

*Appendix 3*

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**Qualitative Statement On  
Air Ventilation Assessment**



## 1. INTRODUCTION

### 1.1 Project Background

1.1.1 The Subject Site at Long Bin, Yuen Long is to be developed as Public Housing Development (PHD). The area of the Subject Site is about 7.9 ha. It is located to the immediate west of Long Tin Road, to the north of Tong Yan San Tsuen Interchange and Yuen Long Highway, and to the south of Castle Peak Road – Ping Shan. To its west are Ma Fung Ling Road, a planned school site, low-rise private residential developments and a small mountain. It comprises of a construction site for Long Bin Phase 1 PHD on the northern portion, and areas currently under site formation and infrastructure works by the Civil Engineering and Development Department (CEDD).

### 1.2 Current Scheme

1.2.1 The Current Scheme (the notional scheme submitted by CEDD and approved by the Town Planning Board under planning application no. A/YL-TYST/1074) assessed in the approved Air Ventilation Assessment Initial Study (AVA-IS) of the site consists of ten residential towers with maximum building height of 170 mPD atop podium structures including welfare facilities, carpark, retail, kindergartens, and wet market. There is a public transport interchange (PTI) in the middle of the site and adjacent to Long Tin Road.

1.2.2 With reference to the approved Air Ventilation Assessment Initial Study (AVA-IS) of the site, the following key mitigation measures have been identified in the Current Scheme:

- Minimum 15m wide WNW-ESE running Non-building Area (NBA) between Block 6 and Block 5;
- Minimum 15m wide WNW-ESE running building separation between Block 3 and Block 2;
- Minimum 15m wide WNW-ESE running NBA between Block 2 and Block 1;
- Minimum 15m wide WNW-ESE running NBA between Block A and Block B;
- Four empty bays with minimal width of 5m at G/F;
- Setback from the podiums to the site boundary along Long Tin Road ranging from ~0.4m to 12m;
- Setback from the towers to the site boundary along Long Tin Road ranging from ~4m to 21m; and
- Stepped building height ranged from about 150 mPD to 170 mPD.

1.2.3 **Figure 1** illustrates the NBA, building separations and empty bays in the Current Scheme. **Appendix 1** shows the MLP and sections of the Current Scheme. It also illustrates the setback from the podiums and towers to the site boundary along Long Tin Road.

### 1.3 Proposed Scheme

1.3.1 The Proposed Scheme also consists of ten residential blocks with a maximum building height of 170 mPD. Most of these blocks are situated on top of a podium which consists of welfare facilities, retail, wet market, kindergartens, as well as carparks. In Phase 1, there are three housing blocks. Blocks B and C will be standalone towers, while Block A will be built on top of a three-storey

podium. Additionally, there are two non-domestic blocks: a two-storey block to the east of Blocks B and C, and another two-storey block to the northeast of Block A. For Phases 2 & 3, the no. of storeys for podium are eight storeys for Blocks 1 & 2, four for Blocks 3, 4, 6, 7 and two for Block 5. Similarly, a PTI is proposed to be located within Phase 2 site. The proposed residential towers are in cruciform or X-shaped.

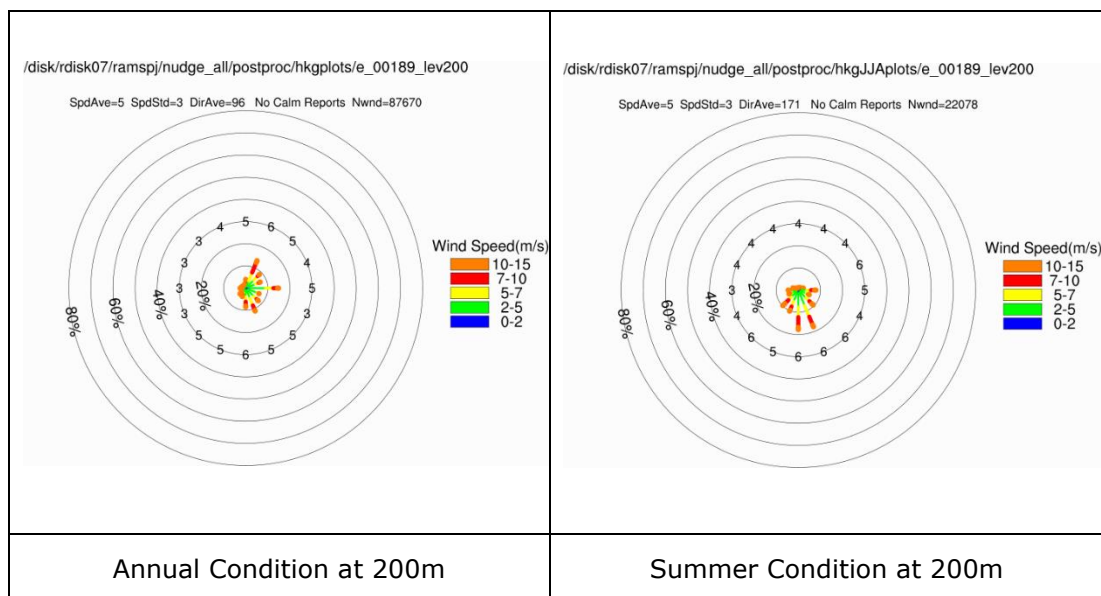
- 1.3.2 Compared to the Current Scheme, the maximum total Plot Ratio (PR) of Phases 2 and 3 is proposed to be further increased from 7.0 to 7.3 for accommodation of additional welfare facilities. The welfare facilities are located at the multi-storey podium, and the podium footprint is increased slightly. As for Phase 1, there is a minor change in the shape of the podium under Block A, i.e. the eastern portion near the site boundary. In addition, the alignment of the elevated walkway between the podiums of Block A and Block B has been changed slightly.
- 1.3.3 Moreover, more storeys of podium carpark are located beneath the towers of Block 1 and Block 2, when compared to the Current Scheme (named as Block 7 and Block 6). Nevertheless, the maximum building height of the development remains the same at 170 mPD.
- 1.3.4 The key mitigation measures outlined in Section 1.2.2 are partially maintained in the Proposed Scheme, while some have been slightly modified. The mitigation measures included in the Proposed Scheme are as follows:
- Minimum 15m wide WNW-ESE running building separation between Block 2 and Block 3;
  - Minimum 15m wide WNW-ESE running building separation between Block 6 and Block 7 ;
  - Minimum 15m wide WNW-ESE running building separation between Block 5 and Block 6;
  - Minimum 15m wide WNW-ESE running building separation between Block A and Block B;
  - Four empty bays with minimal width of 5m at G/F;
  - Setback from the podiums to the site boundary along Long Tin Road ranging from ~0.8m to 12.5m;
  - Setback from the towers to the site boundary along Long Tin Road ranging from ~6m to 21m; and
  - Stepped building height ranged from about 150 mPD to 170 mPD.
- 1.3.5 For Phases 2 & 3, the first floor of the podium is designed as an elevated pedestrian deck to connect all the towers within the development. In accordance with this design concept, the building separation between Blocks 2 & 3, Blocks 6 & 7 and Blocks 5 & 6, all with an effective width of 15m, are integrated into the first-floor podium deck. The podium deck contains covered walkways, covered and open recreational facilities and landscaped areas. The covered recreational facility has a side-opened design, and it is permeable along the building separation direction. In Phase 1, an elevated walkway is proposed to connect Blocks A and B.
- 1.3.6 Across all three phases, there are no fully enclosed structures within the 15m building separations. Both the podium deck in Phases 2 & 3 and the elevated walkway in Phase 1 are considered permeable from AVA perspectives.

1.3.7 On the other hand, the setback from both the podiums or towers to the site boundary along Long Tin Road has maintained or slightly increased. It is anticipated that the Proposed Scheme would not have an adverse impact on the wind performance along Long Tin Road.

1.3.8 **Figure 2b & 2c** illustrates the location of the podium deck, covered walkway and one covered recreational facility. **Appendix 2** illustrates the MLP of the Proposed Scheme and the setback from the podiums/ towers to the site boundary along Long Tin Road. It also includes the sections of the podium deck and covered walkway at each 15m building separation for the Proposed Scheme.

**1.4 Site Wind Availability**

1.4.1 The relevant wind data (RAMS) for the district (grid: X:047, Y:069) under concern has been extracted from the Planning Department’s website for representing the Subject Site wind availability data (at 200m). The annual prevailing winds comes from NNE, E and SSE; whereas the summer prevailing winds are from SSE to SSW. Below wind roses are extracted from the Planning Department’s website.



**1.5 Wind Flow under Annual Condition and Summer Condition**

1.5.1 The anticipated wind flow under the prevailing winds is illustrated in **Figure 2a**.

Annual Condition

1.5.2 The annual winds are coming from the easterly direction (NNE, E and SSE) as mentioned in section 1.4.1. The topography is generally flat to the east of the Subject Site. Besides, most of the surrounding buildings at the upwind area are mid-rises such as Scenic Gardens and Parkside Villa. It is anticipated that the annual wind availability of the Subject Site would not be impacted by these buildings significantly.

