HONG KONG GOVERNMENT

HIGHWAYS DEPARTMENT

PWP Item 454TH: Lung Cheung Road Flyover

Focussed Environmental Impact Assessment

Volume II

DRAWINGS

by

Peter Fraenkel BMT (Asia) Ltd.

in association with

Enpac Ltd.

Urbis Travers Morgan Ltd.

February 1993

Highways Department
Highways (Kowloon) Region
Farm Road Government Offices
11 Farm Road, Kowloon

Peter Fraenkel BMT (Asia) Ltd.
7/F. Swire & Maclaine House
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AGREEMENT NO. CE 42/91

LUNG CHEUNG ROAD FLYOVER
FROM HAMMER HILL ROAD TO NEW CLEARWATER BAY ROAD
(PWP Item No. 454TH)

FOCUSED ENVIRONMENTAL IMPACT ASSESSMENT

REPORT DRAWINGS

e No.		Title
		Study Area
	*	Sensitive Receivers
		Outline Zoning Plan with Route Options
		Outline Development Plan with Route Options
		Village Layout Plan with Route Options
		Location of Noise & Air Quality Measurements
		Land Ownership Plan
		Visual Character Plan
		Existing Landscape
0		Engineering Layout and Profile Option A
1		Engineering Layout and Profile Option B
2		Engineering Layout and Profile Option C
3		Engineering Features Sheet 1 of 4 Typical Flyover Cross Sections Sheet 2 of 4 Option A Sheet 3 of 4 Option B Sheet 4 of 4 Option C
4		Construction Requirements and Working Areas Sheet 1 Sheet 2 Sheet 3
5	*	Predicted Facade Noise Levels: 2011 Option A
6	*	Predicted Facade Noise Levels: 2011 Option B
7	*	Predicted Facade Noise Levels: 2011 Option C
18		Predicted Air Quality: 2011 Option A - (A) Carbon Monoxide (B) Nitrogen Dioxide (C) TSP
19		Predicted Air Quality: 2011 Option B - (A) Carbon Monoxide (B) Nitrogen Dioxide (C) TSP
20		Predicted Air Quality: 2011 Option C - (A) Carbon Monoxide (B) Nitrogen Dioxide (C) TSP
21		Panoramic photos Sheet 1 Sheet 2 Sheet 3
22	*	Noise Contours - Do Nothing
23	*	Noise Contours Option A
24	*	Noise Contours Option B
25	*	Noise Contours Option C
26	*	Noise Contours Options A & B (mitigated)
27	*	Noise Contours Option C (mitigated)
28		Air (No_2) Contours - Do Nothing
29		AQ Contours Option A
30		AQ Contours Option B
31		AQ Contours Option C
32		Zone of Visual Influence Options A & B
33		Zone of Visual Influence Option C
34		Noise Mitigation Measures Noise Barrier
35	*	Noise Mitigation Measures Noise Enclosure
36		Landscape Mitigation Measures Option A
37		Landscape Mitigation Measures Option B
38		Landscape Mitigation Measures Option C
39		The Decision Matrix
40	*	The Recommended Scheme

* Drawing amended following comments on Draft Final Report

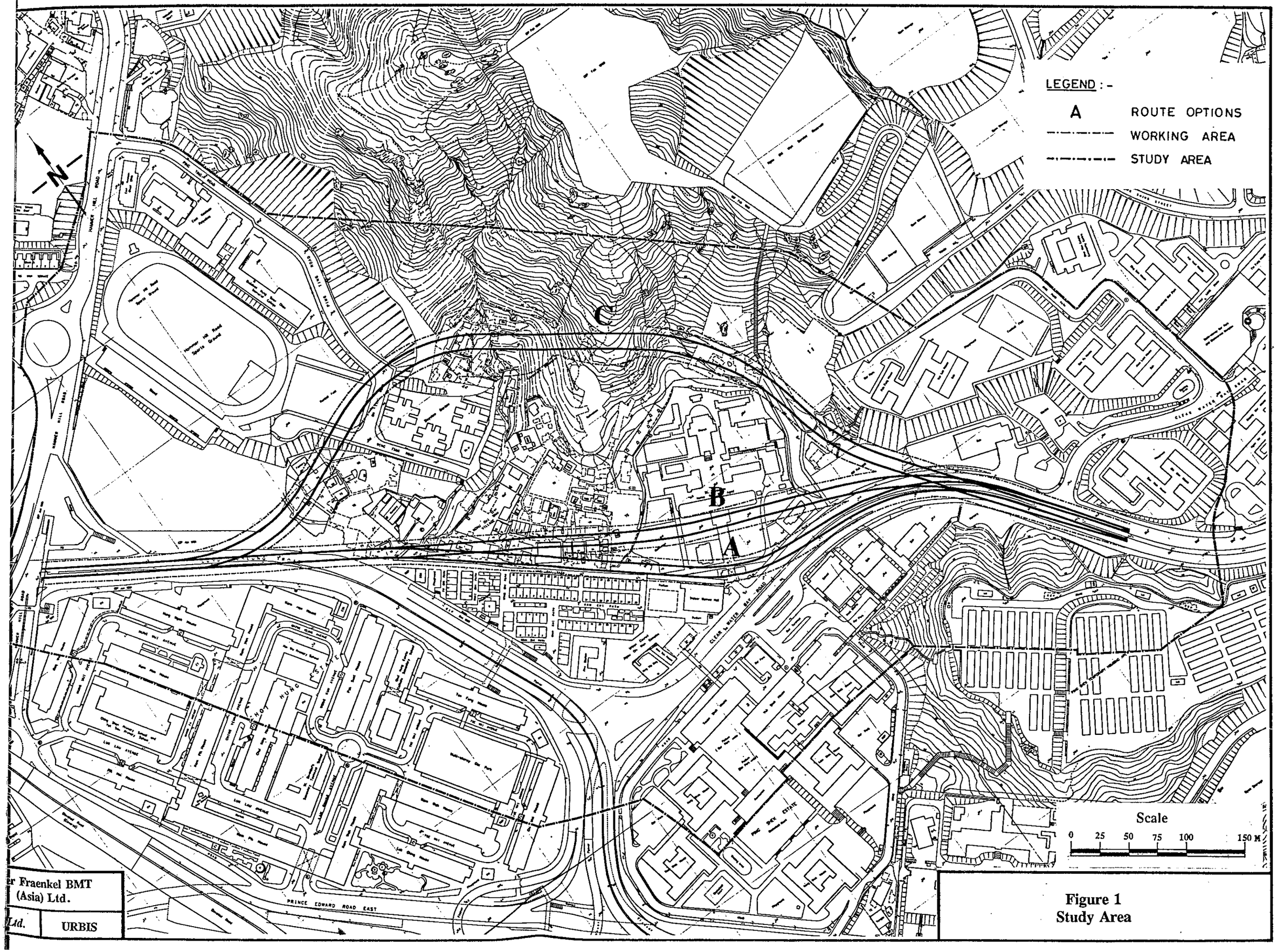

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Figure 1
Study Area

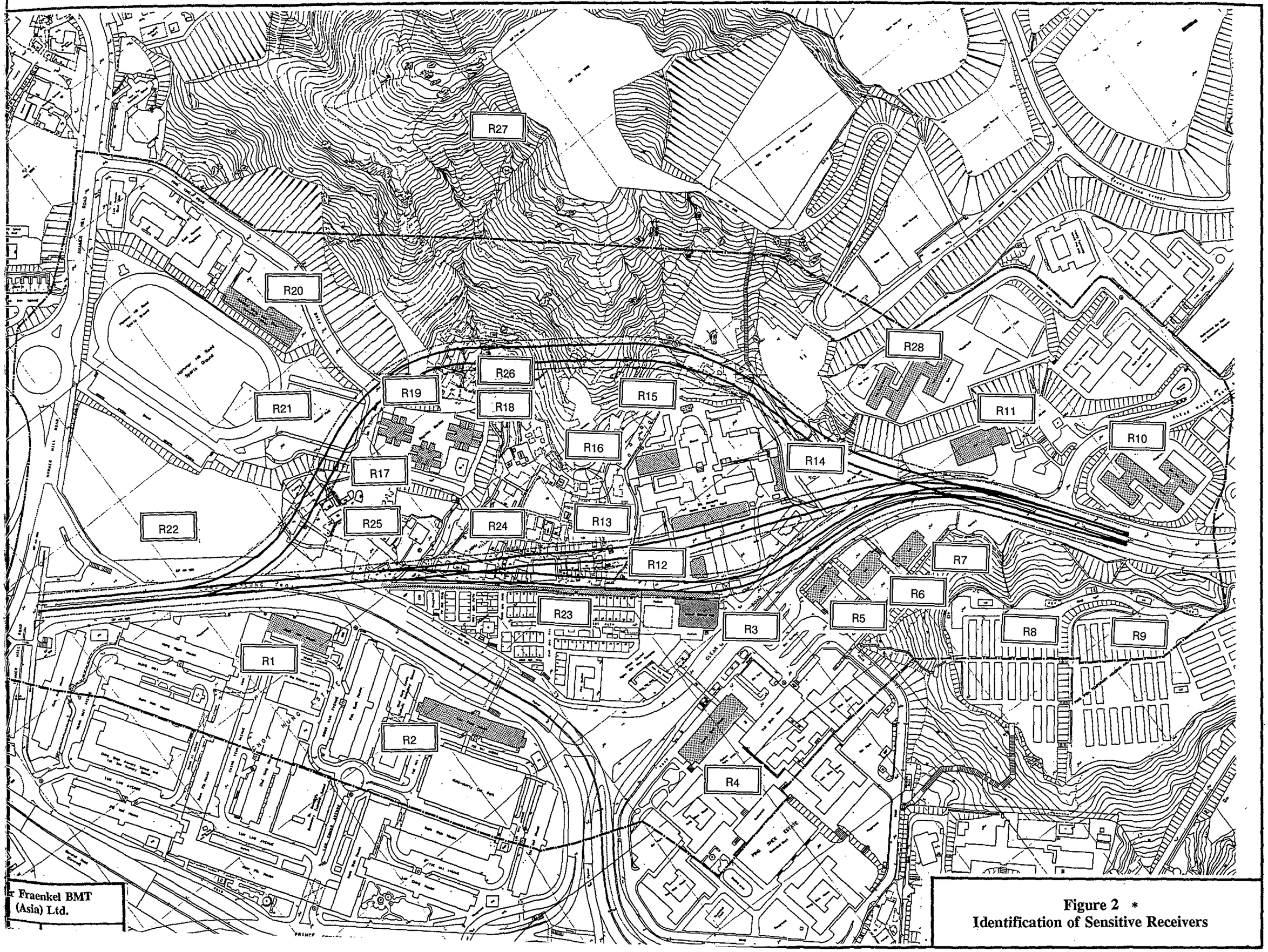

Figure 2 *
Identification of Sensitive Receivers

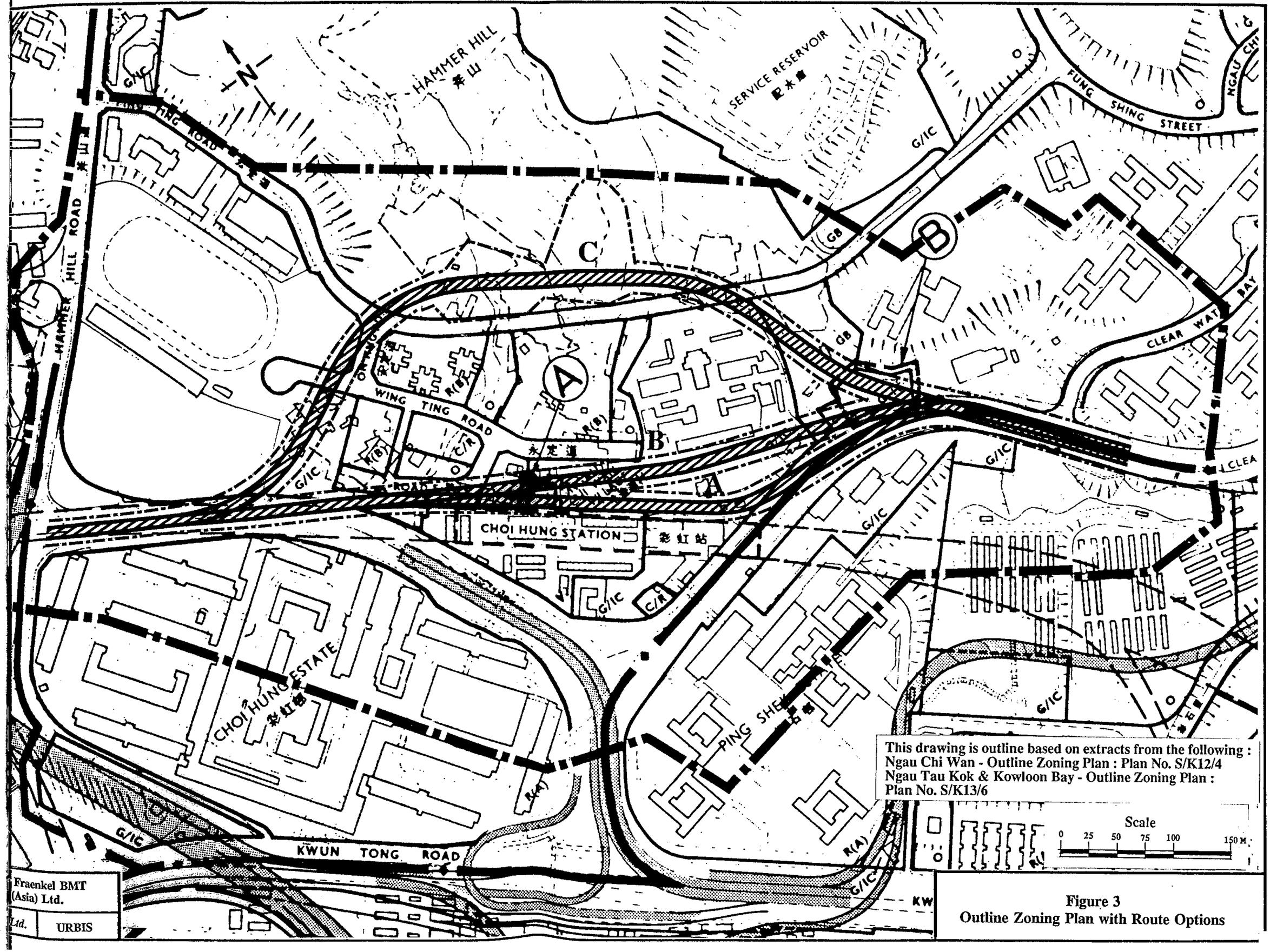

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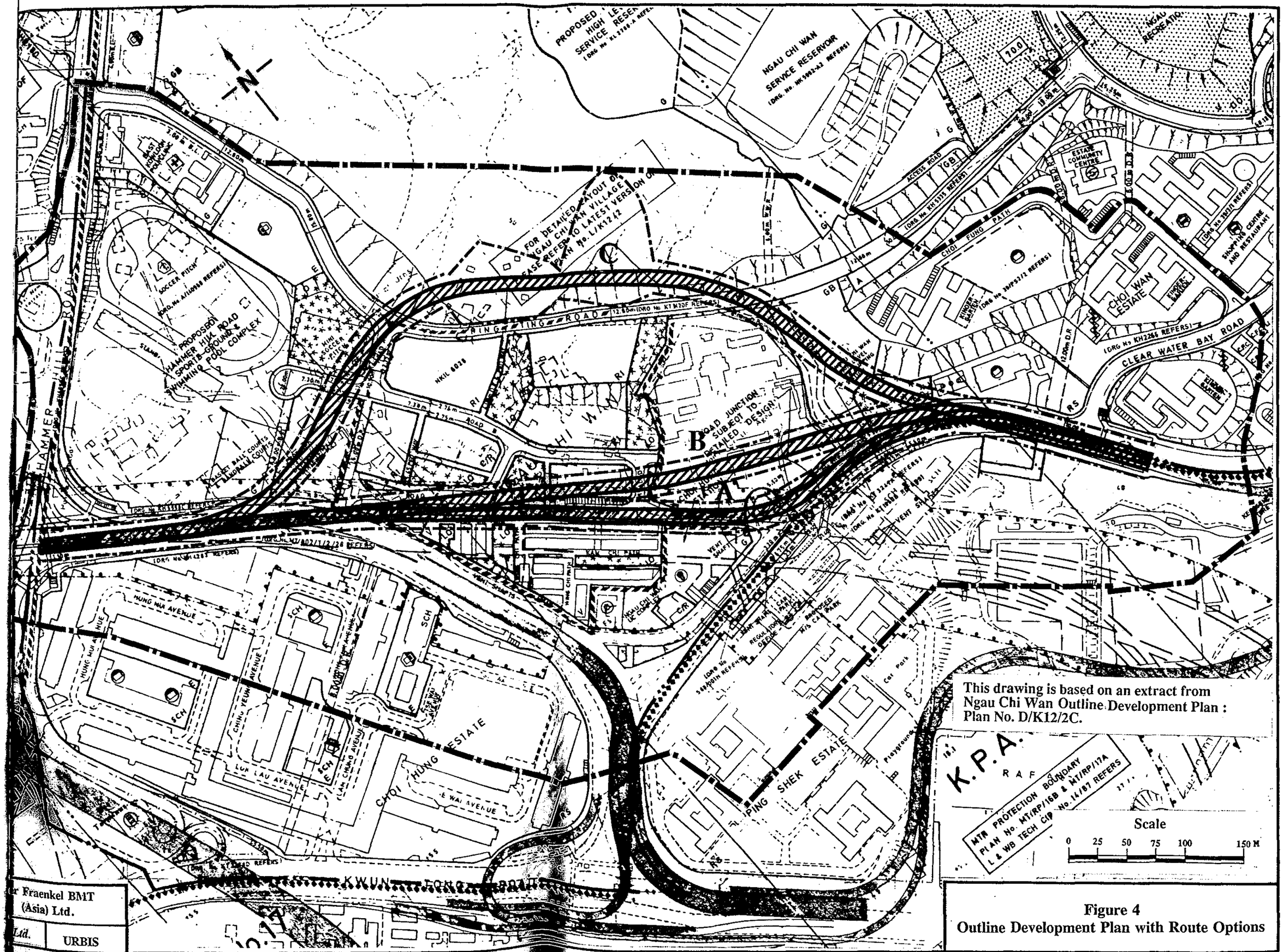
Figure 3
Outline Zoning Plan with Route Options


This drawing is based on an extract from Ngau Chi Wan Outline Development Plan : Plan No. D/K12/2C.
Scale
0 25 50 75 100 150 M
MTR PROTECTION BOUNDARY PLAN No. MT/RP/16B & MT/RP/17A L & WB TECH CIR No. 14/87 REFERS
K.P.A.
R A F
NGAU CHI WAN SERVICE RESERVOIR
CHOI WAN ESTATE
CHOI HUNG ESTATE
PING SHEK ESTATE
HUNG HUI AVENUE
CHUNG YEUNG AVENUE
LUK LAU AVENUE
LAM CHUNG AVENUE
E WAI AVENUE
RING ROAD
CLEAR WATER BAY ROAD
KWUN TONG BYPASS
HAMMER HILL ROAD
CHOI FUNG PATH
ACCESS ROAD
PROPOSED HAMMER HILL ROAD SPORTS GROUND & SWIMMING POOL COMPLEX
SOCCER PITCH
MINI SOCCER PITCH
BASKET BALL COURTS
VOLLEY BALL COURTS
ESTATE COMMUNITY CENTRE
SHOPPING CENTRE AND RESTAURANT
KINDER GARTEN
PROPOSED CAR PARK
Car Park
Playground
SCH
HKIL 6028
FOR DETAILED LAYOUT OF NGAU CHI WAN VILLAGE REFER TO LATEST VERSION OF PLAN No. L/K12/2
Figure 4
Outline Development Plan with Route Options
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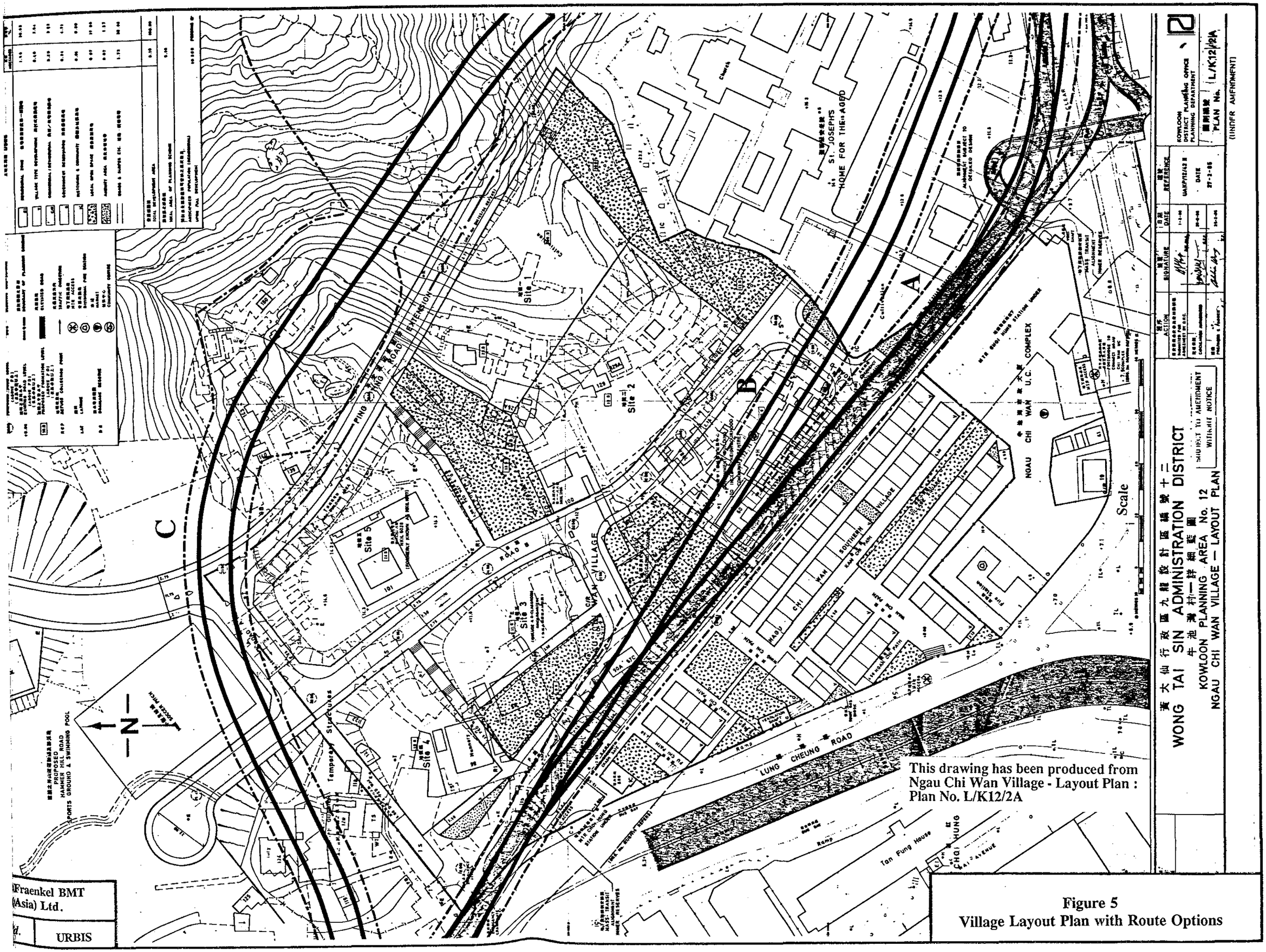

