

Proposed Comprehensive Development at Wo Shang Wai, Yuen Long

Environmental Impact Assessment

Executive Summary

March 2008

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E.1 BACKGROUND AND PLANNING INTENTS

Wo Shang Wai to the north of Royal Palms and Palm Springs is zoned "OU(CDWRA)". This area comprises formed land, fish ponds filled prior to the publication of the Mai Po and Fairview Park Interim Development Permission Area Plan, and fragmented and partially filled marshland. The western portion is currently mostly vacant while the eastern portion is currently partly vacant and partly occupied by a mix of uses including open storage uses, container yards and container vehicle parks.

The planning intention of this location is to provide incentive for the restoration of degraded wetlands adjoining existing fish ponds and to encourage the phasing out of sporadic open storage and port back-up uses on degraded wetland. This can be achieved through comprehensive residential and/or recreational development to include wetland restoration area. Development or redevelopment schemes on the degraded wetlands directly adjoining the existing continuous and contiguous fish ponds should include wetland restoration and buffer proposals to separate the development from and minimize its impact on the fish pond areas. Any new building should be located farthest away from Deep Bay. (Approved Mai Po and Fairview Park OZP No. S/YL - MP/6).

In March 2005 the Project Proponent, **Profit Point Enterprises Limited**, acquired a development site at Wo Shang Wai, Yuen Long as shown in [Figure E.1](#). The Project Area is one of the areas within the New Territories which is zoned, as stated above, with the specific target of restoring hitherto degraded lands which have been used for lorry parking and open storage areas. The statutory planning intent is to provide incentives for the restoration of degraded land through comprehensive residential and/or recreational development together with wetland restoration. The underlying planning objective is to encourage the removal of degraded open storage areas in the New Territories and to provide an opportunity to enhance the ambient environment and community structures within the area.

In April 2005 **Mott Connell Ltd (MCL)** was commissioned to undertake an EIA for this project. A Project Profile was prepared and submitted to the Director of Environmental Protection (EPD), and in September 2005 a Study Brief No. ESB – 131/2005 for the "Proposed Comprehensive Development at Wo Shang Wai, Yuen Long" was issued. The EIA has been conducted by **MCL** with **Urbis** providing the urban planning and design, landscape and visual impact assessments. **Masterplan** and **Allied Environmental Consultant Limited** were also engaged to provide statutory planning inputs and noise impact assessment respectively to the EIA. In addition to the foregoing, the Project has also benefited by ecological inputs from **Asia Ecological Consultants (AEC)** and **Ecology and Environment, Inc. (E&E)**. AEC has principally been responsible for input to the Ecological Assessments and developed the wetland restoration plans as well as providing suggestions on the management and maintenance aspects. In addition to which, the Wetland Management arrangement have been reviewed by one of Hong Kong's most experienced wetland lawyers, **John Davison**.

E.2 EIAO AND DESIGNATED PROJECTS

As the development site is more than 20 hectares (i.e. 21.36ha) the Project is defined as a Designated Project under the EIA Ordinance (EIAO), i.e. item 1 of Schedule 3 of the EIAO

(engineering feasibility study of urban development projects within an Assessment Area covering more than 20 hectares).

In addition to the above, the proposed residential development lies within the Deep Bay Buffer Zone 2 and is not “New Territories exempted houses”. Thus item P1 of Schedule 2 of the EIAO also applies.

In the early stages of the Project it was identified that as there is no public sewerage system in the area for the discharge of the domestic effluent, then the “No Net Increase Requirement for Deep Bay” would also apply.

However during the planning and assessment stage of the Project, and subsequent to the issue of the Study Brief, the Government has committed to the provision of a public sewerage system along Castle Peak Road which will include the Subject Site as one of its catchment. The Government has confirmed that the domestic effluent generated from this Site will be able to be discharged via the public sewer and thus the timing of the Project, the Comprehensive Development at Wo Shan Wai, has been phased to accord with the provision of this Government sewer. Hence item F4 is no longer a relevant component of this EIA.

E.3 CONTINUOUS PUBLIC INVOLVEMENT

From the outset, the Project Proponent has been committed to the Continuous Public Involvement (CPI) process in recognition of the fact that such an approach can assist in harmonious implementation of the Project as well as to minimize its undesirable environmental impacts. The CPI programme for this Project has included, but not limited to the involvement of community and conservation interest groups. The inputs and feedback on the development concepts and suggestions, particularly on the development and management issues associated with the wetland restoration, have been of particular value.