- 1.5.3 Under NNE prevailing wind direction, the wind would flow along Long Tin Road to the downwind area or pass through the landscape area (circled in green in **Figure 2a**) at the northern portion of Phases 2 & 3 and the Driveway/ EVA in Phase 1 to reach the Subject Site. In comparing the two schemes, the changes are mainly at the minor increment of the podium height under Blocks 1 and 2, footprint of podium under Blocks 3, 4, 6 & 7, additional podium decks within the building separations and the minor changes of the podium shape under Block A as well as the alignment of the elevated walkway. These increments or changes of podiums do not affect the wind flow along Long Tin Road as the setback of building structure from the road is similar under both schemes. For the wind coming from the landscape area and Driveway/ EVA, it is expected that the wind performance of both schemes would be similar as this wind flow would already been blocked by the proposed development.
- 1.5.4 Under annual E prevailing wind, the three NBAs, one building separation and four empty bays have been proposed in the Current Scheme to facilitate the wind to pass via the Subject Site from east to west as mitigation measures. Although there are permeable podium decks and elevated walkway incorporated in the Proposed Scheme, the width of the building separations as well as the empty bays remains the same. Therefore, it is considered that the air ventilation performance at the downwind area would be comparable for both schemes.
- 1.5.5 Under annual prevailing SSE wind, the two blocks and the podium underneath at the southern portion of the Subject Site (Blocks 1 & 2 of the Proposed Scheme and Blocks 6 & 7 of the Current Scheme) would divert the upcoming wind to continuously flow to north along Long Tin Road and west along Road L1 under both two schemes. Since the proposed amendments are located within the Subject Site, the wind flows along these roads would be similar under both schemes. In addition, the building separation at the southern portion of the Subject Site may also facilitate some of the SSE wind passing towards downwind area, i.e. Green Lodge. Only permeable podium deck is incorporated in the Proposed Scheme and so the wind performance at the downwind area would be similar in both schemes.
- 1.5.6 Compared to the Current Scheme, mitigation measures including the empty bays at ground floor and stepped building height are retained in the Proposed Scheme. In addition, the building separation between Blocks 6 & 7 is also retained in the Proposed Scheme. Although some permeable podium deck and covered walkways are located within the three previous NBAs, the width are kept as 15m. It is considered that wind performance of the surrounding areas would be comparable under both schemes.

#### Summer Condition

- 1.5.7 The summer winds are coming from the southerly direction (SSE, S and SSW) as mentioned in section 1.4.1. The wind performance of the Proposed Scheme under SSE has been reviewed in section 1.5.5 above, and below are the analysis of the Proposed Scheme for S and SSW winds.
- 1.5.8 Under summer prevailing S and SSW winds, the Current Scheme would divert the wind to Road L1 and Long Tin Road in view of the podium layout. Under the Proposed Scheme, these two winds are also be diverted to these roads due to the provision of the podium. The podium layouts of both schemes are similar, and so the wind flow along these roads would be similar under both schemes.

In addition, the setback from Long Tin Road is similar in both schemes, the wind flow along Long Tin Road would also be similar.

- 1.5.9 Although the podium under the four towers, i.e. Block 3, 4, 6 and 7, is enlarged slightly, and the shape of podium under Block A as well as the alignment of the elevated walkway has minor change in the Proposed Scheme, the maximum building height and the mitigation measures are similar. It is believed that it would not significantly worsen the pedestrian wind environment as compared to the Current Scheme.

## 1.6 Conclusion

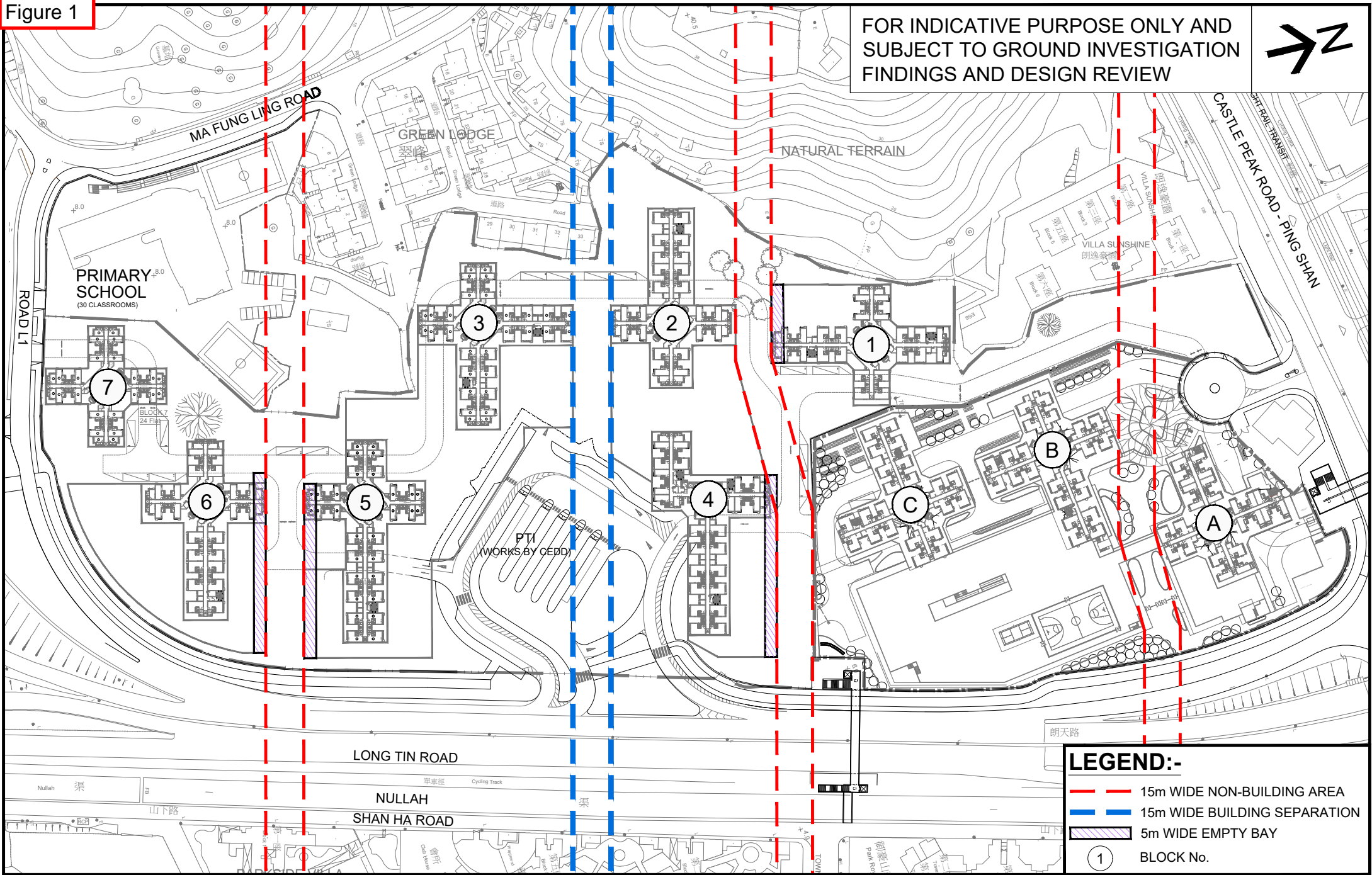
- 1.6.1 In the Current Scheme, a total of 8 air ventilation mitigation measures have been incorporated in the previously approved AVA-IS, including 3 non building areas (NBAs). In view of incorporating the latest development parameters, permeable podium deck and covered walkways are proposed to be located within these NBAs in the Proposed Scheme. Nevertheless, the separation between the towers along these concerned areas maintain a width of 15 meters, same as the previous agreed NBA. Additionally, the setback from the podiums and towers to the site boundary along Long Tin Road has been slightly increased in the Proposed Scheme compared to the Current Scheme. In summary, the mitigation measures in the Proposed Scheme are similar to the Current Scheme, with only the three 15m wide NBAs revised to three 15m wide building separations.
- 1.6.2 For the proposed permeable podium deck, there are no solid walls within the building separations at pedestrian level so that natural wind can flow through them. Therefore, this proposed change is not expected to have any significant impact upon the overall ventilation performance of the Proposed Scheme in comparing with that of the Current Scheme. The ventilation performance of the Proposed Scheme would be comparable with the Current Scheme.

