west of the Hoi Yu Street key site including the Eastern Harbour Centre, and The Hong Kong and China Gas Company Ltd.
7. Users and workers circulating within the northern confines of the Hong Kong Museum of Coastal Defence
8. Occupants of flats along the western face of Heng Fa Villa
9. Users and workers circulating in waterfront areas south of the IEC (there are however limited vistas as public access to areas adjacent to the IEC is restricted and limited)
10. Occupants of the lower floors of developments adjacent to the IEC (only limited views will be possible) and areas adjacent to the North Point Ferry Piers
11. Distant views across the Harbour from the eastern edge of the Kowloon Peninsula (e.g. Hung Hom). The proposed boardwalk is not likely to be significantly perceptible from Kowloon. The visual impacts that might arise during construction and operation are likely to be similarly imperceptible

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Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Locations of Visually Sensitive Receivers

Scale	Date	Figure No.
As Shown	March 2012	13.3

Key Site 1: North Point Ferry Piers
(Assessment Year : 2011)

Variation 1: North Point Key Site 1

Indicator	Without Scenario	Variation 1
Carbon dioxide emitted per year	❍	☑☑
Cost-Benefit	❍	☑☑☑☑☑
Fixed capital	❍	☑☑
Open space shortfall	❍	☑☑☑
Significant Landscape Features (Area)	❍	☑☑☑
Travel distance	❍	☑☑
Travel speed	❍	☑☑
Unemployment Rate	❍	☑☑

Social Checklist		
Family solidarity	❍	☑☑☑
Social cohesion	❍	☑☑☑
Physical/mental health	❍	☑☑
Leisure and cultural facilities	❍	☑☑☑
Leisure and cultural activities	❍	☑☑☑

Legends

❍ Annotates no change to the current baseline situation

	Very Small	Small	Moderate	Moderate to Large	Large	Very Large
Improvement	☑	☑☑	☑☑☑	☑☑☑☑	☑☑☑☑☑	☑☑☑☑☑☑
Deterioration	⊘	⊘⊘	⊘⊘⊘	⊘⊘⊘⊘	⊘⊘⊘⊘⊘	⊘⊘⊘⊘⊘⊘

Key Site 2 - Hoi Yu Street Key Site in Quarry Bay
(Assessment Year: 2011)

Variation 1: Preferred Option - Entertainment Hub

Indicator	Without Scenario	Variation 1
Carbon dioxide emitted per year	❍	⊘
Cost-Benefit	❍	☑☑☑☑☑
Excessive noise	❍	⊘⊘
Fixed capital	❍	☑☑
Open space shortfall	❍	☑☑☑
Significant Landscape Features (Area)	❍	☑☑☑
Travel distance	❍	☑☑
Travel speed	❍	☑☑
Unemployment Rate	❍	☑☑☑

Social Checklist		
Family solidarity	❍	☑☑☑
Social cohesion	❍	☑☑☑
Physical/mental health	❍	☑☑☑
Leisure and cultural facilities	❍	☑☑☑
Leisure and cultural activities	❍	☑☑☑

Legends

❍ Annotates no change to the current baseline situation

	Very Small	Small	Moderate	Moderate to Large	Large	Very Large
Improvement	☑	☑☑	☑☑☑	☑☑☑☑	☑☑☑☑☑	☑☑☑☑☑☑
Deterioration	⊘	⊘⊘	⊘⊘⊘	⊘⊘⊘⊘	⊘⊘⊘⊘⊘	⊘⊘⊘⊘⊘⊘

SkyTrail
(Assessment Year: 2011)

Variation 1: Sky Trail

Indicator	Without Scenario	Variation 1
Cost-Benefit	❍	☑☑
Fixed capital	❍	☑☑
Open space shortfall	❍	☑☑
Significant Landscape Features (Area)	❍	☑☑☑
Unemployment Rate	❍	☑☑

Social Checklist		
Family solidarity	❍	☑☑☑
Social cohesion	❍	☑☑☑
Physical/mental health	❍	☑☑
Leisure and cultural facilities	❍	☑☑☑
Leisure and cultural activities	❍	☑☑☑

Legends

❍ Annotates no change to the current baseline situation

	Very Small	Small	Moderate	Moderate to Large	Large	Very Large
Improvement	☑	☑☑	☑☑☑	☑☑☑☑	☑☑☑☑☑	☑☑☑☑☑☑
Deterioration	⊘	⊘⊘	⊘⊘⊘	⊘⊘⊘⊘	⊘⊘⊘⊘⊘	⊘⊘⊘⊘⊘⊘

Waterfront Boardwalk under the IEC
(Assessment Year: 2011)

Variation 1: Waterfront Boardwalk under the IEC

Indicator	Without Scenario	Variation 1
Carbon dioxide emitted per year	❍	☑☑☑
Cost-Benefit	❍	☑☑
Fixed capital	❍	☑☑
Open space shortfall	❍	☑☑☑
Significant Landscape Features (Area)	❍	☑☑☑
Travel distance	❍	☑☑
Travel speed	❍	☑☑

Social Checklist		
Family solidarity	❍	☑☑☑
Social cohesion	❍	☑☑☑
Physical/mental health	❍	☑☑☑
Leisure and cultural facilities	❍	☑☑
Leisure and cultural activities	❍	☑☑

Legends

❍ Annotates no change to the current baseline situation

	Very Small	Small	Moderate	Moderate to Large	Large	Very Large
Improvement	☑	☑☑	☑☑☑	☑☑☑☑	☑☑☑☑☑	☑☑☑☑☑☑
Deterioration	⊘	⊘⊘	⊘⊘⊘	⊘⊘⊘⊘	⊘⊘⊘⊘⊘	⊘⊘⊘⊘⊘⊘

LEGEND

- Study Boundary
- Private Land Lot
- Government Land Allocation (GLA)
- Short Term Tenancy (STT)

Source: Information extracted from Lot Index Plan provided by the District Survey Office, Lands Department in 2010

Note: Land areas not falling within the above categories are Government land.

