

**Annex B**

**Response to Comments on Working  
Paper**

**To** Mr T K Lee  
 Regional Highway Engineer/Hong Kong, HyD

**Copied to** Mr Maurice Yeung, EPD Noise Policy Group

**From** Jon Pyke

**Ref/Project no.** C1570\53168\CONSULT

**Subject** Scoping Study for Providing Direct Technical Remedies on Existing Flyovers - Comments on Working Paper

**Date** 28 January 1997

**Direct lines**  
 Telephone : 2722 9706  
 Facsimile : 2316 7919  
 E-mail : jp@ermhk.com



Page 1 of 2

Dear Mr Lee,

Thank you very much for your letter of 17 January 1997 [( ) in HH63/50(CE)] concerning HyD's comments on the Working Paper for the captioned study. We would like to take this opportunity to briefly address some of the points raised in your letter.

Your concerns on the structural considerations for erecting noise barriers or enclosures on existing flyovers are justified. We have already checked with EPD on the structural issue prior to commencement of this scoping study. It was confirmed that structural considerations would be included for the investigations to be conducted separately at a later stage and short-listing of flyover candidates within this stage will be based solely on factors including the prevailing noise environment, fire fighting and road safety. The output of this scoping stage will form the basis for the second stage of the study, in which each flyover short-listed in this scoping stage will be subject to further investigation, taking into account all factors including engineering and structural ones, and the suitability and the most appropriate form of direct technical remedy will be determined.

The other constraints raised on p. 2 of your letter (i.e. air quality, road space, size of enclosure, loss of sunlight, and visual impact) will depend, to a very large extent, on the final design of the direct technical remedies. Your concerns are noted but they would be more appropriately addressed during the second stage of the study.

In the last paragraph of your letter, you have indicated the discrepancy between HyD's record and the estimate figure quoted in the Working Paper. We would like to clarify that the figure was based on a preliminary estimate of 'noisy' flyovers. In order to allow us to ascertain that all flyover candidates are included in this scoping exercise, we would be most grateful if you could provide a copy of your complete record on existing flyovers and an indication on the definition

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Facsimile  
message

currently used by HyD for 'flyover'. Your prompt response is very much appreciated.

Thank you for your assistance.

Best regards,

A handwritten signature in black ink, appearing to read 'JRPye', written over a horizontal line.

Jon Pyke



**HIGHWAYS DEPARTMENT**

**HIGHWAYS (HONG KONG) REGION**  
8/F & 9/F, HENNESSY CENTRE,  
500 HENNESSY ROAD, HONG KONG.

**URGENT BY FAX**  
2316 7919

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本署編號 OUR REF. ( ) in HH 63/50 (CE)  
來函編號 YOUR REF. 2895 8448  
電話 TELEPHONE  
圖文傳真 FAX NO. 2576 6244

17 January 1997

Environmental Resources Management Hong Kong  
6/F, Hency Tower,  
9, Chatham Road,  
Tsim Sha Tsui,  
Kowloon.

(Attn: Mr. John Pyke)

*can be  
pp'd*

Dear Sir,

**Scoping Study for providing  
Direct Technical Remedies on Existing Flyovers**

I refer to DEP's memo ref. ( ) in EP 42/T6/01 Annex I dated 20.12.96 enclosing a copy of your working paper on the captioned study.

Most of the existing flyover structures are not designed to take up the additional dead and wind loads from noise barriers or enclosures to be erected directly on it. In the scoping study, due consideration should be given to the provision of independent structures for supporting these noise barriers/enclosures at ground level. There is therefore a question of whether road space is available between the flyovers and the adjacent buildings to accommodate this requirement. In fact, you are requested to elaborate on the 6th line of the last para. on page 1 of the working paper - "However, direct technical remedies on flyovers do not appear to be infeasible given the latest engineering know-how." Without this information, our efforts in reviewing the practicability of reducing the adverse noise impacts brought about by traffic on existing flyovers may be wasted.

In this respect, I also wish to clarify that the existing section of Kwai Chung Road Flyover adjacent to Mei Foo is structurally infeasible to support the addition of a noise enclosure. The loading of the proposed noise cover at Mei Foo will not be transferred to the existing flyover structure. This of course requires a considerable ground level area to accommodate the foundations and columns of the noise cover.

