

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

**HEAD 707 – NEW TOWNS AND URBAN AREA DEVELOPMENT
New Territories North and West Development
Transport – Roads**

780TH – Retrofitting of noise barriers on Cheung Pei Shan Road, Tsuen Wan

Members are invited to recommend to Finance Committee the upgrading of **780TH** to Category A at an estimated cost of \$217.3 million in money-of-the-day prices for the retrofitting of noise barriers on the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan.

PROBLEM

The existing dwellings adjacent to Cheung Pei Shan Road near Yi Pei Chun, Hoi Pa Resite Village, Sam Tung Uk Resite Village, Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan are exposed to excessive traffic noise generated from Cheung Pei Shan Road.

PROPOSAL

2. The Director of Civil Engineering and Development (DCED), with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade **780TH** to Category A at an estimated cost of \$217.3 million in money-of-the-day (MOD) prices for the retrofitting of noise barriers on the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan.

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of **780TH** comprises –
- (a) along the eastbound carriageway of Cheung Pei Shan Road between Yi Pei Chun and Sam Tung Uk Resite Village, retrofitting of cantilevered noise barrier of about 845 metres (m) in length and 6 m in height ;
 - (b) along the westbound carriageway of Cheung Pei Shan Road –
 - (i) retrofitting of cantilevered noise barrier of about 25 m in length and 6 m in height along the section outside Shek Wai Kok Estate;
 - (ii) retrofitting of noise semi-enclosures of about 285 m in length with the overall height varying from 6.5 m to 11 m along the section outside Shek Wai Kok Estate; and
 - (iii) retrofitting of noise semi-enclosures of about 360 m in length with an overall height of 6.5 m along the section outside Cheung Shan Estate;
 - (c) construction of two 6 m wide emergency vehicular access roads of about 125 m in length outside Cheung Shan Estate;
 - (d) reprovisioning of a 2 m wide footway ramp of about 43 m in length outside Cheung Shan Estate;
 - (e) construction of the associated retaining walls, street lighting, drainage, geotechnical and landscaping works; and
 - (f) implementation of an environmental monitoring and audit (EM&A) programme for the works mentioned in items (a) to (e) above.

———— The proposed works are shown on the plan at Enclosure 1.

4. We have substantially completed the detailed design for the project. We plan to commence the construction works in September 2005 for completion in March 2008.

JUSTIFICATION

5. In November 2000, the Administration introduced a policy to address the traffic noise impact of existing roads on neighbouring residents. Under this policy, direct engineering solutions by way of retrofitting of noise barriers and enclosures and resurfacing with low noise material will be implemented where practicable on existing roads with a traffic noise level exceeding the limit of 70 dB(A)L₁₀(1 hour)¹.

6. At present, about 1 663 dwellings adjacent to the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan are exposed to traffic noise of up to 80 dB(A)L₁₀(1 hour). In line with the policy, we propose to retrofit noise barriers and semi-enclosures on this road section in order to mitigate the noise impact. The traffic noise at the façades of all the affected dwellings will be reduced by up to 18 dB(A) L₁₀(1 hour).

FINANCIAL IMPLICATIONS

7. We estimate the cost of the project to be \$217.3 million in MOD prices (see paragraph 8 below), made up as follows –

| | \$ million |
|---|-------------------|
| (a) Noise abatement measures | 169.4 |
| (i) Cantilevered noise barriers | 43.7 |
| (ii) Semi-enclosures with the overall height varying from 6.5 m to 11 m | 82.0 |

/(iii)

¹ L₁₀(1 hour) is the noise level exceeded for 10% of a one-hour period, generally used for road noise at peak traffic flow. The noise limit of 70 dB(A) for residential premises as stipulated in the Hong Kong Planning Standards and Guidelines is adopted as the administrative guideline for retrofitting projects identified under the policy introduced in 2000.

| | \$ million | |
|---|-------------------|----------------------------|
| (iii) Semi-enclosures with an overall height of 6.5 m | 43.7 | |
| (b) Emergency vehicular access roads | 6.0 | |
| (c) Footway ramp | 1.1 | |
| (d) Associated retaining walls, street lighting, drainage, geotechnical and landscaping works | 4.5 | |
| (e) Consultants' fees | 18.5 | |
| (i) specialist works ² | 0.6 | |
| (ii) construction supervision and contract administration | 2.6 | |
| (iii) resident site staff costs | 14.1 | |
| (iv) EM&A programme | 1.2 | |
| (g) Contingencies | 19.9 | |
| Sub-total | 219.4 | (in September 2004 prices) |
| (h) Provision for price adjustment | (2.1) | |
| Total | 217.3 | (in MOD prices) |

A breakdown by man-months of the estimate for the consultants' fees is at Enclosure 2.

8. Subject to approval, we will phase the expenditure as follows –

/2005

²

Independent advisors would be jointly employed by the Government and contractors to help resolve and avoid contractual conflicts.

| Year | \$ million (Sept 2004) | Price adjustment factor | \$ million (MOD) |
|-------------|---------------------------|----------------------------|---------------------|
| 2005 - 2006 | 20.0 | 0.99000 | 19.8 |
| 2006 - 2007 | 90.2 | 0.98753 | 89.1 |
| 2007 - 2008 | 88.0 | 0.99123 | 87.2 |
| 2008 - 2009 | 21.2 | 0.99990 | 21.2 |
| | 219.4 | | 217.3 |

9. We have derived the MOD estimate on the basis of the Government's latest forecast of the trend rate of change in the prices of public sector building and construction output for the period 2005 to 2009. Due to insufficient in-house resources, DCED proposes to employ specialist consultant to carry out specialist works, and engage consultants to supervise the construction works. We will tender the proposed works under a standard remeasurement contract because the quantities of the foundations of noise barriers and semi-enclosures are subject to variation due to actual ground conditions. The contract will provide for price adjustments as the contract period will exceed 21 months.

10. We estimate the annual recurrent expenditure arising from this project to be \$2.5 million.

PUBLIC CONSULTATION

11. We presented the project including the scope, aesthetic design, interim traffic arrangements and implementation timetable to the Tsuen Wan East Area Committee (TWEAC) and the Tsuen Wan District Council Traffic and Transport Committee (TWDC TTC) on 27 February 2004 and 2 March 2004 respectively. Members of both Committees unanimously supported the project and raised no objection to the aesthetic design.

/12.

12. Lui Ming Choi Lutheran College (the College) has requested the Administration to erect additional noise barriers along the roadside of Cheung Pei Shan Road westbound carriageway outside the College to protect it from the traffic noise. While supporting the project, the TWDC TTC and TWEAC have raised the same request to the Administration. To address existing road traffic noise impacts on existing schools, the Administration launched a 'Noise Abatement Programme' for schools in 1987 to provide acoustic window insulation and air-conditioning to classrooms affected by traffic noise. Under the programme, all teaching activity-related rooms of the College have already been provided with the necessary noise protection measures since 1993 in the form of acoustic window insulation and air-conditioning. In view of this, the Administration does not consider the request of the College justified.

13. We also consulted the Advisory Committee on the Appearance of Bridges and Associated Structures³ (ACABAS) on the aesthetic design of the noise barriers and semi-enclosures on 20 April 2004. The Committee accepted the proposed aesthetic design.

14. We gazetted the road scheme of **780TH** under the Roads (Works, Use and Compensation) Ordinance (the Ordinance) on 18 June 2004 and no objection was received. The Permanent Secretary for the Environment, Transport and Works (Transport), under the delegated authority from the Secretary for the Environment, Transport and Works, authorised the road scheme of **780TH** under the Ordinance on 3 September 2004. The notice of authorisation was gazetted on 10 September 2004.

15. We consulted the Panel on Environmental Affairs (EA Panel) of the Legislative Council on 21 December 2004. While Members supported the project in principle, they requested the Administration to provide additional noise barriers to the College, to consider alternative schemes by erecting the noise semi-enclosures along the eastbound carriageway and to assess the acoustic effectiveness of absorptive noise barrier panels. On the non-provision of noise barriers to the College, we explained to Members at the EA Panel meeting that

/noise

³ The Advisory Committee on the Appearance of Bridges and Associated Structures, which comprises representatives of the Hong Kong Institute of Architects, the Hong Kong Institution of Engineers, Architectural Services Department, Highways Department, Housing Department, Planning Department and Civil Engineering and Development Department, is responsible for vetting the design of bridges and other structures associated with the public highway system, including noise barriers and semi-enclosures, from the aesthetic and visual impact points of view.

noise mitigation measures in the form of acoustic window insulation and air-conditioning had been provided to the College under the 'Noise Abatement Programme' in 1993 already. In response to the suggestion on alternative schemes, we have considered two alternative schemes by installing the semi-enclosure on eastbound carriageway with its vertical noise barrier panels erected either at the verge of the slow lane (Alternative Scheme A) or at the central median (Alternative Scheme B). Assessments show that the overall percentage of flats protected by the recommended scheme is 63% as compared with 39% and 60% for Alternative Schemes A and B respectively. The cost of the two alternative schemes will be higher than that of the recommended scheme by \$43 million. We therefore consider the recommended scheme a more favourable option. On acoustic performance of absorptive noise barrier panels, overseas research studies show that installing absorptive panels at the lower portion of the noise barrier should be able to absorb much of the road traffic noise since such noise is mainly generated from the tyres and engines of vehicles. A detailed comparison of the current and alternative schemes and on the acoustic performance of absorptive panels is given in an information note submitted to the EA Panel on 8 February 2005 (vide Enclosure 3). No further comments from Members have been received since then.

ENVIRONMENTAL IMPLICATIONS

16. **780TH** is not a designated project under the Environmental Impact Assessment Ordinance. We completed an environmental assessment for the project in June 2004 and concluded that it would not cause adverse long-term environmental impact. The project will reduce the existing traffic noise levels on the affected noise sensitive receivers adjacent to the section of Cheung Pei Shan Road between Shek Wai Kok Estate and Cheung Shan Estate in Tsuen Wan by up to 18 dB(A) L_{10} (1 hour).