Fee Paying Public Car Park

Fee Paying Public Car Park

Fee Paying Public Car Park

NORTH 0 100 200 300 400 500m

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

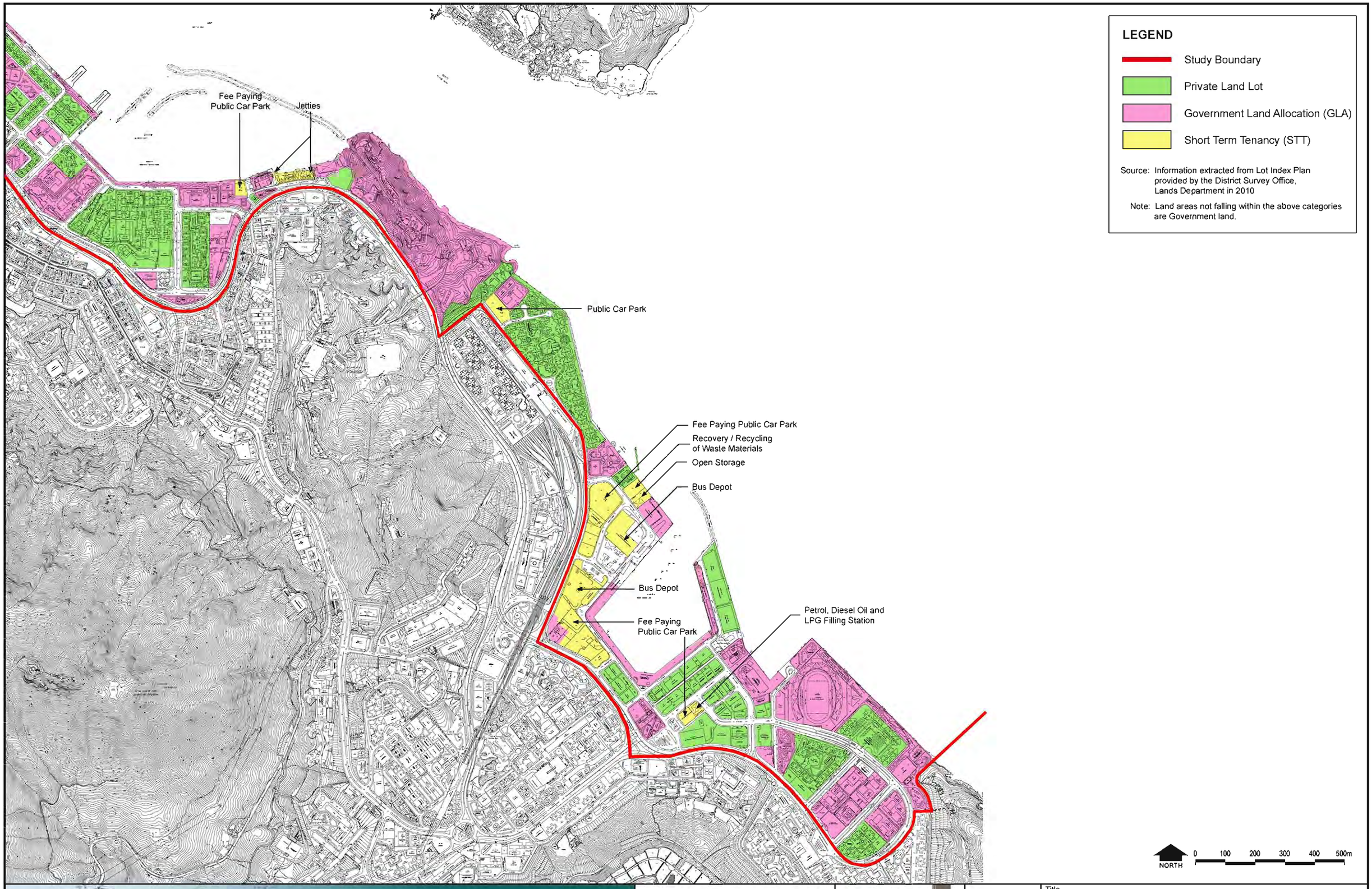
Wilbis 雅邦 Limited

AECOM

Title

Land Requirement Assessment (1 of 2)

Scale	Date	Figure No.
As Shown	July 2010	15.1



Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Title: Land Requirement Assessment (2 of 2)

Scale	Date	Figure No.
As Shown	July 2010	15.2

Appendix A

AVA Expert Evaluation Report

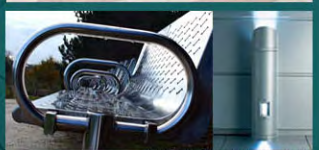


Table of Content

FIGURES

1. EXPERT EVALUATION ON AVA STUDY

Background

1.1 On 26 May 2005, the Harbour-front Enhancement Committee (HEC) agreed to the approach of the Harbour Plan Review, which included undertaking of review studies for areas around the Victoria Harbour. In May 2009, the Planning Department commissioned consultants to conduct the Hong Kong Island East Harbour-front Study, as part of the Harbour Plan Review. The purpose of the Study is to formulate a comprehensive plan for enhancement of the Hong Kong Island East harbourfront areas, including, but not limited to, a waterfront proposal, an improved pedestrian circulation network to enhance harbourfront connectivity, an urban design framework for key sites, a streetscape enhancement and landscape framework for major pedestrian corridors and an implementation strategy for the recommended proposals. At the Option Generation Stage of the Study, two key sites with potentials for enhancement were identified and the initial options of the enhancement proposals for these sites were formulated. The subject air ventilation assessment (expert evaluation) report will examine and assess the air ventilation aspect of the proposals for the key sites.

Objective

1.2 The objective of this report is to provide a qualitative assessment on the likely impact of the initial options of key site proposals formulated under the Hong Kong Island East Harbour-front Study and on the availability of winds for natural ventilation of the pedestrian areas surrounding the key sites. This report presents an in-principle assessment only and it is not based on wind tunnel data. The assessment is based on a qualitative review of wind flow around buildings, information on the local wind climate, building morphology and land topography.

Content of this Report

1.3 The remaining of the report is organized as follows:

- Section 2: Site Environs;
- Section 3: Prevailing Wind Conditions;
- Section 4: Site Wind Environment; and
- Section 5: Evaluation on Possible Problem and Proposed Mitigation Measures.

2. SITE ENVIRONS

2.1 The study area covers the land along the harbourfront of the Hong Kong Island East stretching from the immediate east of the “Comprehensive Development Area” in Oil Street in North Point to Siu Sai Wan in the east. For the purpose of description, the Study Area has been sub-divided into four sub-areas, namely North Point, Quarry Bay, Shau Kei Wan and Chai Wan, which reflect the existing zoning plan demarcations (**Figure 2.1**).

2.2 The environs of the Study Area is generally categorised as a developed urban area. Developments within the Study Area are predominantly medium-high rise buildings, with uses ranging from residential, commercial, industrial, government, etc.

Area 1 – North Point Area

2.3 The North Point Area is bounded by Java Road and Hoi Yu Street to the east and ex-Government Supplies Depot site at Oil Street to the west. To the south and southwest of the area is a mixture of medium-rise residential development and commercial uses. The ex-North Point Estate (ex-NPE) site is planned for hotel and residential developments with the integration of open space. To the west of the ex-NPE site and across Tong Shui Road is the residential development of Provident Centre. Several government institutions, including North Point Government Offices, North Point Fire Station, North Point Police Station and the ICAC Headquarters are located along Java Road.

Area 2 – Quarry Bay Area

2.4 The Quarry Bay Area is bounded by Tai On Street to the east, Hoi Yu Street to the west and King"s Road/Taikoo Shing to the south. Quarry Bay Park is the largest open space in the area. Major residential developments including Taikoo Shing, Kornhill, Westlands Gardens and Sunway Gardens are located to the south of Quarry Bay Park. The high-rise residential development of Grand Promenade is located adjacent to the Sai Wan Ho Marine Police Regional Headquarters and Marine Harbour Division. To the south of the Eastern Harbour Crossing portal, there is a cluster of high rise commercial office towers which include One Island East and Tai Koo Place located in close proximity to the Quarry Bay MTR station.