Informal discussions with Government Departments such as the Environmental Protection Department (EPD), Agriculture Fisheries and Conservation Department (AFCD), Drainage Services Department (DSD), Transport Department (TD), Planning Department (PlanD) and with local interest groups, Nature and Conservation Groups including Conservancy Association, Hong Kong Bird Watching Society, World Wide Fund for Nature, Kadoorie Farm and Botanic Garden, Green Power and international wetland experts have been fruitful and the feedback received has resulted in a more robust development plan. The Project Proponent will continue with the CPI process through the planning application stage and the construction stage to maintain harmonious relationship with the surrounding communities.

E.4 SCOPE OF THE EIA

The Scope of the EIA has been defined in the Study Brief and encompasses all technical assessments of air quality, noise, water quality, waste, ecology, fisheries and cultural heritage aspects during the construction and operation of the Project. In addition to which the landscape and visual impacts during and following the implementation of the Project are key focus of the EIA given the location and environment within which the development is proposed. The short and long term arrangements for the management and maintenance of the proposed wetland restoration are also a key focus of this EIA which includes consideration of the management and financial arrangements of the proposed wetland.

E.5 ASSESSMENT AREA

The Assessment Area is illustrated on [Figure E.1](#) shows the proximity of the Site to the Conservation Area, the fishponds adjoining the Site to the north, the Mai Po Egretty and the adjacent residential areas of Palm Springs, Wo Shang Wai Village and Royal Palms. These aspects all provide the context for the planning and development of the comprehensive residential development and wetland restoration at Wo Shang Wai.

E.6 DEVELOPMENT PLAN

The development plan has been conceived through detailed studies of the constraints and opportunities associated with the development site and interpretation of environmental and ecological baseline data collected for this EIA. The constraints and opportunities are illustrated on [Figure E.2](#). Opportunities include the fundamental prospect of improving the degraded environmental conditions and enhancing the community structure. Constraints include the proximity to the Conservation Area (CA) and its inherent imposition of avoiding disturbance both during and following construction of the development, the proximity to the San Tin Highway and the potential noise and vehicle emissions arising from the increasing number of vehicles using the road, the No Net Increase Requirement for Deep Bay and the visual character of the surrounding areas. The seemingly opposing requirements for residential development and wetland restoration have been carefully considered in the generation of a harmonious development plan, centred on ecological considerations.

E.7 SELECTION OF THE PREFERRED OPTION FOR THE TECHNICAL ASSESSMENTS

The development concept was essentially derived at the outset of the Project taking into consideration ecological, planning, landscaping and site constraints of the Site, which a “bubble diagram” has been generated [[Figure E.3](#). refers]. This sets out the development principles for the Site.

The “bubble diagram” not only provided a clear statement of the relationship of the Site with different characteristics of the surrounding area, but also set the framework for the relationship of the components to be included within the Site. The development concept has then evolved into site requirements with basic tenets of providing the residential developments as far from the Conservation Area as possible, minimization of the disturbance to the restored wetland through screening and buffering, and consideration of the permitted plot ratio in respect of the surrounding developments and skyline.

As the ecological data was gathered (both within the Project Area and in the Assessment Area during the period April 2005 through June 2006), alternative development arrangements were considered. The alternatives has taken into account of the bird flight path data for example, and considered the effects of such data in respect of various building heights and layout arrangements. Visual intrusion of the buildings in respect of the neighbouring developments was also considered. The extent of habitat loss due to development was also determined through the ecological surveys, from which the mitigation measures i.e. the wetland restoration area, was derived (taking into account of area, function and other relevant factors). A series of options were generated and appraised and ultimately an option was selected for

detailed assessment. This option struck the balance between the environmental, ecological, planning, engineering and management objectives, and is illustrated on [Figure E.4](#).

The Preferred Option was subject to detailed technical assessment as per the requirements of the Study Brief and included both construction and operational phases. Both the residential developments and the wetland restoration scheme were considered in totality as neither aspect could ignore the other.

E.8 PROGRAMME

The programme for the development has been scheduled to ultimately tie in with the provision of the public sewer along the Castle Peak Road. The intention is to commence construction in 2008 to allow an occupation date in 2013, i.e. when the public sewer will be commissioned by Government. The implementation programme is illustrated on [Figure E.5](#).