17. The aesthetic design of the cantilevered noise barriers and semi-enclosures will be compatible with the environment. The proposed noise barrier panels are transparent, except those to be installed at the lower parts of the noise barriers and semi-enclosures. A drawing showing the perspective view of the noise barriers and semi-enclosures is at Enclosure 4. The proposed aesthetic design is supported by the TWEAC, TWDC TTC and ACABAS as described in paragraphs 11 and 13 above.

18. For short-term construction impacts, we will control noise, dust and

site run-off nuisances to within the established standards and guidelines through the implementation of mitigation measures. We will also carry out the EM&A programme to ensure proper implementation of the recommendations of the environmental assessment.

19. We will require the contractor to submit a Waste Management Plan (WMP) for approval. The WMP will include appropriate mitigation measures to minimise, reuse and recycle the construction and demolition (C&D) materials. We will require the contractor to carry out on-site sorting of C&D materials and ensure that the day-to-day operations on site comply with the approved WMP. We will also control the disposal of C&D waste to landfills through a trip-ticket system. We will record and monitor the reuse and disposal of C&D materials. To further minimise the generation of C&D materials, we will encourage the contractor to use non-timber formwork and recyclable materials for temporary works.

20. At the planning and design stages, we have considered ways to minimise the generation of C&D materials. We estimate that the project will generate about 27 100 cubic metres (m³) of C&D materials. Of these, we will reuse about 13 000 m³ (48.0%) on site, 13 600 m³ (50.2%) as fill in public filling areas⁴ and dispose of 500 m³ (1.8%) at landfills. The notional cost of accommodating the C&D waste at landfill sites is estimated to be \$62,500 for the project (based on a notional unit cost⁵ of \$125/m³).

LAND ACQUISITION

21. The proposed works do not require land acquisition.

/BACKGROUND

⁴ A public filling area is a designated part of a development project that accepts public fill for reclamation purpose. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering and Development.

⁵ This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

BACKGROUND INFORMATION

22. We included **780TH** in Category B in May 2002. In June 2003, we engaged consultants to carry out the review and detailed design for the proposed works at an estimated cost of \$5.8 million under **Subhead 7100CX** “New towns and urban area works, studies and investigations for items in Category D of the Public Works Programme”. The consultants substantially completed the review and detailed design in December 2004.

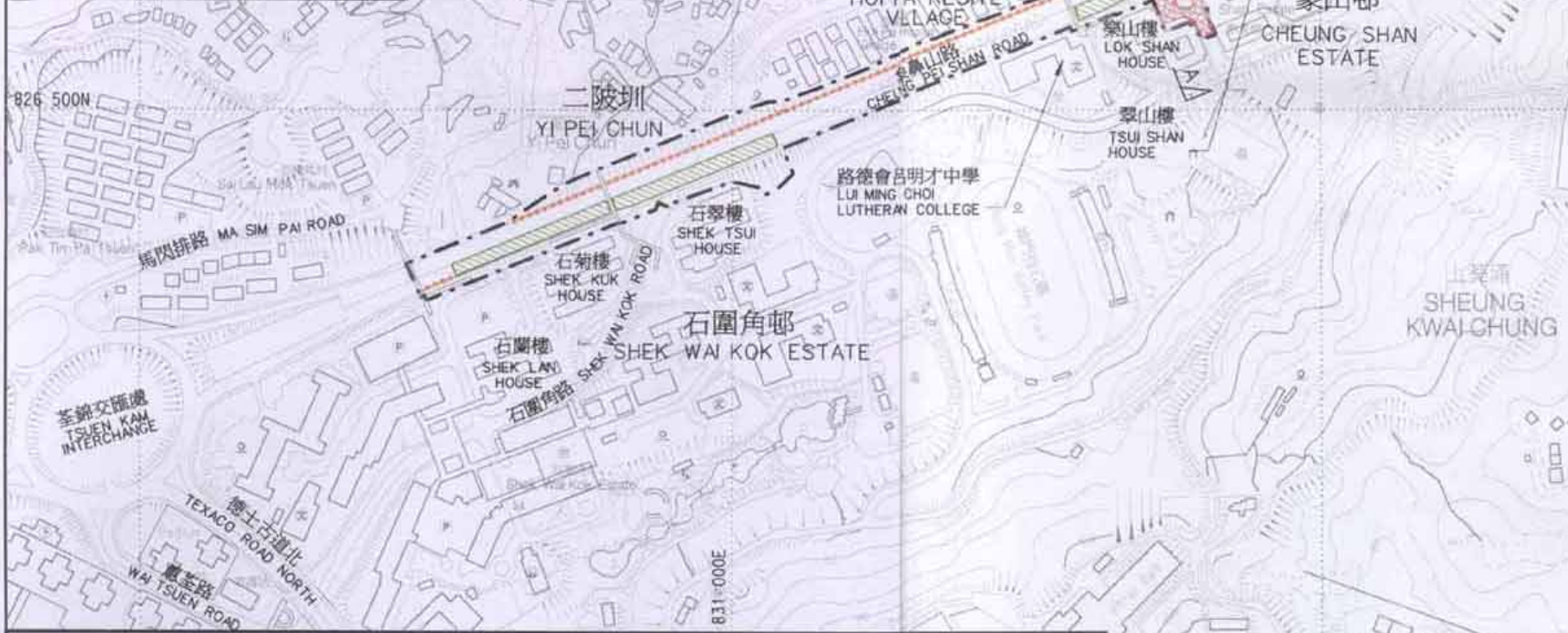
23. The proposed retrofitting of noise barriers and semi-enclosures will involve removal of 66 trees including 33 trees to be felled and 33 trees to be replanted within the project site. All trees to be removed are not important trees⁶. We will provide compensatory planting as part of the project, including estimated quantities of 80 trees, 1 080 shrubs and 560 square metres of grassed area.

24. We estimate that the proposed works will create about 225 jobs (180 for labourers and another 45 for professional/technical staff) providing a total employment of 4 850 man-months.

Environment, Transport and Works Bureau
February 2005

⁶ Important trees include trees on the Register of Old and Valuable Trees and any other trees which meet one or more of the following criteria –

- (a) trees over 100 years old;
- (b) trees of cultural, historical or memorable significance;
- (c) trees of precious or rare species;
- (d) trees of outstanding form; or
- (e) trees with trunk diameter exceeding one metre (measured at one metre above ground level).



註釋 NOTES :

- LEGENDS:
- 施工區界限
LIMIT OF WORKS AREA
 - 擬建懸臂式隔音屏障
PROPOSED CANTILEVERED NOISE BARRIER
 - 擬建半密閉式隔音罩
PROPOSED NOISE SEMI-ENCLOSURE
 - 擬建緊急車輛通道
PROPOSED EMERGENCY VEHICULAR ACCESS ROAD
 - 擬建行人斜道
PROPOSED FOOTWAY RAMP

| 編號 | 日期 | 內容摘要 | 校對 | 核准 |
|----|----|------|----|----|
| | | | | |

修訂 REVISION

| 繪圖 | 姓名 name | 簽署 initial | 日期 date |
|----|-----------|------------|----------|
| 繪圖 | P. K. SO | SIGNED | 11.12.04 |
| 校對 | S. M. LAI | SIGNED | 11.12.04 |

核准 approved

| | |
|--------------------------------------|----------|
| SIGNED | 11.12.04 |
| DUNCAN S C SIU Chief Engineer/NTW | 日期 date |

工程編號 project no. 780TH

檔案編號 file no.

合約編號 contract no.

合約 contract

圖則名稱 drawing title

荃灣象鼻山路隔音屏障加建工程 - 平面圖

RETROFITTING OF NOISE BARRIERS ON CHEUNG PEI SHAN ROAD, TSUEN WAN - LAYOUT PLAN

圖則編號 drawing no.

NTW 1386

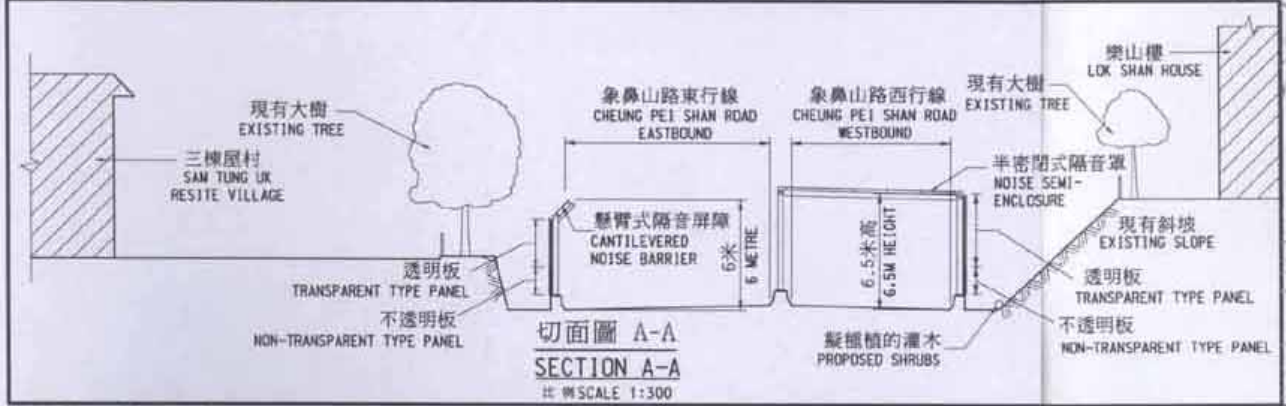
比例 scale

1:4000 OR AS SHOWN

辦事處 office

新界西及北拓展處
NEW TERRITORIES NORTH AND WEST DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



