

Highways Department

Agreement No. CE46/97
Environmental Impact Assessment
Study for Footbridge and
Improvements to Ap Lei Chau
Bridge Road & Ap Lei Chau Drive :
Executive Summary

5 January 1999

Reference C1765/97409

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1 INTRODUCTION

1.1 PREAMBLE

Highways Department proposes to improve the traffic condition at Ap Lei Chau Bridge Road and Ap Lei Chau Drive. It includes junction improvement at Ap Lei Chau Bridge Road/Ap Lei Chau Drive, Ap Lei Chau Drive/Lei Tung Estate Road and Ap Lei Chau Drive/Ap Lei Chau Coastal Road, widening of Ap Lei Chau Drive and construction of a footbridge at the western approach of Ap Lei Chau Bridge Road to replace the existing at-grade pedestrian crossing. These works are included in the Public Works Programme Item No. B130TB - "Footbridge and Improvements to Ap Lei Chau Bridge Road and Ap Lei Chau Drive" (hereinafter called "the Project").

Following the completion of a Preliminary Environmental Review in July 1996, it was concluded that traffic noise impact arising from the Project would affect the adjacent sensitive receivers. An Environmental Impact Assessment (EIA) Study for the Project is required to further investigate the noise and associated issues. ERM-Hong Kong Ltd, in association with Maunsell Consultants Asia Ltd, have been commissioned by the Highways Department to undertake the EIA to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project.

This Executive Summary highlights the issues of concern to the community and residual environmental impacts. It also recommends mitigation measures and requirements for implementation of the Project.

1.2 STUDY AREA

The boundary of the "study area" for the purpose of the noise assessment is 300 m from either side of the individual work areas. However, as some of the first layer of noise sensitive receivers (NSRs) provide adequate acoustic screening to NSRs located further away, this distance is reduced where appropriate.

Figure 1.2a shows the extent and the limit of the proposed road works. The current programme indicates that construction is expected to commence in March 2001, with a 20 month construction schedule proposed. Completion of the Project is therefore expected at the end of October 2002.

1.3 STRUCTURE OF THE EXECUTIVE SUMMARY

After this introductory section, the remainder of the report is arranged as follows:

- Section 2 described the identified impacts arising from the construction works for the Project;
- Section 3 described the identified impacts arising from the operation of the Project; and
- Section 4 discussed the implementation requirements during the construction and operational phases of the Project.

2.1 BASELINE CONDITIONS

Sensitive land uses in the vicinity of the Project mainly consist of government/institution/community uses, high-rise residential premises including Yue On Court, Lei Tung Estate and the planned residential development along Ap Lei Chau Drive; and commercial/residential uses along Main Street, Ap Lei Chau.

The existing environment is mainly affected by the traffic on Ap Lei Chau Bridge Road, Ap Lei Chau Drive, Ap Lei Chau Praya Road and other roads in the vicinity of the Project. No industrial uses are identified within the study area and thus traffic on this road network is considered to be the dominant source of noise and air pollutants.

As there are no air quality monitoring stations located in the study area, monitoring results obtained from the nearest monitoring station operated by the Environmental Protection Department positioned at Central/Western District are used to reflect the background air quality. A summary of the monitoring results for year 1996 is given in *Table 2.1a* below.

Table 2.1a Annual Average of Air Pollutants Monitored at Central/Western District in 1996 ($\mu\text{g m}^{-3}$)

Pollutant	Concentration
Total Suspended Particulates	87
Respiratory Suspended Particulates	52
Nitrogen Dioxide	47
Carbon Monoxide	1100 ⁽¹⁾

Note: ⁽¹⁾ Carbon Monoxide was not monitored at Central/Western District, the data obtained was from Mongkok Station monitored at ground level.

It is anticipated that the future environment will still be affected and dominated by road traffic. With the operation of the future Ap Lei Chau North Coastal Road and the increased volume on Ap Lei Chau Bridge Road and Ap Lei Chau Drive, the level of noise and air pollutants within the local area will be moderately affected.

2.2 NOISE

2.2.1 Unmitigated Impacts

The most polluting construction activities include excavation works during drainage and road construction, retaining wall construction and footbridge construction. Road paving will also cause noise impacts on the nearby sensitive receivers.

