

S16 Planning Application for Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction in “Government, Institution or Community (7)” Zone and Areas Shown as ‘Road’ at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

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1.	<p>Buildings Department, New Buildings Division 1, Kowloon Section, Kowloon, dated 24 June 2024</p> <p>According to paragraph 4.3.1.21 of the Supporting Planning Statement, building separation and building setback under PNAP APP-152 will not be pursued. In this regard, the applicant is reminded that application for relevant GFA concession under PNAP APP-151 will not be considered if the pre-requisites and the SBDG stipulated in PNAP APP-151 and PNAP APP-152 respectively are not complied with.</p> <p>Application for GFA concession for private car parking spaces might be considered subject to compliance with the relevant requirements stipulated in PNAP APP-2.</p> <p>Hospital wards are considered as habitable space and should be provided with natural lighting and ventilation and open space in accordance with the Building (Planning) Regulations.</p> <p>The claimed mean street level and building height should be justified at building plan submission stage.</p> <p>The proposed acoustic barriers and architectural features on 13/F to R/F (as shown in Section A-A of Appendix G of subject FI received on 31.5.2024) and the proposed acoustic fins and sunshading features along the facade facing Waterloo road (as shown in Annex 4 of Appendix F of subject FI received on 31.5.2024) should be included in site coverage (SC) and gross floor area (GFA) calculations in accordance with regulations 20 and 23(3)(a) of Building (Planning) Regulations (B(P)R). Application for GFA</p>	<p>Noted.</p> <p>Noted.</p> <p>Noted. All habitable space will be provided with natural lighting and ventilation and open space in accordance with the Building (Planning) Regulations.</p> <p>Noted.</p> <p>Noted.</p> <p>We understand that the GFA concession for the acoustic barrier and architectural features on 13/F to R/F, as well as the proposed acoustic fins and sunshading features along the facade facing Waterloo Road, are subject to the BD’s approval.</p> <p>We have recent precedent case of hospital project with acoustic barrier/architectural features exempted from GFA calculation. The total GFA involved of this project for the acoustic barrier/architectural features</p>

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	<p>concession for acoustic fins/ barriers and sunshades might be considered subject to compliance with the relevant requirements stipulated in JPN No. 1, JPN No.2 and PNAP APP-19.</p> <p>According to Annex 10.2 of Appendix F of the subject FI received on 31.5.2024, it appears that a temporary link bridge is proposed to be constructed over Kam Shing Road and the adjoining existing building (i.e. Telephone Exchange) on Lot No. NKIL 5183. The portion of such link bridge projecting over street might contravene section 31(1) of Buildings Ordinance (BO). Application for modification might be considered subject to compliance with the relevant criteria stipulated in PNAP APP-38 and favourable comments from relevant departments. The portion of such link bridge within private lots should be accountable for SC and GFA under B(P)R 20 and 23(3)(a).</p> <p>In respect of the portion of the link bridge within the adjoining private lot (i.e. NKIL 5183), the applicant should be reminded that submission of documentary proof of ownership or realistic prospect of control of the lot is required at building plan submission stage. It is not sure whether the applicant has obtained consent from the adjoining lot owner to erect such link bridge. You may wish to clarify with the</p>	<p>is about 1800m² (approximately 3% of the total GFA, with certain buffer allowed for future flexibility during detail design stage).</p> <p>In any case, the counting/non-counting of GFA for these features shall not have any impact on the building height and bulk.</p> <p>Noted.</p> <p>Please be advised that the final route of the temporary link bridge is subject to design development. Relevant application for modification will be applied for the portion of such link bridge projecting over the street as per APP-38.</p> <p>In terms of SC, the current design have not been maximized for podium portion (where the proposed link bridge is located) for both our lot and adjacent lot, and there are enough spare to accommodate the additional SC for the link bridge.</p> <p>In terms of GFA, please note that the provision of this link bridge is temporary in nature and will be demolished upon the operation of Block B&C. Separate justification for this temporary provision/GFA will be provided for BD’s consideration. (Please note that there are spare GFA in adjacent lot to accommodate the link-bridge, if required)</p> <p>Noted. The current alignment of proposed link-bridge is still subject to detail design coordination. Documentary proof of ownership and/or agreement with adjacent lot owner on the temporary use of associated space for the provision of this link bridge will be provided during submission stage if any portion of the link bridge needs to be projected into the private lot (Lot No. NKIL 5183) in the</p>

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	<p>applicant in this regard.</p> <p>Regarding the proposed canopies projecting over Kam Shing Road, the applicant's attention is drawn to the requirements under section 31(1) of BO and regulation 10 of B(P)R.</p>	<p>final design.</p> <p>Noted.</p>
<p>2.</p>	<p>Fire Services Department, dated 8 July 2024</p> <p><u>2) Requirements of location of the Vacuum Insulated Evaporator (VIE) Tank</u></p> <p>Based on the previous siting comment made by this Department on VIE tank which is less than 20,000L Liquid Oxygen Tank and located on G/F at same location, the following requirements for the location of VIE tank should be noted: -</p> <p>i) The DG store should in general comply with the recommendations in recognized standard/ code (e.g. IGC, BCGA Code of Practice 36(Rev. 2:2013));</p> <p>ii) The DG store should not jeopardized MoE and EVA;</p> <p>iii) Natural ventilation should be applicable to the VIE tank;</p> <p>iv) No DG store should be located on upper floor or underneath;</p> <p>v) It should be possible discharge to open air from the DG store;</p> <p>vi) No car parking shall be within 5 m radius of the installation; and</p> <p>vii) The DG store is 5 m away from the boundary line.</p>	<p>Noted. The DG store will comply with the relevant recommendations of the standard/code [BCGA Code of Practice 36 (Rev. 2:2013)].</p> <p>Noted. Please be clarified the proposed DG store will not jeopardize MoE and EVA.</p> <p>Noted. Natural ventilation will be applicable to the proposed VIE tank.</p> <p>Noted. There will be no DG store on the upper floor or underneath.</p> <p>Noted. Please be advised that the DG store will discharge to open air.</p> <p>Noted. Please be advised that no car parking will be within 5 m radius of the VIE tank.</p> <p>Noted. Please be advised that the DG store is 5m away from the site boundary.</p>

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	<p><u>Part B: Advisory Comments for the Applicant</u></p> <p>The applicant should be reminded to read the FSD Publication “A Guide to Application for Dangerous Goods License and Approval” before submitting a DG application to this Department.</p>	<p>Noted.</p>
<p>3.</p>	<p>Planning Department, District Planning Branch, Metro District Planning Division, Kowloon District Planning Office, dated 12 June 2024</p> <p>I refer to the subject Further Information (2) for the captioned planning application received by the Town Planning Board on 31.5.2024 and 6.6.2024.</p> <p>According to the Kowloon Tong Outline Development Plan, there is a 6m wide non-building area (NBA) for building setback along Waterloo Road to maintain the existing scale and disposition of developments; and to enhance the townscape of the Kowloon Tong area. As shown on the G/F plan of Appendix G and Annex 9 of Appendix F, it is observed that the proposed water meter room spanning across the NBA in the north has entirely blocked the northern part of the NBA, which is not considered as a minor structure with high air porosity or visual permeability; and will likely defeat the intended purpose of the designation of the NBA and adversely affect the townscape of Kowloon Tong area. Please advise the height of the proposed water meter room and avoid placing any structures including the proposed water meter room that will likely defeat the intended purpose of the designation of the NBA and adversely affect the townscape of Kowloon Tong area.</p>	<p>With consideration of the special circumstances of our case, the current proposed water meter room will not block air or visual permeability since it will be built against a retaining wall of HKBU.</p> <p>Notwithstanding the above, after further review with E&M consultant, a water meter cabinet (4000mm (L) x 800mm (D) x 2000mm (H)) can be incorporated into the currently proposed fence wall (with green roof) at the NBA in lieu of the previously proposed water meter room.</p> <p>Upon completion of Phase 1 (Block A), due to the common site boundaries with the adjacent HKT’s telephone exchange building (south) and the adjacent HKBU building (north), as well as Blocks B & C to the east being under redevelopment, [i.e. all three sides (north, east, south) are not accessible], the water meter cabinet can only be accessed from the west side (i.e. Waterloo Road).</p> <p>In addition, referring to p. 3 of the revised Annex 9 of Supplementary Information of</p>

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		<p>the Revised Scheme (Appendix A), in Phase 1, the current layout at G/F was already occupied by the followings:</p> <ul style="list-style-type: none"> a. Car ramp (up and down) access for basement floors b. the frontage along the Waterloo Road occupied by – <ul style="list-style-type: none"> i. 6 MOE stairs (4 staircases for basement and 2 staircases for upper floors). ii. 1 vehicle ingress/ egress, iii. 1 pedestrian entrance for direct access to hospital’s lift lobby iv. Smoke vent for 3 levels of basement and other essential E&M space, (including VIE tank and its limitation on opening on other adjacent accommodation within 5-7m) v. Essential DG stores for Phase 1. vi. Mortuary and space for hearse to enter the mortuary. vii. FSAP (fire service access point) c. Loading bay for large vehicles including 2 nos. of HGV/MGV (11m. x 3.5m) and 1 nos. for ambulance parking d. Security control room. e. F.S. Control Room. f. Dirty linen collection room. <p>Moreover, the cabinet needs to be accessible by WSD staff at all times directly from site boundary. Therefore, the currently proposed location at fence wall</p>

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		<p>(without increasing the massing of the fence wall) is the best location in fulfilling all technical requirements and PlanD’s concern.</p> <p>Please refer attached revised Annex 9 of Supplementary Information of the Revised Scheme (Appendix A) for setting out and dimension for the fence wall.</p> <p>Due to the omission of the water meter room, the greenery area originally allocated to its green roof has been transferred and incorporated into the greenery on the upper roof to maintain the previously proposed total greenery area. The relevant updates have been reflected in the revised Architectural Layout Plans (Appendix B).</p>
4.	<p>Planning Department, District Planning Branch, Special Duties Division, Urban Design & Landscape Section, Urban Design Unit, dated 27 June 2024</p> <p>1. R-to-C Table – The applicant should ensure the numbering of the R-to-C items is in numerical order to facilitate vetting.</p> <p><u>Design Merits</u></p> <p>2. Please annotate the proposed planters and vertical greenings on the G/F plan (Appendix G refers) to tally with Annex 4 of Appendix F “Covered Walkaway along Kam Shing Road”. The applicant is reminded to ensure the consistency of all the proposed design measures across the submission.</p> <p>3. Please indicate the proposed two additional green walls (R-to-C Item ix, p.46) on layout/ section plans under Appendix G and figures for design merits under Annex 4 of Appendix F</p>	<p>Noted.</p> <p>Please refer to revised G/F Plan (SK04) with additional annotation in Appendix B which is consistent with the revised renderings in Annex 4 of Appendix A.</p> <p>For easy reference, the proposed planters and vertical greenings on G/F were also shown on the detailed blow up drawings (SK12 & SK13) in Appendix B.</p> <p>Please refer to updated Architectural Layout Plan in Appendix B for details and the layout of the landscape treatment.</p>

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	<p>where appropriate. Please also supplement more details on the locations and landscape treatments of these green walls.</p> <p><u>Appendix F</u></p> <p>4. Annex 6 – It is noted that the set of layout/ section plans under this annex do not tally with that under Appendix G. Please review and ensure the consistency of all the plans across the submission.</p> <p>5. Annex 8 and 9 (R-to-C Item 5, p.32) – The applicant may wish to supplement key plans showing the viewing angles of the artist rendering for easy reference.</p> <p><u>Appendix G</u></p> <p>6. 14/F Plan, UR/F Plan and Section A-A (R-to-C Item 17b, p. 34) – The indications for “Outdoor Plant Area” in the layout and section plans are inconsistent:</p> <p>a. 14/F Plan – Please review if “Outdoor Plant Area” should be indicated on this plan to tally with the section plan.</p> <p>b. Section A-A – Please review if “Outdoor Plant Area” should be indicated on this plan to tally with UR/F Plan.</p> <p><u>Appendix H – PS</u></p> <p>7. Para. 4.3.1.20 – Please revise this para. as “...the redeveloped Blocks A, B and C will be suitably set back from north, south and east side of the site boundary at <u>3/F</u>, while there is a 6m non-building area...” to tally with Annex 4 of</p>	<p>Noted. Please refer to revised Architectural Layout Plan (Appendix B).</p> <p>Noted. Please refer to updated Annex 8 and 9 of the Supplementary Information of the Revised Scheme with key plans in Appendix A.</p> <p>Noted. Please refer to the updated Architectural Plan with consistent annotation for the outdoor plant area.</p> <p>Noted.</p> <p>Noted.</p> <p>Noted. Please refer to the revised Para. 4.3.1.20 of the revised Supporting Planning Statement (Appendix C).</p>

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	<p>Appendix F.</p> <p><u>Appendix I – VIA</u></p> <p>8. Please check whether the BHs quoted for the existing and planned/ committed developments in the photomontages are correct and updated. All planned/ committed developments with status in the surroundings (i.e. approved building plans or schemes approved by the Town Planning Board) should be properly reflected/ simulated in the report and relevant photomontages as appropriate, including the following:</p> <p>a. Figures 5 and 6 – Please review if the BH for the proposed development under planning application No. A/K18/345 should be 94.35mPD.</p> <p>b. Figure 5 –</p> <ul style="list-style-type: none"> ● Please review if the BH for the Palace should be 37 storeys/ 180.75mPD. ● Please review if the BHs for the Kowloon East Barracks should be 25.5 to 50mPD. <p>c. Figure 7 – Please review if the BH for Hong Kong Baptist University Shiu Pong Hall should be 79.5mPD.</p> <p>9. Photomontages – Please indicate the range of BHs (in mPD) of the proposed development on all the photomontages for easy reference.</p> <p>10. Para. 2.2.1</p> <p>a. 1st bullet – Please supplement the BH of 180.75mPD for The Palace.</p>	<p>Noted. The existing and planned/ committed developments in the report and relevant photomontages (Appendix D refers) have been checked and updated as appropriate.</p> <p>Noted. Please refer to revised Figures 5, 6 and 8 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Figure 5 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Figure 7 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Figures 3 to 11 of the revised VIA (Appendix D) with the range of BHs (in mPD) of the proposed development indicated.</p> <p>Noted. Please refer to revised Para. 2.2.1 of the revised VIA (Appendix D).</p>

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	<p>b. 3rd bullet –</p> <ul style="list-style-type: none"> ● Please supplement the BH of 74.6mPD and 74.8mPD respectively for the Hong Kong Baptist Hospital Blocks D and E in this para. and tally with Figure 3. ● Please supplement the BHs of 25.5 to 50mPD for the Kowloon East Barracks. <p>11. Para. 4.1.1, Figure 2, Section A-A (R-to-C Item 22, p. 35) – Please review if the mean street level should be 33mPD instead of 37.6mPD to align with Section A-A and revise the size of the assessment area if necessary.</p> <p><i>VPI</i></p> <p>12. Para. 5.1.3 – Please review if the Kowloon International Baptist Church will be redeveloped into 8 storeys to tally with Figure 3.2 of the PS.</p> <p>13. Paras. 5.1.3 to 5.1.5 (R-to-C Items 24 and 25b, p. 35 to 36) – It is noted from the photomontages that the viewing angle at this VP has been adjusted. Please update the following paras. accordingly:</p> <p>a. Para. 5.1.3 “...the Proposed Scheme are anticipated to be partially obstructed by the said redevelopment.”.</p>	<p>Noted. Please refer to revised Para. 2.2.1 of the revised VIA (Appendix D).</p> <p>Noted. We would like to clarify that the mean street level is 33mPD, subject to BD approval on the justification during the building plan submission stage. Please refer to the revised Para. 4.1.1 and Figure 2 of the revised VIA (Appendix D) on the revised mean street level and the revised size of assessment area.</p> <p>Noted. Please refer to revised Para. 5.1.3 of the revised VIA (Appendix D).</p> <p>Noted. Nonetheless, please note that the Proposed Scheme is already partially screened off by the redevelopment of the Kowloon International Baptist Church and Hong Kong Baptist Hospital Block D and E. The Proposed Scheme blends in well with the surrounding mid-rise context and only a small portion of the sky view will be obstructed. With the transient nature of the VP, the minor change in the Proposed Scheme would be hardly noticeable from the public viewer’s perspective.</p> <p>Noted. Please refer to revised Para. 5.1.3 of the revised VIA (Appendix D).</p>

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	<p>b. Para. 5.1.4 – “...mainly comprises of the proposed redevelopment of Kowloon International Baptist Church and the Junction Road and the Kowloon East Barrieks blocked by trees in the foreground,...The proposed Scheme at the Application Site would obstruct a small portion of the sky view in the background but most of the building mass will already be partially screened off by the proposed redevelopment...As such, the effect on visual composition of the Proposed Scheme is therefore <u>negligible to slight</u>”.</p> <p>c. Para. 5.1.5 – “As the Proposed Scheme is partially screened off by the proposed Kowloon International Baptist Church with a small portion of the sky view...there will be <u>negligible to slight</u> impacts on the visual composition, visual obstruction and permeability...”.</p> <p>14. Para 5.1.6 (R-to-C Item 26, p.36) – Our previous comments have not been properly addressed. Given the slight obstruction of sky view, please revise the overall visual impact rating for this VP as “<u>negligible to slightly adverse</u>”.</p> <p><i>VP2</i></p> <p>15. Para. 5.1.8 – Please revise this para. as “...The effects on visual composition are therefore negligible to <u>slight adverse</u>”.</p> <p>16. Para. 5.1.9 – Please revise this para. as “<u>As the upper portion</u> of the Proposed Scheme could not be screened-off by</p>	<p>Noted. Please refer to revised Para. 5.1.4 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.5 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.6 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.8 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.9 of the revised VIA (Appendix D).</p>

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	<p>the lush vegetation of the Playground and the Proposed Scheme will create a <u>small</u> visual blockage...The effects on visual obstruction and visual permeability are therefore negligible to <u>slight-adverse</u>.”.</p> <p>17. Para. 5.1.10 – Please revise this para. as “Although the Proposed Scheme has a <u>small</u> visual blockage to the sky...The effects on Public viewers will therefore be negligible to <u>slight-adverse</u>.”.</p> <p>18. Para. 5.1.11 – Please revise this para. as “Due the <u>slight</u> change between the OZP Compliant Scheme and Proposed Scheme, <u>the quality and character of the key visual resources remain largely the same except a small</u> obstruction to the sky view. Therefore, impacts to Visual Elements/ Resources will therefore be negligible to <u>slight adverse</u>.”.</p> <p><i>VP3</i></p> <p>19. Para. 5.1.14 –</p> <p>a. Judging from the photomontages, it appears that the intended smooth gradation of BH profile descending from the foothill of Lion Rock towards the inner Kowloon Tong may be weakened by the proposed development. Please supplement such changes on the visual composition in this para..</p> <p>b. Subsequently, please revise this para. as “...Therefore, impact of</p>	<p>Noted. Please refer to revised Para. 5.1.10 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.11 of the revised VIA (Appendix D).</p> <p>Noted. Para. 5.1.14 of the revised VIA (Appendix D) has been revised to supplement as appropriate.</p> <p>Please note that photomontages of the VPs have now incorporated the proposed top levels of the building height to demonstrate the possible visual impacts arising from the outdoor equipment/plants. The building massing of the Proposed Scheme has adopted stepped height profile echoing and without obstructing the ridgeline of Lion Rock and thus could maintain a visually compatible building mass in the wider area.</p> <p>Noted. Please refer to revised Para. 5.1.14 of the revised VIA (Appendix D).</p>

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	<p>the Proposed Scheme on visual composition is considered <u>slight to moderate</u>.”.</p> <p>20. Para. 5.1.15 – Please revise this para. as “<u>As</u> the Proposed Development borders the ridgeline <u>and obstruct a considerable portion of the mountain view backdrop, the visual permeability and the depth of view will be reduced.</u> the Proposed Scheme has only a slight increase in BH when compared to the OZP Compliant Scheme, and that the BH of the Proposed Phase 1A of the HKBU Sin Hang Campus Redevelopment is taller than the Proposed Scheme. Nevertheless, the mountain view backdrop has already been <u>partially</u> blocked by the Proposed Phase 1A...The effects on visual obstruction and visual permeability are therefore <u>slight to moderate</u>.”.</p> <p>21. Judging from the photomontages, it seems like the statements “building mass and height is unnoticeable” and “remain unchanged” could not be justified. Please revise the following paras. accordingly.</p> <p>a. Para. 5.1.16 – Please revise this para. as “<u>Although public viewers</u> from this VP is transient in nature when getting across the usually heavily trafficked Waterloo Road via this Footbridge, <u>they are</u></p>	<p>Noted. Please refer to revised Para. 5.1.15 of the revised VIA (Appendix D).</p> <p>Noted.</p> <p>Please note that the Proposed Scheme has adopted a stepped height profile echoing and without obstructing the Lion Rock. In addition, vertical greening will be provided on the elevation as a design mitigation measure to soften the visual build of the proposed development. Given the transient nature of this VP, when comparing the Proposed Scheme and OZP Compliant Scheme, the effects on public viewers and visual elements/ resources brought by the slight change in the building height would be slight.</p> <p>Noted. Please refer to revised Para. 5.1.16 of the revised VIA (Appendix D).</p>

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	<p><u>expected to experience a slight to moderate visual changes given the proposed development will block a considerable portion of the mountain view backdrop and border the ridgeline. Comparing with the OZP Compliant Scheme, the changes to public viewers in terms of building mass and height is unnoticeable along the side of Waterloo Road.</u> Thus, the effects on Public Viewers will be <u>slight to moderate.</u>”.</p> <p>b. Para. 5.1.17 – Please revise this para. as “The quality and character of the visual resources <u>would be inevitably altered due to the similar building mass of the Proposed Scheme and the OZP Compliant Scheme.</u> While as the Proposed Scheme will border the ridgeline. Nevertheless, <u>no further</u> the sky view is <u>largely maintained</u> with the Proposed Scheme...Impacts to Visual Elements/ Resources will therefore be <u>slight to moderate.</u>”.</p> <p>22. Paras. 5.1.14 to 5.1.18 (R-to-C Item 29, p.37) – Given the proposed development will block a considerable portion of the mountain view backdrop and border the ridgeline of Lion Rock at the view corridor along Waterloo Road, please revise the overall visual impact rating for this VP should read as “<u>slightly to moderately adverse</u>”.</p> <p><i>VP3A</i></p> <p>23. Para. 5.1.20 – Given a small portion of the upper floors could be visible from this VP, please revise this para. as “...Moreover, <u>the changes in BH and massing under the Proposed Scheme</u></p>	<p>Noted. Please refer to revised Para. 5.1.17 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.18 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.20 of the revised VIA (Appendix D).</p>

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	<p>cannot be observed with key visual resources such as the ridgeline and sky view at the background would be unaffected, thus...”.</p> <p>24. Para. 5.1.21 – Please revise this para. as “...as the mountain view backdrop has already been partially blocked by the Proposed Phase 1A...<u>Despite the slight reduction in the depth of view,</u> the effects on visual obstruction and visual permeability...”.</p> <p>25. Figure 6 –</p> <p>a. Our previous comments have not been properly addressed (R-to-C p.42). Based on our internal checking, the height of the proposed development seems to be underestimated, where it should be of similar height as the “Residential development in construction from this VP. Please rectify.</p> <p>b. In addition, it appears that the upper portion of Block A could be visible from this VP. The building mass of such portion should be annotated on this figure instead of being outlined in red dotted line with transparent shading. Please rectify.</p> <p><i>VP4</i></p> <p>26. Judging from the photomontages, it seems like the statements on the increase in BH “cannot be observed”, “hardly noticeable” and “remain unnoticeable” could not be justified. Please revise the following paras. accordingly.</p>	<p>Noted. Please refer to revised Para. 5.1.21 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Figure 6 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Figure 6 of the revised VIA (Appendix D).</p> <p>Noted.</p> <p>Nonetheless, a majority part of the Proposed Scheme is screened-off by the vegetation hill slope and therefore only a small portion of the upper floors are visible. The public viewers can still enjoy a large portion of open sky view with small obstruction and no ridgeline is blocked.</p>

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	<p>a. Para. 5.1.26 and Figure 7 – Please revise this para. as “...<u>The resultant</u> changes in BH and massing under the Proposed Scheme cannot be observed and will further obstruct a <u>small</u> portion of the sky view thus the visual composition will remain negligible to <u>slight adverse</u> with the Proposed Scheme.”.</p> <p>b. Para. 5.1.27 – Please revise this para. as “...The Proposed Scheme will create slight additional visual obstruction comparing to the OZP Compliant Scheme. A very small portion of sky view will be obstructed...The effects on visual obstruction and visual permeability are therefore negligible to <u>slight adverse</u>.”.</p> <p>c. Para. 5.1.28 – Please revise this para. as “...Comparing with the OZP Compliant Scheme, the changes to public viewers in terms of building mass and height are hardly noticeable and they can still enjoy <u>a large portion of</u> open sky view with <u>small</u> obstruction. Thus, the effects on Public Viewers will be negligible to <u>slight adverse</u>.”.</p> <p>d. Para.5.1.29 – Please revise this para. as “The quality and character of the visual resources <u>remain largely the same with small obstruction of sky view. No</u> ridgeline is blocked...In a result, impacts to Visual Elements/ Resources will therefore be negligible to <u>slight adverse</u>.”.</p> <p>VP5</p>	<p>Noted. Please refer to revised Para. 5.1.26 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.27 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.28 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.29 of the revised VIA (Appendix D).</p>

Responses to Comments

No.	Comments	Responses
	<p>27. Para. 5.1.32 – Please revise this para. as “...the minor changes in BH will be considered remain negligible to <u>slight adverse</u> on visual composition...”.</p> <p>28. Para. 5.1.33 – Please revise this para. as“...The Proposed Scheme will create <u>slight</u> additional blockage of the sky comparing the OZP Compliant Scheme. However, the additional blockage does not construct visual obstruct and permeability <u>and depth of view</u> for passengers facing south of the Waterloo Road <u>would remain largely the same</u>. So, the effects on visual obstruction and visual permeability are therefore negligible to <u>slight adverse</u>.”.</p> <p>29. Para. 5.1.34 – Given the visual obstruction on the sky view at this VP, please revise this para. as “...to a small extent noticeable <u>with slight visual obstruction on the sky view</u>. Thus, the effects on Public Viewers will be <u>negligible to slight</u>.”.</p> <p>30. Paras. 5.1.31 to 5.1.35 – The discussion on the aspect “Effect on Visual Elements/ Resources” is missing. Please supplement.</p> <p><i>Conclusion</i></p> <p>31. Table 5.1 and Section 6 – Please revise the table and conclusion based on our comments on the rating of visual impact above.</p> <p>32. Section 6 – Please supplement the range of visual impact rating of <u>“Negligible” to “Slightly to Moderately Adverse”</u> in this section.</p>	<p>Noted. Please refer to revised Para. 5.1.32 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.33 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Para. 5.1.34 of the revised VIA (Appendix D).</p> <p>Noted. Para. 5.1.35 on “Effect on Visual Elements/ Resources” is added to the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Table 5.1 and Section 6 of the revised VIA (Appendix D).</p> <p>Noted. Please refer to revised Section 6 of the revised VIA (Appendix D).</p>
5.	Transport Department, Urban Regional Office, Transport Operations (Urban)	

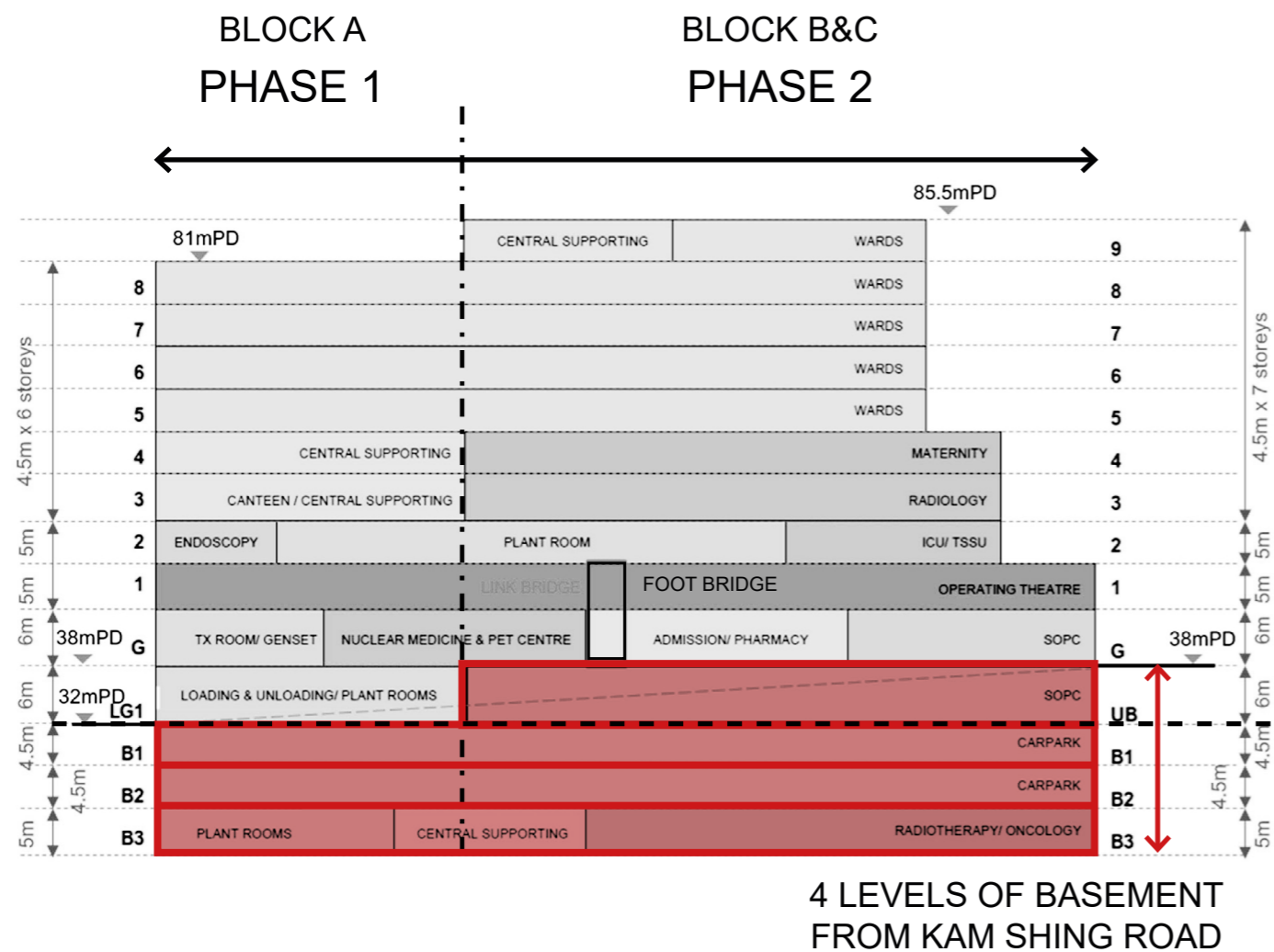
Responses to Comments

No.	Comments	Responses
	<p>Division, Kowloon Section, dated 20 June 2024</p> <p>Regarding the R-to-C item no. 2 on the proposed nil provision of layby for public light bus under the subject redevelopment:-</p> <ul style="list-style-type: none"> • Noted from the submission that the applicant is suggesting to increase the service frequency of existing GMB routes to accommodate the increased number of visitors to HKBH. For GMB 29A, currently the operator has been increasing service frequency to 3-4 minutes to cater passenger demand during peak hours. If the no. of visitors to HKBH is anticipated to increase and GMB service frequency is suggested to be increased under the application, provision of layby or dedicated boarding / alighting facilities for GMB would reduce the impact on road traffic of Junction Road by boarding / alighting activities of GMBs. • In view of the above, we consider that lay-by(s) for public light bus shall be provided according to HKPSG within the subject redevelopment. 	<p>Noted.</p> <p>In view of the site constraint on G/F and 1/F of the proposed redevelopment, it is proposed to provide 1 lay-by for public light bus at 1/F near the proposed run-out at Kam Shing Road, as shown in Figure 3.1 of the revised TIA report (Appendix E).</p> <p>As the additional passenger demand for GMB service is expected to be limited, the provision of 1 lay-by for public light bus is believed to be acceptable from traffic viewpoint.</p>

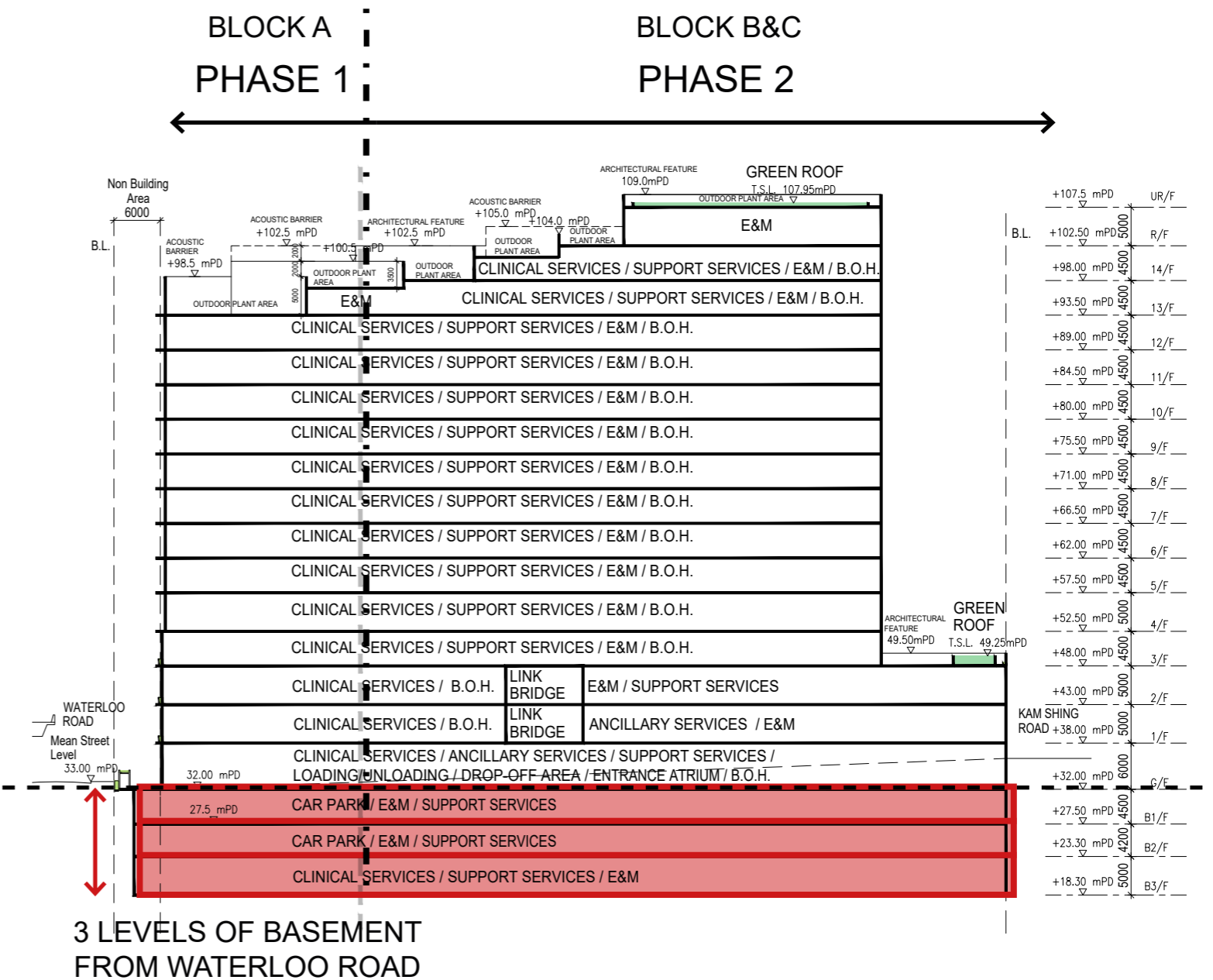
(Last Updated 11 July 2024)

Appendix A Revised Annexes of the Supplementary Information of the Revised Scheme

Annex 1. Levels of Basement



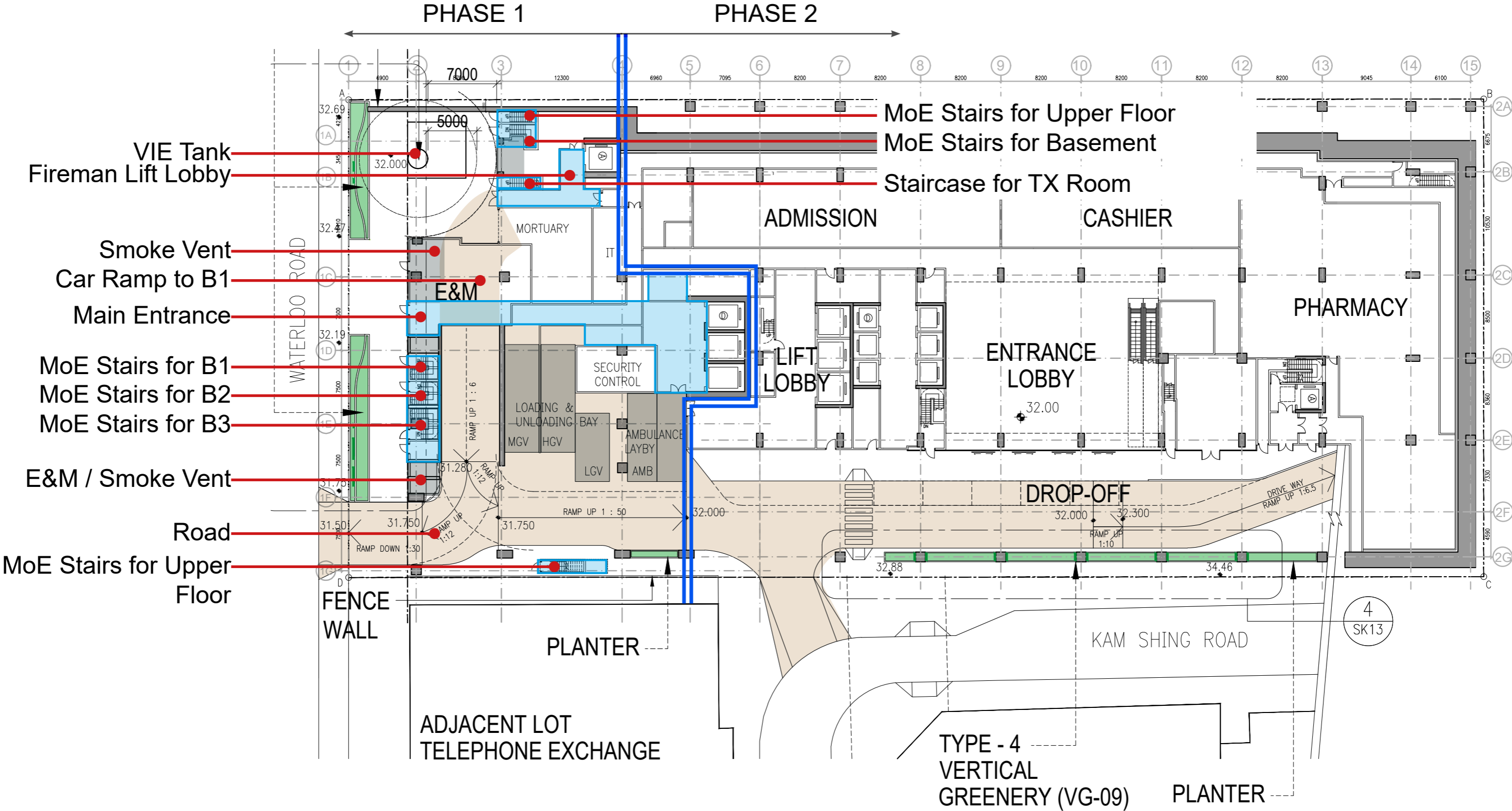
3 Levels of Basement
OZP Compliant Scheme



3 Levels of Basement
S16 Proposed Scheme

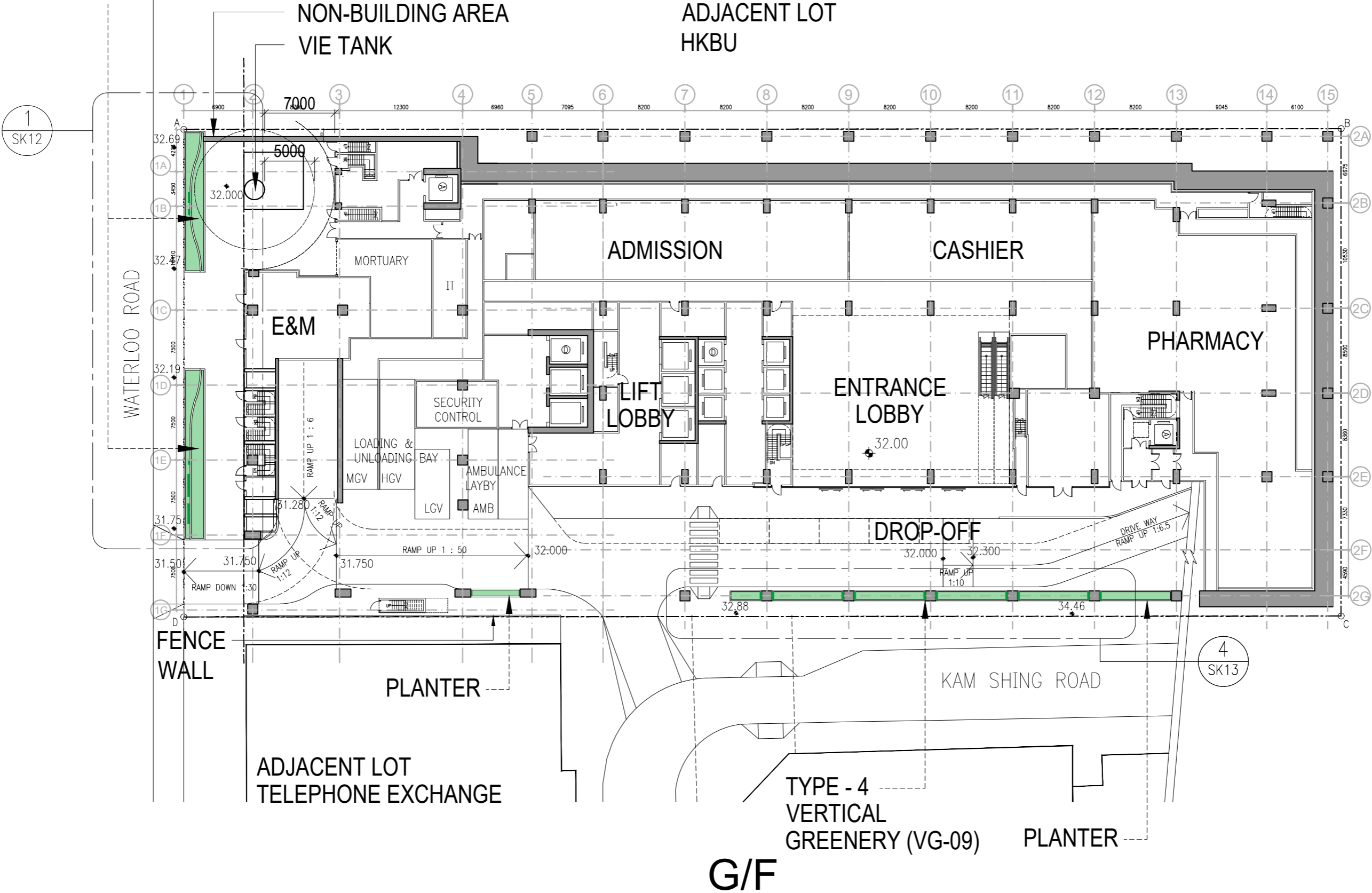
Annex 1. Levels of Basement

Insufficient Frontage for MoE Stairs and Smoke Vent for Additional Basement Level



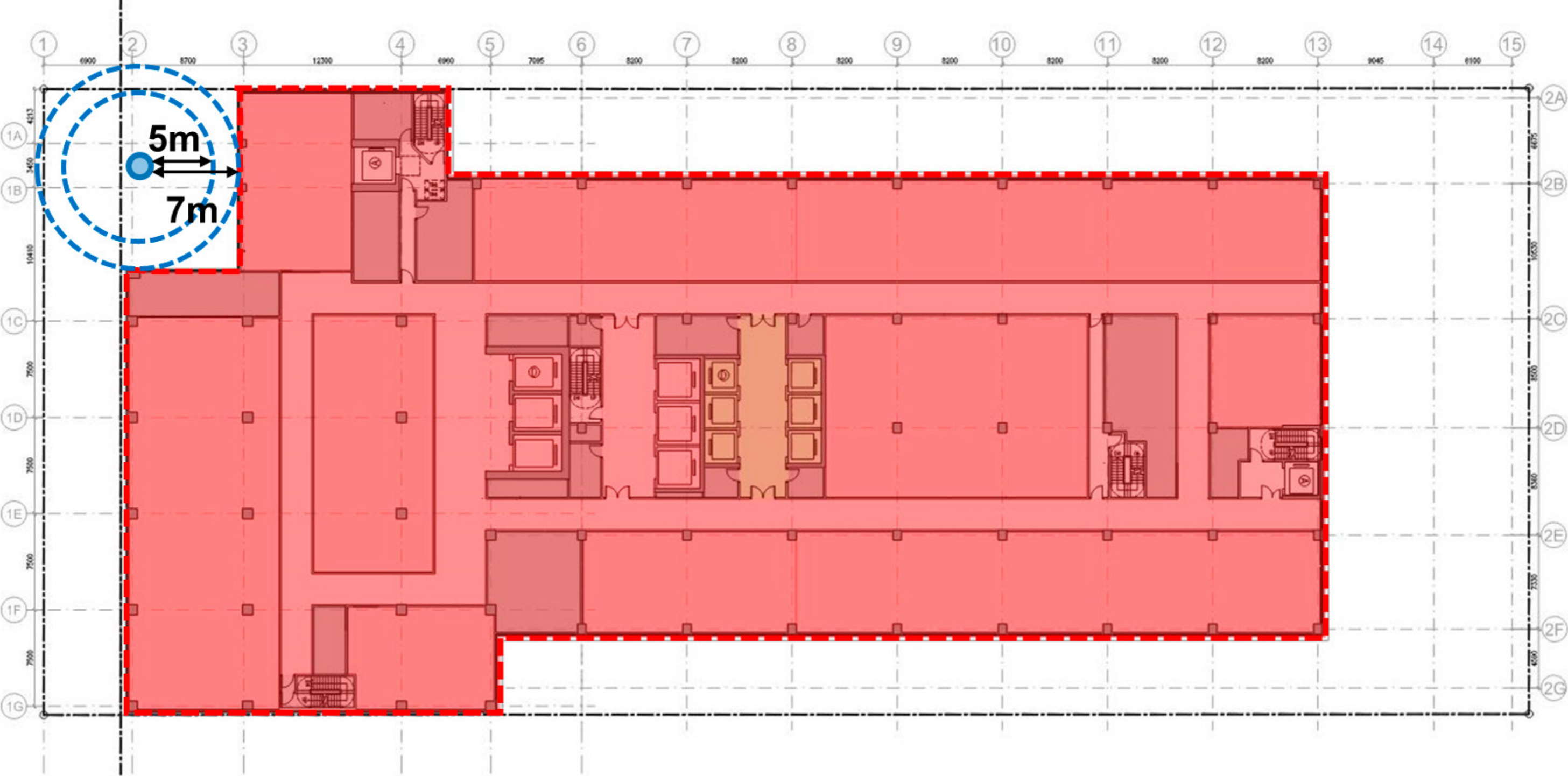
Annex 3. VIE Tank Location

FENCE WALL
 WITH F.S. INLET/ SPRINKLER CONTROL VALVE
 / AUTOMATIC METER READING CABINET
 / WATER METER CABINET
 WITH GREEN ROOF



Annex 3. VIE Tank Location

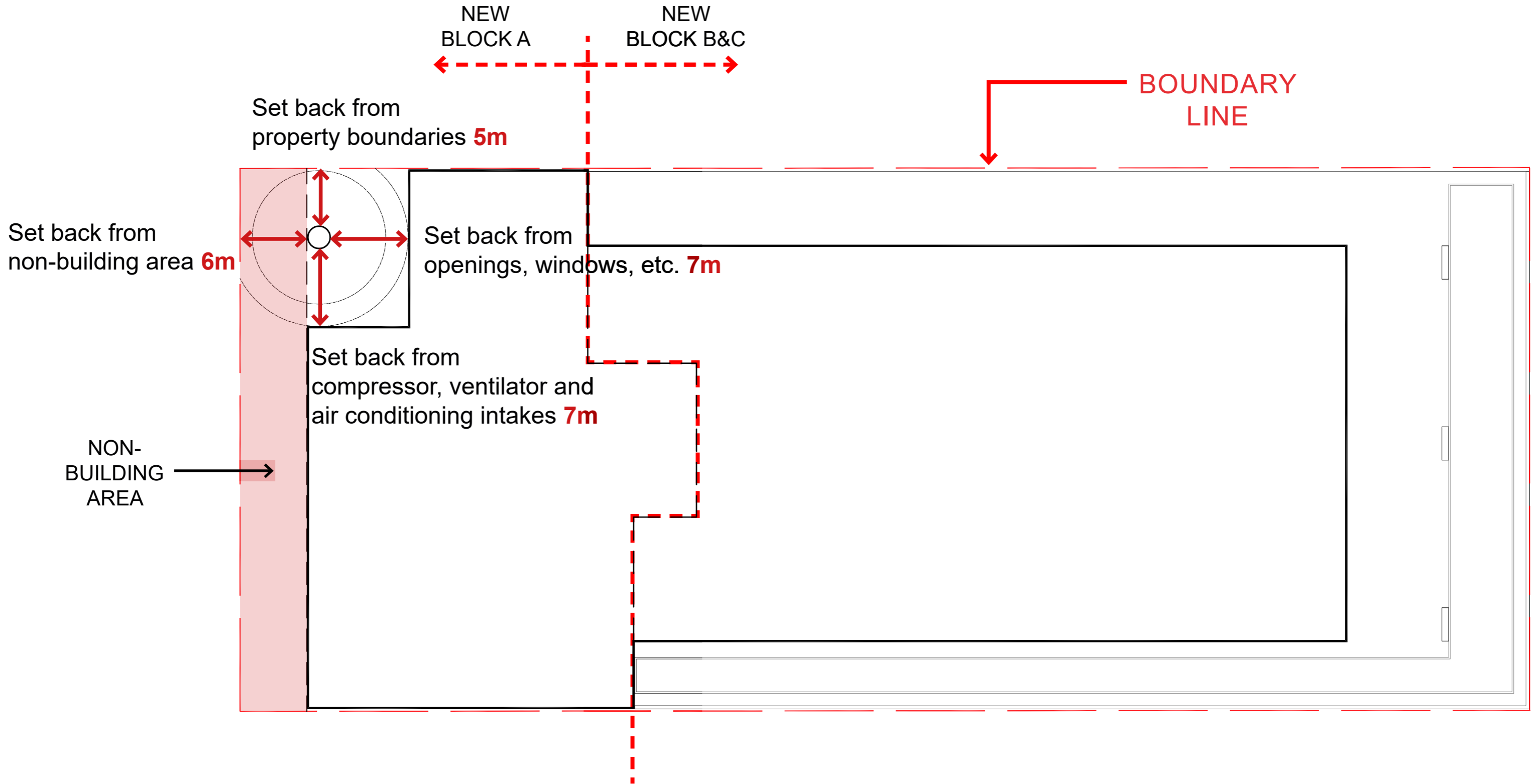
Clearance Requirement for VIE Tank



Site Coverage of Typical Floor Plate Already Maximized at 62.5%

Annex 3. VIE Tank Location

Clearance Requirement for VIE Tank



A new VIE tank will have to be placed at the new Block A area (phase 1) to ensure uninterrupted oxygen supply to the whole HKBH complex (including Phase 1 & 2) during the redevelopment process.

Annex 3. VIE Tank Location

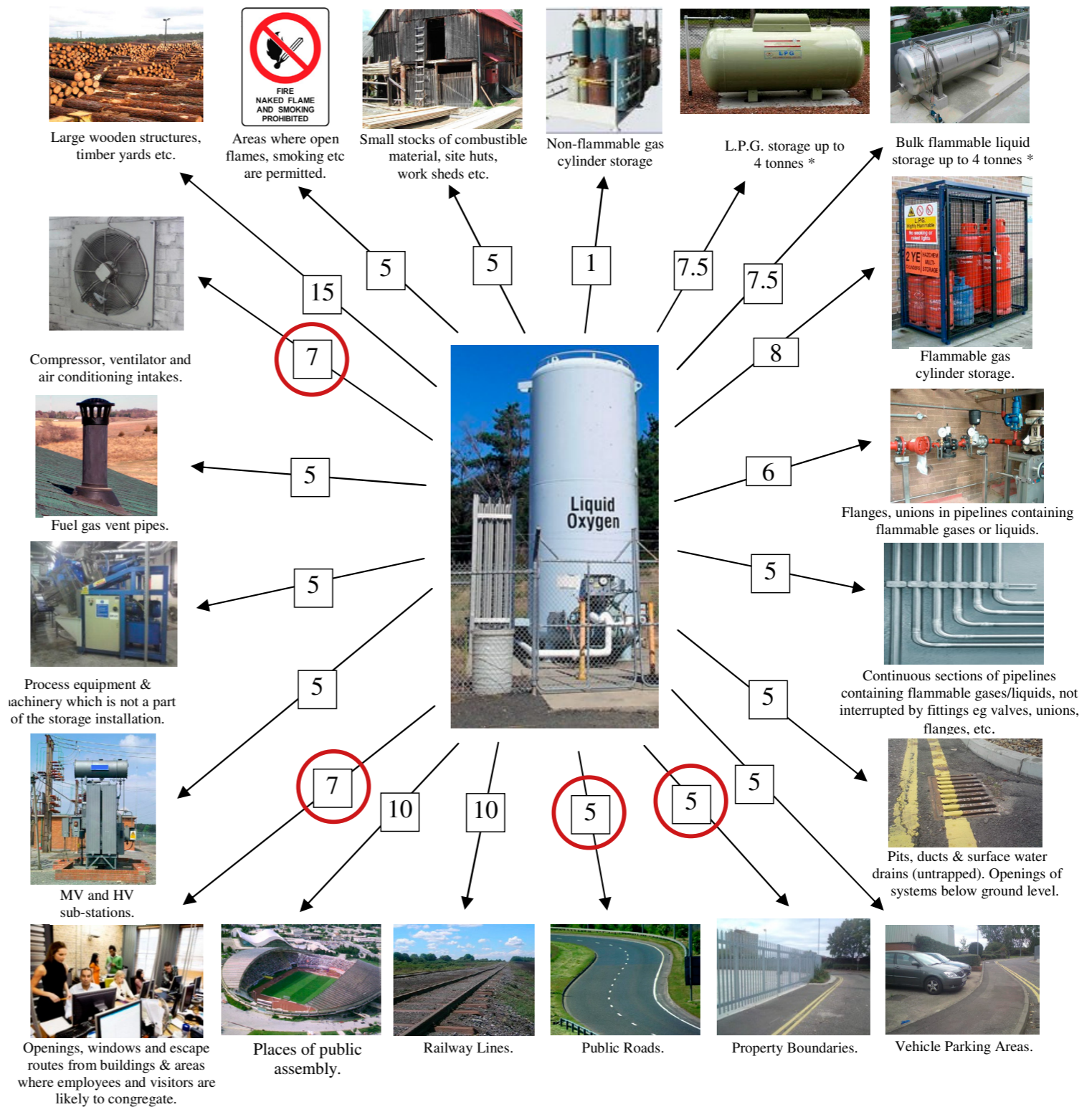
Clearance Requirement for VIE Tank

VIE tank to 'Openings, windows and escape routes from buildings...' as extracted from **BCGA CP36** which form the basis of approval from **FSD DG unit on siting of VIE tank**.

This siting already makes use of 6m NBA along Waterloo Road so as to minimize the clearance area/ maximize site coverage of project site.

Distance between oxygen tanks from 2,000 litres to 20,000 litres water capacity and typical hazards.

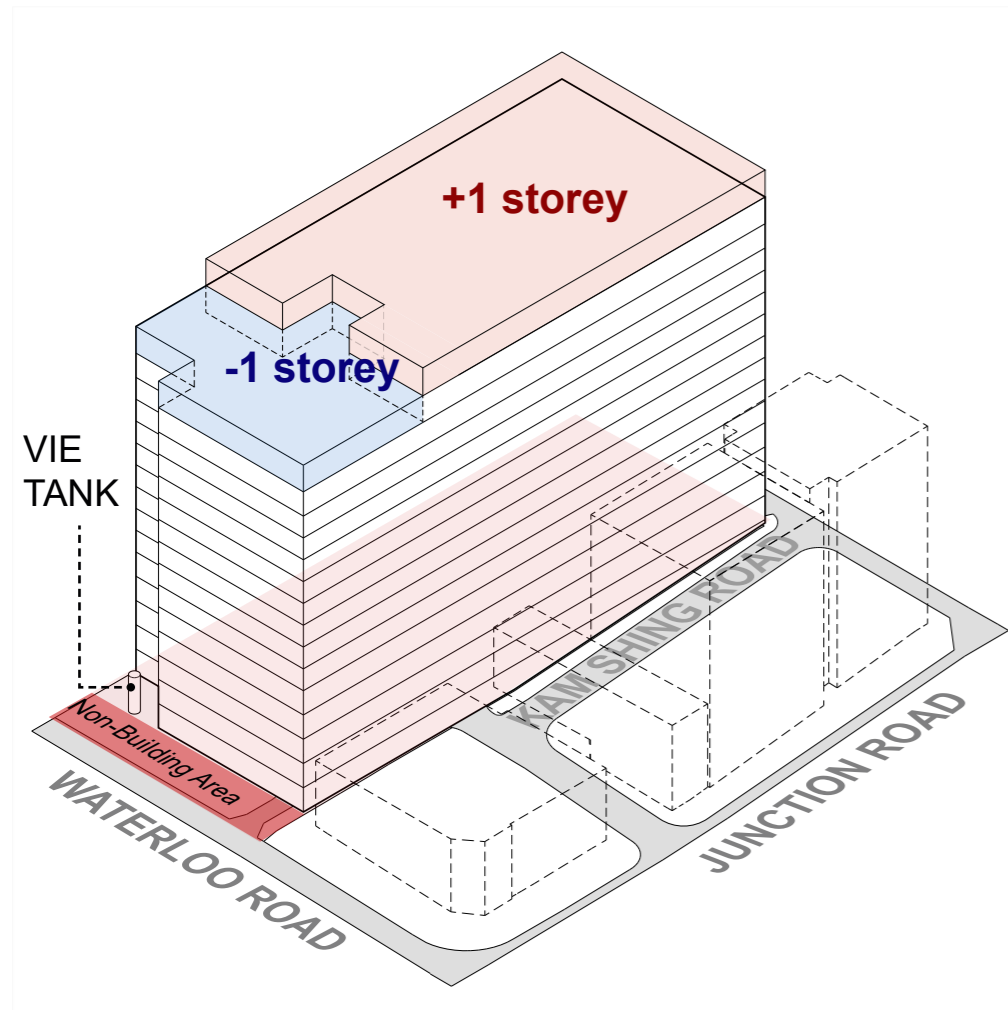
Distances in metres



NOTE: Assumed maximum oxygen liquid phase pipework diameter DN 40 (1½" nominal bore) and flammable gas / liquid pipe up to DN25 (1" nominal bore).

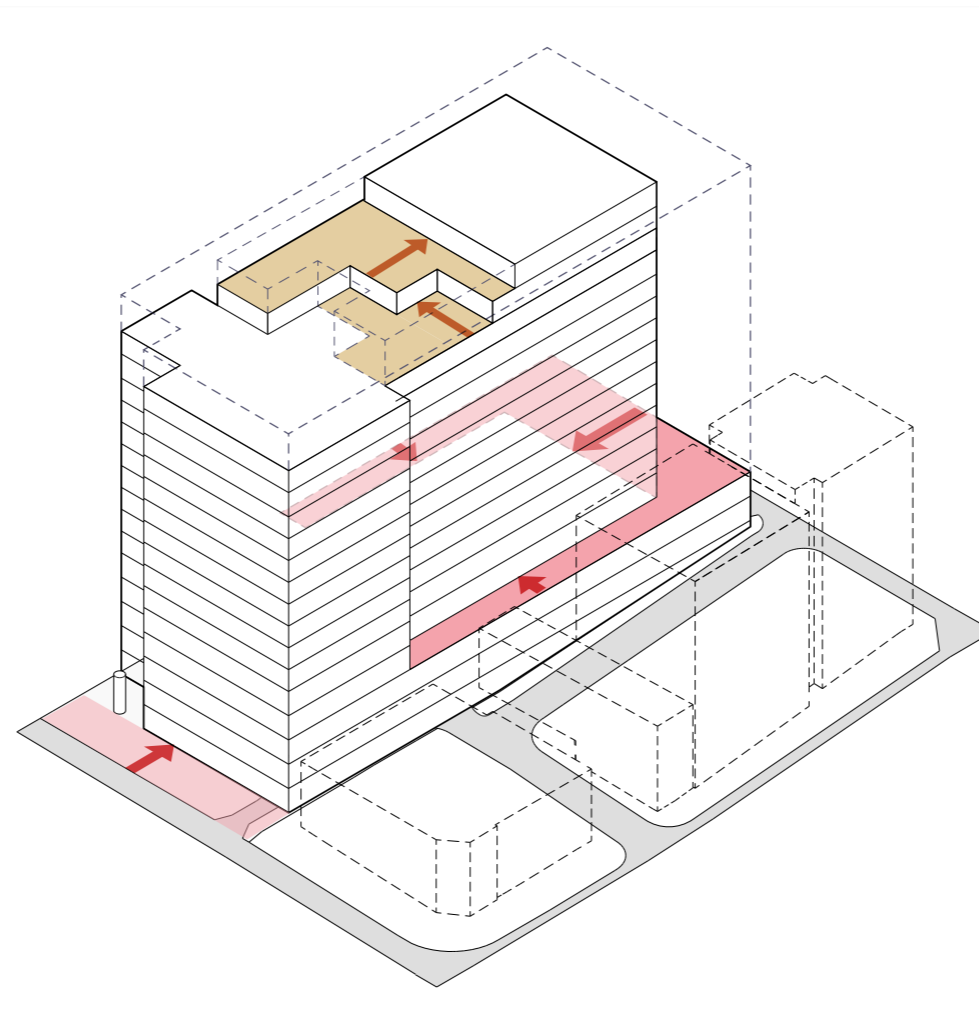
* For LPG or flammable liquid tanks above 4 tonnes a risk assessment shall be carried out to establish the safe separation distance.

Annex 4. Design Merits / Mitigation Measures for Softening Visual Bulk



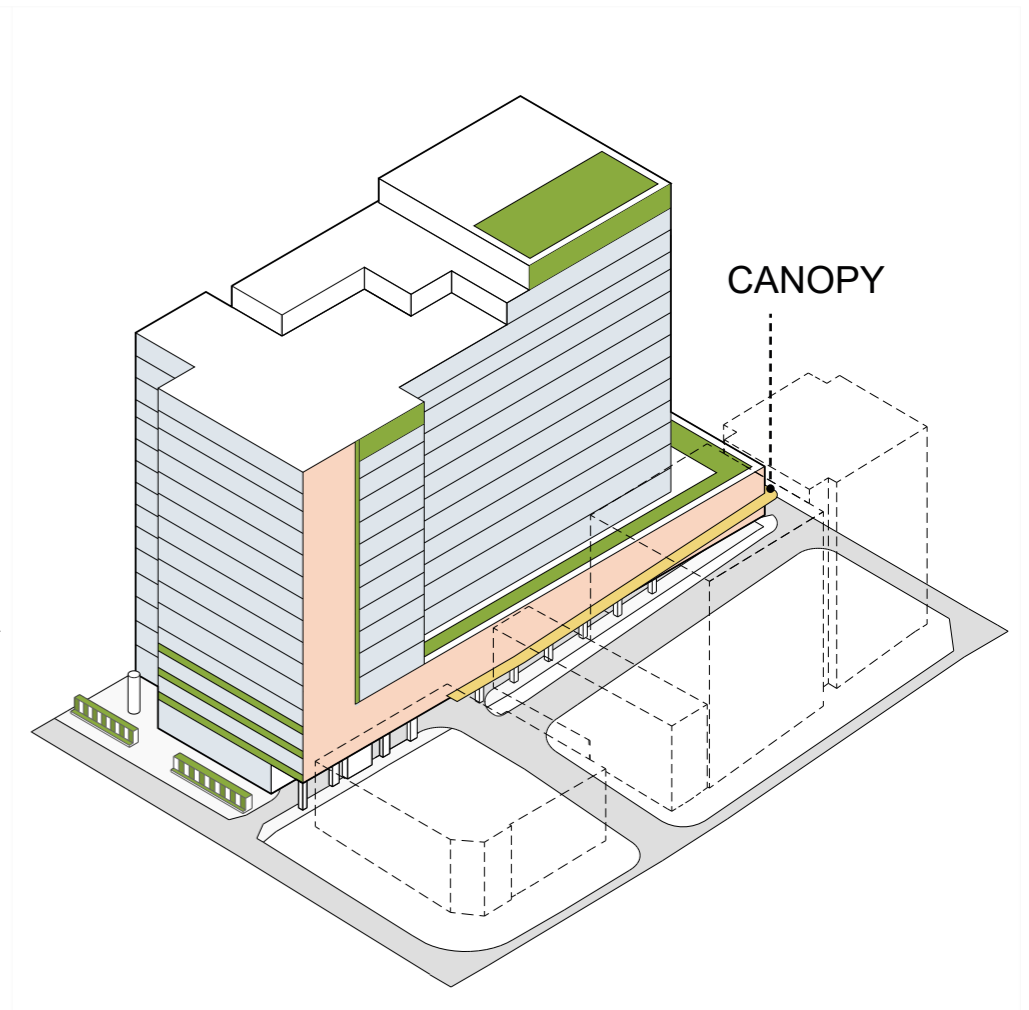
Extruded Building Mass

Block A will be reduced one clinical storey while new Block B and C will add one storeys to compensate for the lost area in Block A.



Set Back at Tower Level

From All Sides of Site Boundary and form a stepped profile echoing the ridgeline

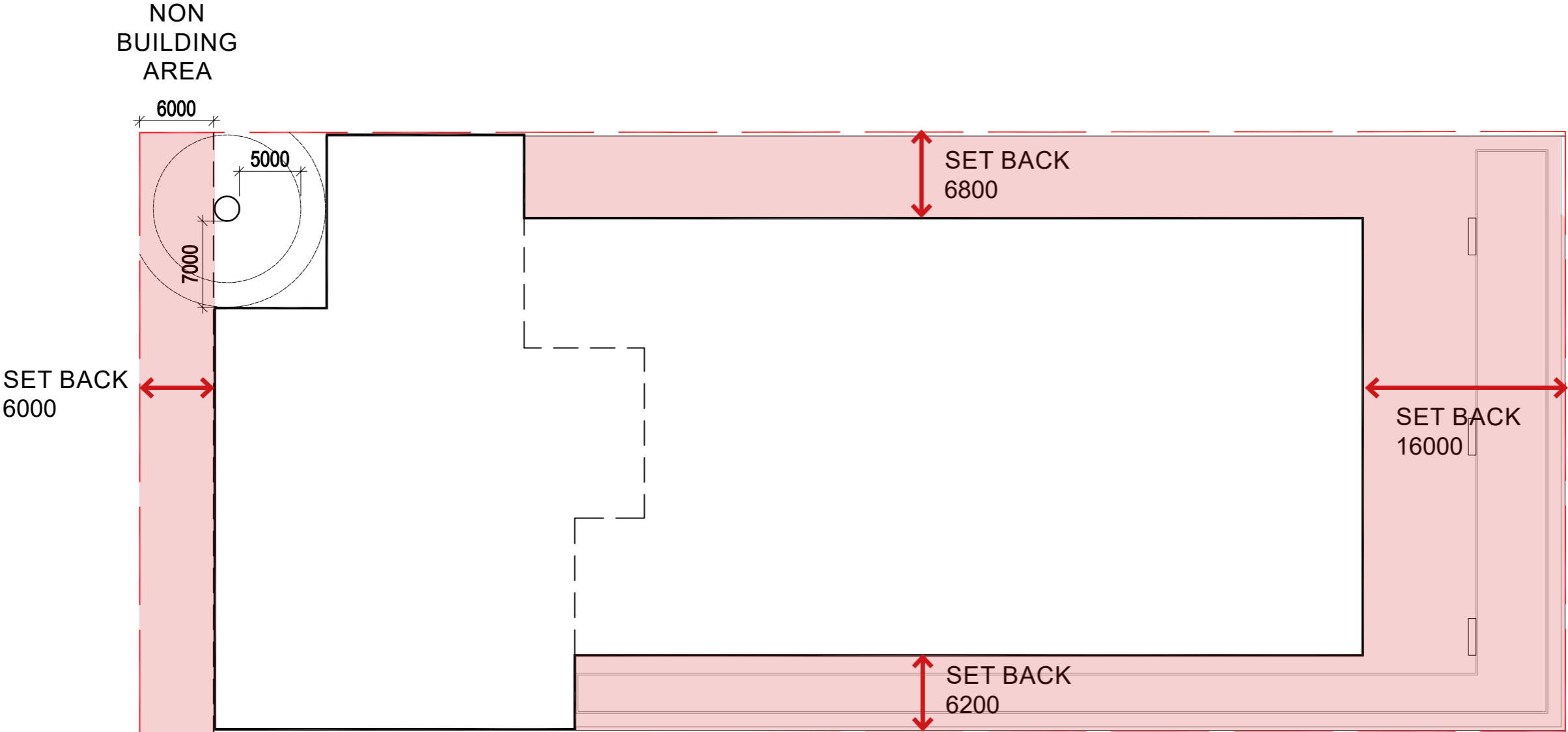


Façade Treatment / Greenery to Further Reduce Visual Bulk

Annex 4. Design Merits / Mitigation Measures for Softening Visual Bulk

Legend

SET BACK AREA



3/F Plan

Annex 4. Design Merits / Mitigation Measures for Softening Visual Bulk

- 1 Formation of HKBH Hospital Cluster**

Redevelopment of Block A, B and C offers an opportunity to unify and modernize the appearance of the HKBH hospital cluster to provide HKBH with an outstanding identity as it is easily visible from Waterloo flyover, Cornwall Street and Junction Road
- 2 Façade Treatment**

Phase 1 south building elevation is further broken down into 2 main zones with a colour band continuing from the roof along left side of south elevation and finishing at the podium level, to reduce visual impact of the new building. This colour band will serve to tie in with the solid components of Block D and Block E of HKBH to form one holistic HKBH hospital cluster.
- 3 Acoustic Fin/ Sunshading Feature**

Acoustic fin/ sunshading feature will be provided along the façade facing Waterloo road to reduce traffic noise/ heat gain/ glare to future patients and users. The provision of which will also serve to break down the building mass into various horizontal compositions, especially when viewed from Cornwall Street
- 4 Landscape Feature Along Waterloo Road**

Planters and vertical greenery along pedestrian zone of Waterloo Road will be provided to improve townscape and walking experience, refer street view from Waterloo Road
- 5 Greening at Non-Building Area Facing Waterloo Road**

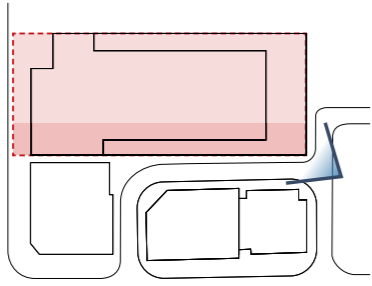
Fence wall along Waterloo Road will be set back and provided with planters, tree will be planted either side of the pedestrian entrance while vertical green will be provided to fence wall to improve pedestrian walking experience.
- 6 Greenery on Main Roof and Podium Roof**

Greenery will be provided on podium roof for staff recreation and patient rehabilitation, together with greenery on main roof, it will also serve to reduce heat gain to the building.
- 7 Vertical Greening on the South Elevation**

Vertical greenery will be provided on the elevation to soften the visual bulk of the proposed development when viewing from the south.



Annex 4. Design Merits / Mitigation Measures for Softening Visual Bulk



⑧ Landscape Feature Along Kam Shing Road

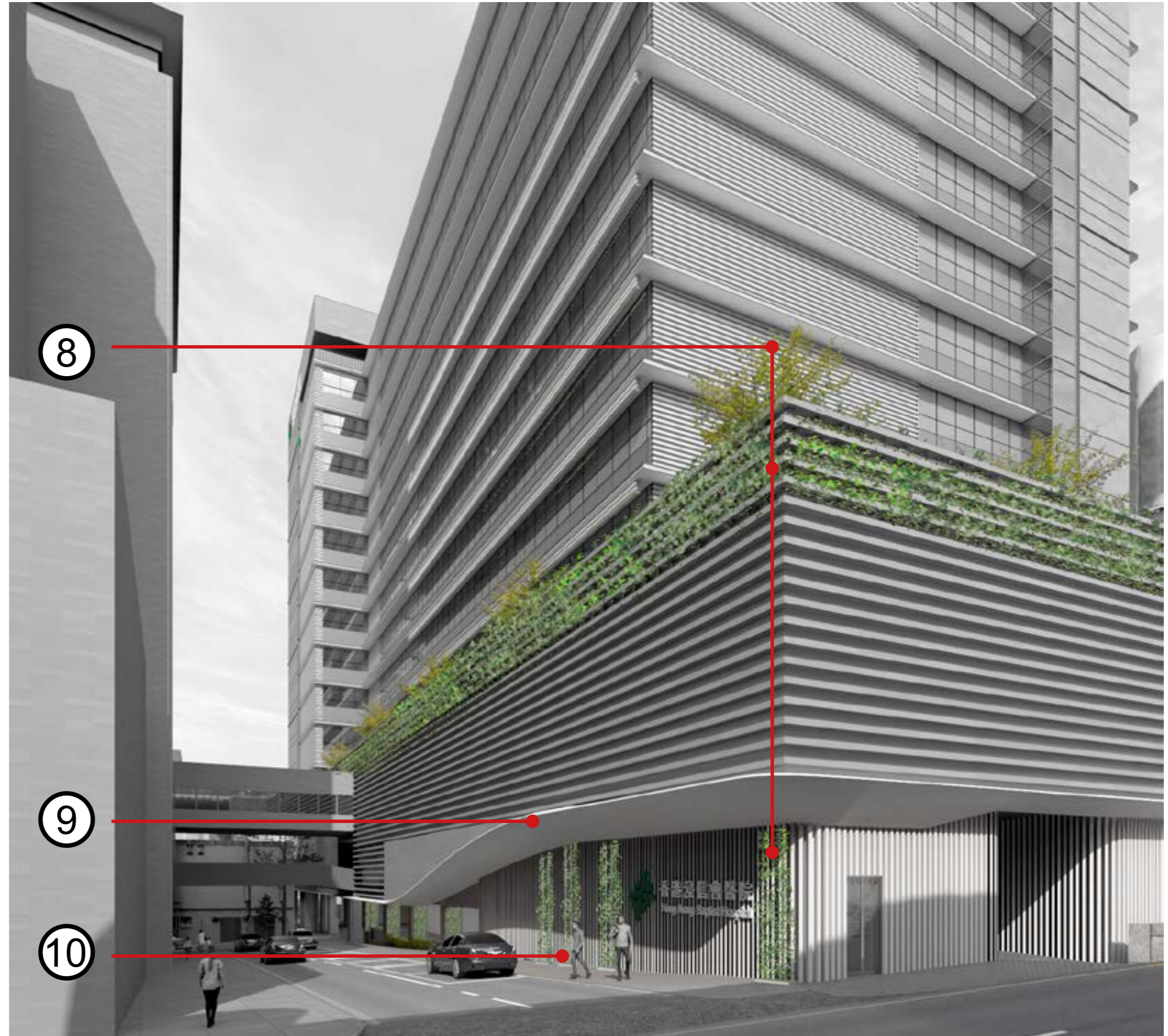
Planters and vertical green will be provided along Kam Shing Road to improve pedestrian walking experience.

⑨ Canopy Along Kam Shing Road

Canopy will be provided along Kam Shing Road to provide shelter for public using Kam Shing Road

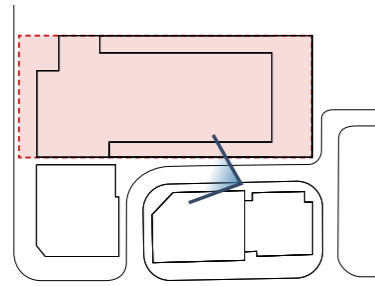
⑩ Set Back on Street Level

G/F Building Line along Kam Shing Road will be slightly setback from site boundary to widen footpath of Kam Shing Road, also visually 'lifting up' the building mass above, thus reducing the visual impact of the building mass.



Covered Walkway Along Kam Shing Road

Annex 4. Design Merits / Mitigation Measures for Softening Visual Bulk

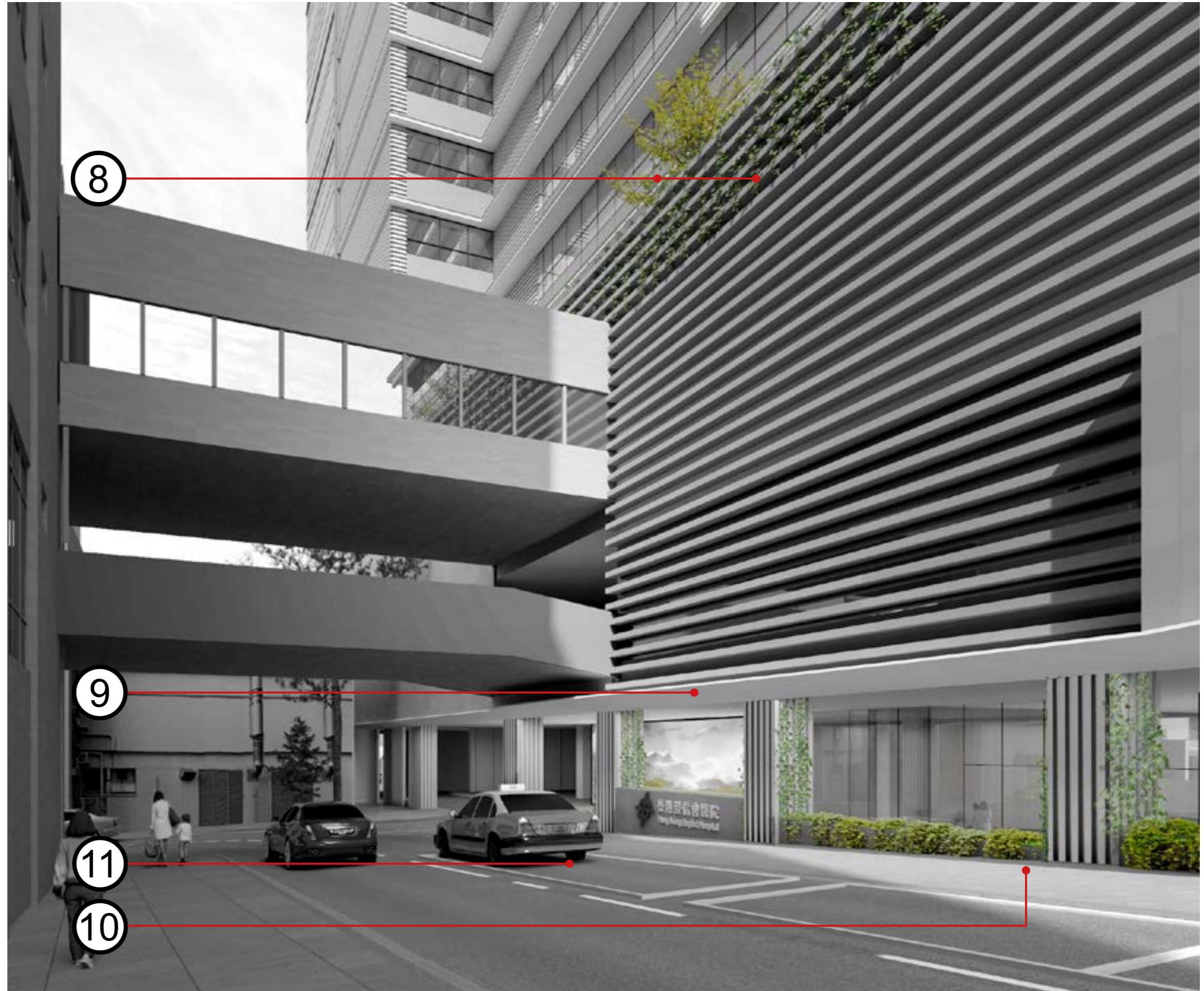


8 Landscape Feature Along Kam Shing Road
Planters and vertical green will be provided along Kam Shing Road to improve pedestrian walking experience.

9 Canopy Along Kam Shing Road
Canopy will be provided along Kam Shing Road to provide shelter for public using Kam Shing Road

10 Set Back on Street Level
G/F Building Line along Kam Shing Road will be slightly setback from site boundary to widen footpath of Kam Shing Road, also visually 'lifting up' the building mass above, thus reducing the visual impact of the building mass.

11 Improvement of Existing Taxi Stands
Existing Taxi Stand at Kam Shing Road will be kept and provided with canopy for public waiting for taxi.



Covered Walkway Along Kam Shing Road

Illustration for Reference Only

Annex 4. Design Merits / Mitigation Measures for Softening Visual Bulk



5 Greening at Non-Building Area Facing Waterloo Road

Fence wall along Waterloo Road will be set back and provided with planters, tree will be planted either side of the pedestrian entrance while vertical green will be provided to fence wall to improve pedestrian walking experience.

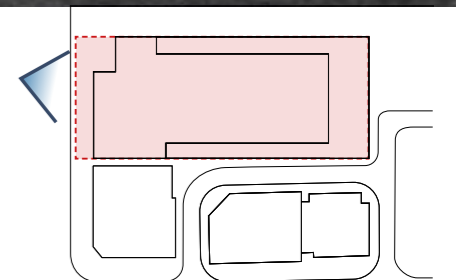


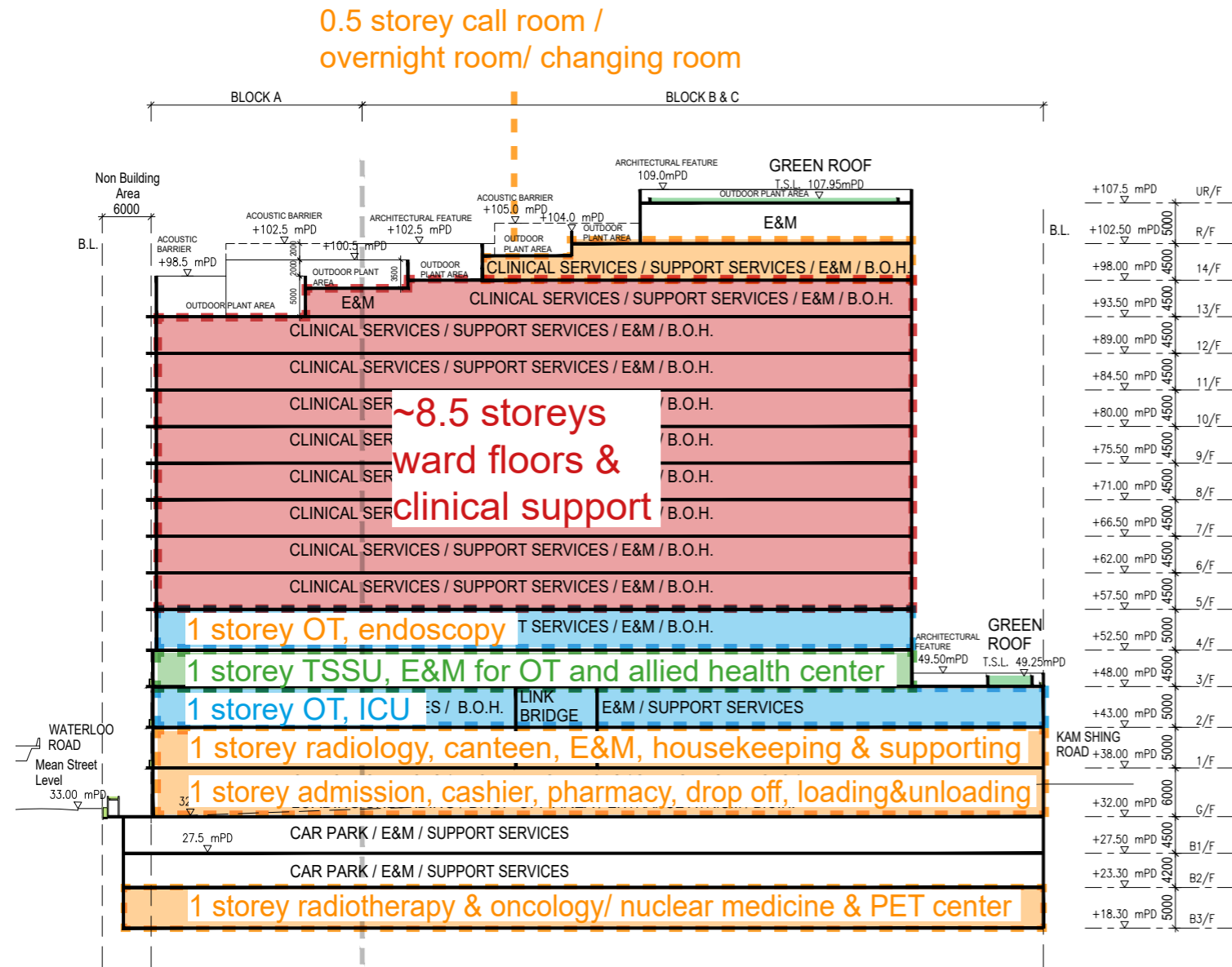
Illustration for Reference Only

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

Comments on 15 Dec 2022

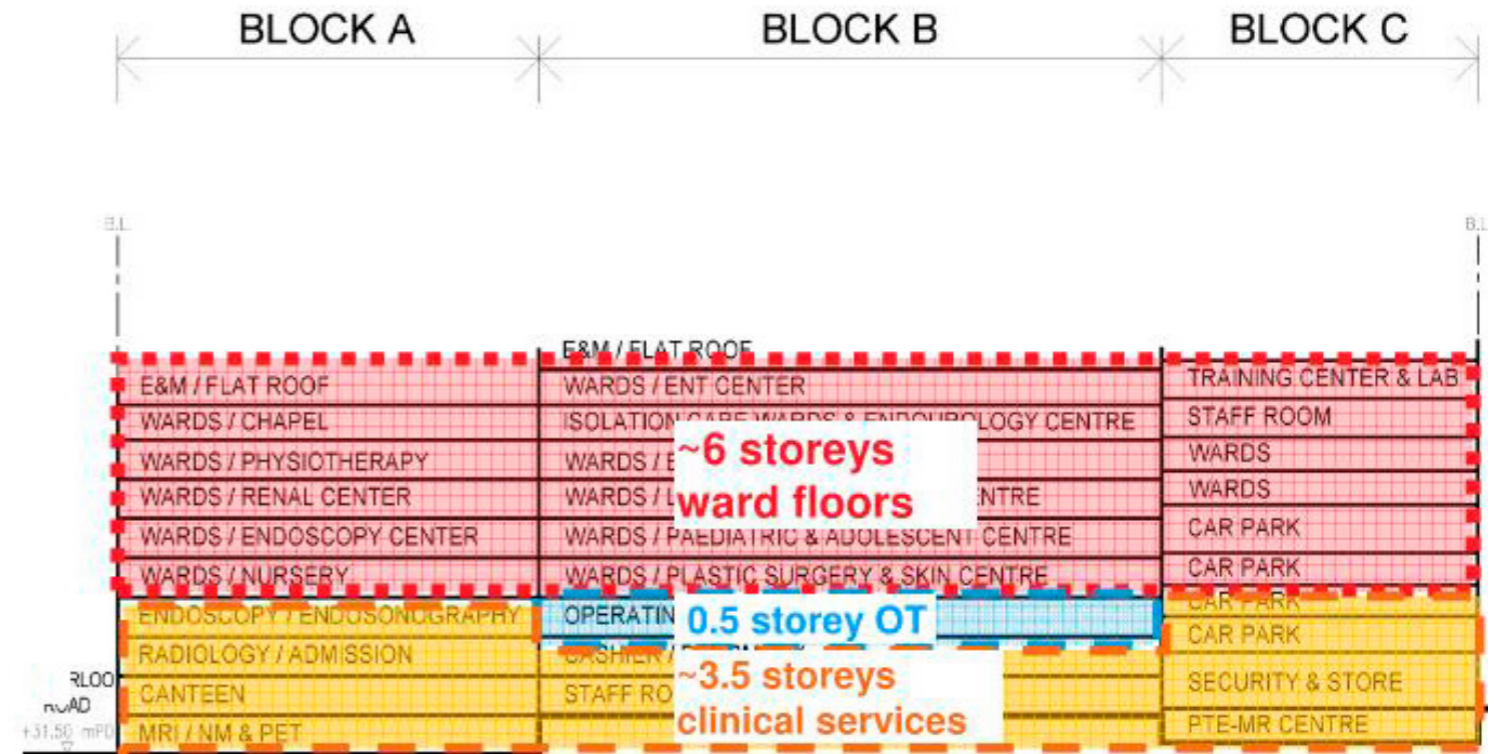
PlanD's Comment	Response		
<p>The subject site is within a cluster of GIC buildings which is in general of lower intensity than commercial/residential uses to provide visual and spatial relief. The proposed PR of 11.83 based on a site area of 5,649 sq.m is considered much higher than the nearby GIC buildings, with PR ranging from 1.5 to 8.7, as well as the residential developments zoned in “R(C)1”, “R(C)6” and “R(C)10”, with PR ranging from 0.5 to 3.</p> <p>While there is no control on PR under the “G/IC(7)” zone, explanation is required to justify the adoption of such PR in comparison with the surrounding areas and design measure should be adopted to reduce the visual impact of the building mass.</p>	<ol style="list-style-type: none"> 1. Meeting needs for high quality healthcare services – modernising hospital infrastructure/facilities for modern medical and smart hospital features 2. Accommodating large amount of plant rooms for meeting post-Covid expectations 3. Additional beds with larger bed cubicle size in Proposed Scheme required more space 4. Increase need and support for private healthcare (e.g. Voluntary Health Insurance Scheme, PPP projects, introduction of primary healthcare services) 5. Fill notable services gaps (e.g. cancer service, medical imaging service, geriatric service and rehabilitation service) 		
	①	Additional OT, ICU and associated facilities	1.5 storey
	②	Additional clinical ward and associated facilities	2 storeys
	③	Enhanced E&M facilities to cater for the latest statutory regulations and hospital design principles	0.5 storey

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme



Proposed s16 Scheme Programme Disposition

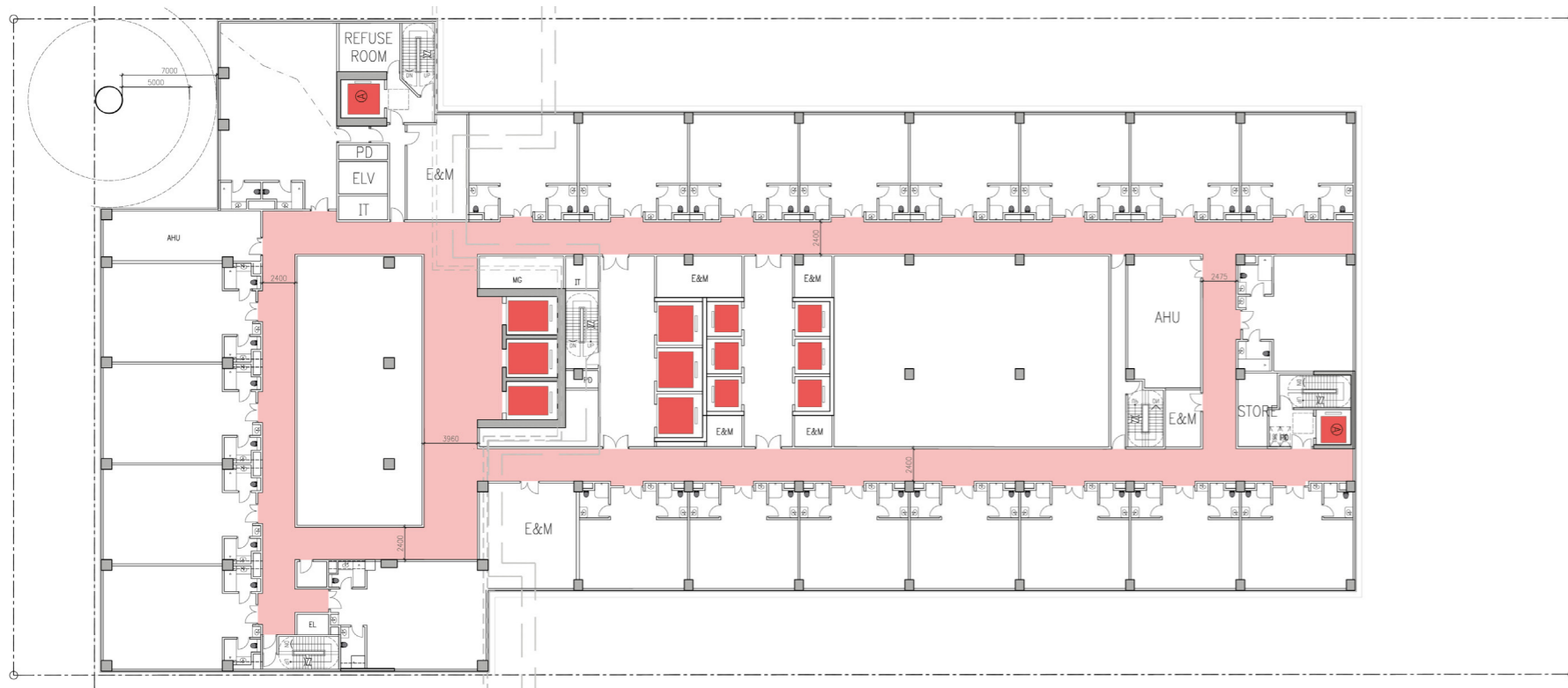
Indicative Only



Existing Building Programme Disposition

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

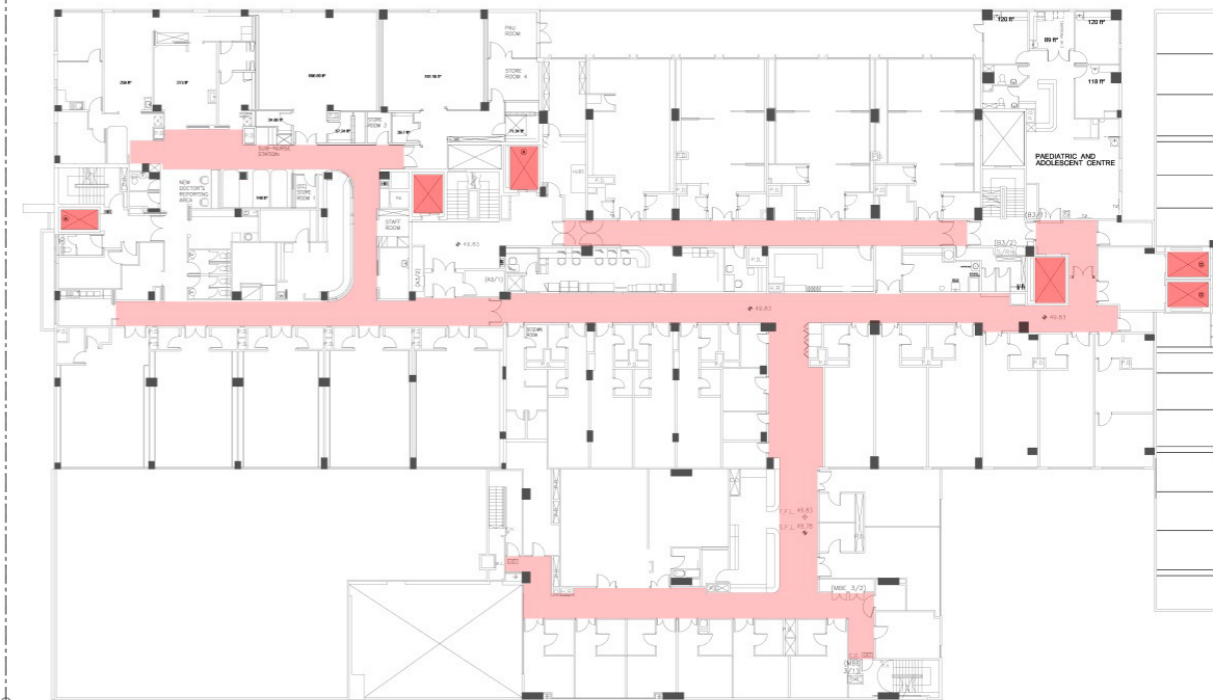
	Proposed s16 Scheme	Existing Building
Lift Number (100% increase)	Will have 6 nos of staff lift + 6 nos of public lift with clear segregation of staff and public lift zone and 2 dedicated fireman's lift	has 6 nos of lift with no clear public/ staff lift zone segregation which mixes medical workflow with public circulation. Fireman's lifts are used as normal lift
Corridor Width (~30% increase)	Will have ~2400mm corridor width to better bed movement/ AMR usage (Smart Hospital)	Has typical 1800mm width which is bare minimum for bed movement/ medical operation



No. of Rooms: ~22
No. of Beds: ~84

**Proposed s16 Scheme
Typical Ward Floor**

Indicative Only

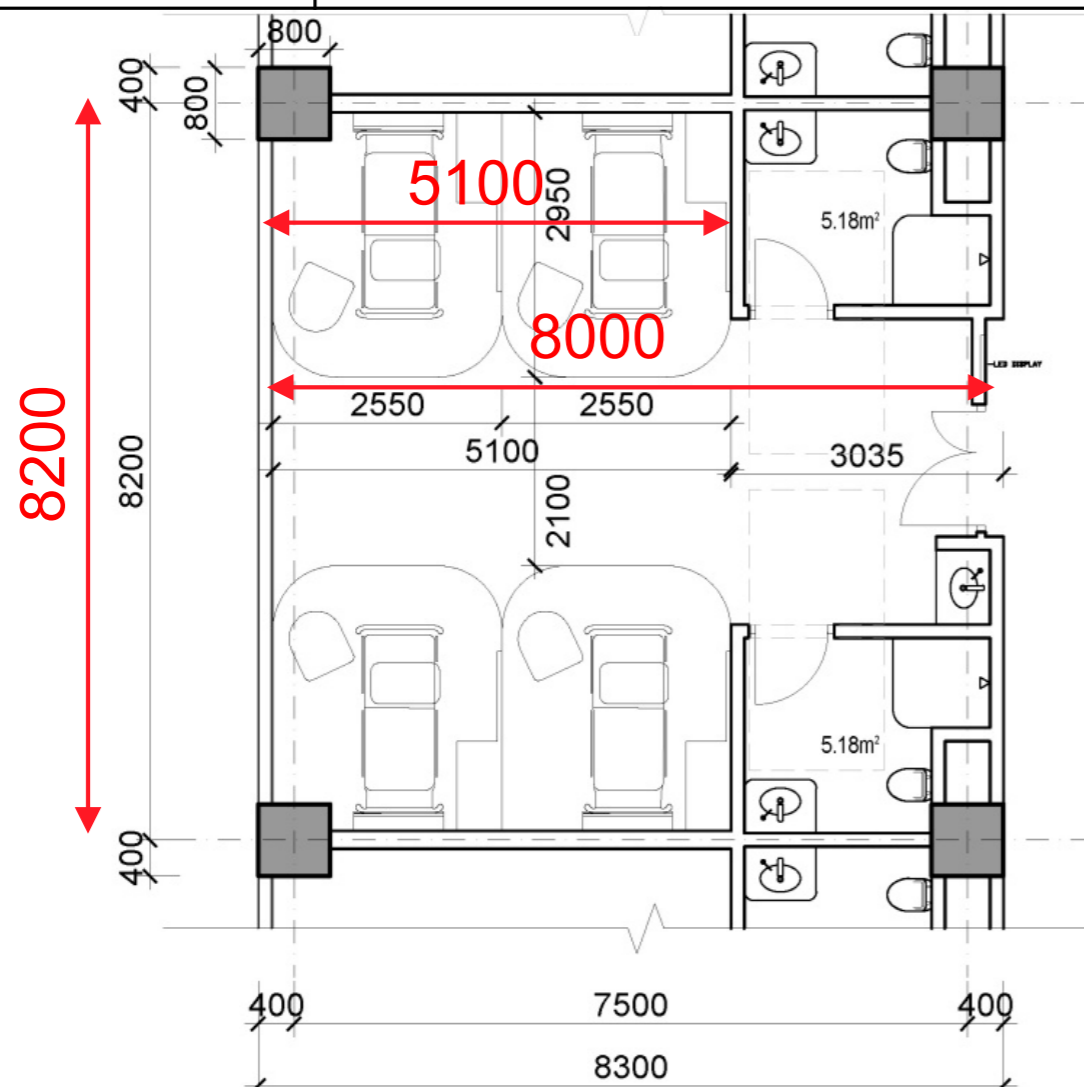


No. of Rooms: 30
No. of Beds: 129

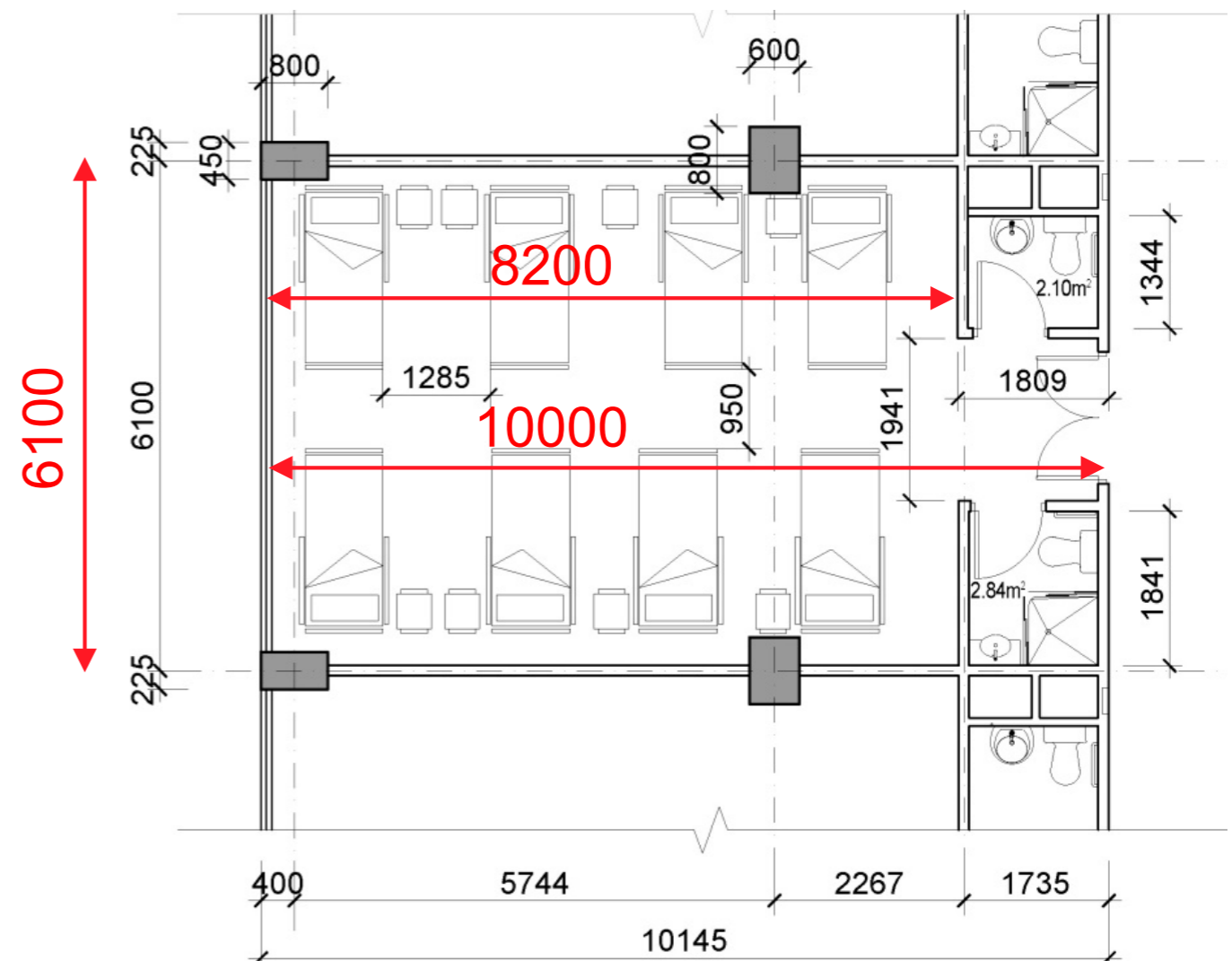
**Existing Building
Typical Ward Floor**

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

	Proposed s16 Scheme	Existing Building
Bed Cubicle Size (~70% increase)	Min. 9 sq.m. for each bed cubicle which tally with cubicle area in HA new hospitals	Average 5.3 sq.m. per bed cubicle which ranks smallest among all hospitals in Hong Kong
Ward area (~6% increase)	~66 sq.m. (4 beds)	~62 sq.m. (8 beds)
Ward Toilet Size (~100% increase)	At least 1 toilet in each ward will be able to cater for wheelchair manoeuvring and accessible use	~2 sq.m. which is substandard and cannot cater wheelchair manoeuvring

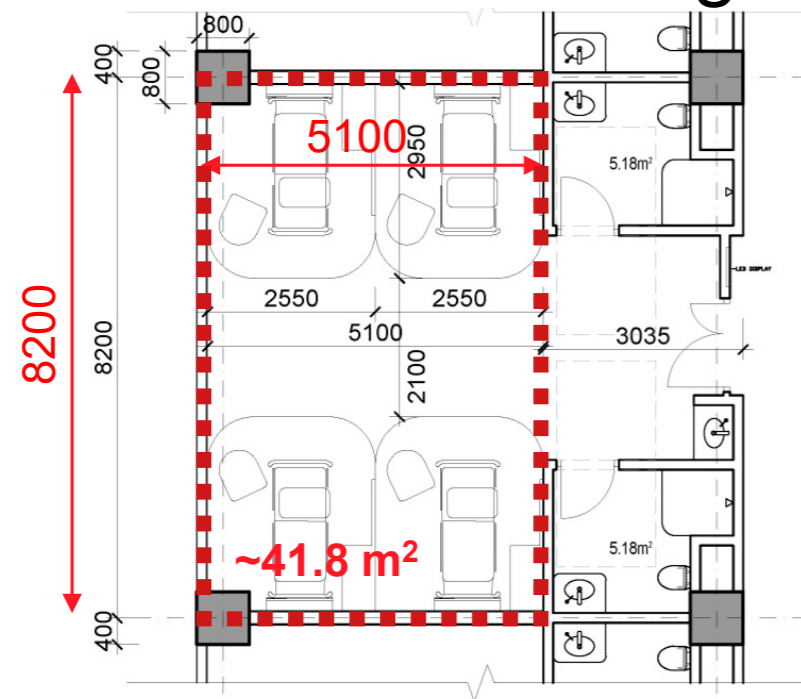


Proposed s16 Scheme
Typical Ward

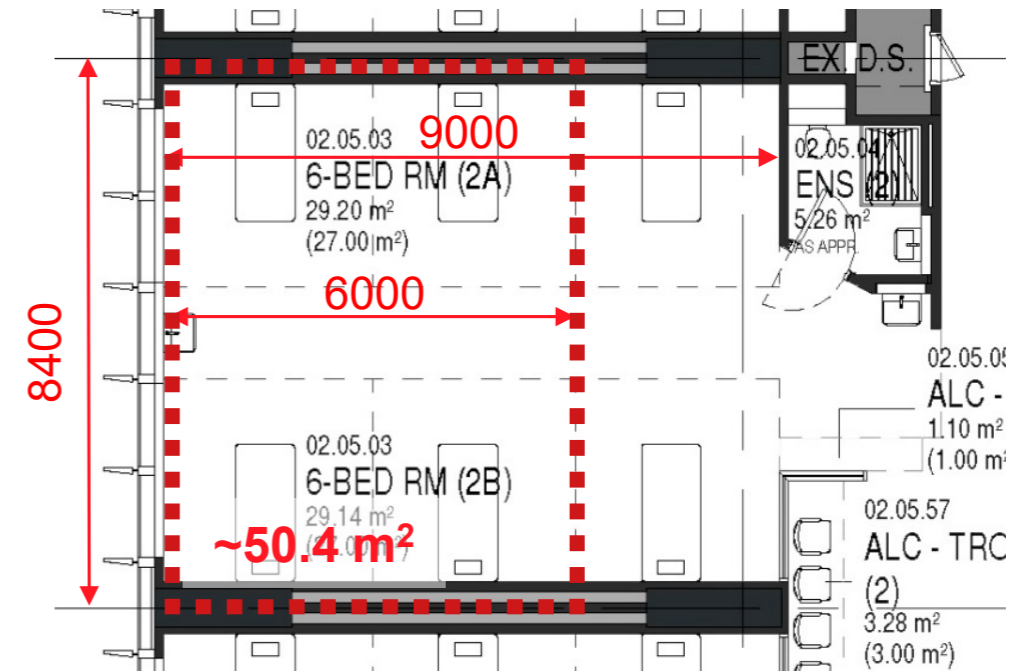


Existing Building
Typical Ward

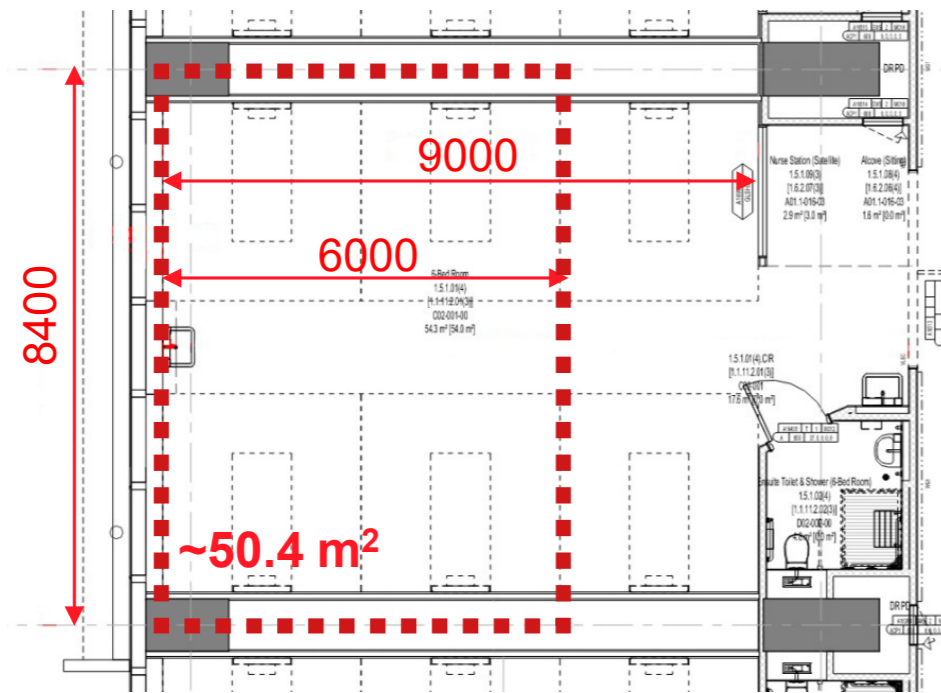
Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme



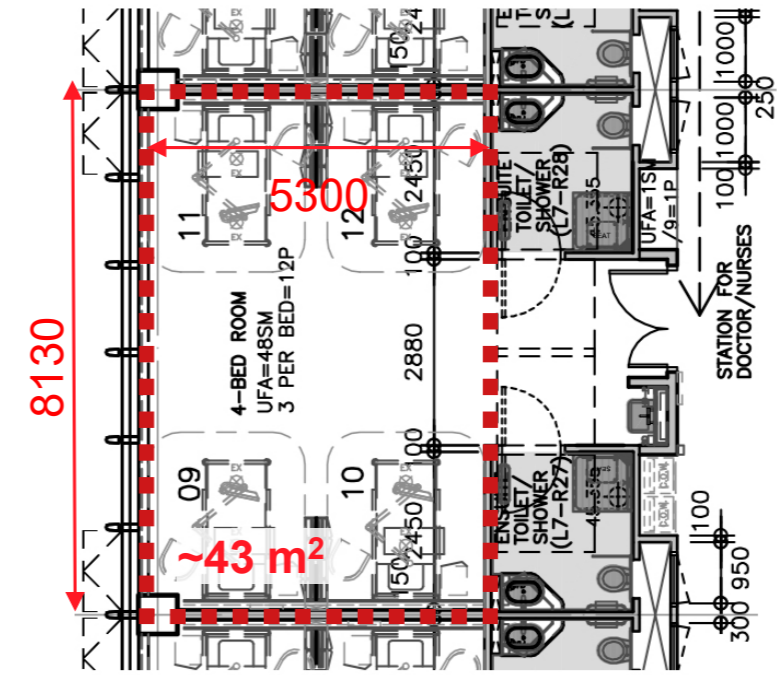
Proposed s16 Scheme
Typical Ward



Prince of Wales Hospital
(PWH) Typical Ward



New Acute Hospital (NAH)
Typical Ward



Chinese University Medical Centre (CUMC) Typi-
cal Ward

Typical Ward

(Comparison with Hospital recently completed/ under construction)

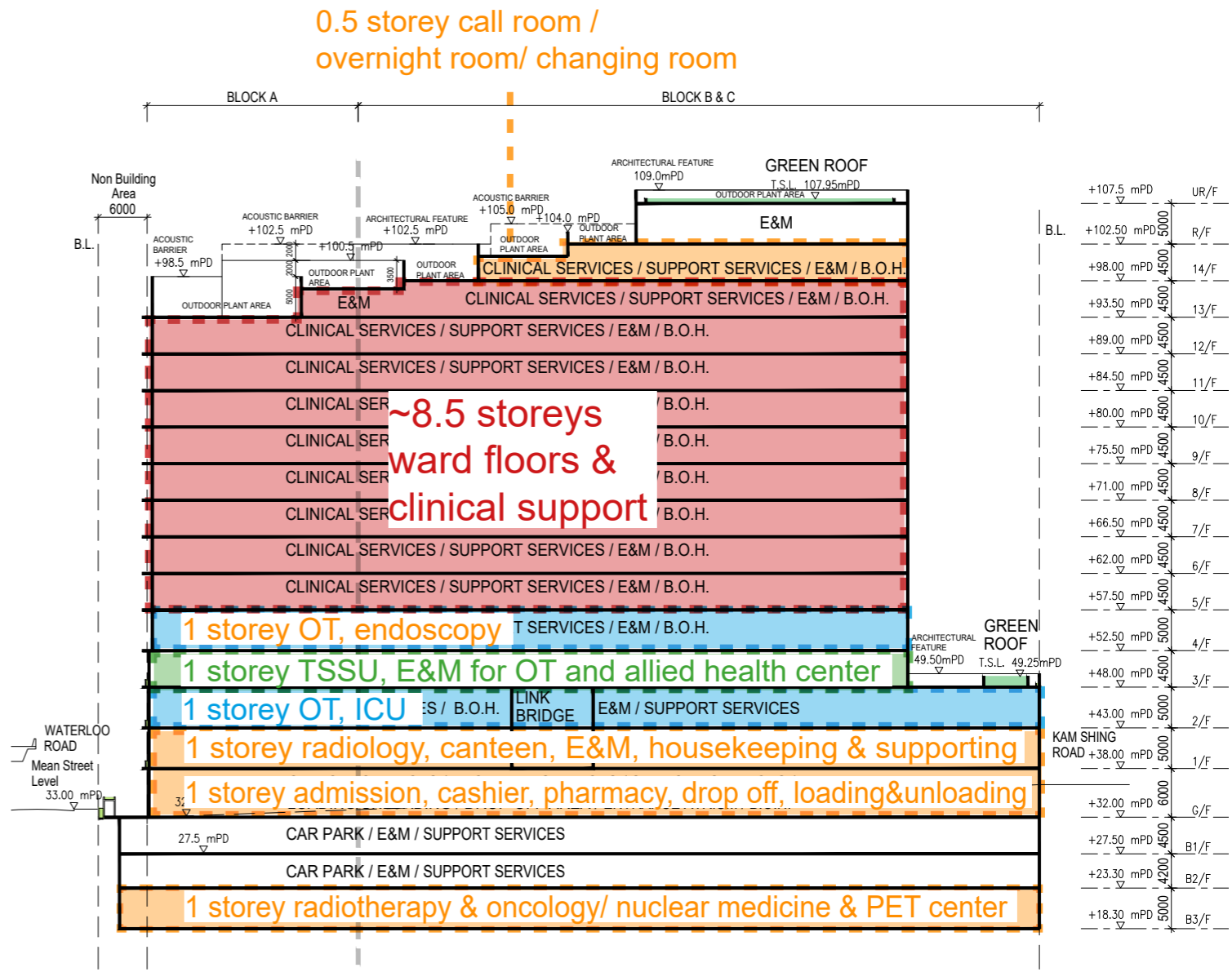
Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme



No. of Rooms: ~22
 No. of Beds: ~84
 No. of Storeys: 8.5
 Total No. of Beds: 700

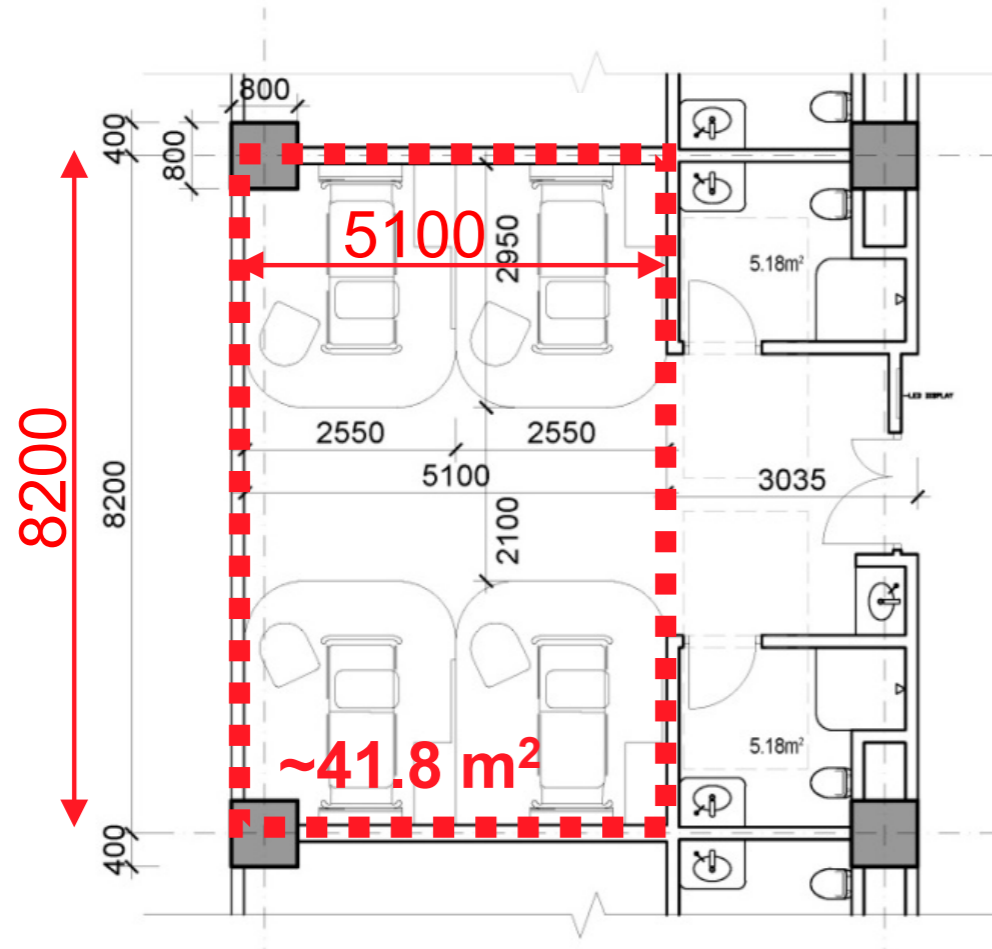
Proposed s16 Scheme
 Typical Ward Floor

Indicative Only

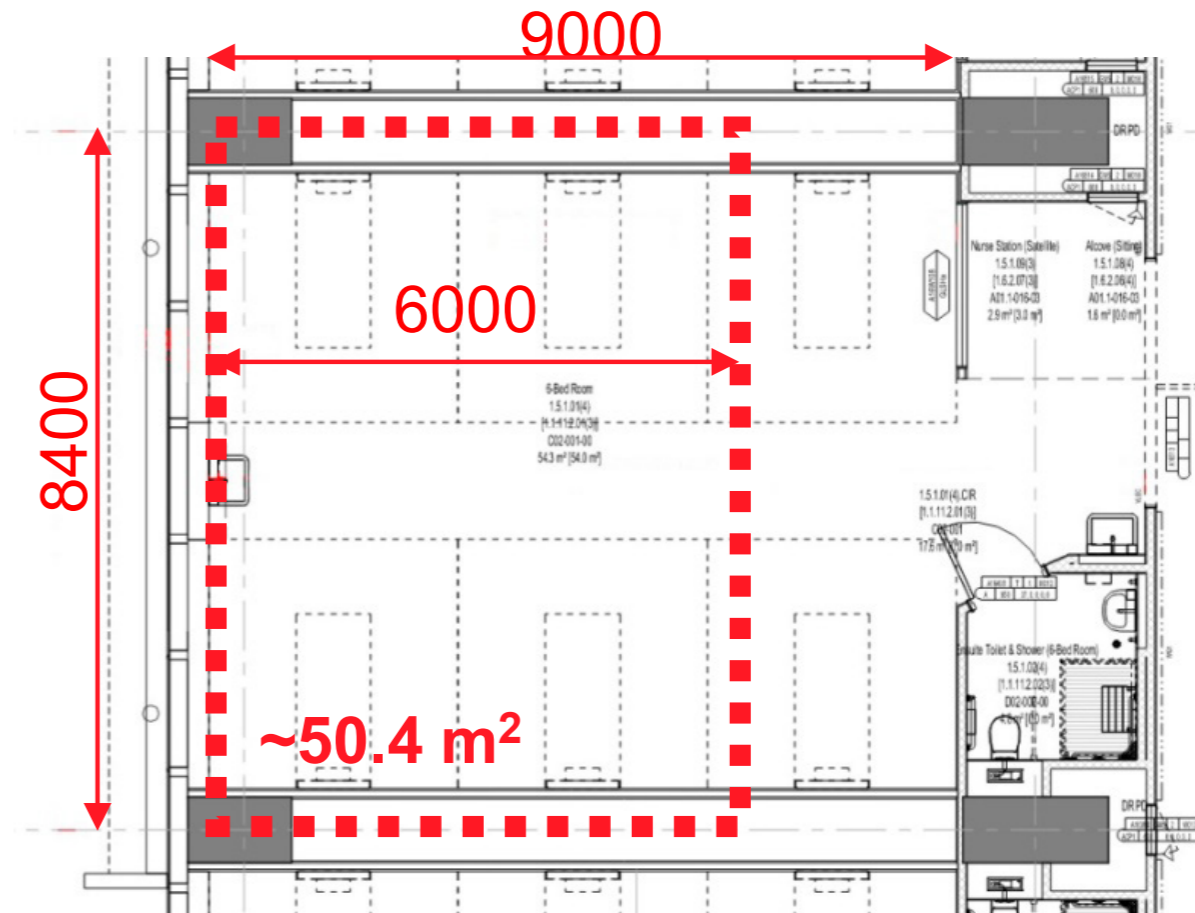


Proposed s16 Scheme
 Programme Disposition

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme



Proposed s16 Scheme
Typical Ward



New Acute Hospital (NAH)
Typical Ward

*If HKBH were to align current HA hospital spatial standard (eg. PWH/NAH) each 4-bed ward will occupy **8.6 sq.m.** extra area. Since ~175 no. rooms will be provided, this will result in **~1505 sq.m.** extra ward area, which approx. equals to **1.5 extra storeys.**



Proposed s16 Scheme
Typical Ward

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

	Proposed s16 Scheme	Existing Building
Major addition of plantrooms	<p>All E&M systems will be designed and installed to fulfil international standards or HA standards. Examples include:-</p> <ol style="list-style-type: none"> Air handling units (AHUs) will be installed in designated plantrooms with maintenance accesses to allow proper maintenances to be carried out to enhance overall reliability. Clinical spaces will be served by all-air system, i.e. AHU, with higher filtration capability, and will have a flexibility to enlarge the fresh air and exhaust air rate during pandemic or winter surge. More Airborne Infection Isolation Rooms (AIIRs) with designs up to international and HA standards will be provided. Each AIIR will have its own AHU. Sprinkler system will be designed to protect the entire premises, according to the latest FSD requirements. Lead-in water will be pumped from a sump tank to the roof tank via a set of intermediate booster pumps. Dedicated water supply systems will be designed for individual uses, such as general potable, clinical potable, kitchen potable, cleansing, irrigation etc. Medical Gas (MG) system will be designed in full compliance with the latest Health Technical Memorandum (HTM) standards and HA standards in terms of provisions of duty banks of manifold, reserve manifold, spare cylinders etc. to increase reliability. 	<p>Certain E&M systems were installed based on older versions of design requirements, and are considered sub-standard in latest hospital designs. Examples include:-</p> <ol style="list-style-type: none"> Most air handling units (AHUs) serving front-of-house spaces are hung in the ceiling, which hinders proper maintenances and leads to more frequent AC failure. Most clinical spaces are served by fan coil units (FCUs), with lower filtration capability and less flexibility for larger air change requirements during pandemic time or winter surge. Provisions of Airborne Infection Isolation Rooms (AIIRs) are minimal, and the AC design cannot meet the latest standards. No sprinkler protection is available in Blocks A & B. Lead-in water is directly fed to the roof tank. No provision of dedicated water supply system for different uses. For example, currently one water tank & pump system is serving all general potable, clinical potable (medical equipment, laboratory, CSSD etc.), cleansing etc. Current Medical Gas (MG) system does not fully comply with latest Health Technical Memorandum (HTM) standards nor HA standards.

Total contribute to net addition of **0.5 floor**

Modernizing Hospital Infrastructure/
Increase Provision of Plant Rooms

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

	Proposed s16 Scheme	Existing Building
Misc. addition of plantrooms	<p>Certain services and/or E&M systems to the best practices will be provided to align with other similar new hospital developments. Examples include:-</p> <ul style="list-style-type: none"> i. Electrified heating, with use of free heat sources (e.g. heat recovery chillers) and higher efficiency systems (e.g. air source heat pumps). More pumps and heat exchangers will be needed for such staged heating design. Gas-fired water heaters will also be designed to ensure provision of adequate heating capacity but will be operated at a lower priority to ensure lowest scope 1 carbon emission. ii. 100% of car parking space will be capable for EV chargers. iii. A Pneumatic Tube System (PTS) will be installed for efficient transportation of materials between departments, releasing elevator capacity for people transportation. iv. Separated soil pipes and waste pipes will be designed to minimize risk of cross contamination between different sanitary fitments. Dedicated drainage systems will be provided to serve isolation facilities which follows HA standards. v. Dual power distribution risers for each power zone will be designed to enhance the system resilience. 	<p>Certain services and/or E&M systems do not meet the best practice requirement. Examples include:-</p> <ul style="list-style-type: none"> i. Space heating and domestic water heating is provided by central oil-fired boiler which is not efficient and has large amount of scope 1 carbon emission. ii. Only 3nos EV chargers are installed in Block C. iii. No Pneumatic Tube System (PTS) is installed. All material transportation relies on manual transfers with use of trolleys via elevators. iv. Combined soil and waste pipe system are provided, for both isolation and non-isolation facilities. v. Single power distribution riser for each power zone is designed.

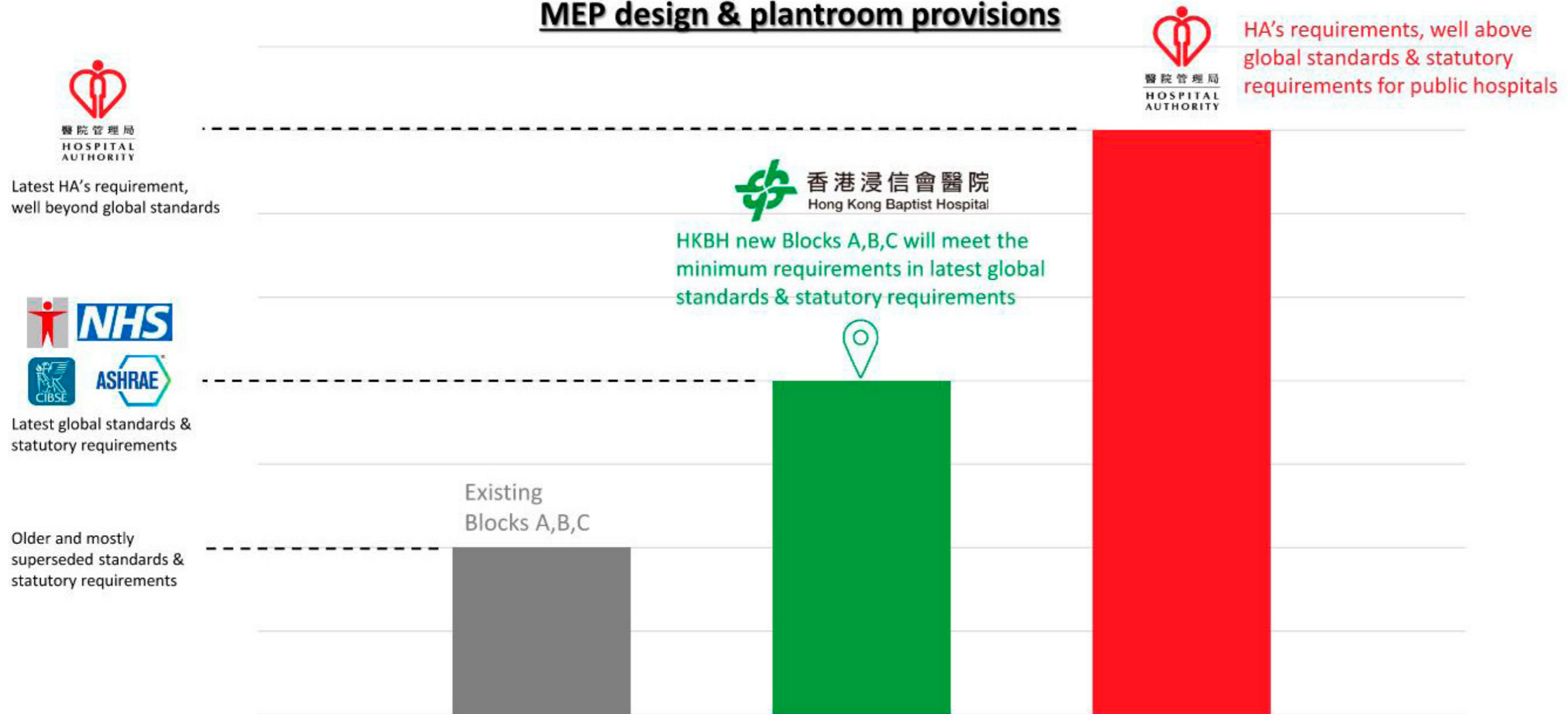
Total contribute to net addition of **0.5 floor**

Modernizing Hospital Infrastructure/
Increase Provision of Plant Rooms

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

Modernizing Hospital Infrastructure/ increase provision of **Plant Rooms**

MEP design & plantroom provisions



Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme



Only 2.2m clear headroom achieved in clinical areas due to ceiling hung AC units



Oil-fired boiler is used to provide domestic and space heating hot water in existing hospital, with low efficiency and large amount of on-site flue emission and thus Scope 1 carbon emission.







The design of the existing Medical Gas manifold systems cannot fulfil latest hospital design and global standards

Current situation in existing
Blocks A, B & C





Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

Modernizing Hospital Infrastructure/ increase provision of **Plant Rooms**

	Proposed s16 Scheme	Existing Building
Major addition of plantrooms	All E&M systems will be designed and installed to fulfil global standards and latest statutory requirements. Examples include:-	Certain E&M systems were installed based on older versions of design requirements, and are considered sub-standard in latest hospital designs. Examples include:-
	<p>Proper AC plantroom, safe maintenance access, minimal disturbance to clinical spaces</p> 	<p>VS</p>  <p>Mostly ceiling hung AC, difficult for maintenances, disturbance to clinical spaces</p>
	<p>All-Air system for effective infection control</p> 	<p>VS</p>  <p>Mostly Fan-coil system, inefficient infection control, may induce secondary contamination</p>
	<p>Total contribute to net addition of 0.5 floor</p>	


Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

Modernizing Hospital Infrastructure/ increase provision of **Plant Rooms**

	Proposed s16 Scheme	Existing Building
Major addition of plantrooms	All E&M systems will be designed and installed to fulfil global standards and latest statutory requirements. Examples include:-	Certain E&M systems were installed based on older versions of design requirements, and are considered sub-standard in latest hospital designs. Examples include:-
	<p>Proper sprinkler system to meet FS code for safer indoor environment</p>  <p>Medical Gas Manifold system sized according to latest UK Standard (HTM) to reduce cylinder replacement</p> 	<p>VS</p>  <p>No sprinkler system in Blocks A&B as per the outdated / superseded FS code</p> <p>VS</p>  <p>Capacity of Medical Gas Manifold system requires frequent cylinder replacement</p> <p>Total contribute to net addition of 0.5 floor</p>

Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

Modernizing Hospital Infrastructure/ increase provision of **Plant Rooms**

	Proposed s16 Scheme	Existing Building
Major addition of plantrooms	All E&M systems will be designed and installed to fulfil global standards and latest statutory requirements. Examples include:-	Certain E&M systems were installed based on older versions of design requirements, and are considered sub-standard in latest hospital designs. Examples include:-
	<p>And other designs to upgrade / fulfil standards, such as:-</p> <ul style="list-style-type: none"> • Water sump tank and pump rooms to fulfil latest WSD requirements; • 100% EV charging enabled; • Backup AC provisions to critical care areas; • Pneumatic Tube Transportation system to be designed; • Separate soil and waste drainage systems from isolation facilities to prevent cross contamination. <p><i>Total contribute to net addition of 0.5 floor</i></p>	 <p>Water Supplies Department (水務署)</p> <p>EMSD (機電工程署)</p> <p>CIBSE</p> <p>NHS</p> <p>ASHRAE</p>

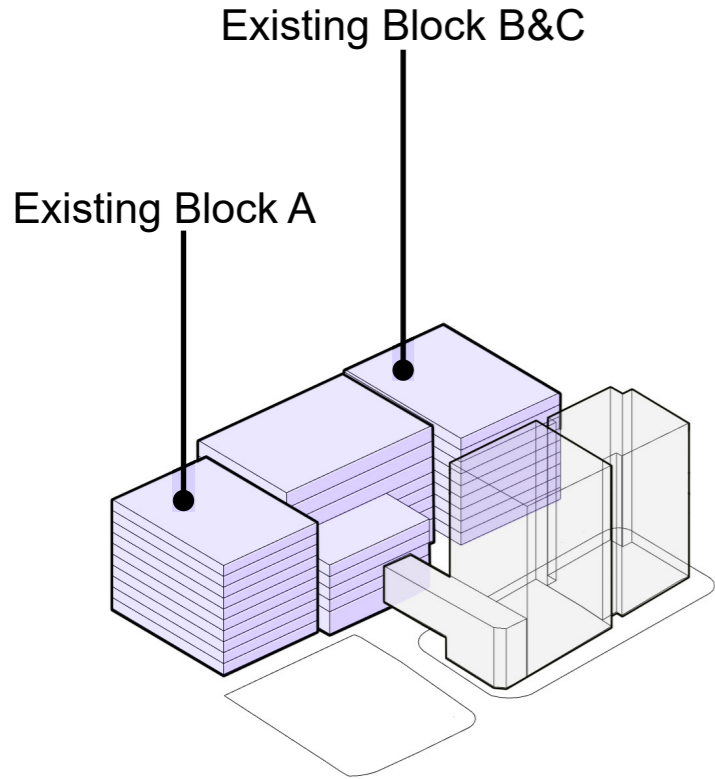
Annex 5. Comparison Between the Floor use and Facilities of Existing HKBH and Proposed S16 Scheme

Modernizing Hospital Infrastructure/ increase provision of Plant Rooms

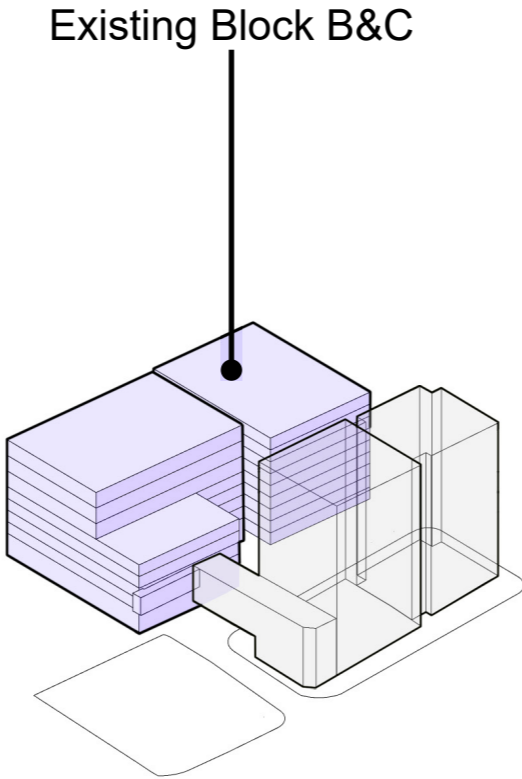
	Proposed s16 Scheme	HA general design provision	Location	Extra Area
Chiller Plant	~1100 sq.m. (N+1)	~1500 sq.m. (N+1 for Essential and N+1 for Normal)	R/F	400 sq.m.
Generator	~250sq.m. (1 FS + 1 Non FS Generator)	~350 sq.m. (1 FS + 2 Non FS Generator) (Min a pair of generators to be provide)	R/F	100 sq.m.
LV Switchroom	~180 sq.m. (Combined FS and Essential Switchroom)	~250 sq.m. (Separate FS and Essential Switchroom)	G/F	70 sq.m.
Transformer	~350 sq.m. (min 20% spare capacity is allowed)	~500 sq.m. (Still maintain full operation when one TX failure)	G/F	150 sq.m.
ELV Room	6 sq.m. (Typical floor for blk A) 6 sq.m. (Typical floor for blk BC)	6 sq.m. x 2 nos (Typical floor for blk A) 6 sq.m. x 2 nos (Typical floor for blk BC)	Typical Floors	96 sq.m.
Fuel Tank	12 sq.m. (By Fuel pump)	132 sq.m. (Underground tank for 48 hours continuous fuel supply)	LG/F	120 sq.m.
Clinical water supply system	~500 sq.m. Combine all Clinical water into one tank and system	~900 sq.m. Dedicate system for Clinical Potable, Medical Equipment, Laboratory Water, Renal Dialysis Water, Endoscopy Water, CSSD Water and Mortuary Water supply system	R/F	400 sq.m.
TOTAL	~2488 sq.m.	~3824 sq.m.	Extra R/F area required:	900 sq.m.

