Appendix 10

AIR VENTILATION ASSESSMENT REVIEW

Proposed School at Various Lots in D.D. 94, 98 & 100 and adjoining Government Land, Kwu Tung South, New Territories

Air Ventilation Review

1. Background

1.1 The applicants, Global King Investment Limited, Winpost (HK) Investment Limited and Rand Development Limited, seek to rezone the current "Agriculture" zoning with a minor portion of "Green Belt" of the Application Site as outlined in the approved Kwu Tung South Outline Zoning Plan No. S/NE-KTS/22.

1.2 **The purpose of this application is to develop an international school campus in the Kwu** Tung South area, spanning both sides of the Beas River. The development will include a kindergarten, primary school, middle and high school, as well as sports facilities, cultural amenities, and student dormitories. This will enhance the social infrastructure of San Tin and the wider community, diversity and innovation at the heart of Hong Kong's new technology corridor. **The total project site area is approximately** 128,232 m^2**.**

2. Baseline Scheme and Proposed Scheme

2.1 The Baseline Scheme adopts existing condition which consists of agriculture land with some temporary structures.

2.2 The Proposed Scheme outlined in this study features several low-rise buildings serving various functions, including a kindergarten, primary school, middle and high school, along with sports facilities, cultural amenities, and student dormitories. A Sports Ground is located to the west of the Beas River.

2.3 The height of the low rises ranges from approximately 23mPD to 53.5mPD. The highest buildings are situated in the southernmost section designated for the student dormitory area.

2.4 The Proposed Scheme incorporates stepped heights and terrace designs in several buildings, which will help mitigate the wind impact. Overall, the building heights are greater at the northern and southern ends, while the central portion, which includes sports complex and the Sports Ground, is relatively lower.

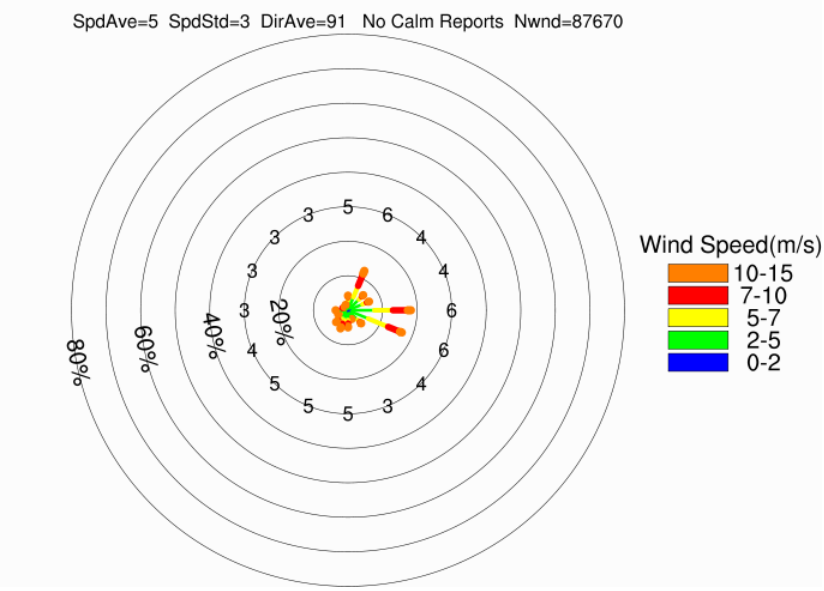
2.5 To improve connectivity and circulation within the site and enhance surrounding transportation, a proposed loop road and public roads will be developed within the Application Site. In the southern portion of the site near dormitory area, the elevated EVA is positioned at a higher level above the public road, and they overlap in the top view. Additionally, two bridges span the Beas River, linking the campus on both sides.

2.6 **Figure 1** illustrates the layout of the Proposed Scheme as well as its surroundings.

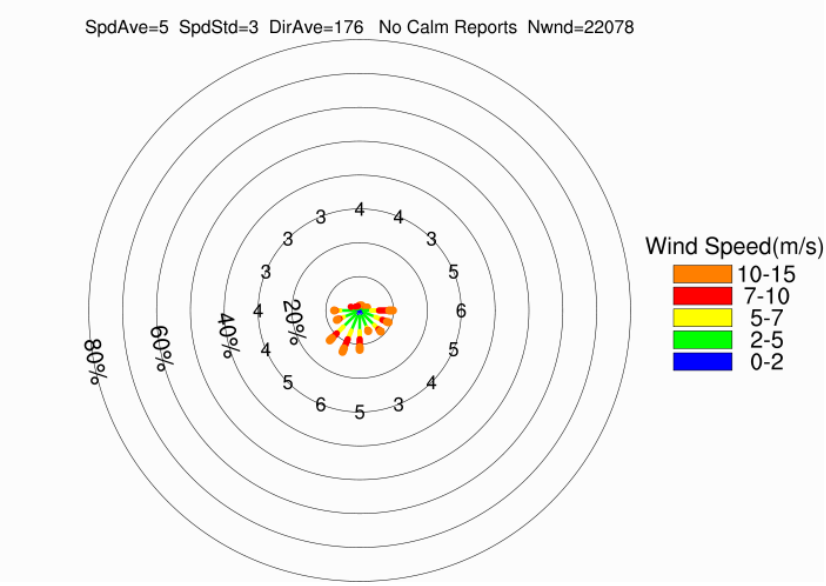
3. Site Wind Availability

Regional Atmospheric Modelling System (RAMS)

3.1 The Application Site is covered by RAMS wind data grids: (064, 081), (064, 080), (065, 081) and (065, 080). However, the identified prevailing winds in the concerned grids are the same, thus it has been extracted from the Planning Department's website for Application Site wind availability data at 200m. The annual prevailing winds come from NNE, E and ESE directions whereas the summer prevailing winds come from S, SSW and SW. Below are the wind roses extracted from the Planning Department's website.



Annual Condition at 200m



Summer Condition at 200m

4. Important Pedestrian Areas

4.1 The Application Site is currently zoned for agriculture, which means there are relatively fewer sensitive receivers in the vicinity. The nearby important pedestrian areas are mainly the residential developments to the east of the Application Site and Ki Lun Tsuen to the west, as shown in **Figure 1**. These areas include:

- Hang Tau Road
- Grand Garden
- Wah Lok Villa
- The Fairyland
- Caverdish Villa
- Eden Garden
- Rose Garden
- Nice Villa
- Richmond Garden
- Regent garden
- Serenity Garden
- Grand View
- Richmond Villa

- Ki Lun Tsuen
- Ki Lun Tsuen Playground
- Sheung Shui Hang Tau Village Sitting-out Area No. 2s

5. Wind Flow under Annual and Summer Prevailing Conditions

5.1 Figures 2a to 6a and 2b to 6b show the illustrations of annual (NNE, E and ESE) and summer (S, SSW and SW) prevailing wind flows of the Baseline Scheme and the Proposed Scheme respectively. Below section discuss the annual and summer wind flows of the area under the Baseline Scheme and Proposed Scheme.

Annual Condition – NNE Wind

5.2 **Figure 2a** illustrates the NNE wind flow under the Baseline Scheme, while **Figure 2b** depicts the flow under the Proposed Scheme.

5.3 Given the current vacant land on the Application Site, the NNE wind can primarily travel along the Beas River and through the Site without any obstructions affecting the downwind area in the Baseline Scheme.

5.4 In the Proposed Scheme, it is expected that the NNE wind at pedestrian level will be reduced due to the low-rise clusters of the campus. However, it is important to highlight that there are very few sensitive receivers in the downwind area of the Application Site, with only some temporary structures present.

5.5 According to the Urban Design Guidelines of HKSPG, height variation across the district with decreasing heights towards the direction where the prevailing wind comes from should be adopted to promote air movements. In the Proposed Scheme, building heights increase in a stepped manner from the Sports Ground to the southernmost part of the site. This design may also enhance the NNE wind towards the downwind areas.

5.6 Similar to the Baseline Scheme, the NNE wind is expected to flow along the Beas River, as well as over the outdoor area to the southeast of Middle/ High School Blocks. Although two linkage bridges will span the river, they are designed to be naturally ventilated, thus it is expected that they will not impede the NNE wind's passage along the river. Additionally, the Proposed Scheme does not encroach upon the river, and given its low-rise design, it is unlikely to significantly impact the downwind areas.

Annual Condition – E and ESE Winds

5.7 **Figure 3a** illustrates the E and ESE winds flow under the Baseline Scheme, while **Figure 3b** depicts the flow under the Proposed Scheme.

5.8 In the upwind area of the Application Site, there are mainly low-rise residential developments, along with a small local hill slope located to the west of Regent Garden. As a result, the wind availability for the Application Site is expected to be high.

5.9 With the current vacant land on the Application Site in the Baseline Scheme, the E and ESE winds can pass through the Site unobstructed, reaching the downwind areas, which primarily include Ki Lun Tsuen, Ki Lun Tsuen Playground, and some temporary structures located to the west of the southern portion of the Application Site.

5.10 In the Proposed Scheme, it is anticipated that E and ESE winds would flow through the Sports Ground and the building separation between the dormitory and the primary school. To the east of the Sports Ground is a golf driving range across the Beas River, while three ball courts are situated to the west. This relatively open area allows for good penetration of E and ESE winds, benefiting the downwind area, i.e. Ki Lun Tsuen.

5.11 The terrace designs of specific buildings in the Proposed Scheme, such as the Sports Complex and Middle/ High School Blocks, will enhance the flow of E/ESE winds through the spaces between these structures, if any.

5.12 As such, the Proposed Scheme is not expected to have a significant impact on the downwind areas.

Summer Condition – S Wind

5.13 **Figure 4a** illustrates the S wind flow under the Baseline Scheme, while **Figure 4b** depicts the flow under the Proposed Scheme.

5.14 Given the current vacant land on the Application Site, the S wind can travel through the Site without any obstructions in the Baseline Scheme. The downwind areas under S wind include Ki Lun Tsuen, Sheung Shui Hang Tau Village Sitting-out Area No. 2, and some nearby squatters.

5.15 In the Proposed Scheme, it is anticipated that the S wind would mainly flow along the Beas River to pass through the site from south to north. One section of the proposed road, located to the east of the Middle/ High School, runs north–south and is approximately 7m wide. This alignment could facilitate the northward flow of wind, acting as an air path. Although there is a 4-5m height structure at the Golf Driving Range, its low-rise nature is expected to cause only minimal obstruction to the wind.