Area 3 – Shau Kei Wan Area

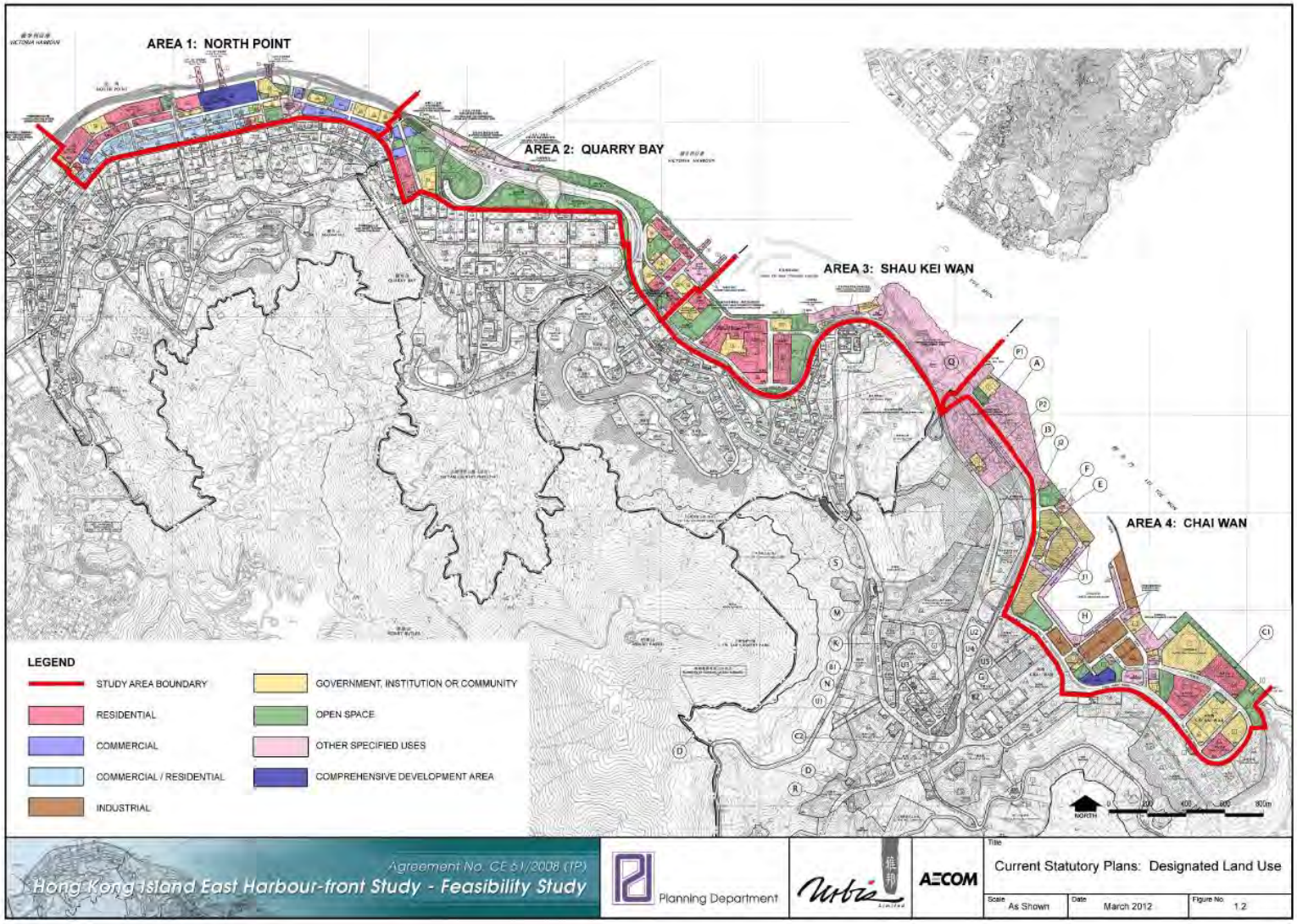
2.5 The Shau Kei Wan Area is bounded by Tai On Street to the west and Heng Fa Chuen to the east. The area is dominated by high-rise public and private residential developments, intermixing with several schools and open spaces. Residential developments within the area include Oi Tung Estate, Tung Tao Court and Aldrich Garden. At the eastern end of the Shau Kei Wan Typhoon Shelter, Shau Kei Wan Wholesale Fish Market and several shipyards abut the water edge. To the hillside further east of the typhoon shelter are the Hong Kong Museum of Coastal Defence and the historic Lei Yue Mun Fort.

Area 4 – Chai Wan Area

2.6 The Chai Wan Area is bounded by Heng Fa Chuen to the west and the Siu Sai Wan Promenade to the east. With the exception of the Heng Fa Chuen residential development, the area is predominately industrial with a large number of operating go-downs and industrial establishments. The medium-rise industrial buildings are generally located in the vicinity of the Chai Wan Public Cargo Working Area (PCWA). To the east of the Chai Wan PCWA is Siu Sai Wan Sports Ground and the Siu Sai Wan Promenade at the waterfront. Several residential developments such as the Island Resort and Harmony Garden are located near Siu Sai Wan Sports Ground.

2.7 **Figure 2.1** shows the location and the environs of the Subject Site.

Figure 2.1 Study Area



2.8 Two key sites within the Study Area have been identified as potential sites for enhancement. Three initial design options for each key site have been developed. The components of these proposals are described in more detail as follows:

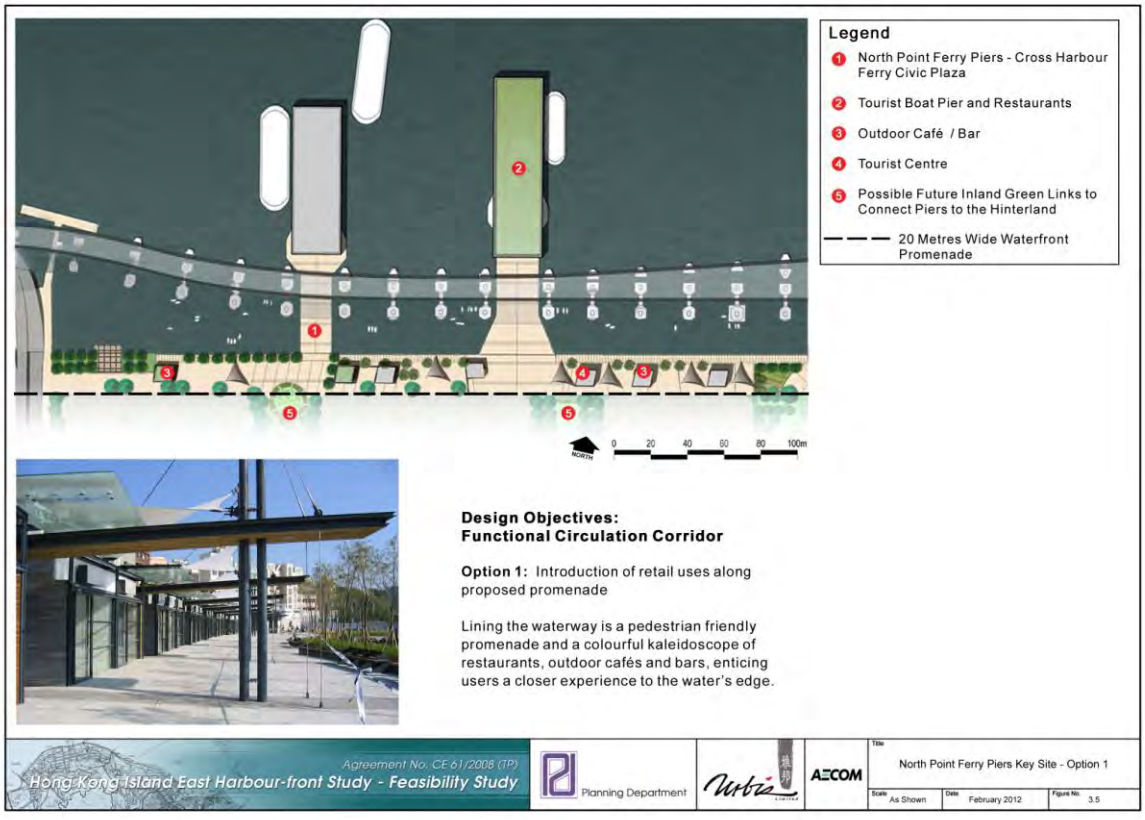
Key Site 1 – North Point Ferry Piers and the Adjoining 20m Wide Waterfront Promenade of the ex-NPE Site

North Point Ferry Piers key site is located within Area 1 and at the northern end of Shu Kuk Street and Kam Hong Street.

Option 1 – Theme: Promenade as Functional Circulation Corridor (see **Figure 2.2**)

2.9 This option suggests a promenade with emphasis on a mixture of various retail uses, e.g. cafes and kiosks, within the 20m wide promenade set out in the planning brief of the ex-NPE site. It will primarily be a functional circulation corridor, whilst the western berth of the eastern pier could be partially converted into a leisure boat pier complemented with restaurants and commercial activities.