Enclosure 2 to PWSC(2004-05)60

**780TH – Retrofitting of noise barriers on Cheung Pei Shan Road,
Tsuen Wan**

Breakdown of estimates for consultants’ fees

| Consultants’ staff costs | | Estimated man-months | Average MPS* salary point | Multiplier (Note 1) | Estimated Fees (\$ million) |
|---------------------------------------|--|-----------------------------|----------------------------------|----------------------------|------------------------------------|
| (a) | Specialist works Professional | 4 | 38 | 2.0 | 0.4 |
| | Technical | 5 | 14 | 2.0 | 0.2 |
| (b) | Construction supervision and contract administration (Note 2) Professional | - | - | - | 2.3 |
| | Technical | - | - | - | 0.3 |
| (c) | Resident site staff Professional | 44 | 38 | 1.6 | 3.8 |
| | Technical | 356 | 14 | 1.6 | 10.3 |
| (d) | EM&A programme Professional | 6 | 38 | 2.0 | 0.7 |
| | Technical | 13 | 14 | 2.0 | 0.5 |
| Total consultants’ staff costs | | | | | 18.5 |

* MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 is applied to the average MPS point to arrive at the full staff costs including the consultants’ overheads and profit, as the staff will be employed in the consultants’ offices. A multiplier of 1.6 is applied to the average MPS point in the case of resident site staff supplied by the consultants. (As at 1 January 2005, MPS Pt. 38 = \$54,255 per month and MPS Pt. 14 = \$18,010 per month.)
2. The consultants’ fees for construction supervision and contract administration are estimated in accordance with Agreement No. CE 40/2002(HY) titled “Retrofitting of direct noise mitigation measures on Cheung Pei Shan Road and Ma On Shan Road – Design and Construction”. The construction phase of the assignment will only be executed subject to Finance Committee’s approval to upgrade **780TH** to Category A.

LEGISLATIVE COUNCIL

PANEL ON ENVIRONMENTAL AFFAIRS

**PWP Item No. 780TH - Retrofitting of Noise barriers
on Cheung Pei Shan Road, Tsuen Wan**

Supplementary Information

INTRODUCTION

When considering the PWP Item No. **780TH** – Retrofitting of noise barriers on Cheung Pei Shan Road, Tsuen Wan at the EA Panel meeting on 21 December 2004, Members requested the Administration to consider alternative schemes by erecting noise semi-enclosures along the eastbound carriageway, to provide noise assessment results of the Current Scheme, and to assess the acoustic effectiveness of absorptive noise barrier panels.

THE ADMINISTRATION'S RESPONSE

Noise Assessment Results of the Current and Alternative Schemes

2. We have considered two alternative schemes as follows –

Alternative Scheme A - to install the semi-enclosure on the eastbound carriageway with its vertical noise barrier panels erected at the verge of the slow lane; and

Alternative Scheme B - to install the semi-enclosure on the eastbound carriageway with its vertical noise barrier panels erected at the central median.

_____ The above Alternative Schemes are shown on the drawing at Annex A.

3. According to our assessment, the overall percentage of flats protected by the Current Scheme is 63% as compared with 39% and 60% for Alternative Schemes A and B respectively. Although Alternative Scheme B can offer an overall percentage of protection similar to that offered by the Current Scheme, the orientation

of the semi-enclosure will not effectively protect the low-rise village houses along the road.

4. On the financial front, since the eastbound carriageway is wider than the westbound by one lane, the cost of each of the two alternative schemes will be \$260 million which is higher than that of the Current Scheme by \$43 million.

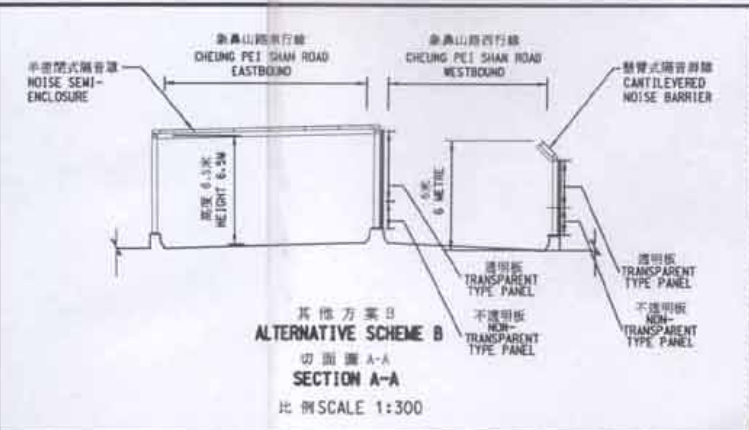
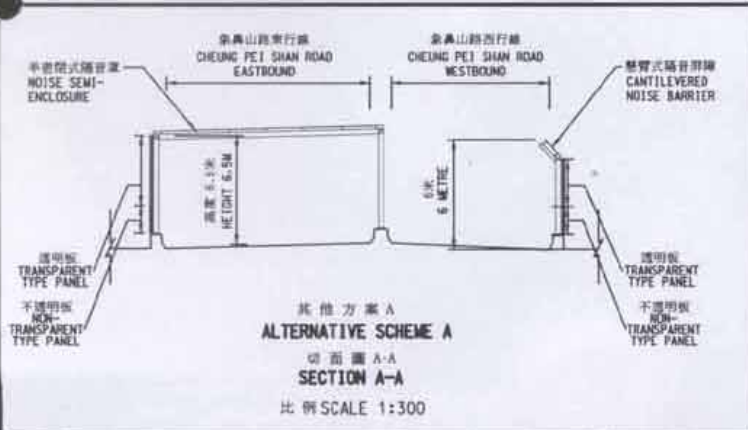
5. Therefore, the overall acoustic performance and cost-effectiveness of the Current Scheme is more favorable than the two Alternative Schemes. The overall acoustic performance and costs for the current and two alternative schemes are summarized at Annex B. Detailed noise assessment results of individual noise sensitive receivers are at Annex C.

Acoustic Effectiveness of Absorptive Noise Barrier Panels

6. Overseas research studies show that the provision of absorptive noise barrier panels for the lower portion of the noise barrier can achieve similar absorptive effects as installing absorptive panels for the entire barrier. This is because road traffic noise is mainly generated from the tyres and engines of vehicles and hence the absorptive noise barrier panels at the lower portion of the noise barrier should be able to absorb most of such noise.

7. According to the "Guidelines on Design of Noise Barriers" issued by the Highways Department and the Environmental Protection Department, noise barriers with absorptive panels at the lower portion of the barriers of 2- to 3-metre high (measured from ground including the concrete profile barrier) can sufficiently avoid reflection of noise to the noise sensitive receivers located on the opposite side of the barriers. The Current Scheme follows the Guidelines where absorptive panels will be installed at the lower portion of the noise barrier of 2.5-metre high from ground.

8. The difference in acoustic performance between the Current Scheme using either absorptive or reflective materials for the entire noise barriers is generally less than 1dB(A). Therefore, the amount of absorptive panels used in the Current Scheme should achieve almost the same absorptive effect when compared with installing absorptive panels for the entire barrier. Detailed noise assessment results for the above comparison are at Annex D.



註釋 NOTES :

LEGENDS:

- 施工區界限 LIMIT OF WORKS AREA
- 擬建懸臂式隔音屏障 PROPOSED CANTILEVERED NOISE BARRIER
- 擬建半透明式隔音罩 PROPOSED NOISE SEMI-ENCLOSURE
- 擬建緊急車輛通道 PROPOSED EMERGENCY VEHICULAR ACCESS ROAD
- 擬建行人斜道 PROPOSED FOOTWAY RAMP

| 編號 no. | 日期 date | 內容說明 description | 校對 checked | 批准 approved |
|--------|---------|------------------|------------|-------------|
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修訂 REVISION

| | 姓名 name | 簽署 initial | 日期 date |
|------------|------------|------------|----------|
| 繪圖 drawn | K H KOR | SIGNED | 23.12.04 |
| 校對 checked | K L CHEUNG | SIGNED | 23.12.04 |

核准 approved

日期 date

工程編號 project no. 780TH

檔案編號 file no.

合約編號 contract no.

合約 contract

圖則名稱 drawing title

荃灣象鼻山路隔音屏障加建工程 - 平面圖 (其他方案)
RETROFITTING OF NOISE BARRIERS ON CHEUNG PEI SHAN ROAD, TSUEN WAN - LAYOUT PLAN (ALTERNATIVE SCHEMES)

| | |
|------------------|--------------------------|
| 圖則編號 drawing no. | 比例 scale |
| NTWZ 1270 | 1:4000 OR AS SHOWN |

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NEW TERRITORIES NORTH AND WEST DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

不同方案的隔音效果及造價之摘要

Summary of Acoustic Performance and Costs of Various Schemes

| | | 建議的方案 Recommended Scheme | 其他方案 A Alternative Scheme A | 其他方案 B Alternative Scheme B |
|---|--------------------------|--------------------------------|-----------------------------------|-----------------------------------|
| 暴露於過量噪音的住宅數目 No. of Exposed Flats | 鄉村 Villages | 142 | 142 | 142 |
| | 公共屋邨 Housing Estates | 1521 | 1521 | 1521 |
| | 總數 Total | 1663 | 1663 | 1663 |
| 受保護的住宅數目 No. of Flats Protected | 鄉村 Villages | 117 | 136 | 77 |
| | 公共屋邨 Housing Estates | 926 | 515 | 920 |
| | 總數 Total | 1043 | 651 | 997 |
| 受保護的住宅的百分比 % of Flats Protected | 鄉村 Villages | 82% | 96% | 54% |
| | 公共屋邨 Housing Estates | 61% | 34% | 60% |
| | 整體百分比 Overall Percentage | 63% | 39% | 60% |
| 受惠的住宅總數 Total No. of Flats Benefited | | 1659 | 1438 | 1658 |
| 受惠的住宅的百分比 Total % of Flat Benefited | | 99.76% | 86.00% | 99.70% |
| 估計造價 Estimated Cost (HK\$) | | \$217M | \$260M | \$260M |

註釋：

1. 受保護的住宅，是指這些住宅所承受的交通噪音在一小時內有 10% 時間超逾 70 分貝(A)L₁₀(1 小時)，而在實施加建工程後，所承受的噪音水平可減至 70 分貝(A)L₁₀(1 小時)或以下。
2. 受惠的住宅，是指這些住宅所承受的交通噪音在一小時內有 10% 時間超逾 70 分貝(A)L₁₀(1 小時)，而在實施加建工程後，所承受的噪音水平可消減 1 分貝(A)以上。

Note :

1. Flats protected refer to flats being exposed to traffic noise above 70dB(A)L₁₀(1 hour) and their mitigated noise levels are reduced to 70dB(A)L₁₀(1 hour) and below after the implementation of the retrofitting project.
2. Flats benefited refer to flats being exposed to traffic noise above 70dB(A)L₁₀(1 hour) and their mitigated noise levels are reduced by more than 1dB(A) after the implementation of the retrofitting project.

