

Appendix 8

Geotechnical Planning Review Report

Introduction

The redevelopment site is located at 200-210 Lai King Hill Road, Kwai Chung, New Territories. Location plan of the Site is shown in Figure 1.

This Geotechnical Planning Review Report (GPPR) was prepared in support of the redevelopment project in relation to the stability of man-made slopes/ retaining walls that may affect or be affected by the proposed redevelopment.

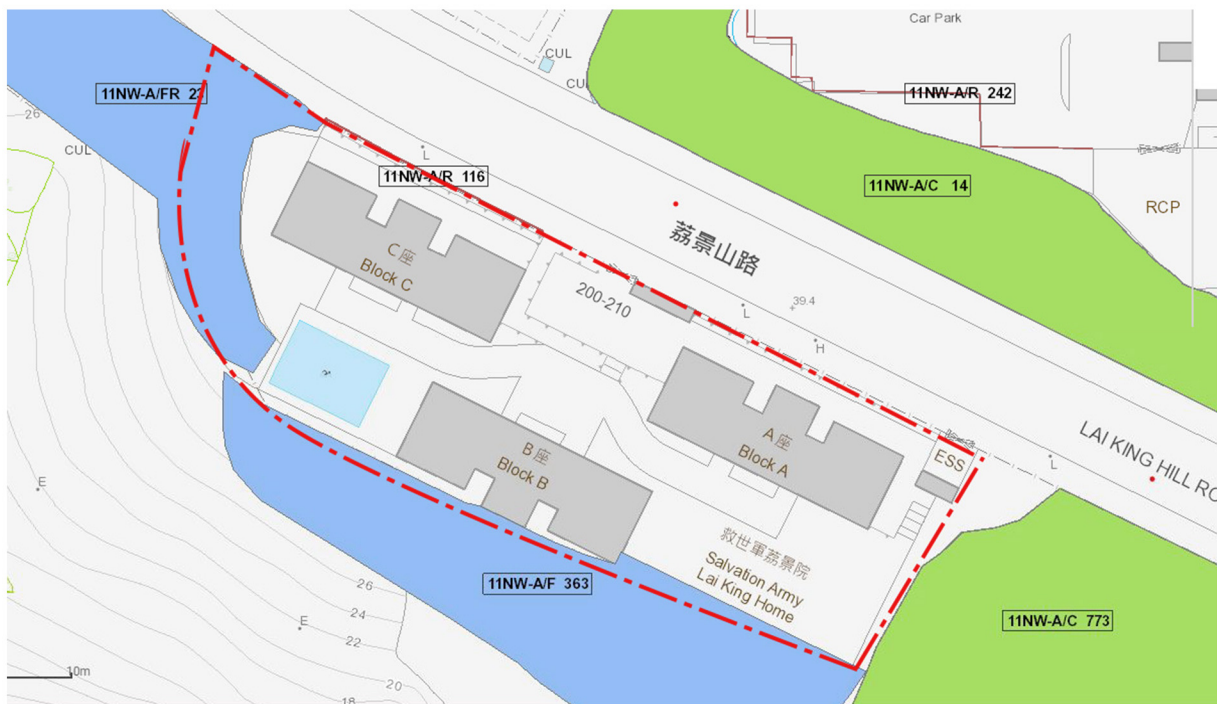


Figure 1 – Site Location Plan

Site Description and Proposed Development

Site Description

The Site is zoned “Government, Institution or Community(2)” under the Kwai Chung Outline Zoning Plan No.S/KC/30. It is located at No. 200-210 Lai King Hill Road, Kwai Chung, New Territories. The Site is located opposite of Lai King Hill Road Playground and between MTR Lai King Ventilation Building and Lai King Estate Carpark.

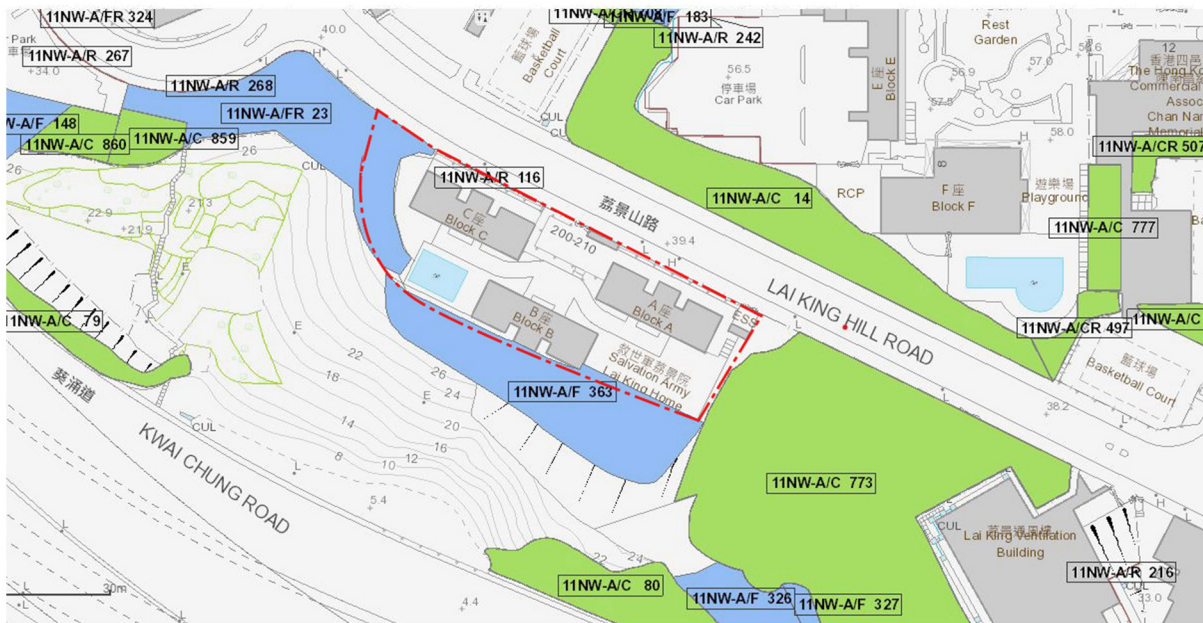


Figure 2 – Geotechnical Feature Layout Plan

Section 9 – Geotechnical Planning Review Report

According to the Slope Information System (SIS) of Geotechnical Engineering Office (GEO), there are 3 nos. of registered features located immediately adjacent to the Site and may affect or be affected within the lot boundary. The general details of the features are summarized as in Table 1. The detailed information is attached in the Annex A.

Feature No.:	Wall Height (m)	Slope Height (m)	Length (m)	Average Angle (Degree)
11NW-A/C 773*	N/A	34	140	20
11NW-A/F 363*	N/A	9	95	30
11NW-A/FR 23*	3	3/ 14	18/ 80	30 /30

Table 1 – Slope Information

(Note: Features marked with * are located in vicinity of the proposed development that may affect or be affected by the proposed development.)

Proposed Development

The proposed development will involve the demolition of the existing Building A, B and C of the Lai King Home and re-construct 2 new 7-storey buildings. Excavation and Lateral Support (ELS) Works may be provided for constructing the proposed foundation system. ELS plans and site formation plans (if necessary) will be submitted separately to the Buildings Department for approval.

In view of the Site is located on the crest of slope 11NW-A/F 363, it is proposed the foundation system of the 2 new building adopting socketed steel H-piles or bored pile to minimized the surcharge induced to the slope which will affecting its stability against soil sliding.