Date Received by ERMA

With regard to Table 5a of the working paper, the following constraints need to be considered in providing direct technical remedies on the structures of existing flyovers:

(i) Air quality

For full enclosure, forced ventilation may need to be incorporated to cater for the situation when traffic inside the enclosure comes to a standstill. The air quality for lower floor residents of buildings adjacent to a flyover with a noise barrier or enclosure need to be examined.

(ii) Road space

The independent support for noise mitigation structures will occupy road space at ground level thereby reducing traffic lanes and affecting road capacities.

(iii) Size of enclosure

Necessity for lighting and ventilation inside an enclosure would affect its size and headroom.

(iv) Loss of sunlight

Loss of sunlight to lower floor residents of buildings adjoining the noise mitigation structures.

(v) Visual impact

The overall aesthetic view of the flyover.

Current record indicates that the total number of existing flyovers is 689. Please clarify how you arrive at a figure of only 110 as depicted in para. 3 of the working paper.

This serves as a co-ordinated reply for HyD

Yours faithfully,



(T.K. Lee)

for Regional Highway Engineer/Hong Kong

To Mr Cheung Wai-wah  
Fire Services Department

Copied to Mr Maurice Yeung, EPD Noise Policy Group

From Jon Pyke

Ref/Project no. C1570\53197\CONSULT

Subject Scoping Study for Providing Direct Technical Remedies on  
Existing Flyovers - Comments on Working Paper

Date 28 January 1997

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Page 1 of 2

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Dear Mr Cheung,

Thank you very much for your letter of 6 January 1997 [ref. (20) in FSD 4/130/94] detailing FSD's comments on the Working Paper for the captioned study. As the project is progressing within a very tight schedule, we do not anticipate the issuing of a revised Working Paper. However, your comments are noted and will be taken into account, where appropriate, during the preparation of the Final Report.

In response to the information requested in the last paragraph of your letter, we have copied the relevant sections of PWDTC No. 31/75 for your reference. In addition, we would like to clarify that the detailed design of the direct technical remedies will only be generated during the second stage of the study, which is beyond the scope of the present scoping study and will be tendered separately. However, we would incorporate your request as one of the recommendations of the Final Report.

Best regards,

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### Fire Fighting

11. For a height from ground level to 16'-6" above the elevated road level a minimum horizontal clearance of 15 ft. between elevated road structures and adjacent property should be aimed for as a minimum standard, but each case should be considered on its merits. Any balconies, etc. which protrudes into this clear distance zone will have to be removed, but balconies above the specified zone (i.e. elevated road level plus 16'-6") can remain. It is noted that it may be necessary to resume and demolish buildings or parts of buildings in order to achieve this standard.

12. Facilities for fire fighting purposes in the form of fire hydrants should be provided on the structure, and D. of F.S. will state his requirements for individual cases (normally every 300 feet).

13. Some form of emergency traffic control by traffic lights should be incorporated in the scheme where in the opinion of the Commissioner for Transport after consultation with D. of F.S., C.P. and C.E.T.E. this is considered to be practicable.

14. Drainage connections from the elevated structure should be connected direct to the main drainage system and not to ground level surface channels.

15. Subject to height of elevated highways above the lower road or ground level remaining within reach of the Fire Services Department ladders, i.e. 20 ft., the physical communication between the lower and upper roadways could be achieved by means of the Fire Services Department's own ladders.

16. In view of the limited length and type of elevated road structures so far envisaged in Hong Kong, the need for emergency telephone equipment does not arise. If, however, elevated road structure becomes widespread and extensive, then such equipment will be required for summoning the services of the police, fire appliances and ambulances in the event of an emergency.

Note :- The D. of F.S. will require certain specialised "Snorkel" equipment to facilitate fire fighting within confined spaces and will establish a drill for dual attendance of appliances to any incident in the vicinity of elevated road structures, whereby the fire can be tackled from both ground level and from the elevated structure. In order to operate this drill, the D. of F.S. will also require additional personnel and appliances.