工務計劃項目第7780TH號 PWP Item No. 7780TH
荃灣象鼻山路隔音屏障加建工程
Retrofitting of Noise Barriers on Cheung Pei Shan Road, Tsuen Wan

不同方案的噪音評估結果
Noise Assessment Results for the Various Schemes

二陂圳 Yi Pei Chun



(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|-----------------|-------------|---|---|---|---|
| YPC1 | G | 74 | 69 | 56 | 72 |
| | 1 | 77 | 70 | 57 | 76 |
| | 2 | 77 | 72 | 59 | 76 |
| YPC2 | G | 69 | 64 | 60 | 67 |
| | 1 | 74 | 68 | 63 | 72 |
| | 2 | 76 | 70 | 66 | 74 |
| YPC3 | G | 63 | 59 | 53 | 61 |
| | 1 | 67 | 61 | 54 | 64 |
| YPC4 | G | 70 | 62 | 54 | 67 |
| YPC5 | G | 72 | 65 | 62 | 70 |
| YPC6 | G | 70 | 63 | 61 | 67 |
| YPC7 | G | 65 | 61 | 56 | 62 |
| | 1 | 68 | 63 | 59 | 65 |
| | 2 | 70 | 65 | 62 | 67 |
| YPC8 | G | 63 | 58 | 52 | 60 |
| YPC9 | G | 72 | 71 | 70 | 71 |
| | 1 | 72 | 70 | 70 | 71 |
| | 2 | 73 | 70 | 70 | 72 |

不同方案的噪音評估結果
Noise Assessment Results for the Various Schemes

海壩村 Hoi Pa Resite Village



(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|-----------------|-------------|---|---|---|---|
| HPR1 | G | 78 | 60 | 60 | 62 |
| | 1 | 79 | 62 | 62 | 64 |
| | 2 | 79 | 66 | 66 | 67 |
| HPR2 | G | 79 | 61 | 61 | 61 |
| | 1 | 79 | 64 | 63 | 64 |
| | 2 | 79 | 68 | 68 | 68 |
| HPR3 | G | 78 | 61 | 61 | 62 |
| | 1 | 79 | 64 | 64 | 64 |
| | 2 | 79 | 69 | 69 | 69 |
| HPR4 | G | 74 | 61 | 61 | 61 |
| | 1 | 79 | 64 | 64 | 65 |
| | 2 | 79 | 69 | 69 | 69 |
| HPR5 | G | 71 | 62 | 61 | 62 |
| | 1 | 80 | 65 | 64 | 67 |
| | 2 | 80 | 70 | 69 | 70 |
| HPR6 | G | 67 | 62 | 60 | 63 |
| | 1 | 80 | 69 | 64 | 72 |
| | 2 | 80 | 72 | 69 | 73 |
| HPR7 | G | 71 | 64 | 64 | 66 |
| | 1 | 74 | 71 | 71 | 72 |
| | 2 | 76 | 73 | 73 | 74 |
| HPR8 | G | 72 | 59 | 58 | 64 |
| | 1 | 74 | 61 | 60 | 67 |
| | 2 | 74 | 63 | 62 | 67 |
| HPR9 | G | 71 | 65 | 65 | 65 |
| | 1 | 74 | 66 | 66 | 66 |
| | 2 | 75 | 68 | 68 | 68 |

不同方案的噪音評估結果
Noise Assessment Results for the Various Schemes

三棟屋村 Sam Tung Uk Resite Village (Page 1/2)



(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|-----------------|-------------|---|---|---|---|
| STU1 | G | 77 | 65 | 63 | 76 |
| | 1 | 79 | 67 | 64 | 78 |
| | 2 | 79 | 70 | 65 | 78 |
| STU2 | G | 72 | 61 | 55 | 70 |
| | 1 | 74 | 63 | 57 | 73 |
| | 2 | 76 | 64 | 58 | 74 |
| STU3 | G | 76 | 66 | 58 | 74 |
| | 1 | 78 | 67 | 59 | 76 |
| | 2 | 78 | 68 | 60 | 76 |
| STU4 | G | 71 | 67 | 61 | 69 |
| | 1 | 76 | 69 | 65 | 74 |
| | 2 | 76 | 69 | 65 | 74 |
| STU5 | G | 74 | 70 | 64 | 72 |
| | 1 | 77 | 71 | 68 | 76 |
| | 2 | 77 | 72 | 68 | 76 |
| STU6 | G | 70 | 67 | 61 | 67 |
| | 1 | 75 | 71 | 62 | 72 |
| | 2 | 76 | 72 | 62 | 73 |
| STU7 | G | 62 | 60 | 56 | 60 |
| | 1 | 66 | 62 | 57 | 63 |
| | 2 | 69 | 65 | 58 | 65 |

不同方案的噪音評估結果
Noise Assessment Results for the Various Schemes

三棟屋村 Sam Tung Uk Resite Village (Page 2/2)

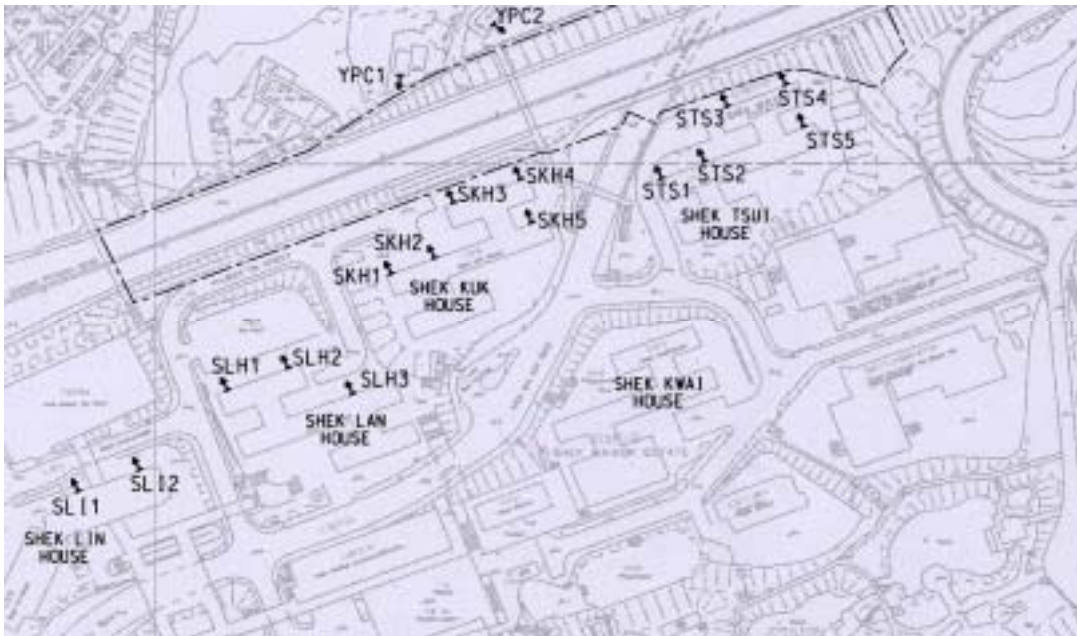


(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|-----------------|-------------|---|---|---|---|
| STU8 | G | 63 | 61 | 55 | 61 |
| | 1 | 69 | 64 | 57 | 65 |
| | 2 | 72 | 67 | 58 | 69 |
| STU9 | G | 60 | 59 | 53 | 59 |
| | 1 | 67 | 64 | 57 | 64 |
| | 2 | 73 | 68 | 59 | 70 |
| STU10 | G | 68 | 64 | 62 | 66 |
| | 1 | 71 | 67 | 65 | 69 |
| | 2 | 72 | 67 | 66 | 70 |
| STU11 | G | 63 | 62 | 61 | 62 |
| | 1 | 69 | 68 | 67 | 68 |
| | 2 | 71 | 70 | 69 | 70 |
| STU12 | G | 59 | 58 | 58 | 58 |
| | 1 | 60 | 60 | 59 | 60 |
| | 2 | 62 | 62 | 61 | 61 |
| STU13 | G | 68 | 66 | 60 | 66 |
| | 1 | 73 | 70 | 64 | 70 |
| | 2 | 74 | 71 | 65 | 71 |
| STU14 | G | 58 | 58 | 56 | 58 |
| | 1 | 60 | 59 | 57 | 59 |
| | 2 | 62 | 60 | 58 | 60 |

不同方案的噪音評估結果
Noise Assessment Results for Various Schemes

石圍角邨 Shek Wai Kok Estate (Page 1/3)