Figure 2.2 Option 1 of Key Site 1

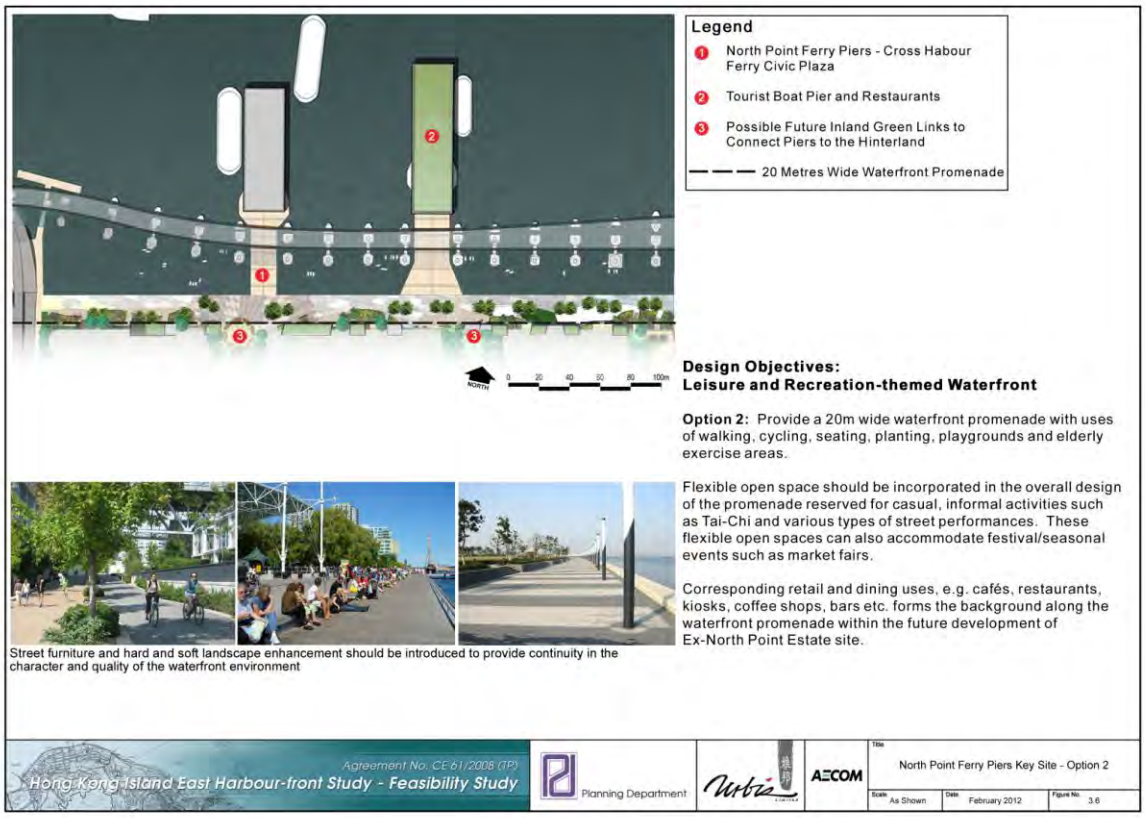


Option 2 – Theme: Leisure and Recreation-themed Waterfront (see **Figure 2.3**)

2.10 The 20m wide promenade will mainly comprise a walkway alongside the harbourfront, with the opportunity to incorporate a cycle track with a length of about 400m-500m for recreational and leisure purpose. This will run parallel to the pedestrian circulation area within the promenade. A full range of hard landscape elements will be incorporated into the promenade, e.g. special paving, seating benches, pedestrian lighting, safety guardrails, life buoys, and bespoke distinctive signage. Other

recreational amenities will also be installed, e.g. children"s playgrounds and elderly exercise equipment. Passive and flexible open space will be incorporated to accommodate informal activities (e.g. tai-chi) as well as special festivals/seasonal events. Under this option, the western pier will remain as a working ferry terminal, whereas the western berth of the eastern pier could be renovated and partially converted into a leisure boat pier with the inclusion of restaurants and commercial activities.

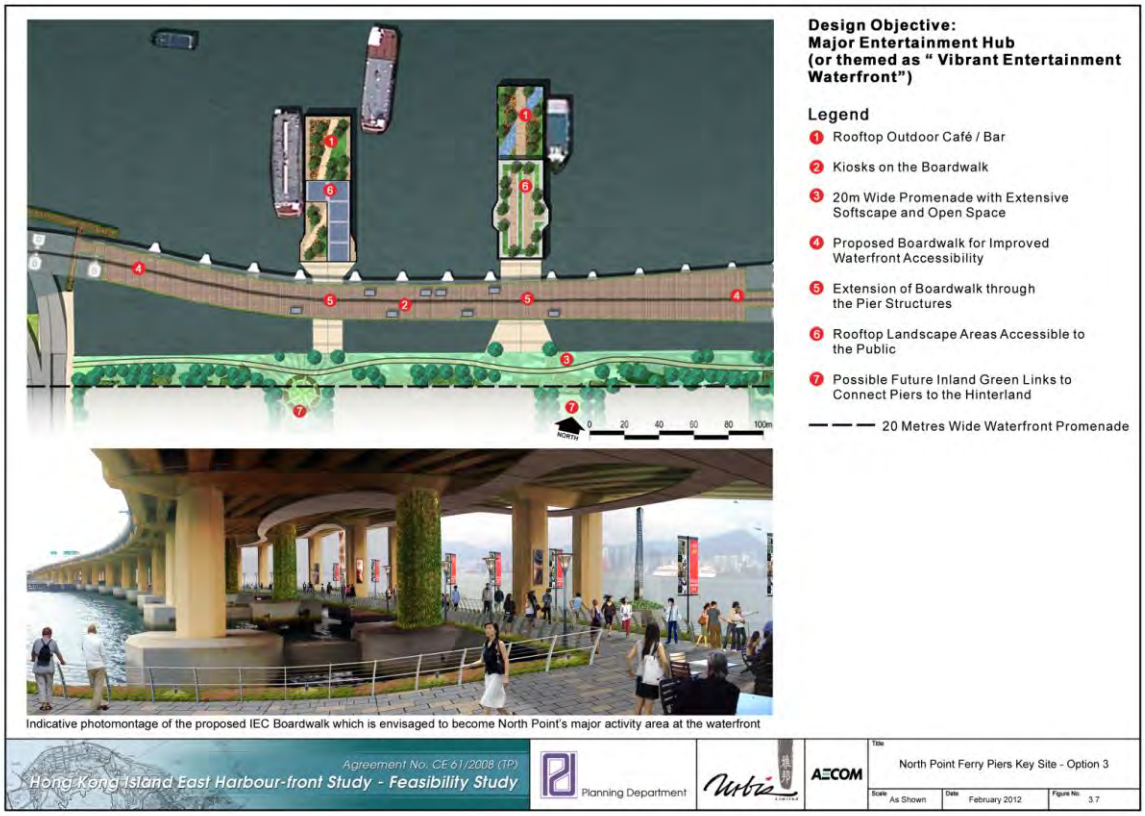
Figure 2.3 Option 2 of Key Site 1



Option 3 – Theme: Major Entertainment Hub (see **Figure 2.4**)

2.11 The proposed boardwalk underneath the IEC is intended to form an extended activity deck from the ex-NPE promenade. Whilst the ex-NPE promenade maintains the functions of a walkway and a cycle track for recreational and leisure purpose, the boardwalk space will allow for the emphasis of various animated uses such as retail kiosks, cafes, restaurants, bars and coffee shops. Urban design elements will be incorporated into the promenade, e.g. special paving, seating benches, pedestrian lighting, safety guardrails, life buoys, distinctive signage as well as public arts in the form of wall decoration, paving engravings and sculptures. Both pier structures will be renovated and partially opened up to connect with the boardwalk. There will be opportunities to integrate current uses in both piers (e.g. fish markets and tourist souvenir shops) onto the boardwalk. Apart from the leisure boat use, it is also suggested that restaurants, retail/commercial activities and/or entertainment uses etc. be adaptively incorporated into the available space in the pier structures. Publicly accessible landscaped areas and cafes are proposed on the rooftops of the ferry piers. The 20m wide waterfront promenade will be integrated with the proposed boardwalk, where most of the informal, passive and recreational activities are located.