**Figures**



Figure 1

FOR INDICATIVE PURPOSE ONLY AND  
SUBJECT TO GROUND INVESTIGATION  
FINDINGS AND DESIGN REVIEW



**LEGEND:-**

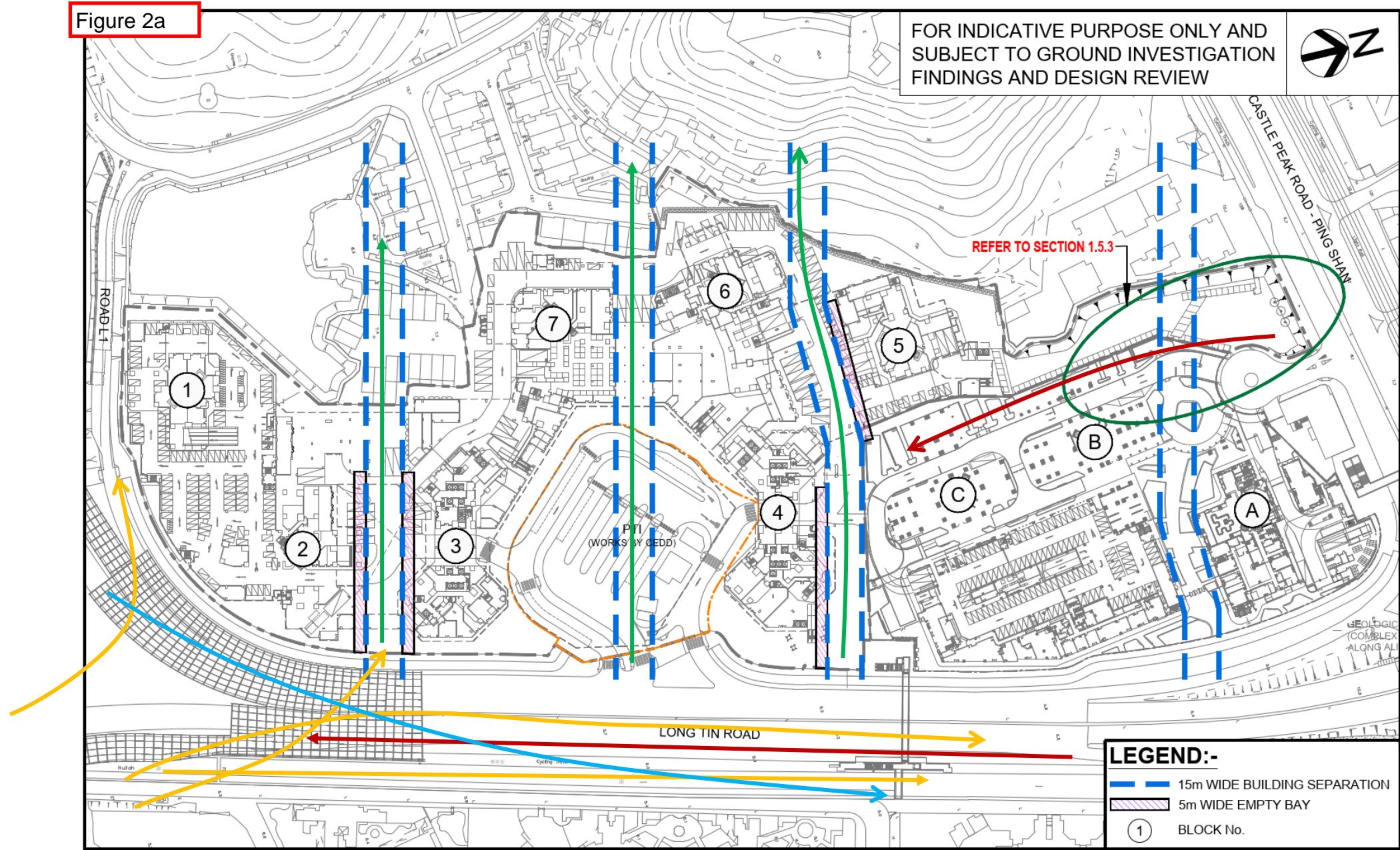
- 15m WIDE NON-BUILDING AREA
- 15m WIDE BUILDING SEPARATION
- 5m WIDE EMPTY BAY
- BLOCK No.

# CURRENT SCHEME

Figure 2a

- NNE Wind
- E Wind
- SSE/S Wind
- SSW Wind

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SUBJECT TO GROUND INVESTIGATION  
FINDINGS AND DESIGN REVIEW



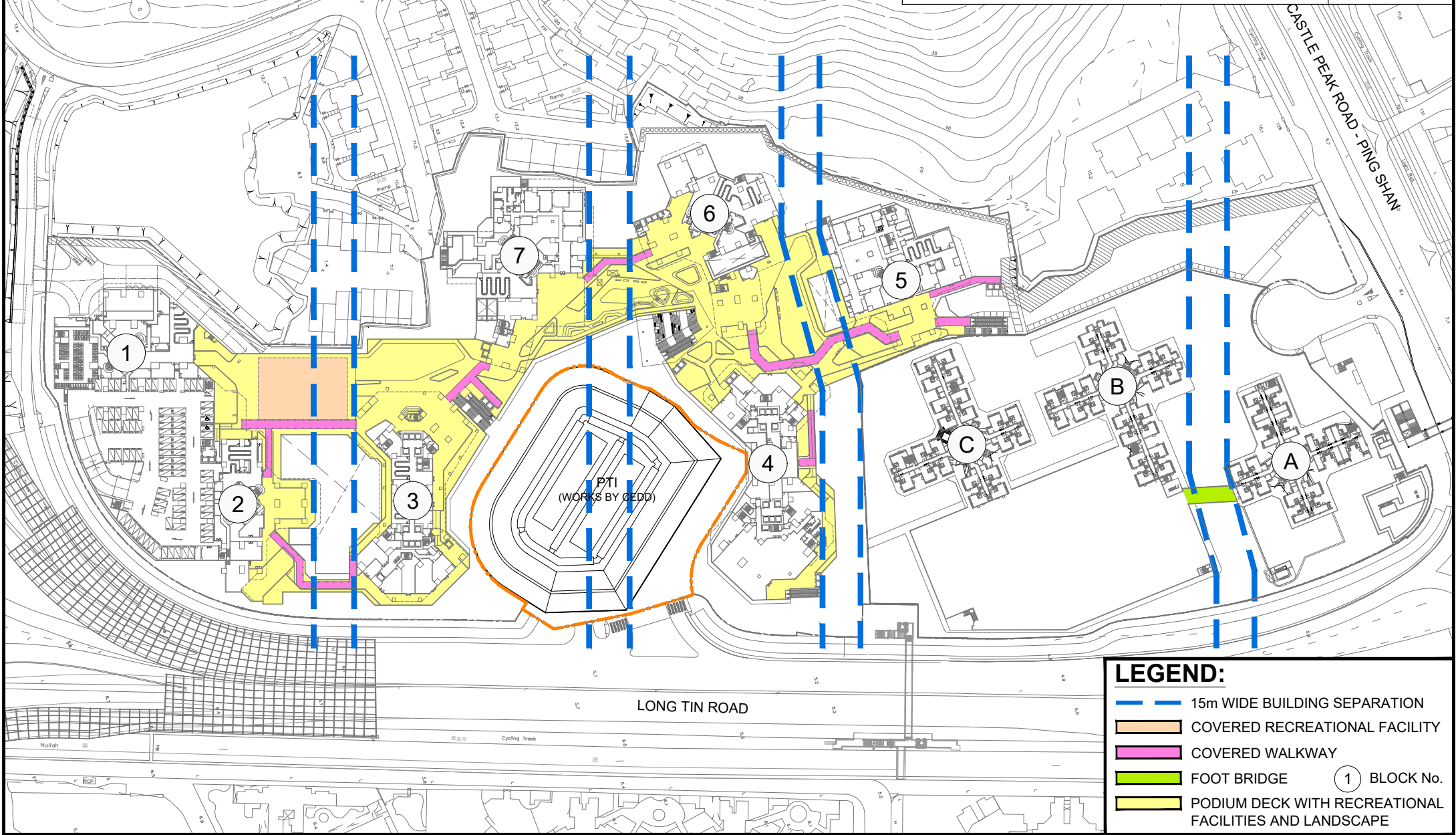
**LEGEND:-**

- 15m WIDE BUILDING SEPARATION
- 5m WIDE EMPTY BAY
- BLOCK No.