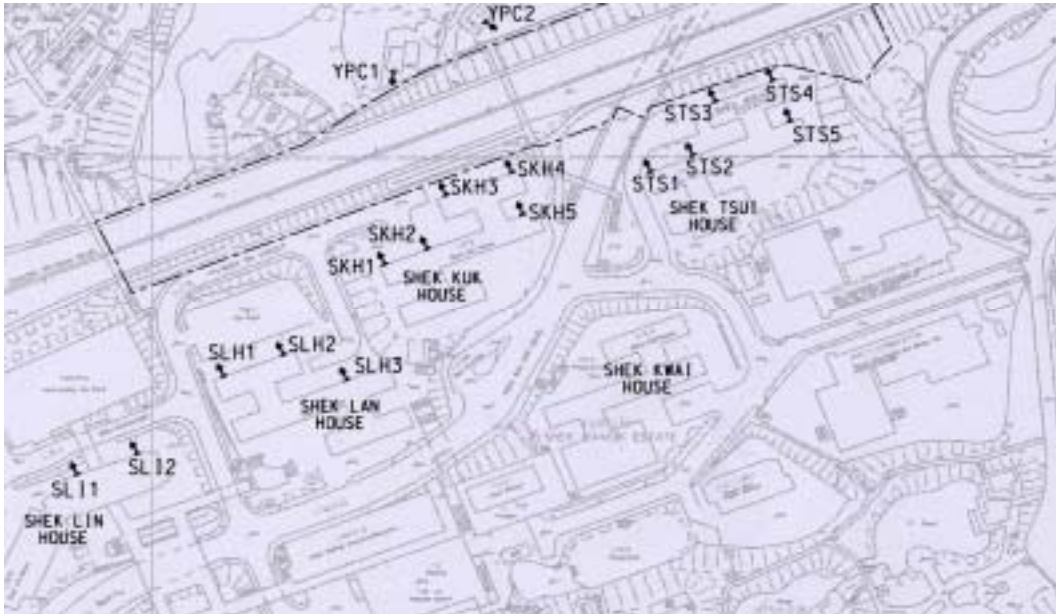


(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 位置 Location | 噪音感應強 的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|---|---------------------|-------------|--|--|--|--|
| 石圍角邨 石蓮樓 Shek Wai Kok Estate Shek Lin House | SLI1 | 1 | 68 | 67 | 67 | 67 |
| | | 5 | 68 | 67 | 67 | 67 |
| | | 10 | 70 | 68 | 68 | 68 |
| | | 13 | 71 | 69 | 70 | 69 |
| | SLI2 | 1 | 64 | 63 | 63 | 63 |
| | | 5 | 65 | 63 | 64 | 63 |
| | | 10 | 69 | 67 | 67 | 66 |
| | | 13 | 70 | 68 | 69 | 68 |
| 石圍角邨 石蘭樓 Shek Wai Kok Estate Shek Lan House | SLH1 | 1 | 72 | 71 | 71 | 71 |
| | | 5 | 73 | 70 | 70 | 70 |
| | | 10 | 73 | 70 | 71 | 70 |
| | | 15 | 73 | 70 | 72 | 70 |
| | | 20 | 72 | 70 | 71 | 70 |
| | | 25 | 72 | 70 | 71 | 70 |
| | | 27 | 72 | 70 | 71 | 70 |
| | | SLH2 | 1 | 70 | 66 | 66 |
| | 5 | | 72 | 67 | 67 | 67 |
| | 10 | | 72 | 68 | 69 | 68 |
| | 15 | | 72 | 68 | 71 | 68 |
| | 20 | | 72 | 69 | 71 | 68 |
| | 25 | | 72 | 69 | 70 | 68 |
| | 27 | | 71 | 69 | 70 | 68 |
| | SLH3 | 1 | 66 | 60 | 60 | 60 |
| | | 5 | 68 | 61 | 62 | 61 |
| | | 10 | 69 | 62 | 63 | 62 |
| | | 15 | 69 | 62 | 66 | 62 |
| | | 20 | 69 | 63 | 67 | 62 |
| | | 25 | 68 | 63 | 67 | 62 |
| 27 | | 68 | 63 | 66 | 62 | |

不同方案的噪音評估結果
Noise Assessment Results for Various Schemes

石圍角邨 Shek Wai Kok Estate (Page 2/3)

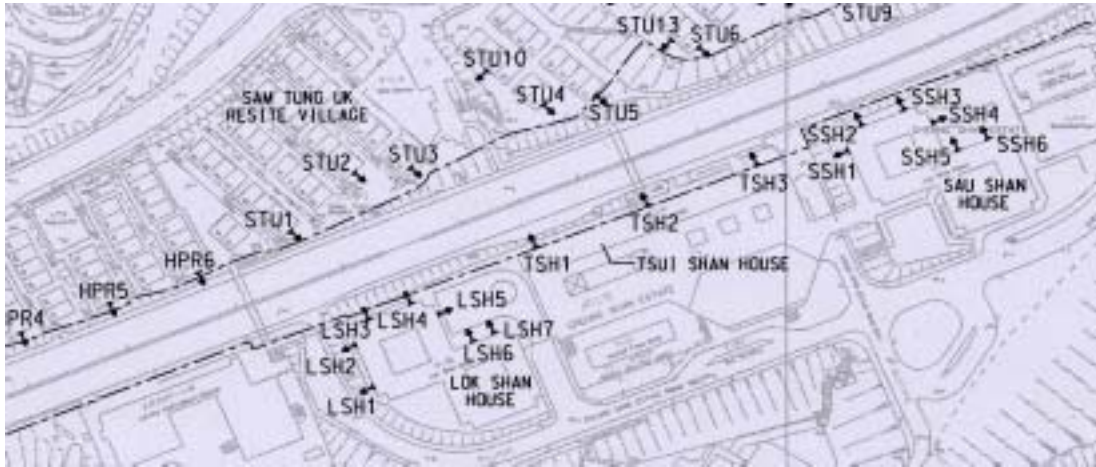


(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 位置 Location | 噪音感應強 的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|---|---------------------|-------------|--|--|--|--|
| 石圍角邨 石菊樓 Shek Wai Kok Estate Shek Kuk House | SKH1 | 1 | 73 | 63 | 64 | 63 |
| | | 5 | 74 | 64 | 68 | 64 |
| | | 10 | 74 | 65 | 71 | 65 |
| | | 15 | 73 | 67 | 71 | 66 |
| | | 20 | 72 | 69 | 71 | 67 |
| | | 25 | 72 | 69 | 70 | 68 |
| | SKH2 | 1 | 71 | 61 | 62 | 61 |
| | | 5 | 72 | 62 | 66 | 62 |
| | | 10 | 72 | 63 | 70 | 64 |
| | | 15 | 72 | 65 | 69 | 64 |
| | | 20 | 71 | 67 | 69 | 65 |
| | | 25 | 70 | 68 | 69 | 66 |
| | SKH3 | 1 | 76 | 64 | 67 | 65 |
| | | 5 | 77 | 65 | 74 | 66 |
| | | 10 | 76 | 69 | 74 | 70 |
| | | 15 | 75 | 72 | 74 | 71 |
| | | 20 | 74 | 72 | 73 | 71 |
| | | 25 | 73 | 71 | 73 | 70 |
| | SKH4 | 1 | 76 | 68 | 69 | 68 |
| | | 5 | 77 | 68 | 74 | 69 |
| | | 10 | 76 | 70 | 74 | 70 |
| | | 15 | 75 | 72 | 74 | 72 |
| | | 20 | 74 | 72 | 73 | 71 |
| | | 25 | 74 | 72 | 73 | 71 |
| | SKH5 | 1 | 71 | 70 | 70 | 70 |
| 5 | | 72 | 69 | 70 | 69 | |
| 10 | | 71 | 67 | 70 | 67 | |
| 15 | | 70 | 67 | 69 | 67 | |
| 20 | | 70 | 67 | 69 | 67 | |
| 25 | | 69 | 67 | 68 | 67 | |