For the purposes of the EIA and technical assessments the construction can be subdivided into three main components i.e. site formation, construction of the residential developments and associated infrastructure (roads, drains etc) and wetland restoration.

E.9 SUMMARY OF CONCLUSIONS

The overall conclusion of the EIA is that the comprehensive residential development with wetland restoration at Wo Shang Wai offers an exciting opportunity to provide the required enhancement to the area, which is implicitly required under the statutory outline zoning plan. The creation of a wetland within the site boundary, yet screened from the residential developments, has been carefully planned and designed to not only mitigate for the ecological losses due to development of the existing site but also to enhance the biodiversity in the local area.

Through the planning and environmental studies which underpin this Environmental Impact Assessment (EIA) the Project has created a harmonious blend of high quality residential development and associated restored wetland.

The conclusions of the technical assessments are described below:

Ecological Impact Assessment: The ecological impact assessment has been based upon baseline survey data collected between April 2005 and June 2006, and supplemented with published data where appropriate. The dominant habitat within the Project Area has been found to be grassland derived from vegetative succession on land created by filling of fishponds during the early 1990s. Due to variation in topography, small areas (totally 0.69 ha) within the grassland hold water seasonally and function as seasonal marsh. A larger area (4.00 ha) holds water permanently and has evolved into a freshwater marsh habitat. The dominant plant species present is Phragmites, although vegetation management has prevented this from fully maturing into reed bed habitat. Faunal surveys recorded wetland-dependent species present within the seasonal marsh and freshwater marsh/reed bed habitats present in the Project Area.

Development of the Project Area would result in loss of 4.69 ha of wetland habitats (0.69 ha of seasonal marsh and 4.00 ha of freshwater marsh/reed bed) close to the Deep Bay wetland ecosystems. This would have potential impacts through loss of habitat for local fauna, especially foraging egrets (including birds breeding in local egretries). This habitat loss would be mitigated by the creation of a Wetland Restoration Area (WRA) of 4.74 ha to the north of the Project Area, adjacent to existing wetland habitats. Details of habitat creation and management in the WRA are described in the Wetland Restoration Plan. Creation of the WRA would result in no-net-loss in wetland within the Project Area and would allow for management of wetland habitats within the Project Area as well as integration of these with existing wetland habitats nearby. The loss of open storage within the Project Area is however considered an ecological gain.

Other indirect impacts have been predicted to result from disturbance to water birds in adjacent fishpond habitats and impedance of flight paths for birds flying over the Project Area. The avoidance and minimisation of these potential impacts have been addressed by designed features at the site, including the WRA at the northern edge of the Project Area and the design and layout of buildings within the residential area. Construction of the WRA has been scheduled at the commencement of the construction period not only to reduce the duration of disturbance impacts but also to minimise the duration of temporary habitat loss within the Project Area.

Ecological impacts arising from the development are envisaged to be fully mitigated by the proposed mitigation measures. No significant, long-term ecological impacts should arise from the proposed development at the Project Area.

Landscape and Visual Impact Assessment (LVIA): the close proximity of the residential developments at Palm Springs, Royal Palms, and Wo Shang Wai Village imply these are the most immediately affected sensitive receivers. From the surveys undertaken and the impact assessments conducted as part of this EIA as well as a result of the mitigation measures adopted (greening, landscape planning, building setback and landscape buffer etc.) it was concluded that during the operational phase, the outcome on the landscape resources would be insubstantial and that no negative residual impact would arise. Arising from the landscaping proposals there will be a net gain in the number of trees planted, in addition to the provision of around 4.7 hectares of restored wetland and associated planting. The residual visual impacts during the operational phase on almost all receivers will be insubstantial, the development will for the most part be screened by a belt of trees. The Project Proponent will continue the CPI program through the planning application stage and the construction stage to ensure the harmonious implementation relationship with the surrounding communities.

Fisheries Impact Assessment: For the avoidance of doubt, it should be noted that there will be no infilling of fishponds as a result of this proposed development. The proposed project will have no direct impact on the pond culture resources and activities. Indirect impacts on the existing aquaculture resources or activities as a result of water quality deterioration due to construction dust and site runoff will be insignificant with good site practices and implementation of dust and runoff control measures. No direct and indirect impacts on the pond culture activities in the brackish fishponds and inactive ponds around Mai Po are anticipated during both the construction and operational phases.