5.16 The Ancillary Staff Dormitory buildings, which are 53.5mPD and the tallest structures on the campus, are positioned at the southernmost part of the Application Site. This positioning may obstruct the flow of S winds toward the downwind areas, primarily affecting the campus itself. However, some reduction in wind flow is also expected in the portion of Ki Lun Tsuen to the north of the Application Site.

5.17 Given the low-rise nature of the Proposed Scheme, it is not expected to have a significant impact on the downwind area.

Summer Condition – SSW Wind

5.18 **Figure 5a** illustrates the SSW wind flow under the Baseline Scheme, while **Figure 5b** depicts the flow under the Proposed Scheme.

5.19 Ngau Tam Shan, which rises above 320mPD, is situated in the upwind area under SSW winds, thus, it is expected that primarily hill foot winds will reach the Application Site.

5.20 Given the current vacant land on the Application Site, hill foot winds can flow through the Site without any obstructions in the Baseline Scheme. The downwind areas under SSW wind include Ki Lun Tsuen, Sheung Shui Hang Tau Village Sitting-out Area No. 2, and some nearby squatters.

5.21 In the Proposed Scheme, the dormitory buildings, which are 53.5mPD and the tallest structures on the campus, are positioned at the southernmost part of the Application Site. This placement may obstruct the flow of SSW winds toward the downwind areas, with the campus itself being the most affected due to its elongated layout. Additionally, some reduction in wind flow is anticipated in the northern portion of Ki Lun Tsuen and Sheung Shui Hang Tau Village Sitting-out Area No. 2.

5.22 On the other hand, given that there is a row of dormitory buildings with a height of 28.5mPD at the southernmost part of the Application Site, it is anticipated that hill foot winds may skim over these buildings and flow along the Beas River towards downwind areas, such as the Sheung Shui Hang Tau Village Sitting-out Area No. 2.

5.23 As a result, the Proposed Scheme is not expected to have a significant impact on the downwind areas.

Summer Condition – SW Wind

5.24 **Figure 6a** illustrates the SW wind flow under the Baseline Scheme, while **Figure 6b** depicts the flow under the Proposed Scheme.

5.25 Similarly, Ngau Tam Shan, which rises above 320mPD, is situated in the upwind area under SW winds, thus, it is expected that primarily katabatic winds will reach the Application Site.

5.26 With the current vacant land on the Application Site, katabatic winds can pass through the Site unobstructed in the Baseline Scheme, reaching downwind areas such as the clusters of residential developments, Sheung Shui Hang Tau Village Sitting-out Area No. 2, and some nearby squatters, as detailed in Section 4.1.

5.27 In the Proposed Scheme, some SW wind could pass through the Sports Ground and the building separation between the Primary School and the Middle/ High School. Although two linkage bridges will span the river, they are designed to be naturally ventilated, thus it is expected that they will not impede the SW wind's passage along the river, if any. It is important to note that the distance between the building structures in the Proposed Scheme and the sensitive receiver area is generally more than 200m, significantly greater than the height of the Proposed Scheme's buildings. This distance greatly reduces the potential impact.

5.28 As a result, the Proposed Scheme is not expected to have a significant impact on the downwind areas.

6. Conclusion

6.1 Considering the existing topography, the location of built areas, and the layout of the Proposed Scheme, the potential air ventilation impacts have been assessed.

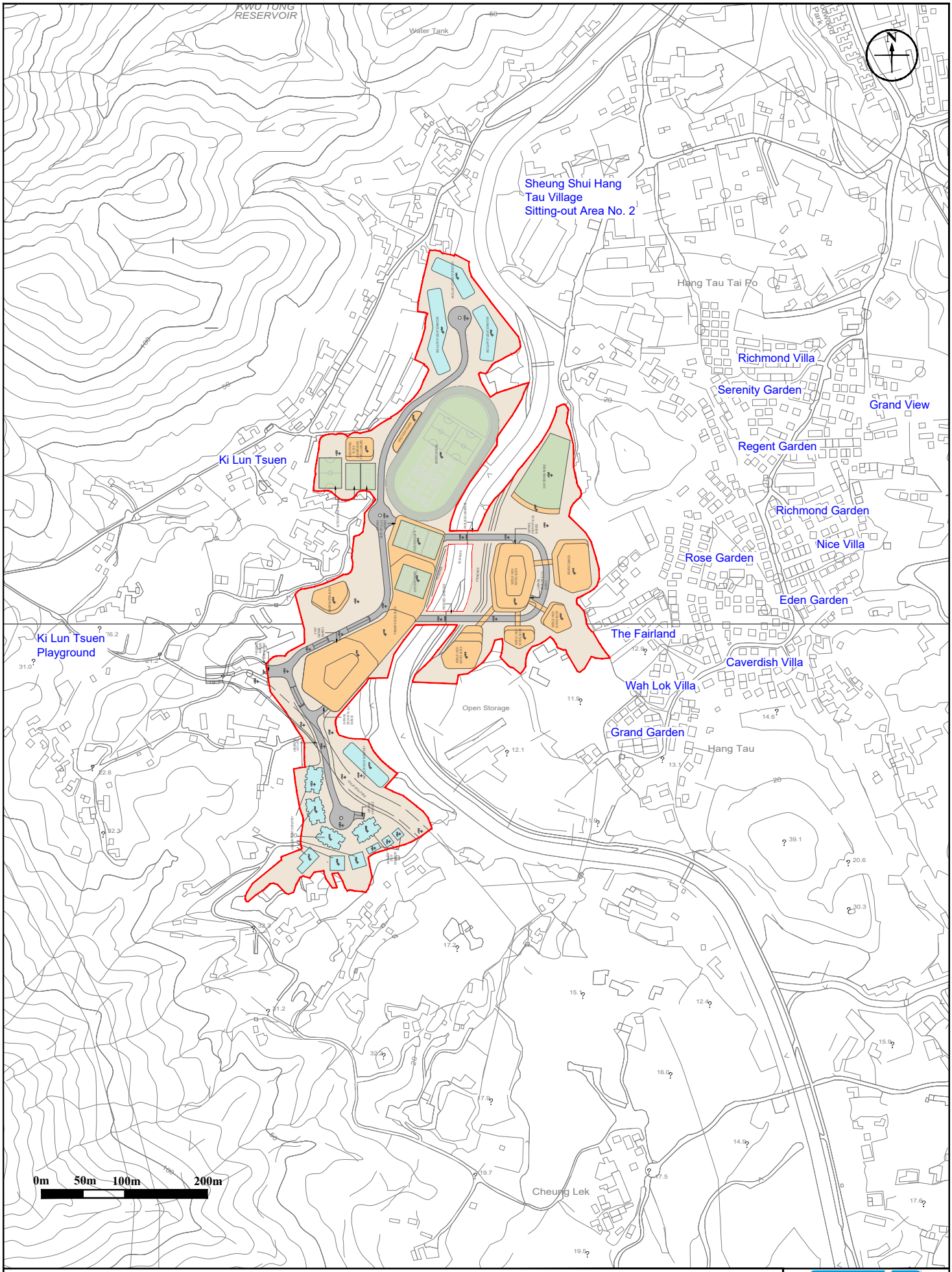
6.2 The Application Site is currently zoned for agriculture and is surrounded by low-rise residential developments, villages, and temporary structures.

6.3 The annual prevailing winds are from the NNE, E, and ESE, while the summer prevailing winds come from the S, SSW, and SW.

6.4 During the annual prevailing winds, temporary structures, Ki Lun Tsuen and Ki Lun Tsuen Playground are found in the downwind areas. Given the campus nature of the Proposed Scheme, which consists entirely of low-rise buildings, the tallest being 53.5mPD, with the stepped height profile and terrace deign, the anticipated blockage effect is relatively minor.

6.5 Under the summer prevailing S and SSW winds, similar to the annual conditions, portion of Ki Lun Tsuen, Sheung Shui Hang Tau Village Sitting-out Area No. 2, and temporary structures are present in the downwind areas. The low-rise nature of the Proposed Scheme is not expected to significantly impact these areas. For SW winds, the sensitive receivers are the low-rise residential buildings to the east of the Application Site, Sheung Shui Hang Tau Village Sitting-out Area No. 2, and some nearby squatters. However, due to the Proposed Scheme's low height and the considerable distance from the buildings to these sensitive receivers, no significant impact is anticipated.

6.6 In summary, the Proposed Scheme features a low-rise, stepped height design, incorporating building separations and road spacing in both north-south and east-west directions. Additionally, some buildings have terrace designs aligned with prevailing winds. As a result, no significant impact on the surrounding environment is anticipated.



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Project: Section 16 Planning Application for Beas River International School Campus	Rev.: 1.0
	Date: Jan-26

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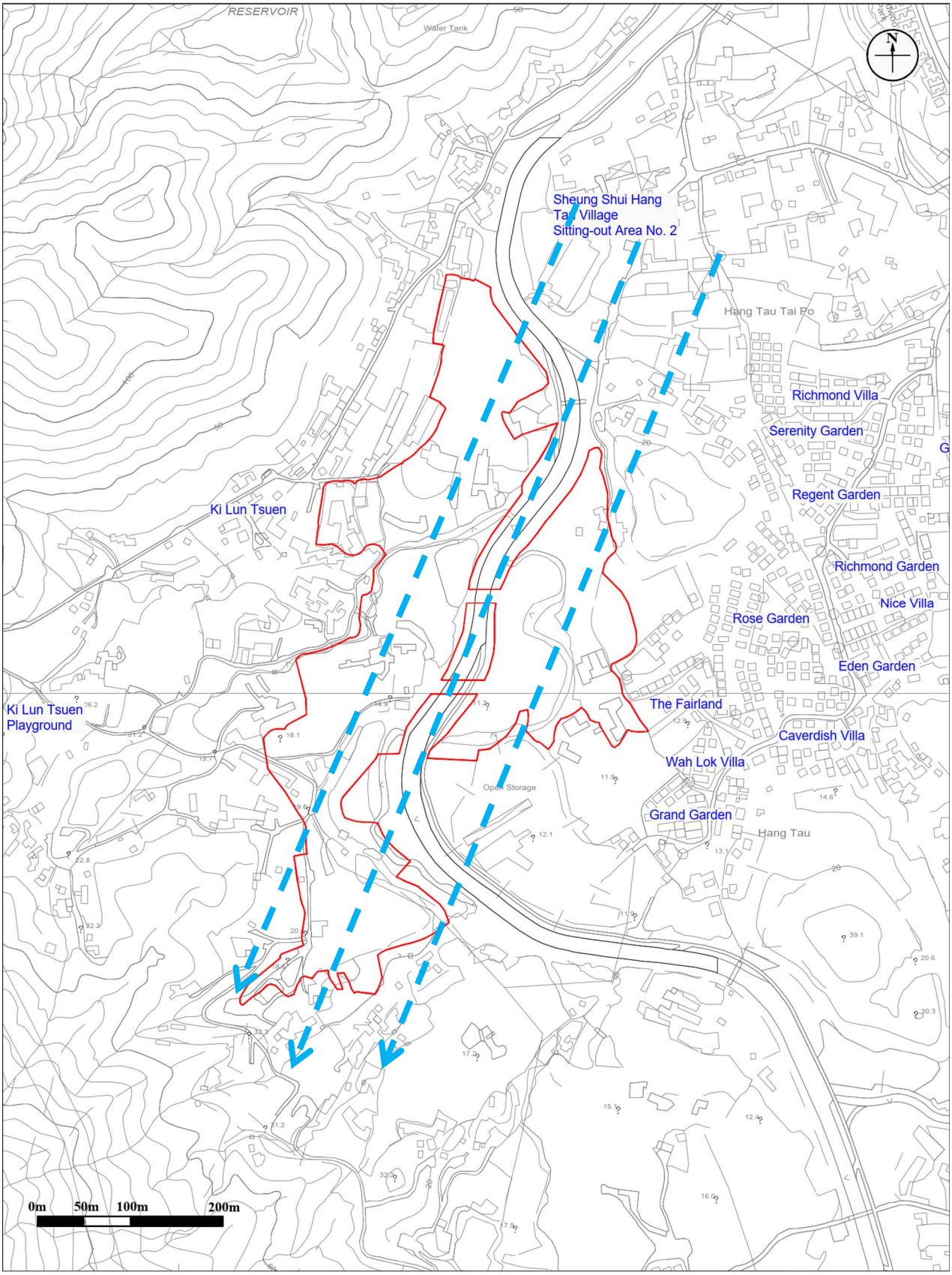