### International Standards

17. The only standards to be found that specifically cover this subject are those of the American Association of State Highway Officials, which recommends a minimum clearance of 15'-0" for single level elevated structures and 20'-0" for two-level structures.

消防處  
香港九龍尖沙咀康莊道1號  
消防總部大廈



FIRE SERVICES DEPARTMENT  
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函檔號 YOUR REF.: C1570\50805-1\CONSULT  
報掛號 TELEX: 39607 HKFSD HX } (24小時 HOURS)  
文傳真 FAX: 852-2311 0066  
852-2368 9744  
話 TEL NO.: 2733 7888

Mr. Jon Pyke  
Senior Consultant  
Environmental Resources  
Management Hong Kong  
6/F, Hency Tower  
9 Chatham Road  
Kowloon

Dear Sir,

**Working Paper/Consultation Paper**  
**Scoping Study for Providing Direct Technical Remedies on Existing Flyovers**

With reference to the memo from DEP of 20 December 1996 and the Working Paper/Consultation Paper attached thereto, please be informed that I have the following comments :-

<u>Figure</u>	<u>Comment</u>
4e	In case of fire, the smoke and hot gases will go up to the highest point of the enclosure. According to your preliminary design of 6.25% open area, it will form a pocket to trap the smoke in-stead of ventilating such to open air. Therefore, the open areas must be located above the vertical acoustic panels (please see appendix I).
5a	<ul style="list-style-type: none"><li>- The minimum width of 6 m vehicular road should be indicated on the sketch (please see appendix II).</li><li>- The horizontal clearance between the outer edge of the flyover structure and building facade should be at least 4.5 m instead of 4.6 m (please see appendix II).</li></ul>

/...(2)

REF. NUMBER AND DATE SHOULD BE QUOTED IN REFERENCE TO THIS LETTER  
凡提及本信時請引述編號及日期



Figure

Comment

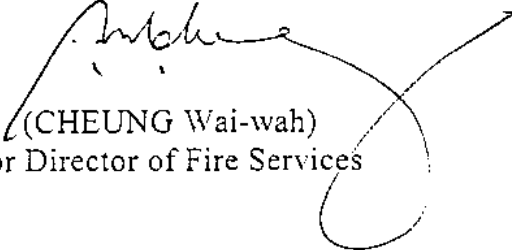
- A minimum of 4.5 m clearance between the building facade and the outer edge of 5 m above the elevated road level must be maintained (please see appendix II).

5b

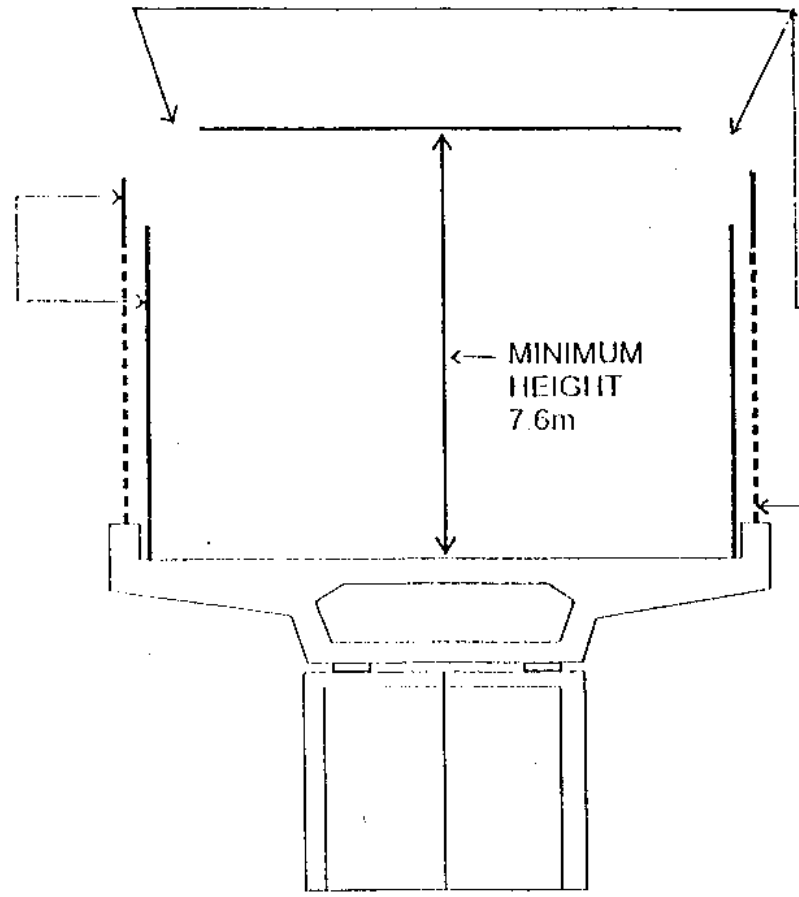
----- ditto -----  
(please see appendix III)