不同方案的噪音評估結果
Noise Assessment Results for Various Schemes

象山邨 Cheung Shan Estate

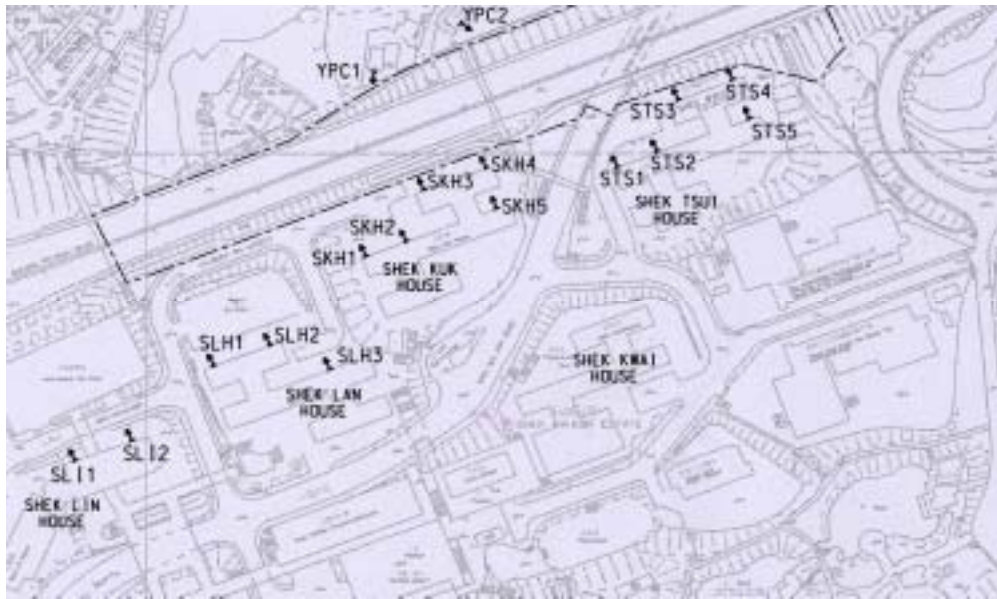


(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 位置 Location | 噪音感應強 的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|---|---------------------|-------------|--|--|--|--|
| 象山邨 樂山樓 Cheung Shan Estate Lok shan House | LSH1 | 1 | 69 | 65 | 66 | 66 |
| | | 5 | 70 | 66 | 68 | 66 |
| | | 10 | 70 | 68 | 69 | 68 |
| | | 15 | 71 | 69 | 70 | 69 |
| | | 20 | 70 | 69 | 70 | 69 |
| | LSH2 | 1 | 72 | 68 | 68 | 68 |
| | | 5 | 73 | 68 | 71 | 69 |
| | | 10 | 72 | 69 | 71 | 70 |
| | | 15 | 72 | 70 | 71 | 70 |
| | | 20 | 71 | 70 | 71 | 70 |
| | LSH3 | 1 | 78 | 68 | 72 | 69 |
| | | 5 | 77 | 70 | 75 | 72 |
| | | 10 | 76 | 74 | 75 | 74 |
| | | 15 | 75 | 74 | 75 | 73 |
| | | 20 | 75 | 73 | 75 | 73 |
| | LSH4 | 1 | 78 | 66 | 70 | 67 |
| | | 5 | 77 | 69 | 75 | 70 |
| | | 10 | 76 | 73 | 75 | 73 |
| | | 15 | 75 | 73 | 75 | 73 |
| | | 20 | 75 | 73 | 74 | 73 |
| | LSH5 | 1 | 75 | 63 | 66 | 63 |
| | | 5 | 75 | 66 | 72 | 65 |
| | | 10 | 74 | 71 | 72 | 69 |
| | | 15 | 74 | 71 | 72 | 70 |
| | | 20 | 73 | 71 | 72 | 70 |
| | LSH6 | 1 | 69 | 56 | 59 | 55 |
| | | 5 | 71 | 59 | 66 | 59 |
| | | 10 | 71 | 63 | 68 | 61 |
| 15 | | 70 | 67 | 68 | 64 | |
| 20 | | 70 | 68 | 68 | 66 | |
| 23 | | 70 | 68 | 69 | 67 | |
| LSH7 | 1 | 69 | 62 | 63 | 62 | |
| | 5 | 72 | 64 | 67 | 64 | |
| | 10 | 72 | 66 | 70 | 65 | |
| | 15 | 71 | 68 | 70 | 66 | |
| | 20 | 71 | 69 | 70 | 67 | |
| | 23 | 71 | 69 | 70 | 68 | |

不同方案的噪音評估結果
Noise Assessment Results for Various Schemes

石圍角邨 Shek Wai Kok Estate (Page 3/3)

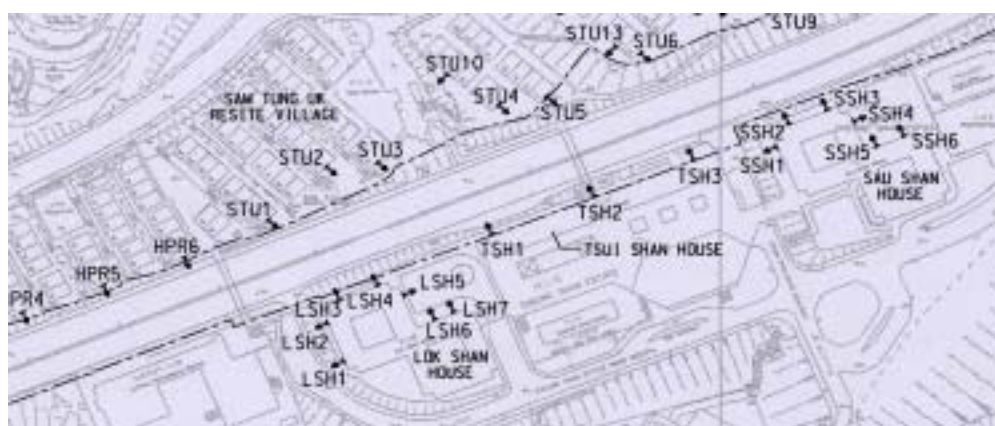


(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 位置 Location | 噪音感應強 的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|--|---------------------|-------------|--|--|--|--|
| 石圍角邨 石翠樓 Shek Wai Kok Estate Shek Tsui House | STS1 | 1 | 71 | 65 | 66 | 65 |
| | | 5 | 74 | 68 | 69 | 68 |
| | | 10 | 75 | 71 | 73 | 71 |
| | | 15 | 75 | 71 | 73 | 71 |
| | | 20 | 74 | 71 | 73 | 71 |
| | | 25 | 74 | 71 | 72 | 71 |
| | | 27 | 73 | 71 | 72 | 71 |
| | STS2 | 1 | 68 | 54 | 58 | 55 |
| | | 5 | 71 | 58 | 63 | 59 |
| | | 10 | 72 | 61 | 69 | 62 |
| | | 15 | 72 | 65 | 70 | 65 |
| | | 20 | 72 | 66 | 70 | 67 |
| | | 25 | 72 | 67 | 70 | 68 |
| | | 27 | 71 | 67 | 70 | 68 |
| | STS3 | 1 | 71 | 59 | 60 | 59 |
| | | 5 | 77 | 64 | 68 | 66 |
| | | 10 | 77 | 68 | 74 | 69 |
| | | 15 | 76 | 71 | 74 | 72 |
| | | 20 | 75 | 72 | 74 | 72 |
| | | 25 | 74 | 72 | 74 | 72 |
| | | 27 | 74 | 72 | 74 | 71 |
| | STS4 | 1 | 70 | 59 | 60 | 59 |
| | | 5 | 76 | 66 | 68 | 66 |
| | | 10 | 77 | 68 | 74 | 69 |
| | | 15 | 76 | 71 | 74 | 71 |
| | | 20 | 75 | 72 | 74 | 72 |
| | | 25 | 74 | 72 | 74 | 72 |
| | STS5 | 1 | 64 | 62 | 62 | 61 |
| 5 | | 68 | 66 | 66 | 66 | |
| 10 | | 69 | 67 | 68 | 67 | |
| 15 | | 69 | 67 | 68 | 67 | |
| 20 | | 69 | 68 | 68 | 67 | |
| 25 | | 68 | 68 | 68 | 67 | |
| 27 | 68 | 67 | 68 | 67 | | |

不同方案的噪音評估結果
Noise Assessment Results for Various Schemes

象山邨 Cheung Shan Estate (Page 2/2)



(灰色陰影的數字顯示在該噪音感應強的地方，該方案的減音效果為最佳)
(NSR where the scheme(s) is/are the most effective are shaded in grey)

| 位置 Location | 噪音感應強 的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 建議的方案 Recommended Scheme 分貝 dB(A) | 其他方案A Alternative Scheme A 分貝 dB(A) | 其他方案B Alternative Scheme B 分貝 dB(A) |
|--|---------------------|-------------|--|--|--|--|
| 象山邨 翠山樓 Cheung Shan Estate Tsui Shan House | TSH1 | 1 | 78 | 66 | 75 | 69 |
| | | 5 | 77 | 73 | 75 | 73 |
| | | 10 | 76 | 73 | 75 | 73 |
| | | 12 | 76 | 73 | 75 | 73 |
| | TSH2 | 1 | 78 | 69 | 75 | 70 |
| | | 5 | 77 | 73 | 75 | 73 |
| | | 10 | 76 | 74 | 75 | 73 |
| | | 12 | 76 | 74 | 75 | 73 |
| | TSH3 | 1 | 78 | 63 | 72 | 64 |
| | | 5 | 77 | 70 | 75 | 71 |
| | | 10 | 76 | 73 | 75 | 73 |
| | | 12 | 76 | 73 | 75 | 73 |
| 象山邨 秀山樓 Cheung Shan Estate Sau Shan House | SSH1 | 1 | 72 | 66 | 71 | 66 |
| | | 5 | 73 | 68 | 72 | 67 |
| | | 10 | 73 | 70 | 71 | 69 |
| | | 15 | 72 | 71 | 71 | 69 |
| | | 20 | 72 | 70 | 71 | 69 |
| | SSH2 | 1 | 78 | 67 | 75 | 68 |
| | | 5 | 77 | 72 | 75 | 73 |
| | | 10 | 76 | 73 | 75 | 73 |
| | | 15 | 75 | 73 | 75 | 72 |
| | | 20 | 74 | 72 | 74 | 72 |
| | SSH3 | 1 | 78 | 67 | 74 | 69 |
| | | 5 | 77 | 72 | 75 | 73 |
| | | 10 | 76 | 73 | 75 | 73 |
| | | 15 | 75 | 73 | 75 | 72 |
| | | 20 | 74 | 72 | 74 | 72 |
| | SSH4 | 1 | 72 | 65 | 70 | 65 |
| | | 5 | 74 | 68 | 72 | 68 |
| | | 10 | 74 | 71 | 72 | 71 |
| | | 15 | 73 | 71 | 72 | 71 |
| | | 20 | 72 | 71 | 72 | 71 |
| | SSH5 | 1 | 65 | 61 | 63 | 61 |
| | | 5 | 70 | 63 | 68 | 63 |
| | | 10 | 71 | 68 | 70 | 68 |
| | | 15 | 71 | 70 | 70 | 69 |
| | | 20 | 71 | 70 | 70 | 69 |
| | SSH6 | 1 | 65 | 62 | 64 | 62 |
| | | 5 | 71 | 64 | 69 | 64 |
| | | 10 | 73 | 70 | 72 | 70 |
| 15 | | 73 | 71 | 72 | 70 | |
| 20 | | 73 | 71 | 72 | 71 | |
| 23 | 73 | 71 | 72 | 71 | | |

工務計劃項目第7780TH號 PWP Item No. 7780TH
荃灣象鼻山路隔音屏障加建工程
Retrofitting of Noise Barriers on Cheung Pei Shan Road, Tsuen Wan

選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

二陂圳 Yi Pei Chun



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音交效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|-----------------|-------------|---|--|--|
| YPC1 | G | 74 | 69 | 69 |
| | 1 | 77 | 70 | 70 |
| | 2 | 77 | 72 | 72 |
| YPC2 | G | 69 | 64 | 64 |
| | 1 | 74 | 68 | 68 |
| | 2 | 76 | 70 | 71 |
| YPC3 | G | 63 | 59 | 59 |
| | 1 | 67 | 61 | 61 |
| YPC4 | G | 70 | 62 | 62 |
| YPC5 | G | 72 | 65 | 65 |
| YPC6 | G | 70 | 63 | 63 |
| YPC7 | G | 65 | 61 | 61 |
| | 1 | 68 | 63 | 63 |
| | 2 | 70 | 65 | 65 |
| YPC8 | G | 63 | 58 | 58 |
| YPC9 | G | 72 | 71 | 71 |
| | 1 | 72 | 70 | 70 |
| | 2 | 73 | 70 | 70 |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

Note : The provision of absorptive noise barrier panels for the lower portion of the noise barrier (as in the Recommended Scheme) can achieve almost the same absorptive effect when compared with installing absorptive panels for the entire barrier.

