

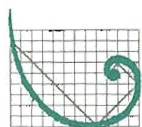
Meinhardt Management Asia Ltd

EIA Executive Summary
*HAECO/HAESL Facilities at
Tseung Kwan O*

30 March 1998

CONSULTING SERVICES BY ENVIRONMENTAL RESOURCES MANAGEMENT

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ERM

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Reference C1441

For and on behalf of ERM-Hong Kong, Ltd

Approved by: FREEMAN CHEUNG

Signed: 

Position: Deputy Managing Director

Date: 30 March 1998

This report has been prepared by ERM-Hong Kong, Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and other in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

INTRODUCTION

ERM-Hong Kong, Ltd (ERM) was commissioned by Meinhardt Management Asia Ltd (Meinhardt) to provide environmental services associated with the development of a new facility for the Hong Kong Aircraft Engineering Company (HAECO) and Hong Kong Aero Engine Services Ltd. (HAESL). An Environmental Impact Assessment (EIA) was conducted to identify and evaluate any environmental impacts that will arise from the construction and operation of the Tseung Kwan O Aircraft Overhaul Division (the facility) and, where appropriate, to recommend mitigation measures to reduce those impacts to acceptable levels. As part of this assessment, impacts have been compared to pertinent standards with which the construction and the operation of the proposed facility must comply.

This EIA Executive Summary presents a summary of the findings of the EIA Study of the construction and operation of the Tseung Kwan O Aircraft Overhaul Division.

PROJECT DESCRIPTION

The proposed facility will be constructed as part of the second phase (Phase II) of the replacement of the existing HAECO/HAESL facilities at Kai Tak Airport. The first phase (Phase I) was the construction of the Aircraft Engine Test Cell which is located adjacent to the site of the proposed Phase II facility. An additional facility is also being developed by HAECO at the new Chek Lap Kok Airport.

The proposed facility is being developed on a reclamation at the southern end of the Tseung Kwan O Industrial Estate where the northeast coast of Junk Island meets the reclamation. The location of the site is presented in *Figure 2a*. Chai Wan, on Hong Kong Island, is about 2.5 km to the south of the site beyond Junk Island and Victoria Harbour. To the west, at a similar distance on the other side of Junk Bay, there are various scattered dwellings and villages. The South East New Territories (SENT) landfill is located to the east of the site. To the north at a distance of about 3 km, is the Tseung Kwan O new town development.

The nature of activities to be carried out at the Phase II facility will be broadly similar to many of those carried out in the existing facilities at Kai Tak. The proposed facility will support the maintenance requirements of major international air passenger carrier fleets. Principal activities to be undertaken will include aircraft engine mechanical and avionic component inspection and overhaul. These activities will be undertaken mainly in a Chemical Plating Workshop, a Chemical Cleaning Workshop, a General Machinery Shop, Rework and Inspection facilities, Component Test Cells, a Non-Destructive Testing (NDT) Workshop, and General Workshops which will all be included within the facility.

3 NOISE IMPACT

3.1 CONSTRUCTION PHASE

As the proposed facility will be constructed primarily on reclaimed land, there will be little necessity for site clearance or site excavation, although foundation and building superstructure construction may have the potential to create noise impacts at the Noise Sensitive Receivers (NSR), particularly if evening and nighttime works are required.

The construction noise assessment, using a conservative worst case scenario assuming simultaneous operation of all the construction equipment, indicates that the construction noise complies with all applicable noise criteria.

3.2 OPERATIONAL PHASE

The principal sources of noise that will be generated by the proposed facility will be the workshops, component test cell and plant rooms located mainly on the ground and second floors and the Air Handling Units (AHUs) and chiller units mounted on the building roof. Noise generated by the proposed facility will add to noise generated from the Aircraft Engine Test Cell (Phase I), which is situated adjacent to the facility.

The cumulative noise impact from the two facilities at the NSRs has been evaluated and the predicted noise levels are well within the relevant criteria of the *Hong Kong Planning Standards and Guidelines*.

4 WATER QUALITY IMPACT

4.1 CONSTRUCTION PHASE

Potential sources of impact to water quality to arise from the construction of the proposed facility will include construction site runoff and sewage from the construction workforce, which are typical of other land-based construction activities.