As regards the 2.4 m clearance (PWDTC No. 31/73) shown in Table 5a, I should be grateful if you would provide such information and relevant sketch to this office in order to clarify the configuration and the location of these balconies. Also, please incorporate my comments made in para. 1 into your detailed design of remedies for road traffic noise on existing flyovers.

Yours faithfully,

  
(CHEUNG Wai-wah)  
for Director of Fire Services

ACOUSTIC  
PANELS  
OF  
FULL  
ENCLOSURE



VENTILATION -  
TOTAL OPEN AREAS EQUAL TO OR  
EXCEEDING 6.25% OF THE ROAD SURFACE  
AREA MUST BE PROVIDED  
(DETAILED ARRANGEMENTS MAY VARY)

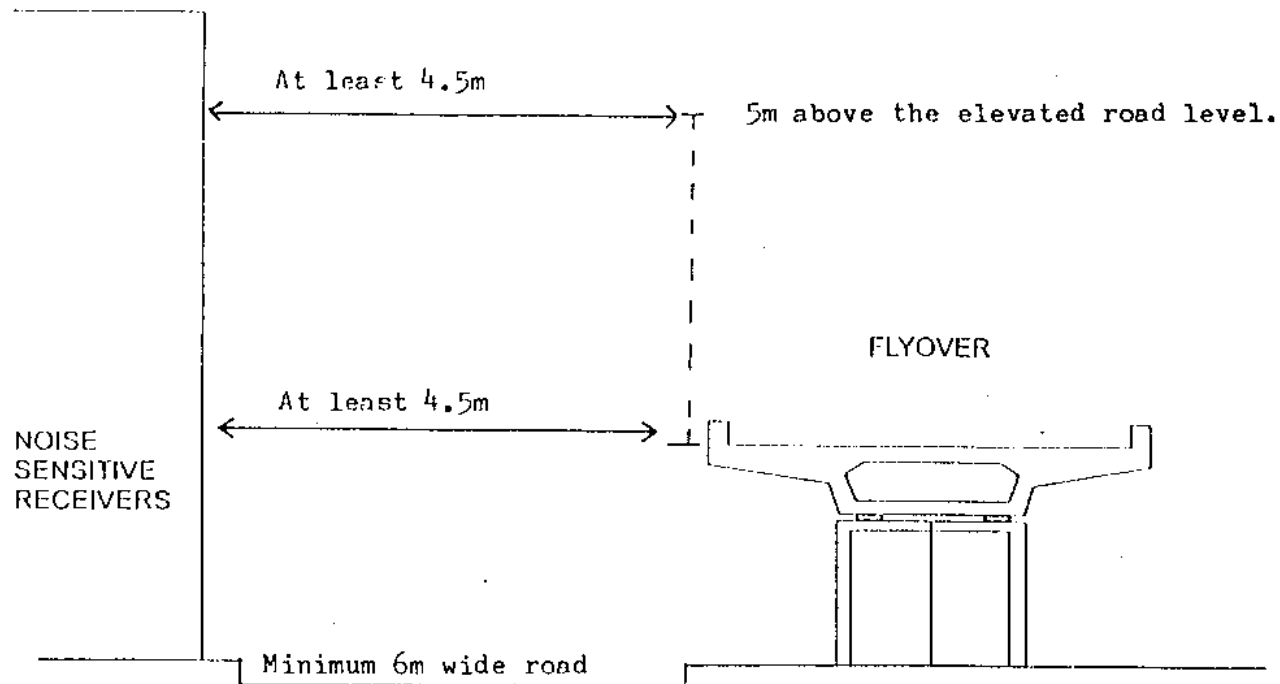
STRUCTURAL SUPPORT

FULL ENCLOSURE WITH SIDE  
OPENING FOR VENTILATION

FIGURE 4c - GENERIC DIRECT TECHNICAL REMEDIES FOR ROAD TRAFFIC NOISE ON FLYOVERS - FULL ENCLOSURE

ERM-Hong Kong, Ltd  
6th Floor  
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Tsimshatsui, Kowloon  
Hong Kong