Figure 5
Village Layout Plan with Route Options

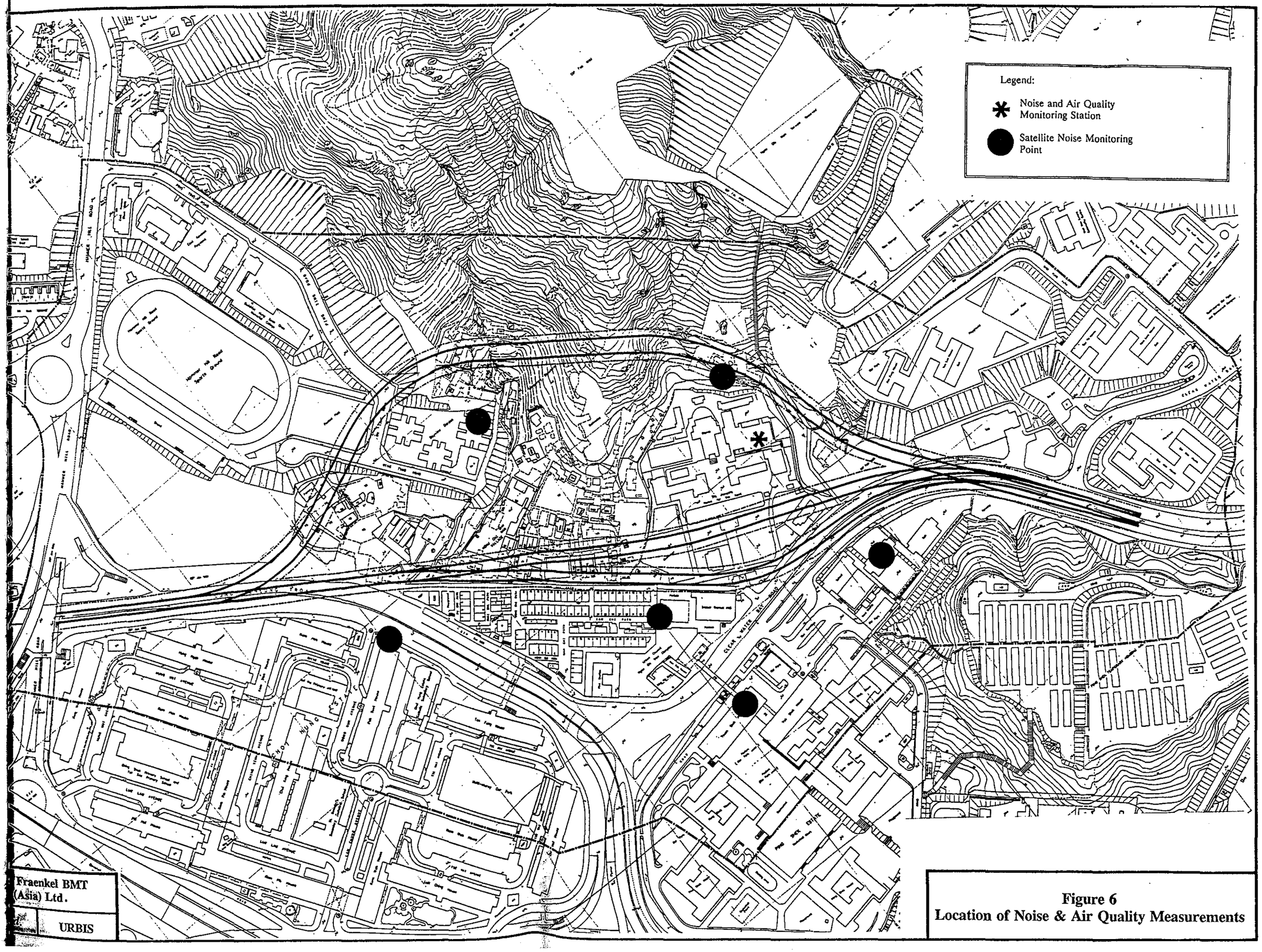

Figure 6
Location of Noise & Air Quality Measurements

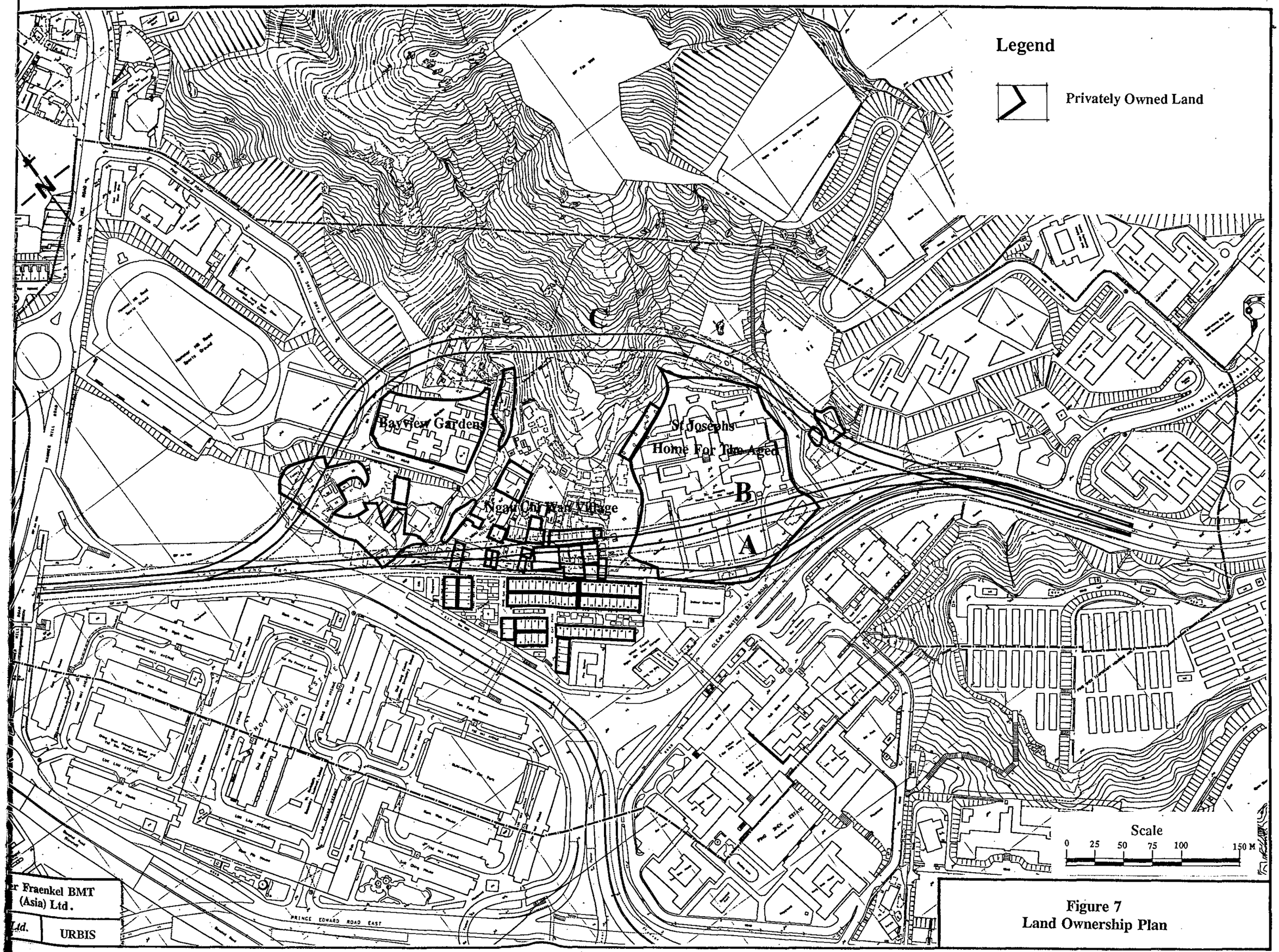

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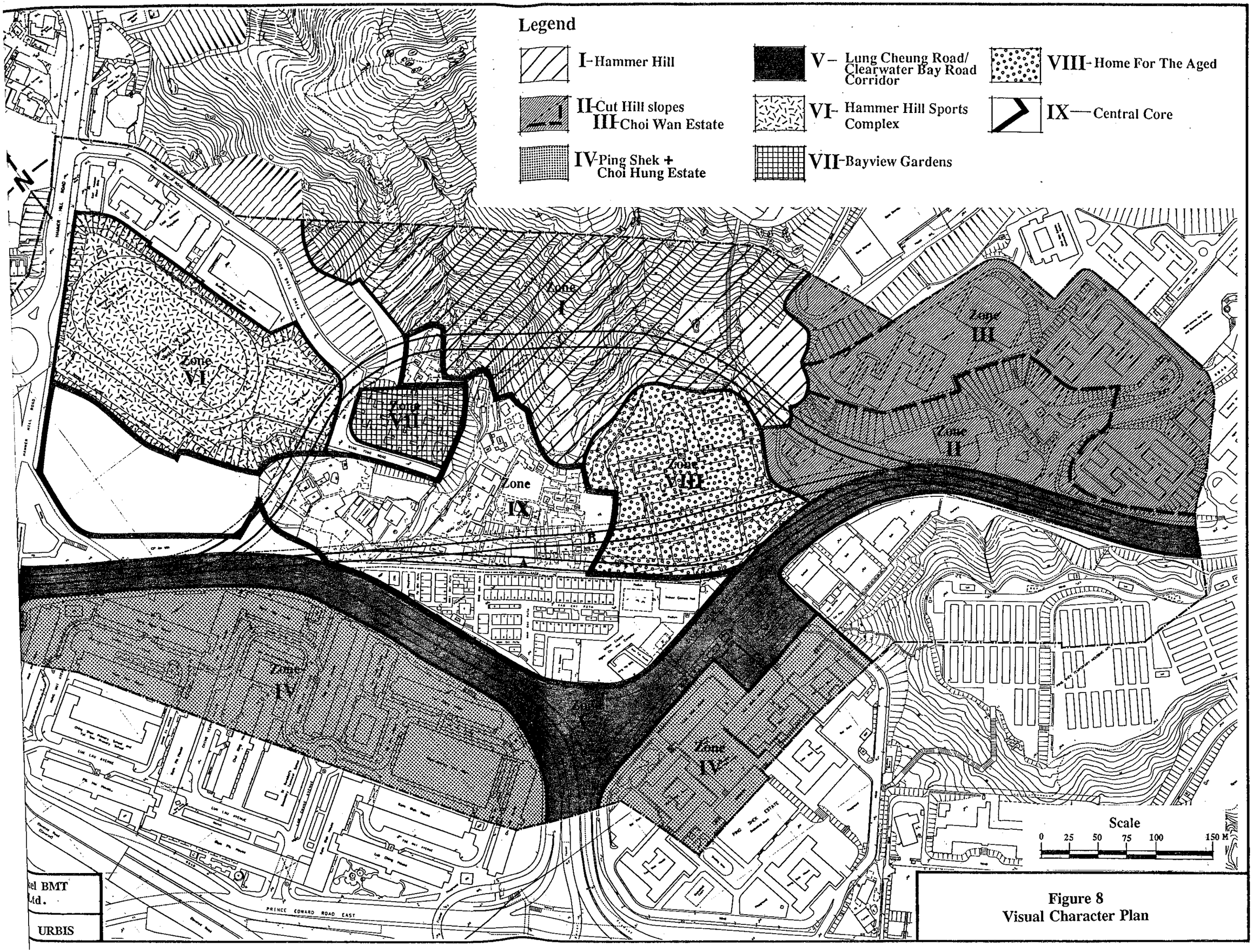
Figure 7
Land Ownership Plan


Legend
I-Hammer Hill
II-Cut Hill slopes
III-Choi Wan Estate
IV-Ping Shek + Choi Hung Estate
V- Lung Cheung Road/ Clearwater Bay Road Corridor
VI- Hammer Hill Sports Complex
VII-Bayview Gardens
VIII- Home For The Aged
IX— Central Core
N
Zone I
Zone II
Zone III
Zone IV
Zone IV
Zone VI
Zone VII
Zone VIII
Zone IX
Scale
0 25 50 75 100 150 M
PRINCE EDWARD ROAD EAST
LUK LAU AVENUE
Figure 8
Visual Character Plan
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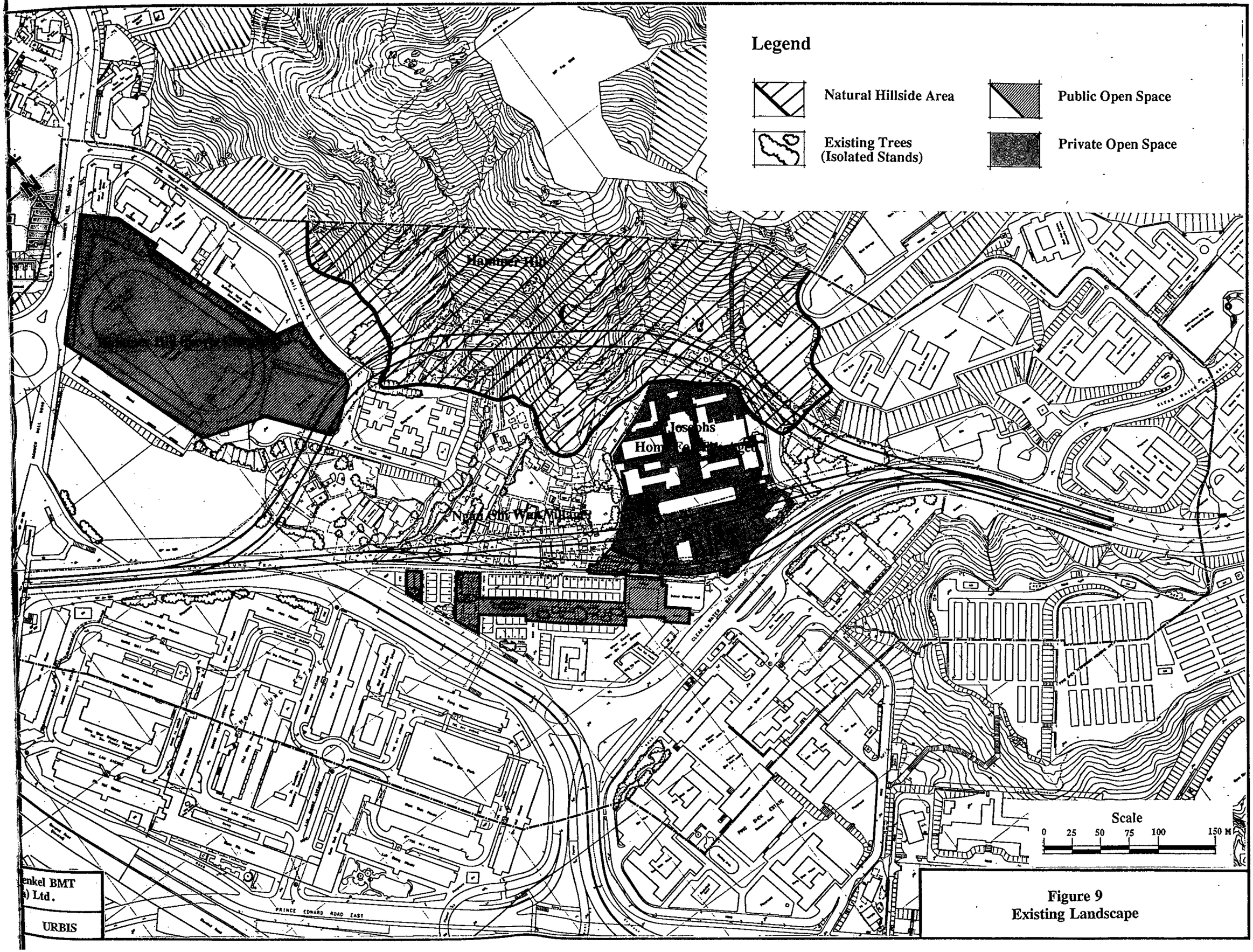
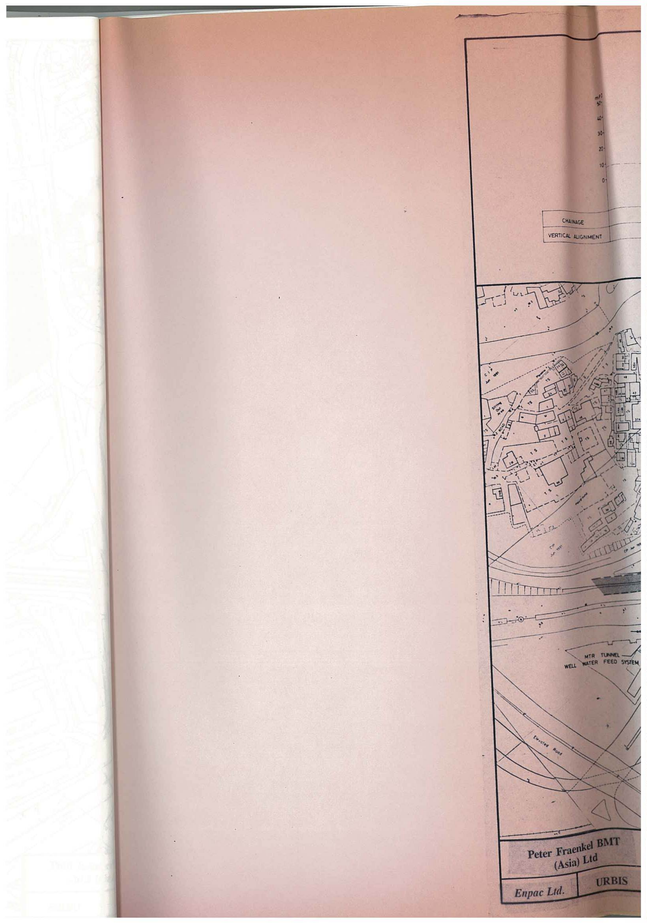
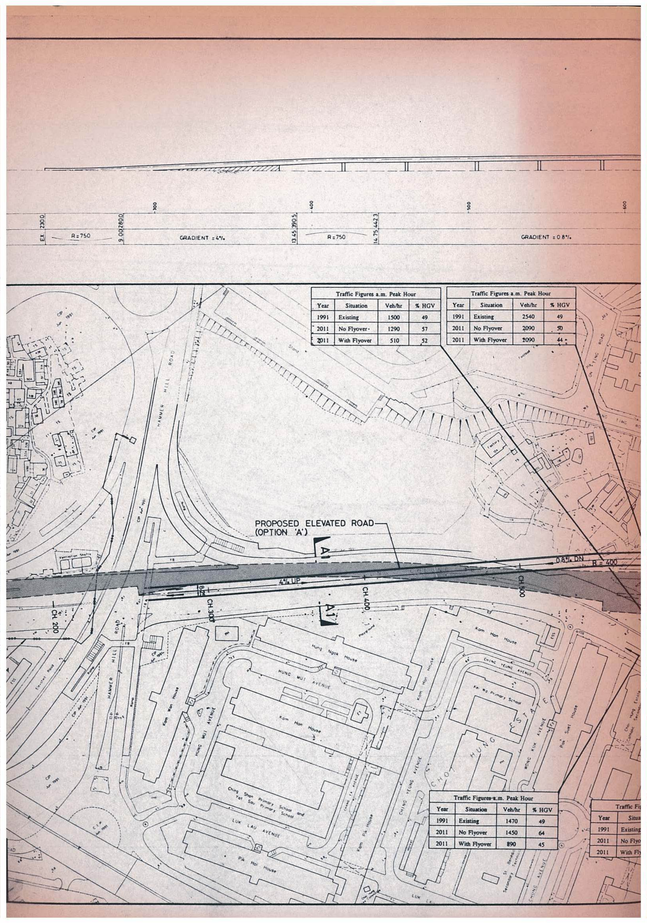
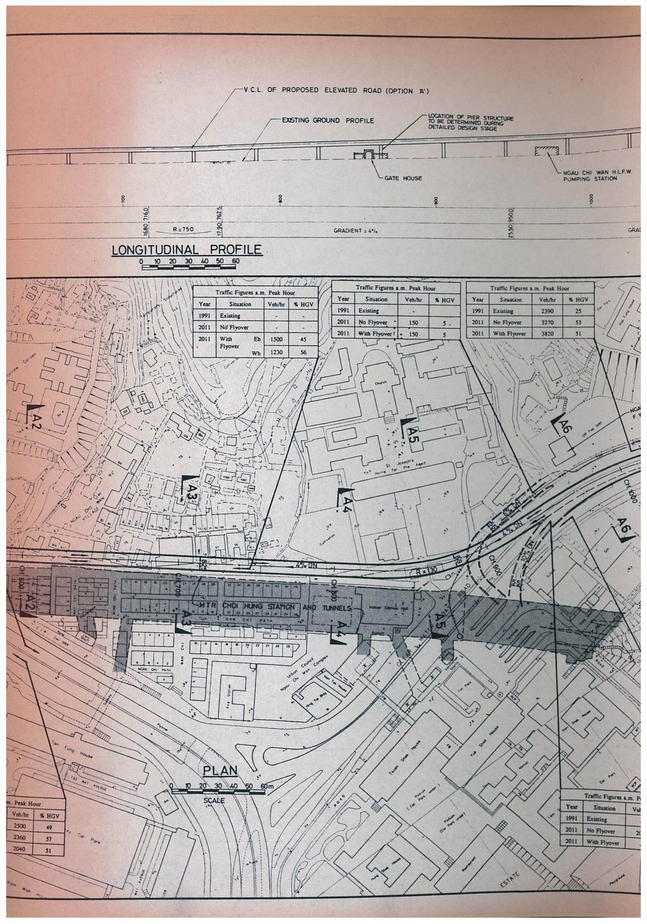


Figure 9
Existing Landscape







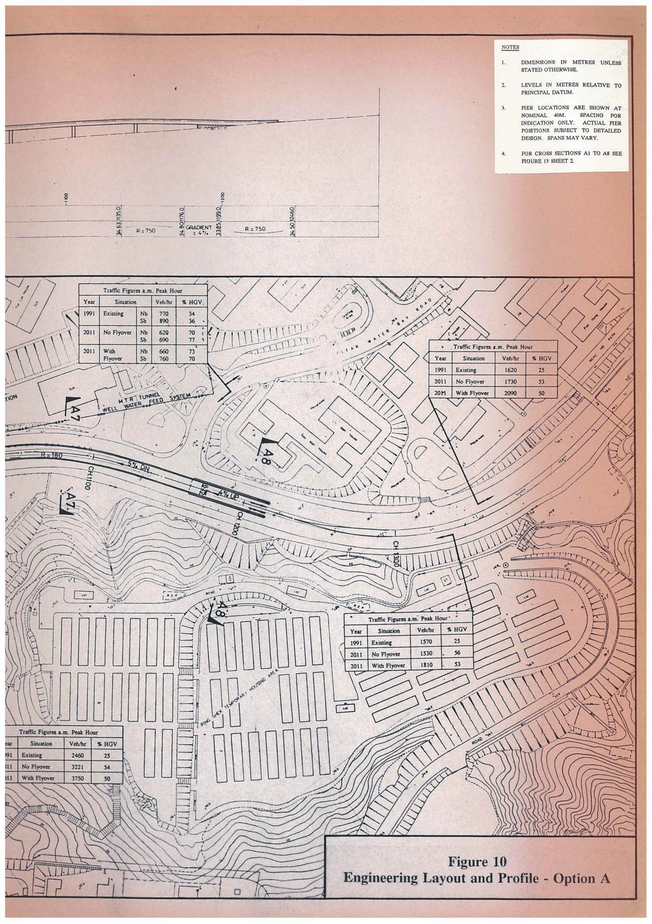
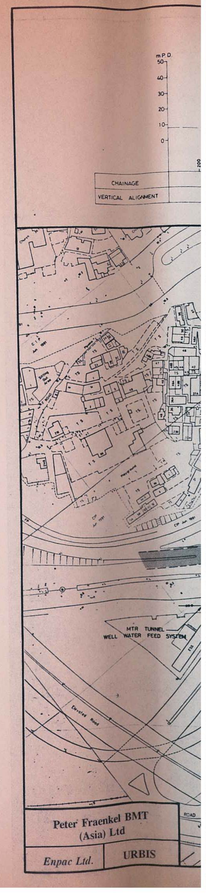
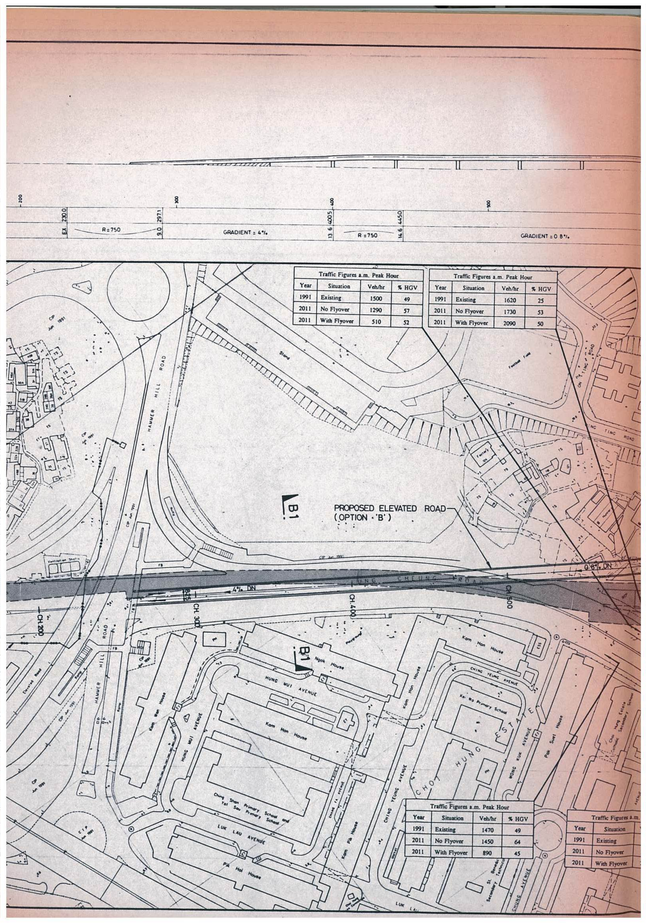
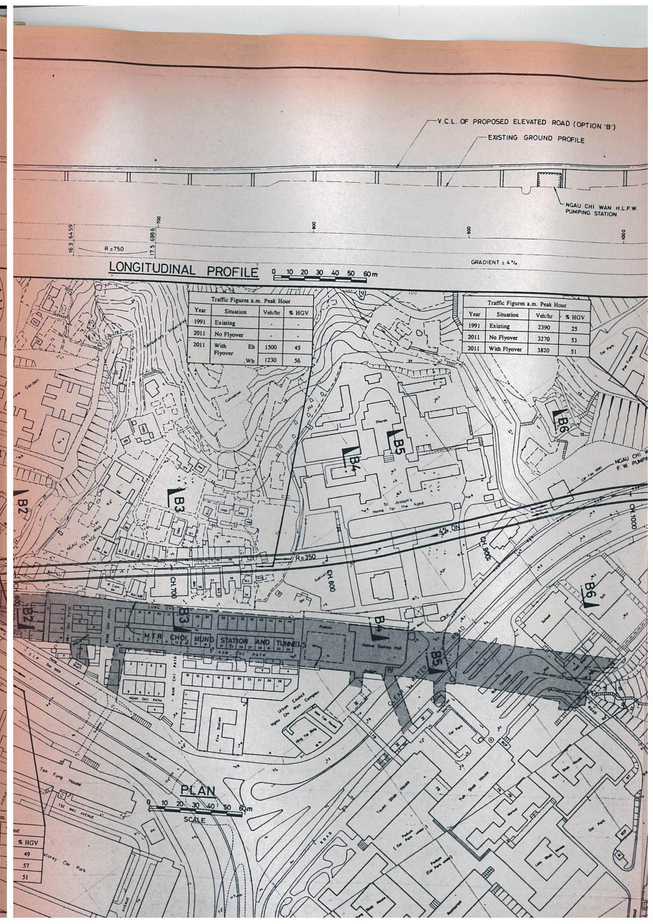


Figure 10
Engineering Layout and Profile - Option A







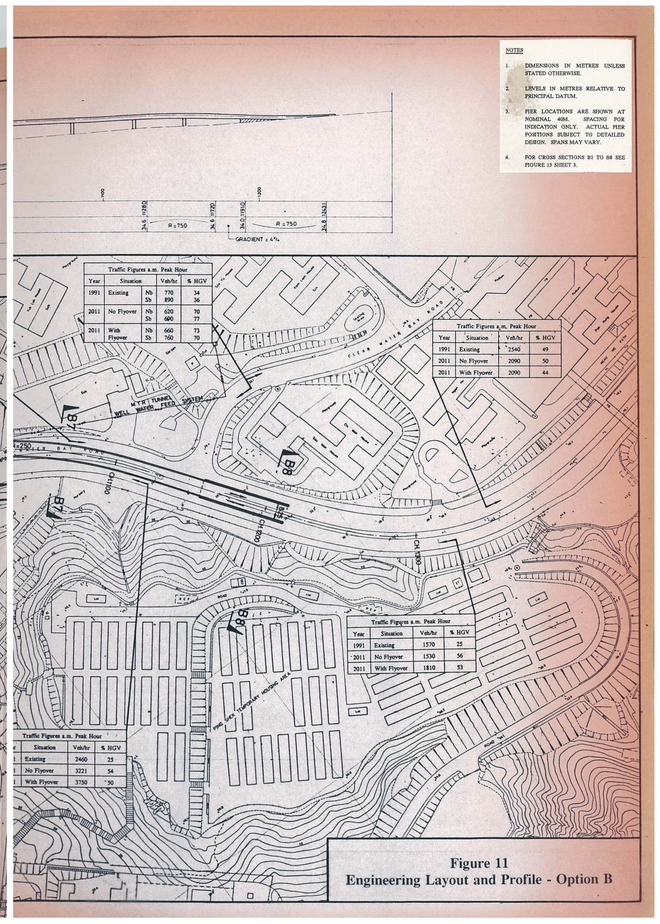
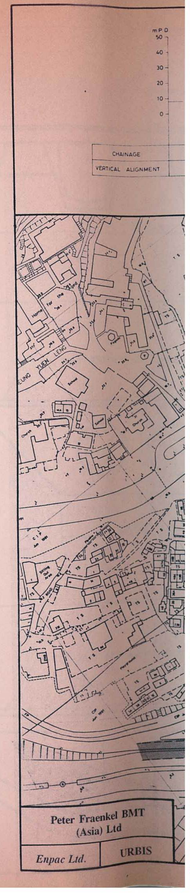