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Project:	**Section 16 Planning Application for Beas River International School Campus**	Rev.: 1.0 Date: Jan 2026

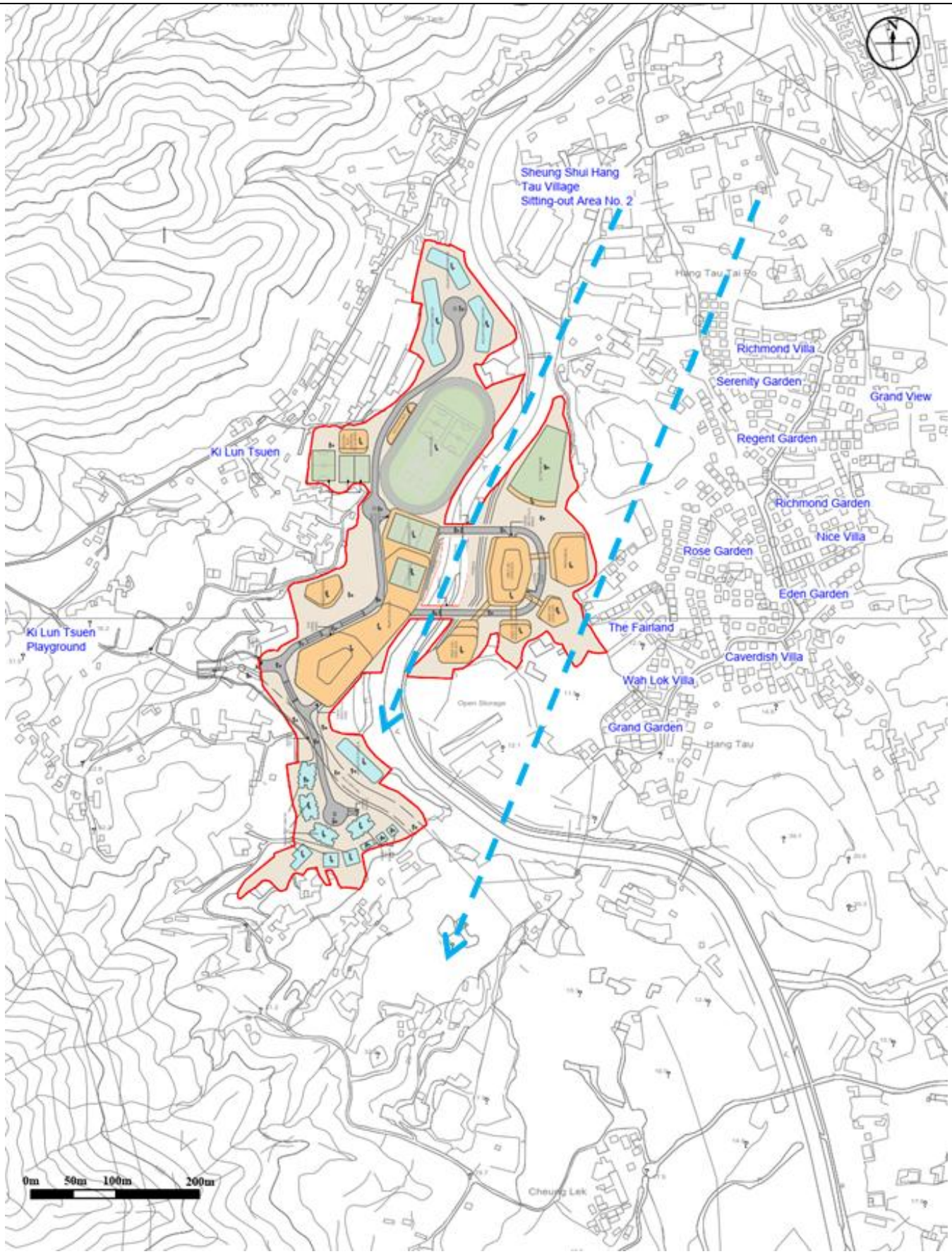

Figure:	**2b**	RAMBOLL
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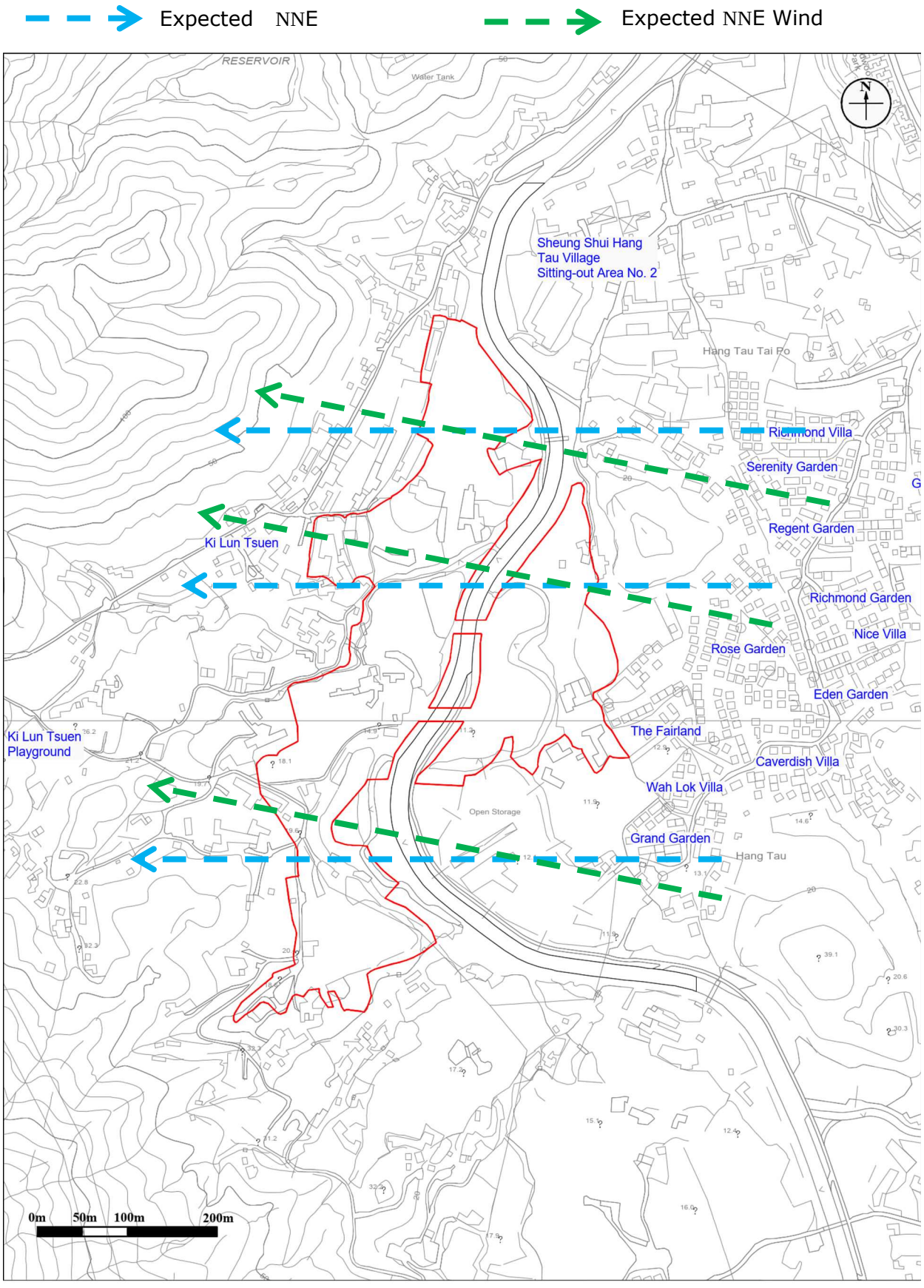