Air Quality: During the construction phase, fugitive dusts may be generated on-site. It is envisaged that with the implementation of appropriate on-site environmental management measures, this will not present any adverse impacts to the surroundings or nearby sensitive receivers. During operational phase, no adverse impact is anticipated, especially as there will be no on-site sewage treatment plant and therefore no source of malodour.

Noise: The noise impact associated with unmitigated construction activities of the proposed residential development together with the wetland restoration would cause exceedance of the daytime construction noise criterion at nearby NSRs during normal working hours. Therefore, adequate control measures have been recommended for the construction works in order to meet the standards required. Mitigation measures including the use of quiet plant, noise barriers and site hoarding are proposed to achieve the noise criteria.

The impacts from open storage site nearby have been assessed and no significant noise impacts to NSRs are predicted.

There is 100% compliance with the Noise Standards for Planning Purposes and the requirements set forth in the associated Technical Memoranda during the operational phase. This implies that all dwellings will comply with the traffic noise criterion despite the forecast increase in vehicle movements on the adjacent roads including San Tin Highway and Castle Peak Road in future.

Water Quality: the No Net Increase Requirement of Deep Bay is a constraint on the development of this site. However with the phasing of the implementation programme to tie in with the provision of public sewers means that the provisions of the No Net Increase will be fulfilled. Water quality impacts during the construction phase will be controlled through the implementation of good site practice. Once operational the water on-site in the restored wetland will be managed through a Wetland Restoration Plan with appropriate monitoring. The provision of appropriate site drainage including soft landscaping and measures to prevent incursion of surface runoff from roads into the restored wetland will further protect the water quality.

Sewerage and Sewage Treatment Implications: confirmation has been received from both the Environmental Protection Department and Drainage Services Department in respect of discharging the domestic effluent into the planned trunk sewer along Castle Peak Road. There will therefore be no further need for the provision of an on-site sewage treatment plant and the sewage generated from the development will be collected through the internal sewerage network and then discharged to this planned trunk sewer. There is therefore no (net) discharge from the Project Area.

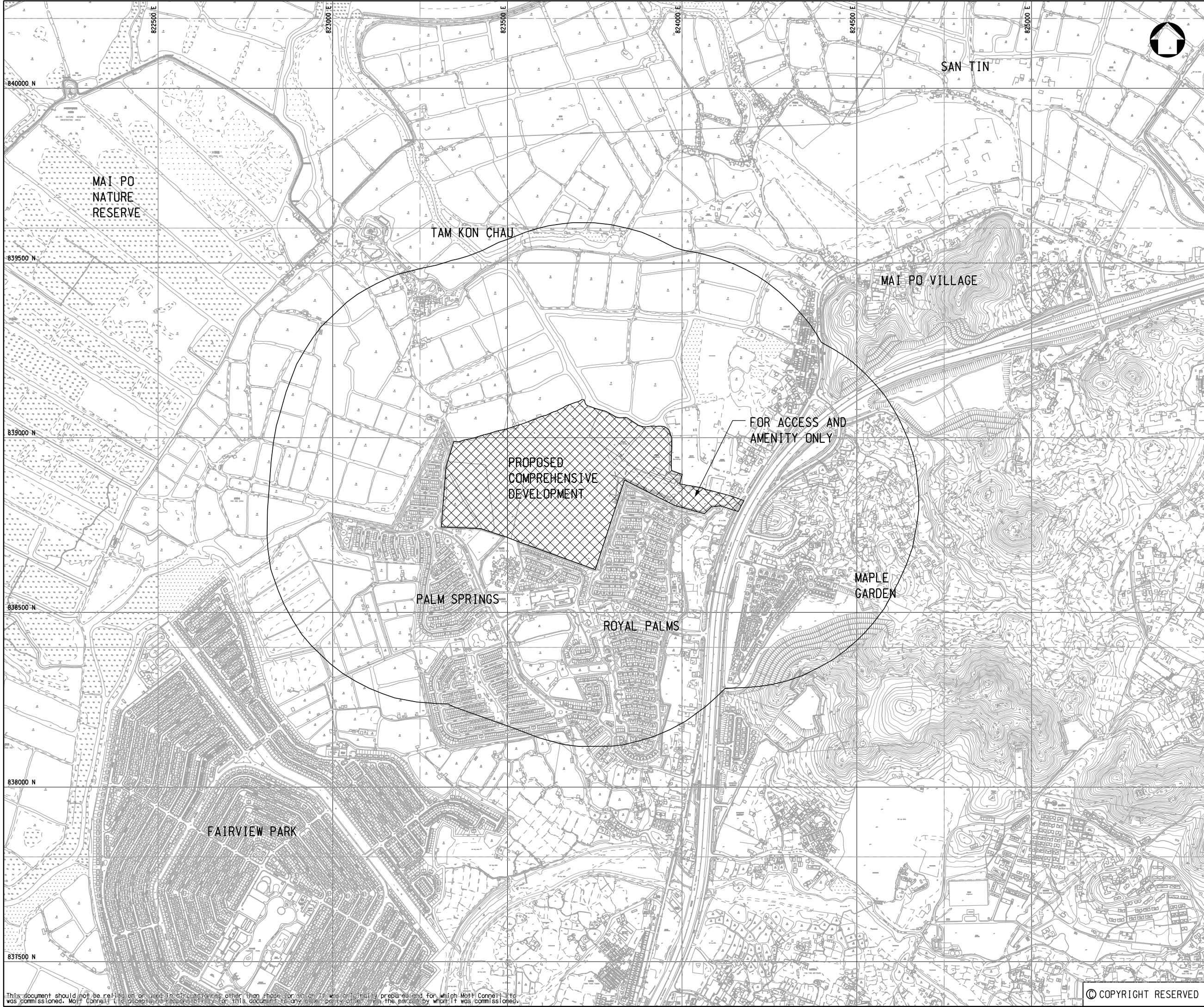
Waste Management: This Project will generate general construction and municipal wastes in the early stages of its construction. Provided good site management practices are adopted, it is not anticipated that there will be any adverse waste management issues associated with the residential development.