Figure 2.4 Option 3 of Key Site 1



Key Site 2 – Hoi Yu Street Site in Quarry Bay

2.12 The key site consists of two parts: the Eastern Harbour Crossing (EHC) Tunnel Portal site and the linear area to the north of the IEC and Hoi Yu Street along the harbourfront and located within Area 2.

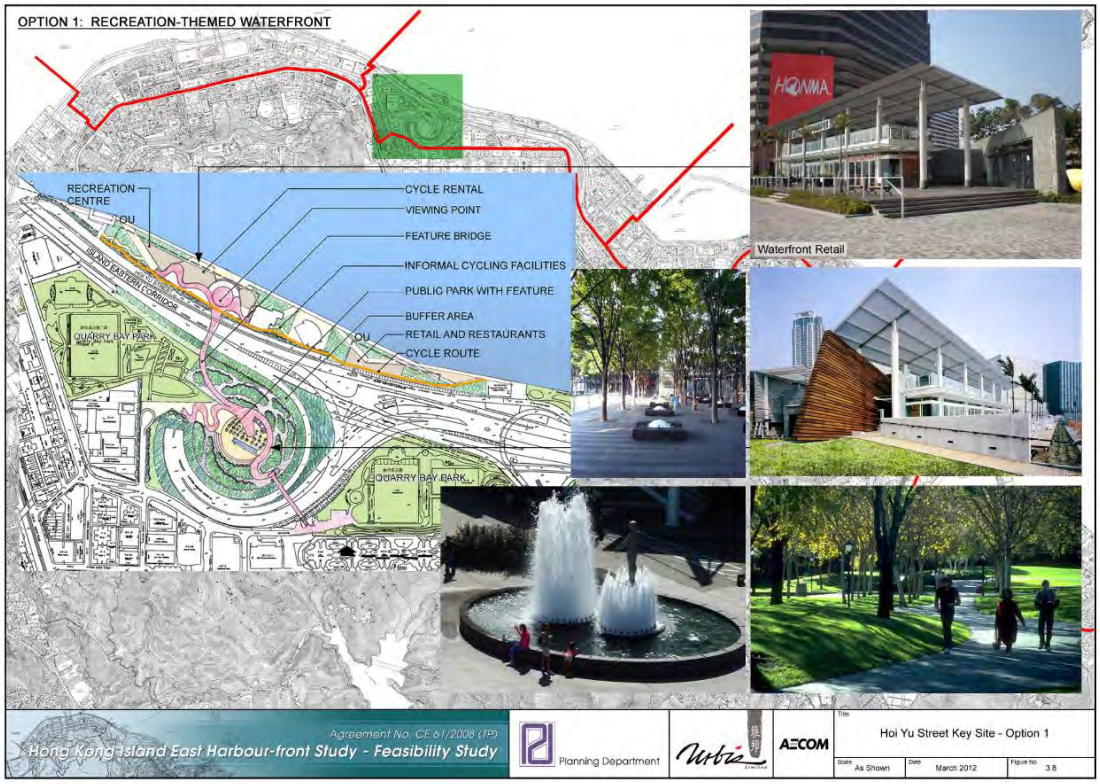
Option 1 – Recreation-themed Waterfront (see **Figure 2.5**)

2.13 This option suggests that the area will be designed with a focus for recreational uses. The EHC Tunnel Portal site is proposed to be developed as a park with hard-paved area and corresponding park elements. To improve connectivity to the waterfront, a public walkway is proposed to traverse the site towards the waterfront, starting at Hoi Wan Street and the west end of the existing Quarry Bay Park Phase II, turning into an elevated footbridge as it crosses the IEC. Special signage, public art displays, engravings, landscape furniture, unique lighting, incorporation of softscape etc. could add to the experience and character of the area.

2.14 The Hoi Yu Street waterfront site is proposed to accommodate a range of recreational activities. These are anticipated to include a jogging promenade, regular sitting areas, a children's playground, fitness/exercise equipment zones, elderly exercise areas, a tai-chi court etc. Under this option, an informal cycling route is envisaged to be aligned adjacent to the planting buffer area abutting the IEC. Cycling can then form one of the recreational components of the promenade. The two "Other Specified Uses" ("OU") sites within the waterfront space are envisaged as developments which can accommodate cycle rental facilities and other uses that can serve to animate the waterfront edge (e.g. retail kiosks; eating places; places of

entertainment, recreation, sports or culture etc).

Figure 2.5 Option 1 of Key Site 2

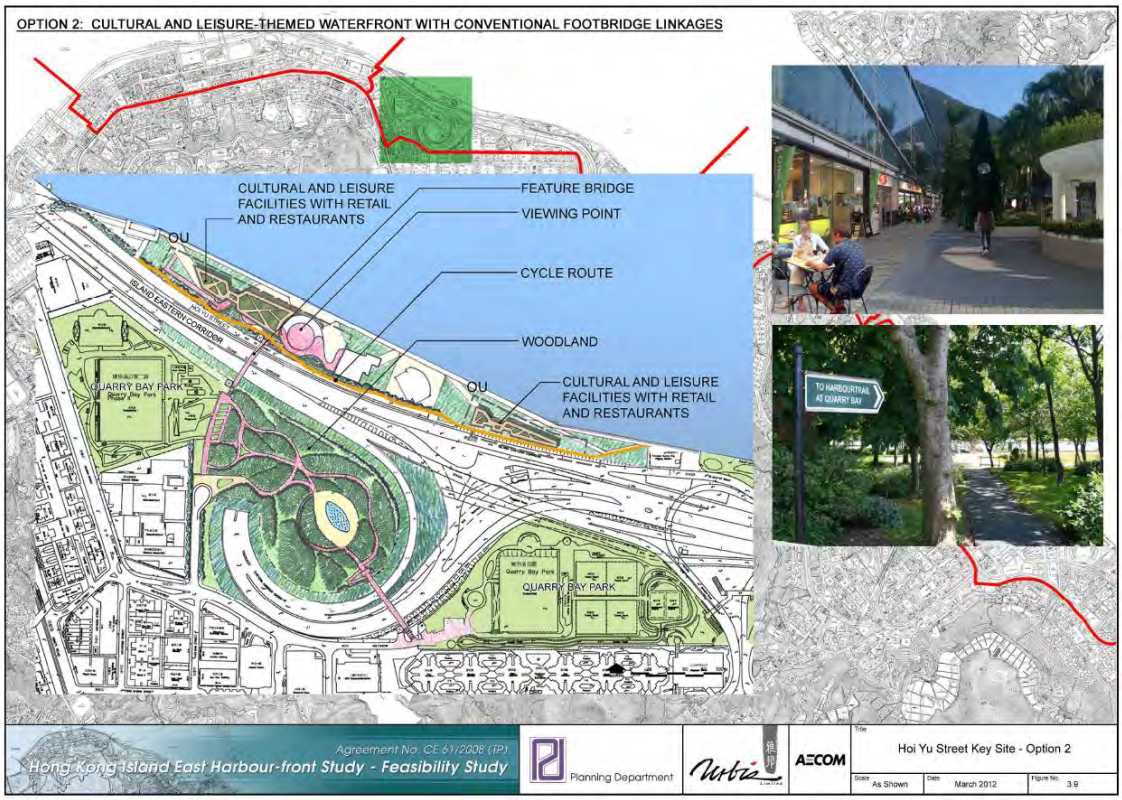


Option 2 – Cultural and Leisure-themed Waterfront (see **Figure 2.6**)