Figure 11
Engineering Layout and Profile - Option B



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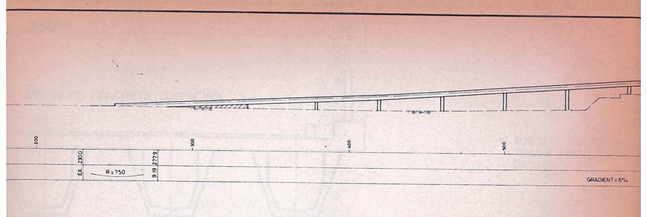
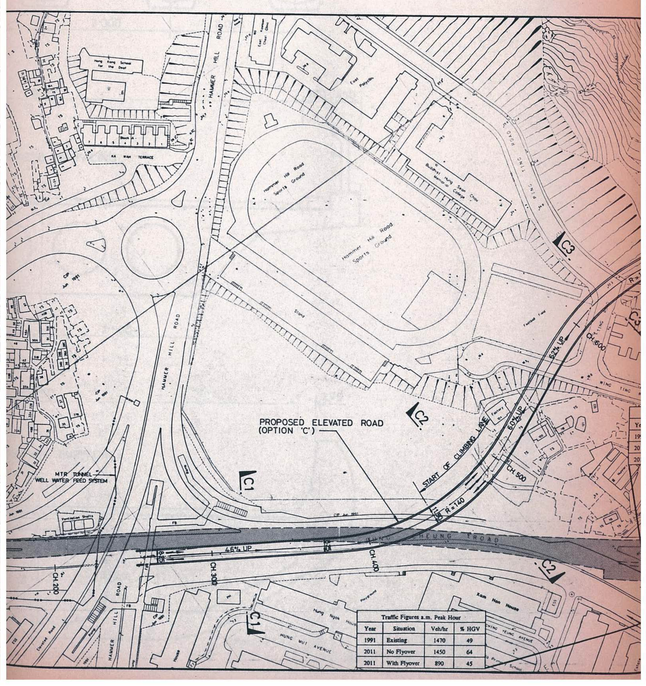
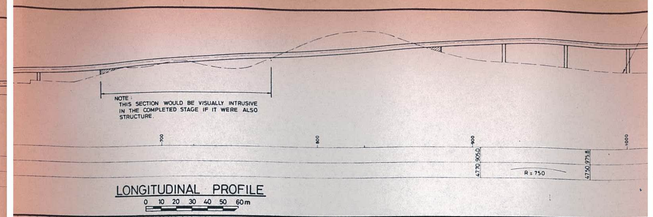
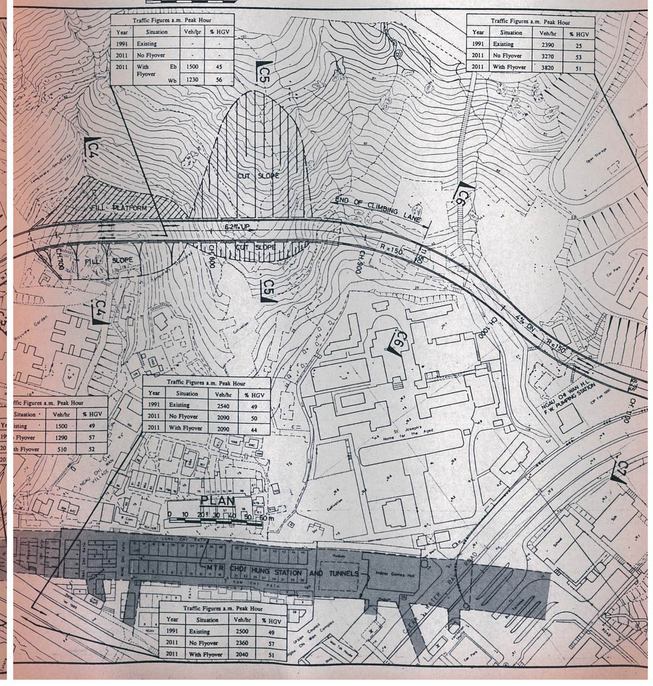
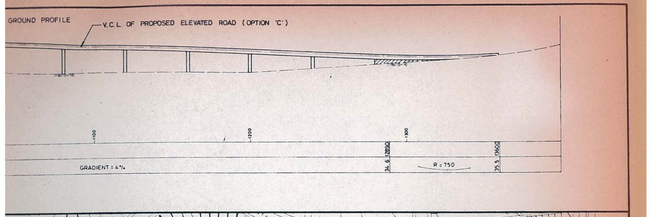
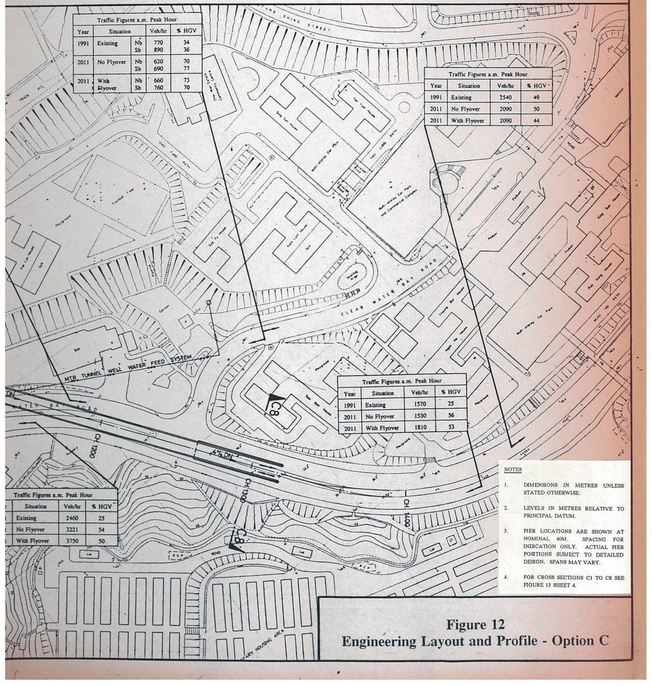










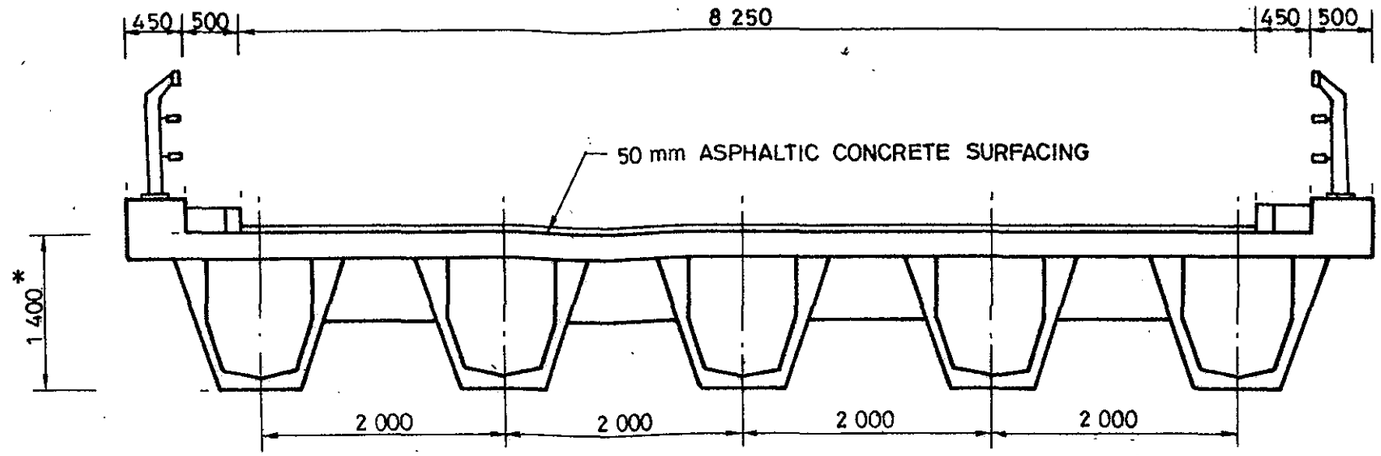


NOTES

1. DIMENSIONS IN METRES UNLESS STATED OTHERWISE.
2. LEVELS IN METRES RELATIVE TO PRINCIPAL DATUM.
3. PIER LOCATIONS ARE SHOWN AT NOMINAL 40M. SPACING FOR INDICATION ONLY. ACTUAL PIER POSITIONS SUBJECT TO DETAILED DESIGN. SPANS MAY VARY.
4. FOR CROSS SECTIONS C1 TO C9 SEE FIGURE 13 SHEET 4.

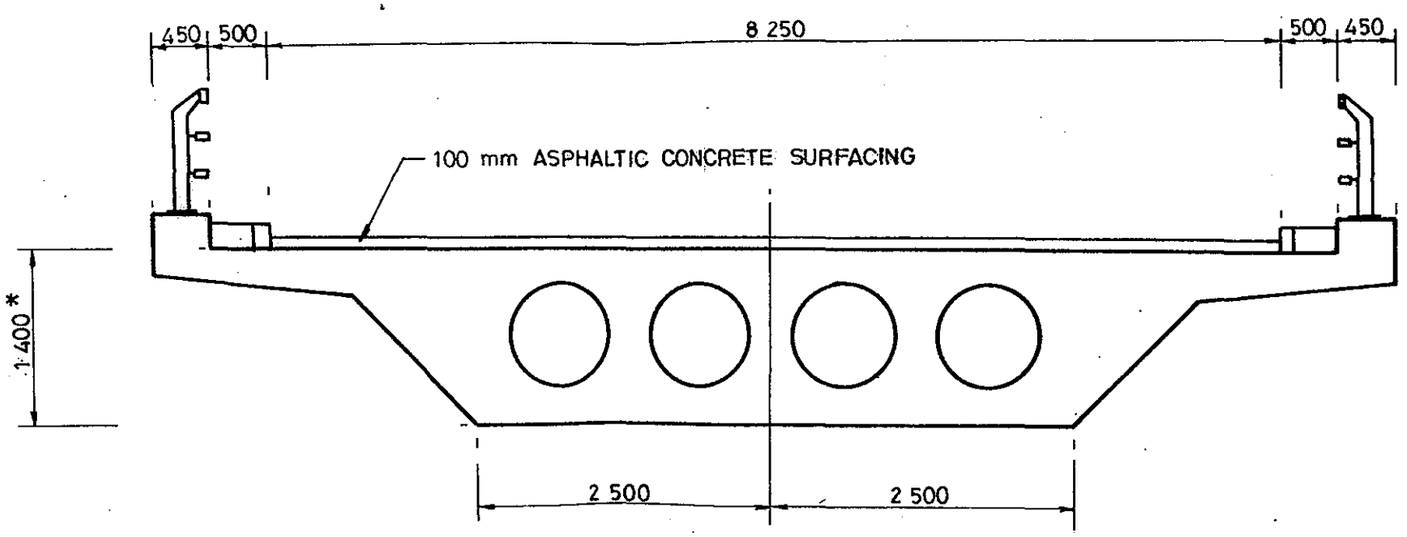
Figure 12
Engineering Layout and Profile - Option C

PRECAST CONCRETE BEAMS



* SUBJECT TO ACTUAL SPANS AND DETAILED DESIGN

ONCRETE CAST IN-SITU
LTERNATIVE 1



NCRETE CAST IN-SITU
TERNATIVE 2

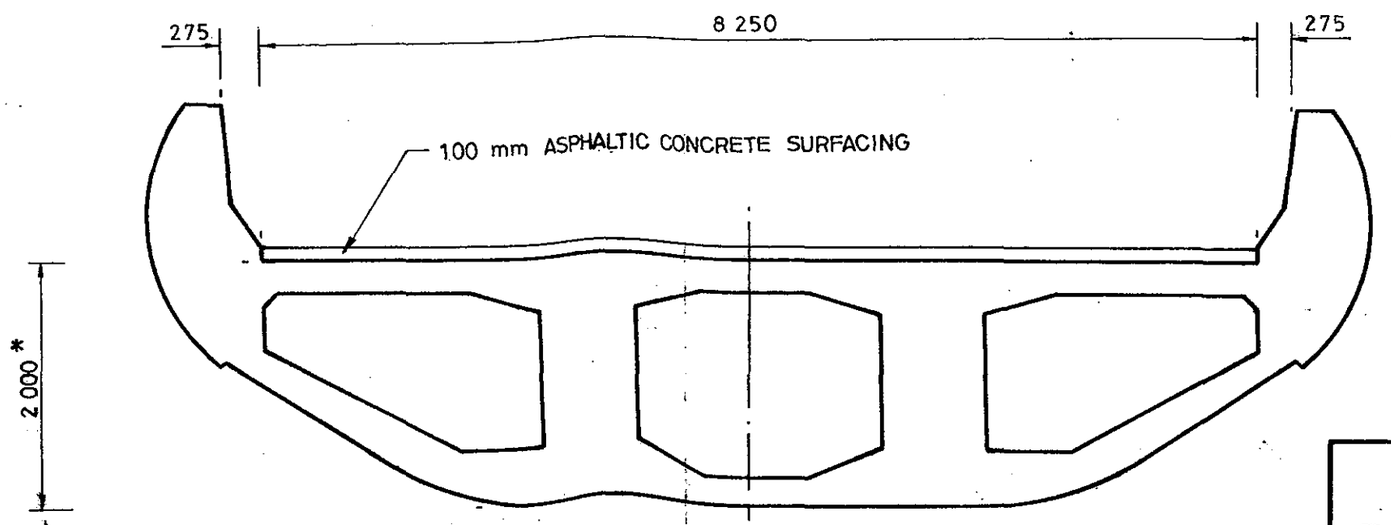


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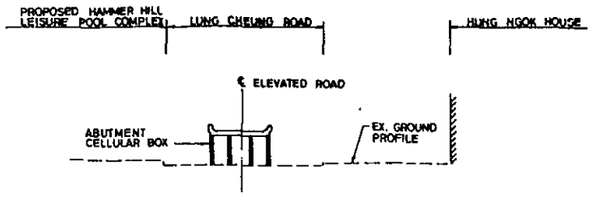
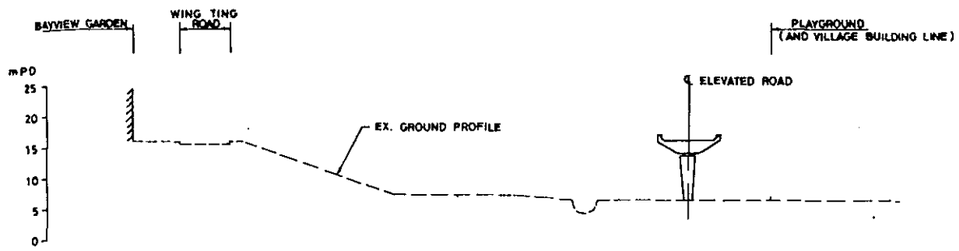
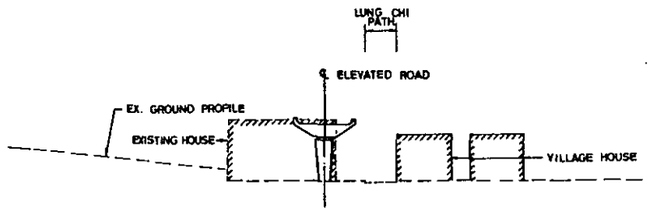
Figure 13
Engineering Features
Sheet 1 of 4 - Typical Flyover Cross Sections



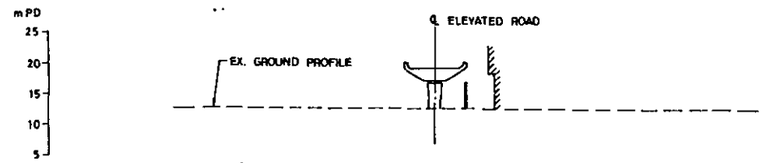
SECTION A1



SECTION A2



SECTION A3



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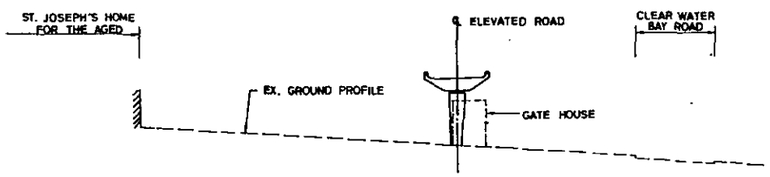

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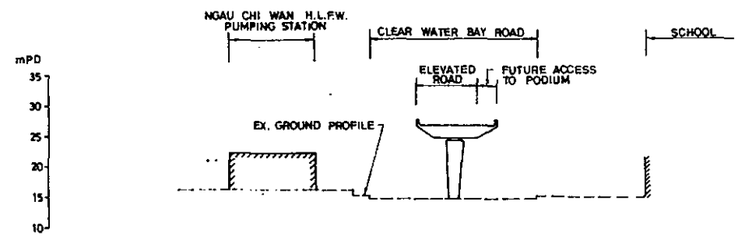

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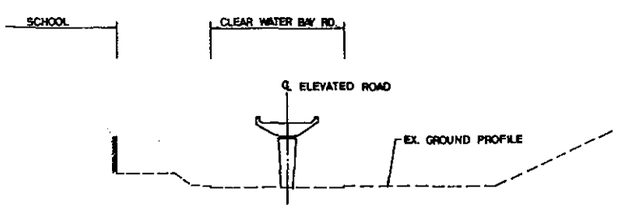

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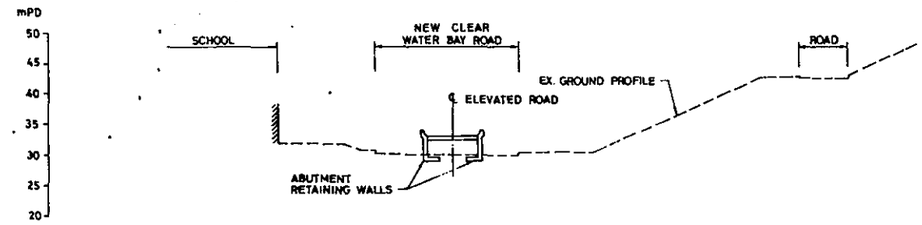

SECTION A8

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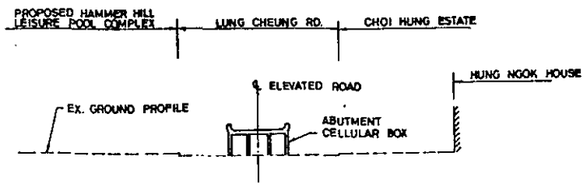
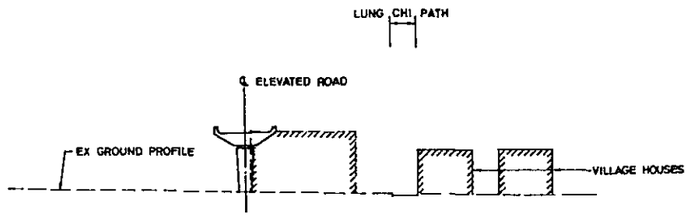
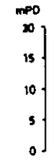
Figure 13
Engineering Features
Sheet 2 of 4 - Option A

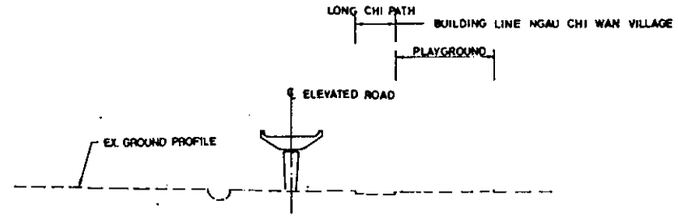


SECTION B1

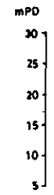


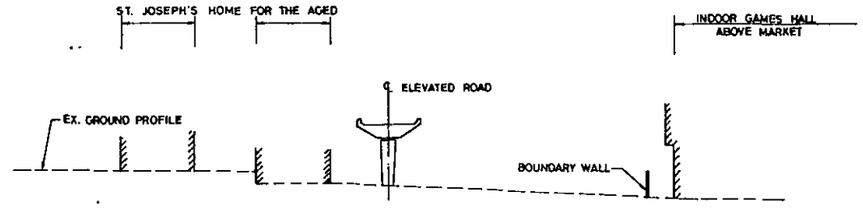
SECTION B3





SECTION B2





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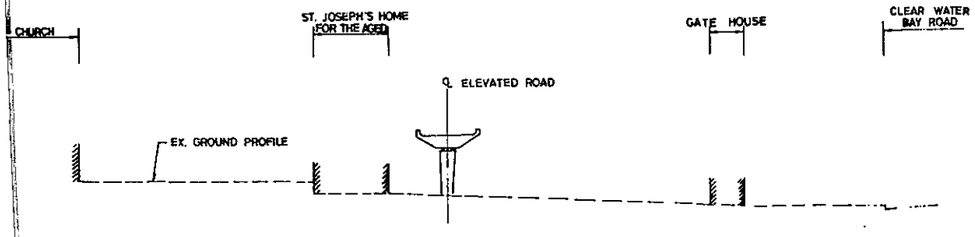

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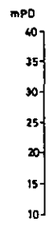

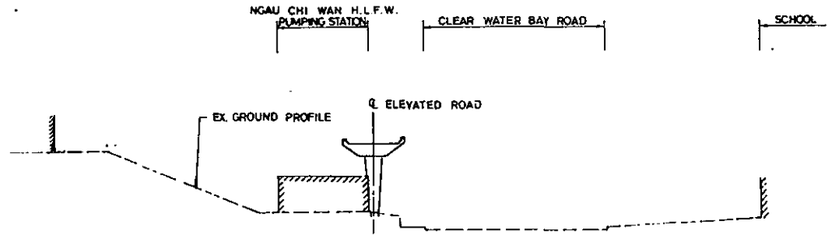

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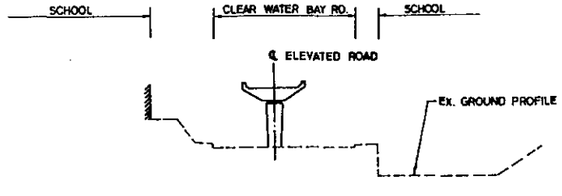

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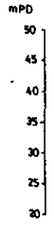

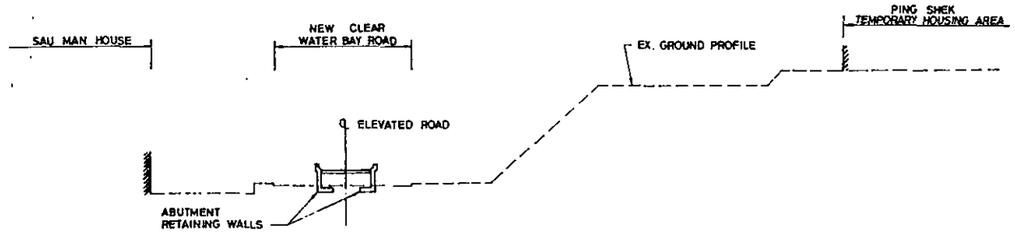

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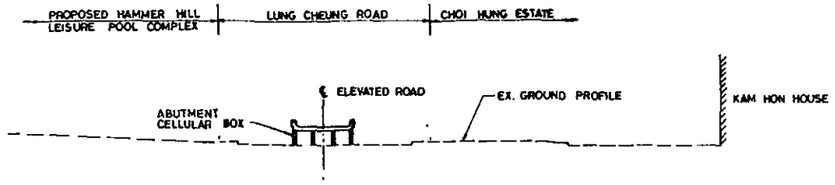
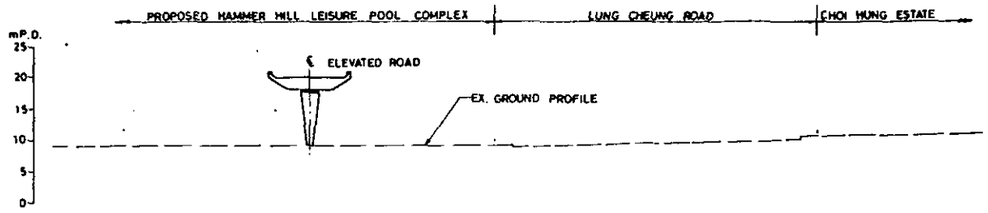
Figure 13
Engineering Features
Sheet 3 of 4 - Option B



SECTION C1



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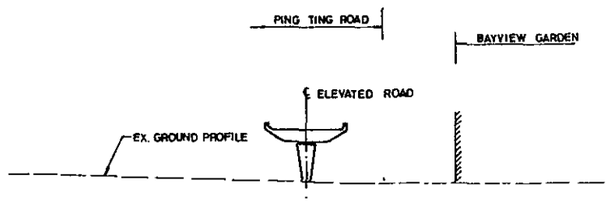

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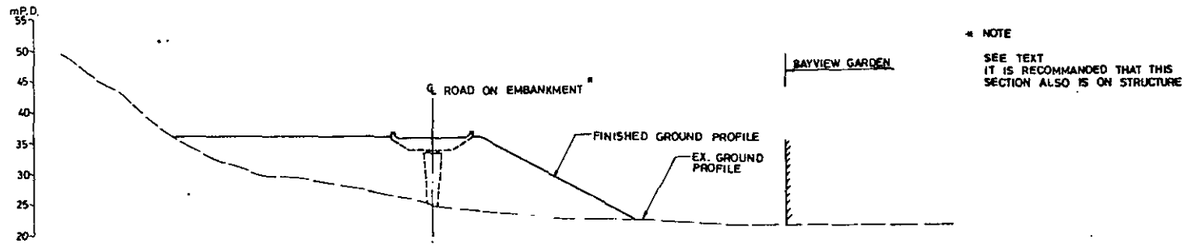

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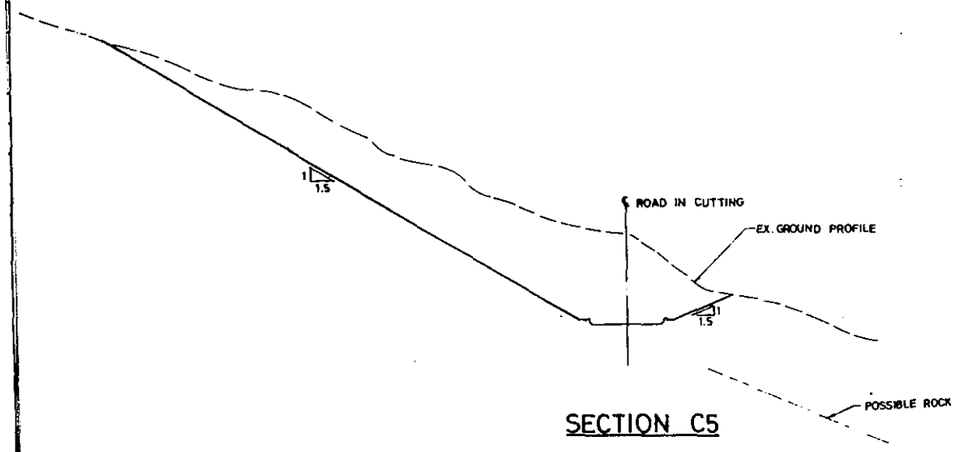

