# Project Profile 

for

## Proposed Cheung Sha Wan Wholesale Market Complex Phase II, Kowloon

## Reference : R0220-1.99

| Client | $:$ | Architectural Services Department <br> Government of the Hong Kong Special Administrative Region |
| :--- | :--- | :--- |
| Date | $:$ | February 1999 |

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## A. BASIC INFORMATION

A.1. Project Title<br>Proposed Cheung Sha Wan Wholesale Market Complex Phase II

## A.2. Purpose and Nature of the Project

The primary objective of this proposed Cheung Sha Wan Wholesale Market Complex Phase II (the Market) is to provide a permanent building structure to match up with the rapid increase wholesale market activities in Hong Kong. This building complex will be located next to the existing Cheung Sha Wan Wholesale Complex Phase I as shown in Figure A-1. Existing Cheung Sha Wan Wholesale Market Complex Phase I, the remaining wholesale marketing facilities in Cheung Sha Wan and Yau Ma Tei Fruit Market will be relocated and integrated into this proposed Market. Such single market practice will not only maximise the land use but also achieve the best land use effectiveness

The proposed Market will be a multi-storey building which consists of various provisions to facilitate different trading and operational needs. Table A-1 summarises the details of the provision of the proposed Market. Preliminary floor layout plans of the Market is enclosed in Appendix I for information.

Table A-I Tentative Schedule of the Cheung Sha Wan Wholesale Market Complex Phase II

| No. | Facility | Area (mi) | Location |
| :---: | :---: | :---: | :---: |
| Provision for Relocation of Existing Cheung Sha Wan Wholesale Market Complex Phase I |  |  |  |
| 1 | Vegetable market | 30,000 | Block 1- second floor |
| 2 | Egg market | 18,000 | Block 4 - ground floor |
| 3 | Fresh water fish market | 10,000 | Block 2 - ground floor |
| 4 | Fish Marketing Organization (FMO) markets | 7,000 | Block 3-ground floor |
| Provision for Relocation of Existing Yau Ma Tei Fruit Market |  |  |  |
| 5 | 2-levels fruit market | 60,000 | Block I - third \& forth floor |
| Provision for Relocation of Existing Cheung Sha Wan Poullry Market |  |  |  |
| 6 | 2-tevel poultry market | 36,000 | Block 4 - first \& second floor |
| 7 | Manual slaughtering facilities <br> future conversation into a central slaughtering house capable of slaughtering a maximum of 80,000 chicken per day | 7,000 | Block 3 - first floor |
| Future Provisions |  |  |  |
| 8 | Vegetable Marketing Organisation (VMO) | 23,000 | Block 1- first floor |
| 9 | Coid storage facilities (optional) | 7,000 | Block 3 - forth floor |
| 10 | Centralized inward delivery unloading area | 30,000 | Block 1 - ground floor |
| 11 | Parking, Administrative offices, amenity areas and vertical circulation areas | 59,000 | various locations |

Apart from the above facilities, the nature of the project will also include the followings:

- demolition of the existing Phase I market except the sea-water intake chamber/ pump room located at existing Link Block 3. The latter will be extended and modified to supply seawater cooling for the Phase II complex;
- provision of an electronic traffic control and parking management system for the efficient operation of the proposed Market;
- provision of an in-house sewage treatment plant and waste handling facilities;
- in house civil and infrastructure works to provide hardstanding area to accommodate the new structures, roadworks, drainage, sewerage, lighting, traffic aids \& utilities works;
- Construction of an additional pier for the fish market. The construction works for this pier will be carried out by Civil Engineering Department.

The existing Phase I market facilities will be maintained in operation throughout the course of the project and will be demolished only after the proposed Market been completed in operational condition.

In order to address the froit market trade's concern to have a streamline inward and outward delivery pattern, an alternative proposal for third and forth floor have been prepared to facilitate on-going consultation with the concern parties. Preliminary layout plans of the alternative design of the Market is enclosed in Appendix II for information. Final layout of the Market shall only be confirmed upon the acceptable of the third and forth floors design by concerned parties.