2.15 Under this option, the waterfront promenade gives emphasis to the inclusion of cultural, leisure and commercial uses along the waterfront whilst improving pedestrian circulation from the hinterland to the harbourfront. The Hoi Yu Street waterfront site will be developed mainly as an open space with a new waterfront promenade to link up the existing waterfront promenade in Quarry Bay Park. Semi-mature trees and dense planting will be installed along Hoi Yu Street to create a sufficient peripheral planting buffer. Two short truncated linear footbridges will connect to the waterfront. As the EHC Tunnel Portal site located between the two footbridge sections is subject to adverse air quality given its proximity to the IEC, it is proposed to introduce intensive „woodland" planting. Semi-mature trees and low-level planting are proposed to create a green transition from the hinterland to the waterfront. The transition space between the two footbridge sections within the woodland should be designed to discourage loitering.

2.16 Medium-scale structures are suggested for the two “OU” sites at the waterfront, accommodating a diverse range of cultural, leisure and tourism-related uses, e.g. exhibition or convention halls; markets; arts and crafts fairs; eating places; places of entertainment; and retail shops. It is proposed that the developments within the “OU” sites will be lower than the maximum building heights (35mPD and 25mPD for the two “OU” sites in the west and east respectively) stipulated in the Quarry Bay Outline Zoning Plan (OZP). Accordingly the proposed developments will rise to approximately 3 storeys high. Green roofs and open passageways through the buildings will be utilised to promote the sustainability of the development proposals.

Figure 2.6 Option 2 of Key Site 2



Option 3 – Tourism and Entertainment-themed Waterfront (see **Figure 2.7**)

2.17 Under this option, it is envisaged the EHC Tunnel Portal site will contain an indoor structure/facility for entertainment purposes. Uses could include a multi-purpose performance centre or an IMAX theatre. Given the concerns on air quality at the EHC portal, an interesting indoor use will greatly mitigate the air quality issue that would result from an outdoor space. It is also suggested that the proposed elevated walkway/footbridge connecting to the waterfront will be designed in an innovative and interesting manner. The use of linear standardized structures will be avoided. The design should be coordinated with the character and design of the proposed architecture and planting.

2.18 The Hoi Yu Street waterfront site will be developed in a similar way to that described under Options 1 and 2 above, with developments within the two "OU" sites incorporating tourism and entertainment facilities, shops and themed restaurants. A viewing deck can also be integrated within the development. Under this option, the proposed development will aim to achieve the maximum building height permitted under the Quarry Bay OZP (i.e. 5 – 6 storeys high). The scale of development will be compatible with its environs and the proposed entertainment facility at the EHC Tunnel Portal Site. The layout of the development will be designed to human scale with recreational uses and functions along the waterfront. Remaining areas will be greened and designed in such a way that a range of seasonal outdoor activities will be permitted. The option promotes and gives emphasis to performing arts and cultural functions tied in with commercial elements that will promote viability. Hard and soft landscape treatments will be designed to reflect these themes. This will also be laid out in such a way to reinforce a definable entertainment corridor that extends from the hinterland to the waterfront. Specific locations along the corridor and the waterfront can be designated for permanent or periodic display of public art.

Figure 2.7 Option 3 of Key Site 2

3. PREVAILING WIND CONDITIONS

3.1 Hong Kong as a whole is characterised with northeast prevailing wind throughout the year. During summer time, southwest wind is also predominant.

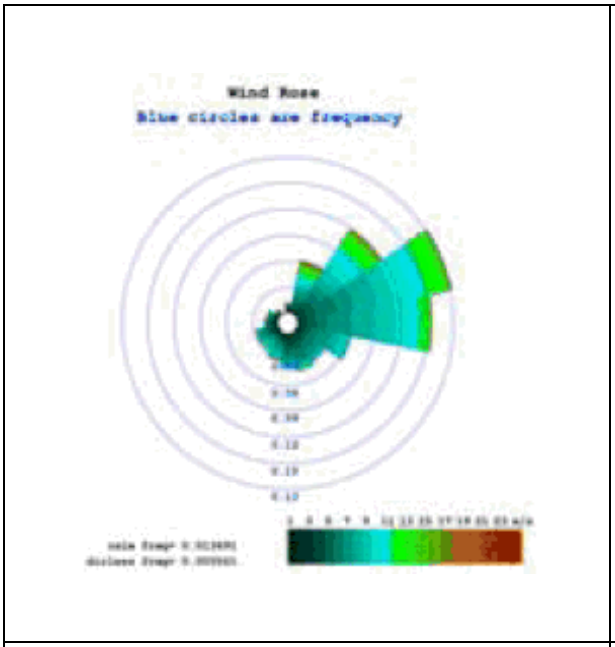
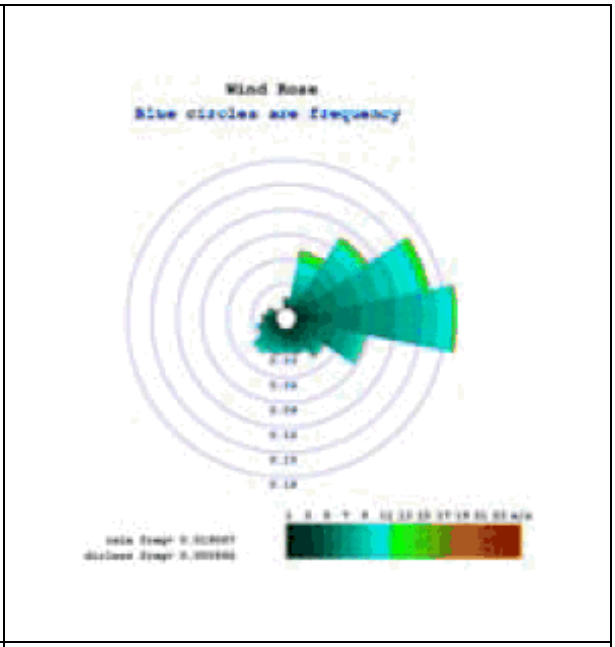
3.2 With regard to the proposed development at the North Point Ferry Piers key site, based on the simulated set of MM5 (Fifth-Generation NCAR/Penn State Mesoscale Model) wind data, north-easterly and easterly winds (including NE, ENE and E) are the most predominant winds in the area. At upper level (about 450m above terrain), more north-east-easterly winds are observed; whereas at lower level (about 120m above terrain), more easterly winds are observed. During summer time, east to south-westerly winds are the most predominant winds at the upper level in the area; whilst east, south-east-easterly and south-westerly winds are the most predominant winds at the lower level in the area.

3.3 Besides, with regard to the proposed development at the Hoi Yu Street site in Quarry Bay, based on the simulated set of MM5 wind data, north-easterly and easterly winds (including NE, ENE and E) are the most predominant winds at both upper and lower levels in the area. At upper level, more north-east-easterly winds are observed; whereas at lower level, more easterly winds are observed. During summer time, east to south-westerly winds are the most predominant winds at the upper level in the area; whilst south-east-easterly winds are the most predominant winds at the lower level in the area.