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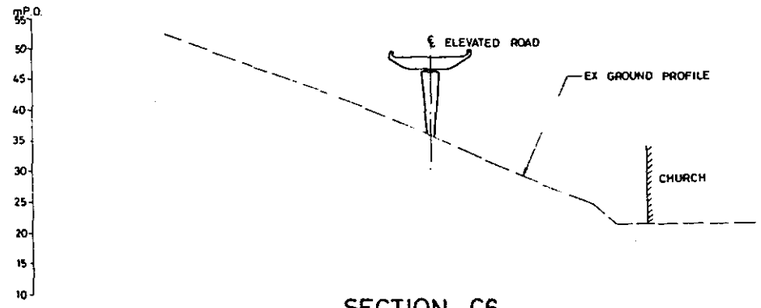

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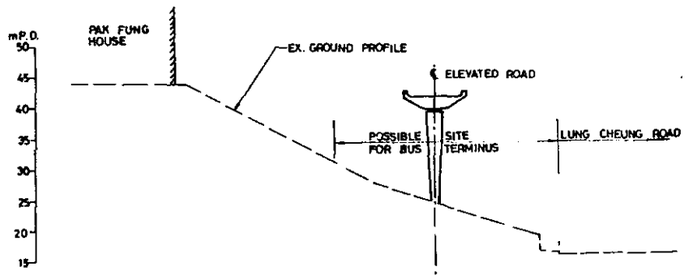

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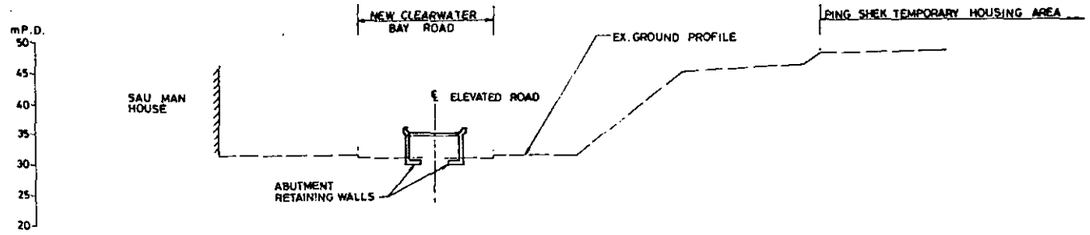

SECTION C8

SCALE 1:500

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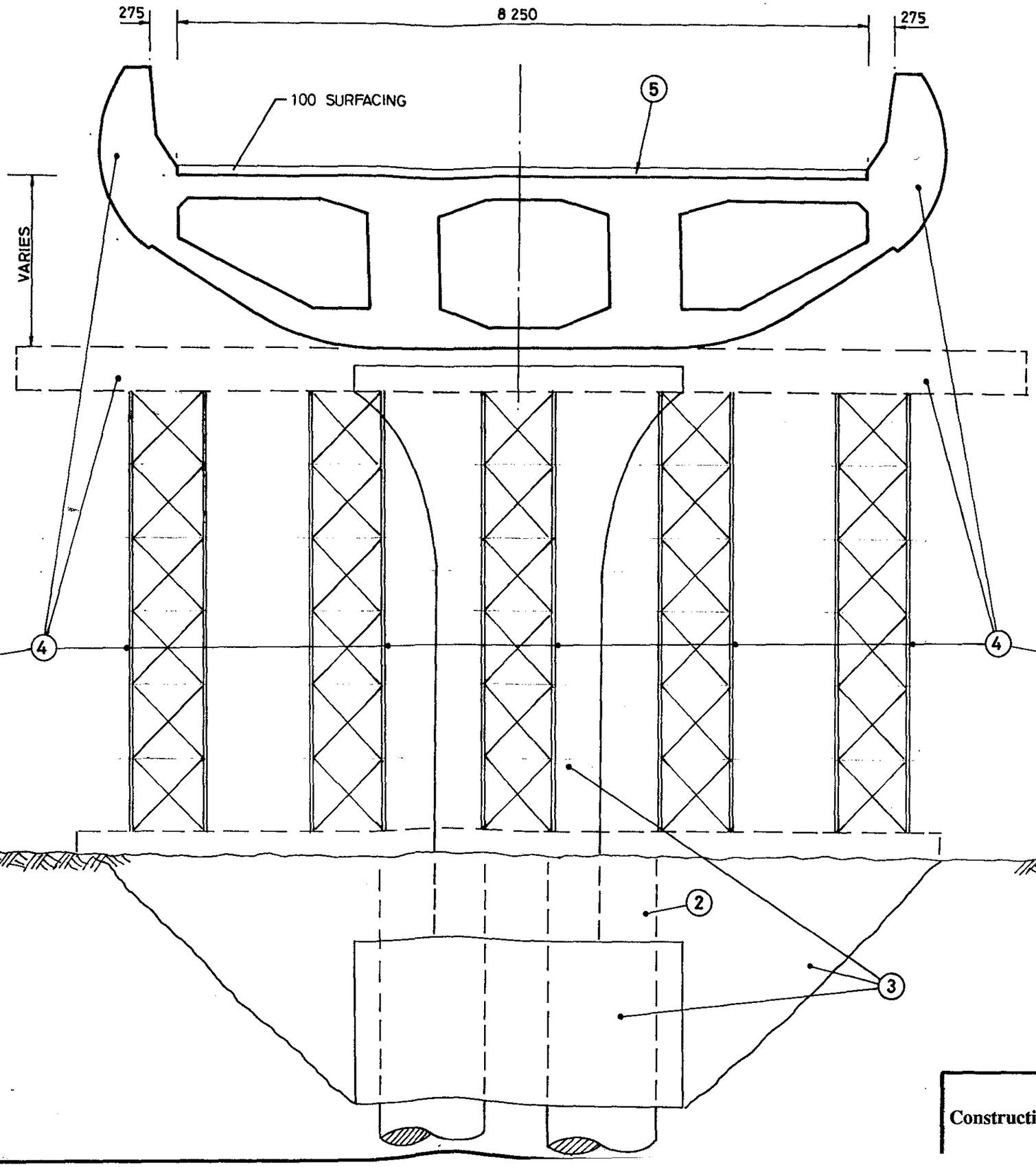
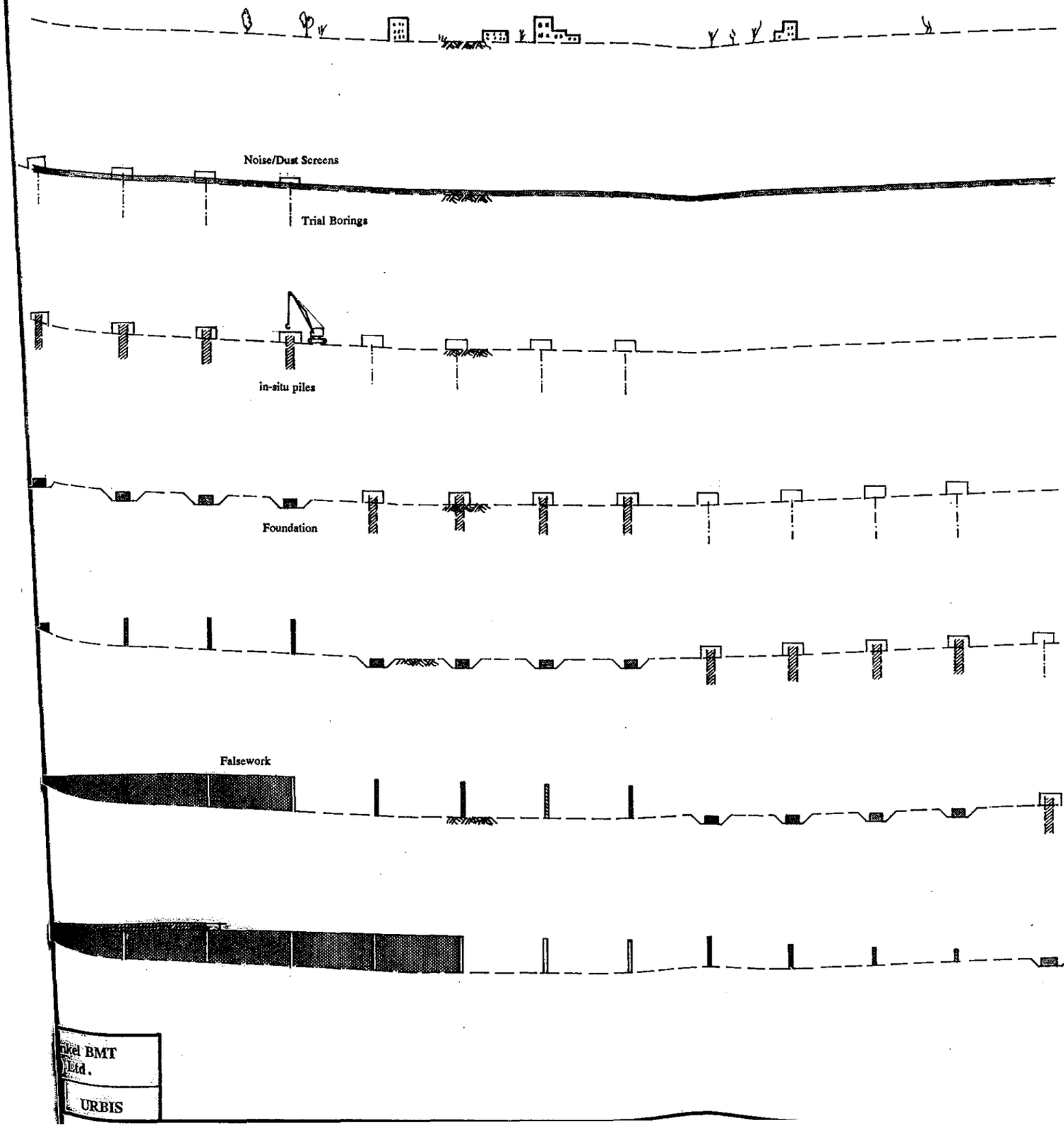
Figure 13
Engineering Features
Sheet 4 of 4 - Option C



Notes

1. Clear site 20m wide & erect hoardings 3m high.
2. Erect additional temporary screens at 40m. centres and construct cast-in place piles.
3. Excavate, cut off piles, construct pile cap and column, backfill excavation to original ground level.
4. Remove temporary hoardings, erect temporary falsework (over 3 spans 120m approx.) and construct flyover.
5. Remove falsework, complete flyover, surfacing, noise barriers (not shown).
6. Clear up site and construct landscape works.

Figure 14
Construction Requirements and Working Areas
Sheet 1 of 3



Week 0

Weeks 1 to 6
. Clear Site & Erect Hoardings
. Erect Noise/Dust Screens at Foundations 1 - 4
. Trial Borings at Foundations 1 - 4

Weeks 7 - 14
. Erect Noise/Dust Screens at Foundations 5 - 8
. Construction In-Situ Piles Foundations 1 - 4
. Trial Borings at Foundation 5 - 8

Weeks 15 - 22
. Erect Noise/Dust Screens at Foundation 9 - 12
. Trial Borings at Foundation 9 - 12
. Construction In-Situ pile caps Foundations 5 - 8
. Excavate Construct Pile Caps Foundations 1 - 4

Weeks 23 - 30
. Erect Noise/Dust Screens at Foundation 13
. Trial Boring at Foundation 13
. Construct In-Situ Piles Foundations 9 - 12
. Excavate Construct Pile Caps Foundations 5 - 8
. Construct Supports 1 - 4

Weeks 31 - 38
. Construct In-situ Piles Foundation 13
. Excavate Construct Pile Caps Foundations 9 - 12
. Construct Supports 5 - 8
. Erect Falsework Spans 1, 2 & 3

Weeks 39 - 43
. Exc. Construct Pile Cap Foundation 13
. Construct Supports 9 - 12
. Concrete, Cure & Stress Spans 1 & 2
. Erect Falsework Spans 4 & 5

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Figure 14
Construction Requirements and Working Areas
Sheet 2 of 3

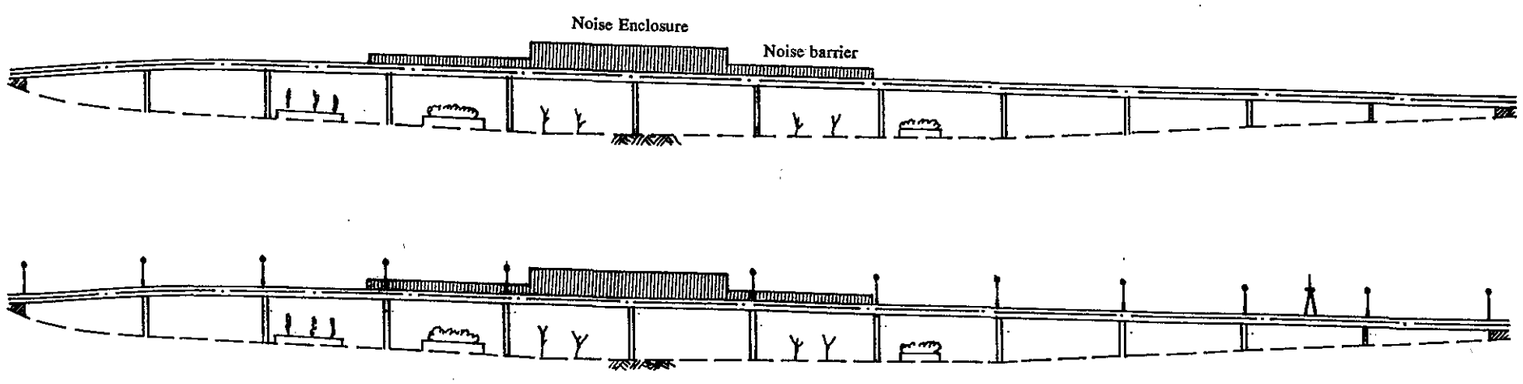
Weeks 44 - 48
. Construct Support 13
. Remove Falsework Span 1
. Concrete Cure & Stress Spans 3 & 4
. Erect Falsework Spans 6 & 7

Weeks 49 - 58
. Remove Falsework Spans 2 & 3
. Concrete Cure & Stress Spans 5 & 6
. Erect Falsework Spans 8 & 9

Weeks 54 - 58
. Remove Falsework Spans 4 & 5
. Concrete Cure & Stress Spans 7 & 8
. Erect Falsework Spans 10 & 11

Weeks 59 - 63
. Remove Falsework Spans 6 & 7
. Concrete Cure & Stress Spans 9 & 10
. Erect Falsework Span 12

Weeks 64 - 68
. Remove Falsework Spans 8 & 9
. Concrete Cure & Stress Spans 11 & 12



Weeks 69 - 81
. Remove Falsework Spans
. Erect Noise Barriers/Enclosures as required
. Surfacing
. Clear up site
. Carry out Landscaping

Weeks 82 - 91
. Signs, White lines, Lighting
. Programme float

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Figure 14
Construction Requirements and Working Areas
Sheet 3 of 3

Shows L_{10} facade noise levels (dB(A)) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

CTED L_{10} FACADE NOISE LEVEL

T FLOOR	70	70	70
FLOOR	70	70	70

OPTION A
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

NORTH

R14 ST JOSEPHS AGED HOME (EAST)

FIRST FLOOR	72	76	77
TOP FLOOR	72	76	77

R15 ST JOSEPHS AGED HOME (NORTH)

FIRST FLOOR	60	60	60
TOP FLOOR	60	60	60

R28 PAK FUNG HOUSE (CHOI WAN ESTATE)

FIRST FLOOR	76	79	82
TOP FLOOR	74	77	79

R19 BAYVIEW GARDENS (NORTH)

FIRST FLOOR	73	73	71
TOP FLOOR	72	72	73

R18 BAYVIEW GARDENS (EAST)

FIRST FLOOR	58	58	58
TOP FLOOR	59	61	63

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

FIRST FLOOR	79	82	83
TOP FLOOR	75	78	79

R13 ST JOSEPHS AGED HOME (MID)

FIRST FLOOR	74	77	78
TOP FLOOR	75	78	78

R17 BAYVIEW GARDENS (WEST)

FIRST FLOOR	77	74	74
TOP FLOOR	77	77	77

R12 ST JOSEPHS AGED HOME (SOUTH)

FIRST FLOOR	74	77	78
TOP FLOOR	74	78	78

R23 LUNG CHI PATH

FIRST FLOOR			71
TOP FLOOR			84

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

FIRST FLOOR	87	87	86
TOP FLOOR	84	84	84

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

FIRST FLOOR	84	84	83
TOP FLOOR	81	82	81

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

FIRST FLOOR	81	85	84
TOP FLOOR	80	84	84

PRINCE EDWARD ROAD EAST

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Figure 15 *
Predicted Facade Noise Levels 2011 - Option A

Shows L_{10} facade noise levels (dB(A)) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

PREDICTED L_{10} FACADE NOISE LEVEL

FIRST FLOOR	70	70	70
TOP FLOOR	70	70	70

OPTION B
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

NORTH

R14 ST JOSEPHS AGED HOME (EAST)

FIRST FLOOR	72	76	77
TOP FLOOR	72	76	77

R15 ST JOSEPHS AGED HOME (NORTH)

FIRST FLOOR	60	60	60
TOP FLOOR	60	60	60

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

FIRST FLOOR	76	79	78
TOP FLOOR	74	77	79

R19 BAYVIEW GARDENS (NORTH)

FIRST FLOOR	73	73	72
TOP FLOOR	72	72	72

R18 BAYVIEW GARDENS (EAST)

FIRST FLOOR	58	58	57
TOP FLOOR	59	61	62

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

FIRST FLOOR	79	82	81
TOP FLOOR	75	78	79

R17 BAYVIEW GARDENS (WEST)

FIRST FLOOR	77	74	74
TOP FLOOR	76	77	78

R13 ST JOSEPHS AGED HOME (MID)

FIRST FLOOR	74	77	77
TOP FLOOR	74	78	78

R12 ST JOSEPHS AGED HOME (SOUTH)

FIRST FLOOR	74	77	78
TOP FLOOR	74	78	78

R23 LUNG CHI PATH

FIRST FLOOR			72
TOP FLOOR			72

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

FIRST FLOOR	87	87	86
TOP FLOOR	84	84	84

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

FIRST FLOOR	84	84	83
TOP FLOOR	81	82	81

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

FIRST FLOOR	81	85	84
TOP FLOOR	80	84	84

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Figure 16 *
Predicted Facade Noise Levels 2011 - Option B

OPTION C

PREDICTED L_{10} FACADE NOISE LEVEL

FIRST FLOOR	70	70	70
TOP FLOOR	70	70	70

OPTION C
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

Shows L_{10} facade noise levels (dB(A)) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

NORTH

R14 ST JOSEPHS AGED HOME (EAST)

FIRST FLOOR	72	76	77
TOP FLOOR	72	76	77

R15 ST JOSEPHS AGED HOME (NORTH)

FIRST FLOOR	60	60	70
TOP FLOOR	60	60	70

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

FIRST FLOOR	76	79	80
TOP FLOOR	74	77	79

R17 BAYVIEW GARDENS (WEST)

FIRST FLOOR	77	58	75
TOP FLOOR	76	61	77

R13 ST JOSEPHS AGED HOME (MID)

FIRST FLOOR	74	77	78
TOP FLOOR	75	78	78

R19 BAYVIEW GARDENS (NORTH)

FIRST FLOOR	73	73	78
TOP FLOOR	72	72	77

R12 ST JOSEPHS AGED HOME (SOUTH)

FIRST FLOOR	74	77	78
TOP FLOOR	74	78	78

R18 BAYVIEW GARDENS (EAST)

FIRST FLOOR	58	74	69
TOP FLOOR	59	77	76

R23 LUNG CHI PATH

FIRST FLOOR			70
TOP FLOOR			70

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

FIRST FLOOR	79	82	83
TOP FLOOR	75	78	79

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

FIRST FLOOR	87	87	87
TOP FLOOR	84	84	84

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

FIRST FLOOR	84	84	83
TOP FLOOR	81	82	81

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

FIRST FLOOR	81	85	84
TOP FLOOR	80	84	84

PRINCE EDWARD ROAD EAST

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Figure 17 *
Predicted Facade Noise Levels 2011 - Option C

OPTION A

PREDICTED CARBON MONOXIDE (CO) CONCENTRATIONS

GROUND	7080	5780	5690
20 METERS	1740	1560	1430
40 METERS	690	710	700

OPTION A
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

Shows carbon monoxide concentrations ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

NORTH

R18 BAYVIEW GARDENS (EAST)

GROUND	1950	1980	2140
20 METERS	1390	1470	1570
40 METERS	630	710	740

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	1580	1910	2210
20 METERS	1130	1400	1590
40 METERS	550	650	690

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	2540	3220	4200
20 METERS	1210	1670	1960
40 METERS	580	650	780

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	2670	3620	4470
20 METERS	1280	1860	2290
40 METERS	540	810	930

R19 BAYVIEW GARDENS (NORTH)

GROUND	2160	2130	2230
20 METERS	1550	1580	1670
40 METERS	720	780	840

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	4940	6960	8960
20 METERS	1310	1900	1490
40 METERS	540	810	930

R21 HAMMER HILL RECREATION AREA

GROUND	2120	2040	2120
20 METERS	1650	1580	1660
40 METERS	890	870	930

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	4370	5950	7950
20 METERS	1470	1810	2600
40 METERS	700	850	1100

R13 ST JOSEPHS AGED HOME (MID)

GROUND	2340	2970	3790
20 METERS	1200	1580	1730
40 METERS	630	540	710

R17 BAYVIEW GARDENS (WEST)

GROUND	2460	2390	2520
20 METERS	1630	1660	1750
40 METERS	660	740	780

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	2840	3650	4870
20 METERS	1160	1580	1900
40 METERS	650	560	730

R7 ST JOHNS PRIMARY SCHOOL

GROUND	3200	4000	5450
20 METERS	1230	1750	1840
40 METERS	630	680	760

R6 YAN KAU SCHOOL

GROUND	3870	4920	6470
20 METERS	1170	1780	1840
40 METERS	630	680	760

R22 LIESURE POOLS COMPLEX

GROUND	3690	3450	3600
20 METERS	2110	2000	2100
40 METERS	940	950	970

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	6100	8550	9760
20 METERS	1130	1410	1450
40 METERS	650	600	760

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	7080	6360	6240
20 METERS	1740	1680	1580
40 METERS	690	740	780

R3 UC NGAU CHI WAN COMPLEX

GROUND	3410	4450	5500
20 METERS	1260	1520	1950
40 METERS	680	570	740

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	5590	5100	4870
20 METERS	1530	1570	1530
40 METERS	520	500	760

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	5550	6300	6650
20 METERS	1650	1410	1450
40 METERS	720	620	700

R23 LUNG CHI PATH

GROUND	3800	3600	3160
20 METERS	1640	1710	1790
40 METERS	640	540	720

PRINCE EDWARD ROAD EAST

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Figure 18A
Predicted Air Quality 2011 - Option A
Carbon Monoxide

OPTION A

PREDICTED NITROGEN DIOXIDE (NO_2) CONCENTRATIONS

GROUND	230	230	230
20 METERS	230	230	230
40 METERS	230	230	230

OPTION A
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

Shows nitrogen dioxide concentrations ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

NORTH

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	80	110	120
20 METERS	60	80	80
40 METERS	30	40	40

R13 ST JOSEPHS AGED HOME (MID)

GROUND	120	160	180
20 METERS	60	90	90
40 METERS	40	30	40

R18 BAYVIEW GARDENS (EAST)

GROUND	110	110	120
20 METERS	80	80	90
40 METERS	30	40	40

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	120	170	200
20 METERS	60	90	100
40 METERS	60	40	40

R19 BAYVIEW GARDENS (NORTH)

GROUND	120	120	120
20 METERS	90	90	90
40 METERS	40	50	50

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	120	190	220
20 METERS	60	100	110
40 METERS	30	50	50

R21 HAMMER HILL RECREATION AREA

GROUND	120	130	120
20 METERS	90	90	100
40 METERS	50	50	50

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	210	350	410
20 METERS	60	100	140
40 METERS	30	50	50

R17 BAYVIEW GARDENS (WEST)

GROUND	140	140	140
20 METERS	90	90	90
40 METERS	40	40	40

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	190	300	390
20 METERS	70	100	130
40 METERS	40	50	60

R22 LIESURE POOLS COMPLEX

GROUND	220	210	210
20 METERS	120	120	120
40 METERS	50	50	50

R7 ST JOHNS PRIMARY SCHOOL

GROUND	150	210	270
20 METERS	60	100	100
40 METERS	40	40	50

R23 LUNG CHI PATH

GROUND	220	210	180
20 METERS	90	100	100
40 METERS	40	30	40

R6 YAN KAU SCHOOL

GROUND	180	260	320
20 METERS	60	100	100
40 METERS	40	40	50

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	430	380	370
20 METERS	100	90	90
40 METERS	40	40	40

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	280	440	490
20 METERS	60	100	90
40 METERS	40	30	50

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	140	200	230
20 METERS	70	90	90
40 METERS	40	30	40

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	310	290	260
20 METERS	80	90	80
40 METERS	30	30	40

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	290	340	340
20 METERS	100	80	80
40 METERS	40	40	40

R3 UC NGAU CHI WAN COMPLEX

GROUND	170	240	260
20 METERS	80	90	90
40 METERS	40	30	40

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Figure 18B
Predicted Air Quality 2011 - Option A
Nitrogen Dioxide

Shows total suspended particulates ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

ON A

DICTED TOTAL SUSPENDED PARTICULATES (TSP) CONCENTRATIONS

OUND	230	230	230
METERS	230	230	230
METERS	230	230	230

OPTION A
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

NORTH

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	50	70	70
20 METERS	30	40	50
40 METERS	20	20	20

R13 ST JOSEPHS AGED HOME (MID)

GROUND	80	110	110
20 METERS	30	50	60
40 METERS	20	20	30

R18 BAYVIEW GARDENS (EAST)

GROUND	70	80	70
20 METERS	40	50	50
40 METERS	10	20	30

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	80	120	120
20 METERS	30	50	60
40 METERS	20	20	20

R19 BAYVIEW GARDENS (NORTH)

GROUND	80	90	80
20 METERS	40	50	60
40 METERS	20	20	30

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	80	130	140
20 METERS	30	60	70
40 METERS	20	20	30

R21 HAMMER HILL RECREATION AREA

GROUND	80	90	70
20 METERS	50	50	60
40 METERS	20	30	30

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	140	240	260
20 METERS	30	60	80
40 METERS	20	20	30

R17 BAYVIEW GARDENS (WEST)

GROUND	90	100	80
20 METERS	40	50	60
40 METERS	20	20	30

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	120	210	240
20 METERS	40	60	80
40 METERS	20	20	40

R22 LIESURE POOLS COMPLEX

GROUND	130	140	130
20 METERS	60	70	70
40 METERS	20	30	30

R7 ST JOHNS PRIMARY SCHOOL

GROUND	100	150	170
20 METERS	30	50	60
40 METERS	20	20	30

R23 LUNG CHI PATH

GROUND	140	150	110
20 METERS	50	60	60
40 METERS	20	20	20

R6 YAN KAU SCHOOL

GROUND	120	180	200
20 METERS	30	60	60
40 METERS	20	20	30

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	250	260	220
20 METERS	50	50	50
40 METERS	20	20	20