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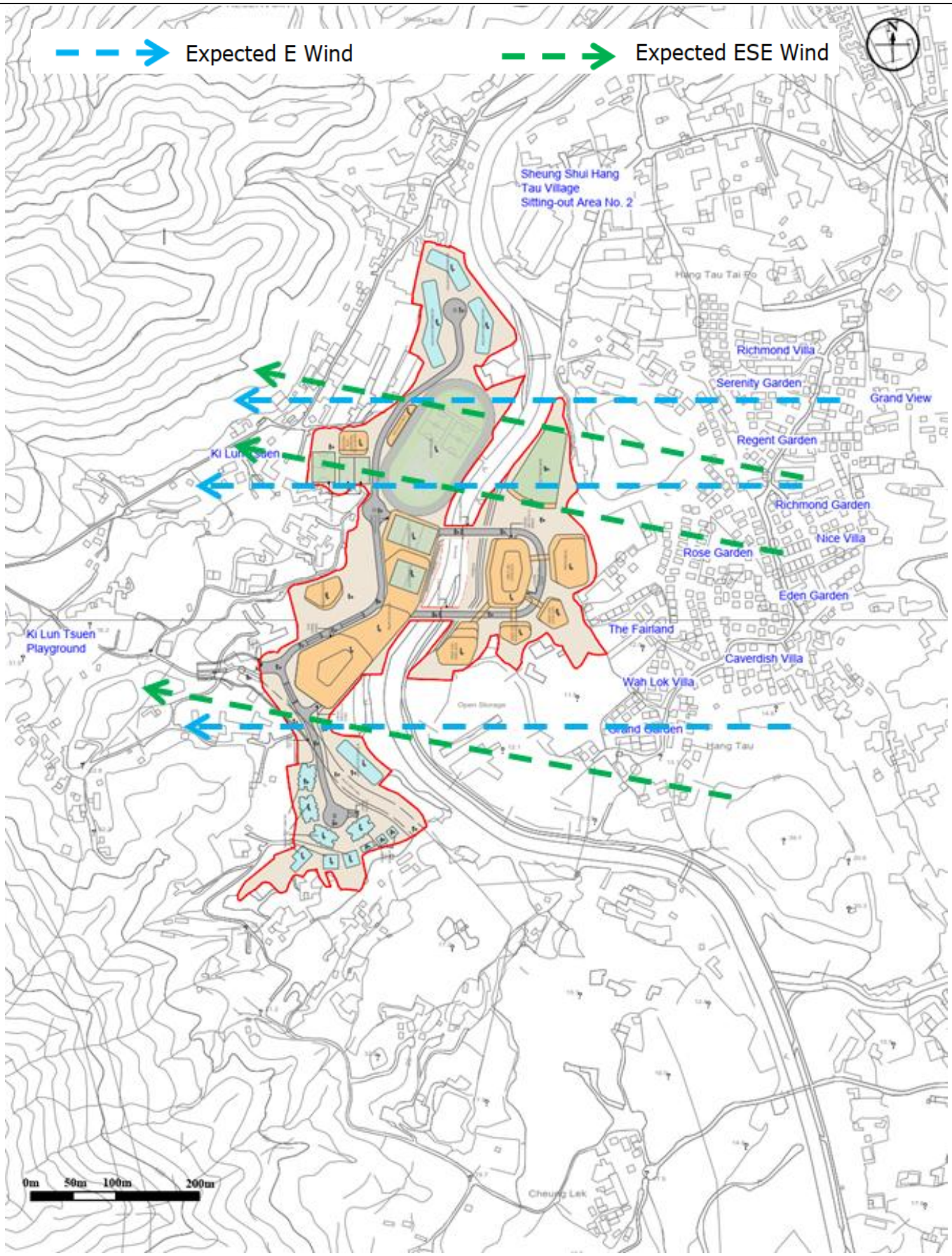

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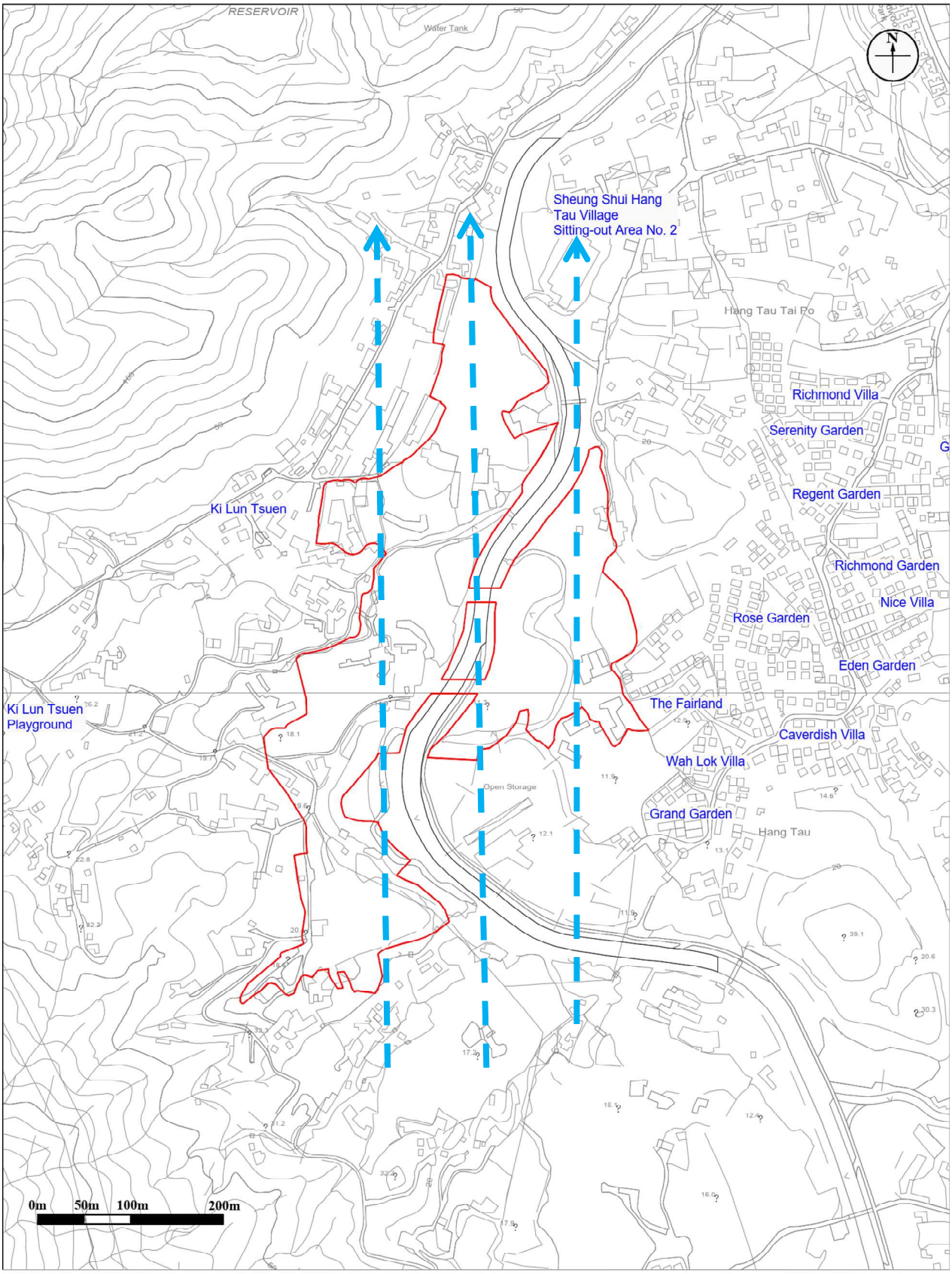

Figure:	**4a**	RAMBOLL
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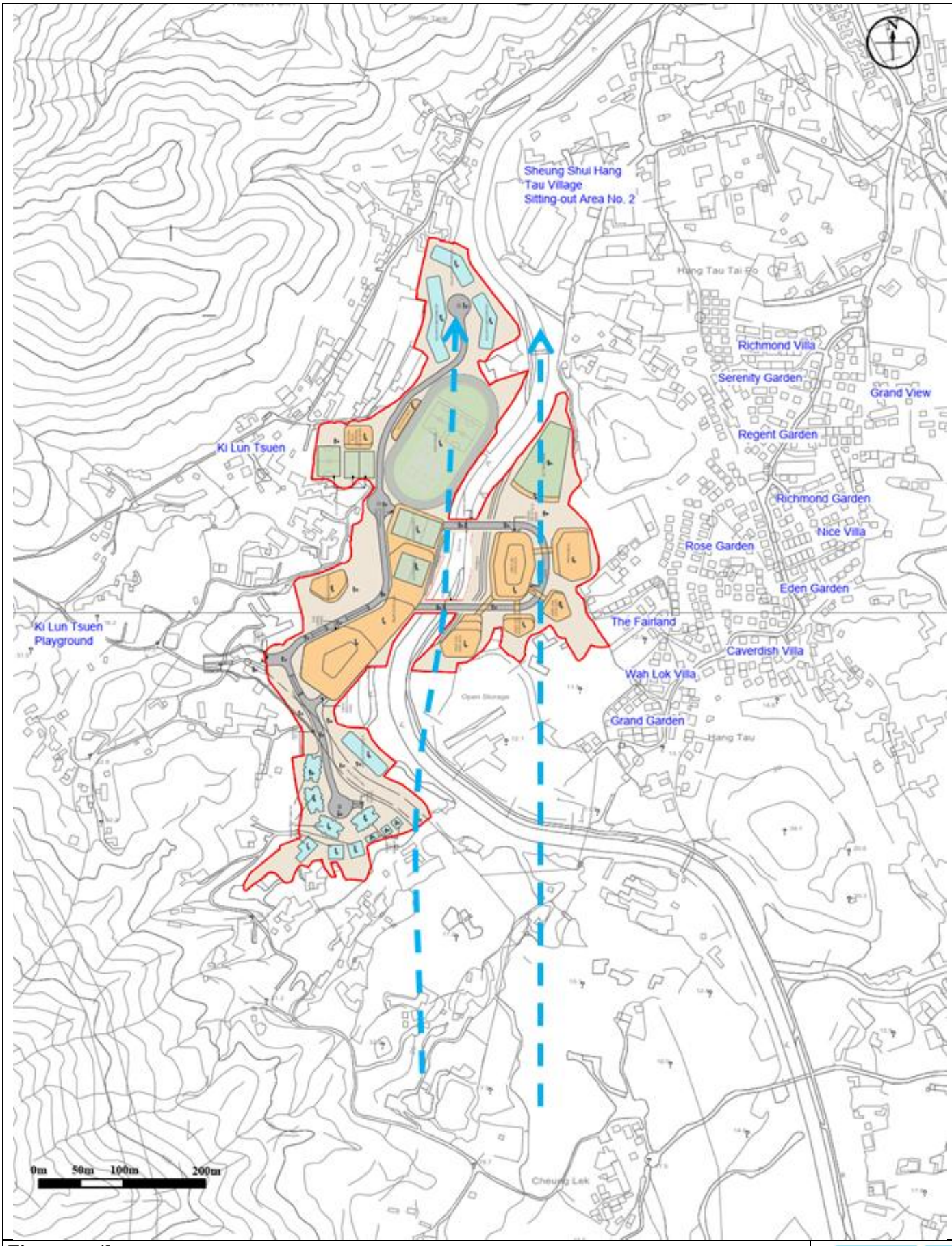