DIRECT TECHNICAL REMEDIES SUCH AS BARRIER AND NOISE ENCLOSURE ON THE FLYOVER IS CONSIDERED FEASIBLE

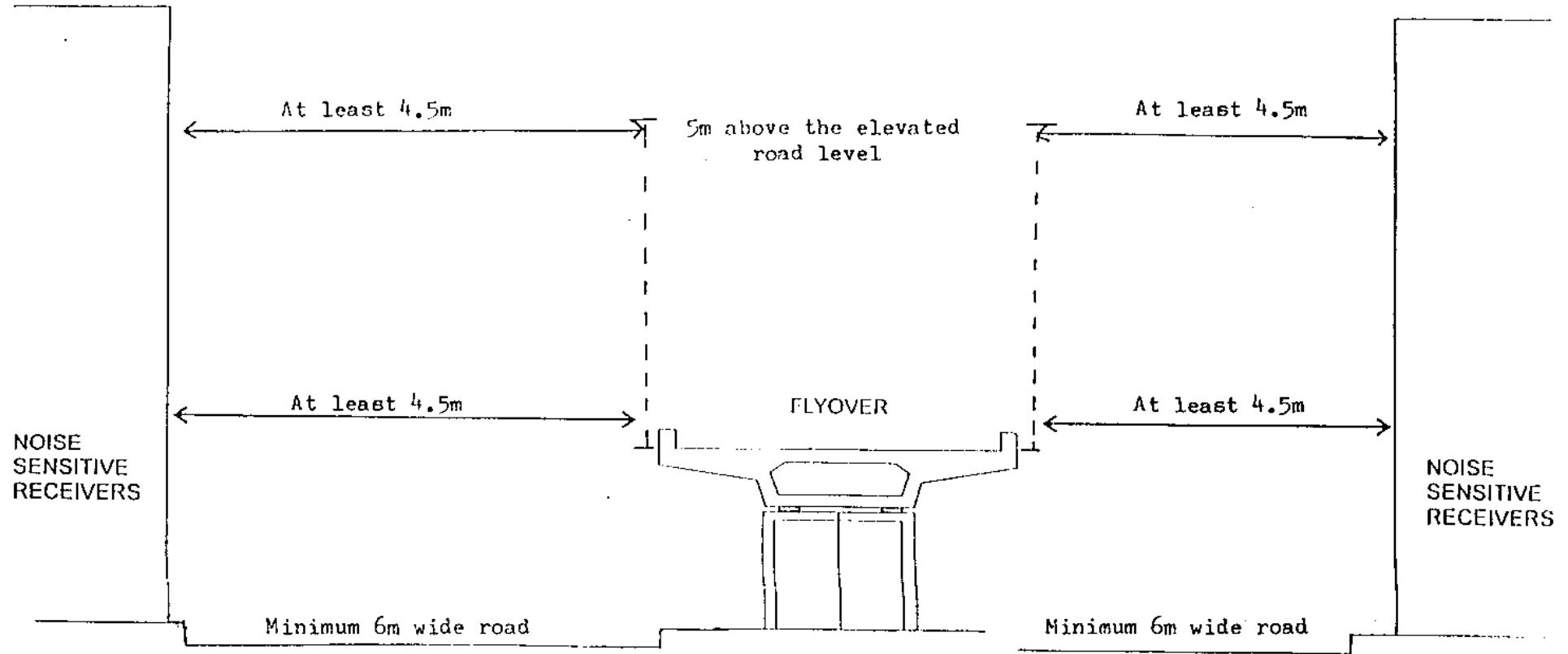
- FLYOVER IS NOT THE ONLY ACCESS TO BUILDING FACADES
- CLEARANCE BETWEEN THE OUTER EDGE OF THE FLYOVER STRUCTURE AND BUILDING FACADE IS GREATER THAN 4.5m
- FIRE FIGHTING OPERATIONS WOULD NOT BE OBSTRUCTED BY THE ERECTION OF NOISE BARRIER OR NOISE ENCLOSURE