Owing to the proximity of construction works, NSRs such as the Harbour Mission Church and Yan Oi Kindergarten, Hong Kong True Light College, Ap Lei Chau

- KEY
- PROPOSED DRIVEADWORKS
 - █ PROPOSED FOOTPATHS

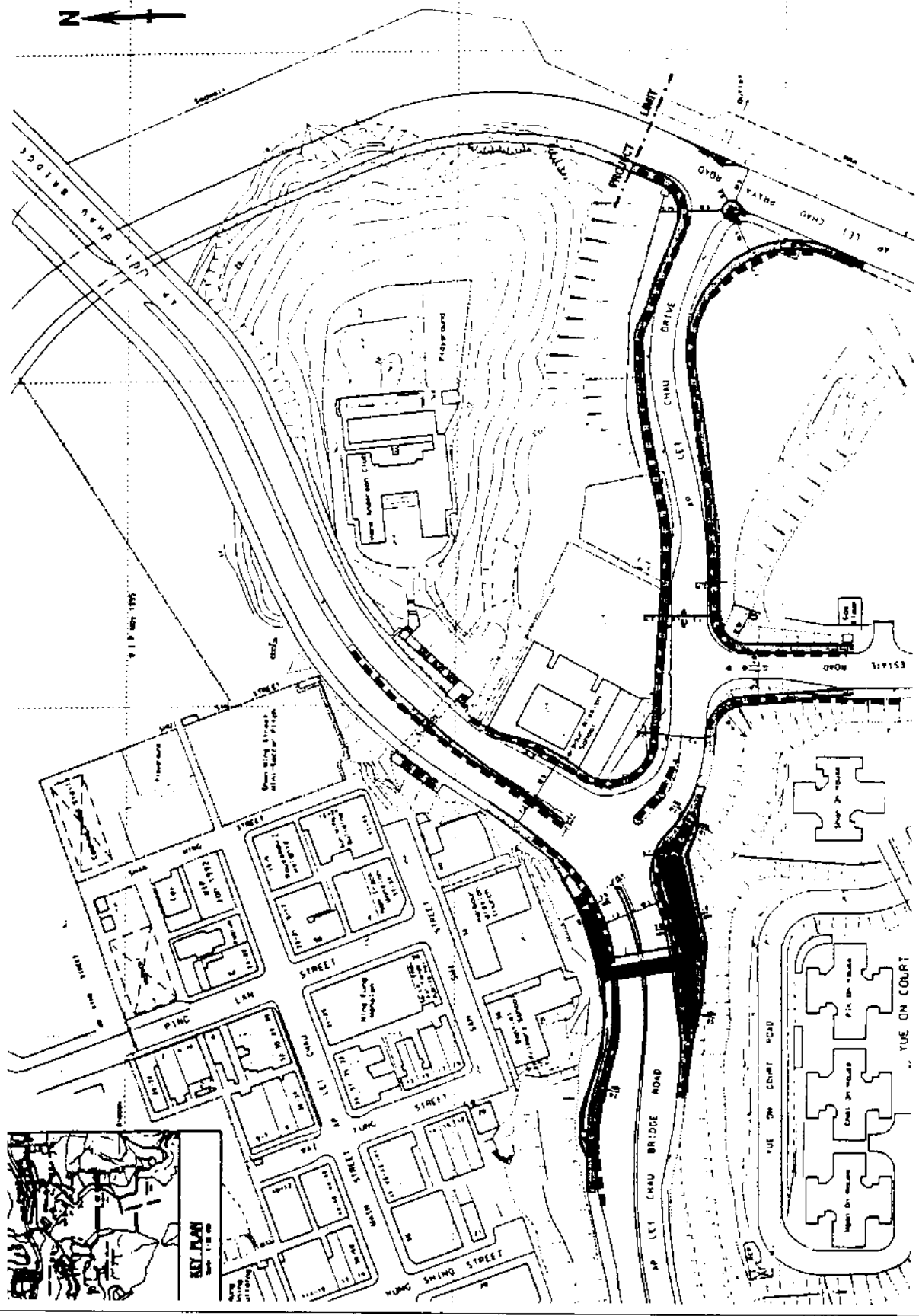


FIGURE 1.2a PROPOSED ROAD WORKS AT AP LEI CHAU BRIDGE ROAD AND AP LEI CHAU DRIVE

Baptist Kindergarten and Shan On House of Yue On Court will be adversely impacted. Other NSRs in the vicinity of the works were also predicted to be affected, the degree of impact was comparatively lower.