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	180	310	300
20 METERS	30	50	60
40 METERS	20	20	30

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	90	140	150
20 METERS	40	50	60
40 METERS	20	20	30

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	190	200	160
20 METERS	40	50	50
40 METERS	10	10	20

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	180	240	200
20 METERS	50	50	50
40 METERS	20	20	30

R3 UC NGAU CHI WAN COMPLEX

GROUND	110	170	170
20 METERS	40	50	60
40 METERS	20	20	30

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Figure 18C
Predicted Air Quality 2011 - Option A
TSP

OPTION B

PREDICTED CARBON MONOXIDE (CO) CONCENTRATIONS

GROUND	230	230	230
20 METERS	230	230	230
40 METERS	230	230	230

OPTION B
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGH

Shows carbon monoxide concentrations ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

NORTH

R18 BAYVIEW GARDENS (EAST)

GROUND	1950	1980	2140
20 METERS	1390	1470	1570
40 METERS	630	710	740

R19 BAYVIEW GARDENS (NORTH)

GROUND	2160	2130	2240
20 METERS	1550	1580	1660
40 METERS	720	780	840

R21 HAMMER HILL RECREATION AREA

GROUND	2120	2040	2120
20 METERS	1650	1580	1650
40 METERS	890	870	920

R17 BAYVIEW GARDENS (WEST)

GROUND	2460	2390	2580
20 METERS	1630	1660	1720
40 METERS	660	740	760

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	1580	1910	2270
20 METERS	1130	1400	1600
40 METERS	550	650	670

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	2450	3220	4360
20 METERS	1210	1670	1900
40 METERS	580	650	690

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	2670	3620	4390
20 METERS	1280	1860	2230
40 METERS	540	810	870

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	4940	6960	8430
20 METERS	1310	1900	2460
40 METERS	540	860	920

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	4370	5950	7880
20 METERS	1470	1810	2570
40 METERS	700	850	1080

R7 ST JOHNS PRIMARY SCHOOL

GROUND	3200	4000	5140
20 METERS	1230	1750	1800
40 METERS	620	730	740

R6 YAN KAU SCHOOL

GROUND	3870	4920	5990
20 METERS	1170	1780	1800
40 METERS	630	680	720

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	6100	8550	9500
20 METERS	1130	1750	1760
40 METERS	650	600	720

R3 UC NGAU CHI WAN COMPLEX

GROUND	3410	4450	4820
20 METERS	1260	1520	1590
40 METERS	680	570	710

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	5550	6300	6640
20 METERS	1650	1410	1440
40 METERS	720	620	690

R22 LIESURE POOLS COMPLEX

GROUND	3690	3450	3580
20 METERS	2110	2000	2080
40 METERS	940	950	960

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	7080	6360	6160
20 METERS	1740	1680	1580
40 METERS	690	740	740

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	5590	5100	4750
20 METERS	1530	1570	1530
40 METERS	520	500	710

PRINCE EDWARD ROAD EAST

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Figure 19A
Predicted Air Quality 2011 - Option B
Carbon Monoxide

OPTION B

PREDICTED NITROGEN DIOXIDE (NO_2) CONCENTRATIONS

GROUND	230	230	230
20 METERS	230	230	230
40 METERS	230	230	230

OPTION B
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

Shows nitrogen dioxide concentrations ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

NORTH

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	80	110	120
20 METERS	60	80	80
40 METERS	30	40	40

R13 ST JOSEPHS AGED HOME (MID)

GROUND	120	160	190
20 METERS	60	90	90
40 METERS	40	30	40

R18 BAYVIEW GARDENS (EAST)

GROUND	110	110	120
20 METERS	80	80	90
40 METERS	30	40	40

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	120	170	210
20 METERS	60	90	100
40 METERS	60	40	40

R19 BAYVIEW GARDENS (NORTH)

GROUND	120	120	120
20 METERS	90	90	90
40 METERS	40	50	50

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	120	190	220
20 METERS	60	100	120
40 METERS	30	50	50

R21 HAMMER HILL RECREATION AREA

GROUND	120	130	120
20 METERS	90	90	90
40 METERS	50	50	50

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	210	350	400
20 METERS	60	100	130
40 METERS	30	50	50

R17 BAYVIEW GARDENS (WEST)

GROUND	140	140	140
20 METERS	90	90	90
40 METERS	40	40	40

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	190	300	380
20 METERS	70	100	130
40 METERS	40	50	60

R22 LIESURE POOLS COMPLEX

GROUND	220	210	210
20 METERS	120	120	120
40 METERS	50	50	50

R7 ST JOHNS PRIMARY SCHOOL

GROUND	150	210	260
20 METERS	60	100	90
40 METERS	40	40	40

R23 LUNG CHI PATH

GROUND	220	210	180
20 METERS	90	100	90
40 METERS	40	30	40

R6 YAN KAU SCHOOL

GROUND	180	260	300
20 METERS	60	100	90
40 METERS	40	40	40

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	430	380	360
20 METERS	100	90	90
40 METERS	40	40	40

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	280	440	470
20 METERS	60	100	90
40 METERS	40	30	40

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	140	200	200
20 METERS	70	90	80
40 METERS	40	30	40

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	310	290	260
20 METERS	80	90	80
40 METERS	30	30	30

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	290	340	340
20 METERS	100	80	80
40 METERS	40	40	40

R3 UC NGAU CHI WAN COMPLEX

GROUND	170	240	240
20 METERS	80	90	80
40 METERS	40	30	40

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Figure 19B
Predicted Air Quality 2011 - Option B
Nitrogen Dioxide

OPTION B

PREDICTED TOTAL SUSPENDED PARTICULATES (TSP) CONCENTRATIONS

GROUND	230	230	230
20 METERS	230	230	230
40 METERS	230	230	230

OPTION B
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

Shows total suspended particulates ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

NORTH

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	50	70	70
20 METERS	30	40	50
40 METERS	20	20	20

R13 ST JOSEPHS AGED HOME (MID)

GROUND	80	110	120
20 METERS	30	50	60
40 METERS	20	20	30

R18 BAYVIEW GARDENS (EAST)

GROUND	70	80	70
20 METERS	40	50	50
40 METERS	10	20	20

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	80	120	120
20 METERS	30	50	60
40 METERS	20	20	20

R19 BAYVIEW GARDENS (NORTH)

GROUND	80	90	80
20 METERS	40	50	60
40 METERS	20	20	30

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	80	130	130
20 METERS	30	60	70
40 METERS	20	20	30

R21 HAMMER HILL RECREATION AREA

GROUND	80	90	70
20 METERS	50	50	60
40 METERS	20	30	30

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	140	240	250
20 METERS	30	60	80
40 METERS	20	20	30

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	120	210	240
20 METERS	40	60	80
40 METERS	20	20	40

R17 BAYVIEW GARDENS (WEST)

GROUND	90	100	90
20 METERS	40	50	60
40 METERS	20	20	20

R22 LIESURE POOLS COMPLEX

GROUND	130	140	120
20 METERS	60	70	70
40 METERS	20	30	30

R7 ST JOHNS PRIMARY SCHOOL

GROUND	100	150	160
20 METERS	30	50	60
40 METERS	20	20	30

R23 LUNG CHI PATH

GROUND	140	150	110
20 METERS	50	60	60
40 METERS	20	20	20

R6 YAN KAU SCHOOL

GROUND	120	180	190
20 METERS	30	60	60
40 METERS	20	20	30

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	180	310	290
20 METERS	30	50	60
40 METERS	20	20	30

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	250	260	220
20 METERS	50	50	50
40 METERS	20	20	20

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	90	140	130
20 METERS	40	50	50
40 METERS	20	20	30

R2 YAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	190	200	160
20 METERS	40	50	50
40 METERS	10	10	20

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	180	240	210
20 METERS	50	50	50
40 METERS	20	20	20

R3 UC NGAU CHI WAN COMPLEX

GROUND	110	170	150
20 METERS	40	50	50
40 METERS	20	20	30

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Figure 19C
Predicted Air Quality 2011 - Option B
TSP

OPTION C

PREDICTED CARBON MONOXIDE (CO) CONCENTRATIONS

GROUND	230	230	230
20 METERS	230	230	230
40 METERS	230	230	230

OPTION C
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

Shows carbon monoxide concentrations ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

NORTH

R18 BAYVIEW GARDENS (EAST)

GROUND	1950	1980	1820
20 METERS	1390	1470	1390
40 METERS	630	710	720

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	1580	1910	2230
20 METERS	1130	1400	1480
40 METERS	550	650	640

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	2450	3220	3950
20 METERS	1210	1670	1570
40 METERS	580	650	610

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	2670	3620	4190
20 METERS	1280	1860	2070
40 METERS	540	810	820

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	4940	6960	8370
20 METERS	1310	1900	2110
40 METERS	540	860	870

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	4370	5950	7580
20 METERS	1470	1810	2430
40 METERS	700	850	930

R19 BAYVIEW GARDENS (NORTH)

GROUND	2160	2130	3500
20 METERS	1550	1580	1470
40 METERS	720	780	780

R21 HAMMER HILL RECREATION AREA

GROUND	2120	2040	2460
20 METERS	1650	1580	1580
40 METERS	890	870	840

R17 BAYVIEW GARDENS (WEST)

GROUND	2460	2390	2300
20 METERS	1630	1660	1550
40 METERS	660	740	740

R13 ST JOSEPHS AGED HOME (MID)

GROUND	2340	2970	3343
20 METERS	1200	1580	1570
40 METERS	630	540	610

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	2840	3650	4120
20 METERS	1160	1580	1560
40 METERS	650	560	630

R7 ST JOHNS PRIMARY SCHOOL

GROUND	3200	4000	5030
20 METERS	1230	1750	1790
40 METERS	620	730	730

R6 YAN KAU SCHOOL

GROUND	3870	4920	5520
20 METERS	1170	1780	1800
40 METERS	630	680	660

R22 LIESURE POOLS COMPLEX

GROUND	3690	3450	3570
20 METERS	2110	2000	1980
40 METERS	940	950	920

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	6100	8550	9490
20 METERS	1130	1750	1760
40 METERS	650	600	580

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	7080	6360	5630
20 METERS	1740	1680	1580
40 METERS	690	740	740

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	5590	5100	4700
20 METERS	1530	1570	1530
40 METERS	520	500	660

R23 LUNG CHI PATH

GROUND	3800	3600	3160
20 METERS	1640	1710	1650
40 METERS	640	540	620

R3 UC NGAU CHI WAN COMPLEX

GROUND	3410	4450	
20 METERS	1260	1520	
40 METERS	680	570	

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	5550	6300	6630
20 METERS	1650	1410	1400
40 METERS	720	620	660

PRINCE EDWARD ROAD EAST

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Figure 20A
Predicted Air Quality 2011 - Option C
Carbon Monoxide

Shows nitrogen dioxide concentrations ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

OPTION C

PREDICTED NITROGEN DIOXIDE (NO_2) CONCENTRATIONS

GROUND	230	230	230
20 METERS	230	230	230
40 METERS	230	230	230

OPTION C
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

NORTH

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	80	110	110
20 METERS	60	80	80
40 METERS	30	40	30

R13 ST JOSEPHS AGED HOME (MID)

GROUND	120	160	160
20 METERS	60	90	80
40 METERS	40	30	30

R18 BAYVIEW GARDENS (EAST)

GROUND	110	110	100
20 METERS	80	80	80
40 METERS	30	40	40

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	120	170	180
20 METERS	60	90	90
40 METERS	60	40	30

R19 BAYVIEW GARDENS (NORTH)

GROUND	120	120	180
20 METERS	90	90	80
40 METERS	40	50	40

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	120	190	210
20 METERS	60	100	110
40 METERS	30	50	50

R21 HAMMER HILL RECREATION AREA

GROUND	120	130	130
20 METERS	90	90	90
40 METERS	50	50	50

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	210	350	400
20 METERS	60	100	110
40 METERS	30	50	50

R17 BAYVIEW GARDENS (WEST)

GROUND	140	140	130
20 METERS	90	90	80
40 METERS	40	40	40

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	190	300	360
20 METERS	70	100	120
40 METERS	40	50	50

R22 LIESURE POOLS COMPLEX

GROUND	220	210	210
20 METERS	120	120	110
40 METERS	50	50	50

R7 ST JOHNS PRIMARY SCHOOL

GROUND	150	210	230
20 METERS	60	100	90
40 METERS	40	40	40

R23 LUNG CHI PATH

GROUND	220	210	180
20 METERS	90	100	90
40 METERS	40	30	40

R6 YAN KAU SCHOOL

GROUND	180	260	270
20 METERS	60	100	90
40 METERS	40	40	40

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	430	380	330
20 METERS	100	90	90
40 METERS	40	40	40

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	280	440	470
20 METERS	60	100	90
40 METERS	40	30	30

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	140	200	200
20 METERS	70	90	80
40 METERS	40	30	40

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	310	290	250
20 METERS	80	90	80
40 METERS	30	30	30

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	290	340	340
20 METERS	100	80	80
40 METERS	40	40	40

R3 UC NGAU CHI WAN COMPLEX

GROUND	170	240	240
20 METERS	80	90	80
40 METERS	40	30	40

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Figure 20B
Predicted Air Quality 2011 - Option C
Nitrogen Dioxide

Shows total suspended particulates ($\mu g/m^3$) due to 2011 morning peak hour traffic on proposed flyover and other major roads.

OPTION C

PREDICTED TOTAL SUSPENDED PARTICULATES (TSP) CONCENTRATIONS

GROUND	230	230	230
20 METERS	230	230	230
40 METERS	230	230	230

OPTION C
DO-NOTHING
EXISTING SITUATION
RECEIVER HEIGHT

NORTH

R15 ST JOSEPHS AGED HOME (NORTH)

GROUND	50	70	70
20 METERS	30	40	50
40 METERS	20	20	20

R13 ST JOSEPHS AGED HOME (MID)

GROUND	80	110	120
20 METERS	30	50	50
40 METERS	20	20	20

R18 BAYVIEW GARDENS (EAST)

GROUND	70	80	60
20 METERS	40	50	50
40 METERS	10	20	20

R14 ST JOSEPHS AGED HOME (EAST)

GROUND	80	120	120
20 METERS	30	50	60
40 METERS	20	20	20

R19 BAYVIEW GARDENS (NORTH)

GROUND	80	90	110
20 METERS	40	50	50
40 METERS	20	20	30

R28 PAK FUN HOUSE (CHOI WAN ESTATE)

GROUND	80	130	130
20 METERS	30	60	70
40 METERS	20	20	30

R21 HAMMER HILL RECREATION AREA

GROUND	80	90	80
20 METERS	50	50	60
40 METERS	20	30	30

R11 ST JOSEPHS PRIMARY SCHOOL

GROUND	140	240	250
20 METERS	30	60	70
40 METERS	20	20	30

R10 SAU MAN HOUSE (CHOI WAN ESTATE)

GROUND	120	210	230
20 METERS	40	60	80
40 METERS	20	20	30

R17 BAYVIEW GARDENS (WEST)

GROUND	90	100	80
20 METERS	40	50	50
40 METERS	20	20	20

R22 LIESURE POOLS COMPLEX

GROUND	130	140	120
20 METERS	60	70	70
40 METERS	20	30	30

R7 ST JOHNS PRIMARY SCHOOL

GROUND	100	150	150
20 METERS	30	50	60
40 METERS	20	20	20

R23 LUNG CHI PATH

GROUND	140	150	110
20 METERS	50	60	50
40 METERS	20	20	20

R6 YAN KAU SCHOOL

GROUND	120	180	170
20 METERS	30	60	60
40 METERS	20	20	20

R5 PING SHEK CATHOLIC PRIMARY SCHOOL

GROUND	180	310	290
20 METERS	30	50	60
40 METERS	20	20	20

R1 KAM HON HOUSE (CHOI HUNG ESTATE)

GROUND	250	260	200
20 METERS	50	50	50
40 METERS	20	20	20

R12 ST JOSEPHS AGED HOME (SOUTH)

GROUND	90	140	120
20 METERS	40	50	50
40 METERS	20	20	20

R2 TAN FUNG HOUSE (CHOI HUNG ESTATE)

GROUND	190	200	150
20 METERS	40	50	50
40 METERS	10	10	20

R4 TSUEN SHEK HOUSE (PING SHEK ESTATE)

GROUND	180	240	210
20 METERS	50	50	50
40 METERS	20	20	20

R3 UC NGAU CHI WAN COMPLEX

GROUND	110	170	150
20 METERS	40	50	50
40 METERS	20	20	20

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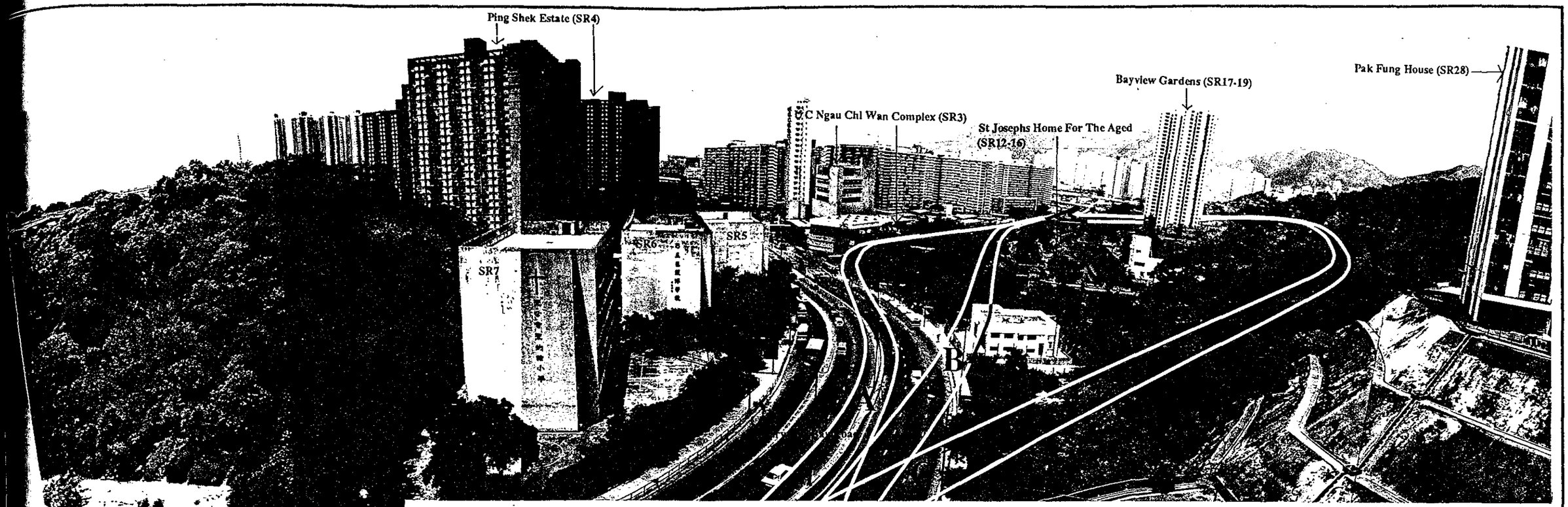
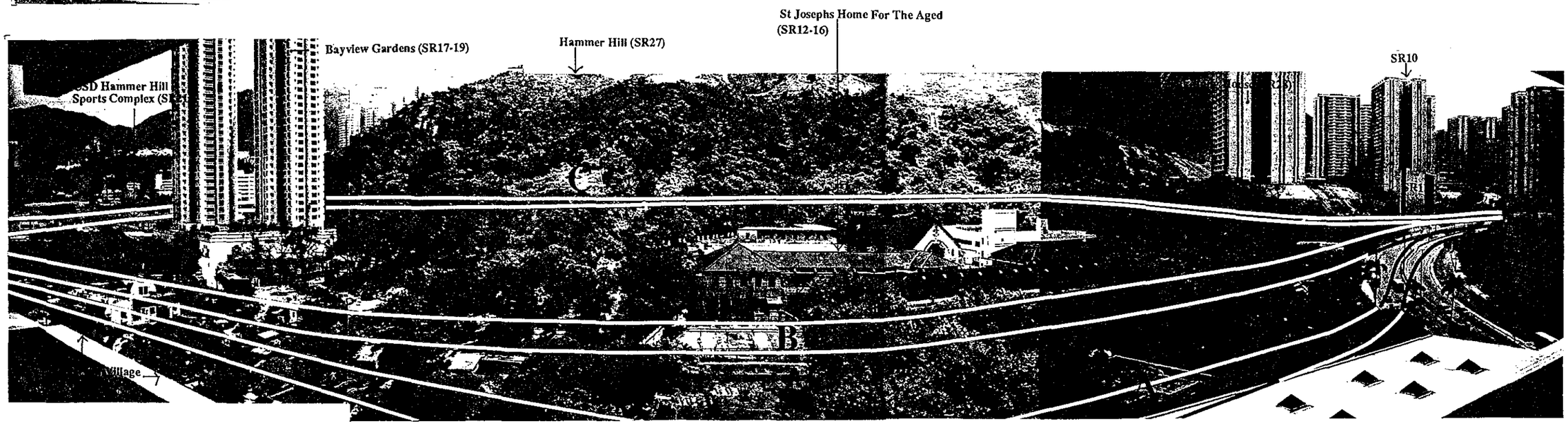
Figure 20C
Predicted Air Quality 2011 - Option C
TSP



View 1 : From Roof Top of Choi Wan St Joseph's Primary School (SR11)



View 2 : From Library : UC Ngau Chi Wan Complex (SR3)

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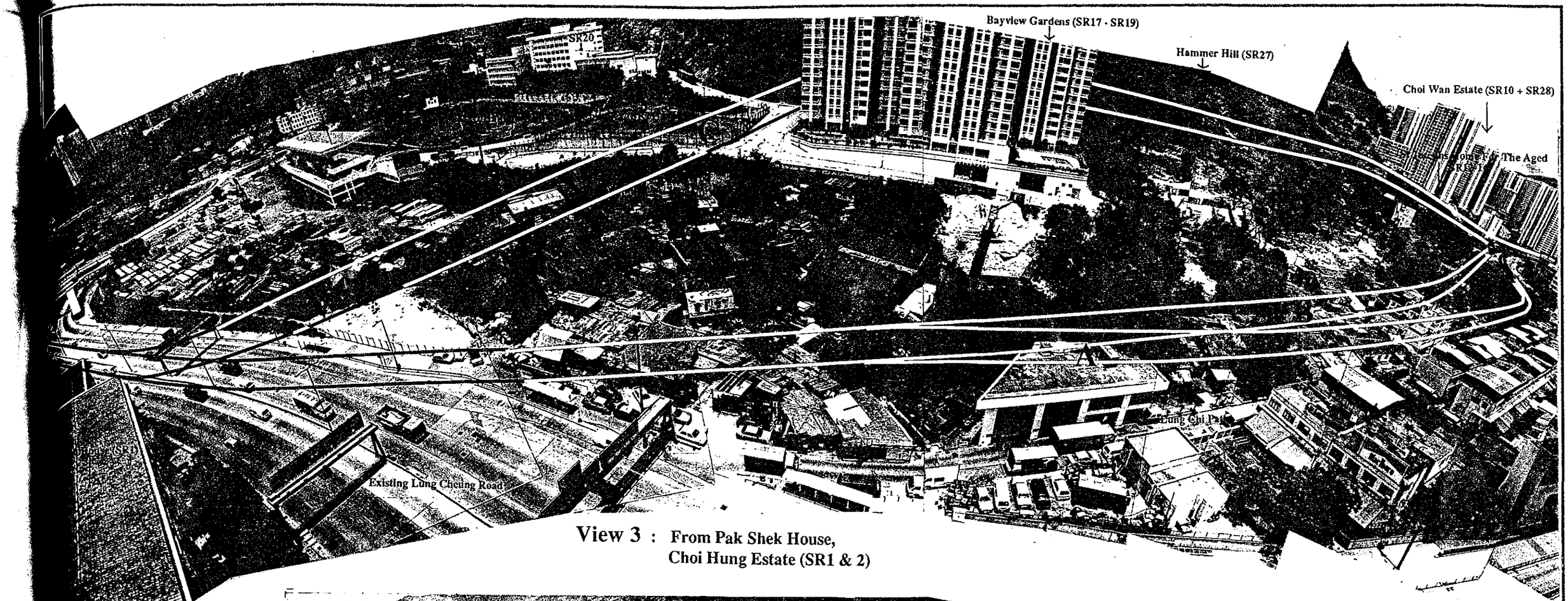
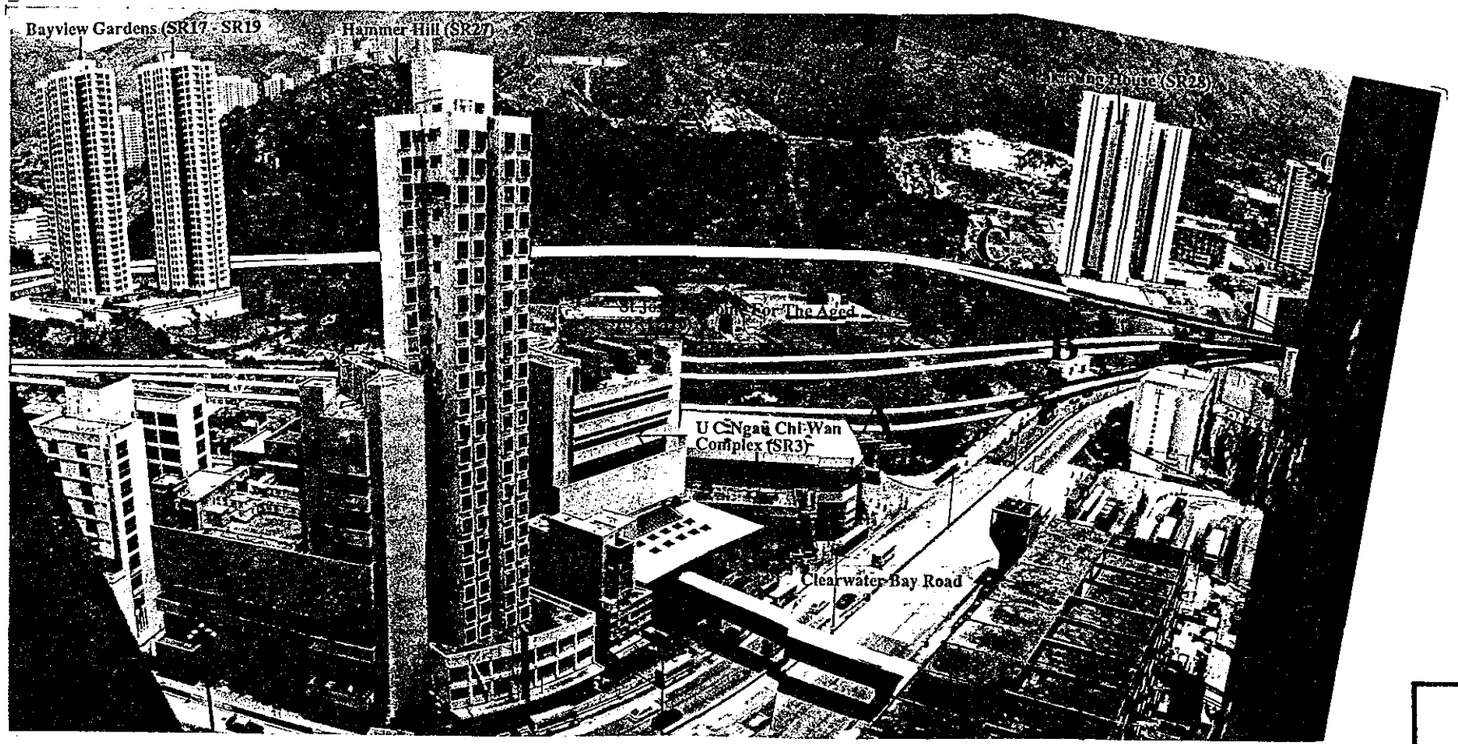
Figure 21
Panoramic Photos
Sheet 1 of 3