For bulk excavation at the wetland restoration area, no contaminated material will be excavated. Upon finalisation of the detailed design, the findings of the investigations should be presented in a Contamination Assessment Report (CAR) and the final remediation options should be presented in a Remediation Assessment Plan (RAP).



For bulk excavation at the wetland restoration area, around 2,140 m³ of Category M and Category H sediment will be excavated and disposed of or reused within the Project Area. If disposal at sea is adopted, a Sediment Quality Report will be prepared and submitted to the Authorities for approval. If reuse is to be adopted, the specific arrangements will be developed as part of the detailed design when a Contamination Assessment Report (CAR) and Remediation Assessment Plan (RAP) are prepared and submitted to the Authorities for approval.

Cultural Heritage: From surveys and examination of records, it has been confirmed that there are no declared or deemed monuments or graded historical buildings present in the Assessment Area. Most houses within the Mai Po Village and Wo Shang Wai Village are modern houses and their ancestral halls are located at least 100m from the development site. Fishpond features adjacent to the site are of low landscape sensitivity. No construction activities which could result in unacceptable vibrations are planned for the construction of the Project. Given the distance between the development site and the villages, there is no anticipated effect on cultural heritage resources.

FIGURES



LEGENDS:

-  ASSESSMENT AREA
-  PROPOSED COMPREHENSIVE DEVELOPMENT

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 PROFIT POINT ENTERPRISES LTD