The cumulative noise impacts on the NSRs, when there are works on two or more work sites within the project limit undertaken simultaneously, would be severe during the construction phase of the Project.

2.2.2 *Recommended Mitigation Measures*

Noise emissions from construction sites can be minimised through good site practice, selecting quiet plant and quiet working methods. These methods will be effective in providing an overall reduction in construction noise levels, however, they will not be enough to protect fully the closest NSRs.

Residual impacts are likely at some of the sensitive receiver locations. Further mitigation has therefore been developed requiring restrictions to be placed on the number of individual items of construction plant that may operate on-site, e.g. avoidance of the use of certain construction equipment and simultaneous noisy activities near junctions and close to schools. The proposed restrictions will be useful to minimize residual impacts at the affected NSRs. In addition to the measures as stated above, the implementation of an effective monitoring exercise is expected to reduce the residual impacts to acceptable levels in accordance with the EIAO-TM requirements.

2.3 *AIR QUALITY*

The major dust generating activities in association with the works are identified to be material handling and excavation during road construction, drainage works and retaining wall construction. It was envisaged that the volume of material to be handled on site and the excavation rate for road construction would be low. Adverse dust impact on the nearby Air Sensitive Receivers was not expected.

Implementation of generic air pollution control measures and compliance with the *Air Pollution Control (Construction Dust) Regulation* at the work sites will minimise potential dust nuisance arising from the works to meet the established standards and guidelines.

3 OPERATIONAL PHASE

3.1 NOISE

3.1.1 *Unmitigated Impacts*

The traffic on Ap Lei Chau Bridge Road and Ap Lei Chau Drive has the potential to generate noise impacts at existing and planned sensitive receivers. Potential impacts are likely to be greatest during the peak hour and, therefore, this has been considered in this assessment. Traffic noise levels exceeding the *Hong Kong Planning Standards and Guidelines* road traffic noise criteria (70 dB(A) for residential uses and 65 dB(A) for educational premises) are predicted at most of the identified noise sensitive receivers during the worst prediction year 15 years after the official opening of the Project (ie. Year 2017).

The estimated number of dwellings and classrooms of kindergartens likely to be impacted by the Project is 750 and 6 respectively. These numbers are by and large no different from those being affected under prevailing conditions.

3.1.2 *Recommended Mitigation Measures*

The use of direct technical remedies for the proposed scheme was considered not feasible given the potential constraints of the site, including visibility splay at junctions, presence of public light bus/taxi lay-by and the stability of the existing retaining wall foundation.

The noise impacts were assessed against the indirect technical remedies criteria and the results indicated that none of the existing NSRs were eligible to be considered for noise insulation.

For the identified planned sensitive uses along Ap Lei Chau Drive, mitigation measures such as provision of air-conditioners and good quality windows and adoption of suitable building design are recommended.

3.2 AIR QUALITY

In accordance with the Study Brief, an operational air quality impact assessment was not required as no direct technical remedies with regard to noise were recommended in the operational phase of the Project.

ENVIRONMENTAL MONITORING AND AUDIT

During the construction phase, environmental monitoring will be required to monitor the noise generated from construction activities. Noise monitoring requirements have been recommended in the EM&A Manual. It has been suggested that noise monitoring should be undertaken, as part of the EM&A programme during the construction period of the Project, at the Ap Lei Chau Baptist Kindergarten, the Harbour Mission Church and Yan Oi Kindergarten, the Hong Kong True Light College and Shan On House and lastly, at any additional locations considered necessary in agreement with the EPD.

Auditing of the implementation of the recommended construction phase mitigation measures for noise and air quality will also be necessary.

No environmental monitoring on air quality was required.