View 3 : From Pak Shek House, Choi Hung Estate (SR1 & 2)



View 4 : From Top Floor of Hung Shek House, Ping Shek Estate (SR4)

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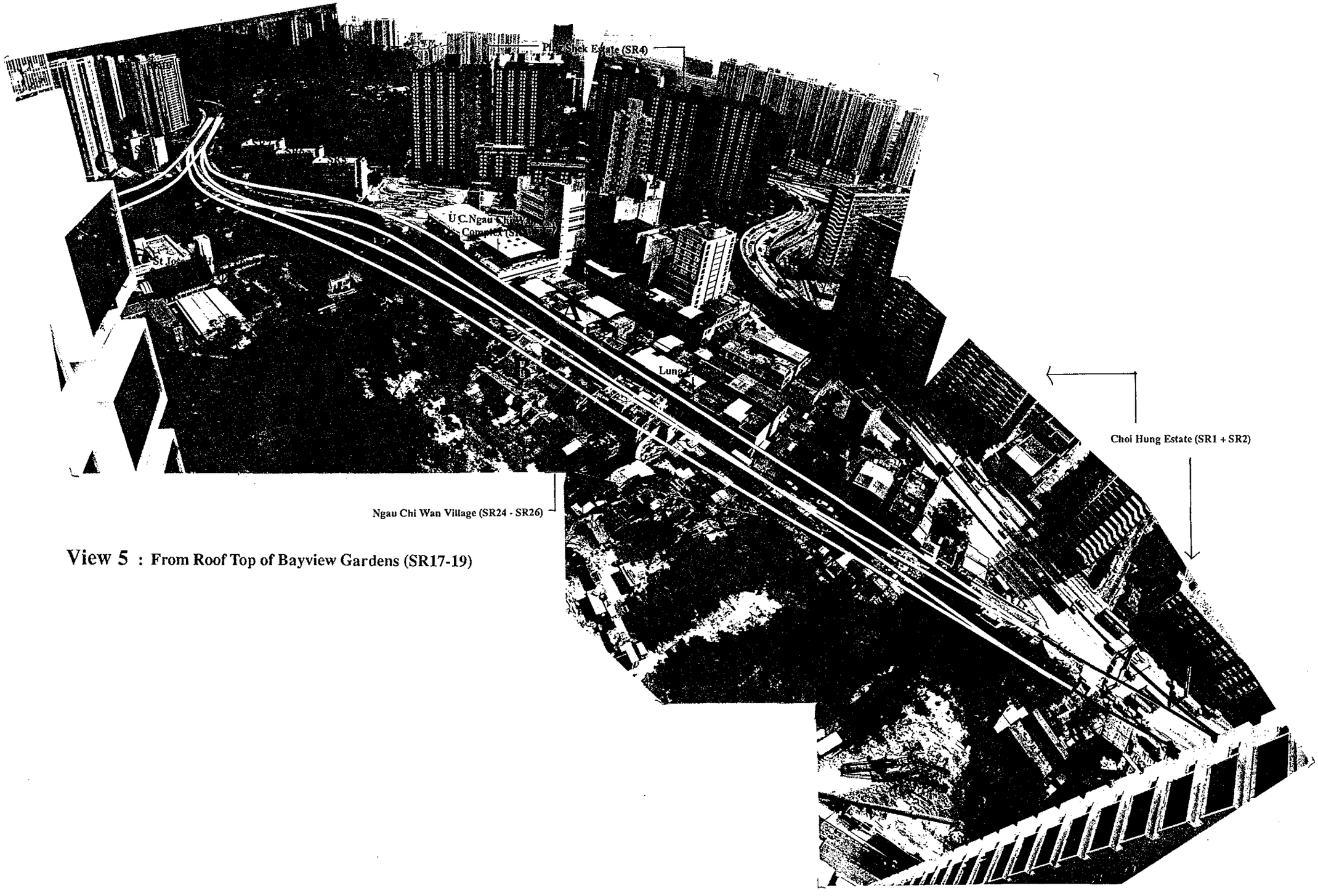
Figure 21
Panoramic Photos
Sheet 2 of 3



View 5 : From Roof Top of Bayview Gardens (SR17-19)

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Figure 21
Panoramic Photos
Sheet 3 of 3

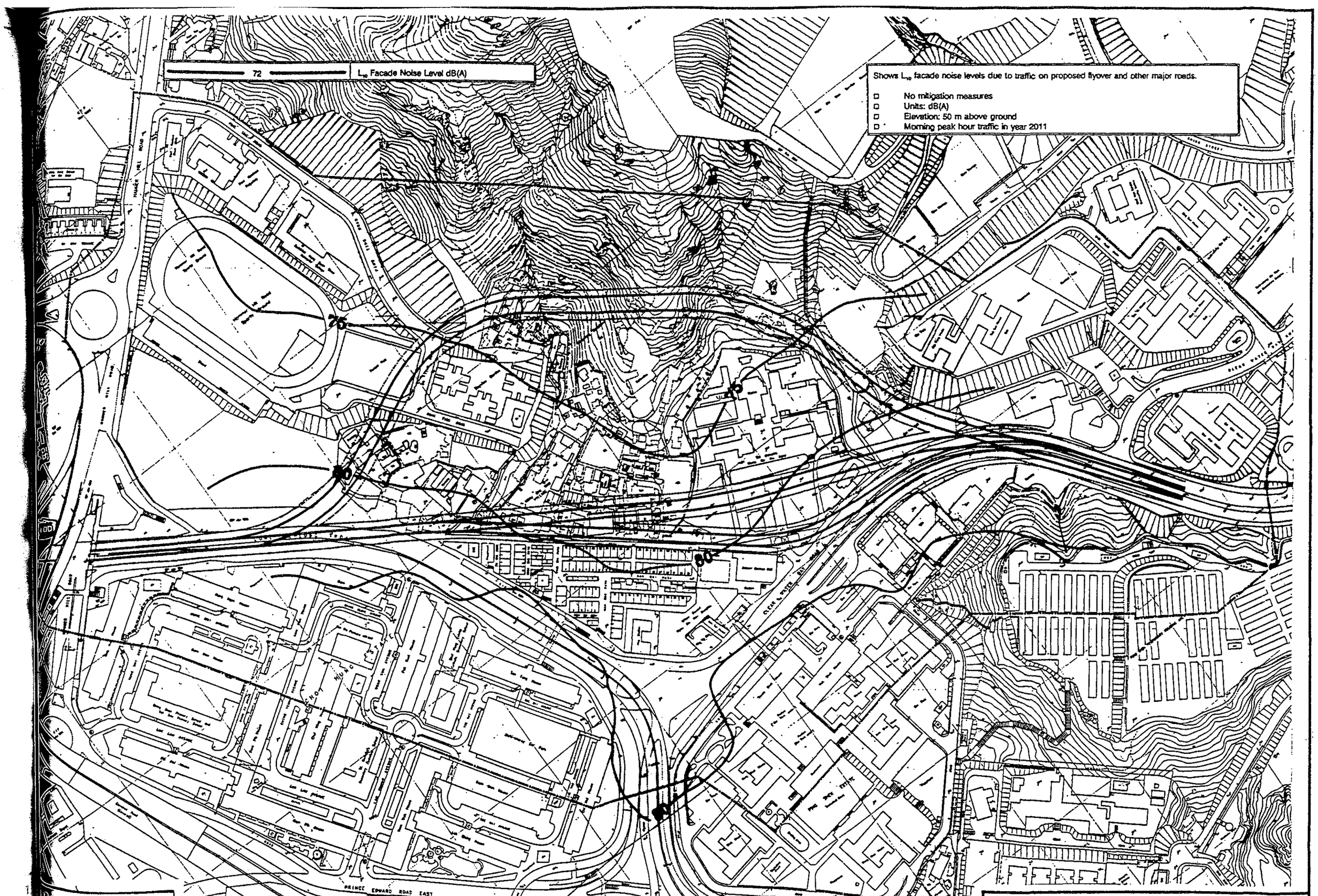

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Figure 22 *
Noise Contours - Do Nothing

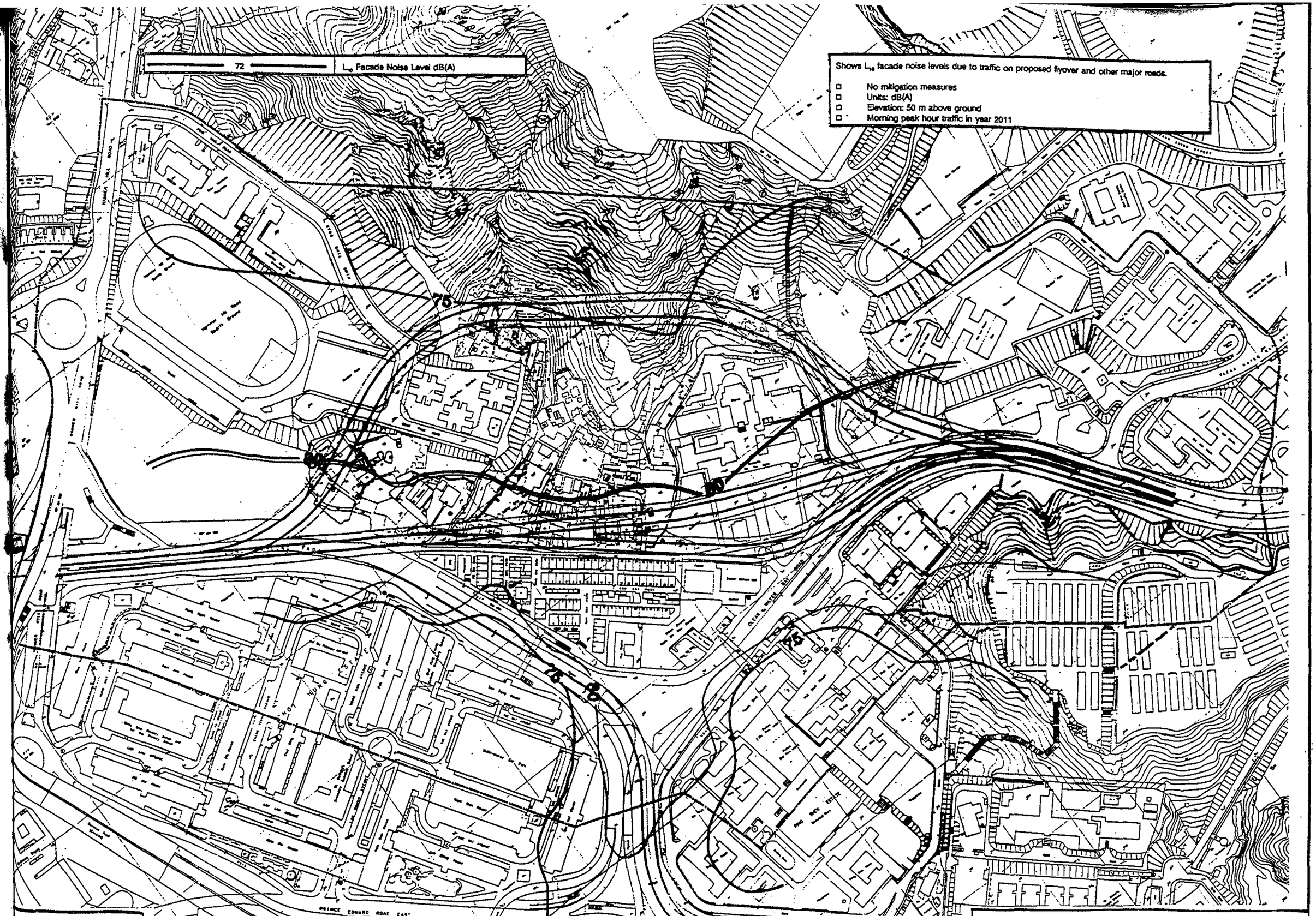

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Figure 23 *
Noise Contours - Option A

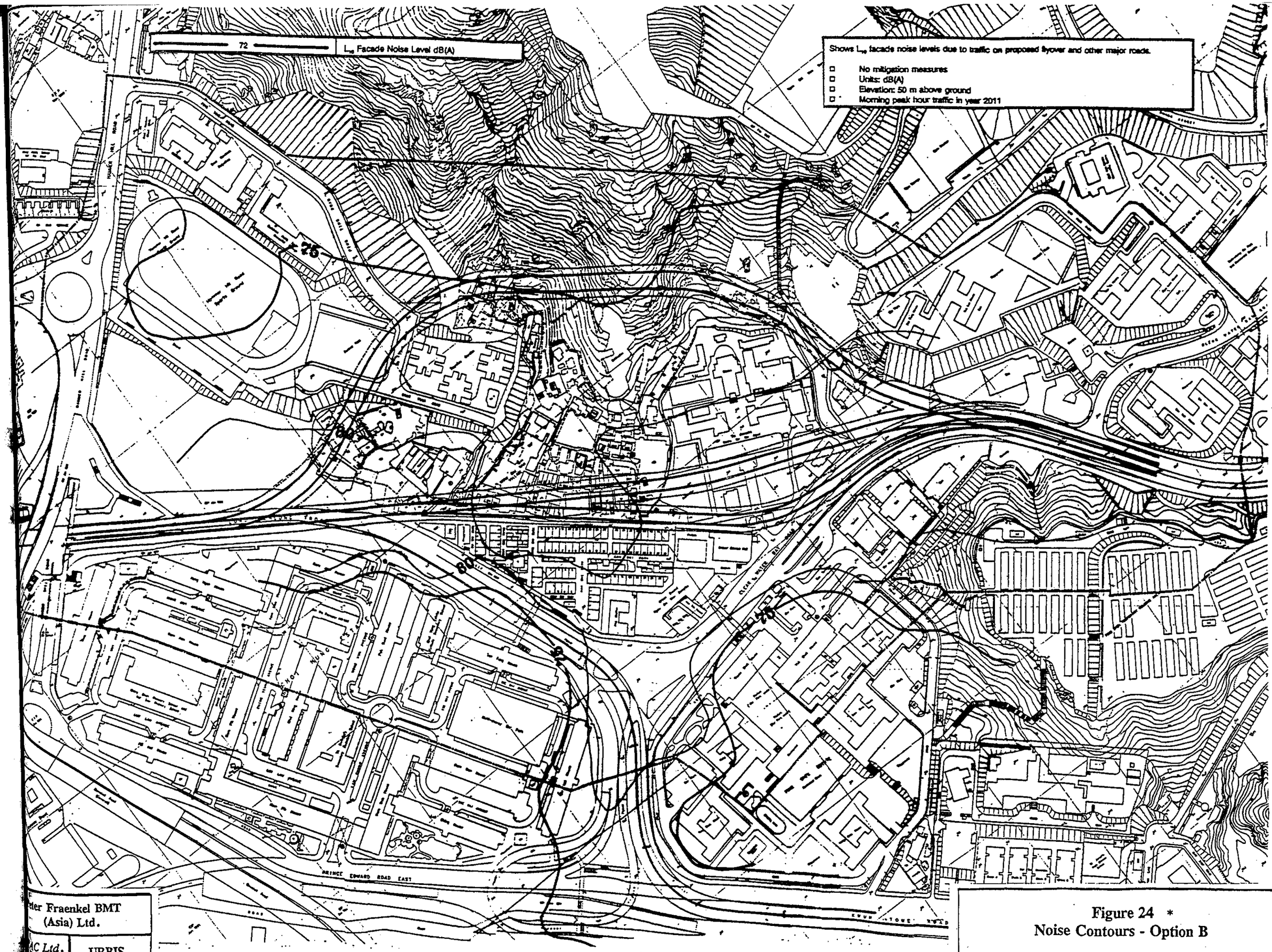

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Figure 24 *
Noise Contours - Option B

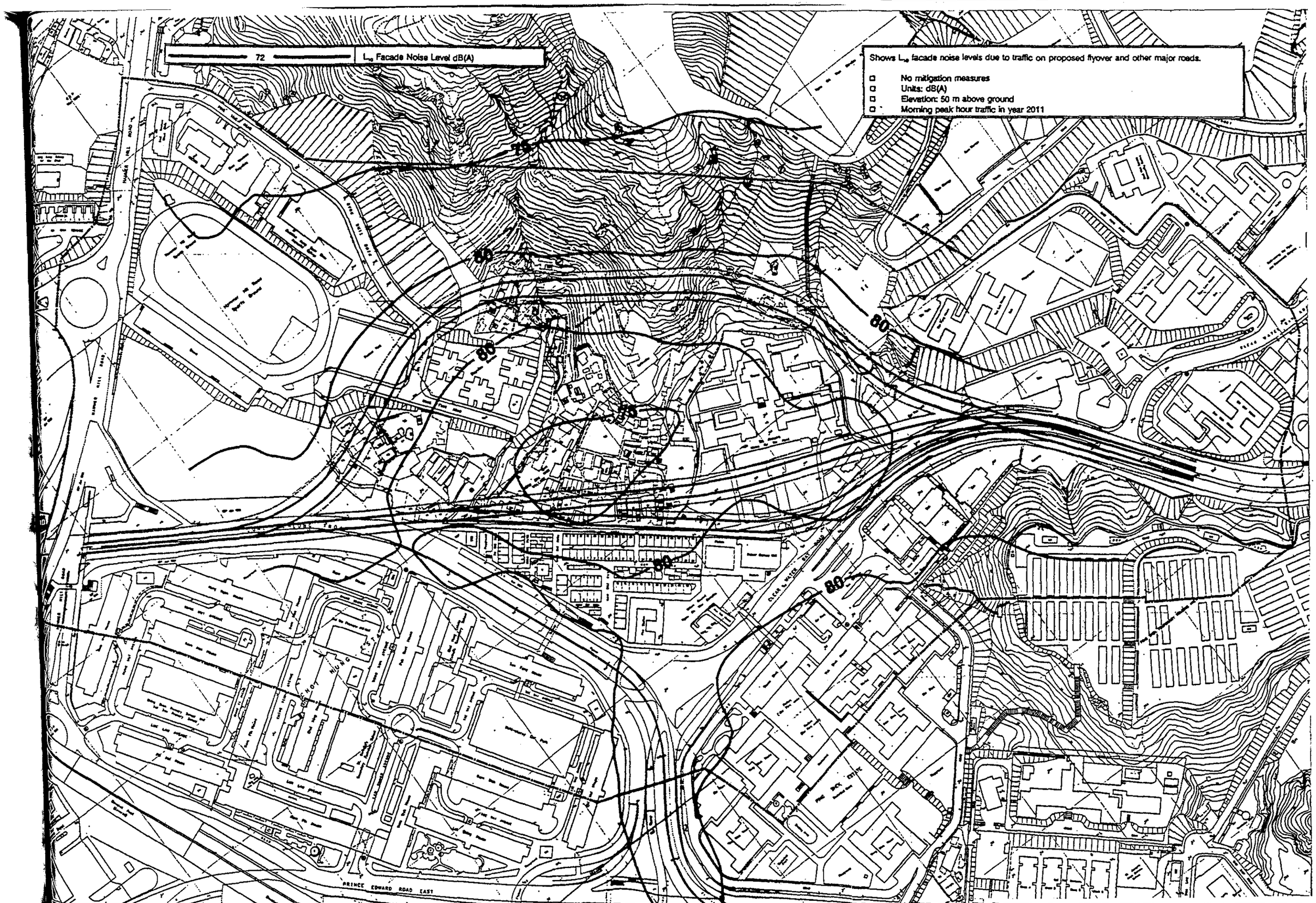

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Figure 25 *
Noise Contours - Option C

72 — L_{10} Facade Noise Level dB(A)

Shows L_{10} facade noise levels due to traffic on proposed flyover and other major roads.

- Assumes use of total enclosure over shaded portion of flyover
- Units: dB(A)
- Elevation: 50 m above ground
- Morning peak hour traffic in year 2011

KEY:

indicates Noise Enclosure with wall panels both sides (ie total enclosure)

indicates Noise Barrier 2m high

75

80

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Figure 26 *
Noise Contours - Options A & B (mitigated)

72 — L_{10} Facade Noise Level dB(A)

Shows L_{10} facade noise levels due to traffic on proposed flyover and other major roads.

- Assumes use of total enclosure over shaded portion of flyover
- Units: dB(A)
- Elevation: 50 m above ground
- Morning peak hour traffic in year 2011

KEY:

indicates Noise Enclosure with wall panels both sides (ie total enclosure)

indicates Noise Enclosure with wall panels only on side indicated

75

70

80

PRINCE EDWARD ROAD EAST

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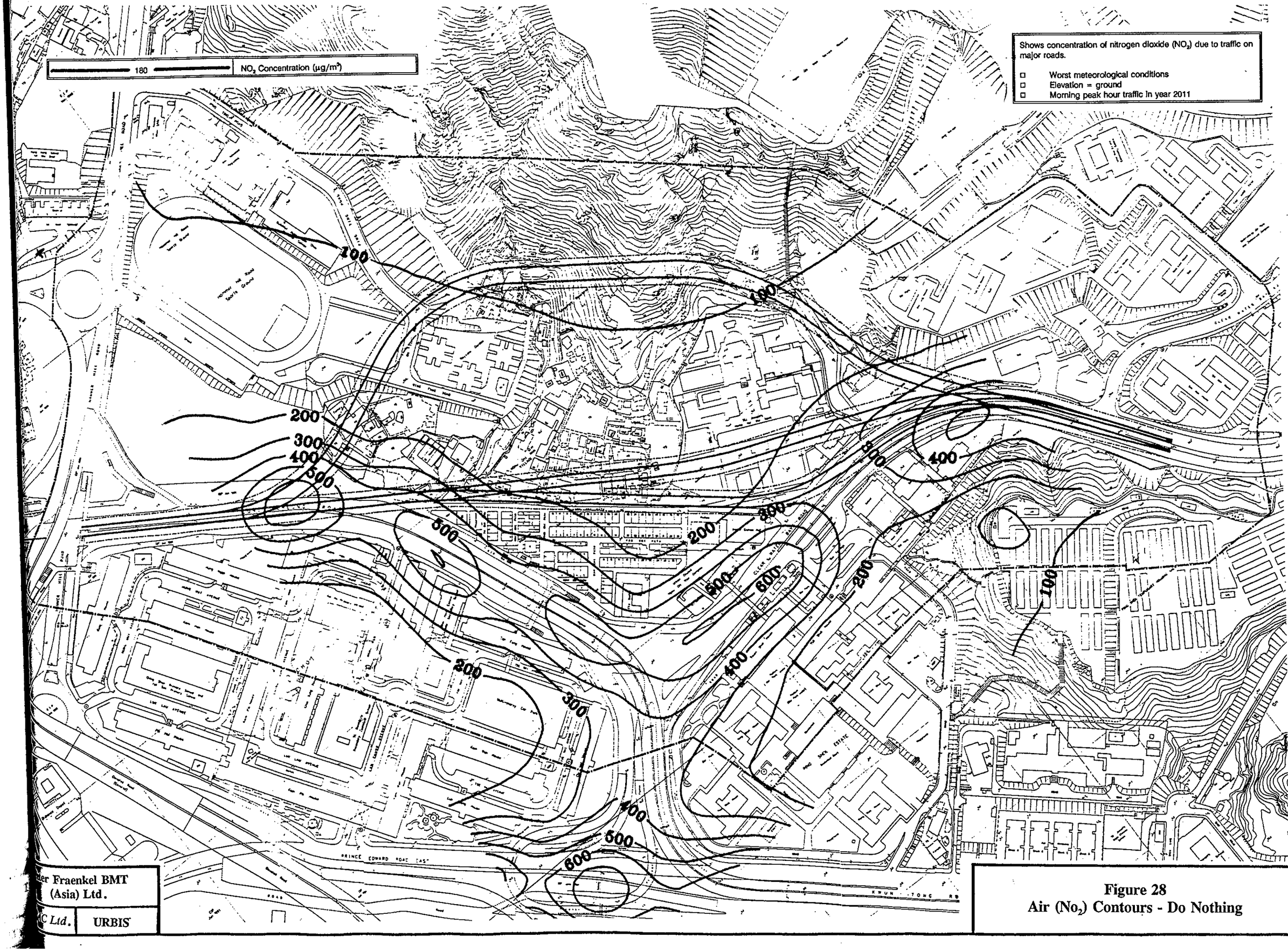
Figure 27 *
Noise Contours - Option C (mitigated)



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C Ltd.	URBIS

Figure 28
Air (No_2) Contours - Do Nothing

180 — NO_2 Concentration ($\mu g/m^3$)

Shows concentration of nitrogen dioxide (NO_2) due to traffic on proposed flyover and other major roads.