## A.3. Name of the Project Proponent

Architectural Services Department of the Hong Kong SAR Government

## A.4. Location and Scale of the Project

The proposed Market is located at the north-west of the existing Cheung Sha Wan Phase I Wholesale Market and occupies about 9.8 hectares. Location of the proposed market is shown in Figure A-1. The Market has good accessibility as it is bound by the recently opened West Kowloon Highway to the north and seafront to its south. There are numerous old industrial building across the West Kowloon Expressway towards the North. Most of these old development sites have been recently rezoned to comprehensive development area (CDA) to enhance future residential development proposals.

## A.5. History of Site

The proposed Market will be built on a flat land reclaimed in the carly 90 s and subject to drainage reserves, box culverts and a sewer rising mains.

The proposed Market is bound by existing sea wall on the west. To the north-west corner, it is bounded by drainage reserve which prohibits structures to be built-over.. It was also bisected by a 24 meters wide rising mains in the direction from east to west.

## A.6. Number and Types of Designated Projects to be Covered

According to Part $\mid$ Schedule 2 Section $N$ (Community Facilities) of the Environmental lmpact Assessment Ordinance (EIAO), this project is classified as a Designated Project. An Environmental Permit issued by the Director of Environmental Protection is required prior to the coustruction or operation of the Cheung Sha Wan Wholesale Market Phase II. In addition, an Environmental lmpact Assessment (EIA) is required as part of the EIAO requirement.

## A.7. Name and Telephone Number of Contact Person

Key personnel of the project is listed in Table A-2 for information.
Table A-2 Contact for the Key Personal of the Project

| Project Team | Company | Contact Person | Telephone <br> Number | Fax <br> Number |
| :---: | :---: | :---: | :---: | :---: |
| Project Proponent | Architectural Services <br> Department |  |  |  |
| Project Architect | Architectural Services <br> Department |  |  |  |
| Environmental <br> Consultant | EHS Consultants Limited |  |  |  |$\quad$|  |
| :--- |

## B. OUTLINE AND PLANNING IMPLEMENTATION PROGRAMME

The project will be implemented partly by the in-house resources of Architectural Services Department and partly by Consultants. In view of project size, type and fast track programme required. Design and Build form of contract will be used.

The EIA study will be started in early 1999 and to be completed by end September 1999. The project construction is expected to be commenced in October 2000 and to be completed and commissioned by early 2004.

## C. POSSIBLE IMPACT ON THE ENVIRONMENT

## C.1. Construction Phase

## C.1.1.Fugitive Dust Impact

Fugitive dust emission is likely to be the only main air quality pollutant upon the sensitive receivers during the construction phase of the proposed Market.

## C.1.2.Construction Noise Impact

Construction noise comes from the use of powered mechanical equipment (PME) for the construction of the market building structure will be the dominant source of nuisance. It is not anticipated that the noise level to exceed the daytime construction noise guidelines of $75 \mathrm{~dB}(\wedge)$ at any of the sensilive receivers.

## C.1.3.Water Quality Impact

Site construction activities will inevitably have the potential to generate wastewater. Construction runoff contains increased loads of sediments, other suspended solids and contaminants. Potential sources of pollution include runoff and erosion from the site surfaces, drainage channels: Bentonite slurries and other grouting materials, unused batching washout and drainage from dust suppression sprays, fuel. oil and lubricants from construction vehicles and other equipment.
The main process will be initial dredging works, if necessary, to prepare a suitable bed on which to lay the foundation of the pier. Pre-cast concrete blocks will be laid to form the pier and once complete, fittings will be attached. Dredging of marine deposits may increase suspended solid content in the water column. It is likely that suspended solids generated will be low in the vicinity of the site.

## C.2. Operational Phase

## C.2.1.Air Quality Impact

Odour
Nuisance of odour is expected to be generated from mainly the poultry loading/unloading area. poultry stalls, market stalls, poultry slaughter house and the Refuse Collection Points (RCP) within the proposed Market. Specifically, the odour source will come from the poultry's excretion and waste, the slaughtering of poultry and the generic smell of the poultry themselves. The odour constituents for a poultry market environment include mainly aerial emission of ammonia, sulphur compounds, organic (acids, aliphatic and alcohol's) and amines.