PROPOSED SCHEME - GROUND FLOOR

Figure 2b

FOR INDICATIVE PURPOSE ONLY AND  
SUBJECT TO GROUND INVESTIGATION  
FINDINGS AND DESIGN REVIEW



**LEGEND:**

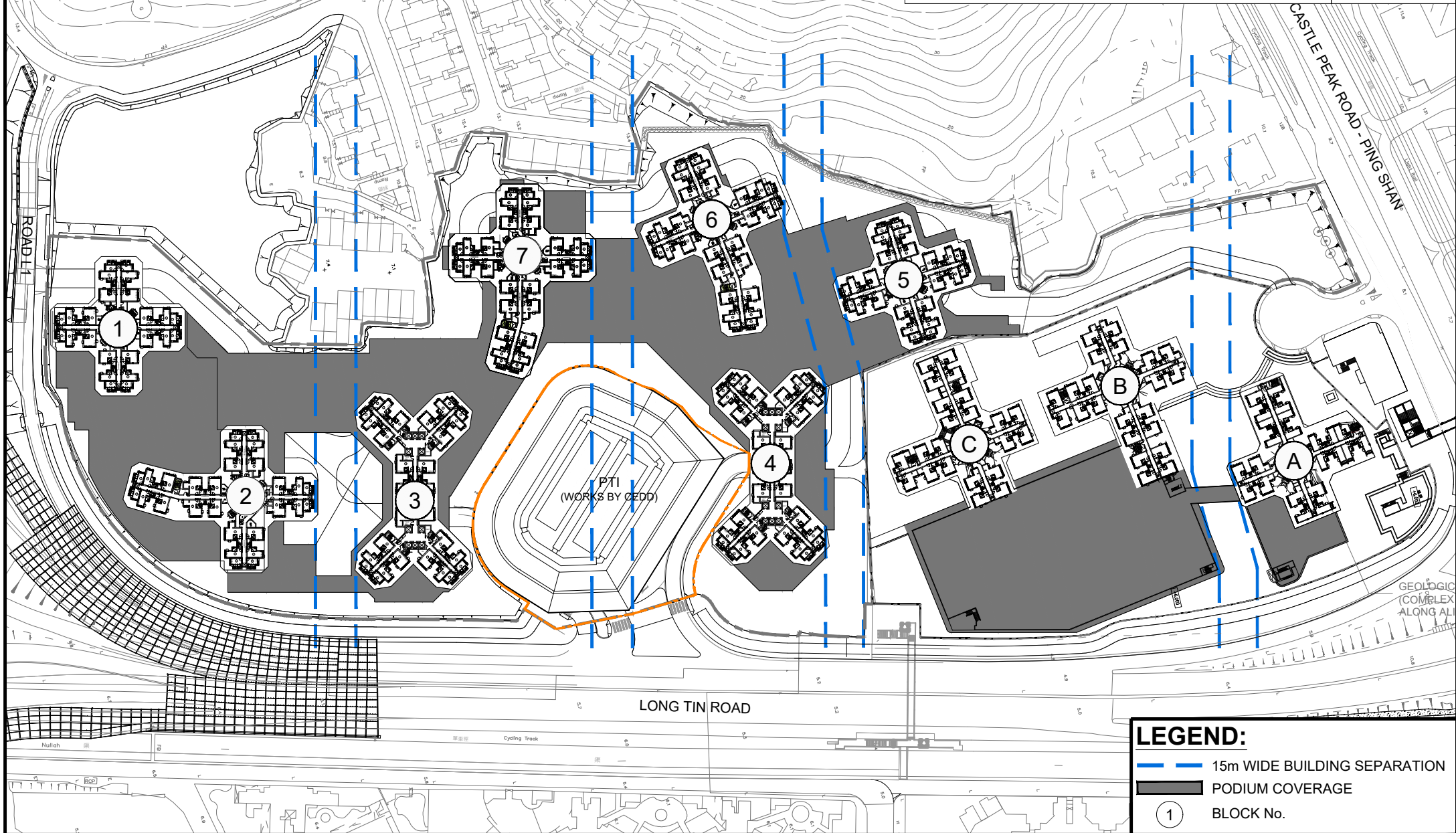
- 15m WIDE BUILDING SEPARATION
- COVERED RECREATIONAL FACILITY
- COVERED WALKWAY
- FOOT BRIDGE
- PODIUM DECK WITH RECREATIONAL FACILITIES AND LANDSCAPE
- BLOCK No.

PROPOSED SCHEME - FIRST FLOOR




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Figure 2c

FOR INDICATIVE PURPOSE ONLY AND  
SUBJECT TO GROUND INVESTIGATION  
FINDINGS AND DESIGN REVIEW



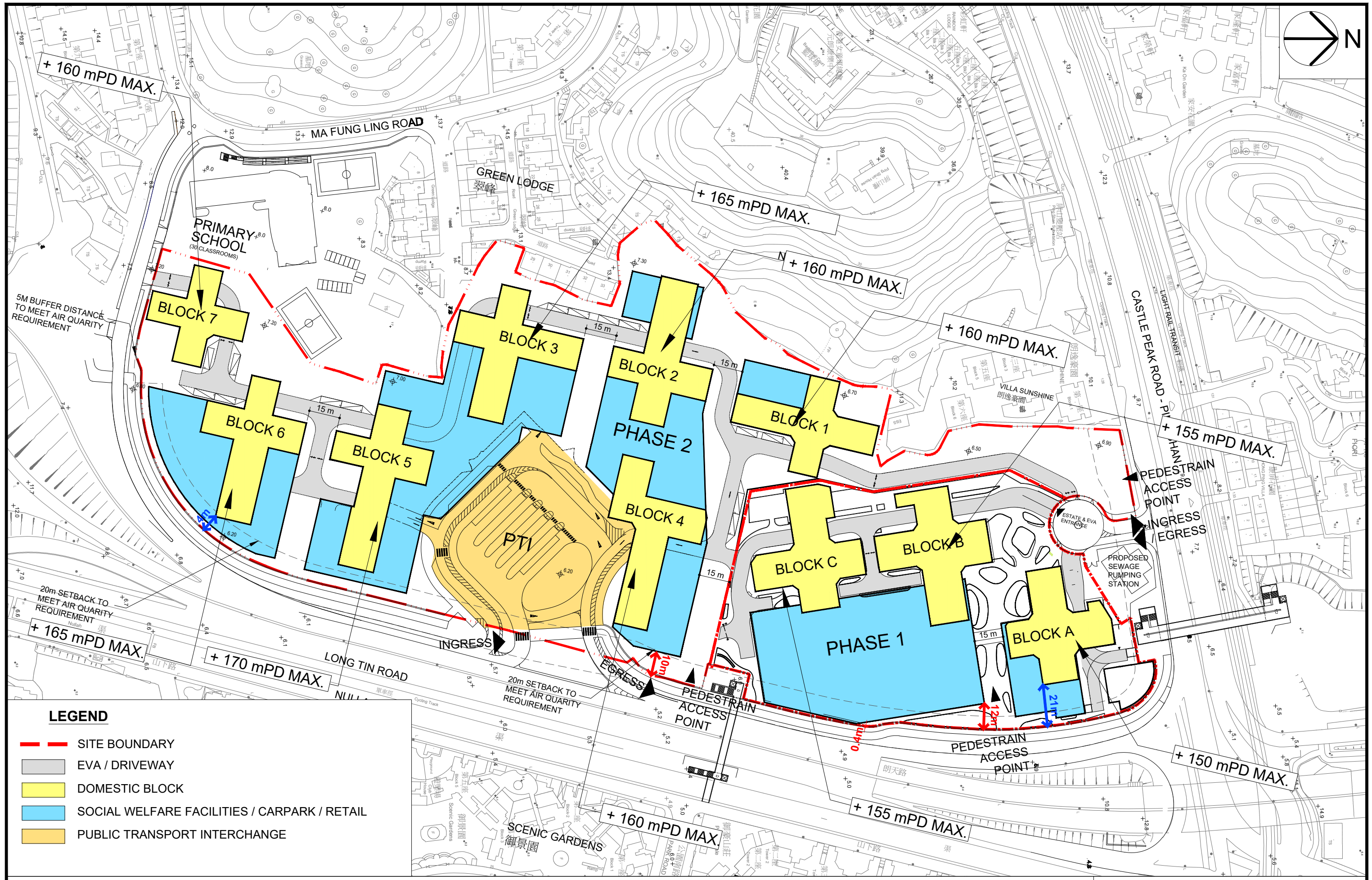
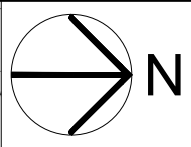
**LEGEND:**

-  15m WIDE BUILDING SEPARATION
-  PODIUM COVERAGE
-  BLOCK No.

**PROPOSED SCHEME - PODIUM COVERAGE**

**Appendix 1**

**Master Layout Plan of the Current Scheme**



**LEGEND**

- SITE BOUNDARY
- EVA / DRIVEWAY
- DOMESTIC BLOCK
- SOCIAL WELFARE FACILITIES / CARPARK / RETAIL
- PUBLIC TRANSPORT INTERCHANGE

**PUBLIC HOUSING DEVELOPMENT AT LONG BIN PHASES 1&2**  
**PROPOSED SITE LAYOUT PLAN**



HOUSING DEPARTMENT

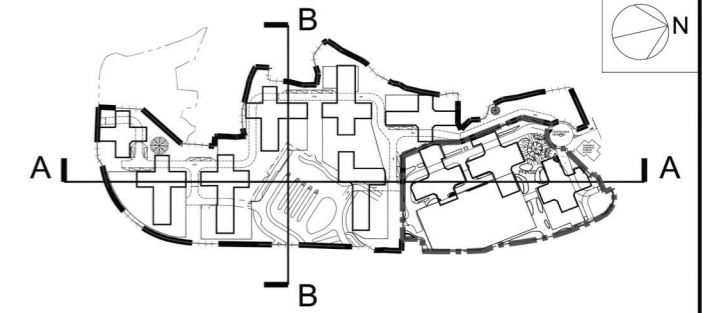
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YL43/S16/A/LO-01