Modernizing Hospital Infrastructure/
Increase Provision of Plant Rooms

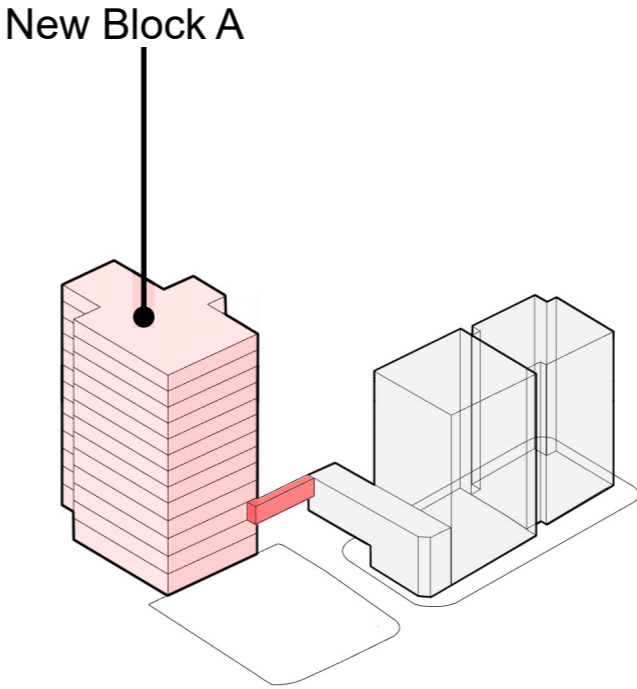
Annex 7. Phasing Plan



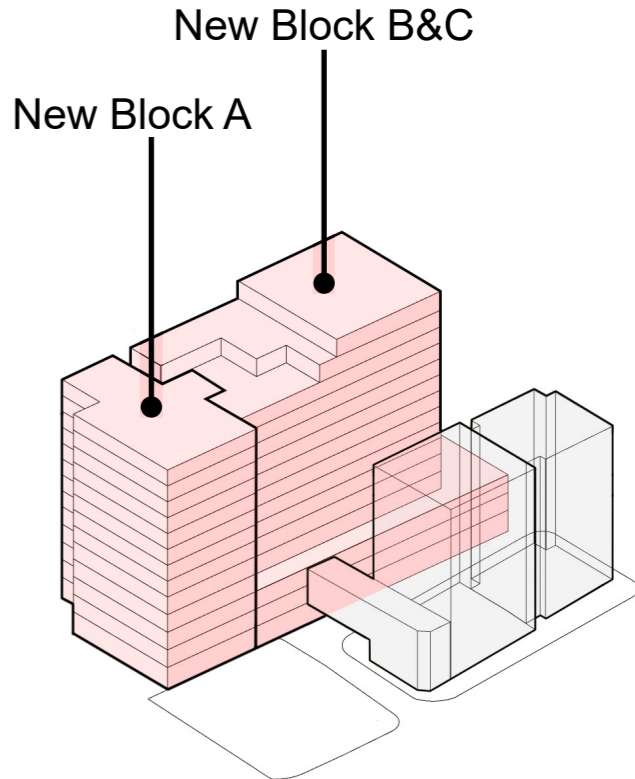
Stage 0



Stage 1



Stage 2

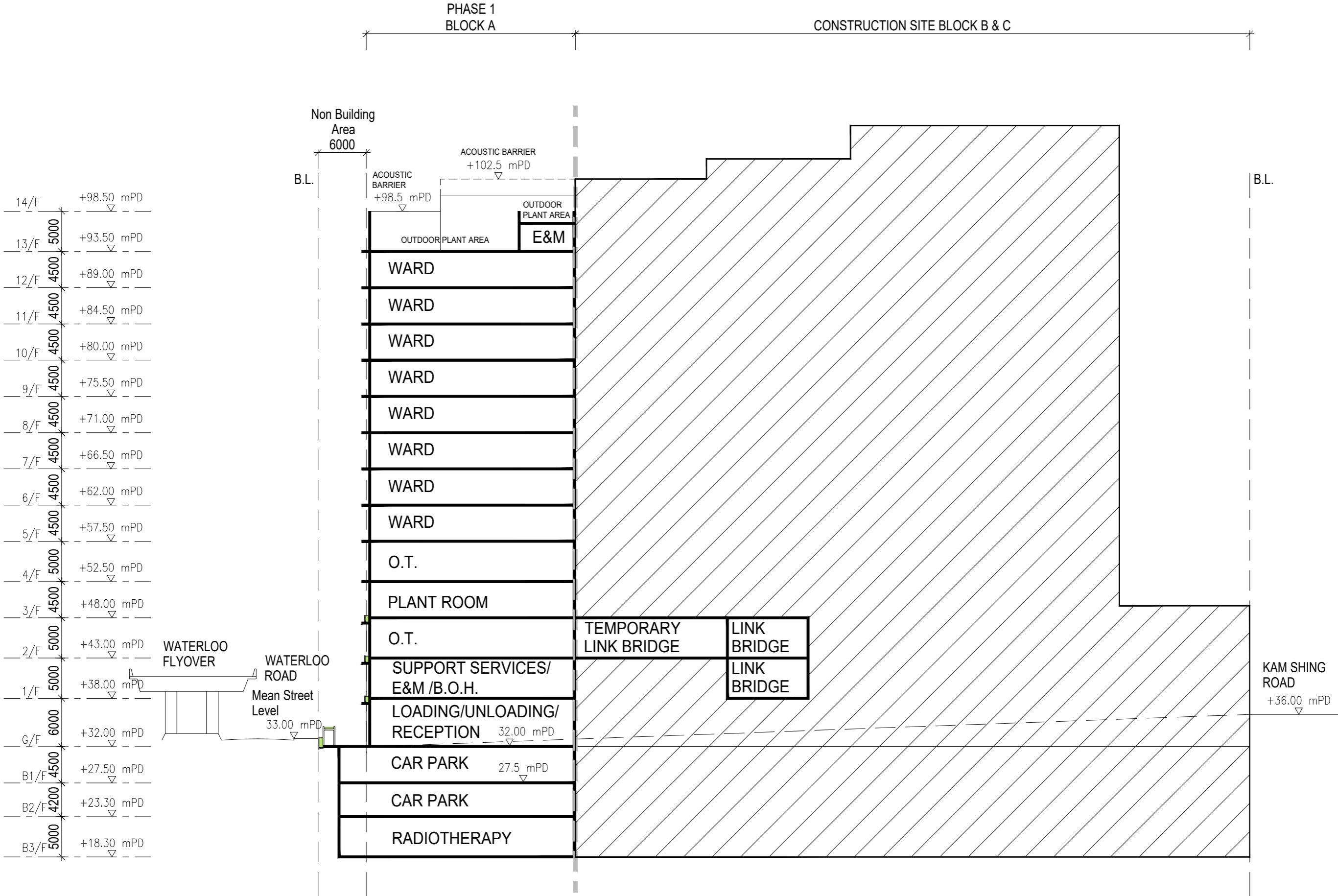


Stage 3

Year:	Existing	2025-2028	2028-2033	Post 2033
Bed Nos (ABC):	685 beds	454 beds	273 beds	700 beds
OT Nos:	13	9	10	16

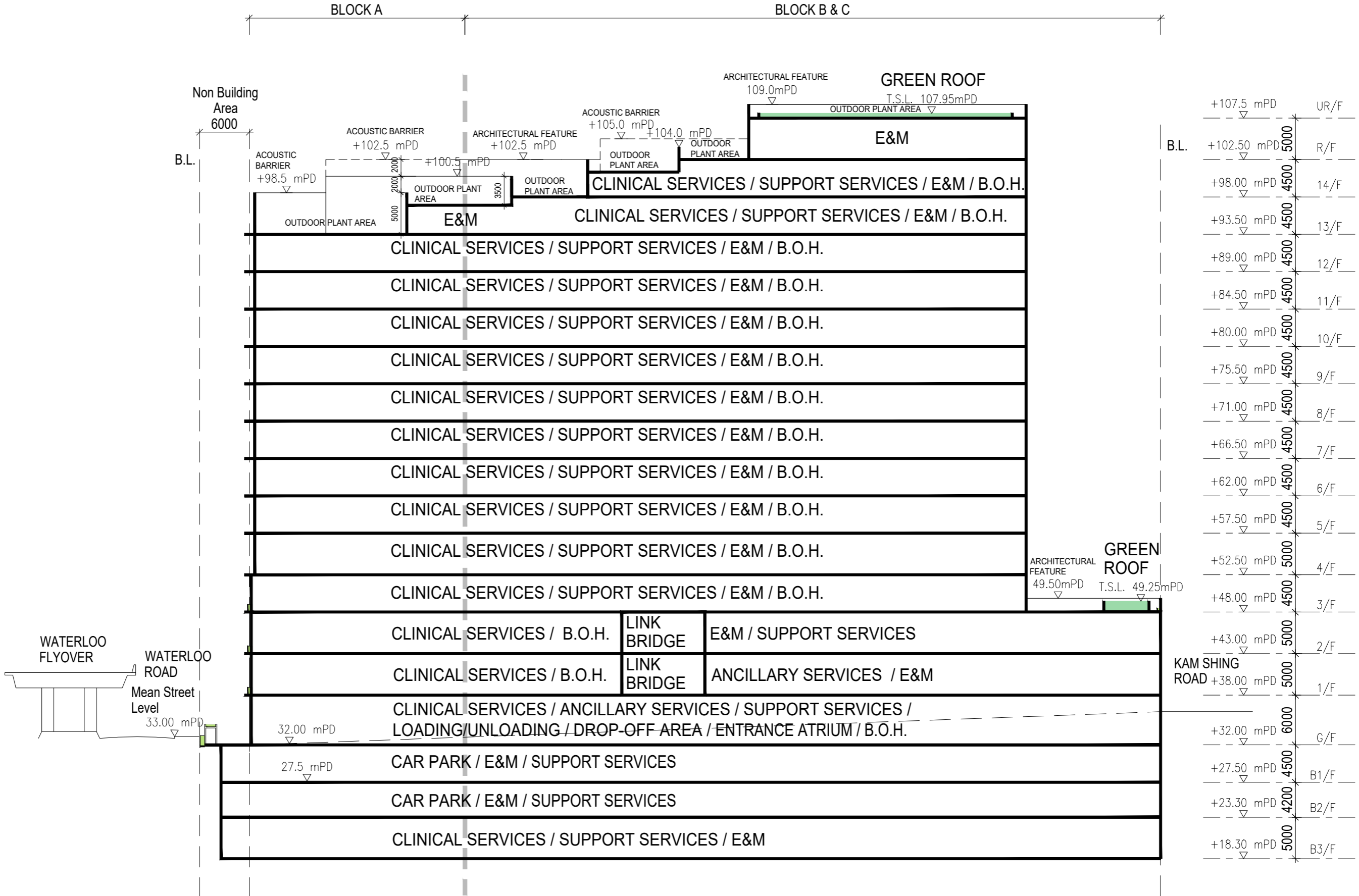
Indicative Only

Annex 7. Phasing Plan



Phase 1 Section

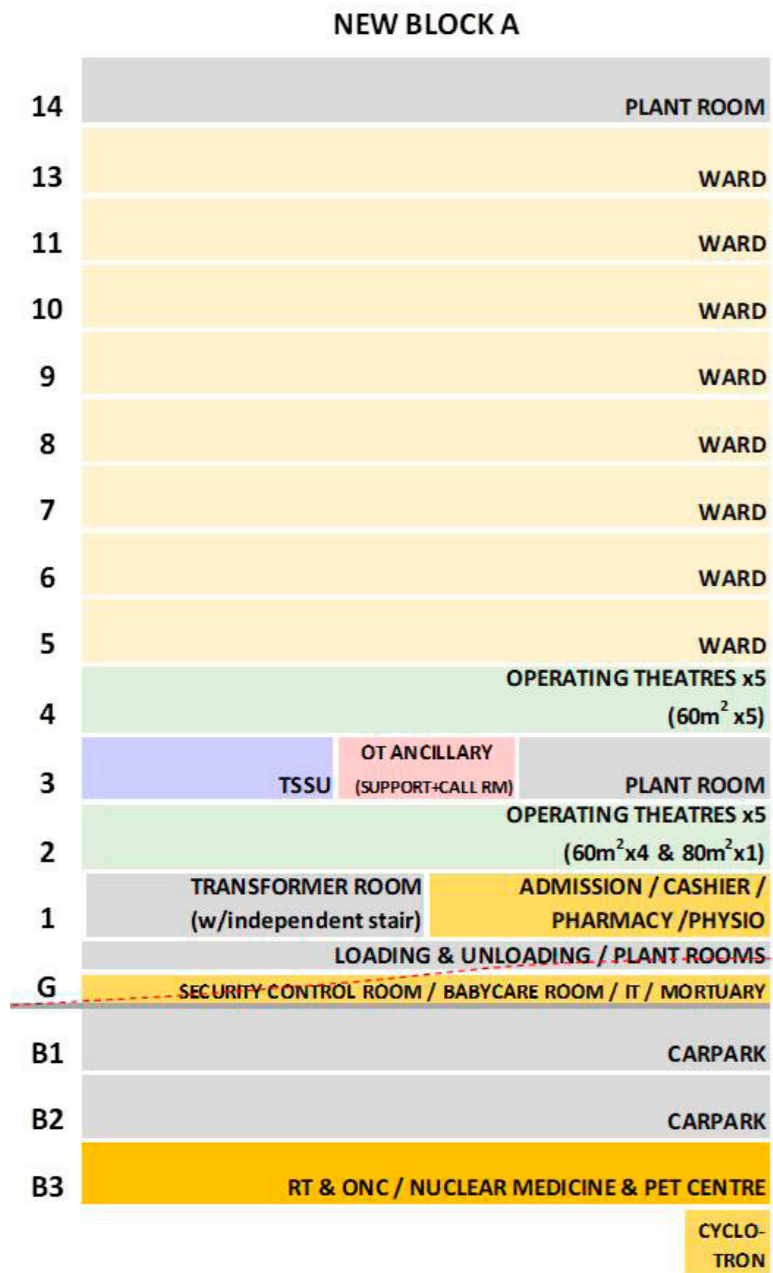
Annex 7. Phasing Plan



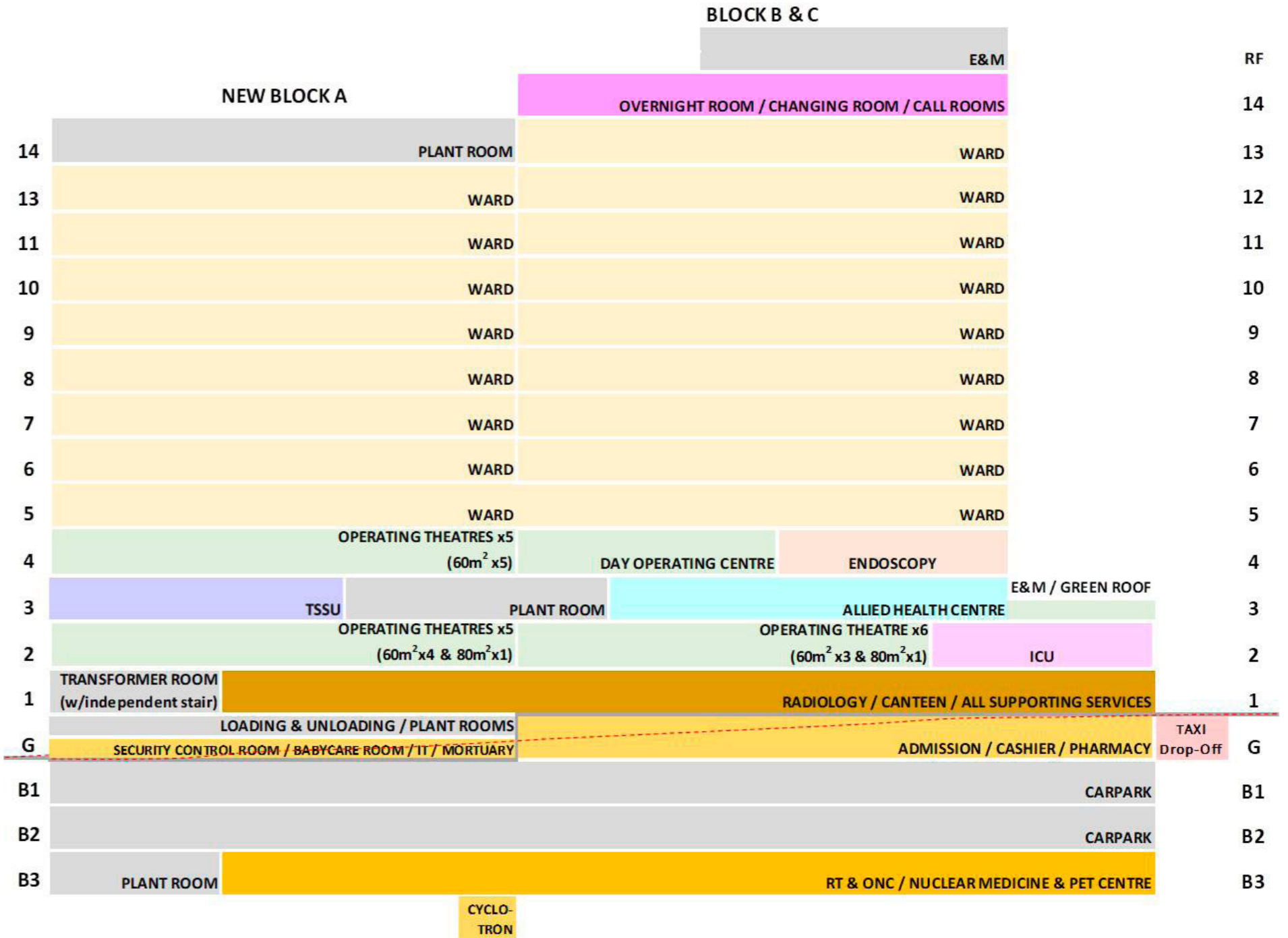
Phase 2 Section

Annex 7. Phasing Plan

PHASE 1



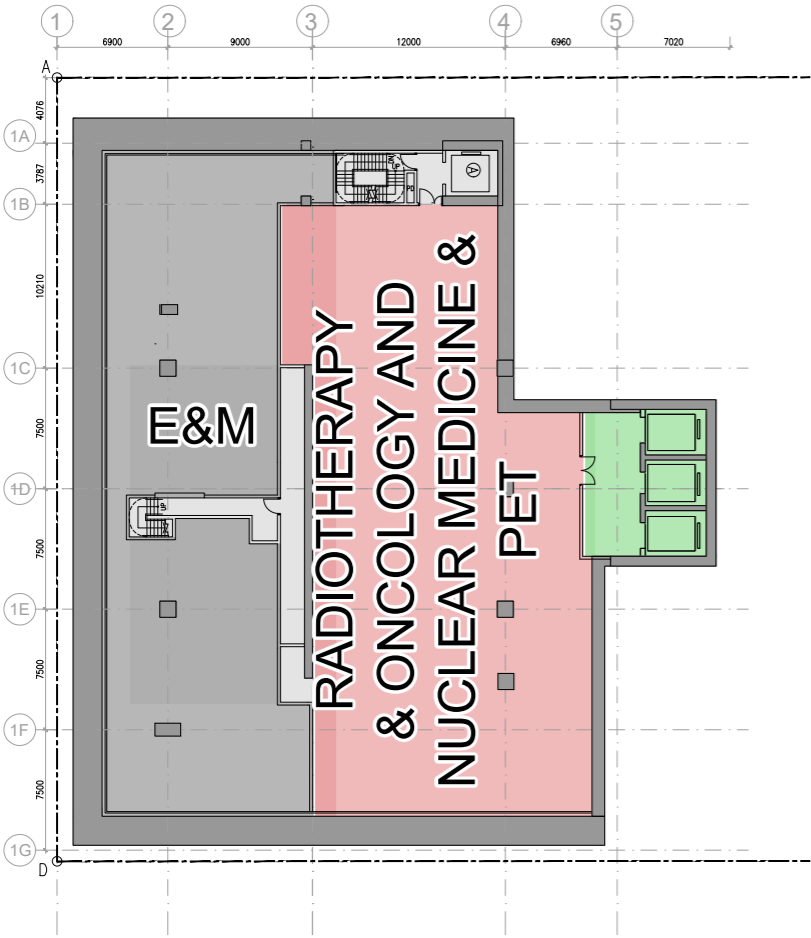
PHASE 2



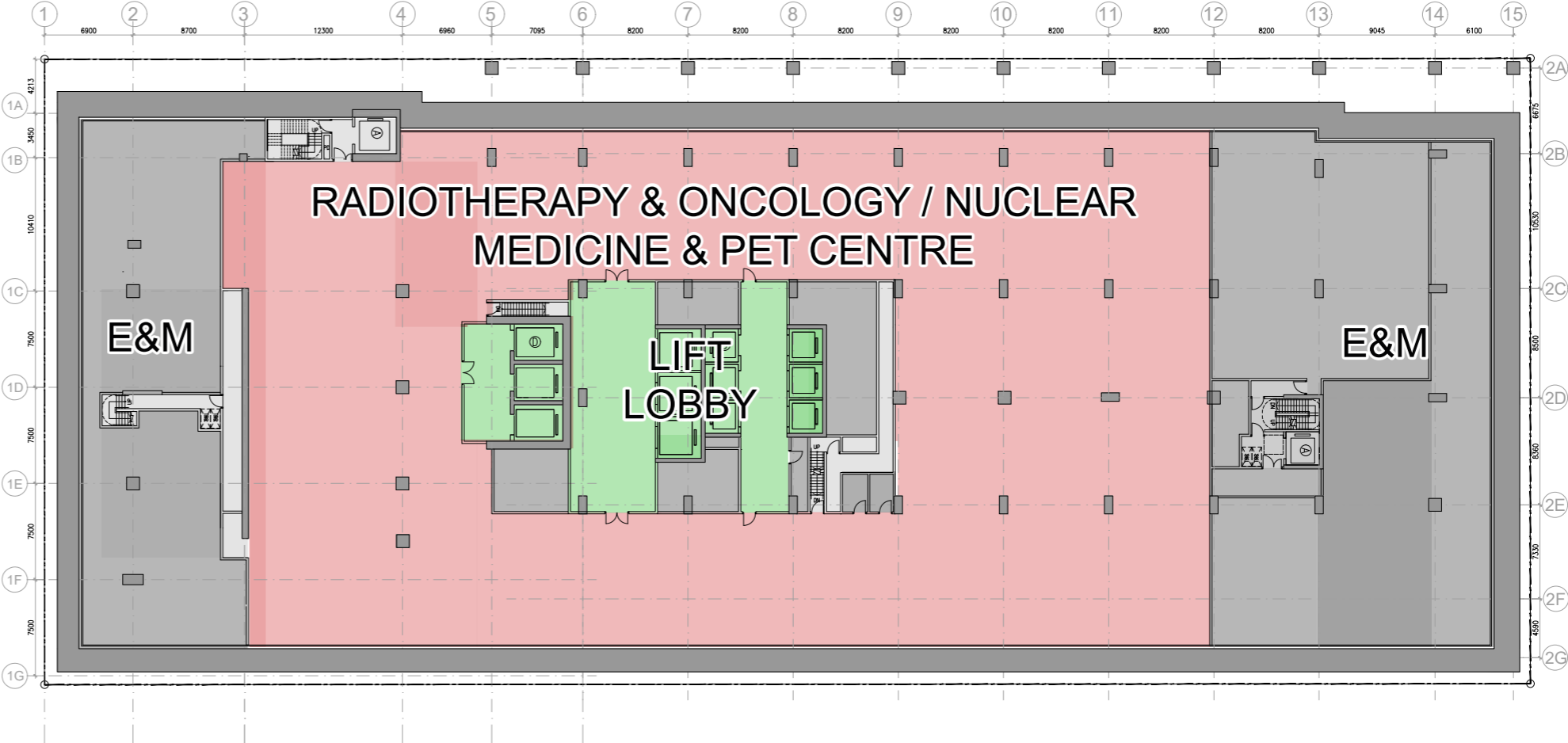
Annex 7. Phasing Plan

Legend

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
B3/F

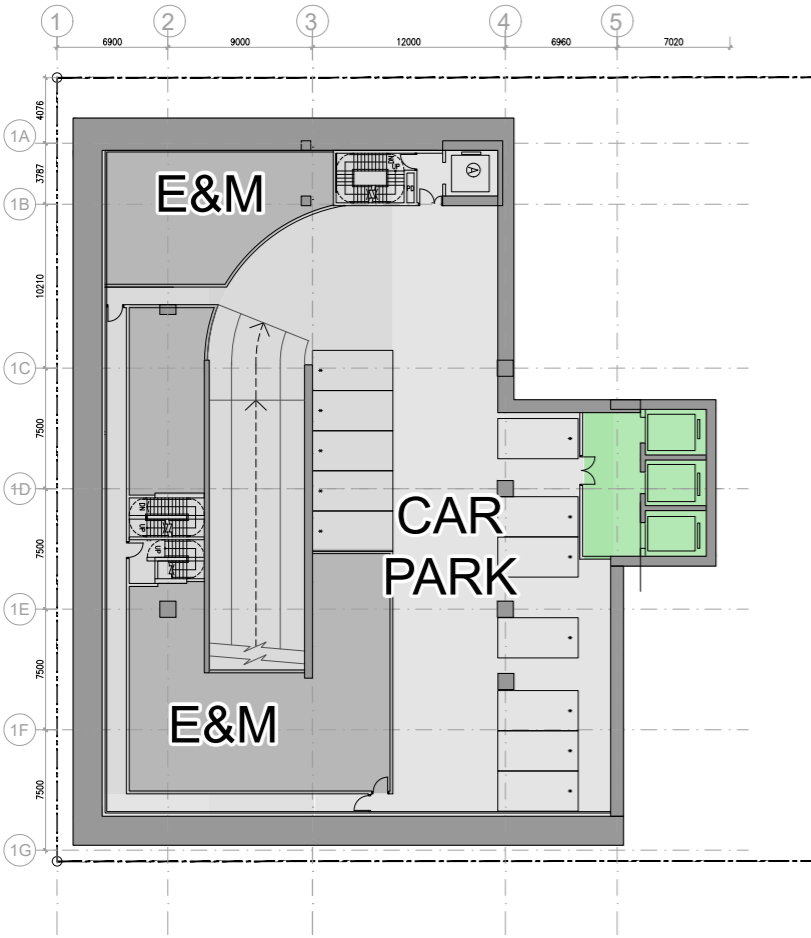


Phase 2
B3/F

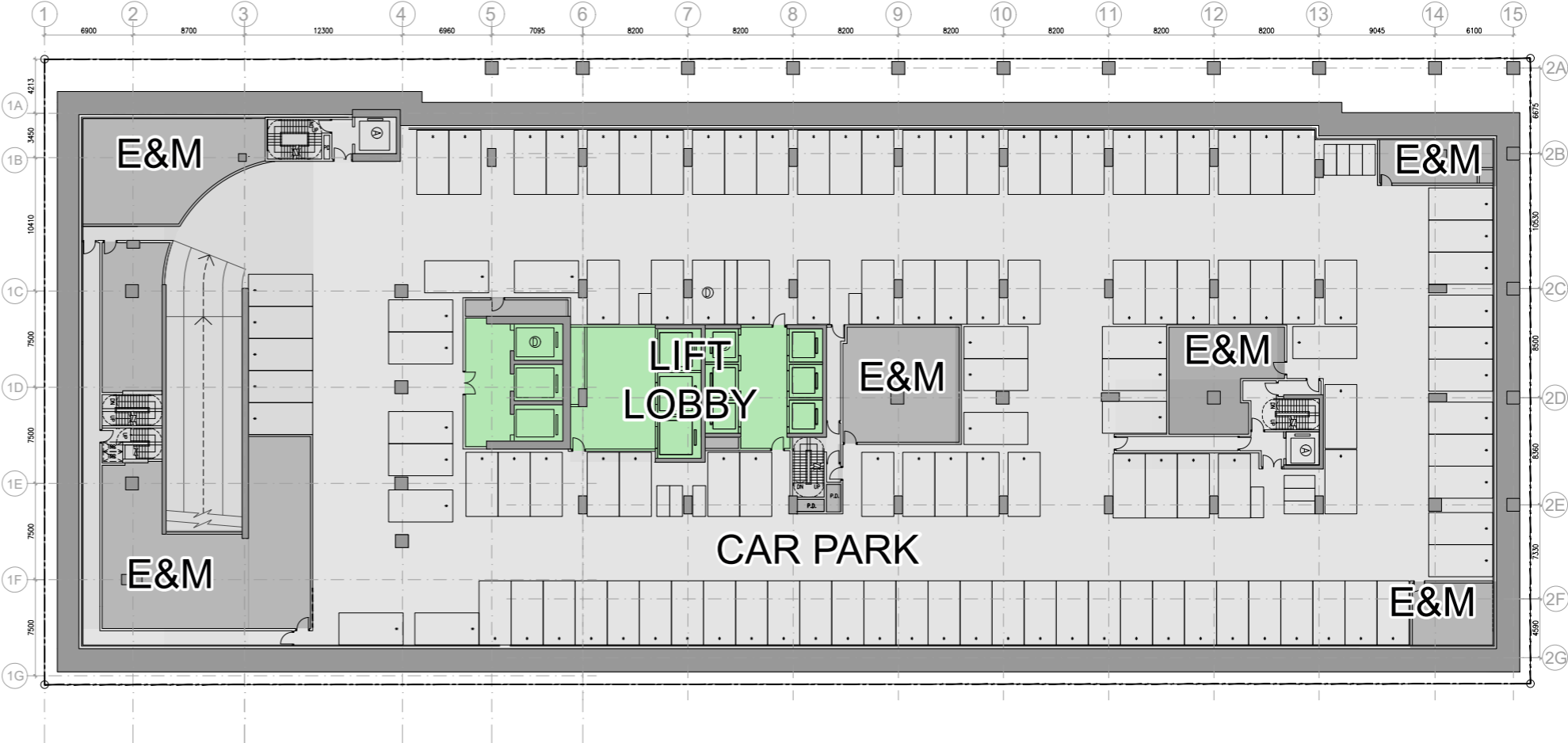
Annex 7. Phasing Plan

Legend

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
B2/F

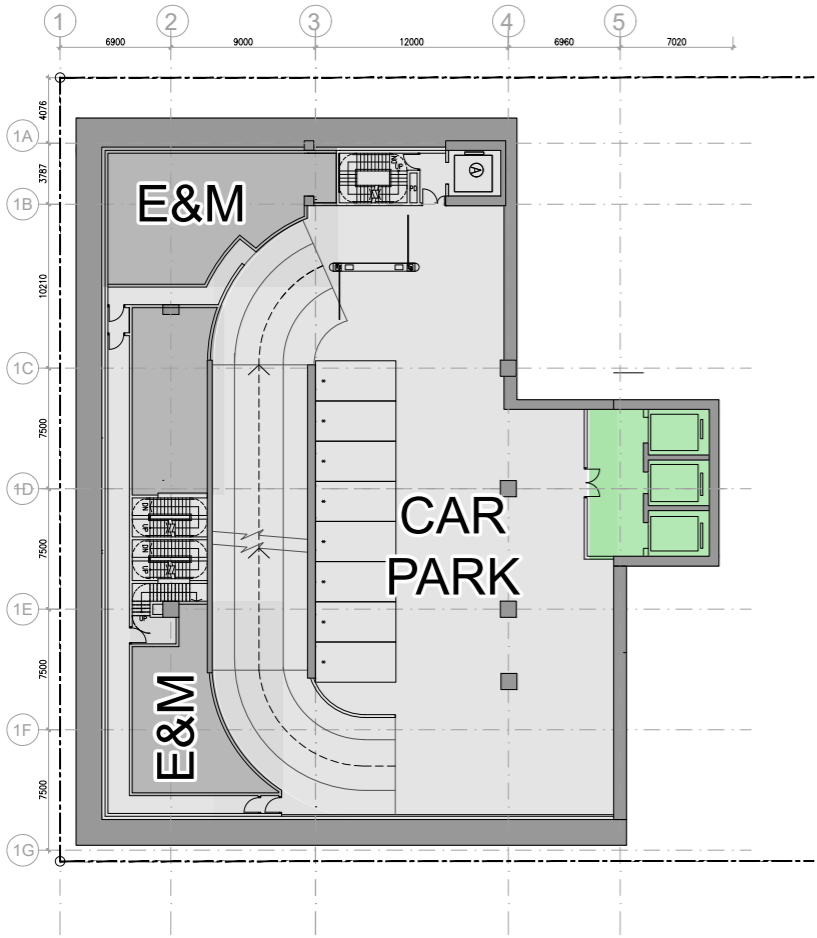


Phase 2
B2/F

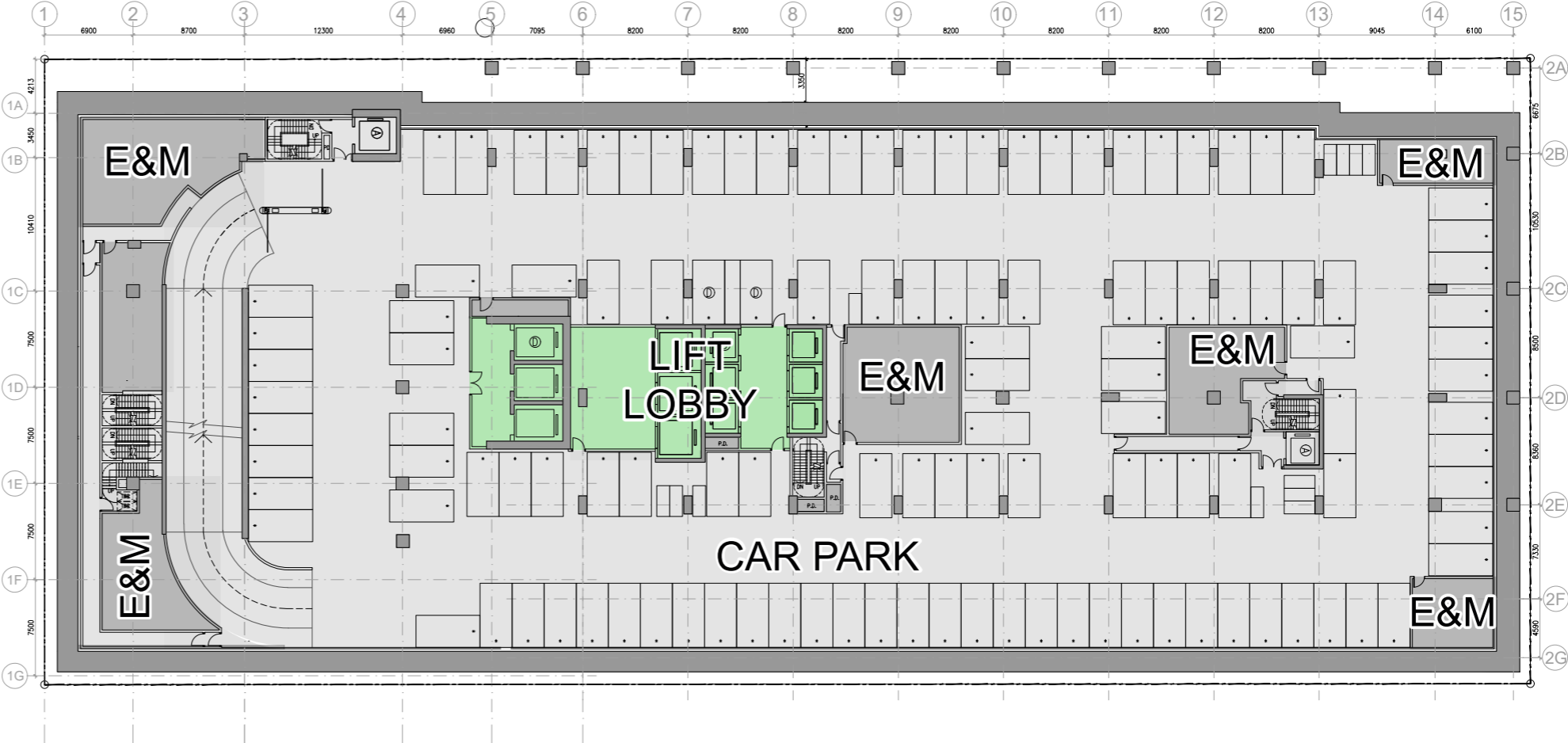
Annex 7. Phasing Plan

Legend

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
B1/F

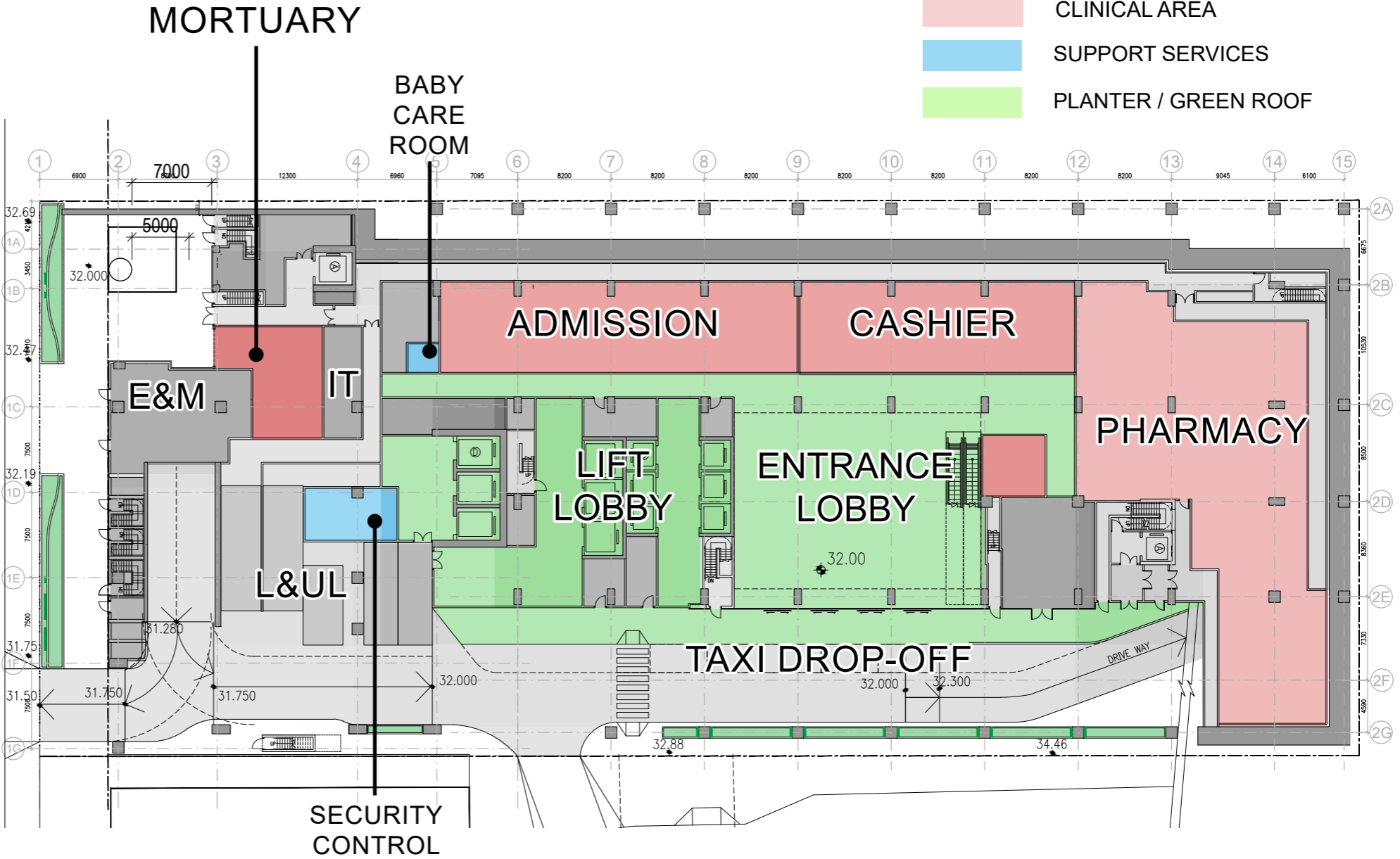
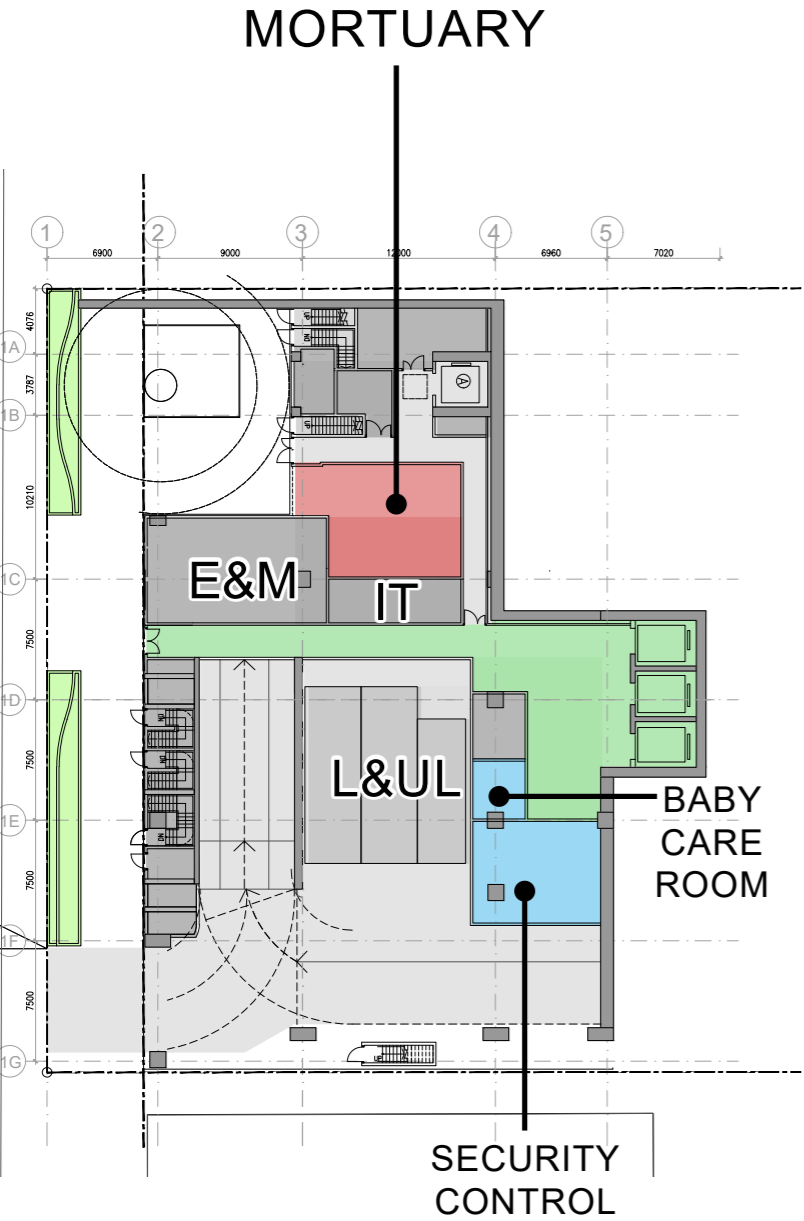


Phase 2
B1/F

Annex 7. Phasing Plan

Legend

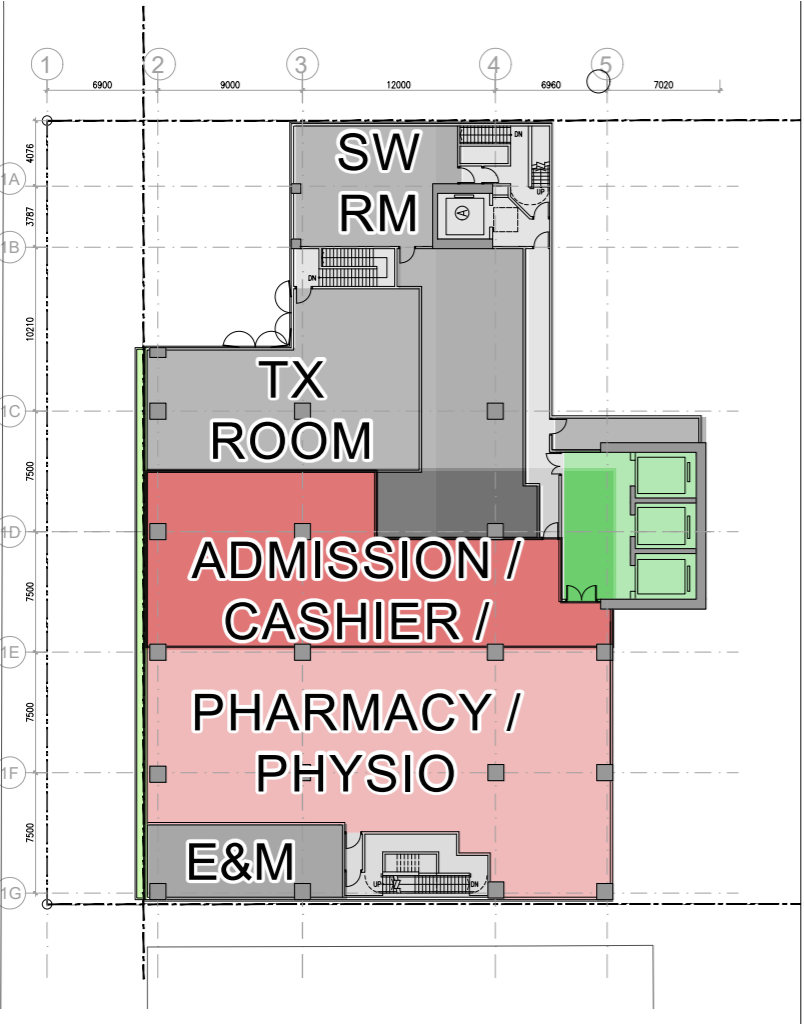
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA
- SUPPORT SERVICES
- PLANTER / GREEN ROOF



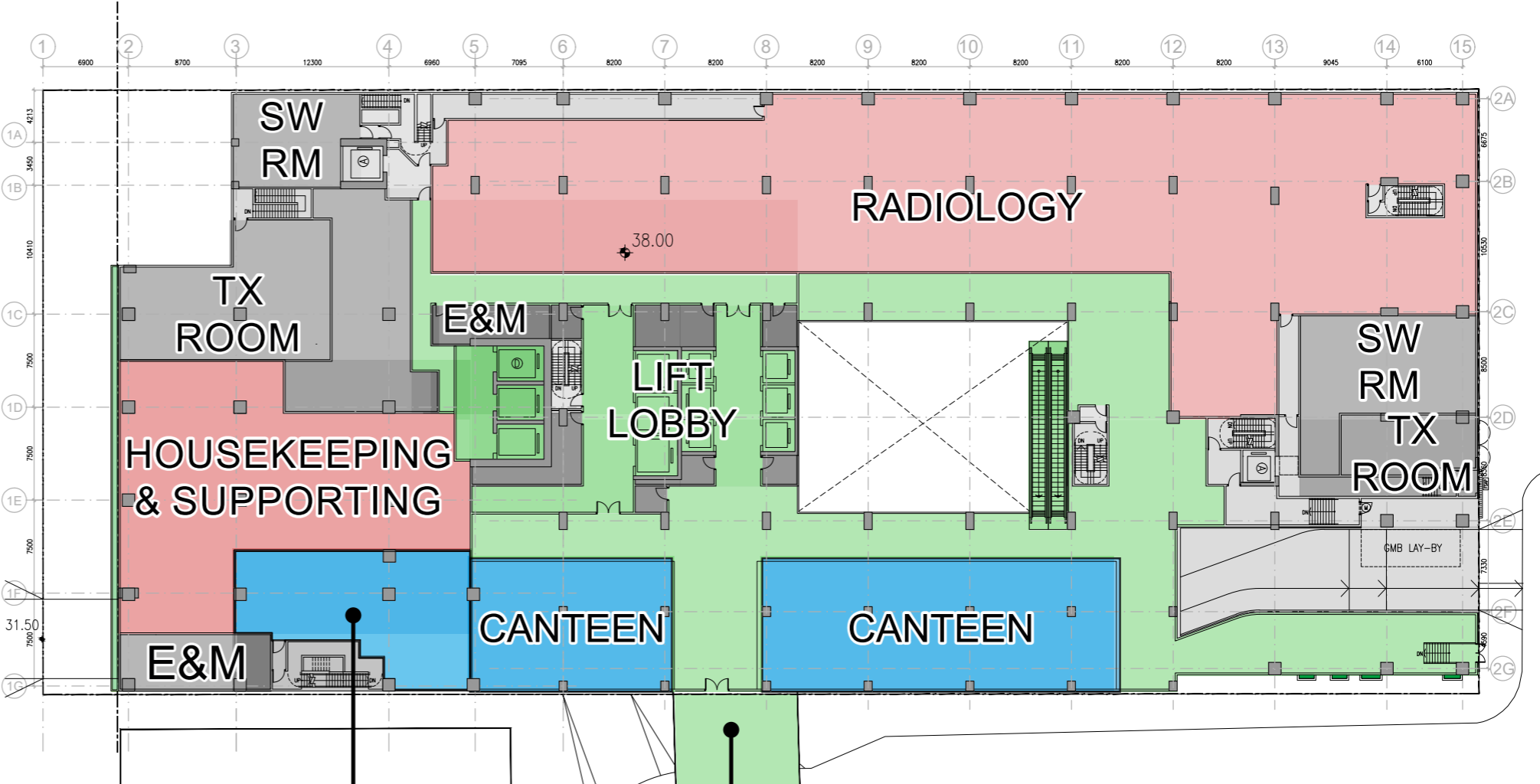
Annex 7. Phasing Plan

Legend

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA
- SUPPORT SERVICES
- PLANTER / GREEN ROOF



Phase 1
1/F



Phase 2
1/F

PATIENT & STAFF
CATERING

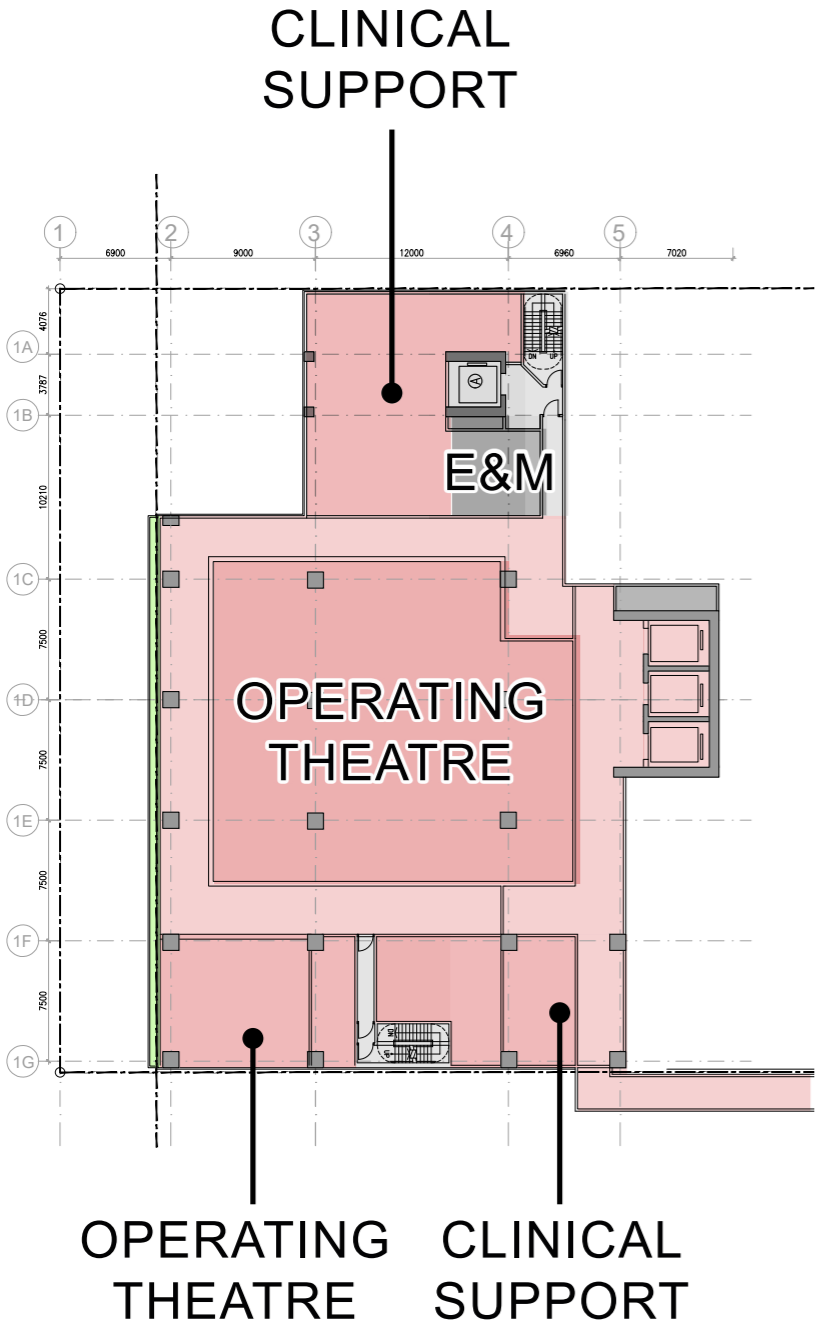
FOOTBRIDGE

Annex 7. Phasing Plan

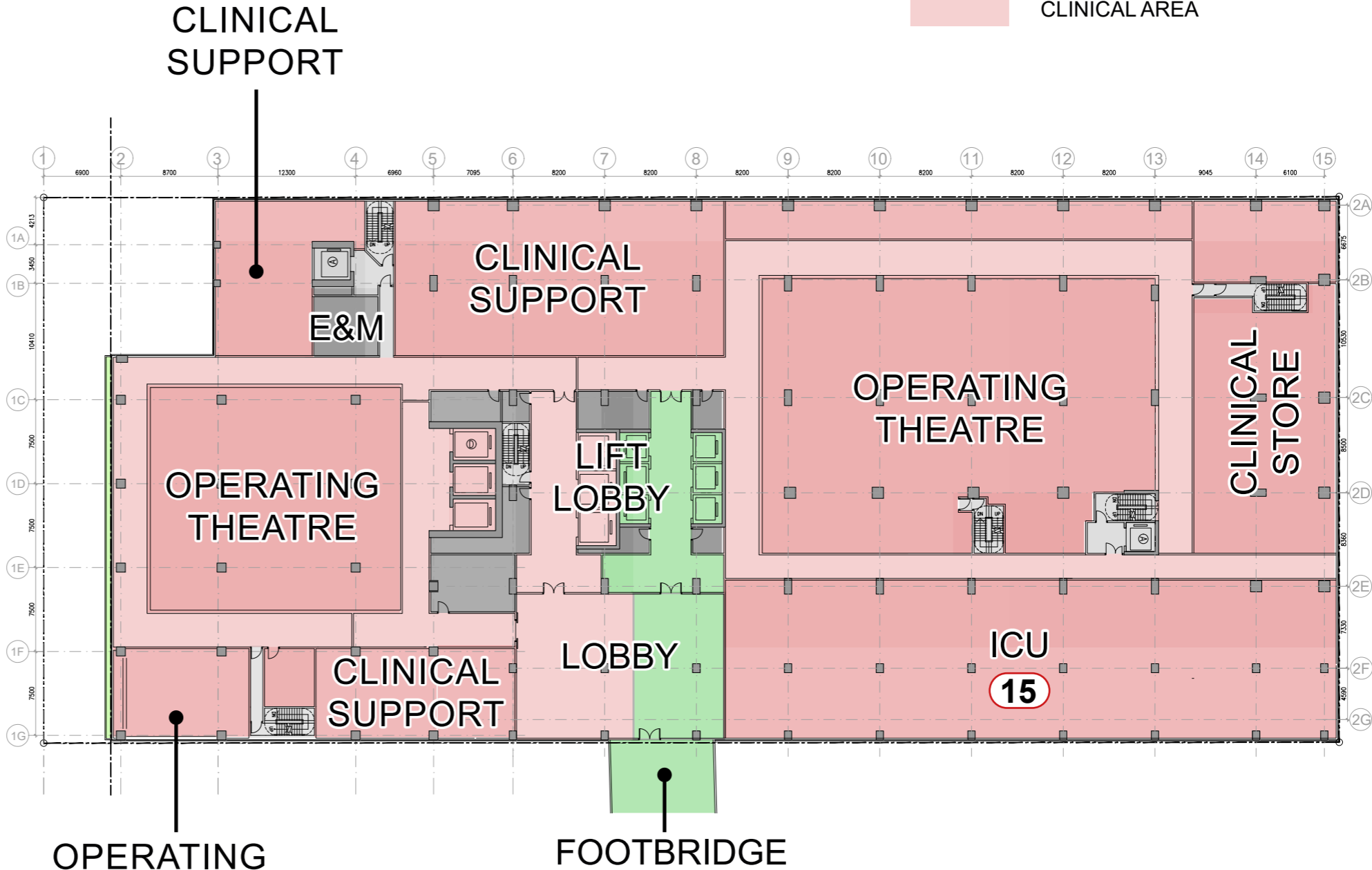
Legend

15 ICU (15 beds)

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
2/F

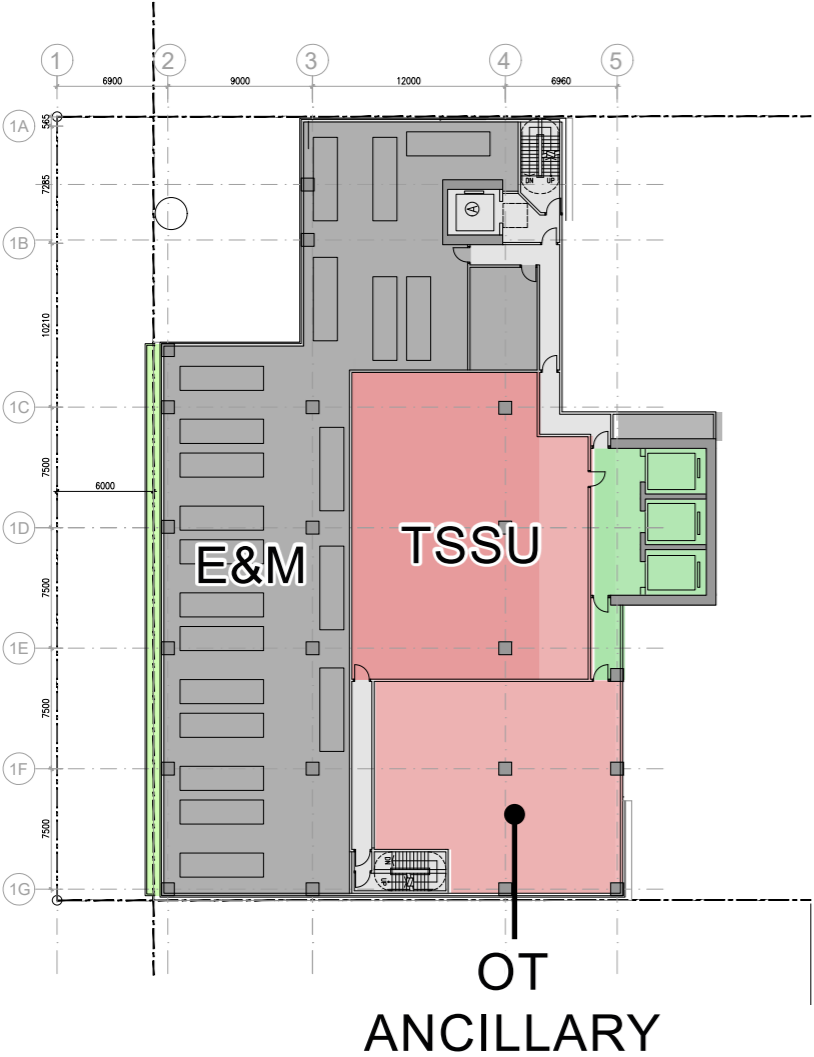


Phase 2
2/F

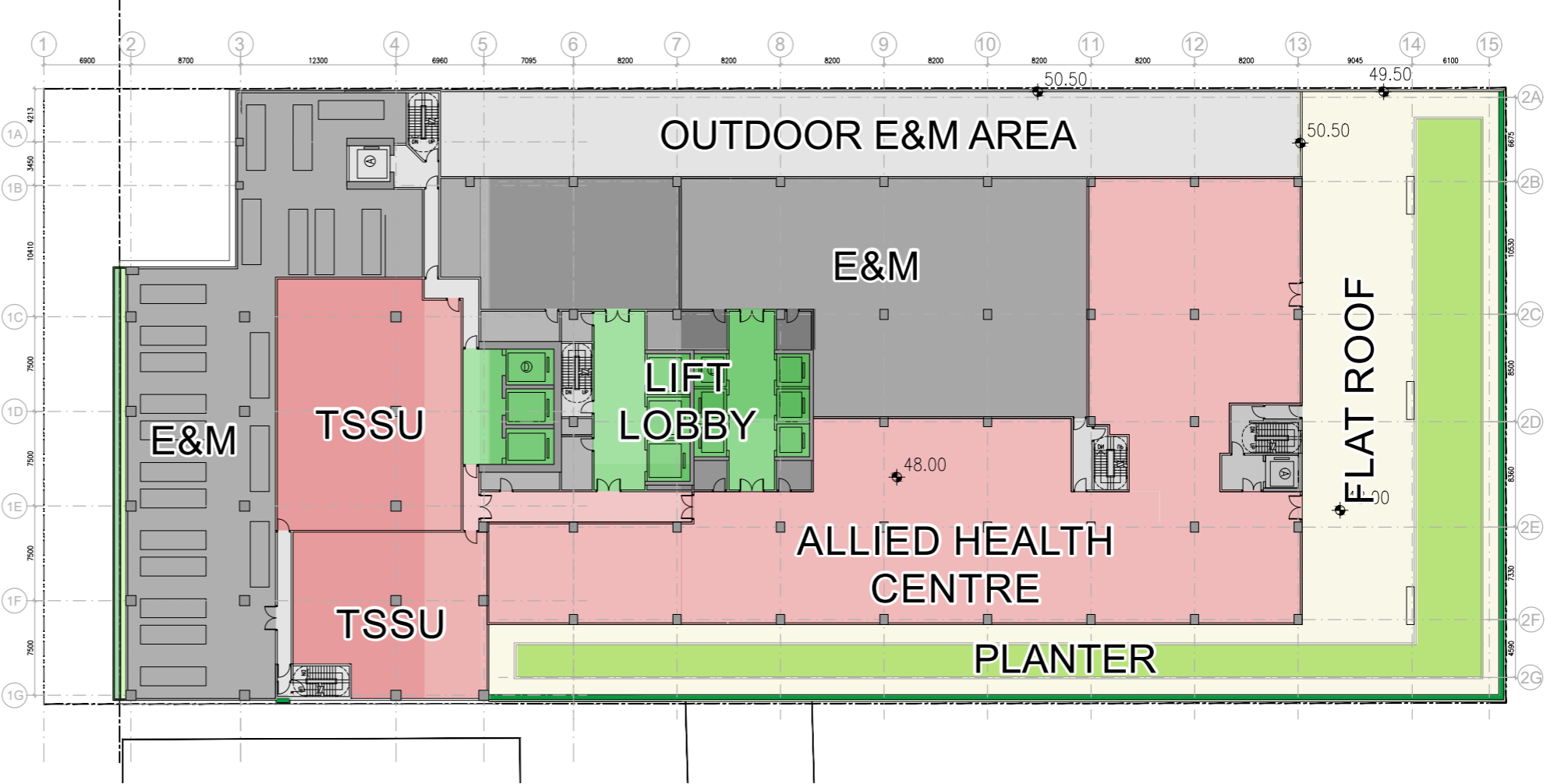
Annex 7. Phasing Plan

Legend

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
3/F

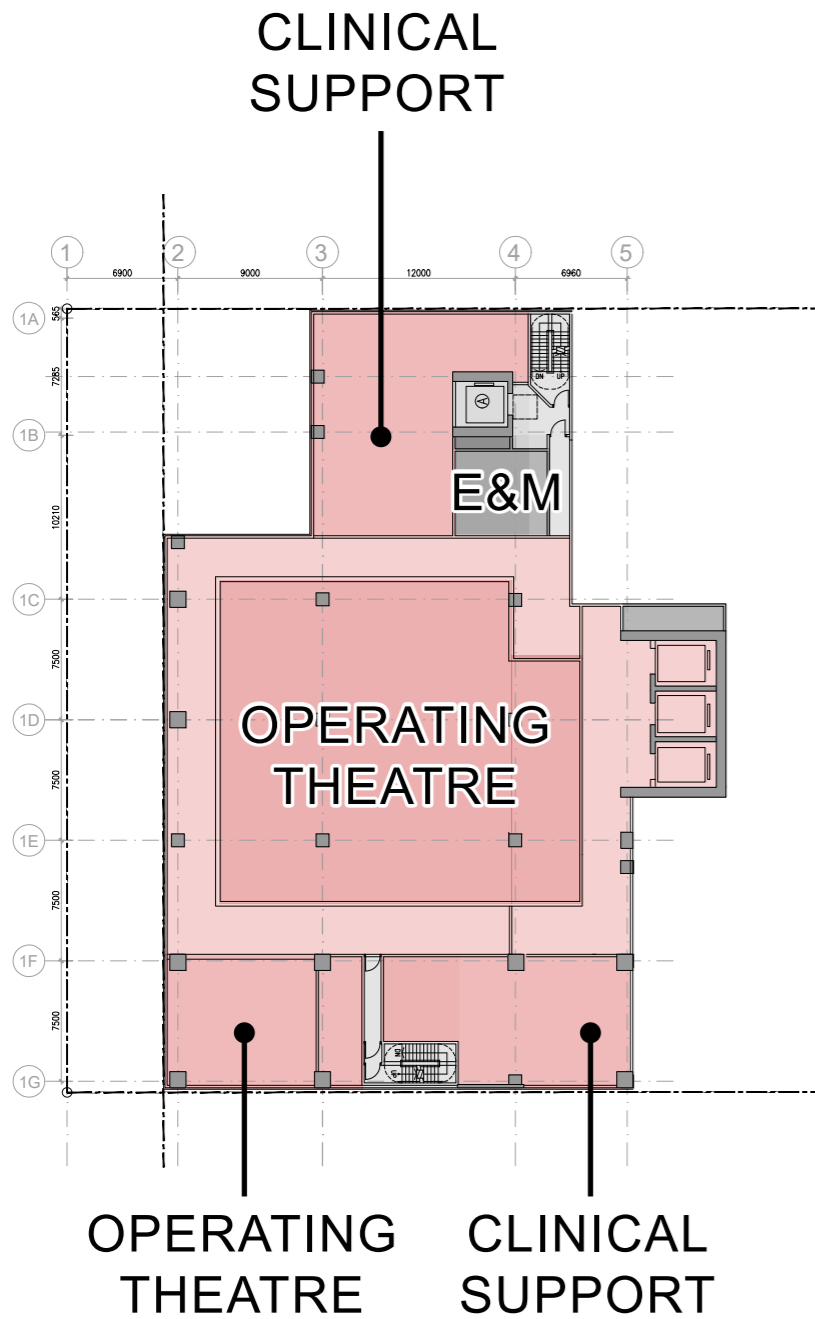


Phase 2
3/F

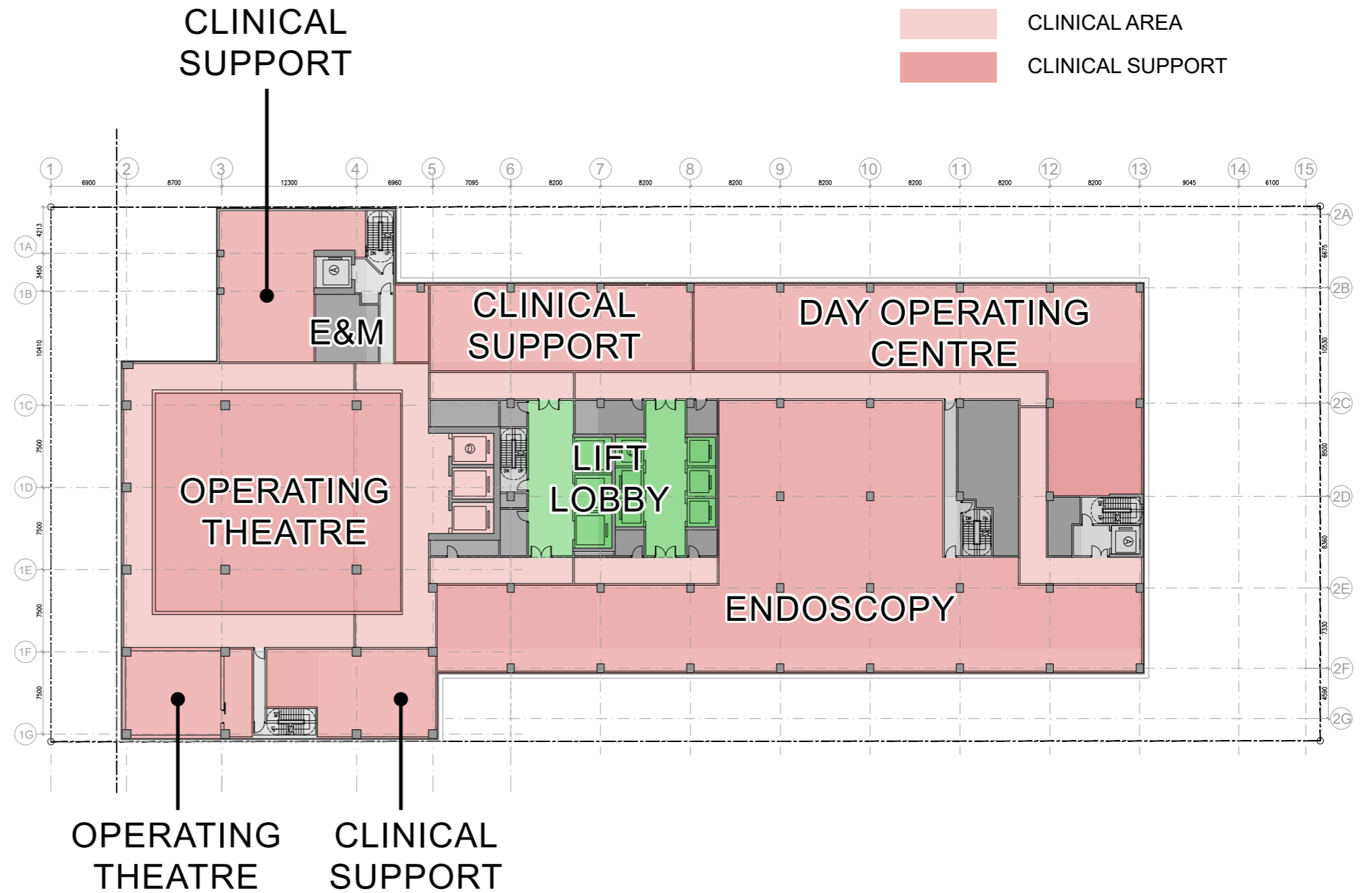
Annex 7. Phasing Plan

Legend

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA
- CLINICAL SUPPORT



Phase 1
4/F

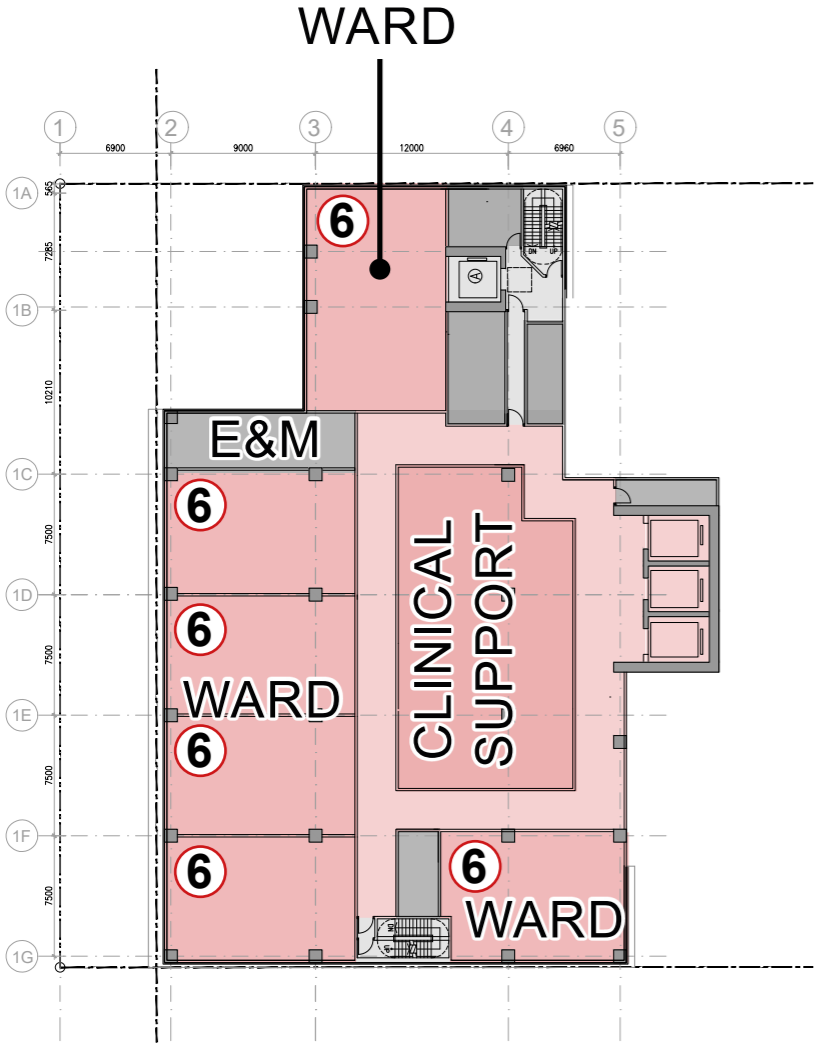


Phase 2
4/F

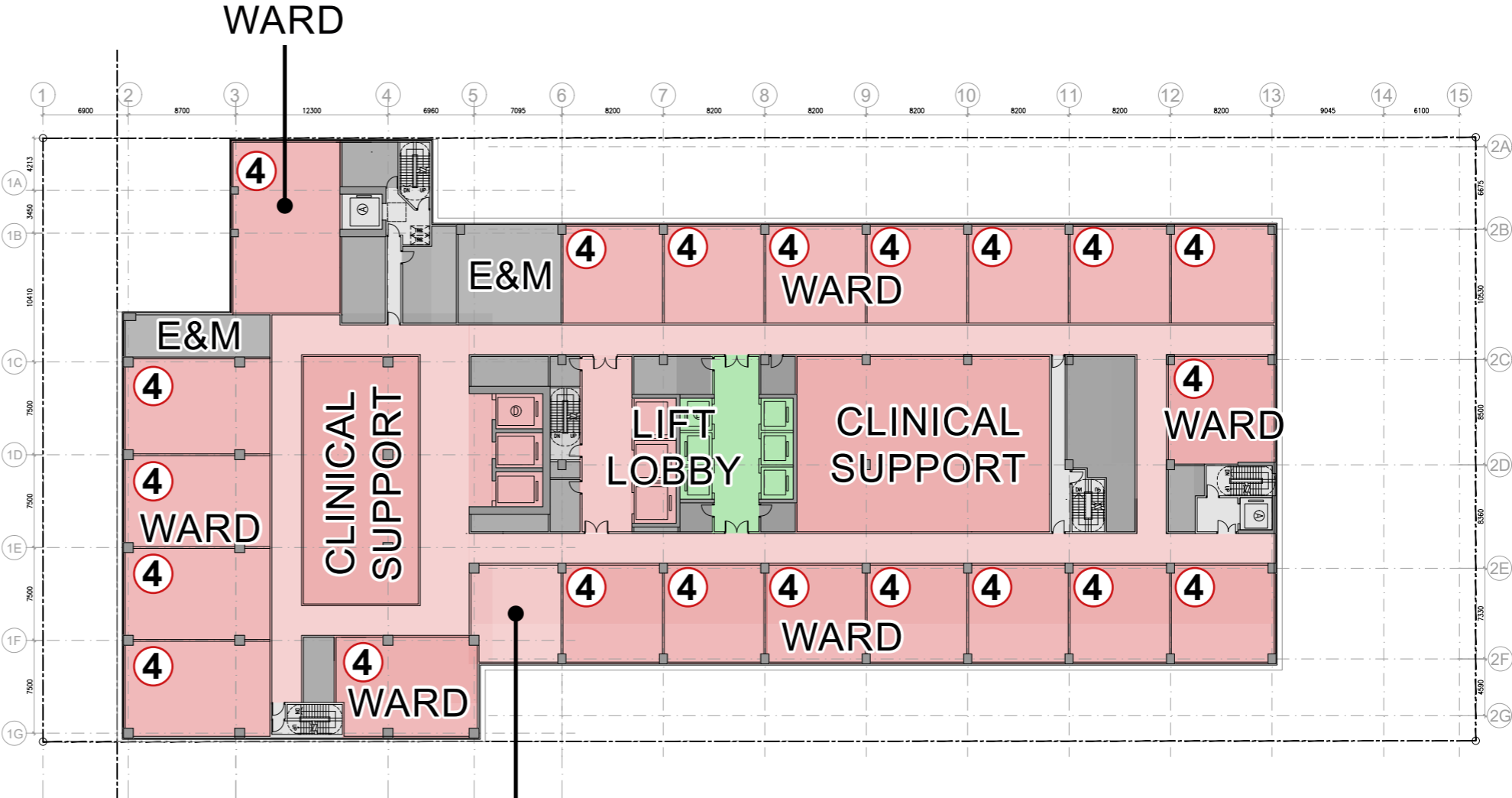
Annex 7. Phasing Plan

Legend

- 6** Six-bed ward
- 4** Four-bed ward
- 1** Single-bed ward
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
5/F
Total Bed No. 36

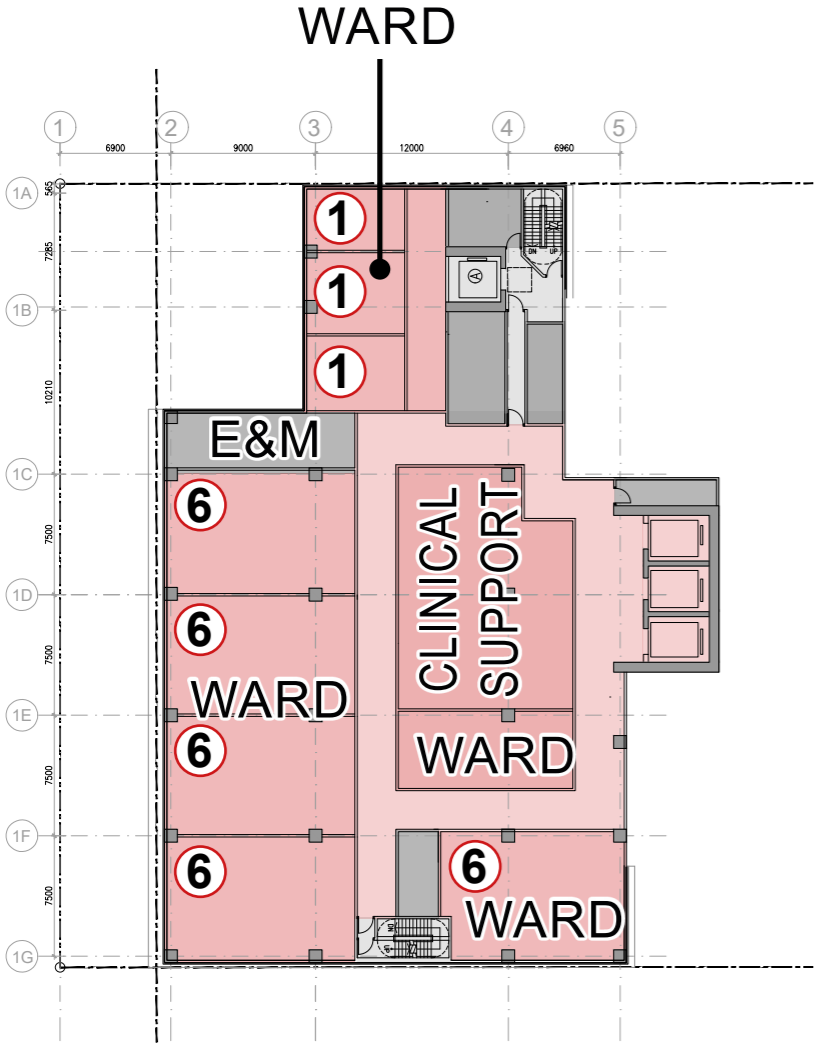


Phase 2
5/F
Total Bed No. 24+60=84

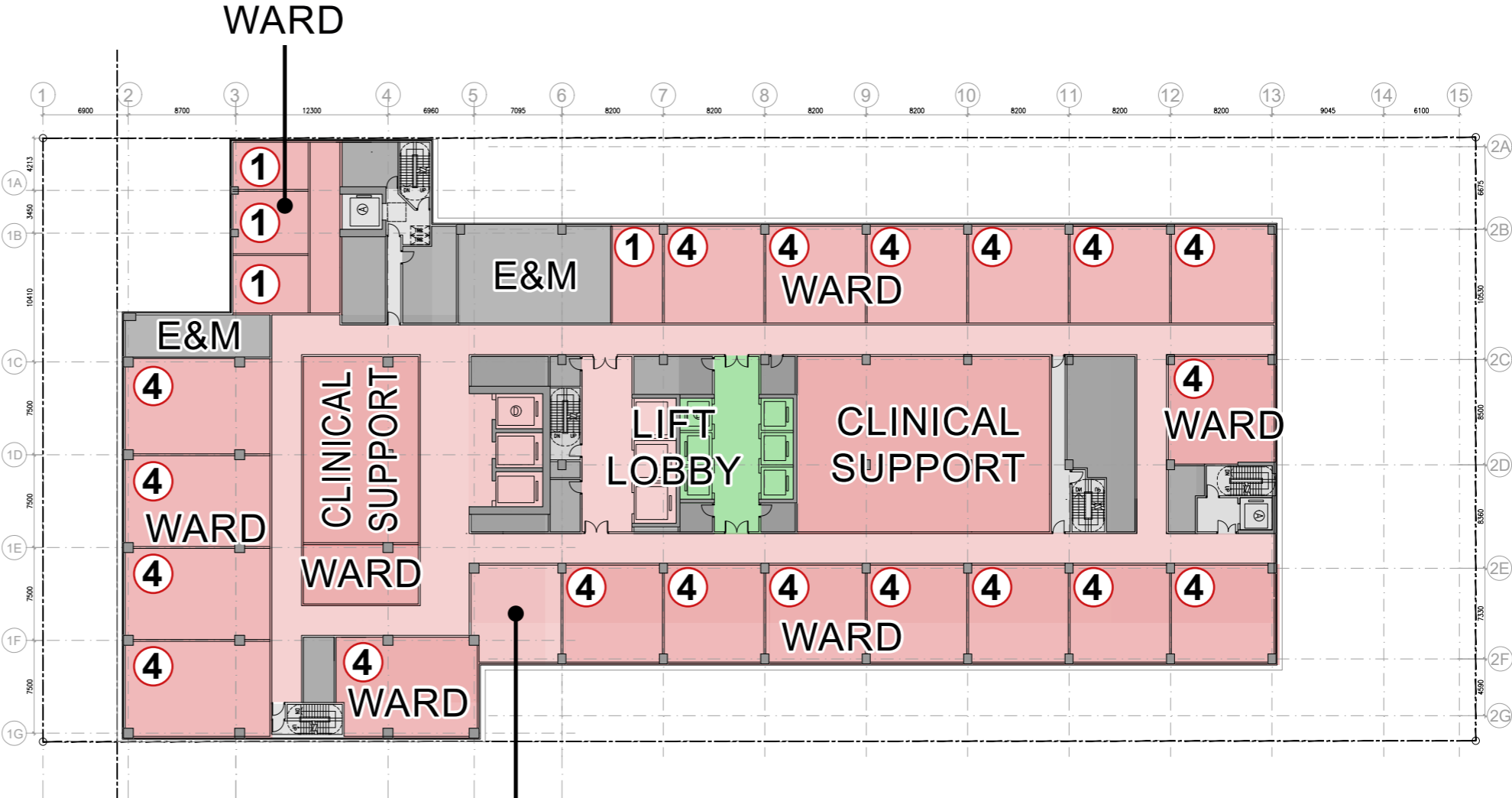
Annex 7. Phasing Plan

Legend

- 6** Six-bed ward
- 4** Four-bed ward
- 1** Single-bed ward
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
6/F
Total Bed No. 33



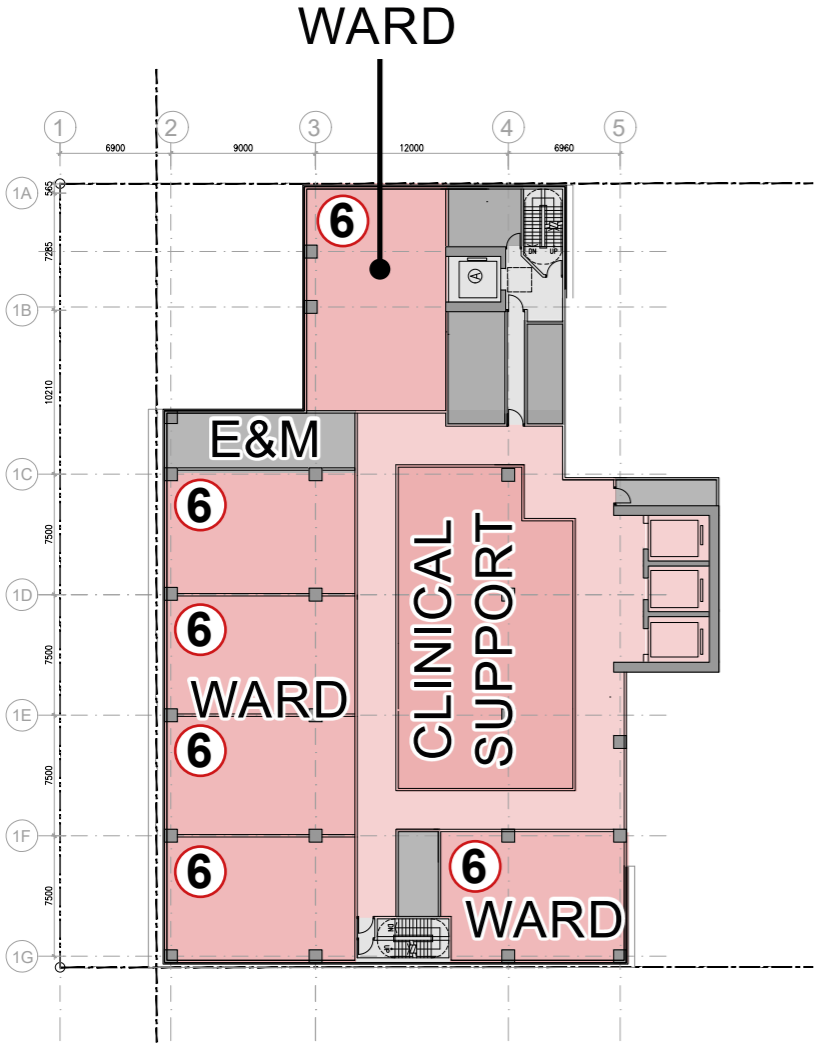
Phase 2
6/F
Total Bed No. 23+57=80

CLINICAL SUPPORT

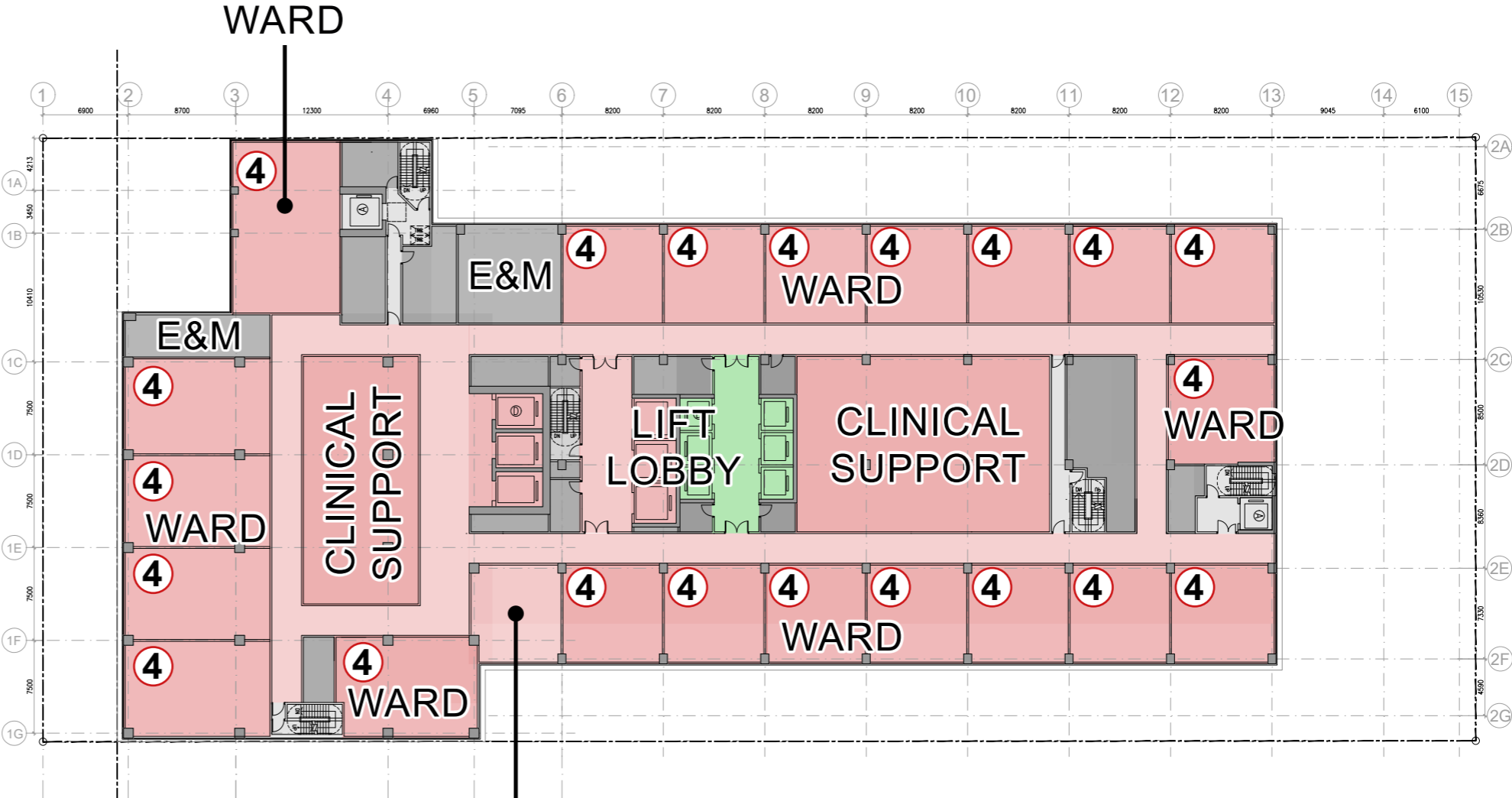
Annex 7. Phasing Plan

Legend

- 6** Six-bed ward
- 4** Four-bed ward
- 1** Single-bed ward
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
7-9/F
Total Bed No. 36

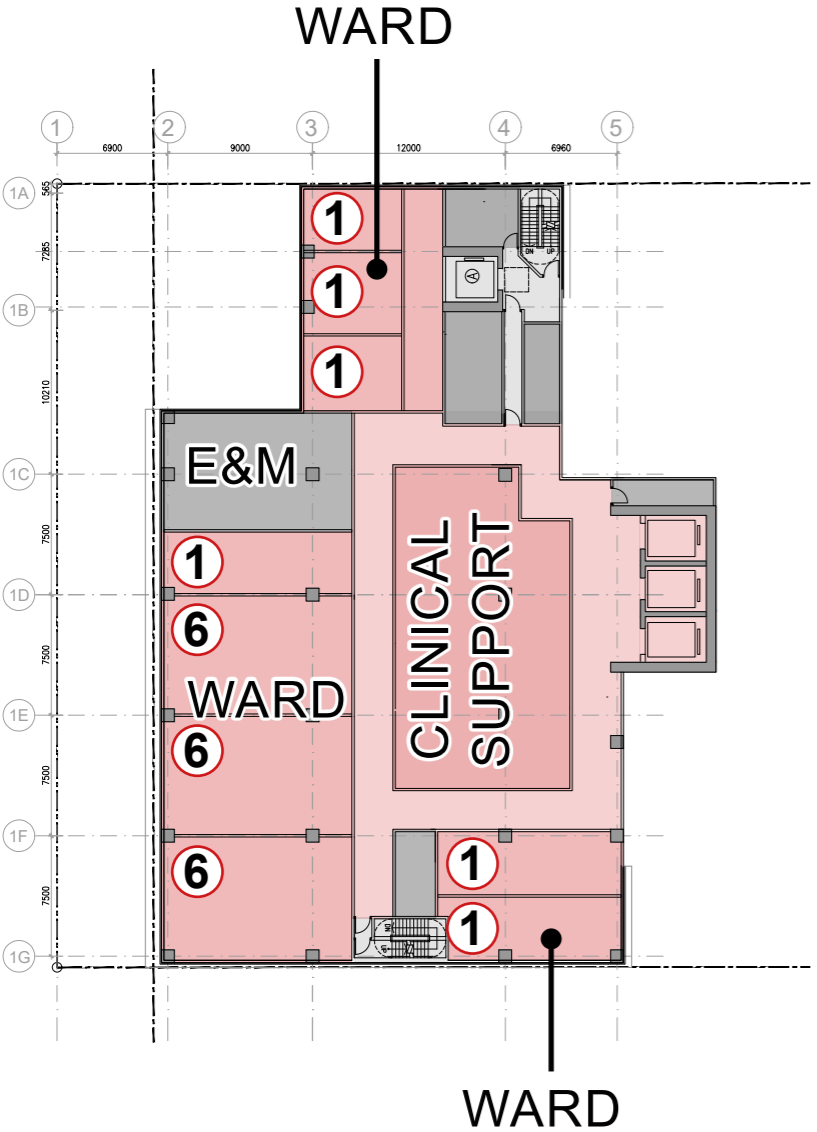


Phase 2
7-9/F
Total Bed No. 24+60=84

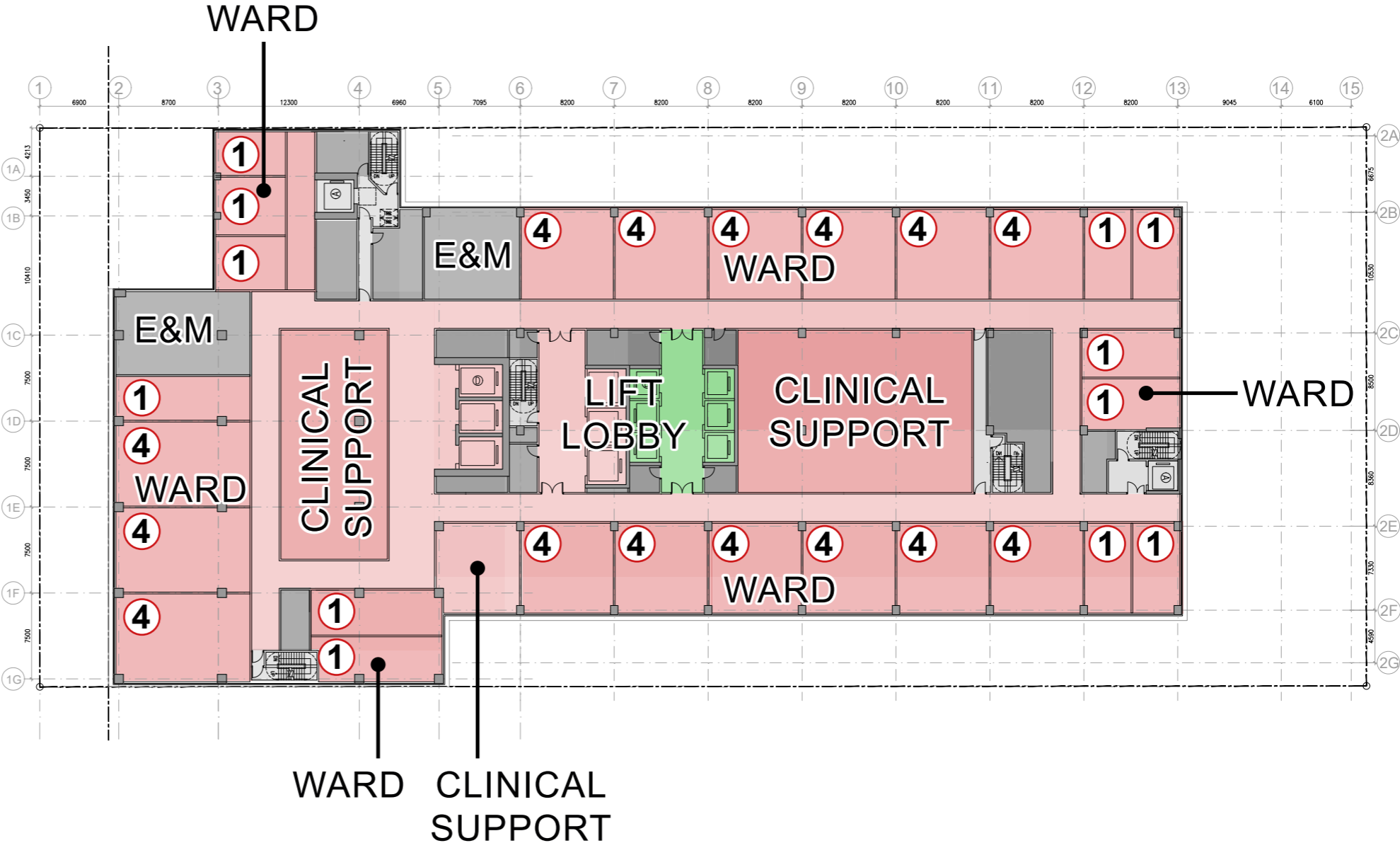
Annex 7. Phasing Plan

Legend

- 6** Six-bed ward
- 4** Four-bed ward
- 1** Single-bed ward
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
10/F
Total Bed No. 24

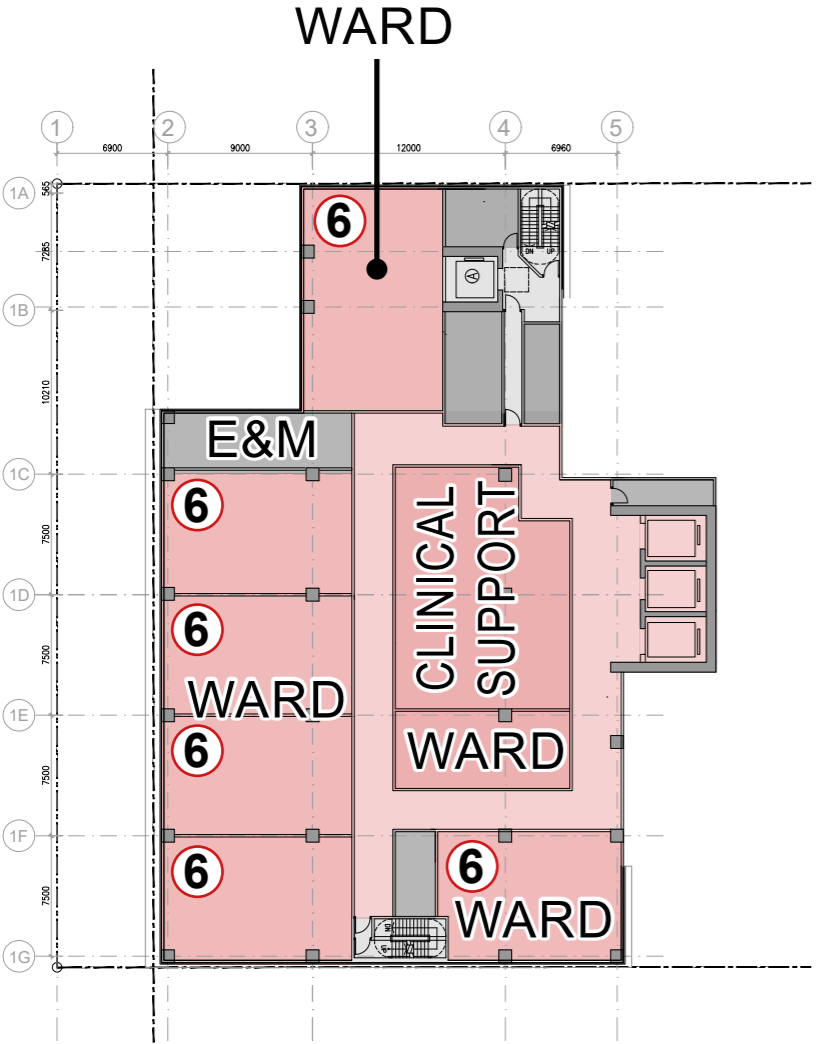


Phase 2
10/F
Total Bed No. 18+54=72

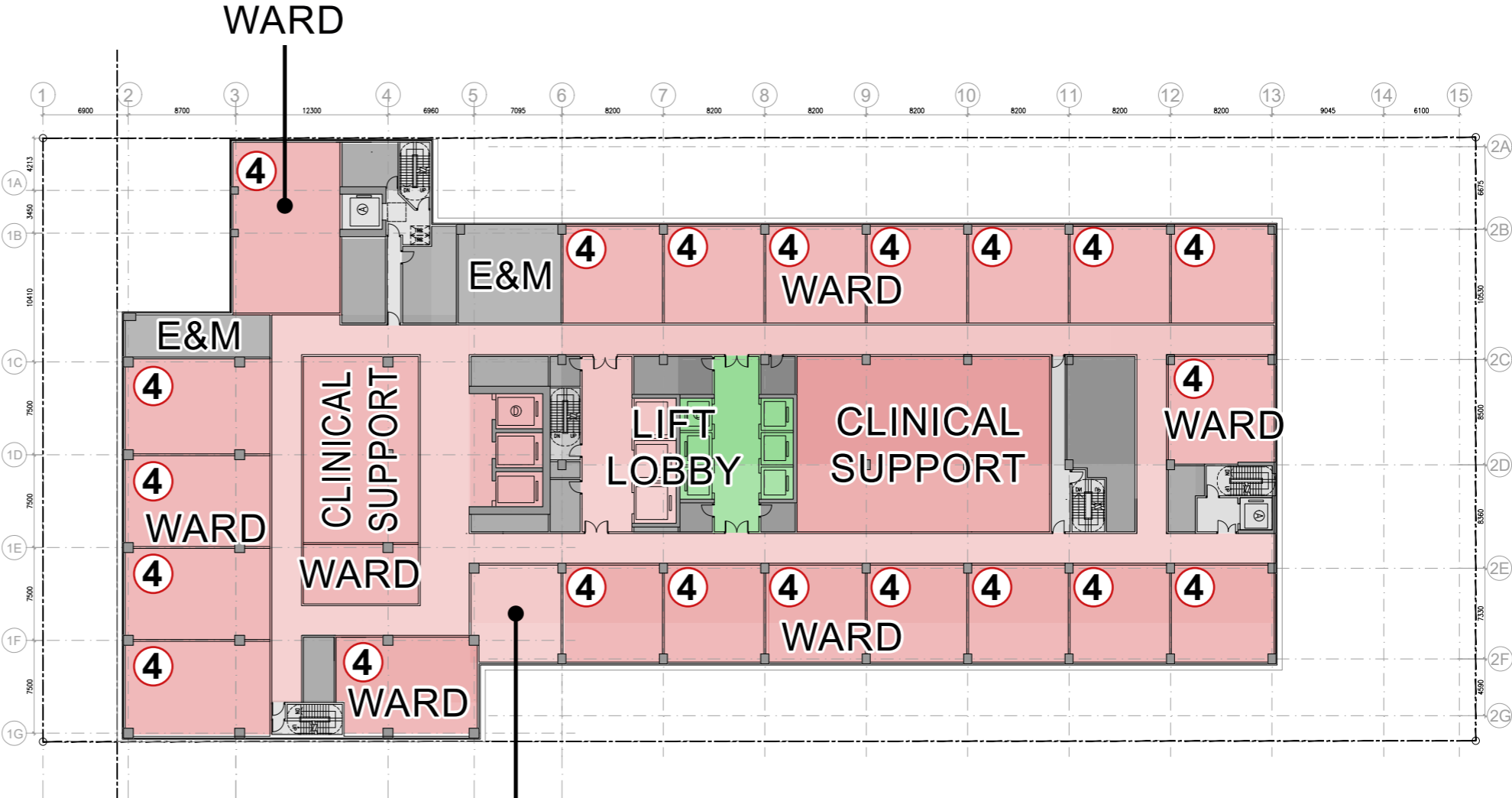
Annex 7. Phasing Plan

Legend

- 6** Six-bed ward
- 4** Four-bed ward
- 1** Single-bed ward
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
11/F
Total Bed No. 36



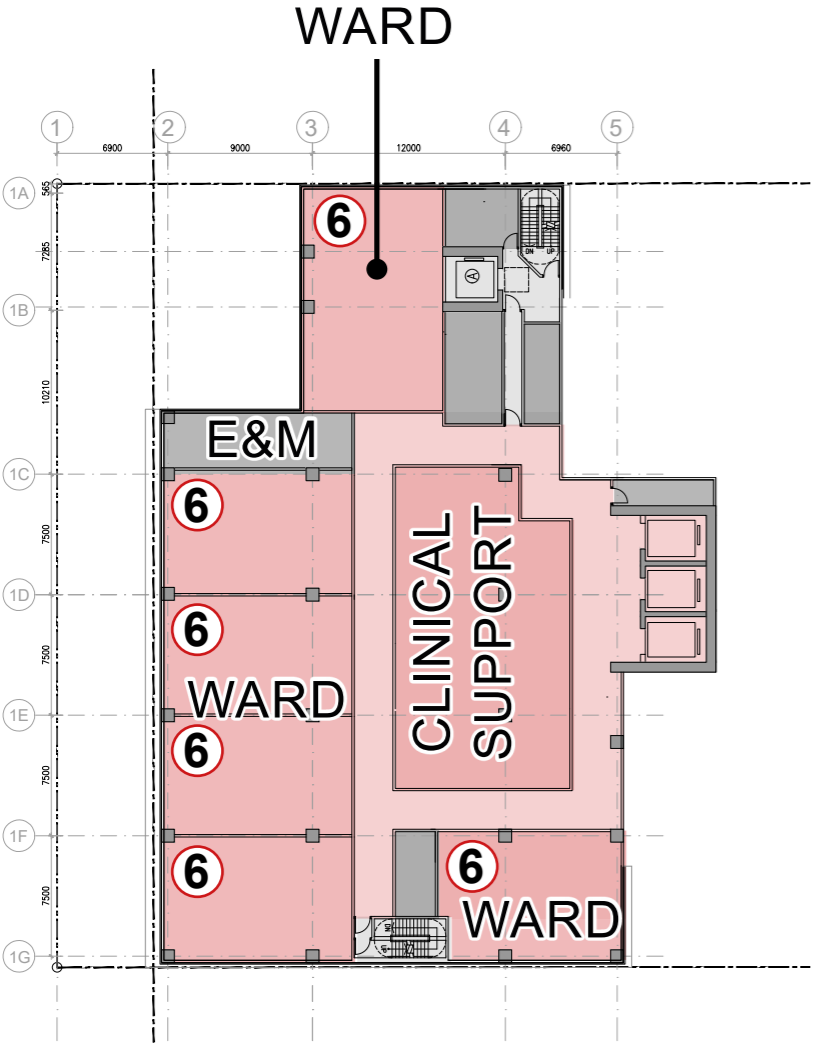
Phase 2
11/F
Total Bed No. 24+60=84

CLINICAL SUPPORT

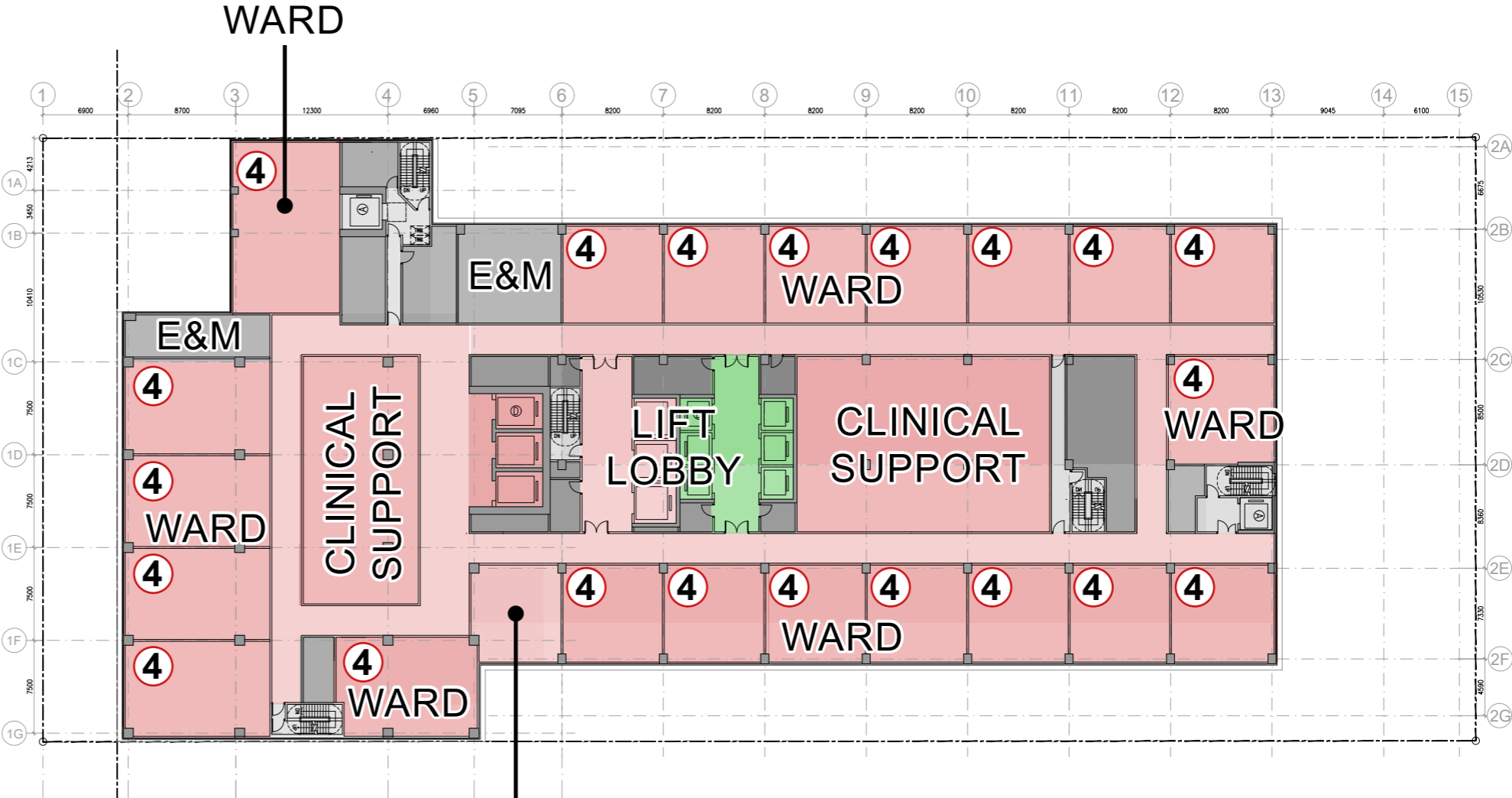
Annex 7. Phasing Plan

Legend

- 6** Six-bed ward
- 4** Four-bed ward
- 1** Single-bed ward
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA



Phase 1
12/F
Total Bed No. 36



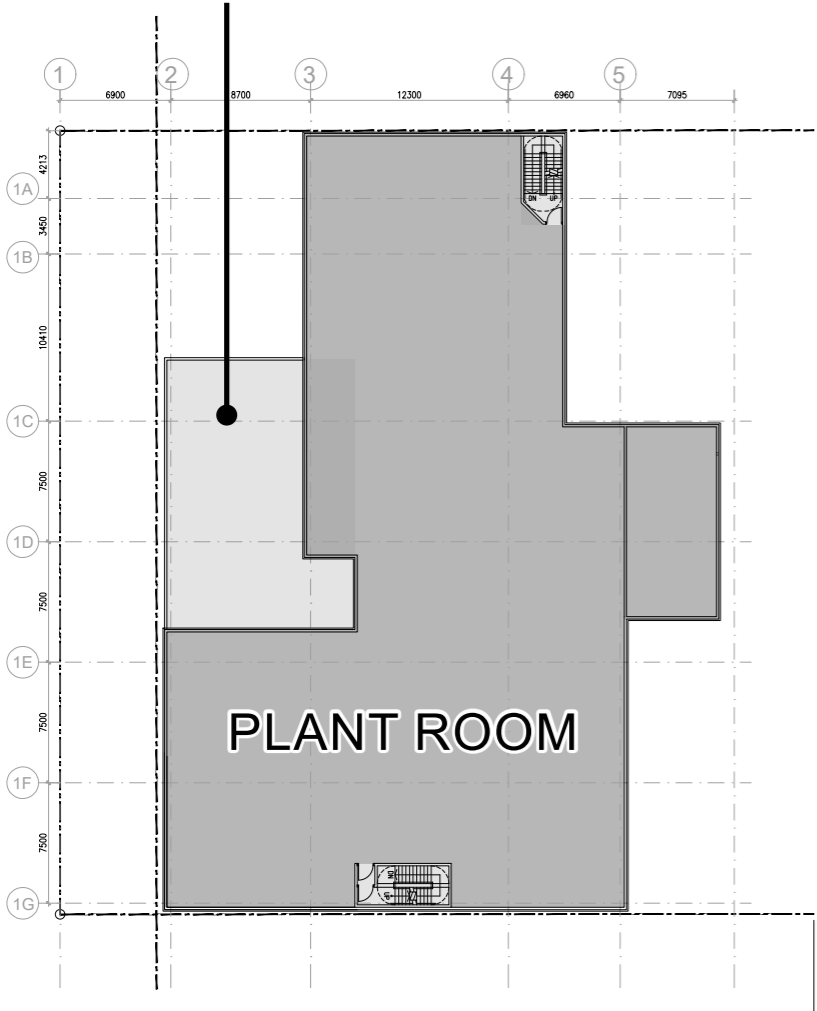
Phase 2
12/F
Total Bed No. 24+60=84

Annex 7. Phasing Plan

Legend

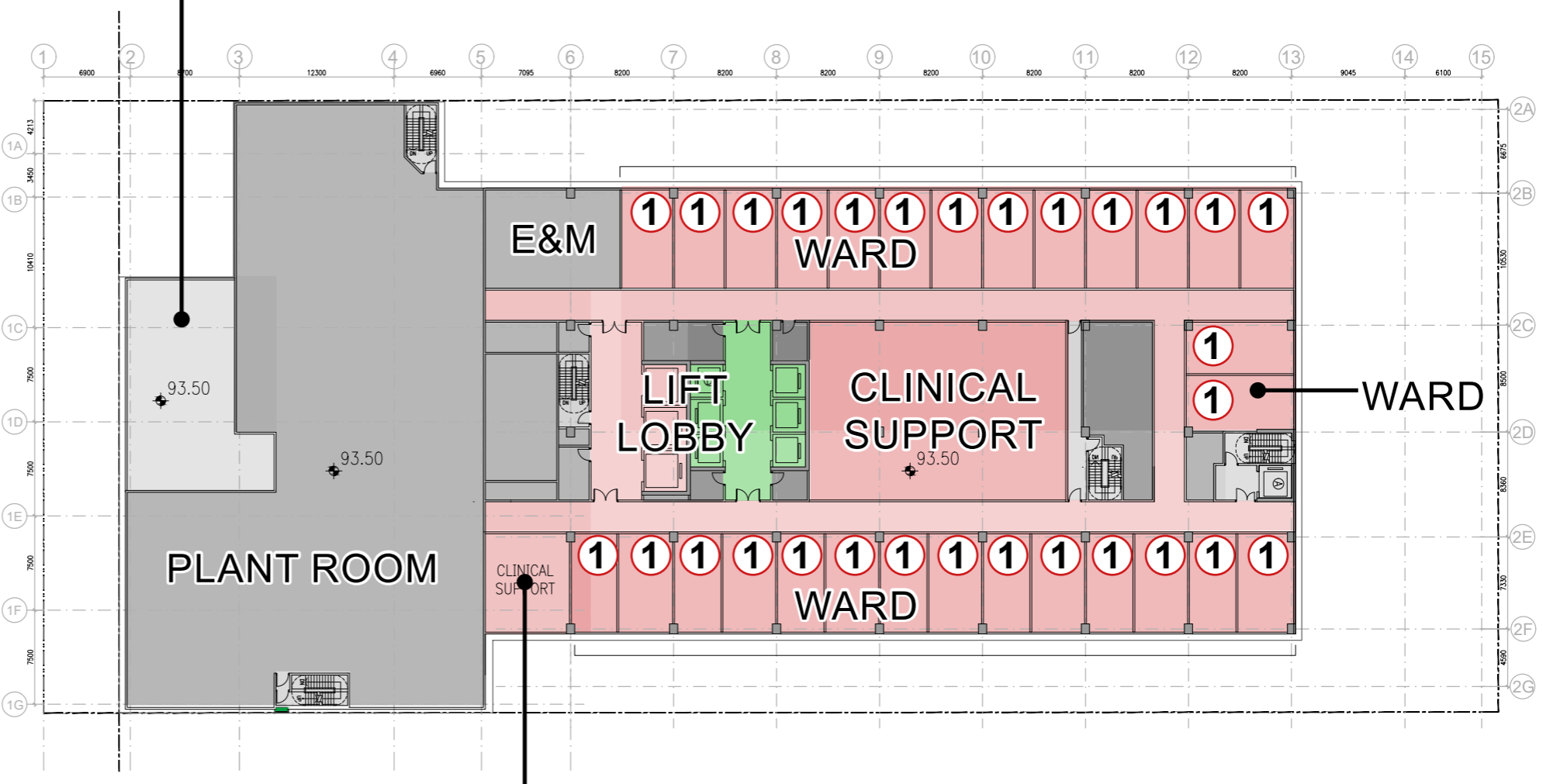
- 6** Six-bed ward
- 4** Four-bed ward
- 1** Single-bed ward
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA

OUTDOOR
PLANT
AREA



Phase 1
13/F

OUTDOOR
PLANT
AREA



CLINICAL
SUPPORT

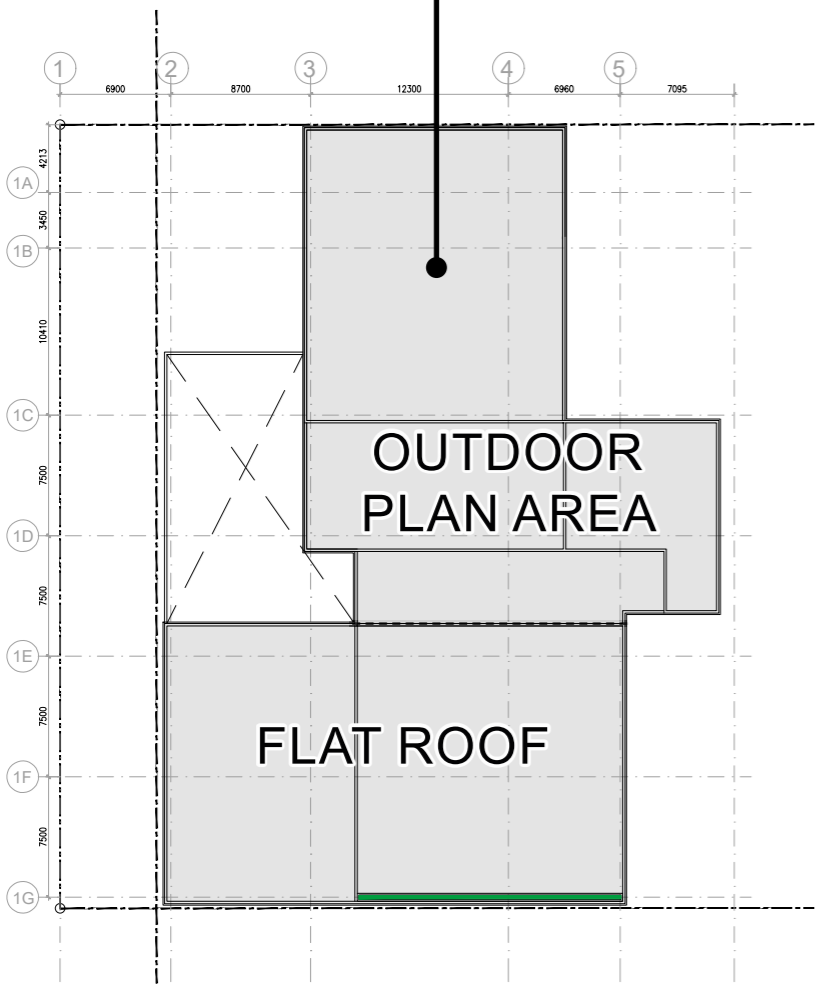
Phase 2
13/F
Total Bed No. 29

Annex 7. Phasing Plan

Legend

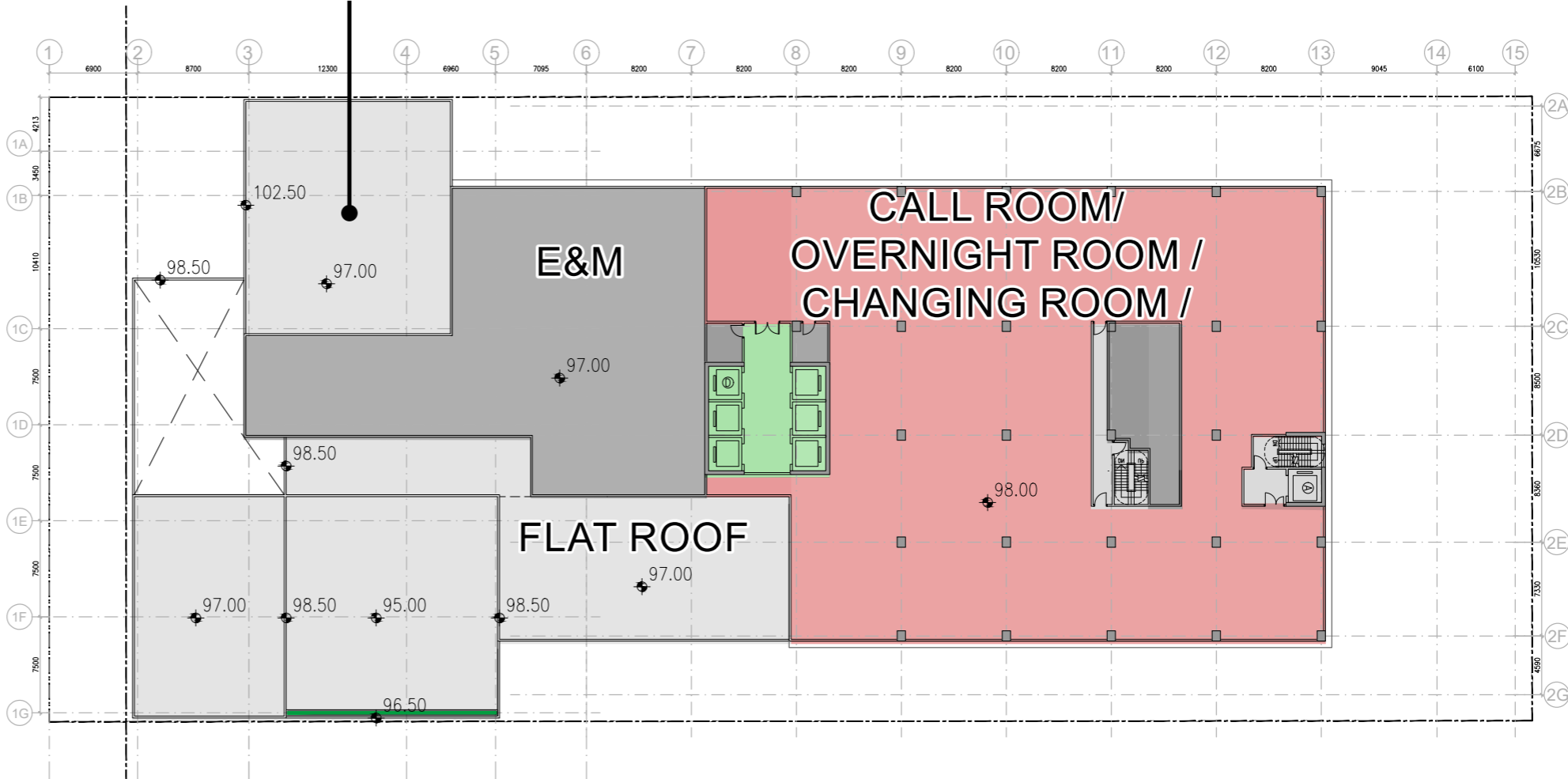
- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA

OUTDOOR
PLAN AREA



Phase 1
14/F

OUTDOOR
PLAN AREA



Phase 2
14/F

Annex 7. Phasing Plan

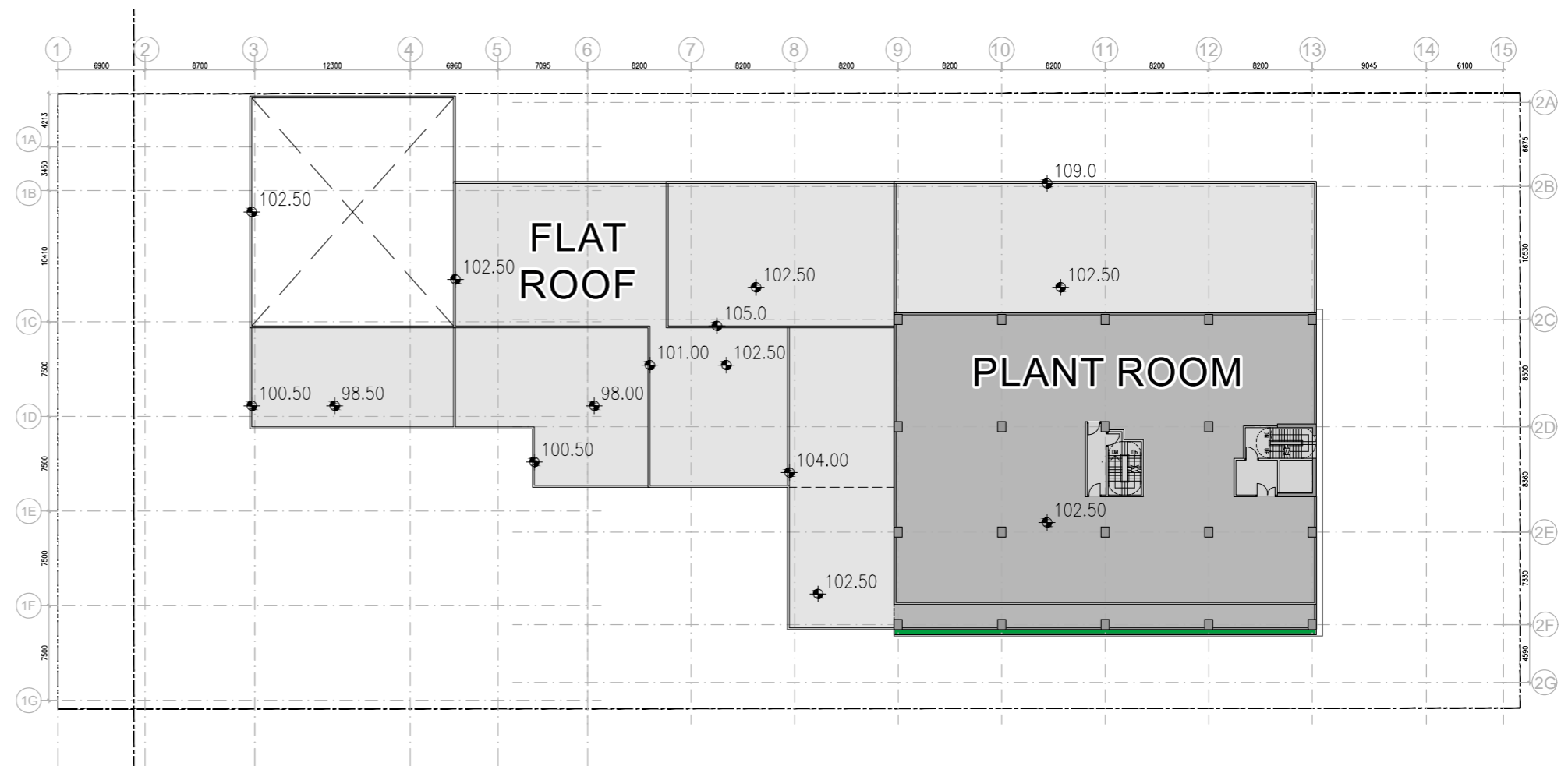
Bed Number:

Phase 1	Block A
13F	E&M
12F	36
11F	36
10F	24
9F	36
8F	36
7F	36
6F	33
5F	36
Total	273

Phase 2	Block A	Block B+C
13F	E&M	29
12F	24	60
11F	24	60
10F	18	54
9F	24	60
8F	24	60
7F	24	60
6F	23	57
5F	24	60
2F		15(ICU)
	185	515
Total	700	

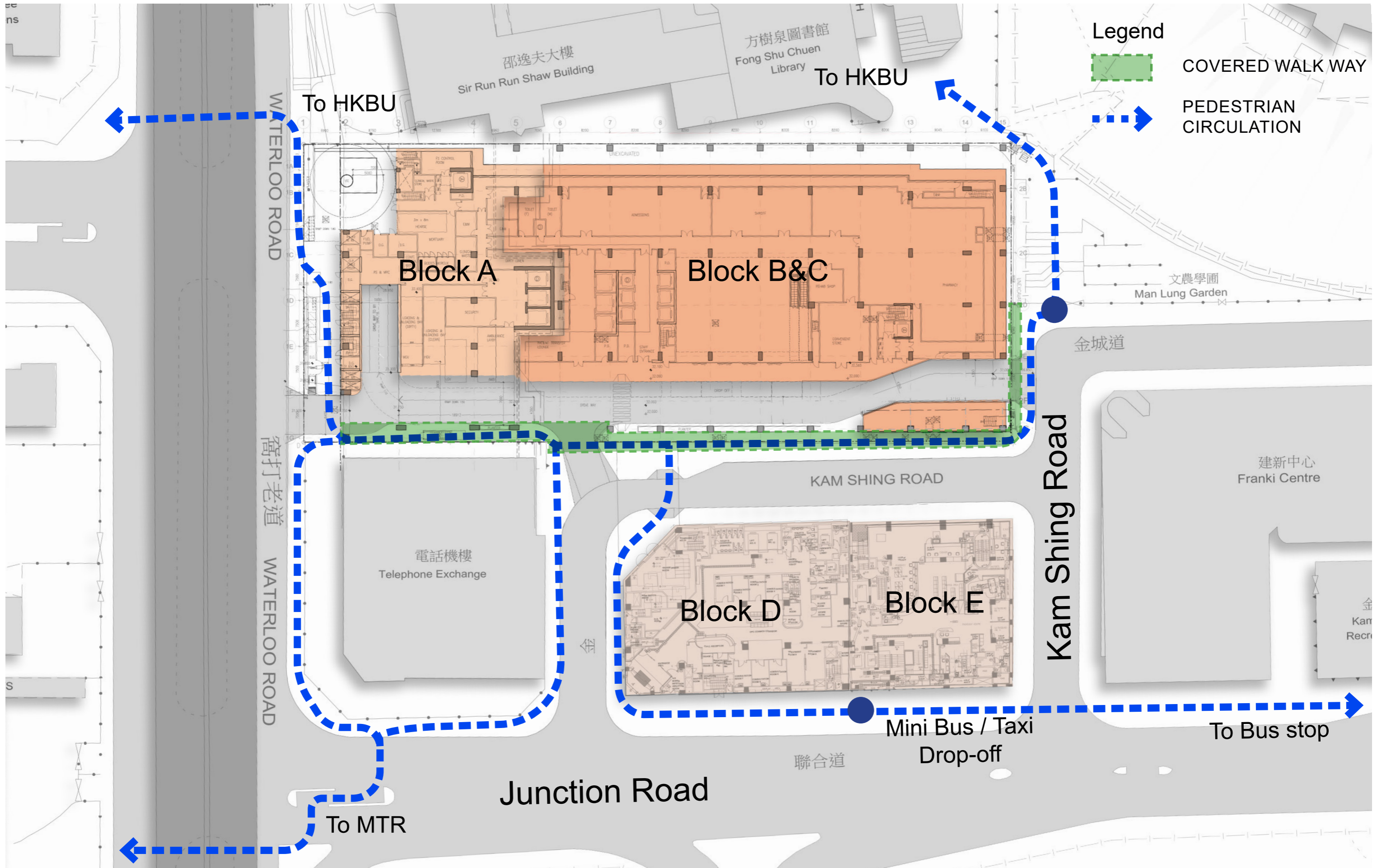
Legend

- PUBLIC CIRCULATION
- CIRCULATION (BACK OF HOUSE)
- BUILDING SERVICES & PLANT
- CLINICAL SERVICES
- CLINICAL SUPPORT
- CLINICAL AREA

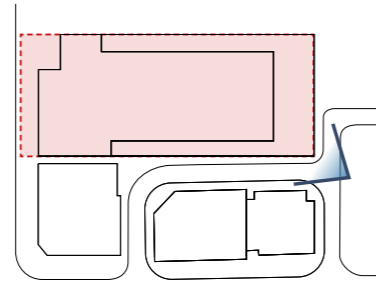


Phase 2
R/F

Annex 8. Covered Walkway Along Kam Shing Road



Annex 8. Covered Walkway Along Kam Shing Road



Existing Entrance of HKBU
From Man Lung Garden

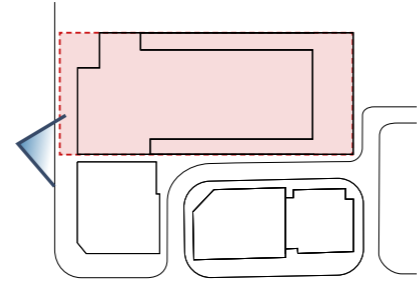


Existing condition

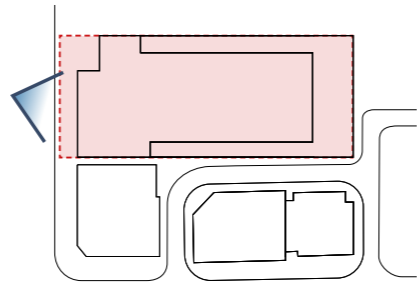


Proposed Covered Walkway Along Kam Shing Road

Annex 8. Covered Walkway Along Kam Shing Road



Pedestrian Will Be Able to Walk Along Covered Area At G/F From Kam Shing Road to Waterloo Road