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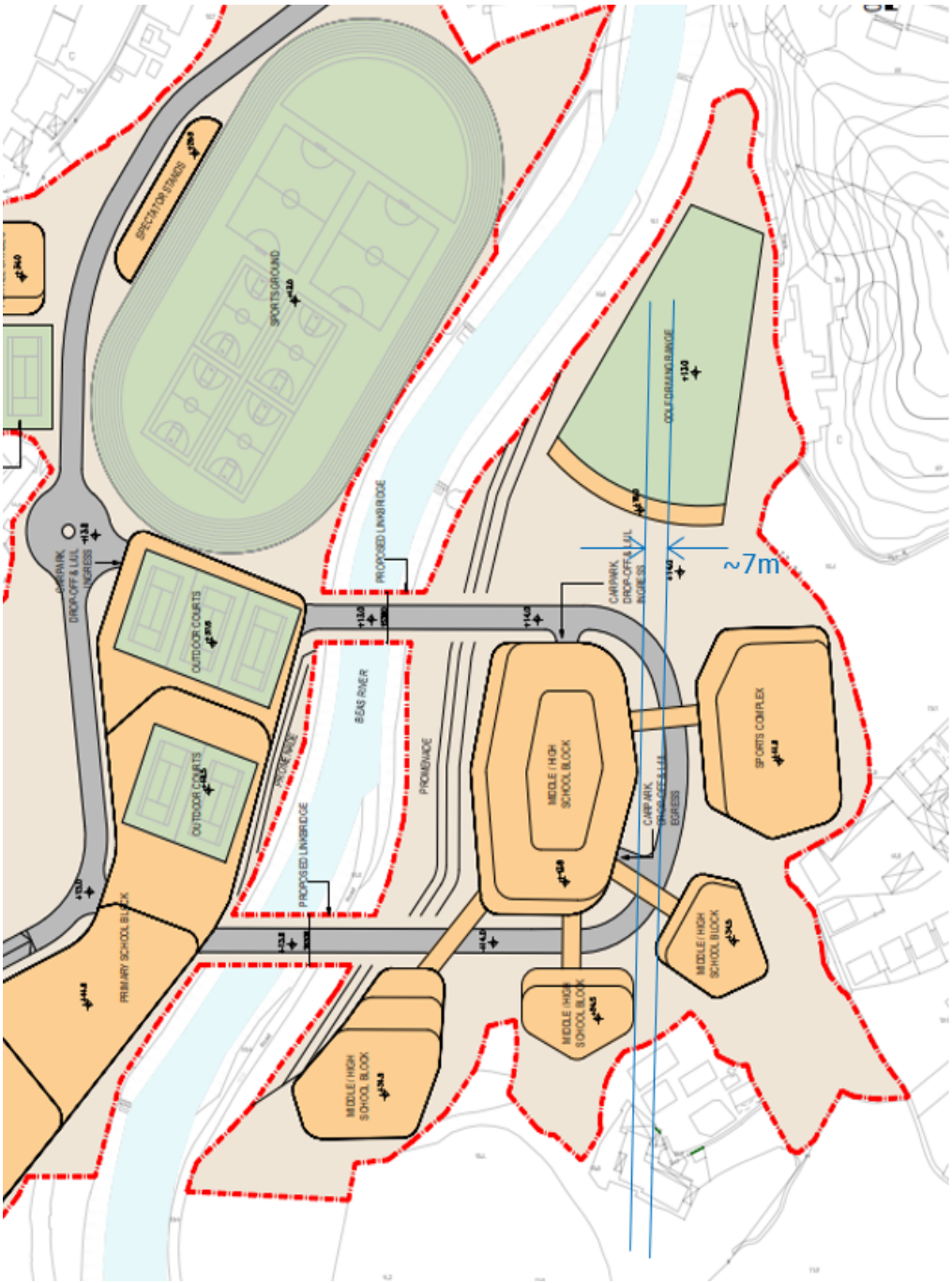

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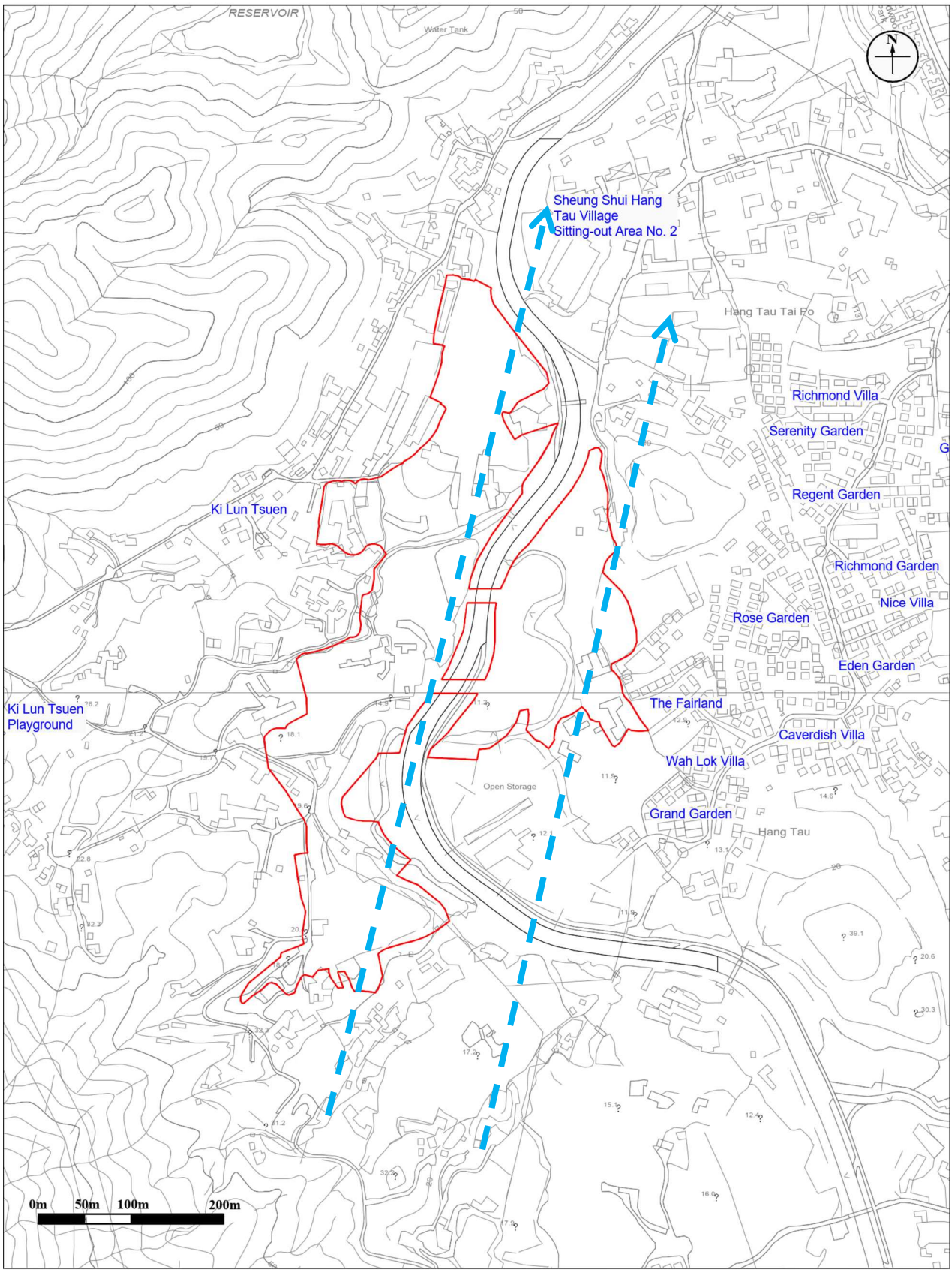

Figure:	**5a**	RAMBOLL
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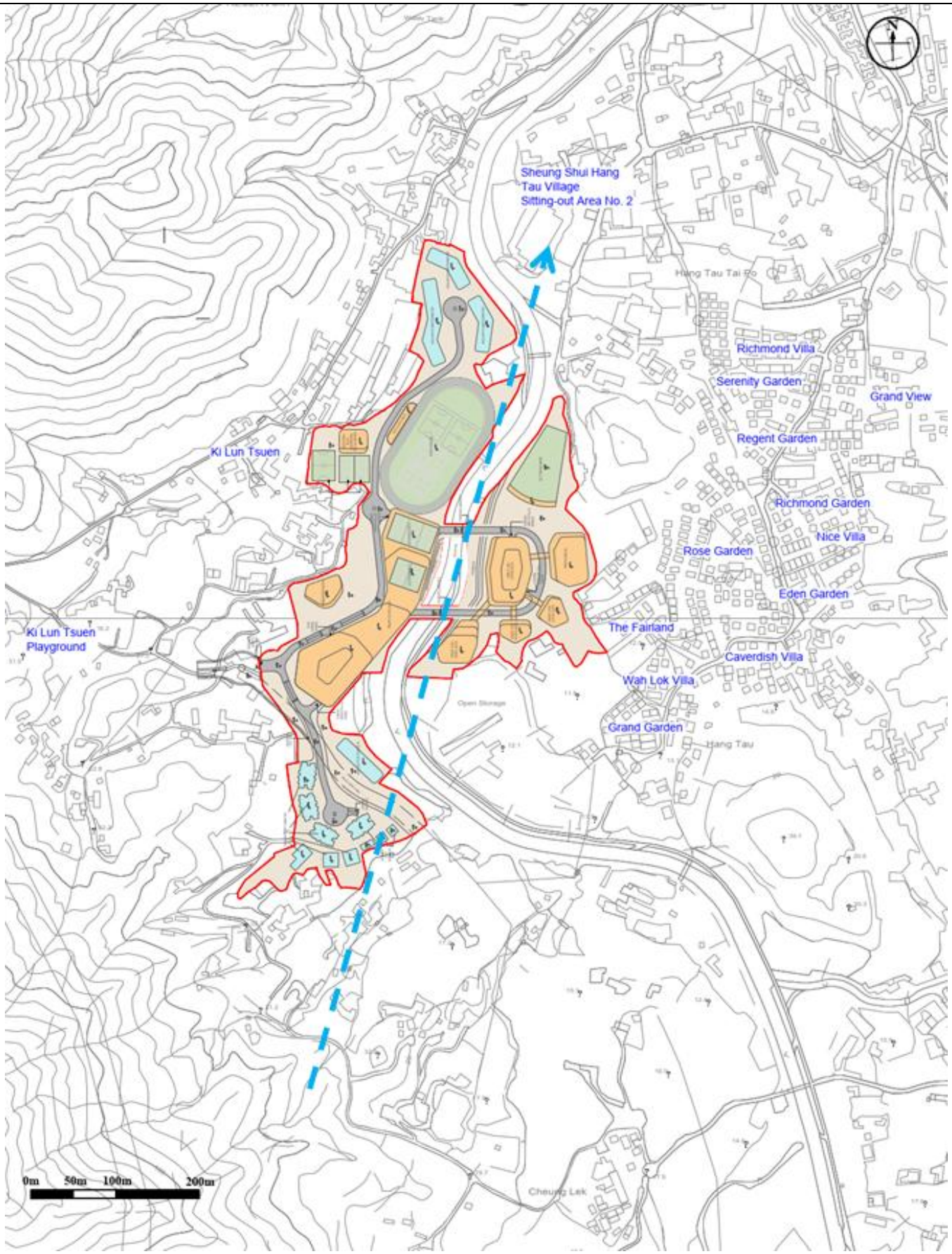