DATE:  
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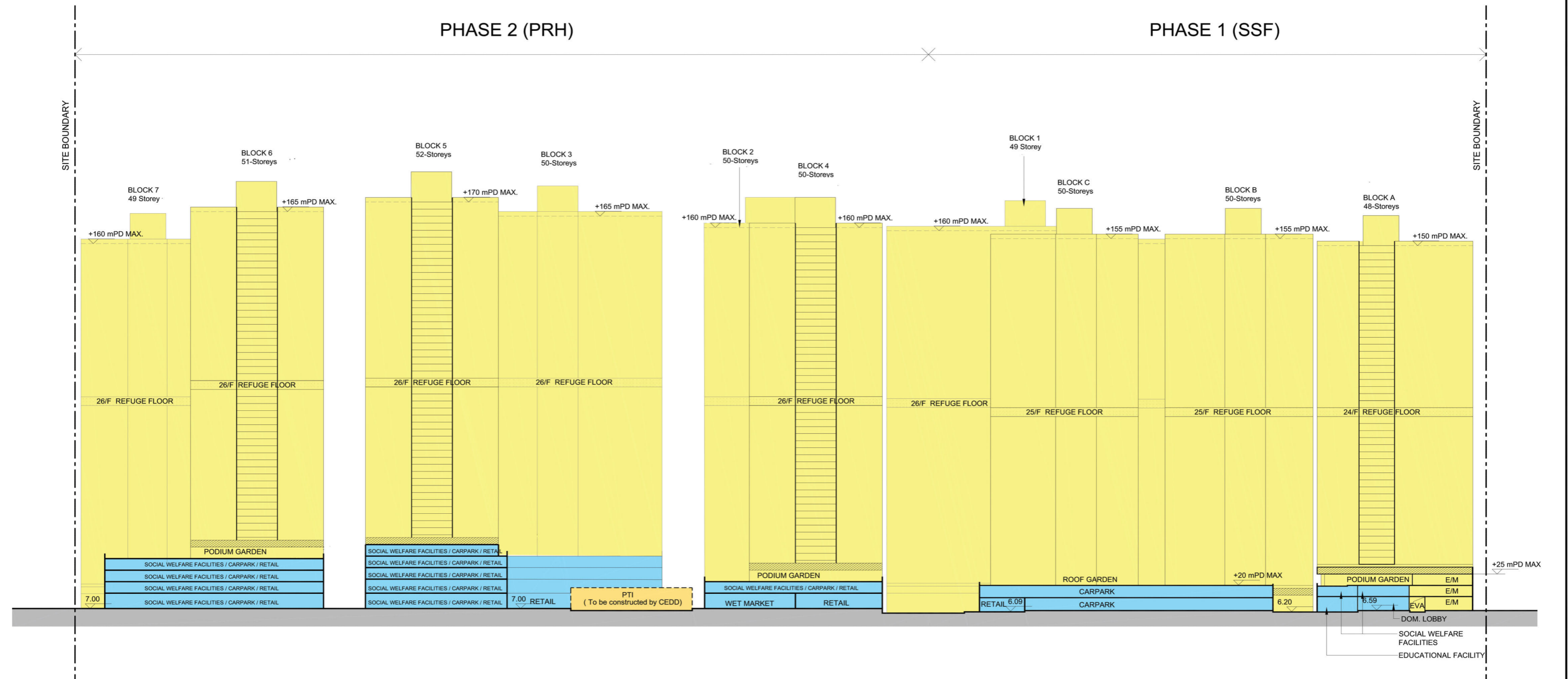
**LEGEND**

- SITE BOUNDARY
- DOMESTIC BLOCK
- COMMERCIAL / CARPARK / SOCIAL WELFARE FACILITIES
- PUBLIC TRANSPORT INTERCHANGE



KEY PLAN

SCALE 1 : 8000



PROJECT TITLE  
**PUBLIC HOUSING DEVELOPMENT AT  
LONG BIN PHASES 1 & 2**

DRAWING TITLE  
**SITE SECTION A - A**

\*for indicative purpose only

SCALE 1:1500 (A1), 1:3000(A3)



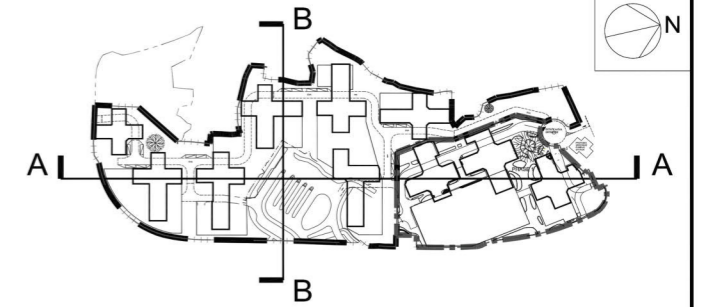
房屋署  
HOUSING DEPARTMENT

DRAWING NO.  
YL43/S16/A/LO-02

DATE:  
04/01/2021

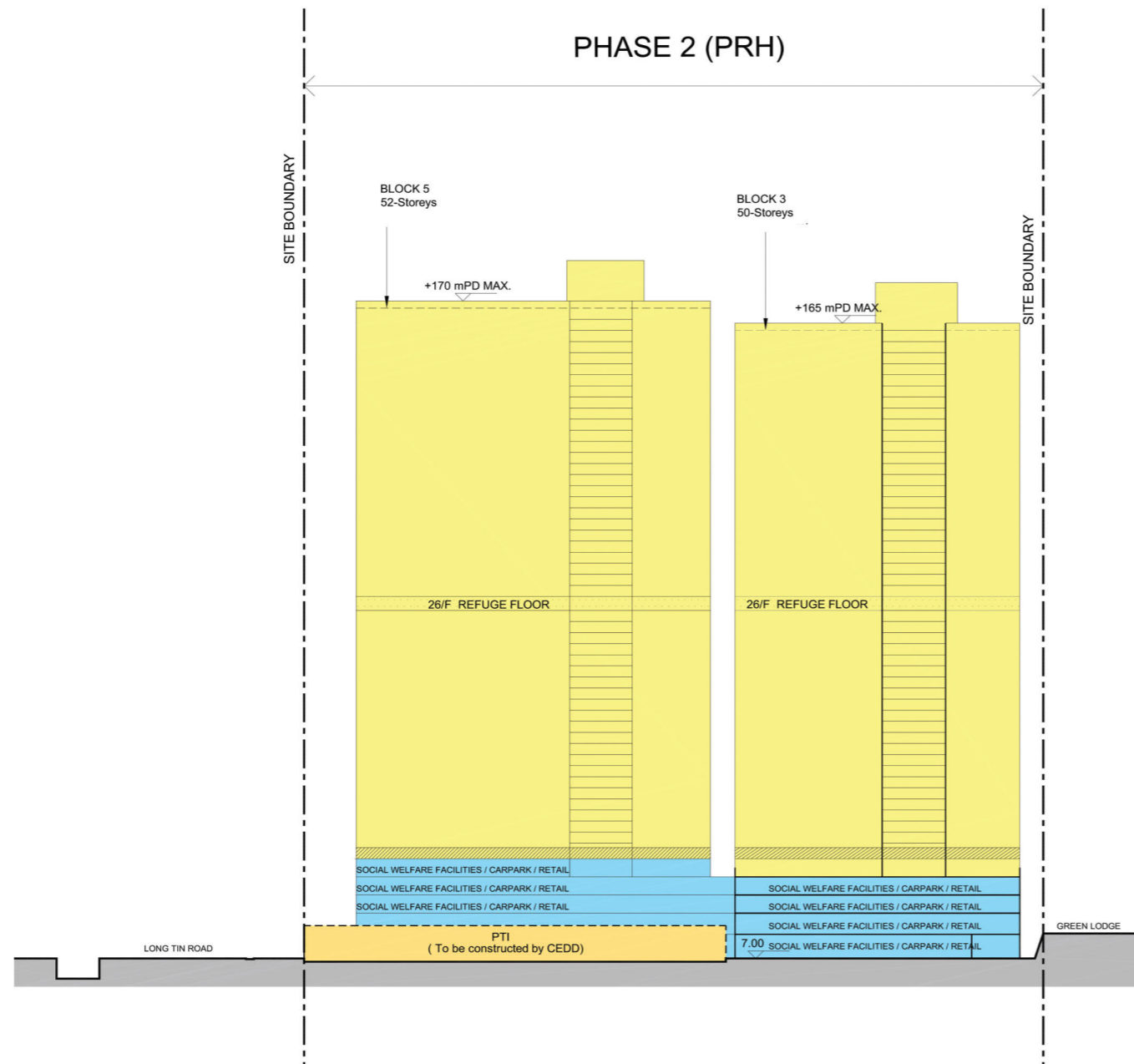
**LEGEND**

- SITE BOUNDARY
- DOMESTIC BLOCK
- COMMERCIAL / CARPARK / SOCIAL WELFARE FACILITIES
- PUBLIC TRANSPORT INTERCHANGE



KEY PLAN

SCALE 1 : 8000



PROJECT TITLE

**PUBLIC HOUSING DEVELOPMENT AT  
LONG BIN PHASES 1 & 2**

DRAWING TITLE

**SITE SECTION B - B**

\*for indicative purpose only

SCALE 1:1500 (A1), 1:3000(A3)