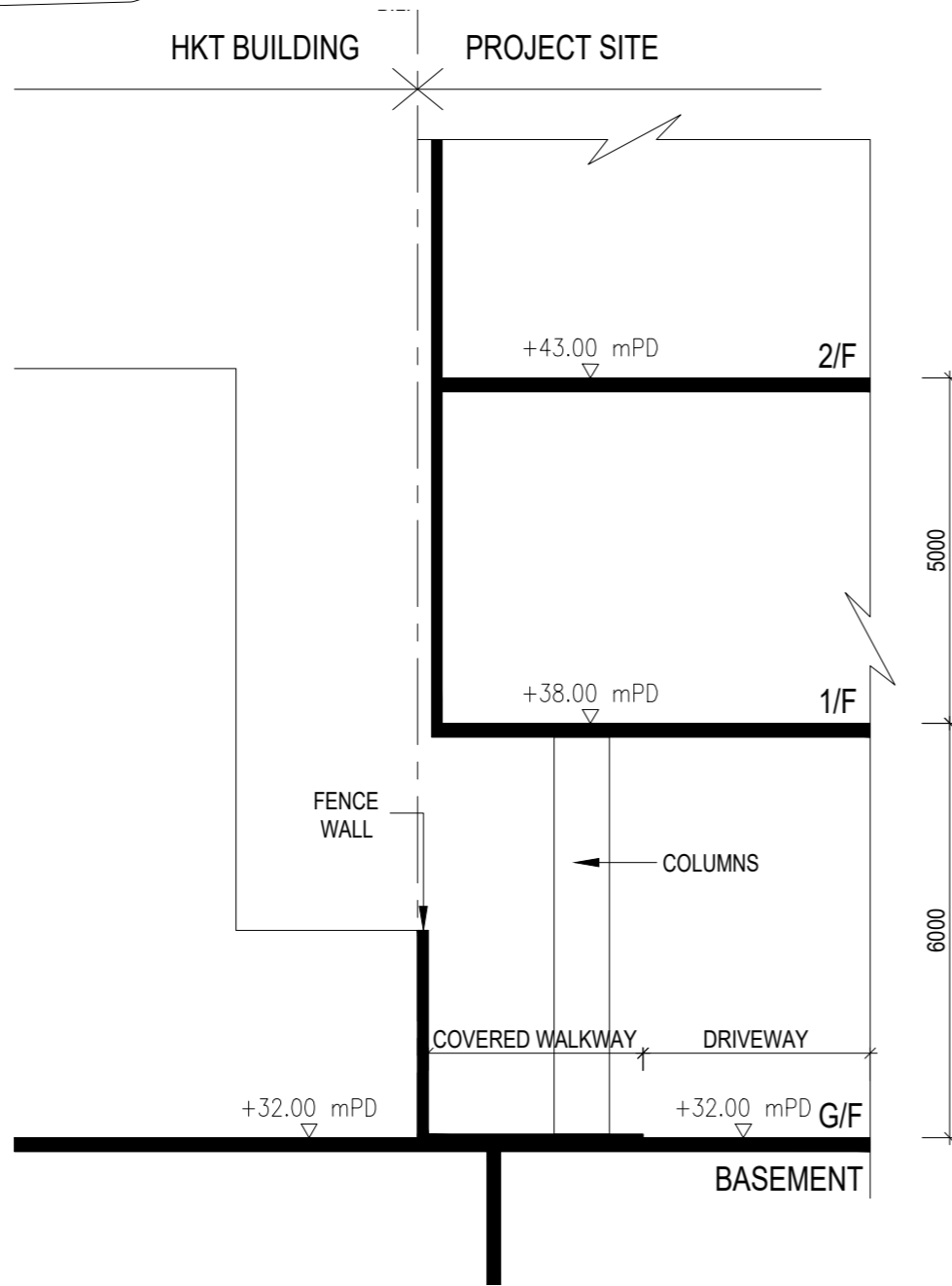
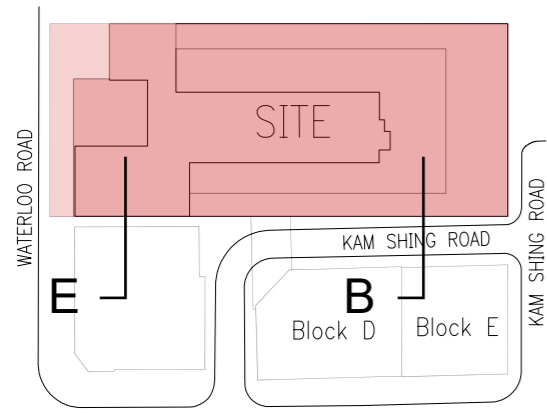
View From Waterloo Road



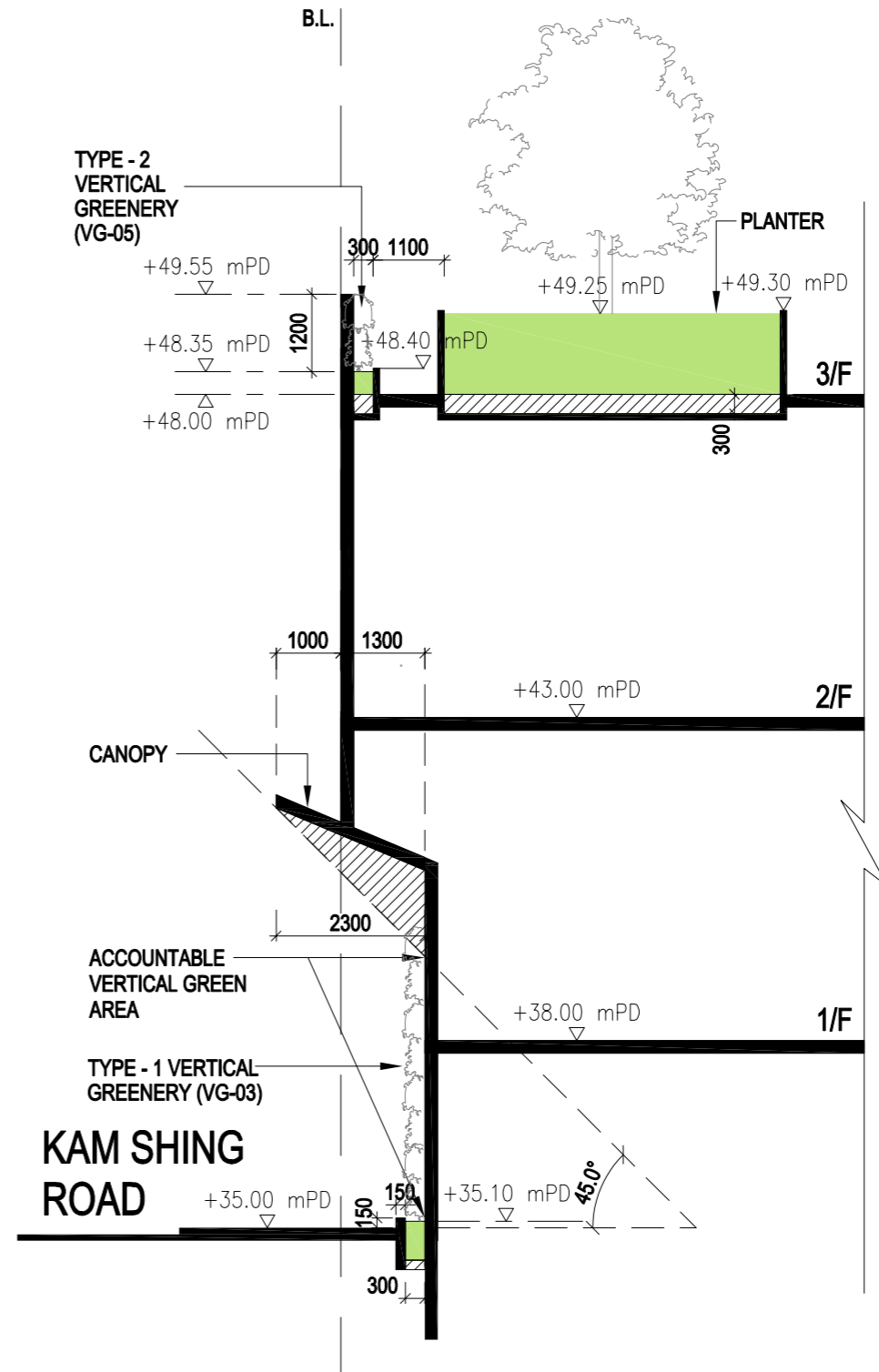
Existing Route to HKBU Along Waterloo Road

Illustration for Reference Only

Annex 8. Covered Walkway Along Kam Shing Road



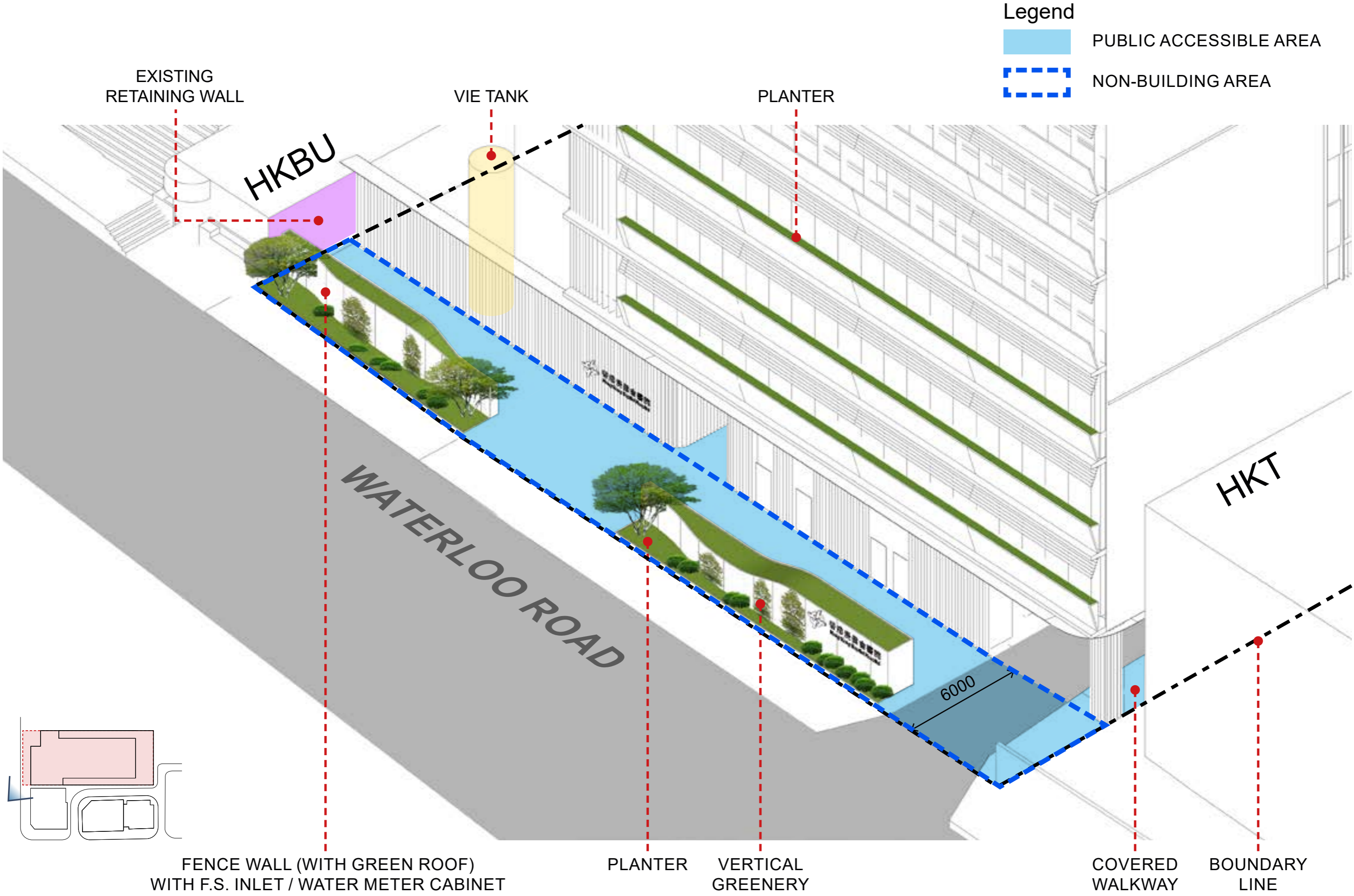
E SECTION
SK27 1:100



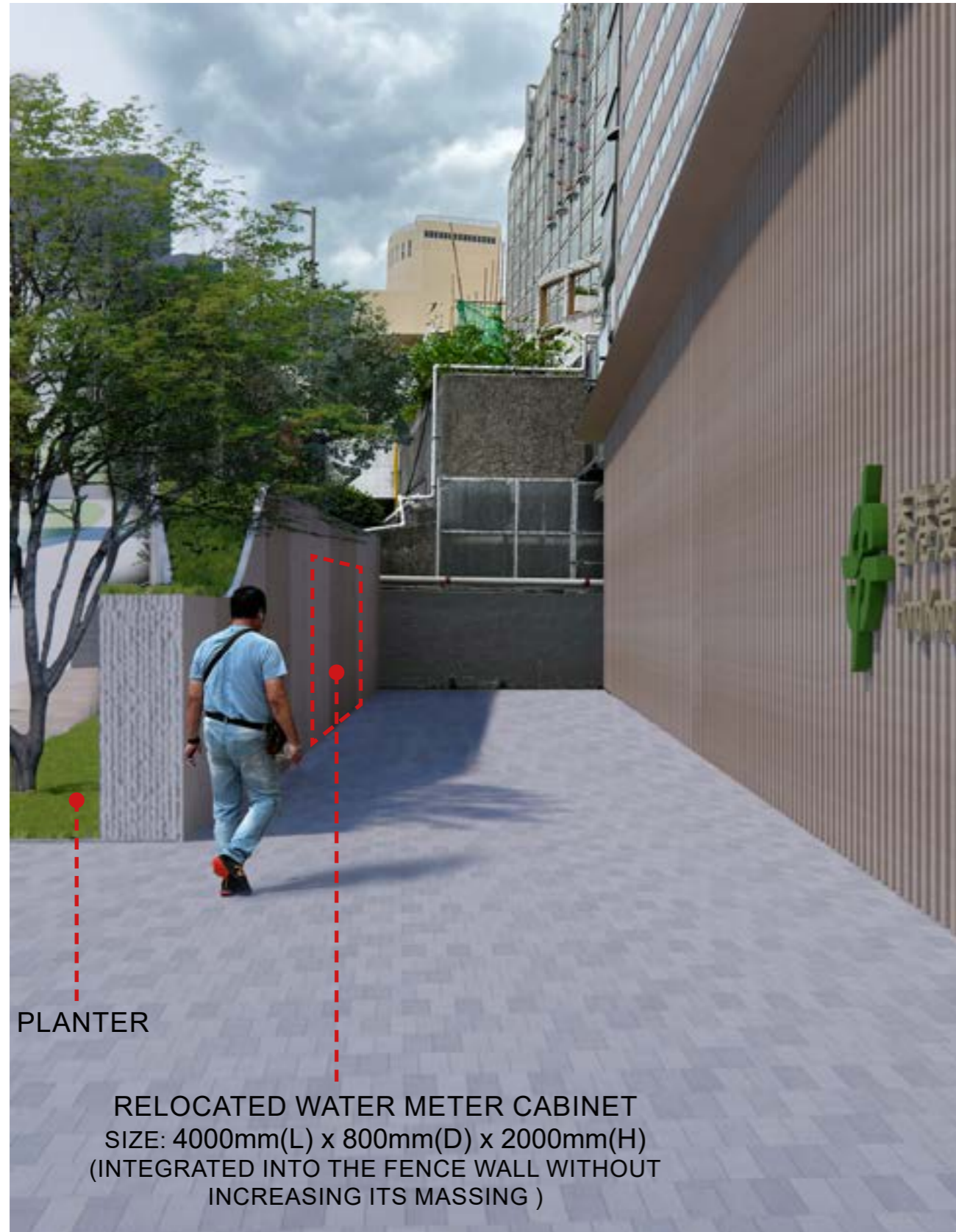
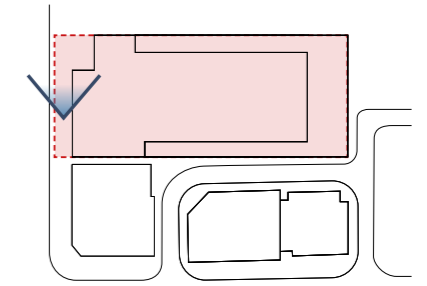
B SECTION
SK17

Covered Walkway Section

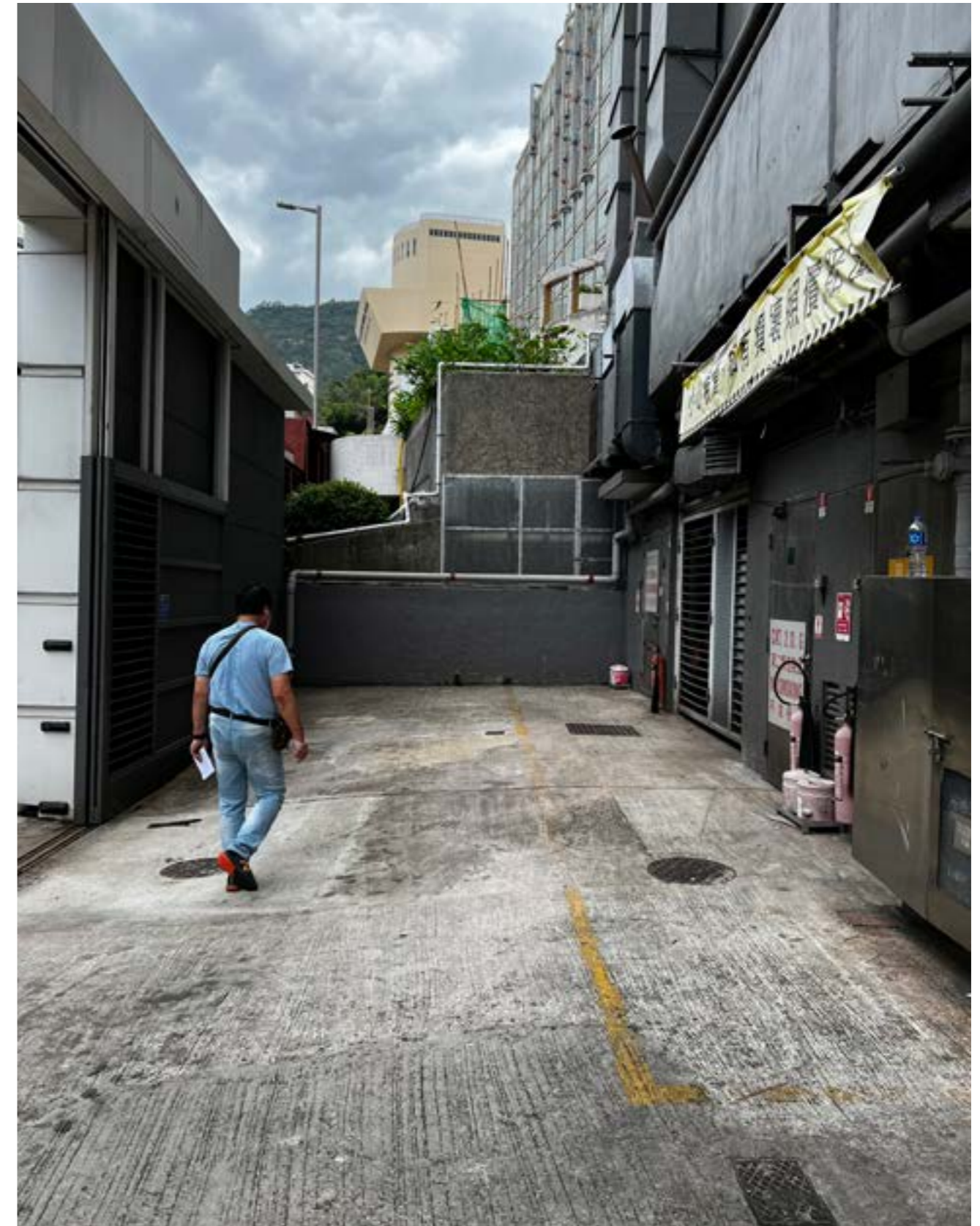
Annex 9. Water Meter Cabinet at Non-Building Area



Annex 9. Water Meter Cabinet at Non-Building Area



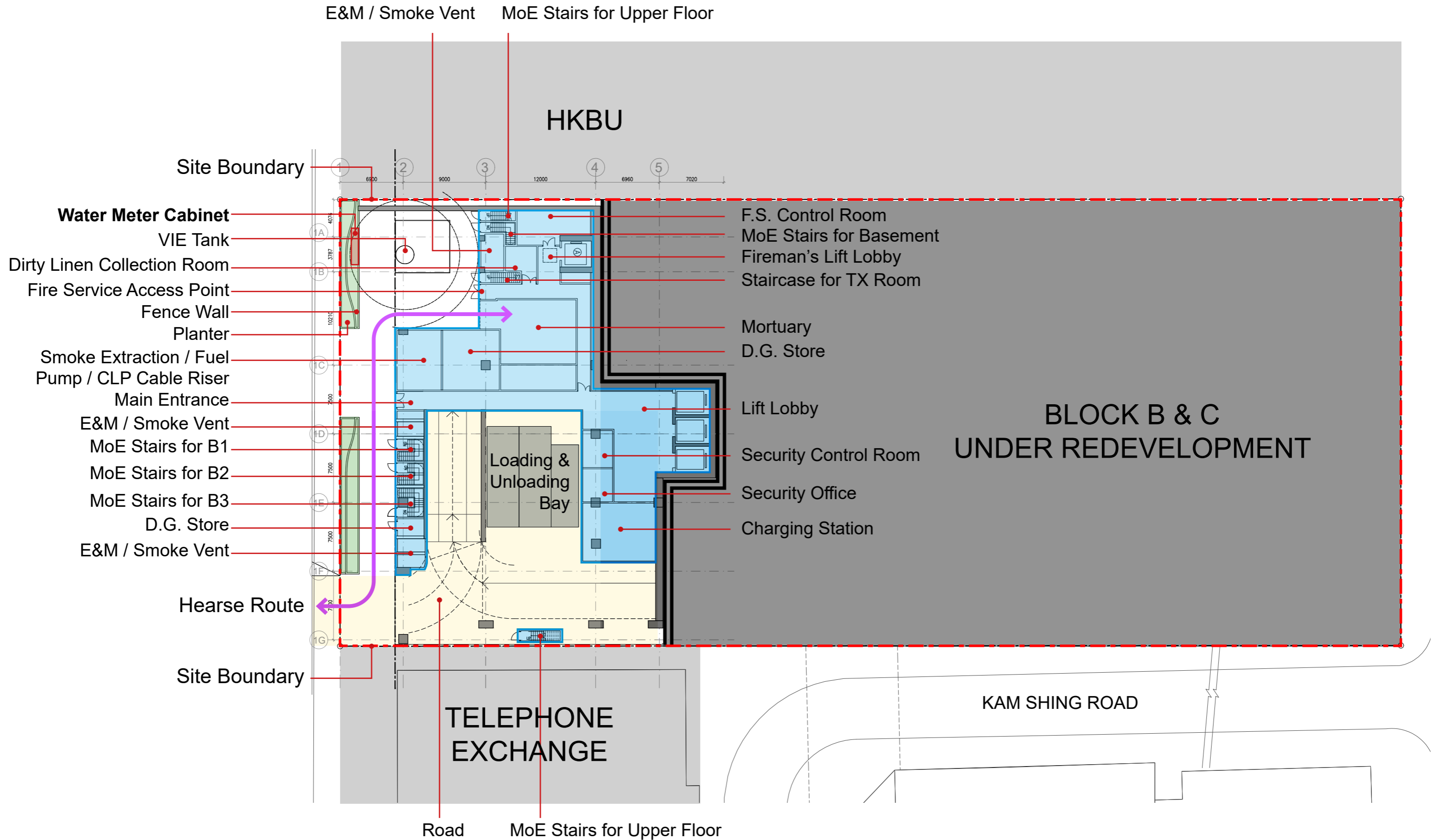
Proposed Water Meter Cabinet



Existing Condition

Illustration for Reference Only

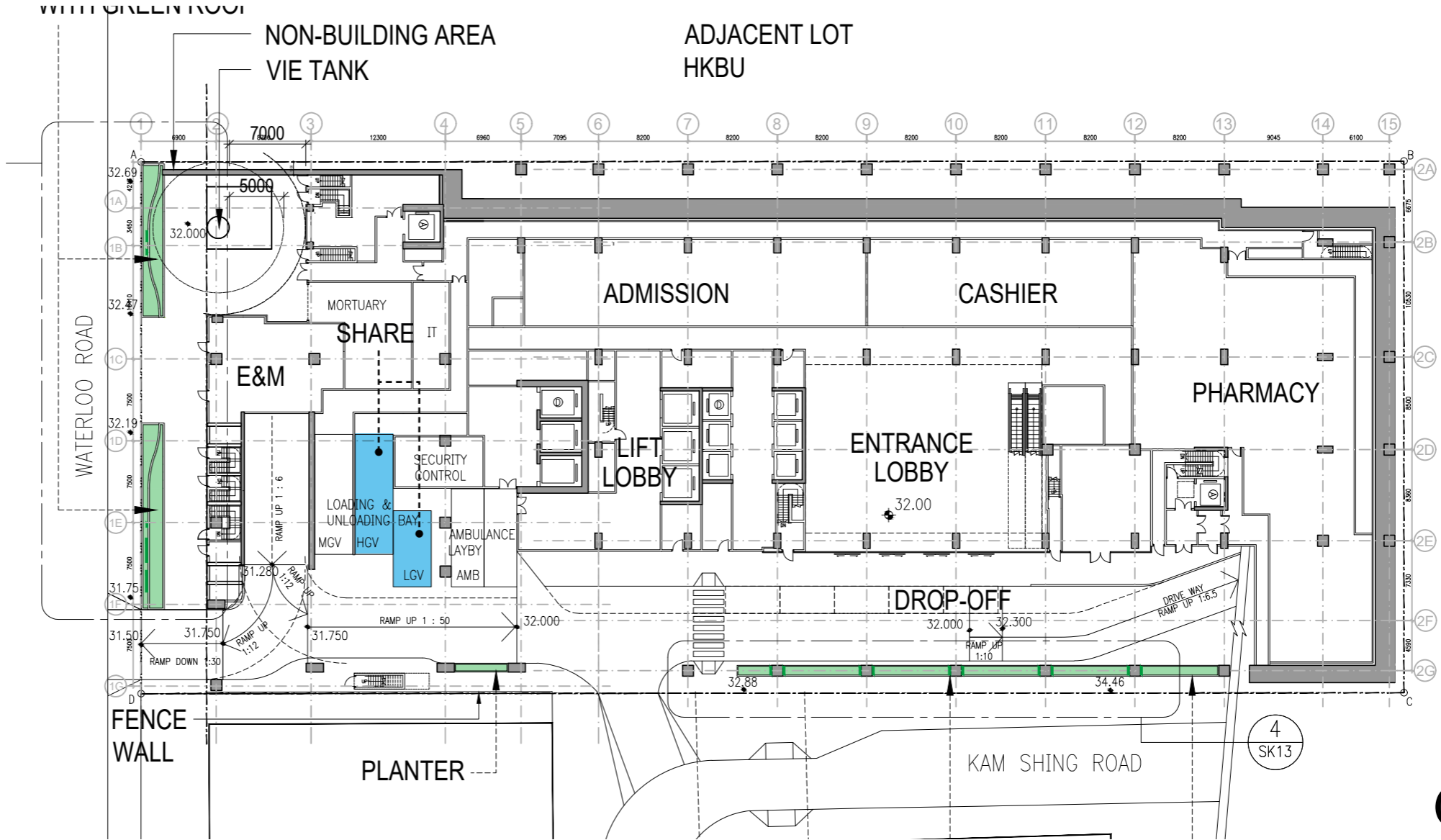
Annex 9. Water Meter Cabinet at Non-Building Area



Annex 10.1 Reprovision of Block D Transport Facilities to Project Site

Legend

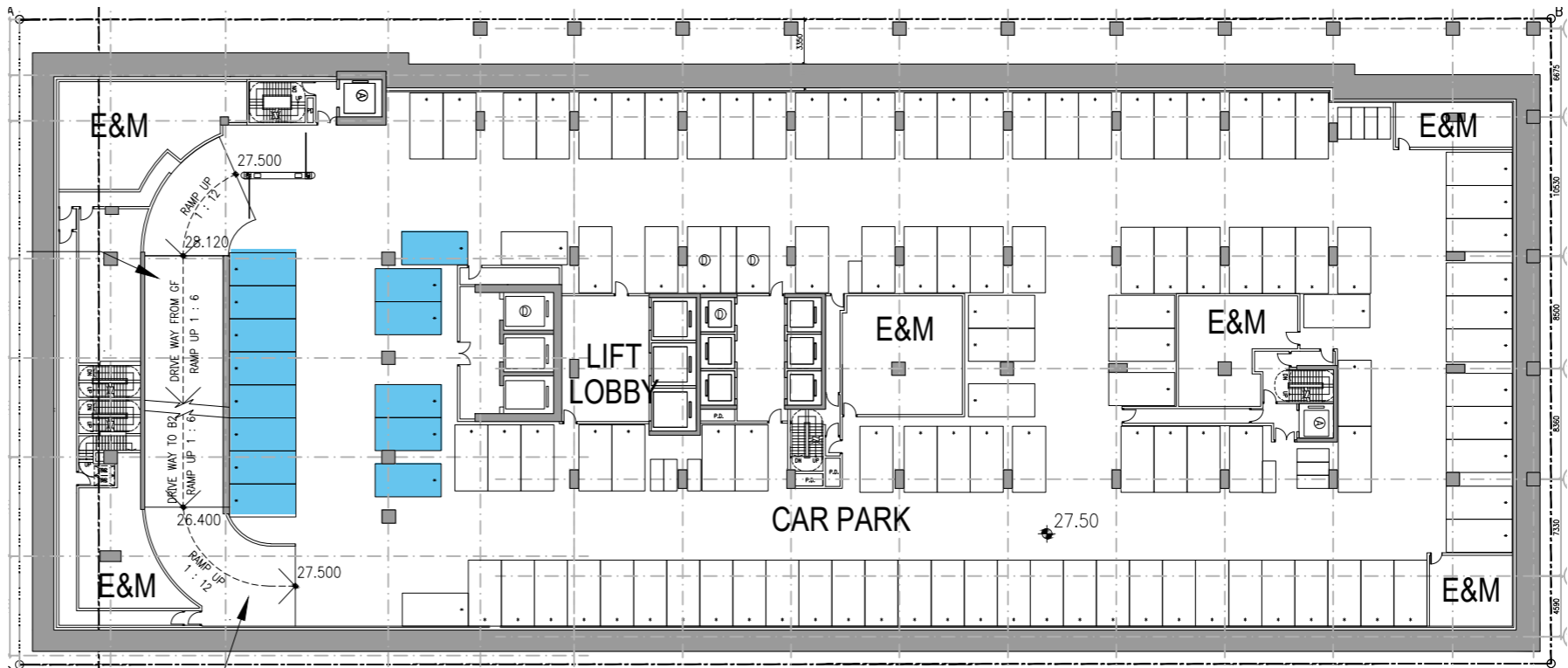
REPROVISION OF BLOCK D TRANSPORT FACILITIES



G/F

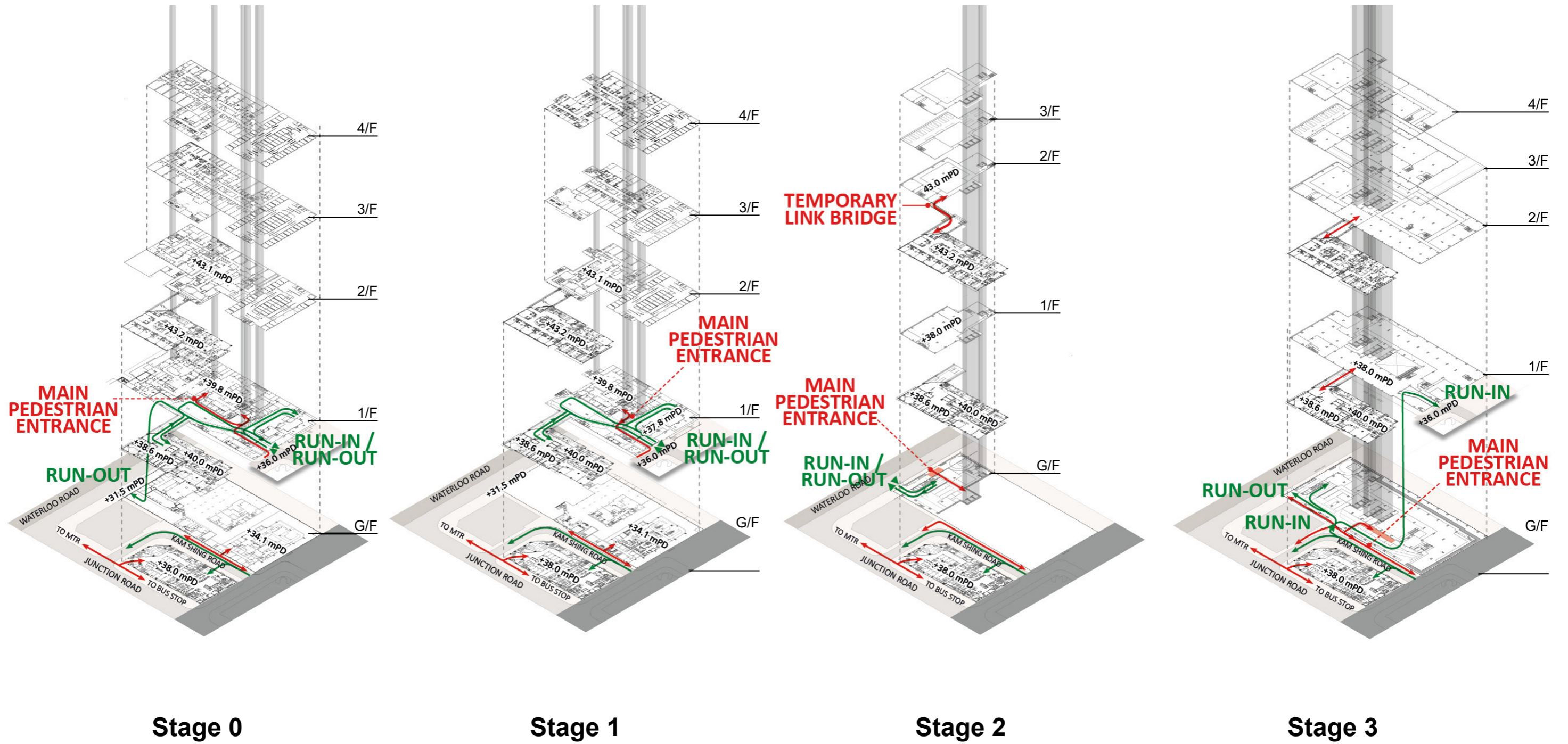
Existing Internal Transport Facilities at Block D

Private Car Parking Space: 13 Nos.
Loading / Unloading Bay for LGV: 2 Nos.



B1/F

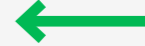


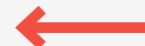
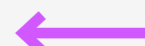


Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

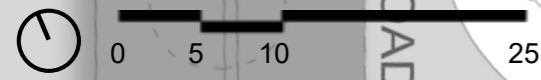
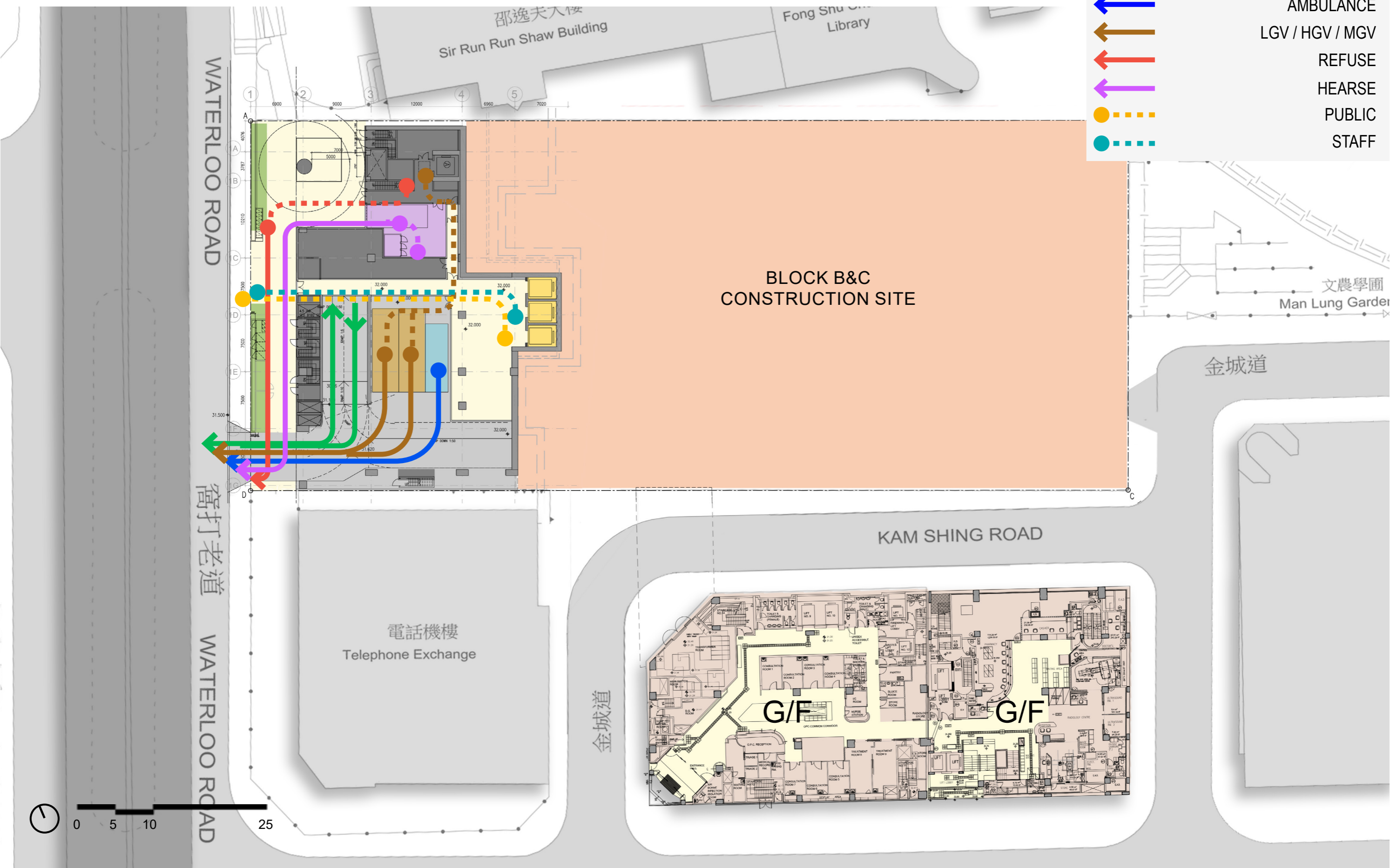


Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 1 G/F

LEGEND

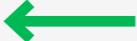
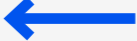

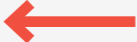
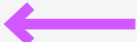



-  PRIVATE VEHICLES
-  AMBULANCE
-  LGV / HGV / MGV
-  REFUSE
-  HEARSE
-  PUBLIC
-  STAFF

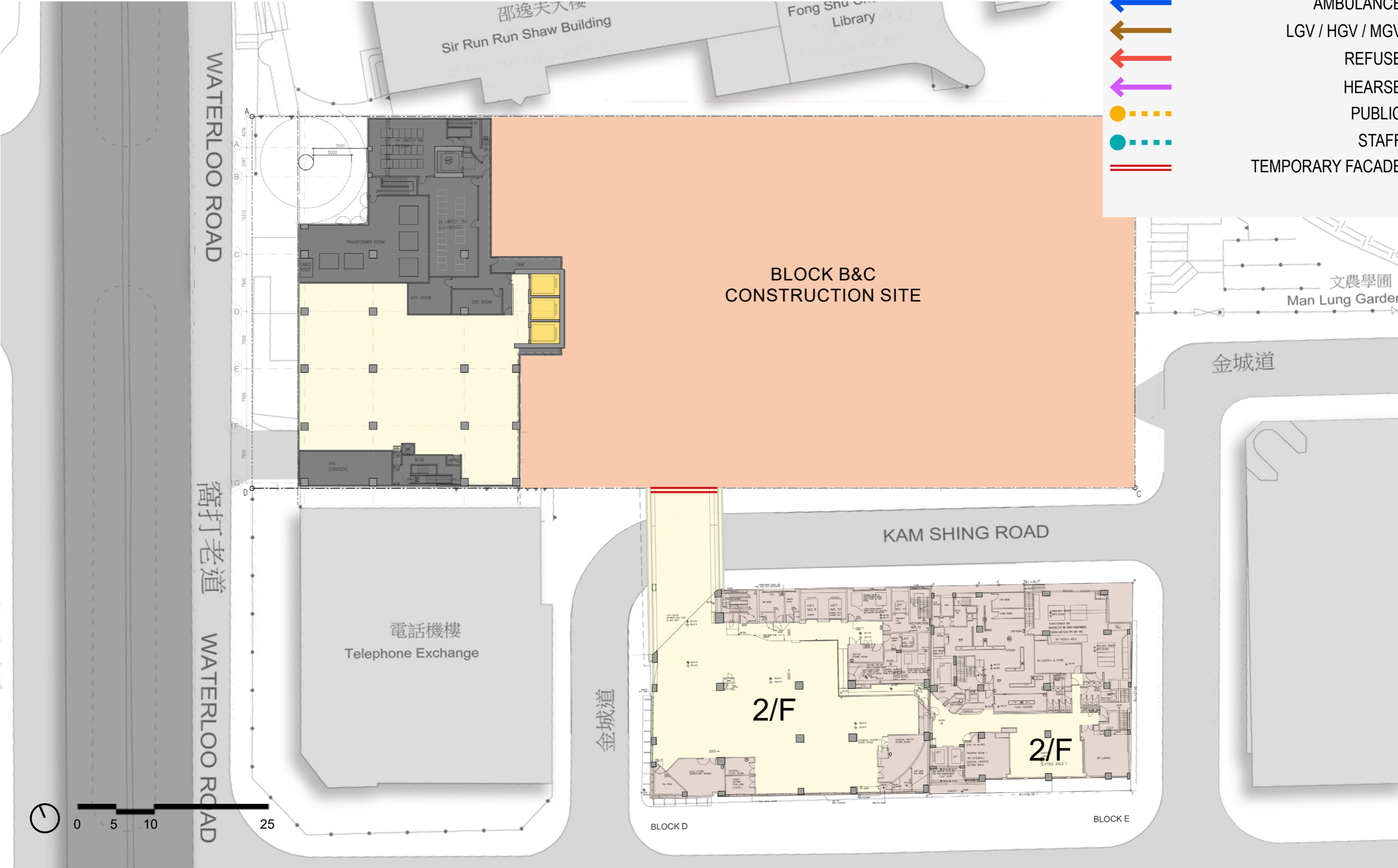


Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 1 1/F

LEGEND

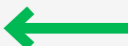
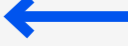

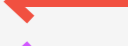
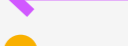




-  PRIVATE VEHICLES
-  AMBULANCE
-  LGV / HGV / MGV
-  REFUSE
-  HEARSE
-  PUBLIC
-  STAFF
-  TEMPORARY FACADE

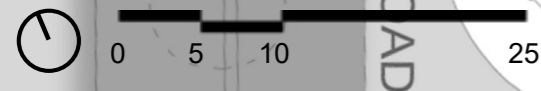
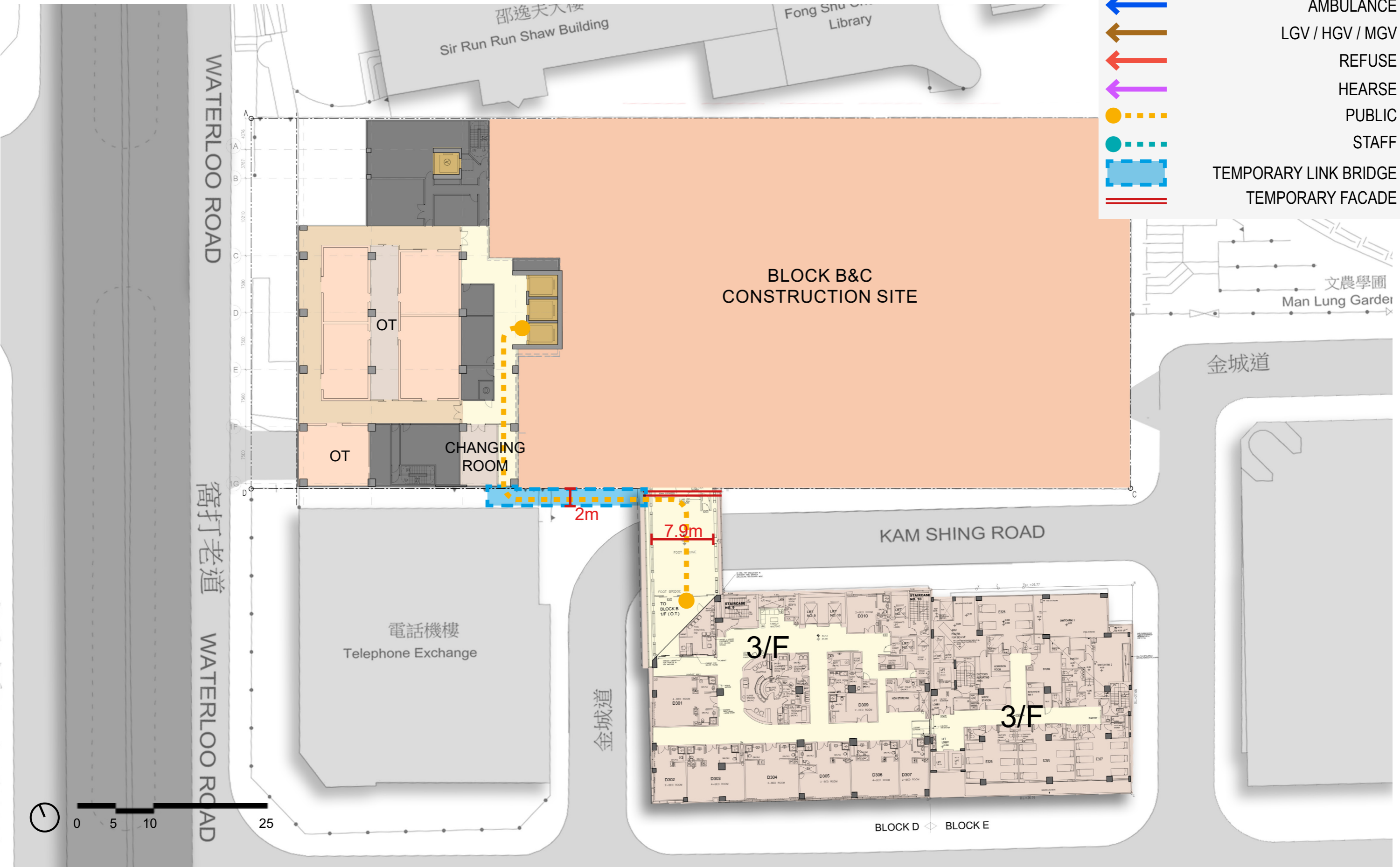


Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 1 2/F

LEGEND

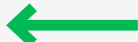


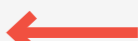
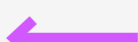


-  PRIVATE VEHICLES
-  AMBULANCE
-  LGV / HGV / MGV
-  REFUSE
-  HEARSE
-  PUBLIC
-  STAFF
-  TEMPORARY LINK BRIDGE
-  TEMPORARY FACADE

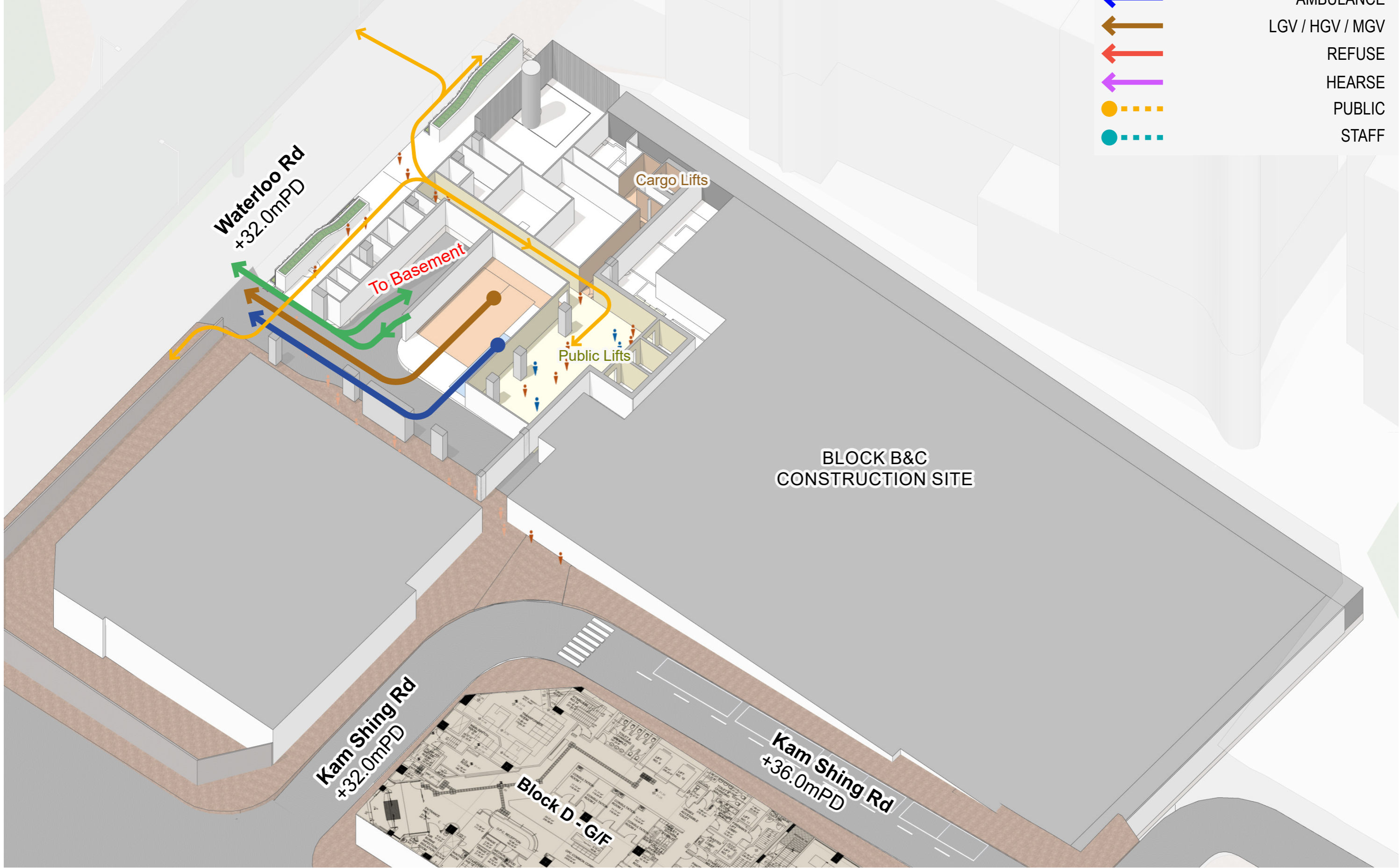


Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 1 G/F

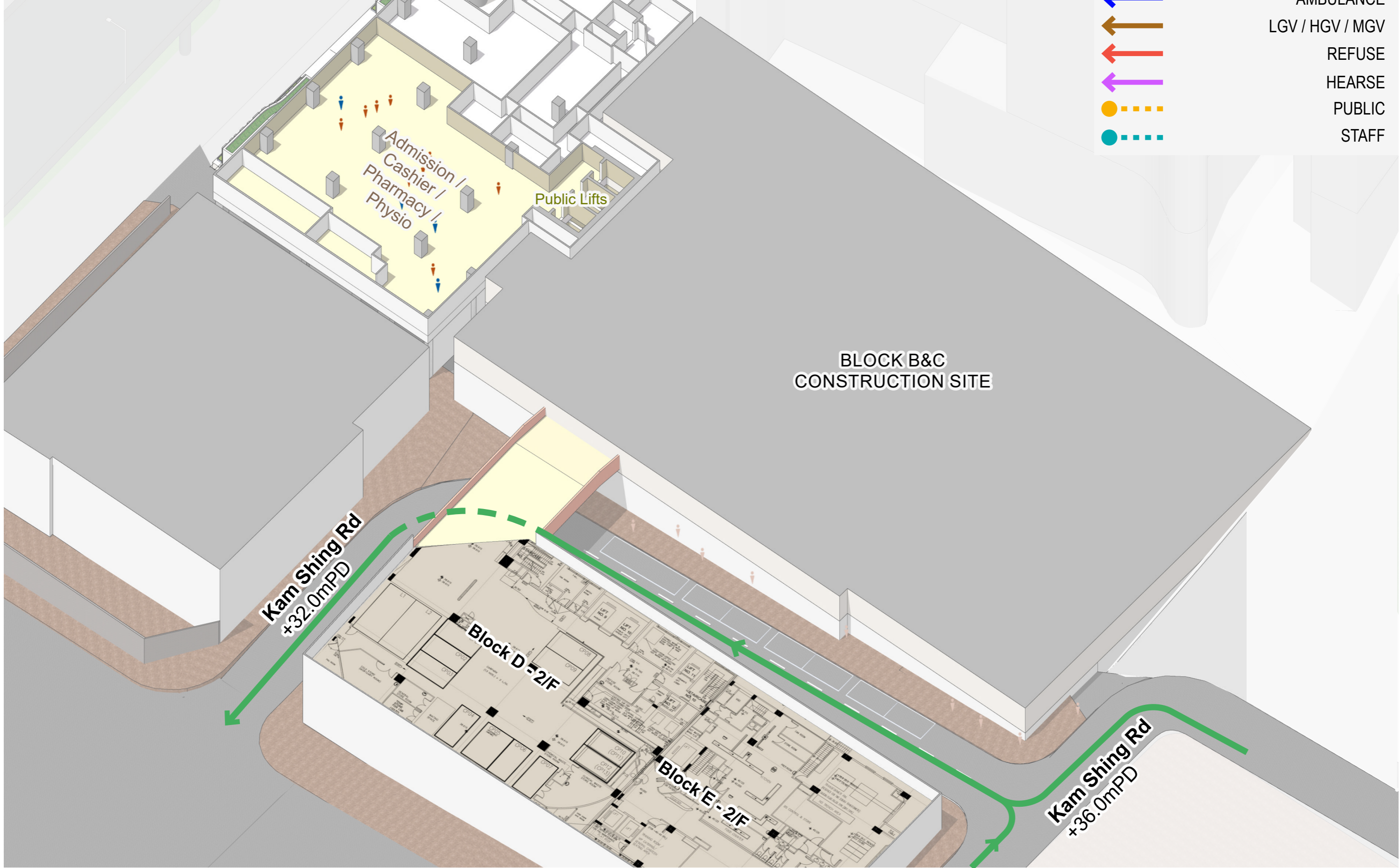
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-  PRIVATE VEHICLES
-  AMBULANCE
-  LGV / HGV / MGV
-  REFUSE
-  HEARSE
-  PUBLIC
-  STAFF



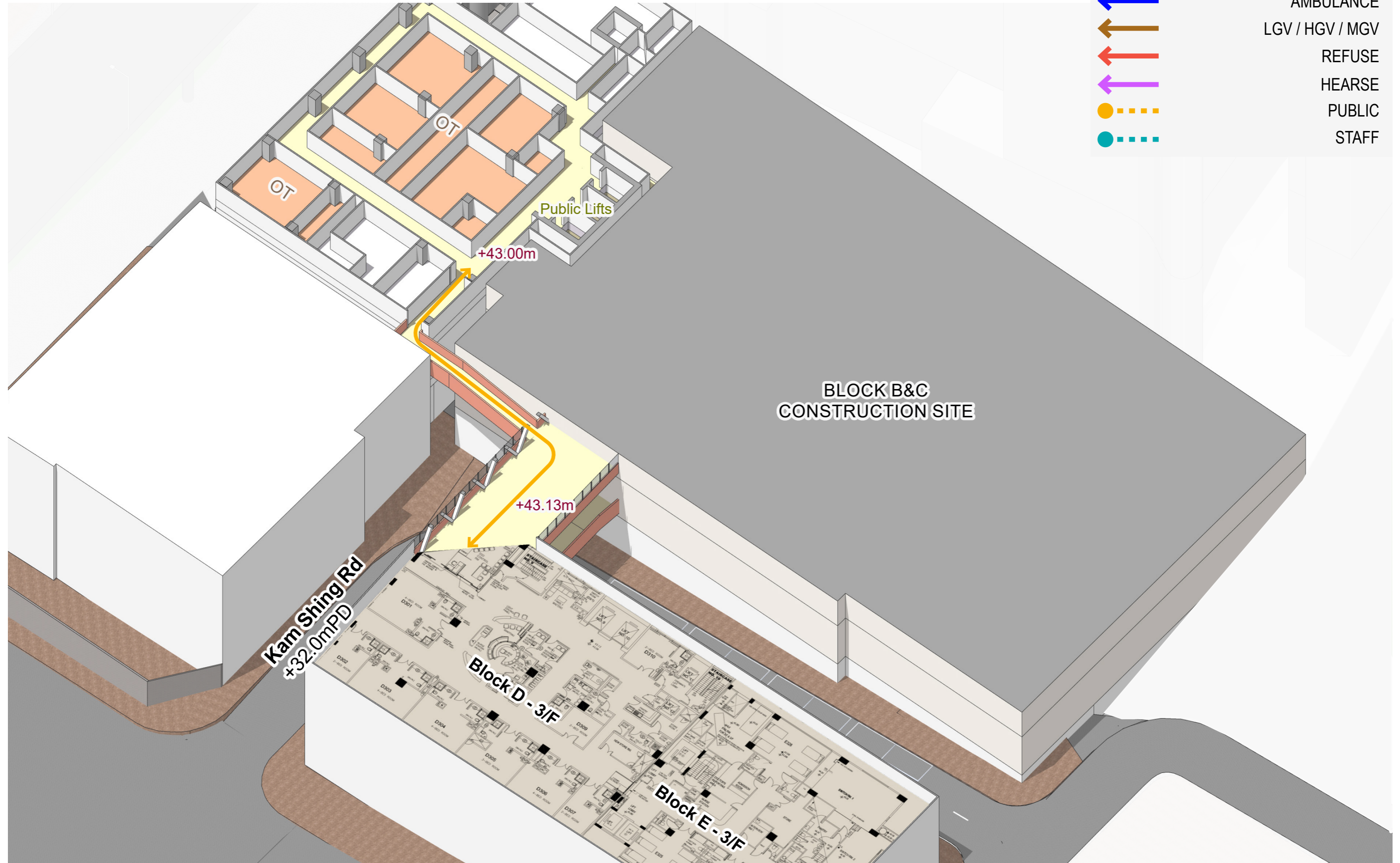
Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 1 1/F



Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels


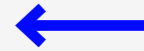

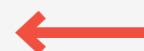
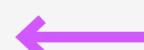
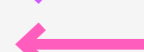


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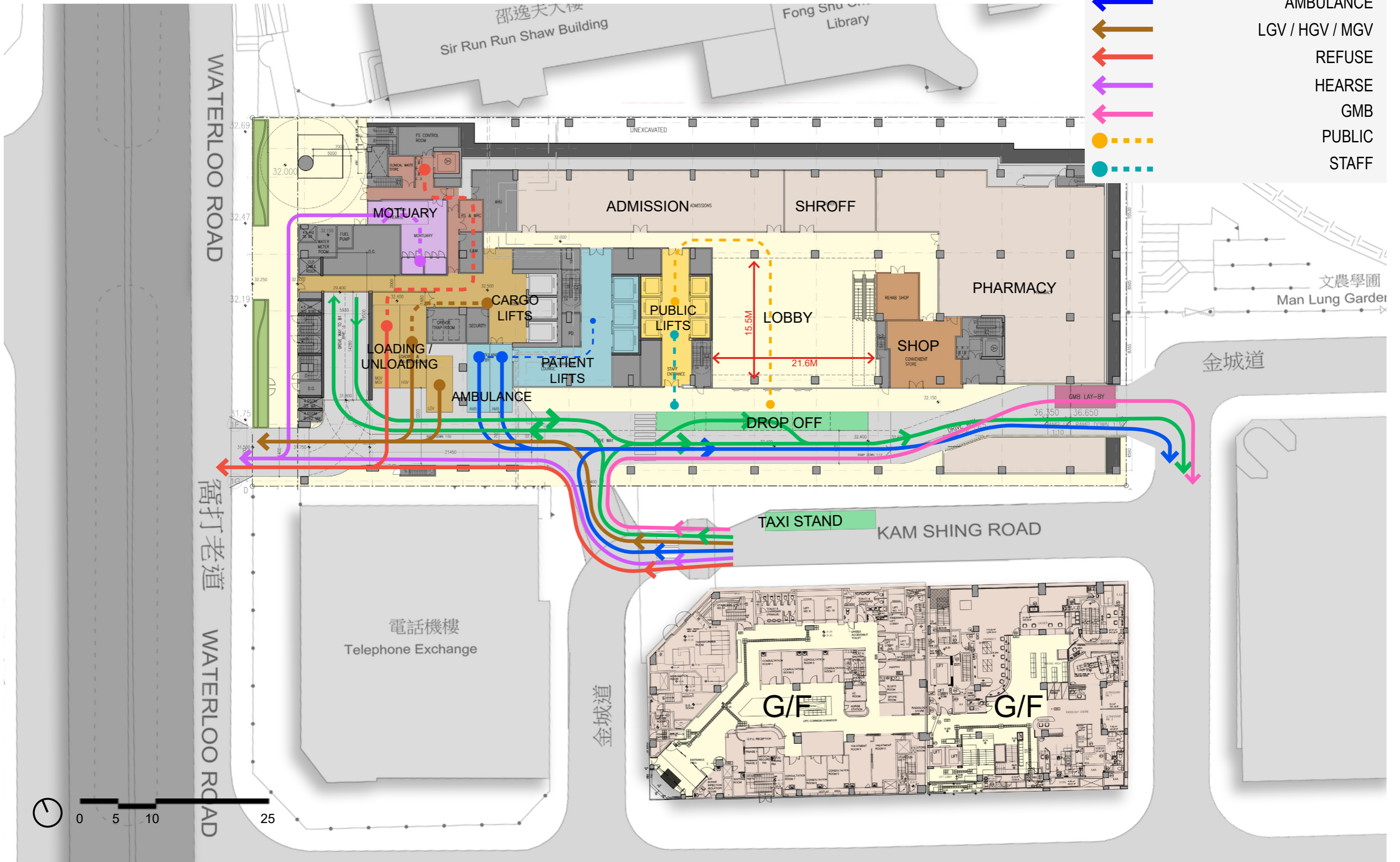


Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 2 - G/F

LEGEND


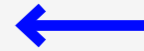

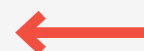
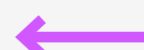
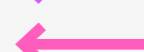


-  PRIVATE VEHICLES
-  AMBULANCE
-  LGV / HGV / MGV
-  REFUSE
-  HEARSE
-  GMB
-  PUBLIC
-  STAFF

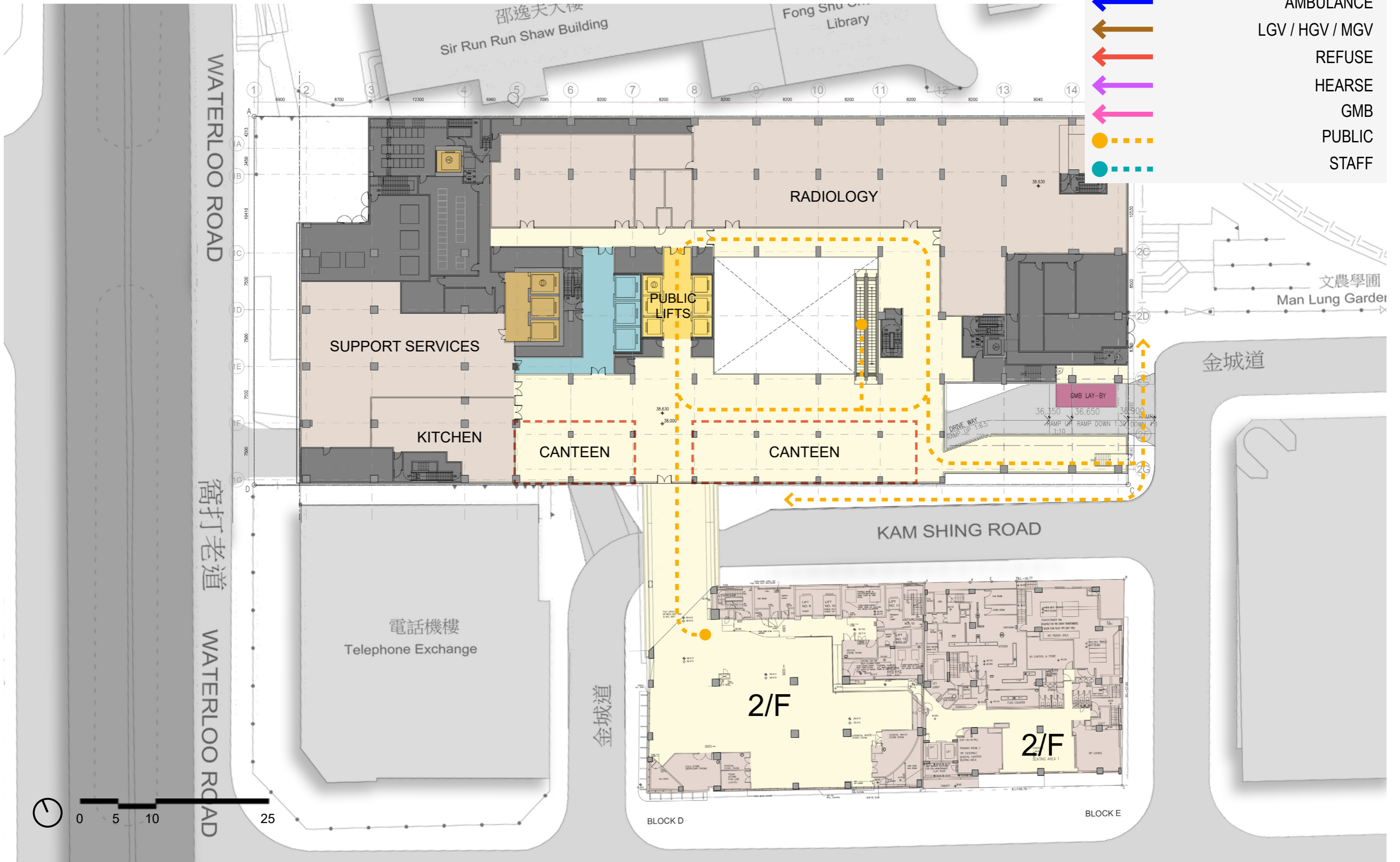


Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 2 - 1/F

LEGEND

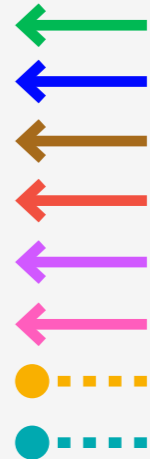
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-  AMBULANCE
-  LGV / HGV / MGV
-  REFUSE
-  HEARSE
-  GMB
-  PUBLIC
-  STAFF



Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 2 - 2/F

LEGEND

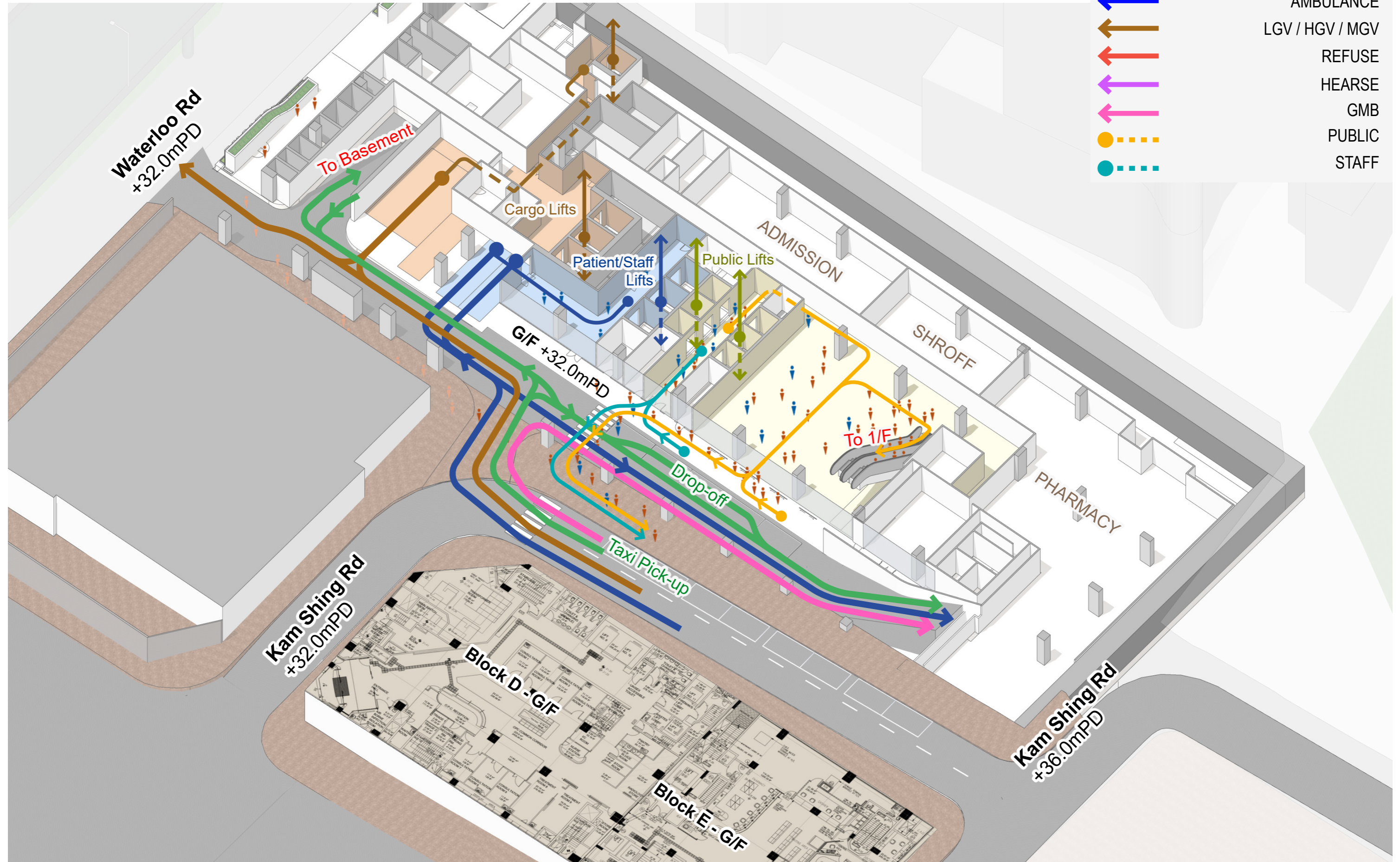


- PRIVATE VEHICLES
- AMBULANCE
- LGV / HGV / MGV
- REFUSE
- HEARSE
- GMB
- PUBLIC
- STAFF



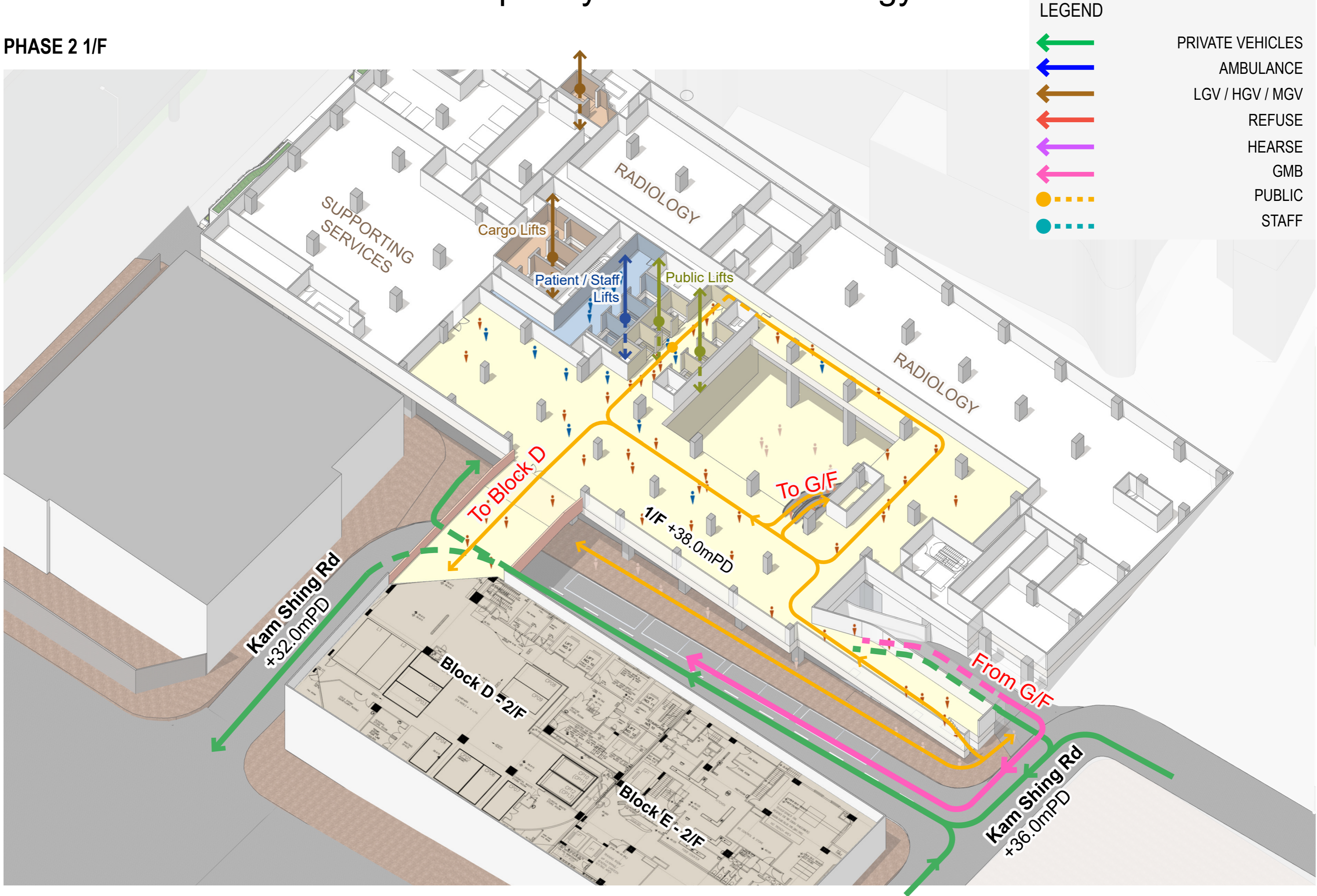
Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 2 G/F



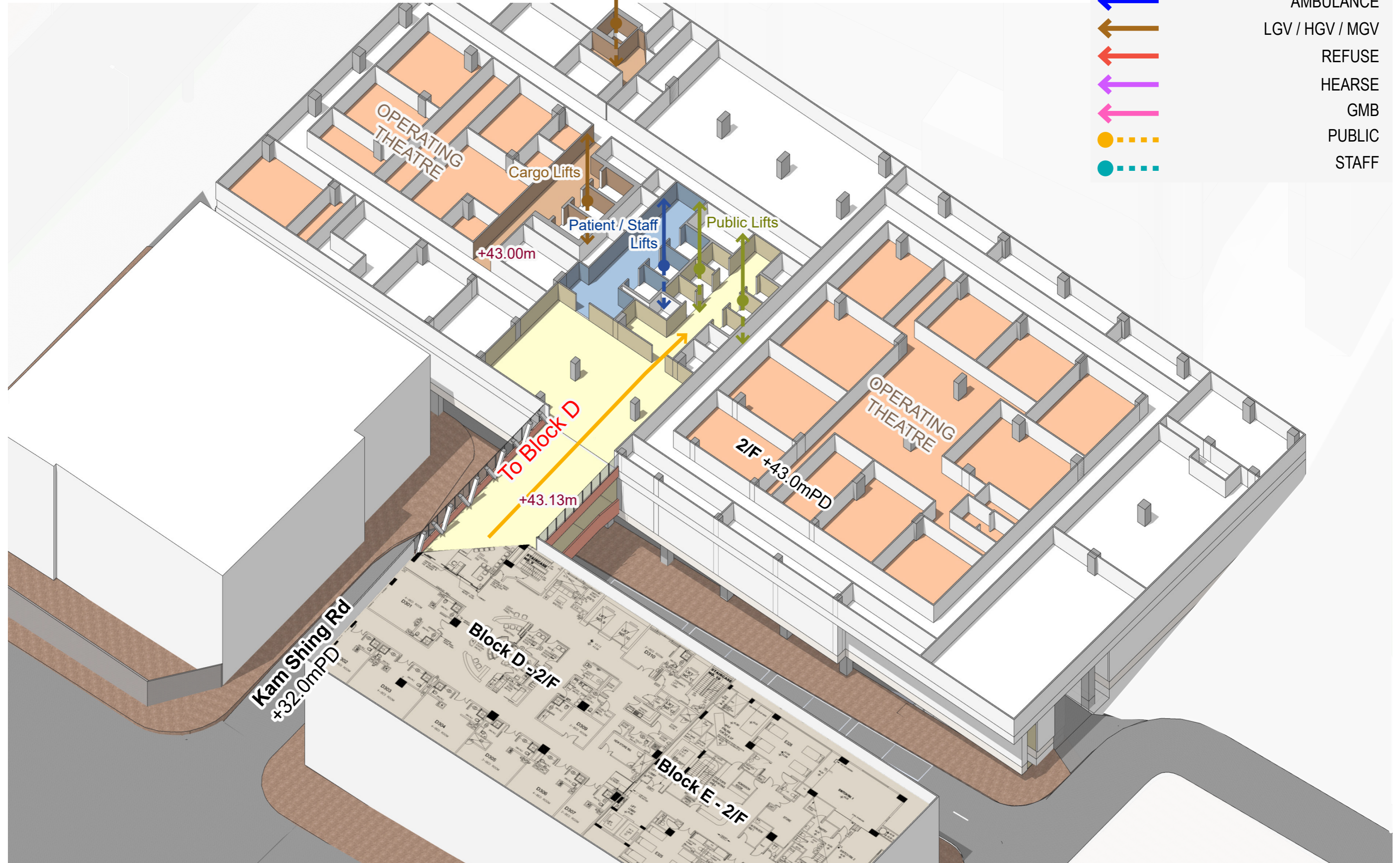
Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 2 1/F



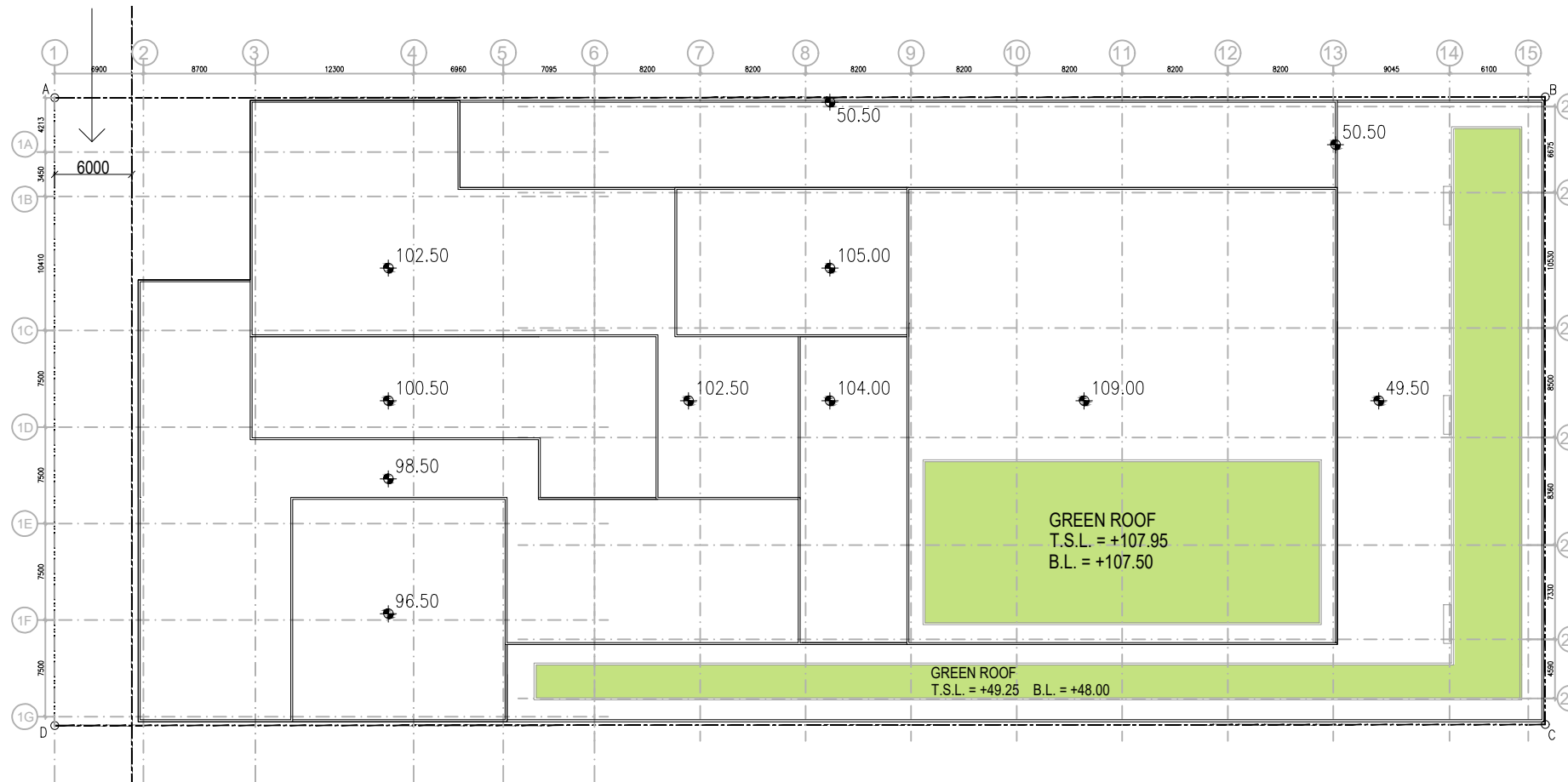
Annex 10.2 Permanent and Temporary Circulation Strategy at Different Levels

PHASE 2 2/F



Annex 15 Rooftop Layout Plan

NON-BUILDING AREA



NOTE:
THE LEVELS ON THE PLAN ARE THE TOP LEVELS OF THE
ACOUSTIC BARRIERS, ARCHITECTURAL FEATURES AND PARAPET WALL.

B.D. REF :
F.S.D. REF :

KEY PLAN

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03	JUL 2024	FURTHER INFORMATION	CK
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Hong Kong Baptist Hospital

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OZZO TECHNOLOGY

FACADE CONSULTANT
AECOM

ENVIRONMENTAL CONSULTANT
AEC

JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

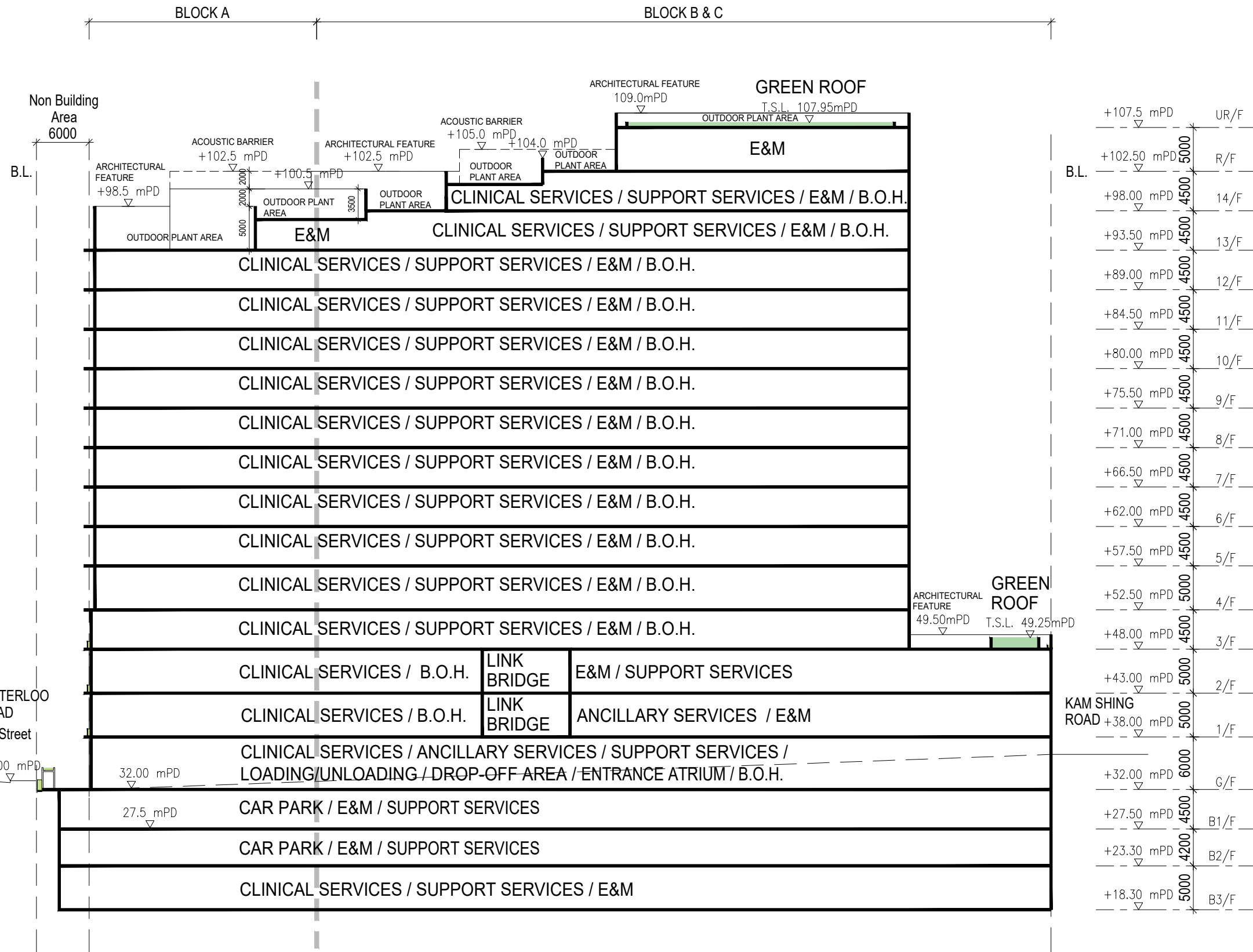
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ROOFTOP PLAN

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Annex 15 Section Plan



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03	JUL 2024	FURTHER INFORMATION	OK
02	MAY 2024	FURTHER INFORMATION	OK
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EMPLOYER
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Hong Kong Baptist Hospital

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 ROCCO

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 ARUP

MEDICAL PLANNER
 Jewelry Davies

LANDSCAPE CONSULTANT
 HWA

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

ENVIRONMENTAL CONSULTANT
 AECOM

JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (TY ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
SECTION A-A

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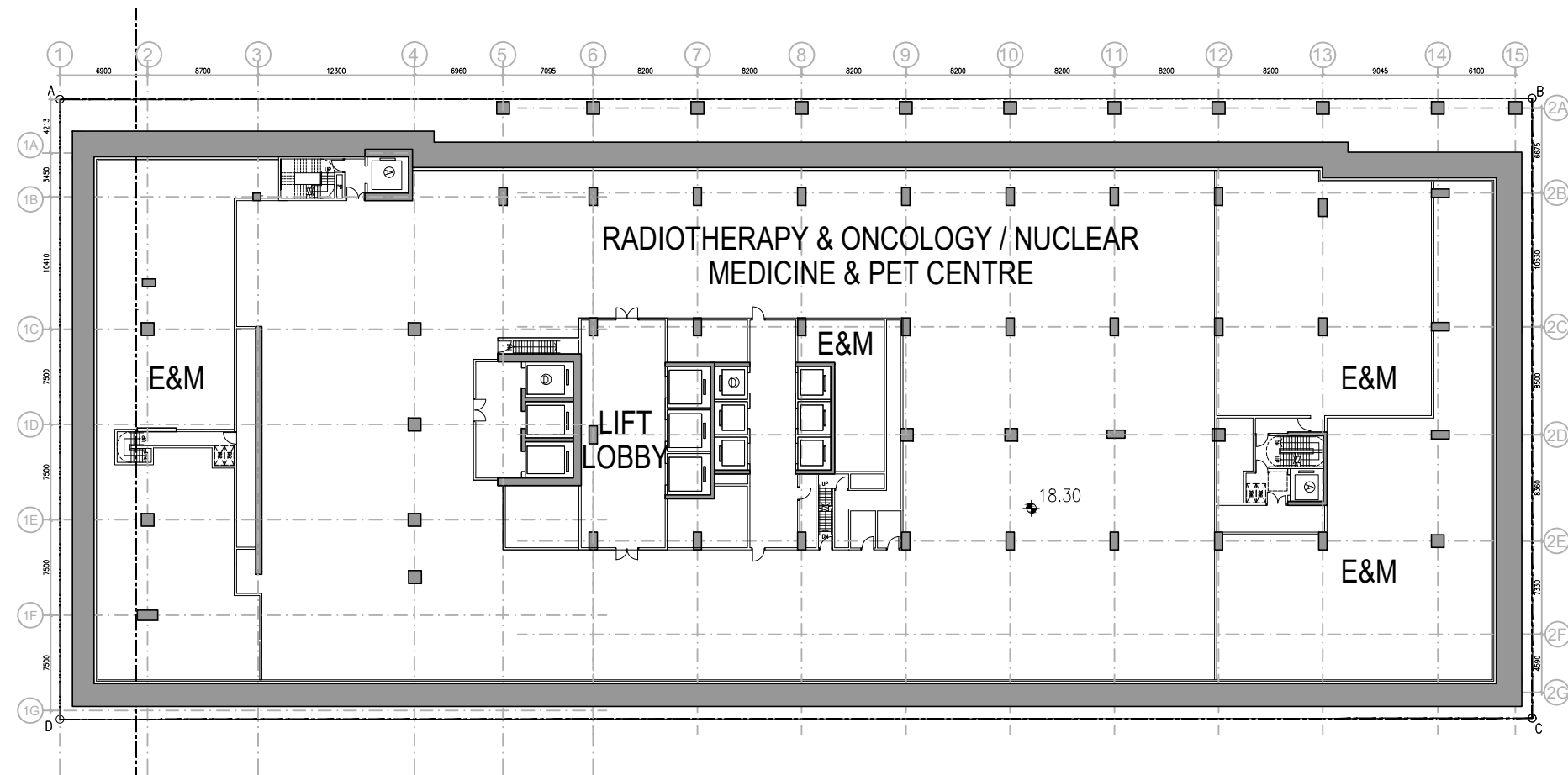
CONTRACT NO.
DRAWING NO.
 20240119-SK11

REV. 03

Annex 15 Illustration of Roof Top Structures with Specific Top Levels



Appendix B Revised Architectural Layout Plans




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 F.S.D. REF :

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-	OCT 2023	PD PRE-SUBMISSION	OK

EMPLOYER
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 Hong Kong Baptist Hospital

PROJECT MANAGER



ARCHITECT / AP


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MEDICAL PLANNER


LANDSCAPE CONSULTANT


TRAFFIC CONSULTANT


ENVIRONMENTAL CONSULTANT


QUANTITY SURVEYOR


JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 B3/F PLAN

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PROJECT MANAGER



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STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT



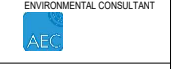
MEDICAL PLANNER



LANDSCAPE CONSULTANT



FACADE CONSULTANT



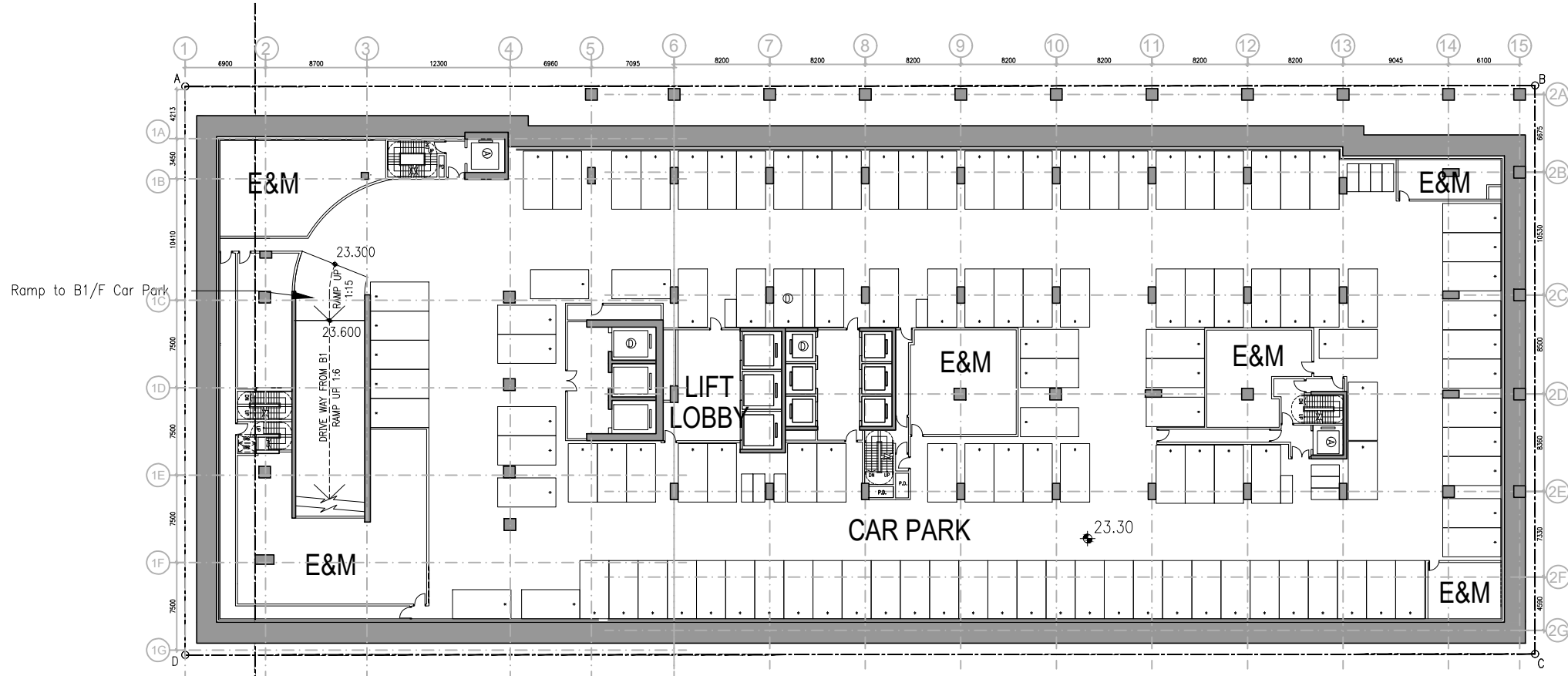
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 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

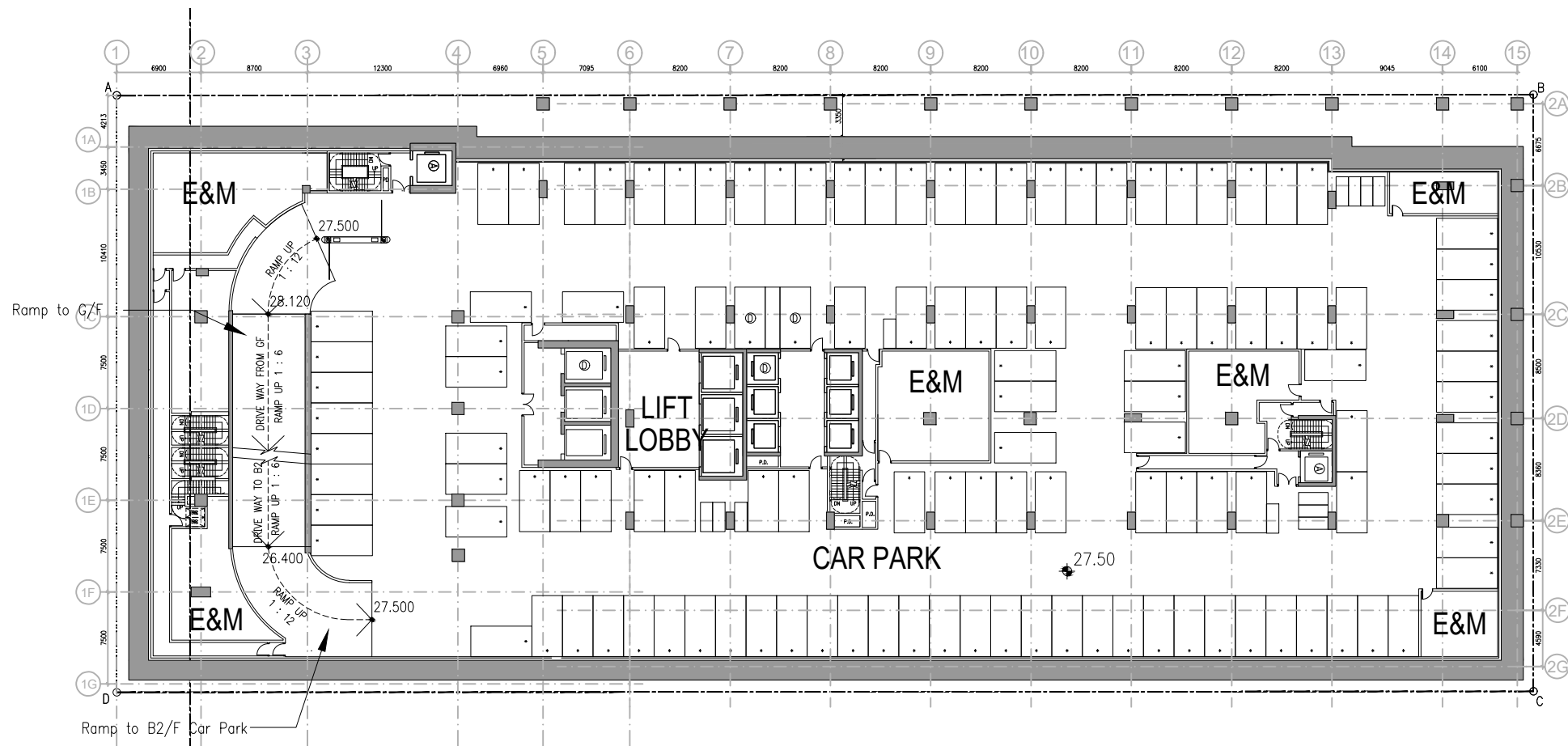
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REV.	DATE	DESCRIPTION	APPROVED
02	MAY 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
-	OCT 2023	PD PRE-SUBMISSION	OK

EMPLOYER
 香港浸信會醫院
 Hong Kong Baptist Hospital

PROJECT MANAGER



ARCHITECT / AP


STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT


MEDICAL PLANNER


LANDSCAPE CONSULTANT


TRAFFIC CONSULTANT


ENVIRONMENTAL CONSULTANT


QUANTITY SURVEYOR


JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

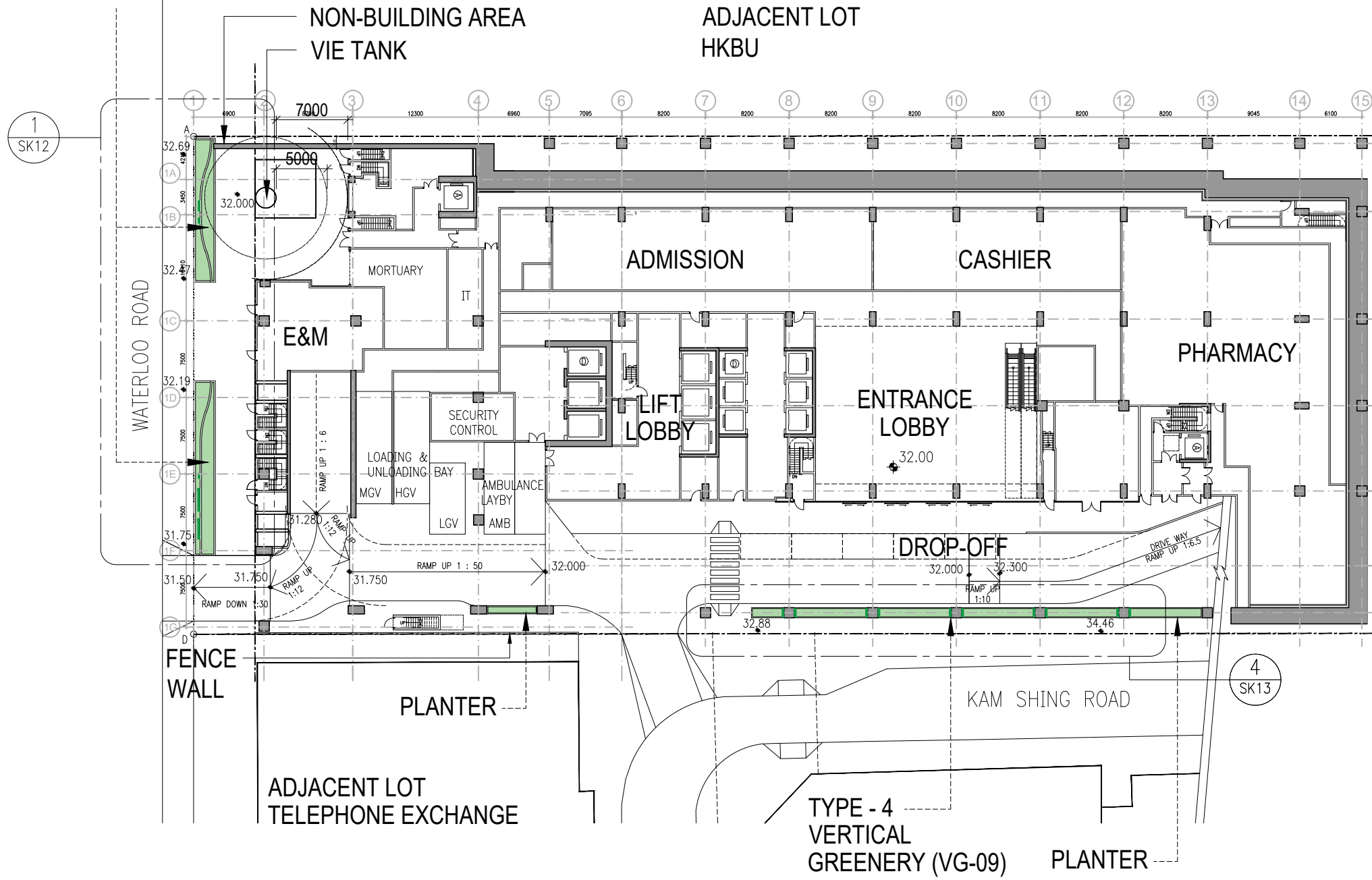
DRAWING TITLE
 B1/F PLAN

SCALE	1:500	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.

DRAWING NO.	REV.
20240119-SK03	02

FENCE WALL
 WITH F.S. INLET/ SPRINKLER CONTROL VALVE
 / AUTOMATIC METER READING CABINET
 / WATER METER CABINET
 WITH GREEN ROOF



B.D. REF :
 F.S.D. REF :
 KEY PLAN

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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	OK
02	MAY 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
-	OCT 2023	PD PRE-SUBMISSION	OK

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PROJECT MANAGER
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STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT
 ARUP

MEDICAL PLANNER
 Jewelyn Davies

QUANTITY SURVEYOR
 Rider Levett Bucknall

LANDSCAPE CONSULTANT
 H2A

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

FACADE CONSULTANT
 AECOM

ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 G/F PLAN

SCALE	1:500	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.

DRAWING NO.
 20240119-SK04


REV.
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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	OK
02	MAY 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
-	OCT 2023	PD PRE-SUBMISSION	OK


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 ARUP


MEDICAL PLANNER
 Jewelyn Davies

QUANTITY SURVEYOR
 Rider Levett Bucknall

LANDSCAPE CONSULTANT
 HWA

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

FAÇADE CONSULTANT
 AECOM

ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
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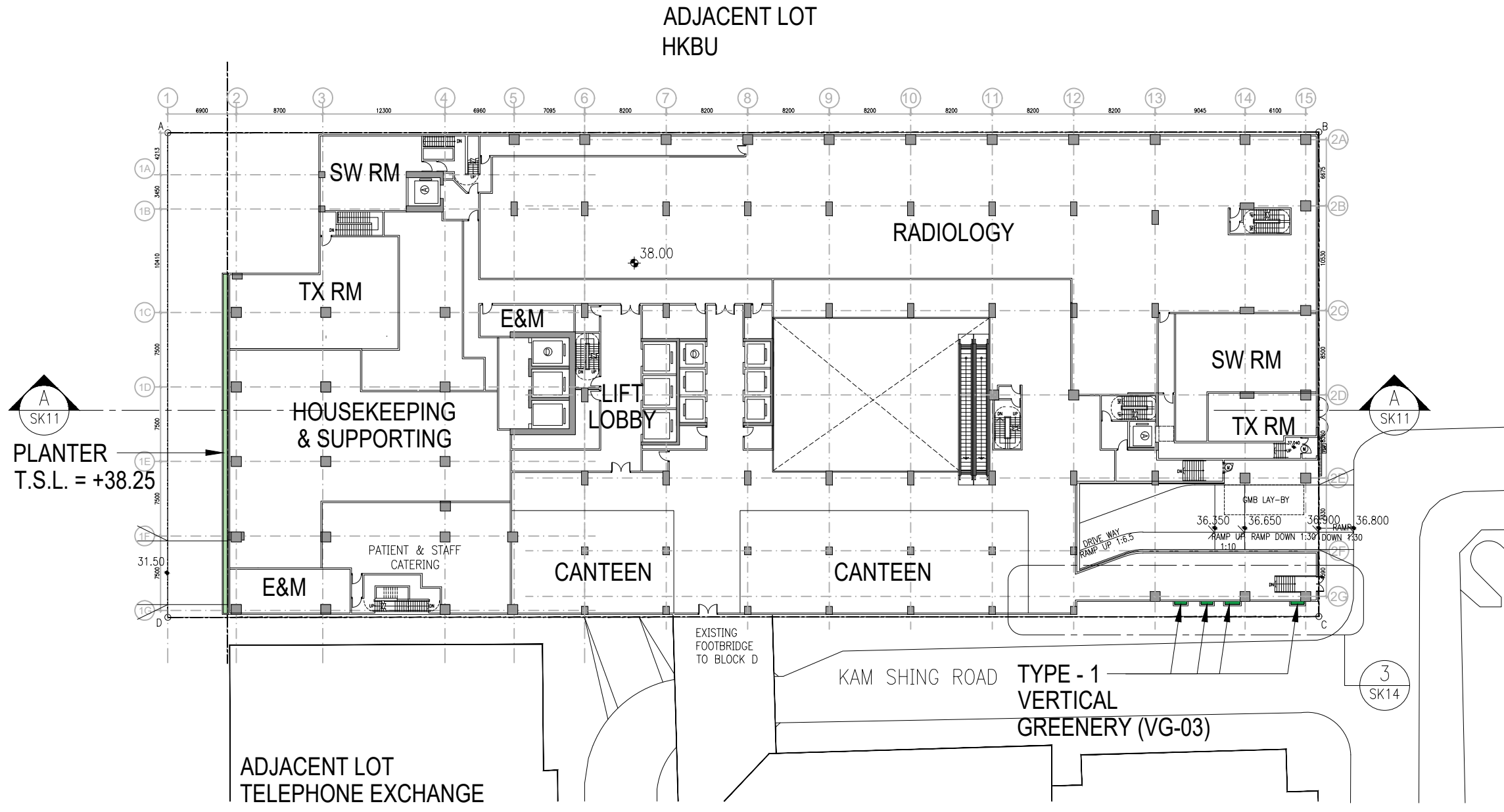
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 1/F PLAN

SCALE	1:500	PRINTED	JAN 2024
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CONTRACT NO.

DRAWING NO.
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REV.
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REV.	DATE	DESCRIPTION	APPROVED
01	JAN 2024	PD FORMAL SUBMISSION	CK
-	OCT 2023	PD PRE-SUBMISSION	CK

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 Hong Kong Baptist Hospital

PROJECT MANAGER



ARCHITECT / AP


STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT


MEDICAL PLANNER


LANDSCAPE CONSULTANT


TRAFFIC CONSULTANT


ENVIRONMENTAL CONSULTANT


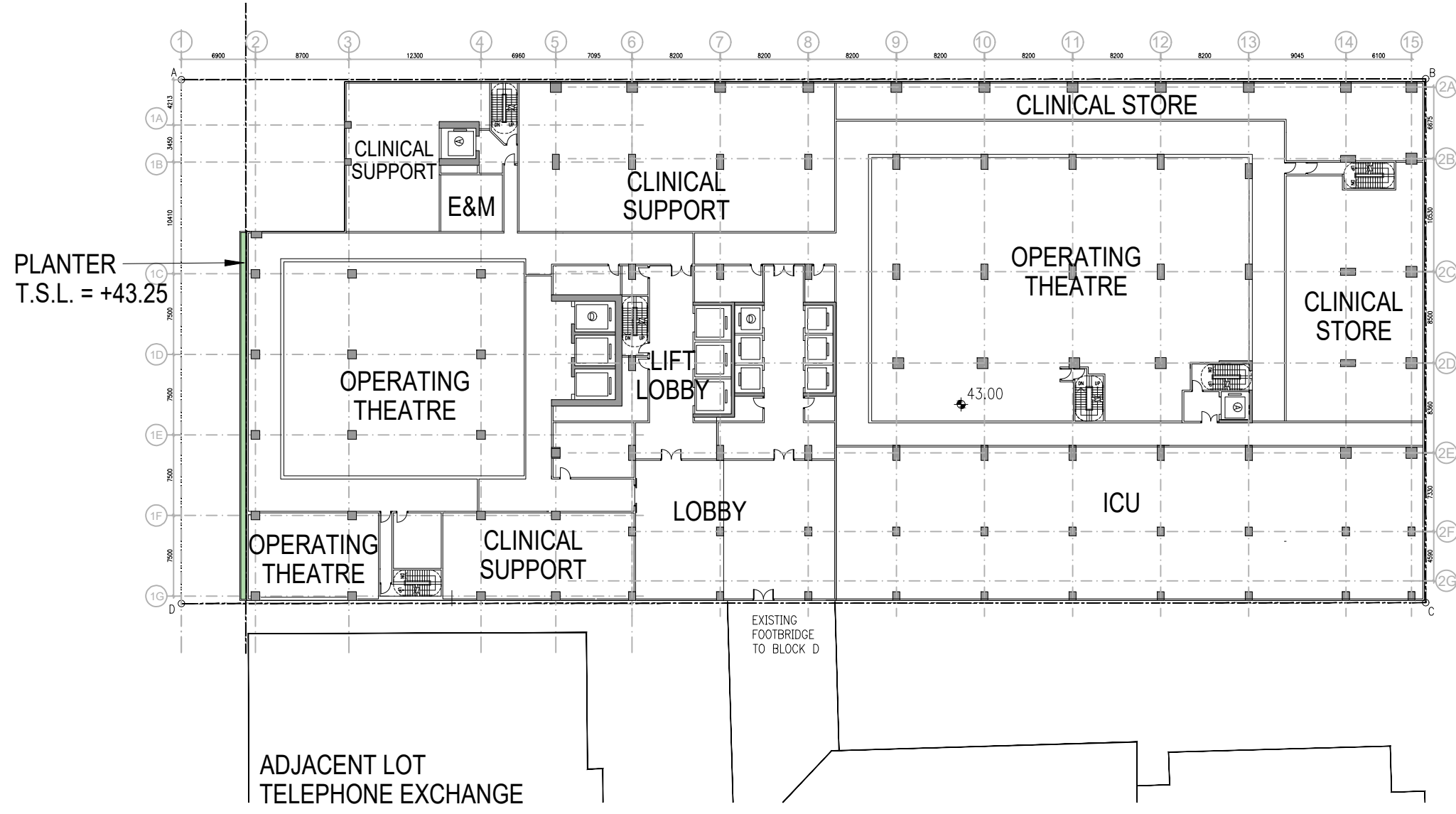
JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 2/F PLAN

SCALE	1:500	PRINTED	JAN 2024
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APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.

DRAWING NO.	REV.
20240119-SK06	01



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03	JUL 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
-	OCT 2023	PD PRE-SUBMISSION	OK

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MEDICAL PLANNER


LANDSCAPE CONSULTANT


TRAFFIC CONSULTANT


ENVIRONMENTAL CONSULTANT


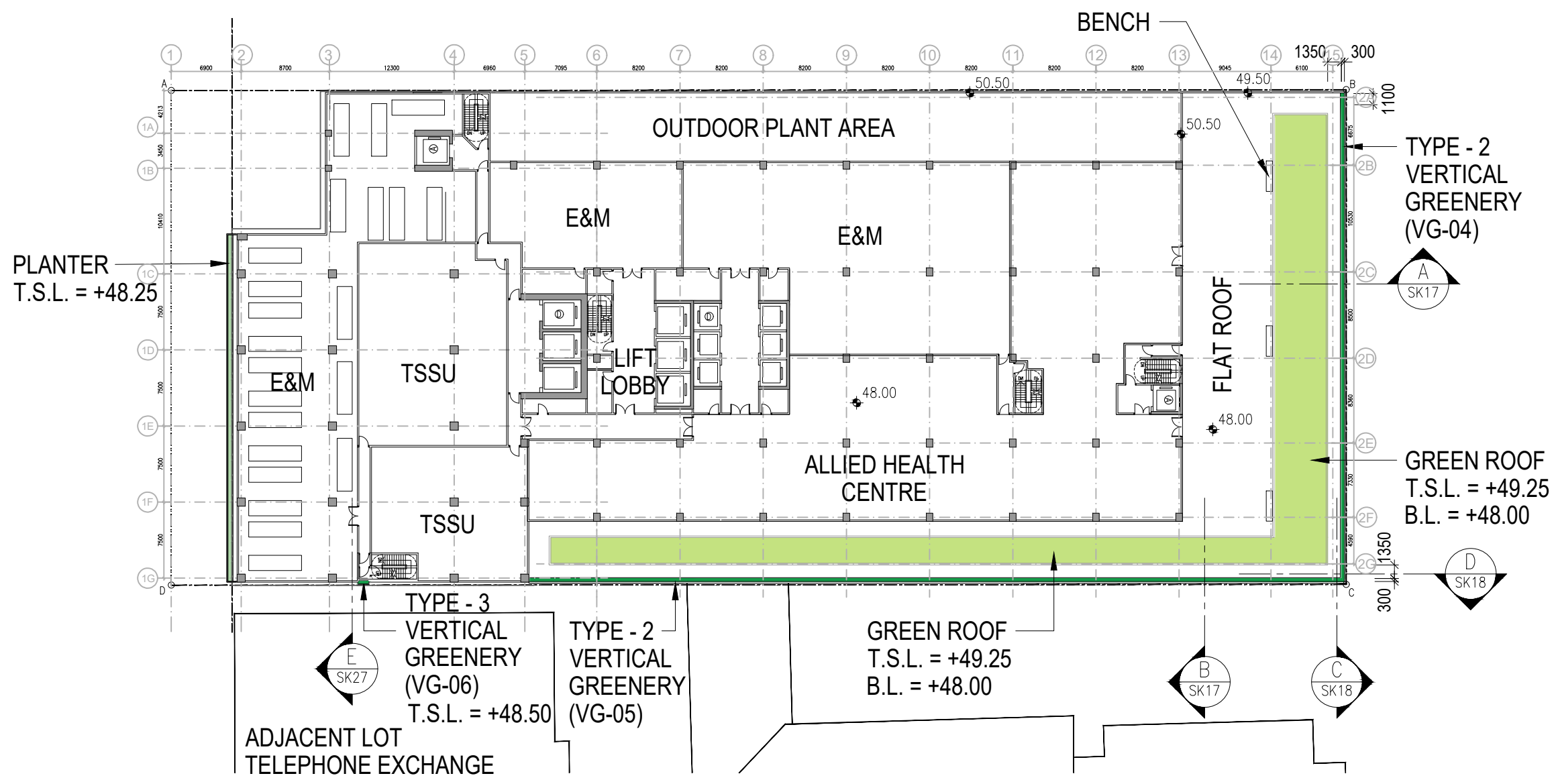
JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

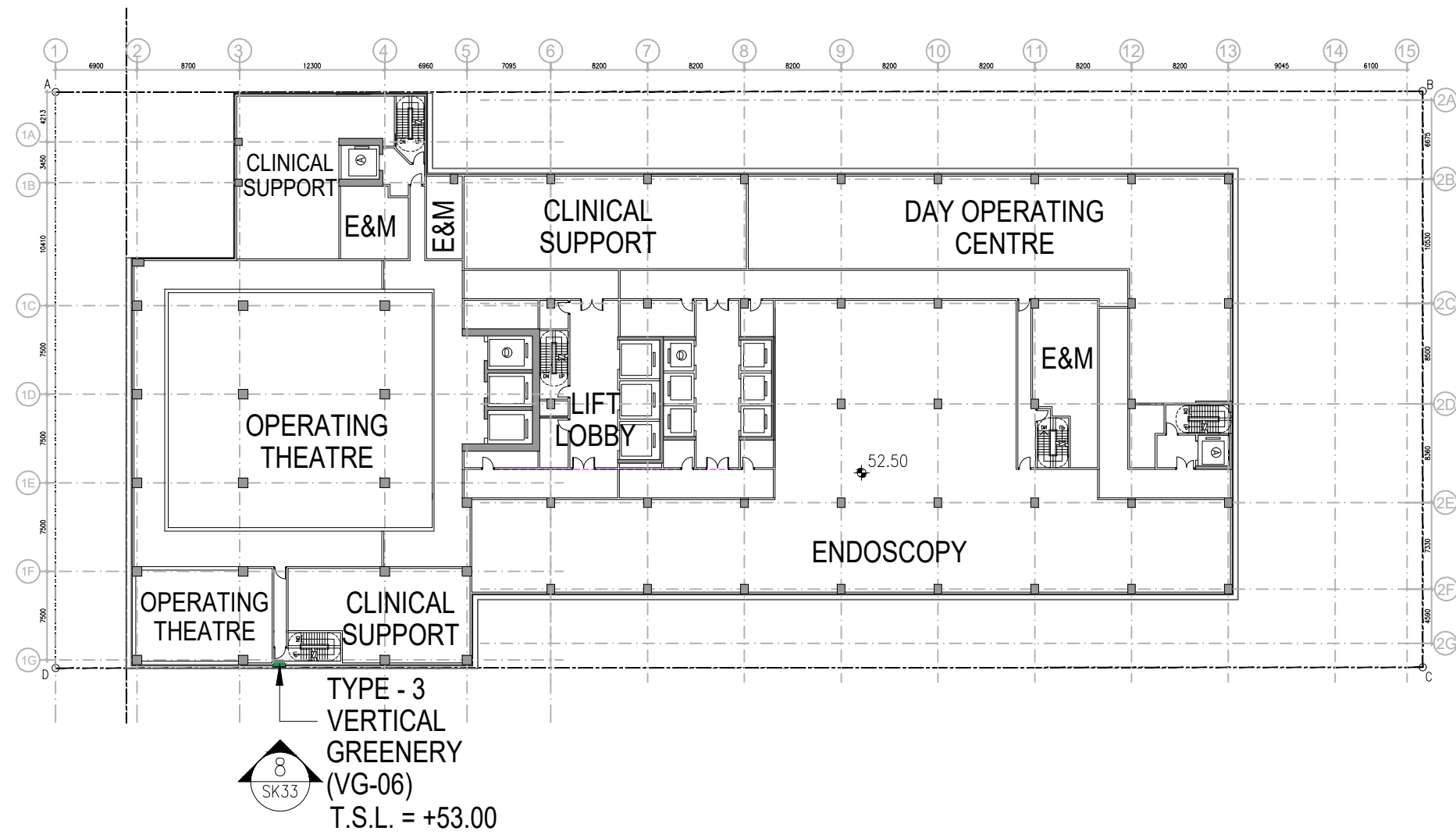
DRAWING TITLE
 3/F PLAN

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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
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EMPLOYER
香港浸信會醫院
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LANDSCAPE CONSULTANT
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TRAFFIC CONSULTANT
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FACADE CONSULTANT
AECOM

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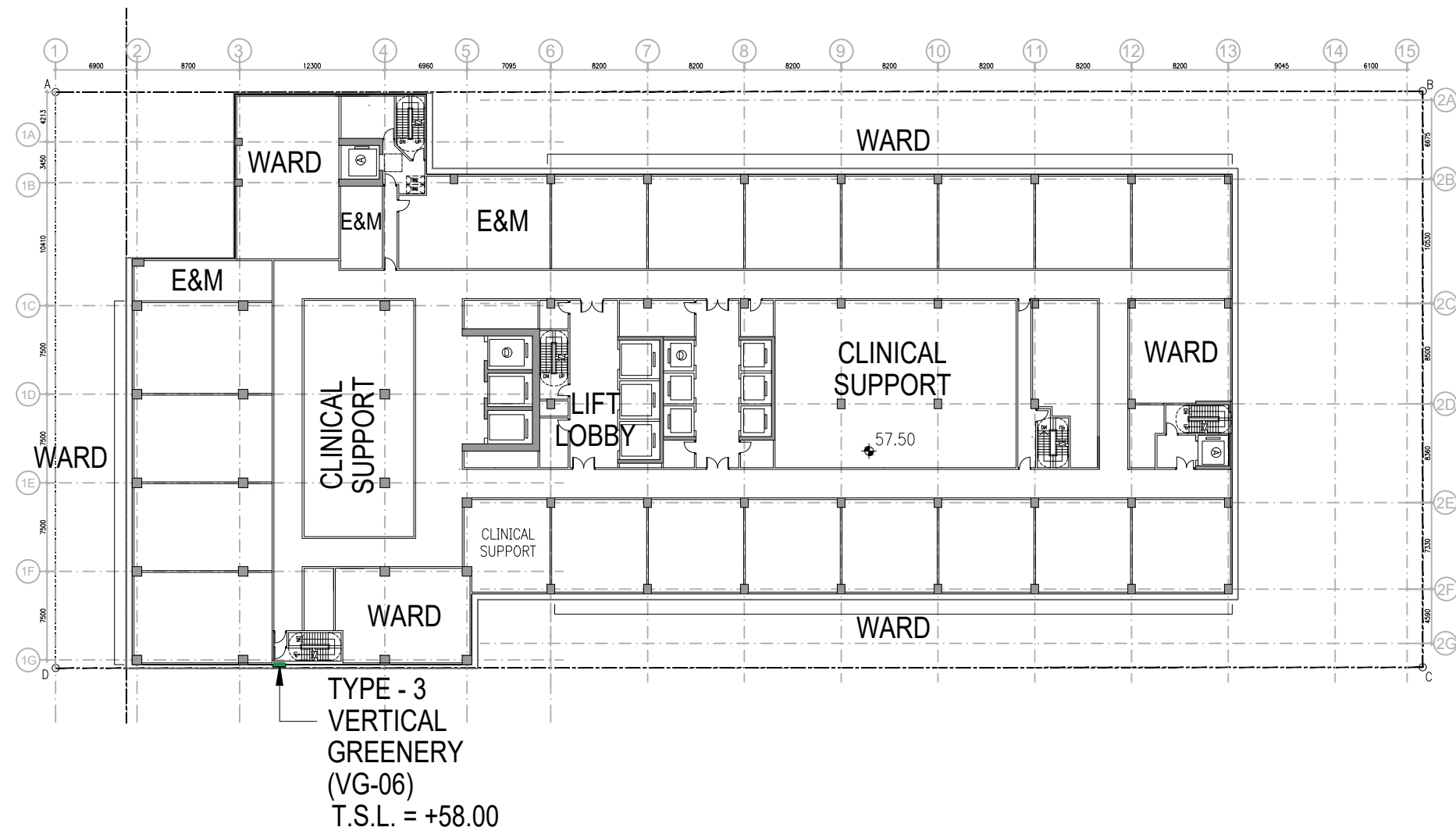
JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
4/F PLAN

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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	OK
02	MAY 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
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MEDICAL PLANNER

LANDSCAPE CONSULTANT

FACADE CONSULTANT

QUANTITY SURVEYOR

TRAFFIC CONSULTANT

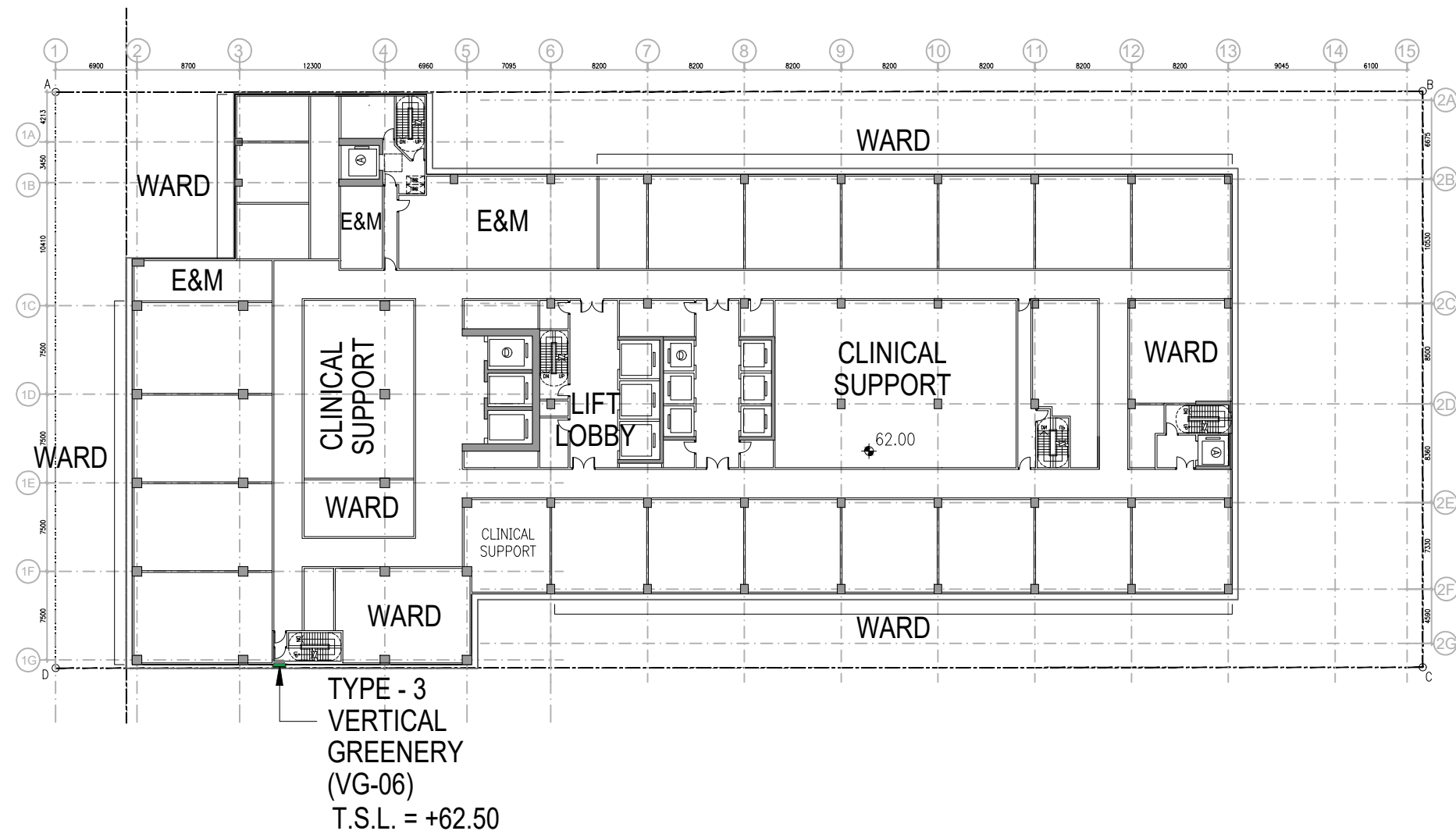
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JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 5/F PLAN

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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	OK
02	MAY 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
-	OCT 2023	PD PRE-SUBMISSION	OK

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MEDICAL PLANNER

LANDSCAPE CONSULTANT

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QUANTITY SURVEYOR

TRAFFIC CONSULTANT

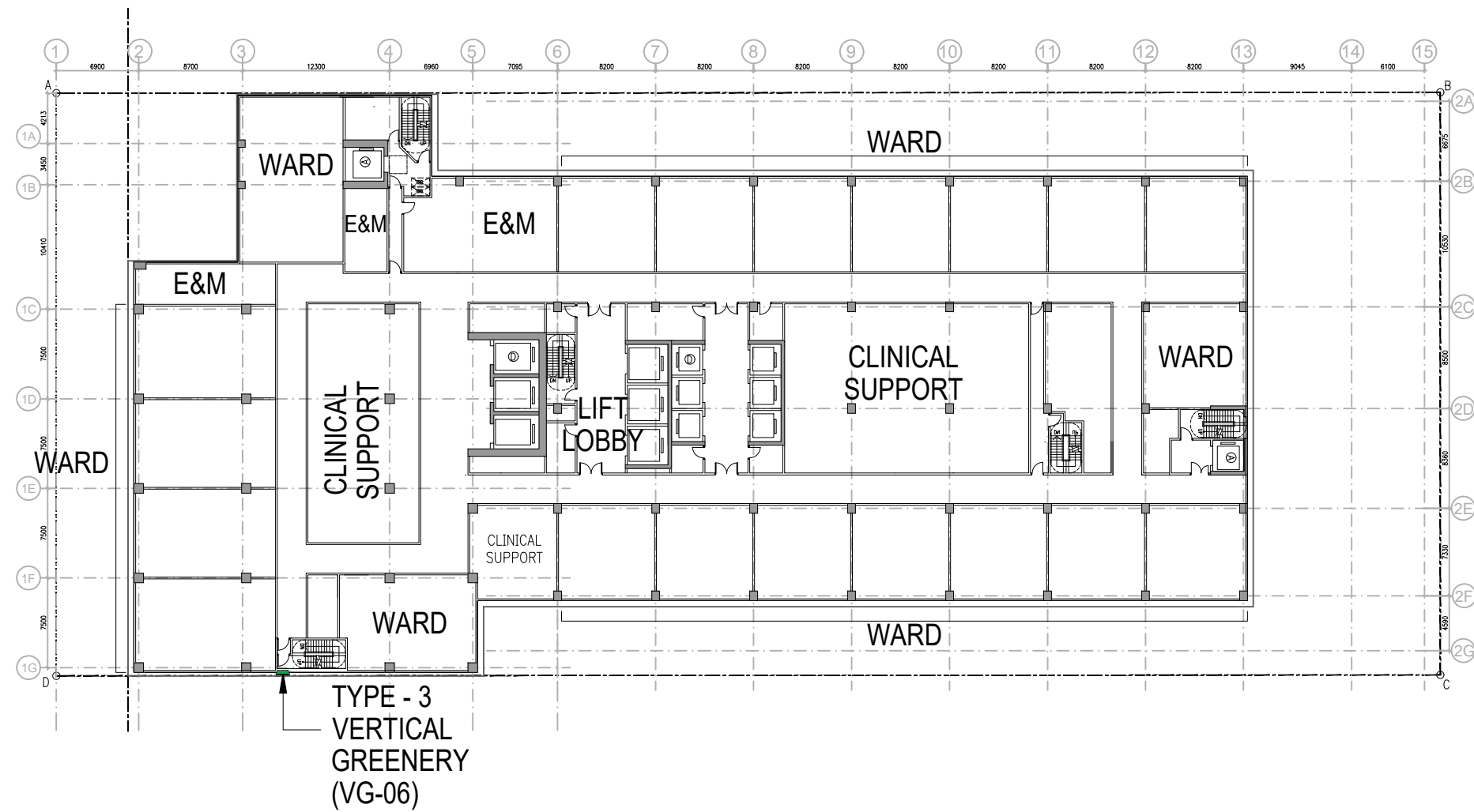
ENVIRONMENTAL CONSULTANT

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 6/F PLAN

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REV.	DATE	DESCRIPTION	APPROVED
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-	MAY 2024	FURTHER INFORMATION	CK

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 Hong Kong Baptist Hospital

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LANDSCAPE CONSULTANT
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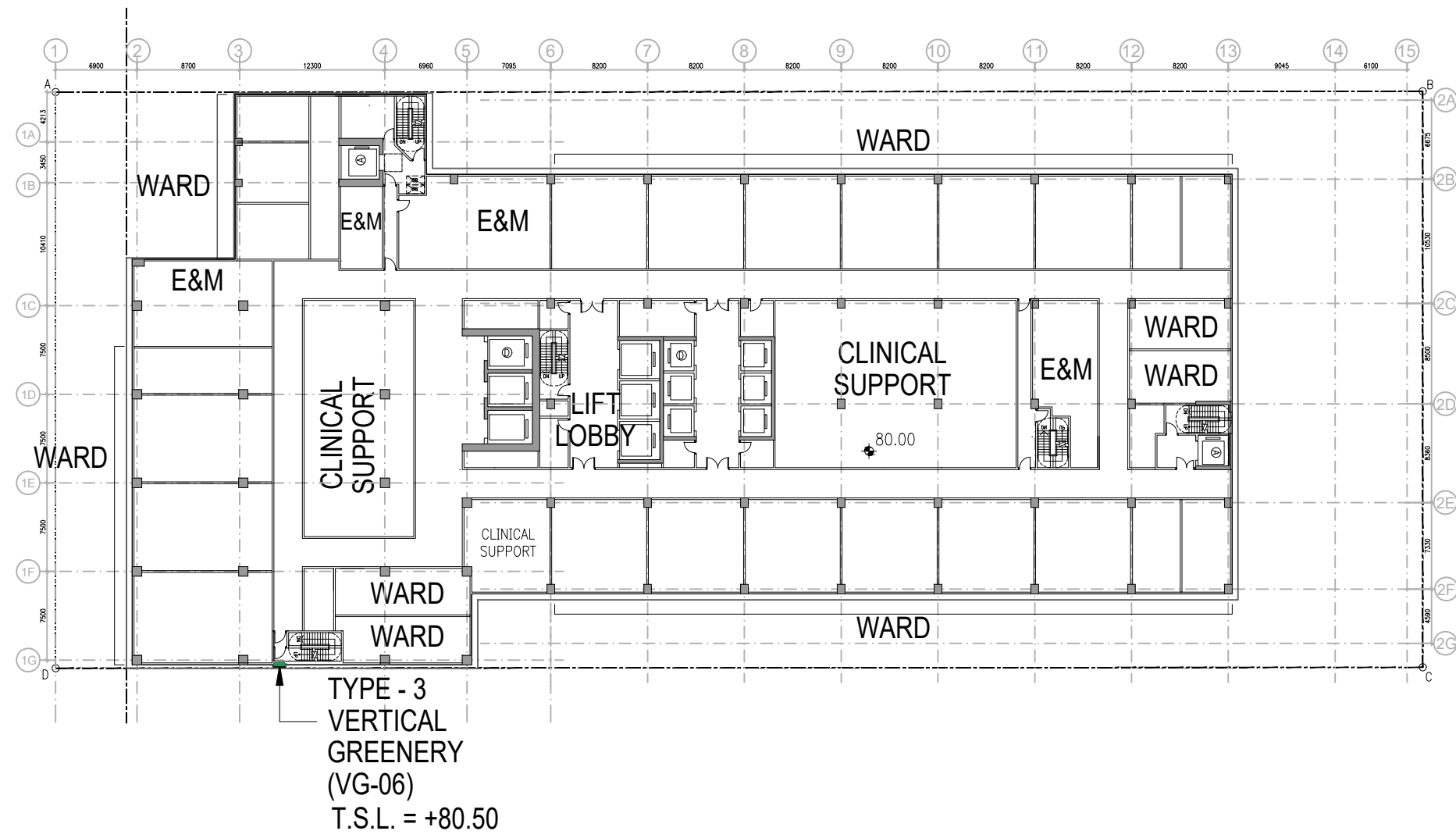
ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 7-9/F PLAN

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20240119-SK23	03



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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	CK
-	MAY 2024	FURTHER INFORMATION	CK

EMPLOYER
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 Hong Kong Baptist Hospital

PROJECT MANAGER


ARCHITECT / AP


STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT


MEDICAL PLANNER
 Jewelyn Davies

LANDSCAPE CONSULTANT
 HWA

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 AECOM

QUANTITY SURVEYOR
 Rider Levitt Bucknall

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

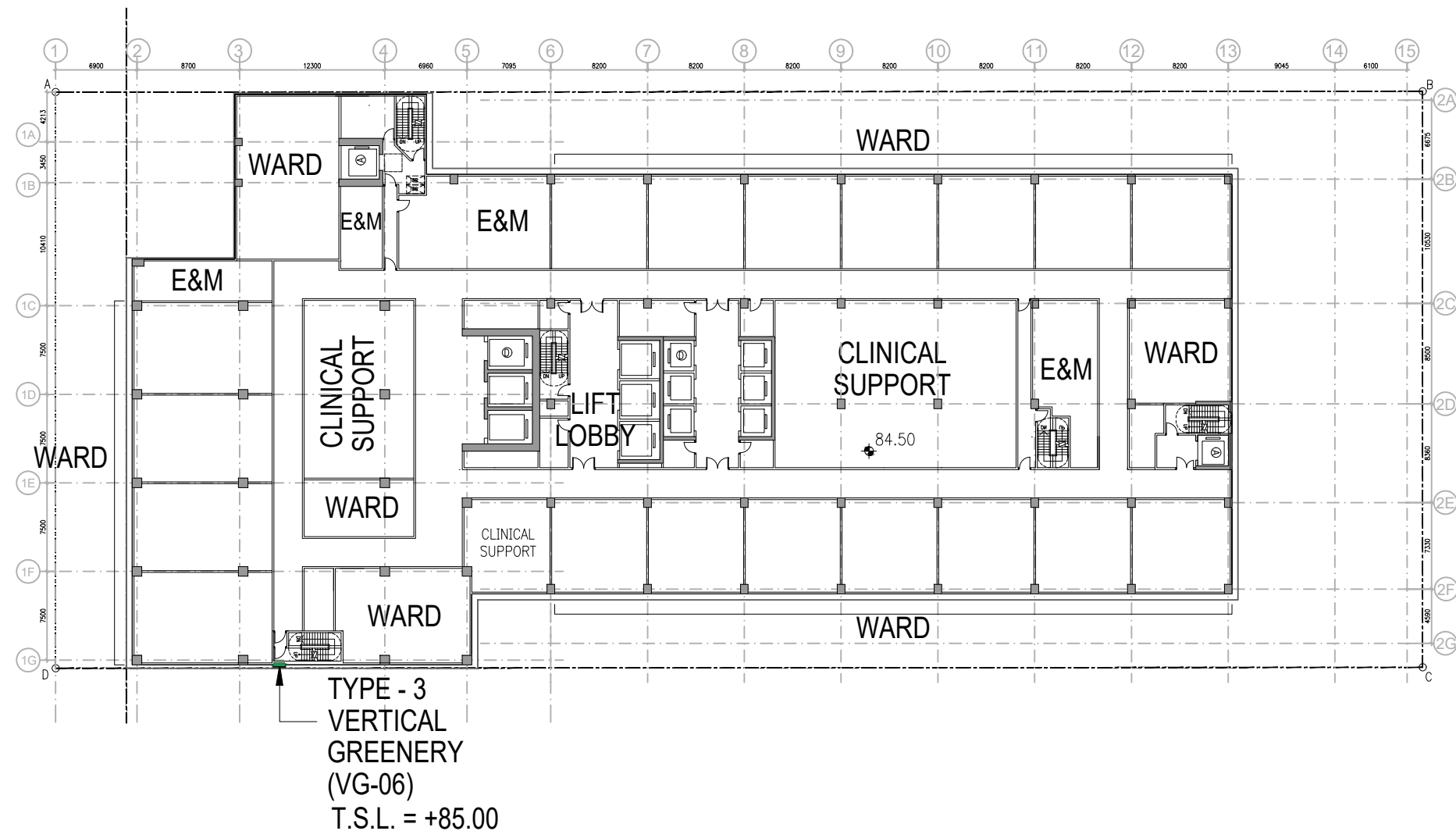
ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 10/F PLAN

SCALE	1:500	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

DRAWING NO.		REV.
20240119-SK24		03



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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	CK
-	MAY 2024	FURTHER INFORMATION	CK

EMPLOYER
 香港浸信會醫院
 Hong Kong Baptist Hospital

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FACADE CONSULTANT
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ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

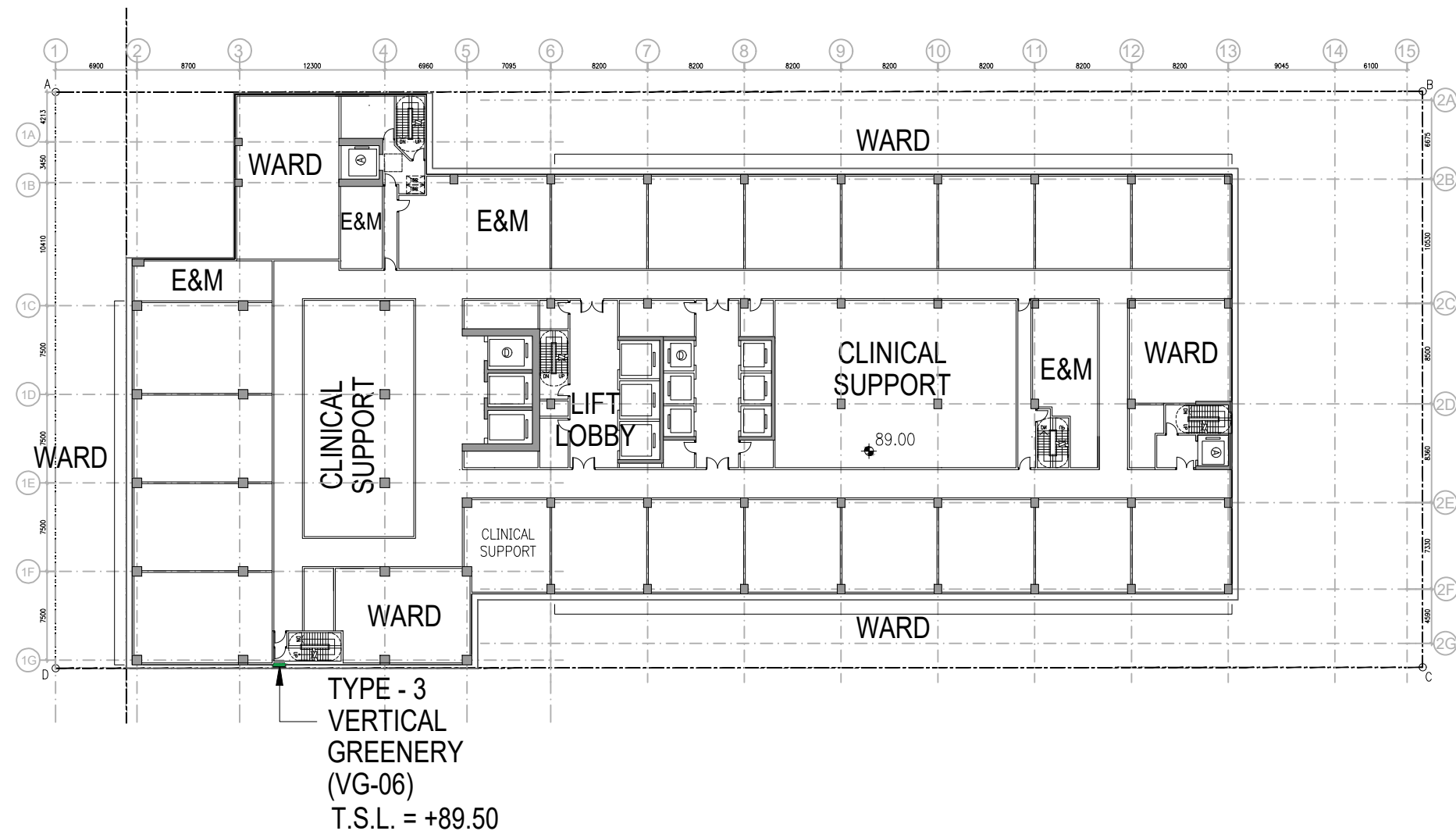
DRAWING TITLE
 11/F PLAN

SCALE	1:500	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.