選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

海壩村 Hoi Pa Resite Village



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音交效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|-----------------|-------------|---|--|--|
| HPR1 | G | 78 | 60 | 60 |
| | 1 | 79 | 62 | 62 |
| | 2 | 79 | 66 | 66 |
| HPR2 | G | 79 | 61 | 61 |
| | 1 | 79 | 64 | 64 |
| | 2 | 79 | 68 | 68 |
| HPR3 | G | 78 | 61 | 61 |
| | 1 | 79 | 64 | 64 |
| | 2 | 79 | 69 | 69 |
| HPR4 | G | 74 | 61 | 61 |
| | 1 | 79 | 64 | 64 |
| | 2 | 79 | 69 | 69 |
| HPR5 | G | 71 | 62 | 62 |
| | 1 | 80 | 65 | 65 |
| | 2 | 80 | 70 | 70 |
| HPR6 | G | 67 | 62 | 62 |
| | 1 | 80 | 69 | 70 |
| | 2 | 80 | 72 | 72 |
| HPR7 | G | 71 | 64 | 64 |
| | 1 | 74 | 71 | 71 |
| | 2 | 76 | 73 | 73 |
| HPR8 | G | 72 | 59 | 59 |
| | 1 | 74 | 61 | 61 |
| | 2 | 74 | 63 | 63 |
| HPR9 | G | 71 | 65 | 65 |
| | 1 | 74 | 66 | 66 |
| | 2 | 75 | 68 | 68 |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

Note : The provision of absorptive noise barrier panels for the lower portion of the noise barrier (as in the Recommended Scheme) can achieve almost the same absorptive effect when compared with installing absorptive panels for the entire barrier.

選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

三棟屋村 Sam Tung Uk Resite Village (Page 1/2)



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|-----------------|-------------|---|--|--|
| STU1 | G | 77 | 65 | 65 |
| | 1 | 79 | 67 | 67 |
| | 2 | 79 | 70 | 71 |
| STU2 | G | 72 | 61 | 61 |
| | 1 | 74 | 63 | 63 |
| | 2 | 76 | 64 | 64 |
| STU3 | G | 76 | 66 | 66 |
| | 1 | 78 | 67 | 67 |
| | 2 | 78 | 68 | 69 |
| STU4 | G | 71 | 67 | 67 |
| | 1 | 76 | 69 | 69 |
| | 2 | 76 | 69 | 70 |
| STU5 | G | 74 | 70 | 70 |
| | 1 | 77 | 71 | 71 |
| | 2 | 77 | 72 | 72 |
| STU6 | G | 70 | 67 | 68 |
| | 1 | 75 | 71 | 71 |
| | 2 | 76 | 72 | 73 |
| STU7 | G | 62 | 60 | 60 |
| | 1 | 66 | 62 | 62 |
| | 2 | 69 | 65 | 65 |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

Note : The provision of absorptive noise barrier panels for the lower portion of the noise barrier (as in the Recommended Scheme) can achieve almost the same absorptive effect when compared with installing absorptive panels for the entire barrier.

選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

三棟屋村 Sam Tung Uk Resite Village (Page 2/2)



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音交效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|-----------------|-------------|---|--|--|
| STU8 | G | 63 | 61 | 61 |
| | 1 | 69 | 64 | 64 |
| | 2 | 72 | 67 | 67 |
| STU9 | G | 60 | 59 | 59 |
| | 1 | 67 | 64 | 64 |
| | 2 | 73 | 68 | 69 |
| STU10 | G | 68 | 64 | 64 |
| | 1 | 71 | 67 | 67 |
| | 2 | 72 | 67 | 67 |
| STU11 | G | 63 | 62 | 62 |
| | 1 | 69 | 68 | 68 |
| | 2 | 71 | 70 | 70 |
| STU12 | G | 59 | 58 | 58 |
| | 1 | 60 | 60 | 60 |
| | 2 | 62 | 62 | 62 |
| STU13 | G | 68 | 66 | 66 |
| | 1 | 73 | 70 | 70 |
| | 2 | 74 | 71 | 71 |
| STU14 | G | 58 | 58 | 58 |
| | 1 | 60 | 59 | 59 |
| | 2 | 62 | 60 | 60 |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

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選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

石圍角邨 Shek Wai Kok Estate (Page 1/3)



(灰色陰影的數字顯示在某該噪音感應強烈的地方，全部吸音板的減音交效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

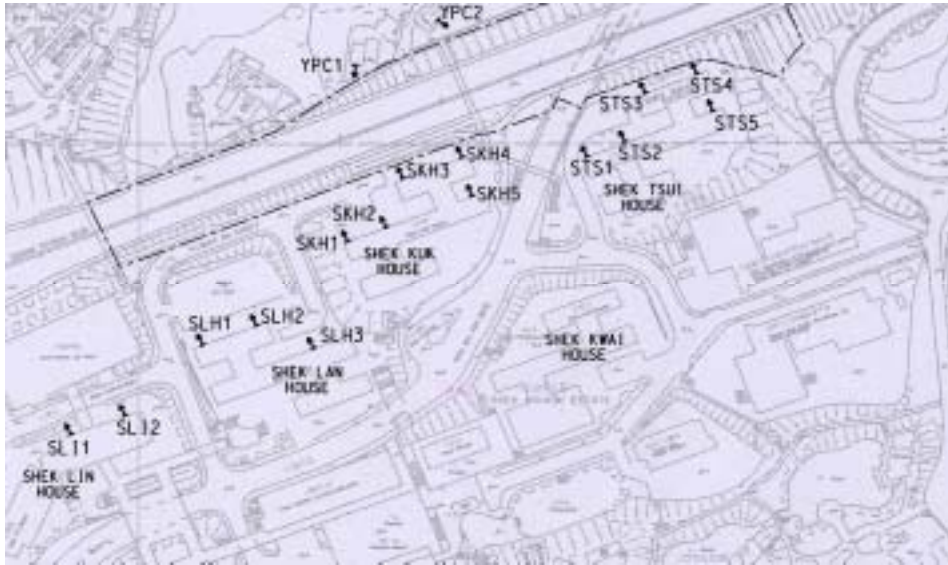
| 位置 Location | 噪音感應強烈的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|---|------------------|-------------|---|--|--|
| 石圍角邨 石蓮樓 Shek Wai Kok Estate Shek Lin House | SLI1 | 1 | 68 | 67 | 67 |
| | | 5 | 68 | 67 | 67 |
| | | 10 | 70 | 68 | 68 |
| | | 13 | 71 | 69 | 69 |
| | SLI2 | 1 | 64 | 63 | 63 |
| | | 5 | 65 | 63 | 63 |
| | | 10 | 69 | 67 | 67 |
| | | 13 | 70 | 68 | 68 |
| 石圍角邨 石蘭樓 Shek Wai Kok Estate Shek Lan House | SLH1 | 1 | 72 | 71 | 71 |
| | | 5 | 73 | 70 | 70 |
| | | 10 | 73 | 70 | 70 |
| | | 15 | 73 | 70 | 70 |
| | | 20 | 72 | 70 | 70 |
| | | 25 | 72 | 70 | 70 |
| | | 27 | 72 | 70 | 70 |
| | SLH2 | 1 | 70 | 66 | 66 |
| | | 5 | 72 | 67 | 67 |
| | | 10 | 72 | 68 | 68 |
| | | 15 | 72 | 68 | 68 |
| | | 20 | 72 | 69 | 69 |
| | | 27 | 71 | 69 | 69 |
| | SLH3 | 1 | 66 | 60 | 60 |
| | | 5 | 68 | 61 | 61 |
| | | 10 | 69 | 62 | 62 |
| | | 15 | 69 | 62 | 62 |
| | | 27 | 68 | 63 | 63 |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

Note : The provision of absorptive noise barrier panels for the lower portion of the noise barrier (as in the Recommended Scheme) can achieve almost the same absorptive effect when compared with installing absorptive panels for the entire barrier.