Geotechnical Assessment

Desk Study

From Lands Department

Based on the SIMAR records obtained from the Slope Maintenance Responsibility Information System (SMRIS) of Lands Department (LD), the features are located adjacent to the Site. The maintenance responsibilities are included in Annex A and summarized below:-

<u>Feature No.:</u>	<u>Maintenance Responsibility Lot/ Party</u>
11NW-A/C 773*	Highways Department
11NW-A/F 363*	K.C.T.L. 354
11NW-A/FR 23*	Mixed Feature: (1) Housing Authority (2) Highways Department (3) K.C.T.L. 354

(Note: Features marked with * are located in vicinity of the proposed development that may affect or be affected by the proposed development.)

From Geotechnical Engineering Office (GEO)

Feature No. 11NW-A/C773

The Feature No. 11NW-A/C773 is located at east of the Site. It is a 34m high and 140m long cut slope with a slope angle 20 which its coordinates in Hong Kong Metric Grid 831261E and 822809N. Road/ footpath with heavy traffic density is located immediately at crest and toe. The consequence-to-life Category was considered as 2 according to the SIS.

Feature No. 11NW-A/F363

The Feature No. 11NW-A/F363 is located at south of the Site. It is a 9m high and 95m long fill slope with a slope angle 30 which its coordinates in Hong Kong Metric Grid 831188E and 822843N. Other densely populated buildings (The Site) is located immediately from its crest and road/ footpath with very heavy traffic density is around 35m away from its toe. The consequence-to-life Category was considered as 1 according to the SIS.

Feature No. 11NW-A/FR23

The Feature No. 11NW-A/FR23 is located at west of the Site. It is a feature with 2 levels of fill slope portion (3m and 14m high respectively) and retaining wall (3m high and 25m long) on top which its coordinates in Hong Kong Metric Grid 831115E and 822921N. Hotel is located from its crest around 5m while undeveloped green belt is located immediately from its toe. The consequence-to-life Category was considered as 1 according to the SIS.

Geological Condition and Groundwater Condition

There is no record showing the geological and ground water condition, the condition of geological and ground water shall be revealed by future ground investigation works.

Effect of Proposed Development to Existing Features

In general, in order to safeguard the effect of the proposed works on the adjacent features, the following comprehensive monitoring measures are proposed during the stage of foundation works, ELS works and site formation works (if any):-

- (1) Settlement checkpoints on ground and utilities
- (2) Tilting checkpoints on adjacent structures/ retaining walls
- (3) Piezometer/ standpipe to monitoring groundwater level

Before the commencement of work, the monitoring points will be installed and initial readings will be taken. During the progress of the foundation works, ELS works and site Formation works (if any), monitoring will be carried out on a daily basis and the results will be reviewed closely to assess the impact on the adjacent properties and submitted to the Buildings Department regularly. Remedial works will be proposed and submitted for approval and construction if necessary.

Existing Features

The proposed redevelopment works including foundation, ELS works and site formation (if any) will be design to avoid adverse effect to the existing features, and vice versa.

Ground investigation will be proposed to investigate the site geology and groundwater condition with respect to the thickness of fill and bedrock level. Associated laboratory tests will be proposed to determine the soil properties and parameters. Piezometers or standpipes will be installed to measure and determine the ground water table. Detailed design with assessment will be submitted in future for approval in order to ensure that there is no adverse effect from the proposed works on the adjacent features.

Conclusion

Feature No. 11NW-A/C773, 11NW-A/F363 and 11NW-A/FR 23 adjacent to the Site would be slightly affected by the proposed redevelopment without significant impact of additional surcharge onto the features in connection with the proposed foundation of the new 8-storey buildings would be adopted socketed steel H-piles or bored pile which will directly transfer the load onto the bedrock strata. The actual effects shall subject to the results of the future stability analysis.

The design of the proposed redevelopment shall avoid causing any adverse effect onto adjacent features. All foundation, ELS or site formation plan involving geotechnical content and related necessary remedial measures shall be submitted to the Buildings Department and passed to GEO for checking and comment.

Based on the findings of this GPRR, the proposed redevelopment is considered geotechnically feasible to be implemented within the Site Area.

Annex A
Slope SIS Information

BASIC INFORMATION

Location: Kwai Chung Road, HSR

Date of Formation: post-1977

Date of Construction/
Modification:

Approximate Coordinates: Easting : 831261 Northing : 822809

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Road/footpath with heavy traffic density

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with heavy traffic density

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 2

Remarks: N/A

SLOPE PART

(1) Max. Height (m): 34 Length (m): 140 Average Angle (deg): 20

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

Government Feature Party: HyD Agent: HyD

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 24-01-2014
Data Source: LPM
Slope Part Drainage: (1) Position: Berm Size(mm): 225
(2) Position: On slope Size(mm): 1000
(3) Position: Toe Size(mm): 225

Wall Part Drainage: (1) Position: Toe Size(mm): 300

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: 4 Min. Berm Width (m): 1
Weepholes: Size (mm): N/A Spacing (m): N/A



WALL PART

N/A

SERVICES

N/A



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: N/A

Section No: 1-1

Height(m):

Type of Toe Facility: Road/footpath with heavy traffic density

Distance from Toe(m): 0

Type of Crest Facility: Road/footpath with heavy traffic density

Distance from Crest(m): 0

Consequence Category:

Engineering Judgement:

Section No: 2-2

Type of Toe Facility:

Distance from Toe(m):

Type of Crest Facility:

Distance from Crest(m):

Consequence Category:

Engineering Judgement:



Sign of Seepage:

Criterion A satisfied:

Sign of Distress:

Criterion D satisfied:

Non-routine maintenance required:

Note:

Masonry wall/Masonry facing:

Note:

Consequence category (for critical section):

Observations: N/A

Emergency Action Required:

Action By: N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

OTHER EXTERNAL ACTION

Check / repair Services:

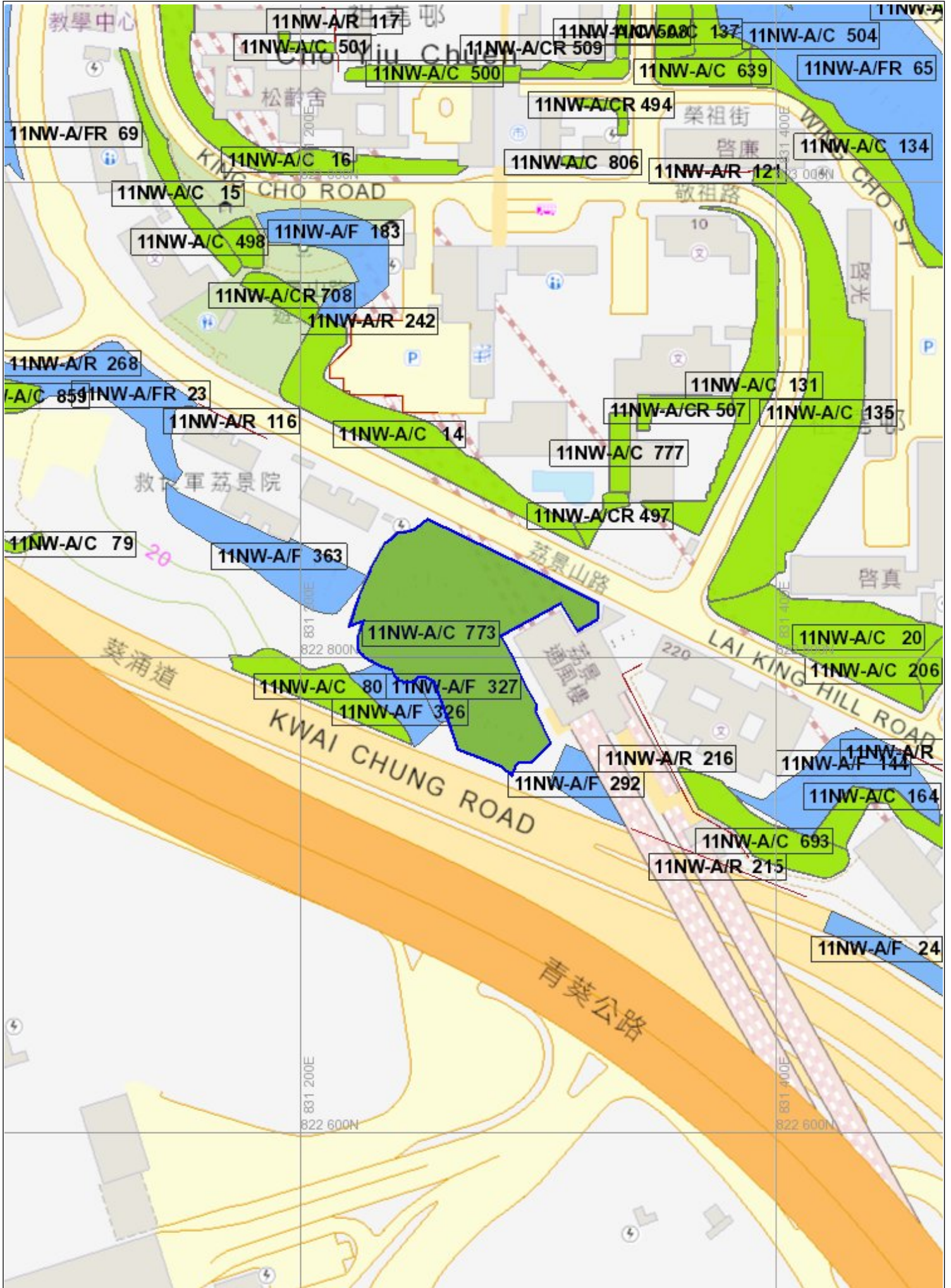
Action By: N/A

Non-routine Maintenance:

Action By: N/A

PHOTO





BASIC INFORMATION

Location: At the South of Salvation Army Lai King Home

Date of Formation: pre-1977

Date of Construction/
Modification:

Approximate Coordinates: Easting : 831188 Northing : 822843

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Other densely populated buildings

Distance of Facility from Crest (m): 0

Facility at Toe: Road/footpath with very heavy traffic density

Distance of Facility from Toe (m): 35

Consequence-to-life Category: 1

Remarks: N/A

SLOPE PART

(1) Max. Height (m): 9 Length (m): 95 Average Angle (deg): 30

WALL PART

N/A



MAINTENANCE RESPONSIBILITY

Private Feature Party: KCTL354 Agent: N/A

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 06-01-2014
Data Source: LPM
Slope Part Drainage: N/A

Wall Part Drainage: N/A

SLOPE PART

Slope Part (1)

Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0

Material Description: Material type: Soil Geology: N/A

Berm: No. of Berms: N/A Min. Berm Width (m): N/A

Weepholes: Size (mm): N/A Spacing (m): N/A



WALL PART

N/A

SERVICES

N/A



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: N/A

Section No: 1-1

Height(m):

Type of Toe Facility: Road/footpath with very heavy traffic density

Distance from Toe(m): 35

Type of Crest Facility: Other densely populated buildings

Distance from Crest(m): 0

Consequence Category:

Engineering Judgement:

Section No: 2-2

Type of Toe Facility:

Distance from Toe(m):

Type of Crest Facility:

Distance from Crest(m):

Consequence Category:

Engineering Judgement:



Sign of Seepage:

Criterion A satisfied:

Sign of Distress:

Criterion D satisfied:

Non-routine maintenance required:

Note:

Masonry wall/Masonry facing:

Note:

Consequence category (for critical section):

Observations: N/A

Emergency Action Required:

Action By: N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

OTHER EXTERNAL ACTION

Check / repair Services:

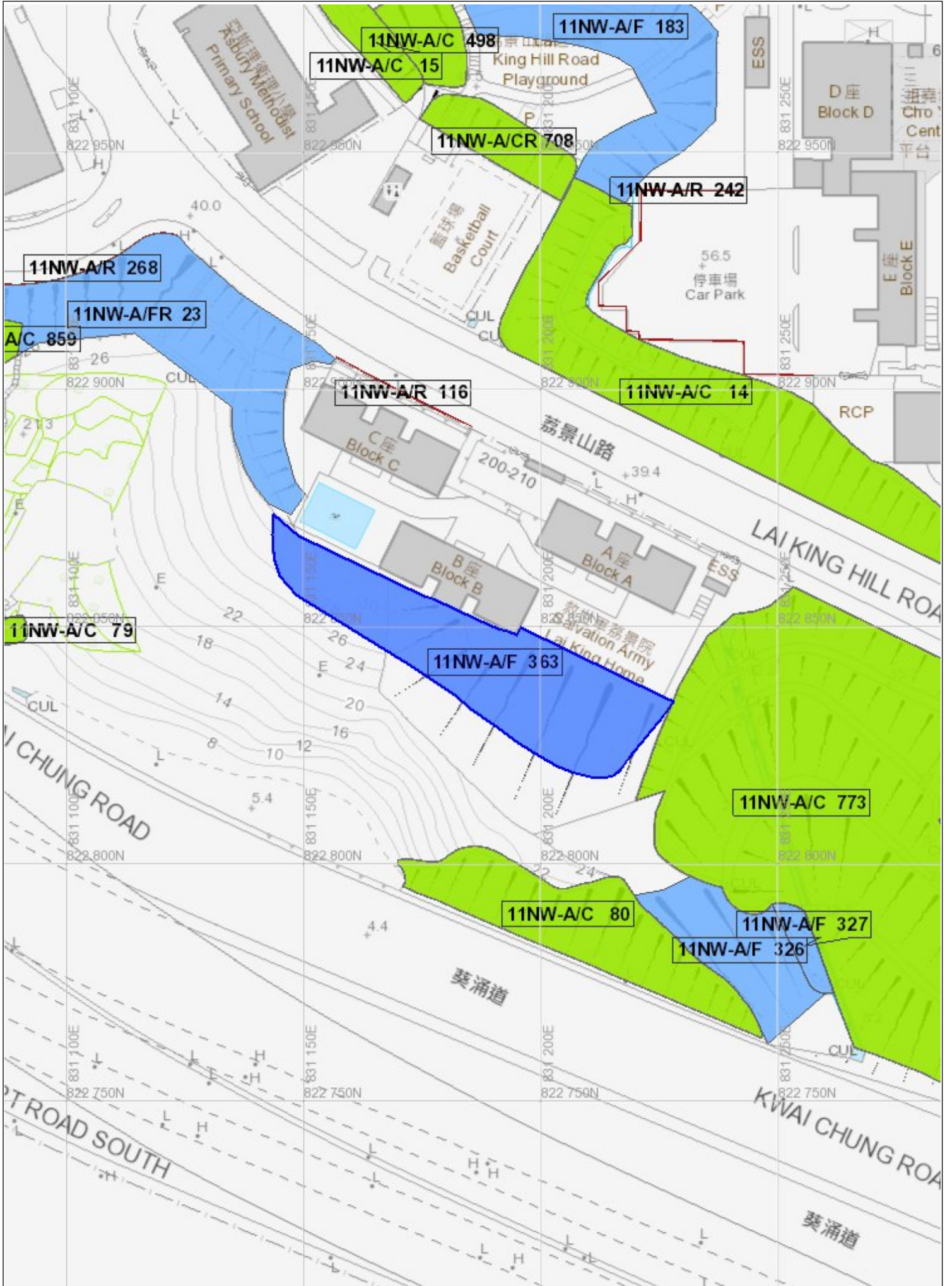
Action By: N/A

Non-routine Maintenance:

Action By: N/A

PHOTO





BASIC INFORMATION

Location: Lai King Estate, Kwai Chung

Date of Formation: pre-1977

Date of Construction/
Modification:

Approximate Coordinates: Easting : 831115 Northing : 822921

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Hotel

Distance of Facility from Crest (m): 5

Facility at Toe: Undeveloped green belt

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 1

Remarks: N/A

SLOPE PART

(1)	Max. Height (m): 3	Length (m): 18	Average Angle (deg): 30
(1)	Max. Height (m): 14	Length (m): 80	Average Angle (deg): 30

WALL PART

(1)	Max. Height (m): 3	Length (m): 25	Face Angle (deg): 90
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MAINTENANCE RESPONSIBILITY

Mixed Feature Party: HA Agent: HD
 Mixed Feature Party: HyD Agent: HyD
 Mixed Feature Party: KCTL 354 Agent: N/A

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 05-07-2021
 Data Source: Project Office
 Slope Part Drainage: (1) Position: Berm Size(mm): 300
 (2) Position: Crest Size(mm): 300
 (3) Position: On slope Size(mm): 300
 (4) Position: Toe Size(mm): 300
 Wall Part Drainage: (1) Position: Crest Size(mm): 300
 (2) Position: Toe Size(mm): 300

SLOPE PART

Slope Part (1)
 Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0
 Material Description: Material type: Soil Geology: N/A
 Berm: No. of Berms: N/A Min. Berm Width (m): N/A
 Weepholes: Size (mm): N/A Spacing (m): N/A
 Slope Part (2)
 Surface Protection (%): Bare: 0 Vegetated: 90 Chunam: 10 Shotcrete: 0 Other Cover: 0
 Material Description: Material type: Soil Geology: N/A
 Berm: No. of Berms: 1 Min. Berm Width (m): 1.2
 Weepholes: Size (mm): 80 Spacing (m): 1.3

WALL PART

Wall Part (1)

Type of Wall: Wall Material: Concrete Wall Location: Wall at toe
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): 80 Spacing (m): 1.3

SERVICES

- (1) Utilities Type: Cable Size(mm): 100 Location: On crest Remark: N/A
- (2) Utilities Type: Cable Size(mm): 100 Location: On slope Remark: N/A
- (3) Utilities Type: Electricity Size(mm): 100 Location: On crest Remark: N/A
- (4) Utilities Type: Electricity Size(mm): 100 Location: On slope Remark: N/A
- (5) Utilities Type: Sewer/Drain Size(mm): 150 Location: On slope Remark: N/A



STAGE 1 STUDY REPORT

Inspected On:

Weather:

District: MW

Section No: 1-1

Height(m):

Type of Toe Facility: Undeveloped green belt

Distance from Toe(m): 0

Type of Crest Facility: Hotel

Distance from Crest(m): 5

Consequence Category:

Engineering Judgement:

Section No: 2-2

Type of Toe Facility:

Distance from Toe(m):

Type of Crest Facility:

Distance from Crest(m):

Consequence Category:

Engineering Judgement:



Sign of Seepage:

Criterion A satisfied:

Sign of Distress:

Criterion D satisfied:

Non-routine maintenance required:

Note:

Masonry wall/Masonry facing:

Note:

Consequence category (for critical section):

Observations: N/A

Emergency Action Required:

Action By: N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D: N/A

Action By: N/A

Further Study:

Action By: N/A

OTHER EXTERNAL ACTION

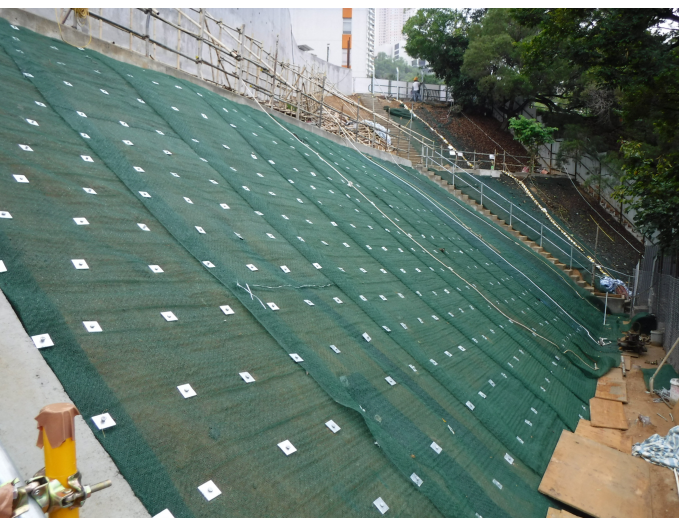
Check / repair Services:

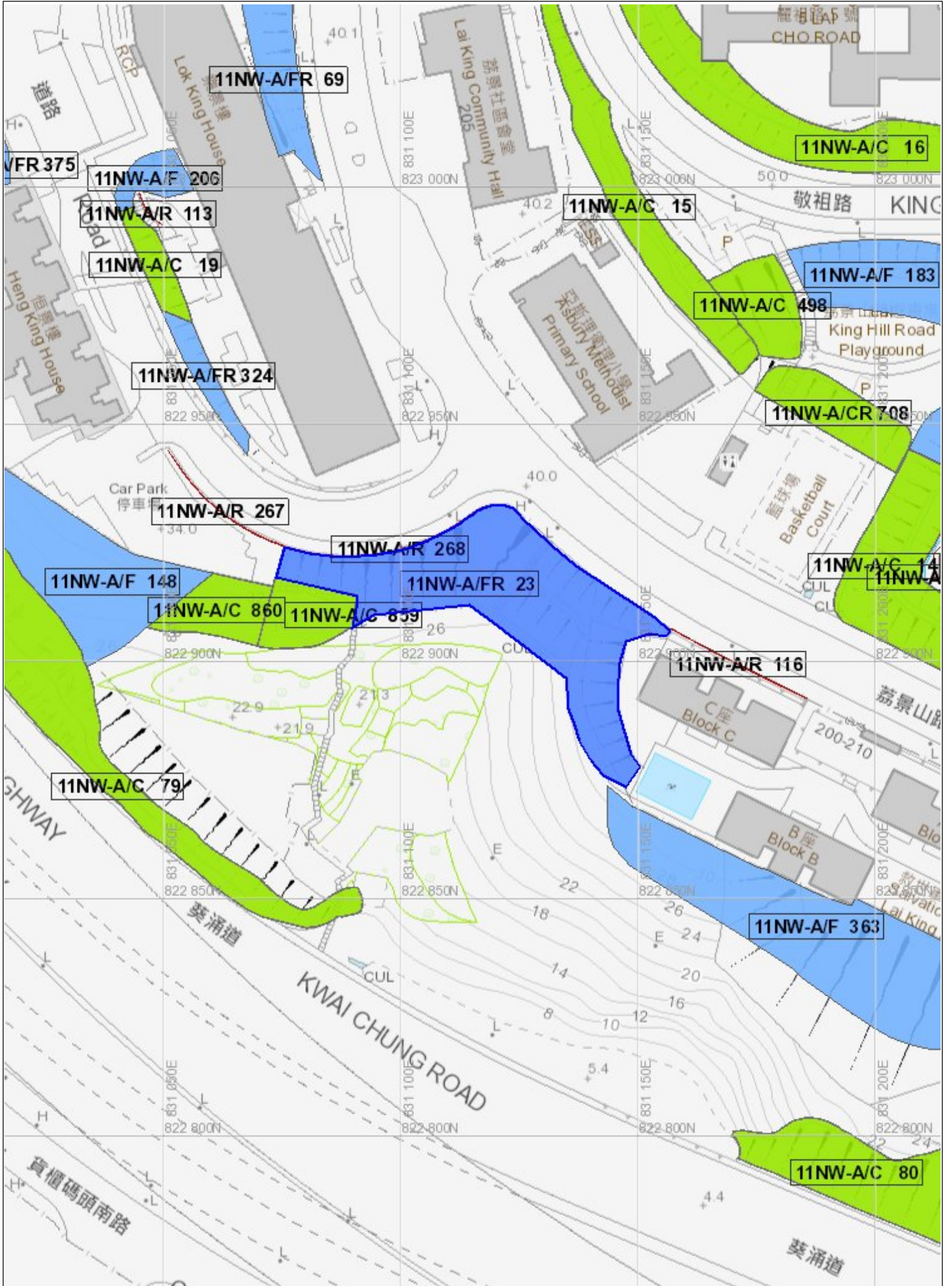
Action By: N/A

Non-routine Maintenance:

Action By: N/A

PHOTO

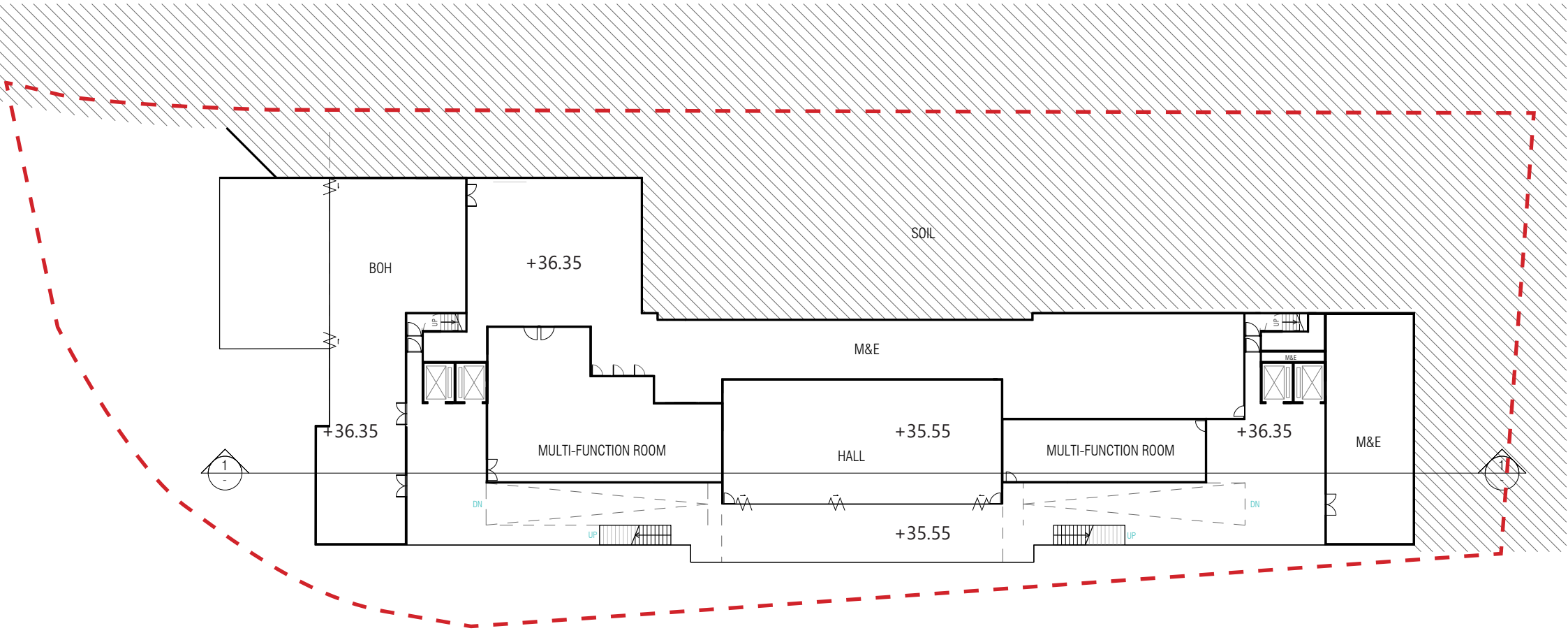




Annex B
Plans of Proposed Redevelopment

NON-OPENABLE WINDOW

OPENABLE WINDOW

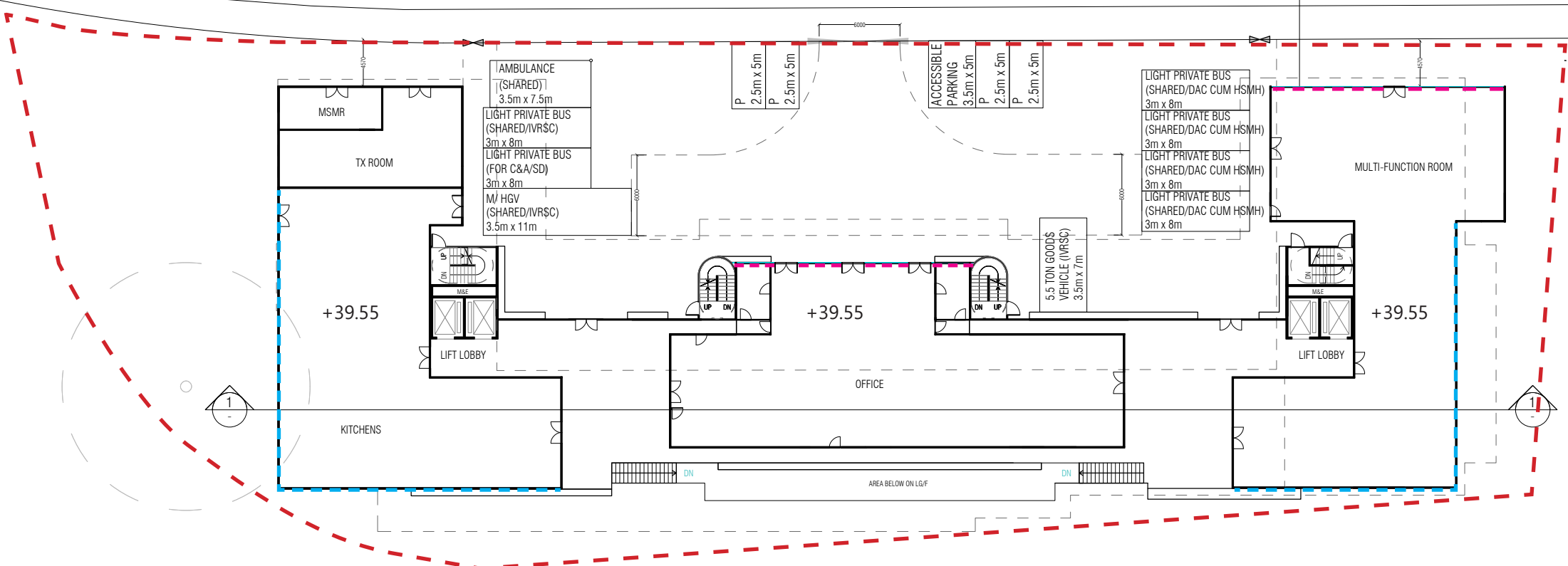


1 GENERAL LAYOUT PLAN - LG/F
Scale 1:400@A4

--- NON-OPENABLE WINDOW

--- OPENABLE WINDOW

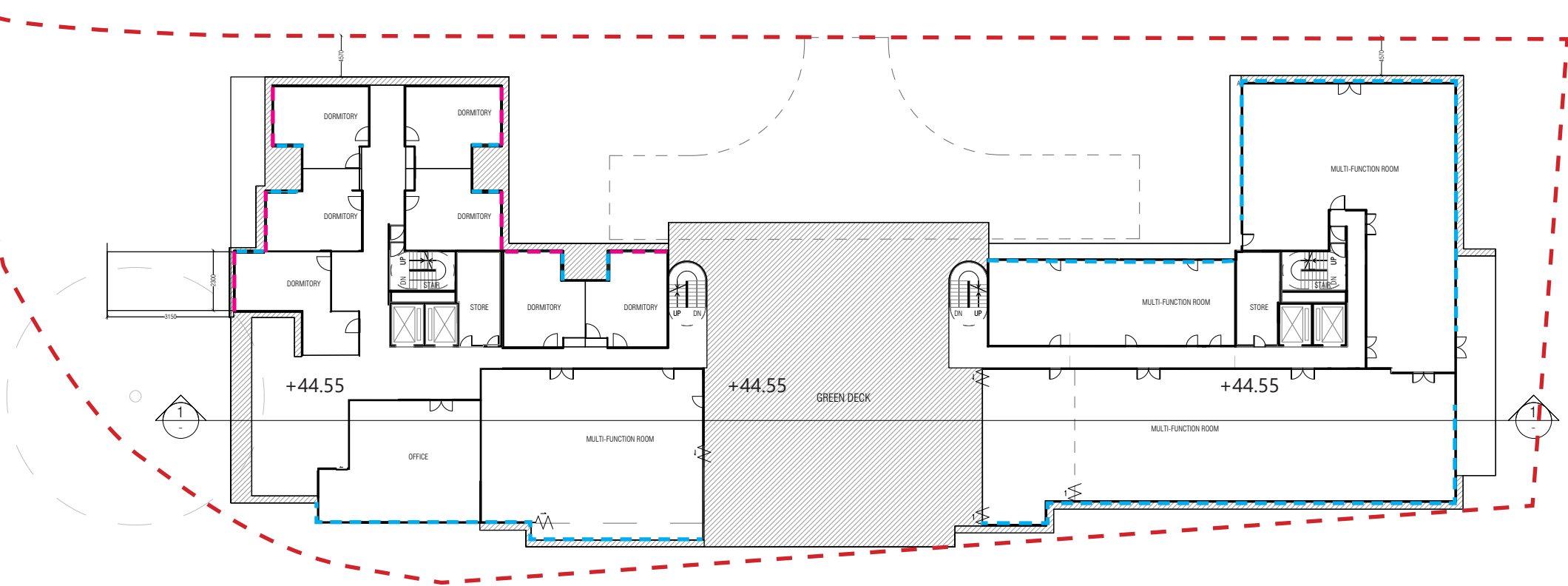
LAI KING HILL ROAD



1 GENERAL LAYOUT PLAN - G/F
Scale 1:400@A4

NON-OPENABLE WINDOW