Project:
 PROPOSED COMPREHENSIVE DEVELOPMENT
 AT WO SHANG WAI, YUEN LONG

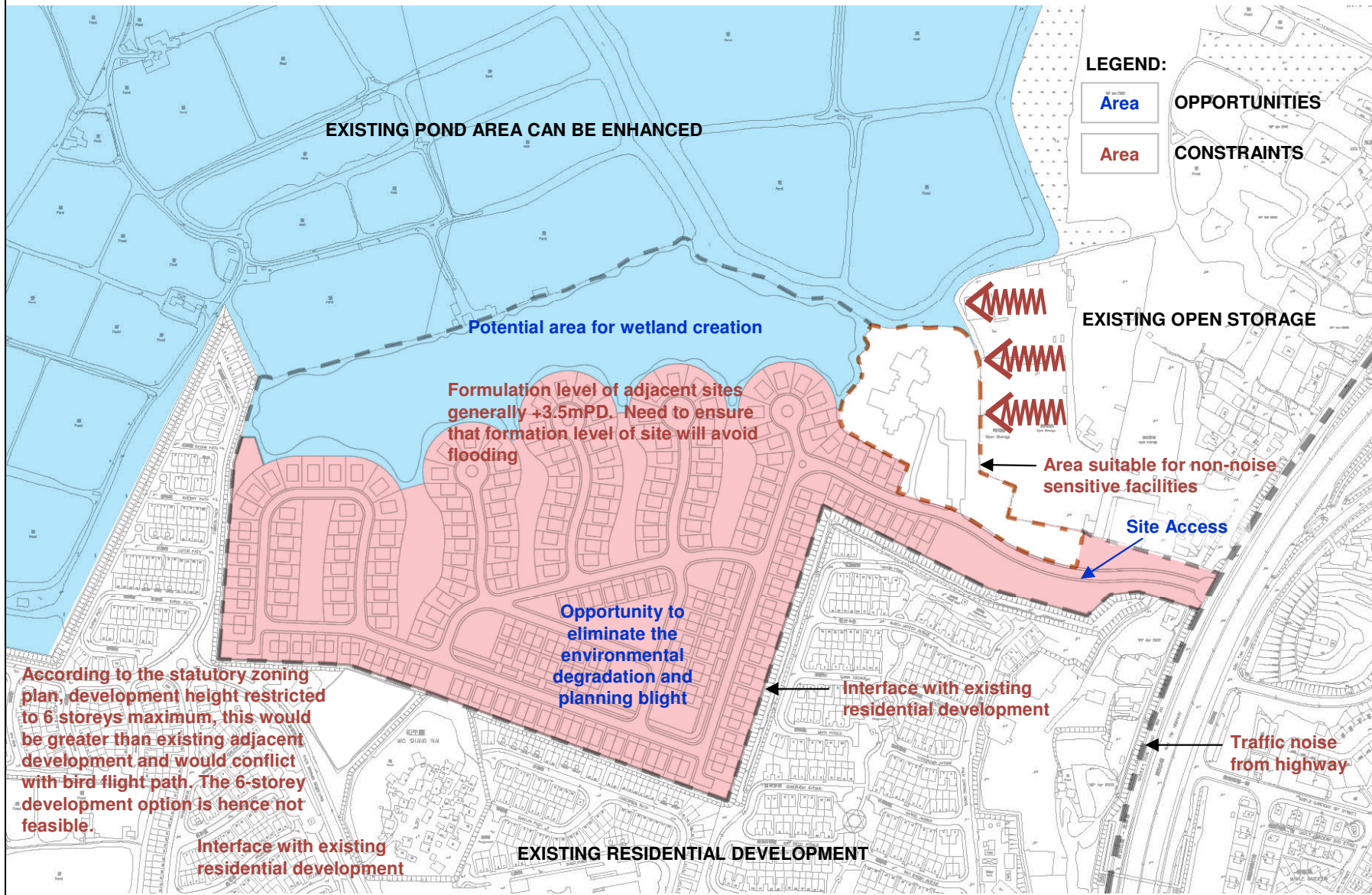
Title:
 LOCATIONS AND ASSESSMENT AREA OF
 THE PROPOSED DEVELOPMENT SITE

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| Designed | PW | Eng.Chk. | |
| Drawn | TSG | Coordination | |
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FIGURE E.1