It is considered that proper site management, good site practice and the implementation of suitable mitigation measures will prevent the entry of potential pollutants into Junk Bay and hence no water quality impact will be caused by the construction activities.

4.2 OPERATIONAL PHASE

The operation of the proposed facility will generate a range of effluents and liquid wastes with the potential to cause water quality impacts. They can be broadly categorised as follows:

- metal processing and finishing effluent;
- other workshop effluents;
- kitchen effluent; and
- sewage effluent.

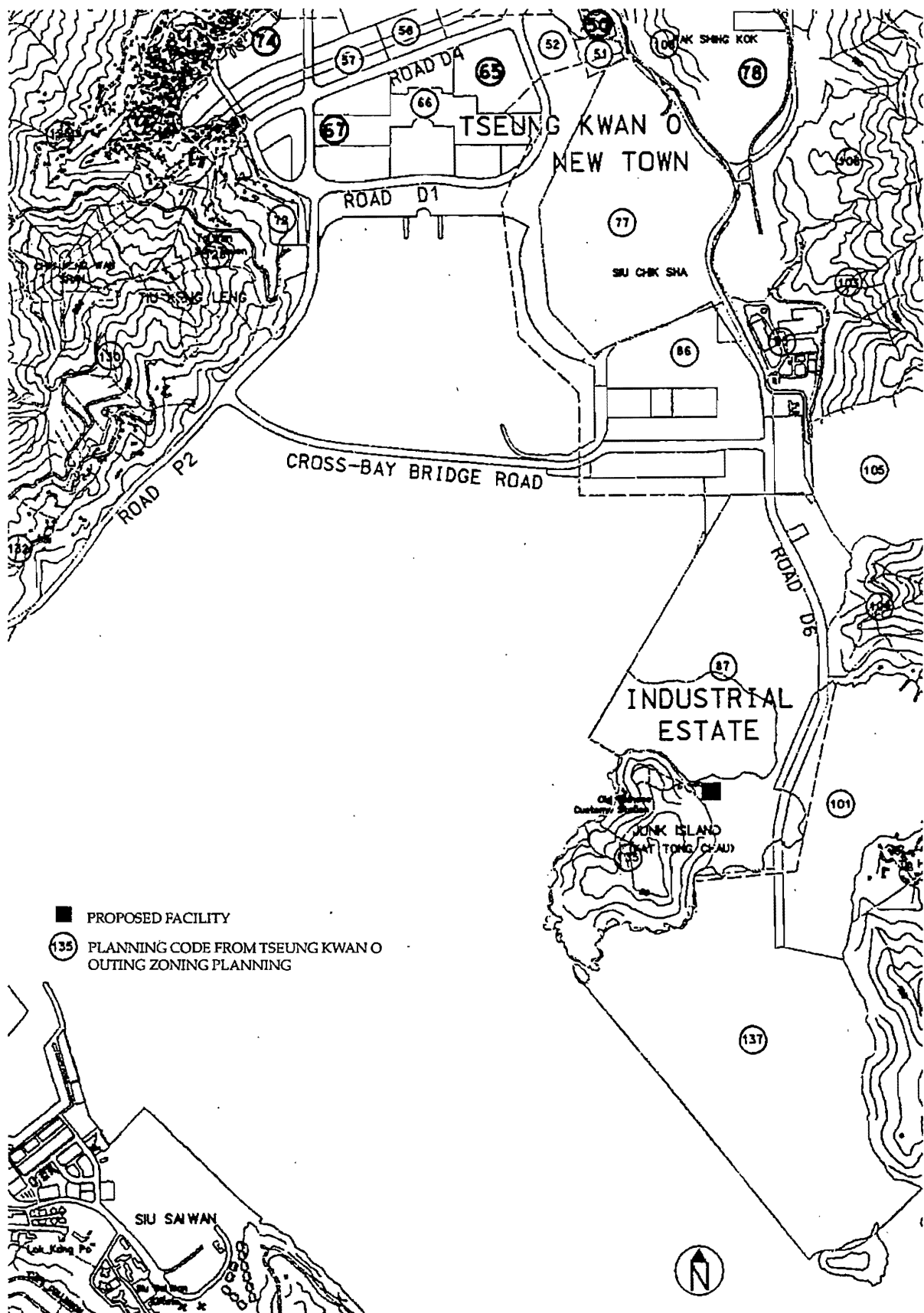
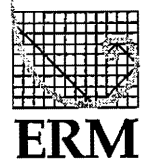