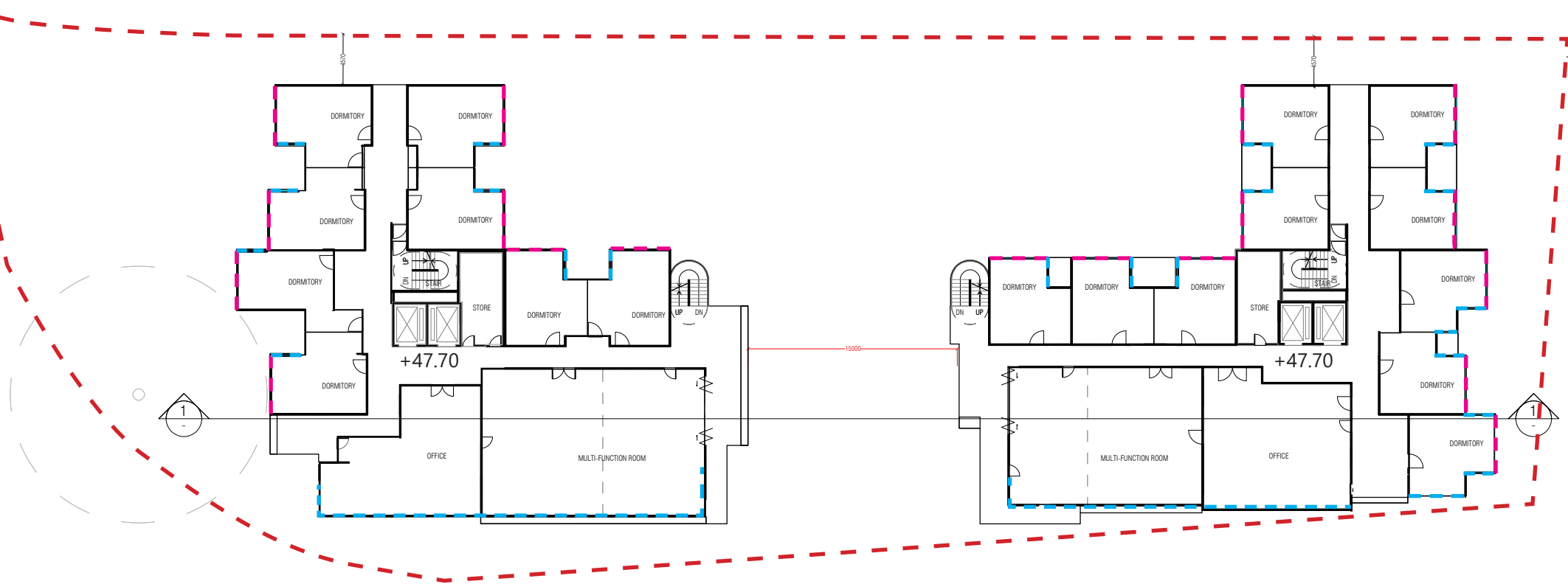
OPENABLE WINDOW



1 GENERAL LAYOUT PLAN - 1/F (HSMH & DAC & IV)
Scale 1:400@A4

--- NON-OPENABLE WINDOW

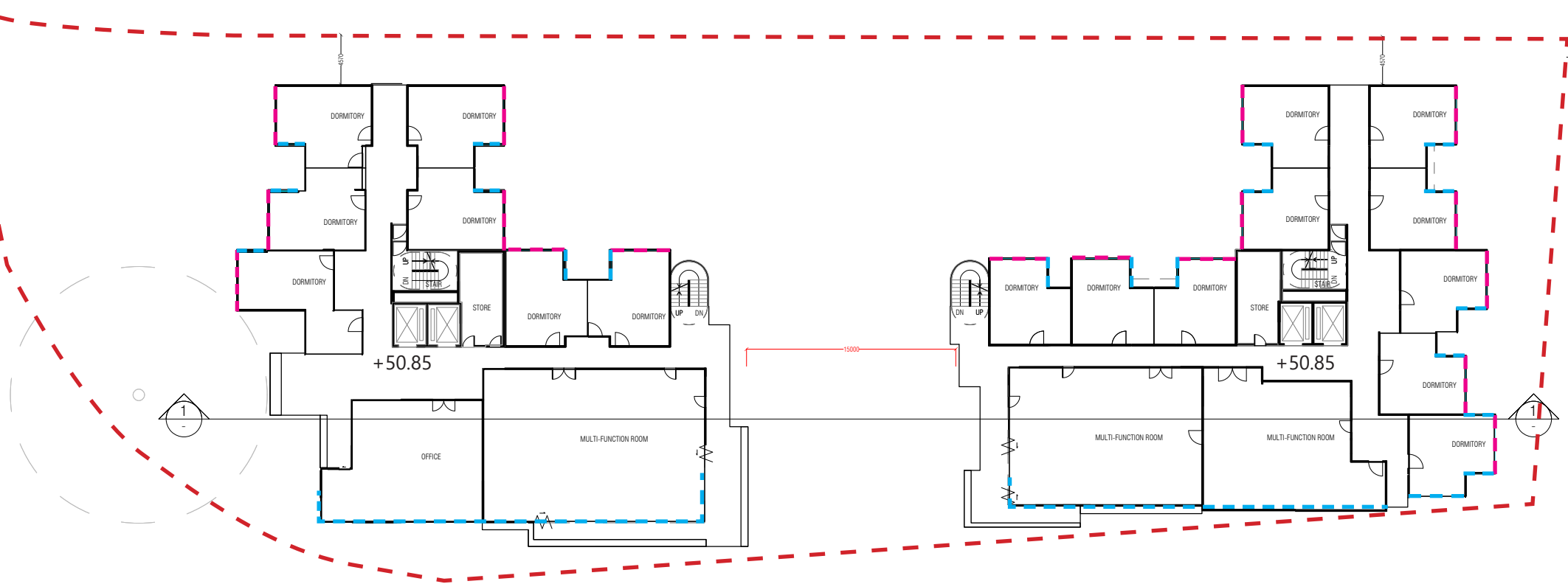
--- OPENABLE WINDOW



1 GENERAL LAYOUT PLAN - 2/F (HSMH & HMMH)
Scale 1:400@A4

NON-OPENABLE WINDOW

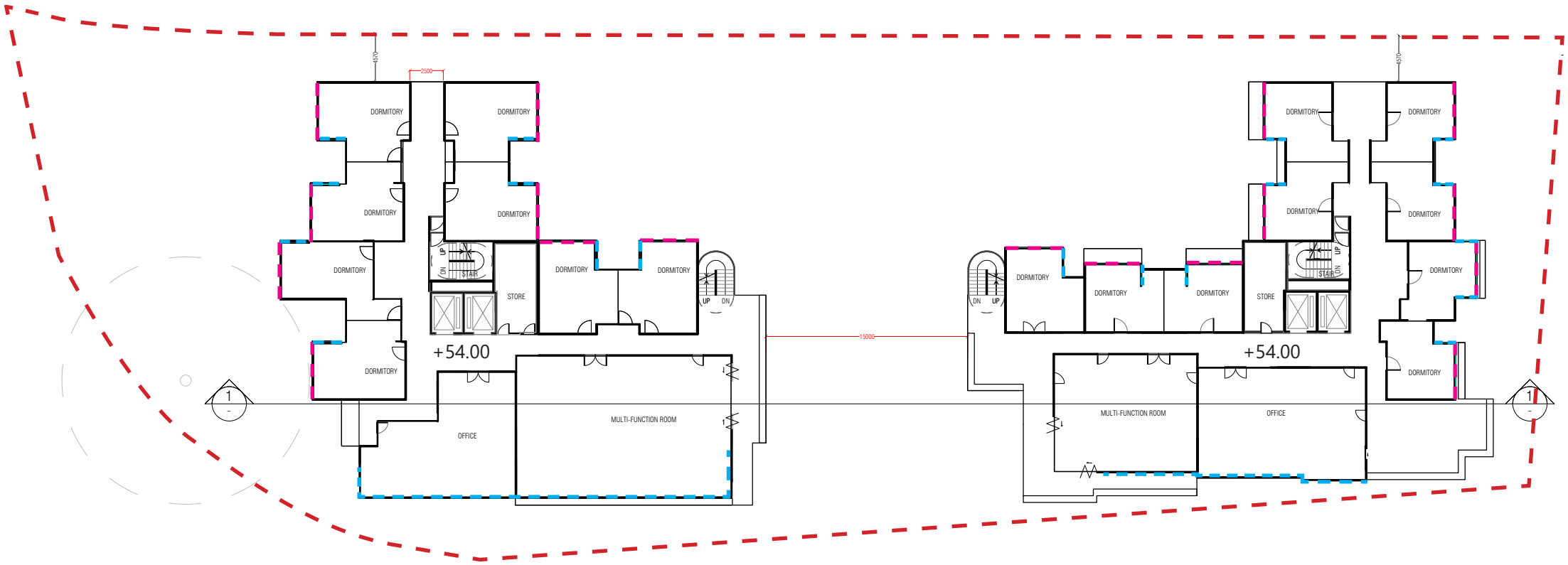
OPENABLE WINDOW



1 GENERAL LAYOUT PLAN - 3/F (HSMH & HMMH)
Scale 1:400@A4

--- NON-OPENABLE WINDOW