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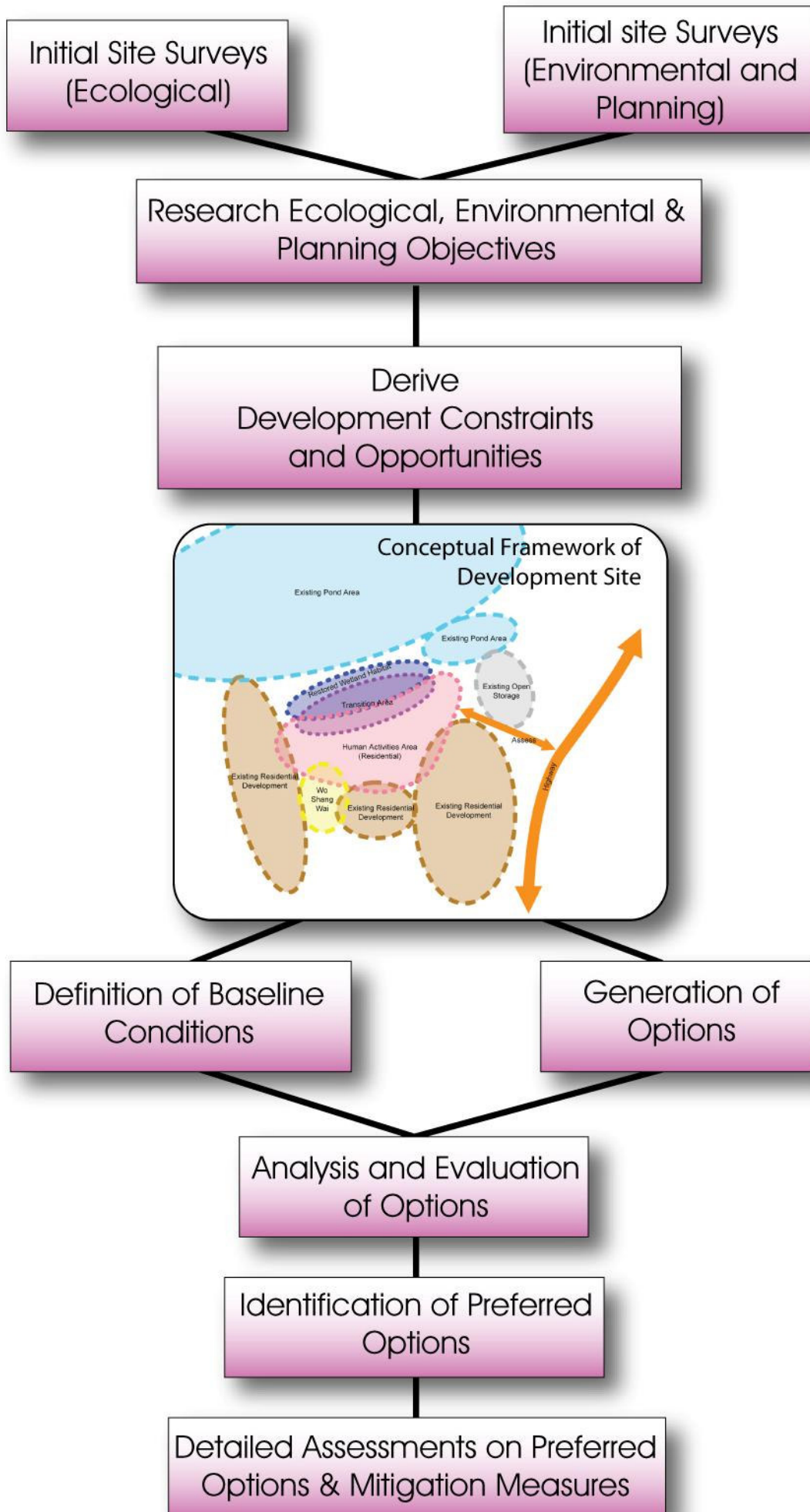
Project
 PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG

Title
DEVELOPMENT CONSTRAINT AND OPPORTUNITIES

| | | | |
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| Designed | | Eng. Chk. | |
| Drawn | | Coordination | |
| Dwg. Chk. | | Approved | |
| Scale | Project 221005 | Status | |
| | CAD File <small>SA\22005\CAD_ADMIN\MCL-22005-P-H-N.dwg</small> | | |
| Drawing No. | | Rev | |

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FIGURE E.3 GENESIS OF THE RESTORED WETLAND



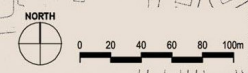


LEGEND

- SITE BOUNDARY
- 2.5/3 STOREY DETACHED HOUSE
- 2.5/3 STOREY DETACHED HOUSE
- 2.5/3 STOREY SEMI-DETACHED HOUSE
- 4 STOREY DUPLEX-ON-DUPLEX
- WETLAND RESTORATION AREA
- AMENITY WATER BODY
- TREE/WOODLAND VEGETATION
- CAR WASH SERVICE CENTRE

CLUB HOUSE

2.5/3 Storey Houses with Duplex-on-Duplex



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Project: **PROPOSED COMPREHENSIVE DEVELOPMENT AT WO SHANG WAI, YUEN LONG**

Title: **SKETCH MASTER LAYOUT PLAN
PREFERRED OPTION - 2.5/3-STOREY HOUSES WITH DUPLEX-ON-DUPLEX**

| | | | |
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| Designed | | Eng. Crk. | |
| Drawn | DK | Coordination | |
| Dwg. Crk. | CD | Approved | CD |
| Scale | Project 221005 | Status | |
| | CAD File | | |

Drawing No. **FIGURE E.4** Rev **B**

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Proposed Comprehensive Development at Wo Shang Wai, Yuen Long

Figure E.5 Implementation Programme