3.4 The relevant annual and summer wind roses for North Point Area are shown in **Figure 3.1** and **Figure 3.2** below. The relevant annual and summer wind roses for

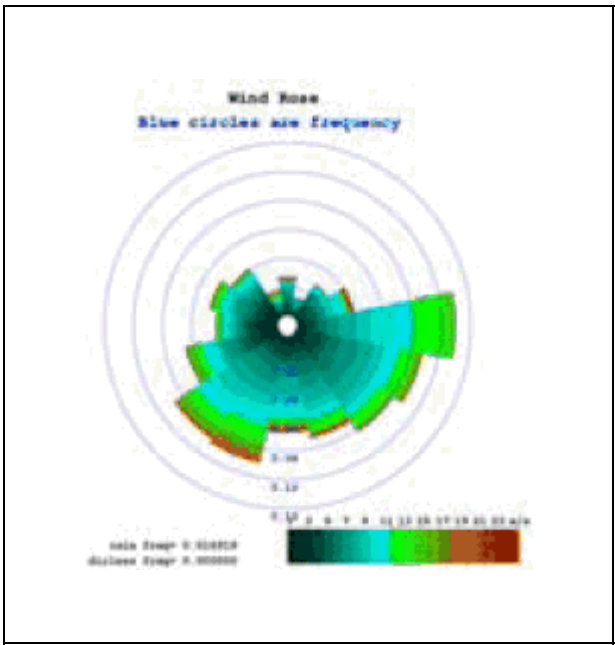
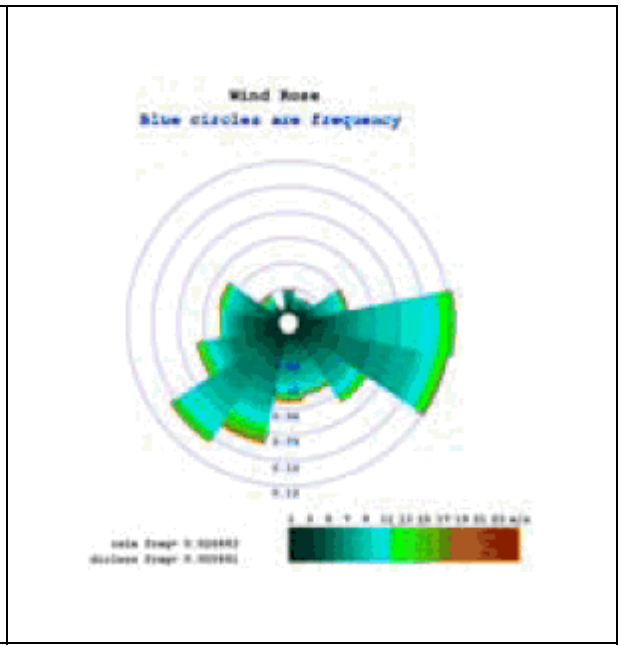
Quarry Bay Area are shown in **Figure 3.3** and **Figure 3.4**. The wind rose result indicates the dominance of each of 16 wind directions and distribution of the wind speed at about 450m and 120m above terrain.

Figure 3.1 Relevant Annual Wind Rose Analysis Result in the Vicinity of the Proposed Development at North Point Ferry Piers Key Site

	
At about 450m above terrain	At about 120m above terrain

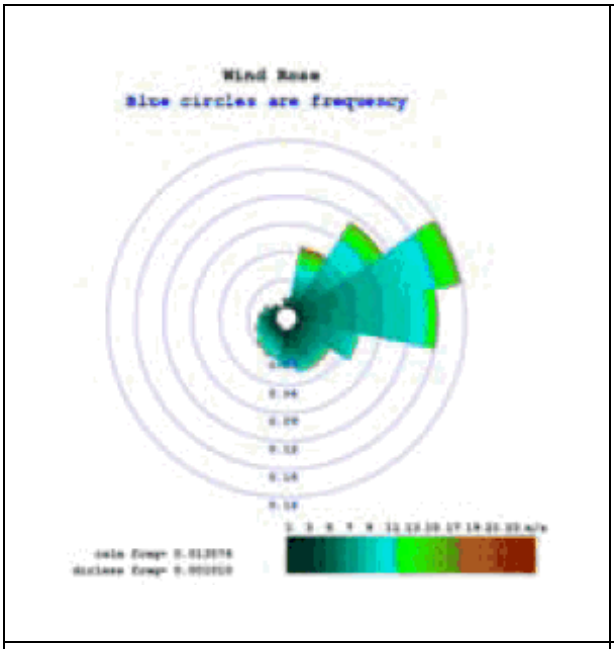
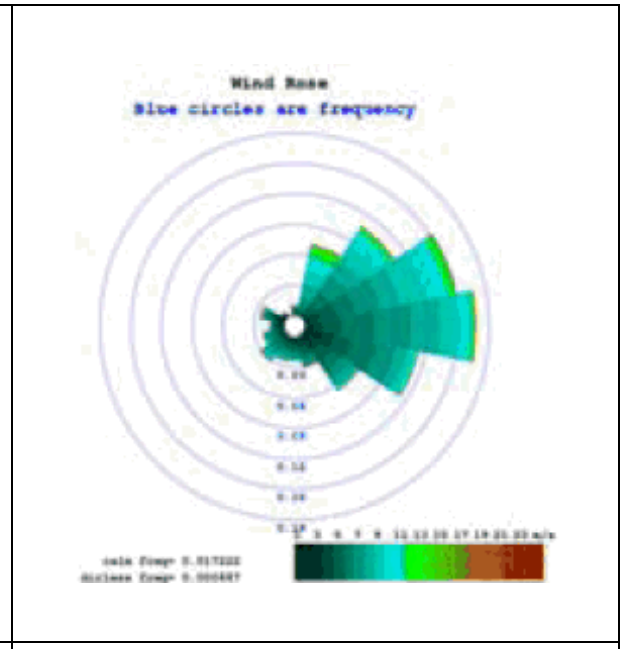
Reference: Faculty of Environment of the Hong Kong University of Science and Technology

Figure 3.2 Relevant Summer Wind Rose Analysis Result in the Vicinity of the Proposed Development at North Point Ferry Piers Key Site

	
At about 450m above terrain	At about 120m above terrain

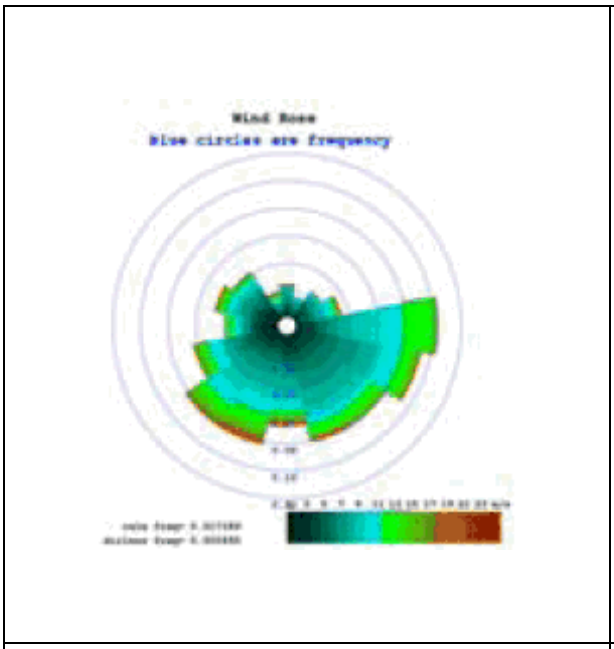
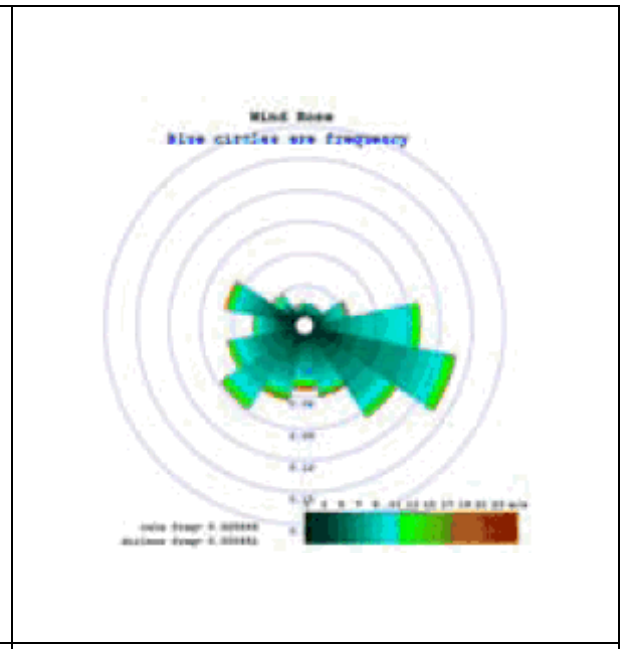
Reference: Faculty of Environment of the Hong Kong University of Science and Technology