DRAWING NO.	REV.
20240119-SK25	03

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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	CK
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QUANTITY SURVEYOR
 Rider Levett Bucknall

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 OZZO TECHNOLOGY

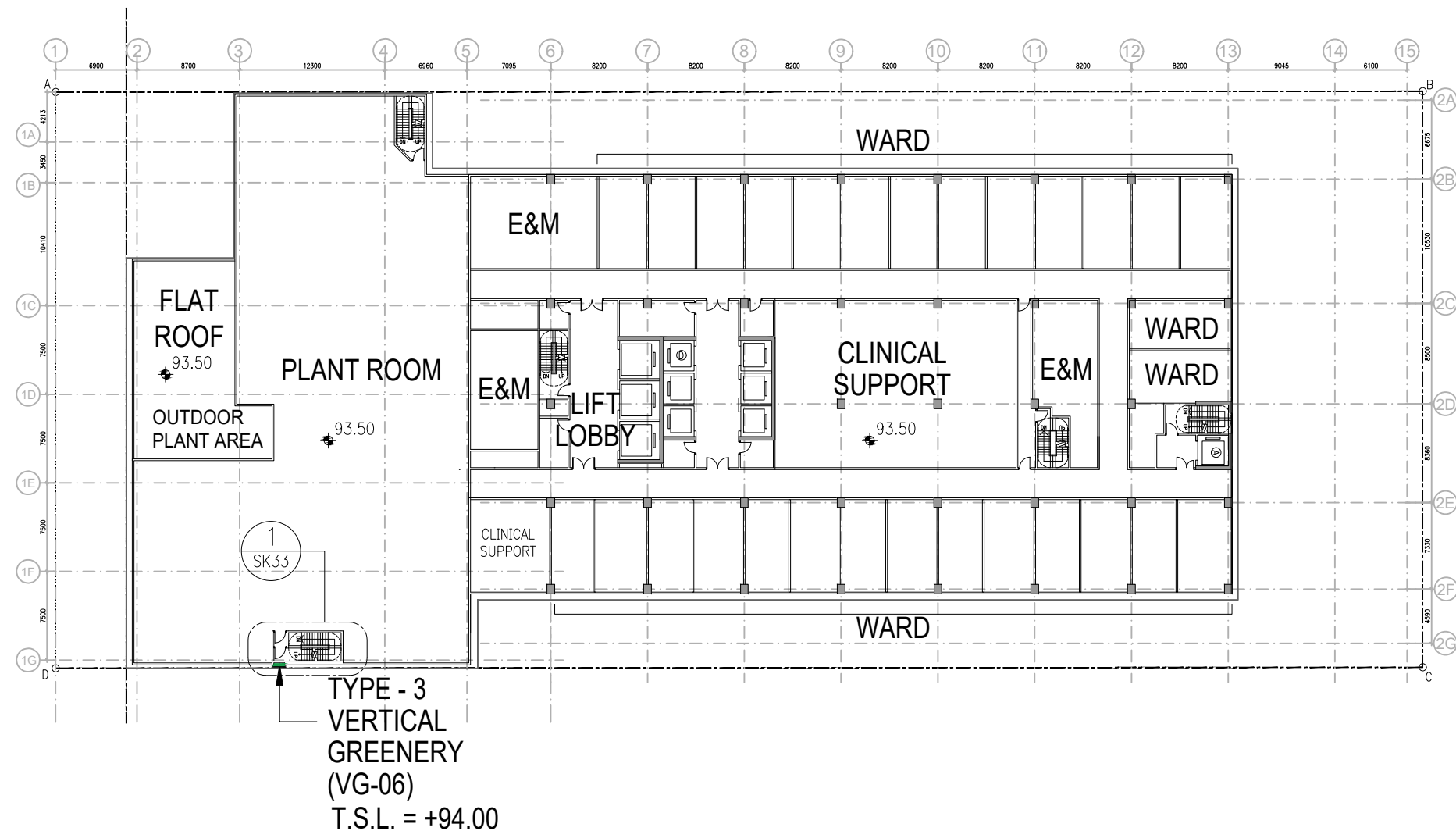
ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 12/F PLAN

SCALE	1:500	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
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20240119-SK26	03



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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	CK
-	MAY 2024	FURTHER INFORMATION	CK

EMPLOYER
 香港浸信會醫院
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 HWA

FACADE CONSULTANT
 AECOM

QUANTITY SURVEYOR
 Rider Levett Bucknall

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

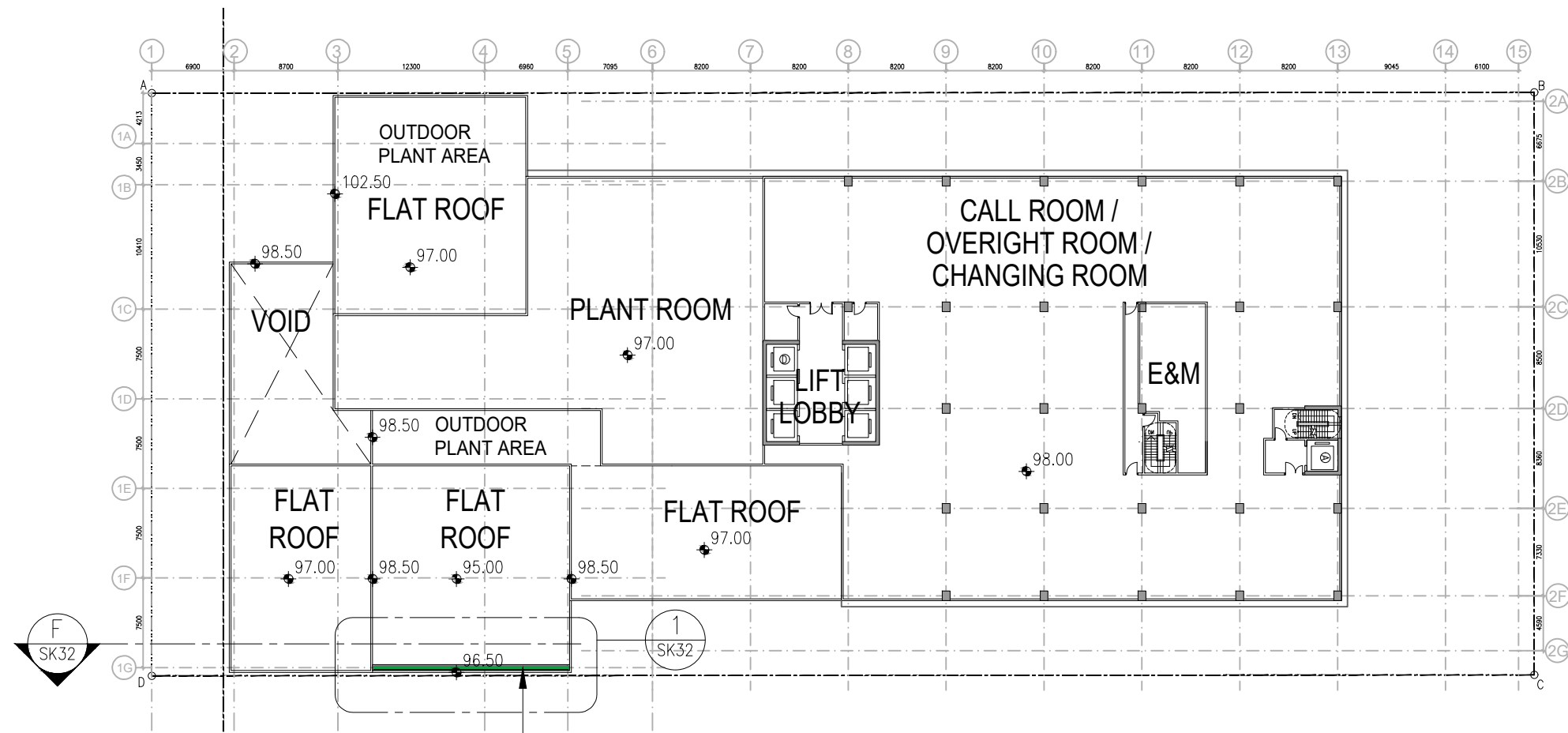
ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 13/F PLAN

SCALE	1:500	PRINTED	JAN 2024
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APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.
 DRAWING NO.
 20240119-SK09
 REV.
 03



TYPE - 2
VERTICAL
GREENERY (VG-07)
T.S.L. = +95.50

B.D. REF :
F.S.D. REF :

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03	JUL 2024	FURTHER INFORMATION	CK
-	MAY 2024	FURTHER INFORMATION	CK

EMPLOYER
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LANDSCAPE CONSULTANT
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OZZO TECHNOLOGY

FACADE CONSULTANT
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ENVIRONMENTAL CONSULTANT
AEC

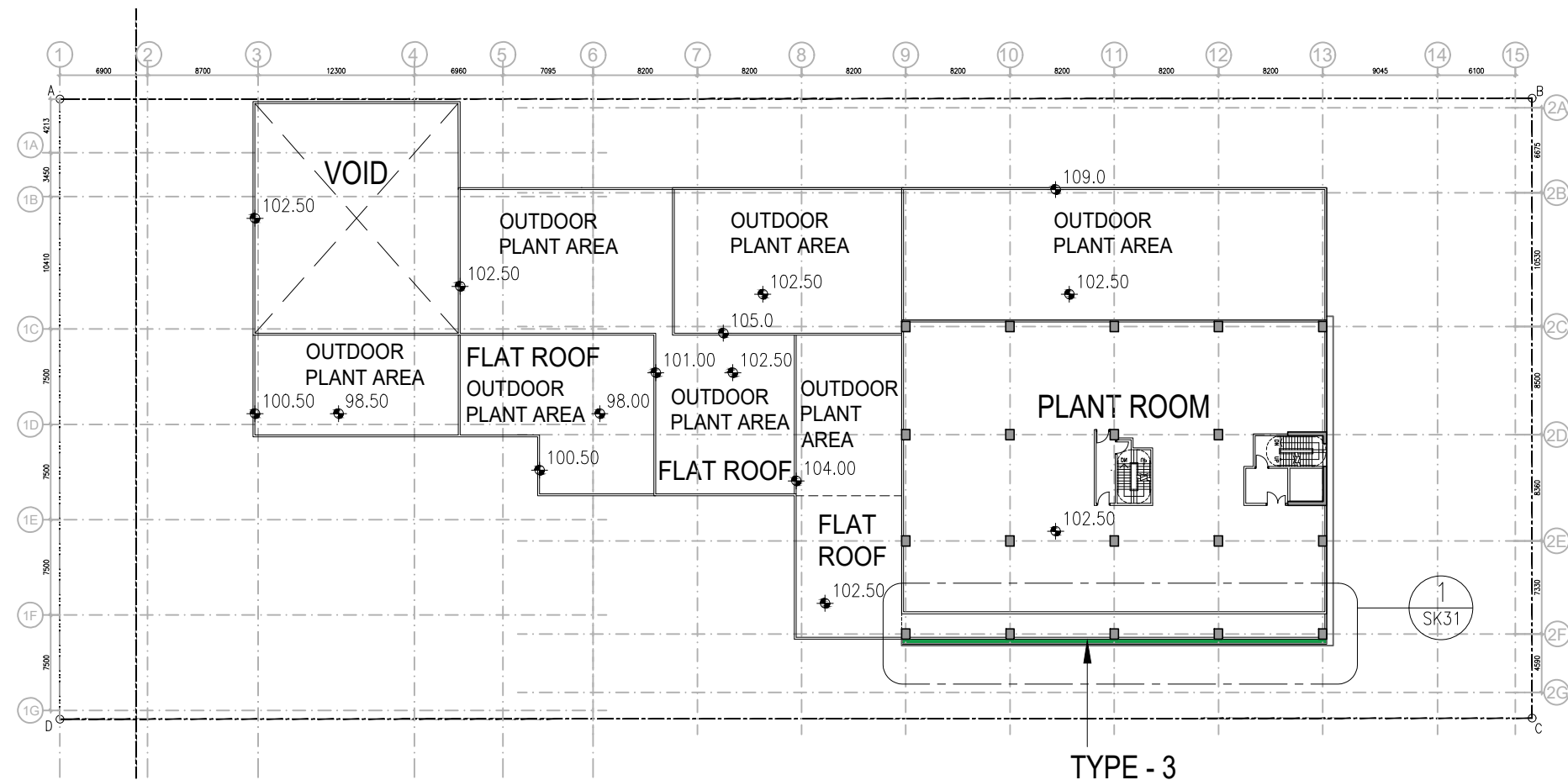
JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
14/F PLAN

SCALE	1:500	PRINTED	JAN 2024
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APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.

DRAWING NO.	REV.
20240119-SK10	03



TYPE - 3
VERTICAL
GREENERY (VG-08)
T.S.L. = +103.00

B.D. REF :
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03	JUL 2024	FURTHER INFORMATION	CK
-	MAY 2024	FURTHER INFORMATION	CK

EMPLOYER
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LANDSCAPE CONSULTANT
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OZZO TECHNOLOGY

FACADE CONSULTANT
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ENVIRONMENTAL CONSULTANT
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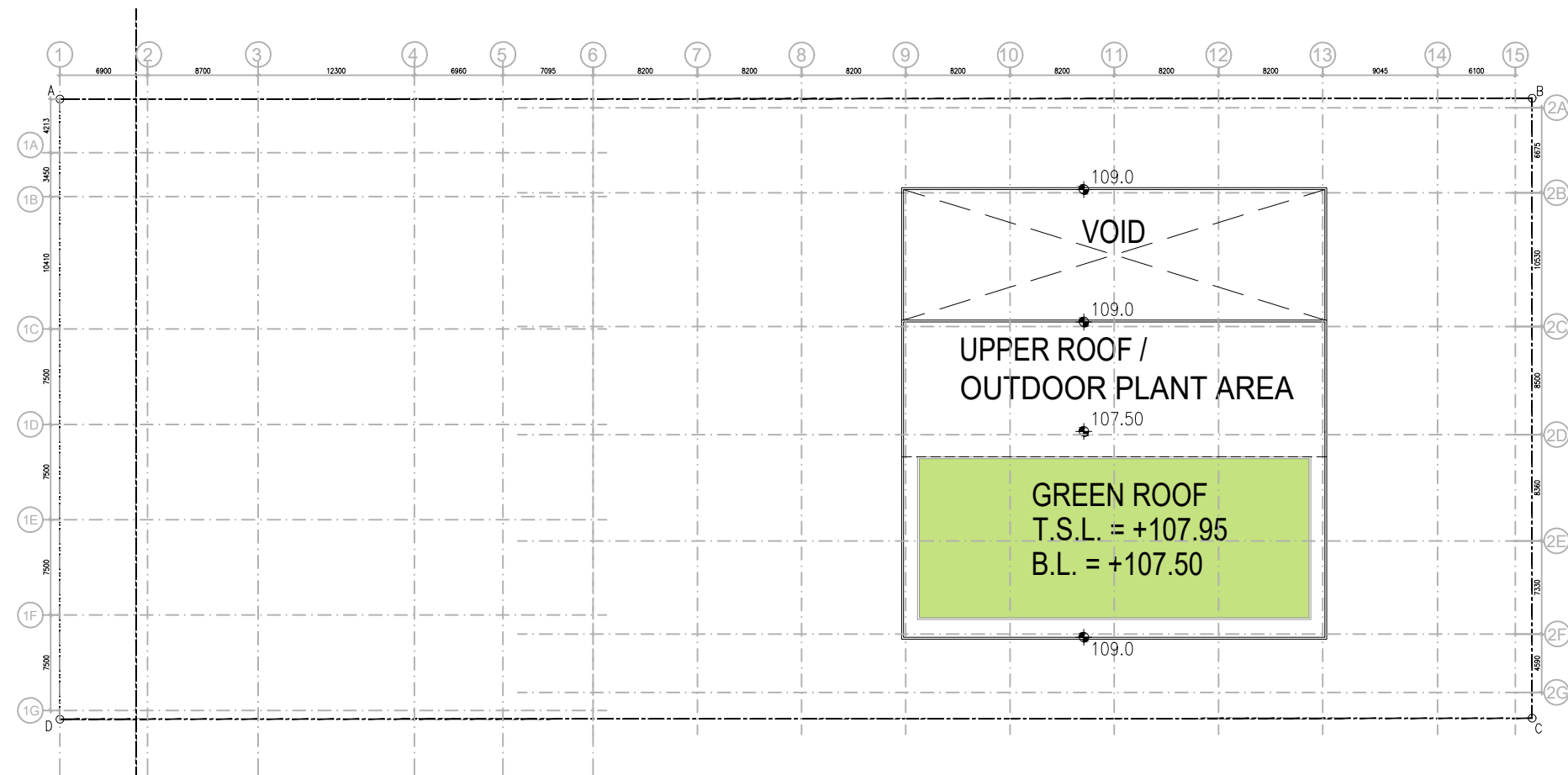
JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
R/F PLAN

SCALE	1:500	PRINTED	JAN 2024
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DRAWN	BW	DATE	JAN 2024

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20240119-SK19	03




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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	CK
-	MAY 2024	FURTHER INFORMATION	CK

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QUANTITY SURVEYOR


TRAFFIC CONSULTANT


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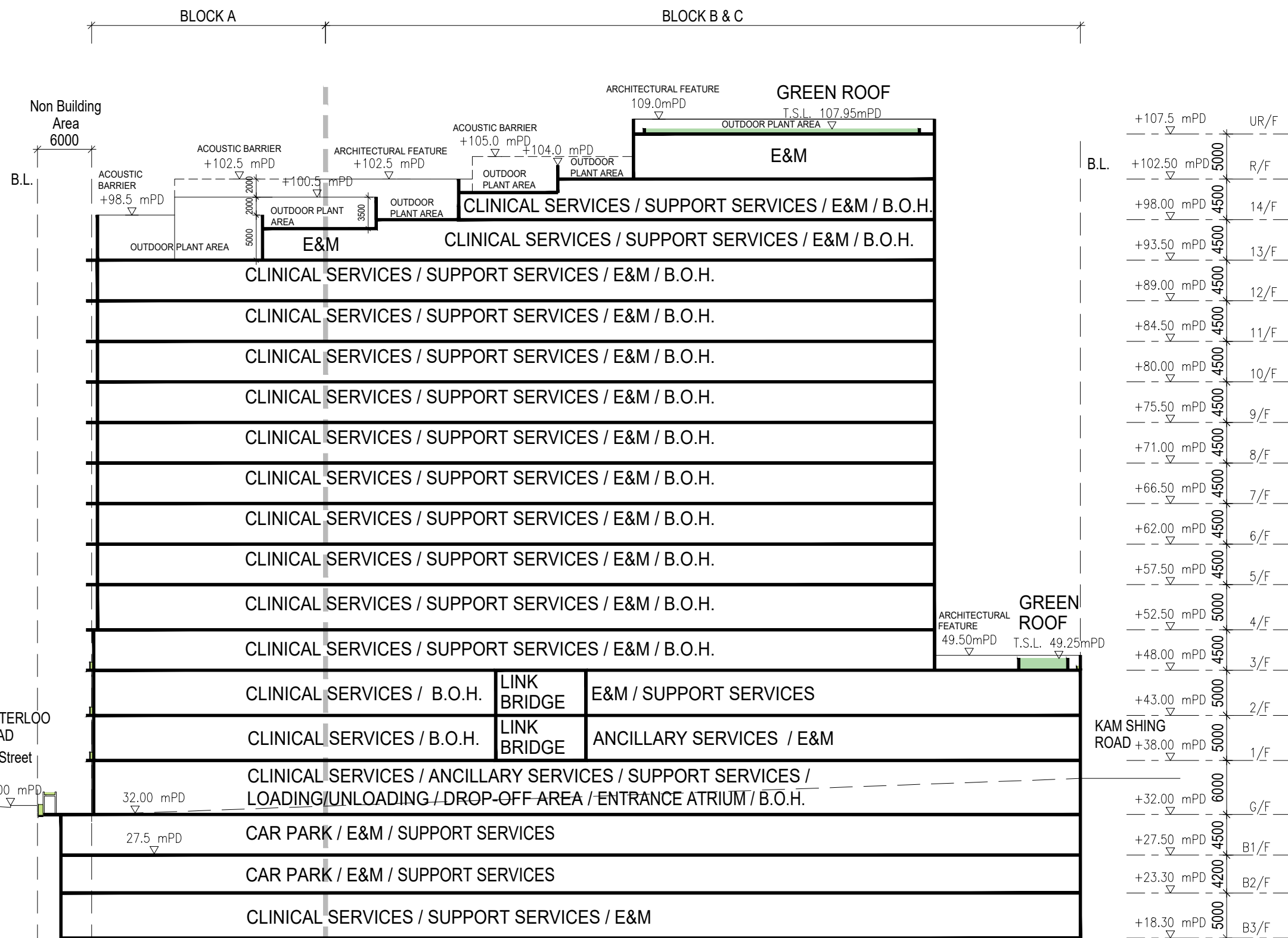

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 UR/F PLAN

SCALE	1:500	PRINTED	JAN 2024
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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	OK
02	MAY 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
-	OCT 2023	PD PRE-SUBMISSION	OK

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JOB TITLE
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DRAWING TITLE
 SECTION A-A

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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	CK
02	MAY 2024	FURTHER INFORMATION	CK
-	JAN 2024	PD FORMAL SUBMISSION	CK

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MEDICAL PLANNER


QUANTITY SURVEYOR


LANDSCAPE CONSULTANT


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ENVIRONMENTAL CONSULTANT

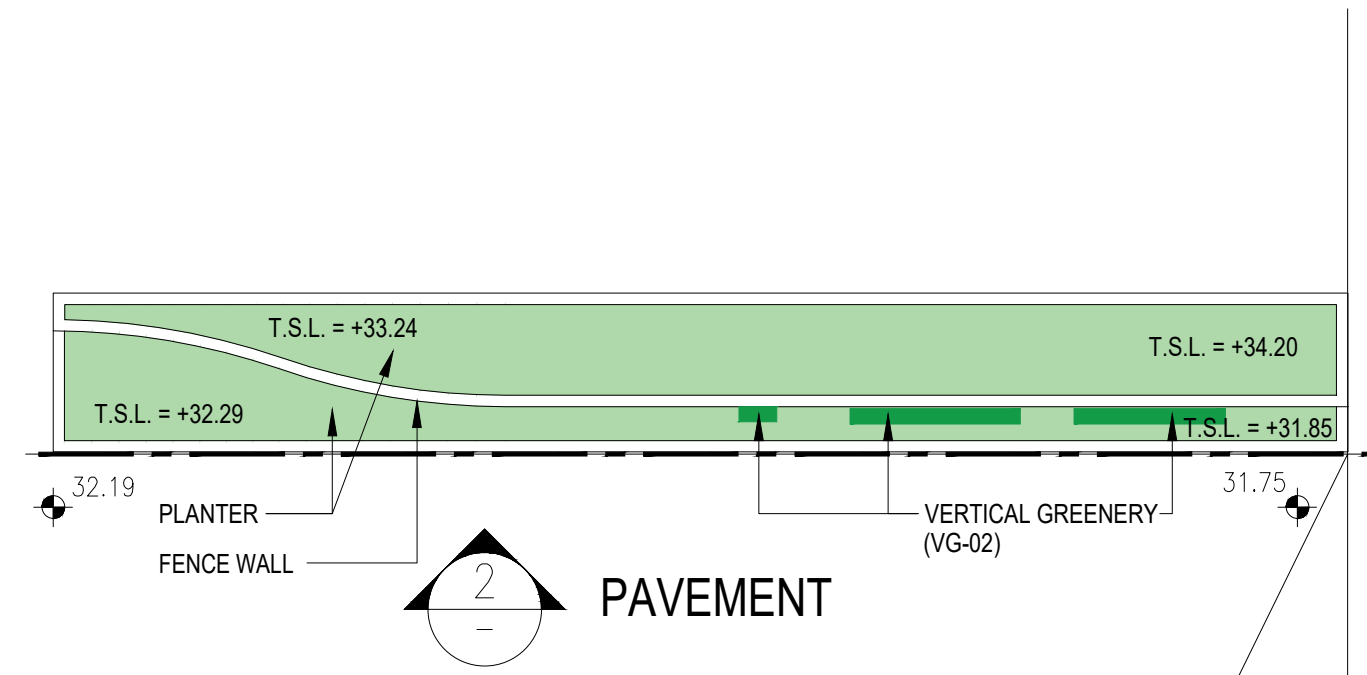
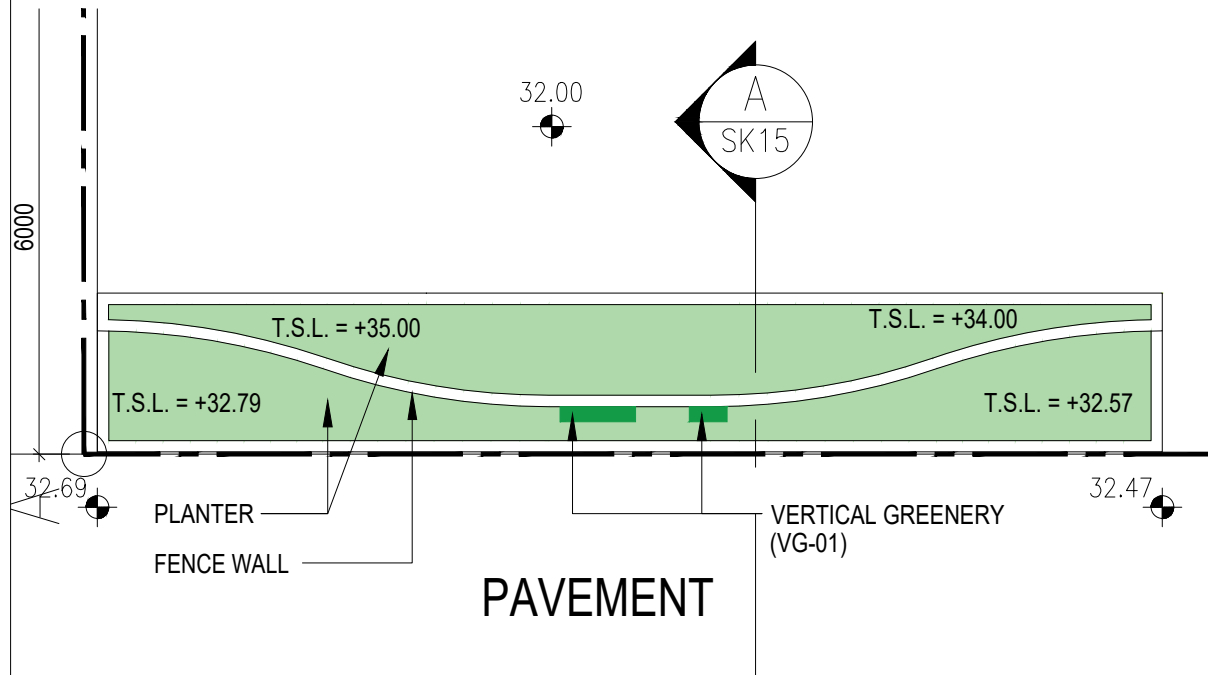

FAÇADE CONSULTANT


JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (TY) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

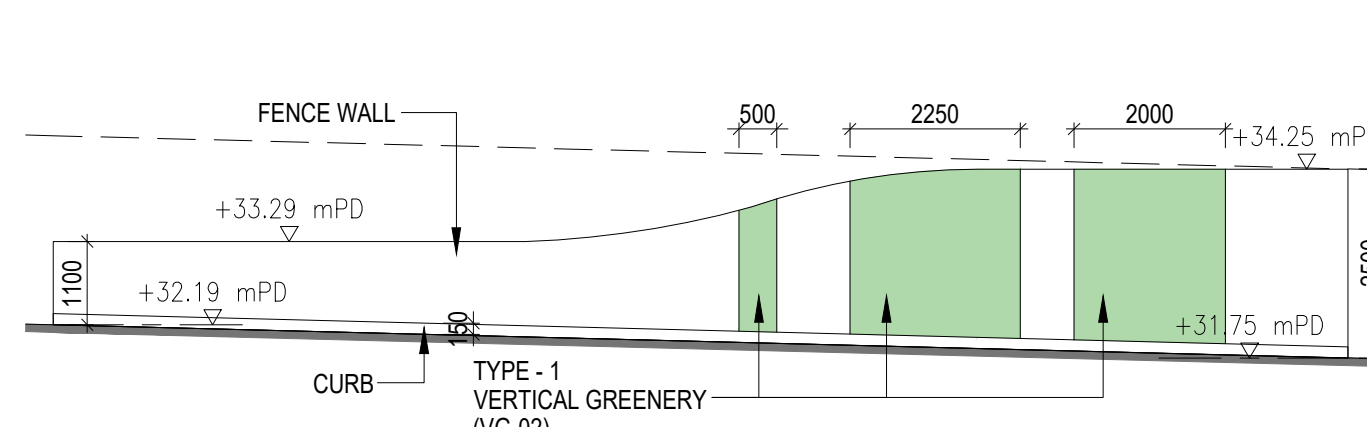
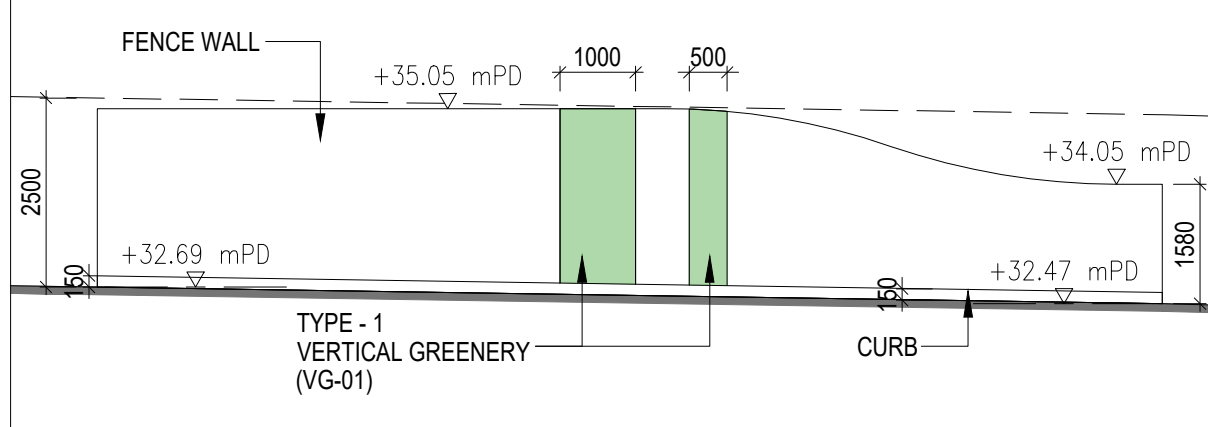
DRAWING TITLE
 PART PLAN OF G/F (1)

SCALE	1:100	PRINTED	JAN 2024
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APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

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DRAWING NO.	20240119-SK12
REV.	03



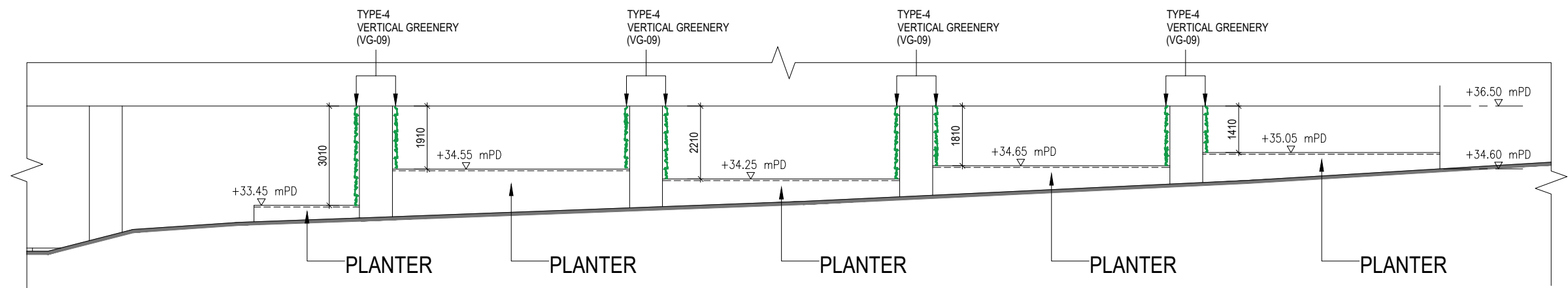
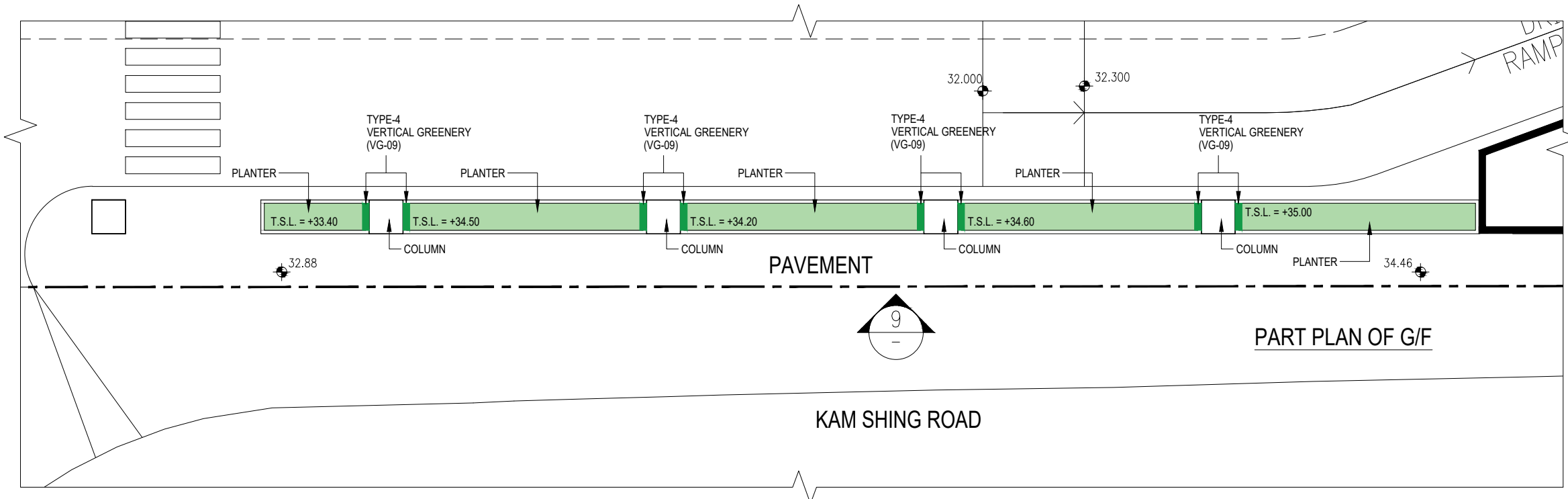
1
 SK12
 PART PLAN OF G/F



2
 -
 ELEVATION


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-	JAN 2024	PD FORMAL SUBMISSION	CK

EMPLOYER
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MEDICAL PLANNER


LANDSCAPE CONSULTANT


FACADE CONSULTANT


QUANTITY SURVEYOR


TRAFFIC CONSULTANT

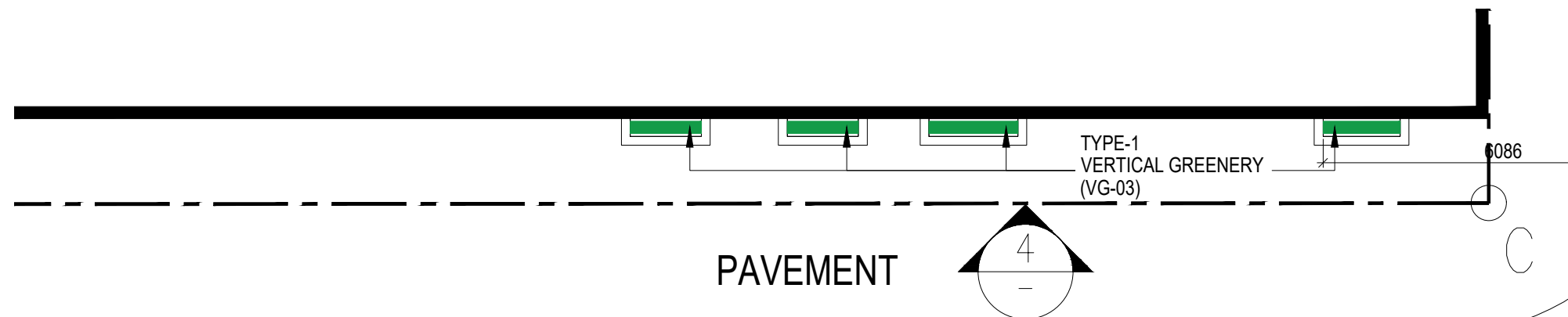

ENVIRONMENTAL CONSULTANT


JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (T) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

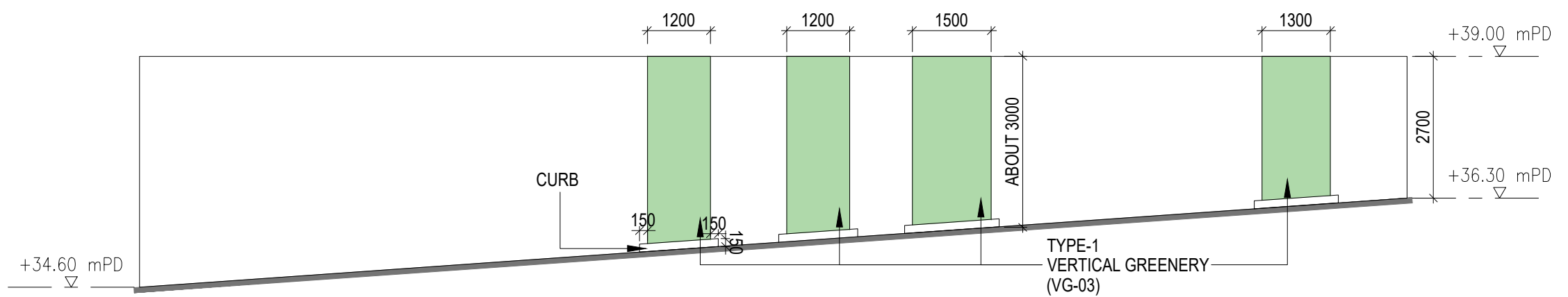
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3 PART PLAN OF 1/F
SK14



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SK14

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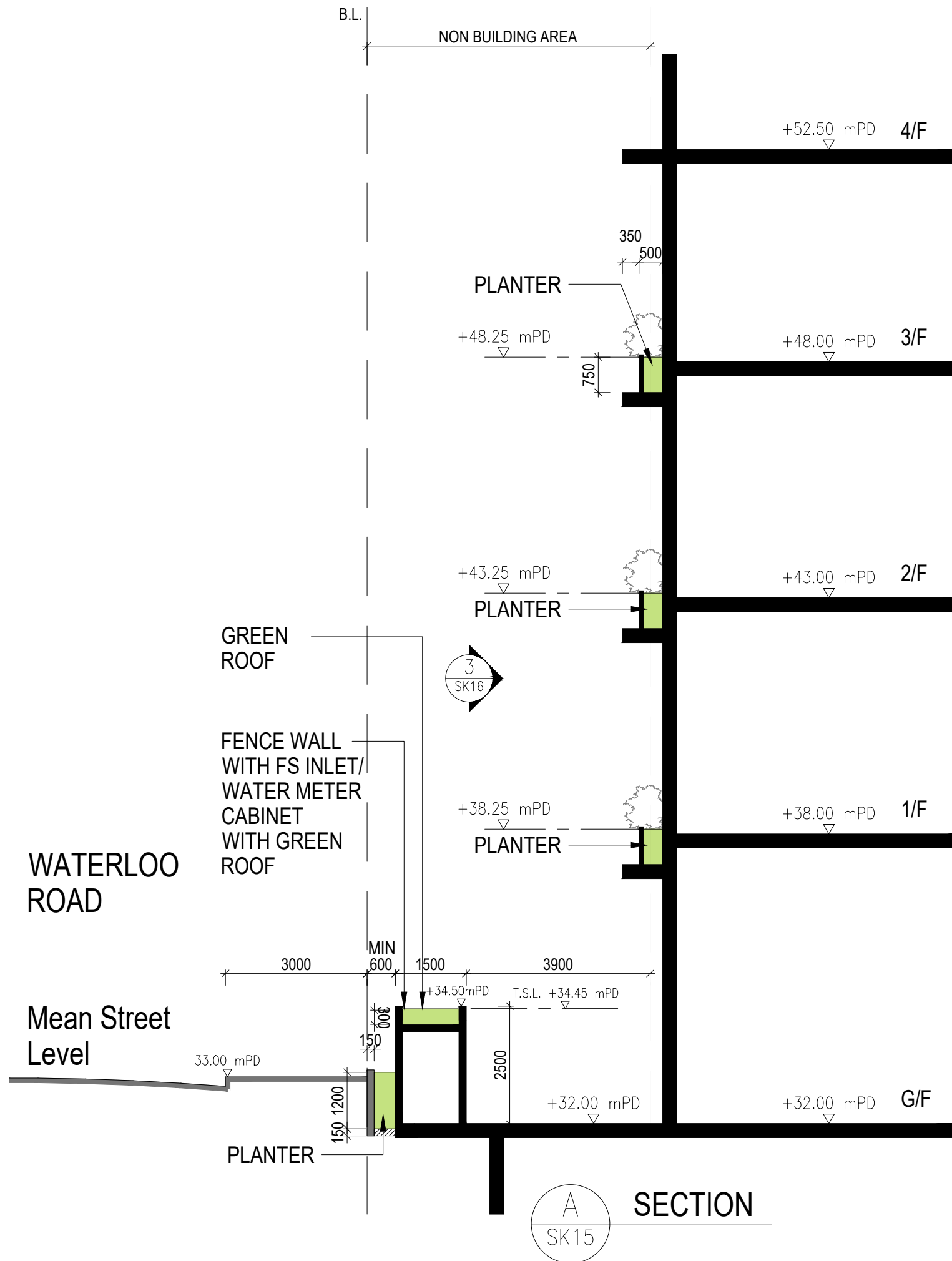
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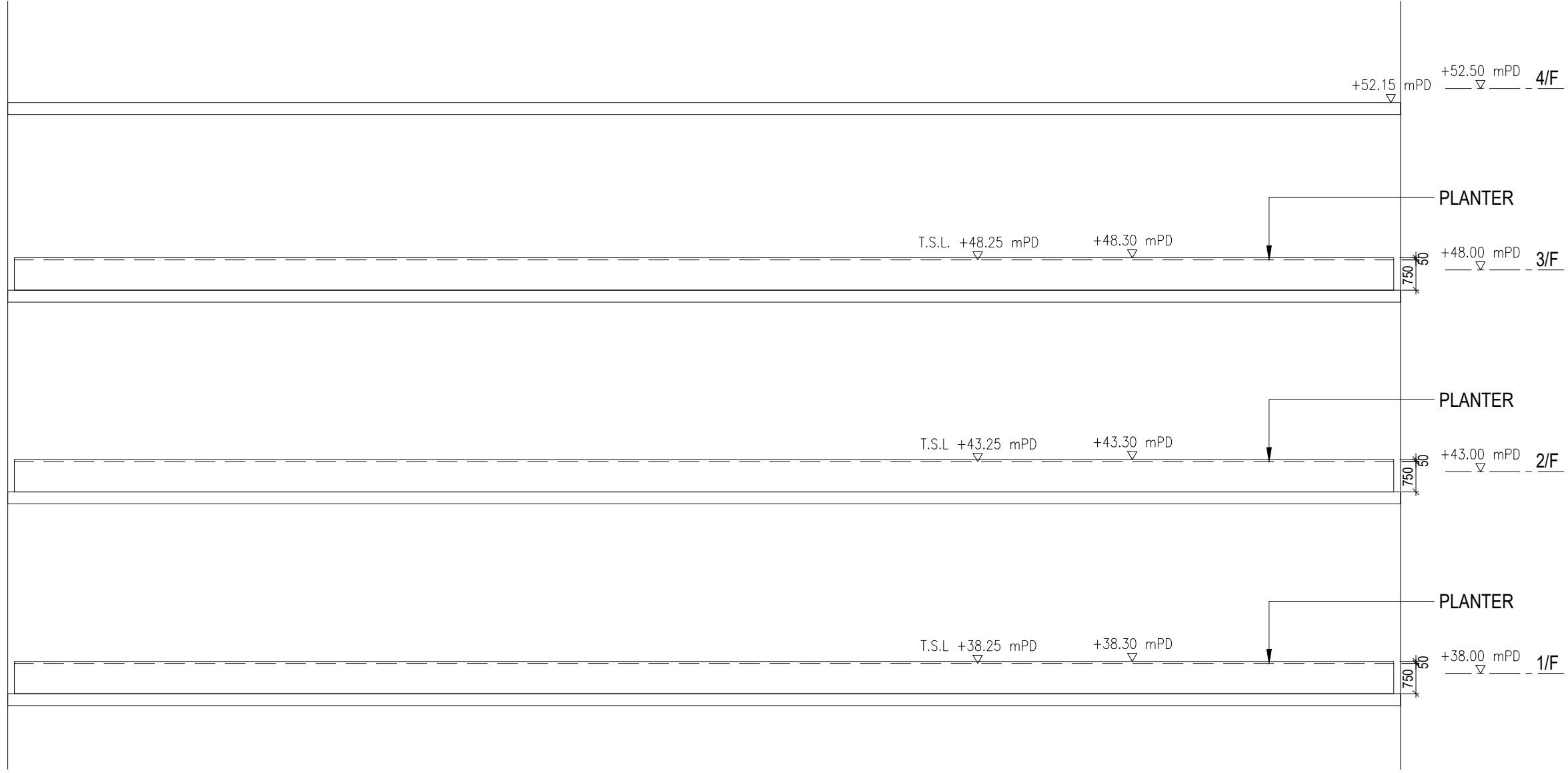


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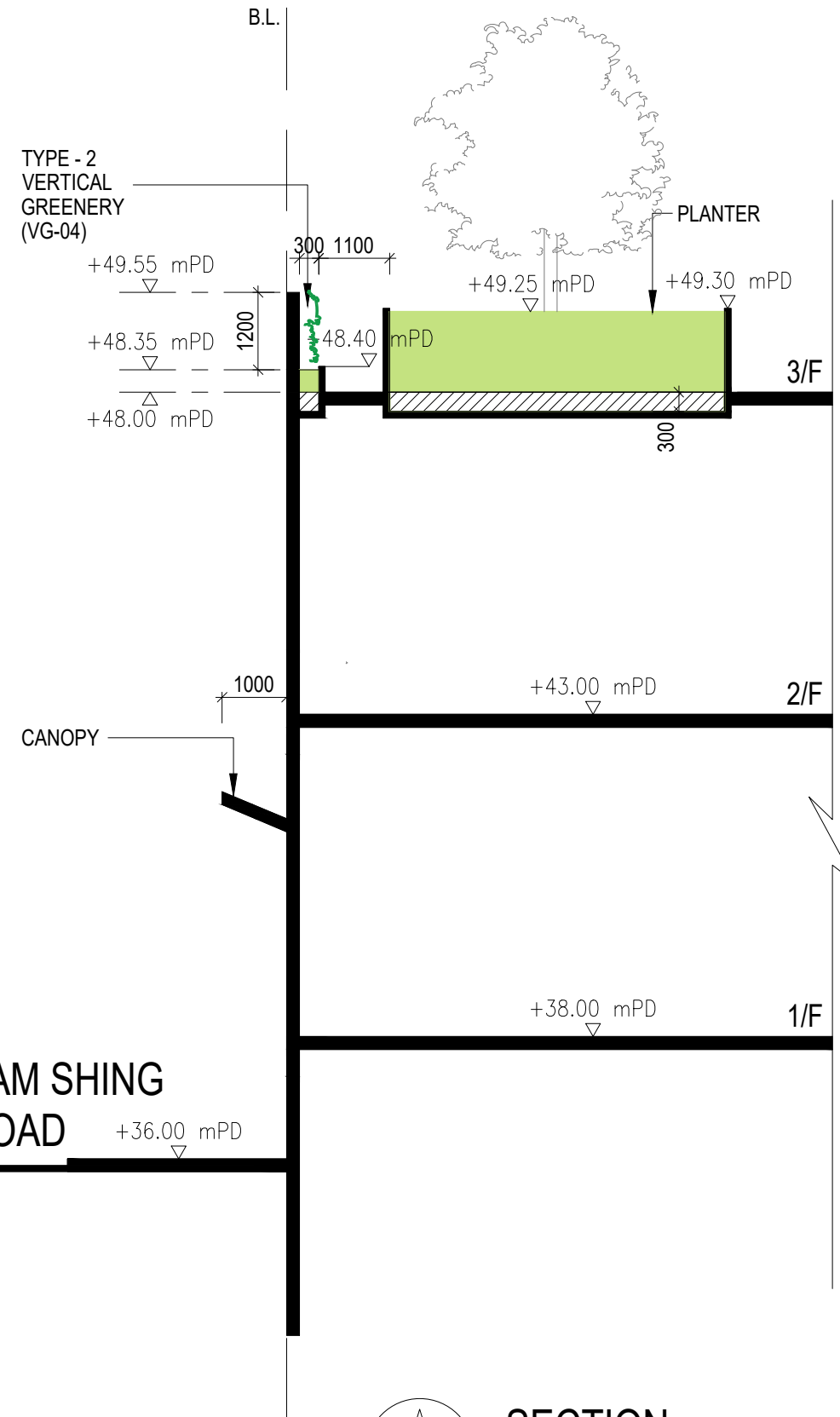
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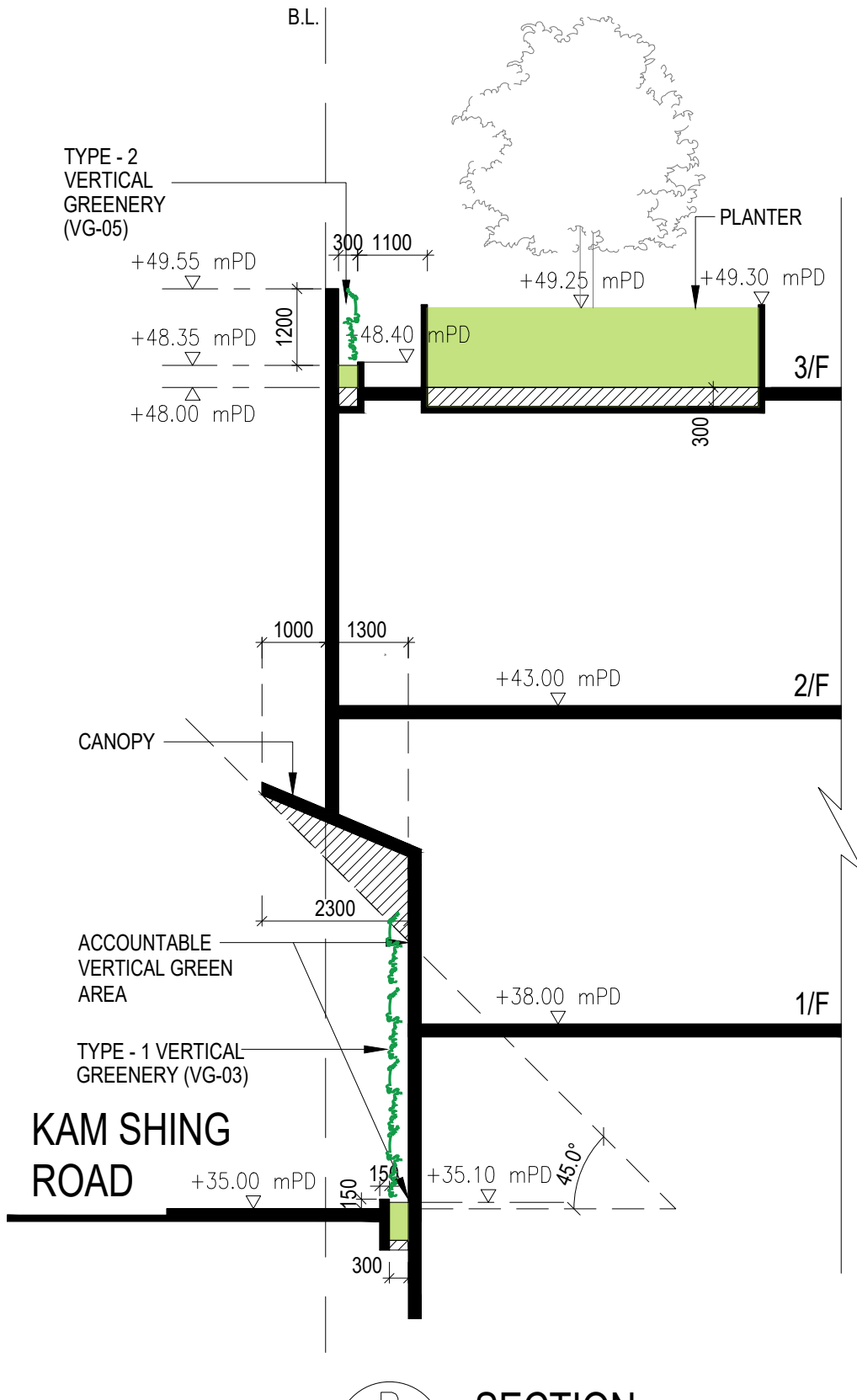
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A SECTION
SK17



B SECTION
SK17

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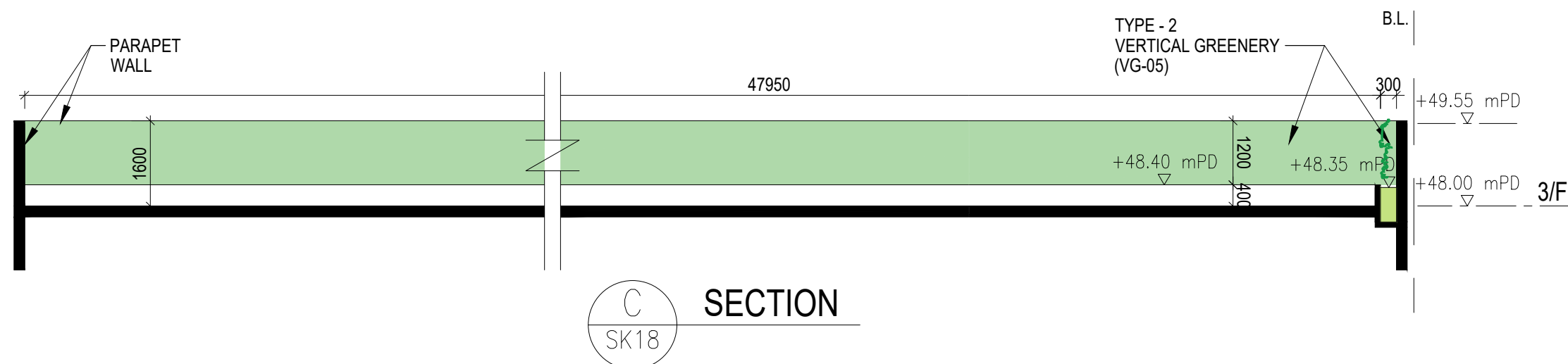
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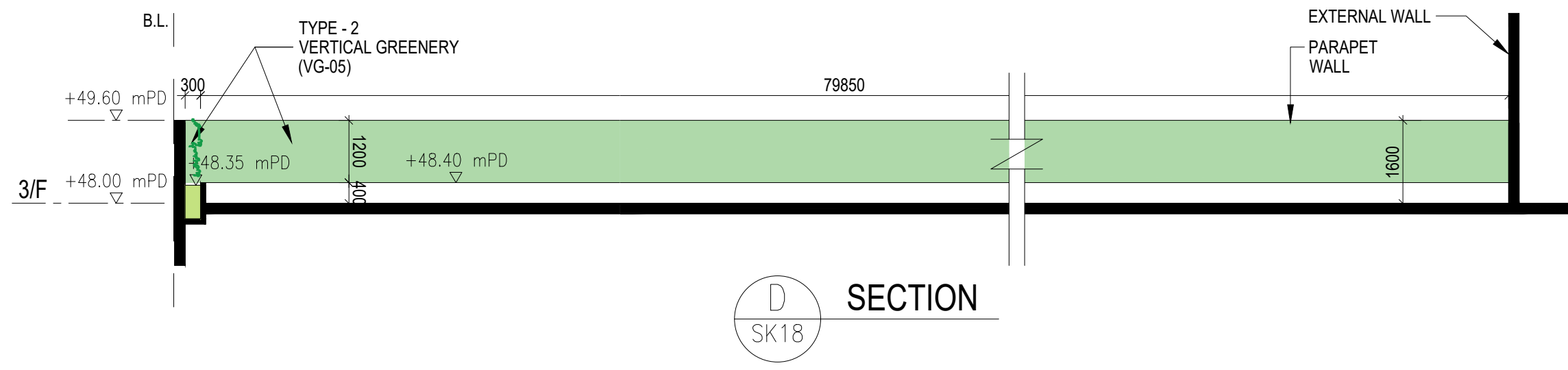
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C SECTION
SK18



D SECTION
SK18

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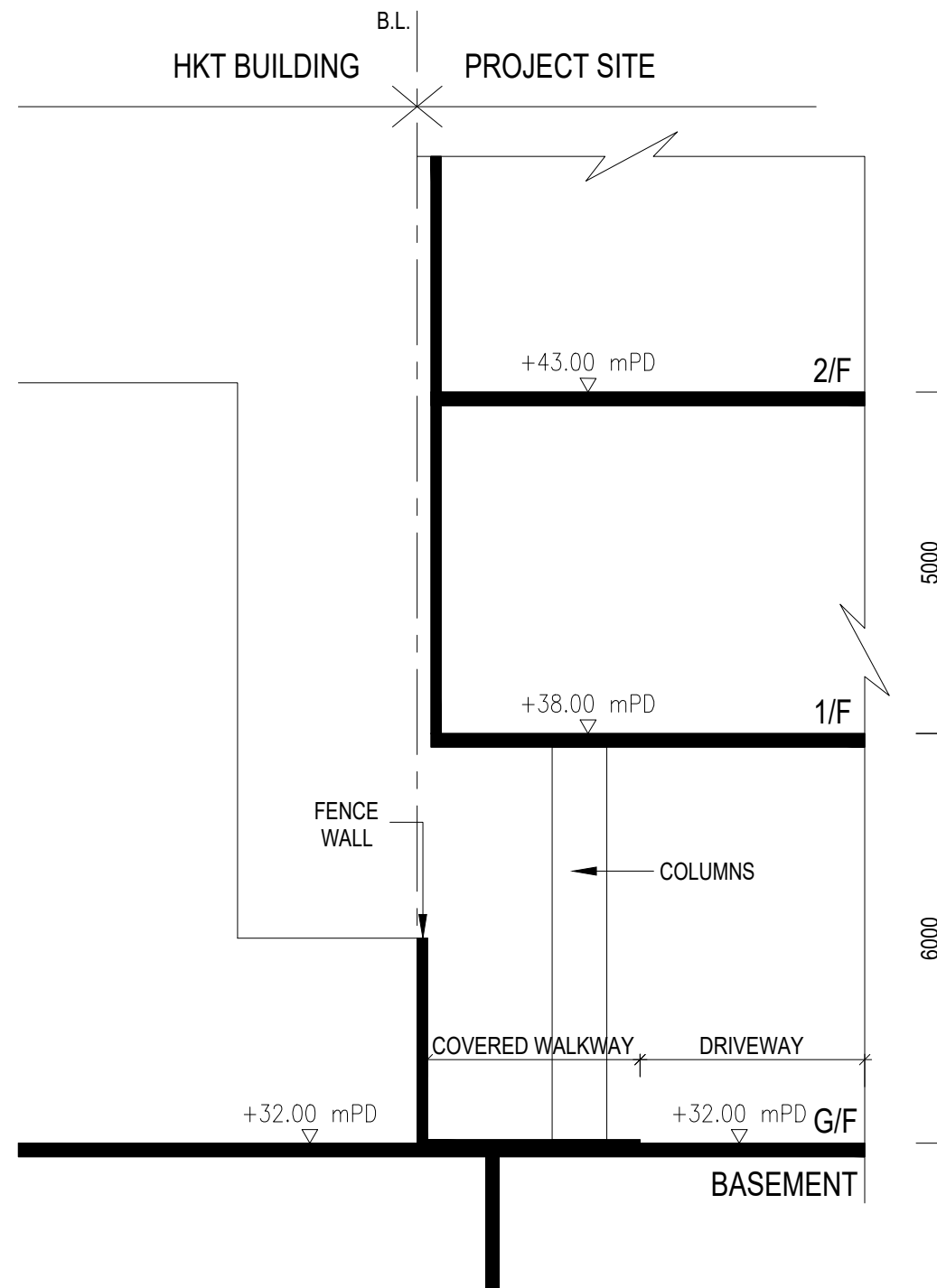
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E SECTION
SK27 1:100

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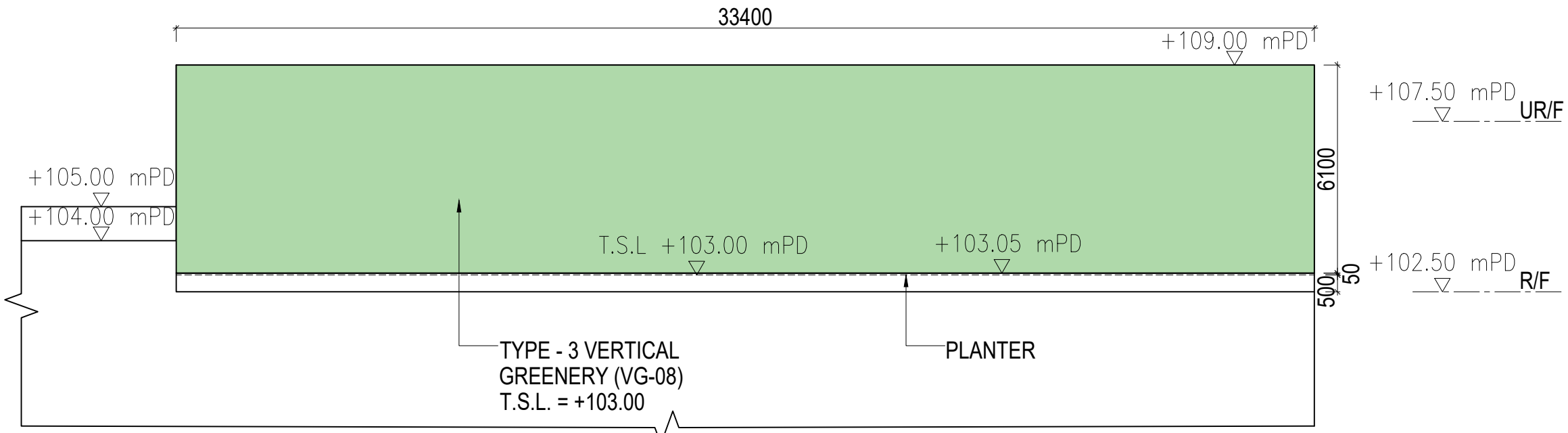
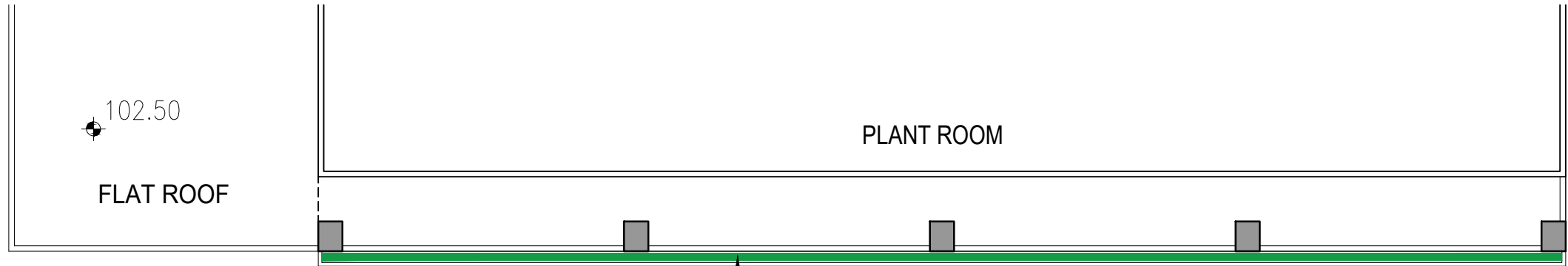
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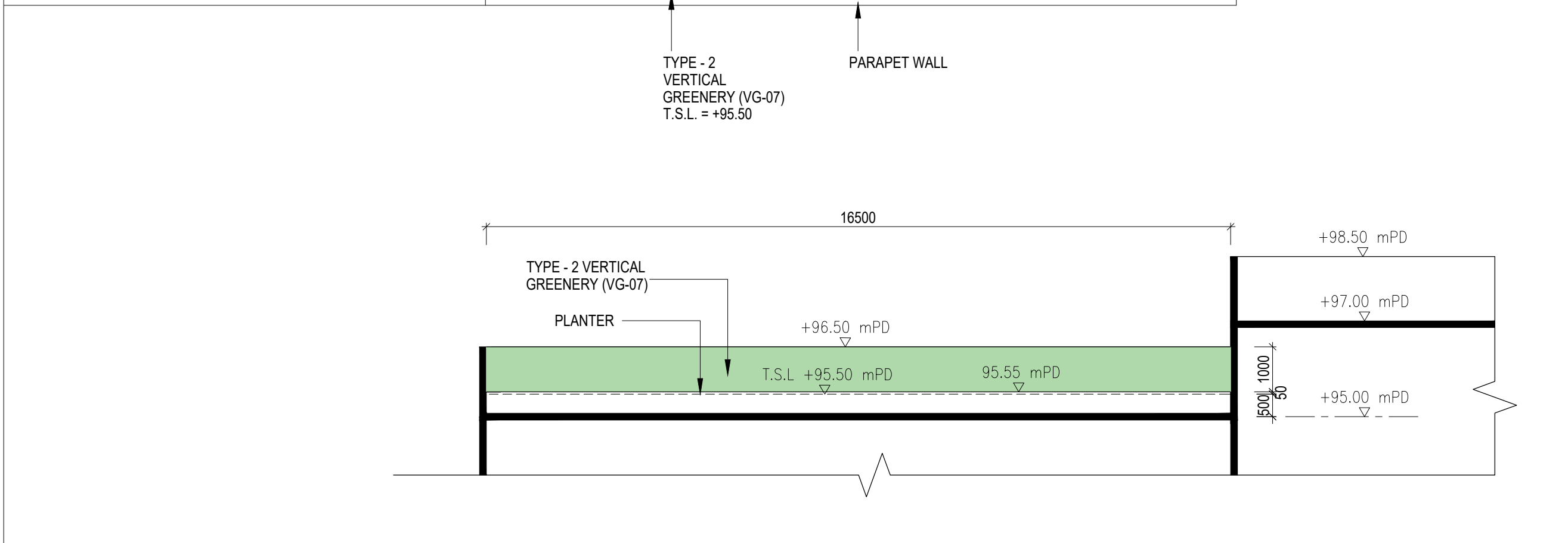
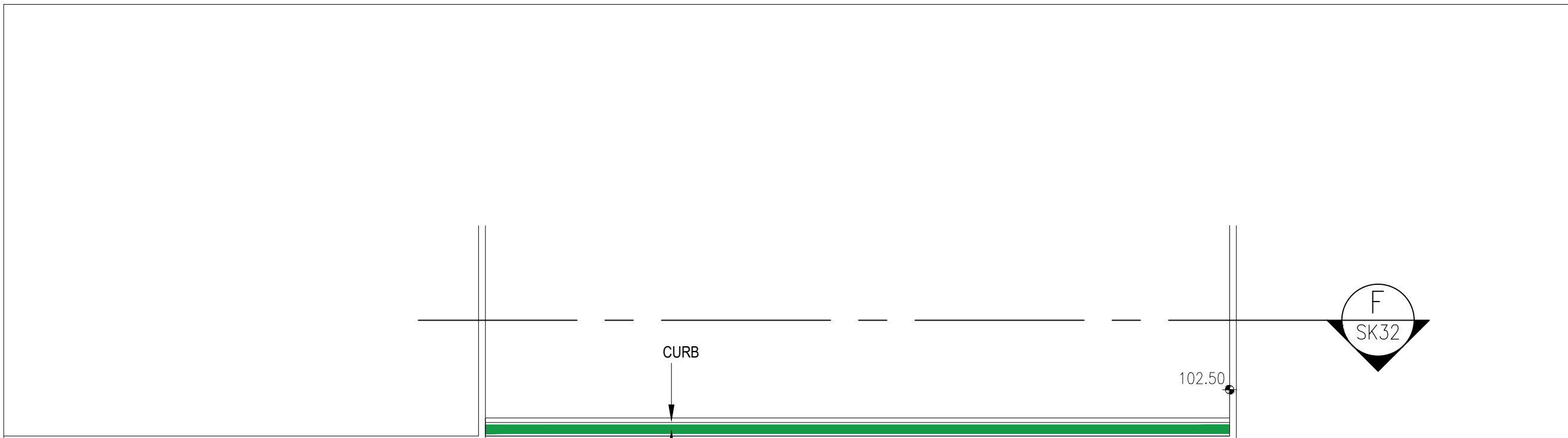
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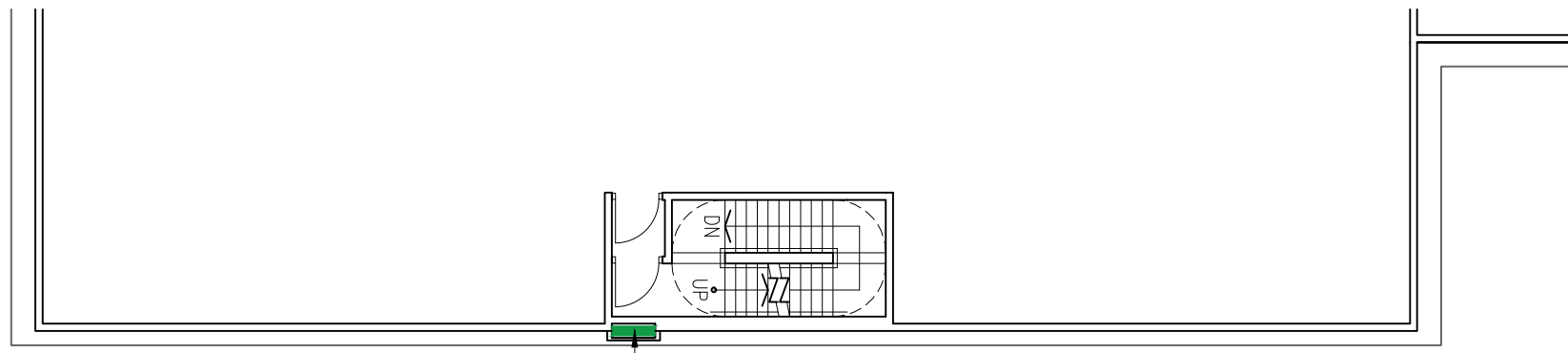
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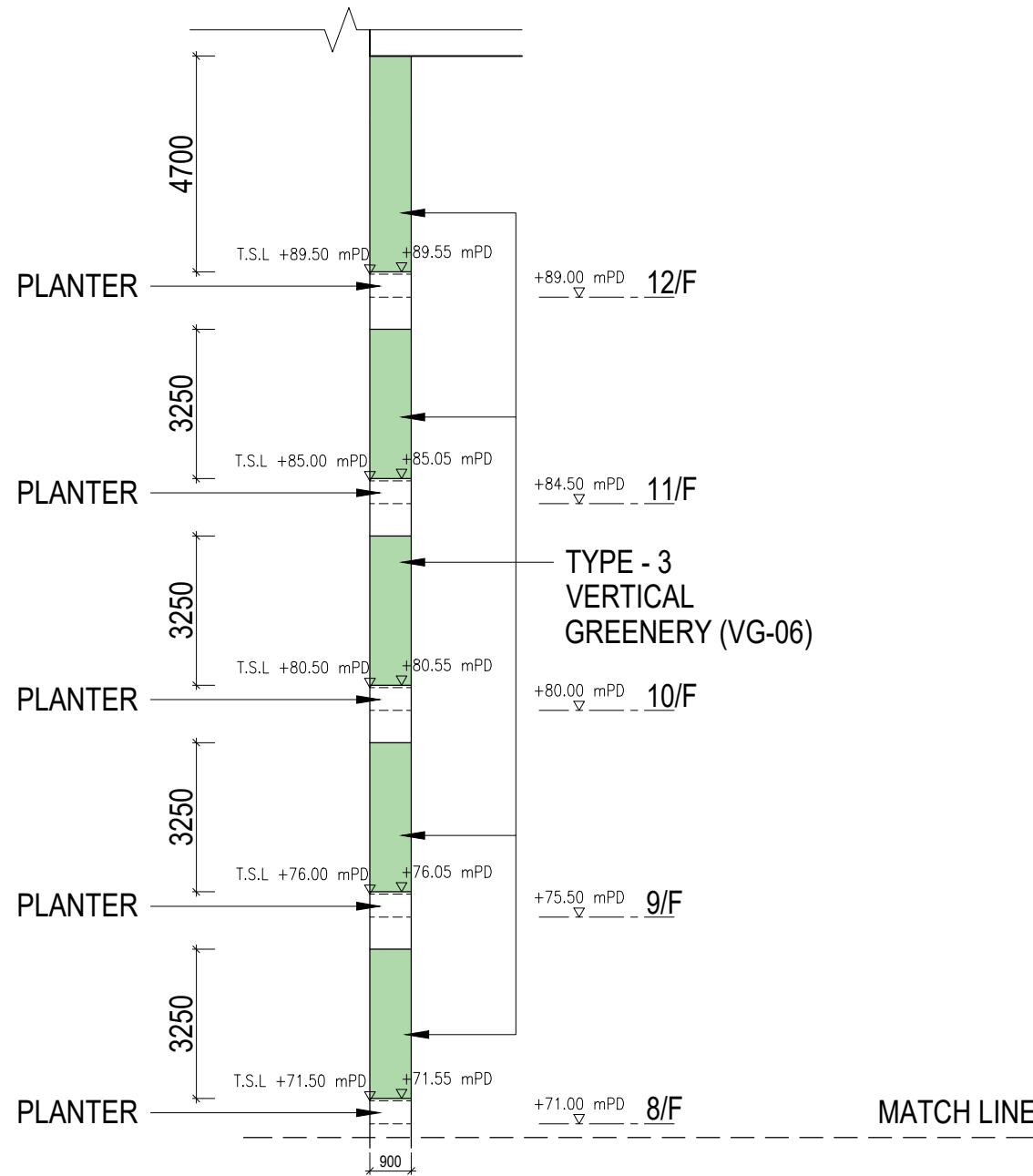
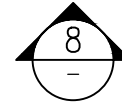
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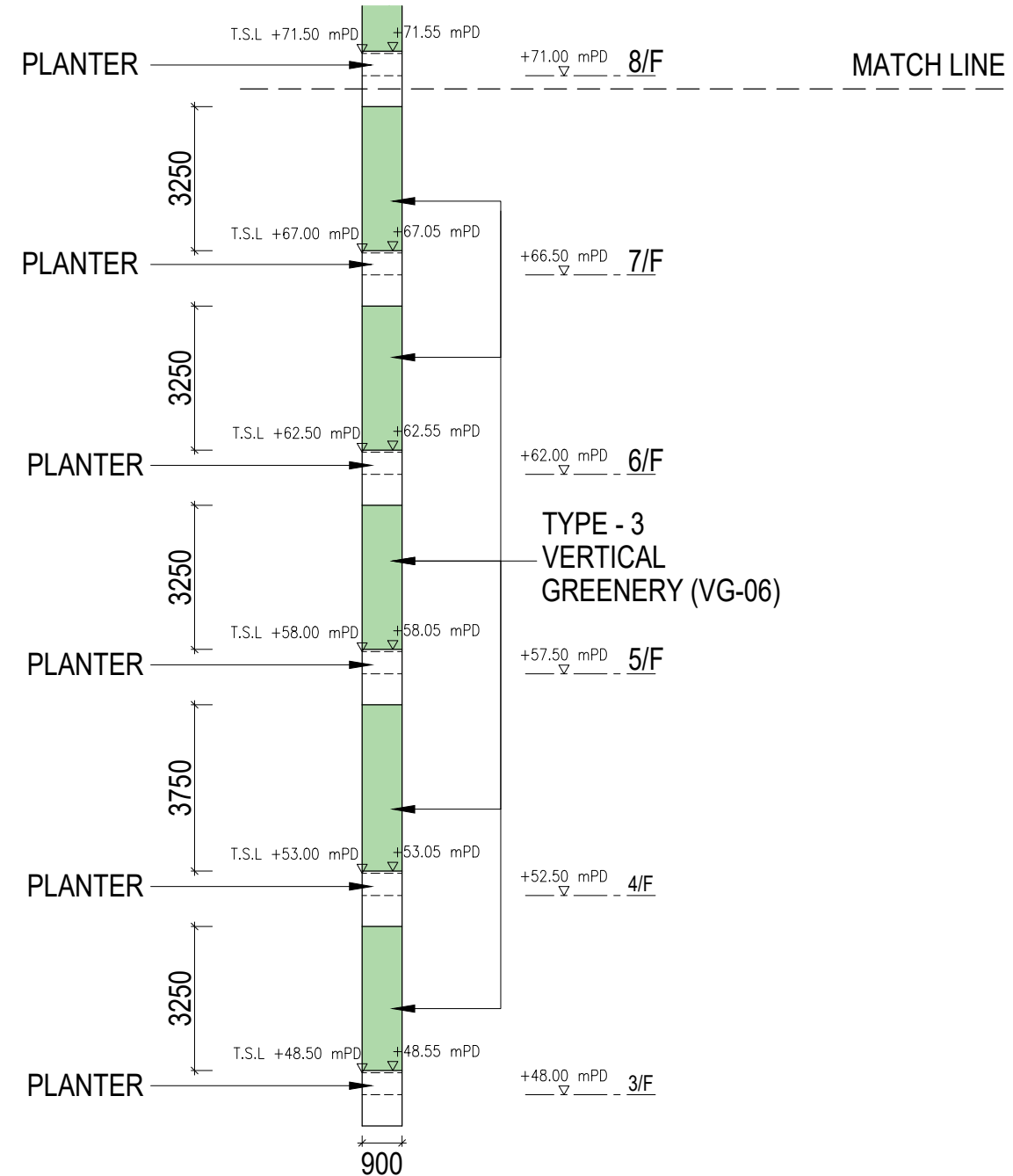
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8
SK33
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Appendix C Revised Supporting Planning Statement Report

Hong Kong Baptist Hospital

Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction in “Government, Institution or Community (7)” Zone and Areas Shown as ‘Road’ at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

Supporting Planning Statement

Final | July 2024

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 282303

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EXECUTIVE SUMMARY

This Section 16 Planning Application is submitted to seek approval from the Town Planning Board (TPB) for the Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction (“Proposed Development”) in “Government, Institution or Community (7)” Zone and Areas Shown as ‘Road’ at Blocks A, B and C of Hong Kong Baptist Hospital (“HKBH”), 222 Waterloo Road, Kowloon Tong, Kowloon (“Application Site”).

The Application Site falls within an area zoned as the “Government, Institution and Community (7)” (“G/IC(7)”) and Areas Shown as ‘Road’ on the Approved Kowloon Tong Outline Zoning Plan No. S/K18/21 (Kowloon Tong OZP). According to the Notes of the Kowloon Tong OZP, “Hospital” use is always permitted under Column 1 uses of the “G/IC” zone. Development at the Application Site is subject to a maximum BH of 10 Storeys, or the height of the existing building, whichever is the greater. It is stated in the Remarks (8) of the Notes that based on the individual merits of a development or redevelopment proposal, minor relaxation of building height may be considered by the Town Planning Board on application under Section 16 of the Town Planning Ordinance.

The Proposed Development is expected to achieve the following public planning and design benefits under the Indicative Development Scheme:

- In Line with the Government’s Policy Objectives;
- Aligning with the Planning Intention of the “G/IC” Zone;
- Meeting Territorial Demand of Healthcare Services;
- Comply with the Relevant Greenery Coverage Requirements in the "Sustainable Building Design Guidelines"
- Fulfilling Relevant Criteria for Consideration of Minor Relaxation of Building Height Restriction as Stipulated in the Kowloon Tong OZP;
- The Proposed Minor Relaxation of Building Height Restriction is Compatible with the Surroundings;
- Generating No Adverse Impacts to the Surroundings;
- Setting a Desirable Precedent for Optimising Community Services Provision in the Kowloon Tong Area; and
- The Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction is Not Unprecedented

The Applicant has demonstrated their genuine intention and commitment in taking forward the Proposed Development at the Application Site. In light of the planning merits and justifications put forward in this Supporting Planning Statement, we sincerely seek the favourable consideration from the TPB to give its support to this Section 16 Application.

行政摘要

(內容如有任何差異，應以英文內文為準)

本第 16 條規劃申請旨在獲得城市規劃委員會(下稱「城規會」)批准，於九龍九龍塘窩打老道 222 號香港浸信會醫院 A、B 及 C 座「政府、機構或社區(7)」地帶及顯示為「道路」的地方(下稱「申請地點」)的擬議醫院重建(下稱「擬議發展」)及略為放寬建築物高度限制，由 10 層提高至 15 層。

申請地點於九龍塘分區計劃大綱核准圖編號 S/K18/21(下稱「分區計劃大綱圖」)被劃為「政府、機構或社區(7)」地帶及顯示為「道路」的地方。根據「政府、機構或社區」地帶的註釋，土地用途表的第一欄用途中包含「醫院」用途。此外，申請地點內的發展不得超過 10 層的最高建築物高度限制，或不得超過現有建築物的高度，兩者中以數目較大者為準。註釋內的備註(8)指出，城規會如接獲根據《城市規劃條例》第 16 條提出的申請，可按個別發展或重建計劃的情況，考慮略為放寬建築物高度限制。

擬議發展將就規劃方面帶來以下公眾規劃增益：

- 配合政府的政策目標；
- 符合「政府、機構或社區」地帶的規劃意向；
- 有助滿足本港醫療服務需求；
- 符合《可持續建築設計指引》上的有關綠化覆蓋率規定；
- 符合分區計劃大綱圖略為放寬建築物高度限制的相關要求；
- 擬議略為放寬建築物高度限制與周圍環境兼容；
- 不會對周邊地區帶來負面影響
- 為優化九龍塘區的社區服務創立良好先例；及
- 擬議略為放寬建築物高度限制以作擬議的醫院重建並非無先例可援

申請人對於申請地點推進擬議發展抱有誠懇和積極的態度。基於本規劃報告所闡述的規劃優點和理據，我們懇請城規會通過是次第 16 條規劃申請。

1. INTRODUCTION

- 1.1.1.1 Pursuant to Section 16 of the Town Planning Ordinance (TPO), this Supporting Planning Statement is prepared and submitted on behalf of the Applicant, Hong Kong Baptist Hospital (HKBH), to seek approval for Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction (“Proposed Development”) in “Government, Institution or Community (7)” Zone and Areas Shown as ‘Road’ at Blocks A, B and C of Hong Kong Baptist Hospital (“HKBH”), 222 Waterloo Road, Kowloon Tong, Kowloon (“Application Site”).
- 1.1.1.2 The Application Site falls within an area zoned as “Government, Institution or Community (7)” (“G/IC(7)”) zone and areas shown as ‘Road’ on the Approved Kowloon Tong Outline Zoning Plan No. S/K18/21 (Kowloon Tong OZP or the OZP). According to the Notes of the OZP, “Hospital” use is always permitted under Column 1 uses of the “G/IC(7)” zone. Development at the Application Site is subject to a maximum building height of 10 storeys, or the height of the existing building, whichever is the greater. It is stated in the Remarks (8) of the Notes that *“based on the individual merits of a development or redevelopment proposal, minor relaxation of building height may be considered by the Town Planning Board (TPB) on application under Section 16 of the TPO”*. It is also stated in the notes that *“in any area shown as ‘Road’, all uses or developments except those specified in paragraph (7) above and those specified below require permission from the Town Planning Board: on-street vehicle park and railway track”*.
- 1.1.1.3 The Proposed Development is intended for hospital use which aligned with the planning intention of “G/IC(7)” zone, with intention to fully utilise the development potential of the Application Site, by seeking approval for minor relaxation of building height restriction from 10 storeys to 14 storeys. While aimed to meet the ever-rising territorial demand for healthcare services through increasing number of beds and improving ward environment, the building design of the Proposed Development has taken various green features into considerations, such as stepped terrace gardens, planters along the terrace gardens and along Kam Shing Road at the street level and the full height setback of about 6m wide facing Waterloo Road. The Proposed Development also intended to meet the minimum site coverage of greenery requirements as stipulated in the Sustainable Building Design Guidelines (SBDG).
- 1.1.1.4 Most importantly, the minor relaxation of building height from 10 storeys to 15 storeys is considered fully compatible with the surrounding context and is not considered to be excessive when comparing to other approved planning applications of similar nature. The Proposed Development has fulfilled relevant criteria for consideration of minor relaxation of building height restrictions as stipulated in the Kowloon Tong OZP. With reference to the various technical assessments conducted on the Application Site, no significant adverse impacts to the surroundings are anticipated. Approval of this Section 16 planning application is considered not an undesirable precedent in realizing the planning intention of the “G/IC” zone to optimise community services provision in the Kowloon Tong Area.
- 1.1.1.5 This Supporting Planning Statement is to provide members of the TPB with relevant information to considering this Section 16 Application. Sections 2 and 3 provides a brief description of the Application Site, its surrounding environment and its planning context. Section 4 details the Proposed Development at the Application Site in relation to its planning and design principles and key development parameters. Section 5 presents the planning justifications in support of the Application. We sincerely seek for favourable consideration from the TPB to grant approval to this well justified Section 16 Application.

2. SITE CONTEXT

2.1 Location

2.1.1.1 The Application Site is located at No. 222 Waterloo Road, situated in the community of Kowloon Tong near the foothill of the Beacon Hill, with an approximated site area of 5,648.5m². The Application Site is bounded by Waterloo Road to the west, the Kowloon Tong Telephone Exchange to the southwest, Kam Shing Road to the south, Franki Centre and Man Lung Garden to the east, the Radio Television Hong Kong TV House and Commercial Radio to the northeast and the Hong Kong Baptist University (HKBU) Ho Sin Hang Campus to the north.

2.1.1.2 Please refer to **Figure 2.1** for the location of the Application Site.

2.2 Land Status

2.2.1 Land Ownership

2.2.1.1 According to the records of Land Registry, the HKBH Blocks A, B and C are held under Government Lease of New Kowloon Inland Lot No. 5906 ("NKTL 5906") dated 8 March 1982. NKTL 5906 was granted with a term of 24 years commencing from 1 July 1973 till 1997 and it was further extended to 30th June 2047 in 1994. The registered owner is "Hong Kong Baptist Hospital", which is the Applicant.

2.2.1.2 Please refer to **Figure 2.2** for the lot index plan of the Application Site.

2.2.2 Observations on the Land Lease

2.2.2.1 The Land Lease has the following major development conditions:

Table 2.1 Extracted Conditions under Lease

User	Non-profit-making hospital (which hospital is hereinafter referred to as "the said hospital") together with such staff quarters
Type of Building	A building required for the purposes of the said hospital to which the said Director shall have given his written approval.
Operation	And will conduct the said hospital in accordance with all Ordinances and Regulations if any relating to such hospital that shall or may at any time be in force in Hong Kong and in all respects to the satisfaction of the said Director of Health Services.
Compliance of Buildings Ordinance	And subject to the terms and covenants herein contained will upon re-development of the said piece or parcel of ground or any part thereof comply in all respects the provisions of the Buildings Ordinance any regulations made thereunder and any amending legislation.
Design, Disposition and Height ("DDH") Clause	And will obtain the approval in writing of the said Director to the design disposition and height of any building erected or to be erected on the said piece or parcel of ground.
Max. Height	And except with the prior written approval of the said Director will not erect or allow to be erected on the said piece or parcel of ground any building or structure any part of which shall exceed a height of 51 metres and 82 centimetres above the Hong Kong Principal Datum.
Non-building Area	And will not erect or allow to be erected any building or structure within 6 metres and 10 centimetres of that boundary of the said piece of parcel of ground abutting on Waterloo Road.
Parking Space Requirement	And will provide within the said piece or parcel of ground adequate space to the satisfaction of the said Director for parking of motor vehicles and will not use the space so provided for any other purpose.
Trees Preservation	And will not interfere with or remove any trees growing on the said piece or parcel of ground or adjacent thereto without the prior written consent of the said Director who may in granting consent impose such conditions as to replanting or landscaping as he may deem appropriate.
Non-offensive Trade Clause	The said Lessee or any other person or persons will not during the continuance of this demise use exercise or follow in or upon the demised premises or any part thereof the trade or business of a Brazier, Slaughterman Soap-maker Sugar-baker Fellmonger Melter of tallow Oilman Butcher Distiller Victualler or Tavern-keeper Blacksmith Nightman Scavenger or any other noisy noisome or offensive trade or business whatever without the previous licence of Her said Majesty signified in writing by the Governor or other person duly authorized in that behalf.

Note: Please refer to the original land lease document for details.

2.2.2.2 The Lease is subject to the following land documents registered under the land registry:

Table 2.2 Land Documents Registered under the Land Registry

Document	Date	Major Content
No-Objection Letter	24 Jun 1992	Permitted to erect and maintain a chimney of height measuring not more than 91.44m above Hong Kong Principal Datum at the roof-top of the building erected on the Lot under the Occupation Permit No. NK44/86.for lifetime of the building.
Particulars and Conditions of Extension of Lease Term	2 Sep 1994	Extend the term to 30 June 2047
Permission Letter with Plan	12 Dec 2007	Carrying out of such removal of the retaining wall on Government land
Modification Letter with Plan	24 Mar 2011	Construction of structural support and connection to a connection bridge "No alteration or addition to the Structural Support and Connection. shall be made without the prior consent of the Director". "In the event of any redevelopment of the lot whereby the Structural Support and Connection are required to be demolished, the Lessee shall if required by the Director, within such time limit.at his own expense and in all respect to the satisfaction of the Director replace the same by the construction and completion of such new construction of structural support and connection."
Offensive Trade Licence	19 Jun 2015	Allow the trade or business of sugar baker, oilman (excluding petrol filling station), butcher, victualler and tavern keeper.

Note: Please refer to the original land documents for details.

2.2.2.3 According to a letter from District Lands Office/Kowloon East dated 11 January 2002, an approval was granted in 1987 to a proposed building extension with height of 66.58mPD on the lot.

2.2.3 Height Restriction with “Flexibility Clause” under Lease Conditions

2.2.3.1 There is a height restriction under existing lease governing the height of development erected on the lot shall not exceeding 51 metres and 82 centimetres above Hong Kong Principal Datum. It is noted that there is a "flexibility clause" under the height restriction conditions:

"...except with the prior written approval of the said Director will not erect or allow to be erected on the said piece or parcel of ground any building or structure any part of which shall exceed a height of 51 metres and 82 centimetres above the Hong Kong Principal Datum..."

2.2.3.2 On the other hand, under the latest streamline policy (Joint Practice Notes No. 5 (first issued in 2019)), building height restrictions shall be controlled under the statutory town plans, and such control would generally not be included in new leases and modified leases except in special circumstances. Applications for lease modifications to remove building height restrictions in existing leases may be submitted to LandsD for consideration.

2.3 Existing Use

- 2.3.1.1 The Application Site has been used as a private hospital since 1963. Block A was built in 1963, Block B opened as East Wing in 1982, Block C was built in 1987, Block D in 2008 and Block E in 2015. With increasing demand for healthcare services, there is potential to improve the building design. There are 5 blocks of hospital buildings (i.e., Block A to E) in total, 3 of them (Blocks A to C) are included in the Application Site.
- 2.3.1.2 A wide range of services are covered by HKBH including more than 30 Medical Centres/Specialty Clinics, Paramedical Services and 24-hour Out-patient Clinic. The HKBH has around 2,200 staff and own around 800 beds.
- 2.3.1.3 Please refer to **Figure 2.3** for the existing condition of the Application Site.

2.4 Surrounding Land Uses

- 2.4.1.1 The Application Site is located within a G/IC cluster, which includes the Blocks D and E of the HKBH, Kowloon Tong Telephone Exchange and HKBU Ho Sin Hang Campus.
- 2.4.1.2 To the immediate northeast of the Application Site is an area on top of elevated ground, dominated by mid-rise residential developments and broadcasting-related facilities such as Radio Television Hong Kong and Commercial Radio, building around the Broadcast Drive. Notable residential development includes One Mayfair (10 Storeys / +97.6mPD).
- 2.4.1.3 To the immediate northwest of the Application Site is a mid-rise residential neighbourhood situated on a gentle slope between Waterloo Road and Lung Cheung Road, with the Beacon Hill as the background. Notable residential developments include 3 Ede Road (13 Storeys / +95.7mPD) and Eden Gate (13 Storeys / +92.7mPD).
- 2.4.1.4 To the immediate southeast of the Application Site is the Kowloon East Barracks, and the mid-rise Shaw Campus and Baptist University Road Campus of the HKBU, which includes the proposed HKBU University Hostel and Academic Building Complex (17 Storeys / +97.3mPD) and the HKBU Academic & Administration Building (14 Storeys / +93.7mPD).
- 2.4.1.5 To the immediate southwest of the Application Site is a low-rise residential neighbourhood mixed with various educational and religious institution uses. Further southwest are the MTR Kowloon Tong Station and an education cluster, which encompasses the Education Bureau Kowloon Tong Education Services Centre, Yew Chung International School - Secondary, Australian International School Hong Kong and Holy Family Canossian School (Kowloon Tong).
- 2.4.1.6 Please refer to **Figures 2.4a to d** for the surrounding uses of the Application Site.

2.5 Accessibility

2.5.1.1 The Application Site is located at an accessible location in Kowloon Tong and well-served by an existing network of public transport. The Application Site has an access from Waterloo Road on left and the entrance from Kam Shing Road on right. It is connected with major roads, such as Waterloo Road from the Lion Rock Tunnel Road leading to Ho Man Tin to the south and Prince Edward Road West to Prince Edward direction in the southwest. Various franchised bus and minibus services are the major mode of public transport serving the Application Site and allow a high degree of accessibility compared to other hospitals. There is one MTR station (Kowloon Tong Station) within the 500m radius of the Application Site. All these transportation facilities illustrate a well-connected site with a number of choices for public transport.

3. PLANNING CONTEXT

3.1 Land Use Zoning

- 3.1.1.1 The Application Site is situated within the “G/IC(7)” zone and areas shown as ‘Road’ (about 81.3m², 1.4%) in the Kowloon Tong OZP. According to the Notes of the Kowloon Tong OZP, the “G/IC” Zone is intended primarily for *“the provision of Government, institution and community (G/IC) facilities serving the needs of the residents as well as the general public. It is also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments.”* “Hospital” use is under the Column 1 use of “G/IC” zone, which is always permitted. It is also stated in the Notes of the Kowloon Tong OZP that *“in any area shown as ‘Road’, all uses or developments except those specified in paragraph (7) above and those specified below require permission from the Town Planning Board: on-street vehicle park and railway track”*.
- 3.1.1.2 On the Kowloon Tong OZP, Blocks A to C of the HKBH fall within the “G/IC (7)” zone with a maximum height restriction of 10 storeys, or the height of the existing building, whichever is the greater. There is no plot ratio, site coverage or gross floor area restrictions in the “G/IC (7)” zone.
- 3.1.1.3 Remarks (6) of the “G/IC” zone stipulates *“in determining the relevant maximum number of storeys, any basement floor(s) may be disregarded”*. Remarks (8) stipulates that *“Based on the individual merits of a development or redevelopment proposal; minor relaxation of the building height restrictions may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance”*.
- 3.1.1.4 Referring to Paragraph 8.4.3 of the Explanatory Statement (ES) of the Kowloon Tong OZP, it stipulates that building height restrictions for “G/IC” zones are primarily to reflect the building height of the existing and planned GIC developments so as to maintain the existing character of Kowloon Tong and allow variety in the overall building height profile of Kowloon Tong. It is also the building height concept to preserve the view corridor along Waterloo Road for the “G/IC” zones.
- 3.1.1.5 Please refer to **Figures 3.1a to d** for the extracted Notes and **Figure 3.1 e to g** for the extracted ES of the “G/IC” Zone.

3.2 Planning History in the Vicinity of the Application Site

- 3.2.1.1 While there are no previous planning applications within the Application Site, there are various planning applications applied for minor relaxation of building height restrictions and two amendments of plan which involved a significant increase in building height restriction in “G/IC” zones approved in the vicinity of the Application Site as illustrated in **Table 3.1 and Figure 3.2**. Previously approved planning applications besides “G/IC” zones in Kowloon Tong are also illustrated in **Table 3.2**.

Table 3.1 Previously Approved Planning Applications within G/IC Zones in Vicinity

Application No.	Location	Building Height Relaxation Approved	TPB Approval Date
A/K18/345	Permitted Educational Institution Use (Academic Complex) at 224 Waterloo Road (Part), Kowloon Tong, Kowloon	10 to 11 storeys (+10%)	17 Mar 2023
A/K18/343	Proposed Educational Institution (Academic and Administration Building) at 15 Baptist University Road	13 to 14 storeys (+7.69%)	14 Jan 2022
A/K4/69	Permitted Education Institution (University Indoor Sports Centre, Auditorium and Laboratory Building Complex) at 83 Tat Chee Avenue, Kowloon Tong, Kowloon	70mPD to 90.8mPD (29.7%)	7 Dec 2018
A/K18/329 A/K18/316	Proposed Educational Institution (University Hostel and Academic Building Complex) at 30 Renfrew Road	13 to 17 storeys (+30.77%) 13 to 15 storeys (+15.38%)	12 Apr 2019 5 Feb 2016
A/K18/314	Munsang College (Block E and adjoining areas), 8 Dumbarton Road, Kowloon City, Kowloon	5 to 7 storeys (+40%)	17 Jul 2015
Y/K18/7	Kowloon International Baptist Church at 300 Junction Road	3 storeys to +72.8mPD (~8 storeys)	21 Dec 2012
A/K18/269	Block D of the Hong Kong Baptist Hospital	10 to 11 storeys (+10%)	23 Apr 2010
Y/K18/3	Block E of the Hong Kong Baptist Hospital	6 to 10 storeys (+66.67%)	9 Jan 2009

Table 3.2 Previously Approved Planning Application besides G/IC Zones in Kowloon Tong

Application No.	Location	Building Height Relaxation Approved	TPB Approval Date
A/K18/344	63 Cumberland Road, Kowloon Tong, Kowloon	3 to 4 storeys (+33.3%)	26 Aug, 2022
A/K18/331	7 Lincoln Road, Kowloon Tong, Kowloon	3 to 4 storeys (+33.3%)	13 Sep 2019
A/K18/326	147 Waterloo Road, Kowloon Tong, Kowloon	3 to 4 storeys (+33.3%)	3 Aug 2018
A/K18/264	12 Beacon Hill Road, Kowloon Tong (NKIL 4948)	5 to 6 storeys (+20%)	9 Oct 2009
A/K18/242	2 Beacon Hill Road, Kowloon Tong, Kowloon	5 to 7 storeys (+40%)	25 May 2007
A/K18/236	3A Norfolk Road, Kowloon Tong	51mPD to 54mPD (+5.9%)	28 Apr 2006

3.2.1.2 Block D of the HKBH has been the subject of a Section 16 planning application (No. A/K18/269) that applied for minor relaxation of the building height restriction from 10 storeys excluding basement floor(s) to 11 storeys excluding basement floor(s), which was approved by the TPB on 23 April 2010. The TPB has also agreed to an amendment of plan for the current Block E of the HKBH (No. Y/K18/3) from “Commercial (1)” (“C(1)”), subjected to maximum plot ratio restriction of 5.8 and maximum building height of 6 storeys, or the PR and height of the existing building, whichever is greater, to "Government, Institution or Community (11)" (“G/IC(11)”) subject to a maximum plot ratio restriction of 7.5 and a maximum building height restriction of 10 storeys (excluding basement floor(s)) and +70mPD, representing a building height restriction relaxation of 66.67%.

- 3.2.1.3 The HKBU has also recently sought planning permission (No. A/K18/343) for minor relaxation of BH restriction from 13 storeys to 14 storeys for an existing Educational Institution (Academic and Administration Building) at 15 Baptist University Road, Kowloon Tong, by adding a mezzanine floor (M/F) above the existing covered carpark, which was approved by the TPB on 14 January 2022.
- 3.2.1.4 The proposed educational institution (university hostel and academic building complex) at 30 Renfrew Road was the subject of 2 approved Section 16 planning applications applied by HKBU. The first planning application, No. A/K18/316, has applied for proposed minor relaxation of building height restriction from 13 storeys to 15 storeys, which was approved by the TPB on 5 February 2016. With a view to optimising the building design to comply with the latest guidelines for sustainable design and the subsequent reconfiguration of the spatial arrangements, the second planning application, No. A/K18/329, has applied for proposed minor relaxation of building height restriction from 13 storeys to 17 storeys (+4 storeys / +30.77%), which was approved by the TPB on 12 April 2019.
- 3.2.1.5 The proposed public housing development at the junction of Junction Road and Chuk Yuen Road, Wong Tai Sin, Kowloon was the subject of Section 16 planning application (No. A/K8/51) which applied for proposed minor relaxation of building height restrict from +120mPD to +152mPD and was approved on 11 November 2022.
- 3.2.1.6 The Kowloon International Baptist Church at 300 Junction Road has applied for an amendment of plan (No. Y/K18/7) for rezoning from "Government, Institution or Community (2)" with building height restriction of 3 storeys to "Government, Institution or Community (6)" with height restriction of 8 storeys. The TPB has agreed to rezone the site to "Government, Institution or Community (13)" with building height restriction of +72.8mPD instead of "Government, Institution or Community (6)" on 21 December 2012.

3.3 Similar Planning Applications of Minor Relaxation of Building Height Relaxation for Hospitals

3.3.1.1 Across the territory, there are numerous precedents in obtaining approvals for minor relaxation of building height for hospital uses in recent years in both private and public sectors.

3.3.1.2 Please refer to **Figure 3.3 and Table 3.3**.

Table 3.3 Approved Planning Applications Applied for Building Height Relaxation for Hospitals

Application No.	Location	Building Height Relaxation Approved	TPB Approval Date
Y/K10/5	Evangel Hospital	26.9mPD to 80mPD (+194%)	28 July 2023
A/H14/82	Hong Kong Adventist Hospital	190mPD to 208.168mPD (+9.56%)	14 May 2021
A/KC/470	Lai King Building of Princess Margaret Hospital	7 to 12 storeys (+71.43%)	4 Dec 2020
A/K11/237	Our Lady of Maryknoll Hospital	7 to 12 storeys (+71.43%)	29 May 2020
A/H15/282	Southern Portion of Phase 1 of the Redevelopment of Grantham Hospital	9 to 14 storeys (+55.56%)	1 Nov 2019
A/KC/451	Kwai Chung Hospital (Phases 2 & 3)	110mPD to 120mPD (+9.09%)	2 Mar 2018
A/H14/62	Matilda & War Memorial Hospital	5 to 6 storeys (+20%)	23 Dec 2010
A/K18/269	Block D of the Hong Kong Baptist Hospital	10 to 11 storeys (+10%)	23 Apr 2010
Y/K18/3	Block E of the Hong Kong Baptist Hospital	6 to 10 storeys (+66.67%)	9 Jan 2009

- 3.3.1.3 In the private sector, Evangel Hospital (No. Y/K10/5) has applied for a proposed minor relaxation of building height restriction for permitted hospital use from 26.9mPD to 80mPD (+194%) and was approved by TPB on 28 July 2023. Hong Kong Adventist Hospital (No. A/H14/82) has applied for a proposed minor relaxation of building height restriction for permitted hospital use from 190mPD to 208.168mPD (+9.56%) and was approved by the TPB on 14 May 2021. Matilda & War Memorial Hospital (No. A/H14/62) has applied for a Section 16 application was for a proposed minor relaxation of building height restriction from 5 storeys to 6 storeys (+20%) for permitted hospital use on a “G/IC” zone which was approved by the TPB on 23 December 2010.
- 3.3.1.4 In the public sector, the Hospital Authority (HA) has successfully applied for minor relaxation of building height restrictions in 3 different hospitals in “G/IC” zones between 2019-2020:
- 3.3.1.5 Lai King Building of Princess Margaret Hospital (No. A/KC/470) has applied for a proposed minor relaxation of building height restriction from 7 storeys to 12 storeys (+71.43%) and was approved by the TPB on 4 Dec 2020
- 3.3.1.6 Our Lady of Maryknoll Hospital (No. A/K11/237) has applied for a proposed minor relaxation of building height restriction from 7 storeys to 12 storeys (+71.43%) and was approved by the TPB on 29 May 2020; and
- 3.3.1.7 Southern Portion of Phase 1 of the Redevelopment of Grantham Hospital (No. A/H15/282) has applied for a proposed minor relaxation of building height restriction from 9 storeys to 14 storeys (+55.56%) and was approved by the TPB on 1 November 2019;
- 3.3.1.8 Architectural Services Department (ArchSD) has applied for a minor relaxation of building height restriction Kwai Chung Hospital (Phases 2 & 3) (No. A/KC/451) from 110mPD to 120mPD (+9.09%) and was approved by the TPB on 2 March 2018.

3.4 Non-Statutory Planning Context

- 3.4.1.1 To meet new demand and improve existing services, it was announced in 2016 Policy Address that the Government of HKSAR to set aside a dedicated provision of HK\$200 billion to the HA for the implementation of a 10-year Hospital Development Plan (HDP) in the coming 10 years. Upon completion of the HDP, some 5,000 additional public hospital beds and over 90 new operating theatres will be provided.
- 3.4.1.2 To meet the increasing demand for healthcare services arising from an aging population, it is necessary to plan ahead the necessary healthcare infrastructure, and it was also announced in 2018 Policy Address to set aside \$300 billion in the 2018-19 Budget for the HA to commence planning for the second 10-year hospital development plan. Upon completion of the whole plan, there will be over 9,000 additional beds and other additional hospital facilities that will largely meet the projected service demand up to 2036.
- 3.4.1.3 Announced in 2018 Policy Address, the Voluntary Health Insurance Scheme as well as provide tax deduction to encourage the public to purchase Certified Plans would be fully implemented and promoted. So that the public may choose to use private healthcare services when needed, thereby alleviating the long-term pressure on the public healthcare system.

3.4.1.4 According to the Forward by the Secretary for Food and Health in the Hong Kong Cancer Strategy 2019, the Government of HKSAR is clearly committed to stepping up the prevention and control of cancer and the support for cancer patients and their careers. The launch of the Hong Kong Cancer Strategy is an important milestone in the united fight against cancer. Through the collective efforts of the Government, and the HA, alongside the valuable contribution of the private healthcare sector and civil society. Hope will be installed in the community that cancer is preventable and curable. Optimized treatment and post-treatment services with bounds will be strived.

3.4.1.5 HKBH is all along very supportive of HA/ public hospitals’ initiatives to serve the community and patients. For instance, HKBH has participated in the following Public-Private-Partnership (PPP) programmes launched by HA.

3.4.1.6 Please refer to **Table 3.4** for HKBH's Participation in Public-Private-Partnership (PPP) programmes launched by HA.

Table 3.4 HKBH's Participation in Public-Private-Partnership (PPP) Programmes Launched by HA

1. Hemodialysis Public-Private Partnership (HDPPP)	<ul style="list-style-type: none"> Treat renal patients that require long-term and regular hemodialysis service. Patient will only be charged at HA’s designated fees
2. Cataract Surgeries Programme (CSP)	<ul style="list-style-type: none"> Provide cataract surgeries to patients referred by HA. Patients will only pay a reduced fee according to the Programme
3. General Outpatient Clinic Public-Private Partnership Programme (GOPC PPP)	<ul style="list-style-type: none"> Provide consultation and medication to stable patients with chronic illness, including diabetic, high blood pressure. Currently, patients pay a reduced rate at \$2,000 after subsidy by the Government
4. Colon Assessment Public-Private Partnership Programme (Colon PPP)	<ul style="list-style-type: none"> Provide Colonoscopy service to patients referred from HA. Currently, patients pay a reduced rate at \$2,000 after subsidy by the Government
5. Discounts for Radiology and PET Service	<ul style="list-style-type: none"> Discounts at 30% off are offered to patients referred from HA for CT, MRI and Mammogram examinations Discount at 25% off are also offered to patients referred from HA for PET-CT examination

3.4.1.7 Other than the above PPP programmes with HA, HKBH also supported the Government’s initiatives to provide service to various patient groups. We accept Elderly Health Care Vouchers from elderly patients. Also, in support for Department of Health (DH)’s initiatives, we joined the Vaccination Subsidy Scheme in the provision of flu vaccination to eligible groups. In addition, HKBH’s resident doctors also joined DH’s Colorectal Cancer Screening Programme (Primary Care Doctor & Colonoscopy Specialist) to serve the community.

3.4.1.8 HKBH also contributed to the community and patients during COVID-19 pandemic by providing the following services for the community.

3.4.1.9 Please refer to **Table 3.5** for the services provided by HKBH during COVID-19 Pandemic.

Table 3.5 Services Provided by HKBH during COVID-19 Pandemic

1. Participated in HA in-patient Transfer Program	<ul style="list-style-type: none">• Provided 177 beds to serve 156 non-COVID patients of HA (28 February 2022 to 31 May 2022)• Provided 50 beds to serve 321 non-COVID patients of HA (5 August 2022 to 15 March 2023)
2. Established Vaccination service points	<ul style="list-style-type: none">• Established Vaccination service points in Hospital site at Kowloon Tong, Community Vaccination Centre in Choi Hung Badminton Centre and Kai Tak Community Health Centre (2021 to 2023)
3. COVID Clinic and Telemedicine Services	<ul style="list-style-type: none">• Provided COVID Adult Patient Clinic and launched the free telemedicine and 5 days' medication (15 March 2022 to 29 April 2022)• Relunched the Telemedicine Consultation with delivery of 3 days' medication, all free of charge

3.4.1.10 All of the above will be continued and expanded if so, needed by the government / HA to serve more patients by the redeveloped HKBH. HKBH is committed to relieve the pressure of the public healthcare system.

4. PROPOSED DEVELOPMENT

4.1 General Planning and Design Principles

- 4.1.1.1 The Proposed Scheme has been carefully prepared in accordance with the planning and design intentions specified in the current OZP.
- 4.1.1.2 **Enhancing Existing Healthcare Services to Meet Community Needs:** As the only hospital situated in the heart of the Kowloon area, HKBH has been providing healthcare services since 1963. For example, HKBH installed the world's most advanced computer scanning system in 1977 and introduced Hong Kong's first minimally invasive endoscopic operating theatre and first PET-CT scan in the 2000s. The provision of diverse healthcare services in HKBH helps filling up a gap in the public healthcare system in the area served by the Kowloon Central Cluster of the HA (HA). During the COVID-19 pandemic, HKBH was one of the private hospitals that provided support to the overburdened public healthcare system by accepting COVID patients with mild symptoms at its clinic and reserve 150 beds in total for patients transferred from HA hospitals¹. In 2021, it was awarded for the Healthcare Asia Awards: Covid Management Initiative of the Year - Hong Kong & Hospital of the Year, which highlight its achievements in enhancing Hong Kong's healthcare service. The Proposed Development at the Application Site, which increases the number of adult in-patient hospital beds from 589 to 700 beds including ancillary facilities such as consultation rooms, and enhances quality and provision of the healthcare services, which is in line with the government policy of enhancing healthcare services in support of the public healthcare system as mentioned in the 2022 Policy Address.
- 4.1.1.3 **Providing Better Streetscape/Good Quality Street Level Public Urban Space:** The Proposed Development includes the implementation of greenery near pedestrian level along Kam Shing Road, aimed at enhancing the walking experience and streetscape. This will involve the installation of planters and vertical greenery along building edges and the site boundary fence wall, providing street-level greenery for pedestrians. Additionally, a full-height setback of about 6m wide is provided within the Application Site facing Waterloo Road, a landscaped pavement will be created with a perforated fence wall along the sidewalk, in order to provide better streetscape and a wider pavement to enhance pedestrians' walking experience. Plants will be placed on the outside of the fence wall, offering street-level greenery to further enhance the pedestrian environment.
- 4.1.1.4 **Building Design that the Townscape and Amenity of the Locality:** The Proposed Development aims to incorporate as much greenery as possible to improve environmental quality of the surrounding urban space. The G/F serves as the arrival and drop-off area, combining both hard and soft landscaping. Durable paving materials are utilized to establish a safe and inviting environment. Long planter strips on 1/F and 2/F maximize green space and enhance visibility from Waterloo Road. The main landscape area on the 3/F features lush vegetation that buffers the building's eastern and southern sides, utilizing a mix of compensatory trees, shrubs, and groundcover to soften the building's appearance and improve its aesthetic appeal. The roof is designed with a lawn to further soften the building and create a visually pleasing green effect. Additionally, vertical green walls are proposed on the G/F, 1/F, and 3/F to enhance the building's aesthetics and increase the presence of greenery in the surrounding area. Overall, the landscape design aims to create a welcoming atmosphere, maximize green spaces, and enhance the visual appeal of the proposed development.

¹Hong Kong Baptist Hospital 浸會醫院快速應對疫情升溫 再次推出免費視像診症服務 (September 2022)

https://www.hkbh.org.hk/press_centre/%e6%b5%b8%e6%9c%83%e9%86%ab%e9%99%a2%e5%bf%ab%e9%80%9f%e6%87%89%e5%b0%8d%e7%96%ab%e6%83%85%e5%8d%87%e6%ba%ab-%e5%86%8d%e6%ac%a1%e6%8e%a8%e5%87%ba%e5%85%8d%e8%b2%bb%e8%aa%96%e5%83%8f%e8%a8%ba%e7%97%87/

4.2 Proposed Development Parameters

4.2.1.1 This Section 16 Planning Application is primarily intended to seek proposed hospital redevelopment with minor relaxation of building height from 10 to 15 storeys and to realize the planning and design concept illustrated above. The scheme with the proposed minor building height relaxation formed the “Proposed Scheme”, while the scheme building up to OZP existing restrictions formed the “OZP Compliant Scheme”.

4.2.1.2 Please refer to *Appendix A* for the Architectural Layout Plans and *Table 4.1* below for the proposed development parameters of the Proposed Development:

Table 4.1 Proposed Development Parameters of the Proposed Development

Development Parameters		Proposed Scheme	OZP Compliant Scheme	Existing HKBH
BHR under OZP		10 Storeys		
Site Area		About 5,648.5 m ²		
Proposed Use		Hospital		
Plot Ratio		10.89	About 8.94	4.04
Total Gross Floor Area		About 61,513 m ²	About 50,493 m ²	About 22,835 m ²
No. of Blocks		1	NA	3
Building Height & No. of Storeys		<u>Block A:</u> 14 storeys (about +98.5mPD) <u>Blocks B and C:</u> 15 storeys (about +102.5mPD) Excluding 3 levels of basement	<u>Block A, B and C:</u> 10 storeys (about +81mPD) Excluding 3 levels of basement	<u>Block A:</u> 6 storeys (about +62.9mPD) <u>Block B:</u> 7 storeys (about +65.8mPD) <u>Block C:</u> 8 storeys (about +66.6mPD)
Floor-to-floor Height		About 4.2-6m	About 4.5-6m	About 2.7-4.9m
Site Coverage (measured from height of building in metres from street level of Waterloo Road)		Below 15m – not more than 100% Above 15m – not more than 62.5%	Below 15m – not more than 100% Above 15m – not more than 72.5%	Below 15m – not more than 90% Above 15m – not more than 60.4%
No. of In-patient Bed Spaces at Block A, B and C		700	Not more than 445	589
No. of Operation Theatres		16	16	13
Parking Space	Private Car	244	166	162
	Motorcycle	25	17	None
	Ambulance	0	3	2
Loading/Unloading (L/UL) Spaces	Light Goods Vehicle Spaces	1	None	None
	Medium/ Heavy Goods Vehicle Spaces	2	3	None
	Taxi and Private Cars	5	4	3
	Ambulance	2	2	None

4.2.1.3 The comparison of development parameters between the Proposed Scheme and OZP Compliant Scheme is available in **Table 4.2** below:

Table 4.2 Comparison in Development Parameters between the Proposed Scheme and OZP Compliant Scheme

Development Parameters	Proposed Scheme (A)	OZP Compliant Scheme (B)	Changes (A)- (B)	
Site Area	About 5,648.5 m ²	About 5,648.5 m ²	No change	
Plot Ratio	10.89	8.94	+1.8 (+20%)	
Total Gross Floor Area	About 61,513 m ²	About 50,493 m ²	+10,166 m ² (+20%)	
No. of Blocks	1	NA	NA	
Building Height & No. of Storeys	<u>Block A:</u> 14 storeys (about +98.5mPD) <u>Blocks B and C:</u> 15 storeys (about +102.5mPD) Excluding 3 levels of basement	<u>Block A, B and C:</u> 10 storeys (about +81mPD) Excluding 3 levels of basement	<u>Block A:</u> +4 storeys (+40%) (about +17.5mPD (+21.6%)) <u>Blocks B and C:</u> +5 Storeys (+50%) (about +21.5mPD (+26.5%))	
Floor-to-floor Height	About 4.2 – 6m	About 4.5 – 6m	Lowest Floor-to-floor Height – -0.3m Highest Floor-to-floor Height – No Change	
Site Coverage (measured from height of building in metres from street level of Waterloo Road)	Below 15m – not more than 100% Above 15m – not more than 62.5%	Below 15m – not more than 100% Above 15m – not more than 72.5%	Below 15m – No change Above 15m – -10% (-13.8%)	
No. of In-patient Bed Spaces at Block A, B and C	700	Not more than 445	+255 (+57.3%)	
No. of Operation Theatres	16	16	No change	
Parking Space	Private Car	244	166	+78 (+47%)
	Motorcycle	25	17	+8 (+47.1%)
	Ambulance	0	3	-3 (-100%)
Loading/Unloading (L/UL) Spaces	Light Goods Vehicle Spaces	1	None	+1 (+100%)
	Medium/ Heavy Goods Vehicle Spaces	2	3	-1 (-33%)
	Taxi and Private Cars	5	4	+1 (+25%)
	Ambulance	2	2	No change

4.2.1.4 Floor uses of the Proposed Development are set out in **Table 4.3** below:

Table 4.3 Floor Uses of the Proposed Development

Blocks A, B & C	
R/F	E&M / Green Roof
4-14/F	Clinical Services / Support Services / E&M / Back of House (B.O.H.)
3/F	Clinical Services / Support Services / E&M / Back of House (B.O.H.) / Staff Garden
2/F	Clinical Services / Support Services / E&M / Link Bridge / Back of House (B.O.H.)
1/F	Clinical Services / Ancillary Services / Link Bridge / E&M / Back of House (B.O.H.)
G/F	Clinical Services / Ancillary Services / Support Services / Loading/Unloading / Drop-off Area / Entrance Atrium / Back of House (B.O.H.)
B1/F	Car Park / E&M / Support Services
B2/F	Car Park / E&M / Support Services
B3/F	Clinical Services / Support Services / E&M

4.3 Building Design of the Proposed Development

Architectural and Medical Planning Design Intent

- 4.3.1.1 The main objective of the Proposed Development of Blocks A, B & C of HKBH serves to upgrade and replace existing aging medical facilities which has reached their maximum operational life and bring them in line with current prevailing local and international hospital design guidelines – including but not limited to enhanced medical layout planning which would be fit for hospital operation in the next era of healthcare services, increased efficiency in clinical operation flow for staff, patients and material logistics. This is to ensure patients of HKBH can receive highest quality of services and care.
- 4.3.1.2 In order to achieve the abovementioned objectives, the development potential of the Application Site will be increased together with floor-to-floor height of each storey. Apart from accommodating various medical needs such as dedicated MVAC system and robotic system for modern Operation Theatres (OTs), radiation shielding for medical equipment, floor-to-floor height from G/F to 2/F will also be dependent on connection to existing footbridge connecting new development to existing Block D.
- 4.3.1.3 Located at an important traffic junction among Waterloo Road, Junction Road and Cornwall Street, the overall massing of the Redeveloped Blocks A, B and C of HKBH will become a new landmark to the HKBH/ HKBU cluster for eastbound Cornwall Street traffic and northbound Waterloo Road traffic. Distinctive architectural features will be provided which will serve as noise barrier and sun shading device for façade facing Waterloo Road and sun shading device for façade facing Kam Shing Road.
- 4.3.1.4 The rational determination of the desired functional stacking within a hospital building addresses both ‘quantitative’ and ‘qualitative’ considerations to balance the clinical operation workflows, accessibility, and adjacencies, functional, connectivity, patient environment, and engineering requirements. This contributes to the bulk building mass and minimum floor plate requirements to achieve the best outcome from medical planning perspective.

- 4.3.1.5 The Proposed Scheme aims to fulfill the demand for high-quality healthcare services by modernizing hospital infrastructure and incorporating modern medical and smart hospital features. The expansion requires additional operating theaters (OT), intensive care units (ICU), and associated facilities. The key driving factor behind this expansion is the need for medical planning to ensure the smooth flow of clinical workflows and adjacency of facilities in the modernized OT and ICU departments. Furthermore, the Proposed Scheme includes additional beds with larger cubicle sizes, necessitating more space. According to the current spatial standards set by the HA in public hospitals, each 4-bed ward requires an extra area of 8.6 m². With approximately 175 rooms planned, this translates to an additional ward area of approximately 1,505m², hence we shall also consider similar enhancement in the HKBH. These factors collectively contribute to the need for extra storeys in the Proposed Scheme.
- 4.3.1.6 To ensure continuation of clinical operation during the entire redevelopment process, the redevelopment will be carried out in 2 phases. Phase 1 serves to demolish existing Block A which abuts Waterloo Road and is approximately 60 years old, 'New Block (Phase 1)' will be constructed at the same location upon completion of demolition of 'existing Block A'. Upon completion of new Block A, phase 2 redevelopment will be commenced which involves demolishing existing Blocks B and C and construction of 'New Block (Phase 2)'.
- 4.3.1.7 In order to sustain minimum clinical services during Phase 2 redevelopment, it is essential to provide 15 storeys to 'New Block (Phase 1)' which will provide ~270 bedspace and 10 nos. OT to maintain sufficient provision of various services.
- 4.3.1.8 It is the architectural design intent to improve streetscape around the redevelopment site to create a better pedestrian environment for the neighbourhood. Fence wall along Waterloo Road will be set back to create a planter strip for vertical greening and tree transplant; ground floor facing Kam Shing Road will be provided with a continuous canopy to create a covered walkway for visitors to HKBH and students entering HKBU via Kam Shing Road and adjacent HKBU Man Lung Garden. The canopy will also serve the public at the existing taxi stand at Kam Shing Road. Greenery features will be provided along Kam Shing Road when feasible to further enhance the pedestrian experience.
- 4.3.1.9 A new vehicular run-in will be provided at the road bend at Kam Shing Road, with the 2 existing run-in/ run-out to N.K.I.L.5906 site turning into vehicular run-out to Waterloo Road and Kam Shing Road respectively. This arrangement should help minimize traffic congestion to Waterloo Road and Kam Shing Road and will be elaborated under **Section 4.5**.

MEP System Design

- 4.3.1.10 MEP system design for this project is envisioned to prioritize four key aspects: reliability, maintainability, carbon reduction, and code compliance. By incorporating these principles into the design development, we aim to create an efficient and sustainable building infrastructure.
- 4.3.1.11 Reliability is a fundamental aspect of our vision for this project to provide quality and reliable healthcare services. Our design will prioritize robust equipment selection and redundancy provisions. By implementing these measures, we aim to minimize the risk of system failures, disruptions, or malfunctions. These reliability measures will contribute to the overall operational efficiency and occupant satisfaction of HKBH by ensuring a reliable supply of heating, cooling, ventilation, and other essential services. N+1 Chillers, Essential generators, and duty banks of manifold etc. will be adopted to achieve this goal which will be also required extra space.

- 4.3.1.12 Maintainability is crucial for the long-term functionality of the MEP system and also the hospital's operation. We will focus on designing easily accessible components and implementing preventive maintenance strategies. This approach will allow for optimized system performance, reduced downtime, minimized repair costs, and minimal disturbance to the patient experience. To ensure maintainability, proper plant rooms will be provided for housing the Air Handling Units (AHUs) instead of hanging them at high levels like the existing setup. Adequate housing and installation for equipment will be implemented to ensure that the MEP system remains in excellent condition throughout its lifecycle.
- 4.3.1.13 Carbon reduction is a vital consideration in today's world. With the aim to achieve the Hong Kong's decarbonisation target is presented in the Hong Kong Climate Action Plan 2050, with a medium-term target to reduce electricity consumption of buildings by 15% and improve energy efficiency by 2035. Our MEP system design will incorporate energy-efficient technologies, such as intelligent lighting controls and renewable energy sources where feasible. Electric heating with the use of free heat sources (e.g., heat recovery chillers) and higher efficiency systems (e.g., air source heat pumps) will be utilized for the re-development, rather than following the existing design with a central oil-fired boiler, which emits a large amount of carbon.
- 4.3.1.14 Furthermore, Code compliance is an essential factor in the MEP design. Our MEP design will adhere to the relevant Fire Services codes and standards to create a safe and secure building environment. As per the up-to-date Fire Services code, a sprinkler system is required. Therefore, a sprinkler tank and pump room will be provided to meet this requirement, while a sprinkler system is currently not available for the existing Blocks A and B. Additionally, Airborne Infection Isolation Rooms (AIIRs) with designs up to international and HA standards will be provided. Each AIIR will have its own AHU.
- 4.3.1.15 By prioritizing reliability, maintainability, carbon reduction, and code compliance in our MEP design for the new redevelopment, which will involve significantly expanded MEP areas compared to the existing design provision.
- 4.3.1.16 The existing E&M systems were installed based on older design requirements and are considered sub-standard compared to the latest hospital designs. For example, most front-of-house spaces have ceiling-hung air handling units (AHUs), which hinder proper maintenance and result in more frequent air conditioning failures; Clinical spaces primarily rely on fan coil units (FCUs) with lower filtration capability and limited flexibility to meet increased air change requirements during pandemics or winter surges.
- 4.3.1.17 For new blocks, the proposed MEP design aims to meet international standards or HA standards. Designated plantrooms will house air handling units (AHUs) to facilitate proper maintenance and enhance overall reliability. In clinical spaces, an all-air system with higher filtration capability will be implemented, providing the flexibility to increase fresh air and exhaust air rates during pandemics or winter surges. Additionally, there will be an increased number of Airborne Infection Isolation Rooms (AIIRs) designed to meet international and HA standards, with each room equipped with its own AHU. Furthermore, the sprinkler system will be designed to cover the entire new blocks in accordance with the latest FSD requirements while the sprinkler system does not provide for the existing Blocks.
- 4.3.1.18 Since the lead-in water is directly fed to the roof tank and providing for the existing block which no longer accepted by the Water Supplies Department (WSD), new pumps and tanks for the portable and flushing water system will be provided for new blocks. Dedicated water supply systems will also be designed to cater to different uses, including general potable water, clinical potable water, kitchen potable water, cleansing water, and irrigation. This ensures an appropriate supply for each purpose, which is currently lacking in the existing blocks.

4.3.1.19 Regarding the Medical Gas (MG) system, it will be designed to fully comply with the latest Health Technical Memorandum (HTM) standards and HA standards. This will involve provisions for duty banks of manifold, reserve manifold, and spare cylinders, thereby increasing system reliability. The existing system does not provide these provisions and does not meet the latest standards. Apart from the aforementioned major design provision, certain services and/or E&M systems to the best practices will be provided to align with other similar new hospital developments which including:-

Electrified heating, with use of free heat sources (e.g., heat recovery chillers) and higher efficiency systems (e.g., air source heat pumps). More pumps and heat exchangers will be needed for such staged heating design. Gas-fired water heaters will also be designed to ensure provision of adequate heating capacity but will be operated at a lower priority to ensure lowest scope 1 carbon emission:

- 100% of car parking space will be capable for EV chargers.
- A Pneumatic Tube System (PTS) will be installed for efficient transportation of materials between departments, releasing elevator capacity for people transportation.
- Separated soil pipes and waste pipes will be designed to minimize risk of cross contamination between different sanitary fittings. Dedicated drainage systems will be provided to serve isolation facilities which follows HA standards.
- Dual power distribution risers for each power zone will be designed to enhance the system resilience.
- In conclusion, the proposed E&M systems for the new blocks aim to address the shortcomings of the existing systems and bring them up to international standards or HA standards, which will result in addition of a new half floor.

Sensitive Building Design and Disposition

4.3.1.20 To alleviate visual impact of the new building mass to adjacent building, the redeveloped Blocks A, B and C will be suitably set back from north, south and east side of the site boundary at 3/F, while there is a 6m non-building area (NBA) to the west of the site abutting Waterloo Road. Architectural features to west façade will be designed to provide necessary sun shading from western sun and acoustic barrier from Waterloo Road. Overlooking between redeveloped Blocks A, B and C and existing Blocks D and E will be mitigated by a series of architectural fins.

Consideration of Sustainable Building Design

4.3.1.21 Due to medical operational need for large continuous floor plate of hospital buildings, building separation and building setback as prescribed under PNAP APP-152 will not be pursued. However, site coverage of greenery will be provided in accordance with PNAP APP-152. Since the site area is ~5,648.5m², not less than 20% Site Coverage of Greenery will be provided, of which 10% will be located in the primary zone of the new building.

4.4 Landscape Design Framework

Landscape Design Concept

4.4.1.1 To make use of various landscape measures to soften the form of the proposed architectural scheme while provide screening and increase visual interest to the building.

4.4.1.2 To maximize the greening opportunity and utilize a variety of tree species, shrub and groundcover mix to alleviate visual impact to the surroundings, delineate the landscape character of the area and emphasize the individuality afforded by the environmental qualities of the Application Site.

Landscape Proposal

- 4.4.1.3 G/F: It is the arrival and drop-off floor. It contains both hard and soft landscaped area. Durable paving materials will be used to create an inviting environment upon which users will feel safe and comfortable. The planting includes the compensatory trees incorporates a varied planting palette to enhance the entrance and as buffer between the development and the public.
- 4.4.1.4 3/F: It is the **extension of** landscape area that proposed with lush vegetation buffering around the East to South side of the building. It is designed to plant with combination of compensatory trees, new trees, shrubs and groundcover mix to soften the hardness of the building and can improve the aesthetic quality of the Proposed Development. A total of 8 nos. of trees are proposed to be planted on 3/F along the planter on both the eastern and southern side of the building. Seating benches are provided for the visitors to relax.
- 4.4.1.5 **Upper** Roof: It is designed to plant with lawn to soften the hardness of the building and to create visual greenery effect to the surrounding.
- 4.4.1.6 Vertical Green: Vertical green walls are proposed at G/F, **and the building façade from 1/F to 3/F, 4/F to 13/F and Roof Floor** of the Proposed Development to soften the hardness of the building and increase the visual amenity of greenery to the surrounding.

Existing Trees

- 4.4.1.7 A tree survey was conducted in October 2023 and 4 nos. of existing trees within the Application Site are identified. The dominant species are *Juniperus chinensis* 'Kaizuca' accounting for 2 nos. The other species is *Melia azedarach* and *Delonix regia* accounting 1 no. for each.

Greenery Provision

- 4.4.1.8 The Application Site has a site area of approximately 5,648.5m². Approximately 1,130.1m² of total open green area (about 20% of the site area) is proposed in this Proposed Scheme. Compensatory trees are proposed to compensate for the loss of the existing trees that are proposed to be felled. To maximize the greenery and increase visual amenity, vertical green walls, buffer plantings, shrubs and groundcover mix vegetation are also proposed to help integrate the development with the surrounding.

4.5 Implementation Schedule/ Phasing Plan of the Proposed Development

- 4.5.1.1 The redevelopment is anticipated to be carried out in 2 phases. Phase 1 (tentatively scheduled from 2025 to 2028) serves to demolish existing Block A which abuts Waterloo Road and is approximately 60-year-old, 'New Block (Phase 1)' will be constructed at the same location upon completion of demolition of 'existing Block A'. Upon completion of new Block A, Phase 2 redevelopment will commence which involves demolishing existing Blocks B and C and construction of 'New Block (Phase 2)' and is tentatively scheduled to commence in 2029 and finish by 2033.