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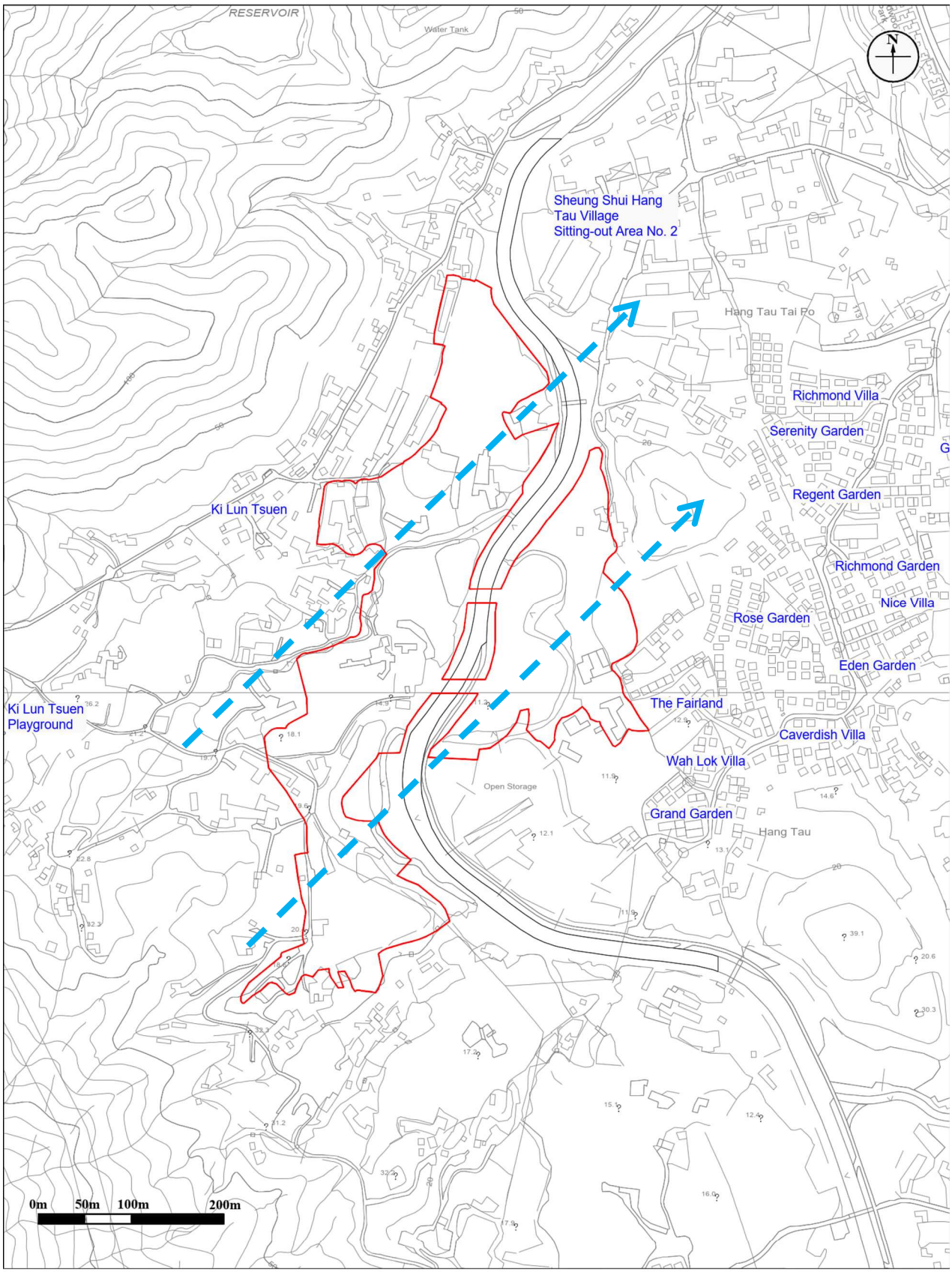

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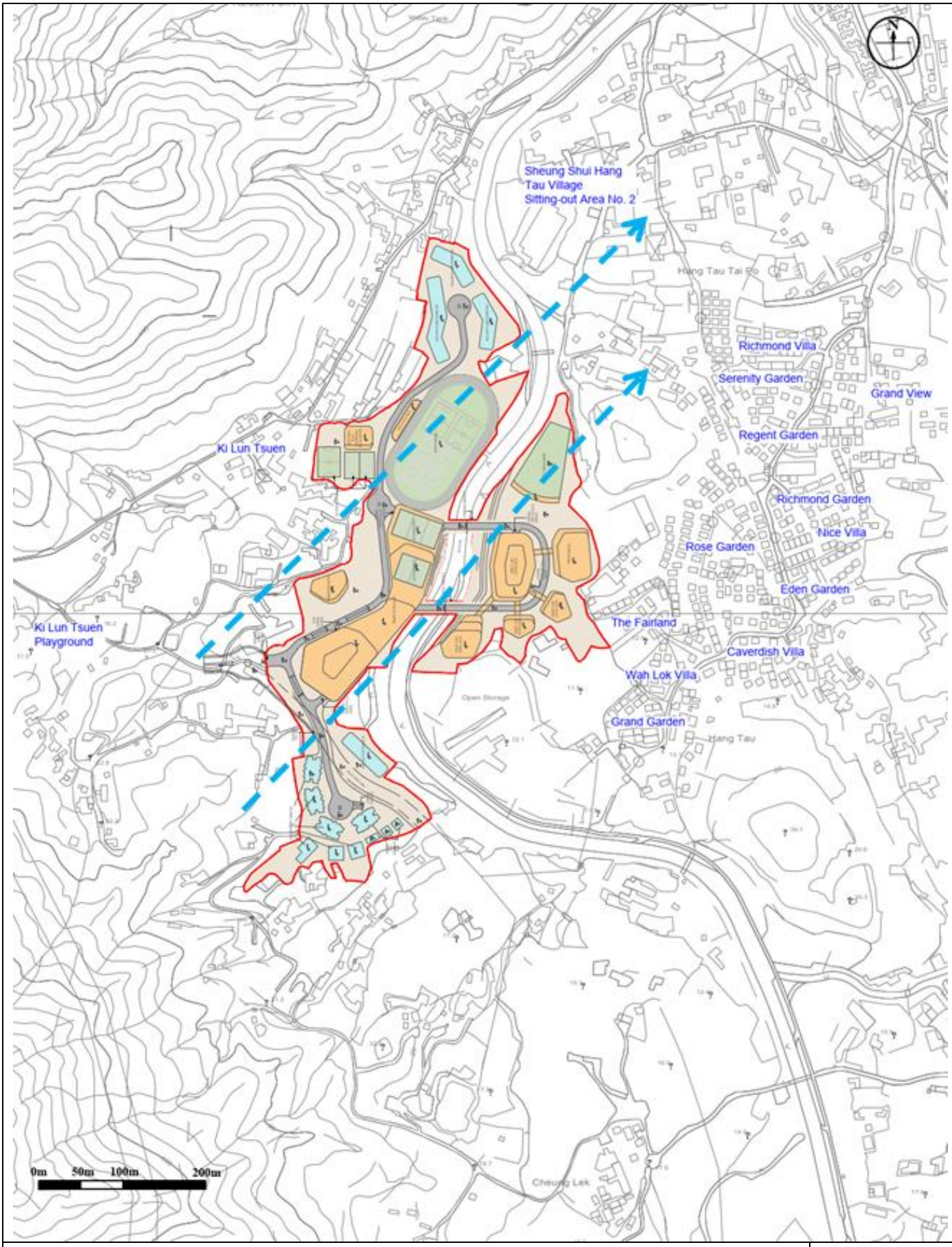

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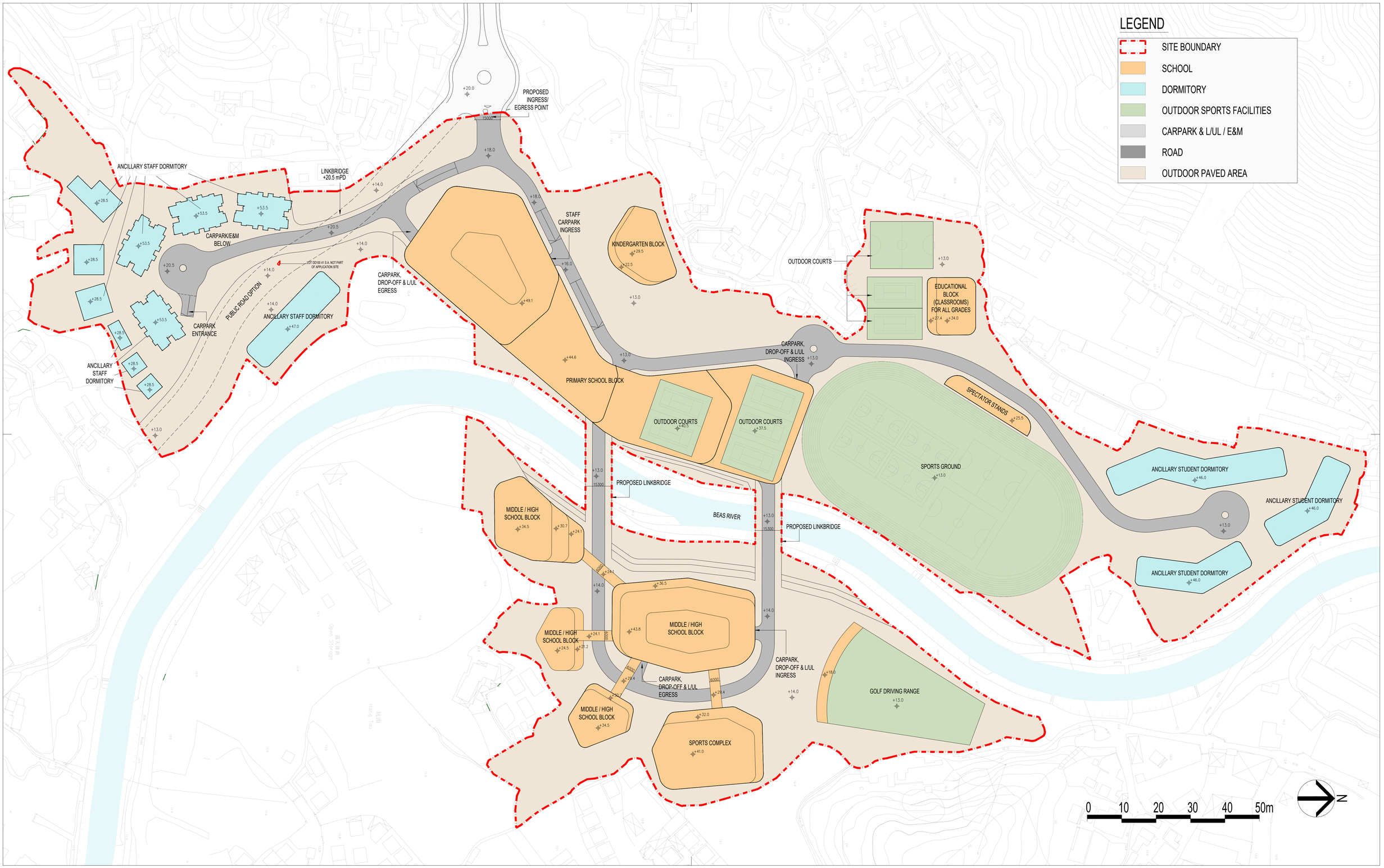
Appendix 1