選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

石圍角邨 Shek Wai Kok Estate (Page 2/3)



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音交效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 位置 Location | 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|---|-----------------|-------------|---|--|--|
| 石圍角邨 石菊樓 Shek Wai Kok Estate Shek Kuk House | SKH1 | 1 | 73 | 63 | 63 |
| | | 5 | 74 | 64 | 64 |
| | | 10 | 74 | 65 | 66 |
| | | 15 | 73 | 67 | 68 |
| | | 20 | 72 | 69 | 70 |
| | | 25 | 72 | 69 | 70 |
| | SKH2 | 1 | 71 | 61 | 61 |
| | | 5 | 72 | 62 | 62 |
| | | 10 | 72 | 63 | 64 |
| | | 15 | 72 | 65 | 66 |
| | | 20 | 71 | 67 | 68 |
| | | 25 | 70 | 68 | 68 |
| | SKH3 | 1 | 76 | 64 | 64 |
| | | 5 | 77 | 65 | 65 |
| | | 10 | 76 | 69 | 70 |
| | | 15 | 75 | 72 | 73 |
| | | 20 | 74 | 72 | 72 |
| | | 25 | 73 | 71 | 71 |
| | SKH4 | 1 | 76 | 68 | 68 |
| | | 5 | 77 | 68 | 69 |
| | | 10 | 76 | 70 | 71 |
| | | 15 | 75 | 72 | 73 |
| | | 20 | 74 | 72 | 73 |
| | | 25 | 74 | 72 | 72 |
| | SKH5 | 1 | 71 | 70 | 70 |
| 5 | | 72 | 69 | 69 | |
| 10 | | 71 | 67 | 67 | |
| 15 | | 70 | 67 | 67 | |
| 20 | | 70 | 67 | 67 | |
| 25 | | 69 | 67 | 67 | |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

Note: The provision of absorptive noise barrier panels for the lower portion of the noise barrier (as in the Recommended Scheme) can achieve almost the same absorptive effect when compared with installing absorptive panels for the entire barrier.

選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

石圍角邨 Shek Wai Kok Estate (Page 3/3)



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音交效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 位置 Location | 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|--|-----------------|-------------|---|--|--|
| 石圍角邨 石翠樓 Shek Wai Kok Estate Shek Tsui House | STS1 | 1 | 71 | 65 | 65 |
| | | 5 | 74 | 68 | 68 |
| | | 10 | 75 | 71 | 71 |
| | | 15 | 75 | 71 | 71 |
| | | 20 | 74 | 71 | 71 |
| | | 25 | 74 | 71 | 71 |
| | | 27 | 73 | 71 | 71 |
| | STS2 | 1 | 68 | 54 | 54 |
| | | 5 | 71 | 58 | 58 |
| | | 10 | 72 | 61 | 61 |
| | | 15 | 72 | 65 | 65 |
| | | 20 | 72 | 66 | 67 |
| | | 25 | 72 | 67 | 68 |
| | | 27 | 71 | 67 | 68 |
| | STS3 | 1 | 71 | 59 | 59 |
| | | 5 | 77 | 64 | 64 |
| | | 10 | 77 | 68 | 68 |
| | | 15 | 76 | 71 | 72 |
| | | 20 | 75 | 72 | 73 |
| | | 25 | 74 | 72 | 72 |
| | | 27 | 74 | 72 | 72 |
| | STS4 | 1 | 70 | 59 | 59 |
| | | 5 | 76 | 66 | 66 |
| | | 10 | 77 | 68 | 69 |
| | | 15 | 76 | 71 | 73 |
| | | 20 | 75 | 72 | 73 |
| | | 25 | 74 | 72 | 72 |
| 27 | | 74 | 72 | 72 | |
| STS5 | 1 | 64 | 62 | 62 | |
| | 5 | 68 | 66 | 66 | |
| | 10 | 69 | 67 | 68 | |
| | 15 | 69 | 67 | 68 | |
| | 20 | 69 | 68 | 68 | |
| | 25 | 68 | 68 | 68 | |
| | 27 | 68 | 67 | 68 | |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

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選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

象山邨 Cheung Shan Estate (Page 1/2)



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 位置 Location | 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|---|-----------------|-------------|---|--|--|
| 象山邨 樂山樓 Cheung Shan Estate Lok shan House | LSH1 | 1 | 69 | 65 | 66 |
| | | 5 | 70 | 66 | 67 |
| | | 10 | 70 | 68 | 68 |
| | | 15 | 71 | 69 | 69 |
| | | 20 | 70 | 69 | 70 |
| | LSH2 | 1 | 72 | 68 | 68 |
| | | 5 | 73 | 68 | 69 |
| | | 10 | 72 | 69 | 70 |
| | | 15 | 72 | 70 | 71 |
| | | 20 | 71 | 70 | 70 |
| | LSH3 | 1 | 78 | 68 | 68 |
| | | 5 | 77 | 70 | 71 |
| | | 10 | 76 | 74 | 75 |
| | | 15 | 75 | 74 | 74 |
| | | 20 | 75 | 73 | 73 |
| | LSH4 | 1 | 78 | 66 | 66 |
| | | 5 | 77 | 69 | 70 |
| | | 10 | 76 | 73 | 74 |
| | | 15 | 75 | 73 | 74 |
| | | 20 | 75 | 73 | 73 |
| | LSH5 | 1 | 75 | 63 | 63 |
| | | 5 | 75 | 66 | 67 |
| | | 10 | 74 | 71 | 72 |
| | | 15 | 74 | 71 | 72 |
| | | 20 | 73 | 71 | 71 |
| | LSH6 | 1 | 69 | 56 | 56 |
| | | 5 | 71 | 59 | 59 |
| | | 10 | 71 | 63 | 63 |
| 15 | | 70 | 67 | 67 | |
| 20 | | 70 | 68 | 69 | |
| 23 | | 70 | 68 | 69 | |
| LSH7 | 1 | 69 | 62 | 62 | |
| | 5 | 72 | 64 | 64 | |
| | 10 | 72 | 66 | 66 | |
| | 15 | 71 | 68 | 69 | |
| | 20 | 71 | 69 | 70 | |
| | 23 | 71 | 69 | 70 | |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

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選擇不同性質的垂直隔音板之效果
Effects of Choice of Vertical Panels

象山邨 Cheung Shan Estate (Page 2/2)



(灰色陰影的數字顯示在某該噪音感應強的地方，全部吸音板的減音交效果較全部反音板為佳)
(NSRs where absorptive panels are more effective than reflective panels are shaded in grey)

| 位置 Location | 噪音感應強的地方 NSR | 樓層 Floor | 現在的噪音聲級 Existing Noise Level 分貝 dB(A) | 全部吸音板 All Absorptive Panels 分貝 dB(A) | 全部反音板 All Reflective Panels 分貝 dB(A) |
|--|-----------------|-------------|---|--|--|
| 象山邨 翠山樓 Cheung Shan Estate Tsui Shan House | TSH1 | 1 | 78 | 66 | 66 |
| | | 5 | 77 | 73 | 73 |
| | | 10 | 76 | 73 | 74 |
| | | 12 | 76 | 73 | 74 |
| | TSH2 | 1 | 78 | 69 | 69 |
| | | 5 | 77 | 73 | 74 |
| | | 10 | 76 | 74 | 74 |
| | | 12 | 76 | 74 | 74 |
| | TSH3 | 1 | 78 | 63 | 63 |
| | | 5 | 77 | 70 | 71 |
| | | 10 | 76 | 73 | 74 |
| | | 12 | 76 | 73 | 74 |
| 象山邨 秀山樓 Cheung Shan Estate Sau Shan House | SSH1 | 1 | 72 | 66 | 66 |
| | | 5 | 73 | 68 | 69 |
| | | 10 | 73 | 70 | 71 |
| | | 15 | 72 | 71 | 71 |
| | | 20 | 72 | 70 | 70 |
| | SSH2 | 1 | 78 | 67 | 67 |
| | | 5 | 77 | 72 | 74 |
| | | 10 | 76 | 73 | 74 |
| | | 15 | 75 | 73 | 73 |
| | | 20 | 74 | 72 | 72 |
| | SSH3 | 1 | 78 | 67 | 67 |
| | | 5 | 77 | 72 | 73 |
| | | 10 | 76 | 73 | 74 |
| | | 15 | 75 | 73 | 73 |
| | | 20 | 74 | 72 | 72 |
| | SSH4 | 1 | 72 | 65 | 65 |
| | | 5 | 74 | 68 | 69 |
| | | 10 | 74 | 71 | 72 |
| | | 15 | 73 | 71 | 72 |
| | | 20 | 72 | 71 | 71 |
| | SSH5 | 1 | 65 | 61 | 61 |
| | | 5 | 70 | 63 | 63 |
| | | 10 | 71 | 68 | 69 |
| | | 15 | 71 | 70 | 70 |
| | | 20 | 71 | 70 | 70 |
| | SSH6 | 1 | 65 | 62 | 62 |
| | | 5 | 71 | 64 | 64 |
| | | 10 | 73 | 70 | 70 |
| 15 | | 73 | 71 | 72 | |
| 20 | | 73 | 71 | 72 | |
| | | 23 | 73 | 71 | 72 |

註釋： 在隔音屏障底部安裝吸音板如建議的方案，能夠大致達到整件隔音屏障安裝吸音板的吸音效果。

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註釋 NOTES :

| 編號 no. | 日期 date | 內容摘要 description | 校對 checked | 批准 approved |
|-----------|------------|---------------------|---------------|----------------|
|-----------|------------|---------------------|---------------|----------------|

修訂 REVISION

| | 姓名 name | 簽署 Initial | 日期 date |
|---------------|-----------|------------|----------|
| 繪圖 drawn | P. K. SO | SIGNED | 11.12.04 |
| 校對 checked | S. M. LAI | SIGNED | 11.12.04 |

核准 approved
 SIGNED 11.12.04
 DUNCAN S C SUI
 Chief Engineer/NTW 日期 date

工程編號 project no. 780TH

檔案編號 file no.

合約編號 contract no.

合約 contract

圖則名稱 drawing title
 荃灣象鼻山路隔音屏障加建工程
 - 透視觀景於擬建隔音屏障及半隔音罩
 RETROFITTING OF NOISE BARRIERS ON
 CHEUNG PEI SHAN ROAD, TSUEN WAN
 - PERSPECTIVE VIEW OF NOISE BARRIERS
 AND SEMI-ENCLOSURE

| | |
|------------------|----------|
| 圖則編號 drawing no. | 比例 scale |
| NTW 1387 | N.T.S. |

辦事處 office
 新界西及北拓展處
 NEW TERRITORIES NORTH AND WEST
 DEVELOPMENT OFFICE

土木工程拓展署
 CIVIL ENGINEERING AND
 DEVELOPMENT DEPARTMENT