4.6 Traffic Arrangement, Pedestrian Connections, and Internal Transport Facilities

Vehicular and Pedestrian Access

- 4.6.1.1 At present, the run-in/ outs of the Application Site are located at Waterloo Road and Kam Shing Road. Under the Proposed Development, the vehicular accesses at Waterloo Road and Kam Shing Road would be for egress of vehicles only, and a new vehicular ingress point is proposed at Kam Shing Road to the south of the Application Site.
- 4.6.1.2 Pedestrians could access the Application Site at Waterloo Road and Kam Shing Road. Since there are numerous Green Minibus (GMB) and bus stops located at Waterloo Road and Junction Road, some patients/visitors are expected to walk to the Application Site from these roads.
- 4.6.1.3 The proposed vehicular and pedestrian accesses are illustrated in the **Diagram 4.1** below:

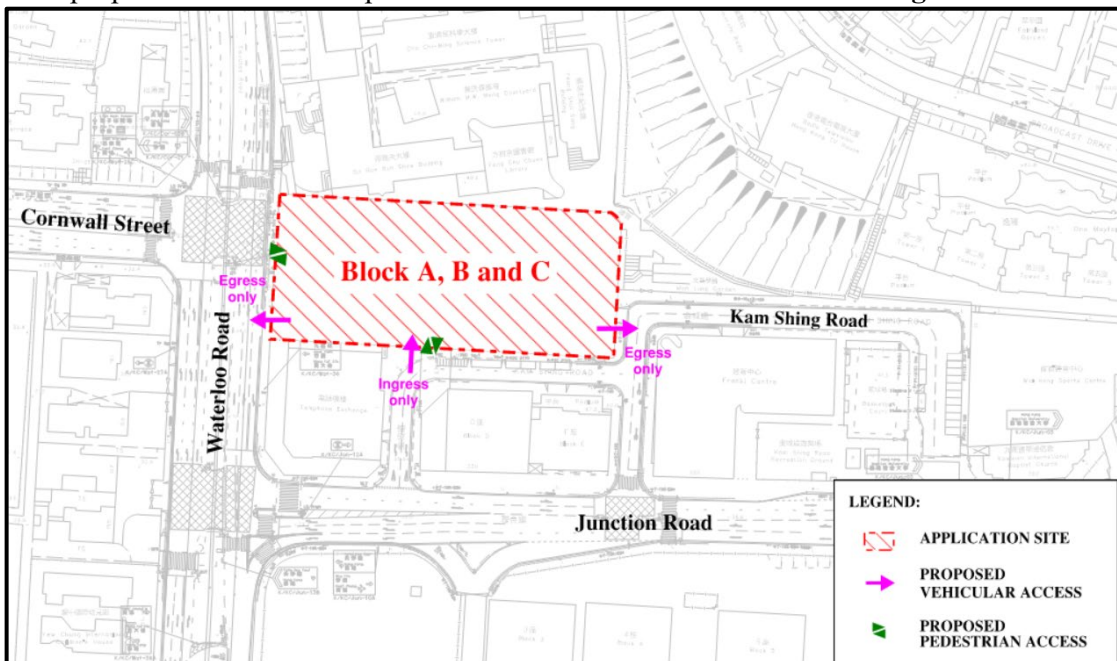


Diagram 4.1 Proposed Vehicular and Pedestrian Accesses

Internal Transport Facilities

- 4.6.1.4 The proposed internal transport facilities are made reference to the provision requirements under Hong Kong Planning Standards and Guidelines (HKPSG) for hospital without Accident and Emergency departments. Furthermore, there is need of re-providing the internal transport facilities for Block D due to the proposed conversion of existing elevated vehicular bridge between Block D and the Application Site into a pedestrian walkway. Minor relaxation of internal transport facilities provisions is proposed, such as nil provision of ambulance parking space and **provision of 1no.** lay-by for public light bus.

- 4.6.1.5 Under the Proposed Development, ambulance lay-bys will be provided in accordance with HKPSG. At present, HKBH does not own or hire any ambulance. Under current planning, the above arrangement will be maintained. Therefore, the provision of ambulance parking space is considered not necessary from the operation aspect of the hospital. Hence, nil provision of ambulance parking space is proposed at the Application Site.
- 4.6.1.6 There are GMB stops located in proximity of HKBH and in view of the site constraint on G/F and 1/F of the proposed redevelopment, it is proposed to provide 1 lay-by for public light bus at 1/F near the proposed run-out at Kam Shing Road. As the additional passenger demand for GMB service is expected to be limited, the provision of 1 lay-by for public light bus is believed to be acceptable from traffic viewpoint.

5. PLANNING JUSTIFICATIONS

5.1 In Line with the Government's Policy Objectives

- 5.1.1.1 The healthcare system and services in Hong Kong are being actively supported by policy initiatives announced in recent Policy Addresses. The government is confronted with the challenge of maintaining an efficient and high-quality healthcare system in light of an aging population and growing health consciousness among the public. According to the "Projections of Population Distribution 2021-2029" released by the Planning Department, the population aged 65 and above in Kowloon City District alone is projected to increase by 50,700 individuals (+68%) from 2019 to 2029.
- 5.1.1.2 In the Hospital Strategic Plan 2022-2027 released in 2021, it was noted that the bed utilization rates in 2019 for individuals aged 65-79 and those above 80 were 5 times and 14 times higher, respectively, compared to individuals below 65 years of age. Specifically, the utilization of acute and extended care beds per 1,000 population was 1.6 beds for non-elderly individuals, 7.1 beds for individuals aged 65-79, and 21.1 beds for those above 80 years old. These statistics indicate a potential shortage of medical services in the Kowloon City region and possibly the broader Hong Kong community, given these demographic trends.

5.2 Aligning with the Planning Intention of the "G/IC" Zone

- 5.2.1.1 The Proposed Development is intended for hospital use that are always permitted in the Column 1 of the "G/IC" zone. Expanding the service capacity on the Application Site is challenging due to the existing building height restriction of 10 storeys specified in the OZP and the aging infrastructure that has been in operation for 60 years for Blocks A and B and 36 years for Block C. Therefore, the Proposed Development is fully in line with the planning intention of the "G/IC" zone in response to its aspiration to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments.

5.3 Meeting Territorial Demand of Healthcare Services

- 5.3.1.1 As a result of various contributing factors such as an ageing population and the COVID-19 pandemic, hospital beds in various public hospitals in Hong Kong are in short supply. According to statistics released by HA back in early 2022, the bed occupancy rate of some of the public hospitals such as Queen Elizabeth Hospital in Kowloon Central Cluster of HA could be as high as 102%².
- 5.3.1.2 HKBH has been providing healthcare services in the Kowloon Tong area since 1963. As the only hospital situated in the heart of the Kowloon Tong, HKBH has been filling up a gap in the public healthcare system in the area served by the Kowloon Central Cluster of HA. During the COVID-19 pandemic, HKBH was one of the private hospitals that provided support to the overloaded public healthcare system by accepting COVID-19 patients with mild symptoms at its clinic and reserve 150 beds for patients transferred from HA hospitals. The Proposed Scheme, with the 4 extra storeys for Blocks A, B and C will increase the number of beds at Block A, B and C to 700, representing a 16.5% increase from the existing condition. The extra floor area allowed by the building height relaxation would also allow more spaces for each patient to create a better ward environment. These improvements are in line with the government policy of enhancing healthcare services in support of the public healthcare system as mentioned in the 2022 Policy Address.

5.4 Comply with the Relevant Greenery Coverage Requirements in the "Sustainable Building Design Guidelines"

- 5.4.1.1 To align with HKBH ambition for a green and smart hospital, the redevelopment of Blocks A, B and C targets to achieve BEAM Plus NB v2.0 Gold rating and will adopt Government's Good Practices on Green Procurement (e.g. ArchSD OI No. 04/2009) with a holistic green consciousness design process from Sketch Design to Construction Stage of the project so that Green Building Design are well-founded in the design solutions to address practical and functional considerations that are effectively implementable:-
- 5.4.1.2 To maximise building energy efficiency, a carbon and life cycle assessment will be prepared, which include but not limited to: (a) CIC Carbon Assessment Tool to measure embodied carbon; (b) Conduct structural optimisation; (c) Adoption low carbon construction materials, and; (d) Use modular design and pre-cast material to reduce wastage.

5.5 Fulfilling Relevant Criteria for Consideration of Minor Relaxation of Building Height Restriction as Stipulated in the Kowloon Tong OZP

- 5.5.1.1 Several relevant criteria for the consideration of minor relaxation of building height restriction have been listed out in Section 7.3 of the ES of the Kowloon Tong OZP. **Table 5.1** has listed out the relevant criteria and a summary of how the Proposed Development has fulfilled each of the criteria.

² Yahoo News – 威爾斯親王醫院病床使用率達 130% 多間醫院爆滿 (9 March 2022)
<https://hk.news.yahoo.com/%E5%A8%81%E7%88%BE%E6%96%AF%E8%A6%AA%E7%8E%8B%E9%86%AB%E9%99%A2-%E6%80%A5%E7%97%87%E5%AE%A4-%E5%85%AC%E7%AB%8B%E9%86%AB%E9%99%A2-030334528.html>

Table 5.1 Fulfilment of Relevant Criteria for Consideration of Minor Relaxation of Building Height Restriction of the Proposed Development as Stipulated in the Kowloon Tong OZP

Criteria for Consideration of Minor Relaxation of Building Height Restriction as Set in Section 7.3 of the ES of the Kowloon Tong OZP	Fulfilment by the Proposed Development
(a) amalgamating smaller sites for achieving better urban design and local area improvements;	Not Relevant
(b) accommodating the bonus plot ratio granted under the Buildings Ordinance in relation to surrender/dedication of land/area for use as public passage/street widening;	Not Relevant
(c) providing better streetscape/good quality street level public urban space;	Fulfilled A full-height setback of about 6m wide is provided within the Application Site facing Waterloo Road, in order to provide better streetscape and a wider pavement to enhance pedestrians' walking experience.
(d) providing separation between buildings to enhance air and visual permeability;	Not Relevant
(e) accommodating building design to address specific site constraints in achieving the permissible plot ratio under the Plan;	Not Relevant
(f) other factors, such as the need for tree preservation, innovative building design and planning merits that would bring about improvements to townscape and amenity of the locality, provided that no adverse landscape and visual impacts would be resulted from the innovative building design.	Fulfilled Terrace gardens are incorporated on the 3/F and R/F of Blocks B&C with the purpose of enhancing visual amenity and user experience. Stepped terrace garden concept has been incorporated into the overall building design to descend gradually from the 2 terrace gardens on the 3/F and R/F of Blocks B&C towards the low-rise buildings and open spaces on the east side of the Application Site (e.g., Franki Centre, Man Lung Garden and Kam Shing Road Recreation Ground) to mitigate the visual impact in the area. Planters along the edges of the terrace gardens on the 3/F and R/F of Blocks B&C and the vertical greening on the 3/F are designed to provide visual enhancement and add interest to the building façade of the Proposed Development. With reference to the Sustainability Building Design Guidelines, a minimum of 20% (approx. 1,130m ²) of site coverage of greenery for the overall development will be provided on 3/F and R/F of Blocks B&C to mitigate the heat island effect and enhance visual experience.

5.6 The Proposed Minor Relaxation of Building Height Restriction is Compatible with the Surroundings

5.6.1.1 To optimise the healthcare services provision during the Proposed Development at the Application Site, this Section 16 Planning Application seeks approval from the TPB for minor relaxation of building height restrictions from 10 storeys to 15 storeys, to provide more floor spaces to accommodate more hospital beds, increase HKBH patient-handling capacity and enhance the quality of its healthcare services. The Application Site is located within the “G/IC” zone with the purpose of providing G/IC facilities serving the needs of the residents as well as the general public.

5.6.1.2 It is observed that a stepped building height profile descending from the foothill of Beacon Hill from the north towards the low-rise residential neighbourhood near MTR Kowloon Tong Station and Kowloon East Barracks to the south. In the immediate adjoining Wang Tau Hom and Tung Tau OZP (No. S/K8/25), there is a cluster of residential developments to the east and northeast of the Application Site with higher building heights than the proposed building height of the Proposed Development (+102.5mPD). They are Fu Keung Court (14-27 Storeys/ +87.5mPD – +116.5mPD), Ka Keung Court (+114.75mPD - +151.7mPD), Lok Fu Estate (18-25 Storeys/ +84.3mPD – +102.3mPD), Tin Ma Court (+148.5mPD - +157.1mPD) and Tin Wang Court (+113.9mPD – +114.2mPD) and Wang Tau Hom Estate (+85.2mPD – +114.3mPD). There are also existing residential buildings with higher building heights or having similar BH as the Proposed Development. They are The Palace (37 Storeys / +180.75mPD), Eden Gate (13 storeys / +92.7mPD), 3 Ede Road (13 Storeys / +95.7mPD) and One Mayfair (10 Storeys / +97.6mPD).

5.6.1.3 It is noted that some G/IC developments within the immediate surrounding of the Application Site have already exceeded the building height restrictions in the Kowloon Tong OZP. To the southeast there are 3 approved planning applications in the Baptist University Road Campus of the HKBU that exceeded the building height restriction of 13, which are the HKBU Academic and Administration Building (14 Storeys) (No. A/K18/343), HKBU University Student Hostel (21 Storeys) (No. A/K18/137) and HKBU University Hostel and Academic Building Complex (17 Storeys) (No. A/K18/329). An amendment of plan has been partially approved on 21 December 2012 for the Kowloon International Baptist Church at 300 Junction Road for increasing the building height restriction from 3 storeys to 9 storeys (i.e., +6 storeys or +200%). Therefore, the Proposed Development with a BH of 15 Storeys/ +102.5mPD is compatible with surrounding area as it has a similar BH to the G/IC developments in the Kowloon Tong planning scheme area.

5.6.1.4 Please refer to **Figure 3.2** for the building height profile surrounding the Application Site and **Table 5.2** below for more information:

Table 5.2 Building Height Relaxation Approved in Planning Applications in the Surrounding Area

Application No.	Location	Building Height Relaxation Approved	TPB Approval Date
A/K18/343	Proposed Educational Institution (Academic and Administration Building) at 15 Baptist University Road	13 to 14 storeys (+7.69%)	14 Jan 2022
A/K18/329 A/K18/316	Proposed Educational Institution (University Hostel and Academic Building Complex) at 30 Renfrew Road	13 to 17 storeys (+30.77%) 13 to 15 storeys (+15.38%)	12 Apr 2019 5 Feb 2016
Y/K18/7	Kowloon International Baptist Church at 300 Junction Road	3 storeys to +72.8mPD (~8 storeys) (+166%)	21 Dec 2012
A/K18/269	Block D of the Hong Kong Baptist Hospital	10 to 11 storeys (+10%)	23 Apr 2010
Y/K18/3	Block E of the Hong Kong Baptist Hospital	6 to 10 storeys (+66.67%)	9 Jan 2009
A/K18/137	Proposed Hong Kong Baptist University Student Hostel	13 to 21 storeys (+61.5%)	4 May 1999

5.7 Generating No Adverse Impacts to the Surroundings

- 5.7.1.1 Various technical assessments on various aspects, including traffic, environmental, landscape, drainage, sewerage, visual have been conducted and included in **Appendices B to G** of this Supporting Planning Statement. Findings of the technical assessments confirmed that the Proposed Development is technically feasible and will not generate significant adverse impact to the future users on the Application Site and to the surrounding environment with appropriate mitigation measures and improvement works.

5.8 Setting a Desirable Precedent for Optimising Community Services Provision in the Kowloon Tong Area

- 5.8.1.1 With the intended hospital use, the Proposed Development at the Application Site is fully in line with planning intention for the “G/IC” zone. The Proposed Development will set a desirable precedent on optimising community services provision in the G/IC clusters in the Kowloon Tong Area with a variety of planning and design merits. The extra floor area allowed by the applied minor relaxation of building height restriction would be used to accommodate more beds and improve ward environment to meet the territorial demand for healthcare services, while the Proposed Development aims to incorporate extensive greenery to enhance the surrounding urban space. which includes a combination of hard and soft landscaping at the ground floor, long planter strips on the upper floors, lush vegetation on the 3/F, and a rooftop lawn. Vertical green walls are proposed, and there will be pedestrian greenery along Kam Shing Road. Additionally, a landscape pavement with plants will be created along Waterloo Road. The design aims to maximize green spaces, improve aesthetics, and enhance the pedestrian experience. The Proposed Development will also meet the minimum site coverage of greenery as stipulated in the SBDG.

- 5.8.1.2 The Proposed Development has also fulfilled all the applicable criteria for consideration of minor relaxation of building height restriction as set in Section 7.3 of the ES of the Kowloon Tong OZP, while the minor nature of the building height relaxation is demonstrated to be fully compatible to its surroundings in both regional and localized context. No significant adverse impact is anticipated to be generated by the proposed minor relaxation of building height restriction at the Application Site. Moreover, the Proposed Development does not form an undesirable precedent for optimising community services provision in the Kowloon Tong area.

5.9 The Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction is Not Unprecedented

- 5.9.1.1 This Section 16 Planning Application seeks approval from the TPB for minor relaxation of building height restrictions from 10 storeys to 15 storeys (+50%), which is not considered to be unprecedented when compared with previous planning applications in the vicinity and of similar nature.

5.9.1.2 Please refer to **Table 5.3** below for more information on building height relaxation approved in similar planning applications:

Table 5.3 Building Height Relaxation Approved in Similar Planning Applications

Application No.	Location	Building Height Relaxation Approved	TPB Approval Date
Y/K10/5	Evangel Hospital	26.9mPD to 80mPD (+194%)	28 July 2023
A/KC/470	Lai King Building of Princess Margaret Hospital	7 to 12 storeys (+71.43%)	4 Dec 2020
A/K11/237	Our Lady of Maryknoll Hospital	7 to 12 storeys (+71.43%)	29 May 2020
A/H15/282	Southern Portion of Phase 1 of the Redevelopment of Grantham Hospital	9 to 14 storeys (+55.56%)	1 Nov 2019
A/K18/329	Proposed university hostel and academic building complex of HKBU	13 to 17 storeys (+30.77%)	12 Apr 2019
A/H14/62	Matilda & War Memorial Hospital	5 to 6 storeys (+20%)	23 Dec 2010
Y/K18/3	Block E of the HKBH	6 to 10 storeys (+66.67%)	9 Jan 2009

6. CONCLUSION

- 6.1.1.1 This Supporting Planning Statement is submitted under Section 16 of the TPO to seek approval for the proposed minor relaxation of building height restriction from 10 storeys to 15 storeys at the Application Site.
- 6.1.1.2 The proposed minor relaxation of building height restriction is fully justified for a number of reasons. The development nature of the Proposed Development completely aligns with the planning intention of the “G/IC(7)” zone in terms of providing land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments. The extra floor areas allowed by the applied minor relaxation of building height restrictions intended to accommodate more hospital beds and create a better ward environment to meet ever-rising territorial demand for healthcare services brought by challenges such as COVID-19 pandemic and ageing population.
- 6.1.1.3 Various considerations have been made to incorporate green features into building design. This includes a mix of hard and soft elements on the ground floor, extensive planter strips on upper levels, lush vegetation on the 3/F, and a rooftop lawn. Vertical green walls are proposed, and pedestrian greenery along Kam Shing Road is included. Furthermore, a full height setback of about 6m along Waterloo Road with a landscape pavement with plants to enhance visual experiences and widen the walking space for pedestrians. Greenery provision within the Proposed Development will meet minimum site coverage of greenery as stipulated in the SBDG, i.e., 20% of the site area, to mitigate the heat island effect and enhance visual amenity.
- 6.1.1.4 The Proposed Development has demonstrated fulfilment of relevant criteria for consideration of minor relaxation of building height restriction as stipulated in the Kowloon Tong OZP. The proposed minor relaxation of building height restriction is considered to be compatible with the surroundings in both regional and localized context and is not considered excessive compared with previous planning applications of similar nature. No significant adverse impact is anticipated to be generated by the proposed minor relaxation of building height restriction at the Application Site. Approval of this Planning Application will not demonstrate an undesirable precedent in optimising community services provision in the Kowloon Tong Area.
- 6.1.1.5 In light of the planning and design merits and justifications being put forward in this Supporting Planning Statement, we sincerely seek for the favourable consideration from the TPB to give support to this Application.

Appendix D Revised Visual Impact Assessment

Hong Kong Baptist Hospital

S16 Planning Application for Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction in “Government, Institution or Community (7)” Zone and Areas Shown as ‘Road’ at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

Visual Impact Assessment

Final | July 2024

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 282303

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1. INTRODUCTION

- 1.1.1 This Visual Impact Assessment (“VIA”) is prepared in support of the Section 16 Planning Application for Proposed Hospital Redevelopment (“Proposed Development”) with Minor Relaxation of Building Height Restriction in “Government, Institution or Community (7)” Zone and Areas Shown as ‘Road’ at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon (“Application Site”).
- 1.1.2 The Application Site with an approximated site area of 5,648.5 m², falls within an area zoned as “Government, Institution or Community (7)” (“G/IC(7)”) and Areas Shown as ‘Road’ on the Approved Kowloon Tong Outline Zoning Plan No. S/K18/21 (Kowloon Tong OZP or the OZP). According to the Notes of the OZP, “Hospital” use is always permitted under Column 1 uses of the “G/IC(7)” zone. Development at the Application Site is subject to a maximum building height of 10 storeys, or the height of the existing building, whichever is the greater. It is stated in the Remarks (8) of the Notes that based on the individual merits of a development or redevelopment proposal, minor relaxation of building height may be considered by the Town Planning Board (TPB) on application under Section 16 of the Town Planning Ordinance (TPO).
- 1.1.3 Since 2018, the government has placed importance on fostering public-private partnerships between the Hospital Authority (HA) and the private healthcare sector to address the challenges faced by the public healthcare system. Approving this Planning Application would enable HKBH to expand its capacity, relieving the long-term pressure on the public sector. Therefore, the Proposed Development is intended for hospital use which aligned with the planning intention of “G/IC(7)” zone with intention to fully utilise the development potential of the Application Site, by seeking approval for minor relaxation of building height restriction from 10 storeys to 15 storeys (the **Proposed Scheme**). While aimed to meet the ever-rising territorial demand for healthcare services through increasing number of beds and improving ward environment, the building design of the Proposed Development has taken various green features into considerations, such as planters along the terrace gardens and along Kam Shing Road at the street level and the full height setback of about 6m wide facing Waterloo Road.
- 1.1.4 Point (e) of Para. 2.3 of the TPB Guidelines (TPB PG) No. 41 states that a VIA is required when *“the proposal involves modification of development parameters of a site to deviate from the statutory planning restrictions applicable to the site or the neighbourhood, and the modification will amount to pronounced increase in development scale and intensity and visual changes from key public viewing points”*. Accordingly, this VIA is prepared to assess the visual impacts of the Proposed Development with the Planned Condition (i.e., OZP complaint scenario plus approved/planned developments), while the existing condition will also be included for reference purpose.
- 1.1.5 The VIA approach adopted in this report has considered the planned housing development in the surrounding Kowloon Tong area under the OZP Compliant Scheme (the **Baseline Condition**). The planned developments incorporated in the Baseline Condition and Proposed Scheme create a reasonably foreseeable future condition for the evaluation of visual impacts. This VIA evaluates the visual impacts of the Proposed Condition against the Baseline Condition, which is the OZP Compliant Scheme.
- 1.1.6 This VIA evaluates the visual compatibility and degree of anticipated visual impact of the Proposed Development on the Visually Sensitive Receivers relevant to the Application Site. Based on the evaluation, the VIA comments on the visual acceptability of the Proposed Scheme.
- 1.1.7 The outline for this VIA is set out below:

- **Section 2** outlines the visual context of the Application Site and its Surrounding Area;
- **Section 3** describes the main design principles of the Proposed Development;
- **Section 4** identifies the Assessment Area and provides an analysis of the viewing points (“VPs”);
- **Section 5** assesses the visual impacts; and
- **Section 6** concludes the VIA.

2. VISUAL CONTEXT OF THE APPLICATION SITE AND SURROUNDING AREA

2.1 Local Context

2.1.1 The Application Site is located at No. 222 Waterloo Road, situated in the community of Kowloon Tong near the foothill of the Beacon Hill, with an approximated site area of 5,648.5m². The Application Site is bounded by Waterloo Road to the west, the Kowloon Tong Telephone Exchange to the southwest, Kam Shing Road to the south, Franki Centre and Man Lung Garden to the east, the Radio Television Hong Kong TV House and Commercial Radio to the northeast and the Hong Kong Baptist University (HKBU) Ho Sin Hang Campus to the north.

2.1.2 The Application Site has been used as a private hospital since 1963. Block A was built in 1963, Block B opened as East Wing in 1982, Block C was built in 1987, Block D in 2008 and Block E in 2015. With increasing demand for healthcare services, there is potential to improve the building design. There are 5 blocks of hospital buildings (i.e., Block A to E) in total, 3 of them (Blocks A to C) are included in the Application Site. A wide range of services are covered by HKBH including more than 30 Medical Centres/Specialty Clinics, Paramedical Services and 24-hour Out-patient Clinic. The HKBH has around 2,200 staff and own around 800 beds.

2.2 Wider Context

2.2.1 The surrounding areas of the Application Site are characterised as follows:

- To the **immediate north** is the Hong Kong Baptist University Ho Sin Hang Campus. To the **immediate northeast** are the Radio Television Hong Kong and Commercial Radio, building. To the further northeast are a cluster of residential developments including The Palace (37 Storeys / +180.75mPD) and Meridian Hill (9 Storeys / +91.44mPD). To the **immediate northwest** are 3 Ede Road (13 Storeys / +95.7mPD) and Eden Gate (13 Storeys / +92.7mPD).
- To the **immediate east** are Man Lung Garden, One Mayfair (10 Storeys / +97.6mPD) and Broadcast Drive Playground. To the **further east** are Fu Keung Court (14-27 Storeys/ +87.5mPD – +116.5mPD), Ka Keung Court (+114.75mPD – +151.7mPD), Lok Fu Estate (18-25 Storeys/ +84.3mPD – +102.3mPD), Tin Ma Court (+148.5mPD – +157.1mPD) and Tin Wang Court (+113.9mPD – +114.2mPD) and Wang Tau Hom Estate (+85.2mPD – +114.3mPD).
- To the **immediate south** are Hong Kong Baptist Hospital Blocks D and E (10-11 Storeys / +74.6mPD and 74.8mPD) and the Kowloon East Barracks (about 10 storeys / +25.5mPD – +50mPD). To the **immediate southeast** are Franki Centre and Kam-Shing Road Recreation Ground. To the **further southeast** is the mid-rise Shaw Campus and Baptist University Road Campus of the HKBU, which included the proposed HKBU University Hostel and Academic Building Complex (17 Storeys / +97.3mPD) and the HKBU Academic & Administration Building (14 Storeys / +94mPD). To the **immediate southwest** of the Application Site is the Kowloon Tong Telephone Exchange, followed by a low-rise residential neighbourhood mixed with various educational and religious institution uses. To the **further southwest** are the MTR Kowloon Tong Station and an education cluster, which encompasses the Education Bureau Kowloon Tong Education Services Centre, Yew Chung International School - Secondary, Australian International School Hong Kong and Holy Family Canossian School (Kowloon Tong).

- To the **immediate west** are Yew Chung International Children's House and Cornwall Street Children's Playground. To the **further west** are the China Graduate School of Theology, Kent Road Garden and Cornwall Street Park.

3. THE PROPOSED SCHEME

3.1 General Planning Design Principles

- 3.1.1 This Section 16 Planning Application is primarily intended to seek for minor relaxation of building height restriction from 10 storeys to 15 storeys for permitted hospital uses for HKBH redevelopment and to realize the planning and design concept illustrated below. The scheme with the proposed minor building height relaxation formed the “Proposed Scheme”, while the scheme building up to OZP existing restrictions formed the “OZP Compliant Scheme”.
- 3.1.2 General planning and design principles of the Proposed Scheme are described below.
- 3.1.3 **Enhancing Existing Healthcare Services to Meet Community Needs:** As the only hospital situated in the heart of the Kowloon Tong area, HKBH has been providing healthcare services since 1963. For example, HKBH installed the world's most advanced computer scanning system in 1977 and introduced Hong Kong’s first minimally invasive endoscopic operating theatre and first PET-CT scan in the 2000s. The provision of diverse healthcare services in HKBH helps filling up a gap in the public healthcare system in the area served by the Kowloon Central Cluster of the Hospital Authority (HA). During the COVID-19 pandemic, HKBH was one of the private hospitals that provided support to the overburdened public healthcare system by accepting COVID patients with mild symptoms at its clinic and reserve 150 beds in total for patients transferred from HA hospitals¹. In 2021, it was awarded for the Healthcare Asia Awards: Covid Management Initiative of the Year - Hong Kong & Hospital of the Year, which highlight its achievements in enhancing Hong Kong’s healthcare service. The Proposed Development at the Application Site, which increases the number of adult in-patient beds from 589 to not more than 700 beds including ancillary facilities such as consultation rooms and enhances quality and provision of the healthcare services, which is in line with the government policy of enhancing healthcare services in support of the public healthcare system as mentioned in the 2022 Policy Address.
- 3.1.4 **Providing Better Streetscape/Good Quality Street Level Public Urban Space:** The Proposed Development includes the implementation of pedestrian greenery along Kam Shing Road, aimed at enhancing the walking experience and streetscape. This will involve the installation of planters and vertical greenery along building edges and the site boundary fence wall, providing street-level greenery for pedestrians. Additionally, a full-height setback of about 6m wide is provided within the Application Site facing Waterloo Road, a landscape pavement will be created with a perforated fence wall along the sidewalk, in order to provide better streetscape and a wider pavement to enhance pedestrians’ walking experience. Plants will be placed on the outside of the fence wall, offering street-level greenery to further enhance the pedestrian environment.
- 3.1.5 **Building Design that the Townscape and Amenity of the Locality:** The Proposed Development aims to incorporate as much greenery as possible to improve environmental quality of the surrounding urban space. The G/F serves as the arrival and drop-off area, combining both hard and soft landscaping. Durable paving materials are utilized to establish a safe and inviting environment. Long planter strips on 1/F and 2/F maximize green space and enhance visibility from Waterloo Road. The main landscape area on the 3/F features lush vegetation that buffers the building's eastern and southern sides, utilizing a mix of compensatory trees, shrubs, and groundcover to soften the building's appearance and improve its aesthetic appeal. The roof is designed with a lawn to further soften the building and create a visually pleasing green effect. Additionally, vertical green walls are proposed on the G/F, 1/F, and 3/F to enhance the building's aesthetics and increase the presence of greenery in the surrounding area. Overall, the landscape design aims to create a welcoming atmosphere, maximize green spaces, and enhance the visual appeal of the proposed development.

3.2 Key Development Parameters

3.2.1 The key development parameters of the OZP Compliant Scheme and the Proposed Scheme put forward under the current S16 Planning Application are summarised in **Table 3.1** below.

Table 3.1 Proposed Development Parameters of the Proposed Development

Development Parameters		Proposed Scheme	OZP Compliant Scheme	Existing HKBH
BHR under OZP		10 Storeys		
Site Area		About 5,648.5 m ²		
Proposed Use		Hospital		
Plot Ratio		10.89	About 8.94	4.04
Total Gross Floor Area		About 61,513 m ²	About 50,493 m ²	About 22,835 m ²
No. of Blocks		1	NA	3
Building Height & No. of Storeys		<u>Block A:</u> 14 storeys (about +98.5mPD) <u>Blocks B and C:</u> 15 storeys (about +102.5mPD) <u>Excluding 3 levels of basement</u>	<u>Block A, B and C:</u> 10 storeys (about +81mPD) Excluding 3 levels of basement	<u>Block A:</u> 6 storeys (about +62.9mPD) <u>Block B:</u> 7 storeys (about +65.8mPD) <u>Block C:</u> 8 storeys (about +66.6mPD)
Floor-to-floor Height		About 4.2-6m	About 4.5-6m	About 2.7-4.9m
Site Coverage (measured from height of building in metres from street level of Waterloo Road)		Below 15m – not more than 100% Above 15m – not more than 62.5%	Below 15m – not more than 100% Above 15m – not more than 72.5%	Below 15m – not more than 90% Above 15m – not more than 60.4%
No. of In-patient Bed Spaces at Block A, B and C		700	Not more than 445	589
No. of Operation Theatres		16	16	13
Parking Space	Private Car	244	166	162
	Motorcycle	25	17	None
	Ambulance	0	3	2
Loading/Unloading (L/UL) Spaces	Light Goods Vehicle Spaces	1	None	None
	Medium/ Heavy Goods Vehicle Spaces	2	3	None
	Taxi and Private Cars	5	4	3
	Ambulance	2	2	None

¹ Hong Kong Economic Times - 【私院支援】10間私院為新冠輕症病人提供門診服務 - 一文看清詳情及注意事項 (2022-03-16)
<https://shorturl.at/abswP>

3.2.2 The comparison of development parameters between the Proposed Scheme and OZP Compliant Scheme is available in **Table 3.2** below:

Table 3.2 Comparison in Development Parameters between the Proposed Scheme and OZP Compliant Scheme

Development Parameters		Proposed Scheme (A)	OZP Compliant Scheme (B)	Changes (A)- (B)
Site Area		About 5,648.5 m ²	About 5,648.5 m ²	No change
Plot Ratio		10.89	8.94	+1.8 (+20%)
Total Gross Floor Area		About 61,513 m ²	About 50,493 m ²	+10,166 m ² (+20%)
No. of Blocks		1	NA	NA
Building Height & No. of Storeys		<u>Block A:</u> 14 storeys (about +98.5mPD) <u>Blocks B and C:</u> 15 storeys (about +102.5mPD) Excluding 3 levels of basement	<u>Block A, B and C:</u> 10 storeys (about +81mPD) Excluding 3 levels of basement	<u>Block A, B and C:</u> +5 Storeys (+50%) (about +21.5mPD (+26.5%))
Floor-to-floor Height		About 4.2 – 6m	About 4.5 – 6m	Lowest Floor-to-floor Height – -0.3m Highest Floor-to-floor Height – No Change
Site Coverage (measured from height of building in metres from street level of Waterloo Road)		Below 15m – not more than 100% Above 15m – not more than 62.5%	Below 15m – not more than 100% Above 15m – not more than 72.5%	Below 15m – No change Above 15m – -10% (-13.8%)
No. of In-patient Bed Spaces at Block A, B and C		700	Not more than 445	+255 (+57.3%)
No. of Operation Theatres		16	16	No change
Parking Space	Private Car	244	166	+78 (+47%)
	Motorcycle	25	17	+8 (+47.1%)
	Ambulance	0	3	-3 (-100%)
Loading/Unloading (L/UL) Spaces	Light Goods Vehicle Spaces	1	None	+1 (+100%)
	Medium/ Heavy Goods Vehicle Spaces	2	3	-1 (-33%)
	Taxi and Private Cars	5	4	+1 (+25%)
	Ambulance	2	2	No change

3.2.3 Floor uses of the Proposed Development are set out in **Table 3.3** below:

Table 3.3 Floor Uses of the Proposed Development

Block ABC	
R/F	E&M / Green Roof
3-14/F	Clinical Services / Support Services / E&M / Back of House (B.O.H.)
2/F	Clinical Services / Support Services / E&M / Link Bridge / Back of House (B.O.H.)
1/F	Clinical Services / Ancillary Services / Link Bridge / E&M / Back of House (B.O.H.)
G/F	Clinical Services / Ancillary Services / Support Services / Loading/Unloading / Drop-off Area / Entrance Atrium / Back of House (B.O.H.)
B1/F	Car Park / E&M / Support Services
B2/F	Car Park / E&M / Support Services
B3/F	Clinical Services / Support Services / E&M

4. ASSESSMENT AREA & SELECTION OF VIEWING POINTS

4.1.1 According to the TPB PG No. 41, the Assessment Area is defined by approximately three times of overall BH of the subject development, i.e., about +102.5mPD with about +33mPD at mean street level of Waterloo Road. Thus, a radius of about 208.5m from the boundary of the Application Site defines the boundary of the Assessment Area, within and slightly beyond which key public viewing points (VPs) are selected for assessment accordingly. The visual assessment will be conducted by comparing the condition of OZP Compliant Scheme and the Proposed Scheme.

4.1.2 The Urban Design Guidelines in the Hong Kong Planning Standards and Guidelines (HKPSG) have identified specific vantage points for the consideration of harbourfront development (Figure 3 of Chapter 11 of HKPSG refers). Given the Proposed Scheme at the Application Site may be visible from the waterfronts in Central District, strategic vantage points at Sun Yat San Memorial Park, Sai Ying Pun and Central Pier No.7 have been selected for impact assessment on the views to Kowloon Peak and other major Kowloon ridgelines.

4.1.3 When assessing the potential visual impacts of the Proposed Scheme, the classification of VPs is categorised as follows:

Table 4.1 Classification of Visual Sensitivity

Receivers	Main Activities	Sensitivity
Recreational	Those viewers who would view the Application Site while engaging in recreational activities	High
Travellers	Those viewers who would view the Application Site from vehicles or on foot	Medium

4.1.4 A total of 8 VPs including short, medium and long rangers are considered to be the most affected by the comprehensive development (**Figure 2** refers) will be assessed. They include:

4.1.5 **VP1: Footbridge near Broadcast Drive Playground (Figure 3)** – Located about 240m to the east of the Application Site and near the MTR Kowloon Tong Station, this VP is taken on the footbridge used by residents and students of the surroundings neighbourhood and university. The VP represents medium-range views of pedestrian along the Junction Road. Thus, the visual sensitivity of this VP is **medium** due to its transient nature.

4.1.6 **VP2: Cornwall Street Children's Playground (Figure 4)** – This short-range VP is located about 170m to the west of the Application Site at a sizable active open space along Cornwall Street with children playing facilities surrounded by low-rise buildings. As a leisure ground, it frequently used by local families for outdoor activities. This VP is selected to assess close-range visual impacts on recreational users, the visual sensitivity is considered **high**.

4.1.7 **VP3: Footbridge near Holy Family Canossian School (Kowloon Tong) (Figure 5)** – Locating slightly beyond the assessment area, this medium-range VP is located about 410m to the south of the Application Site and near the Kowloon Tong Station, allowing assessment of the visual impact of pedestrian crossing Waterloo Road. The visual sensitivity of this VP is considered **medium** due to its transient nature.

- 4.1.8 **VP3A: Footbridge near American International School (Figure 6)** – This long-range VP is located about 820m to the south of the Application Site and near American International School. It is a supplementary VP to VP3 to reflect the visual impact of the Proposed Development from the same angle with similar nature but further away. It also allows assessment of the visual impact of pedestrian crossing Waterloo Road. The visual sensitivity of this VP is considered **medium** due to its transient nature.
- 4.1.9 **VP4: The Entrance of Radio Television Hong Kong (RTHK) Broadcasting House (Figure 7)** – This short-range VP is located about 180m to the north of the Application Site outside a broadcasting house surrounded by low density residential housing. This VP and frequently used by the staff and guests of RTHK, allowing assessment of the visual impacts on the recreational users of the surrounding. Thus, the visual sensitivity of this VP is considered **high**.
- 4.1.10 **VP5: Bus Stop near Orion Court (Figure 8)** – As a frequently visited bus stop by nearby residents and students on Waterloo Road, Moonbeam Terrace Bus Stop, located about 280m to the northwest of the Application Site was selected to access medium-range street-level visual impacts on transient pedestrian/passengers who have a view towards the Application Site. The visual sensitivity of this VP is considered **medium**.
- 4.1.11 **VP6: Lung Cheung Road Lookout (Figure 9)** – This long-range VP is located outside the assessment area about 940m to the northwest of the Application Site. This lookout is popular among members of the public who enjoy panoramic view of the Kowloon peninsula, allowing assessment of the visual impacts on recreational users having a cityscape view towards the direction of Application Site. Thus, the visual sensitivity of this VP is considered **high**.
- 4.1.12 **VP7: Sun Yat San Memorial Park, Sai Ying Pun (Figure 10)** – Locating outside the assessment area, this VP is strategically selected owing to its representation of a major long-range vantage point towards the Application Site from across the harbour as well as its popularity with local users for outdoor recreational activities, sitting-out and walking. It is also the vantage point for a panorama view of West Kowloon as identified in the Urban Design Guidelines. It assesses visual impacts of the Proposed Scheme with the considerations of the overall visual composition of Kowloon West against the backdrop of Lion Rock and Beacon Hill ridgelines. Since it is a strategic VP, the visual sensitivity of this VP is considered **high**.
- 4.1.13 **VP8: Central Pier No.7 (Figure 11)** – Similar to VP7, this VP is strategically selected outside the assessment area to preserve the backdrop of Lion Rock and Beacon Hill ridges. It is also a vantage point on the Hong Kong Island side as identified in the Urban Design Guidelines. Located at the Central Pier No.7 along the Central and Western District Promenade. Being a strategic VP as well as a popular spot for both recreational users and tourists, the visual sensitivity of this VP is considered **high**.

5. ASSESSMENT OF VISUAL IMPACT

- 5.1.1 This Section evaluates the visual impact of the Proposed Scheme by comparing it with the OZP Compliant Scheme. Reference is made to TPB PG No. 41 and the visual appraisal for the Proposed Scheme is carried out on the aspects of ‘visual composition’, ‘visual obstruction’, ‘effect on public viewers’ and ‘effect on visual resources’². The overall visual resultant impact of the Proposed Scheme is appraised based on the classifications of visual impacts as set out in the TPB PG No. 41, which include ‘enhanced’, ‘partly enhanced/partly adverse’, ‘negligible’, ‘slightly adverse’, ‘moderately adverse’ and ‘significantly adverse’³.
- 5.1.2 Major planned developments in the vicinity of the Application Site are also incorporated in both the Approved Scheme and Proposed Scheme to create a reasonably foreseeable future condition for the evaluation of visual impacts.

VP1: Footbridge near Broadcast Drive Playground (Figure 3 refers)

- 5.1.3 This is a medium-range VP located at the footbridge near Broadcast Drive Playground and represent the views of pedestrian looking towards the Application Site. With reference to the Approved OZP No. S/K18/21, the Kowloon International Baptist Church will be redeveloped to 8 storeys, the Proposed Scheme are anticipated to be partially obstructed by the said redevelopment.
- 5.1.4 **Effects on Visual Composition** – The visual composition of this VP mainly comprises of the proposed redevelopment of Kowloon International Baptist Church, the Junction Road and the Kowloon East Barracks blocked by trees in the foreground, the Hong Kong Baptist Hospital Block C, D and E in the middle-ground. The Proposed Scheme at the Application Site would obstruct a small portion of the sky view in the background but the building mass will already be partially screened off by the proposed redevelopment of Kowloon International Baptist Church. As such, the effect on visual composition of the Proposed Scheme is therefore negligible to slight.
- 5.1.5 **Effects on Visual Obstruction and Visual Permeability, Public Viewers, and Visual Elements/ Resources** – As the Proposed Scheme is partially screened-off by the proposed Kowloon International Baptist Church with only a small portion of the sky view will be obstructed and also due to its transient nature, there will be negligible to slight impacts on the visual composition, visual obstruction and permeability, public viewers and visual resources associated with this VP upon realisation of the Proposed Scheme.
- 5.1.6 Overall, the above shows the Proposed Scheme will bring negligible to slightly adverse impacts to the visual quality of this VP.

VP2: Cornwall Street Children's Playground (Figure 4 refers)

- 5.1.7 This short-range VP represents the view of recreational users at Cornwall Street Children’s Playground who have a direct view towards the Proposed Scheme at the Application Site. The Application Site is situated behind the vegetation to the southwest of the Application Site and is only partially visible to viewers.

² Para. 4.10 of the TPB PG No. 41 refers.

³ Para. 4.11 of the TPB PG No. 41 refers.

- 5.1.8 **Effects on Visual Composition** – The visual composition of this VP is largely dominated by vegetations i.e., trees and planters) in the Playground extending in the foreground to the low-density residential housing in the middle-ground. Although a small portion of the sky view in the background would be obstructed by the Proposed Scheme, it is also partially screened-off by the vegetation and residential housing such that only a portion of the upper floors are visible from this VP. Moreover, there are only minor changes in visual composition when comparing with the OZP Compliant Scheme. The effects on visual composition are therefore **negligible to slight**.
- 5.1.9 **Effects on Visual Obstruction and Visual Permeability** – As the upper portion of the Proposed Scheme could not be screened-off by the lush vegetation of the Playground and the Proposed Scheme will create a **small** visual blockage to the sky view at the background. The effects on visual obstruction and visual permeability are therefore **negligible to slight**.
- 5.1.10 **Effects on Public Viewers** – Although the Proposed Scheme has a **small** visual blockage to the sky, the lush vegetations in the foreground and middle ground has contributed to a pleasant view and attracts public viewers' attention, especially for users engaging in active recreational uses. Thus, the effects on Public Viewers will be **negligible to slight**.
- 5.1.11 **Effects on Visual Elements/ Resources** – Due to the **slight** change between the OZP Compliant Scheme and Proposed Scheme, **the quality and character of** the key visual resources **remain largely the same except a small** obstruction to the sky view. Therefore, impacts to Visual Elements/ Resources will therefore be **negligible to slight**.
- 5.1.12 Overall, it is indicated that the Proposed Scheme will have **negligible to slightly adverse** effects on the visual quality of this VP as compared to the OZP Compliant Scheme.

VP3: Footbridge near Holy Family Canossian School (Kowloon Tong) (Figure 5 refers)

- 5.1.13 This medium-range VP located on the foot bridge near Holy Family Canossian School (Kowloon Tong) on the Waterloo Road. It represents the transient view of pedestrian looking towards the Application Site from the south when they are getting across Waterloo Road. The Proposed Development is partly screened-off by the Kowloon East Barracks and partly screening-off the Proposed Phase 1A of the HKBU Ho Sin Hang Campus Redevelopment (Approved Planning Application No. A/K18/345).
- 5.1.14 **Effects on Visual Composition** – The visual composition of this VP is mainly dominated by Waterloo Road, a 6 to 7-lane major thoroughfare in Kowloon Tong District in the foreground, clusters of buildings along Waterloo Road in the middle ground and Lion Rock as a green backdrop. **The Proposed Scheme at the Application Site borders the ridgeline which might slightly weaken the gradation of building height profile descending from the foothill of Lion Rock towards the inner Kowloon Tong. Nonetheless, the building massing of the Proposed Scheme has adopted stepped height profile echoing and without obstructing the ridgeline of Lion Rock, and maintaining a visually compatible building mass in the wider area.** Embedded with the existing building clusters, the Proposed Scheme will be partly screen-off by the Kowloon East Barracks, while the scenario of Proposed Phase 1A of the HKBU Ho Sin Hang Campus Redevelopment will be partly screen-off by the Proposed Scheme with similar height. As such, the Proposed Scheme would be compatible with the surrounding building context at present and in the coming future. Therefore, impact of the Proposed Scheme on visual composition is considered **slight to moderate**.

- 5.1.15 **Effects on Visual Obstruction and Visual Permeability** – As the Proposed Scheme borders the ridgeline and obstruct a considerable portion of the mountain view backdrop, the visual permeability and the depth of view will be reduced. Nevertheless, the mountain view backdrop has already been partially blocked by the Proposed Phase 1A of the HKBU Ho Sin Hang Campus Redevelopment and the residential development in construction in the “Residential (Group C) 11” (“R(C)11”) zone that is subject to a maximum BH of 160mPD. The effects on visual obstruction and visual permeability are therefore **slight to moderate**.
- 5.1.16 **Effects on Public Viewers** – Although public viewers from this VP is transient in nature when getting across the usually heavily trafficked Waterloo Road via this footbridge, they are expected to experience a slight to moderate visual changes given the proposed development will block a considerable portion of the mountain view backdrop and border the ridgeline. Thus, the effects on Public Viewers will be **slight to moderate**.
- 5.1.17 **Effects on Visual Elements/ Resources** - The quality and character of the visual resources would be inevitably altered as the Proposed Scheme will border the ridgeline, the sky view is largely maintained with the Proposed Scheme as compared with the OZP Compliant Scheme. Impacts to Visual Elements/ Resources will therefore be **slight to moderate**.
- 5.1.18 Overall, the above shows the Proposed Scheme will bring **slightly to moderately adverse** impact to the visual quality of this VP.

VP3A: Footbridge near American International School (Figure 6 refers)

- 5.1.19 This long-range VP located near American International School on Waterloo Road. It is a supplementary VP of VP3 that represents the view of pedestrian looking towards the Application Site from the South with a farther perspective when they are getting across Waterloo Road. The Proposed Development is largely screened-off by trees and is only partially visible to viewers.
- 5.1.20 **Effects on Visual Composition** – The visual composition of this VP is mainly dominated by Waterloo Road, a 6 to 7-lane major thoroughfare in Kowloon Tong District in the foreground and buildings with lush vegetation along Waterloo Road in the middle ground such as the Franciscan House and 152 Waterloo Road. The Proposed Scheme at the Application Site will be largely screened-off by trees, only a small portion of the upper floors are visible from this VP. Moreover, key visual resources such as the ridgeline and sky view at the background being unaffected, thus the visual composition will remain **negligible** with the Proposed Scheme.
- 5.1.21 **Effects on Visual Obstruction and Visual Permeability** – Given that the Proposed Scheme has only a slight increase in BH when compared to the OZP Compliant Scheme, and that the BH of the Proposed Phase 1A of the HKBU Ho Sin Hang Campus Redevelopment is comparable to the Proposed Scheme, the Proposed Scheme will not create additional blockage of the mountain view, as the mountain view backdrop has already been partially blocked by the Proposed Phase 1A of the HKBU Ho Sin Hang Campus Redevelopment and the residential development that is subject to a maximum BH of 160 mPD in “R(C)11” and the open sky view is unobstructed as well. **Despite the slight reduction in the depth of view**, the effects on visual obstruction and visual permeability are therefore **negligible**.
- 5.1.22 **Effects on Public Viewers** – Given the lush vegetation in the middle ground, the Proposed Scheme, as compared with the OZP Compliant Scheme with similar massing and disposition is unlikely to be noticed or attract public viewers’ attention, especially for the transient nature of this VP. Public viewers can also enjoy the same open sky view, thus the effects will remain **negligible**.

5.1.23 **Effects on Visual Resources** – With no noticeable changes in the building mass between the OZP Compliant Scheme and Proposed Scheme, the Proposed Scheme will fully integrate with the high-rise residential development and will create **negligible** impact to the key visual resources at this VP.

5.1.24 Overall, the above shows the Proposed Scheme will bring **negligible** impact to the visual quality of this VP.

VP4: The Entrance of Radio Television Hong Kong (RTHK) Broadcasting House (Figure 7 refers)

5.1.25 This close-range VP represents views of staff and guests of RTHK at the Broadcast Drive who have a direct view towards the Proposed Scheme at the Application Site. The Application Site is situated behind the vegetation of the HKBU Shiu Pong Hall to the northeast of the Application Site and is only partially visible to viewers.

5.1.26 **Effects on Visual Composition** - The visual composition of this VP mainly comprises of HKBU Shiu Pong Hall and Commercial Radio in the foreground. Majority part of the OZP Compliant Scheme and Proposed Scheme in the middle-ground are screened-off by the vegetation hill slope such that only a small portion of the upper floors are visible from this VP. The **resultant** changes in BH and massing under the Proposed Scheme will obstruct a **small** portion of the sky view thus the visual composition will remain **negligible to slight** with the Proposed Scheme.

5.1.27 **Effects on Visual Obstruction and Visual Permeability** - Given that the Proposed Scheme has just a slight increase in BH in the Proposed Scheme, the Proposed Scheme will create limited additional visual obstruction comparing to the OZP Compliant Scheme. A small portion of the sky view will be obstructed by the Proposed Scheme while a large proportion of building will be screened-off by vegetation. The effects on visual obstruction and visual permeability are therefore **negligible to slight**.

5.1.28 **Effects on Public Viewers** – Public viewers are expected to experience limited visual changes brought by the Proposed Scheme from this VP. Comparing with the OZP Compliant Scheme, the public viewers can still enjoy **a large portion of** open sky view with **small** obstruction. Thus, the effects on Public Viewers will be **negligible to slight**.

5.1.29 **Effects on Visual Elements/ Resources** – The quality and character of the visual resources **remain largely the same with small obstruction of sky view**. No ridgeline is blocked while the vegetation partially screened-off the same angle of the Proposed Scheme as compared with the OZP Compliant Scheme. In a result, impacts to Visual Elements/ Resources will therefore be **negligible to slight**.

5.1.30 Overall speaking, the visual impact from this VP remains **negligible to slightly adverse**.

VP5: Bus Stop near Orion Court (Figure 8 refers)

5.1.31 This medium-range VP represents views of travellers using public transport services at Waterloo Road, Moonbeam Terrace Bus Stop, with direct view towards the Application Site. A portion of the Proposed Scheme is visible at the middle-ground while the remaining parts are screened-off by the existing HKBU located to the north of the Application Site.

5.1.32 **Effects on Visual Composition** – The visual composition of this VP comprises of Waterloo Road, a 6-lane major thoroughfare with flyover in Kowloon Tong District and residential building, Arcadia Gardens in the foreground, and HKBU buildings along Waterloo Road in the middle ground. Compared with the OZP Compliant Scheme, the Proposed Scheme will slightly obstruct the open sky to a small extent. As a portion of the Proposed Scheme is screened-off by the HKBU, the minor changes in BH will be considered remain **negligible to slight** on visual composition with the Proposed Scheme.

5.1.33 **Effects on Visual Obstruction and Visual Permeability** – Given that the Proposed Scheme has similar building masses with a slight increase in BH in the Proposed Scheme, the Proposed Scheme will create **slight** additional blockage of the sky comparing to the OZP Compliant Scheme. However, the visual permeability and depth of view for passengers facing south of the Waterloo Road **would remain largely the same**. So, the effects on visual obstruction and visual permeability are therefore **negligible to slight**.

5.1.34 **Effects on Public Viewers** – Public viewers are expected to experience limited visual changes brought by the Proposed Scheme from this VP. Comparing with the OZP Compliant Scheme, the changes to public viewers in terms of building mass and height is to a small extent noticeable **with slight visual obstruction on the sky view**. Thus, the effects on Public Viewers will be **negligible to slight**.

5.1.35 **Effects on Visual Elements/ Resources** – The quality and character of the visual resources remains largely the same with a slight obstruction on the sky view with the Proposed Scheme as compared with the OZP Compliant Scheme. Impacts to Visual Elements/ Resources will therefore be **negligible to slight**.

5.1.36 Overall, the visual impact from this VP is considered **negligible to slightly adverse**.

VP6: Lung Cheung Road Lookout (Figure 9 refers)

5.1.37 This long-range VP represents views of recreational users having a cityscape view towards the direction of Application Site from the Lung Cheung Road Lookout. The Application Site is situated behind and screened-off by the vegetation hill slope to the northwest of the Application Site.

5.1.38 **Effects on Visual Composition** – The visual composition of this VP mainly comprises of vegetation and landscaping features in the foreground, and the panoramic view of the Kowloon peninsula. The Proposed Scheme is screened-off by the dense vegetation. Thus, the visual composition will remain **negligible** with the Proposed Scheme.

5.1.39 **Effects on Visual Obstruction and Visual Permeability, Public Viewers, and Visual Elements/ Resources** – As the Proposed Scheme will be fully screened-off by vegetation surrounding the lookout, there will be **negligible** impacts to visual composition, visual obstruction and permeability, public viewers and visual resources to this VP with the Proposed Scheme.

5.1.40 Overall, the above shows the Proposed Scheme will bring **negligible** impact to the visual quality of this VP.

VP7: Sun Yat San Memorial Park, Sai Ying Pun (Figure 10 refers)

- 5.1.41 To assess the impacts on the viewers to the ridgelines of Lion Rock and Beacon Hill, this VP was selected to represent long-range view or recreational users across the Victoria Harbour at the Sun Yat Sen Memorial Park, according to the location specified in the Urban Design Guidelines of HKPSG.
- 5.1.42 **Effects on Visual Composition** – The visual composition of this VP consists of the ridgelines and the building clusters along the Kowloon west area. Since the Proposed Scheme will be screened off by the buildings in the foreground and also blended in with the high-rise cityscape along the coast of the Victoria Harbour, and that there is no noticeable change between the OZP Compliant Scheme and the Proposed Scheme, the effect on visual composition is considered **negligible**.
- 5.1.43 **Effects on Visual Obstruction and Visual Permeability, Public Viewers, and Visual Elements/ Resources** – As the Proposed Scheme is fully obstructed by high-rise buildings in Olympic, there will be **negligible** impacts to visual composition, visual obstruction and permeability, public viewers and visual resources at this VP with the Proposed Scheme. The 20% building-free zone is also not affected from this VP.
- 5.1.44 Due to the long-range and the covering by the high-rise cityscape, the visual impact on this strategic VP is considered **negligible**.
- 5.1.45 Overall, the above shows the Proposed Scheme will bring **negligible** impact to the visual quality of this VP.

VP8: Central Pier No. 7 (Figure 11 refers)

- 5.1.46 This VP represents long-range view of public viewers across the Victoria Harbour to the southwest of the Application Site. According to the Urban Design Guidelines of the HKPSG, this is a strategic VP to assess impacts on the viewers to the ridgelines of Lion Rock and Beacon Hill.
- 5.1.47 **Effects on Visual Composition** – The visual composition from this VP is comprised of the Victoria Harbour in the foreground and the high-rise buildings along the coastline of the Kowloon Peninsula. Ridgelines of Lion Rock and Beacon Hill are also visible from this VP. As the Proposed Scheme is completely screened off by the high-rise residential developments in Tsim Sha Tsui, the Proposed Scheme will not be visible to tourists and visitors at this strategic VP. Therefore, the impact on visual composition is considered **negligible**.
- 5.1.48 **Effects on Visual Obstruction and Visual Permeability, Public Viewers, and Visual Elements/ Resources** – As the Proposed Scheme are fully obstructed by high-rise buildings in Austin, there will be **negligible** impacts to visual composition, visual obstruction and permeability, public viewers and visual resources at this VP with the Proposed Scheme. The 20% building-free zone is also not affected from this VP.
- 5.1.49 As both the OZP Compliant Scheme and the Proposed Scheme is fully obstructed, the visual impact on this strategic VP is considered **negligible**.

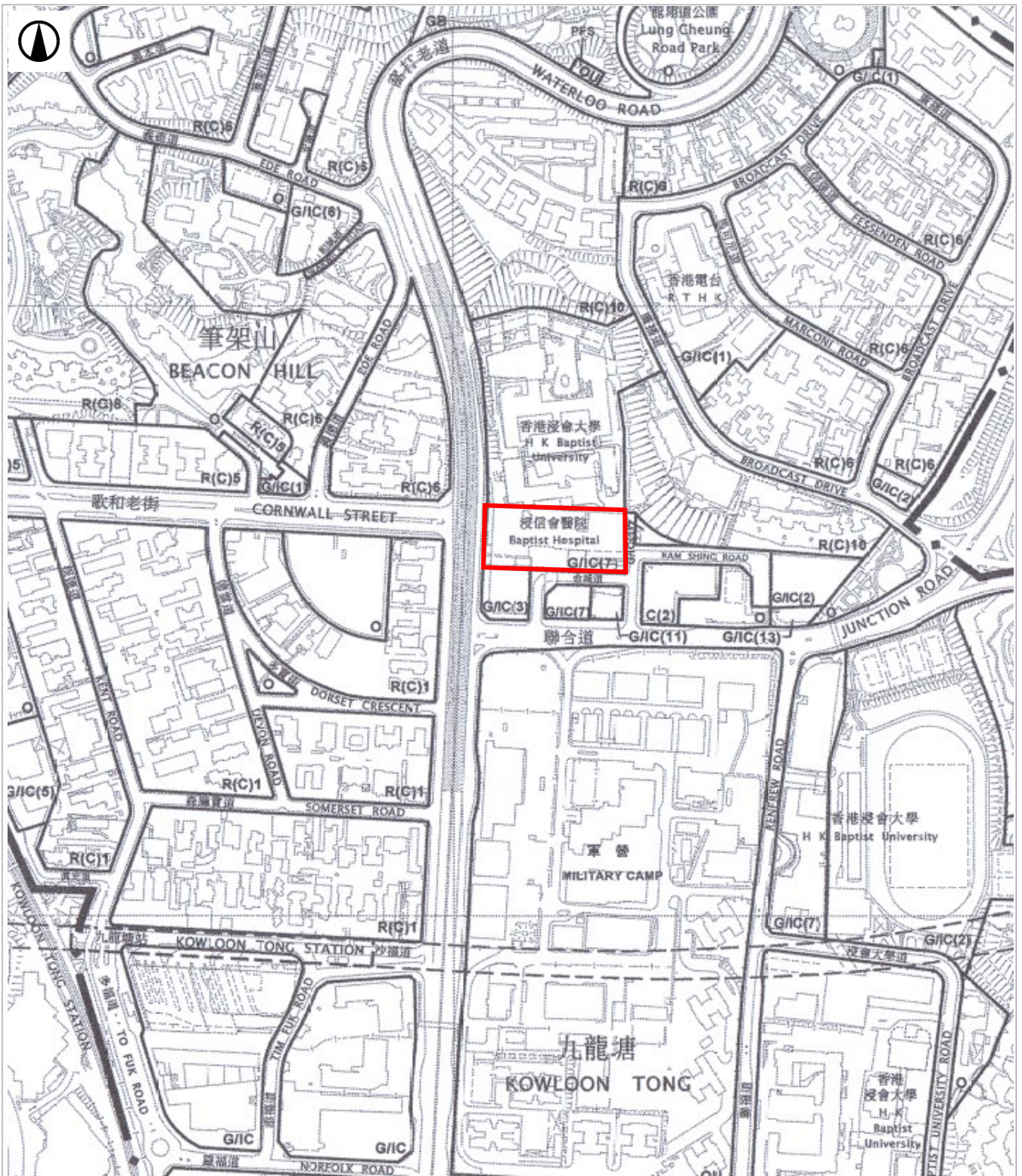
Table 5.1 Visual Impact Assessment Summary

VP	Visual Sensitivity	Appraisal Components				Conclusion
		Visual Composition	Visual Obstruction	Effect on Public Viewers	Effect on Visual Resources	
VP 1 Footbridge near Broadcast Drive Playground	Medium	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slightly adverse
VP2 Cornwall Street Children's Playground	High	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slightly adverse
VP3 Footbridge near Holy Family Canossian School (Kowloon Tong)	Medium	Slight to moderate	Slight to moderate	Slight to moderate	Slight to moderate	Slightly to moderately adverse
VP3A Footbridge near American International School	Medium	Negligible	Negligible	Negligible	Negligible	Negligible
VP 4 The Entrance of RTHK Broadcasting House	High	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slightly adverse
VP5 Bus Stop near Orion Court	Medium	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slight	Negligible to slightly adverse
VP6 Lung Cheung Road Lookout	High	Negligible	Negligible	Negligible	Negligible	Negligible
VP7 Sun Yat San Memorial Park, Sai Ying Pun	High	Negligible	Negligible	Negligible	Negligible	Negligible
VP8 Central Pier No.7	High	Negligible	Negligible	Negligible	Negligible	Negligible

6. CONCLUSION

- 6.1.1.1 The VIA is prepared in support of the Application for Permission under S16 of the Town Planning Ordinance (Cap. 131) for S16 Planning Application for Proposed Hospital Redevelopment with Minor Relaxation of Building Height Restriction in “Government, Institution or Community (7)” Zone and Areas Shown as ‘Road’ at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon. In order to accommodate more hospital beds, create a better ward environment and enhance quality and provision of the healthcare services to meet ever-rising territorial demand for healthcare services brought by challenges such as COVID-19 pandemic and ageing population, the Applicant has formulated the Proposed Development to enhance existing healthcare services to meet community needs. This VIA is prepared in support of the Planning Application.
- 6.1.1.2 The proposed minor relaxation of building height restriction is fully justified for a number of reasons. The development nature of the Proposed Development completely aligns with the planning intention of the “G/IC(7)” zone. In order to assess the visual impact, comparison has been made between the OZP Compliant Scheme and the Proposed Scheme.
- 6.1.1.3 In this report, a total of 8 VPs (including short, medium and long-range VPs) were assessed. All 8 VPs, including 2 strategic viewpoints identified in the Urban Design Guidelines of the HKPSG, are identified with negligible to **slightly to moderately adverse** impacts when in comparison to the OZP Compliant Scheme. Based on the above, the Proposed Scheme is considered to be fully acceptable in terms of visual impact.

Figures



LEGEND



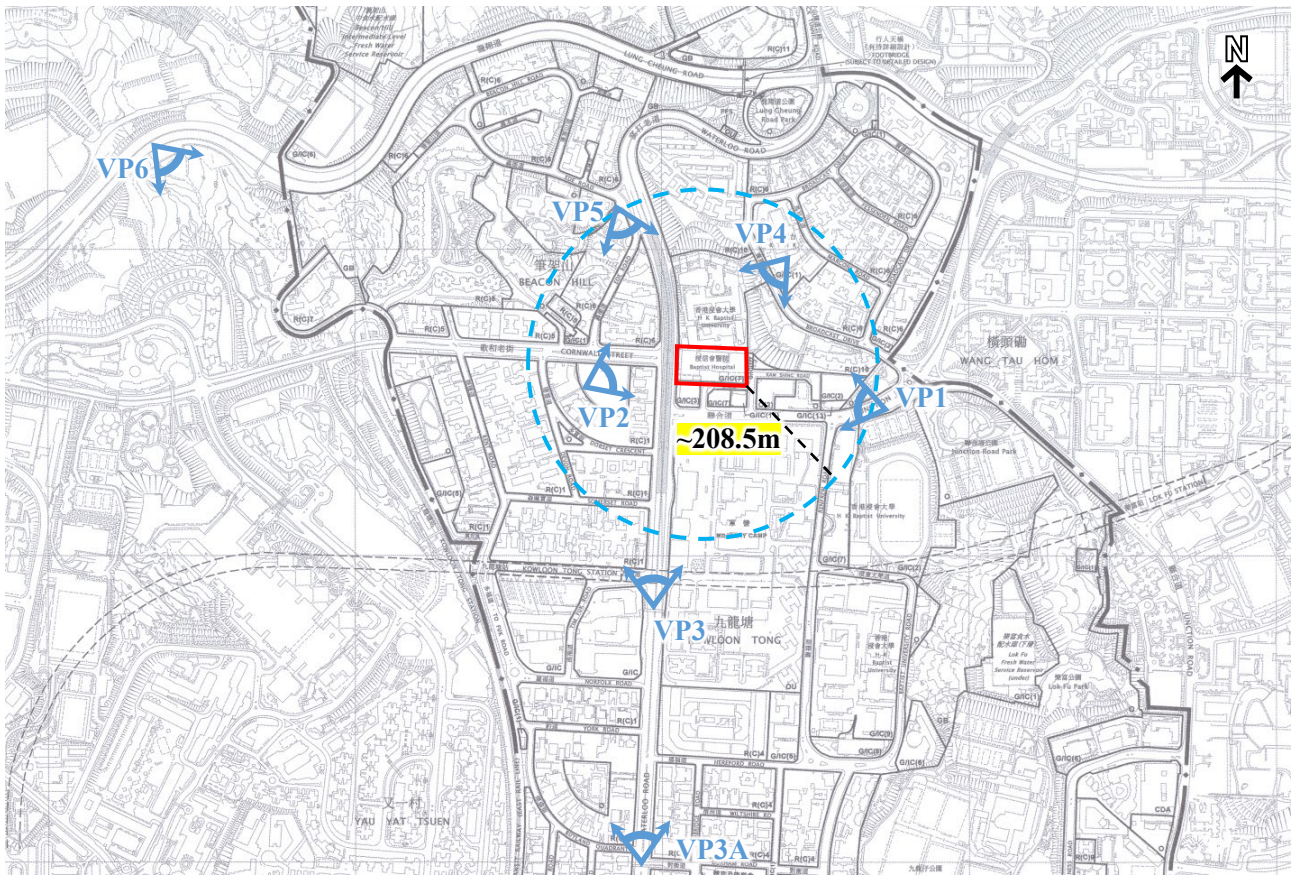
Application Site

ZONING

- C(2) Commercial (2)
- GB Green Belt
- G/IC Government, Institution or Community
- G/IC(2) Government, Institution or Community(2)
- G/IC(3) Government, Institution or Community(3)
- G/IC(5) Government, Institution or Community(5)
- G/IC(6) Government, Institution or Community(6)

- G/IC(7) Government, Institution or Community(7)
- G/IC(11) Government, Institution or Community(11)
- G/IC(13) Government, Institution or Community(13)
- O Open Space
- OU Other Specified Uses
- R(C)1 Residential (Group C)1
- R(C)5 Residential (Group C)5
- R(C)6 Residential (Group C)6
- R(C)8 Residential (Group C)8
- R(C)10 Residential (Group C)10

Figure No. 1	Scale As shown	Figure Title Location Plan
ARUP	Date December 2023	Source Extracted from the Approved Kowloon Tong Outline Zoning Plan (No. S/K18/21)



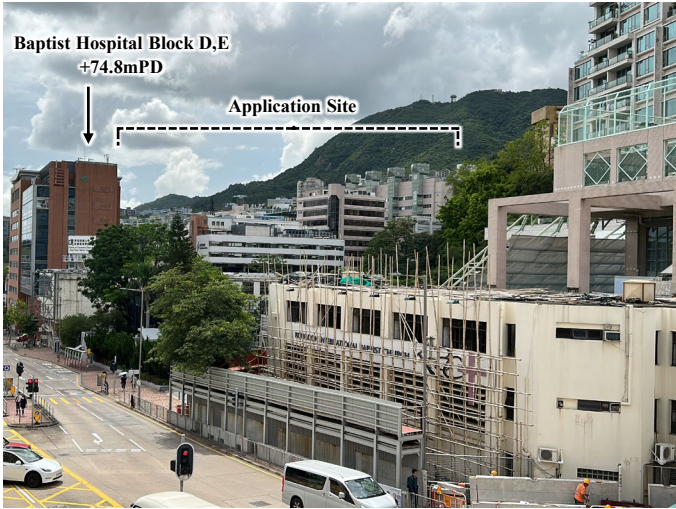
- VP 1: Footbridge near Broadcast Drive Playground
- VP 2: Cornwall Street Children's Playground
- VP 3: Footbridge near Holy Family Canossian School (Kowloon Tong)
- VP 3A: Footbridge near American International School
- VP 4: The Entrance of RTHK Broadcasting TV House
- VP 5: Bus Stop near Orion Court
- VP 6: Lung Cheung Road Lookout
- VP 7: Sun Yat Sun Memorial Park, Sai Ying Pun
- VP 8: Central Pier No. 7

- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about 208.5m)
 - ▶ Viewing Point

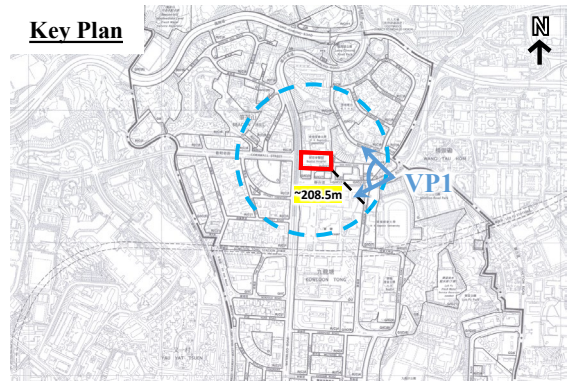


Figure No.	Scale	Figure Title
2	N/A	Assessment Area and Location of Viewing Points
ARUP	Date	Source
	July 2024	Extracted from the Approved Kowloon Tong Outline Zoning Plan No. S/K18/21

Existing Condition

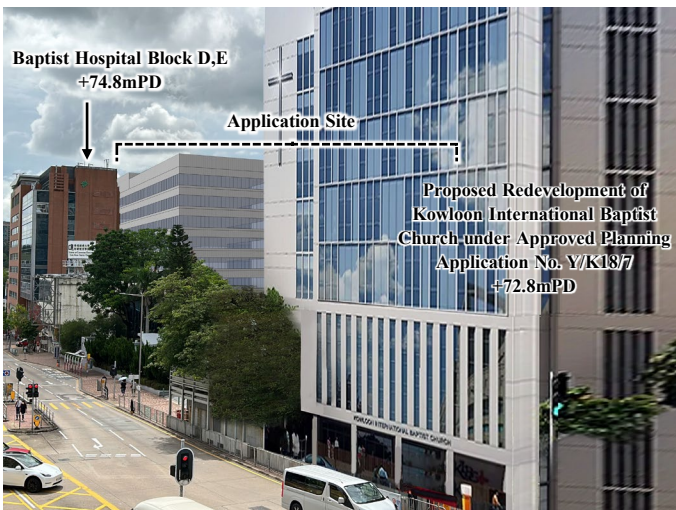


Key Plan



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about **208.5m**)
 - ↖ Viewing Point

OZP Compliant Scheme



Proposed Scheme

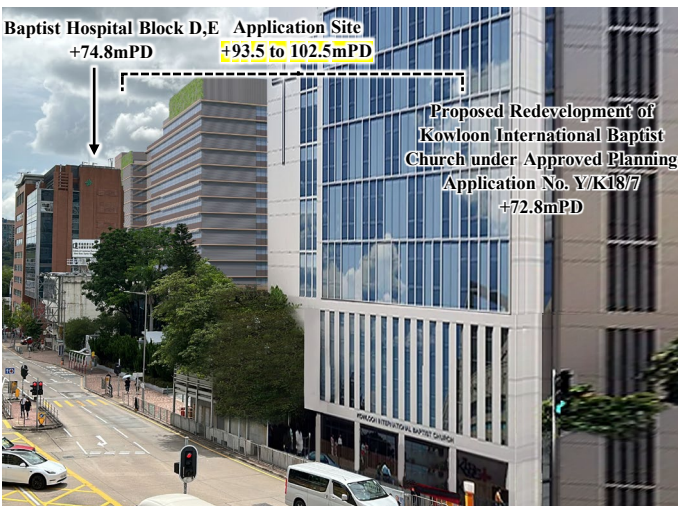
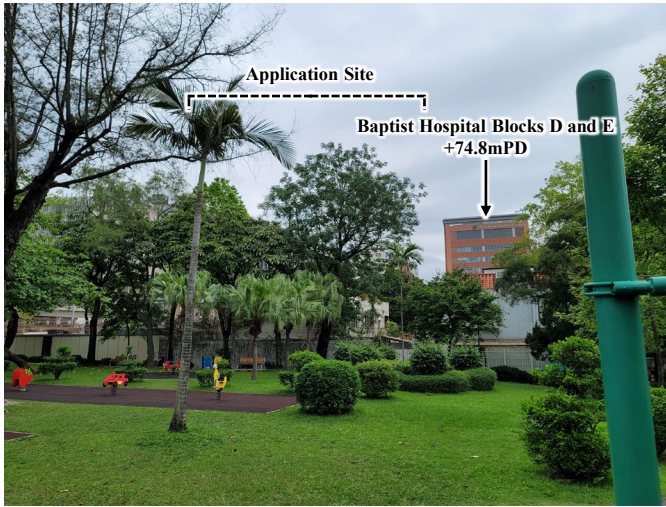
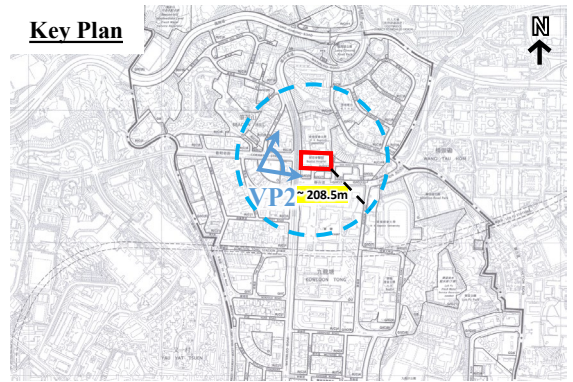


Figure No.	Scale	Figure Title	
3	N/A	Viewing Point 1 : Footbridge near Broadcast Drive Playground	
ARUP	Date	Source	Site Photos
	July 2024		

Existing Condition

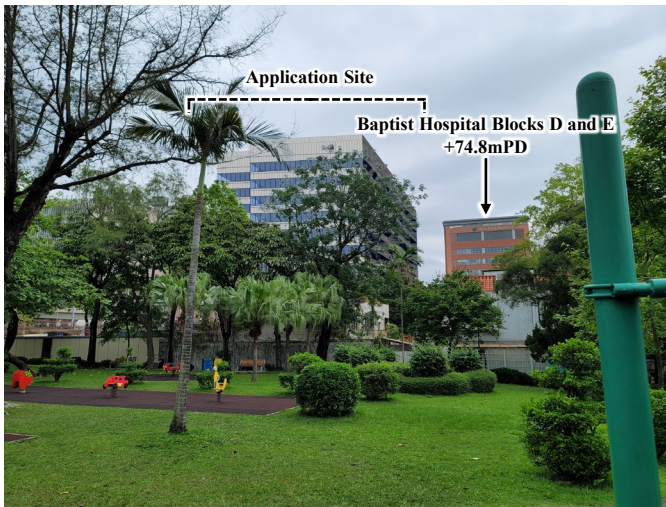


Key Plan



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about **208.5m**)
 - △ Viewing Point

OZP Compliant Scheme

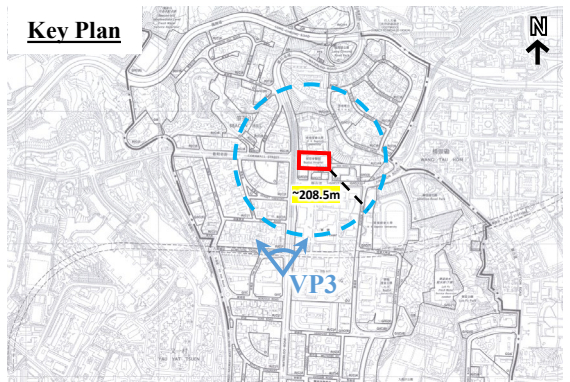
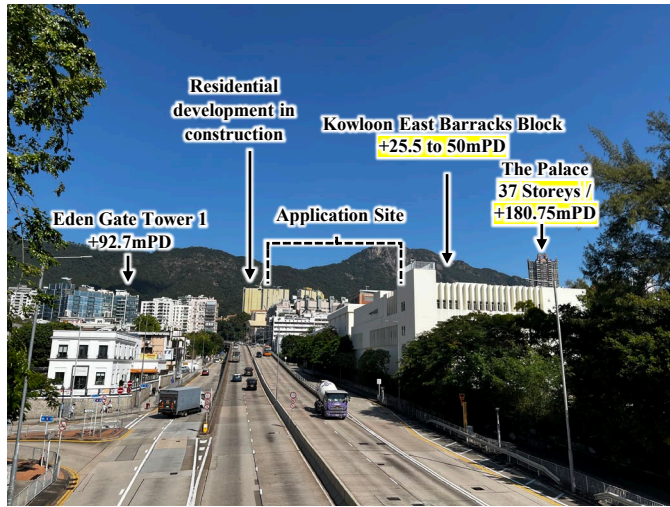


Proposed Scheme



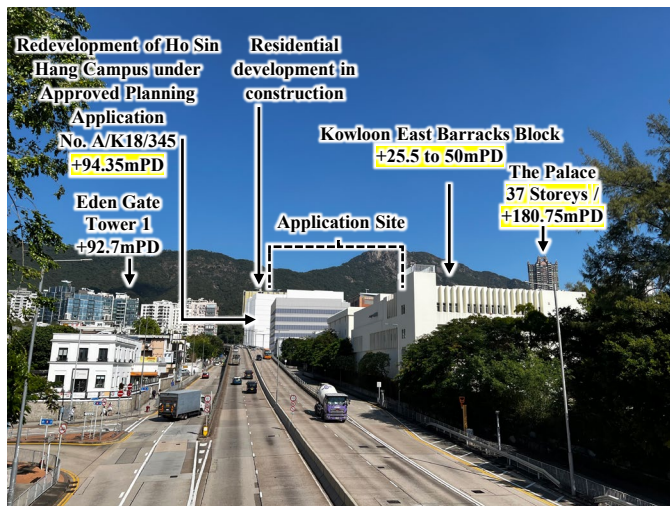
Figure No.	Scale	Figure Title
4	N/A	Viewing Point 2 : Cornwall Street Children's Playground
ARUP	Date	Source
	July 2024	Site Photos

Existing Condition



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about **208.5m**)
 - △ Viewing Point

OZP Compliant Scheme



Proposed Scheme

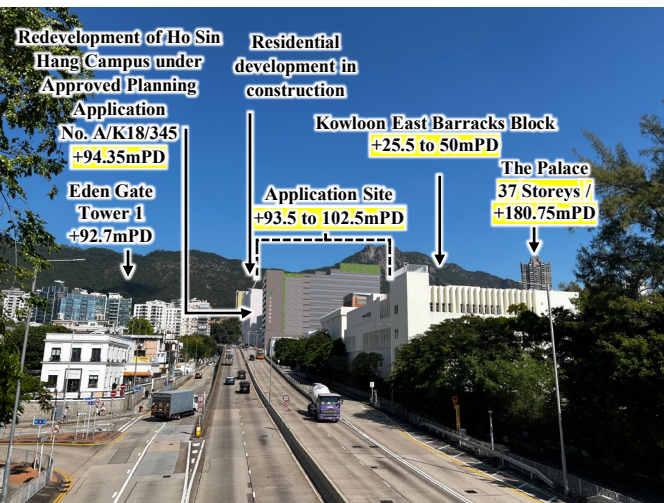
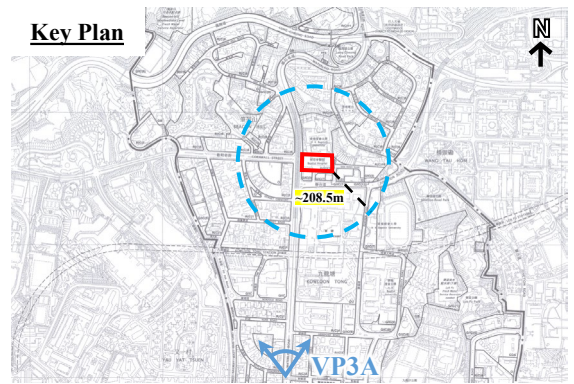


Figure No.	Scale	Figure Title	
5	N/A	Viewing Point 3 : Footbridge near Holy Family Canossian School (Kowloon Tong)	
ARUP	Date	Source	
	July 2024	Site Photos	

Existing Condition



Key Plan



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about 208.5m)
 - ▶ Viewing Point

OZP Compliant Scheme



Proposed Scheme

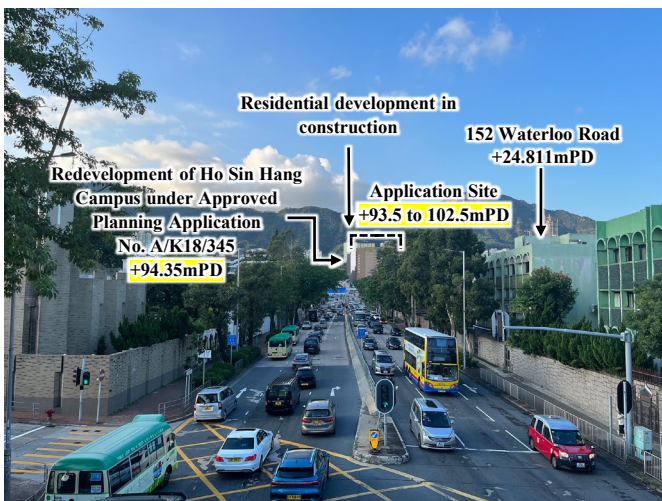
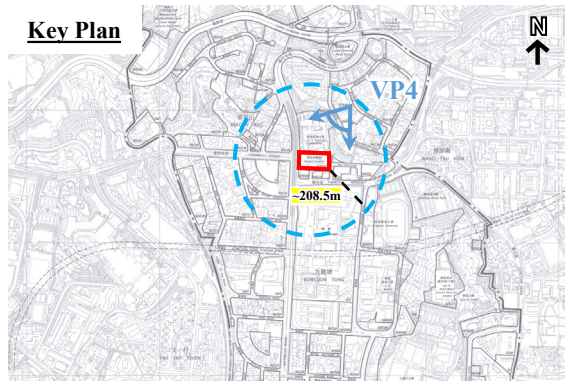


Figure No.	Scale	Figure Title	
6	N/A	Viewing Point 3A: Footbridge near American International School	
ARUP	Date	Source	Site Photos
	July 2024		

Existing Condition



Key Plan



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about **208.5m**)
 - △ Viewing Point

OZP Compliant Scheme



Proposed Scheme

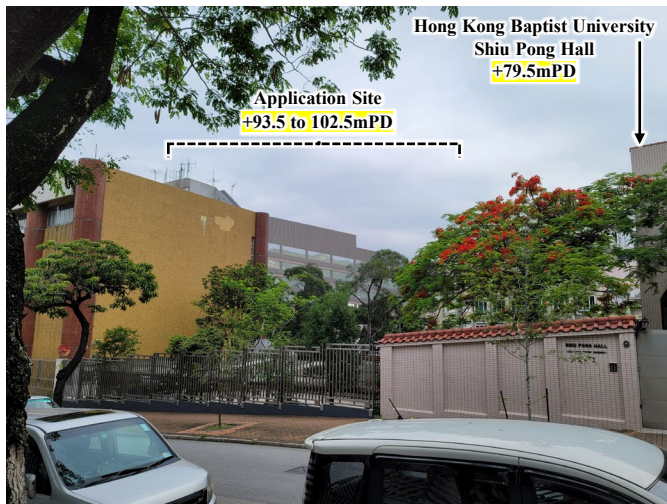
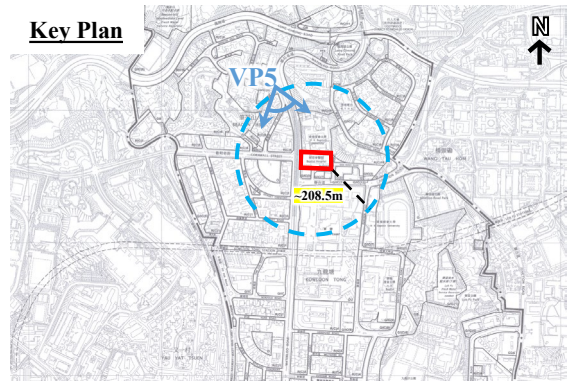


Figure No.	Scale	Figure Title	Viewing Point 4 : The Entrance of RTHK Broadcasting TV House
7	N/A		
ARUP	Date	Source	Site Photos
	July 2024		

Existing Condition



Key Plan



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about **208.5m**)
 - △ Viewing Point

OZP Compliant Scheme

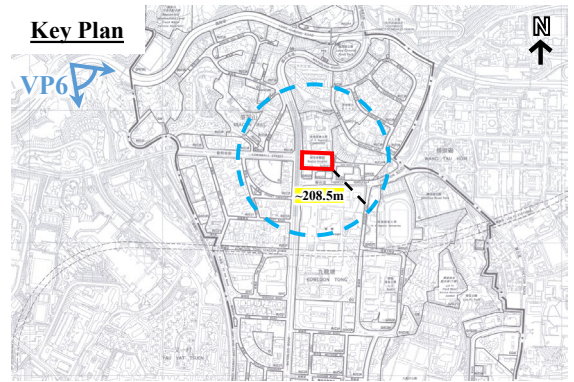


Proposed Scheme



Figure No.	Scale	Figure Title
8	N/A	Viewing Point 5 : Bus Stop near Orion Court
ARUP	Date	Source
	July 2024	Site Photos

Existing Condition



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about **208.5m**)
 - ↖ Viewing Point

OZP Compliant Scheme

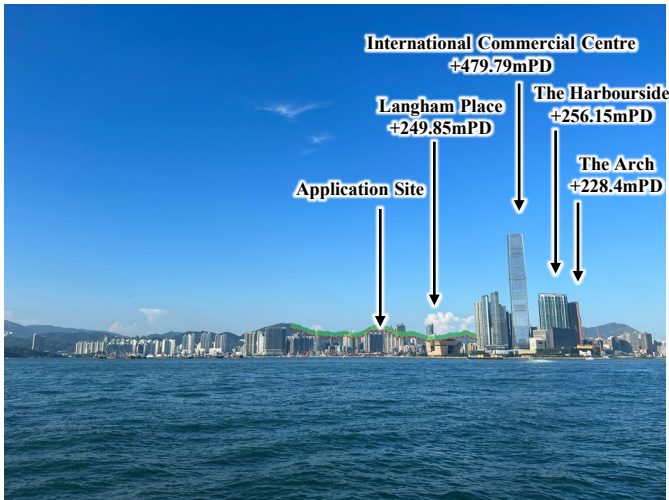


Proposed Scheme

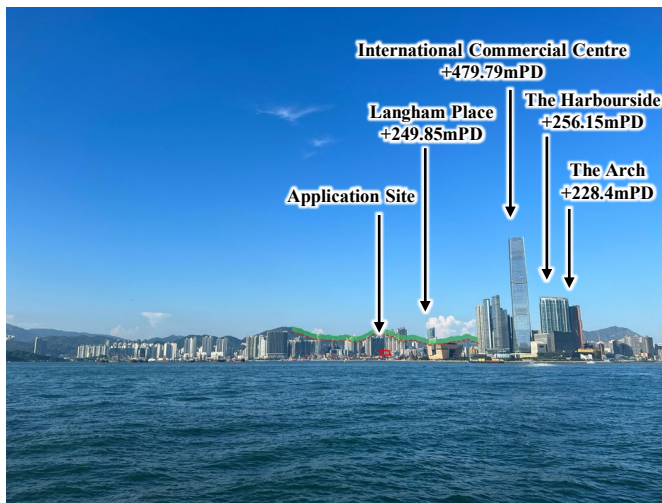


<i>Figure No.</i>	<i>Scale</i>	<i>Figure Title</i>	Viewing Point 6 : Lung Cheung Road Lookout
9	N/A		
ARUP	<i>Date</i>	<i>Source</i>	Site Photos
	July 2024		

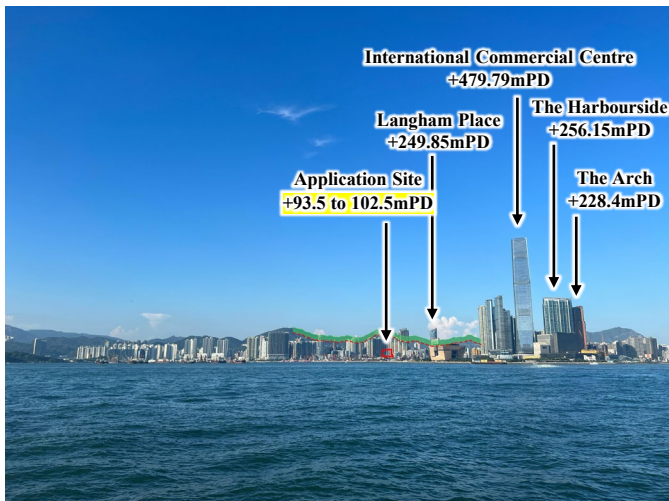
Existing Condition



OZP Compliant Scheme



Proposed Scheme



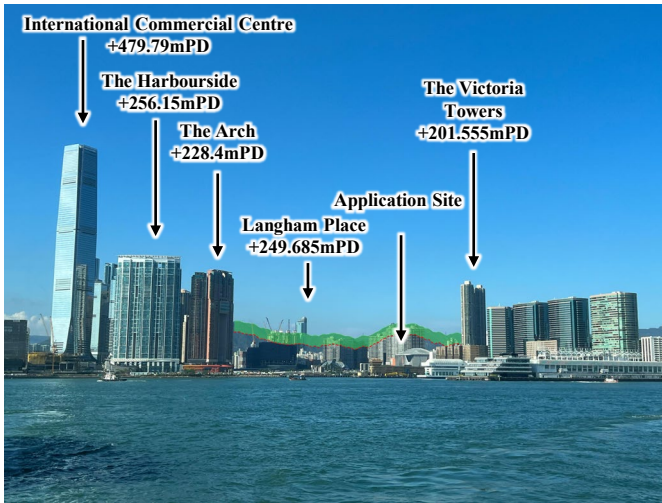
Key Plan



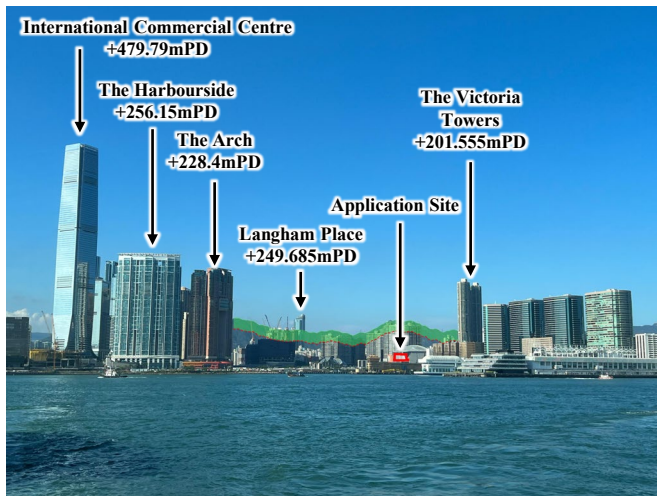
- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about 208.5m)
 - ▶ Viewing Point

Figure No.	Scale	Figure Title
10	N/A	Viewing Point 7 : Sun Yat San Memorial Park, Sai Ying Pun
ARUP	Date	Source
	July 2024	Site Photos

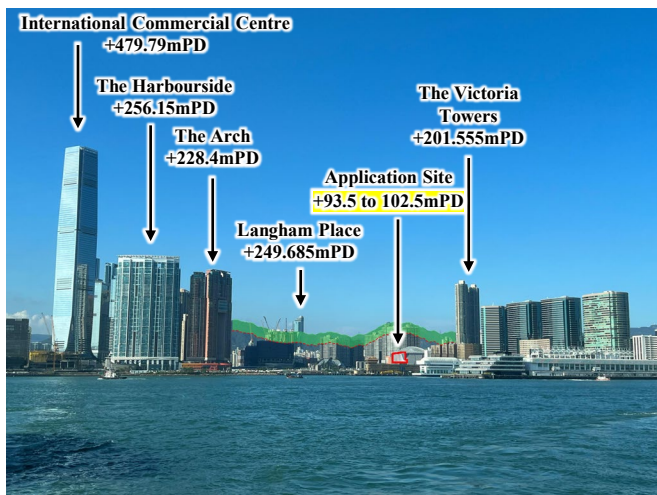
Existing Condition



OZP Compliant Scheme



Proposed Scheme



Key Plan



- LEGEND**
- Application Site
 - Initial Assessment Area (3H = about **208.5m**)
 - ↗ Viewing Point

Figure No.	Scale	Figure Title	
11	N/A	Viewing Point 8 : Central Pier No. 7	
ARUP	Date	Source	
	July 2024	Site Photos	

Appendix E Revised Traffic Impact Assessment

Hong Kong Baptist Hospital

S16 Planning Application for Proposed
Minor Relaxation of Building Height
Restriction for Permitted Hospital Use in
“Government, Institution or Community
(7)” Zone at Blocks A, B and C of Hong
Kong Baptist Hospital, 222 Waterloo Road
Kowloon Tong, Kowloon

Traffic Impact Assessment Report

Reference: 292058-24-TIA-R2

3rd Issue | July 2024

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 292058-24

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- Appendix A Junction Calculation Sheet
- Appendix B Swept Path Analysis Drawings

1. Introduction

1.1 Background

- 1.1.1 Blocks A, B and C of Hong Kong Baptist Hospital (“Application Site”) is located at the northern part of Kowloon Tong. At present, 589 nos. beds are provided in the subject hospital blocks.
- 1.1.2 The Application Site falls within “Government, Institution or Community (“GIC”)” zone on the Approved Kowloon Tong Outline Zoning Plan No. S/K18/21. “Hospital” is a Column 1 use (use always permitted) under the “G/IC” zone. The location of the Application Site is shown in **Figure 1.1**.
- 1.1.3 Hong Kong Baptist Hospital (“HKBH”) intends to retire the aging Blocks A, B and C in the hospital compound and redevelop the said blocks into a new hospital building of 700 nos. beds (i.e., a net increase of 111 nos. beds) including ancillary facilities such as consultation rooms (hereafter referred to as the “Proposed Redevelopment”) to cater for the continuously increasing service demand. The tentative completion year of the Proposed Redevelopment would be Year 2033.
- 1.1.4 Due to the proposed height of the new hospital building, a Section 16 planning application for minor relaxation of building height restriction for the Proposed Redevelopment would be required.
- 1.1.5 Arup Hong Kong Limited (“Arup”) was commissioned to prepare a Traffic Impact Assessment (“TIA”) report in support of the Section 16 planning application for the Proposed Redevelopment.

1.2 Objectives of this Report

- 1.2.1 The principal objective of this report is to support the Proposed Redevelopment by addressing the traffic-related issues and ensuring that the Proposed Redevelopment would be feasible in traffic terms without causing adverse impact on the surrounding road network.

1.3 Scope of Study

- 1.3.1 The tasks for this TIA study are outlined as follows:
- Carry out traffic surveys at critical junctions to appreciate the current traffic condition;
 - Update the inventory regarding traffic circulation patterns, traffic conditions, as well as the constraints of the existing and future committed road network in the vicinity of the Application Site based on the latest information available;
 - Recommend the provision and arrangement of internal transport facilities;
 - Assess the volume of traffic likely to be generated by the Proposed Redevelopment;
 - Assess future traffic condition, taking into account any future traffic growth, as well as the traffic generated by the Proposed Redevelopment and other planned/committed development, if any, to be built in the vicinity;
 - Set up the reference scenario without the Proposed Redevelopment;
 - Identify the likely change in traffic generation should the Application Site be under the design scenario; and
 - Compare the above two traffic scenarios for evaluation of the likely traffic impact, if any, associated with the Proposed Redevelopment;

1.4 Structure of the Report

1.4.1 The tasks for this TIA study are outlined as follows:

<u>Chapter</u>	<u>Title</u>	<u>Aims</u>
1	Introduction	Provide project background and scope of the Study
2	Existing Traffic Condition	Review and appreciate the existing traffic condition
3	The Subject Redevelopment	Provide information of the Proposed Redevelopment
4	Traffic Impact Assessment	Illustrate the results of Traffic Impact Assessment
5	Conclusion	Summarize the findings of this Study

2. Existing Traffic Condition

2.1 Locality and Access to the Site

- 2.1.1 HKBH is bounded by Hong Kong Baptist University to the north, Kam Shing Road to the east, Junction Road to the south and Waterloo Road to the west. **Figure 1.1** shows the location and the surrounding environments of the Application Site.
- 2.1.2 Currently, there are two vehicular access points connecting the Application Site and the external road network, with one at Kam Shing Road and the other at Waterloo Road. Although both vehicular access points permit two-way traffic, HKBH has currently implemented the vehicular access arrangement such that the Waterloo Road access only allows vehicles to exit while maintaining Kam Shing Road access for entry/exit of all vehicles to enhance the overall internal traffic circulation and operation at the hospital.
- 2.1.3 The existing ingress and egress routes for vehicular traffic approaching and leaving the Application Site are illustrated in **Figures 2.1** and **2.2**.

2.2 Existing Road Network

- 2.2.1 The Application Site is well-served by a comprehensive road network to and from all districts. Some major roads in the vicinity of the Application Site are listed below:

Primary Distributor

- 2.2.2 Waterloo Road is a dual three-lane carriageway running in north-south direction. It connects Lion Rock Tunnel Road to the north and up to Jordan, Ferry Street to the south.

District Distributor

- 2.2.3 Junction Road section between Waterloo Road and Chuk Yuen Road is a dual carriageway. It operates with two traffic lanes at eastbound direction towards Chuk Yuen Road and three traffic lanes at westbound direction towards Waterloo Road.

Local Distributor

- 2.2.4 Kam Shing Road has two sections. The eastern section is a single two-lane carriageway running in east-west direction leading to a dead-end with metered parking; the western section is a one-way carriageway running at westbound direction which connects back to Junction Road at the southern end of the carriageway.

2.3 Existing Junction Performance

- 2.3.1 To appreciate the existing traffic conditions, comprehensive classified traffic counts were conducted at the identified key junctions in the vicinity of the Application Site. These surveyed junctions are listed below, and their locations are shown in **Figure 2.3**.

J1	- Waterloo Road / Cornwall Street	(Signalized Junction)
J2	- Waterloo Road / Junction Road	(Signalized Junction)
J3	- Junction Road / Kam Shing Road	(Signalized Junction)
J4	- Junction Road / Renfrew Road	(Signalized Junction)
J5	- Chuk Yuen Road / Junction Road / Broadcast Drive	(Signalized Junction)

- J6 - Chuk Yuen Road / Slip Road to Lung Cheung Road (Signalized Junction)
- J7 - Cornwall Street / Kent Road (Signalized Junction)
- J8 - Waterloo Road / Hereford Road (Signalized Junction)
- J9 - Waterloo Road / Durham Road (Signalized Junction)
- J10 - Waterloo Road / HKBU Ho Sin Hang Campus (HSHC) Access (Priority Junction)

2.3.2 The manual traffic count survey was undertaken on a typical weekday day in October 2023 during the periods of 07:00-10:00 and 17:00-20:00 hours. The morning and evening peak hours were identified to be 07:30-08:30 and 17:15-18:15 respectively. The observed traffic flows during these peak hours are presented in **Figure 2.4**.

2.3.3 Junction capacity analysis was carried out at the identified key junctions. The results of the capacity assessment are shown in **Table 2.3.1** and the detailed calculation sheets are enclosed in **Appendix A**.

Table 2.3.1: Year 2023 Existing Junction Performance

Junction		Type	Performance ⁽¹⁾	
			AM	PM
J1	Waterloo Road / Cornwall Street	Signalized	57%	91%
J2	Waterloo Road / Junction Road	Signalized	80%	68%
J3	Junction Road / Kam Shing Road	Signalized	>100%	82%
J4	Junction Road / Renfrew Road	Signalized	92%	61%
J5	Chuk Yuen Road / Junction Road / Broadcast Drive	Signalized	46%	51%
J6	Chuk Yuen Road / Slip Road to Lung Cheung Road	Signalized	>100%	>100%
J7	Cornwall Street / Kent Road	Signalized	35%	95%
J8	Waterloo Road / Hereford Road	Signalized	34%	30%
J9	Waterloo Road / Durham Road	Signalized	34%	46%
J10	Waterloo Road / HKBU HSHC Access	Priority	0.03	0.04

Note:

(1) Figures shown represent “Reserve Capacity” (“RC”) in % for signalized junctions and “Design flow/Capacity ratio” (“DFC”) for priority junction.

2.3.4 The assessment results indicate that all identified junctions are currently operating with spare capacities during both morning and evening peak hours.

2.4 Visitor Transport Modal Split

2.4.1 To identify the transport modes taken by the visitors of the HKBH, transport modal split surveys were conducted on a typical weekday at the entrances of the hospital. The survey results are summarised in **Table 2.4.1**.

Table 2.4.1: Observed Weekday Visitor Modal Choice

Mode of Transport	Proportion
Railway	40%
Bus	15%
GMB	10%
Private Car	15%
Taxi	15%
On foot	5%
Total	100%

2.4.2 As shown in **Table 2.4.1**, around 65% of the pedestrians travelled to HKBH by railway or road-based public transport. This reflects the ease of accessibility to public transport services in the vicinity of the Application Site.

2.5 Existing Pedestrian Condition

2.5.1 To appreciate the existing pedestrian conditions, comprehensive pedestrian count surveys were undertaken on a typical weekday during the periods of 07:00-10:00 and 17:00-20:00 hours in January 2024 at concerned pedestrian facilities in the vicinity of the application site. The location and observed pedestrian flows of the surveyed footpaths and pedestrian crossings are shown in **Figure 2.5**.

2.5.2 Level of Services (LOS) assessment on the existing footpaths was carried out based on the definitions presented in the Highways Capacity Manual (HCM) 2000. **Table 2.5.1** shows the various LOS ‘quantified’ in terms of pedestrian flow rates for walkway

Table 2.5.1: Level of Service (LOS) for Walkway*

LOS	Flow rate for Walkway (ped/min/m)	Description
A	≤16	Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
B	16 – 23	Sufficient space is provided for pedestrians to freely select their walking speeds, to bypass other pedestrians and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and to respond to their presence in the selection of walking paths.
C	23 – 33	Sufficient space is available to select normal walking speeds and to bypass other pedestrians primarily in unidirectional stream. Where reverse direction or crossing movement exist, minor conflicts will occur, and speed and volume will be somewhat lower.
D	33 – 49	Freedom to select individual walking speeds and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflicts is high and its avoidance requires changes of speeds and position. The LOS provides reasonable fluid flow; however considerable friction and interactions between pedestrians are likely to occur.
E	49 - 75	Virtually, all pedestrians would have their normal walking speeds restricted. At the lower range of this LOS, forward movement is possible only by shuffling. Space is insufficient to pass over slower pedestrians. Cross- and reverse-movement are possible only with extreme difficulties. Design volumes approach the limit of walking capacity with resulting stoppages and interruptions to flow.

F	> 75	Walking speeds are severely restricted. Forward progress is made only by shuffling. There are frequent and unavoidable conflicts with other pedestrians. Cross- and reverse-movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristics of queued pedestrians than of moving pedestrian streams.
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*Source: Extracted from Exhibit 11-8 of Highway Capacity Manual (HCM) 2000

2.5.3 For the purpose of this assessment, a LOS of “C” or better would be considered acceptable for the existing footpaths. At a LOS of “D” or worse, it is determined that mitigation measures or improvement schemes should be considered to achieve “LOS C” or better. **Table 2.5.2** presents the results of LOS assessment on the surveyed footpaths.

Table 2.5.2: Year 2024 Existing LOS Performance on Surveyed Footpaths

Location		Actual Width (m)	Effective Clear Width ⁽¹⁾ (m)	Two-way Peak Hour Flow (ped/peak 15-min)		Flow Rate ⁽²⁾ (ped/min/m)		LOS (Level)	
				AM	PM	AM	PM	AM	PM
FP1	Cornwall Street Footpath	3.5	2.5	15	10	1	1	A	A
FP2	Cornwall Street Footpath	3.9	2.9	15	10	1	1	A	A
FP3	Waterloo Road Footpath	2.9	1.9	20	60	1	3	A	A
FP4	Waterloo Road Footpath	2.9	1.9	20	65	1	3	A	A
FP5	Waterloo Road Footpath	2.3	1.3	385	470	20	25	B	C
FP6	Waterloo Road Footpath	3.2	2.2	30	85	1	3	A	A
FP7	Junction Road Footpath	3	2	170	295	6	10	A	A
FP8	Junction Road Footpath	6.7	5.7	150	180	2	3	A	A
FP9	Kam Shing Road Footpath	2.8	1.8	145	80	6	3	A	A
FP10	Kam Shing Road Footpath	2.8	1.8	35	60	2	3	A	A
FP11	Kam Shing Road Footpath	3.9	2.9	55	185	2	5	A	A

Notes:

- (1) Effective clear width = Actual width (on-site measurement) minus 0.5m dead width on both sides.
- (2) Pedestrian flow rates are computed based on effective clear width.

2.5.4 As shown in **Table 2.5.2**, the surveyed footpaths are operating satisfactorily during morning and evening peak periods.

2.5.5 Volume / Capacity (V/C) Assessment on the existing pedestrian crossings was also carried out and the results are presented in **Table 2.5.3**.

Table 2.5.3: Year 2024 Existing V/C Ratios on Surveyed Pedestrian Crossings

Crossing Facility		Clear Width (m)	Peak Hour Green Time (sec) per 120 sec cycle time		Pedestrian Capacity (ped/15-min)		Two-way Pedestrian Flow (ped/peak 15-min)		Volume/ Capacity (V/C) Ratio	
			AM	PM	AM	PM	AM	PM	AM	PM
PC1	Pedestrian Crossing across Cornwall Street	4	70	68	1110	1080	20	20	0.02	0.02
PC2	Pedestrian Crossing across Cornwall Street	4	14	14	220	220	20	20	0.09	0.09
PC3	Pedestrian Crossing across Waterloo Road	4	14	14	220	220	20	20	0.09	0.09
PC4	Pedestrian Crossing across Waterloo Road	4	50	38	790	600	20	20	0.03	0.03
PC5	Pedestrian Crossing across Waterloo Road	6	33	39	790	930	350	490	0.44	0.53
PC6	Pedestrian Crossing across Waterloo Road	4.5	70	73	1250	1300	350	490	0.28	0.38
PC7	Pedestrian Crossing across Junction Road	5	75	69	1490	1370	220	395	0.15	0.29
PC8	Pedestrian Crossing across Junction Road	8	33	39	1050	1240	220	395	0.21	0.32
PC9	Pedestrian Crossing across Junction Road	7	37	34	1030	940	140	110	0.14	0.12
PC10	Pedestrian Crossing across Kam Shing Road	5	20	20	400	400	120	145	0.30	0.36

2.5.6 As shown in **Table 2.5.3**, the surveyed pedestrian crossings are currently operating satisfactorily during morning and evening peak periods.

2.5.7 LOS assessment on the adequacy of waiting areas on the refuge islands at the existing staggered crossing at Waterloo Road and Junction Road was carried out based on the definitions presented in the Highways Capacity Manual (HCM) 2000. **Table 2.5.4** shows the various LOS ‘quantified’ in terms of pedestrian space for queueing areas.

Table 2.5.4: Level of Service (LOS) for Queueing Area*

LOS	Average Pedestrian Space (m ² /p)	Description
A	> 1.2	Standing and free circulation through the queueing area is possible without disturbing others within the queue.
B	0.9 – 1.2	Standing and partially restricted circulation to avoid disturbing others in the queue is possible.
C	0.6 – 0.9	Standing and restricted circulation through the queueing area by disturbing others in the queue is possible; this density is within the range of personal comfort.
D	0.3 – 0.6	Standing without touching is possible; circulation is severely restricted within the queue and forward movement is only possible as a group; long-term waiting at this density is uncomfortable.
E	0.2 – 0.3	Standing in physical contact with others is unavoidable; circulation in the queue is not possible; queueing can only be sustained for a short period without serious discomfort.
F	< 0.2	Virtually all persons within the queue are standing in direct physical contact with others; this density is extremely uncomfortable; no movement is possible in the queue; there is potential for panic in large crowds at this density.

*Source: Extracted from Exhibit 11-9 of Highway Capacity Manual (HCM) 2000

2.5.8 For the purpose of this assessment, a LOS of “C” or better would be considered adequate for the existing waiting areas at pedestrian crossings. At a LOS of “D” or worse, it is determined that mitigation measures or improvement schemes should be considered to achieve “LOS C” or better.

2.5.9 The surveyed pedestrian flows at PC5 / PC6 and PC7 / PC8 would be adopted for the LOS assessment, and the details are summarized in **Table 2.5.5**.

Table 2.5.5: Year 2024 Surveyed Pedestrian Flows at Concerned Pedestrian Crossings (Ped/15-min)

Direction of Flow	AM	PM
Pedestrians Flows at PC5 / PC6		
Eastbound	248 (71%)	140 (28%)
Westbound	102 (29%)	350 (72%)
Two-way	350 (100%)	490 (100%)
Pedestrians Flows at PC7 / PC8		
Northbound	143 (65%)	152 (38%)
Southbound	77 (35%)	243 (62%)
Two-way	220 (100%)	395 (100%)

2.5.10 The LOS assessment results on the waiting areas are presented in **Table 2.5.6**.

Table 2.5.6: Year 2024 Existing LOS Performance on Waiting Areas

Location of Waiting Area	Area (m ²): [A]	Average no. of pedestrian at the waiting area (ped/ peak 15-min)		Average no. of pedestrian at the waiting area (ped/signal cycle ⁽³⁾): [B]		Pedestrian Space (m ² /ped): [A] / [B]		LOS	
		AM	PM	AM	PM	AM	PM	AM	PM
Refuge island between PC5 & PC6	76	102 ⁽¹⁾	350 ⁽¹⁾	15	51	5.07	1.5	A	A
Refuge island between PC7 & PC8	35	143 ⁽²⁾	243 ⁽²⁾	21	35	1.7	1.0	A	B

Notes:

- (1) It is observed from the MOC of J2: Waterloo Road / Junction Road that, only the westbound pedestrian movements at PC6 would generate pedestrian queue at the refuge island between PC5 & PC6, and the related pedestrian flow data in **Table 2.5.5** have been adopted for assessment.
- (2) It is observed from the MOC of J2: Waterloo Road / Junction Road that, both northbound pedestrian movements at PC7 and southbound pedestrian movements at PC8 would generate pedestrian queue at the refuge island between PC7 & PC8. The related pedestrian flow data in **Table 2.5.5** with higher values have been adopted for assessment.
- (3) Assuming 7 traffic signal cycles would occur in a 15-minute period for assessment purposes.

2.5.11 As shown in **Table 2.5.6**, the surveyed waiting areas at pedestrian crossing are operating satisfactorily during morning and evening peak periods.

2.6 Public Transport Facilities

2.6.1 The Application Site is well served by various modes of public transport services, which include:

- Kowloon Tong MTR Station – The Application Site is located within 10-minute walking distance from Kowloon Tong MTR Station and is thus well-served by the railway service which has a significant passenger catchment.
- Franchised Bus Services and Green Mini-bus (“GMB”) Services are currently operating along the main public transport corridors in the study area including Cornwall Street, Waterloo Road, Junction Road and Renfrew Road. The Proposed Redevelopment is well-served by comprehensive franchised bus (more than 30 nos. of bus routes) and GMB services within the surrounding road network.

2.6.2 A summary of the franchised bus and GMB services operating in the vicinity of Application Site is presented in **Table 2.6.1** and **Figure 2.6**.

Table 2.6.1: Existing Franchised Bus and GMB Services*

Route No.	Route Name	Peak Headway (min)
Franchised Bus Services		
2B	Chuk Yuen Estate - Cheung Sha Wan	30
2F	Tsz Wan Shan (north) - Cheung Sha Wan	15 to 20
3C	Tsz Wan Shan (north) - China Ferry Terminal	15 to 20
7	Star Ferry - Lok Fu	15 to 25
22	Kai Tak Cruise Terminal - Kowloon Tong (festival walk)	30
72X	Tai Po Central - Mong Kok (Park Avenue)	12 to 20
80M	Sui Wo Court - Kowloon Tong (Suffolk Road)	30
81C	Yiu On - Tsim Sha Tsui East (Mody Road)	25
81S	Mei Tin Estate - Nathan Road (Public Square Street)	Weekday special buses
85	Fo Tan (Shan Mei Street) - Kowloon City Ferry	13 to 20
85A	Kwong Yuen - Kowloon City Ferry	20 to 25
85B	Chun Shek - Kowloon City Ferry	20 to 30
86C	Lee On - Cheung Sha Wan	25 to 30
87D	Kam Ying Court - Hung Hom Station	8 to 25
87E	Nai Chung - Tsim Sha Tsui	Weekday special buses
103	Chuk Yuen Estate - Pokfield Road	14 to 21
170	Sha Tin Station - Wah Fu (Central)	20
182	Yu Chui Court - Central (Macau Ferry)	15 to 25
208	Broadcast Drive - Tsim Sha Tsui East	20
270A	Sheung Shui - Tsim Sha Tsui East (Mody Road)	12 to 20
270C	Luen Wo Hui Bus Terminus - Tsim Sha Tsui East (Mody Road)	Weekday special buses
271	Tsim Sha Tsui (Middle Road) - Fu Heng	20
271B	Tai Po (Fu Heng) - Jordan (West Kowloon Station)	Weekday special buses
271P	Kau Lung Hang - Tsim Sha Tsui (Canton Road)	Weekday special buses
281A	Kwong Yuen - Kowloon Station	7 to 20
281B	Shek Mun Estate - Tsim Sha Tsui East (Mody Road)	15
281M	Sun Tin Wai - Kowloon Tong (Suffolk Road)	30
281X	Yiu On - Tsim Sha Tsui East (Mody road)	20
A23	Tsz Wan Shan (North) - Airport	30
E22	Lam Tin (North) - Asiaworld-Expo	14 to 20
N170	Sha Tin Central (New Town Plaza) - Wah Fu (Central)	Night services only
N182	Kwong Yuen - Central (Macau Ferry)	Night services only
N271	Fu Heng - Hung Hom Station	Night services only
N281	Kam Ying Court - Hung Hom Station	Night services only

Route No.	Route Name	Peak Headway (min)
N373	Fanling (Luen Wo Hui) - Central (Macau Ferry)	Night services only
GMB Services		
25M	Kowloon Tong Station - Tung Tau Estate	6
29A	Kowloon Tong Station - Kowloon Tong (Broadcast Drive)	7
72	Grand View Garden - Festival Walk Public Transport Terminus	6
73	Festival Walk Public Transport Terminus - Tsz Wan Shan Centre (Circular)	8

*Source: Hong Kong eTransport (<https://www.hkemobility.gov.hk/>)

KMB (<http://search.kmb.hk/KMBWebSite/>)

CityBus & NWFB (<http://www.nwstbus.com.hk/routesearch.aspx?t=1479712062077&intLangID=2>)

GMB (<http://www.16seats.net/>)

3. The Subject Development

3.1 Development Schedule

3.1.1 The developer intends to redevelop Blocks A, B and C in the hospital compound of HKBH into a new hospital building of 700 nos. beds. Similar to existing, it will not have Accident and Emergency Department.

3.2 Internal Transport Facilities Provision

3.2.1 The required internal transport facilities for hospitals with reference to Hong Kong Planning Standards and Guidelines (“HKPSG”) based on the proposed 700 nos. beds under the redevelopment of Blocks A, B and C are summarised in **Table 3.2.1**.

Table 3.2.1: HKPSG Requirement of Internal Transport Facilities Provision Based on the Proposed 700 Beds under the Proposed Redevelopment

Facility (L x W x H)	HKPSG Standard	HKPSG Low-end Requirement	HKPSG High-end Requirement
Private Car Parking Space (5m x 2.5m x 2.4m)	1 space per 3-12 beds (incl. Accessible Car Parking Space)	59 nos.	234 nos.
Accessible Car Parking Space (5m x 3.5m x 2.4m)	2-5 spaces for hospitals without Accident and Emergency departments	2 nos.	5 nos.
Motorcycle Parking Space (2.4m x 1m x 2.4m)	5-10% of the total provision for private cars	3 nos.	24 nos.
Ambulance Parking Space (9m x 3m x 3.8m)	3 spaces for hospitals without Accident and Emergency departments	3 nos.	
Ambulance Lay-by (9m x 3m x 3.8m)	1-2 lay-bys for ambulances to be provided under cover for hospitals without Accident and Emergency departments	1 no.	2 nos.
Loading / Unloading Bay for M/HGV (11m x 3.5m x 4.7m)	1-3 lay-bys for MGVs/HGVs	1 no.	3 nos.
Lay-by for taxi and private cars (5m x 2.5m x 2.4m)	1 space per 160 beds for hospitals without Accident and Emergency departments	5 nos.	
Lay-by for public light bus (8m x 3.0m x 3.3m)	1 space per 400 beds for hospitals without Accident and Emergency departments	2 nos.	

3.2.2 At present, the existing internal transport facilities at Block D of HKBH at Kam Shing Road are accessible via the vehicular access points at the Application Site and the elevated vehicular bridge connecting between the Application Site and Block D. Under the Proposed Redevelopment, the elevated vehicular bridge will be converted into a pedestrian walkway, i.e., a car-free area.

3.2.3 Due to the proposed conversion of elevated vehicular bridge, the usage of the existing internal transport facilities at Block D will be affected. Details of the existing provision of internal transport facilities at Block D are presented in **Table 3.2.2**.

Table 3.2.2: Existing Internal Transport Facilities at Block D

Facility (L x W x H)	Existing Provision
Private Car Parking Space (5m x 2.5m x 2.4m)	13 nos.
Loading / Unloading Bay for LGV (7m x 3.5m x 3.6m)	2 nos.

3.2.4 The affected internal transport facilities at Block D will be re-provided based on the required internal transport facilities under HKPSG, thus the required internal transport facilities for the Proposed Redevelopment will be based on a total number of 700 (i.e. proposed bed nos. in Blocks A, B and C) + 94 (i.e. existing bed nos. in Block D) = **794 beds**.

3.2.5 The required and proposed internal transport facilities provision under the Proposed Redevelopment are summarised in **Table 3.2.3**.

Table 3.2.3: Required and Proposed Internal Transport Facilities Provision at the Application Site

Facility (L x W x H)	Required Internal Transport Facilities Provision Under the Proposed Redevelopment (Based on 794 beds)	Proposed Provision
Private Car Parking Space (5m x 2.5m x 2.4m)	67 - 265 nos. (included the accessible parking space)	244 nos. (included the accessible parking space)
Accessible Car Parking Space (5m x 3.5m x 2.4m)	2 - 5 nos.	3 nos.
Motorcycle Parking Space (2.4m x 1m x 2.4m)	13 - 25 nos. (5 - 10% of proposed provision for private car)	25 nos.
Ambulance Parking Space (9m x 3m x 3.8m)	3 nos.	Nil
Ambulance Lay-by (9m x 3m x 3.8m)	1 - 2 nos.	2 nos.
Loading / Unloading Bay for Goods Vehicle LGV: (7m x 3.5m x 3.6m) M/HGV: (11m x 3.5m x 4.7m)	 1 - 3 nos. (M/HGV)	 3 nos. (1 LGV + 2 M/HGV)
Lay-by for taxi and private cars (5m x 2.5m x 2.4m)	5 nos.	5 nos.
Lay-by for public light bus (8m x 3.0m x 3.3m)	2 nos.	1 no.

3.2.6 The proposed internal transport facilities will be provided on G/F, B1/F and B2/F of the Proposed Redevelopment. The basement floors can be accessed by a car ramp connecting to G/F. The corresponding preliminary layout plans showing the internal transport facilities provisions and arrangement are presented in **Figures 3.1, 3.2, 3.3 and 3.4**. Swept path analysis has been carried out at critical locations at the layout plans and the relevant drawings are enclosed in **Appendix B**.

3.2.7 At present, there are 162 car parking spaces provided at Blocks A, B and C with 589 beds. The proposed nos. of private car parking spaces for the Proposed Redevelopment with 794 beds (700 + 94) are 244, which is near the HKPSG's upper limit of 265 spaces. The proposed provision rate is about 1 space per 3.3 beds, which is higher than the existing provision rate of car parking space for Blocks A, B and C at about 1 space per 3.6 beds.

3.2.8 To identify the utilisation of the existing car park in Blocks A, B and C, parking occupancy analysis has been carried out for the parking data for November 2023. The (i) peak occupancy during the day and (ii) average occupancy between 8am to 8pm, for the peak week of the month is shown in **Table 3.2.4**.

Table 3.2.4: The Existing Utilisation of the Car Park (162 Spaces) at Blocks A, B and C

Day of Week	Peak Occupancy		Average Occupancy (between 8am to 8pm)	
	Number of Occupied Space	% Occupancy	Number of Occupied Space	% Occupancy
Sunday	56	35%	30	18%
Monday	137	85%	104	64%
Tuesday	141	87%	108	67%
Wednesday	144	89%	102	63%
Thursday	136	84%	105	65%
Friday	136	84%	108	67%
Saturday	121	75%	90	56%

3.2.9 According to **Table 3.2.4**, the existing car parking spaces at Blocks A, B and C is not fully utilised. The average occupancy during the daytime is around 18 – 67%. Furthermore, the Application Site is well served by various modes of public transport services as discussed in **Chapter 2.4**. In view of the above and the proposed provision rate of car parking space is higher than the existing provision rate, the proposed provision of private car parking spaces slightly (less than 10%) below the upper limit of the recommendation from HKPSG is considered acceptable from traffic viewpoint.

3.2.10 Of the proposed 3 nos. goods vehicle loading / unloading bays, i.e., at HKPSG upper limit, it is proposed to convert 1 no. loading / unloading bay from M/HGV to LGV. At present, there are only 2 nos. loading / unloading bay for LGV at Block D serving Blocks A, B, C, and D of HKBH. The proposed 1 no. LGV and 2 nos. M/HGV loading / unloading bays under the Proposed Redevelopment is considered sufficient to serve the operation needs of the hospital.

3.2.11 The proposed hospital does not have Accident and Emergency departments, therefore the ambulance arriving the hospital in emergency situation is unlikely. Furthermore, the existing internal transport provision for ambulances at the Application Site and Block E are also in the form of a parking space, and no adverse impact to the operation of the ambulance was observed. Therefore, it is considered that the proposed configuration of ambulance lay-by, i.e., in parking format, will not have adverse effects on ambulance operation.

Justifications for Minor Relaxation of Internal Transport Facilities Provision under HKPSG Requirements

Nil Ambulance Parking Space

3.2.12 At present, HKBH does not own or hire any ambulance. Under current planning, the above arrangement will be maintained. The ambulance from other hospital can carry out patient pick-up/drop-off at the proposed ambulance layby and the demand on parking by these ambulances is not anticipated. Therefore, the provision of ambulance parking space is considered not necessary from the operation aspect of the hospital. Hence, it is proposed to maintain nil provision of ambulance parking space at the Application Site which is similar to existing.

Provision of 1 no. Lay-by for Public Light Bus

3.2.13 At present, there are no lay-by for GMB within HKBH. The existing GMB stops are located in proximity of HKBH, which include a GMB stop of Routes 29A, 72 and 73 located at Junction Road outside Block E of HKBH. In view of the site constraint on G/F and 1/F of the proposed redevelopment, it is proposed to provide 1 lay-by for public light bus at 1/F near the proposed run-out at Kam Shing Road, as shown in **Figure 3.1**.

3.2.14 As the additional passenger demand for GMB service is expected to be limited, the provision of 1 lay-by for public light bus is believed to be acceptable from traffic viewpoint.

3.3 Ticket Gate Assessment

3.3.1 To control the entry/exit of vehicles at the basement carpark, a ticket gate is proposed at B1/F next to the car ramp connecting to G/F, as shown in **Figure 3.3**. Assessment and relevant queuing analysis were conducted for vehicles using the ticket gate to enter B1/F, and the results are summarized in **Table 3.3.1**.

Table 3.3.1: Assessment of Ticket Gate Operation and Queuing Analysis

Assumptions	Parameters
Average Rate Estimation	
No. of Ticket Gate	1
Maximum Arrival Rate in Peak 15 Minutes (estimated from trip attraction rate at Table 4.1.1 in Chapter 4)	34 vehicles
Estimated Time of Using the Ticket Gate (in sec)	
Vehicle manoeuvring to ticket machine	4
Waiting time at ticket machine	4
Gate opens and vehicle passes the ticket gate	5
Total (Cycle Time)	13
Average Servicing Time and Rate	
Average Servicing Time ($1/\mu$)	13 seconds
Average Servicing Rate (μ) per 15 Minutes	69 veh/15 min
No. of Vehicles Arrived at Peak 15 Minutes (r)	34 vehicles
Analysis Results	
Probability of no vehicle in the system, $P(0)$	49.1%
Probability of one vehicle at the gate, $P(1)$	24.1%
Probability of one vehicle at the gate with one queuing vehicle, $P(2)$	11.8%
Probability of one vehicle at the gate with two queuing vehicles, $P(3)$	5.8%
Probability of one vehicle at the gate with three queuing vehicles, $P(4)$	2.9%

3.3.2 The assessment shows that at 95% confidence interval, the probability of traffic queues when one vehicle at the ticket gate and three queueing vehicles, i.e. a total of 4 spaces, is less than 5%. With the provision of about 6 spaces from the gate and along the road ramp between G/F and B1/F (excluding the driveway on G/F), it is anticipated that the vehicles could be served by the proposed ticket gate system without inducing any queue onto the public road.

3.4 Proposed Vehicular and Pedestrian Access Arrangement

3.4.1 At present, the run-in/out of the subject site are located at Waterloo Road and Kam Shing Road. Under the Proposed Redevelopment, the proposed vehicular accesses at Waterloo Road and Kam Shing Road will be for egress of vehicles only, and a new vehicular ingress point is proposed at Kam Shing Road to the south of the Application Site. The width of (i) the proposed run-out at Waterloo Road is 6.5m (same as existing), (ii) the proposed run-out at Kam Shing Road is **6.5m** and (iii) the proposed run-in at Kam Shing Road is 5.5m.

- 3.4.2 The proposed vehicular access arrangement and proposed vehicular ingress routes are illustrated in **Figures 3.5** and **3.6** respectively.
- 3.4.3 Assessment of the visibility distances of the proposed run-outs has been carried out and it can comply with the guidelines from TPDM. The assessments are presented in **Figure 3.7**.
- 3.4.4 The justifications for the proposed vehicular access arrangement are as follows:
- The proposed vehicular access point at Waterloo Road is for egress of vehicles only, which could minimise disruption to traffic at Waterloo Road and avoid the possibility of any vehicles tailed back onto Waterloo Road.
 - The proposed two egresses are located at similar locations as the two existing vehicular access points.
 - The proposed ingress would be located at the less traffic section of Kam Shing Road and away from road junctions.
 - The proposed vehicular access arrangement could enable the hospital to maintain internal traffic circulation for normal operation during any road blockage incident on internal driveway or public road of Waterloo Road or Kam Shing Road.
- 3.4.5 Pedestrians could access the Application Site at Waterloo Road and Kam Shing Road, as shown in **Figure 3.5**.

3.5 Proposed Cautionary Pedestrian Crossing

- 3.5.1 At present, there are numerous GMB and bus stops located along Junction Road, thus, some patients/visitors are expected to walk to Blocks A, B and C from this road. To enhance the pedestrian connectivity between Junction Road and the Application Site, it is proposed to provide an additional cautionary pedestrian crossing at Kam Shing Road, as shown in **Figure 3.8**.
- 3.5.2 The proposed cautionary pedestrian crossing would have conflict with the existing on-street motorcycle parking spaces at Kam Shing Road. Hence, it is proposed to relocate the affected 10 nos. on-street motorcycle parking spaces about 180m eastward at Kam Shing Road near Wai Hang Sports Centre to facilitate the provision of pedestrian crossing.
- 3.5.3 Sightline assessment of the proposed cautionary crossing has been carried out and it can comply with the guidelines from TPDM. The assessments are presented in **Figure 3.8**.

4. Traffic Impact Assessment

4.1 Traffic Trip Generation and Attraction of Proposed Redevelopment

4.1.1 Since the traffic trip generation and attraction rates for hospital development are not specified in Transport Planning Design Manual (“TPDM”), the trip generation for the Proposed Redevelopment are estimated based on the existing trip rates at the Application Site, as shown in in **Table 4.1.1**.

Table 4.1.1: Existing Traffic Generation/Attraction at the Application Site (pcu/hr)

Development Parameters		AM Peak		PM Peak	
		GEN	ATT	GEN	ATT
Existing Development	589 beds	55 ⁽¹⁾	95 ⁽¹⁾	100 ⁽¹⁾	100 ⁽¹⁾
Traffic Trip Rate (pcu/hr/bed)		0.0934	0.1613	0.1698	0.1698

Note:

(1) Based on the traffic survey period detailed in **Chapter 2.3**.

4.1.2 The net difference between the existing and estimated traffic generation under the Proposed Redevelopment are presented in **Table 4.1.2**.

Table 4.1.2: Net Difference of Traffic Generation/Attraction under the Proposed Redevelopment (pcu/hr)

Development Parameters		AM Peak		PM Peak	
		GEN	ATT	GEN	ATT
[A]: Existing Development	589 beds	55	95	100	100
[B]: Proposed Redevelopment	700 beds	65	115	120	120
Net Difference: [B] - [A]	+111 beds	+10	+20	+20	+20

4.1.3 As indicated in **Table 4.1.2**, it is estimated that the traffic generation and attraction of the Application Site will be increased by **30 pcu/hr** and **40 pcu/hr** (two-way) under the Proposed Redevelopment during morning and evening peak periods respectively.

4.2 Future Traffic Growth

4.2.1 The Proposed Redevelopment is targeted for completion in Year 2033. In order to assess the traffic impact of the development-related traffic on the adjacent road network, Year 2036 (i.e. 3 years after completion) is adopted as the design year of the study.

Annual Traffic Census

4.2.2 Reference was made to Annual Traffic Census (“ATC”) on annual average daily traffic (“AADT”) at counting stations in the vicinity of the Application Site and the corresponding traffic flows are summarized in **Table 4.2.1** below.

Table 4.2.1: Annual Average Growth Rate by ATC

Station No.	Road Name	2018 AADT	2019 AADT	2020 AADT	2021 AADT	2022 AADT	Average Annual Growth Rate from 2018 to 2022
3622	Waterloo Road (from Junction Road to Suffolk Road)	33,020	33,260	26,180	31,880	30,370	-
3819	Waterloo Road (from Junction Road to Cornwall Street)	30,170	30,390	28,450	28,430	23,270	-
3849	Junction Road (from Junction Road and Broadcast Drive to Renfrew Street)	29,700	29,920	28,000	37,830	32,940	-
3880	Renfrew Street (from Junction Road to Hereford Road)	10,710	10,780	10,090	8,930	9,070	-
4017	Waterloo Road (from Cornwall Street to Ede Road)	11,660	11,600	10,960	11,310	8,340	-
4049	Junction Road (from Renfrew Street to Waterloo Road)	31,730	31,970	29,920	31,200	26,120	-
4206	Cornwall Street (from Waterloo Road to Nam Cheong Street)	21,440	20,260	18,960	19,670	17,640	-
Total		168,430	168,180	152,560	169,250	147,750	-3.2%

4.2.3 The ATC historic data indicates an overall reduction of traffic in recent years in the region with around -3.2% p.a.

Territorial Population and Employment Data Matrix (TPEDM)

4.2.4 Reference was also made to 2019-based TPEDM published by Planning Department. **Table 4.2.2** below summarises the estimated and projected population and employment data as well as their respective annual average growth rate of Kowloon City District in 2019, 2026 and 2031.

Table 4.2.2: Annual Average Growth Rate by TPEDM (Kowloon City District)

Year	2019	2026	2031
Population	429,300	451,100	420,050
Employment	212,000	237,900	227,850
Total	641,300	689,000	647,900
Annual Average Growth Rate	0.09% (from 2019 to 2031)	-1.22% (from 2026 to 2031)	---

4.2.5 As shown in **Table 4.2.2**, the annual growth rates from 2019 to 2031 and from Year 2026 to 2031 calculated from TPEDM are +0.09% and -1.22% respectively.

4.2.6 For conservative purpose, the annual growth rate of +0.5% p.a. is adopted to produce the traffic forecast from 2023 to 2036.

Adjacent Developments

4.2.7 In addition to the development traffic, the traffic generated and attracted by adjacent major planned/committed developments in the vicinity of the Proposed Redevelopment as shown in **Table 4.2.3**, were taken into account for the traffic forecast.

Table 4.2.3 List of Adjacent Major Planned/Committed Developments

Item	Development	Type	Parameters
1	Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted House Development at 147 Waterloo Road, Kowloon Tong, Kowloon	Private Housing	1 no. domestic block ⁽¹⁾
2	Proposed Minor Relaxation of Building Height Restriction for Permitted Educational Institution (University Hostel and Academic Building Complex) at 30 Renfrew Road (part), Kowloon Tong, Kowloon	Educational Institution	1,135 nos. Hostel Units ⁽²⁾
3	Proposed Private Residential Development in New Kowloon Inland Lot No. 6579 at the Junction of Lung Cheung Road and Lion Rock Tunnel Road, Kowloon Tong, Kowloon	Private Housing	About 436,218 ft ² total GFA ⁽³⁾
4	Proposed Minor Relaxation of Building Height Restriction for Permitted Educational Institution (Academic Complex) at 224 Waterloo Road (part), Kowloon Tong, Kowloon	Educational Institution	About 46,200 m ² Non-domestic GFA ⁽⁴⁾
5	Proposed Minor Relaxation of Building Height Restriction for Permitted Public Housing in Government Land at the Junction of Junction Road and Chuk Yuen Road, Wong Tai Sin, Kowloon	Public Housing	208 nos. Flats and 1,742 m ² Non-domestic GFA ⁽⁵⁾

Notes:

- (1) Refer to approved planning application no.: A/K18/326.
- (2) Refer to approved planning application no.: A/K18/329.
- (3) Refer to <https://www.richitt.com/propertydevelopmentatlungcheungroad/>.
- (4) Refer to approved planning application no.: A/K18/345.
- (5) Refer to approved planning application no.: A/K8/51.

4.3 Assessment Scenarios

4.3.1 To evaluate the associated traffic impact likely to be induced by the Proposed Redevelopment, two scenarios were analysed and compared. The first scenario (i.e. Year 2036 Reference Scenario) assumed that the existing hospital buildings are to be retained on the site. The second scenario (i.e. Year 2036 Design Scenario) assumed that the existing hospital buildings are to be redeveloped into the proposed hospital.

4.2.8 Lion Rock Tunnel (LRT) is a major link between Kowloon and Sha Tin that has been put in use for over 40 years. In order to extend its service life and to take this opportunity to enhance the capacity of the tunnel and its connecting roads, Highways Department proposed to widen the LRT Road. According to the Hong Kong Major Transport Infrastructure Development Blueprint promulgated in December 2023, the tentative completion years of the improvement works are 2034 – 2038. Hence, the design year 2036 has considered the above improvement.

Year 2036 Reference Scenario

(the site occupied by existing hospital building)

= Year 2023 observed traffic flow × growth factor during the period of year 2023-2036

Plus traffic generations of other planned/committed developments in the vicinity

Year 2036 Design Scenario

(the site occupied by the Proposed Redevelopment)

= Year 2036 Reference Scenario

Plus trips generated and attracted by the net increase in 111 nos. of hospital beds within the Application Site

4.3.2 The forecasted traffic flows for the two scenarios are shown in **Figures 4.1** and **4.2** respectively.

4.4 Junction Capacity Assessment

Junction capacity assessment was carried out at the identified key junctions for Year 2036 Reference and Design scenarios. The Assessment results are summarised in **Table 4.4.1** and the detailed junction calculation sheets are enclosed in **Appendix A**.

Table 4.4.1 Year 2036 Future Junction Performance

Junction		Type	Performance ⁽¹⁾			
			2036 Reference		2036 Design	
			AM	PM	AM	PM
J1	Waterloo Road / Cornwall Street	Signalized	43%	74%	43%	74%
J2	Waterloo Road / Junction Road	Signalized	65%	56%	64%	54%
J3	Junction Road / Kam Shing Road	Signalized	97%	69%	94%	66%
J4	Junction Road / Renfrew Road	Signalized	68%	45%	68%	44%
J5	Chuk Yuen Road / Junction Road / Broadcast Drive	Signalized	31%	35%	31%	34%
J6	Chuk Yuen Road / Slip Road to Lung Cheung Road	Signalized	76%	97%	75%	96%
J7	Cornwall Street / Kent Road	Signalized	26%	83%	26%	83%
J8	Waterloo Road / Hereford Road	Signalized	25%	16%	25%	16%
J9	Waterloo Road / Durham Road	Signalized	17%	34%	17%	34%
J10	Waterloo Road / HKBU HSHC Access	Priority	0.05	0.07	0.05	0.07

Note:

(1) Figures shown represent “Reserve Capacity” (“RC”) in % for signalized junctions and “Design flow/Capacity ratio” (“DFC”) for priority junction.

4.4.1 The results of the junction capacity assessment revealed that all identified key junctions would be operating with spare capacities under Year 2036 Reference and Design Scenarios.