Layout and Section Plans of the Proposed Scheme



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Rev.	Description	Drawn	Checked	Approved	Date

Check all measurements on site. Do not scale off drawings.

This drawing is to be read in conjunction with the specification and any discrepancies are to be immediately reported to the Architect.

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Project Title
PROPOSED INTERNATIONAL SCHOOL DEVELOPMENT AT KWU TUNG SOUTH

Drawing Title
FULL PHASE – MASTER LAYOUT PLAN

Project No. 25018NT
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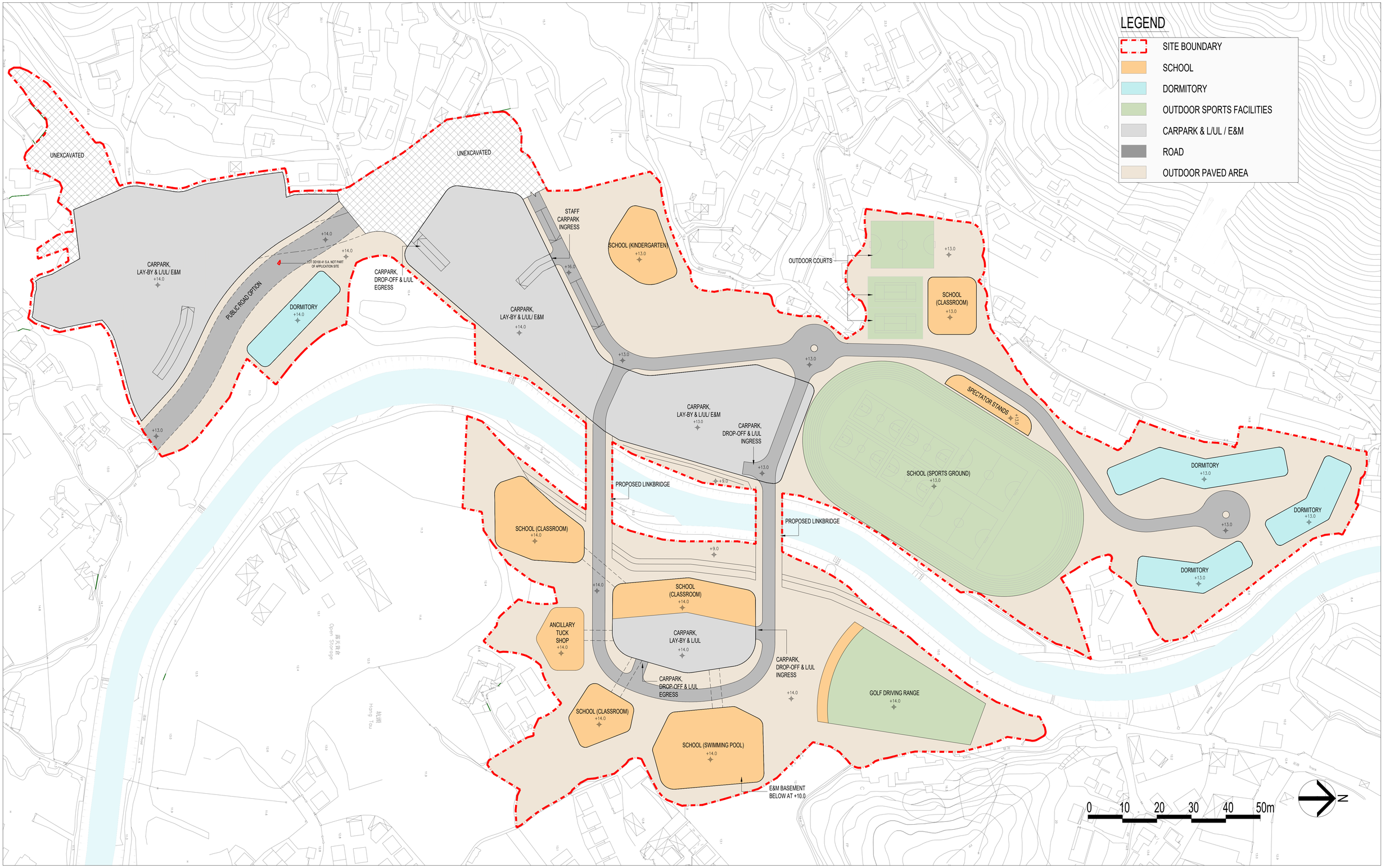

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RONALD LU & PARTNERS

呂元祥建築師事務所

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Project No. 25018NT

Scale 1 : 1000 Issue Date NOV 2025

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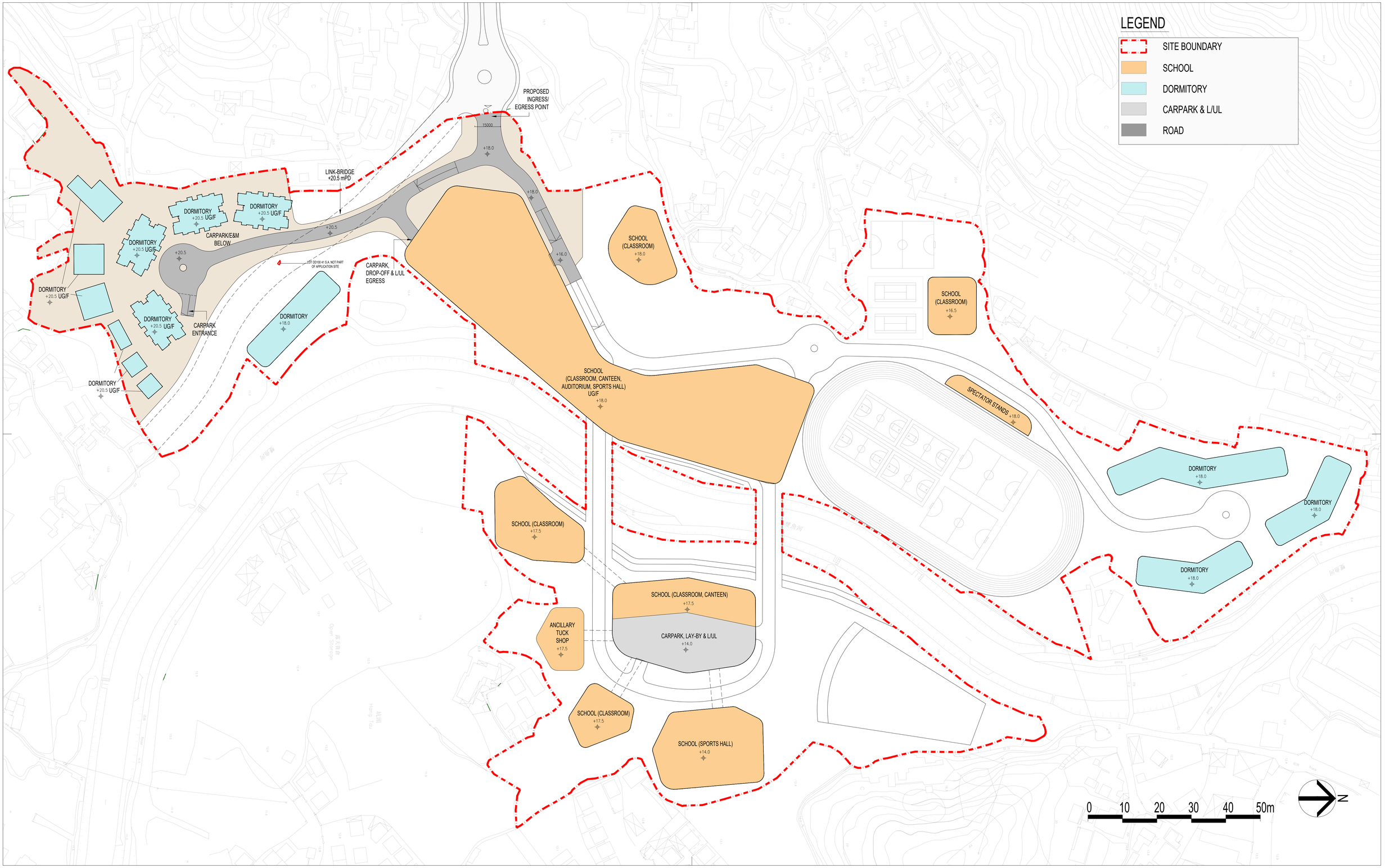

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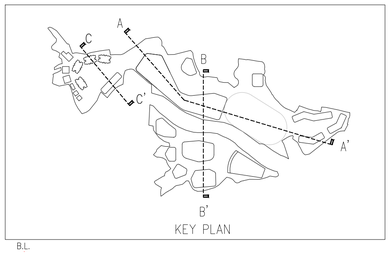