Figure 3.3 Relevant Annual Wind Rose Analysis Result in the Vicinity of the Proposed Development at Hoi Yu Street Site in Quarry Bay

	
At about 450m above terrain	At about 120m above terrain

Reference: Faculty of Environment of the Hong Kong University of Science and Technology

Figure 3.4 Relevant Summer Wind Rose Analysis Result in the Vicinity of the Proposed Development at Hoi Yu Street Site in Quarry Bay

	
At about 450m above terrain	At about 120m above terrain

Reference: Faculty of Environment of the Hong Kong University of Science and Technology

4. SITE WIND ENVIRONMENT

4.1 The prevailing wind conditions at North Point and Quarry Bay where the two key sites locate are described in **Section 3** above by making reference to the simulated set of MM5 wind data. The proposed developments at the two key sites, as discussed in **Section 2** above, are situated at the harbourfront area with waterfront promenade, walkway and recreational cycle track. These are all low-lying structures and significant obstruction to the prevailing winds blowing from the harbour is not anticipated. However, the prevailing winds blowing from the hinterland towards the proposed harbourfront development would be influenced by the existing buildings surrounding the sites, which are largely medium to high rise residential and commercial buildings.

4.2 For the North Point Area covering Key Site 1, it is located at the harbourfront which is benefited from the unobstructed prevailing north-easterly and easterly winds. Java Road would serve as a major breezeway for the annual prevailing wind in the North Point Area. During summer time, the simulated wind data indicate that east to south-westerly winds are the prevailing winds in the area. However, these winds are largely obstructed by the existing mixture of medium-rise residential and commercial buildings located south-east to south-west of Key Site 1 penetrating to the pedestrian level. Obstruction to these winds would likely be aggravated subsequent to the existence of the future development of the ex-NPE site with planned hotel and residential development located to the immediate south of Key Site 1. The existing roads in north-south orientation including Tong Shui Street, Shu Kuk Street and Kam Hong Street would serve as breezeways for the penetration of summer prevailing winds from the southerly directions. The major annual and summer breezeways are illustrated in **Figure 4.1**.

4.3 For the Quarry Bay Area covering Key Site 2, a long stretch of park and sports grounds along the harbourfront next to the IEC which is located to the southeast of the area would provide useful open spaces for air ventilation, in particular for the prevailing easterly and north-easterly winds. These annual prevailing winds blowing from the harbour would cross the IEC and then run along Eastern Harbour Crossing Tunnel roundabout and Taikoo Shing Road to the inland area of Quarry Bay. During summer time, the local topographical environment provides better ventilation for the area. The large greenery area of Tai Tam Country Park (south of the proposed development) creates katabatic wind flowing down the valley from the southern mountain slopes. Moreover, the orientation of the existing streets to the south of Key Site 2 is favourable for the penetration of prevailing east to south-westerly summer winds towards the proposed development and to the harbourfront area. For example, the south-easterly summer prevailing wind could pass along Hong Cheung Street and the IEC or pass along Shau Kei Wan Road and then follow Tai Mou Avenue and Tai Yue Avenue to the harbourfront area. The major annual and summer breezeways are shown in **Figure 4.2**.

5. EVALUATION ON POSSIBLE PROBLEM AND PROPOSED MITIGATION MEASURES

5.1 The proposed harbourfront development areas at Key Sites 1 and 2 in North Point and Quarry Bay are located along the harbourfront area with waterfront promenade, walkway and recreational cycle track. Significant obstruction and hence negative impact on the local wind environment is not anticipated.

5.2 With reference to the discussion in **Section 4** above on the existing wind environment, all the sites of concern are located immediate to the harbourfront which would be benefited from the unobstructed prevailing north-easterly to easterly winds. Therefore, given that the facilities proposed at the sites are mostly small kiosks and the proposed height would be at about a few metres above terrain, adverse air ventilation impact associated with these small structures is not expected. With reference to G Z. Brown 2001[1], the wind „shadow" behind the building depends on the "bulk" of the building represented by the height and width of the building and is known as the wake area. For low-rise building, this wake area extends to a distance of about 4 times the building height. Thus for an isolated building of 5m in height, the wake area would be about 20m from the building structure which is considered as localized and would not affect the overall ventilation performance of the surrounding area.

5.3 For the prevailing summer winds from the east to south-west, the proposed harbourfront development at all the sites are located mostly at the downwind direction under these wind directions. Adverse air ventilation impacts associated with the development on the hinterland is not anticipated. As discussed in **Section 4** above, these summer winds would be obstructed by the surrounding buildings in the hinterland for the North Point area.

5.4 For Key Site 1 in North Point, a straight and continuous promenade is not clearly devised with Option 1. The east-west wind movement would be restricted by the retail uses sitting at the existing open spaces right at the harbourfront. Whereas under Options 2 and 3 with a straight and continuous promenade, both options allow the pedestrians to enjoy winds blowing in the east-west direction. Under all the options for Key Site 1, the proposed small kiosks would unlikely pose significant obstruction to wind flow between the harbour and the further hinterland area.

5.5 For Key Site 2 in Quarry Bay, all options involved the development of open space area along the harbourfront with low-rise developments. The proposed low-rise developments would only result in localised wake area and adverse air ventilation impact is not expected. For Option 3 of Key Site 2, the indoor facility such as a multi-purpose performance centre/IMAX theatre at the EHC Tunnel Portal site is proposed to be 20 – 30m above ground level. Good design measures which minimize obstruction to the prevailing north-easterly and easterly winds blowing from the harbour to the hinterland area can enhance the air ventilation. This being said, given the low-rise nature of the proposed indoor facility and that it is separated from the surrounding buildings in the hinterland area by more than 80m, adverse air ventilation impact on the hinterland area is not expected.

[1] Brown G Z and Dekay M, (2001) Sun, Wind and Light, 2nd edition, John Wiley and Sons Inc., New York.

LEGEND

Summer Breezeway

Annual Breezeway

0 50 100 150 200 250m

Annual Prevailing Wind

Summer Prevailing Wind

VICTORIA HARBOUR

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Arup 雅邦 Limited

AECOM

Title

Major Annual and Summer Breezeways at North Point

Scale	Date	Figure No.
As Shown	February 2012	4.1

LEGEND

Summer Breezeway

Annual Breezeway

Annual Prevailing Wind

Summer Prevailing Wind

0 50 100 150 200 250m

Agreement No. CE 61/2008 (TP)

Hong Kong Island East Harbour-front Study - Feasibility Study

Planning Department

Wilbis 雅邦 Limited

AECOM

Title

Major Annual and Summer Breezeways at Quarry Bay

Scale	Date	Figure No.
As Shown	November 2011	4.2