Only minor odour impacts will be generated from the wet and dry wastes collected from the fruit/vegetable/fisl//egg market. The RCPs on the poultry market floors are expected to be strong in
odour as waste generated from the poultry market is generically more odorous. These odorous air will likely to create nuisance to the environment if discharged untreated.

Industrial Air
To serve various operations or building services facilities of the Market, either a furnace, an oven, a chimney, or a flue will be installed. Air generated from these heating facilities will create air quality impact to surrounding air sensitive receivers.

## Vehicular Emission

Emission from heavy diesel goods vehicles within various parking levels of the Market.

## C.2.2.Water Quality impact

Effuent and wastewater are expected to be generated from all the markets stalls (fish, vegetable, fruit and poultry), poultry slaughter house, loading/ unloading area and from general foor cleaning of the proposed Market. Effluent generated from bleeding area of the poultry slaughter house will be particularly high blood-contaminated as animal blood contains a high content of organic matters and nutrients.

## C.2.3.Industrial Noise Impact

Industrial noise impact from the proposed Market operations including the loading/unloading of merchandises and poultry by barges and lorries during the operation hours, squealing noise from the animals during various process associated within the slaughter house operations, the public amouncement system, building services installations, central mechanical ventilation system. traffic movement within the proposed Market and waterfront operations.

## C.2.4.Traffic Noise Impact

Thaffic flow generated by the proposed Market include incoming, delivery and outward despateh of goods due to the operational requirements of the proposed Market. In any case, the West Kowloon Highway is stiłl considered as the dominant noise source to create impact upon surrounding noise sensitive receivers.

## C.2.5.Waste Management

A large amount of contaminated packaging materials will be generated due to the operational procedures and business nature of the Market. Manure from poultry holding areas, blood and offal generated from the killing area, dead and diseased animal carcasses is expected within the proposed Market areas. Screen rejects from the sewerage treatment plant shall be another major source of waste.

## C.2.6. Visual impact

The development of the Cheung Sha Wan Wholesale Market Phase II will create visual impact upon the nearby visually sensitive areas.

## D. MAJOR ELEMENTS OF THE SURROUNDING ENVIRNOMENT

Existing and planned land use in the vicinity of the Market are considered as sensitive receivers during construction and operational phase of the project. Affected etements of the surrounding -. environment due to this project can be classified into 3 types: the existing, planned sensitive receivers. and the existing and relevant past land use. Their details are as follows:

The existing sensitive receivers and sensitive parts of the natural environment which might be affected by the proposed project include:

- nearby development including the adjoining Phase I Market and the Yuen Fat Wharf \& Godown;
- West Kowloon harbour front;
- Sea water intakes are the water sensitive receivers

The planned sensitive receivers and sensitive parts of the natural environment which might be affected by the proposed project include:

- the as-planned Yen Chow Street KCRC/MTRC Station \& development;
- others to be identified under the Study include future developments on the other side of West Kowloon IIighway.
The existing and relevant past land use on site which might affect the area in which the project is proposed to be located includes:
- The site is zoned as GIC on the OZP and has been earmarked for a wholesale market;
- The site is currently used for temporary facilities and will be available for development when required for construction on October 2000.


## E. ENVIRONMENTAL PROTECTION MEASURES

## E.1. Construction Phase

## E.1.1.Fugitive Dust Impact

The contractor of the project shall follow the requirement as stipulated in the Air Pollution Control (Construction Dust) Regulation and implement the necessary dust suppression measures to reduce the fugitive dust impact within the Air Quality Objectives at the sensitive receivers.

## E.1.2.Water Quality

Construction works shall be programmed to minimise soil excavation works in rainy seasons. A series of sill removal facilities shall be installed to settle siltation prior to discharge. Such facilities shall be properly designed in accordance with guidelines from the Civil Engineering Department to achieve the desired mitigating effect on the water quality. Typically, a detention time not less than 5 minutes for maximum design flow of inlet shall achieve adequate sediment removal. Channels or earth bunds or sand bag barriers shall be provided on site to properly direct surface runoff to such silt removal facilities. Sediment traps, channels and manholes shall be maintained and the deposited silt and grit shall be removed on regular basis.