LEGEND

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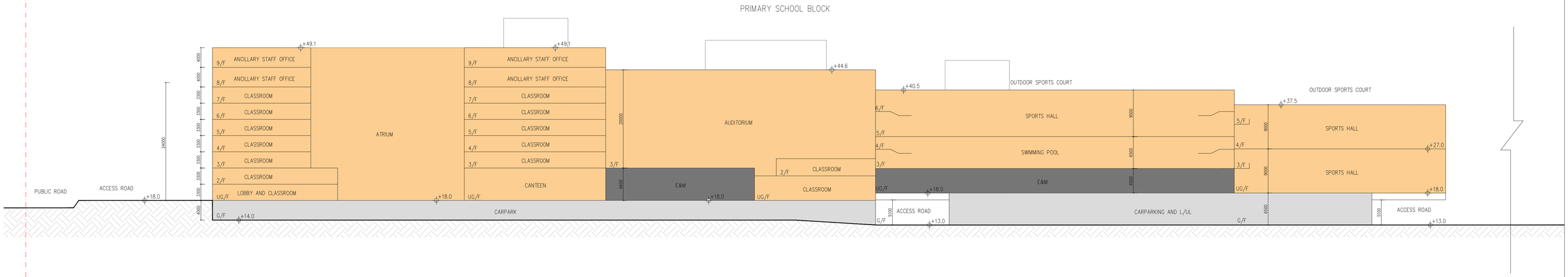
- SCHOOL
- DORMITORY
- OUTDOOR SPORTS FACILITIES
- CARPARK & L/UL
- E&M



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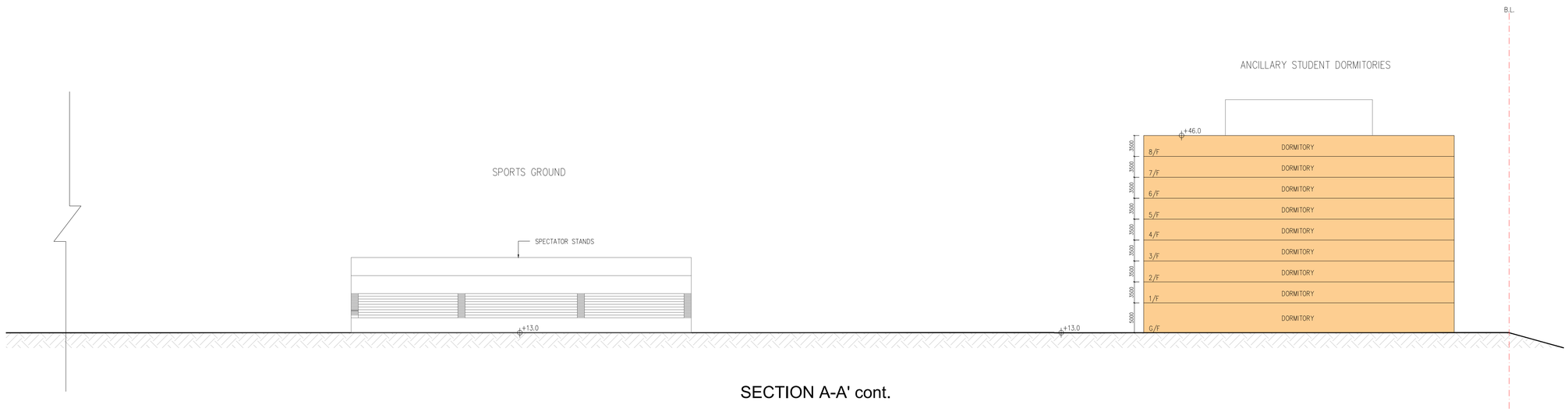

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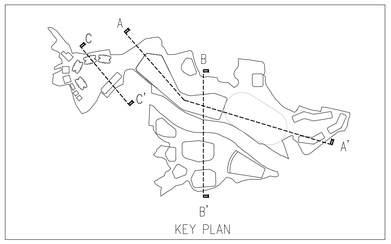
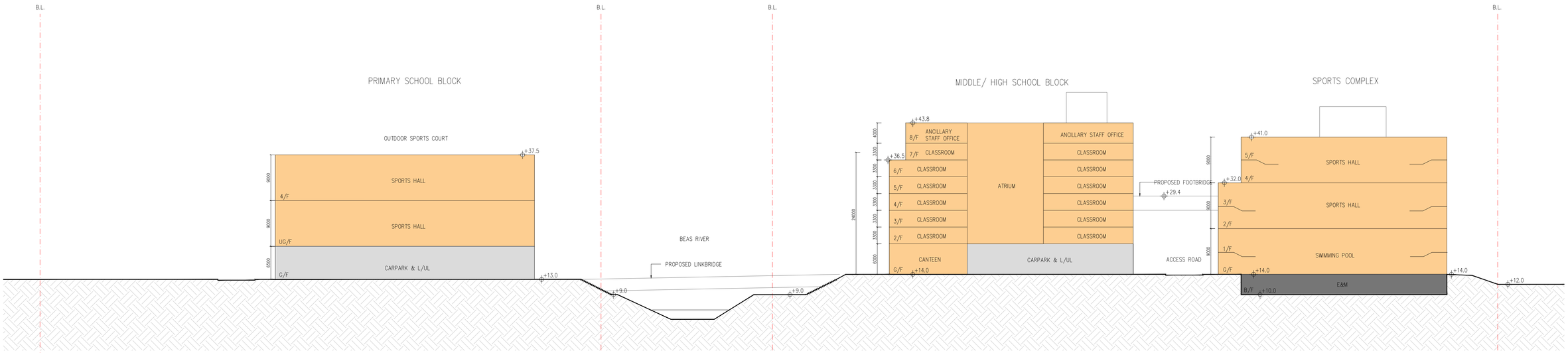


LEGEND

- SITE BOUNDARY
- SCHOOL
- DORMITORY
- OUTDOOR SPORTS FACILITIES
- CARPARK & L/UL
- E&M



SECTION B-B'

Rev.	Description	Drawn	Checked	Approved	Date
_	PLANNING SUBMISSION	HKO	JHK	JHY	9-2025
A	PLANNING SUBMISSION	HKO	JHK	JHY	11-2025

Rev.	Description	Drawn	Checked	Approved	Date

B.D. Ref. _
F.S.D. Ref. _
D.L.O. Ref. _
Drawn HKO Date 11-2025
Checked JHK Date 11-2025
Approved JHY Date 11-2025
Cad File No. I:\Studio_01\Proj_Data\2025\25018NT\DRAWING\SUB\20250821_S12 Application\P\01_BD\GBP_06

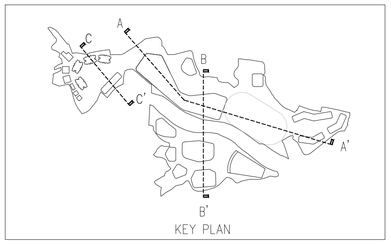
RONALD LU & PARTNERS
呂元祥建築師事務所

Project Title

Drawing Title
SECTION B-B

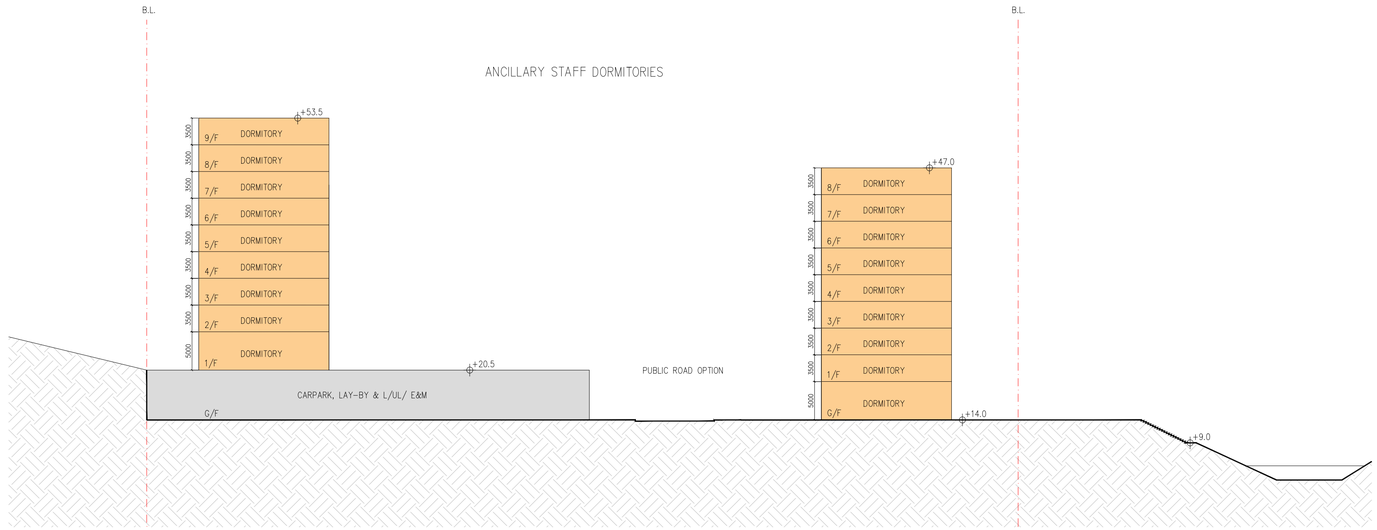
Project No. 25018NT
Scale 1:400 Issue Date NOV 2025
Drawing No. A/GBP_06

Drawing Purpose



LEGEND

- SITE BOUNDARY
- SCHOOL
- DORMITORY
- OUTDOOR SPORTS FACILITIES
- CARPARK & L/UL
- E&M



SECTION C-C'

Rev.	Description	Drawn	Checked	Approved	Date
_	PLANNING SUBMISSION	HKO	JHK	JHY	9-2025
A	PLANNING SUBMISSION	HKO	JHK	JHY	11-2025

Rev.	Description	Drawn	Checked	Approved	Date

Check all measurements on site. Do not scale off drawings.

This drawing is to be read in conjunction with the specification and any discrepancies are to be immediately reported to the Architect.

B.D. Ref. _
F.S.D. Ref. _
D.L.O. Ref. _
Drawn HKO Date 11-2025
Checked JHK Date 11-2025
Approved JHY Date 11-2025
Cad File No. U:\Studio_01\Proj_Data\2025\25018NT\DRAWING\SUB\20250820_S72 Application\PLOT_BD\GBP_07_new

RONALD LU & PARTNERS
呂元祥建築師事務所

Project Title

Drawing Title
SECTION C-C

Project No. 25018NT
Scale 1 : 400
Issue Date NOV 2025
Drawing No. A/GBP_07_new

Drawing Purpose