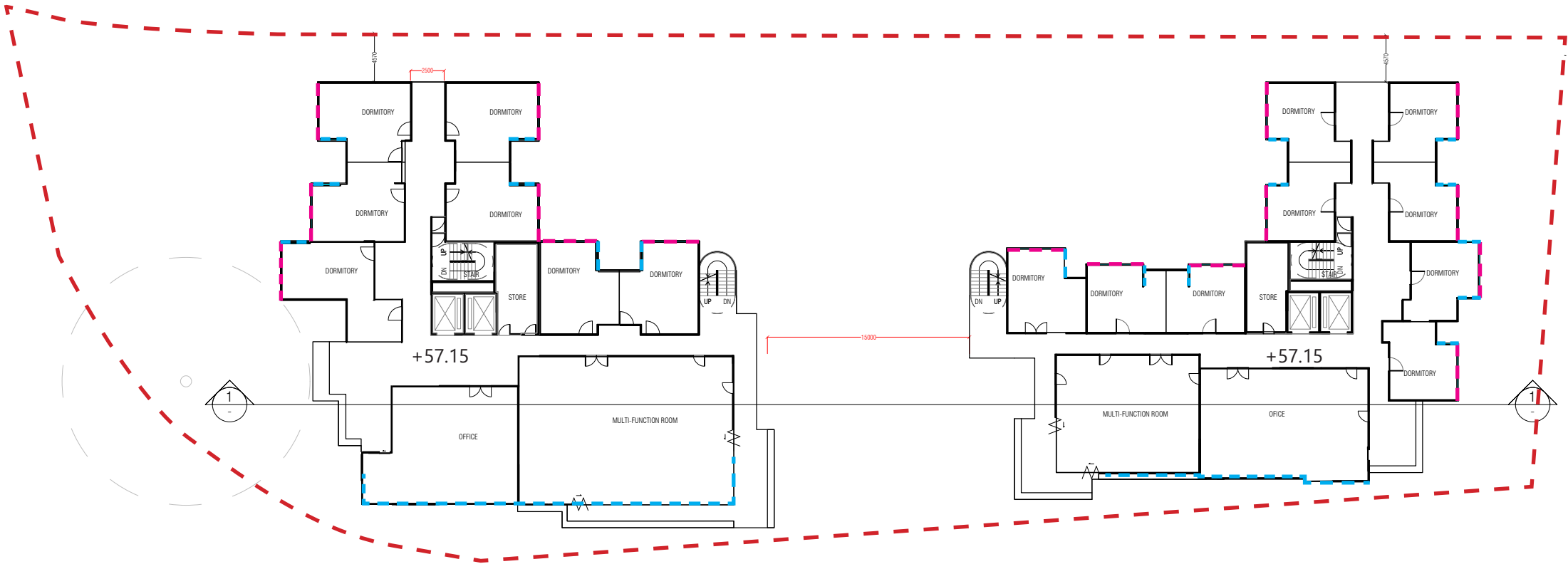
--- OPENABLE WINDOW



1 GENERAL LAYOUT PLAN - 4/F (HSMH & C&A/SD)
Scale 1:400@A4

--- NON-OPENABLE WINDOW

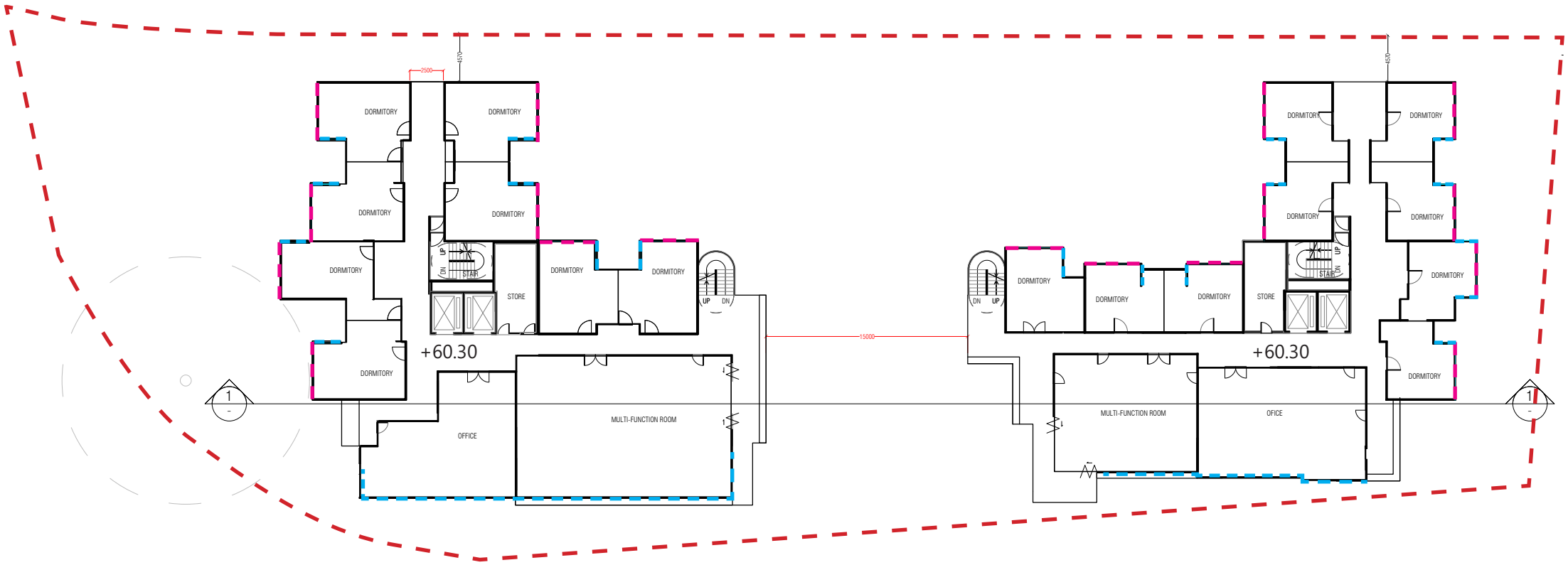
--- OPENABLE WINDOW



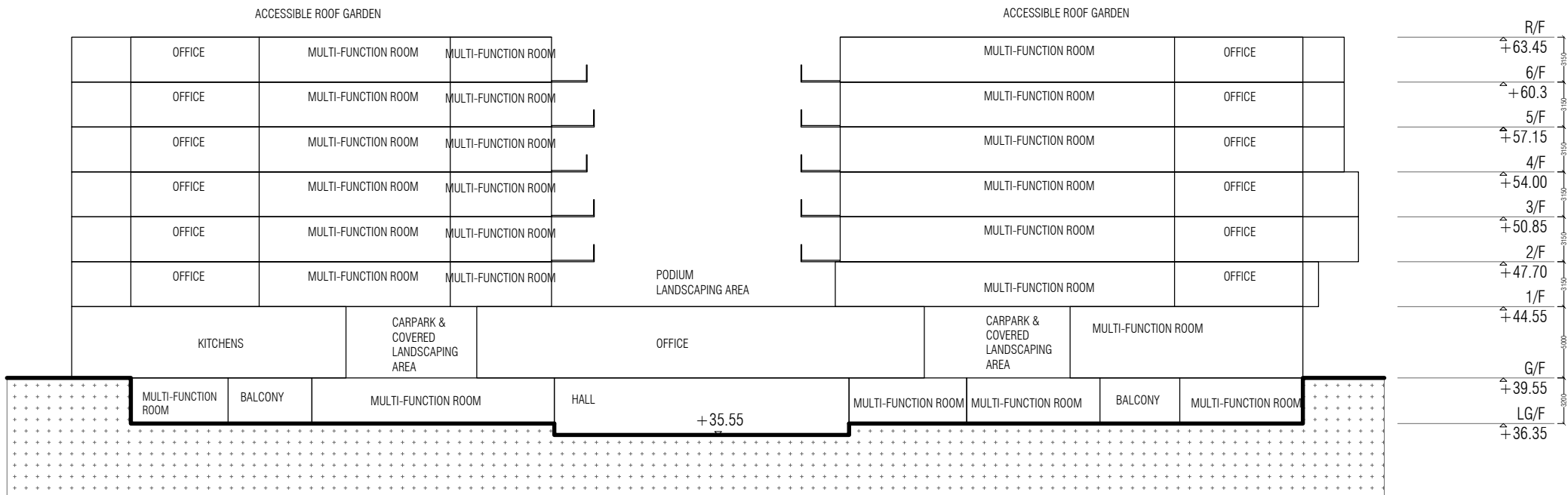
1 GENERAL LAYOUT PLAN - 5/F (HSMH & C&A/SD)
Scale 1:400@A4

NON-OPENABLE WINDOW

OPENABLE WINDOW



1 GENERAL LAYOUT PLAN - 6/F (HSMH & C&A/SD)
Scale 1:400@A4



1 SECTION 1
Scale 1:400@A4