The future contractor will adopt the use of a silt curtain to screen the surrounding area from the elevated suspended solids generated by dredging. The contractor will require to use a grab capable of taking contained buckets of sediments without leakage, for the duration of the dredging works.

A water quality EM\&A programme shall be specified to identify and control water parameters (SS, DO and turbidity) during construction of the pier. The programme includes the collection of data prior to and during the construction works. Careful on-site management procedures shall also be strictly implemented through contract clauses.

Sewage generated from the construction workers shall be contained by chemical toilets before connection to public foul sewer can be completed. These toilets shall be provided at a minimum rate of about 1 per 50 workers. The facility shall be serviced and cleaned by specialist contractor at regular intervals. To prevent spillage of fuel oils or other poiluting fluids at source, it is *. recommended that all the stocks shall be stored inside proper containers and sited on sealed areas.

## E.1.3.Noise /mpacts

With the implementation of appropriate and sufficient noise mitigation measures, it is envisaged that the potential construction noise impact can be substantially minimised. The effectiveness and continuous implementation of noise mitigation measures shall be checked by a noise monitoring and audit programme which can help protect the nearby noise sensitive receivers through the provision of regular feedback to the contractors. Restrictions on works during the examination period will be imposed unless the contractor could demonstrate that there shall be no insurmountable noise impact.

## E.1.4. General Management

As a general guidance, the contractor shall maintain high standard of housekeeping to prevent cmission of fugitive dust emission. Loading, unloading, handling and storage of building materials and debris shall be carried out in a manner so as to minimise the release of visible dust emission.

A high standard of housekeeping shall be maintained. Any piles of debris accumulated on or around the work areas shall be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas shall be carried out in a manner without generating fugitive dust emissions. The material shall be handled properly to prevent fugitive dust emission before cleaning.

An environmental monitoring and audit programme can be drawn up to monitor the construction air and noise impacts in order to enforce effective controls and modify methods of works to reduce the emission down to as minimum as practicable.

## E.2. Operational Phase

## E.2.1.Air Quality

## Odour

In order to remove the odour nuisance to the traders within the proposed Market and the surrounding sensitive receivers, a centralised air pollution treatment system for each market component shall be installed.

Within the Market, an air change rate of 15 ACPH for the market stalls shall be provided by the system. Due to the high intensity of warm air generated in the slaughtering operation, a maximum of up to 40 ACPH for the slaughter house will be required. Different operational modes of the ventilation system shall be made available to reduce running costs. Fresh air intake portals for mechanical ventilation shall be located at positions away from the busy roads. Exhaust(s) of the mechanical ventilation shall be towards the main roads to minimise any potential air nuisance on the nearby air sensitive receivers and pedestrians. Normal practice of the exhaust(s) is 5 m above ground and 10 m away from any other exhausts.

The air pollution treatment system shall be able to reduce the cumulative odour impacts at the air sensitive receivers to meet the assessment criteria of 5 odour units based on an averaging time of 5 seconds. For odour monitoring, 2 odour units at the receptors shall be the criteria for odour nuisance.

## Car Park Ventilation

A velicle ventilation system complied with the air quality standards as stipulated in the EPD's ProPECC Note PN2/96 shall be installed for all the parking areas within the proposed Market.

## Specified Process

Rendering works in which the process capacity exceeds 250 kg per hour and in which rendering or reduction or drying through application of heat, or curing by smoking, of animal matter is carried out is classified as a Specified Process. If any processes mentioned above will be carried out within the Slaughter House as a by-product operation line, a specified process license shall be obtained from E.PD prior to such process being operated.

## E.2.2.Water Quality

Wastewater generated from all operational processes and loading/unloading area of the Market should be treated before being discharged into government sewers for ultimately final disposal. The treated effluent discharge standards shall comply with EPD's Technical Memorandum "Standards for Effluents Discharged into Drainage and Sewerage System, Inland and Coastal Waters". An-house treatment system within the Market shall be of at least secondary treatment level and comprise of a series of coarse and fine screens,. grease traps and gravity separator system and sequencing batch reactor including sludge dewatering, storage and disposal.