房屋署  
HOUSING DEPARTMENT

DRAWING NO.  
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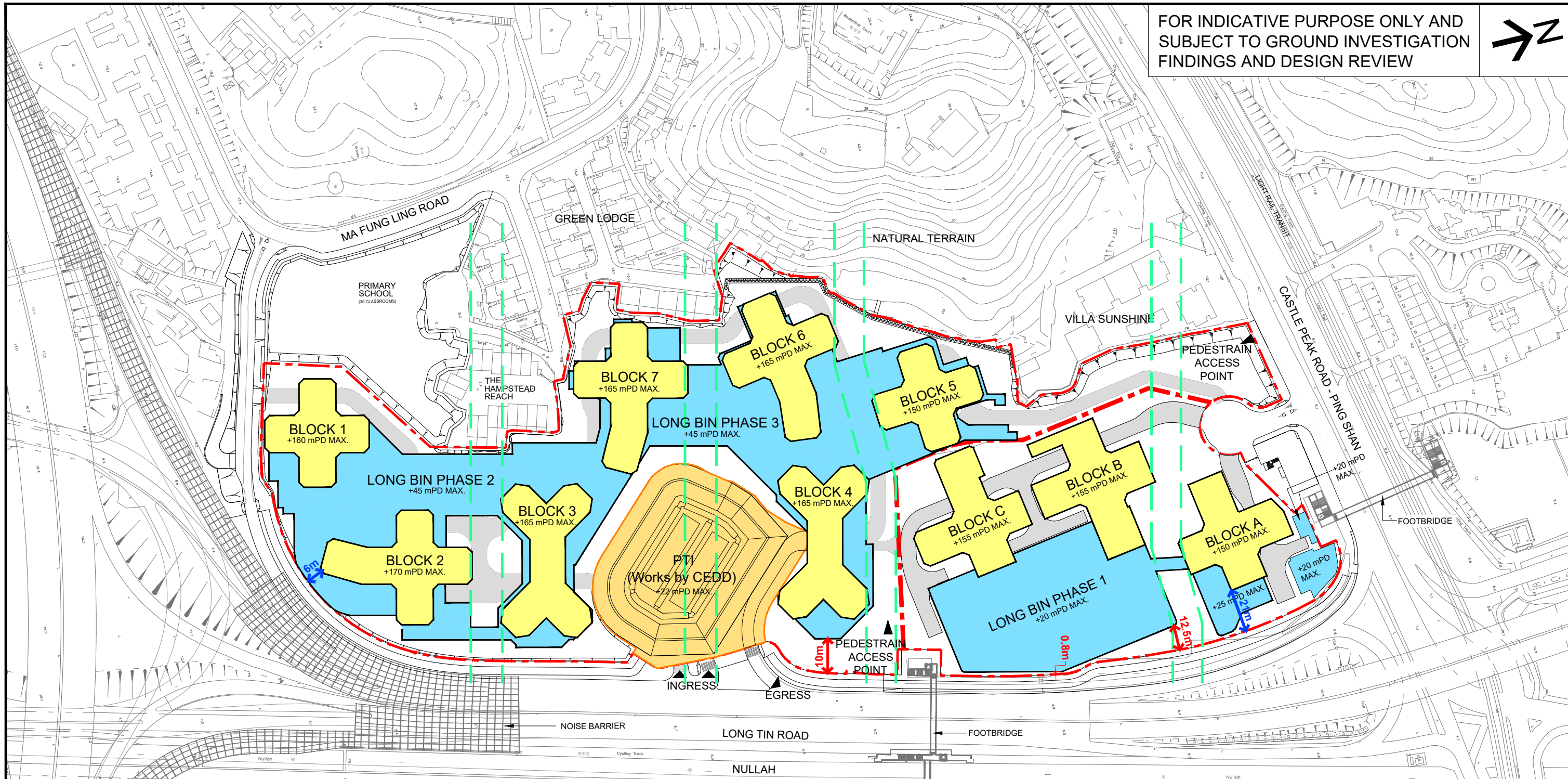
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**Appendix 2**

**Master Layout Plan of the Proposed Scheme**

FOR INDICATIVE PURPOSE ONLY AND  
SUBJECT TO GROUND INVESTIGATION  
FINDINGS AND DESIGN REVIEW



LEGEND	
	SITE BOUNDARY
	15m WIDE BUILDING SEPARATION
	EVA / DRIVEWAY
	DOMESTIC BLOCK
	WELFARE FACILITIES / CARPARK / RETAIL / EDUCATIONAL FACILITY
	PUBLIC TRANSPORT INTERCHANGE

PROJECT TITLE  
**PUBLIC HOUSING DEVELOPMENT AT  
LONG BIN PHASES 1, 2 & 3**

DRAWING TITLE  
**PROPOSED SITE LAYOUT PLAN**

房屋署  
HOUSING DEPARTMENT

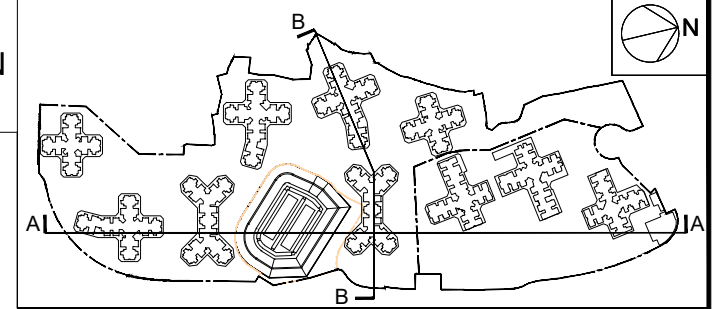
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DATE: 06/2024

SCALE 1:2000(A3)

**LEGEND**

- SITE BOUNDARY
- DOMESTIC BLOCK
- WELFARE FACILITIES / CARPARK / RETAIL / EDUCATIONAL FACILITY
- PUBLIC TRANSPORT INTERCHANGE
- TRANSFER STRUCTURE

FOR INDICATIVE PURPOSE ONLY AND  
SUBJECT TO GROUND INVESTIGATION  
FINDINGS AND DESIGN REVIEW

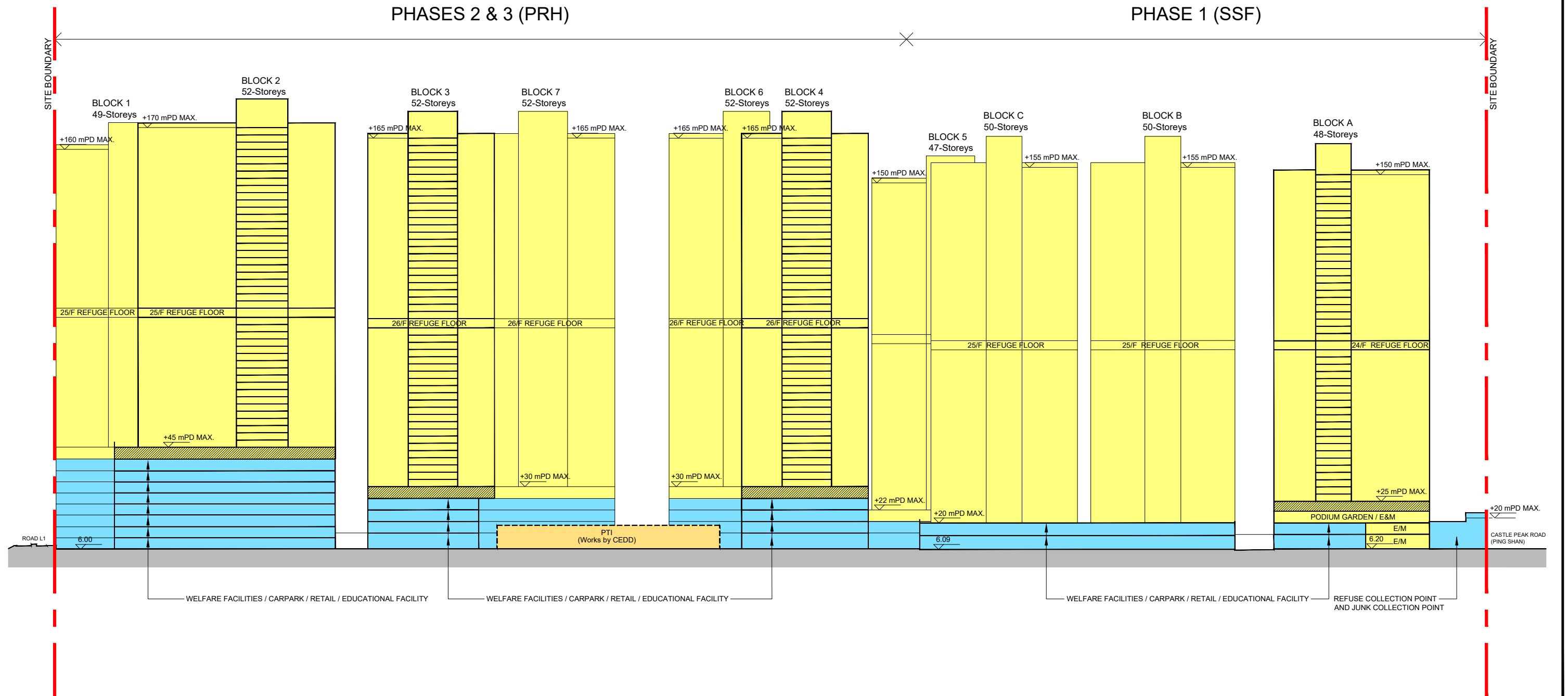


KEY PLAN

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PHASES 2 & 3 (PRH)