4.5 Pedestrian Impact Assessment

4.5.1 The pedestrian trip generation for the Proposed Redevelopment are estimated based on the pedestrian survey conducted at the entrances of the HKBH during the AM and PM peak period of a typical weekday. The calculated pedestrian trip rates are shown in **Table 4.5.1**.

Table 4.5.1: Existing Pedestrian Generation/Attraction Rates at the HKBH

Development Parameters	AM Peak		PM Peak	
	GEN	ATT	GEN	ATT
Pedestrian Trip Rate (ped/15-min/bed)	0.0359	0.1124	0.0898	0.0864

4.5.2 The net difference between the existing and estimated pedestrian generation under the Proposed Redevelopment are presented in **Table 4.5.2**.

Table 4.5.2: Net Difference of Pedestrian Generation/Attraction under the Proposed Redevelopment (ped/15-min)

Development Parameters		AM Peak		PM Peak	
		GEN	ATT	GEN	ATT
Net Difference: [B] - [A]	+111 beds	+4	+13	+10	+10
2-way		+17		+20	

4.5.3 As indicated in **Table 4.5.2** above, the proposed development would generate a total of 17 ped/15-min (two-way) and 20 ped/15-min (two-way) during morning and evening peak periods respectively.

4.5.4 Similar to the forecasting approach of traffic impact assessment, year 2036 is adopted as the design year of pedestrian assessment. Growth rate of +0.5% p.a. is adopted to produce the pedestrian forecast for Year 2024–2036. Additionally, the future pedestrian volumes generated by the Proposed Redevelopment, as well as the planned / committed developments in the vicinity are taken into account for year 2036 pedestrian flows.

4.5.5 To evaluate the associated pedestrian impact likely to be induced by the Proposed Redevelopment, pedestrian forecast under Year 2036 Design Scenario were analysed with the Proposed Redevelopment in place. The forecasted pedestrian flows for the design scenario are shown in **Figure 4.3**.

4.5.6 In order to address the performance of the pedestrian facilities, Level of Service (LOS) assessment of the concerned footpaths have been conducted under Year 2036 Design scenario, and the results are summarised in **Table 4.5.3**.

Table 4.5.3: Year 2036 LOS Performance of Concerned Footpaths under Design Scenario

Location		Actual Width (m)	Effective Clear Width ⁽¹⁾ (m)	Two-way Peak Hour Flow (ped/15-min)		Flow Rate ⁽²⁾ (ped/min/m)		LOS (Level)	
				AM	PM	AM	PM	AM	PM
FP1	Cornwall Street Footpath	3.5	2.5	25	20	1	1	A	A
FP2	Cornwall Street Footpath	3.9	2.9	20	15	1	1	A	A
FP3	Waterloo Road Footpath	2.9	1.9	45	90	2	4	A	A
FP4	Waterloo Road Footpath	2.9	1.9	55	110	2	4	A	A
FP5	Waterloo Road Footpath	2.3	1.3	430	525	22	27	B	C
FP6	Waterloo Road Footpath	3.2	2.2	35	95	2	3	A	A
FP7	Junction Road Footpath	3	2	190	325	7	11	A	A
FP8	Junction Road Footpath	6.7	5.7	165	200	2	3	A	A
FP9	Kam Shing Road Footpath	2.8	1.8	155	90	6	4	A	A
FP10	Kam Shing Road Footpath	2.8	1.8	40	65	2	3	A	A
FP10	Kam Shing Road Footpath	3.9	2.9	60	200	2	5	A	A

4.5.7 Volume / Capacity (V/C) Assessment has been conducted on the concerned pedestrian crossing under Year 2036 Design scenario, and the results are summarised in **Table 4.5.4**.

Table 4.5.4: Year 2036 V/C Ratio of Concerned Pedestrian Crossing under Design Scenario

Crossing Facility		Clear Width (m)	Peak Hour Green Time (sec) per 120 sec cycle time		Pedestrian Capacity (ped/15-min)		Two-way Pedestrian Flow (ped/15-min)		Volume/ Capacity (V/C) Ratio	
			AM	PM	AM	PM	AM	PM	AM	PM
PC1	Pedestrian Crossing across Cornwall Street	4	70	68	1110	1080	25	25	0.02	0.02
PC2	Pedestrian Crossing across Cornwall Street	4	14	14	220	220	25	25	0.11	0.11
PC3	Pedestrian Crossing across Waterloo Road	4	14	14	220	220	30	30	0.14	0.14
PC4	Pedestrian Crossing across Waterloo Road	4	50	38	790	600	30	30	0.04	0.05
PC5	Pedestrian Crossing across Waterloo Road	6	33	39	790	930	395	545	0.50	0.59
PC6	Pedestrian Crossing across Waterloo Road	4.5	70	73	1250	1300	395	545	0.32	0.42
PC7	Pedestrian Crossing across Junction Road	5	75	69	1490	1370	260	450	0.17	0.33
PC8	Pedestrian Crossing across Junction Road	8	33	39	1050	1240	260	450	0.25	0.36
PC9	Pedestrian Crossing across Junction Road	7	37	34	1030	940	150	120	0.15	0.13
PC10	Pedestrian Crossing across Kam Shing Road	5	20	20	400	400	135	160	0.34	0.40

4.5.8 LOS assessment on the surveyed waiting areas at the concerned pedestrian crossing has been carried out under Year 2036 Design scenario. The forecasted pedestrian flow data at PC5 / PC6 and PC7 / PC8 are summarized in **Table 4.5.5**, and the assessment results are presented in **Table 4.5.6**.

Table 4.5.5: Year 2036 Pedestrian Flows at Concerned Pedestrian Crossings (Ped/15-min)

Direction of Flow	AM	PM
Pedestrians Flows at PC5 / PC6		
Eastbound	280 (71%)	155 (28%)
Westbound	115 (29%)	390 (72%)
Two-way	395 (100%)	545 (100%)
Pedestrians Flows at PC7 / PC8		
Northbound	169 (65%)	173 (38%)
Southbound	91 (35%)	277 (62%)
Two-way	260 (100%)	450 (100%)

Table 4.5.6: Year 2036 LOS Performance on Waiting Areas

Location of Waiting Area	Area (m ²): [A]	Average no. of pedestrian at the waiting area (ped/ peak 15-min)		Average no. of pedestrian at the waiting area (ped/signal cycle ⁽³⁾): [B]		Pedestrian Space (m ² /ped): [A] / [B]		LOS	
		AM	PM	AM	PM	AM	PM	AM	PM
Refuge island between PC5 & PC6	76	115 ⁽¹⁾	390 ⁽¹⁾	17	56	4.5	1.4	A	A
Refuge island between PC7 & PC8	35	169 ⁽²⁾	277 ⁽²⁾	25	40	1.4	0.9	A	B

Notes:

- (1) It is observed from the MOC of J2: Waterloo Road / Junction Road that, only the westbound pedestrian movements at PC6 would generate pedestrian queue at the refuge island between PC5 & PC6, and the related pedestrian flow data in **Table 2.5.5** have been adopted for assessment.
- (2) It is observed from the MOC of J2: Waterloo Road / Junction Road that, both northbound pedestrian movements at PC7 and southbound pedestrian movements at PC8 would generate pedestrian queue at the refuge island between PC7 & PC8. The related pedestrian flow data in **Table 2.5.5** with higher values have been adopted for assessment.
- (3) Assuming 7 traffic signal cycles would occur in a 15-minute period for assessment purposes.

4.5.9 As shown in **Tables 4.5.3, 4.5.4** and **4.5.6**, the concerned pedestrian facilities would be operating satisfactorily under 2036 Design Scenario during morning and evening peak periods.

4.5.10 In view of the above, it is considered that the concerned pedestrian facilities in the vicinity of the Application Site would continue to operate within capacities in Year 2036 taking into account the pedestrian trips associated with the Proposed Redevelopment. Therefore, it is anticipated that no adverse impact on pedestrian facilities would be induced by the Proposed Redevelopment.

5. Construction Traffic Impact Assessment

5.1 Trip Generation and Attraction at Construction Stage

- 5.1.1 To ensure continuation of clinical operation during the entire redevelopment process, the redevelopment will be carried out in 2 phases. Phase 1 serves to demolish the existing Block A, and a 'New Block (Phase 1)' will be constructed at the same location upon completion of demolition of 'existing Block A'. Upon completion of new Block A, phase 2 redevelopment will be commenced which involves demolishing existing Blocks B and C and construction of 'New Block (Phase 2)'.
- 5.1.2 The tentative development schedule and the estimated peak construction traffic of the construction phases are presented in **Table 5.1.1**.

Table 5.1.1 Traffic Generation and Attraction of the Proposed Development at Construction Stage (pcu/hr)

Construction Phase	Construction Period	Estimated Peak Construction Traffic
Phase 1	2025 - 2028	Two-way: 12 veh/hr / 30 pcu/hr <i>occur during the excavation stage of Phase 1</i>
Phase 2	2028 - 2033	Two-way: 14 veh/hr / 36 pcu/hr <i>occur during the excavation stage of Phase 2</i>

- 5.1.3 For conservative assessment purposes, it is proposed to adopt (i) the estimated peak construction traffic for Phase 2, i.e. **36 pcu/hr (two-way)**, (ii) the design year 2033 and (iii) no deduction of traffic generation from the road network due to non-operation of Blocks B and C, for the construction traffic impact assessment (CTIA).

5.2 Assessment Scenarios

- 5.2.1 To evaluate the associated traffic impact likely to be induced by the construction traffic of the Proposed Development and the assessment scenario for the design year 2033 is shown below:

Scenario for Construction Stage

Year 2033 Construction Scenario

= Year 2023 existing traffic flows × growth factor during the period of year 2023-2033

Plus traffic generations of other major planned / committed developments in the vicinity

Plus vehicular trips generated and attracted by the construction traffic of the Proposed Development

- 5.2.2 The traffic flow diagram for Year 2033 construction scenario is shown in **Figure 5.1**.

5.3 Junction Capacity Assessment at Construction Stage

5.3.1 Junction capacity assessment was carried out at the identified key junctions for Year 2033 Construction scenario. The assessment results are summarised in Table 5.3.1 and the detailed junction calculation sheets are enclosed in **Appendix A**.

Table 5.3.1 Year 2033 Future Junction Performance at Construction Stage

Junction		Type	Performance ⁽¹⁾	
			AM	PM
J1	Waterloo Road / Cornwall Street	Signalized	43%	77%
J2	Waterloo Road / Junction Road	Signalized	67%	58%
J3	Junction Road / Kam Shing Road	Signalized	96%	68%
J4	Junction Road / Renfrew Road	Signalized	72%	49%
J5	Chuk Yuen Road / Junction Road / Broadcast Drive	Signalized	33%	35%
J6	Chuk Yuen Road / Slip Road to Lung Cheung Road	Signalized	78%	99%
J7	Cornwall Street / Kent Road	Signalized	28%	85%
J8	Waterloo Road / Hereford Road	Signalized	27%	18%
J9	Waterloo Road / Durham Road	Signalized	19%	36%
J10	Waterloo Road / HKBU HSHC Access	Priority	0.05	0.07

Note:

(1) Figures shown represent “Reserve Capacity” (“RC”) in % for signalized junctions and “Design flow/Capacity ratio” (“DFC”) for priority junction.

5.3.2 The above results reveal that the identified key junctions would operate within capacities at the construction stage of the Proposed Redevelopment.

6. Summary & Conclusion

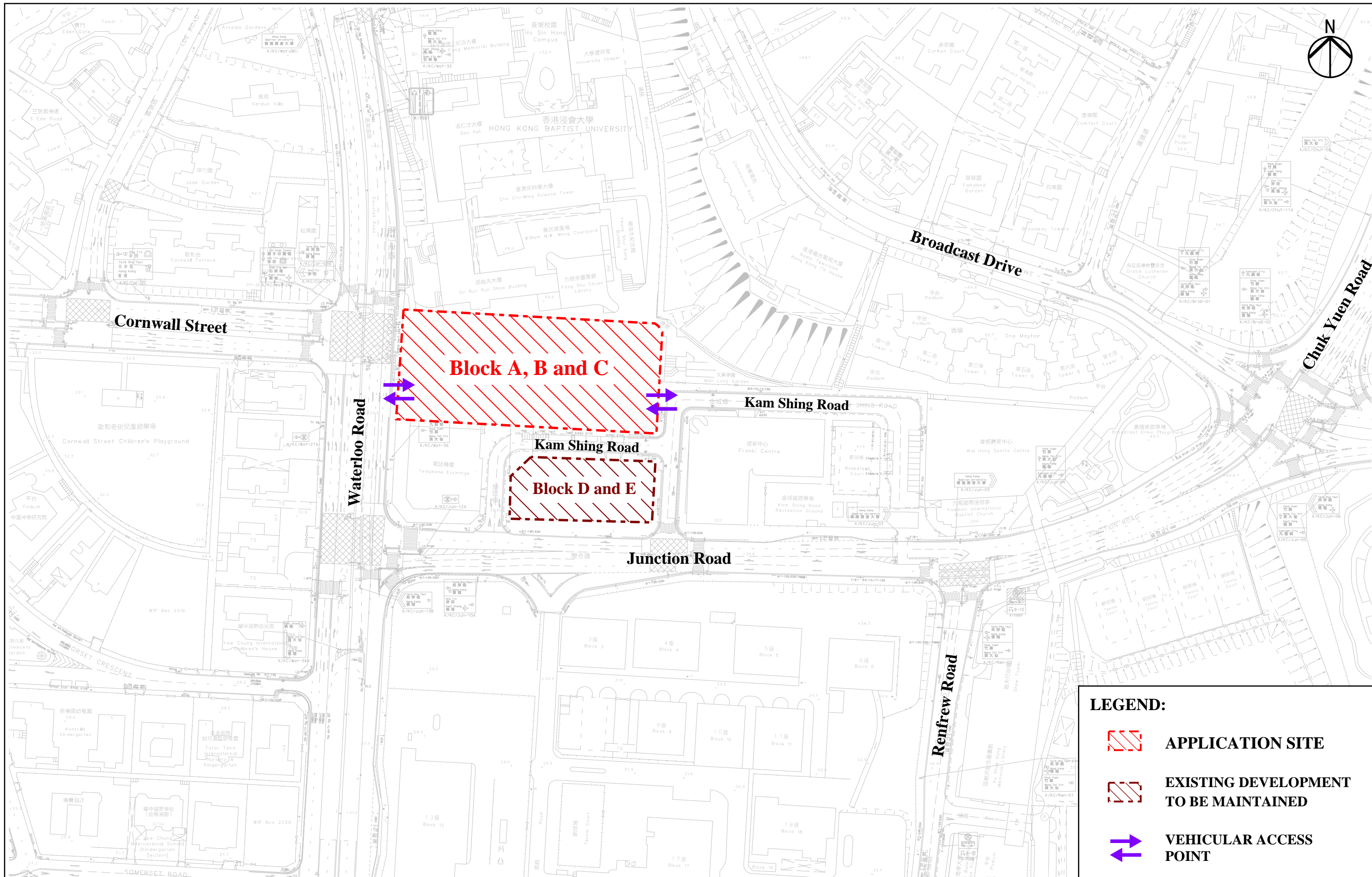
6.1 Summary

- 6.1.1 Blocks A, B and C of Hong Kong Baptist Hospital (“Application Site”) is located at the northern part of Kowloon Tong. It is currently zoned as “Government, Institution or Community (“GIC”)” under the Approved Kowloon Tong Outline Zoning Plan No. S/K18/21.
- 6.1.2 The Applicant, Hong Kong Baptist Hospital, intends to retire the aging Blocks A, B and C in the hospital compound and redevelop the said blocks into a new hospital building of 700 beds (i.e., a net increase of 111 nos. beds) including ancillary facilities such as consultation rooms (“Proposed Redevelopment”) to cater for the continuously increasing service demand.
- 6.1.3 A Traffic Impact Assessment (“TIA”) Study was carried out to evaluate the likely traffic impact associated with the Proposed Redevelopment, in support of the Section 16 planning application for the Application Site.
- 6.1.4 Vehicles will access to/from the Application Site through the proposed vehicular access points at Waterloo Road and Kam Shing Road. The proposed internal parking and servicing facilities provisions are made reference to the requirements under Hong Kong Planning Standards and Guidelines (“HKPSG”) and the operation needs of the hospital. The need of re-providing the affected provision of internal transport facilities at Block D due to the proposed conversion of existing elevated vehicular bridge between Block D and the Application Site into a pedestrian walkway has been considered. Minor relaxation of internal transport facilities provisions was proposed, such as nil provision of ambulance parking space and provision of 1 no. lay-by for public light bus.
- 6.1.5 The identified key junctions in the vicinity were assessed with respect to traffic generation of the Proposed Redevelopment upon Year 2036 (3 years after the target Completion Year 2033), taking into account the traffic generation by the major planned developments in the vicinity.
- 6.1.6 Traffic impact assessment scenarios were set up for the Proposed Redevelopment, namely Year 2036 Reference scenario (the site occupied by existing building) and Year 2036 Design scenario (the site occupied by the Proposed Redevelopment).
- 6.1.7 The assessment results revealed that the traffic condition would be more or less the same under both Reference and Design scenarios in year 2036. The traffic impact due to the Proposed Redevelopment is considered insignificant and could be accommodated by the surrounding road network.
- 6.1.8 Pedestrian Impact assessment was conducted, and the results indicated that the concerned pedestrian facilities in the vicinity of the Application Site are currently operating satisfactorily during morning and evening peak periods, and would continue to operate within capacities in Year 2036 with the Proposed Redevelopment.
- 6.1.9 Construction traffic impact assessment scenario was set up to evaluate the associated construction traffic impact induced by the Proposed Redevelopment. It has revealed that the identified key junctions would operate satisfactorily at the construction stage of the Proposed Redevelopment.

6.2 Conclusion

- 6.2.1 It is concluded that the Proposed Redevelopment will not impose adverse traffic impact on the surrounding road network and thus is feasible from the traffic engineering point of view.

Figures



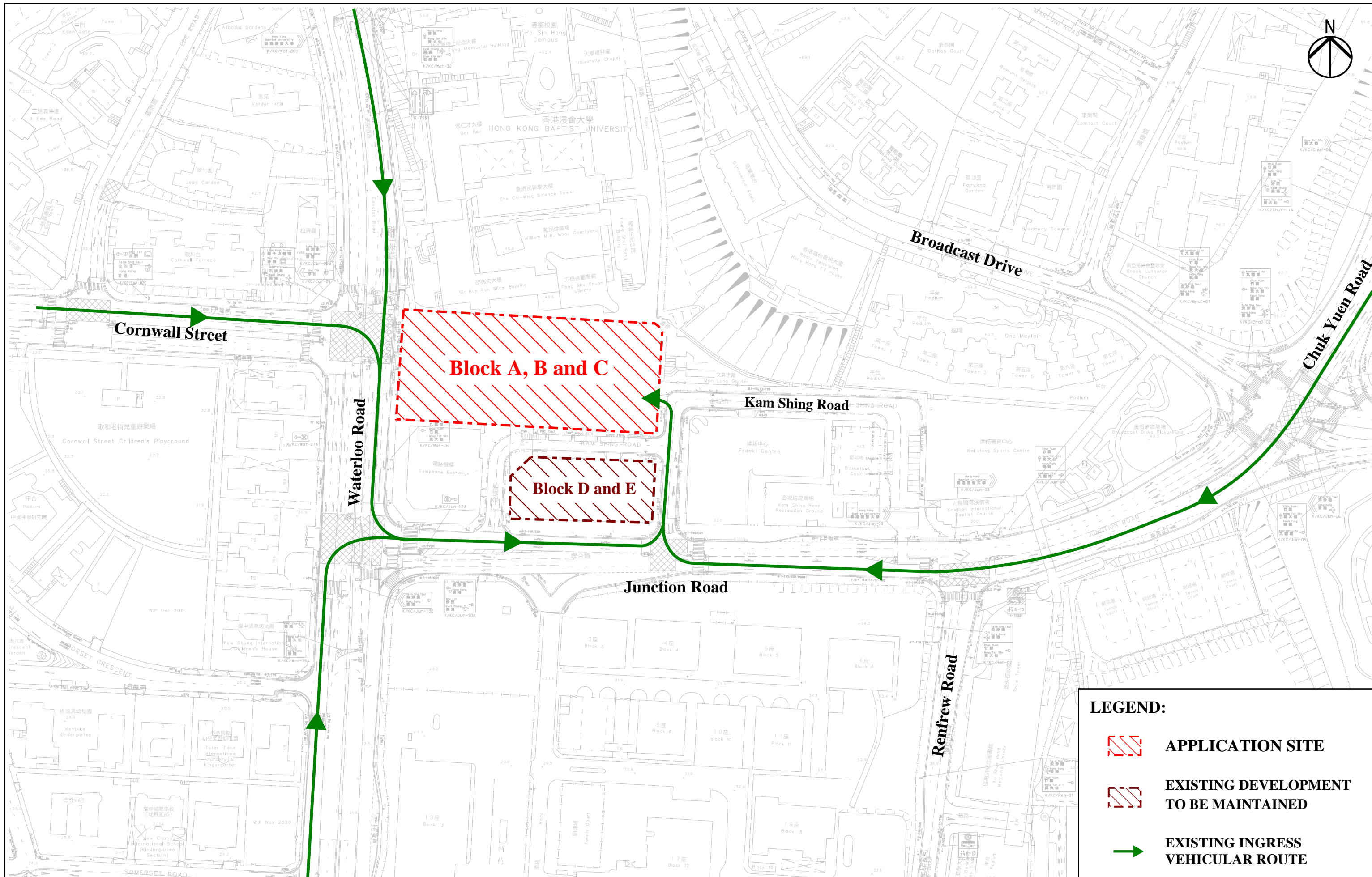
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FIGURE 1.1




Date 07/2024	Scale 1:1,500 (A3)
Drawn WYJL	Job No. 292058-24

Drawing Title
LOCATION OF THE APPLICATION SITE AND ITS ENVIRONS

ARUP



LEGEND:

-  **APPLICATION SITE**
-  **EXISTING DEVELOPMENT TO BE MAINTAINED**
-  **EXISTING INGRESS VEHICULAR ROUTE**

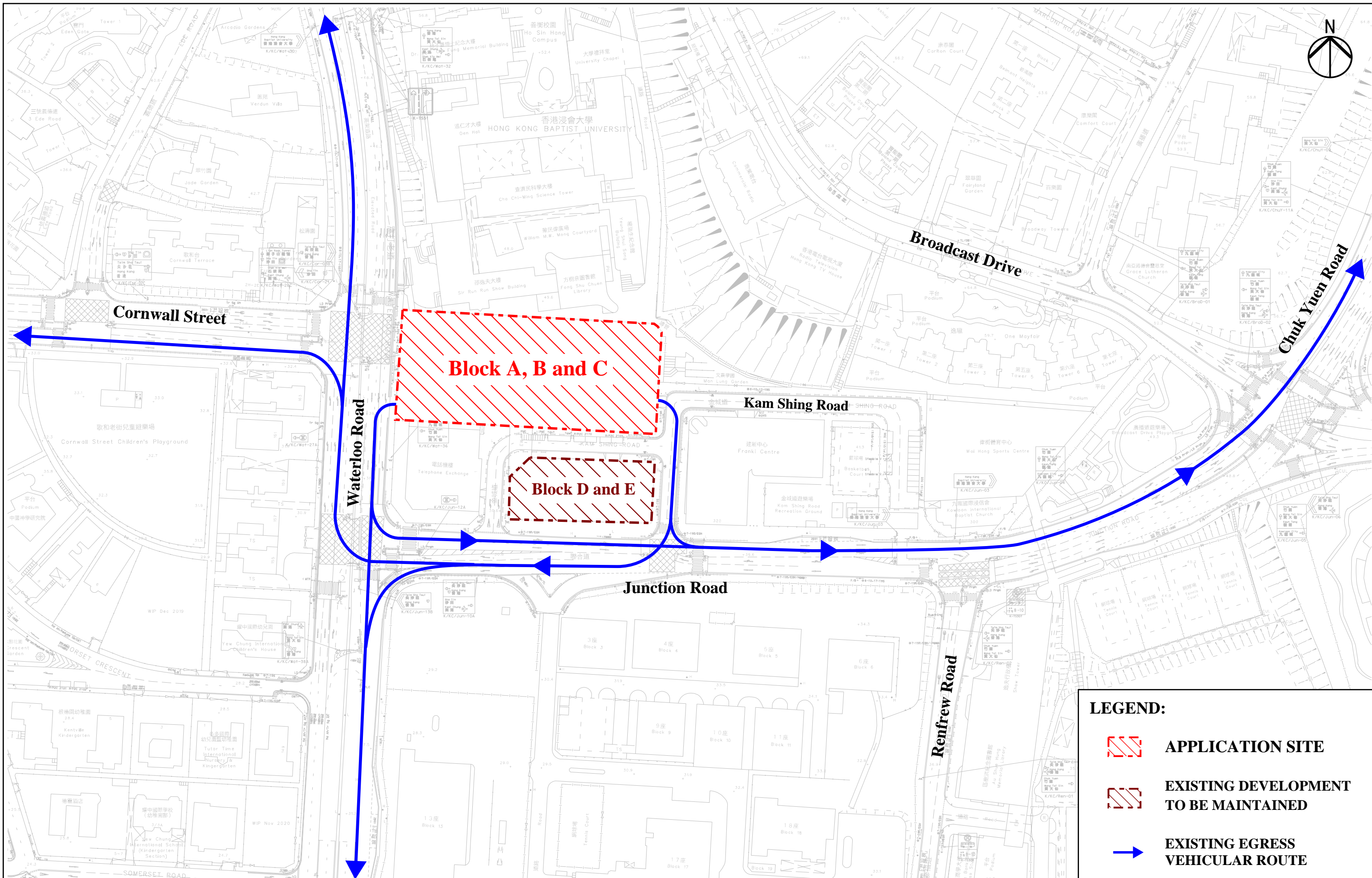
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 2.1

Date	Scale
07/2024	1:1,500 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
EXISTING INGRESS VEHICULAR ROUTE OF THE APPLICATION SITE

ARUP



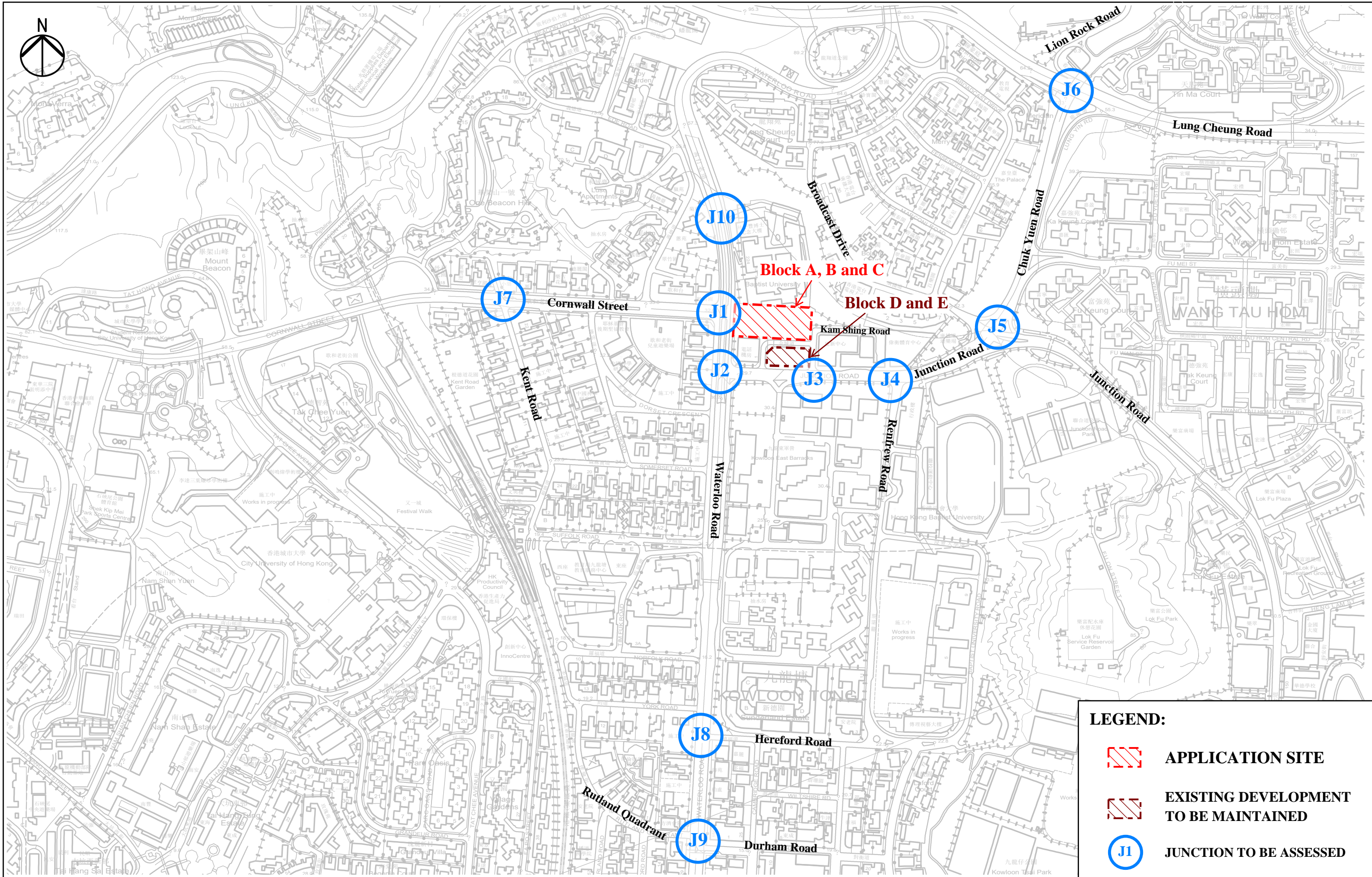
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FIGURE 2.2




Date	Scale
07/2024	1:1,500 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
EXISTING EGRESS VEHICULAR ROUTE OF THE APPLICATION SITE

ARUP



LEGEND:

-  APPLICATION SITE
-  EXISTING DEVELOPMENT TO BE MAINTAINED
-  JUNCTION TO BE ASSESSED

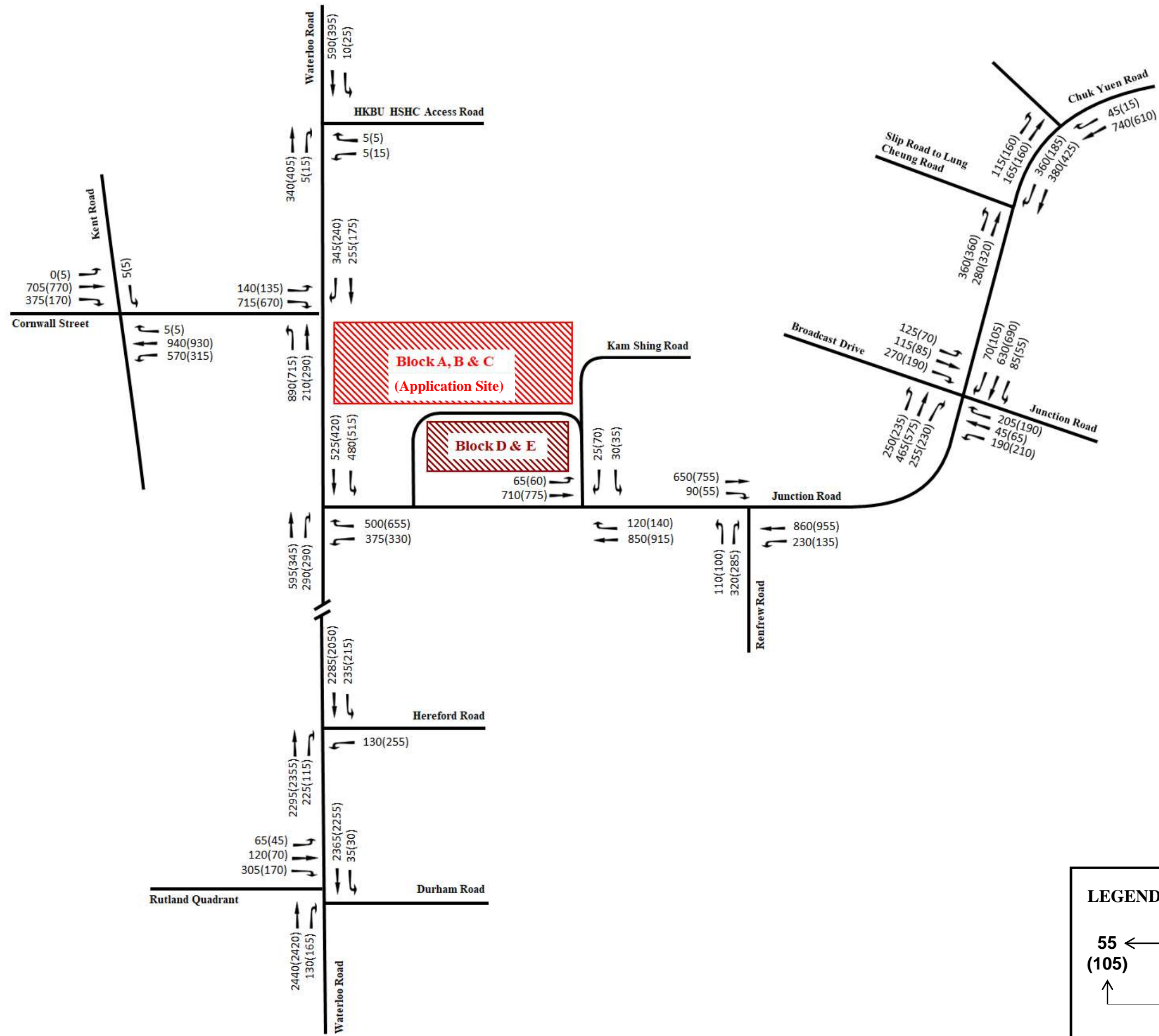
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FIGURE 2.3

Date	Scale
07/2024	1:1,500 (A3)
Drawn	Job No.
WYJL	292058-24

IDENTIFIED JUNCTIONS TO BE ASSESSED

ARUP



LEGEND:

55 ← AM PEAK TRAFFIC FLOW (PCU/HR)

(105) ← PM PEAK TRAFFIC FLOW (PCU/HR)

Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

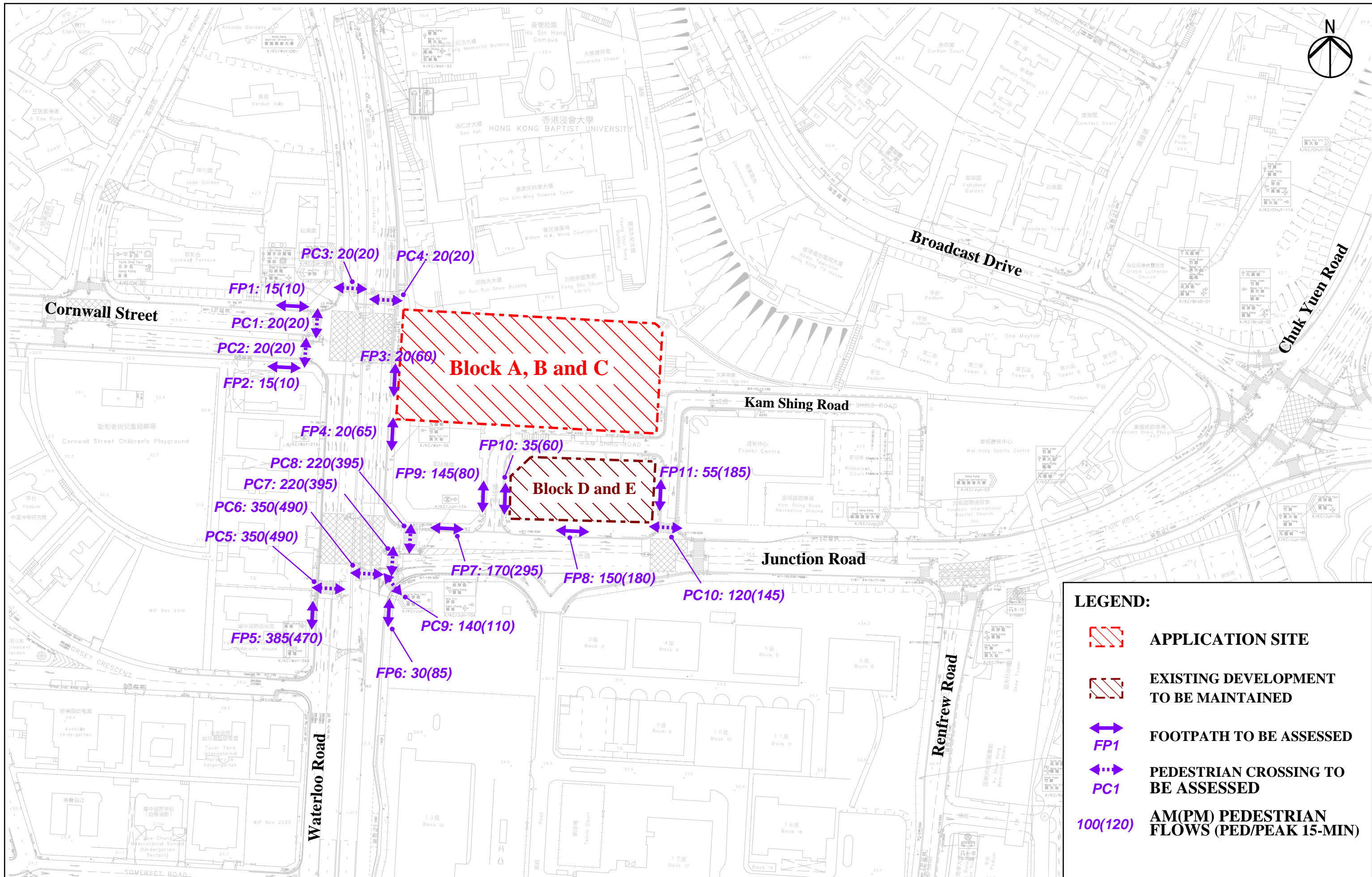
FIGURE 2.4

Date	Scale
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Drawn	Job No.
WYJL	292058-24

Drawing Title

YEAR 2023 EXISTING TRAFFIC FLOW





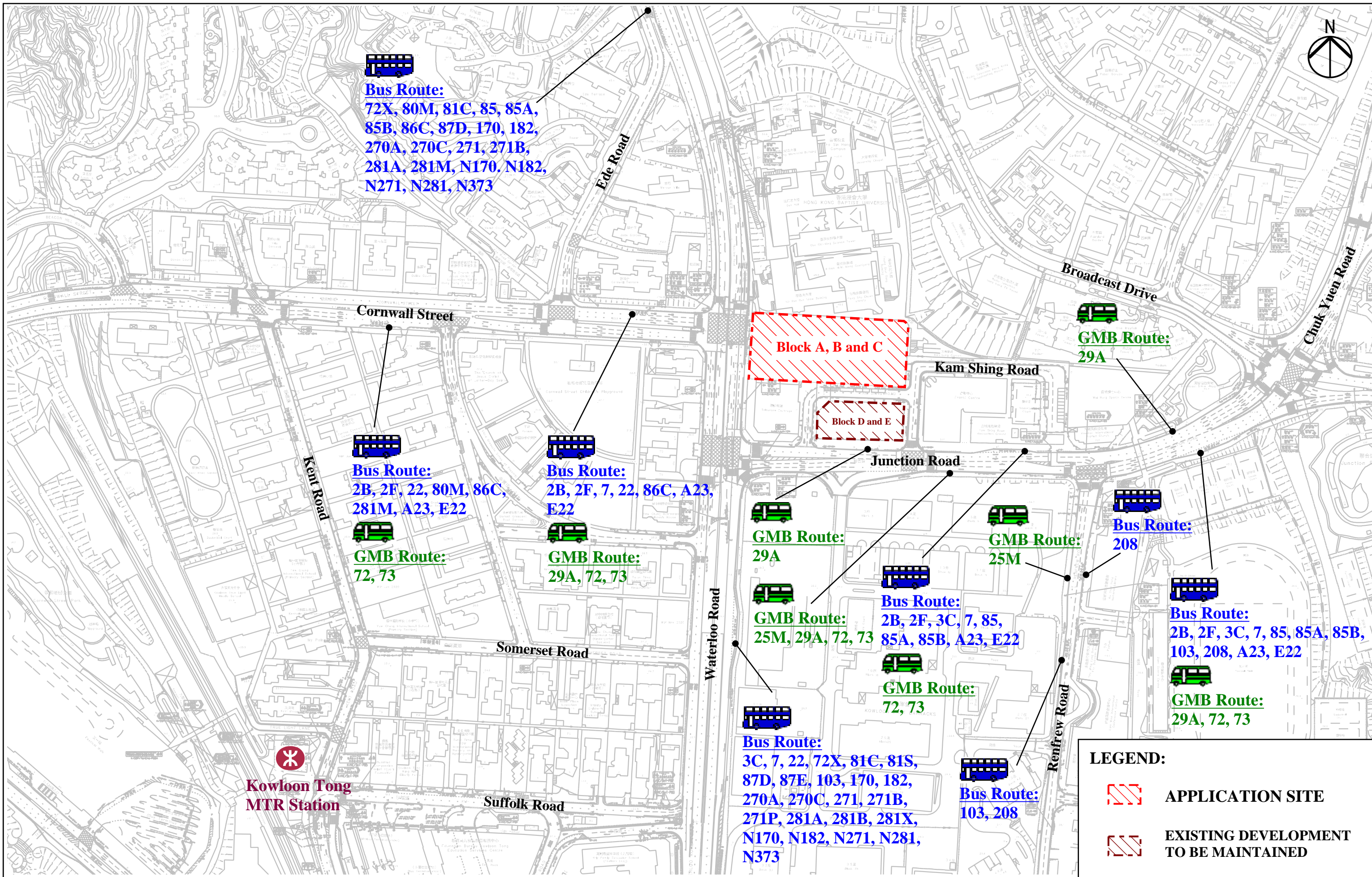
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FIGURE 2.5

Date	Scale
07/2024	1:1,500 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
IDENTIFIED PEDESTRIAN FACILITIES TO BE ASSESSED AND YEAR 2024 PEDESTRIAN FLOWS





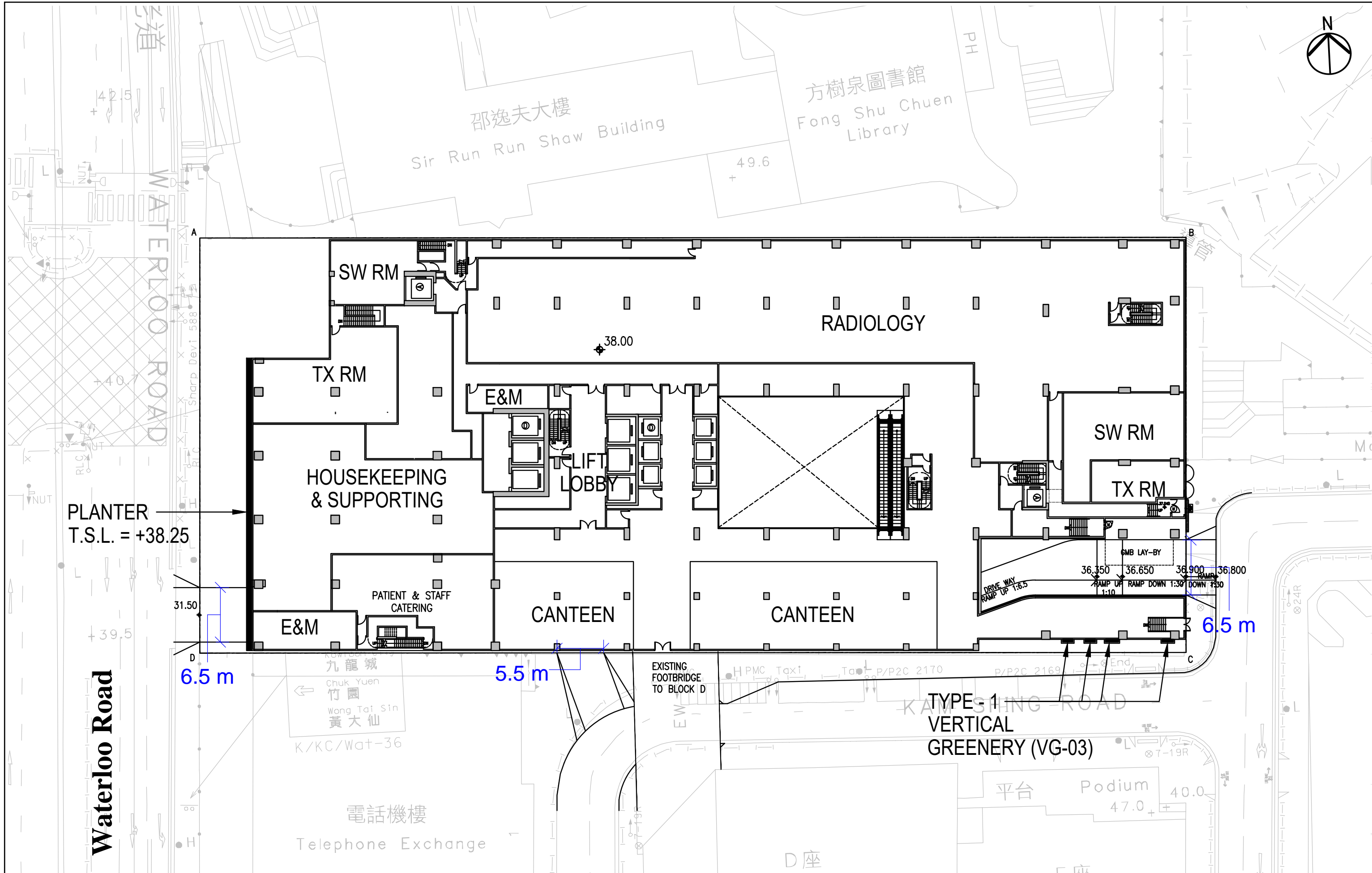
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FIGURE 2.6

Date	Scale	Drawing Title
07/2024	1:2,500 (A3)	EXISTING PUBLIC TRANSPORT SERVICES IN THE VICINITY
Drawn	Job No.	
WYJL	292058-24	

EXISTING PUBLIC TRANSPORT SERVICES IN THE VICINITY





Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

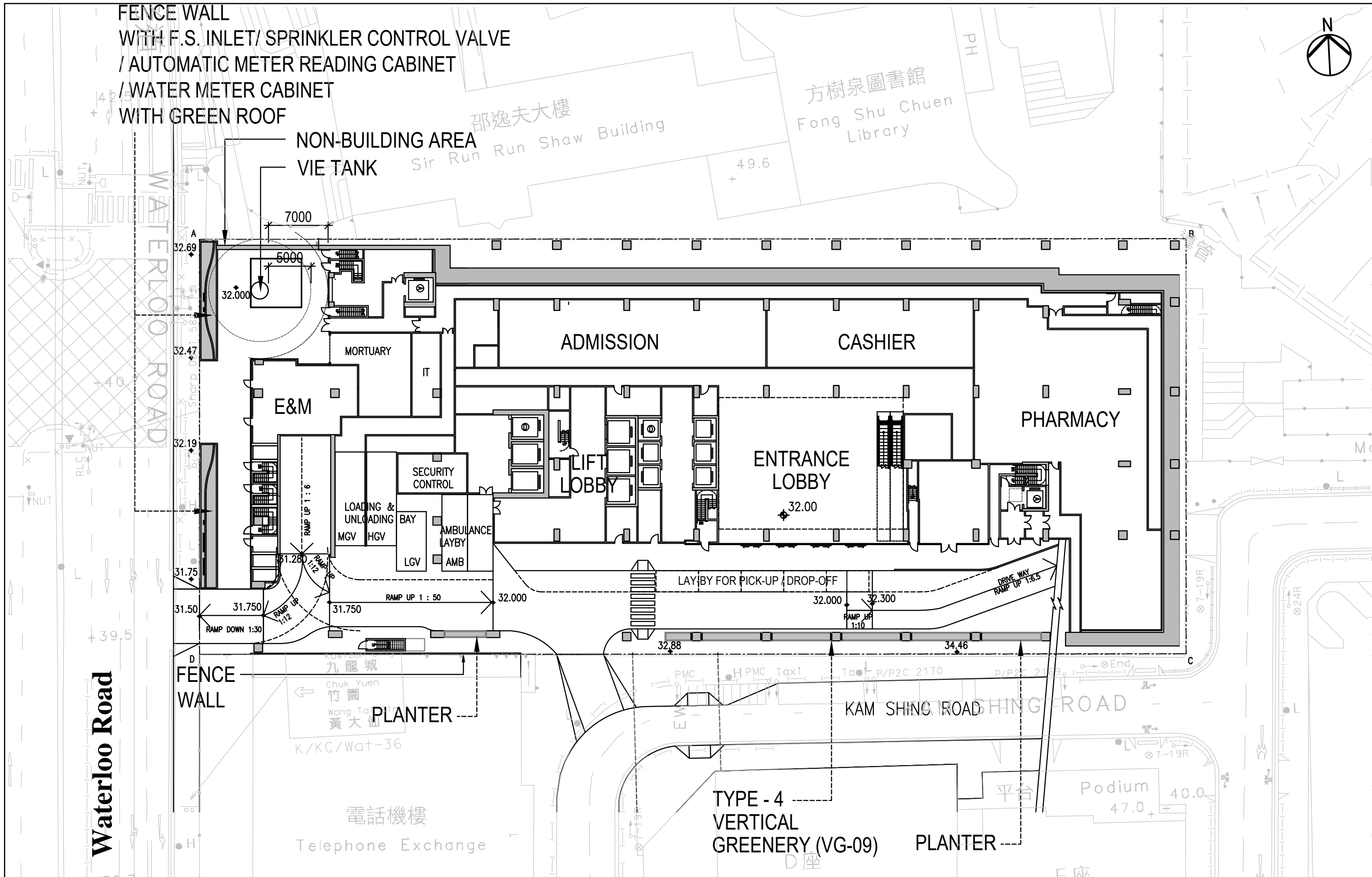
FIGURE 3.1

Date	Scale
07/2024	1:400 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
PROPOSED LAYOUT FOR 1/F

ARUP

FENCE WALL
 WITH F.S. INLET/ SPRINKLER CONTROL VALVE
 / AUTOMATIC METER READING CABINET
 / WATER METER CABINET
 WITH GREEN ROOF



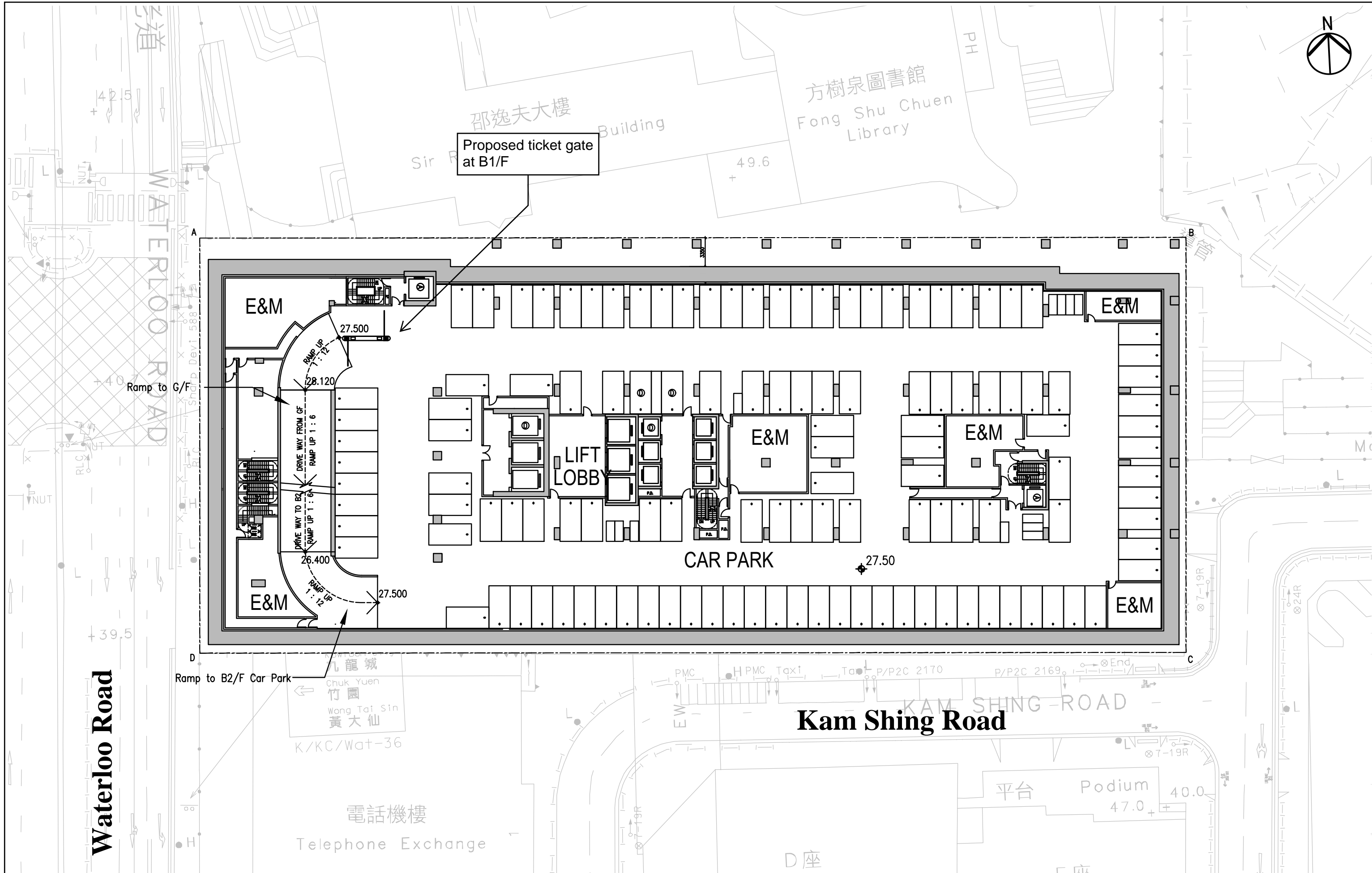
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 3.2

Date	Scale
05/2024	1:400 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
PROPOSED LAYOUT FOR G/F





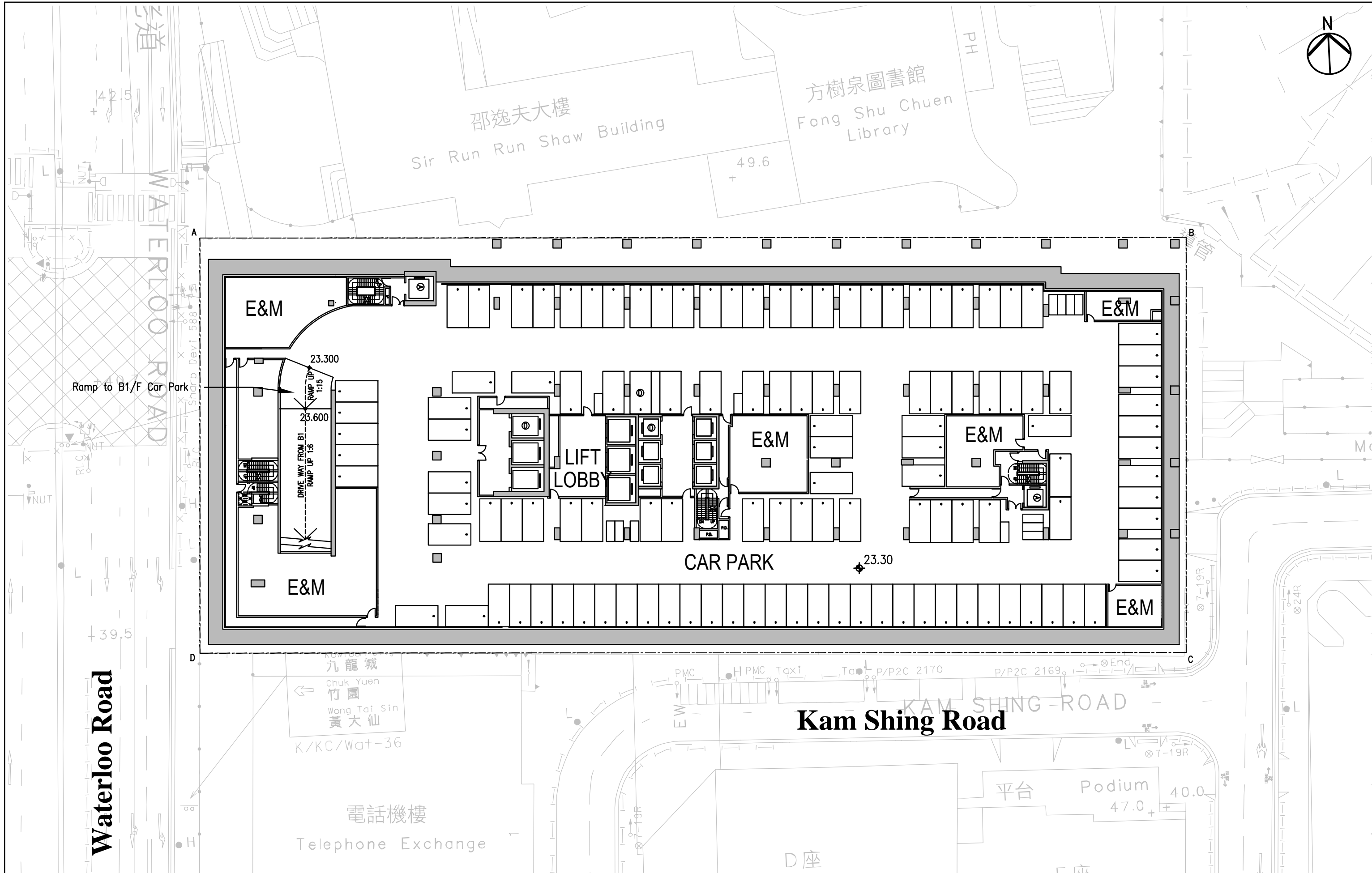
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 3.3

Date	Scale
07/2024	1:400 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
PROPOSED LAYOUT FOR B1/F

ARUP



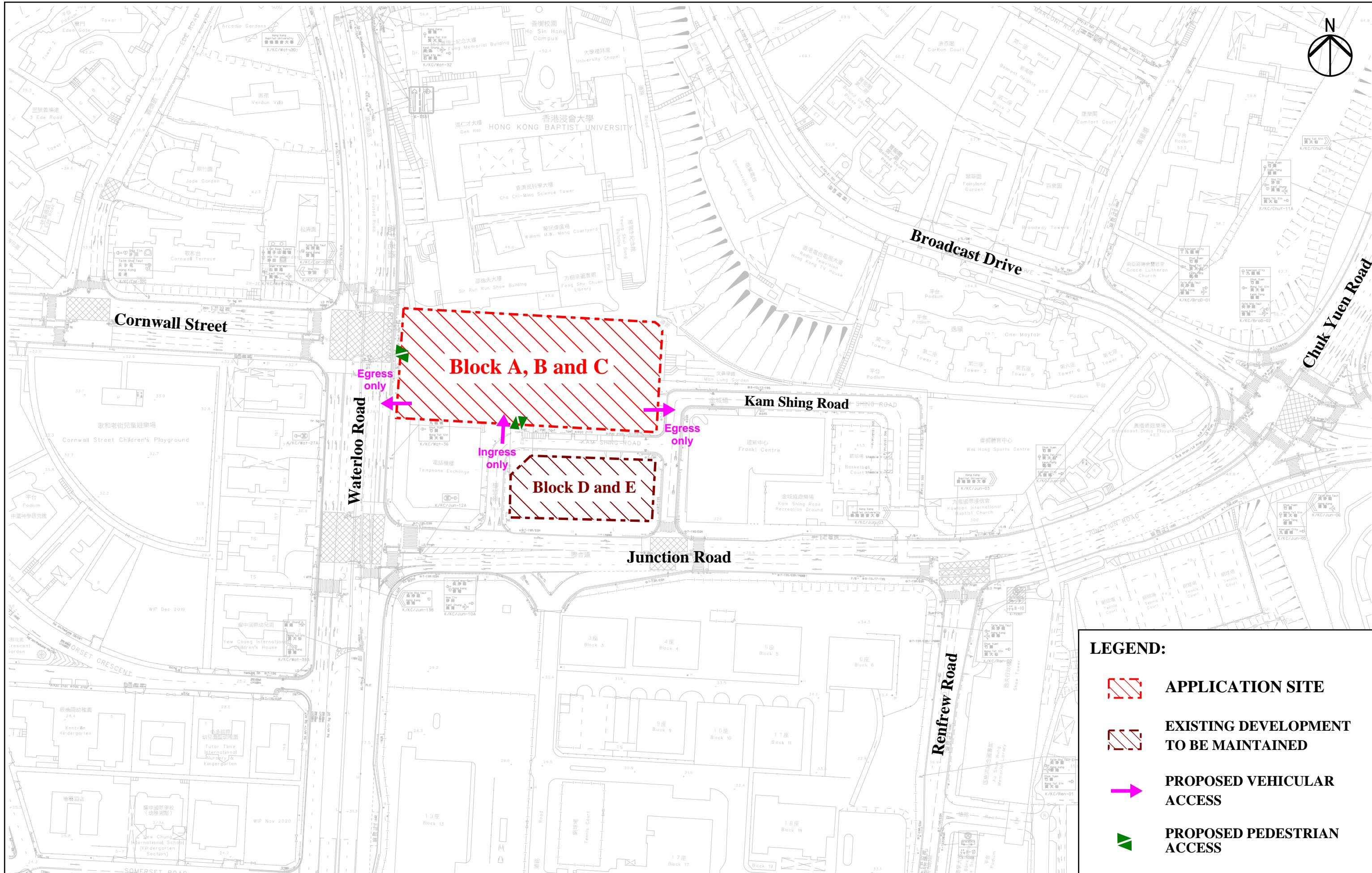
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 3.4





Date	Scale
07/2024	1:400 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
PROPOSED LAYOUT FOR B2/F

ARUP



LEGEND:

-  APPLICATION SITE
-  EXISTING DEVELOPMENT TO BE MAINTAINED
-  PROPOSED VEHICULAR ACCESS
-  PROPOSED PEDESTRIAN ACCESS

Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

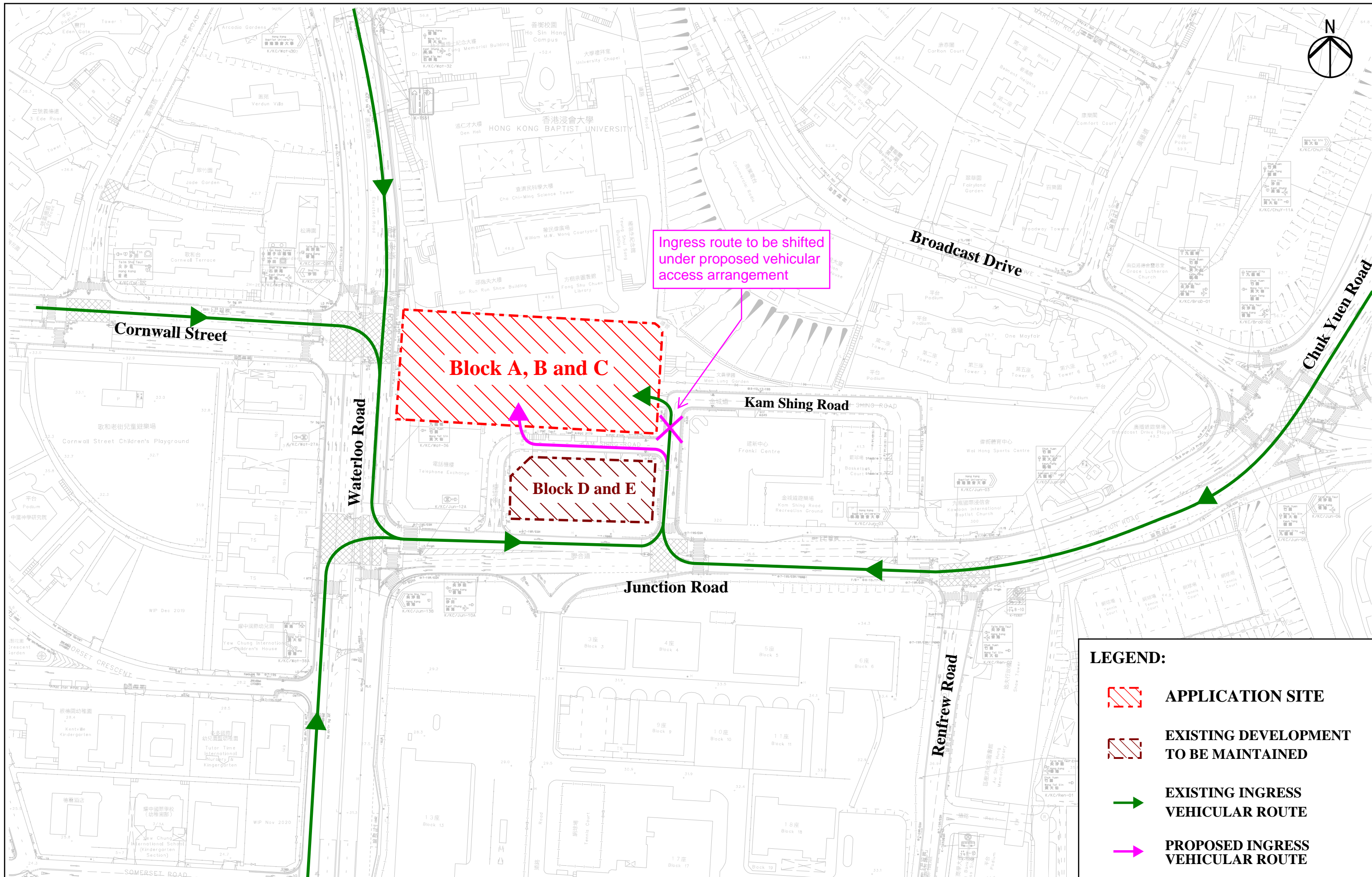
FIGURE 3.5

Date	Scale
07/2024	1:1,500 (A3)
Drawn	Job No.
WYJL	292058-24





Drawing Title

PROPOSED VEHICULAR AND PEDESTRIAN ACCESS ARRANGEMENT

ARUP



LEGEND:

-  **APPLICATION SITE**
-  **EXISTING DEVELOPMENT TO BE MAINTAINED**
-  **EXISTING INGRESS VEHICULAR ROUTE**
-  **PROPOSED INGRESS VEHICULAR ROUTE**

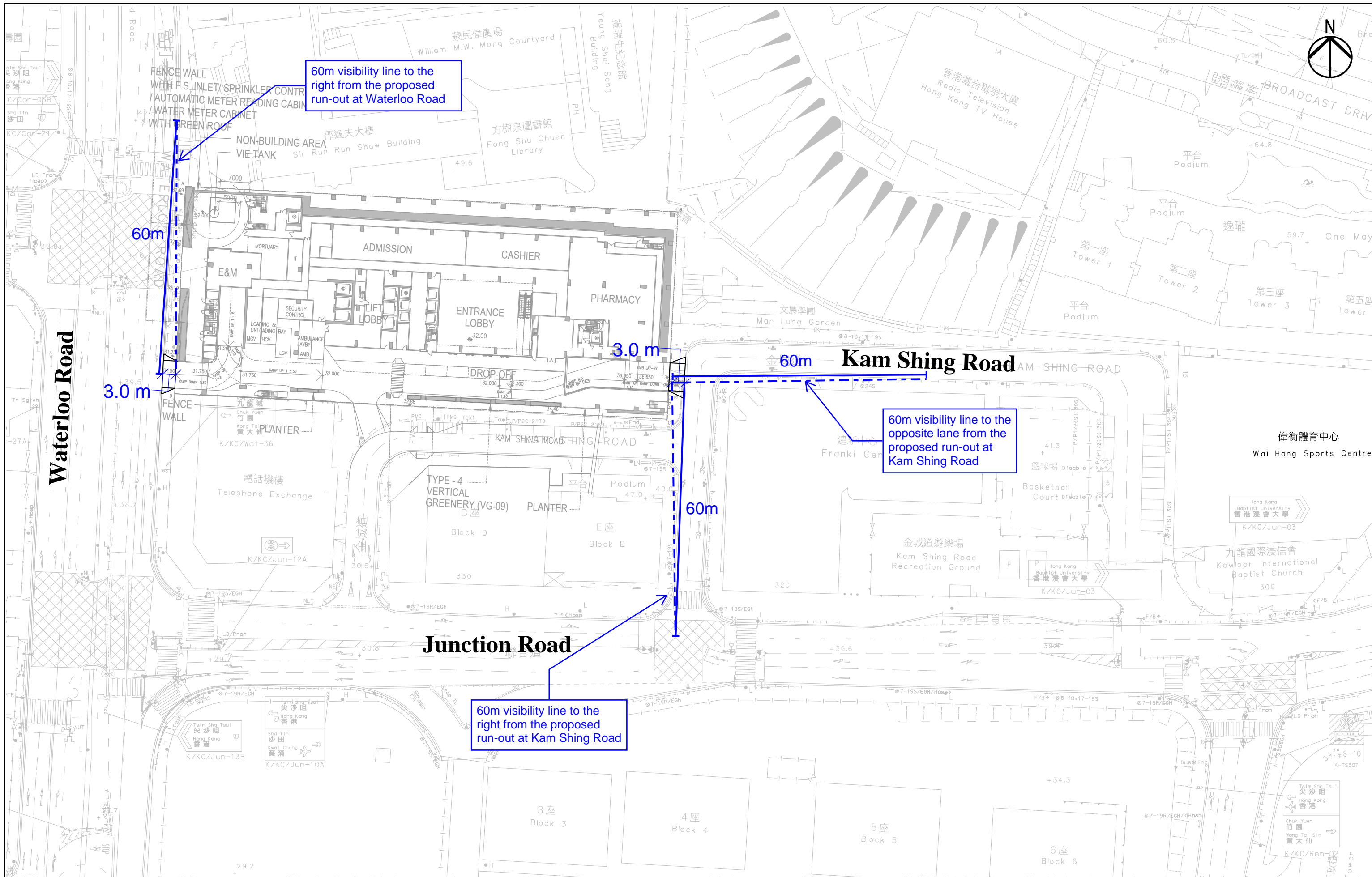
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 3.6

Date	Scale
07/2024	1:1,500 (A3)
Drawn	Job No.
WYJL	292058-24

PROPOSED INGRESS VEHICULAR ROUTE OF THE APPLICATION SITE AND PROPOSED TRAFFIC SIGN ARRANGEMENT

ARUP



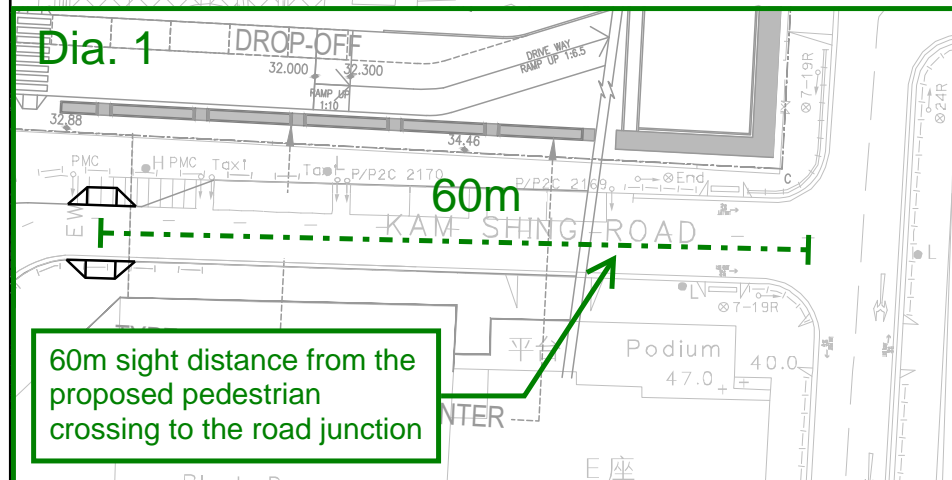
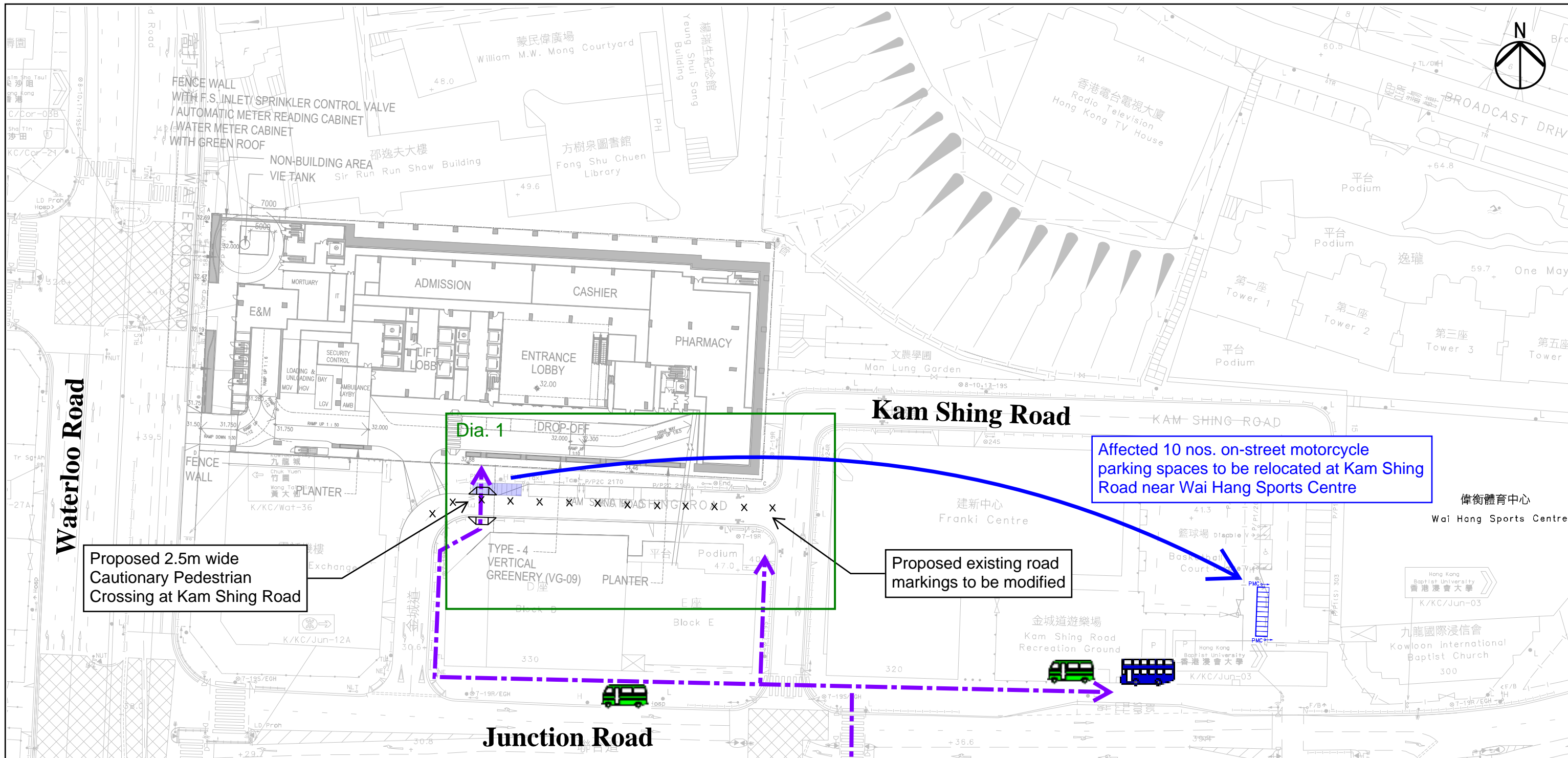
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 3.7





Date	Scale
07/2024	1:800 (A3)
Drawn	Job No.
WYJL	292058-24

ASSESSMENT OF VISIBILITY DISTANCE OF PROPOSED RUN-OUTS AT WATERLOO ROAD AND KAM SHING ROAD

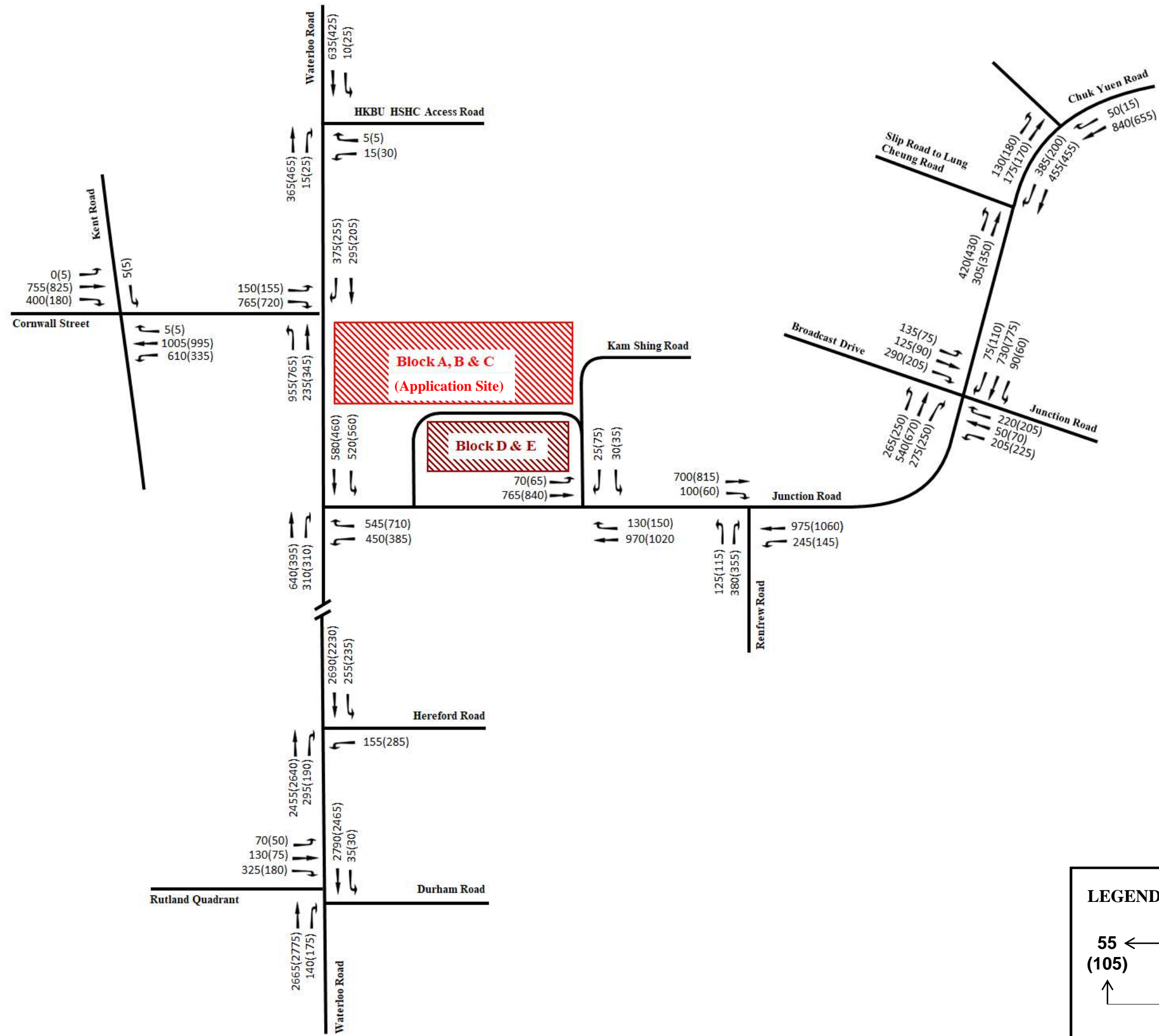




LEGEND:

-  PROPOSED MOTORCYCLE PARKING SPACE (2.4m x 1m)
-  ANTICIPATED PEDESTRIAN ROUTE
-  GMB STOP
-  BUS STOP

Job Title S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON			FIGURE 3.8
Date 07/2024	Scale 1:800 (A3)	Drawing Title PROPOSED CAUTIONARY PEDESTRIAN CROSSING AND RELOCATION OF ON-STREET MOTORCYCLE PARKING SPACES AT KAM SHING ROAD	ARUP
Drawn WYJL	Job No. 292058-24		



LEGEND:

55 ← AM PEAK TRAFFIC FLOW (PCU/HR)

(105) ↑ PM PEAK TRAFFIC FLOW (PCU/HR)

Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

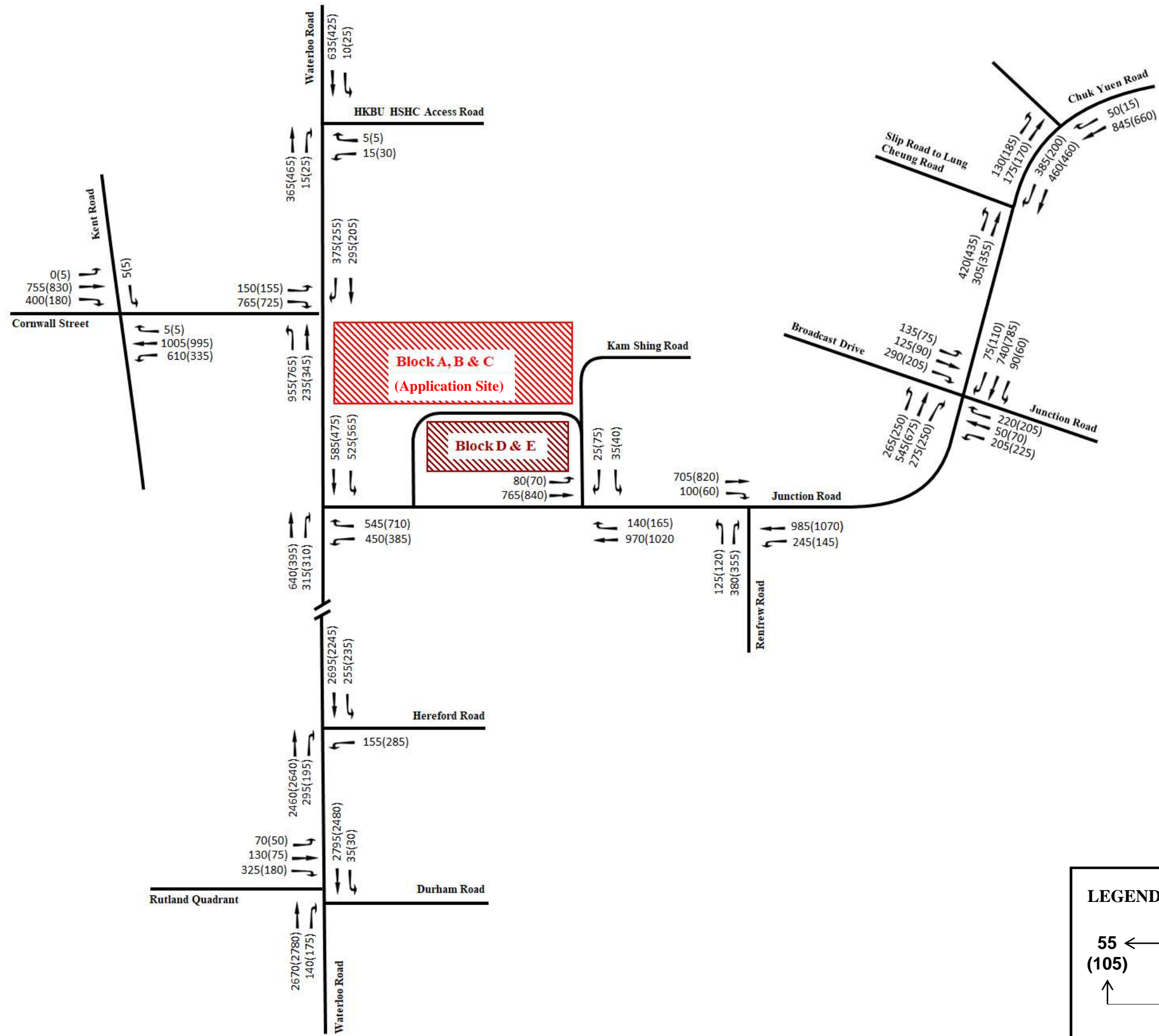
FIGURE 4.1

Date	Scale
07/2024	N.T.S
Drawn	Job No.
WYJL	292058-24

Drawing Title

YEAR 2036 REFERENCE TRAFFIC FLOW





LEGEND:

55 ← AM PEAK TRAFFIC FLOW (PCU/HR)

(105) ↑ PM PEAK TRAFFIC FLOW (PCU/HR)

Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

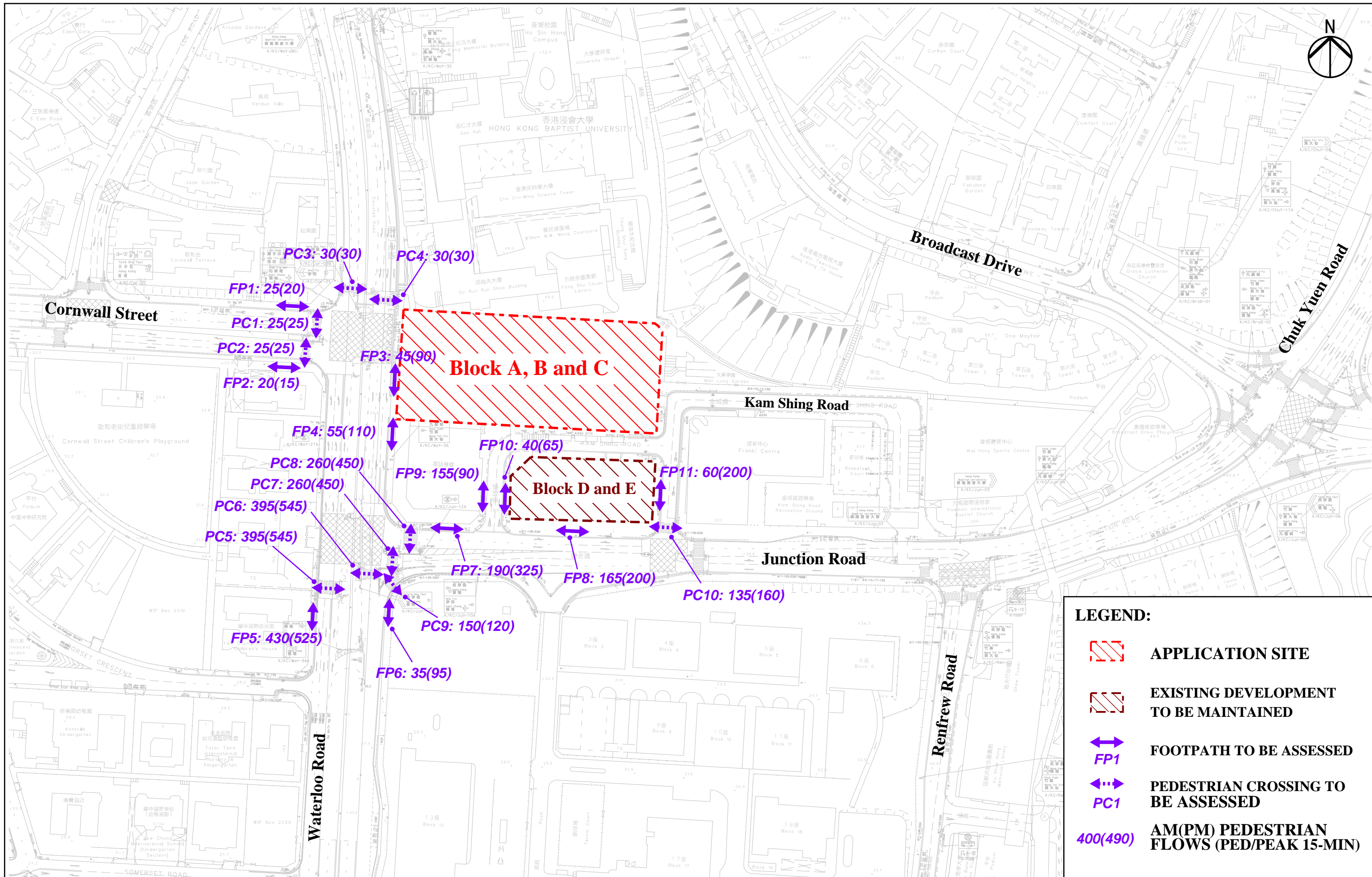
FIGURE 4.2

Date	Scale
07/2024	N.T.S
Drawn	Job No.
WYJL	292058-24

Drawing Title

YEAR 2036 DESIGN TRAFFIC FLOW





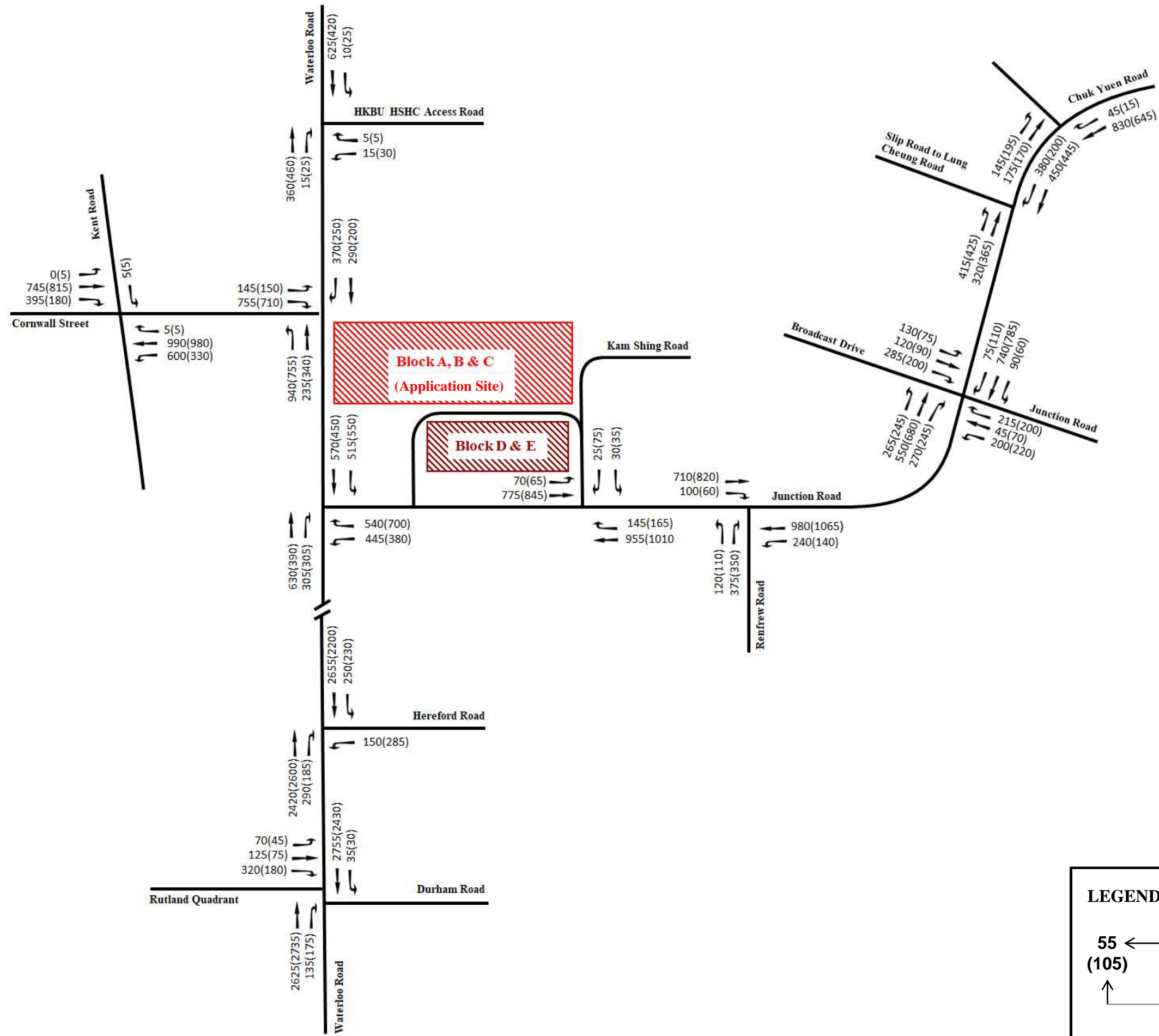
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 4.3

Date	Scale
07/2024	1:1,500 (A3)
Drawn	Job No.
WYJL	292058-24

Drawing Title
YEAR 2036 DESIGN PEDESTRIAN FLOW





Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

FIGURE 5.1

Date	Scale
07/2024	N.T.S
Drawn	Job No.
WYJL	292058-24

Drawing Title

YEAR 2033 CONSTRUCTION TRAFFIC FLOW



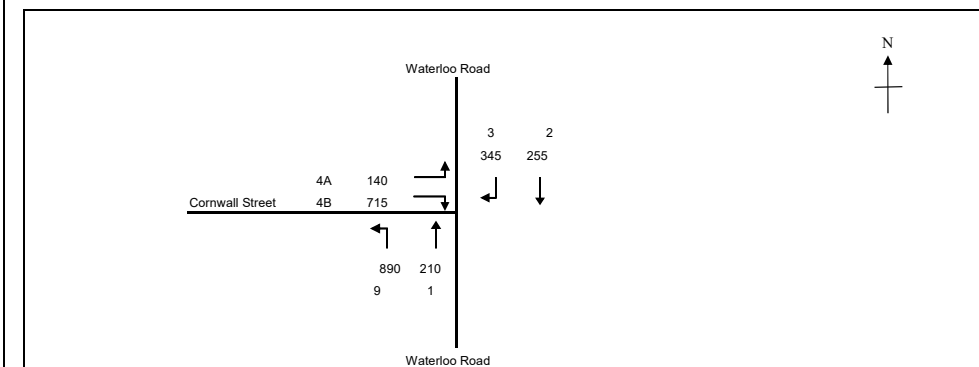
Appendix A

Junction Calculation Sheets

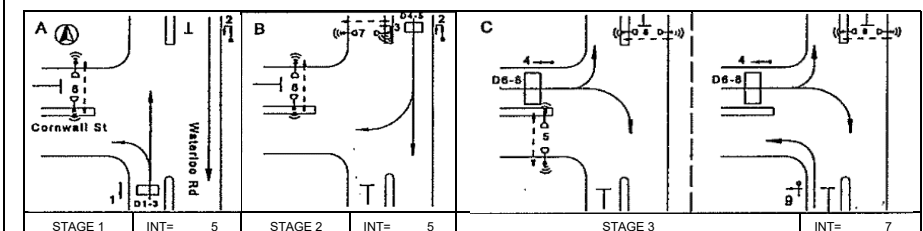
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2023 AM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.282
Loss time	L =	61 sec
Total Flow	=	2555 pcu
Co	= (1.5*L+5)/(1-Y)	= 134.5 sec
Cm	= L/(1-Y)	= 85.0 sec
Yult	=	0.443
R.C.ult	= (Yult-Y)/Y*100%	= 56.7 %
Cp	= 0.9*L/(0.9-Y)	= 88.9 sec
Ymax	= 1-L/C	= 0.492
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 57 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	17	11	9	OK
6p	10	6	3	11	69	3	11	OK
7p	7	5	6	8	18	6	8	OK
8p	10	6	2	11	24	2	11	OK

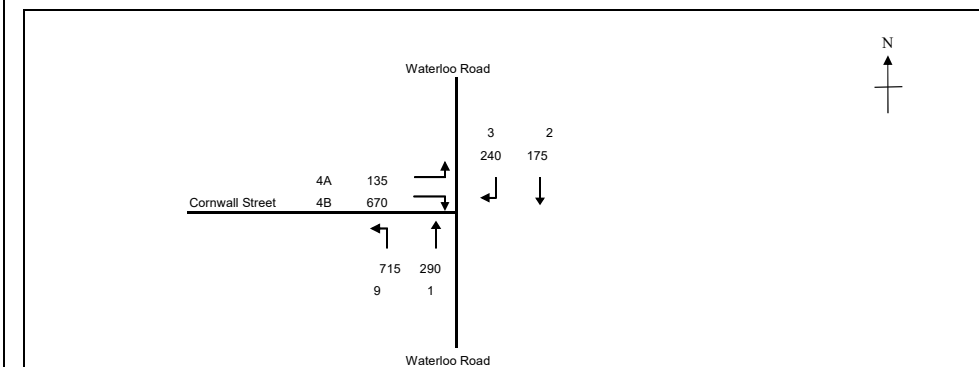
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075		210		210	0.00	2075					14	21	47	0.258	26	
9	1,3	3.20	3	2	15		N	4010	890			890	1.00	3645			0.244			51	51	0.574	51	
2	2	3.00	2	1			N	1915		255		255	0.00	1915			0.133			28	28	0.571	39	
3	2	3.50	3	2	30			4210	345			345	1.00	4010			0.086			18	28	0.369	26	
4A,4B	3	3.20	4	1	15		N	1935	140		122	262	1.00	1759			0.149	0.149		31	31	0.578	39	
4B	3	3.30	4	2	30			4170		593		593	1.00	3971			0.149			31	31	0.578	44	
	1																		47	47	47			

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

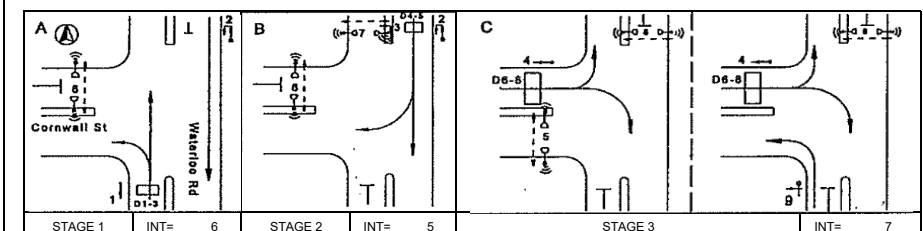
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2023 PM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.232
Loss time	L =	61 sec
Total Flow	=	2225 pcu
Co	= (1.5*L+5)/(1-Y)	= 125.6 sec
Cm	= L/(1-Y)	= 79.4 sec
Yult	=	0.443
R.C.ult	= (Yult-Y)/Y*100%	= 90.8 %
Cp	= 0.9*L/(0.9-Y)	= 82.2 sec
Ymax	= 1-L/C	= 0.492
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 91 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	22	11	9	OK
6p	10	6	3	11	64	3	11	OK
7p	7	5	6	8	13	6	8	OK
8p	10	6	2	11	29	2	11	OK

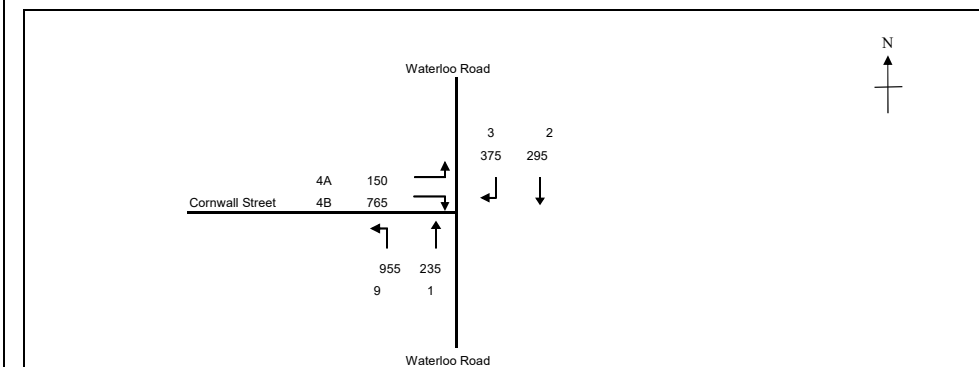
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075			290	290	0.00	2075						15	36	46	0.365	36
9	1,3	3.20	3	2	15		N	4010	715		290	715	1.00	3645			0.196				50	50	0.471	42
2	2	3.00	2	1			N	1915		175	175	0.00	1915			0.091	0.091				23	23	0.477	28
3	2	3.50	3	2	30			4210	240		240	240	1.00	4010			0.060				15	23	0.312	19
4A,4B	3	3.20	4	1	15		N	1935	135		112	247	1.00	1759			0.140	0.140			36	36	0.468	35
4B	3	3.30	4	2	30			4170			558	558	1.00	3971			0.140				36	36	0.468	39
	1																			46	46	46		

NOTE: 'O' - OPPOSING TRAFFIC | N - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

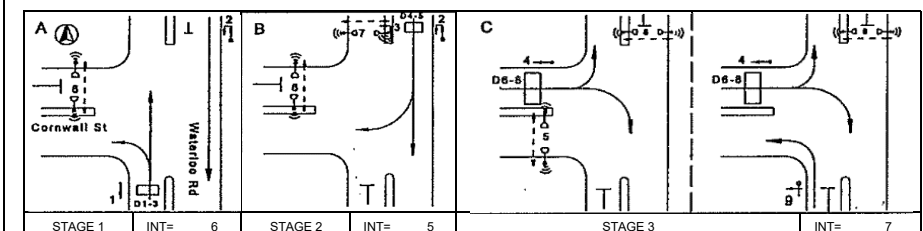
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2036 AM Reference Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.314
Loss time	L =	61 sec
Total Flow	=	2775 pcu
Co	= (1.5*L+5)/(1-Y)	= 140.6 sec
Cm	= L/(1-Y)	= 88.9 sec
Yult	=	0.443
R.C.ult	= (Yult-Y)/Y*100%	= 41.1 %
Cp	= 0.9*L/(0.9-Y)	= 93.6 sec
Ymax	= 1-L/C	= 0.492
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 41 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	16	11	9	OK
6p	10	6	3	11	70	3	11	OK
7p	7	5	6	8	19	6	8	OK
8p	10	6	2	11	23	2	11	OK

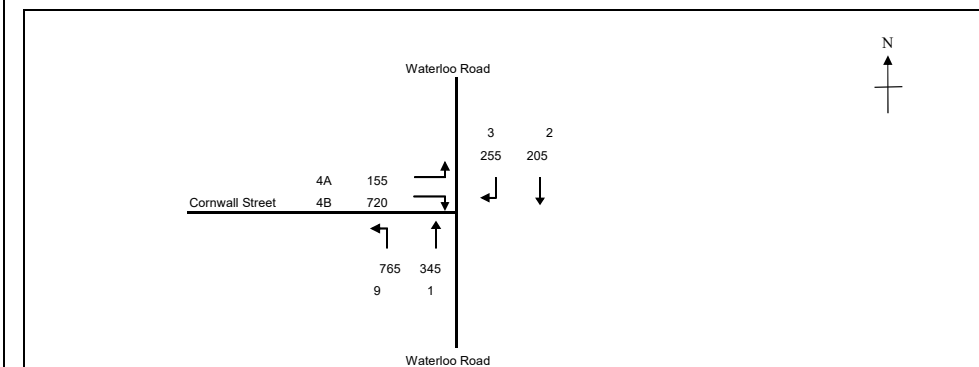
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075		235		235	0.00	2075					15	21	46	0.295	29	
9	1,3	3.20	3	2	15		N	4010	955			955	1.00	3645			0.262		49	50	0.629	56		
2	2	3.00	2	1			N	1915		295		295	0.00	1915			0.154	0.154	29	29	0.637	45		
3	2	3.50	3	2	30			4210	375			375	1.00	4010			0.094		18	29	0.387	28		
4A,4B	3	3.20	4	1	15		N	1935	150		131	281	1.00	1759			0.160	0.160	30	30	0.639	42		
4B	3	3.30	4	2	30			4170			634	634	1.00	3971			0.160		30	30	0.639	48		
	1																		46					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

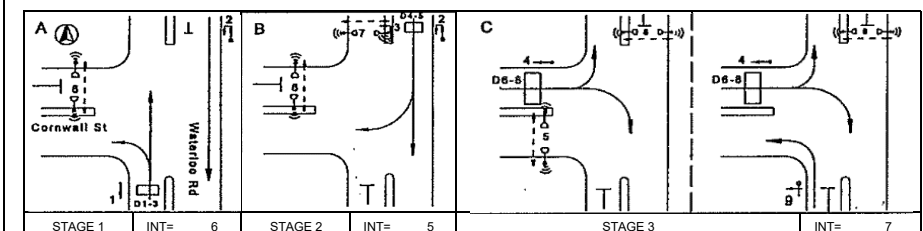
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2036 PM Reference Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.260
Loss time	L =	60 sec
Total Flow	=	2445 pcu
Co	= (1.5*L+5)/(1-Y)	= 128.3 sec
Cm	= L/(1-Y)	= 81.1 sec
Yult	=	0.450
R.C.ult	= (Yult-Y)/Y*100%	= 73.2 %
Cp	= 0.9*L/(0.9-Y)	= 84.3 sec
Ymax	= 1-L/C	= 0.500
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 73 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	21	11	9	OK
6p	10	6	3	11	65	3	11	OK
7p	7	5	6	8	15	6	8	OK
8p	10	6	2	11	28	2	11	OK

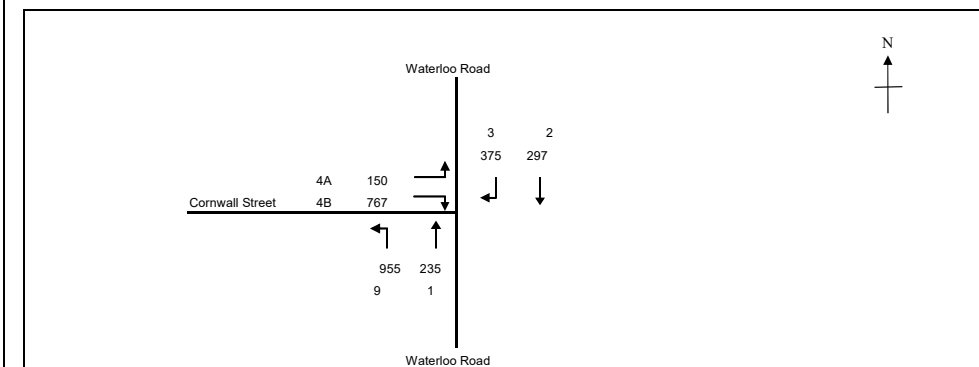
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075				345	0.00	2075					15	38	45	0.443	43	
9	1,3	3.20	3	2	15		N	4010	765		765	205	1.00	3645			0.210		48	49	0.514	45		
2	2	3.00	2	1			N	1915		205	205	0.00	1915			0.107	0.107		25	25	0.514	32		
3	2	3.50	3	2	30			4210	255		255	1.00	4010			0.064			15	25	0.305	20		
4A,4B	3	3.20	4	1	15		N	1935	155		269	1.00	1759			0.153	0.153		35	35	0.524	38		
4B	3	3.30	4	2	30			4170		606	606	1.00	3971			0.153			35	35	0.524	43		
	1																		45					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

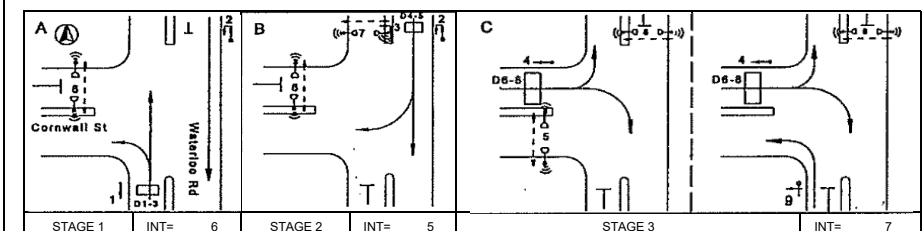
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2036 AM Design Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.315
Loss time	L =	61 sec
Total Flow	=	2779 pcu
Co	= (1.5*L+5)/(1-Y)	= 140.9 sec
Cm	= L/(1-Y)	= 89.1 sec
Yult	=	0.443
R.C.ult	= (Yult-Y)/Y*100%	= 40.4 %
Cp	= 0.9*L/(0.9-Y)	= 93.9 sec
Ymax	= 1-L/C	= 0.492
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 40 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	16	11	9	OK
6p	10	6	3	11	70	3	11	OK
7p	7	5	6	8	19	6	8	OK
8p	10	6	2	11	23	2	11	OK

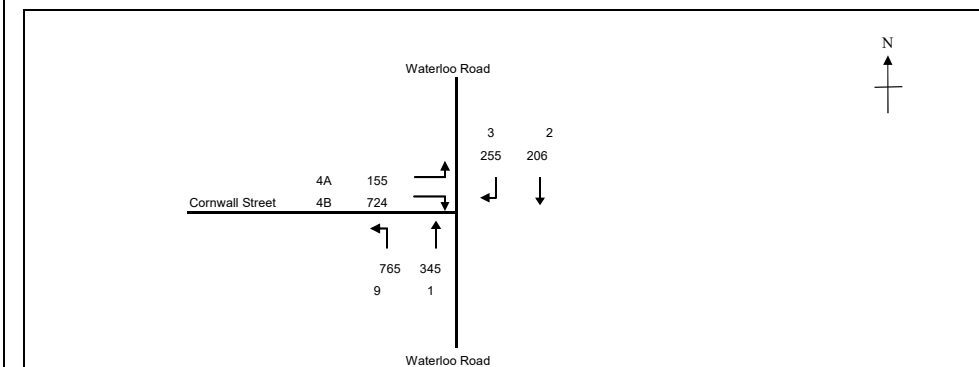
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075			235	235	0.00	2075			2075	0.113		15	21	46	0.295	29
9	1,3	3.20	3	2	15		N	4010	955		235	955	1.00	3645			3645	0.262			49	50	0.629	56
2	2	3.00	2	1			N	1915		297	297	0.00	1915			1915	0.155	0.155		29	29	0.642	45	
3	2	3.50	3	2	30			4210	375		375	4010	1.00	4010			4010	0.094		18	29	0.387	28	
4A,4B	3	3.20	4	1	15		N	1935	150		131	281	1.00	1759			1759	0.160	0.160		30	30	0.640	42
4B	3	3.30	4	2	30			4170			636	636	1.00	3971			3971	0.160			30	30	0.640	48
	1																		46					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

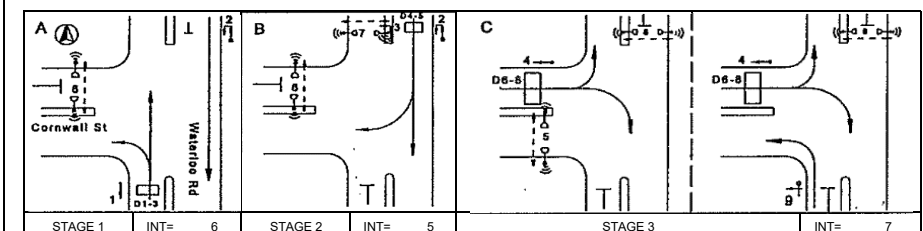
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2036 PM Design Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.261
Loss time	L =	60 sec
Total Flow	=	2450 pcu
Co	= (1.5*L+5)/(1-Y)	= 128.5 sec
Cm	= L/(1-Y)	= 81.2 sec
Yult	=	0.450
R.C.ult	= (Yult-Y)/Y*100%	= 72.4 %
Cp	= 0.9*L/(0.9-Y)	= 84.5 sec
Ymax	= 1-L/C	= 0.500
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 72 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	21	11	9	OK
6p	10	6	3	11	65	3	11	OK
7p	7	5	6	8	15	6	8	OK
8p	10	6	2	11	28	2	11	OK

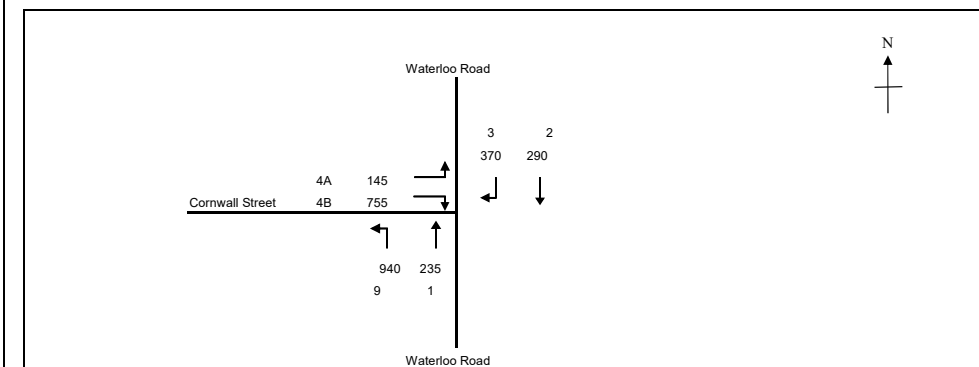
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075				345	0.00	2075					15	38	45	0.443	43	
9	1,3	3.20	3	2	15		N	4010	765		765	206	1.00	3645			0.210		48	49	0.514	45		
2	2	3.00	2	1			N	1915		206	206	0.00	1915			0.108	0.108		25	25	0.516	33		
3	2	3.50	3	2	30			4210	255		255	1.00	4010			0.064			15	25	0.305	20		
4A,4B	3	3.20	4	1	15		N	1935	155	115	270	1.00	1759			0.153	0.153		35	35	0.526	38		
4B	3	3.30	4	2	30			4170		609	609	1.00	3971			0.153			35	35	0.526	43		
	1																		45					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

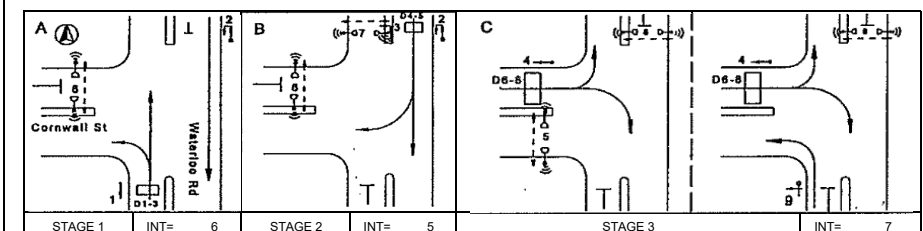
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2033 AM Peak Construction Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.308
Loss time	L =	61 sec
Total Flow	=	2735 pcu
Co	= (1.5*L+5)/(1-Y)	= 139.5 sec
Cm	= L/(1-Y)	= 88.2 sec
Yult	=	0.443
R.C.ult	= (Yult-Y)/Y*100%	= 43.4 %
Cp	= 0.9*L/(0.9-Y)	= 92.8 sec
Ymax	= 1-L/C	= 0.492
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 43 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	16	11	9	OK
6p	10	6	3	11	70	3	11	OK
7p	7	5	6	8	19	6	8	OK
8p	10	6	2	11	23	2	11	OK

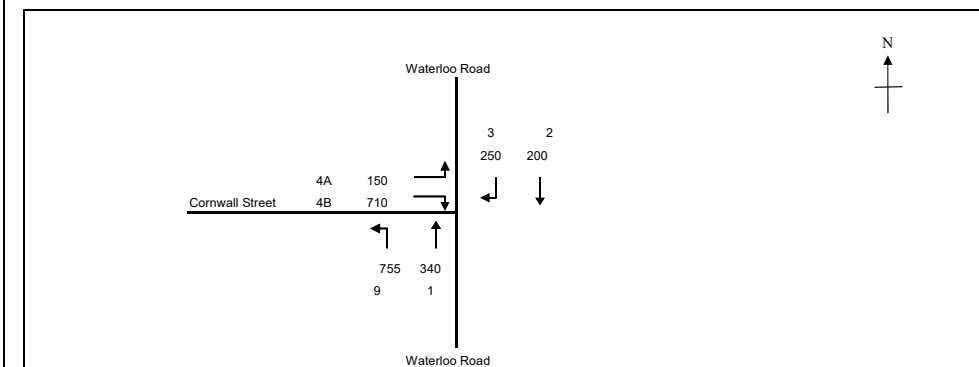
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075		235		235	0.00	2075					15	22	46	0.295	29	
9	1,3	3.20	3	2	15		N	4010	940			940	1.00	3645			0.258		49	50	0.619	55		
2	2	3.00	2	1			N	1915		290		290	0.00	1915			0.151		29	29	0.627	44		
3	2	3.50	3	2	30			4210	370			370	1.00	4010			0.092		18	29	0.382	28		
4A,4B	3	3.20	4	1	15		N	1935	145		131	276	1.00	1759			0.157	0.157	30	30	0.628	41		
4B	3	3.30	4	2	30			4170		624		624	1.00	3971			0.157		30	30	0.628	47		
	1																		46					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

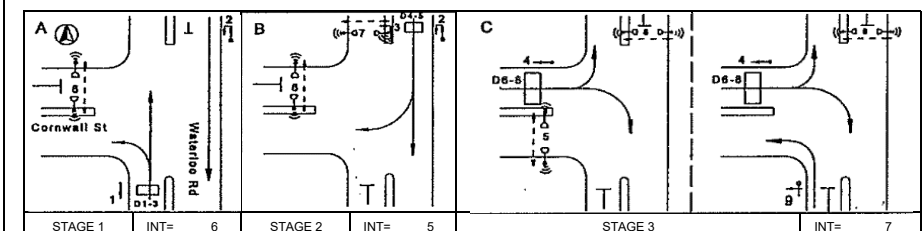
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J1

Waterloo Road / Cornwall Street | 2033 PM Peak Construction Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.255
Loss time	L =	60 sec
Total Flow	=	2405 pcu
Co	= (1.5*L+5)/(1-Y)	= 127.4 sec
Cm	= L/(1-Y)	= 80.5 sec
Yult	=	0.450
R.C.ult	= (Yult-Y)/Y*100%	= 76.8 %
Cp	= 0.9*L/(0.9-Y)	= 83.7 sec
Ymax	= 1-L/C	= 0.500
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 77 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	8	5	11	9	21	11	9	OK
6p	10	6	3	11	65	3	11	OK
7p	7	5	6	8	15	6	8	OK
8p	10	6	2	11	28	2	11	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Standing Vehicle Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1	3.20	1	1				2075			340	340	0.00	2075						15	39	45	0.437	43
9	1,3	3.20	3	2	15		N	4010	755			755	1.00	3645			0.164				49	49	0.507	45
2	2	3.00	2	1			N	1915		200		200	0.00	1915			0.207				25	25	0.501	32
3	2	3.50	3	2	30			4210	250			250	1.00	4010			0.104	0.104			15	25	0.299	20
4A,4B	3	3.20	4	1	15		N	1935	150		114	264	1.00	1759			0.062				35	35	0.515	37
4B	3	3.30	4	2	30			4170			596	596	1.00	3971			0.150	0.150			35	35	0.515	42
	1																			45				

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

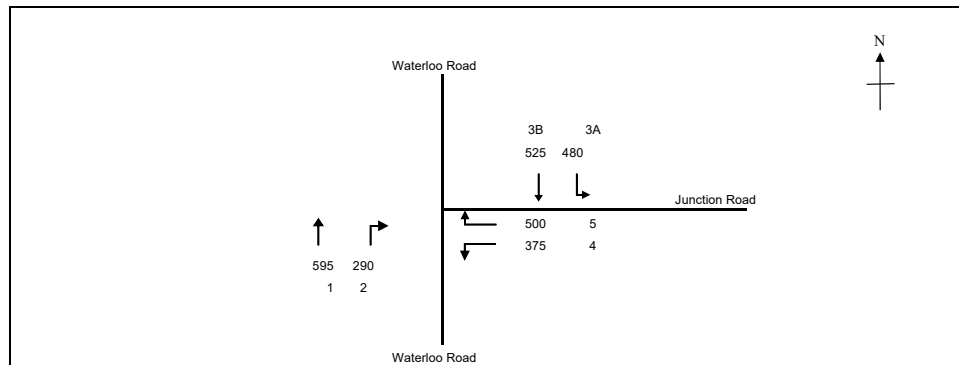
Junction No. J2

Waterloo Road / Junction Road

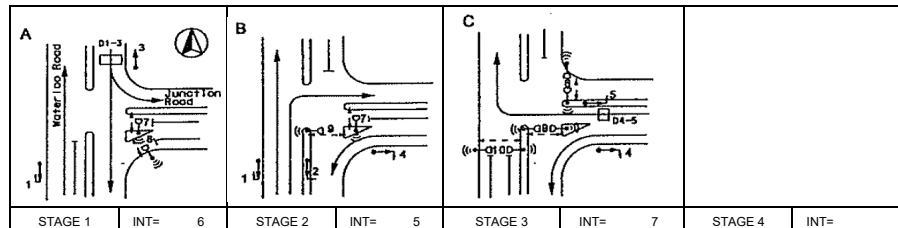
2023 AM Observed Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.441
Loss time	L =	14 sec
Total Flow	=	2765 pcu
Co	= (1.5*L+5)/(1-Y)	= 46.5 sec
Cm	= L/(1-Y)	= 25.0 sec
Yult	=	= 0.795
R.C.cult	= (Yult-Y)/Y*100%	= 80.3 %
Cp	= 0.9*L/(0.9-Y)	= 27.4 sec
Ymax	= 1-L/C	= 0.883
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 80 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	15	11	9	OK
7p	8	5	1	9	75	1	9	OK
8p	5	5	0	6	40	0	6	OK
9p	8	5	4	9	61	4	9	OK
10p	11	6	3	12	24	3	12	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	308			308	1.00	1786		1786	0.172	0.172	14	41	41	0.505	41	
3A,3B	1	3.30	3	1	15		N	2085	172	171		342	0.50	1985		1985	0.172			41	41	0.505	45	
3B	1	3.00	3	1	30		N	2055		354		354	0.00	2055		2055	0.172			41	41	0.505	47	
1	1,2	3.20	1	2			N	4010		595		595	0.00	4010		4010	0.148			36	81	0.220	19	
2	2	3.20	2	1	30		N	2075			290	290	1.00	1976		1976	0.147	0.147		35	35	0.503	41	
4	2,3	3.30	4	1	15		N	1945	375			375	1.00	1768		1768	0.212			51	68	0.374	33	
5	3	3.00	5	2	30		N	4110		500		500	0.00	4110		4110	0.122	0.122		29	29	0.503	38	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

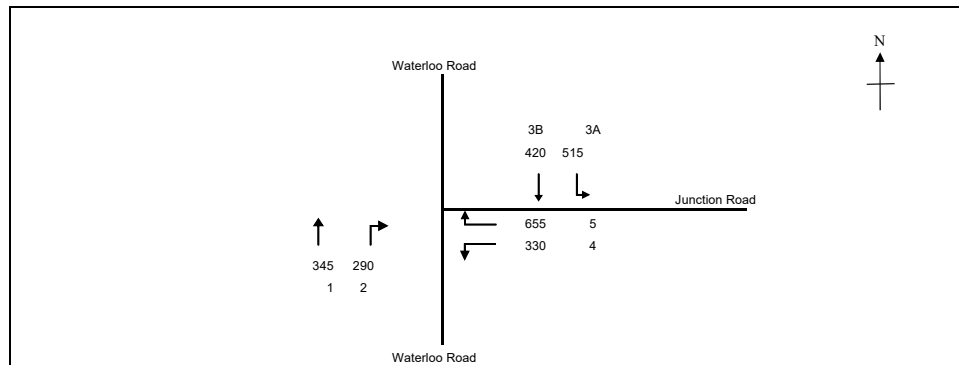
Junction No. J2

Waterloo Road / Junction Road

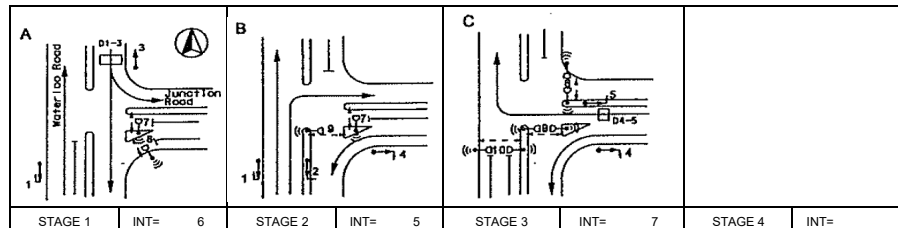
2023 PM Observed Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.468
Loss time	L =	15 sec
Total Flow	=	2555 pcu
Co	= (1.5*L+5)/(1-Y)	= 51.7 sec
Cm	= L/(1-Y)	= 28.2 sec
Yult	=	0.788
R.C.cult	= (Yult-Y)/Y*100%	= 68.4 %
Cp	= 0.9*L/(0.9-Y)	= 31.2 sec
Ymax	= 1-L/C	= 0.875
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 68 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	22	11	9	OK
7p	8	5	1	9	68	1	9	OK
8p	5	5	0	6	35	0	6	OK
9p	8	5	4	9	66	4	9	OK
10p	11	6	3	12	22	3	12	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	289			289	1.00	1786		1786	0.162	0.162	15	36	36	0.539	40	
3A,3B	1	3.30	3	1	15		N	2085	226	88		314	0.72	1945		1945	0.162			36	36	0.539	44	
3B	1	3.00	3	1	30		N	2055		332		332	0.00	2055		2055	0.162			36	36	0.539	46	
1	1,2	3.20	1	2			N	4010		345		345	0.00	4010		4010	0.086			19	74	0.140	13	
2	2	3.20	2	1	30		N	2075			290	290	1.00	1976		1976	0.147	0.147		33	33	0.534	42	
4	2,3	3.30	4	1	15		N	1945	330			330	1.00	1768		1768	0.187			42	73	0.307	26	
5	3	3.00	5	2	30		N	4110		655		655	0.00	4110		4110	0.159	0.159		36	36	0.531	46	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

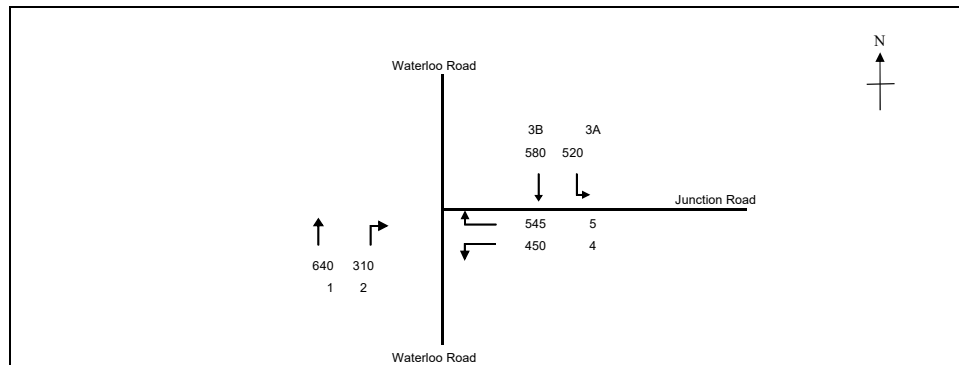
Junction No. J2

Waterloo Road / Junction Road

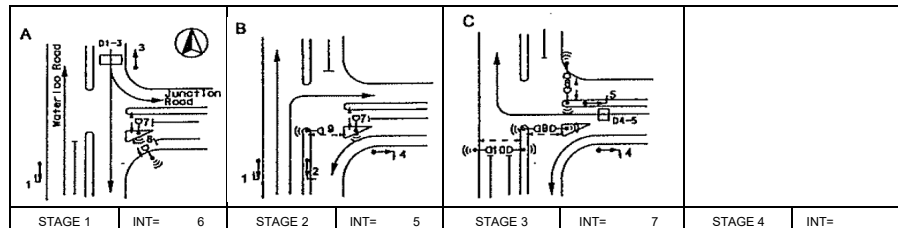
2036 AM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.478
Loss time	L =	15 sec
Total Flow	=	3045 pcu
Co	= (1.5*L+5)/(1-Y)	= 52.7 sec
Cm	= L/(1-Y)	= 28.7 sec
Yult	=	0.788
R.C.cult	= (Yult-Y)/Y*100%	= 64.7 %
Cp	= 0.9*L/(0.9-Y)	= 32.0 sec
Ymax	= 1-L/C	= 0.875
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 65 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	15	11	9	OK
7p	8	5	1	9	74	1	9	OK
8p	5	5	0	6	40	0	6	OK
9p	8	5	4	9	60	4	9	OK
10p	11	6	3	12	23	3	12	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	337			337	1.00	1786		1786	0.189	0.189	15	41	41	0.552	44	
3A,3B	1	3.30	3	1	15		N	2085	183	192		375	0.49	1988		1988	0.189			41	41	0.552	49	
3B	1	3.00	3	1	30		N	2055		388		388	0.00	2055		2055	0.189			41	41	0.552	51	
1	1,2	3.20	1	2			N	4010		640		640	0.00	4010		4010	0.160			35	80	0.239	21	
2	2	3.20	2	1	30		N	2075			310	310	1.00	1976		1976	0.157	0.157		34	34	0.554	44	
4	2,3	3.30	4	1	15		N	1945	450			450	1.00	1768		1768	0.254			56	67	0.456	40	
5	3	3.00	5	2	30		N	4110		545		545	0.00	4110		4110	0.133	0.133		29	29	0.549	41	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

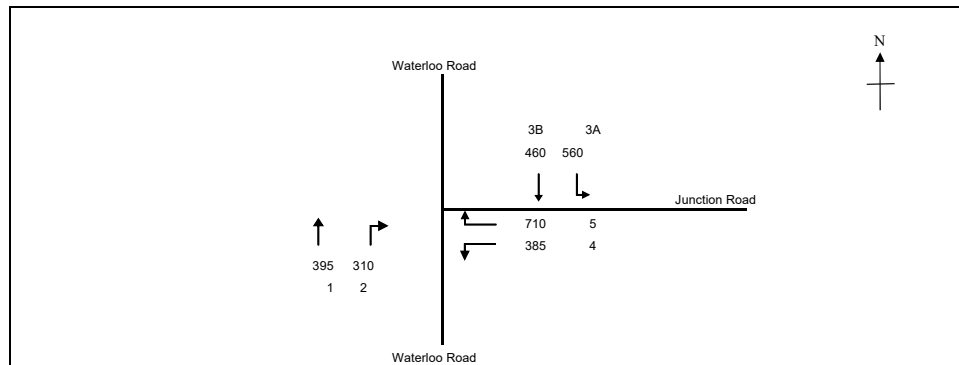
Junction No. J2

Waterloo Road / Junction Road

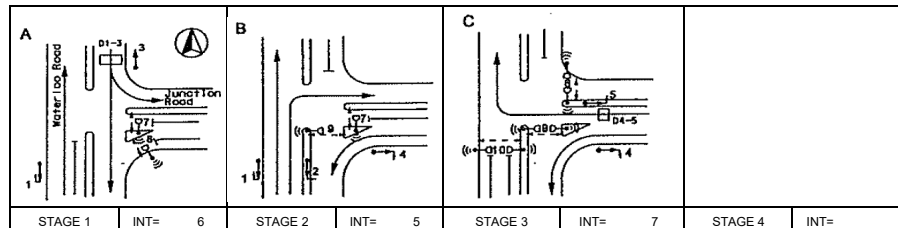
2036 PM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.506
Loss time	L =	15 sec
Total Flow	=	2820 pcu
Co	= (1.5*L+5)/(1-Y)	= 55.7 sec
Cm	= L/(1-Y)	= 30.4 sec
Yult	=	0.788
R.C.cult	= (Yult-Y)/Y*100%	= 55.7 %
Cp	= 0.9*L/(0.9-Y)	= 34.3 sec
Ymax	= 1-L/C	= 0.875
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 56 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	22	11	9	OK
7p	8	5	1	9	69	1	9	OK
8p	5	5	0	6	36	0	6	OK
9p	8	5	4	9	66	4	9	OK
10p	11	6	3	12	22	3	12	OK

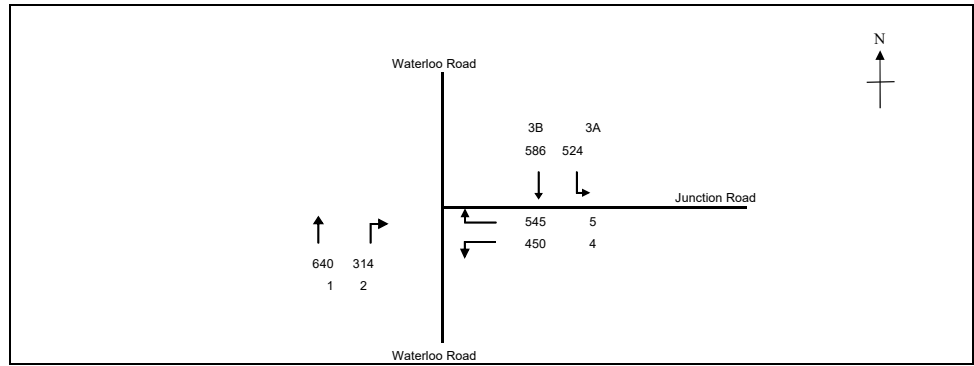
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	315		315	1.00	1786			1786	0.176	0.176	15	37	37	0.572	44	
3A,3B	1	3.30	3	1	15		N	2085	245	98	343	0.71	1946			1946	0.176			37	37	0.572	47	
3B	1	3.00	3	1	30		N	2055		362	362	0.00	2055			2055	0.176			37	37	0.572	50	
1	1,2	3.20	1	2			N	4010		395	395	0.00	4010			4010	0.099			20	75	0.158	15	
2	2	3.20	2	1	30		N	2075			310	1.00	1976			1976	0.157	0.157		33	33	0.570	45	
4	2,3	3.30	4	1	15		N	1945	385		385	1.00	1768			1768	0.218			45	73	0.358	30	
5	3	3.00	5	2	30		N	4110		710	710	0.00	4110			4110	0.173	0.173		36	36	0.576	50	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

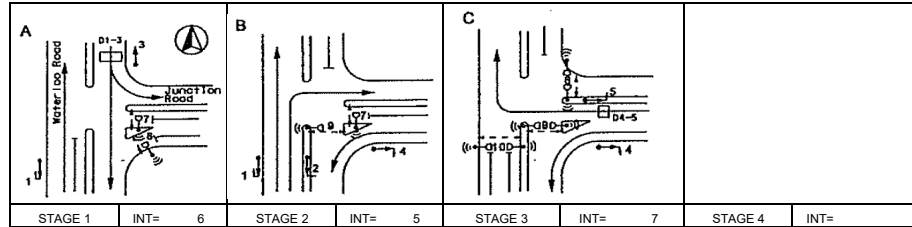
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J2

Waterloo Road / Junction Road | 2036 PM Design Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.482
Loss time	L =	15 sec
Total Flow	=	3059 pcu
Co	= (1.5*L+5)/(1-Y)	= 53.1 sec
Cm	= L/(1-Y)	= 29.0 sec
Yult	=	0.788
R.C.cult	= (Yult-Y)/Y*100%	= 63.4 %
Cp	= 0.9*L/(0.9-Y)	= 32.3 sec
Ymax	= 1-L/C	= 0.875
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 63 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	15	11	9	OK
7p	8	5	1	9	75	1	9	OK
8p	5	5	0	6	40	0	6	OK
9p	8	5	4	9	61	4	9	OK
10p	11	6	3	12	24	3	12	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	340			340	1.00	1786		1786	0.190	0.190	15	41	41	0.557	45	
3A,3B	1	3.30	3	1	15		N	2085	184	195		379	0.49	1988		1988	0.190			41	41	0.557	50	
3B	1	3.00	3	1	30		N	2055		391		391	0.00	2055		2055	0.190			41	41	0.557	52	
1	1,2	3.20	1	2			N	4010		640		640	0.00	4010		4010	0.160			35	81	0.236	21	
2	2	3.20	2	1	30		N	2075			314	314	1.00	1976		1976	0.159	0.159		35	35	0.545	44	
4	2,3	3.30	4	1	15		N	1945	450			450	1.00	1768		1768	0.254			55	68	0.449	39	
5	3	3.00	5	2	30		N	4110		545		545	0.00	4110		4110	0.133	0.133		29	29	0.549	41	

NOTE: 'O' - OPPOSING TRAFFIC | N - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

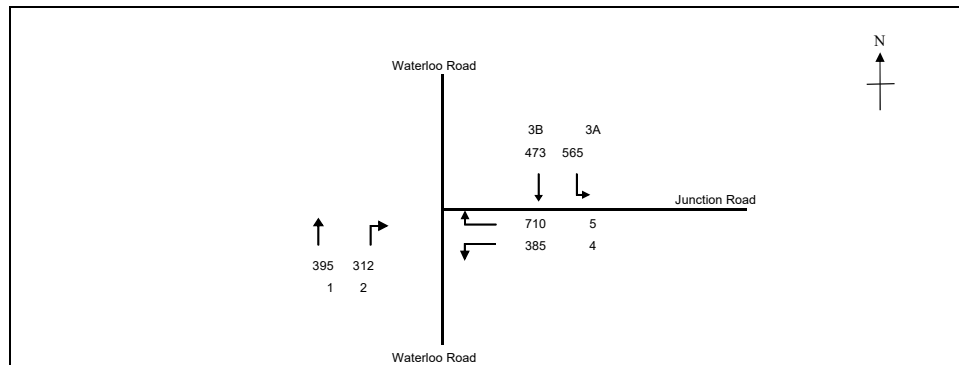
Junction No. J2

Waterloo Road / Junction Road

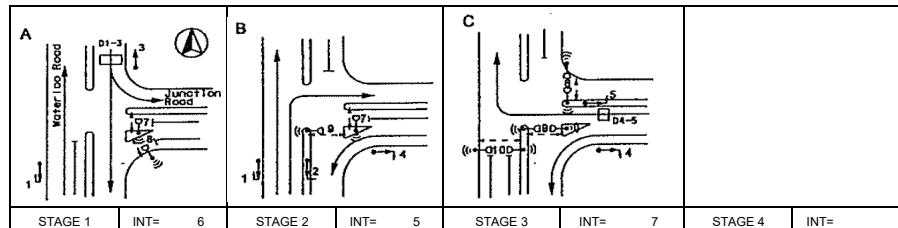
2036 PM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.510
Loss time	L =	15 sec
Total Flow	=	2840 pcu
Co	= (1.5*L+5)/(1-Y)	= 56.1 sec
Cm	= L/(1-Y)	= 30.6 sec
Yult	=	0.788
R.C.cult	= (Yult-Y)/Y*100%	= 54.4 %
Cp	= 0.9*L/(0.9-Y)	= 34.6 sec
Ymax	= 1-L/C	= 0.875
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 54 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	22	11	9	OK
7p	8	5	1	9	69	1	9	OK
8p	5	5	0	6	36	0	6	OK
9p	8	5	4	9	66	4	9	OK
10p	11	6	3	12	22	3	12	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	320			320	1.00	1786		1786	0.179	0.179	15	37	37	0.581	44	
3A,3B	1	3.30	3	1	15		N	2085	245	105		349	0.70	1948		1948	0.179			37	37	0.581	48	
3B	1	3.00	3	1	30		N	2055		368		368	0.00	2055		2055	0.179			37	37	0.581	51	
1	1,2	3.20	1	2			N	4010		395		395	0.00	4010		4010	0.099			20	75	0.158	15	
2	2	3.20	2	1	30		N	2075			312	312	1.00	1976		1976	0.158	0.158		33	33	0.574	45	
4	2,3	3.30	4	1	15		N	1945	385			385	1.00	1768		1768	0.218			45	73	0.358	30	
5	3	3.00	5	2	30		N	4110		710		710	0.00	4110		4110	0.173	0.173		36	36	0.576	50	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