Independent drainage system shall be provided for each market floor to prevent passage of effluent through other marketing space. Petrol interceptors shall be provided for surface run-off of all the parking area within the Market, prior to connection to public sewer.

The opportunities of minimising wastewater arising from the operation of the slaughter house and the general floor cleaning shall also be studied. This may inciude recycling or reuse of the treated wastewater for operations within the Market and propose management and operation practice that could help minimise the wastewater at source.

## E.2.3.Industrial Noise Impact

Noisy operations or activities shall be located at semi-enchosed or even totally enclosed area of the proposed Market as far as operational practicable. If necessary, properly noise barrier or enclosure shall be incorporated into the design of the proposed Market. Locations of ingress and egress points of the proposed wholesale market shall be evaluated to minimum noise impacts on noise sensitive receivers.

## E.2.4.Waste Management

It is estimated that a large amount of packaging waste will be generated from the Market. Due to the operational procedures and business nature of these stalls, the packaging waste will not likely be reusable. Disposal at landfill site will be the ultimate treatment methods for these wastes.

Manure from poultry holding areas, blood and offal generated from the killing area. dead animal carcasses and diseased animal carcasses will need to be properly stored in a designated area prior to being transported to landfill or central incineration facilities for final disposal to prevent food hygiene problems.

An effective waste collection and disposal method and programme should be established within the Market. Sufficient waste collection bins shall be located within all levels of the Market. All the waste collections bins should be liftable by the waste collection vehicles for easy handing. Extensive transport of waste within the market should be avoided or minimised as far as practicable. The type of wastes that need to be disposed of at the Centralised Incineration Facility should be separated from the main stream wastes with due regards must be made to avoid crosscontamination of non-contaminated carcasses by cleaning and disinfection of vehicles. Any other lypes of waste will eventually be transferred to a landfill site through the West Kowloon Refuse Transfer Station.

## E.3. Visual Impact

The proposed Market shall be designed to soften any possible impacts and to blend on thesurroundings.

## E.4. Health and Safety Pian

Sound and regular "housekeeping" shall be exercised to maintain the integrity of the proposed Market. All the identified health and safety issues shall be documented by a method statement and be supported by a health and safety plan, which is cross-referenced to relevant health and safety procedures implemented locally and internationally.

## E.5. Environmental Management Plan

In order to oversee the effectiveness of the proposed controls measures during the operation phase of the Market, an Environmental Management Plan (FMP) shall be derived. The EMP should develop as an extension of the management operations and the plan will assure complance with all the existing legislation in Hong Kong and environmental policy world-wide. The EMP shall include the monitoring and audit requirements during construction and operational phase of the Market.

All relevant operational requirements in the EMP shall be incorporated into the contractual agrecment between the Government and the future operator of the Market for implementation. This plan will need to be reviewed and revised at regular intervals by the management of the Market's operator.

## F. USE OF PREVIOUSLY APPROVED EIA REPORTS

No previously approved EIA reports is found to be relevant to this proposed project.

## Appendix I

## Preliminary Layout Plans <br> of

the Cheung Sha Wan Wholesale Market Complex Phase II
*
BLOCK PLAN
(MULTI-LEVELS MARKET DEVELOPMENT)



FIRST FLOOR PLAN
(MULTI-LEVELS MARKET DEVELOPMENT)
METER Imumulilo ${ }^{\circ}$
(MULTI-LEVELS MARKET DEVELOPMENT)



## Appendix II

## Alternative Layout Plans for $3^{\text {rd }}$ and $4^{\text {th }}$ Floors <br> of

the Cheung Sha Wan Wholesale Market Complex Phase II
STALLS' CALCULATION

$$
\frac{\text { REQUIRED }}{\text { DEEP } \times \text { WIDE }}
$$

$$
\text { DEEP } \times \text { WIDE }
$$

$(11 \times 10)$
$(8 \times 10)$
( $5 \times 11$ )
$\stackrel{1}{4}$
THIRD FLOOR PLAN (FRUIT MARKET ALTERNATE DESIGN) (MULTI-LEVELS MARKET DEVELOPMENT)


$$
\begin{aligned}
& \text { total. }
\end{aligned}
$$


METER 1