PHASE 1 (SSF)

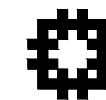


PROJECT TITLE

**PUBLIC HOUSING DEVELOPMENT AT  
LONG BIN PHASES 1, 2 & 3**

DRAWING TITLE

**DIAGRAMMATIC SITE SECTION A-A**



房屋署  
HOUSING DEPARTMENT

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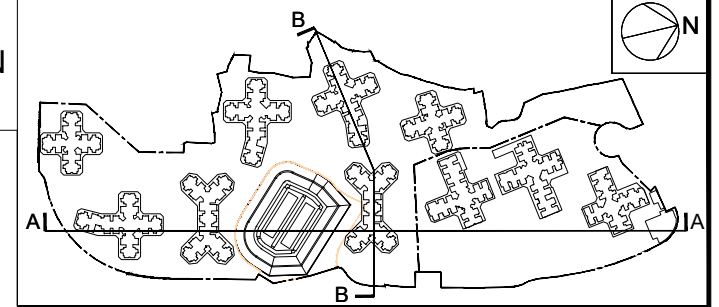
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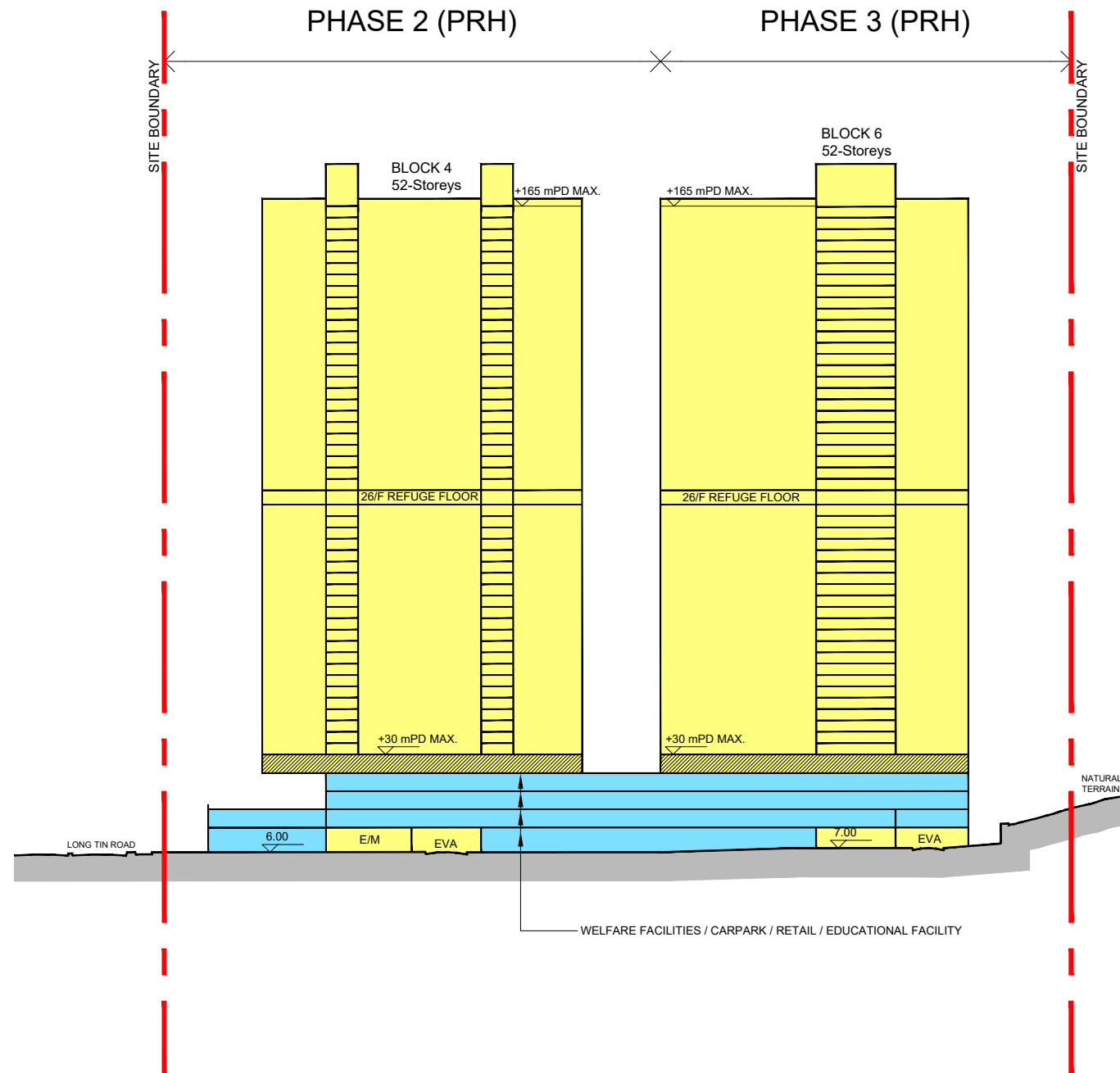
- SITE BOUNDARY
- DOMESTIC BLOCK
- WELFARE FACILITIES / CARPARK / RETAIL / EDUCATIONAL FACILITY
- TRANSFER STRUCTURE

FOR INDICATIVE PURPOSE ONLY AND  
SUBJECT TO GROUND INVESTIGATION  
FINDINGS AND DESIGN REVIEW



KEY PLAN

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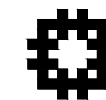


PROJECT TITLE

**PUBLIC HOUSING DEVELOPMENT AT  
LONG BIN PHASES 1, 2 & 3**

DRAWING TITLE

**DIAGRAMMATIC SITE SECTION B-B**

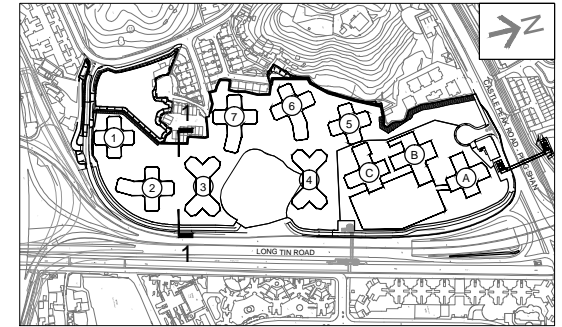


房屋署  
HOUSING DEPARTMENT

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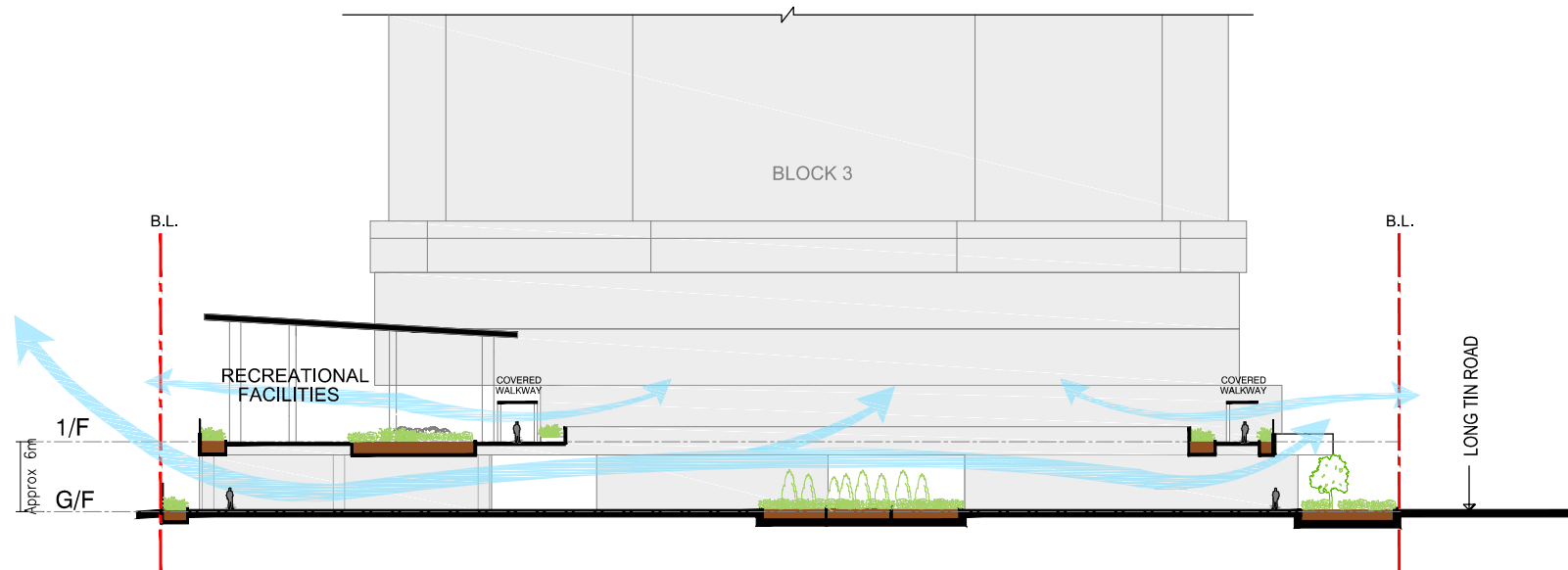
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06/2024