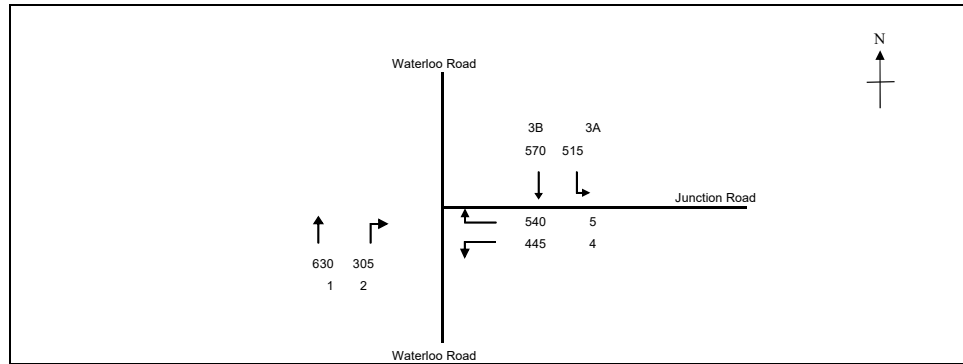
Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24 Junction No. J2

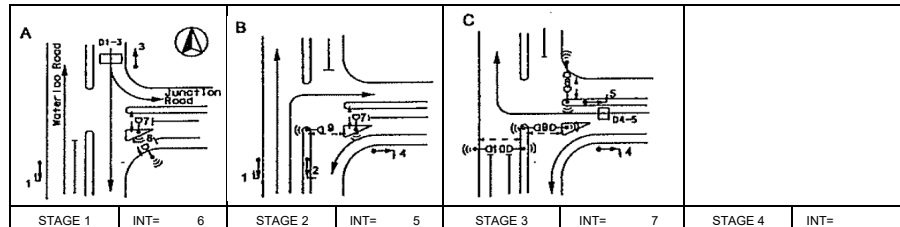
Waterloo Road / Junction Road

2033 AM Peak Construction Flow

DATE: 9-May-24 FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.472
Loss time	L =	15 sec
Total Flow	=	3005 pcu
Co	= (1.5*L+5)/(1-Y)	= 52.1 sec
Cm	= L/(1-Y)	= 28.4 sec
Yult	=	0.788
R.C.ult	= (Yult-Y)/Y*100%	= 66.9 %
Cp	= 0.9*L/(0.9-Y)	= 31.5 sec
Ymax	= 1-L/C	= 0.875
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 67 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	15	11	9	OK
7p	8	5	1	9	74	1	9	OK
8p	5	5	0	6	40	0	6	OK
9p	8	5	4	9	60	4	9	OK
10p	11	6	3	12	23	3	12	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	333			333	1.00	1786		1786	0.186	0.186	15	41	41	0.545	44	
3A,3B	1	3.30	3	1	15		N	2085	182	187		370	0.49	1987		1987	0.186			41	41	0.545	49	
3B	1	3.00	3	1	30		N	2055		383		383	0.00	2055		2055	0.186			41	41	0.545	50	
1	1,2	3.20	1	2			N	4010		630		630	0.00	4010		4010	0.157			35	80	0.236	21	
2	2	3.20	2	1	30		N	2075			305	305	1.00	1976		1976	0.154	0.154		34	34	0.545	44	
4	2,3	3.30	4	1	15		N	1945	445			445	1.00	1768		1768	0.252			56	67	0.451	39	
5	3	3.00	5	2	30		N	4110		540		540	0.00	4110		4110	0.131	0.131		29	29	0.544	41	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

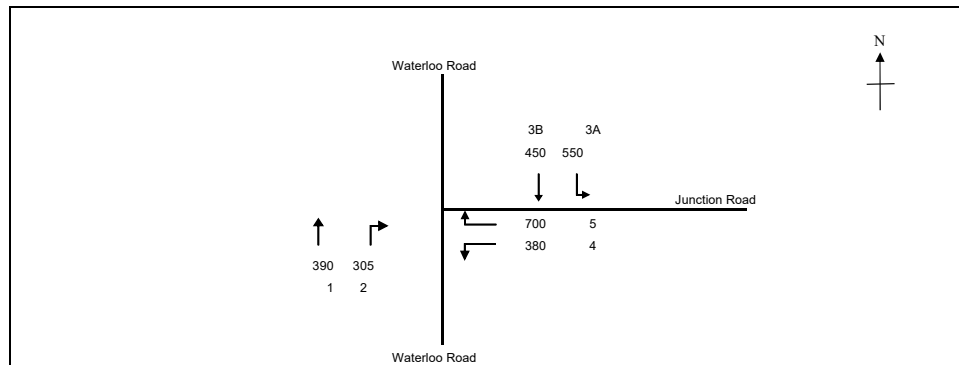
Junction No. J2

Waterloo Road / Junction Road

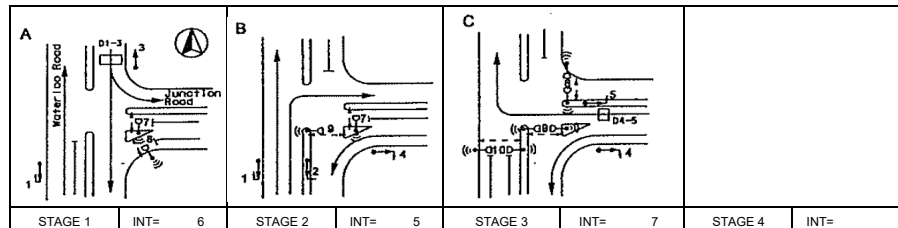
2033 PM Peak Construction Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	120 sec
Sum(y)	Y =	0.497
Loss time	L =	15 sec
Total Flow	=	2775 pcu
Co	= (1.5*L+5)/(1-Y)	= 54.7 sec
Cm	= L/(1-Y)	= 29.8 sec
Yult	=	= 0.788
R.C.ult	= (Yult-Y)/Y*100%	= 58.3 %
Cp	= 0.9*L/(0.9-Y)	= 33.5 sec
Ymax	= 1-L/C	= 0.875
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 58 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
6p	8	5	11	9	22	11	9	OK
7p	8	5	1	9	68	1	9	OK
8p	5	5	0	6	35	0	6	OK
9p	8	5	4	9	66	4	9	OK
10p	11	6	3	12	22	3	12	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
3A	1	3.50	3	1	15		N	1965	309			309	1.00	1786		1786	0.173	0.173	15	36	36	0.576	43	
3A,3B	1	3.30	3	1	15		N	2085	241	95		336	0.72	1945		1945	0.173			36	36	0.576	47	
3B	1	3.00	3	1	30		N	2055		355		355	0.00	2055		2055	0.173			36	36	0.576	50	
1	1,2	3.20	1	2			N	4010		390		390	0.00	4010		4010	0.097			21	74	0.158	15	
2	2	3.20	2	1	30		N	2075			305	305	1.00	1976		1976	0.154	0.154		33	33	0.561	44	
4	2,3	3.30	4	1	15		N	1945	380			380	1.00	1768		1768	0.215			45	73	0.353	30	
5	3	3.00	5	2	30		N	4110		700		700	0.00	4110		4110	0.170	0.170		36	36	0.568	49	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

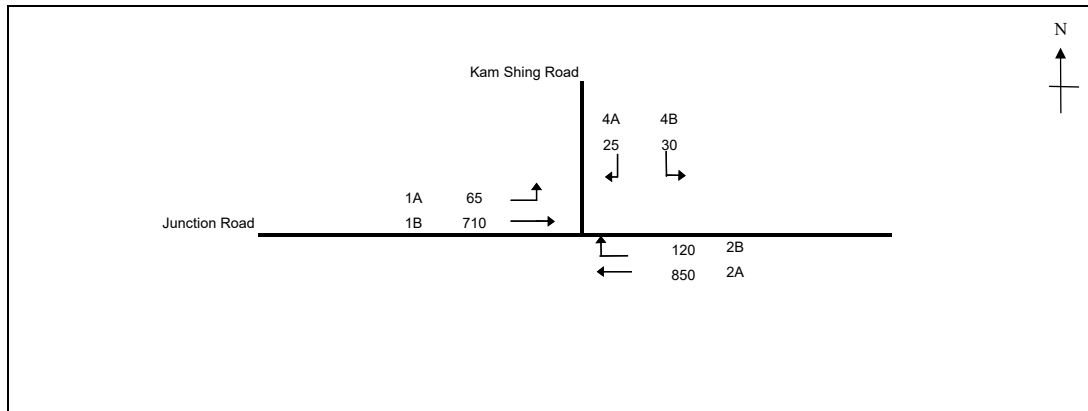
Junction No. J3

Junction Road / Kam Shing Road

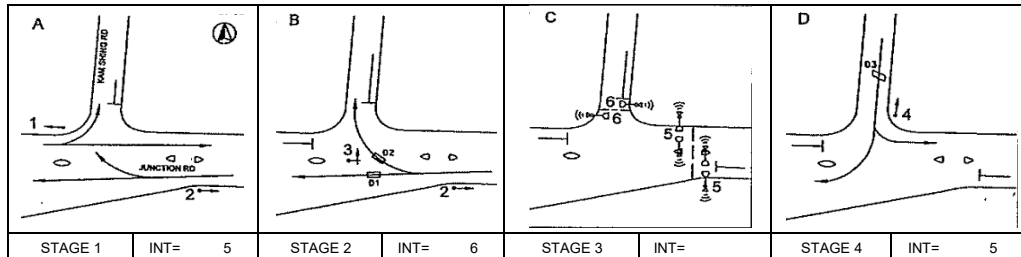
2023 AM Observed Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.291
Loss time	L = 38 sec
Total Flow	= 1800 pcu
Co	= (1.5*L+5)/(1-Y) = 87.5 sec
Cm	= L/(1-Y) = 53.6 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 111.0 %
Cp	= 0.9*L/(0.9-Y) = 56.2 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 111 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	65	230		295	0.22	1923	5.3	0.7*	1124	0.262	0.262	13	74	74	0.427	23
1B	1	3.00	1	1				2055		480		480	0.00	2055	5.3		1834	0.262			74	74	0.427	37
2A	1,2	4.00	2	1			N	2015		515		515	0.00	2015			2015	0.256			72	83	0.371	32
2A,2B	1,2	3.00	2	1	15	O		2055		335	120	455	0.26	1778			1778	0.256			72	83	0.371	28
4	4	3.65	3	1	25		N	1980	30	25		55	1.00	1868			1868	0.029	0.029		8	8	0.427	10
PED	2 3																			5 20	5	5		

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

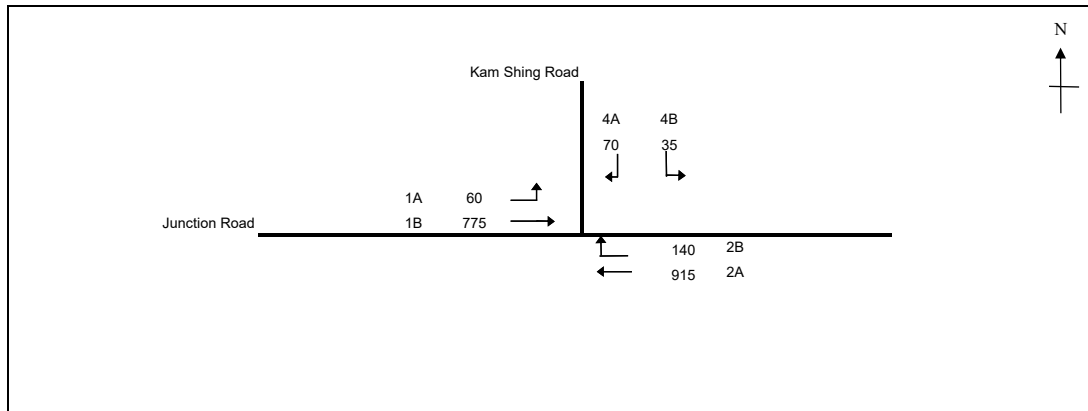
Junction No. J3

Junction Road / Kam Shing Road

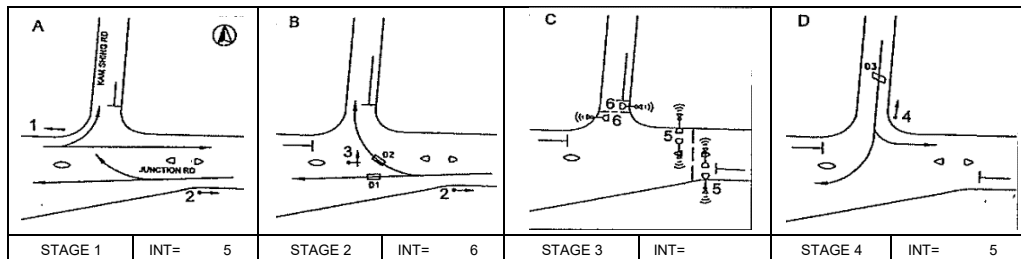
2023 PM Observed Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.338
Loss time	L = 38 sec
Total Flow	= 1995 pcu
Co	= (1.5*L+5)/(1-Y) = 93.7 sec
Cm	= L/(1-Y) = 57.4 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 81.9 %
Cp	= 0.9*L/(0.9-Y) = 60.9 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 82 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	60	258		318	0.19	1929	5.3	0.7*	1129	0.282	0.282	13	68	68	0.495	27
1B	1	3.00	1	1				2055		517		517	0.00	2055	5.3		1834	0.282			68	68	0.495	44
2A	1,2	4.00	2	1			N	2015		561		561	0.00	2015			2015	0.278			68	77	0.432	40
2A,2B	1,2	3.00	2	1	15	O		2055		354	140	494	0.28	1775			1775	0.278			68	77	0.432	35
4	4	3.65	3	1	25		N	1980	35	70		105	1.00	1868			1868	0.056	0.056		14	14	0.495	19
PED	2 3																			5 20	5	5		

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

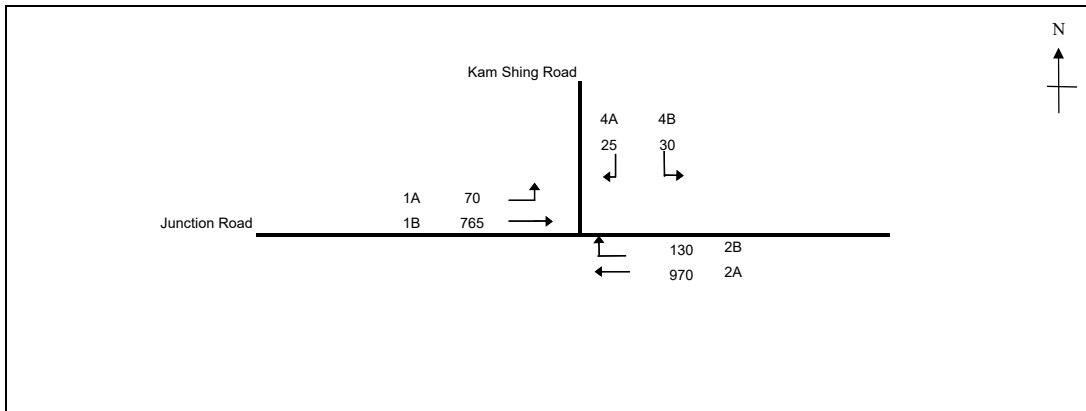
Junction No. J3

Junction Road / Kam Shing Road

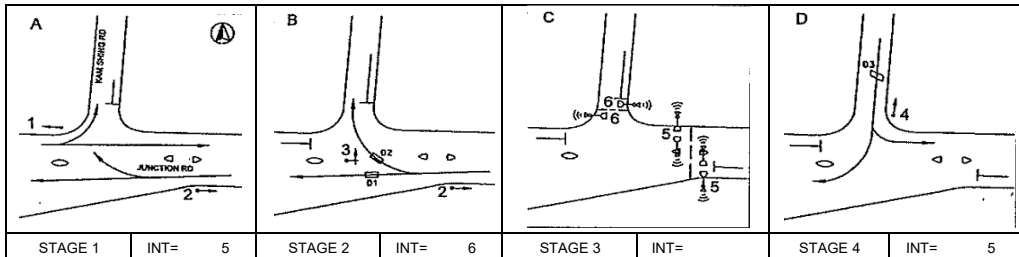
2036 AM Reference Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.312
Loss time	L = 38 sec
Total Flow	= 1990 pcu
Co	= (1.5*L+5)/(1-Y) = 90.1 sec
Cm	= L/(1-Y) = 55.2 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 97.3 %
Cp	= 0.9*L/(0.9-Y) = 58.1 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 97 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	70	247		317	0.22	1923	5.3	0.7*	1124	0.282	0.282	13	74	74	0.456	24
1B	1	3.00	1	1				2055		518		518	0.00	2055	5.3		1834	0.282			74	74	0.456	39
2A	1,2	4.00	2	1			N	2015		584		584	0.00	2015			2015	0.290			76	83	0.418	36
2A,2B	1,2	3.00	2	1	15	O		2055		386	130	516	0.25	1780			1780	0.290			76	83	0.418	32
4	4	3.65	3	1	25		N	1980	30		25	55	1.00	1868			1868	0.029	0.029		8	8	0.456	10
PED	2 3																		5 20	5	5			

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

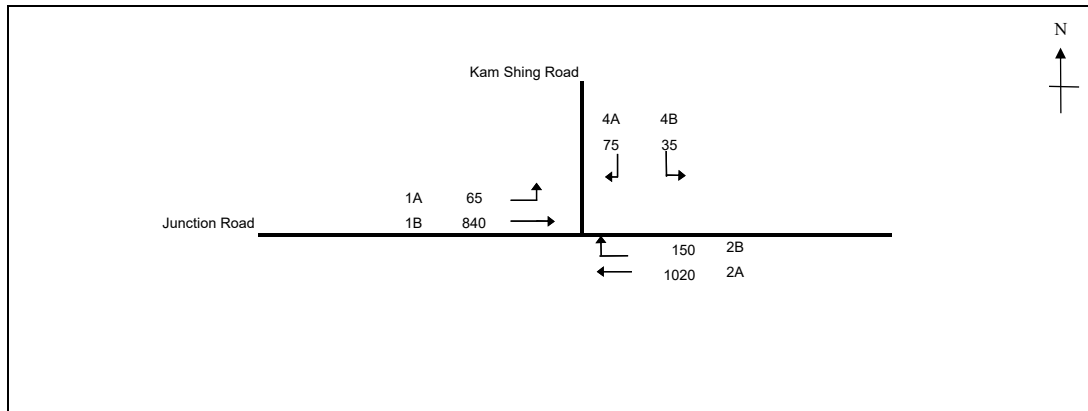
Junction No. J3

Junction Road / Kam Shing Road

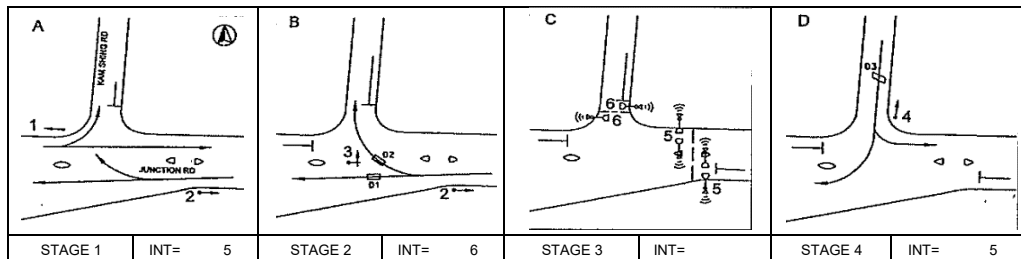
2036 PM Reference Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.364
Loss time	L = 38 sec
Total Flow	= 2185 pcu
Co	= (1.5*L+5)/(1-Y) = 97.5 sec
Cm	= L/(1-Y) = 59.8 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 68.8 %
Cp	= 0.9*L/(0.9-Y) = 63.9 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 69 %

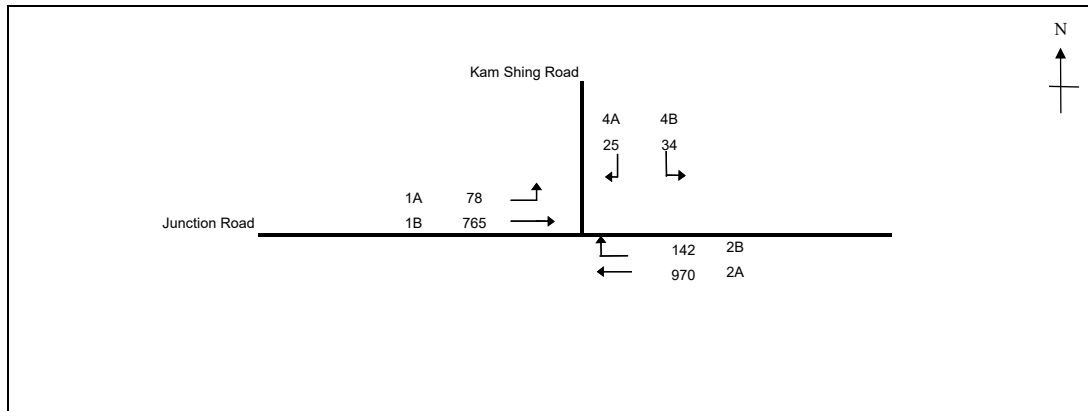


Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

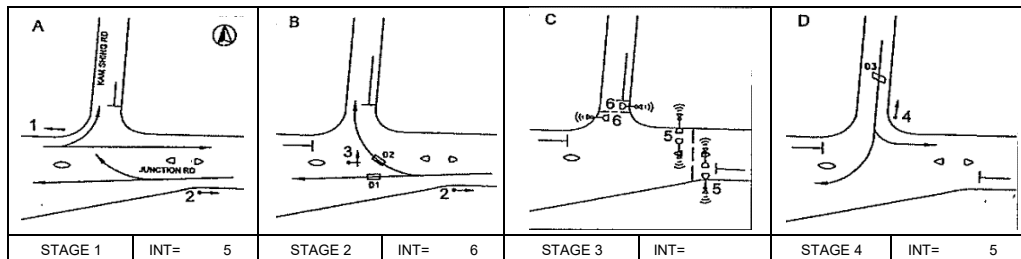
Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	65	280		345	0.19	1929	5.3	0.7*	1129	0.306	0.306	13	69	69	0.533	29
1B	1	3.00	1	1				2055		560		560	0.00	2055	5.3		1834	0.306			69	69	0.533	48
2A	1,2	4.00	2	1			N	2015		622		622	0.00	2015			2015	0.309			69	78	0.476	44
2A,2B	1,2	3.00	2	1	15	O		2055		398	150	548	0.27	1776			1776	0.309			69	78	0.476	39
4	4	3.65	3	1	25		N	1980	35	75		110	1.00	1868			1868	0.059	0.059		13	13	0.533	20
PED	2 3																			5 20	5	5		

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.317
Loss time	L = 38 sec
Total Flow	= 2014 pcu
Co	= (1.5*L+5)/(1-Y) = 90.8 sec
Cm	= L/(1-Y) = 55.6 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 94.1 %
Cp	= 0.9*L/(0.9-Y) = 58.6 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 94 %

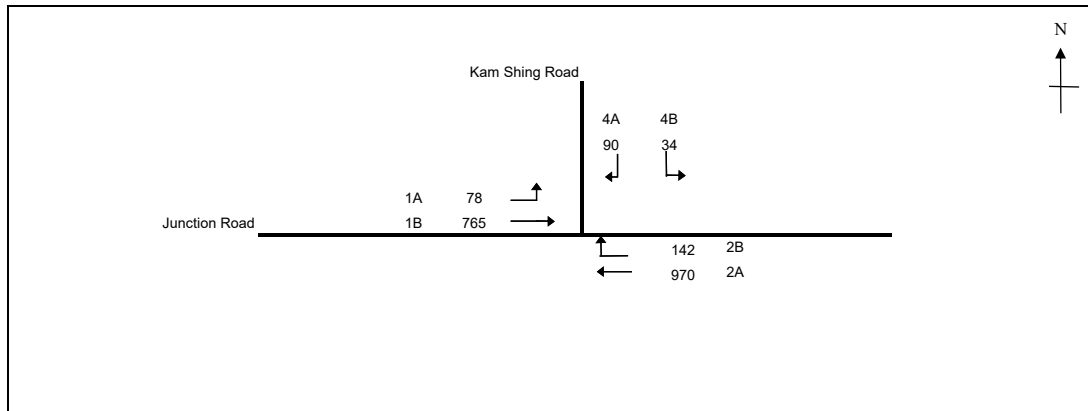


Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

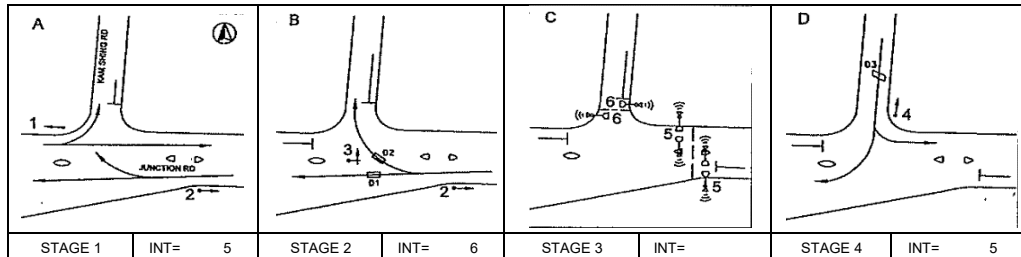
Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	78	242		320	0.24	1918	5.3	0.7*	1121	0.285	0.285	13	74	74	0.464	25
1B	1	3.00	1	1				2055		523		523	0.00	2055	5.3		1834	0.285			74	74	0.464	40
2A	1,2	4.00	2	1			N	2015		591		591	0.00	2015			2015	0.293			76	83	0.425	37
2A,2B	1,2	3.00	2	1	15	O		2055		379	142	521	0.27	1777			1777	0.293			76	83	0.425	32
4	4	3.65	3	1	25		N	1980	34		25	59	1.00	1868			1868	0.032	0.032		8	8	0.464	11
PED	2 3																		5 20	5	5			

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.352
Loss time	L = 38 sec
Total Flow	= 2079 pcu
Co	= (1.5*L+5)/(1-Y) = 95.6 sec
Cm	= L/(1-Y) = 58.6 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 74.9 %
Cp	= 0.9*L/(0.9-Y) = 62.4 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 75 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	78	242		320	0.24	1918	5.3	0.7*	1121	0.285	0.285	13	67	67	0.515	29
	1B	3.00	1	1				2055		523		523	0.00	2055	5.3		1834	0.285			67	67	0.515	47
2A	1,2	4.00	2	1			N	2015		591		591	0.00	2015			2015	0.293			68	76	0.466	44
2A,2B	1,2	3.00	2	1	15	O		2055		379	142	521	0.27	1777			1777	0.293			68	76	0.466	39
4	4	3.65	3	1	25		N	1980	34		90	124	1.00	1868			1868	0.066	0.066		15	15	0.515	22
PED	2																		5	5	5			
	3																		20					

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

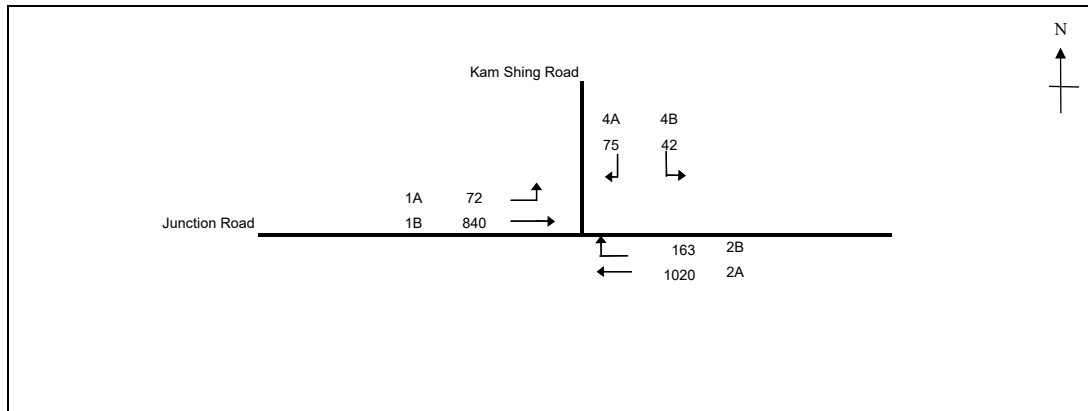
Junction No. J3

Junction Road / Kam Shing Road

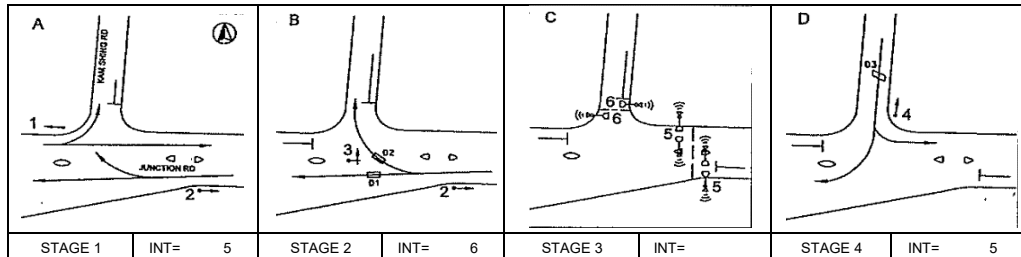
2036 PM Design Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.371
Loss time	L = 38 sec
Total Flow	= 2212 pcu
Co	= (1.5*L+5)/(1-Y) = 98.5 sec
Cm	= L/(1-Y) = 60.4 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 65.9 %
Cp	= 0.9*L/(0.9-Y) = 64.6 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 66 %

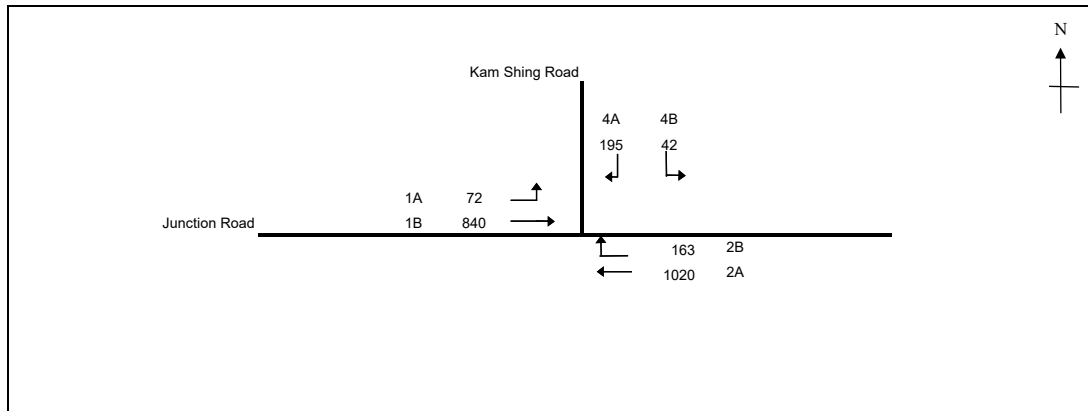


Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

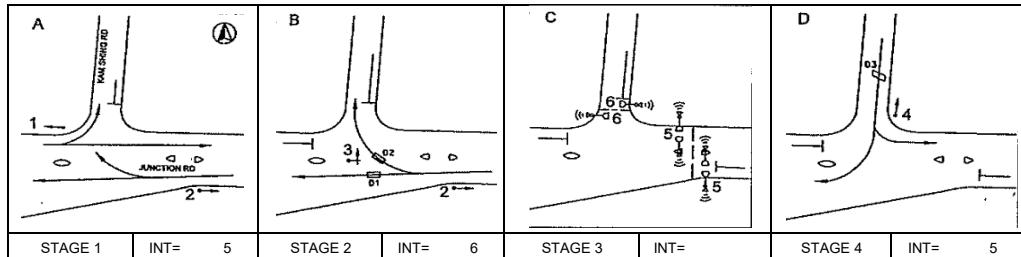
Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	72	275		347	0.21	1925	5.3	0.7*	1126	0.308	0.308	13	68	68	0.543	30
1B	1	3.00	1	1				2055		565		565	0.00	2055	5.3		1834	0.308			68	68	0.543	49
2A	1,2	4.00	2	1			N	2015		629		629	0.00	2015			2015	0.312			69	77	0.486	45
2A,2B	1,2	3.00	2	1	15	O		2055		391	163	554	0.29	1773			1773	0.312			69	77	0.486	40
4	4	3.65	3	1	25		N	1980	42	75		117	1.00	1868			1868	0.063	0.063		14	14	0.543	21
PED	2 3																			5 20	5	5		

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.435
Loss time	L = 38 sec
Total Flow	= 2332 pcu
Co	= (1.5*L+5)/(1-Y) = 109.7 sec
Cm	= L/(1-Y) = 67.3 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 41.4 %
Cp	= 0.9*L/(0.9-Y) = 73.6 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 41 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	72	275		347	0.21	1925	5.3	0.7*	1126	0.308	0.308	13	58	58	0.637	36
1B	1	3.00	1	1				2055		565		565	0.00	2055	5.3		1834	0.308			58	58	0.637	58
2A	1,2	4.00	2	1			N	2015		629		629	0.00	2015			2015	0.312			59	67	0.559	56
2A,2B	1,2	3.00	2	1	15	O		2055		391	163	554	0.29	1773			1773	0.312			59	67	0.559	49
4	4	3.65	3	1	25		N	1980	42	195		237	1.00	1868			1868	0.127	0.127		24	24	0.637	38
PED	2 3																		5 20	5	5			

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

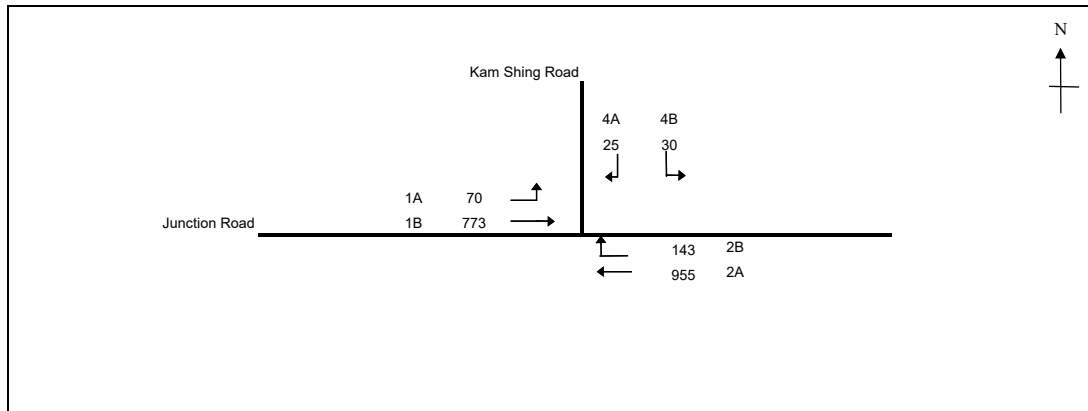
Junction No. J3

Junction Road / Kam Shing Road

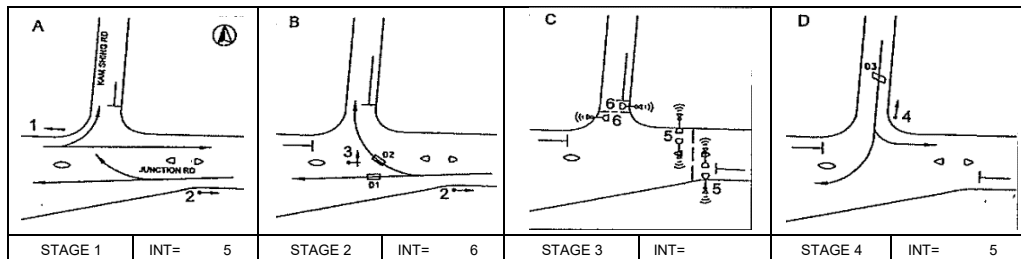
2033 AM Peak Construction Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.314
Loss time	L = 38 sec
Total Flow	= 1996 pcu
Co	= (1.5*L+5)/(1-Y) = 90.4 sec
Cm	= L/(1-Y) = 55.4 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 95.6 %
Cp	= 0.9*L/(0.9-Y) = 58.4 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 96 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	70	250		320	0.22	1923	5.3	0.7*	1125	0.285	0.285	13	74	74	0.460	24
1B	1	3.00	1	1				2055		523		523	0.00	2055	5.3		1834	0.285			74	74	0.460	40
2A	1,2	4.00	2	1			N	2015		584		584	0.00	2015			2015	0.290			76	83	0.417	36
2A,2B	1,2	3.00	2	1	15	O		2055		371	143	514	0.28	1776			1776	0.290			76	83	0.417	31
4	4	3.65	3	1	25		N	1980	30		25	55	1.00	1868			1868	0.029	0.029		8	8	0.460	10
PED	2 3																			5 20	5	5		

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

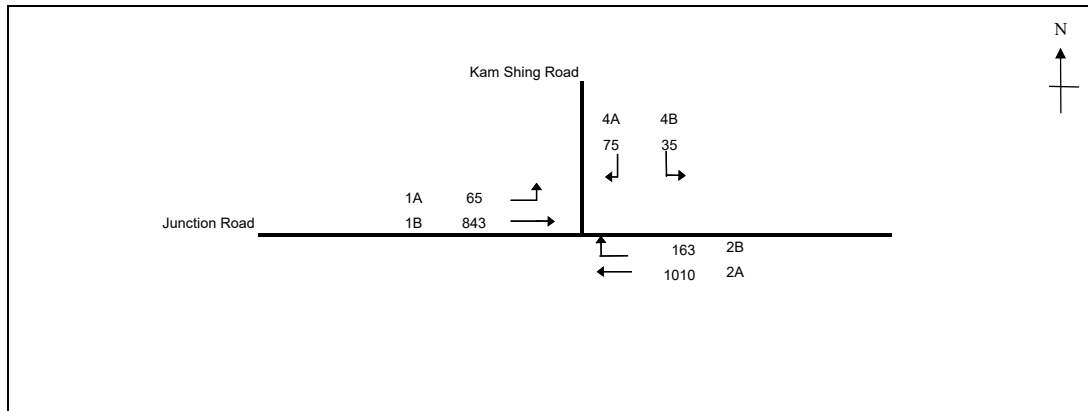
Junction No. J3

Junction Road / Kam Shing Road

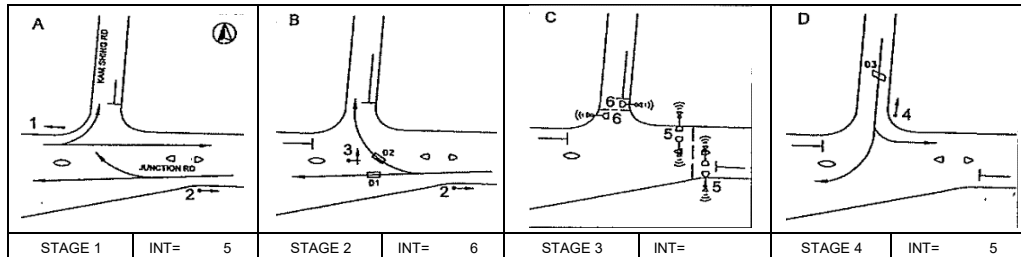
2033 PM Peak Construction Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.365
Loss time	L = 38 sec
Total Flow	= 2191 pcu
Co	= (1.5*L+5)/(1-Y) = 97.7 sec
Cm	= L/(1-Y) = 59.9 sec
Yult	= 0.615
R.C.ult	= (Yult-Y)/Y*100% = 68.3 %
Cp	= 0.9*L/(0.9-Y) = 64.0 sec
Ymax	= 1-L/C = 0.683
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 68 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	7	6	1	5	14	1	5	OK
6	11	5	6	9	5	6	9	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Site Factor	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.50	1	1	15		N	1965	65	281		346	0.19	1929	5.3	0.7*	1129	0.307	0.307	13	69	69	0.535	30
1B	1	3.00	1	1				2055		562		562	0.00	2055	5.3		1834	0.307			69	69	0.535	48
2A	1,2	4.00	2	1			N	2015		624		624	0.00	2015			2015	0.310			70	78	0.478	44
2A,2B	1,2	3.00	2	1	15	O		2055		386	163	549	0.30	1772			1772	0.310			70	78	0.478	39
4	4	3.65	3	1	25		N	1980	35	75		110	1.00	1868			1868	0.059	0.059		13	13	0.535	20
PED	2, 3																		5, 20	5	5			

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

*Taken into account the presence of kerbside activities at Junction Road Eastbound

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

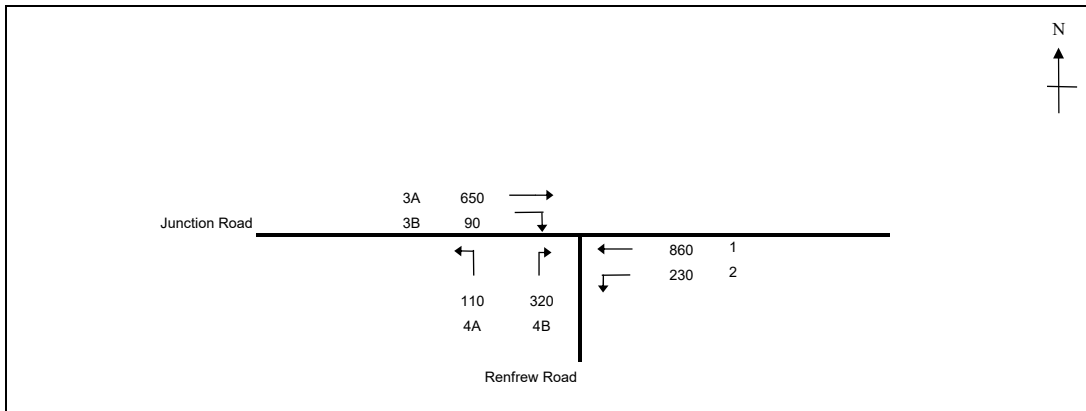
Junction No. J4

Junction Road / Renfrew Road

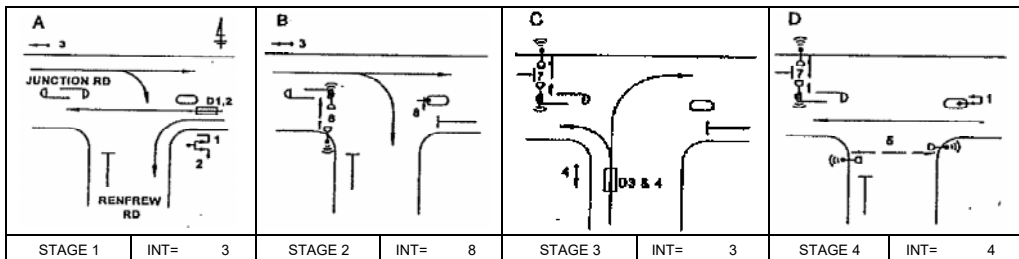
2023 AM Observed Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N =	4
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.262
Loss time	L =	53 sec
Total Flow	=	2260 pcu
Co	= (1.5*L+5)/(1-Y)	= 114.5 sec
Cm	= L/(1-Y)	= 71.8 sec
Yult	=	0.503
R.C.ult	= (Yult-Y)/Y*100%	= 91.8 %
Cp	= 0.9*L/(0.9-Y)	= 74.8 sec
Ymax	= 1-L/C	= 0.558
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 92 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	15	2	8	OK
6	7	5	6	7	16	6	7	OK
7	7	7	1	6	29	1	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170				860	0.00	4170			4170	0.206		14	53	53	0.471	48
2	1	3.30	2	1	20		N	1945	230		230	1.00	1809			1809	0.127	0.127		33	33	0.469	34	
3A	1,2	3.70	3	1			N	1985			386	0.00	1985	5.3		1763	0.219			56	57	0.465	41	
3A,3B	1,2	3.70	3	1	12	O		2125			90	0.25	1837	5.3		1615	0.219			56	57	0.465	37	
4A,4B	3	3.30	4	1	15		N	1945	110		92	1.00	1768	6.5		1495	0.135	0.135		34	34	0.469	29	
4B	3	3.30	4	1	25			2085			228	1.00	1967	6.5		1694	0.135			34	34	0.469	33	
	2																		22	22	22			
	4																		17	17	17			

NOTE : 'O' - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRIAN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

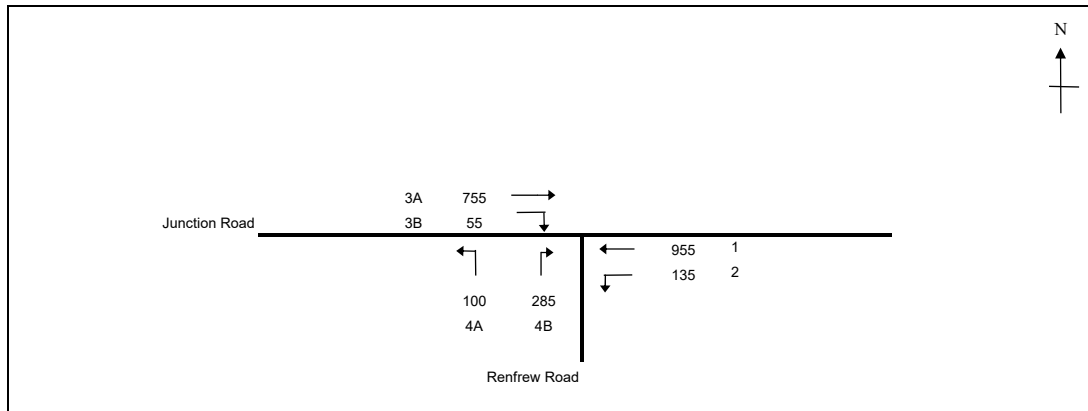
Junction No. J4

Junction Road / Renfrew Road

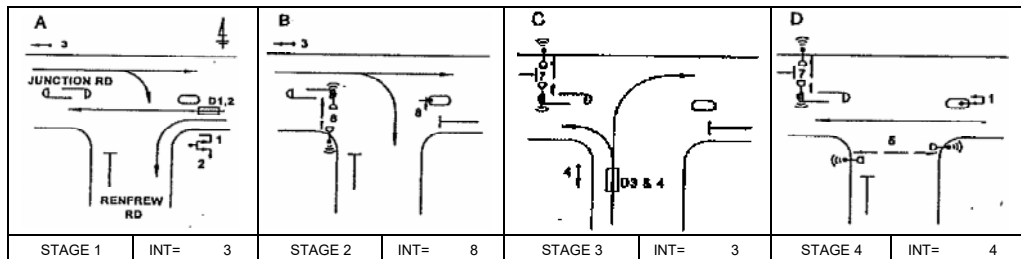
2023 PM Observed Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N =	4
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.195
Loss time	L =	78 sec
Total Flow	=	2285 pcu
Co	= (1.5*L+5)/(1-Y)	= 151.6 sec
Cm	= L/(1-Y)	= 96.9 sec
Yult	=	0.315
R.C.ult	= (Yult-Y)/Y*100%	= 61.2 %
Cp	= 0.9*L/(0.9-Y)	= 99.6 sec
Ymax	= 1-L/C	= 0.350
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 61 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	26	2	8	OK
6	7	5	6	7	27	6	7	OK
7	7	7	1	6	21	1	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170				955	0.00	4170			4170	0.229		14	49	50	0.549	56
2	1	3.30	2	1	20		N	1945	135	955		135	1.00	1809			1809	0.075	0.075		16	16	0.558	23
3A	1,2	3.70	3	1			N	1985		420		420	0.00	1985	5.3		1763	0.238			51	51	0.560	48
3A,3B	1,2	3.70	3	1	12	O		2125		335		390	0.14	1862	5.3		1640	0.238			51	51	0.560	45
4A,4B	3	3.30	4	1	15		N	1945	100			180	1.00	1768	6.5		1495	0.121	0.121		26	26	0.558	28
4B	3	3.30	4	1	25			2085				205	1.00	1967	6.5		1694	0.121			26	26	0.558	32
	2																		33	33	33			
	4																		31	31	31			

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

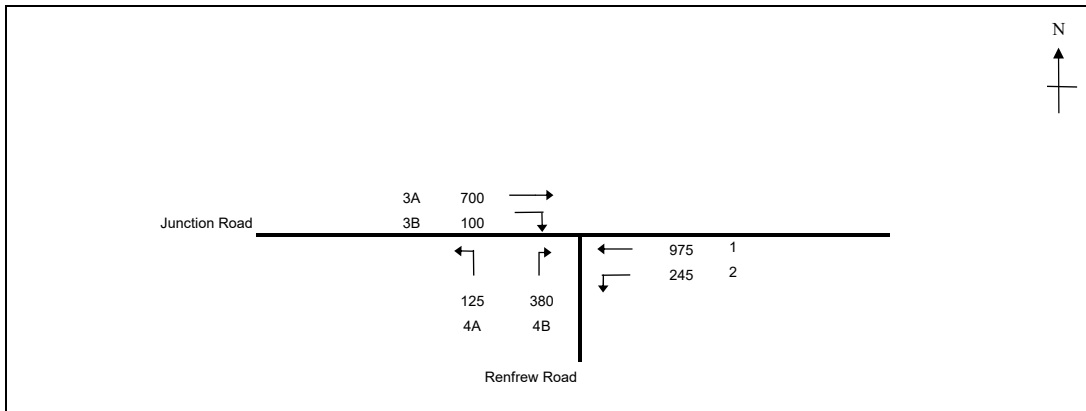
Junction No. J4

Junction Road / Renfrew Road

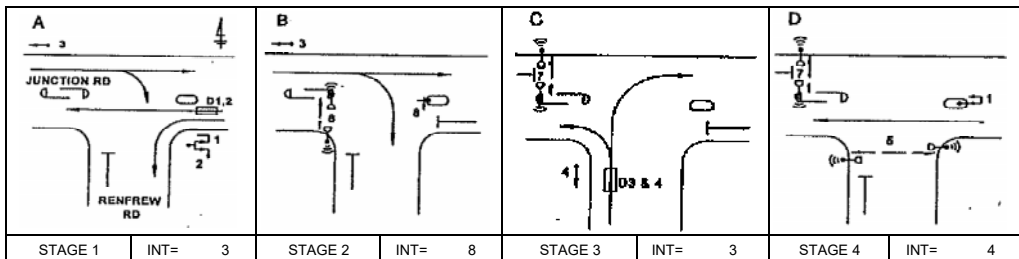
2036 AM Reference Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.294
Loss time	L = 54 sec
Total Flow	= 2525 pcu
Co	= (1.5*L+5)/(1-Y) = 121.8 sec
Cm	= L/(1-Y) = 76.5 sec
Yult	= 0.495
R.C.ult	= (Yult-Y)/Y*100% = 68.5 %
Cp	= 0.9*L/(0.9-Y) = 80.2 sec
Ymax	= 1-L/C = 0.550
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 68 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	14	2	8	OK
6	7	5	6	7	15	6	7	OK
7	7	7	1	6	31	1	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170				975	0.00	4170			4170	0.234		14	53	52	0.535	55
2	1	3.30	2	1	20		N	1945	245	975	245	1.00	1809			1809	0.135	0.135		30	30	0.534	37	
3A	1,2	3.70	3	1			N	1985		418	418	0.00	1985	5.3		1763	0.237			53	53	0.532	46	
3A,3B	1,2	3.70	3	1	12	O		2125		282	100	382	0.26	1835	5.3		1613	0.237			53	53	0.532	42
4A,4B	3	3.30	4	1	15		N	1945	125		112	237	1.00	1768	6.5		1495	0.158	0.158		36	36	0.534	33
4B	3	3.30	4	1	25			2085			268	1.00	1967	6.5		1694	0.158			36	36	0.534	38	
	2																		21	21	21			
	4																		19	19	19			

NOTE : 'O' - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRIAN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

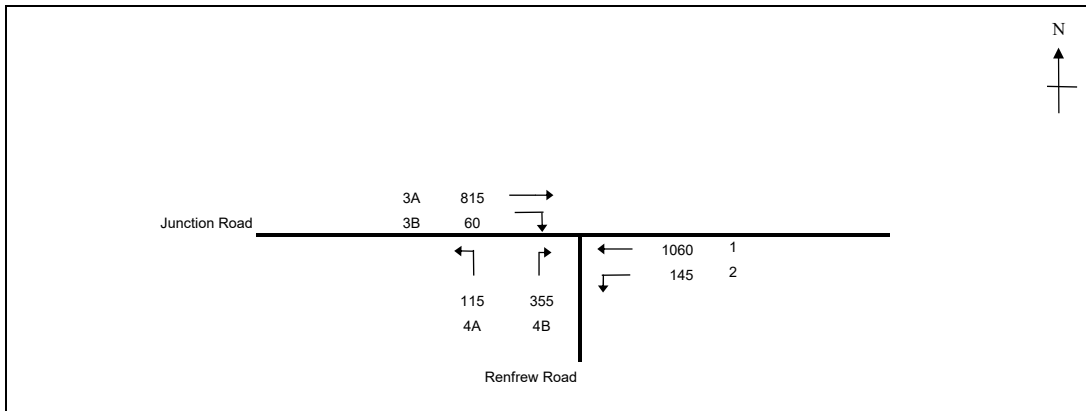
Junction No. J4

Junction Road / Renfrew Road

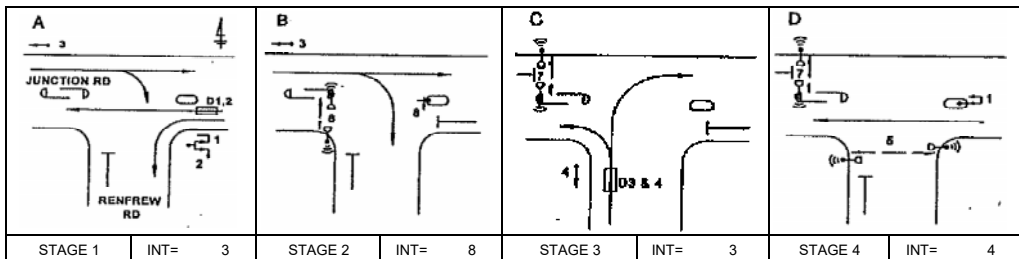
2036 PM Referece Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.228
Loss time	L = 76 sec
Total Flow	= 2550 pcu
Co	= (1.5*L+5)/(1-Y) = 154.1 sec
Cm	= L/(1-Y) = 98.4 sec
Yult	= 0.330
R.C.ult	= (Yult-Y)/Y*100% = 45.0 %
Cp	= 0.9*L/(0.9-Y) = 101.7 sec
Ymax	= 1-L/C = 0.367
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 45 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	25	2	8	OK
6	7	5	6	7	26	6	7	OK
7	7	7	1	6	24	1	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170				1060	0.00	4170			0.254		14	49	48	0.629	63	
2	1	3.30	2	1	20		N	1945	145	1060	145	1.00	1809			0.080	0.080		32	15	15	0.621	25	
3A	1,2	3.70	3	1			N	1985		453	453	0.00	1985	5.3		1763	0.257			50	49	0.623	53	
3A,3B	1,2	3.70	3	1	12	O		2125		362	60	0.14	1862	5.3		1640	0.257			50	49	0.623	50	
4A,4B	3	3.30	4	1	15		N	1945	115		105	1.00	1768	6.5		1495	0.147	0.147		29	29	0.621	34	
4B	3	3.30	4	1	25			2085			250	1.00	1967	6.5		1694	0.147			29	29	0.621	38	
	1																							
	2																			30	30	30		
	4																							

NOTE : 'O' - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRIAN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

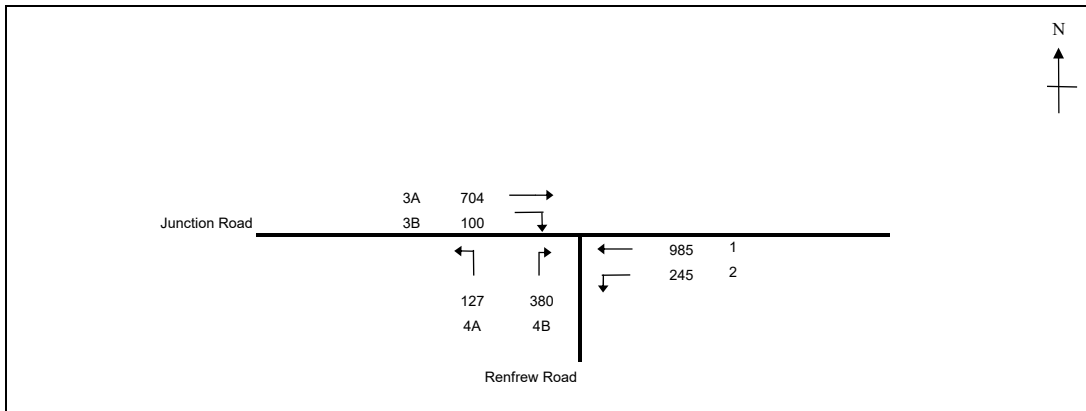
Junction No. J4

Junction Road / Renfrew Road

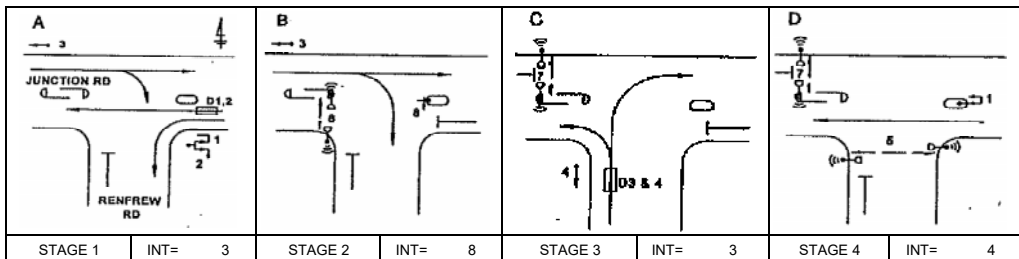
2036 AM Reference Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.294
Loss time	L = 54 sec
Total Flow	= 2541 pcu
Co	= (1.5*L+5)/(1-Y) = 121.9 sec
Cm	= L/(1-Y) = 76.5 sec
Yult	= 0.495
R.C.ult	= (Yult-Y)/Y*100% = 68.1 %
Cp	= 0.9*L/(0.9-Y) = 80.3 sec
Ymax	= 1-L/C = 0.550
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 68 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	14	2	8	OK
6	7	5	6	7	15	6	7	OK
7	7	7	1	6	31	1	6	OK

STAGE 1	INT= 3	STAGE 2	INT= 8	STAGE 3	INT= 3	STAGE 4	INT= 4
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Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170				985	0.00	4170					14	53	52	0.541	56	
2	1	3.30	2	1	20		N	1945	245	985		245	1.00	1809				0.135		30	30	0.535	37	
3A	1,2	3.70	3	1			N	1985		420		420	0.00	1985	5.3			0.238		53	53	0.536	47	
3A,3B	1,2	3.70	3	1	12	O		2125		284		384	0.26	1835	5.3			0.238		53	53	0.536	43	
4A,4B	3	3.30	4	1	15		N	1945	127	111		238	1.00	1768	6.5		0.159	0.159		36	36	0.535	33	
4B	3	3.30	4	1	25			2085		269		269	1.00	1967	6.5			0.159		36	36	0.535	38	
	2																		21	21	21			
	4																		19	19	19			

NOTE : 'O' - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRIAN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

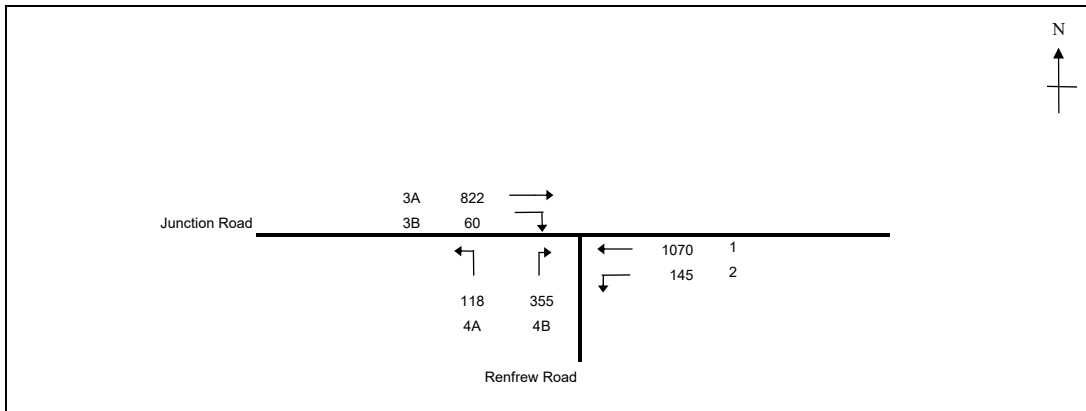
Junction No. J4

Junction Road / Renfrew Road

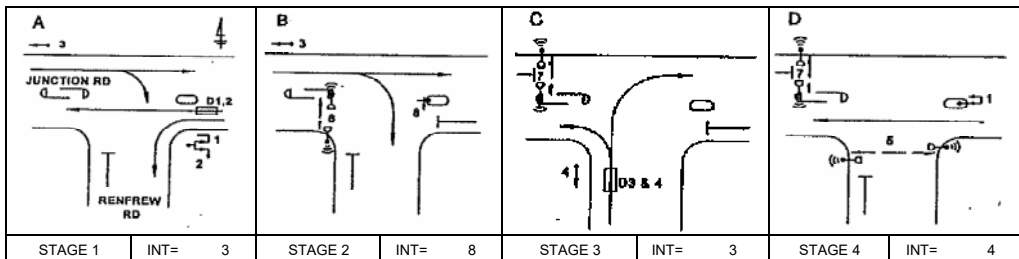
2036 PM Design Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.228
Loss time	L = 76 sec
Total Flow	= 2570 pcu
Co	= (1.5*L+5)/(1-Y) = 154.2 sec
Cm	= L/(1-Y) = 98.5 sec
Yult	= 0.330
R.C.ult	= (Yult-Y)/Y*100% = 44.4 %
Cp	= 0.9*L/(0.9-Y) = 101.9 sec
Ymax	= 1-L/C = 0.367
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 44 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	25	2	8	OK
6	7	5	6	7	26	6	7	OK
7	7	7	1	6	24	1	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170				1070	0.00	4170			0.257		14	49	48	0.636	64	
2	1	3.30	2	1	20		N	1945	145	1070	425	145	1.00	1809			0.080	0.080		15	15	0.623	25	
3A	1,2	3.70	3	1			N	1985		457	457	457	0.00	1985	5.3		0.259			50	49	0.629	54	
3A,3B	1,2	3.70	3	1	12	O		2125		365	60	425	0.14	1862	5.3		0.259			50	49	0.629	50	
4A,4B	3	3.30	4	1	15		N	1945	118		104	222	1.00	1768	6.5		0.148	0.148		29	29	0.623	34	
4B	3	3.30	4	1	25			2085			251	251	1.00	1967	6.5		0.148			29	29	0.623	38	
	1																							
	2																		32	32	32			
	4																		30	30	30			

NOTE : 'O' - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRIAN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

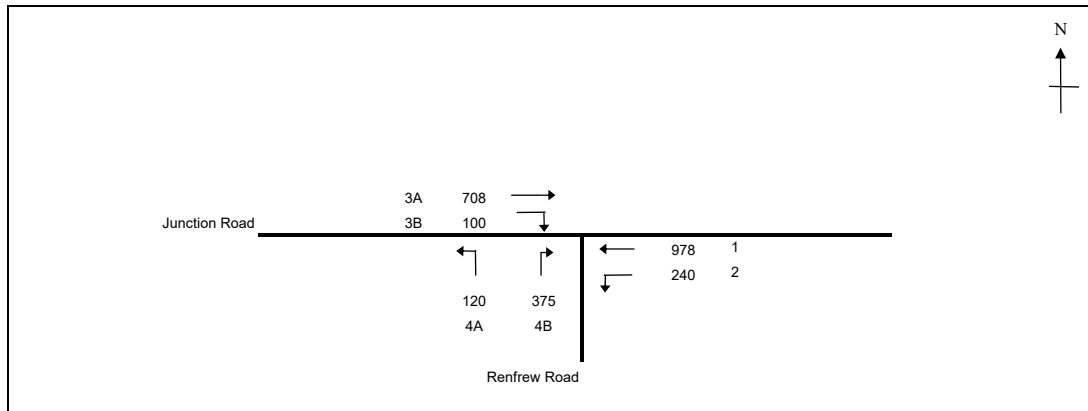
Junction No. J4

Junction Road / Renfrew Road

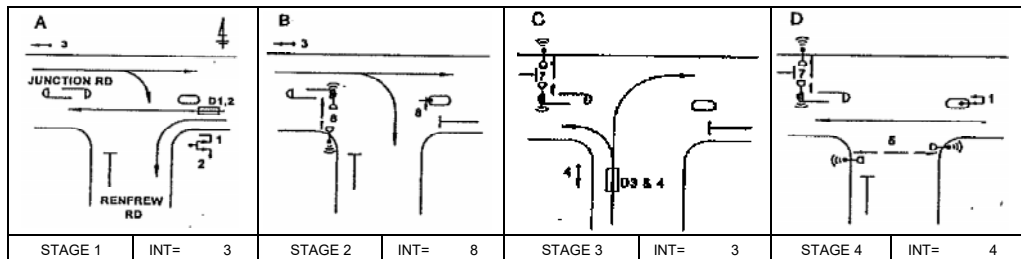
2033 AM Peak Construction Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.288
Loss time	L = 54 sec
Total Flow	= 2521 pcu
Co	= (1.5*L+5)/(1-Y) = 120.8 sec
Cm	= L/(1-Y) = 75.8 sec
Yult	= 0.495
R.C.ult	= (Yult-Y)/Y*100% = 71.9 %
Cp	= 0.9*L/(0.9-Y) = 79.4 sec
Ymax	= 1-L/C = 0.550
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 72 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	14	2	8	OK
6	7	5	6	7	15	6	7	OK
7	7	7	1	6	31	1	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170		978		978	0.00	4170			4170	0.235		14	54	52	0.537	55
2	1	3.30	2	1	20		N	1945	240			240	1.00	1809			1809	0.133	0.133		30	30	0.523	36
3A	1,2	3.70	3	1			N	1985		422		422	0.00	1985	5.3		1763	0.239			55	53	0.538	47
3A,3B	1,2	3.70	3	1	12	O		2125		286	100	386	0.26	1836	5.3		1614	0.239			55	53	0.538	43
4A,4B	3	3.30	4	1	15		N	1945	120		112	232	1.00	1768	6.5		1495	0.155	0.155		36	36	0.523	33
4B	3	3.30	4	1	25			2085			263	263	1.00	1967	6.5		1694	0.155			36	36	0.523	37
	2																		21	21	21			
	4																		19	19	19			

NOTE : 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

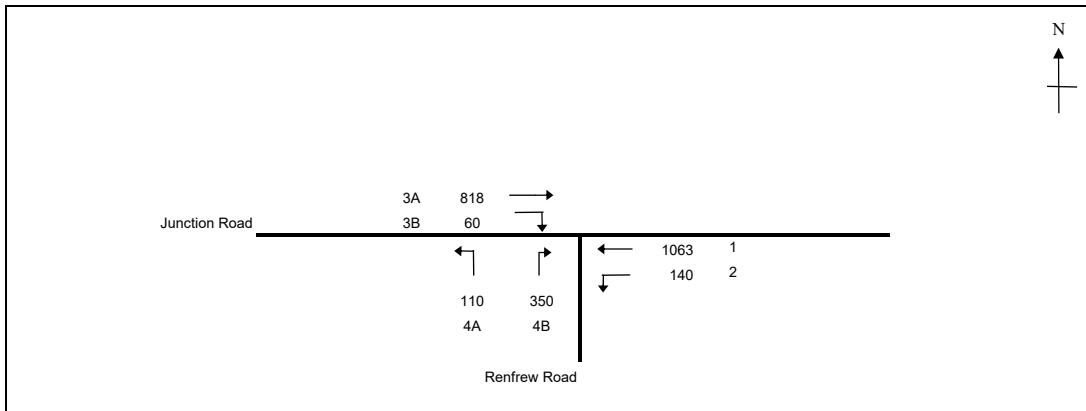
Junction No. J4

Junction Road / Renfrew Road

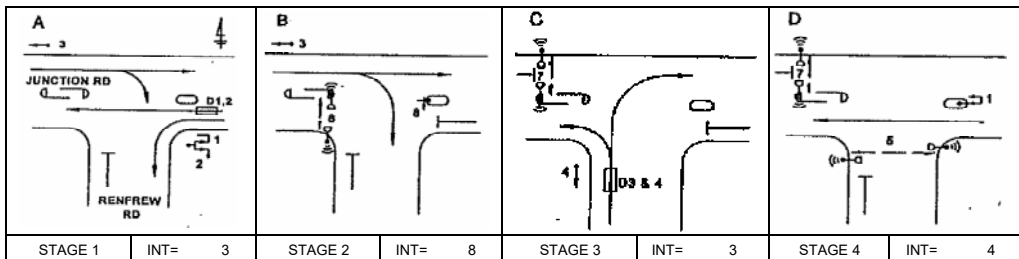
2033 PM Peak Construction Flow

DATE : 9-May-24

FILENAME :



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.222
Loss time	L = 76 sec
Total Flow	= 2541 pcu
Co	= (1.5*L+5)/(1-Y) = 152.9 sec
Cm	= L/(1-Y) = 97.6 sec
Yult	= 0.330
R.C.ult	= (Yult-Y)/Y*100% = 48.9 %
Cp	= 0.9*L/(0.9-Y) = 100.8 sec
Ymax	= 1-L/C = 0.367
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 49 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5	15	11	2	8	25	2	8	OK
6	7	5	6	7	26	6	7	OK
7	7	7	1	6	24	1	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1	1,4	3.30	1	2				4170		1063		1063	0.00	4170			0.255		14	51	48	0.633	63	
2	1	3.30	2	1	20		N	1945	140	1063		140	1.00	1809			0.077	0.077		15	15	0.604	24	
3A	1,2	3.70	3	1			N	1985		455		455	0.00	1985	5.3		0.258			51	49	0.627	54	
3A,3B	1,2	3.70	3	1	12	O		2125		363		423	0.14	1862	5.3		0.258			51	49	0.627	50	
4A,4B	3	3.30	4	1	15		N	1945	110			216	1.00	1768	6.5		0.144	0.144		29	29	0.604	33	
4B	3	3.30	4	1	25			2085				244	1.00	1967	6.5		0.144			29	29	0.604	37	
	1																							
	2																			32	32	32		
	4																			30	30	30		

NOTE : 'O' - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRIAN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

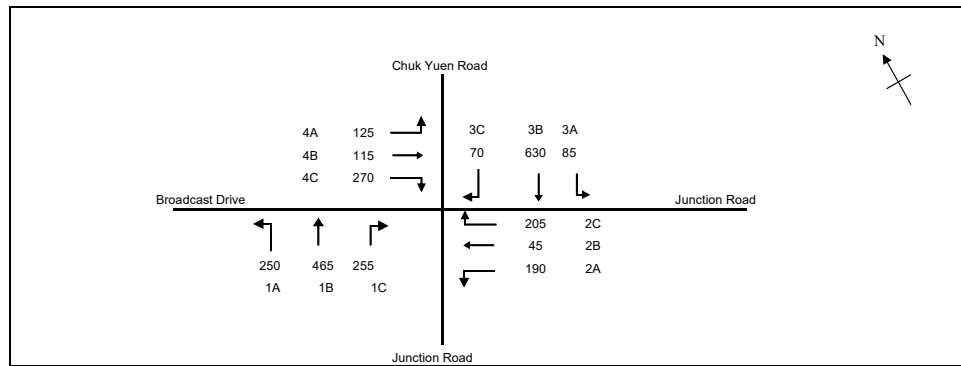
Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive

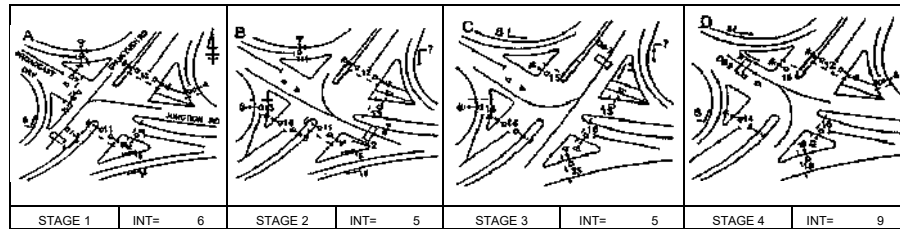
2023 AM Observed Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	4
No. of stage using for calculation	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.510
Loss time	L =	21 sec
Total Flow	=	2705 pcu
Co	= (1.5*L+5)/(1-Y)	= 74.5 sec
Cm	= L/(1-Y)	= 42.9 sec
Yult	=	0.743
R.C.ult	= (Yult-Y)/Y*100%	= 45.6 %
Cp	= 0.9*L/(0.9-Y)	= 48.5 sec
Ymax	= 1-L/C	= 0.825
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 46 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	23	2	5	OK
10p	4	5	3	5	56	3	5	OK
11p	9	10	8	8	14	8	8	OK
12p	12	13	3	12	79	3	12	OK
13p	9	10	9	8	40	9	8	OK
14p	10	11	2	9	80	2	9	OK
15p	7	8	8	6	47	8	6	OK
16p	7	8	3	6	82	3	6	OK

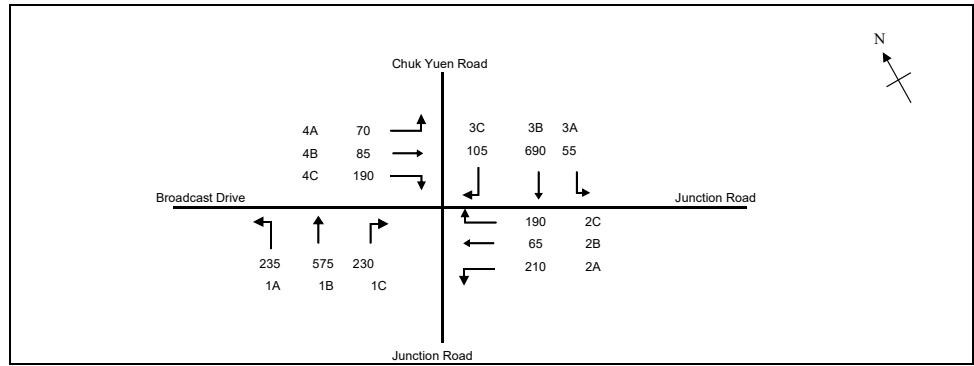
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	250			250	1.00	1823	3.0		1697	0.147		21	29	59	0.300	25
1B	1	3.30	1	1			N	2085		249		249	0.00	2085	3.0		1959	0.127	0.127		25	25	0.610	39
1B,1C	1	3.30	1	1	20		N	2085		216	30	246	0.12	2066	3.0		1940	0.127			25	25	0.610	39
1C	1	3.30	1	1	15		N	2085			225	225	1.00	1895	3.0		1769	0.127			25	25	0.610	36
2A	1,2	3.50	5	1	205		N	1965	92			92	1.00	1951			1951	0.047			9	56	0.101	10
2A	1,2	3.50	5	1	210		N	2105	98			98	1.00	2090			2090	0.047			9	56	0.101	10
2B,2C	2	3.00	2	1	15		N	2055		45	205	250	0.82	1899			1899	0.132	0.132		26	26	0.608	39
3A,3B	3	3.50	7	1	25		N	1965	85	143		228	0.37	1922			1922	0.119			23	23	0.618	37
3B	3	3.00	3	2			N	4110		487		487	0.00	4110			4110	0.119	0.119		23	23	0.618	39
3C	3	3.00	3	1	15		N	2055			70	70	1.00	1868			1868	0.037			7	23	0.195	11
4A,4B,4C	4	3.00	4	1	20		N	2055	125	115	22	262	0.56	1972			1972	0.133	0.133		26	26	0.613	41
4C	4	3.00	4	1	15		N	2055			248	248	1.00	1868			1868	0.133			26	26	0.613	39

NOTE: 'O' - OPPOSING TRAFFIC 'N' - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

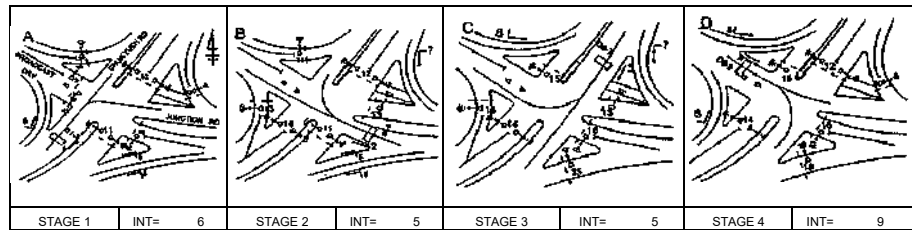
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive | 2023 PM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 4
Cycle time	C = 120 sec
Sum(y)	Y = 0.493
Loss time	L = 21 sec
Total Flow	= 2700 pcu
Co = (1.5*L+5)/(1-Y)	= 72.0 sec
Cm = L/(1-Y)	= 41.4 sec
Yult	= 0.743
R.C.ult = (Yult-Y)/Y*100%	= 50.6 %
Cp = 0.9*L/(0.9-Y)	= 46.4 sec
Ymax = 1-L/C	= 0.825
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 51 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	27	2	5	OK
10p	4	5	3	5	52	3	5	OK
11p	9	10	8	8	18	8	8	OK
12p	12	13	3	12	76	3	12	OK
13p	9	10	9	8	43	9	8	OK
14p	10	11	2	9	75	2	9	OK
15p	7	8	8	6	41	8	6	OK
16p	7	8	3	6	80	3	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	235			235	1.00	1823	3.0		1697	0.138		21	28	55	0.302	25
1B	1	3.30	1	1			N	2085		288		288	0.00	2085	3.0		1959	0.147	0.147		29	29	0.607	44
1B,1C	1	3.30	1	1	20		N	2085		288	0	288	0.00	2085	3.0		1959	0.147			29	29	0.607	44
1C	1	3.30	1	1	15		N	2085			230	230	1.00	1895	3.0		1769	0.130			26	29	0.538	35
2A	1,2	3.50	5	1	205		N	1965	101			101	1.00	1951			1951	0.052			10	61	0.102	10
2A	1,2	3.50	5	1	210		N	2105	109			109	1.00	2090			2090	0.052			10	61	0.102	11
2B,2C	2	3.00	2	1	15		N	2055		65	190	255	0.75	1913			1913	0.133	0.133		27	27	0.593	40
3A,3B	3	3.50	7	1	25		N	1965	55	184		239	0.23	1938			1938	0.123			25	25	0.591	38
3B	3	3.00	3	2			N	4110		506		506	0.00	4110			4110	0.123	0.123		25	25	0.591	40
3C	3	3.00	3	1	15		N	2055			105	105	1.00	1868			1868	0.056			11	25	0.270	17
4A,4B,4C	4	3.00	4	1	20		N	2055	70	85	22	177	0.52	1978			1978	0.090	0.090		18	18	0.598	30
4C	4	3.00	4	1	15		N	2055			168	168	1.00	1868			1868	0.090			18	18	0.598	28

NOTE: 'O' - OPPOSING TRAFFIC | 'N' - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

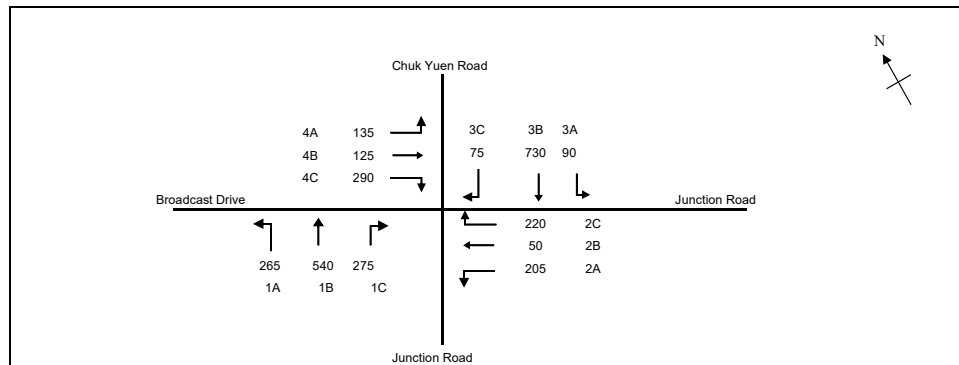
Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive

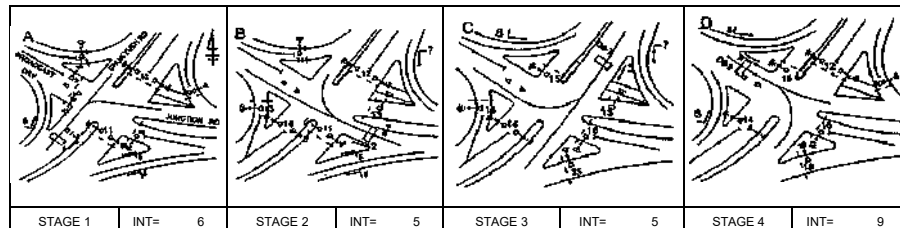
2036 AM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 4
Cycle time	C = 120 sec
Sum(y)	Y = 0.565
Loss time	L = 21 sec
Total Flow	= 3000 pcu
Co	= (1.5*L+5)/(1-Y) = 83.9 sec
Cm	= L/(1-Y) = 48.2 sec
Yult	= 0.743
R.C.ult	= (Yult-Y)/Y*100% = 31.5 %
Cp	= 0.9*L/(0.9-Y) = 56.4 sec
Ymax	= 1-L/C = 0.825
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 31 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	23	2	5	OK
10p	4	5	3	5	55	3	5	OK
11p	9	10	8	8	14	8	8	OK
12p	12	13	3	12	77	3	12	OK
13p	9	10	9	8	40	9	8	OK
14p	10	11	2	9	79	2	9	OK
15p	7	8	8	6	47	8	6	OK
16p	7	8	3	6	82	3	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	265			265	1.00	1823	3.0		1697	0.156		21	27	58	0.323	27
1B	1	3.30	1	1				2085		281		281	0.00	2085	3.0		1959	0.144	0.144		25	25	0.689	45
1B,1C	1	3.30	1	1	20			2085		259	21	280	0.07	2073	3.0		1947	0.144			25	25	0.689	44
1C	1	3.30	1	1	15			2085			254	280	1.00	1895	3.0		1769	0.144			25	25	0.689	40
2A	1,2	3.50	5	1	205		N	1965	99			99	1.00	1951			1951	0.051			9	55	0.111	11
2A	1,2	3.50	5	1	210			2105	106			106	1.00	2090			2090	0.051			9	55	0.111	11
2B,2C	2	3.00	2	1	15			2055		50	220	270	0.81	1900			1900	0.142	0.142		25	25	0.682	43
3A,3B	3	3.50	3	1	25		N	1965	90	172		262	0.34	1925			1925	0.136			24	24	0.679	42
3B	3	3.00	3	2				4110		558		558	0.00	4110			4110	0.136	0.136		24	24	0.679	45
3C	3	3.00	3	1	15			2055			75	75	1.00	1868			1868	0.040			7	24	0.201	12
4A,4B,4C	4	3.00	4	1	20			2055	135	125	22	282	0.56	1973			1973	0.143	0.143		25	25	0.687	45
4C	4	3.00	4	1	15			2055			288	268	1.00	1868			1868	0.143			25	25	0.687	42

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

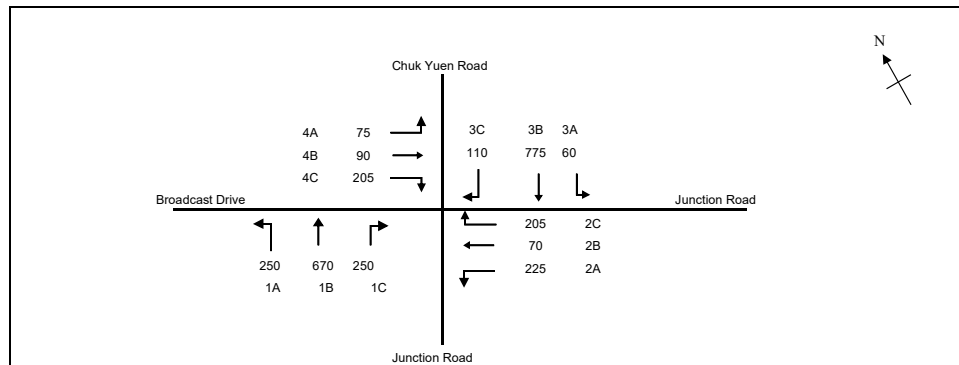
Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive

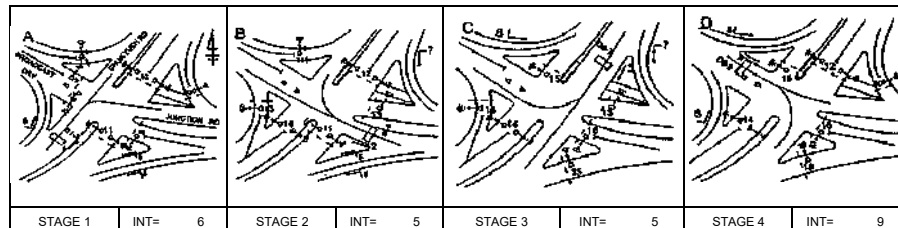
2036 PM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	4
No. of stage using for calculation	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.549
Loss time	L =	21 sec
Total Flow	=	2985 pcu
Co	= (1.5*L+5)/(1-Y)	= 80.9 sec
Cm	= L/(1-Y)	= 46.6 sec
Yult	=	0.743
R.C.ult	= (Yult-Y)/Y*100%	= 35.2 %
Cp	= 0.9*L/(0.9-Y)	= 53.9 sec
Ymax	= 1-L/C	= 0.825
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 35 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	29	2	5	OK
10p	4	5	3	5	53	3	5	OK
11p	9	10	8	8	20	8	8	OK
12p	12	13	3	12	76	3	12	OK
13p	9	10	9	8	42	9	8	OK
14p	10	11	2	9	73	2	9	OK
15p	7	8	8	6	40	8	6	OK
16p	7	8	3	6	81	3	6	OK

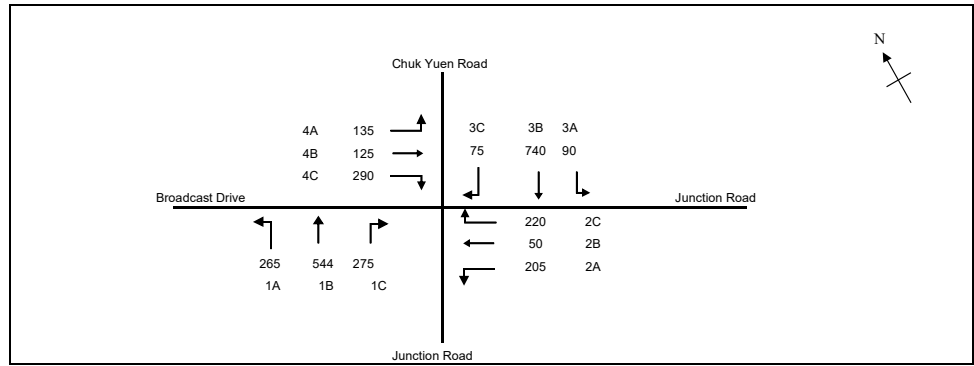
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	250			250	1.00	1823	3.0		1697	0.147		21	27	56	0.316	27
1B	1	3.30	1	1			N	2085		335		335	0.00	2085	3.0		1959	0.171	0.171		31	31	0.662	50
1B,1C	1	3.30	1	1	20		N	2085		335	0	335	0.00	2085	3.0		1959	0.171			31	31	0.662	50
1C	1	3.30	1	1	15		N	2085			250	250	1.00	1895	3.0		1769	0.141			25	31	0.547	37
2A	1,2	3.50	5	1	205		N	1965	109			109	1.00	1951			1951	0.056			10	62	0.108	10
2A	1,2	3.50	5	1	210		N	2105	116			116	1.00	2090			2090	0.056			10	62	0.108	11
2B,2C	2	3.00	2	1	15		N	2055		70	205	275	0.75	1912			1912	0.144	0.144		26	26	0.664	43
3A,3B	3	3.50	3	1	25		N	1965	60	208		268	0.22	1939			1939	0.138			25	25	0.663	42
3B	3	3.00	3	2			N	4110		567		567	0.00	4110			4110	0.138	0.138		25	25	0.663	45
3C	3	3.00	3	1	15		N	2055			110	110	1.00	1868			1868	0.059			11	25	0.283	17
4A,4B,4C	4	3.00	4	1	20		N	2055	75	90	25	190	0.53	1977			1977	0.096	0.096		17	17	0.679	33
4C	4	3.00	4	1	15		N	2055			180	180	1.00	1868			1868	0.096			17	17	0.679	31

NOTE: 'O' - OPPOSING TRAFFIC 'N' - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

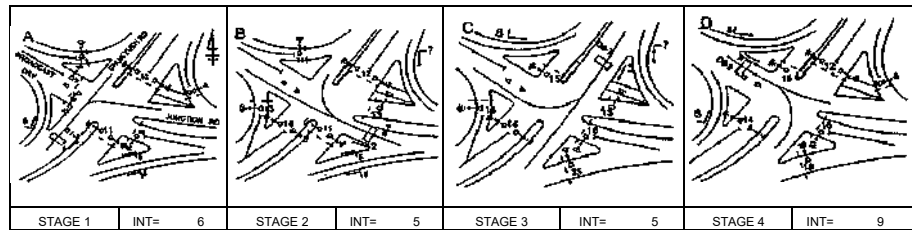
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive | 2036 AM Design Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 4
Cycle time	C = 120 sec
Sum(y)	Y = 0.567
Loss time	L = 21 sec
Total Flow	= 3014 pcu
Co	= (1.5*L+5)/(1-Y) = 84.3 sec
Cm	= L/(1-Y) = 48.5 sec
Yult	= 0.743
R.C.ult	= (Yult-Y)/Y*100% = 30.9 %
Cp	= 0.9*L/(0.9-Y) = 56.8 sec
Ymax	= 1-L/C = 0.825
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 31 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	23	2	5	OK
10p	4	5	3	5	55	3	5	OK
11p	9	10	8	8	14	8	8	OK
12p	12	13	3	12	77	3	12	OK
13p	9	10	9	8	40	9	8	OK
14p	10	11	2	9	79	2	9	OK
15p	7	8	8	6	47	8	6	OK
16p	7	8	3	6	82	3	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	265			265	1.00	1823	3.0		1697	0.156		21	27	58	0.323	27
1B	1	3.30	1	1			N	2085		283		283	0.00	2085	3.0		1959	0.144	0.144		25	25	0.693	45
1B,1C	1	3.30	1	1	20		N	2085		261	20	281	0.07	2074	3.0		1948	0.144			25	25	0.693	45
1C	1	3.30	1	1	15		N	2085			255	255	1.00	1895	3.0		1769	0.144			25	25	0.693	40
2A	1,2	3.50	5	1	205		N	1965	99			99	1.00	1951			1951	0.051			9	55	0.111	11
2A	1,2	3.50	5	1	210		N	2105	106			106	1.00	2090			2090	0.051			9	55	0.111	11
2B,2C	2	3.00	2	1	15		N	2055		50	220	270	0.81	1900			1900	0.142	0.142		25	25	0.682	43
3A,3B	3	3.50	3	1	25		N	1965	90	175		265	0.34	1926			1926	0.138			24	24	0.688	42
3B	3	3.00	3	2			N	4110		565		565	0.00	4110			4110	0.138	0.138		24	24	0.688	45
3C	3	3.00	3	1	15		N	2055			75	75	1.00	1868			1868	0.040			7	24	0.201	12
4A,4B,4C	4	3.00	4	1	20		N	2055	135	125	22	282	0.56	1973			1973	0.143	0.143		25	25	0.687	45
4C	4	3.00	4	1	15		N	2055			288	288	1.00	1868			1868	0.143			25	25	0.687	42

NOTE: 'O' - OPPOSING TRAFFIC | 'N' - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

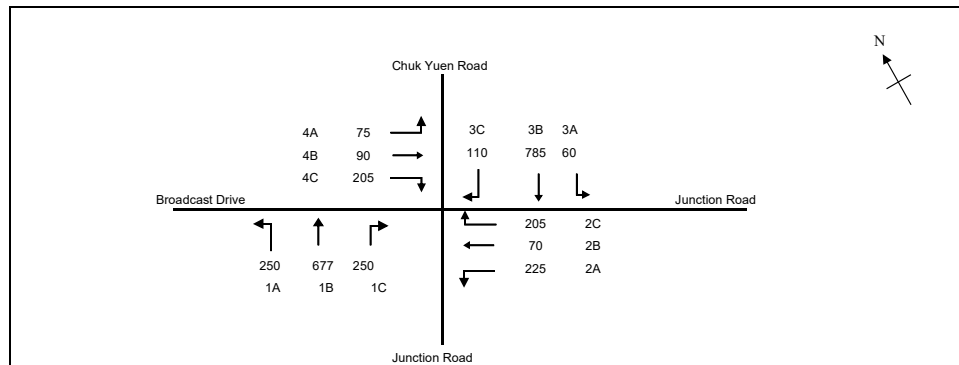
Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive

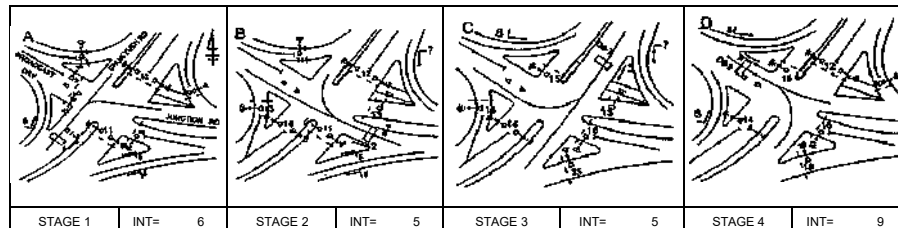
2036 PM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	4
No. of stage using for calculation	N =	4
Cycle time	C =	120 sec
Sum(y)	Y =	0.553
Loss time	L =	21 sec
Total Flow	=	3002 pcu
Co	= (1.5*L+5)/(1-Y)	= 81.6 sec
Cm	= L/(1-Y)	= 46.9 sec
Yult	=	0.743
R.C.ult	= (Yult-Y)/Y*100%	= 34.4 %
Cp	= 0.9*L/(0.9-Y)	= 54.4 sec
Ymax	= 1-L/C	= 0.825
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 34 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	29	2	5	OK
10p	4	5	3	5	53	3	5	OK
11p	9	10	8	8	20	8	8	OK
12p	12	13	3	12	76	3	12	OK
13p	9	10	9	8	42	9	8	OK
14p	10	11	2	9	73	2	9	OK
15p	7	8	8	6	40	8	6	OK
16p	7	8	3	6	81	3	6	OK

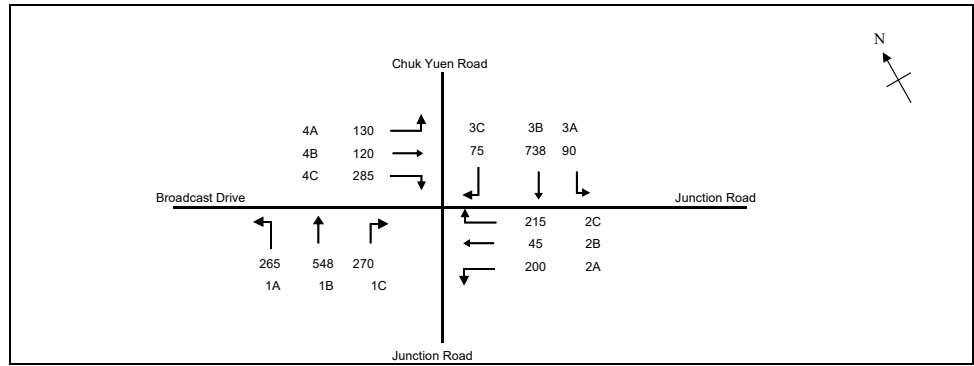
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	250			250	1.00	1823	3.0		1697	0.147		21	26	56	0.316	27
1B	1	3.30	1	1				2085		339		339	0.00	2085	3.0		1959	0.173	0.173		31	31	0.669	50
1B,1C	1	3.30	1	1	20			2085		339	0	339	0.00	2085	3.0		1959	0.173			31	31	0.669	50
1C	1	3.30	1	1	15			2085			250	250	1.00	1895	3.0		1769	0.141			25	31	0.547	37
2A	1,2	3.50	5	1	205		N	1965	109			109	1.00	1951			1951	0.056			10	62	0.108	10
2A	1,2	3.50	5	1	210			2105	116			116	1.00	2090			2090	0.056			10	62	0.108	11
2B,2C	2	3.00	2	1	15			2055		70	205	275	0.75	1912			1912	0.144	0.144		26	26	0.664	43
3A,3B	3	3.50	3	1	25		N	1965	60	211		271	0.22	1939			1939	0.140			25	25	0.670	43
3B	3	3.00	3	2				4110		574		574	0.00	4110			4110	0.140	0.140		25	25	0.670	45
3C	3	3.00	3	1	15			2055			110	110	1.00	1868			1868	0.059			11	25	0.283	17
4A,4B,4C	4	3.00	4	1	20			2055	75	90	25	190	0.53	1977			1977	0.096	0.096		17	17	0.679	33
4C	4	3.00	4	1	15			2055			180	180	1.00	1868			1868	0.096			17	17	0.679	31

NOTE: 'O' - OPPOSING TRAFFIC 'N' - NEAR SIDE LANE 'SG' - STEADY GREEN 'FG' - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

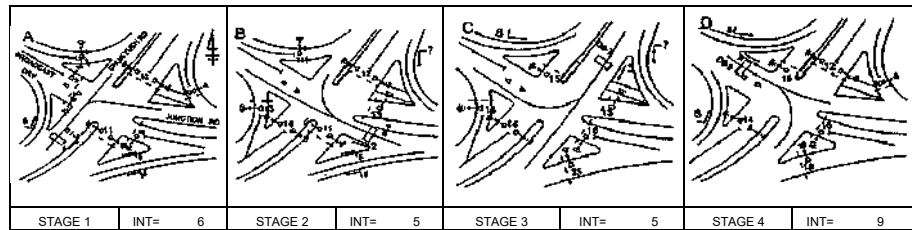
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive | 2033 AM Peak Construction Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 4
Cycle time	C = 120 sec
Sum(y)	Y = 0.558
Loss time	L = 21 sec
Total Flow	= 2981 pcu
Co = (1.5*L+5)/(1-Y)	= 82.5 sec
Cm = L/(1-Y)	= 47.5 sec
Yult = (Yult-Y)/Y*100%	= 0.743
R.C.ult = (Yult-Y)/Y*100%	= 33.2 %
Cp = 0.9*L/(0.9-Y)	= 55.2 sec
Ymax = 1-L/C	= 0.825
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 33 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	24	2	5	OK
10p	4	5	3	5	56	3	5	OK
11p	9	10	8	8	15	8	8	OK
12p	12	13	3	12	77	3	12	OK
13p	9	10	9	8	39	9	8	OK
14p	10	11	2	9	78	2	9	OK
15p	7	8	8	6	47	8	6	OK
16p	7	8	3	6	83	3	6	OK

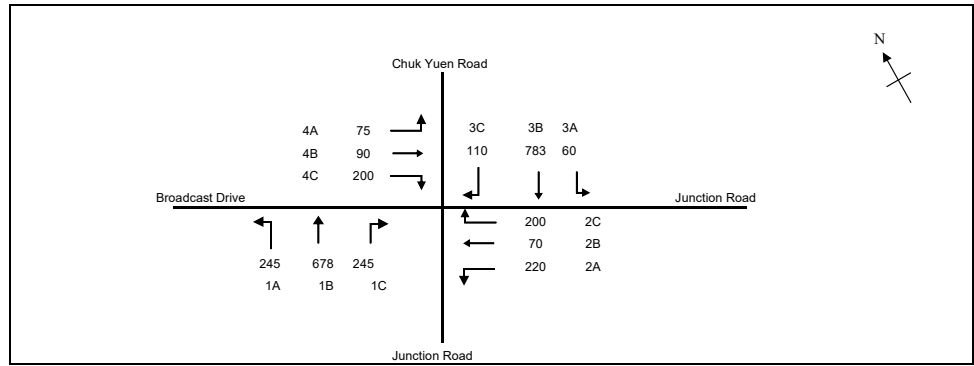
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	265			265	1.00	1823	3.0		1697	0.156		21	28	59	0.318	27
1B	1	3.30	1	1				2085		282		282	0.00	2085	3.0		1959	0.144	0.144		26	26	0.665	44
1B,1C	1	3.30	1	1	20			2085		266	15	281	0.05	2077	3.0		1951	0.144			26	26	0.665	44
1C	1	3.30	1	1	15			2085			255	255	1.00	1895	3.0		1769	0.144			26	26	0.665	40
2A	1,2	3.50	5	1	205		N	1965	97			97	1.00	1951			1951	0.049			9	55	0.108	10
2A	1,2	3.50	5	1	210			2105	103			103	1.00	2090			2090	0.049			9	55	0.108	11
2B,2C	2	3.00	2	1	15			2055		45	215	260	0.83	1898			1898	0.137	0.137		24	24	0.685	42
3A,3B	3	3.50	3	1	25		N	1965	90	174		264	0.34	1926			1926	0.137			24	24	0.686	42
3B	3	3.00	3	2				4110		564		564	0.00	4110			4110	0.137	0.137		24	24	0.686	45
3C	3	3.00	3	1	15			2055			75	75	1.00	1868			1868	0.040			7	24	0.201	12
4A,4B,4C	4	3.00	4	1	20			2055	130	120	25	275	0.56	1972			1972	0.139	0.139		25	25	0.669	43
4C	4	3.00	4	1	15			2055			260	260	1.00	1868			1868	0.139			25	25	0.669	41

NOTE: 'O' - OPPOSING TRAFFIC | 'N' - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

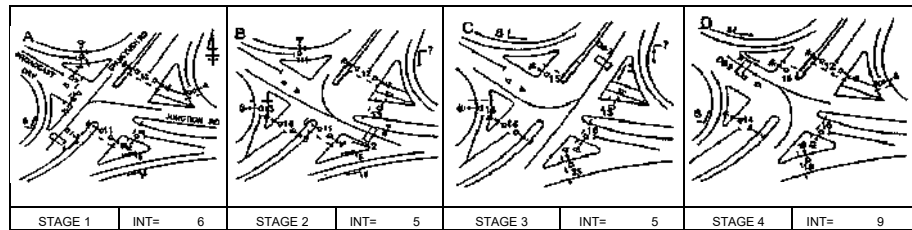
OVE ARUP & PARTNERS TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong PROJECT NO: 292058-24 Junction No. J5

Chuk Yuen Road / Junction Road / Broadcast Drive 2033 PM Peak Construction Flow DATE: 9-May-24 FILENAME:



No. of stages per cycle	N = 4
No. of stage using for calculation	N = 4
Cycle time	C = 120 sec
Sum(y)	Y = 0.548
Loss time	L = 21 sec
Total Flow	= 2976 pcu
Co = (1.5*L+5)/(1-Y)	= 80.8 sec
Cm = L/(1-Y)	= 46.5 sec
Yult = (Yult-Y)/Y*100%	= 0.743
R.C.ult = (Yult-Y)/Y*100%	= 35.4 %
Cp = 0.9*L/(0.9-Y)	= 53.8 sec
Ymax = 1-L/C	= 0.825
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 35 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
9p	6	7	2	5	29	2	5	OK
10p	4	5	3	5	53	3	5	OK
11p	9	10	8	8	20	8	8	OK
12p	12	13	3	12	75	3	12	OK
13p	9	10	9	8	41	9	8	OK
14p	10	11	2	9	72	2	9	OK
15p	7	8	8	6	40	8	6	OK
16p	7	8	3	6	81	3	6	OK

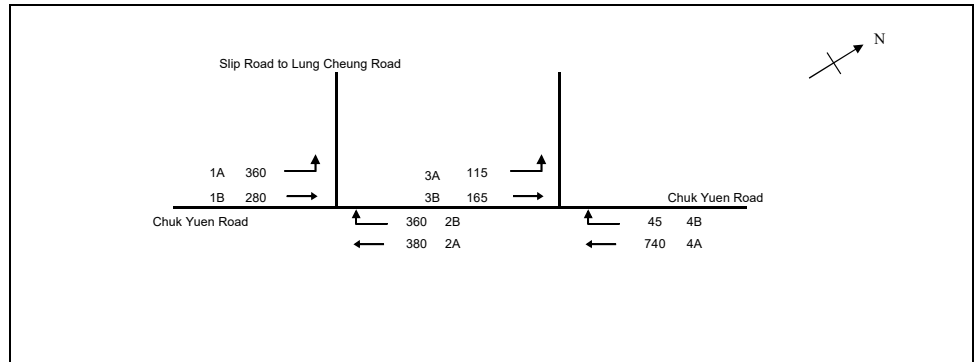
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A	1,4	3.30	6	1	22.5		N	1945	245			245	1.00	1823	3.0		1697	0.144		21	26	56	0.309	26
1B	1	3.30	1	1				2085		339		339	0.00	2085	3.0		1959	0.173	0.173		31	31	0.670	50
1B,1C	1	3.30	1	1	20			2085		339	0	339	0.00	2085	3.0		1959	0.173			31	31	0.670	50
1C	1	3.30	1	1	15			2085			245	245	1.00	1895	3.0		1769	0.138			25	31	0.536	36
2A	1,2	3.50	5	1	205		N	1965	106			106	1.00	1951			1951	0.054			10	61	0.107	10
2A	1,2	3.50	5	1	210			2105	114			114	1.00	2090			2090	0.054			10	61	0.107	11
2B,2C	2	3.00	2	1	15			2055		70	200	270	0.74	1913			1913	0.141	0.141		25	25	0.677	43
3A,3B	3	3.50	3	1	25		N	1965	60	210		270	0.22	1939			1939	0.139			25	25	0.669	43
3B	3	3.00	3	2				4110		573		573	0.00	4110			4110	0.139	0.139		25	25	0.669	45
3C	3	3.00	3	1	15			2055			110	110	1.00	1868			1868	0.059			11	25	0.283	17
4A,4B,4C	4	3.00	4	1	20			2055	75	90	23	188	0.52	1978			1978	0.095	0.095		17	17	0.670	32
4C	4	3.00	4	1	15			2055			177	177	1.00	1868			1868	0.095			17	17	0.670	30

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

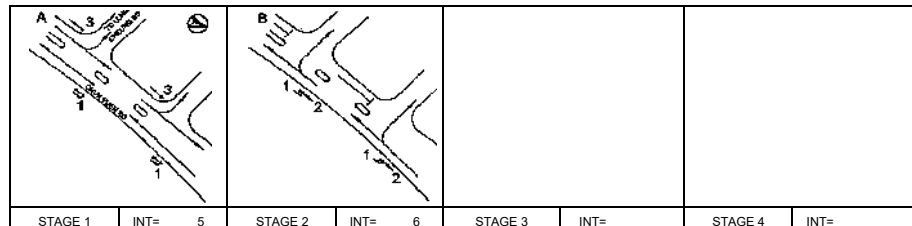
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road | 2023 AM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	2
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.412
Loss time	L =	9 sec
Total Flow	=	2085 pcu
Co	= (1.5*L+5)/(1-Y)	= 31.4 sec
Cm	= L/(1-Y)	= 15.3 sec
Yult	=	0.833
R.C.ult	= (Yult-Y)/Y*100%	= 102.2 %
Cp	= 0.9*L/(0.9-Y)	= 16.6 sec
Ymax	= 1-L/C	= 0.925
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 102 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

STAGE 1	INT=	5	STAGE 2	INT=	6	STAGE 3	INT=	STAGE 4	INT=
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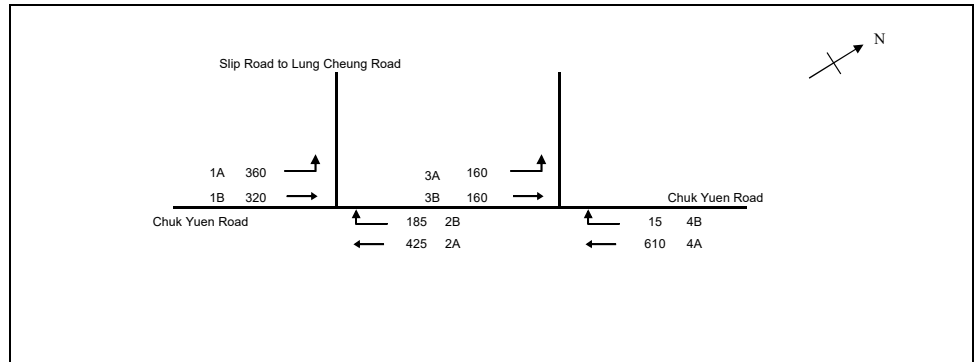
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	360	0		360	1.00	1691			1691	0.213	0.213	9	57	57	0.448	38
1B	1	3.30	3	1				2085		280		280	0.00	2085			2085	0.134			36	57	0.283	29
3A	1	3.00	3	1	10		N	1915	115			115	1.00	1665			1665	0.069			19	57	0.145	12
3B	1	3.00	3	1				2055		165		165	0.00	2055			2055	0.080			22	57	0.169	17
2A	1,2	3.30	1	1			N	1945		380		380	0.00	1945			1945	0.195			53	120	0.195	0
2B	2	3.30	2	1	15			2085		360		360	1.00	1895			1895	0.190			51	54	0.422	40
4A	1,2	3.00	1	1			N	1915		381		381	0.00	1915			1915	0.199			54	120	0.199	0
4A,4B	2	3.00	2	1	15			2055		359	45	404	0.11	2032			2032	0.199	0.199		54	54	0.442	44

NOTE: 'O' - OPPOSING TRAFFIC | N - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

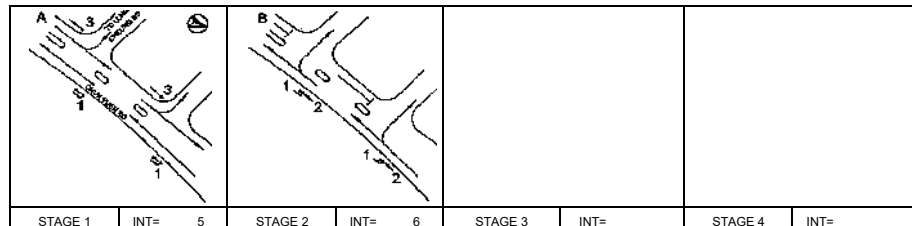
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road | 2023 PM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N = 2
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.371
Loss time	L = 9 sec
Total Flow	= 1875 pcu
Co = (1.5*L+5)/(1-Y)	= 29.4 sec
Cm = L/(1-Y)	= 14.3 sec
Yult	= 0.833
R.C.ult = (Yult-Y)/Y*100%	= 124.6 %
Cp = 0.9*L/(0.9-Y)	= 15.3 sec
Ymax = 1-L/C	= 0.925
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 125 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	360	0		360	1.00	1691			1691	0.213	0.213	9	64	64	0.399	34
1B	1	3.30	3	1				2085		320		320	0.00	2085			2085	0.153			46	64	0.288	30
3A	1	3.00	3	1	10		N	1915	160			160	1.00	1665			1665	0.096			29	64	0.180	15
3B	1	3.00	3	1				2055		160		160	0.00	2055			2055	0.078			23	64	0.146	15
2A	1,2	3.30	1	1			N	1945		425		425	0.00	1945			1945	0.219			65	120	0.219	0
2B	2	3.30	2	1	15			2085		185		185	1.00	1895			1895	0.098			29	47	0.249	23
4A	1,2	3.00	1	1			N	1915		302		302	0.00	1915			1915	0.158			47	120	0.158	0
4A,4B	2	3.00	2	1	15			2055		308	15	323	0.05	2045			2045	0.158	0.158		47	47	0.403	39

NOTE: 'O' - OPPOSING TRAFFIC | N - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

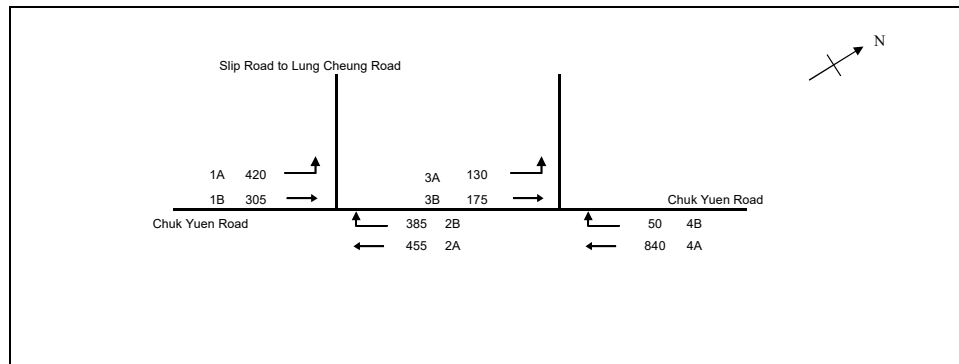
Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road

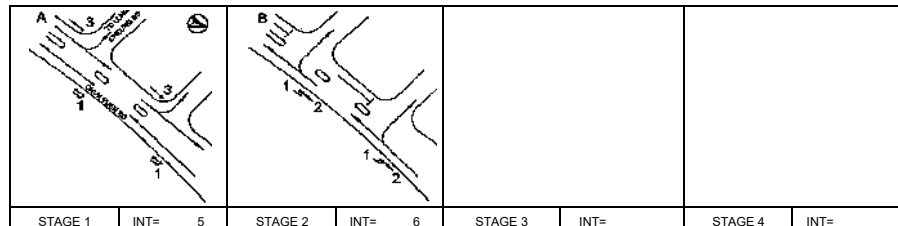
2036 AM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N = 2
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.474
Loss time	L = 9 sec
Total Flow	= 2340 pcu
Co = (1.5*L+5)/(1-Y)	= 35.2 sec
Cm = L/(1-Y)	= 17.1 sec
Yult	= 0.833
R.C.ult = (Yult-Y)/Y*100%	= 75.7 %
Cp = 0.9*L/(0.9-Y)	= 19.0 sec
Ymax = 1-L/C	= 0.925
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 76 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

STAGE 1	INT= 5	STAGE 2	INT= 6	STAGE 3	INT=	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	420	0		420	1.00	1691			1691	0.248	0.248	9	58	58	0.514	43
1B	1	3.30	3	1				2085		305		305	0.00	2085			2085	0.146			34	58	0.303	32
3A	1	3.00	3	1	10		N	1915	130			130	1.00	1665			1665	0.078			18	58	0.162	13
3B	1	3.00	3	1				2055		175		175	0.00	2055			2055	0.085			20	58	0.176	18
2A	1,2	3.30	1	1			N	1945		455		455	0.00	1945			1945	0.234			55	120	0.234	0
2B	2	3.30	2	1	15			2085		385		385	1.00	1895			1895	0.203			48	53	0.460	43
4A	1,2	3.00	1	1			N	1915		432		432	0.00	1915			1915	0.225			53	120	0.225	0
4A,4B	2	3.00	2	1	15			2055		408	50	458	0.11	2033			2033	0.225	0.225		53	53	0.510	51

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

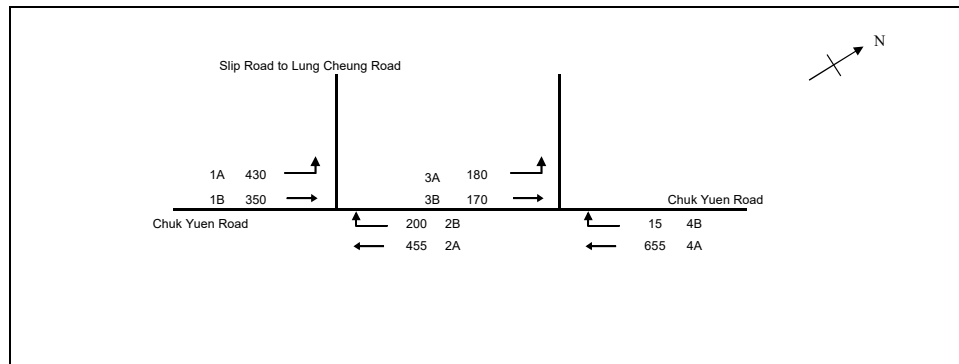
Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road

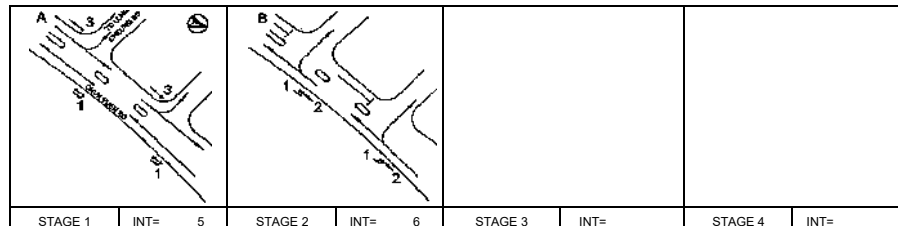
2036 PM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N = 2
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.423
Loss time	L = 9 sec
Total Flow	= 2025 pcu
Co = (1.5*L+5)/(1-Y)	= 32.1 sec
Cm = L/(1-Y)	= 15.6 sec
Yult = (Yult-Y)/Y*100%	= 0.833
R.C.ult = (Yult-Y)/Y*100%	= 96.6 %
Cp = 0.9*L/(0.9-Y)	= 17.0 sec
Ymax = 1-L/C	= 0.925
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 97 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

STAGE 1	INT= 5	STAGE 2	INT= 6	STAGE 3	INT=	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	430	0		430	1.00	1691			1691	0.254	0.254	9	67	67	0.455	38
1B	1	3.30	3	1				2085		350		350	0.00	2085			2085	0.168			44	67	0.301	31
3A	1	3.00	3	1	10		N	1915	180			180	1.00	1665			1665	0.108			28	67	0.194	16
3B	1	3.00	3	1				2055		170		170	0.00	2055			2055	0.083			22	67	0.148	15
2A	1,2	3.30	1	1			N	1945		455		455	0.00	1945			1945	0.234			61	120	0.234	0
2B	2	3.30	2	1	15			2085			200	200	1.00	1895			1895	0.106			28	44	0.288	25
4A	1,2	3.00	1	1			N	1915		324		324	0.00	1915			1915	0.169			44	120	0.169	0
4A,4B	2	3.00	2	1	15			2055		331	15	346	0.04	2046			2046	0.169	0.169		44	44	0.461	44

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

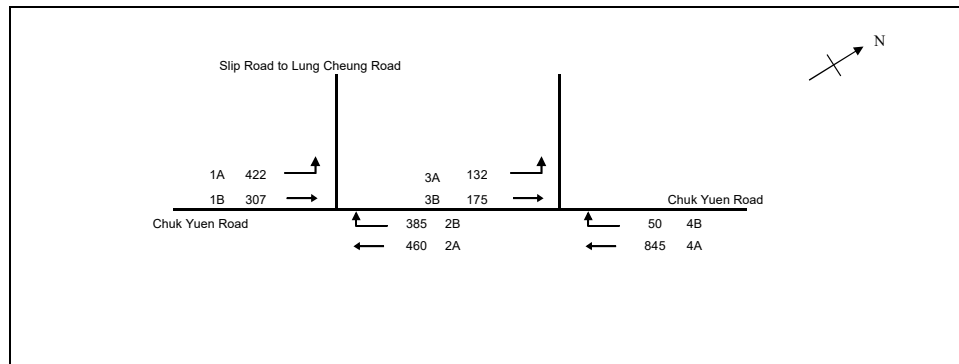
Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road

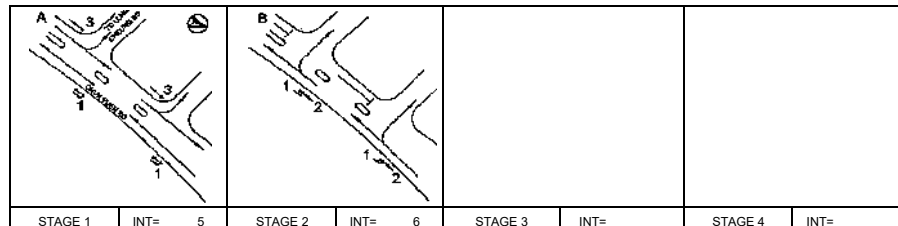
2036 AM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N = 2
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.476
Loss time	L = 9 sec
Total Flow	= 2354 pcu
Co	= (1.5*L+5)/(1-Y) = 35.3 sec
Cm	= L/(1-Y) = 17.2 sec
Yult	= 0.833
R.C.ult	= (Yult-Y)/Y*100% = 74.8 %
Cp	= 0.9*L/(0.9-Y) = 19.1 sec
Ymax	= 1-L/C = 0.925
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 75 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

STAGE 1	INT= 5	STAGE 2	INT= 6	STAGE 3	INT=	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	422	0		422	1.00	1691			1691	0.250	0.250	9	58	58	0.516	44
1B	1	3.30	3	1				2085		307		307	0.00	2085			2085	0.147			34	58	0.305	32
3A	1	3.00	3	1	10		N	1915	132			132	1.00	1665			1665	0.079			18	58	0.164	14
3B	1	3.00	3	1				2055		175		175	0.00	2055			2055	0.085			20	58	0.176	18
2A	1,2	3.30	1	1			N	1945		460		460	0.00	1945			1945	0.237			55	120	0.237	0
2B	2	3.30	2	1	15			2085		385		385	1.00	1895			1895	0.203			47	53	0.460	43
4A	1,2	3.00	1	1			N	1915		434		434	0.00	1915			1915	0.227			53	120	0.227	0
4A,4B	2	3.00	2	1	15			2055		411	50	461	0.11	2033			2033	0.227	0.227		53	53	0.513	51

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

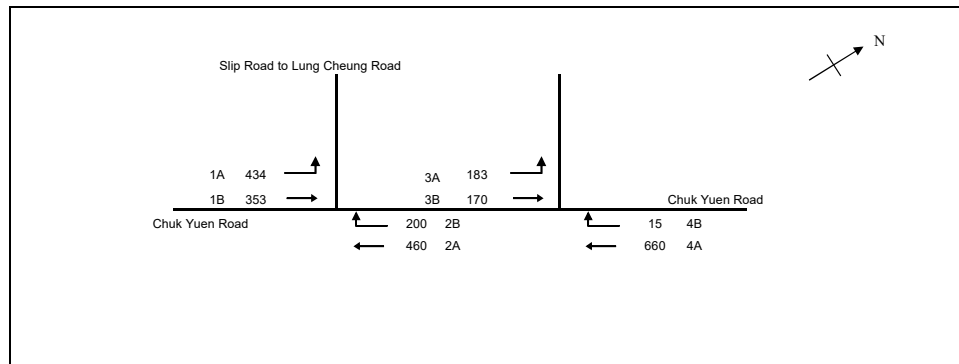
Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road

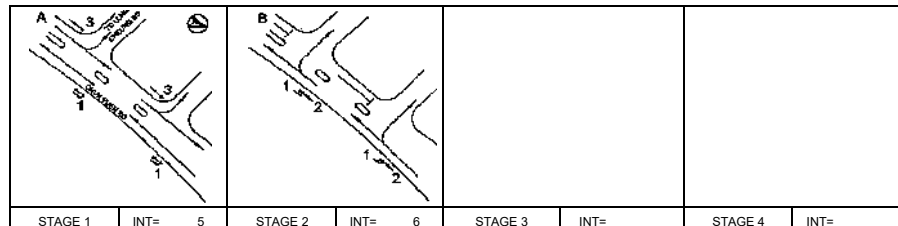
2036 PM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N = 2
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.427
Loss time	L = 9 sec
Total Flow	= 2041 pcu
Co	= (1.5*L+5)/(1-Y) = 32.3 sec
Cm	= L/(1-Y) = 15.7 sec
Yult	= 0.833
R.C.ult	= (Yult-Y)/Y*100% = 95.0 %
Cp	= 0.9*L/(0.9-Y) = 17.1 sec
Ymax	= 1-L/C = 0.925
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 95 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

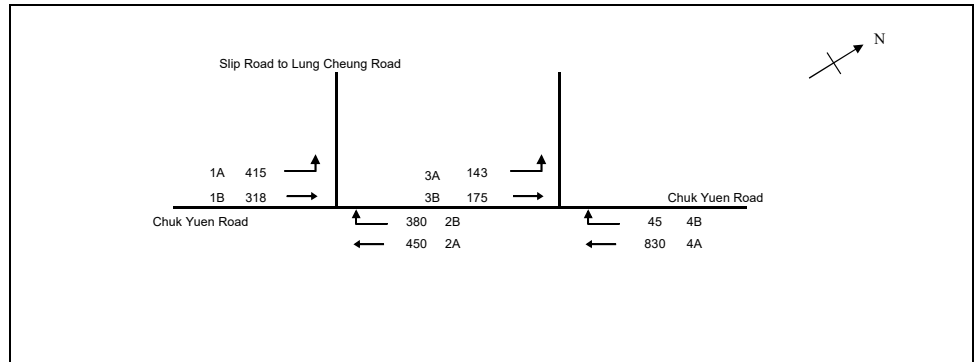
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	434	0		434	1.00	1691			1691	0.257	0.257	9	67	67	0.460	38
1B	1	3.30	3	1				2085		353		353	0.00	2085			2085	0.169			44	67	0.303	31
3A	1	3.00	3	1	10		N	1915	183			183	1.00	1665			1665	0.110			29	67	0.197	16
3B	1	3.00	3	1				2055		170		170	0.00	2055			2055	0.083			22	67	0.148	15
2A	1,2	3.30	1	1			N	1945		460		460	0.00	1945			1945	0.237			61	120	0.237	0
2B	2	3.30	2	1	15			2085			200	200	1.00	1895			1895	0.106			27	44	0.288	25
4A	1,2	3.00	1	1			N	1915		326		326	0.00	1915			1915	0.170			44	120	0.170	0
4A,4B	2	3.00	2	1	15			2055		334	15	349	0.04	2046			2046	0.170	0.170		44	44	0.465	44

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

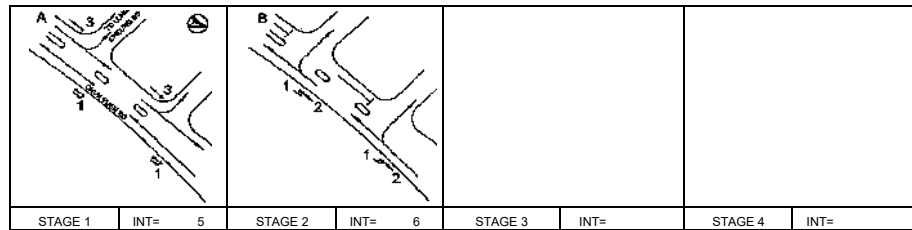
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road | 2033 AM Peak Construction Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N = 2
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.467
Loss time	L = 9 sec
Total Flow	= 2341 pcu
Co = (1.5*L+5)/(1-Y)	= 34.7 sec
Cm = L/(1-Y)	= 16.9 sec
Yult	= 0.833
R.C.ult = (Yult-Y)/Y*100%	= 78.3 %
Cp = 0.9*L/(0.9-Y)	= 18.7 sec
Ymax = 1-L/C	= 0.925
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 78 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	415	0		415	1.00	1691			1691	0.245	0.245	9	58	58	0.508	43
1B	1	3.30	3	1				2085		318		318	0.00	2085			2085	0.153			36	58	0.316	33
3A	1	3.00	3	1	10		N	1915	143			143	1.00	1665			1665	0.086			20	58	0.178	15
3B	1	3.00	3	1				2055		175		175	0.00	2055			2055	0.085			20	58	0.176	18
2A	1,2	3.30	1	1			N	1945		450		450	0.00	1945			1945	0.231			55	120	0.231	0
2B	2	3.30	2	1	15			2085			380	380	1.00	1895			1895	0.200			48	53	0.454	42
4A	1,2	3.00	1	1			N	1915		424		424	0.00	1915			1915	0.222			53	120	0.222	0
4A,4B	2	3.00	2	1	15			2055		406	45	451	0.10	2035			2035	0.222	0.222		53	53	0.502	50

NOTE: 'O' - OPPOSING TRAFFIC | N - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

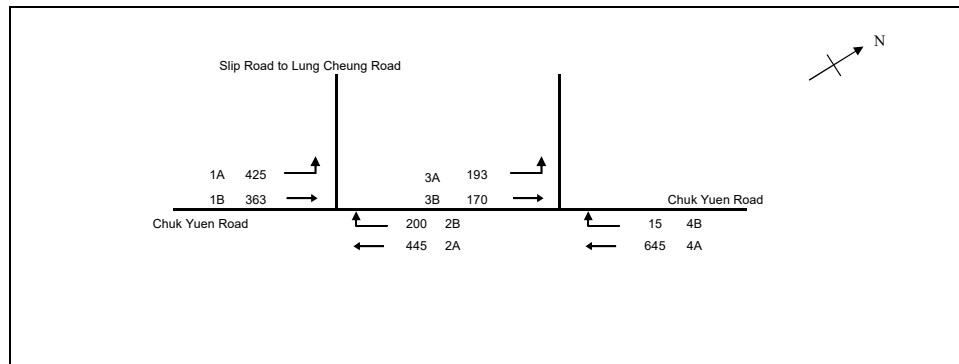
Junction No. J6

Chuk Yuen Road / Slip Road to Lung Cheung Road

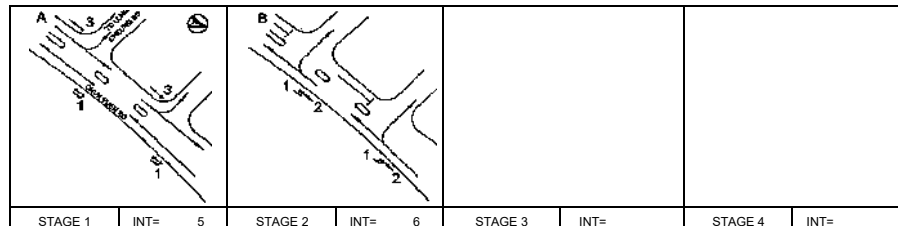
2033 PM Peak Construction Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N = 2
No. of stage using for calculation	N = 2
Cycle time	C = 120 sec
Sum(y)	Y = 0.418
Loss time	L = 9 sec
Total Flow	= 2031 pcu
Co = (1.5*L+5)/(1-Y)	= 31.8 sec
Cm = L/(1-Y)	= 15.5 sec
Yult = (Yult-Y)/Y*100%	= 0.833
R.C.ult = (Yult-Y)/Y*100%	= 99.2 %
Cp = 0.9*L/(0.9-Y)	= 16.8 sec
Ymax = 1-L/C	= 0.925
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 99 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	

STAGE 1	INT= 5	STAGE 2	INT= 6	STAGE 3	INT=	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.30	3	1	10		N	1945	425	0		425	1.00	1691			1691	0.251	0.251	9	67	67	0.450	38
1B	1	3.30	3	1				2085		363		363	0.00	2085			2085	0.174			46	67	0.312	32
3A	1	3.00	3	1	10		N	1915	193			193	1.00	1665			1665	0.116			31	67	0.208	17
3B	1	3.00	3	1				2055		170		170	0.00	2055			2055	0.083			22	67	0.148	15
2A	1,2	3.30	1	1			N	1945		445		445	0.00	1945			1945	0.229			61	120	0.229	0
2B	2	3.30	2	1	15			2085		200		200	1.00	1895			1895	0.106			28	44	0.288	25
4A	1,2	3.00	1	1			N	1915		319		319	0.00	1915			1915	0.167			44	120	0.167	0
4A,4B	2	3.00	2	1	15			2055		326	15	341	0.04	2046			2046	0.167	0.167		44	44	0.454	43

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

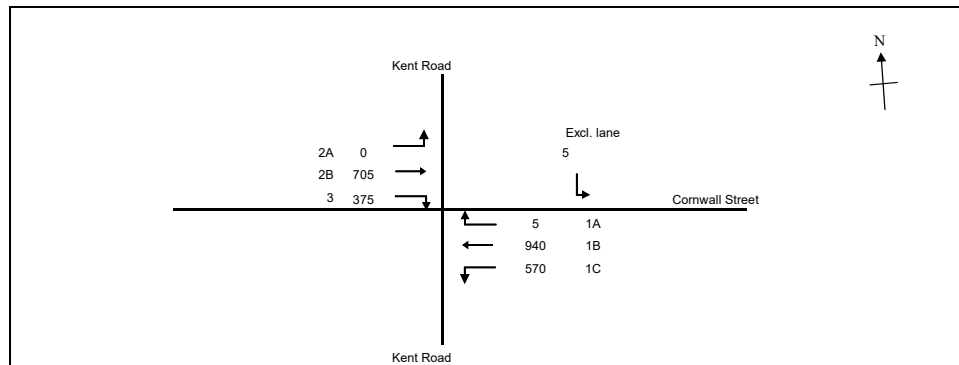
Junction No. J7

Cornwall Street / Kent Road

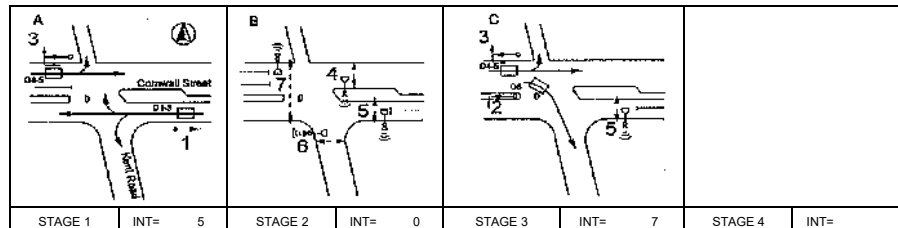
2023 AM Observed Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.445
Loss time	L =	40 sec
Total Flow	=	2051 pcu
Co	= (1.5*L+5)/(1-Y)	= 117.2 sec
Cm	= L/(1-Y)	= 72.1 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 34.8 %
Cp	= 0.9*L/(0.9-Y)	= 79.2 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 35 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	55	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		539	5	544	0.00	2085		2085	0.261	0.261	10	47	47	0.666	66	
1B, 1C	1	3.30	1	1	15			2085	129	401		530	0.25	2034		2034	0.261			47	47	0.666	65	
1C	1	3.30	1	1	10		N	1945	441			441	1.00	1691		1691	0.261			47	47	0.666	54	
2A, 2B	1,3	3.00	2	1	10		N	1915	0	340		340	0.00	1915		1915	0.178			32	86	0.248	19	
2B	1,3	3.00	2	1				2055		365		365	0.00	2055		2055	0.178			32	86	0.248	21	
3	3	4.00	4	1	25			2155			375	375	1.00	2033		2033	0.184	0.184		33	33	0.671	54	
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

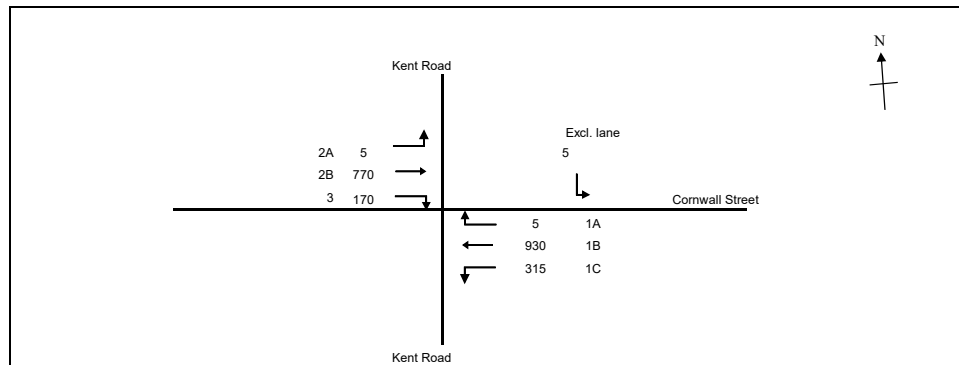
Junction No. J7

Cornwall Street / Kent Road

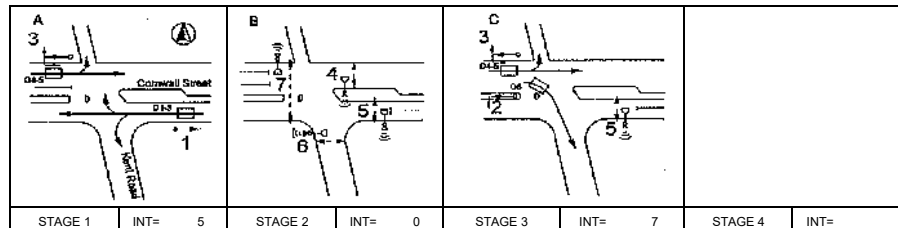
2023 PM Observed Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.308
Loss time	L =	40 sec
Total Flow	=	1727 pcu
Co	= (1.5*L+5)/(1-Y)	= 93.9 sec
Cm	= L/(1-Y)	= 57.8 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 94.8 %
Cp	= 0.9*L/(0.9-Y)	= 60.8 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 95 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	44	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		463	5	468	0.00	2085		2085	0.224	0.224	10	58	58	0.464	48	
1B, 1C	1	3.30	1	1	15			2085	0	467		467	0.01	2083		2083	0.224			58	58	0.464	48	
1C	1	3.30	1	1	10		N	1945	315			315	1.00	1691		1691	0.186			48	58	0.385	33	
2A, 2B	1,3	3.00	2	1	10		N	1915	5	368		373	0.01	1911		1911	0.195			51	86	0.273	21	
2B	1,3	3.00	2	1				2055		402		402	0.00	2055		2055	0.195			51	86	0.273	23	
3	3	4.00	4	1	25			2155			170	170	1.00	2033		2033	0.084	0.084		22	22	0.456	28	
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