- Worst meteorological conditions
- Elevation = ground
- Morning peak hour traffic in year 2011

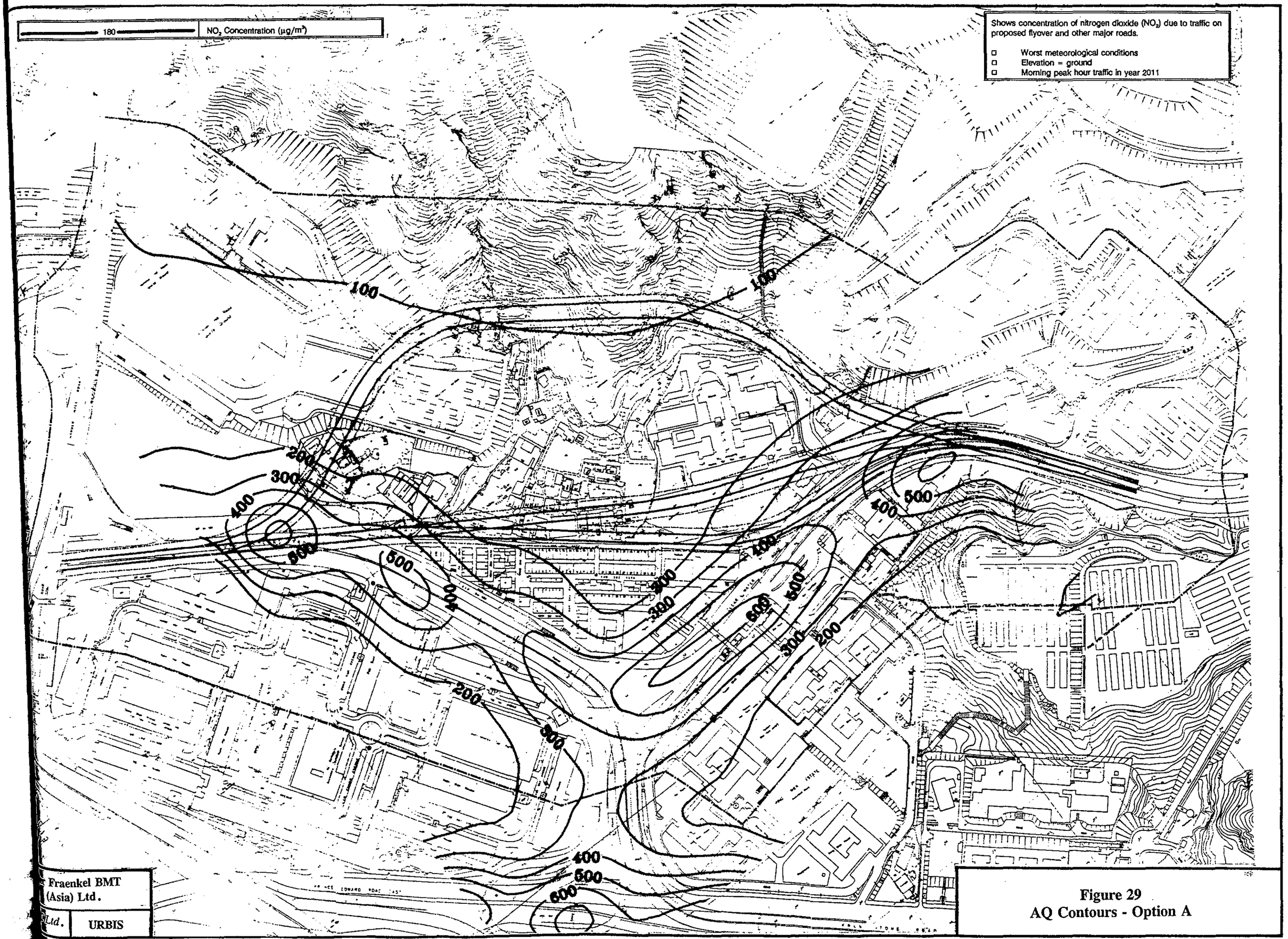

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Figure 29
AQ Contours - Option A

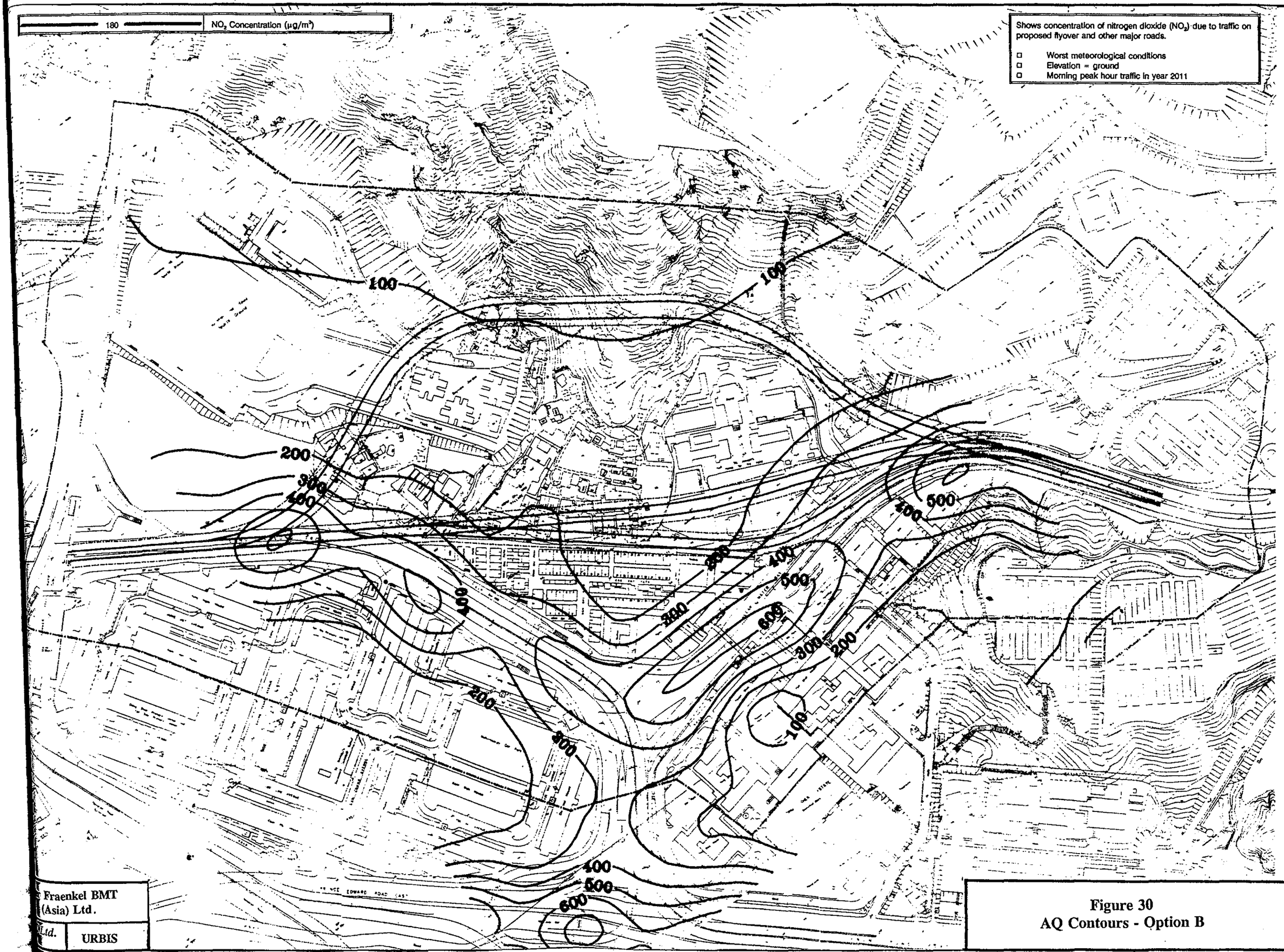

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Figure 30
AQ Contours - Option B

180 | NO_2 Concentration ($\mu g/m^3$)

Shows concentration of nitrogen dioxide (NO_2) due to traffic on proposed flyover and other major roads.

- Worst meteorological conditions
- Elevation = ground
- Morning peak hour traffic in year 2011

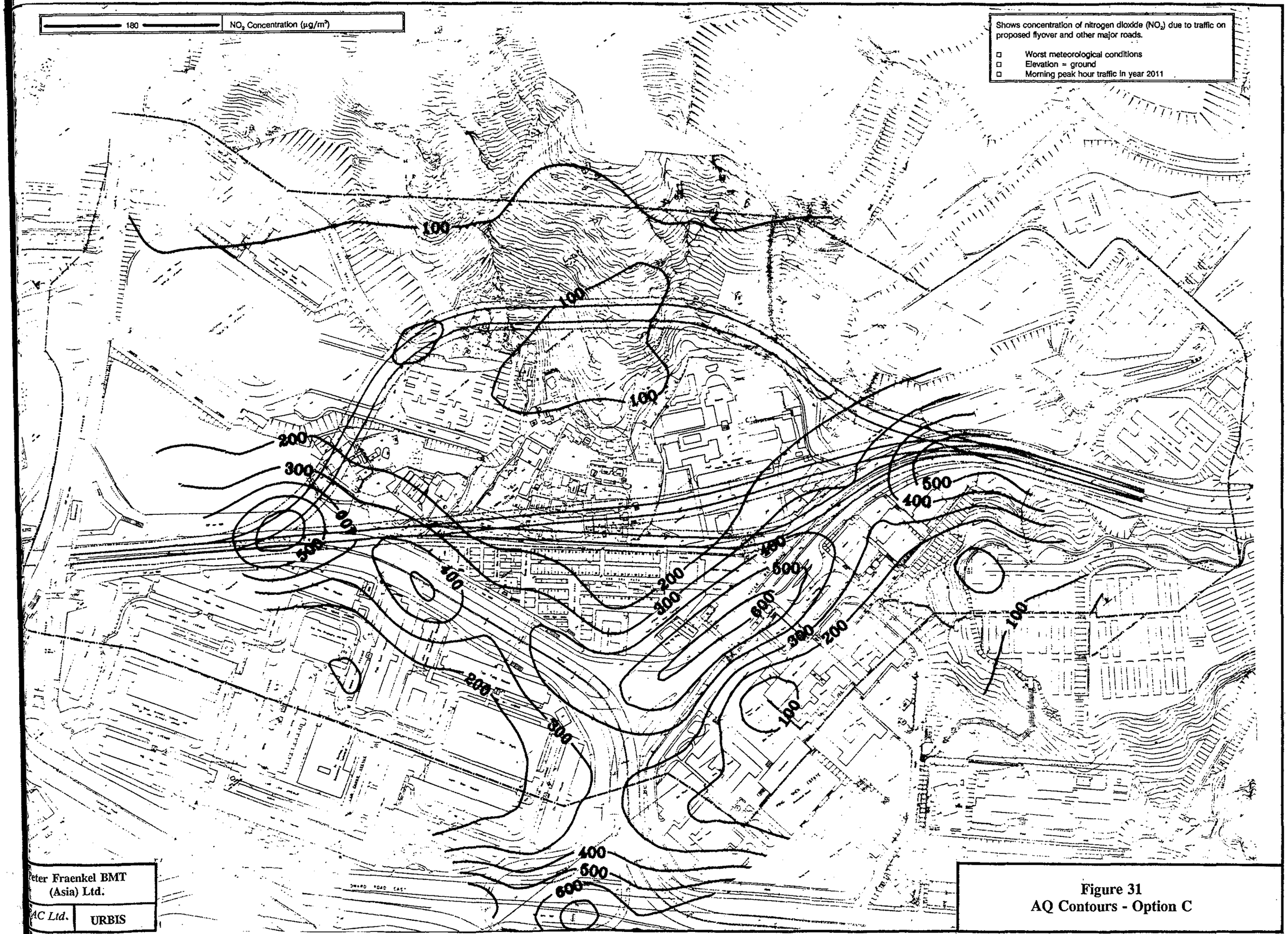

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Figure 31
AQ Contours - Option C

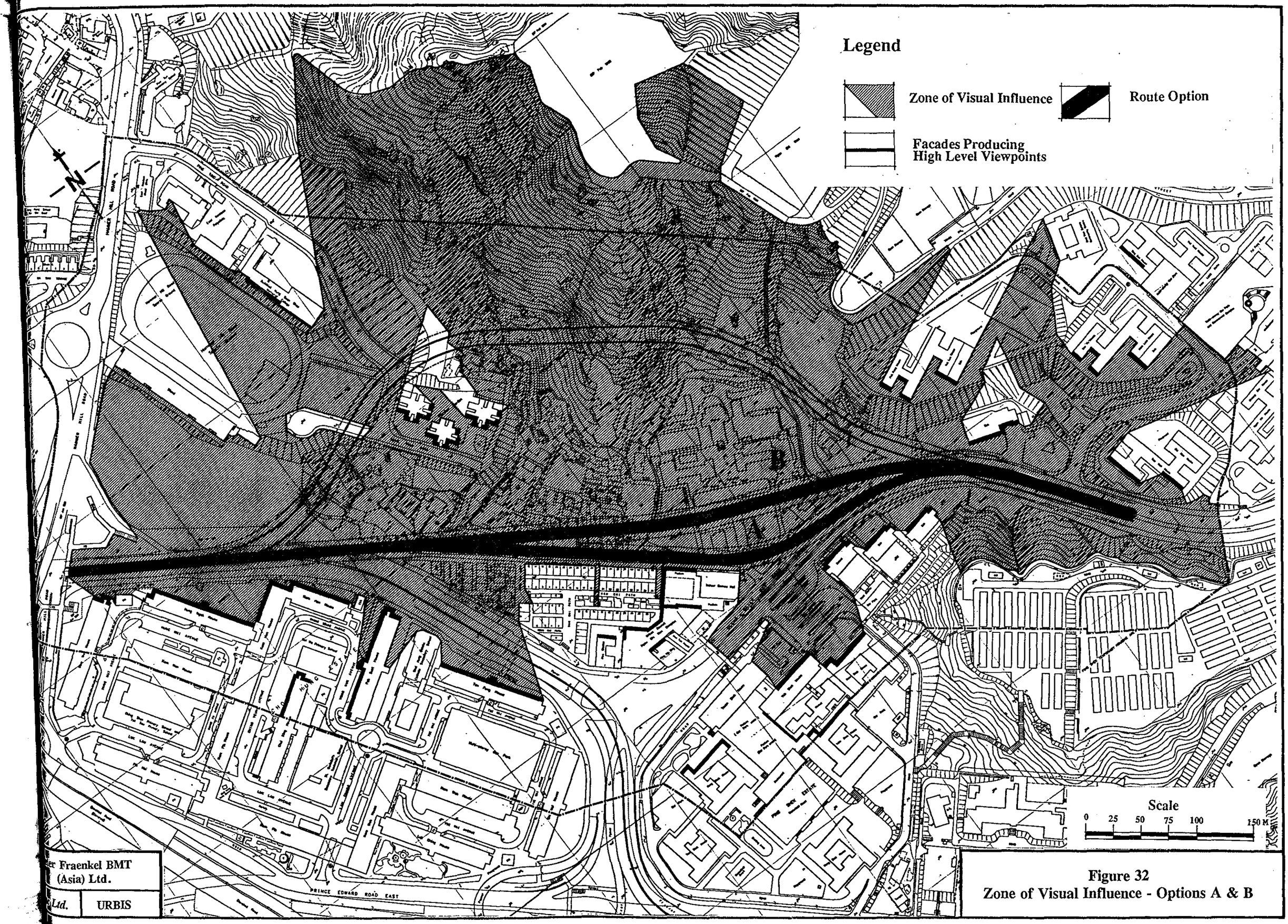

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Figure 32
Zone of Visual Influence - Options A & B

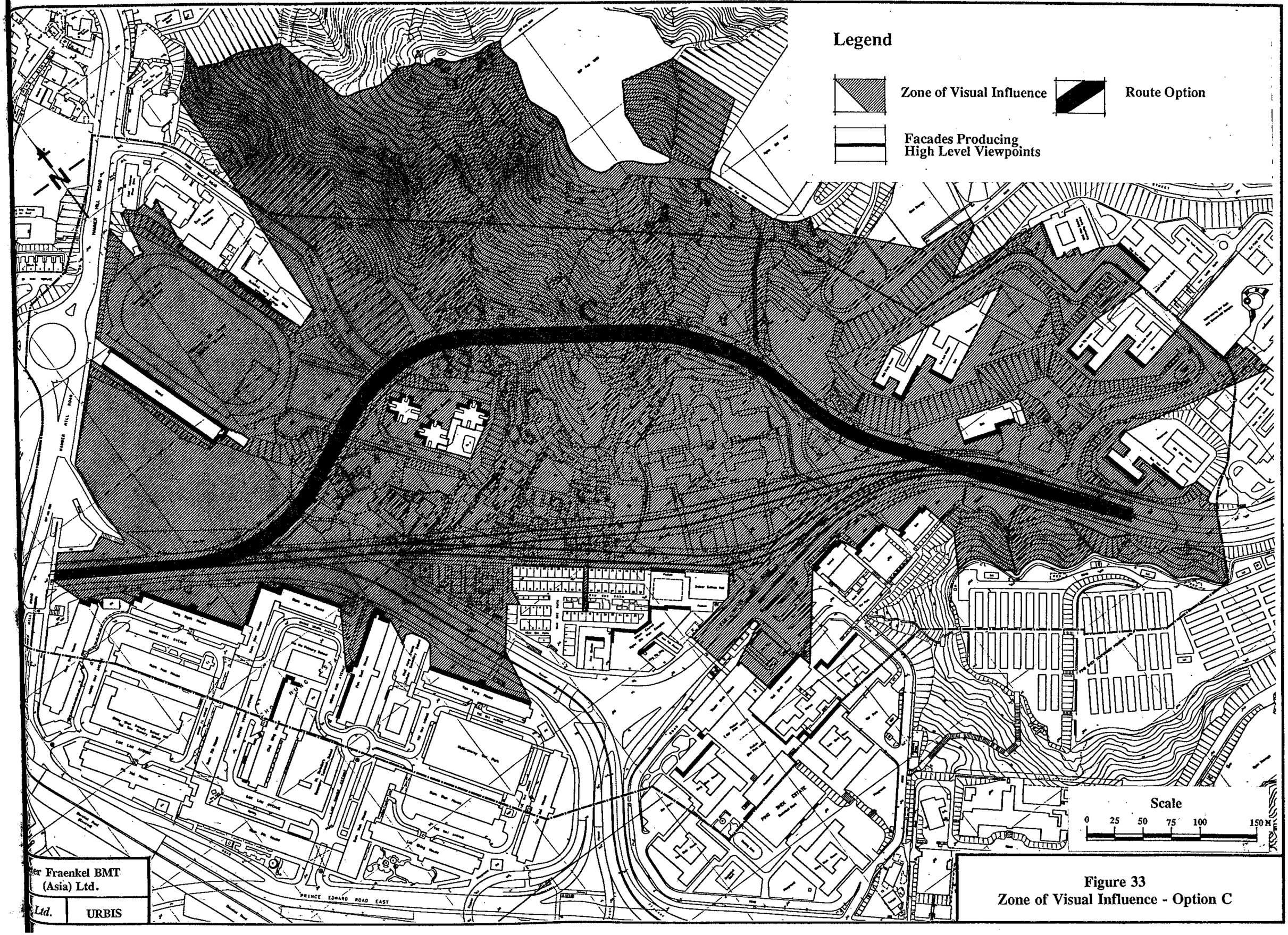

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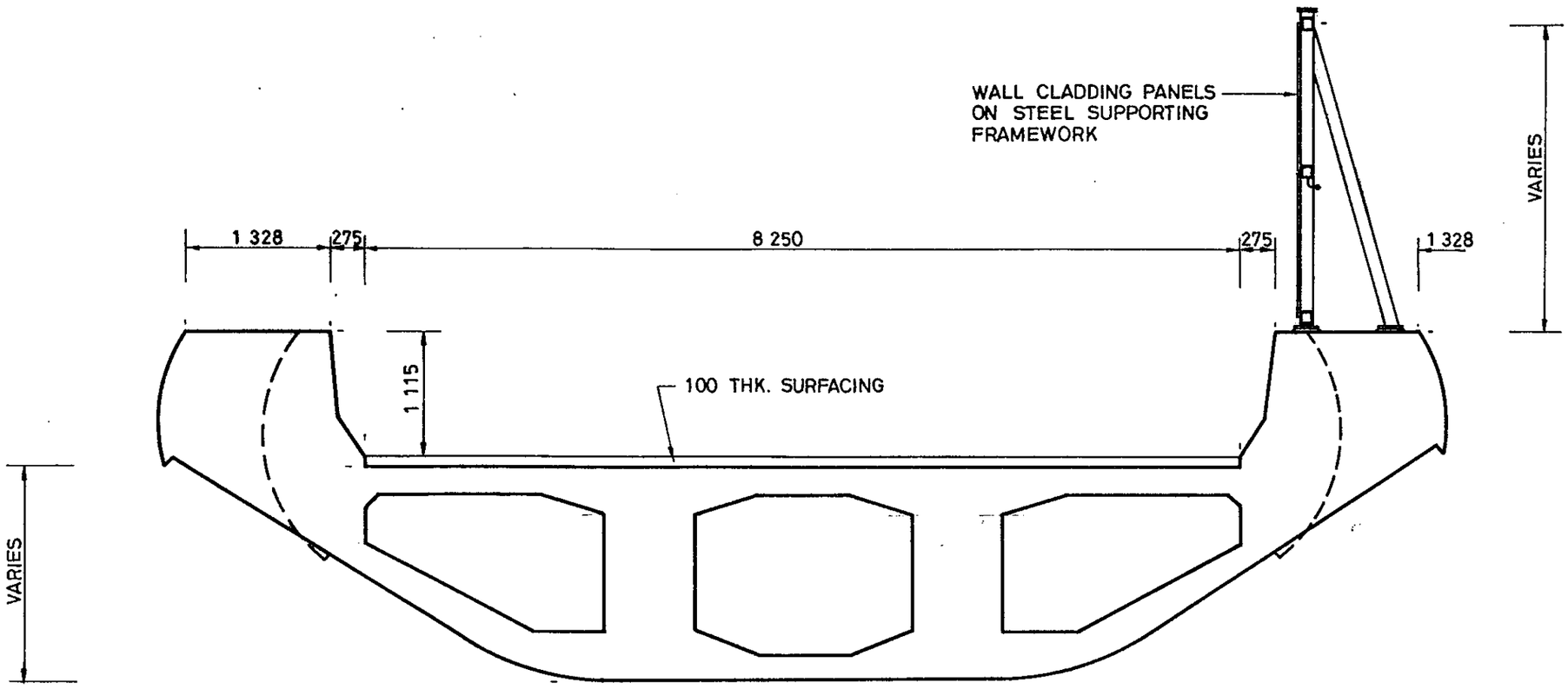
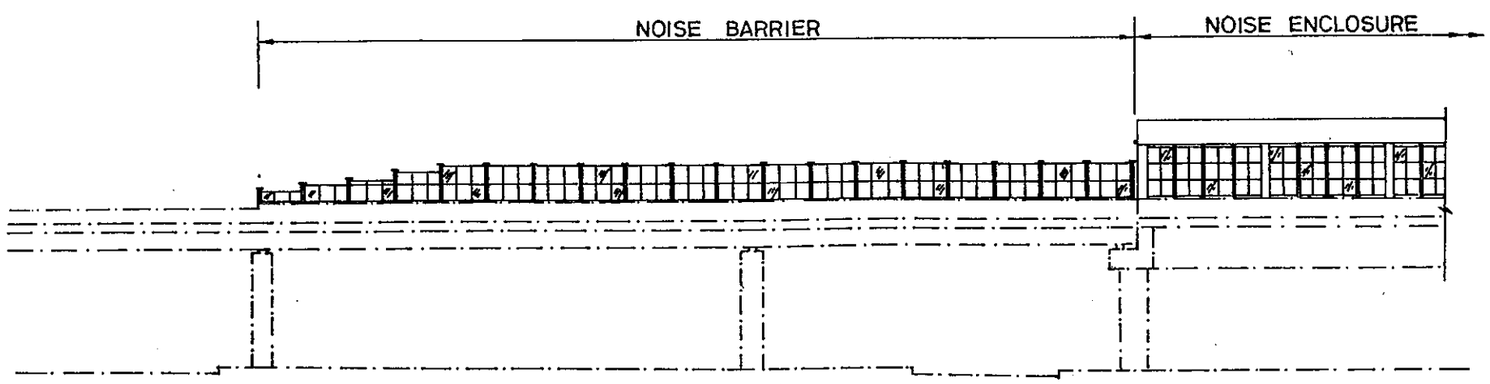
Figure 33
Zone of Visual Influence - Option C



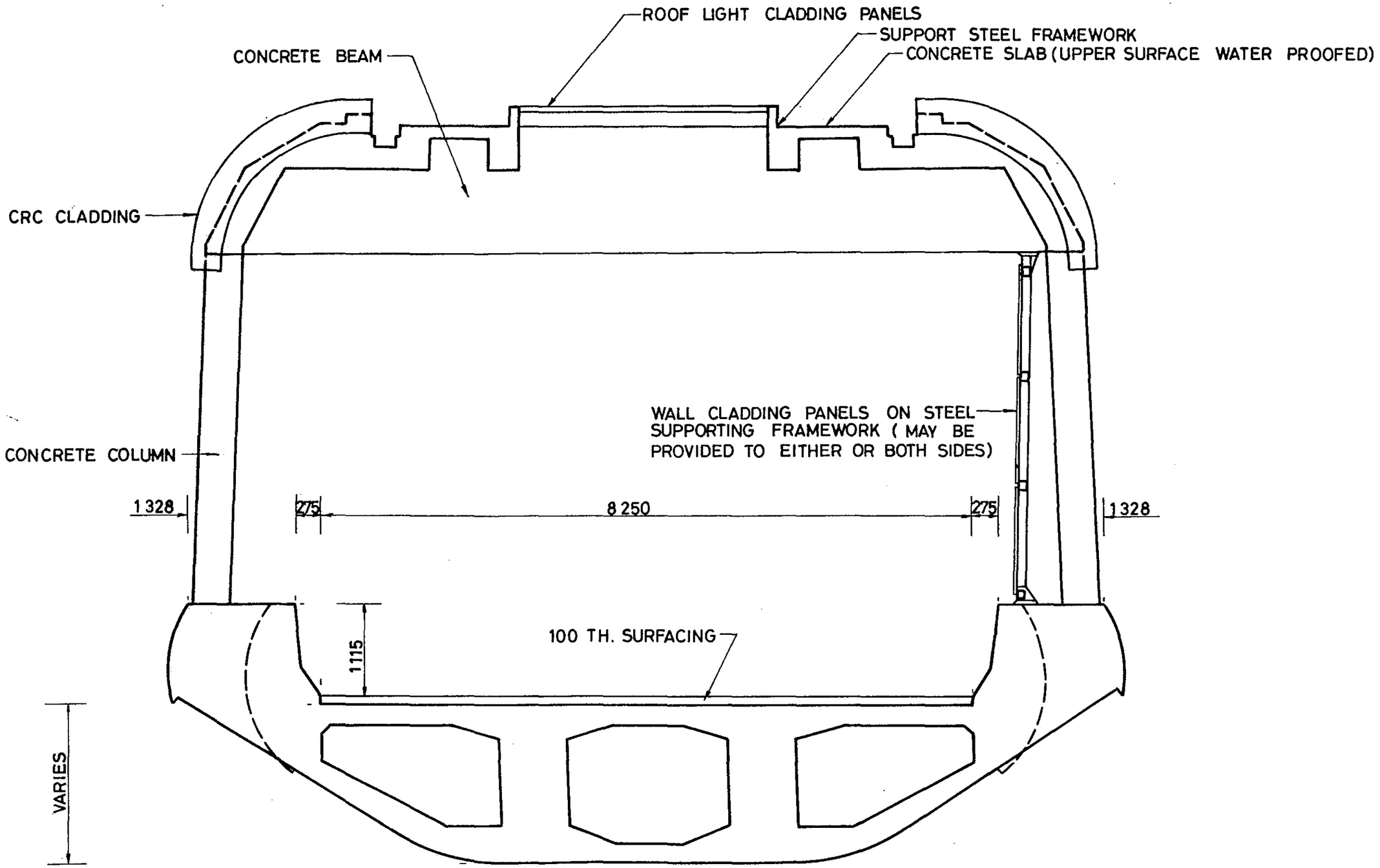
TYPICAL SECTION OF NOISE BARRIER

SCALE 1 : 50



NOISE BARRIER AND ENCLOSURE ELEVATION

SCALE 1 : 500



TYPICAL SECTION OF NOISE ENCLOSURE

SCALE 1 : 50

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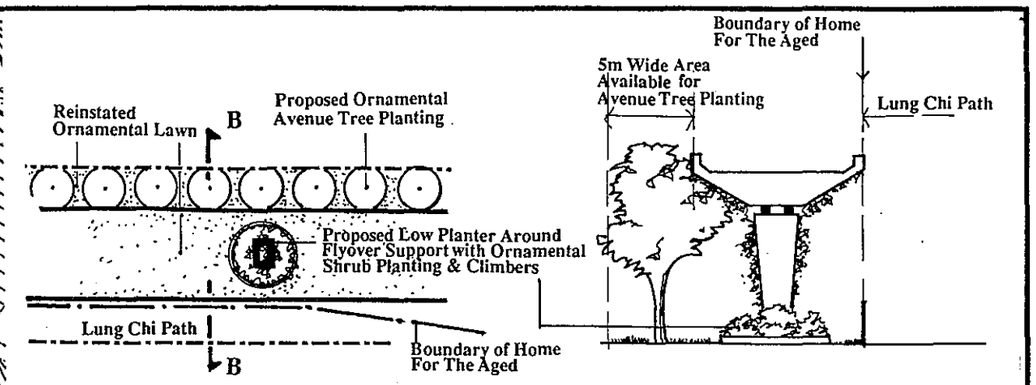
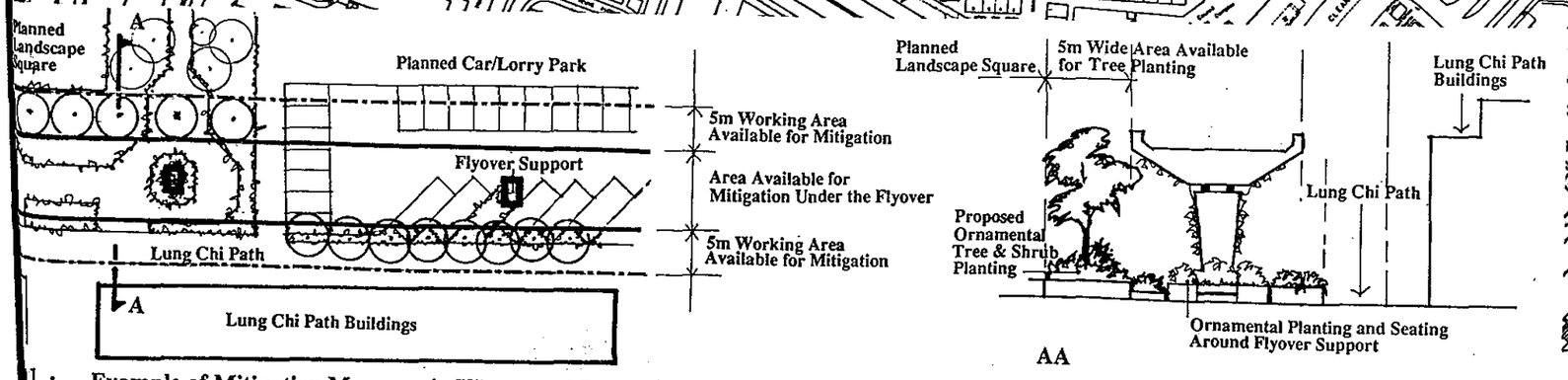
Figure 35 *
Noise Mitigation Measures Noise Enclosure