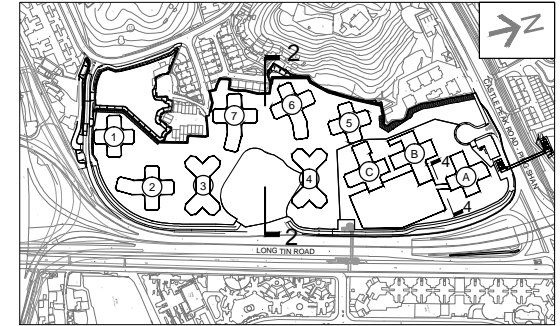


KEY PLAN

FOR INDICATIVE PURPOSE ONLY AND SUBJECT TO DESIGN REVIEW AND DETAILED DESIGN

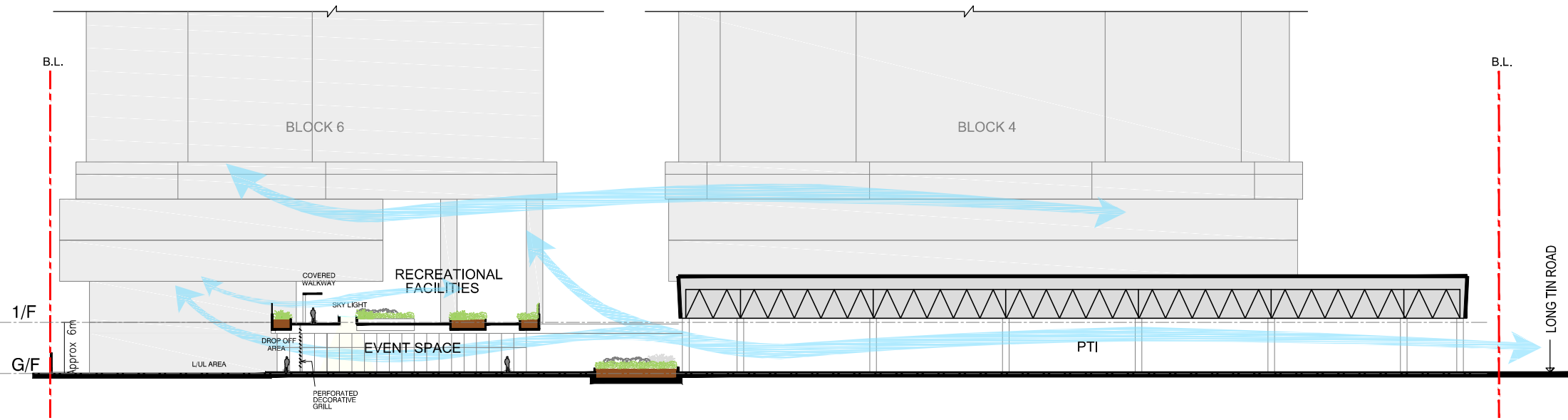


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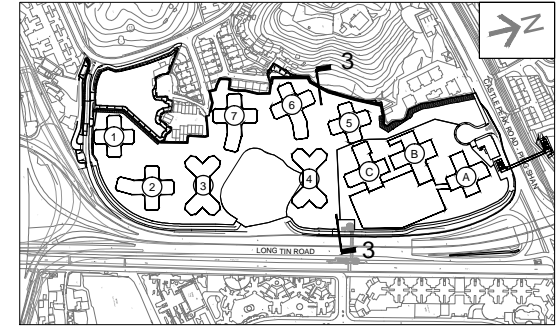


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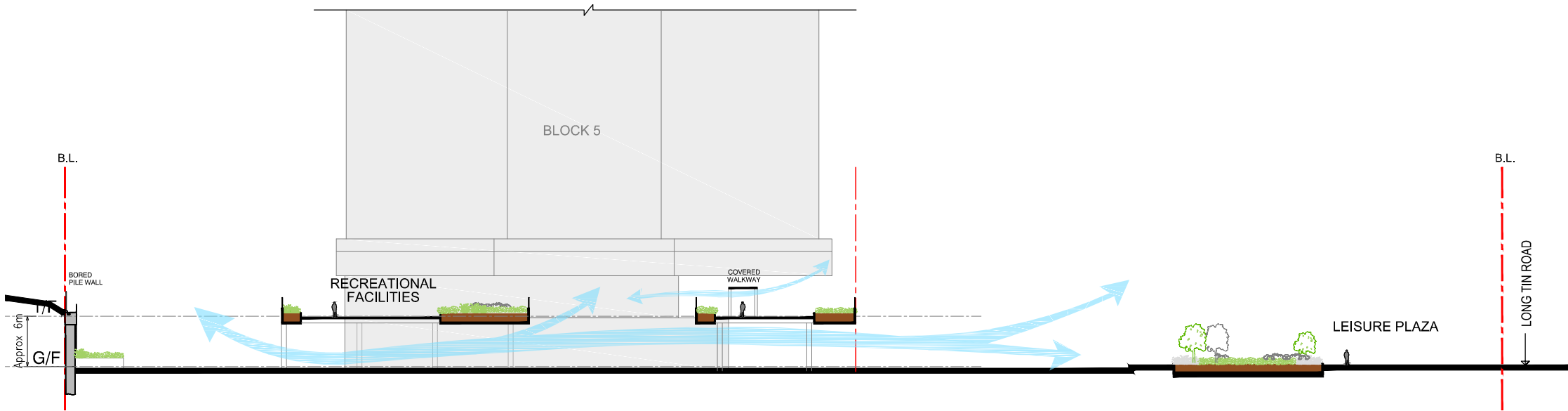


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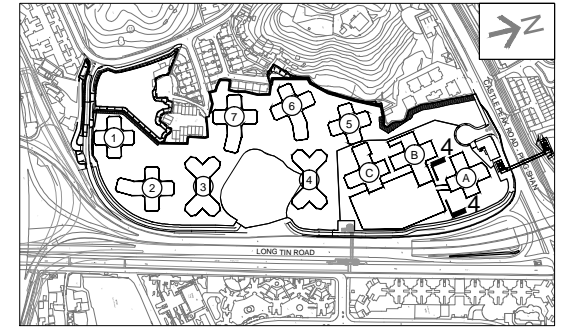


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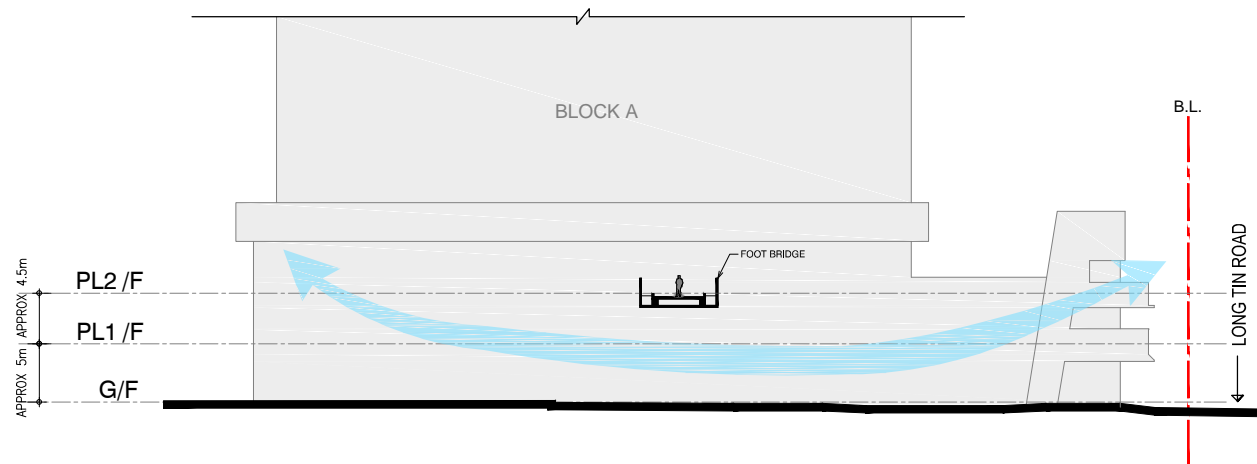


SECTION 3



KEY PLAN

FOR INDICATIVE PURPOSE ONLY AND SUBJECT TO DESIGN REVIEW AND DETAILED DESIGN



SECTION 4