FIGURE 2a - SITE LOCATION AND SURROUNDING LAND AREA

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 Hong Kong



The drainage system of the proposed facility has been designed to segregate effluents at source, thereby ensuring that each is treated to an appropriate standard. Segregated effluents will be treated according to the characteristic of the waste stream, prior to their disposal. Concentrated industrial effluent will be collected and transferred to a licensed off-site facility for treatment prior to disposal. Less concentrated industrial effluent will be treated in on-site treatment facilities before being discharged to sewer. Regular monitoring is recommended to ensure that the quality of the treated effluent complies with the relevant standards and discharge licence conditions. Domestic sewage and kitchen wastewater will be directed to the public foul sewer.

5 *AIR QUALITY IMPACT*

5.1 *CONSTRUCTION PHASE*

Potential air quality impacts associated with construction work are dust nuisance and emissions from construction equipment.

As most of the site formation works have been completed, dust nuisance from this type of activity is not anticipated. Other construction activities (foundations, building of superstructure, steelfixing and concreting) do not generate large amounts of dust and therefore unacceptable levels of dust are not anticipated.

5.2 *OPERATIONAL PHASE*

The principal activities to be conducted at the proposed facility are refinishing and trimming, aircraft component inspection and maintenance, and engine inspection and overhaul. Potential air pollutants associated with these activities include:

- volatile organic compounds (VOCs) which are used in chemical cleaning and painting and include, degreasing solvents, thinners and fuel residues;
- acids and heavy metals which result from chemical cleaning and plating operations; and
- dust and metal particulates which result from sand blasting of aircraft components for the removal of rust and paint.

Spray painting will be carried out in a spraying booth at negative pressure and hence emissions to the atmosphere will be limited. Sand blasting operations will be performed with an extraction system equipped with a cyclone precipitation and filtering device, which prevents emissions of dust and particulates. The facility will be equipped with a total 16 independent scrubbing systems specifically designed to cater for the emissions from each individual process.

Adverse air quality impacts on the Air Sensitive Receivers are not anticipated.

SOLID WASTE MANAGEMENT

6.1

CONSTRUCTION PHASE

Activities during the construction phase of the proposed facility will result in the generation of a variety of wastes including excavated material, general construction waste, general refuse and limited quantities of chemical waste.

Excavated materials should not result in unacceptable environmental impacts because they are inert and relatively low volumes will be produced. If the recommended mitigation measures as discussed in the EIA are used, the levels of impact will be acceptable.

Quantities of chemical wastes arising from the maintenance of construction plant and equipment are expected to be very low. Given proper handling, the prevention of spills and delivery to a licensed chemical waste treatment facility, no adverse environmental impacts should occur.

Provided that the recommendations as presented in the EIA report are implemented, no adverse waste-related environmental impacts are envisaged as a result of the storage, handling, collection, transport and disposal of wastes arising from the construction of the proposed facility.

6.2

OPERATION PHASE

The handling, storage, collection and disposal of general waste, chemical wastes and industrial wastes during the operation of the facility has the potential to create environmental impacts.

No impacts arising from general and industrial waste are envisaged, provided that recyclable wastes are separated for recycling and all other wastes are handled by reputable haulers authorised to collect general waste and industrial waste.

Chemical wastes will arise from the operation of the proposed facility but should not cause adverse environmental impact provided that the relevant legislation and guidelines of the handling, storage, collection and disposal of the chemical wastes are strictly followed.

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CONCLUSIONS

Potential environmental impacts associated with the construction and operation of a proposed aircraft maintenance facility, the Tseung Kwan O Aircraft Overhaul Division, have been identified and assessed. Impacts with respect to noise, water quality, air quality and solid waste management have been considered. In all cases, provided the implementation of various mitigation measures, impacts are predicted to be acceptable.