FIGURE 5a - TYPICAL ROAD - RECEIVER CONFIGURATION (EXAMPLE ONE)

ERM-Hong Kong, Ltd

6th Floor  
 Hecny Tower  
 9 Chatham Road  
 Tsimshatsui, Kowloon  
 Hong Kong





DIRECT TECHNICAL REMEDIES SUCH AS BARRIER AND NOISE ENCLOSURE ON THE FLYOVER IS CONSIDERED FEASIBLE

- FLYOVER IS NOT THE ONLY ACCESS TO BOTH BUILDING FACADES
- CLEARANCE BETWEEN THE OUTER EDGE OF THE FLYOVER AND BUILDING FACADES IS GREATER THAN 4.5m
- FIRE FIGHTING OPERATIONS WOULD NOT BE OBSTRUCTED BY THE ERECTION OF NOISE BARRIER OR NOISE ENCLOSURE

FIGURE 5b - TYPICAL ROAD - RECEIVER CONFIGURATION (EXAMPLE TWO)

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 Heony Tower  
 9 Chatham Road  
 Tsimshatsui, Kowloon  
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To Mr H L Cheng  
Transport Department

Copied to Mr Maurice Yeung, EPD Noise Policy Group

From Jon Pyke

Ref/Project no. C1570\53210\CONSULT

Subject Scoping Study on Providing Direct Technical Remedies on Existing Flyovers - Comments on Working Paper

Date 28 January 1997



Page 1 of 1

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Dear Mr Cheng,

Thank you very much for your letter of 8 January 1997 (RS 181/162) detailing your comments on the Working Paper for the captioned study. Although we do not anticipate the issuing of a revised Working Paper, your comments are noted and will be taken into account, where appropriate, during the preparation of the Final Report.

In response to your comment (e), we would like to clarify that the information was derived from our previous experience on the *Reclamation and Servicing of Tuen Mun Area 38 for Special Industries - Improvement to Roads and Junctions within Tuen Mun: Environmental Impact Assessment Study*. We note that individual cases should be subject to review by TD and this would be included as one of our recommendations for the further investigations to be conducted separately in the second stage of the study when detailed designs of direct technical remedies will be generated. However, your advice on whether there is any commonly adopted minimum height for full/partial acoustic enclosures from TD's perspective would be appreciated. Thank you for your assistance.

Best regards,

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By Fax (2316 7919) & Post

Environmental Resources Management Hong Kong  
6/F, Hency Tower  
9 Chatham Road  
Tsim Sha Tsui  
Kowloon

8 January 1997

(Attn. Mr. John Pyke)

Dear Sir,

**Scoping Study for Providing  
Direct Technical Remedies on Existing Flyovers**

I refer to your circulation of the working paper/consultation paper for the captioned study via your letter of 19 December 1996.

My comments on paragraph 5 of the working paper are:-

- a) Our requirements on minimum horizontal clearance and sightline distance apply to all types of remedies in general;
- b) For minimum horizontal clearance, I suggest rewording the paragraph as "Minimum horizontal clearance between wall and road kerb should be provided as required in Transport Planning & Design manual (TPDM) Volume 2, Chapter 3, Section 3.5.2";
- c) For sightline requirements, add ", Volume 2" after "Chapters 3 & 4";
- d) The provision of noise barrier should not cause obstruction (including sightline for signs) or access to roadside facilities such as directional signs, emergency telephones, CCTV, etc.; and
- e) Whilst I am not sure how the figure of 7.6m for minimum height is arrived at, the design of the barrier fence should cater for the height of the overhead signs of various depth. Therefore, our comments on individual cases are necessary.

Yours faithfully,

(H L Cheng)

for Commissioner for Transport

c.c. DEP (Attn. Mr. Maurice Yeung)