Plan 2 : Example of Mitigation Measures within The Home For The Aged

BB



AA

Plan 1 : Example of Mitigation Measures in Village and Integration with Planned Uses (Under VLP)

Plan 2

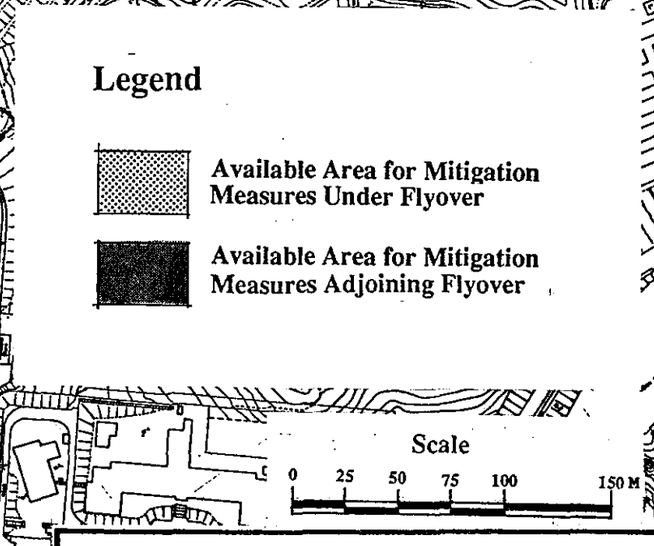


Figure 36
Landscape Mitigation Measures - Option A

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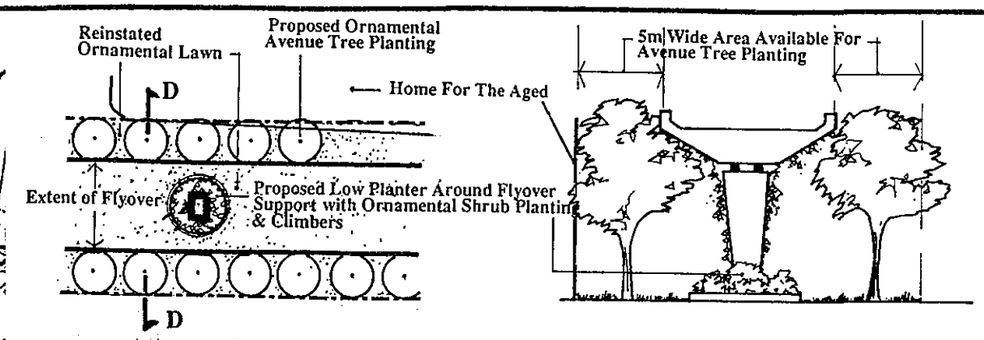
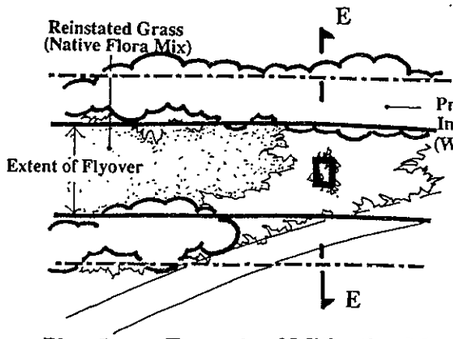
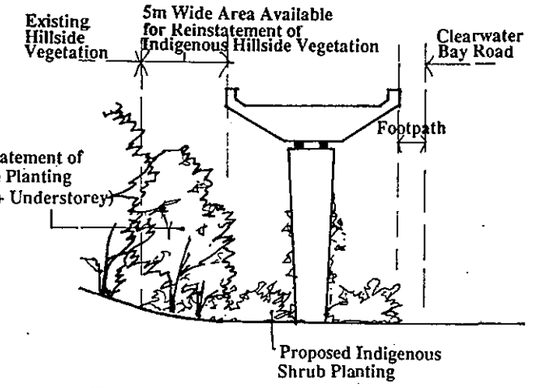


Plan 4: Example of Mitigation Measures within The Home For The Aged

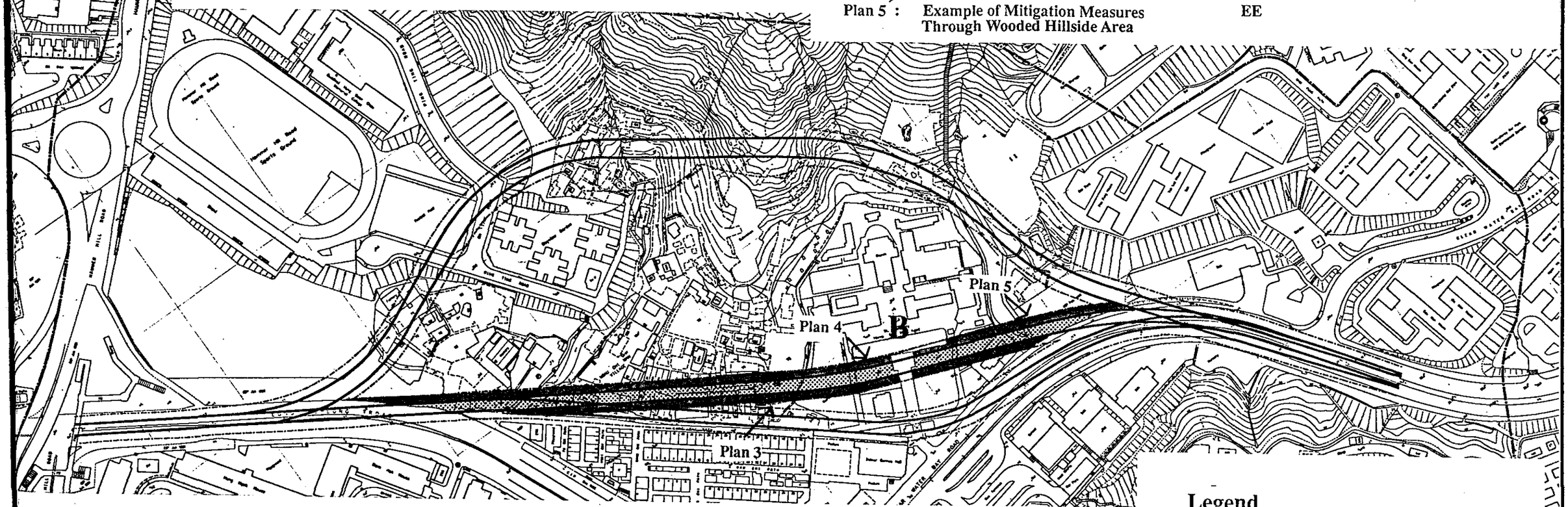
DD

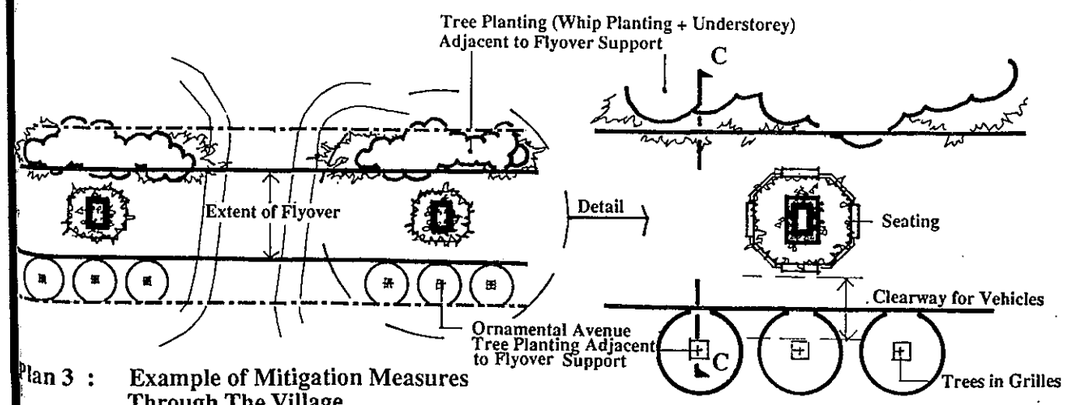


Plan 5 : Example of Mitigation Measures Through Wooded Hillside Area

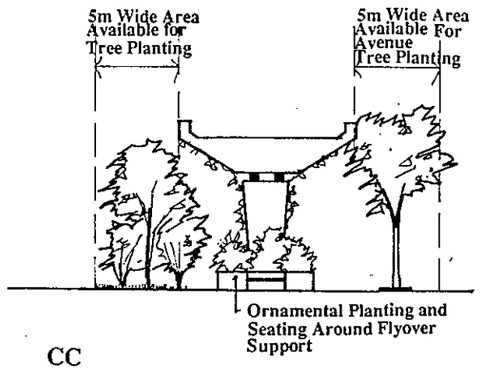


EE





Plan 3 : Example of Mitigation Measures Through The Village



CC

Legend

Available Area for Mitigation Measures Under Flyover

Available Area for Mitigation Measures Adjoining Flyover

Scale 0 25 50 75 100 150 M

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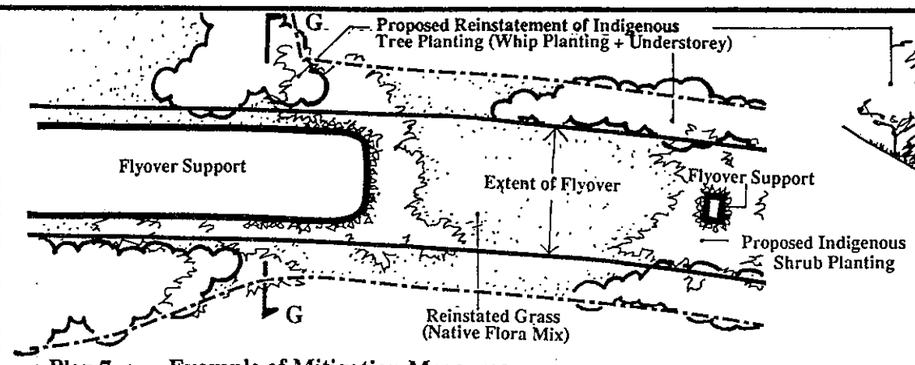
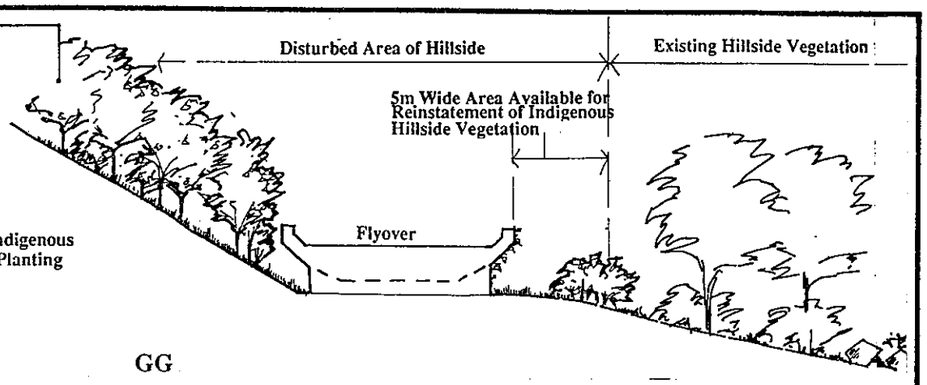
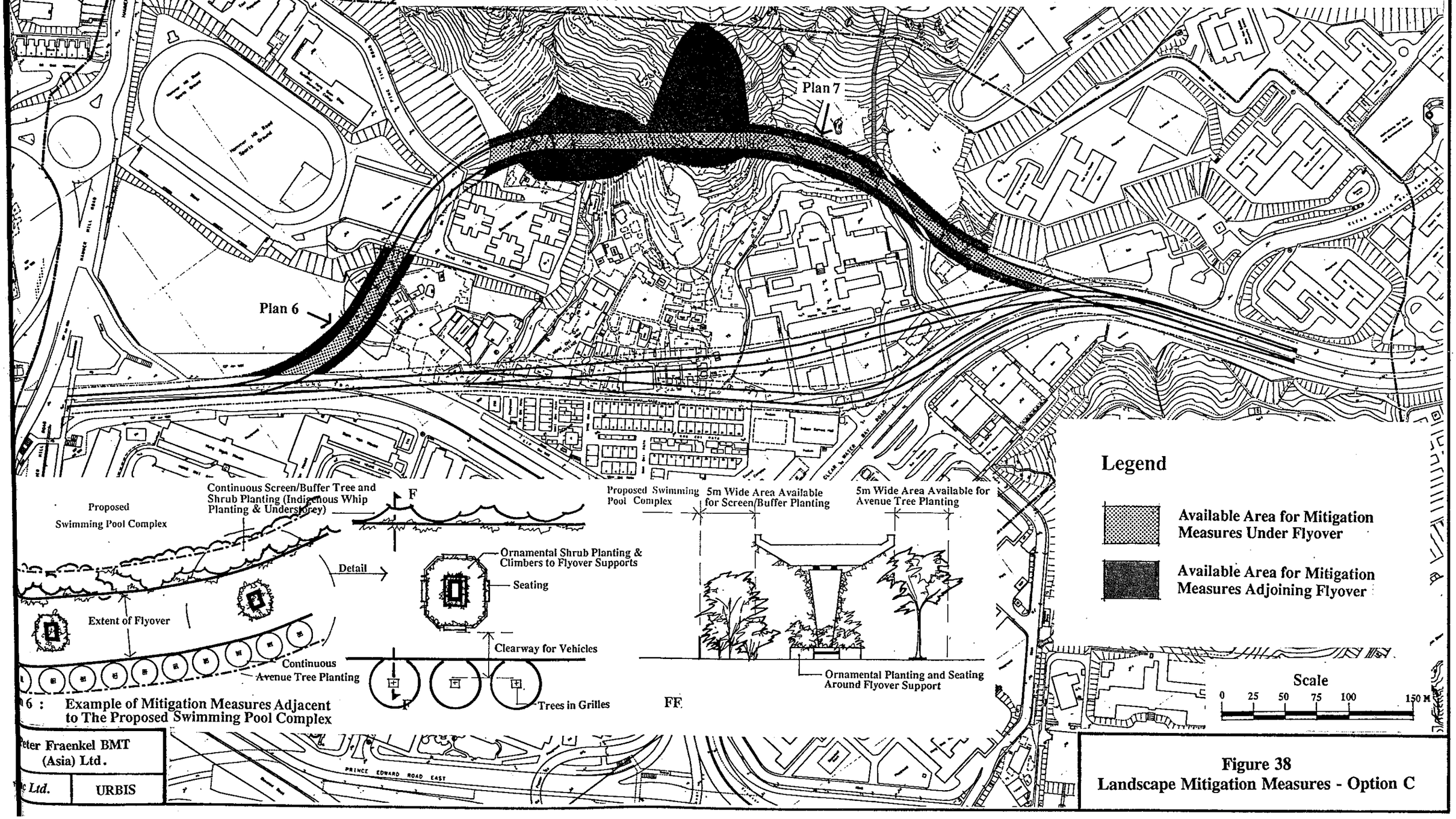
Figure 37
Landscape Mitigation Measures - Option B



Plan 7 : Example of Mitigation Measures Across The Hillside



GG



6 : Example of Mitigation Measures Adjacent to The Proposed Swimming Pool Complex

FF

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Figure 38
Landscape Mitigation Measures - Option C

LUNG CHEUNG ROAD FLYOVER: FOCUSED EIA
DECISION FRAMEWORK

1. ASSESSMENT OF DECISION ISSUES:
NOISE / AIR QUALITY / LAND USE
VISUAL/LANDSCAPE

TYPICAL ASSESSMENT TABLE

RECEIVERS		ASSESSMENT CRITERIA	OVERALL ASSESSMENT
R1	Hung Ngok House Kam Hon House		
R2	Tan Fung House		
R3	UC Ngau Chi Wan Complex (Library + Childrens Play)		
R4	Ping Shek Estate		
R5	Ping Shek Estate Catholic Primary School		
R6	Yan Kau School		
R7	St Johns Primary School		
R8+9	Ping Shek Temporary Housing Area		
R10	Sau Man House		
R11	Choi Wan St Josephs Primary School		
R12-16	St Josephs Home For The Aged		
R17-19	Bayview Gardens		
R20	Hung Sean Chow Memorial College		
R21	USD Hammer Hill Sports Complex		
R22	USD Hammer Hill Proposed Swimming Pool Complex		
R23	Lung Chi Path		
R24-26	Ngau Chi Wan Village		
R27	Hammer Hill		
R28	Pak Fung House		
R29	Area Zoned For Future FSD Quarters		
OVERALL ASSESSMENT			1 / 2 / 3

1 = Low
2 = Moderate
3 = Severe

2. COMPARISION OF DECISION ISSUES

OPTIONS	DECISION ISSUES + ASSESSMENT FOR EACH 1=LOW 2=MODERATE 3=SEVERE	
ROUTE A	NOISE*	1
	AIR QUALITY	1
	LAND USE	2
	VISUAL	2
	LANDSCAPE	2
ROUTE B	NOISE*	1
	AIR QUALITY	1
	LAND USE	2
	VISUAL	2
	LANDSCAPE	2
ROUTE C	NOISE*	1
	AIR QUALITY	1
	LAND USE	2
	VISUAL	3
	LANDSCAPE	3

3. COMPARISION OF OPTIONS

OPTIONS	OPTIONS+OVERALL RANKING 1ST/2ND/3RD	
ROUTE A	ROUTE A	1
ROUTE B	ROUTE B	2
ROUTE C	ROUTE C	3

4. ROUTE SELECTION

SELECTED OPTION

A

* WITH MITIGATION MEASURES

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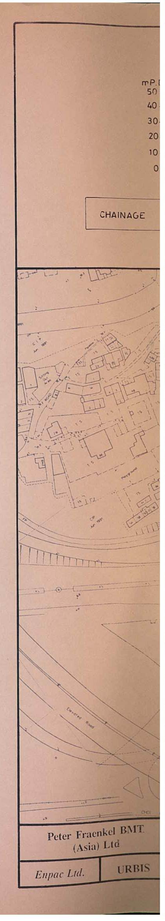
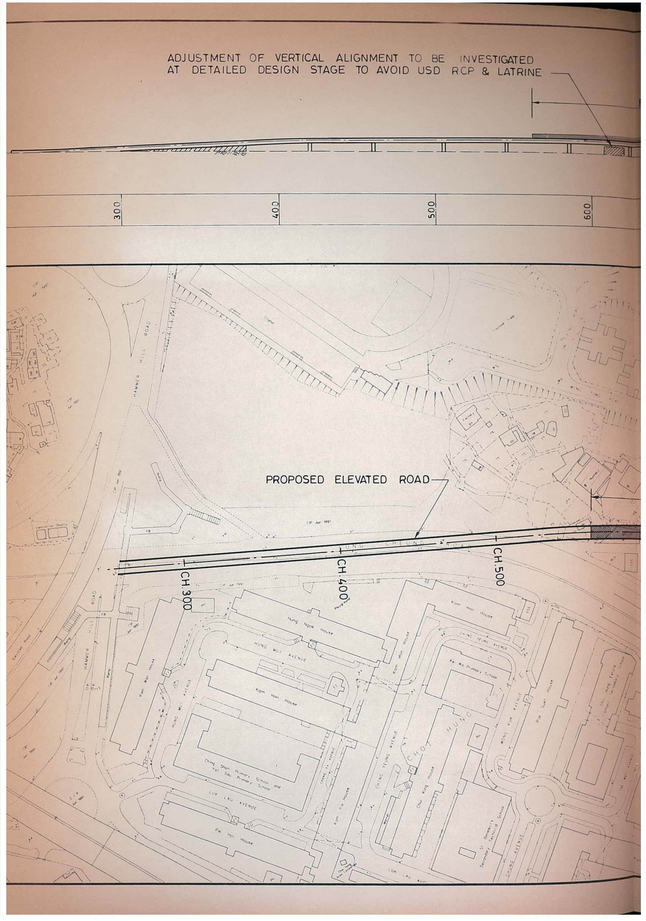
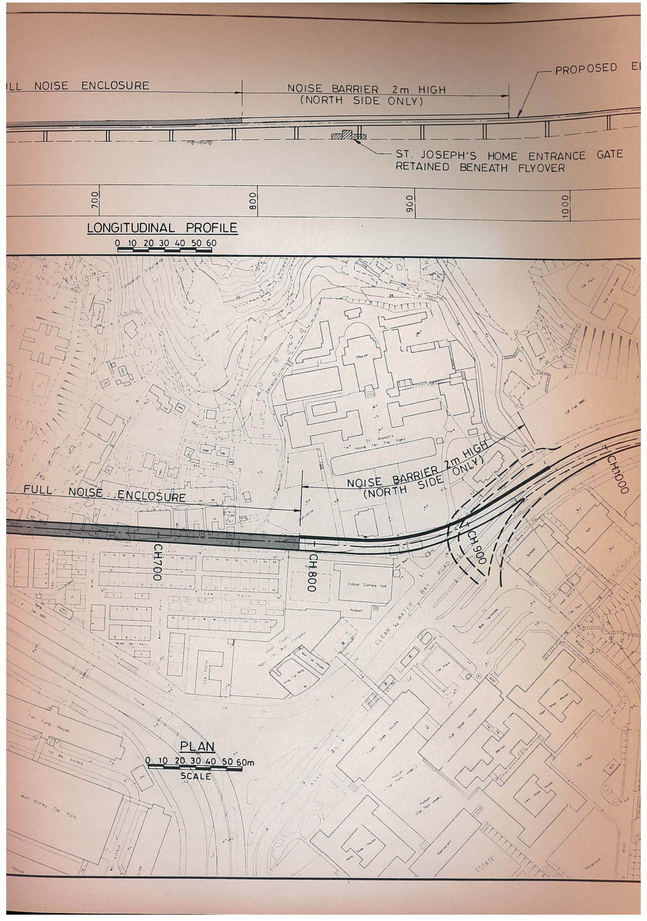
Figure 39
The Decision Matrix







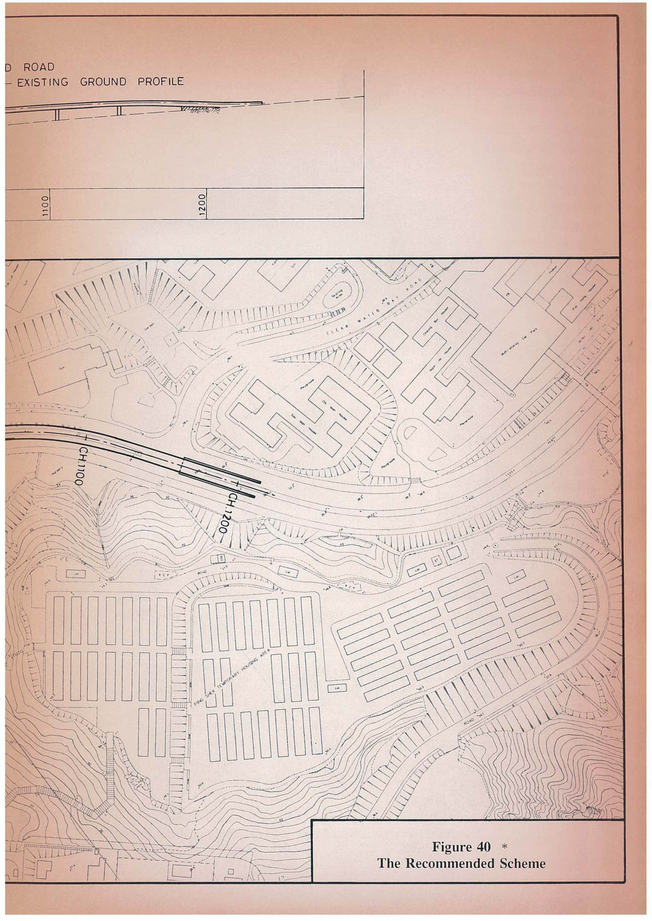


Figure 40 *
The Recommended Scheme