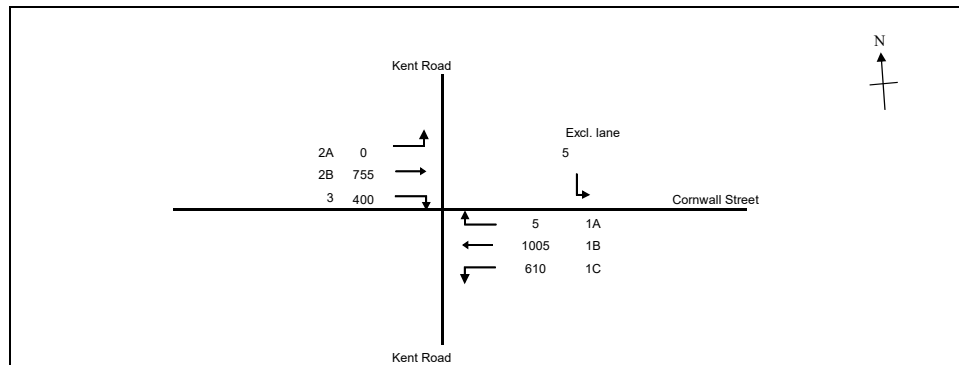
Junction No. J7

Cornwall Street / Kent Road

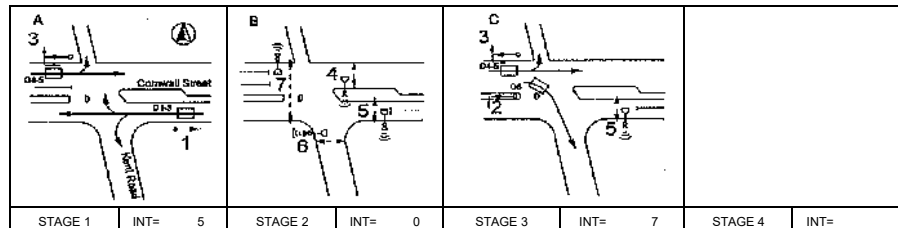
2036 AM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.476
Loss time	L =	40 sec
Total Flow	=	2194 pcu
Co	= (1.5*L+5)/(1-Y)	= 123.9 sec
Cm	= L/(1-Y)	= 76.3 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 26.2 %
Cp	= 0.9*L/(0.9-Y)	= 84.8 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 26 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	55	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		576	5	581	0.00	2085		2085	0.279	0.279	10	47	47	0.712	71	
1B, 1C	1	3.30	1	1	15			2085	138	429		567	0.25	2034		2034	0.279			47	47	0.712	69	
1C	1	3.30	1	1	10		N	1945	472			472	1.00	1691		1691	0.279			47	47	0.712	57	
2A, 2B	1,3	3.00	2	1	10		N	1915	0	364		364	0.00	1915		1915	0.190			32	86	0.265	21	
2B	1,3	3.00	2	1				2055		391		391	0.00	2055		2055	0.190			32	86	0.265	22	
3	3	4.00	4	1	25			2155			400	400	1.00	2033		2033	0.197	0.197		33	33	0.715	58	
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

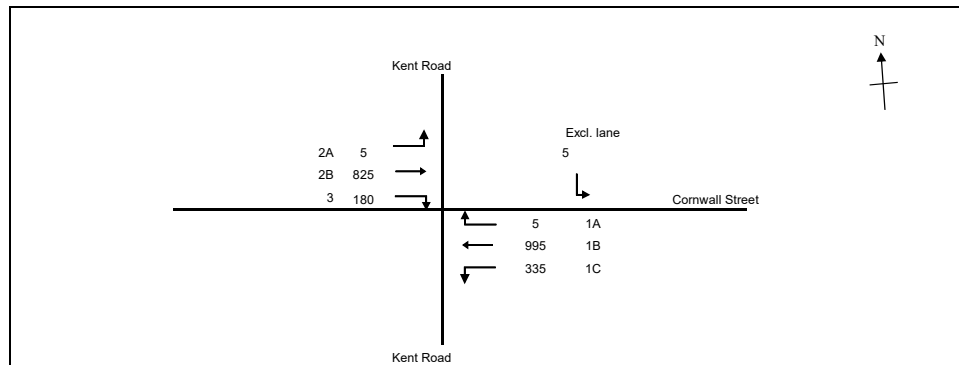
Junction No. J7

Cornwall Street / Kent Road

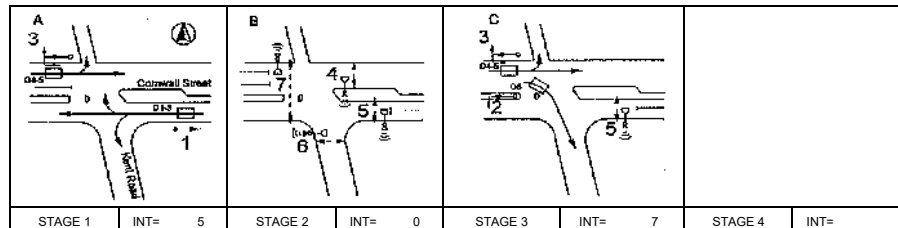
2036 PM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.328
Loss time	L =	40 sec
Total Flow	=	1845 pcu
Co	= (1.5*L+5)/(1-Y)	= 96.8 sec
Cm	= L/(1-Y)	= 59.6 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 82.7 %
Cp	= 0.9*L/(0.9-Y)	= 63.0 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 83 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	44	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		495	5	500	0.00	2085			2085	0.240	0.240	10	58	58	0.496	52
1B, 1C	1	3.30	1	1	15			2085	0	500		500	0.01	2083			2083	0.240			58	58	0.496	52
1C	1	3.30	1	1	10		N	1945	335			335	1.00	1691			1691	0.198			48	58	0.410	35
2A, 2B	1,3	3.00	2	1	10		N	1915	5	395		400	0.01	1911			1911	0.209			51	86	0.292	23
2B	1,3	3.00	2	1				2055		430		430	0.00	2055			2055	0.209			51	86	0.292	24
3	3	4.00	4	1	25			2155			180	180	1.00	2033			2033	0.089	0.089		22	22	0.483	29
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

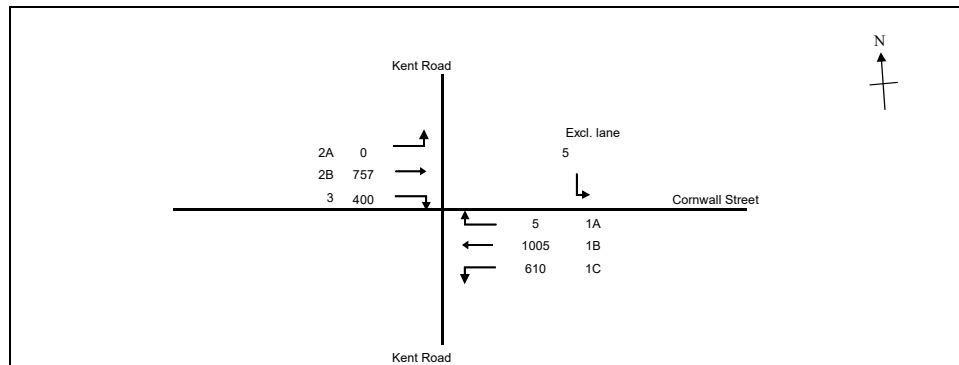
Junction No. J7

Cornwall Street / Kent Road

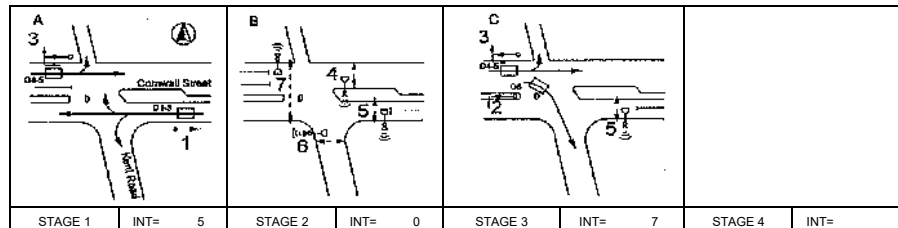
2036 AM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.476
Loss time	L =	40 sec
Total Flow	=	2196 pcu
Co	= (1.5*L+5)/(1-Y)	= 123.9 sec
Cm	= L/(1-Y)	= 76.3 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 26.2 %
Cp	= 0.9*L/(0.9-Y)	= 84.8 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 26 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	55	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		576	5	581	0.00	2085		2085	0.279	0.279	10	47	47	0.712	71	
1B, 1C	1	3.30	1	1	15			2085	138	429		567	0.25	2034		2034	0.279			47	47	0.712	69	
1C	1	3.30	1	1	10		N	1945	472			472	1.00	1691		1691	0.279			47	47	0.712	57	
2A, 2B	1,3	3.00	2	1	10		N	1915	0	365		365	0.00	1915		1915	0.191			32	86	0.266	21	
2B	1,3	3.00	2	1				2055		392		392	0.00	2055		2055	0.191			32	86	0.266	22	
3	3	4.00	4	1	25			2155			400	400	1.00	2033		2033	0.197	0.197		33	33	0.715	58	
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

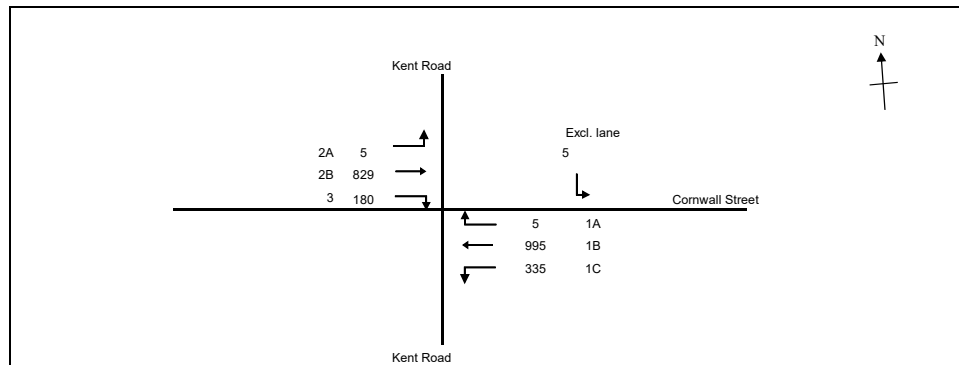
Junction No. J7

Cornwall Street / Kent Road

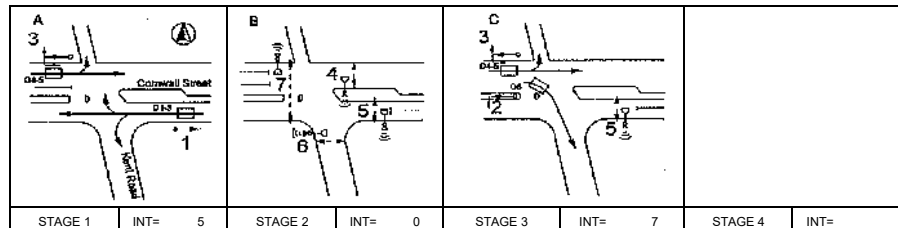
2036 PM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.328
Loss time	L =	40 sec
Total Flow	=	1849 pcu
Co	= (1.5*L+5)/(1-Y)	= 96.8 sec
Cm	= L/(1-Y)	= 59.6 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 82.7 %
Cp	= 0.9*L/(0.9-Y)	= 63.0 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 83 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	44	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		495	5	500	0.00	2085		2085	0.240	0.240	10	58	58	0.496	52	
1B, 1C	1	3.30	1	1	15			2085	0	500		500	0.01	2083		2083	0.240			58	58	0.496	52	
1C	1	3.30	1	1	10		N	1945	335			335	1.00	1691		1691	0.198			48	58	0.410	35	
2A, 2B	1,3	3.00	2	1	10		N	1915	5	397		402	0.01	1911		1911	0.210			51	86	0.293	23	
2B	1,3	3.00	2	1				2055		432		432	0.00	2055		2055	0.210			51	86	0.293	24	
3	3	4.00	4	1	25			2155			180	180	1.00	2033		2033	0.089	0.089		22	22	0.483	29	
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

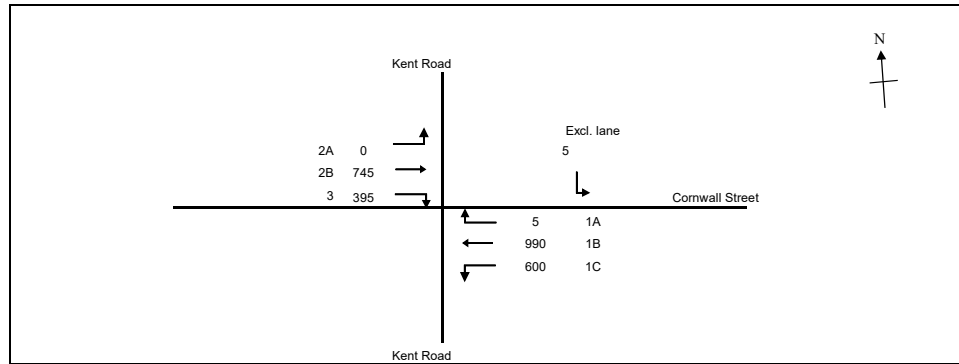
Junction No. J7

Cornwall Street / Kent Road

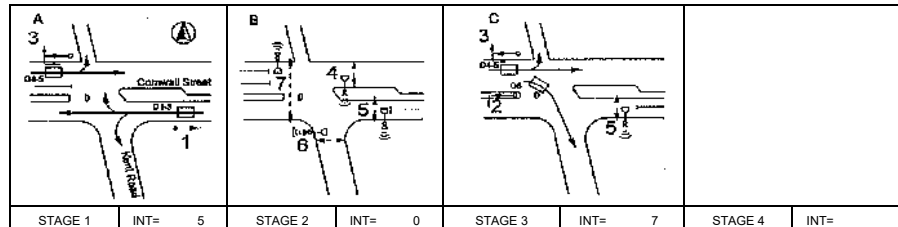
2033 AM Peak Construction Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.469
Loss time	L =	40 sec
Total Flow	=	2163 pcu
Co	= (1.5*L+5)/(1-Y)	= 122.4 sec
Cm	= L/(1-Y)	= 75.3 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 28.0 %
Cp	= 0.9*L/(0.9-Y)	= 83.5 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 28 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	55	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		567	5	572	0.00	2085		2085	0.275	0.275	10	47	47	0.701	70	
1B, 1C	1	3.30	1	1	15			2085	136	423		558	0.25	2034		2034	0.275			47	47	0.701	68	
1C	1	3.30	1	1	10		N	1945	464			464	1.00	1691		1691	0.275			47	47	0.701	56	
2A, 2B	1,3	3.00	2	1	10		N	1915	0	359		359	0.00	1915		1915	0.188			32	86	0.262	20	
2B	1,3	3.00	2	1				2055		386		386	0.00	2055		2055	0.188			32	86	0.262	22	
3	3	4.00	4	1	25			2155			395	395	1.00	2033		2033	0.194	0.194		33	33	0.707	57	
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

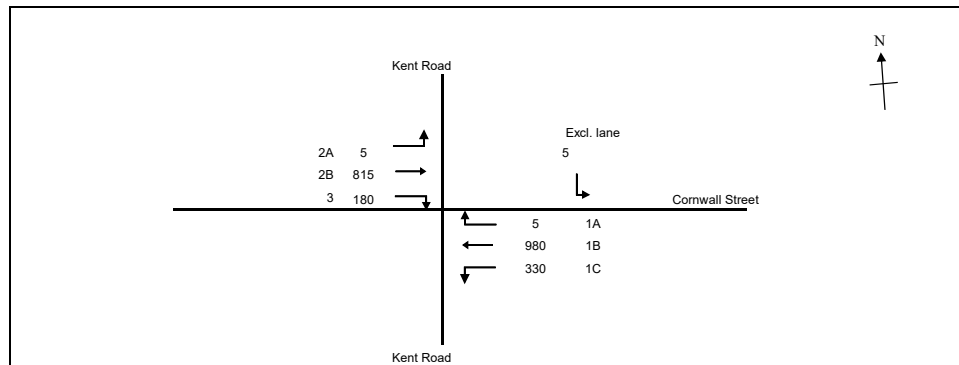
Junction No. J7

Cornwall Street / Kent Road

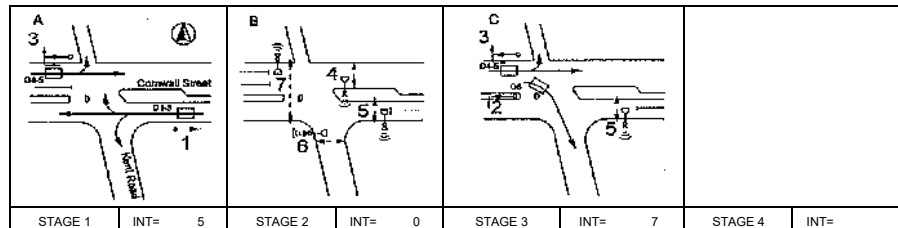
2033 PM Peak Construction Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	120 sec
Sum(y)	Y =	0.325
Loss time	L =	40 sec
Total Flow	=	1822 pcu
Co	= (1.5*L+5)/(1-Y)	= 96.3 sec
Cm	= L/(1-Y)	= 59.2 sec
Yult	=	= 0.600
R.C.ult	= (Yult-Y)/Y*100%	= 84.7 %
Cp	= 0.9*L/(0.9-Y)	= 62.6 sec
Ymax	= 1-L/C	= 0.667
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 85 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
4p	6	5	5	7	18	5	7	OK
5p	10	6	3	11	44	3	11	OK
6p	10	6	5	11	14	5	11	OK
7p	11	12	7	11	12	7	11	OK

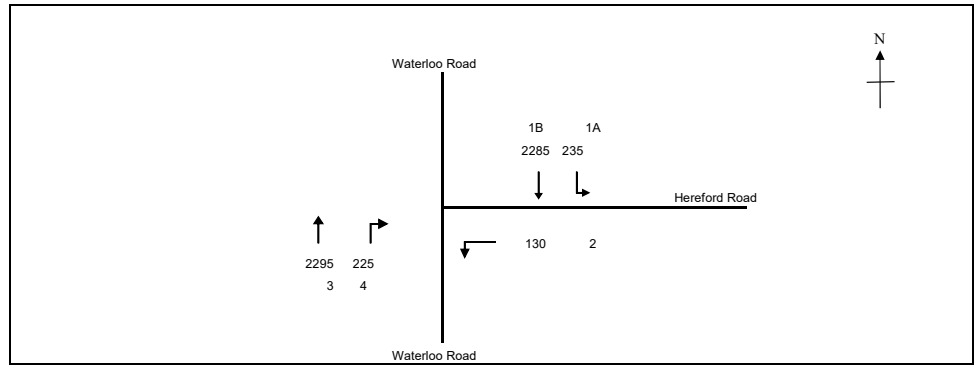
Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A, 1B	1	3.30	1	1	20			2085		488	5	493	0.00	2085			2085	0.236	0.236	10	58	58	0.489	51
1B, 1C	1	3.30	1	1	15			2085	0	492		492	0.01	2083			2083	0.236			58	58	0.489	51
1C	1	3.30	1	1	10		N	1945	330			330	1.00	1691			1691	0.195			48	58	0.404	34
2A, 2B	1,3	3.00	2	1	10		N	1915	5	390		395	0.01	1911			1911	0.207			51	86	0.288	22
2B	1,3	3.00	2	1				2055		425		425	0.00	2055			2055	0.207			51	86	0.288	24
3	3	4.00	4	1	25			2155			180	180	1.00	2033			2033	0.089	0.089		22	22	0.483	29
Ped	2		3																30					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

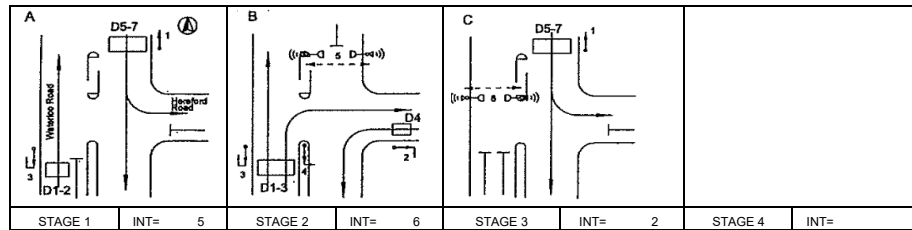
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J8

Waterloo Road / Hereford Road | 2023 AM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	140 sec
Sum(y)	Y =	0.567
Loss time	L =	22 sec
Total Flow	=	5170 pcu
Co	= (1.5*L+5)/(1-Y)	= 87.7 sec
Cm	= L/(1-Y)	= 50.8 sec
Yult	=	0.735
R.C.ult	= (Yult-Y)/Y*100%	= 29.7 %
Cp	= 0.9*L/(0.9-Y)	= 59.4 sec
Ymax	= 1-L/C	= 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 34 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	15	3	11	OK
6p	7	8	3	6	8	3	6	OK

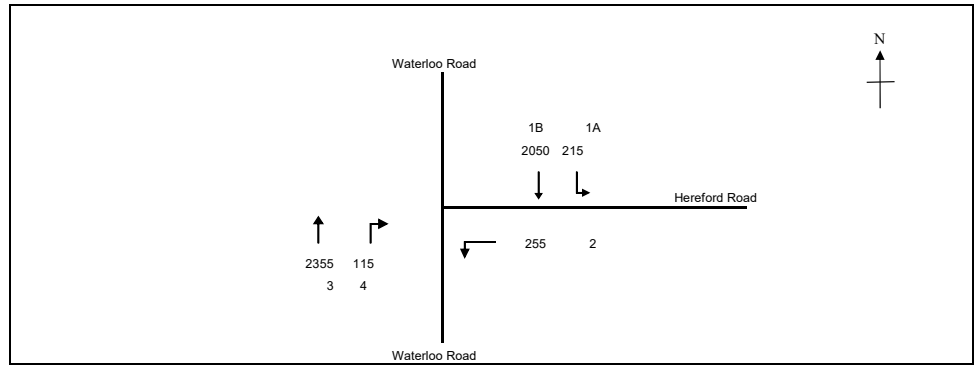
Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	235	546	781	0.30	1890			1890	0.413		5	86	108	0.536	42	
1B	1,3	3.50	1	2			N	4210		1739	1739	0.00	4210			4210	0.413			86	108	0.536	46	
2	2	4.10	2	1	15		N	2025	130		130	1.00	1841			1841	0.071			15	24	0.412	25	
3	1,2	3.40	3	2			N	4050		2295	2295	0.00	4050			4050	0.567	0.567		118	118	0.672	42	
4	2	3.60	2	1	15		N	2115			225	1.00	1923			1923	0.117			24	24	0.683	44	
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC | 'N' - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

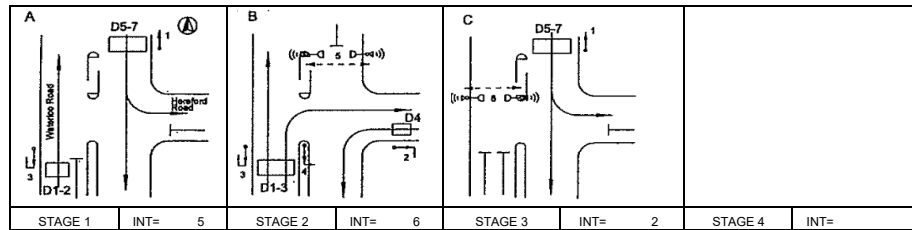
OVE ARUP & PARTNERS | TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J8

Waterloo Road / Hereford Road | 2023 PM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N = 3
No. of stage using for calculation	N = 2
Cycle time	C = 140 sec
Sum(y)	Y = 0.581
Loss time	L = 22 sec
Total Flow	= 4990 pcu
Co	= (1.5*L+5)/(1-Y) = 90.8 sec
Cm	= L/(1-Y) = 52.6 sec
Yult	= 0.735
R.C.ult	= (Yult-Y)/Y*100% = 26.4 %
Cp	= 0.9*L/(0.9-Y) = 62.2 sec
Ymax	= 1-L/C = 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 30 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	19	3	11	OK
6p	7	8	3	6	8	3	6	OK

STAGE 1 | INT= 5 | STAGE 2 | INT= 6 | STAGE 3 | INT= 2 | STAGE 4 | INT=

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	215	486	701	0.31	1888			1888	0.371		5	75	104	0.500	42	
1B	1,3	3.50	1	2			N	4210		1564	1564	0.00	4210			4210	0.371			75	104	0.500	47	
2	2	4.10	2	1	15		N	2025	255		255	1.00	1841			1841	0.139			28	28	0.693	48	
3	1,2	3.40	3	2			N	4050		2355	2355	0.00	4050			4050	0.581	0.581		118	118	0.690	43	
4	2	3.60	2	1	15		N	2115		115	115	1.00	1923			1923	0.060			12	28	0.299	21	
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC | 'N' - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

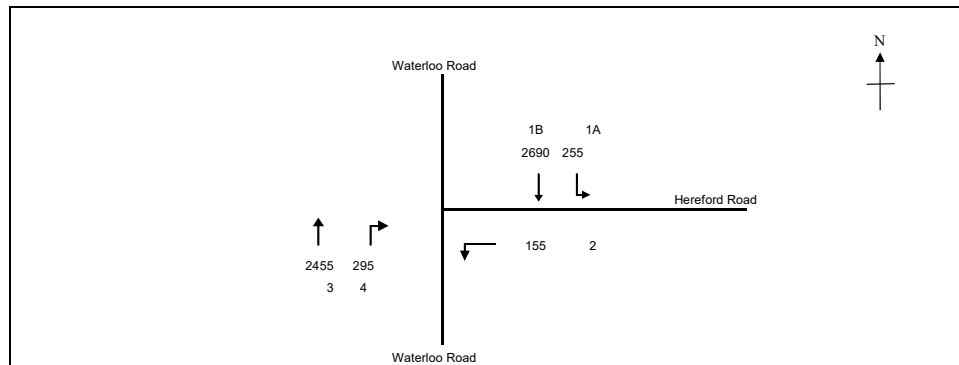
Junction No. J8

Waterloo Road / Hereford Road

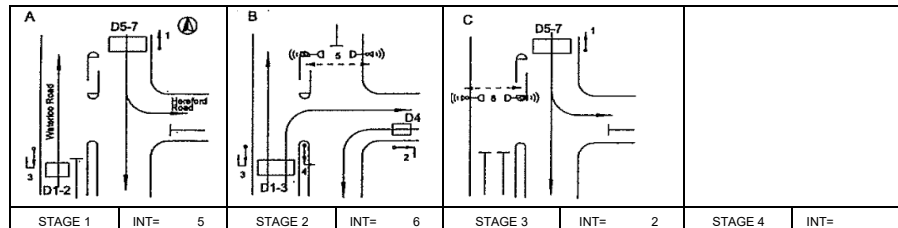
2036 AM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	140 sec
Sum(y)	Y =	0.606
Loss time	L =	22 sec
Total Flow	=	5850 pcu
Co	= (1.5*L+5)/(1-Y)	= 96.5 sec
Cm	= L/(1-Y)	= 55.9 sec
Yult	=	0.735
R.C.ult	= (Yult-Y)/Y*100%	= 21.3 %
Cp	= 0.9*L/(0.9-Y)	= 67.4 sec
Ymax	= 1-L/C	= 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 25 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	21	3	11	OK
6p	7	8	3	6	8	3	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	255	659		914	0.28	1896		1896	0.482		5	94	102	0.662	58	
1B	1,3	3.50	1	2			N	4210		2031		2031	0.00	4210		4210	0.482			94	102	0.662	64	
2	2	4.10	2	1	15		N	2025	155			155	1.00	1841		1841	0.084			16	30	0.393	28	
3	1,2	3.40	3	2			N	4050		2455		2455	0.00	4050		4050	0.606	0.606		118	118	0.719	45	
4	2	3.60	2	1	15			2115			295	295	1.00	1923		1923	0.153			30	30	0.716	54	
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC 'N' - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

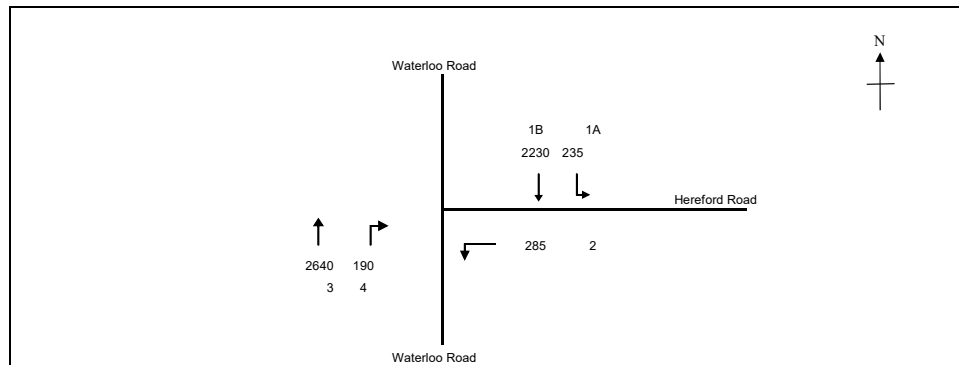
Junction No. J8

Waterloo Road / Hereford Road

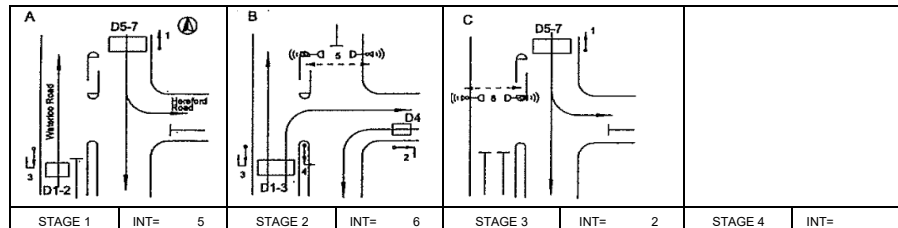
2036 PM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	140 sec
Sum(y)	Y =	0.652
Loss time	L =	22 sec
Total Flow	=	5580 pcu
Co	= (1.5*L+5)/(1-Y)	= 109.1 sec
Cm	= L/(1-Y)	= 63.2 sec
Yult	=	0.735
R.C.cult	= (Yult-Y)/Y*100%	= 12.8 %
Cp	= 0.9*L/(0.9-Y)	= 79.8 sec
Ymax	= 1-L/C	= 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 16 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	19	3	11	OK
6p	7	8	3	6	8	3	6	OK

STAGE 1 INT= 5 STAGE 2 INT= 6 STAGE 3 INT= 2 STAGE 4 INT=

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	235	528	763	0.31	1888			1888	0.404		5	73	104	0.544	46	
1B	1,3	3.50	1	2			N	4210		1702	1702	0.00	4210			4210	0.404			73	104	0.544	51	
2	2	4.10	2	1	15		N	2025	285		285	1.00	1841			1841	0.155			28	28	0.774	53	
3	1,2	3.40	3	2			N	4050		2640	2640	0.00	4050			4050	0.652	0.652		118	118	0.773	48	
4	2	3.60	2	1	15		N	2115		190	190	1.00	1923			1923	0.099			18	28	0.494	35	
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

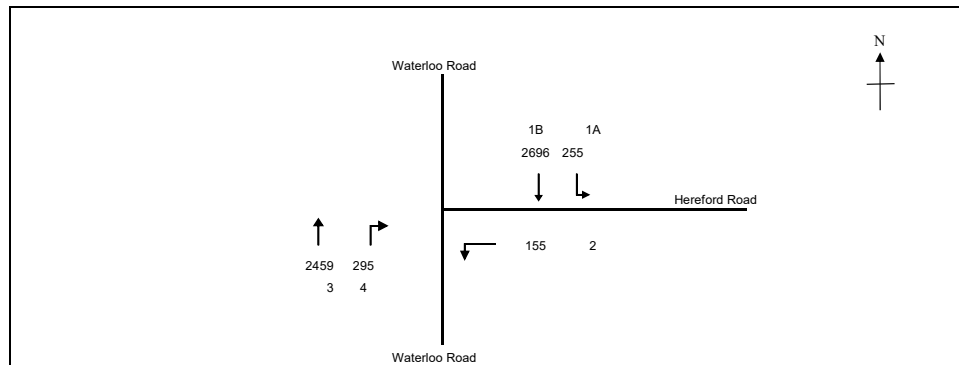
Junction No. J8

Waterloo Road / Hereford Road

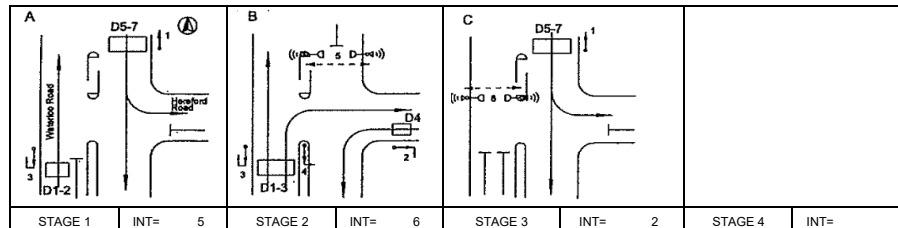
2036 AM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	140 sec
Sum(y)	Y =	0.607
Loss time	L =	22 sec
Total Flow	=	5860 pcu
Co	= (1.5*L+5)/(1-Y)	= 96.7 sec
Cm	= L/(1-Y)	= 56.0 sec
Yult	=	0.735
R.C.ult	= (Yult-Y)/Y*100%	= 21.1 %
Cp	= 0.9*L/(0.9-Y)	= 67.6 sec
Ymax	= 1-L/C	= 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 25 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	21	3	11	OK
6p	7	8	3	6	8	3	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	255	661		916	0.28	1896		1896	0.483		5	94	102	0.663	58	
1B	1,3	3.50	1	2			N	4210		2035		2035	0.00	4210		4210	0.483			94	102	0.663	64	
2	2	4.10	2	1	15		N	2025	155			155	1.00	1841		1841	0.084			16	30	0.393	28	
3	1,2	3.40	3	2			N	4050		2459		2459	0.00	4050		4050	0.607	0.607		118	118	0.720	45	
4	2	3.60	2	1	15		N	2115			295	295	1.00	1923		1923	0.153			30	30	0.716	54	
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

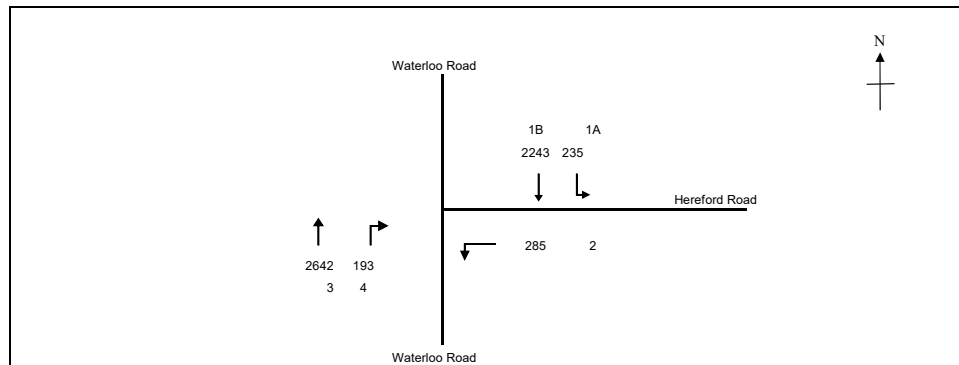
Junction No. J8

Waterloo Road / Hereford Road

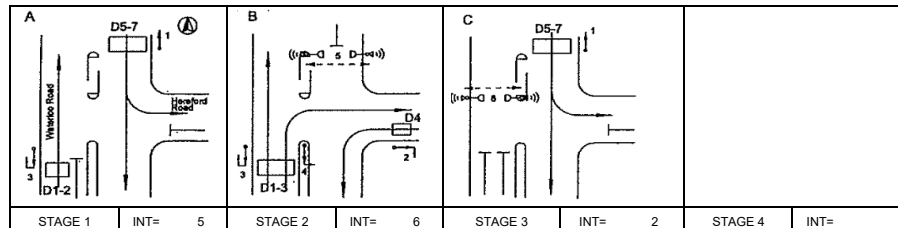
2036 PM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	140 sec
Sum(y)	Y =	0.652
Loss time	L =	22 sec
Total Flow	=	5598 pcu
Co	= (1.5*L+5)/(1-Y)	= 109.3 sec
Cm	= L/(1-Y)	= 63.3 sec
Yult	=	0.735
R.C.ult	= (Yult-Y)/Y*100%	= 12.7 %
Cp	= 0.9*L/(0.9-Y)	= 80.0 sec
Ymax	= 1-L/C	= 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 16 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	19	3	11	OK
6p	7	8	3	6	8	3	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	235	532	767	0.31	1888			1888	0.406		5	74	104	0.547	46	
1B	1,3	3.50	1	2			N	4210		1711	1711	0.00	4210			4210	0.406			74	104	0.547	51	
2	2	4.10	2	1	15		N	2025	285		285	1.00	1841			1841	0.155			28	28	0.774	53	
3	1,2	3.40	3	2			N	4050		2642	2642	0.00	4050			4050	0.652	0.652		118	118	0.774	48	
4	2	3.60	2	1	15		N	2115		193	193	1.00	1923			1923	0.100			18	28	0.502	36	
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24 Junction No. J8

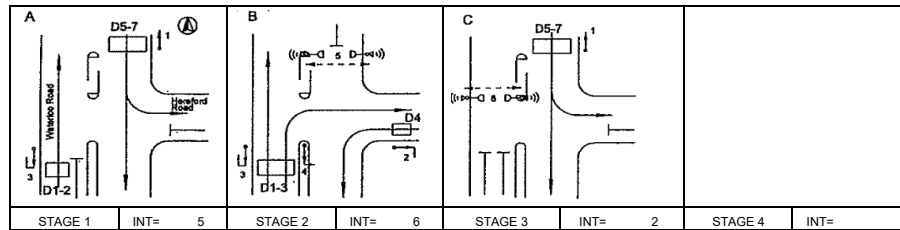
Waterloo Road / Hereford Road

2033 AM Peak Construction Flow

DATE: 9-May-24 FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	2
Cycle time	C =	140 sec
Sum(y)	Y =	0.598
Loss time	L =	22 sec
Total Flow	=	5765 pcu
Co	= (1.5*L+5)/(1-Y)	= 94.4 sec
Cm	= L/(1-Y)	= 54.7 sec
Yult	=	0.735
R.C.ult	= (Yult-Y)/Y*100%	= 23.0 %
Cp	= 0.9*L/(0.9-Y)	= 65.5 sec
Ymax	= 1-L/C	= 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 27 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	21	3	11	OK
6p	7	8	3	6	8	3	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	250	652		902	0.28	1896		1896	0.476		5	94	102	0.653	57	
1B	1,3	3.50	1	2			N	4210		2003		2003	0.00	4210		4210	0.476			94	102	0.653	63	
2	2	4.10	2	1	15		N	2025	150			150	1.00	1841		1841	0.081			16	30	0.380	28	
3	1,2	3.40	3	2			N	4050		2420		2420	0.00	4050		4050	0.598	0.598		118	118	0.709	44	
4	2	3.60	2	1	15		N	2115			290	290	1.00	1923		1923	0.151			30	30	0.704	53	
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

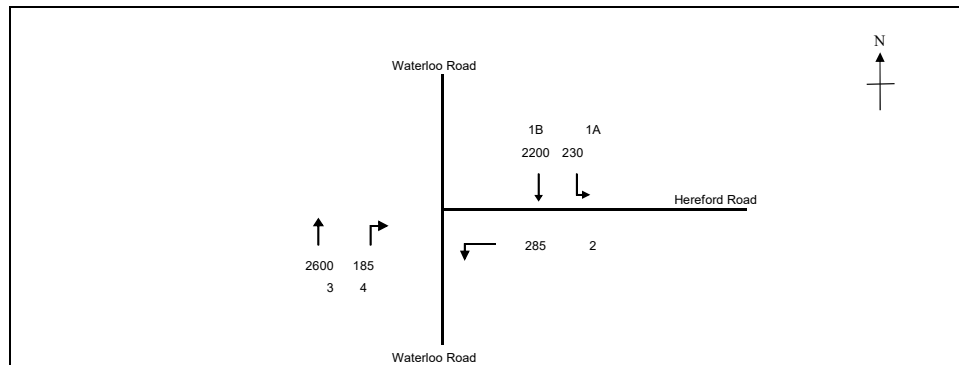
Junction No. J8

Waterloo Road / Hereford Road

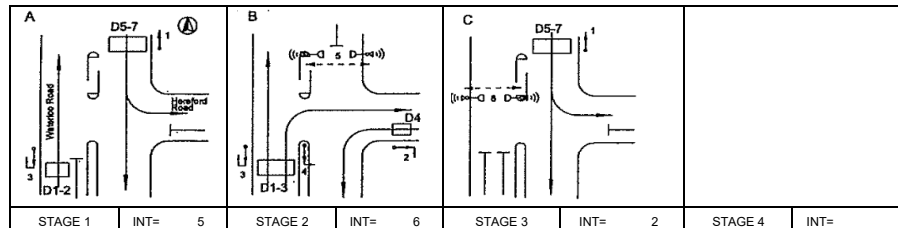
2033 PM Peak Construction Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N = 3
No. of stage using for calculation	N = 2
Cycle time	C = 140 sec
Sum(y)	Y = 0.642
Loss time	L = 22 sec
Total Flow	= 5500 pcu
Co	= (1.5*L+5)/(1-Y) = 106.1 sec
Cm	= L/(1-Y) = 61.4 sec
Yult	= 0.735
R.C.ult	= (Yult-Y)/Y*100% = 14.5 %
Cp	= 0.9*L/(0.9-Y) = 76.7 sec
Ymax	= 1-L/C = 0.843
R.C.(C)	= (0.9*Ymax-Y)/Y*100% = 18 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	11	12	3	11	19	3	11	OK
6p	7	8	3	6	8	3	6	OK

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1,3	3.60	1	1	10		N	1975	230	522		752	0.31	1888		1888	0.398		5	73	104	0.536	45	
1B	1,3	3.50	1	2			N	4210		1678		1678	0.00	4210		4210	0.398			73	104	0.536	50	
2	2	4.10	2	1	15		N	2025	285		285	1.00	1841		1841	0.155			28	28	0.774	53		
3	1,2	3.40	3	2			N	4050		2600	2600	0.00	4050		4050	0.642	0.642		118	118	0.762	48		
4	2	3.60	2	1	15		N	2115		185	185	1.00	1923		1923	0.096			18	28	0.481	35		
6p	3																		17					

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

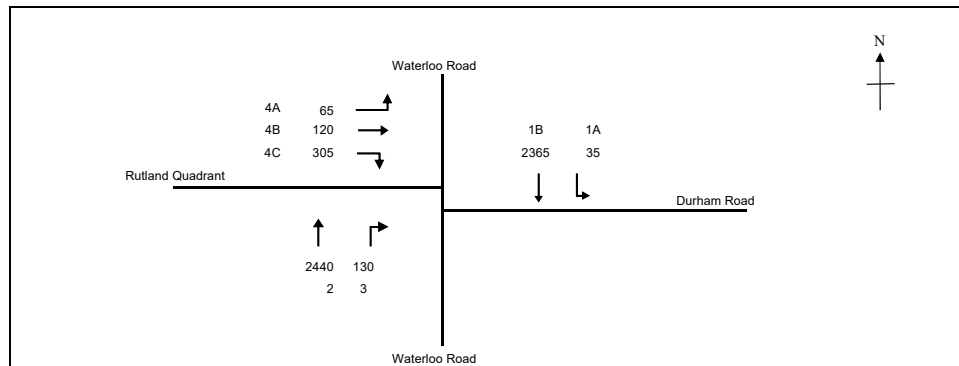
Junction No. J9

Waterloo Road / Durham Road

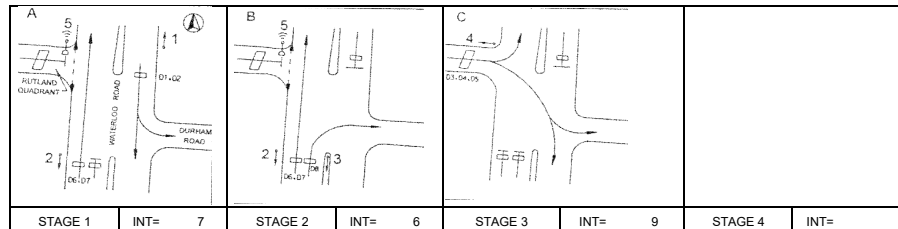
2023 AM Observed Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.583
Loss time	L =	19 sec
Total Flow	=	5460 pcu
Co	= (1.5*L+5)/(1-Y)	= 80.2 sec
Cm	= L/(1-Y)	= 45.5 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 30.0 %
Cp	= 0.9*L/(0.9-Y)	= 53.9 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 34 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	96	2	10	OK

STAGE 1	INT= 7	STAGE 2	INT= 6	STAGE 3	INT= 9	STAGE 4	INT=
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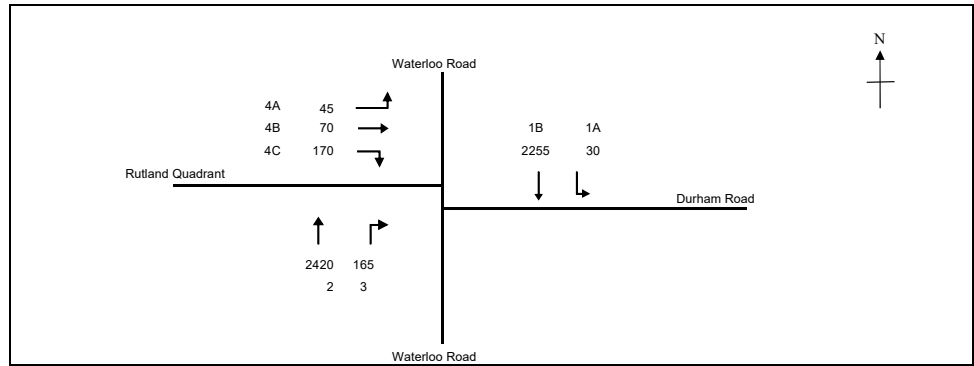
Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	35	719		754	0.05	1902		1902	0.397	0.397	19	82	82	0.677	73	
1B	1	3.20	1	2				4150		1646		1646	0.00	4150		4150	0.397			82	82	0.677	80	
2	1,2	2.90	2	3			N	5995		2440		2440	0.00	5995		5995	0.407			85	102	0.559	52	
3	2	2.80	3	1	10			2035			130	130	1.00	1770		1770	0.073	0.073	15	15	0.686	27		
4A	3	2.70	4	1	10		N	1885	65			65	1.00	1639		1639	0.040			8	23	0.241	13	
4B,4C	3	2.70	4	1	15			2025		120	98	218	0.45	1938		1938	0.112	0.112		23	23	0.685	43	
4C	3	2.70	4	1	15			2025			207	207	1.00	1841		1841	0.112			23	23	0.685	40	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

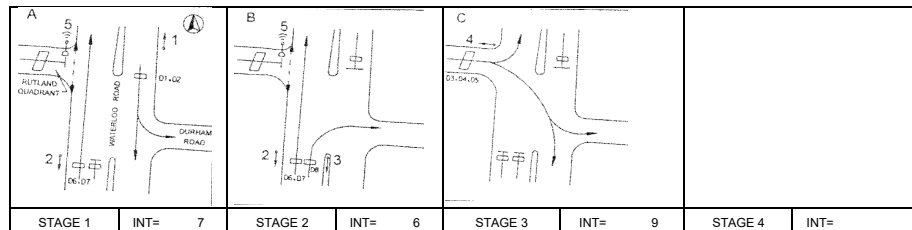
OVE ARUP & PARTNERS | **TRAFFIC SIGNAL CALCULATION**

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong | PROJECT NO: 292058-24 | Junction No. J9

Waterloo Road / Durham Road | 2023 AM Observed Flow | DATE: 9-May-24 | FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.534
Loss time	L =	19 sec
Total Flow	=	5155 pcu
Co	= (1.5*L+5)/(1-Y)	= 71.9 sec
Cm	= L/(1-Y)	= 40.8 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 41.8 %
Cp	= 0.9*L/(0.9-Y)	= 46.7 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 46 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	106	2	10	OK

STAGE 1	INT= 7	STAGE 2	INT= 6	STAGE 3	INT= 9	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	30	688		718	0.04	1903		1903	0.377	0.377	19	86	86	0.615	65	
1B	1	3.20	1	2				4150		1567		1567	0.00	4150		4150	0.377			86	86	0.615	70	
2	1,2	2.90	2	3			N	5995		2420		2420	0.00	5995		5995	0.404			91	112	0.505	38	
3	2	2.80	3	1	10			2035			165	165	1.00	1770		1770	0.093	0.093	21	21	0.622	33		
4A	3	2.70	4	1	10		N	1885	45		45	45	1.00	1639		1639	0.027			6	14	0.275	9	
4B,4C	3	2.70	4	1	15			2025		70	53	123	0.43	1941		1941	0.063	0.063		14	14	0.635	26	
4C	3	2.70	4	1	15			2025			117	117	1.00	1841		1841	0.063			14	14	0.635	25	

NOTE: 'O' - OPPOSING TRAFFIC | N - NEAR SIDE LANE | SG - STEADY GREEN | FG - FLASHING GREEN | PEDESTRIAN WALKING SPEED = 0.9m/s | QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

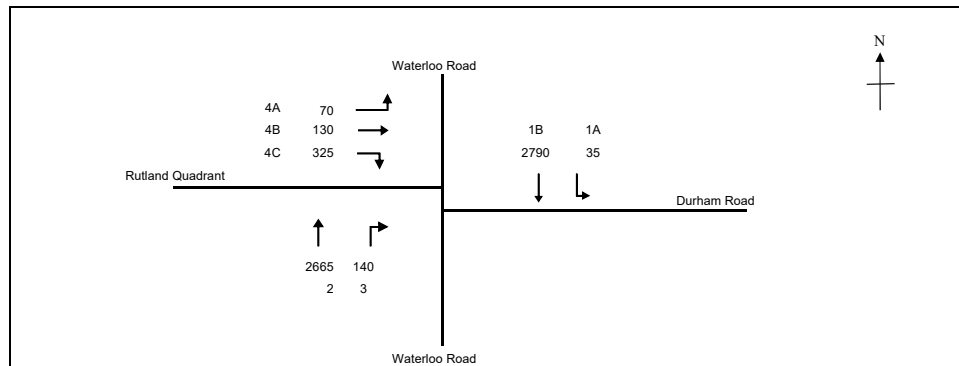
Junction No. J9

Waterloo Road / Durham Road

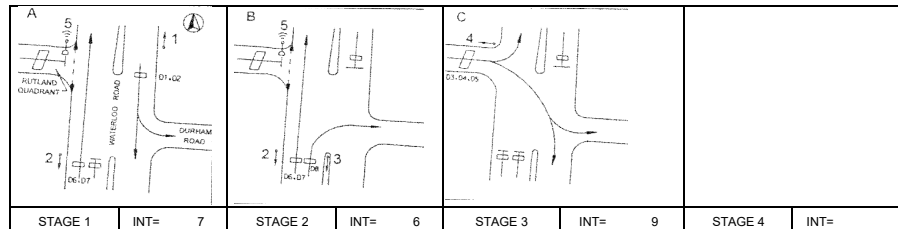
2036 AM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.666
Loss time	L =	19 sec
Total Flow	=	6155 pcu
Co	= (1.5*L+5)/(1-Y)	= 100.3 sec
Cm	= L/(1-Y)	= 56.9 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 13.7 %
Cp	= 0.9*L/(0.9-Y)	= 73.1 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 17 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	98	2	10	OK

STAGE 1	INT= 7	STAGE 2	INT= 6	STAGE 3	INT= 9	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	35	853		888	0.04	1904		1904	0.467	0.467	19	85	85	0.769	81	
1B	1	3.20	1	2				4150		1937		1937	0.00	4150		4150	0.467			85	85	0.769	89	
2	1,2	2.90	2	3			N	5995		2665		2665	0.00	5995		5995	0.445			81	104	0.598	53	
3	2	2.80	3	1	10			2035			140	140	1.00	1770		1770	0.079	0.079		14	14	0.791	29	
4A	3	2.70	4	1	10		N	1885	70			70	1.00	1639		1639	0.043			8	22	0.272	14	
4B,4C	3	2.70	4	1	15			2025		130		233	0.44	1939		1939	0.120	0.120		22	22	0.766	46	
4C	3	2.70	4	1	15			2025				222	1.00	1841		1841	0.120			22	22	0.766	44	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

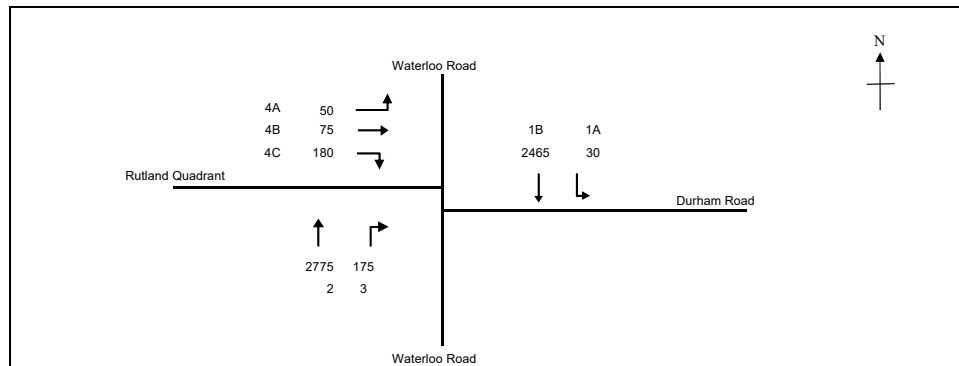
Junction No. J9

Waterloo Road / Durham Road

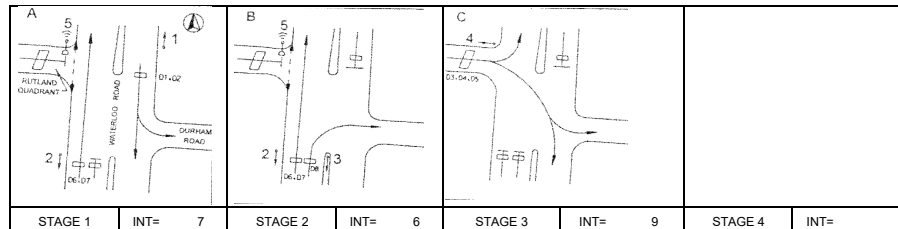
2036 PM Reference Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.578
Loss time	L =	19 sec
Total Flow	=	5750 pcu
Co	= (1.5*L+5)/(1-Y)	= 79.5 sec
Cm	= L/(1-Y)	= 45.1 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 31.0 %
Cp	= 0.9*L/(0.9-Y)	= 53.2 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 34 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	106	2	10	OK

STAGE 1	INT=	7	STAGE 2	INT=	6	STAGE 3	INT=	9	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	30	755		785	0.04	1904		1904	0.412	0.412	19	86	86	0.671	71	
1B	1	3.20	1	2				4150		1710		1710	0.00	4150		4150	0.412			86	86	0.671	77	
2	1,2	2.90	2	3			N	5995		2775		2775	0.00	5995		5995	0.463			97	112	0.579	43	
3	2	2.80	3	1	10			2035			175	175	1.00	1770		1770	0.099	0.099		21	21	0.659	35	
4A	3	2.70	4	1	10		N	1885	50		50	50	1.00	1639		1639	0.031			6	14	0.305	11	
4B,4C	3	2.70	4	1	15			2025		75	56	131	0.43	1942		1942	0.067	0.067		14	14	0.674	27	
4C	3	2.70	4	1	15			2025			124	124	1.00	1841		1841	0.067			14	14	0.674	26	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

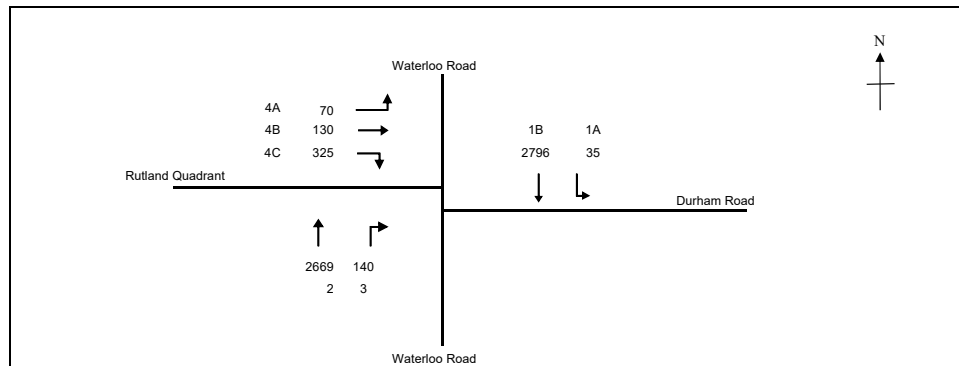
Junction No. J9

Waterloo Road / Durham Road

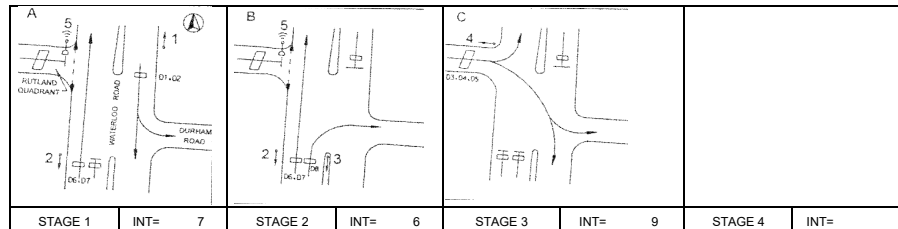
2036 AM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.667
Loss time	L =	19 sec
Total Flow	=	6165 pcu
Co	= (1.5*L+5)/(1-Y)	= 100.6 sec
Cm	= L/(1-Y)	= 57.1 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 13.5 %
Cp	= 0.9*L/(0.9-Y)	= 73.4 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 17 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	98	2	10	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	35	855		890	0.04	1904		1904	0.468	0.468	19	85	85	0.770	82	
1B	1	3.20	1	2				4150		1941		1941	0.00	4150		4150	0.468			85	85	0.770	89	
2	1,2	2.90	2	3			N	5995		2669		2669	0.00	5995		5995	0.445			81	104	0.599	53	
3	2	2.80	3	1	10			2035			140	140	1.00	1770		1770	0.079	0.079	14	14	0.791	29		
4A	3	2.70	4	1	10		N	1885	70			70	1.00	1639		1639	0.043			8	22	0.272	14	
4B,4C	3	2.70	4	1	15			2025		130		233	0.44	1939		1939	0.120	0.120		22	22	0.766	46	
4C	3	2.70	4	1	15			2025				222	1.00	1841		1841	0.120			22	22	0.766	44	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

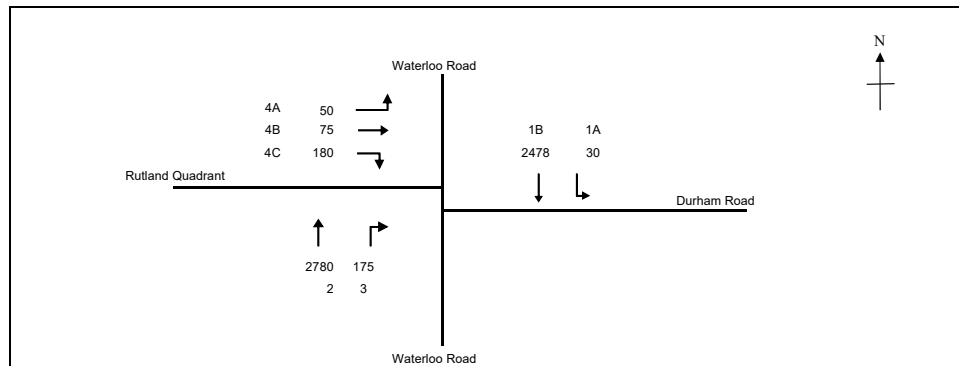
Junction No. J9

Waterloo Road / Durham Road

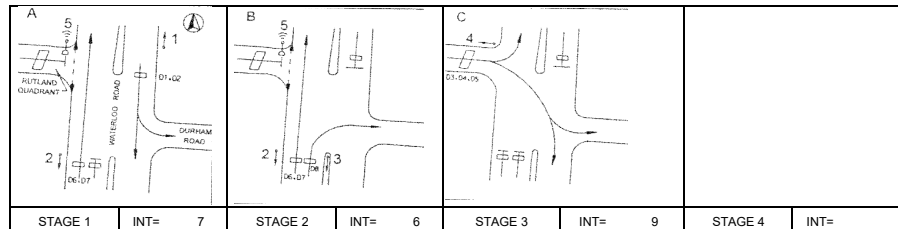
2036 PM Design Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.581
Loss time	L =	19 sec
Total Flow	=	5768 pcu
Co	= (1.5*L+5)/(1-Y)	= 79.9 sec
Cm	= L/(1-Y)	= 45.3 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 30.5 %
Cp	= 0.9*L/(0.9-Y)	= 53.5 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 34 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	106	2	10	OK

STAGE 1	INT=	7	STAGE 2	INT=	6	STAGE 3	INT=	9	STAGE 4	INT=
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Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	30	759		789	0.04	1904		1904	0.414	0.414	19	86	86	0.674	71	
1B	1	3.20	1	2				4150		1719		1719	0.00	4150		4150	0.414			86	86	0.674	77	
2	1,2	2.90	2	3			N	5995		2780		2780	0.00	5995		5995	0.464			97	112	0.580	43	
3	2	2.80	3	1	10			2035			175	175	1.00	1770		1770	0.099	0.099		21	21	0.659	35	
4A	3	2.70	4	1	10		N	1885	50		50	50	1.00	1639		1639	0.031			6	14	0.305	11	
4B,4C	3	2.70	4	1	15			2025		75	56	131	0.43	1942		1942	0.067	0.067		14	14	0.674	27	
4C	3	2.70	4	1	15			2025			124	124	1.00	1841		1841	0.067			14	14	0.674	26	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

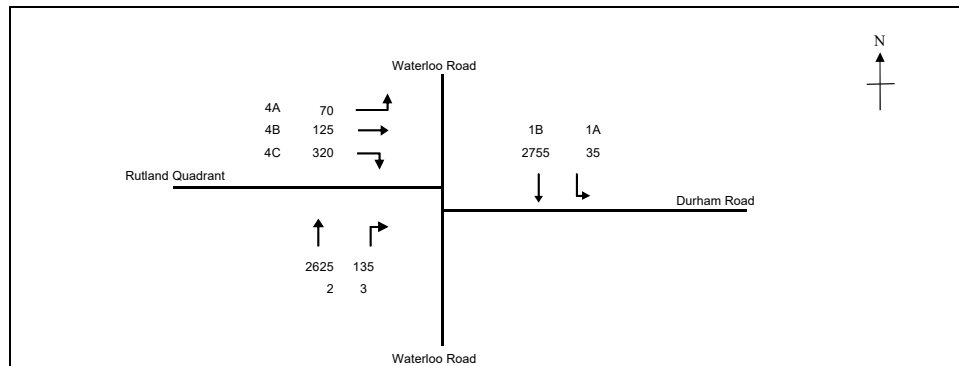
Junction No. J9

Waterloo Road / Durham Road

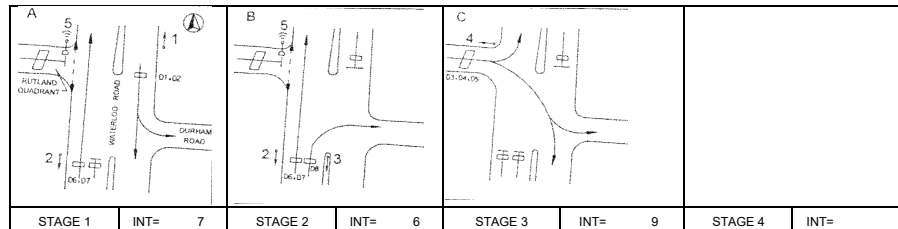
2033 AM Peak Construction Flow

DATE: 9-May-24

FILENAME:



No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.655
Loss time	L =	19 sec
Total Flow	=	6065 pcu
Co	= (1.5*L+5)/(1-Y)	= 97.1 sec
Cm	= L/(1-Y)	= 55.1 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 15.7 %
Cp	= 0.9*L/(0.9-Y)	= 69.8 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 19 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	98	2	10	OK

STAGE 1	INT=	7	STAGE 2	INT=	6	STAGE 3	INT=	9	STAGE 4	INT=
---------	------	---	---------	------	---	---------	------	---	---------	------

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	35	842		877	0.04	1904		1904	0.461	0.461	19	85	85	0.759	80	
1B	1	3.20	1	2				4150		1913		1913	0.00	4150		4150	0.461			85	85	0.759	88	
2	1,2	2.90	2	3			N	5995		2625		2625	0.00	5995		5995	0.438			81	104	0.589	53	
3	2	2.80	3	1	10			2035			135	135	1.00	1770		1770	0.076	0.076		14	14	0.763	28	
4A	3	2.70	4	1	10		N	1885	70			70	1.00	1639		1639	0.043			8	22	0.272	14	
4B,4C	3	2.70	4	1	15			2025		125	103	228	0.45	1937		1937	0.118	0.118		22	22	0.749	45	
4C	3	2.70	4	1	15			2025			217	217	1.00	1841		1841	0.118			22	22	0.749	43	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

OVE ARUP & PARTNERS

TRAFFIC SIGNAL CALCULATION

Section 16 Planning Application for Proposed Redevelopment of Block A, B and C of HKBH, Kowloon Tong

PROJECT NO: 292058-24

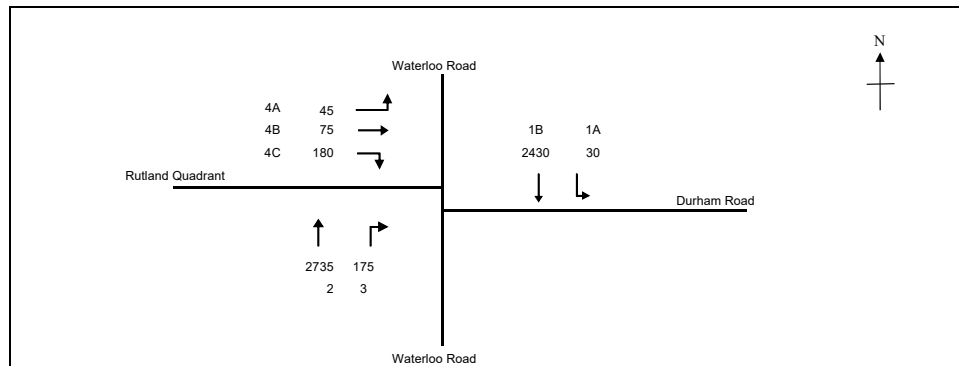
Junction No. J9

Waterloo Road / Durham Road

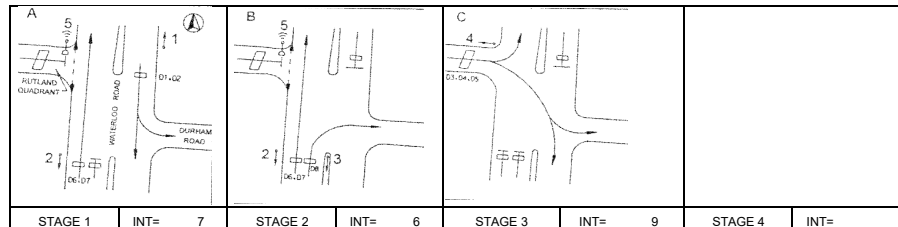
2033 PM Peak Construction Flow

DATE: 9-May-24

FILENAME:



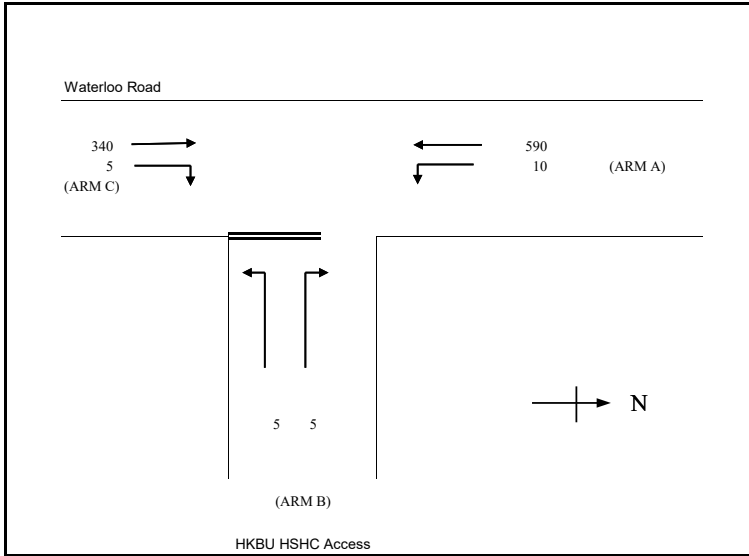
No. of stages per cycle	N =	3
No. of stage using for calculation	N =	3
Cycle time	C =	140 sec
Sum(y)	Y =	0.573
Loss time	L =	19 sec
Total Flow	=	5670 pcu
Co	= (1.5*L+5)/(1-Y)	= 78.4 sec
Cm	= L/(1-Y)	= 44.5 sec
Yult	=	0.758
R.C.ult	= (Yult-Y)/Y*100%	= 32.3 %
Cp	= 0.9*L/(0.9-Y)	= 52.2 sec
Ymax	= 1-L/C	= 0.864
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	= 36 %



Pedestrian Phase	Width (m)	Green Time Required (s)			Green Time Provided (s)			Check
		SG	Delay	FG	SG	Delay	FG	
5p	9	5	2	10	106	2	10	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Flow			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Uphill Gradient %	Short lane Effect pcu/h	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queuing Length m.
									Left pcu/h	Straight pcu/h	Right pcu/h													
1A,1B	1	3.00	1	1	10		N	1915	30	744		774	0.04	1904		1904	0.406	0.406	19	86	86	0.661	70	
1B	1	3.20	1	2				4150		1686		1686	0.00	4150		4150	0.406			86	86	0.661	76	
2	1,2	2.90	2	3			N	5995		2735		2735	0.00	5995		5995	0.456			96	112	0.570	43	
3	2	2.80	3	1	10			2035			175	175	1.00	1770		1770	0.099	0.099	21	21	0.659	35		
4A	3	2.70	4	1	10		N	1885	45			45	1.00	1639		1639	0.027			6	14	0.275	9	
4B,4C	3	2.70	4	1	15			2025		75		131	0.43	1942		1942	0.067	0.067		14	14	0.674	27	
4C	3	2.70	4	1	15			2025			124	124	1.00	1841		1841	0.067			14	14	0.674	26	

NOTE: 'O' - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRIAN WALKING SPEED = 0.9m/s QUEUING LENGTH = AVERAGE QUEUE * 6m



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- VI b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

- W = 6.60 (metres)
- W cr = (metres)
- q a-b = 10 (pcu/hr)
- q a-c = 590 (pcu/hr)

MAJOR ROAD (ARM C)

- W c-b = 3.80 (metres)
- Vr c-b = 50 (metres)
- q c-a = 340 (pcu/hr)
- q c-b = 5 (pcu/hr)

MINOR ROAD (ARM B)

- W b-a = 2.70 (metres)
- W b-c = 2.70 (metres)
- VI b-a = 70 (metres)
- Vr b-a = 50 (metres)
- Vr b-c = 50 (metres)
- q b-a = 5 (pcu/hr)
- q b-c = 5 (pcu/hr)

GEOMETRIC FACTORS :

- D = 0.81236626
- E = 0.8533259
- F = 0.9502117
- Y = 0.7723

THE CAPACITY OF MOVEMENT :

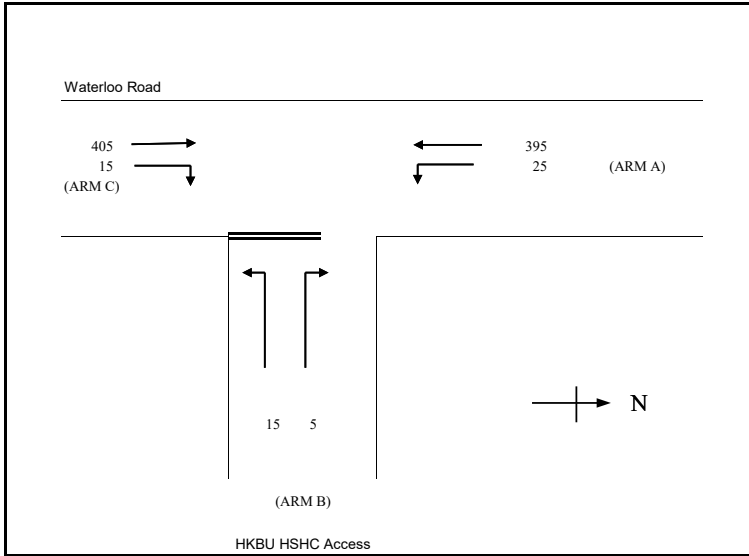
- Q b-a = 321
- Q b-c = 491
- Q c-b = 545
- Q b-ac = 388.2

TOTAL FLOW = 955 (PCU/HR)

COMPARISON OF DESIGN FLOW TO CAPACITY:

- DFC b-a = 0.0000
- DFC b-c = 0.0102
- DFC c-b = 0.0092
- DFC b-ac = 0.0258

CRITICAL DFC = 0.03



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- Vi b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.60 (metres)
 W cr = (metres)
 q a-b = 25 (pcu/hr)
 q a-c = 395 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.80 (metres)
 Vr c-b = 50 (metres)
 q c-a = 405 (pcu/hr)
 q c-b = 15 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.70 (metres)
 W b-c = 2.70 (metres)
 Vi b-a = 70 (metres)
 Vr b-a = 50 (metres)
 Vr b-c = 50 (metres)
 q b-a = 5 (pcu/hr)
 q b-c = 15 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.81236626
 E = 0.8533259
 F = 0.9502117
 Y = 0.7723

THE CAPACITY OF MOVEMENT :

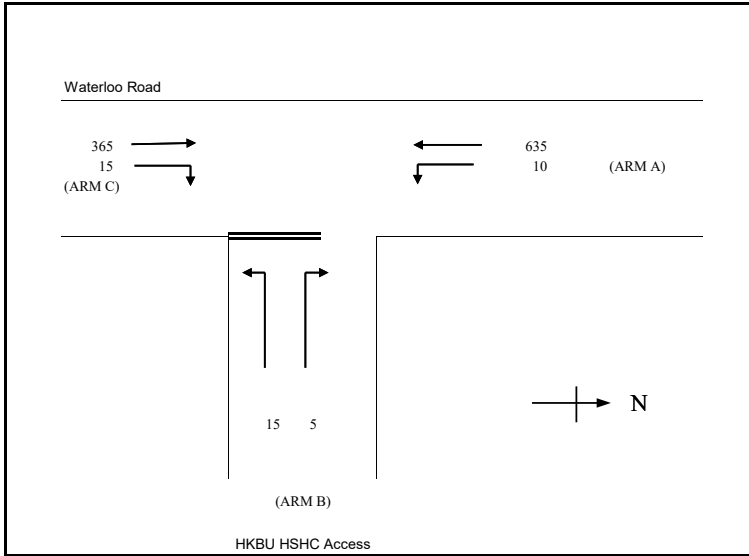
Q b-a = 352
 Q b-c = 536
 Q c-b = 593
 Q b-ac = 456.5

TOTAL FLOW = 860 (PCU/HR)

COMPARISON OF DESIGN FLOW TO CAPACITY:

DFC b-a = 0.0000
 DFC b-c = 0.0280
 DFC c-b = 0.0253
 DFC b-ac = 0.0438

CRITICAL DFC = 0.04



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- VI b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

- W = 6.60 (metres)
- W cr = (metres)
- q a-b = 10 (pcu/hr)
- q a-c = 635 (pcu/hr)

MAJOR ROAD (ARM C)

- W c-b = 3.80 (metres)
- Vr c-b = 50 (metres)
- q c-a = 365 (pcu/hr)
- q c-b = 15 (pcu/hr)

MINOR ROAD (ARM B)

- W b-a = 2.70 (metres)
- W b-c = 2.70 (metres)
- VI b-a = 70 (metres)
- Vr b-a = 50 (metres)
- Vr b-c = 50 (metres)
- q b-a = 5 (pcu/hr)
- q b-c = 15 (pcu/hr)

GEOMETRIC FACTORS :

- D = 0.81236626
- E = 0.8533259
- F = 0.9502117
- Y = 0.7723

THE CAPACITY OF MOVEMENT :

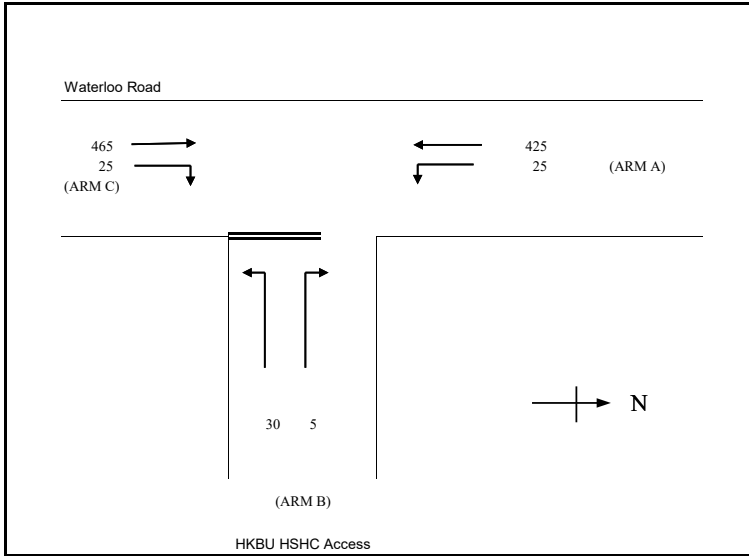
- Q b-a = 304
- Q b-c = 480
- Q c-b = 533
- Q b-ac = 402.4

TOTAL FLOW = 1045 (PCU/HR)

COMPARISON OF DESIGN FLOW TO CAPACITY:

- DFC b-a = 0.0000
- DFC b-c = 0.0313
- DFC c-b = 0.0281
- DFC b-ac = 0.0497

CRITICAL DFC = 0.05



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- VI b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

- W = 6.60 (metres)
- W cr = (metres)
- q a-b = 25 (pcu/hr)
- q a-c = 425 (pcu/hr)

MAJOR ROAD (ARM C)

- W c-b = 3.80 (metres)
- Vr c-b = 50 (metres)
- q c-a = 465 (pcu/hr)
- q c-b = 25 (pcu/hr)

MINOR ROAD (ARM B)

- W b-a = 2.70 (metres)
- W b-c = 2.70 (metres)
- VI b-a = 70 (metres)
- Vr b-a = 50 (metres)
- Vr b-c = 50 (metres)
- q b-a = 5 (pcu/hr)
- q b-c = 30 (pcu/hr)

GEOMETRIC FACTORS :

- D = 0.81236626
- E = 0.8533259
- F = 0.9502117
- Y = 0.7723

THE CAPACITY OF MOVEMENT :

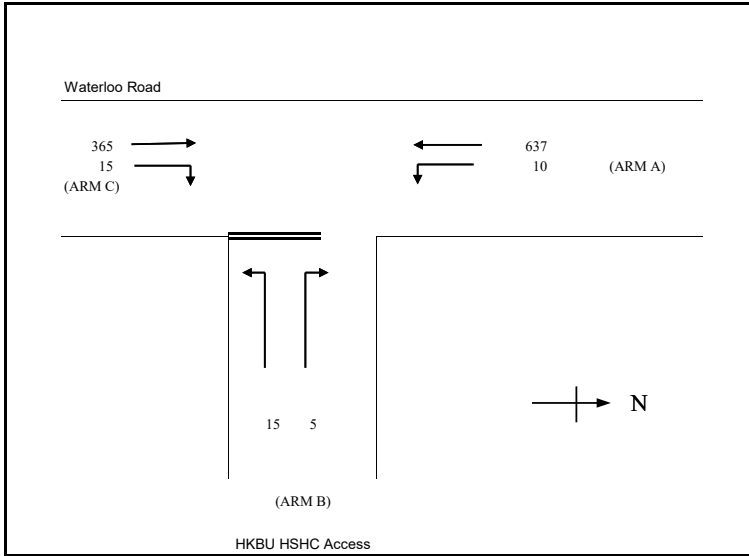
- Q b-a = 333
- Q b-c = 529
- Q c-b = 585
- Q b-ac = 467.8

TOTAL FLOW = 975 (PCU/HR)

COMPARISON OF DESIGN FLOW TO CAPACITY:

- DFC b-a = 0.0000
- DFC b-c = 0.0567
- DFC c-b = 0.0427
- DFC b-ac = 0.0748

CRITICAL DFC = 0.07



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- VI b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

- W = 6.60 (metres)
- W cr = (metres)
- q a-b = 10 (pcu/hr)
- q a-c = 637 (pcu/hr)

MAJOR ROAD (ARM C)

- W c-b = 3.80 (metres)
- Vr c-b = 50 (metres)
- q c-a = 365 (pcu/hr)
- q c-b = 15 (pcu/hr)

MINOR ROAD (ARM B)

- W b-a = 2.70 (metres)
- W b-c = 2.70 (metres)
- VI b-a = 70 (metres)
- Vr b-a = 50 (metres)
- Vr b-c = 50 (metres)
- q b-a = 5 (pcu/hr)
- q b-c = 15 (pcu/hr)

GEOMETRIC FACTORS :

- D = 0.81236626
- E = 0.8533259
- F = 0.9502117
- Y = 0.7723

THE CAPACITY OF MOVEMENT :

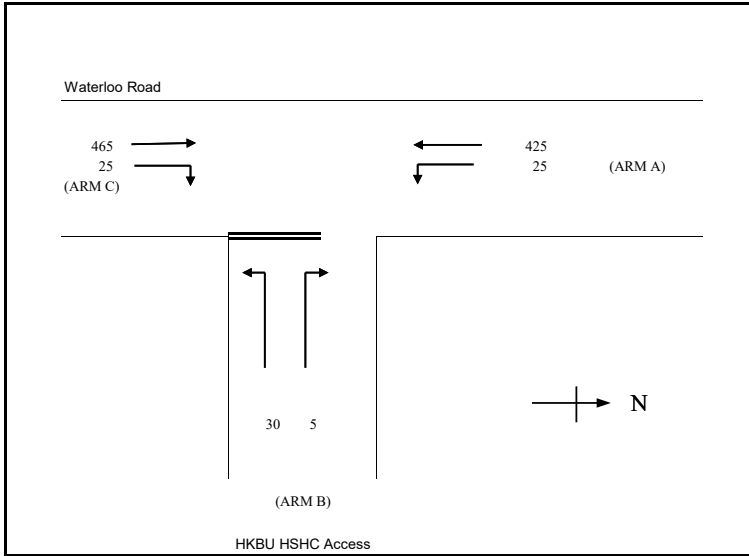
- Q b-a = 303
- Q b-c = 480
- Q c-b = 532
- Q b-ac = 401.8

TOTAL FLOW = 1047 (PCU/HR)

COMPARISON OF DESIGN FLOW TO CAPACITY:

- DFC b-a = 0.0000
- DFC b-c = 0.0313
- DFC c-b = 0.0282
- DFC b-ac = 0.0498

CRITICAL DFC = 0.05



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- VI b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

GEOMETRIC FACTORS :

THE CAPACITY OF MOVEMENT :

COMPARISON OF DESIGN FLOW TO CAPACITY:

MAJOR ROAD (ARM A)

W = 6.60 (metres)
 W cr = (metres)
 q a-b = 25 (pcu/hr)
 q a-c = 425 (pcu/hr)

D = 0.81236626
 E = 0.8533259
 F = 0.9502117
 Y = 0.7723

Q b-a = 333
 Q b-c = 529
 Q c-b = 585
 Q b-ac = 467.8

DFC b-a = 0.0000
 DFC b-c = 0.0567
 DFC c-b = 0.0427
 DFC b-ac = 0.0748

MAJOR ROAD (ARM C)

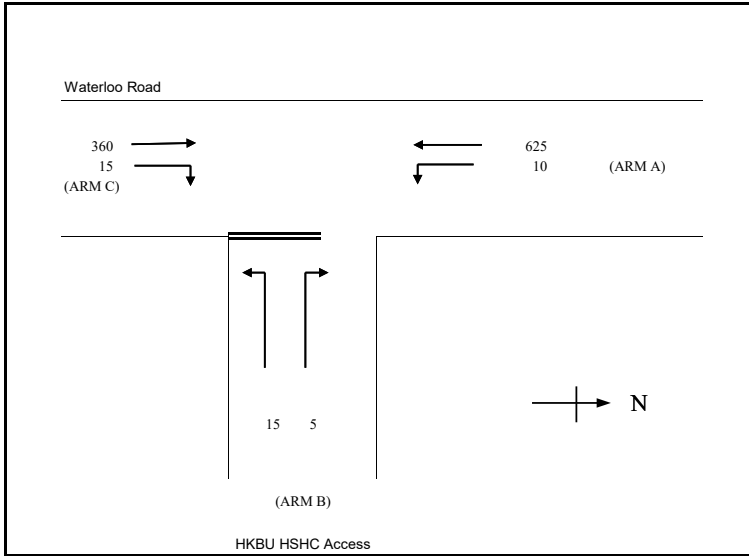
W c-b = 3.80 (metres)
 Vr c-b = 50 (metres)
 q c-a = 465 (pcu/hr)
 q c-b = 25 (pcu/hr)

TOTAL FLOW = 975 (PCU/HR)

MINOR ROAD (ARM B)

W b-a = 2.70 (metres)
 W b-c = 2.70 (metres)
 VI b-a = 70 (metres)
 Vr b-a = 50 (metres)
 Vr b-c = 50 (metres)
 q b-a = 5 (pcu/hr)
 q b-c = 30 (pcu/hr)

CRITICAL DFC = 0.07



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- VI b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.60 (metres)
 W cr = (metres)
 q a-b = 10 (pcu/hr)
 q a-c = 625 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.80 (metres)
 Vr c-b = 50 (metres)
 q c-a = 360 (pcu/hr)
 q c-b = 15 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.70 (metres)
 W b-c = 2.70 (metres)
 VI b-a = 70 (metres)
 Vr b-a = 50 (metres)
 Vr b-c = 50 (metres)
 q b-a = 5 (pcu/hr)
 q b-c = 15 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.81236626
 E = 0.8533259
 F = 0.9502117
 Y = 0.7723

THE CAPACITY OF MOVEMENT :

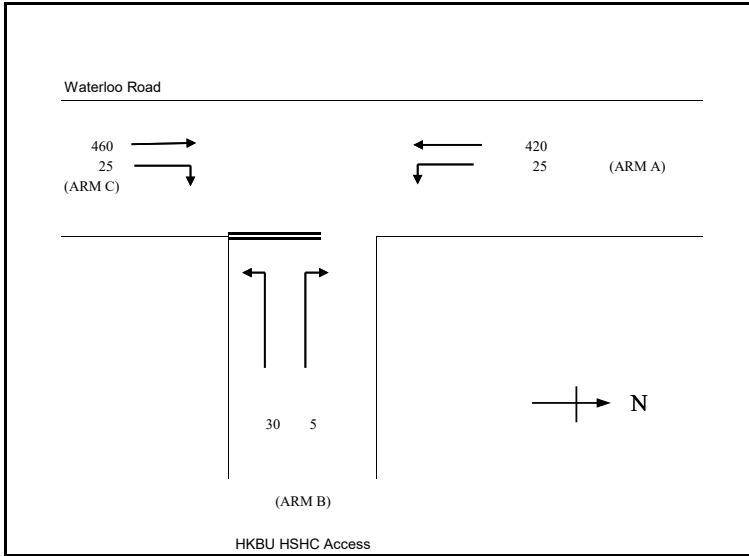
Q b-a = 307
 Q b-c = 482
 Q c-b = 536
 Q b-ac = 405

TOTAL FLOW = 1030 (PCU/HR)

COMPARISON OF DESIGN FLOW TO CAPACITY:

DFC b-a = 0.0000
 DFC b-c = 0.0311
 DFC c-b = 0.0280
 DFC b-ac = 0.0494

CRITICAL DFC = 0.05



NOTES : (GEOMETRIC INPUT DATA)

- W = MAJOR ROAD WIDTH (6-20m) (minor road turn left only, 2W)
- W cr = CENTRAL RESERVE WIDTH (0m, 1.2-9m)
- W b-a = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-a (0m, 2.2-5m)
- W b-c = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM b-c (2.2-5m)
- W c-b = LANE WIDTH AVAILABLE TO VEHICLE WAITING IN STREAM c-b (0m, 2.2-5m)
- VI b-a = VISIBILITY TO THE LEFT FOR VEHICLES WAITING IN STREAM b-a (0-250m)
- Vr b-a = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-a (0-250)
- Vr b-c = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM b-c (0-250)
- Vr c-b = VISIBILITY TO THE RIGHT FOR VEHICLES WAITING IN STREAM c-b (0-250)
- D = STREAM-SPECIFIC B-A
- E = STREAM-SPECIFIC B-C
- F = STREAM-SPECIFIC C-B
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

MAJOR ROAD (ARM A)

W = 6.60 (metres)
 W cr = (metres)
 q a-b = 25 (pcu/hr)
 q a-c = 420 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 3.80 (metres)
 Vr c-b = 50 (metres)
 q c-a = 460 (pcu/hr)
 q c-b = 25 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 2.70 (metres)
 W b-c = 2.70 (metres)
 VI b-a = 70 (metres)
 Vr b-a = 50 (metres)
 Vr b-c = 50 (metres)
 q b-a = 5 (pcu/hr)
 q b-c = 30 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.81236626
 E = 0.8533259
 F = 0.9502117
 Y = 0.7723

THE CAPACITY OF MOVEMENT :

Q b-a = 335
 Q b-c = 530
 Q c-b = 586
 Q b-ac = 469.3

TOTAL FLOW = 965 (PCU/HR)

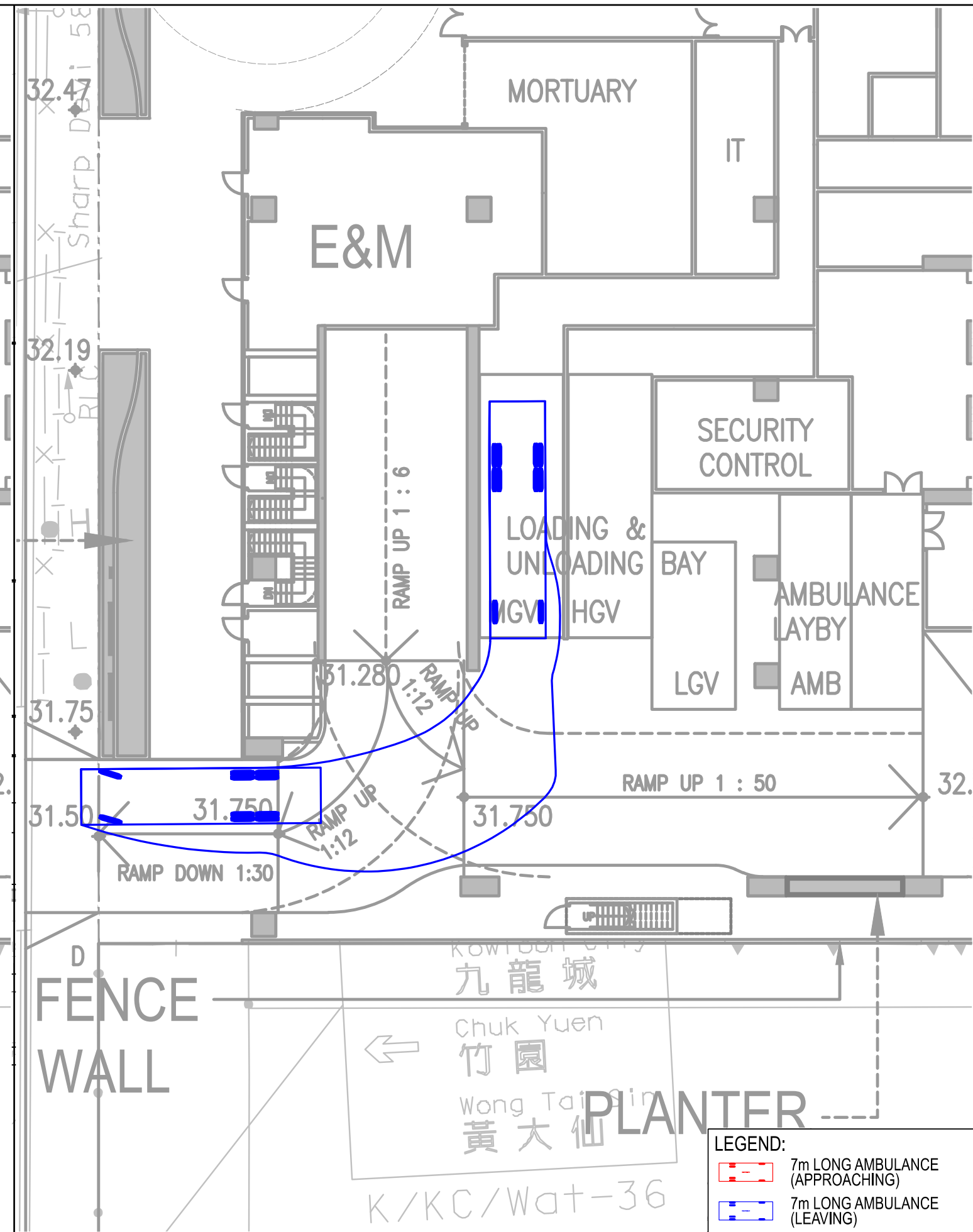
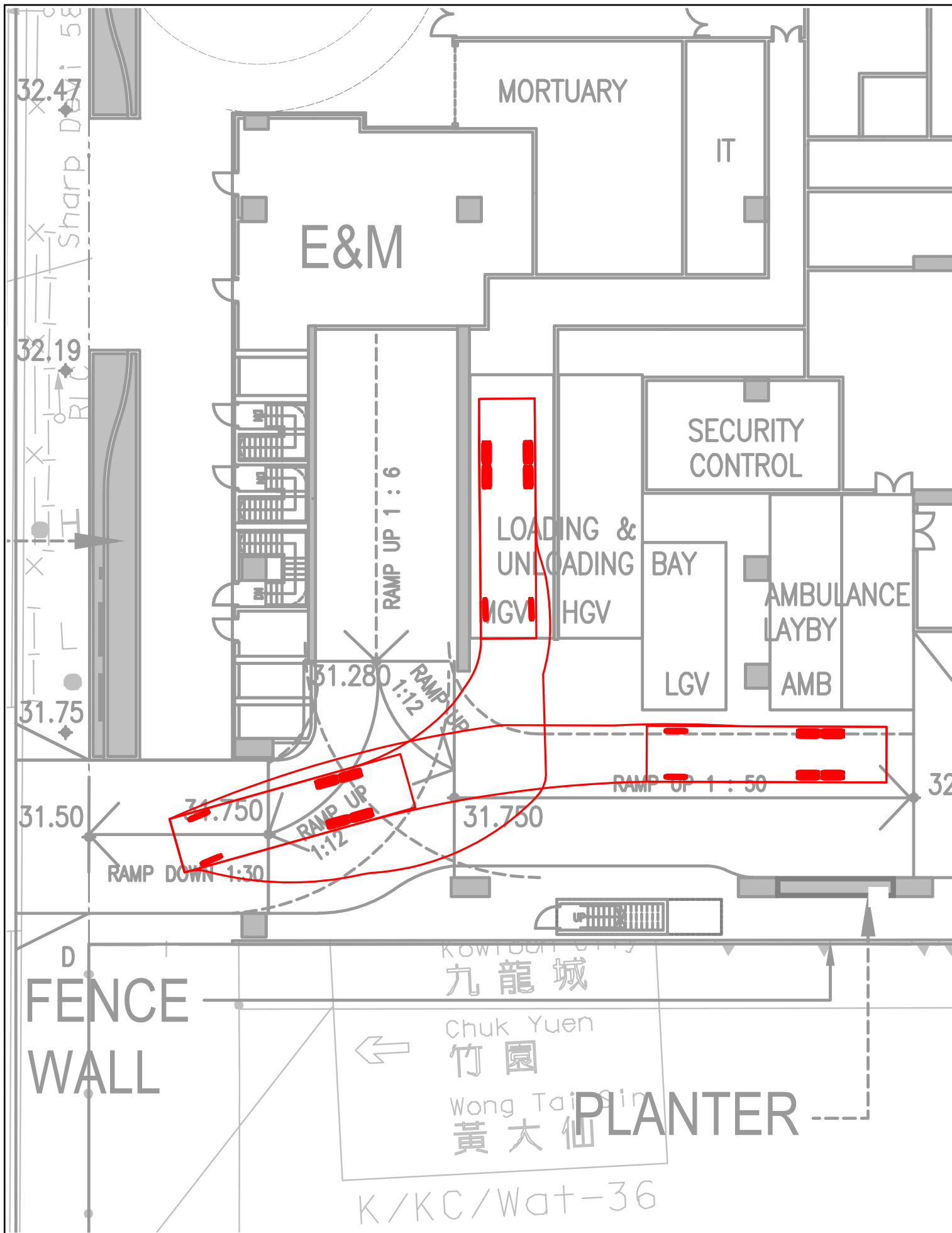
COMPARISON OF DESIGN FLOW TO CAPACITY:



DFC b-a = 0.0000
 DFC b-c = 0.0566
 DFC c-b = 0.0427
 DFC b-ac = 0.0746

CRITICAL DFC = 0.07

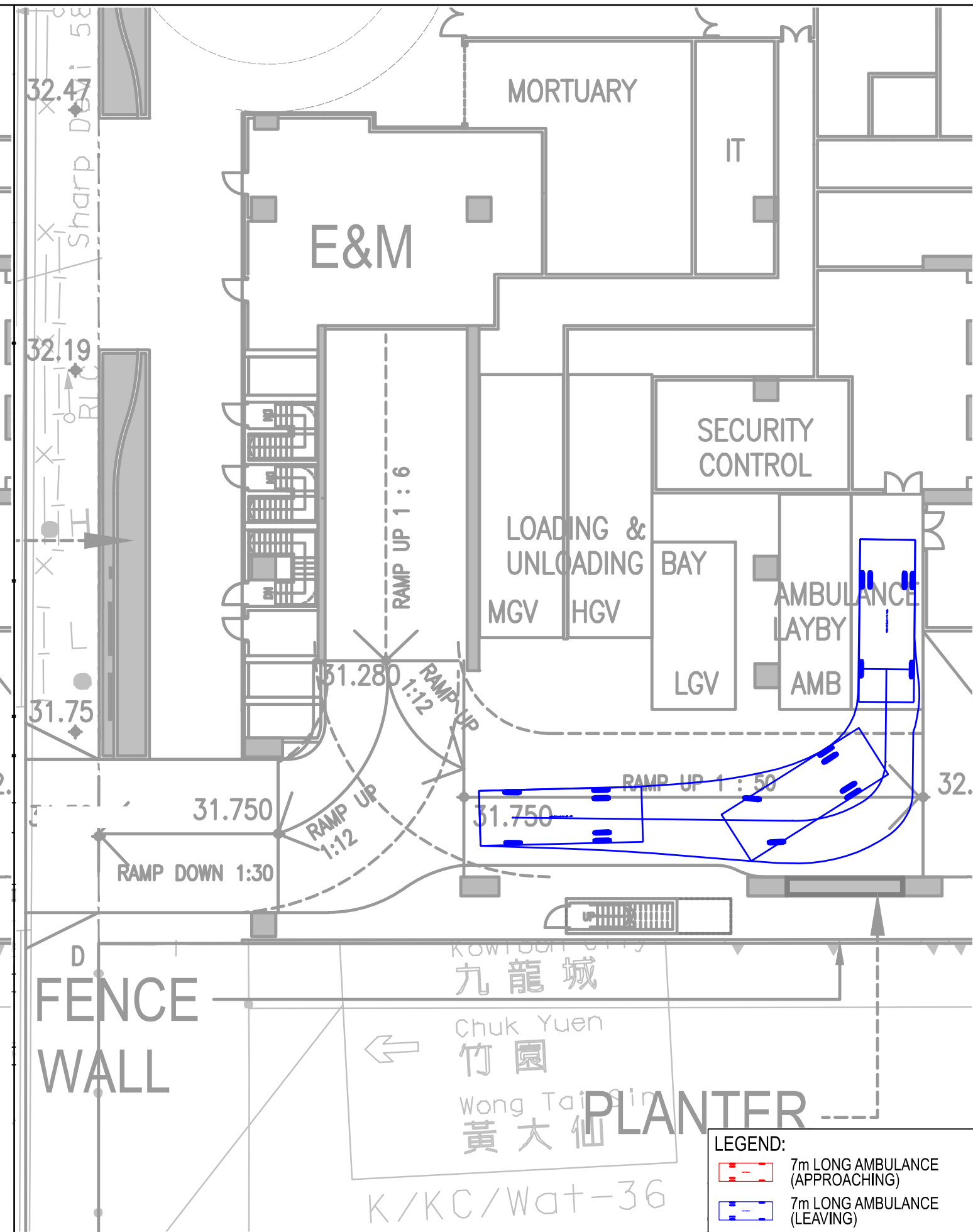
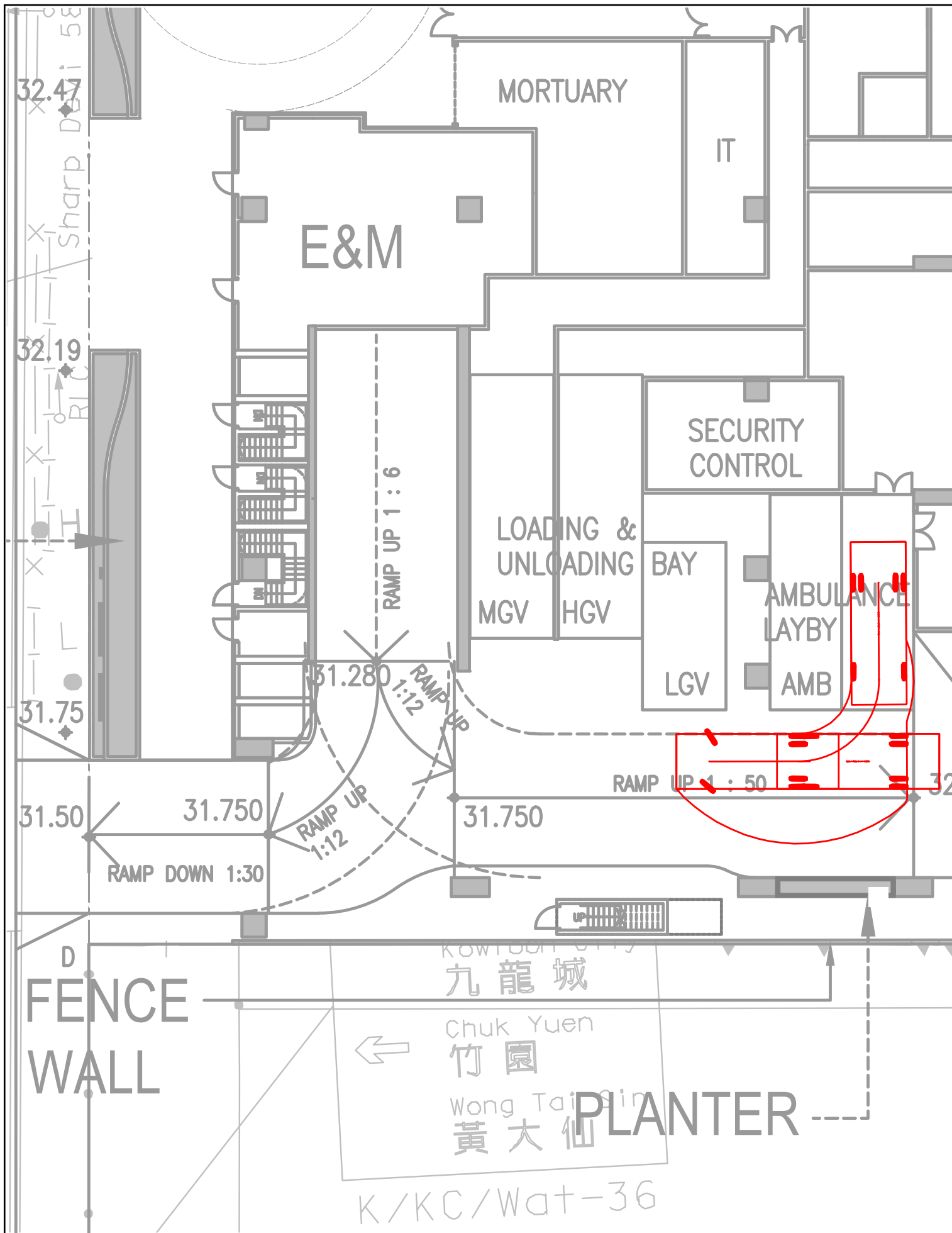
Appendix B



Swept Path Analysis Drawings



LEGEND:
 7m LONG AMBULANCE (APPROACHING)
 7m LONG AMBULANCE (LEAVING)

Job Title S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON			SK-001
Date 07/2024	Scale 1:250 (A3)	Drawing Title SWEPT PATH ANALYSIS FOR 11M LONG HEAVY GOODS VEHICLE AT G/F	ARUP
Drawn WYJL	Job No. 292058-24		



LEGEND:
 7m LONG AMBULANCE (APPROACHING)
 7m LONG AMBULANCE (LEAVING)

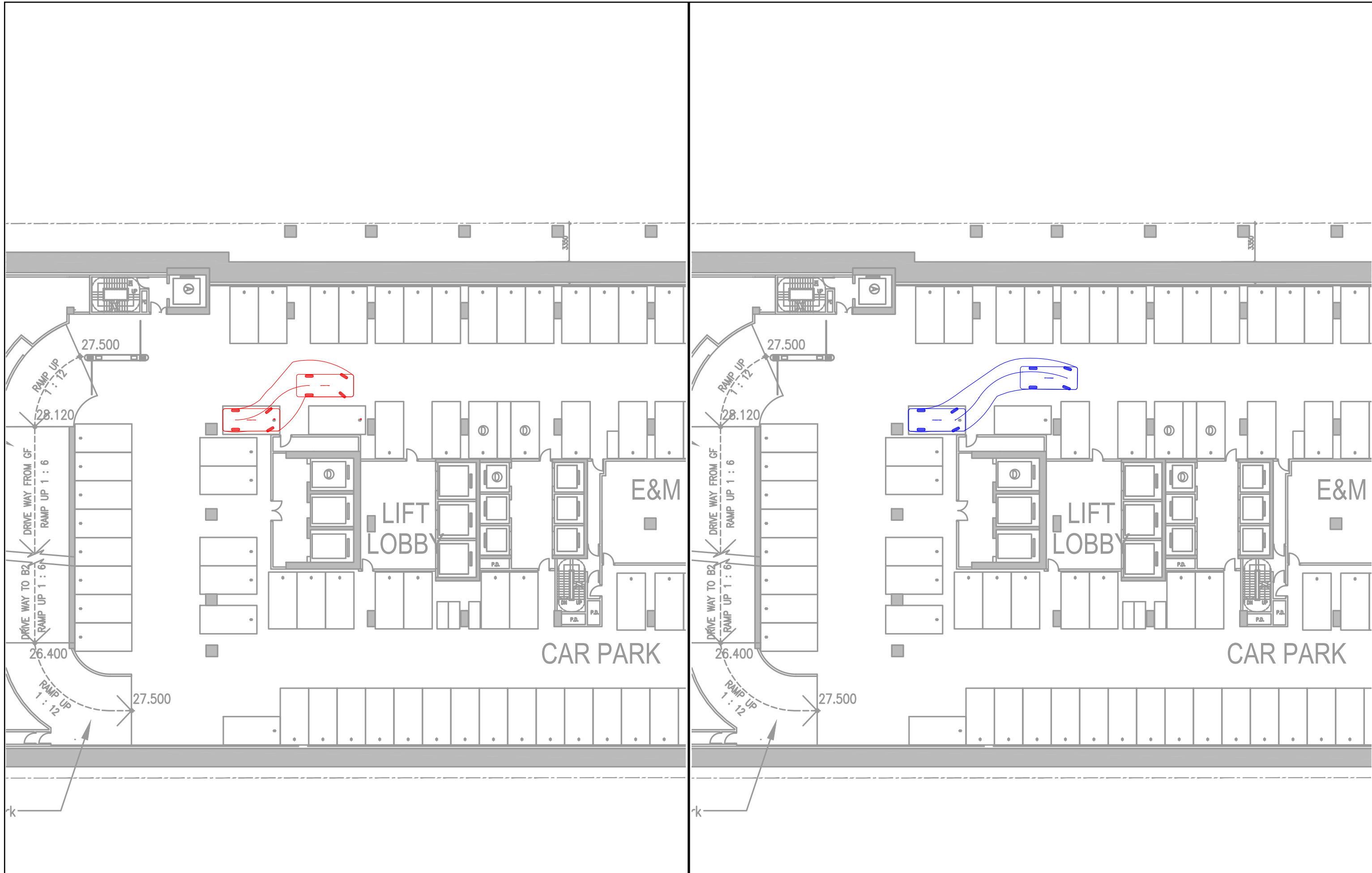
Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

SK-002

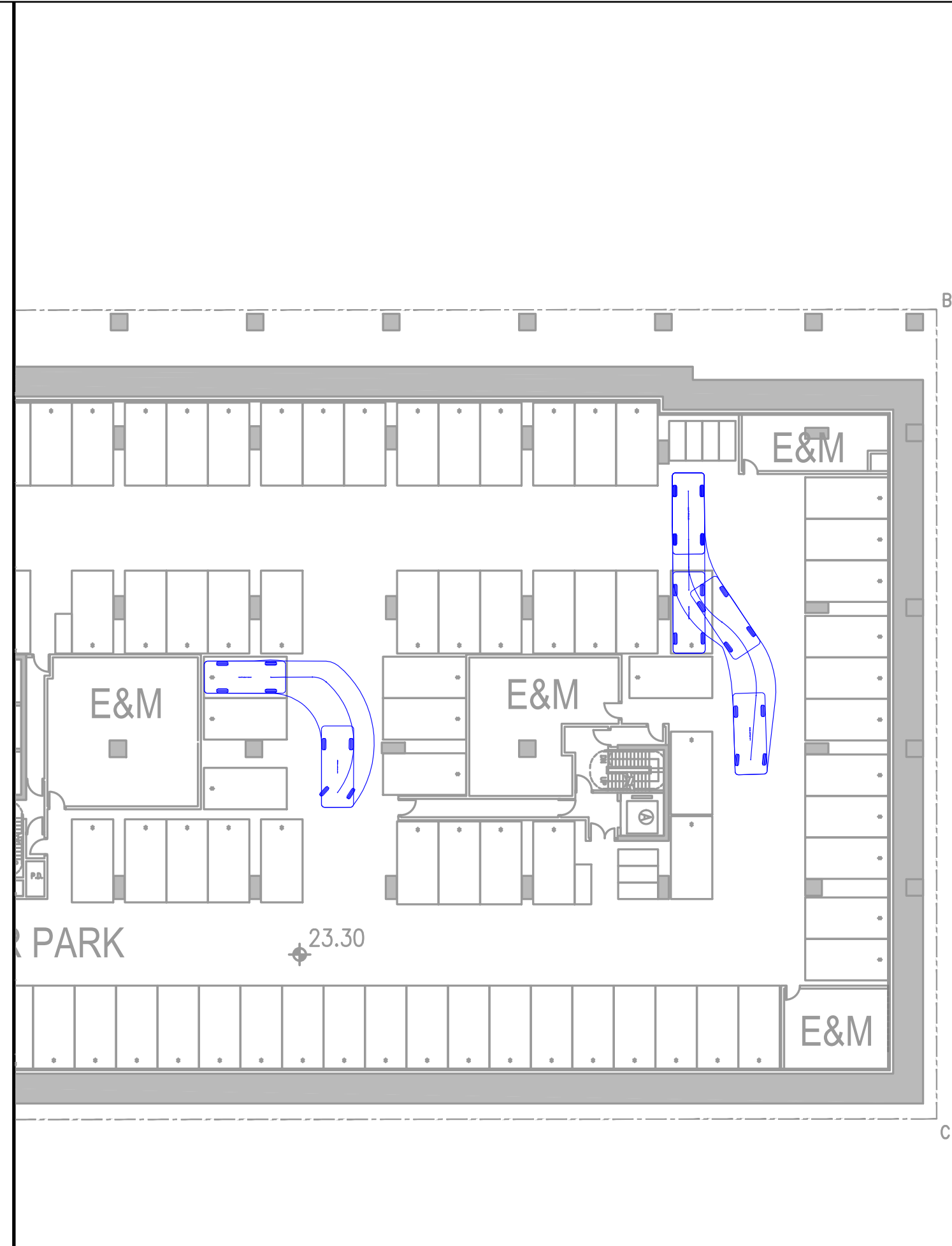
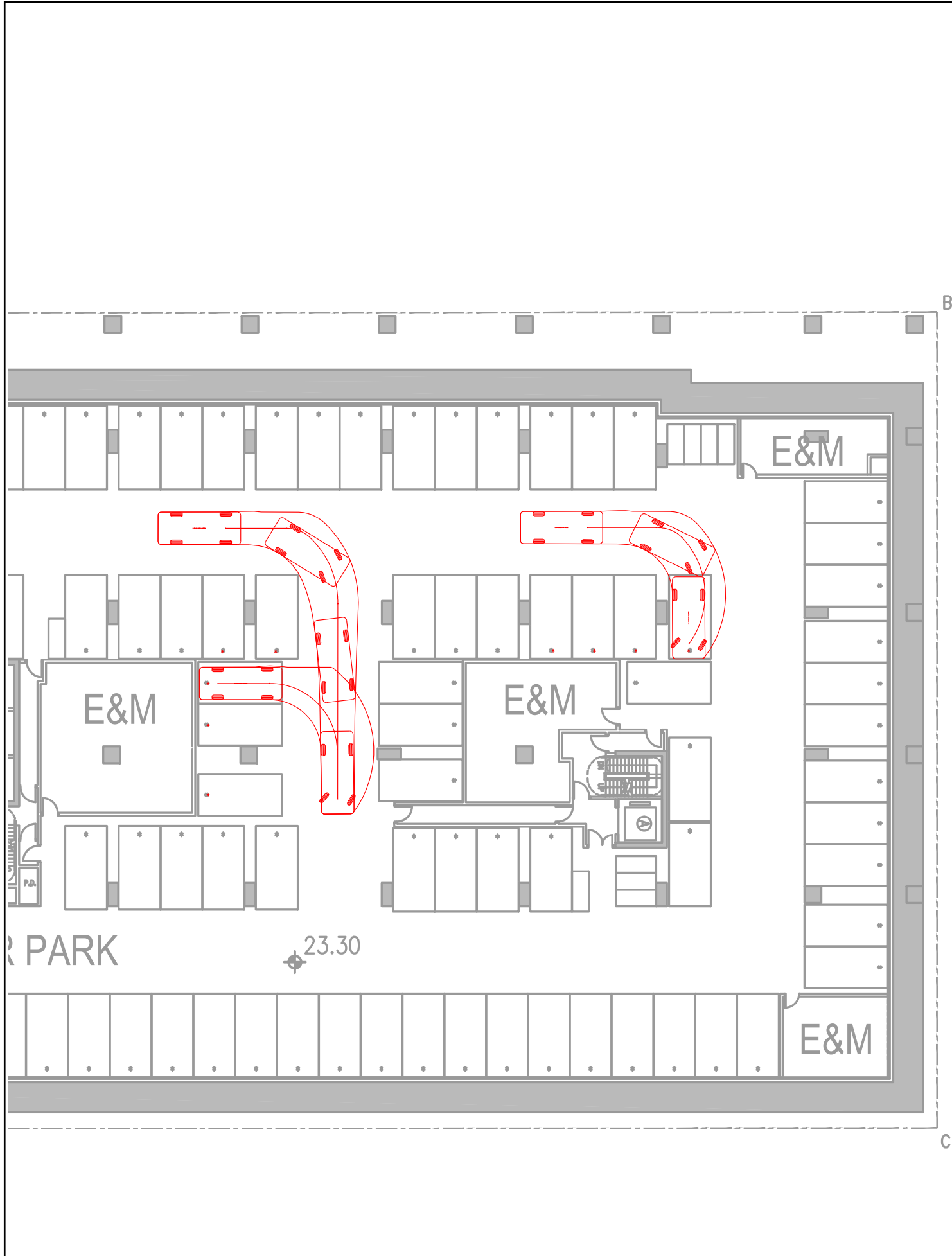
Date **07/2024**
 Scale **1:250 (A3)**
 Drawn **WYJL**
 Job No. **292058-24**

Drawing Title
SWEPT PATH ANALYSIS FOR 7M LONG AMBULANCE AT G/F

ARUP



Job Title S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON		Drawing Title SWEPT PATH ANALYSIS FOR 5M LONG PRIVATE VEHICLE AT B1/F	SK-003
Date 07/2024	Scale 1:300 (A3)	ARUP	
Drawn WYJL	Job No. 292058-24		



Job Title **S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7)" ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON**

SK-004

Date
07/2024

Scale
1:300 (A3)

Drawn
WYJL

Job No.
292058-24

Drawing Title
SWEPT PATH ANALYSIS FOR 5M LONG PRIVATE VEHICLE AT B2/F

ARUP

Appendix F Revised Tree Preservation and Removal Proposal and Landscape Proposal

**S16 Planning Application for Proposed Minor Relaxation
of Building Height Restriction for Permitted Hospital Use
in “Government, Institution or Community (7)” Zone at
Blocks A, B and C of Hong Kong Baptist Hospital, 222
Waterloo Road, Kowloon Tong, Kowloon**



**TREE PRESERVATION AND REMOVAL PROPOSAL &
LANDSCAPE PROPOSAL (RESUBMISSION)**

JULY 2024

**Landscape Consultant
Registered Landscape Architect**

**H Plus Limited
Ms. HUNG Yee Man (R095)**

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- 2.0 Survey Methods and Assessment Criteria**
- 3.0 General Description of Existing Trees**
- 4.0 Tree Treatment Proposal**
 - 4.1 Tree Felling Proposal
 - 4.2 Tree Compensatory Proposal
 - 4.3 Summary of Tree Felling and Compensatory Proposal
- 5.0 Landscape Proposal**
 - 5.1 Landscape Objectives
 - 5.2 Development Schedule
 - 5.3 Proposed Development
 - 5.4 General Landscape Area
 - 5.5 EVA/ Access Roads
- 6.0 Hard Landscape (Paving Materials / Finishes)**
 - 6.1 Hard Landscape Materials
 - 6.2 Landscape Lighting
 - 6.3 Design Codes, Technical Standards & Safety Provision
- 7.0 Soft Landscape (Planting Design / Materials)**
 - 7.1 Hard Landscape Materials
 - 7.2 Planting Materials Tables
 - 7.3 Greening
 - 7.4 Soil Depth and Drainage Provision for the Planted Area
 - 7.5 Irrigation and Proposed Source of Water Supply
- 8.0 Future Maintenance and Management**

APPENDIX

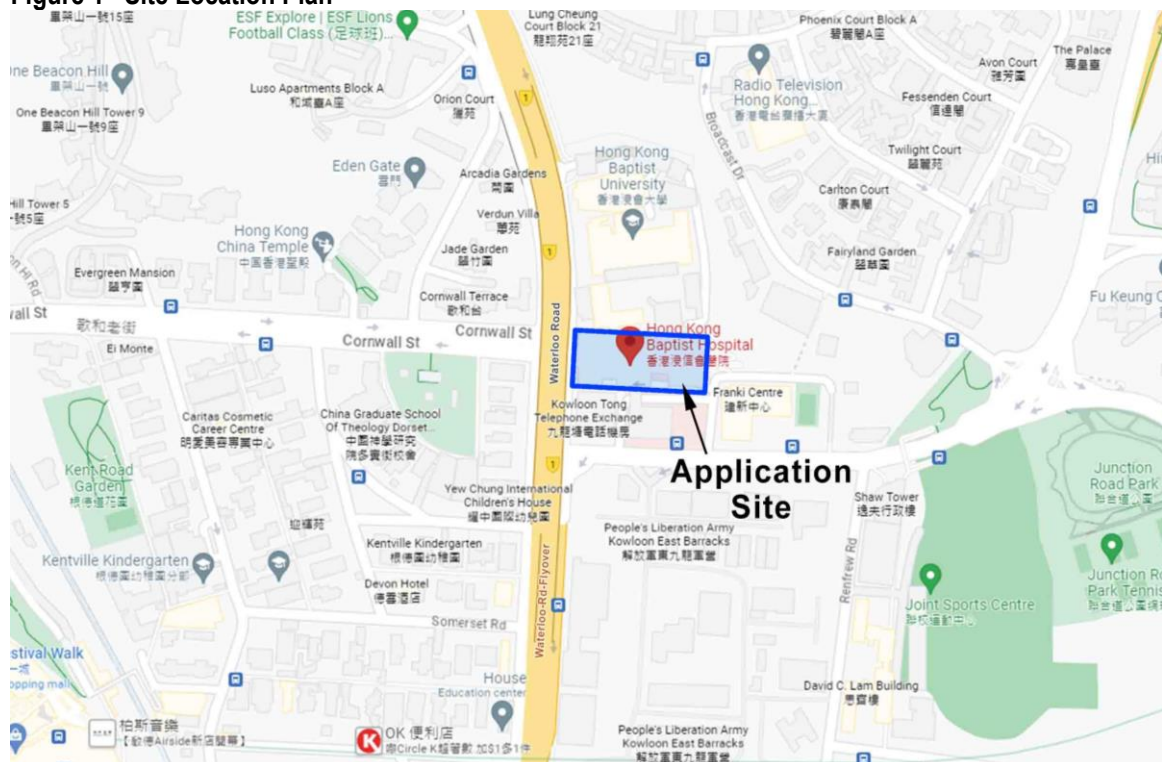
- Appendix A** Architectural Layout Plan
- Appendix B** Tree Assessment Schedule
- Appendix C** Photographic Record of Existing Trees
- Appendix D** Tree Survey Plan
- Appendix E** Compensatory Tree Planting Plan
- Appendix F** Typical Planter Detail
- Appendix G** Landscape Master Plan
- Appendix H** Landscape Section
- Appendix J** Greenery Demarcation Plan
- Appendix K** Vertical Green Elevation and Detail

1.0 INTRODUCTION

1.1 This Tree Preservation and Removal Proposal, based on the latest Architectural Layout Plan (**Appendix A**), is submitted in support of the S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in “Government, Institution or Community (7)” Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon.

1.2 The Application Site, with an application site area of approx. 5,648.5m². The application site is located in the centre of Kowloon Tong District. It can be directly accessed by Waterloo Road from the west and Junction Road and Kam Shing Road from the south. Educational institutions e.g. Hong Kong Baptist University to the north, Yew Chung International Children’s House, China Graduate School of Theology Dorset Crescent Campus and Kentville Kindergarten to the west. Radio Television Hong Kong Television House and Commercial Radio Hong Kong to the northeast. People’s Liberation Army Kowloon East Barracks to the South. Residential developments e.g. Cornwall Terrace, Jade Garden and Verdun Villa to the northwest. Please refer to **Figure 1**.

Figure 1 Site Location Plan



2.0 SURVEY METHODS AND ASSESSMENT CRITERIA

All living trees of 300mm girth (= 95mm diameter) or over (measured at 1.3m above ground level), within the Lot were studied. Each tree was identified to species level, and its girth, height and spread measured. The condition of each tree was then evaluated according to the following criteria (Webb 1991):

- Trees of good form, moderate to large size (for their species type) and in good health are classified as Good.
- Trees of reasonable form, with few or no visible defects or health problems are classified as Fair.
- Trees which are of poor form, badly damaged or clearly suffering from decay, die back, or the effects of very heavy vine growth are classified as Poor.

A general description of the trees on the Site follows in **Section 3**.

3.0 GENERAL DESCRIPTION OF EXISTING TREES

A tree survey was conducted in October 2023 and 4 nos. of existing trees within the Application Site are identified. The dominant species are *Juniperus chinensis* ‘Kaizuca’ accounting for 2 nos. The other species is *Melia azedarach* and *Delonix regia* accounting 1 no. for each.

There is **no** endangered tree species identified in the tree survey under the listing in ‘Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)’. Additionally, there is “Old and Valuable” trees (OVT) observed within the Surveyed Area or its periphery during the undertaking of this survey.

Please refer to the supporting information as follows:

- A schedule of all the trees surveyed, together with their size and condition assessment is presented in Tree Assessment Schedule in **Appendix B**.
- Photographic record of existing trees is shown in **Appendix C**.
- The Location of existing trees overlaid onto the extension of the utility corridor showing those affected by the proposed utility works and proposed for felling are shown on the Tree Survey Plan in **Appendix D**.
- Compensatory Tree Planting Plan showing the locations of compensatory trees within the site boundary in **Appendix E**.

4.0 TREE TREATMENT PROPOSAL

4.1 Tree Felling Proposal (4 nos.)

Upon reviewing the conditions of all the affected trees within and around the Site, felling is considered only as a last resort after retention in-situ and transplanting have been precluded as no other alternate means can be found as viable to save them.

A total of 4 nos. of existing trees identified, all 4 of them are proposed to be felled based on the following principles:

- Trees in **direct conflict with the proposed development layout** e.g. building layout, construction work zone.
- Trees of **unrecoverable health problem and are in poor condition** – The trees possess Poor Form and share common defects such as leaning and imbalanced form. These symptoms cause their structural integrity / stability of these trees and present a potential hazard in the long term.
- **Low survival rate after transplanting** – All trees proposed to be felled are exceptionally low in survival rate after transplanting due to their age, species and intrinsic physiological limitation such as deep root system, inability to easily regenerate new feeder roots and lower resistance to adapt easily to transplanting shock.
- Trees of **low amenity value and very common species** – The trees proposed to be felled are of very common species with low amenity value.

The justifications are summarized in the **Table 1** below (to read in conjunction with the Tree Assessment Schedule in **Appendix B**, Photographic Record of Existing Trees in **Appendix C** and Tree Survey Plan in **Appendix D**).

Table 1: Proposed Tree Felling Schedule

Proposed Tree Felling Schedule	
Tree No.	Justifications for proposed felling of existing trees
Please refer to Tree Assessment Schedule in Appendix B for Tree Nos.	<p>A total of 4 nos. of trees are recommended for <u>Fell</u> in-situ for the following justifications:</p> <ul style="list-style-type: none"> • Trees in direct conflict with the proposed development layout e.g. building layout, construction work zone. • The trees in direct conflict with the proposed development layout due to changes in level between the existing and the proposed layout. They are with: <ul style="list-style-type: none"> (i) Unrecoverable health problem and are in poor condition; (ii) Poor form with severe leaning trunk or imbalanced tree form; (iii) Low amenity value and common species; (iv) Low survival rate after transplanting.

In summary, please find the following **Table 2** showing the Tree Felling Proposal:

Table 2: Summary of Tree Felling Proposal

Description	Current Scheme
Total Nos. of Trees Surveyed	4
Nos. of Trees Proposed to be Felled	4
Aggregated DBH Loss	1386 mm

4.2 Tree Compensatory Proposal (4 nos.)

Major objectives of this current Tree Compensatory Proposal are listed below:

- To enhance greenery within the Site through planting compensatory trees;
- To compensate for the loss of greenery by felling of existing trees;
- To increase the species diversity to enhance greenery within the Site.

To compensate for the loss of greenery, **4 nos.** of compensatory trees are proposed for compensation (Aggregated DBH Compensated is 375 mm). The compensation ratio is 1:1 in terms of quantity and 1:0.27 in terms of quality. Please refer to **Table 3** and read in conjunction with **Appendix E - Compensatory Tree Planting Plan**.

Table 3: Proposed Compensatory Tree Planting Schedule

Qty	Botanical Name	Chinese Name	Height (mm)	Spread (mm)	DBH (mm)	Total DBH (mm)
3	* <i>Cinnamomum burmannii</i>	陰香	5000	3000	100	300
1	* <i>Garcinia oblongifolia</i> Champ. ex Benth.	嶺南山竹子	2500	1500	75	75
Total	4					375

Remark: * Native Species

Considerations that govern the provision of planting area are explained as follows:

- Adequate space is allowed between trees to ensure penetration of sunlight for their viable growth.
- All compensatory trees will be planted at-grade and on structure with not less than 1.2m soil depth excluding drainage layer (refer to **Appendix F**).

4.3 Summary of Tree Felling and Compensatory Proposal

A summary of Tree Felling and Compensatory Proposal in the Current Scheme is shown in **Table 4**:

Table 4: Tree Felling and Compensation Proposal

Description	Current Scheme
Total Nos. of Trees Surveyed	4
Nos. of Trees Proposed to be Retained	0
Nos. of Trees Proposed to be Felled	4
Aggregated DBH Loss	1386 mm
Nos. of Compensatory Trees	4
Aggregated DBH Compensated	375 mm
Compensation Ratio	
- In terms of Quantity	1 : 1
- In terms of Quality	1 : 0.27

5.0 LANDSCAPE PROPOSAL

This section provides a broad description of the design, function and amenity provisions for the landscape components. Refer to **Appendix G**.

5.1 Landscape Objectives

The Primary landscape objectives are:

- 5.1.1 To integrate the proposed development from a landscape and visual perspective with the existing and planned landscape context;
- 5.1.2 To use landscape measures to soften the form of the proposed architectural scheme;
- 5.1.3 To provide visual integration, screening and softening effects of the built-form;
- 5.1.4 To provide a high quality living environment and adequate open space for future residents and visitors;
- 5.1.5 To create a high degree of visual interest and continuity through effective design;
- 5.1.6 To utilize a variety of tree species to alleviate visual impact to the surroundings, delineate the landscape character of the area and emphasize the individuality afforded by the environmental qualities of the Site;
- 5.1.7 To provide compensation for the proposed felling of trees required to accommodate the new development;
- 5.1.8 To maximize opportunities for the planting of new trees, shrubs and other vegetation mix.

5.2 Development Schedule

The proposed development components of the LP are categorized and listed in the Development Schedule. Refer to **Table 5** below:

Table 5: Development Parameters

Items	Proposed Scheme
Development Site Area	Approx. 5,648.5 m ²
Plot Ratio	About 10.89
Total Gross Floor Area	About 61,513 m ²
Site Coverage	
- Below 15m	No more than 100%
- Above 15m	About 62.5%
No. of Storeys Above Ground	15 Storeys
No. of Bed Spaces	700
Parking Spaces	
- Ambulance Layby	2
- Heavy Goods Vehicle	1
- Medium Goods Vehicle	1
- Light Goods Vehicle	1 (at G/F)

5.3 Proposed Development

5.3.1 The proposed development consists of not exceeding 15-storeys tower (excluding basement floors) for the Hong Kong Baptist Hospital development with associated facilities, car parking and ambulance layby. The tower is proposed for 700 of beds.

5.4 General Landscape Area

5.4.1 The landscape proposal within the Site is summarized as follows (refer to **Appendix G**):

- Landscape Area:

G/F:

It is the arrival and drop-off floor. It contains both hard and soft landscaped area. Durable paving materials will be used to create an inviting environment upon which users will feel safe and comfortable. The planting include the compensatory trees incorporates a varied planting palette to enhance the entrance and as buffer between the development and the public.

3/F:

It is the extension of landscape area that proposed with lush vegetation buffering around the East to South edge of the building. It is designed to plant with combination of compensatory trees, new trees, shrubs and groundcover mix to soften the hardness of the building and can improve the aesthetic quality of the proposed development. Seating benches are provided for the visitors to relax.

Upper Roof:

It is designed to plant with lawn to soften the hardness of the building and to create far view visual greenery effect to the surrounding.

- Vertical Green:

Vertical green walls are proposed at G/F and the building façade from 1/F to 3/F at East, South and West side of the building, 4/F to 13/F and Roof Floor at the South side respectively to soften the hardness of the building and increase the visual amenity of greenery to the surrounding (refer to **Appendix K**).

5.5 EVA/ Access Road

5.5.1 Public can be direct access from the West side Waterloo Road and from the South side Kam Shing Road to the development site.

6.0 HARD LANDSCAPE (PAVING MATERIALS / FINISHES)

This section provides a description of the hardscape design together with general information on hardscape related aspects of the design which relate to all phases, including lighting, levels and technical standards. Hardscape elements of the landscape include: paving; walls; site structures and lighting.

6.1 Hard Landscape Materials

6.1.1 Hardscape materials and design are chosen to compliment the building finishes, add character to the development and provide variety to the circulation areas.

6.1.2 Natural stone materials and/ or artificial granite tiles, all suitable for outdoor uses are proposed for outdoor paving materials and wall finishes.

6.1.3 The use of varied finishes to granite and/ or artificial granite tiles provide for safe application through varied textures in the paving pattern design, including ripple texture, brush and hammered finishes.

6.1.4 Natural material textures exhibit a natural variation in material colour, adding interest to the patterns and helping to highlight entrances to different functional zones.

6.1.5 A summary of the hardscape materials is listed in the Preliminary Finishes Schedule for Hardscape. Please refer to **Table 6** below:

Table 6: Preliminary Finishes Schedule for Hardscape

Preliminary Finishes Schedule for Hardscape	
Pedestrian walkway	Artificial granite and concrete block punctuated by natural granite banding and accents
Internal roads	Natural granite / artificial granite tiles / homogeneous tiles
Landscape gardens and open spaces	Natural granite / artificial granite paving
Planter walls	Natural granite stones / artificial granite tiles

6.2 Landscape Lighting

6.2.1 The landscape lighting design for all areas will follow an aesthetic and functional approach. Generally, lighting will be provided for the safety and security of pedestrian circulation as well as highlighting specific landscape features. Lighting will be designed in accordance to the intended use of an area, such as seating areas or play areas.

6.2.2 The desired effect for general landscape lighting in amenity areas is indirect, non-glaring and subtle, with occasional accent lighting to highlight points of interest.

6.2.3 Accent landscape lighting will be soil-recessed up-lights for trees. Signage and feature walls will be spot lit to give prominence. Surface mounted fixtures and burial up-lighters will be employed to highlight the entrance areas.

6.3 Design Codes, Technical Standards & Safety Provision

- 6.3.1 Hard landscape design works shall be in compliance with, or better than, government ordinances, codes and regulations, and relevant international standards. Criteria for the selection of hard landscape materials include: durability, sustainability, low maintenance, reasonable cost, contemporary theme and specific criteria for themed areas as necessary.
- 6.3.2 Criteria for the selection of soft landscape materials include: salinity tolerance, low maintenance, seasonal interest and appropriately selected plant stock in good health.
- 6.3.3 All paved areas will have adequate gradient falls for proper drainage and positive fall to drain inlets, gullies or covered channels, in accordance with accepted surface water run-off drainage practices.
- 6.3.4 Design of disabled access shall be in compliance with the Barrier Free Access 2008.

7.0 SOFT LANDSCAPE (PLANTING DESIGN / MATERIALS)

This section provides a description of greening, soft landscape design and softscape elements together with general information on softscape related aspects of design, including irrigation and maintenance. Softscape elements of the landscape include plantings, planting soil and sub-surface drainage materials. The hierarchy of landscape planting within the development is summarized as follows:

7.1 Soft Landscape Materials

- 7.1.1 The design incorporates a varied planting palette to yield changing variety and seasonal interest. Evergreen trees, flowering and evergreen shrubs, variegated foliage plants and groundcover are selected.
- 7.1.2 In general, shrubs and groundcovers will be mass planted in specific colour groupings, and designed to provide an engaging flowering under-storey layer beneath trees. Integral to any good landscape planting design, colour, texture and contrast of foliage will be articulated to best showcase the planting design. Flowers are important elements to enhance the planting design for this area. Flowering species will be utilized alongside pathways and adjacent to seating areas to tease and raise the human visual sensory awareness.
- 7.1.3 Carefully selected species will ensure maximum greening effect with minimum maintenance requirements. Specimen trees of various sizes will be used in combination with ornamental shrub planting to create a year-round display.
- 7.1.4 A summary of softscape materials (categories of planting, species list, and size) is provided in section 7.2.

7.2 Plant Materials Table

- 7.2.1 The following list indicates the proposed combination of native and exotic tree species along with suitable ornamental evergreen and flowering species to strengthen the greening/ conservation.
- 7.2.2 The summary schedule of key plant material listed below is subject to further refinement and plant availability upon detail design stage. Please refer to **Table 3, 7A, 7B and 7C** below:

Table 7A: Proposed Trees Planting Species

Botanical Name	Chinese Name	Height x Spread (mm)	Spacing (mm)	DBH (mm)
Compensatory Tree Species				
* <i>Cinnamomum burmannii</i>	陰香	5000 x 3000	5000	0.100

Botanical Name	Chinese Name	Height x Spread (mm)	Spacing (mm)	DBH (mm)
* <i>Garcinia oblongifolia</i> <i>Champ. ex Benth.</i>	嶺南山竹子	2500 x 1500	4000	0.075
New Tree Species				
* <i>Ilex rotunda</i> Thunb. var. <i>Microcarpa</i>	小果鐵冬青	2500 x 1500	4000	0.075
* <i>Garcinia oblongifolia</i> <i>Champ. ex Benth.</i>	嶺南山竹子	2500 x 1500	4000	0.075

Remarks: * Native Species

Table 7B: Proposed Shrub and Groundcover Species

Botanical Name	Chinese Name	Height x Spread (mm)	Spacing (mm)
Shrub Species			
<i>Codiaeum variegatum</i> cv. <i>Chrysophylla</i>	金光變葉木	400 x 400	300
<i>Duranta repens</i> 'golden leaves'	金連翹	300 x 300	250
<i>Rhapis humilis</i>	細葉棕竹	1500 x 1000	800
<i>Schefflera arboricola</i> 'variegata'	花葉八葉	600 x 500	400
Groundcover Species			
<i>Axonopus compressus</i>	大葉草	100 x 150	100

Remarks: * Native Species

Table 7C: Proposed Vertical Green Wall Species

Botanical Name	Chinese Name	Height x Spread (mm)
<i>Epipremnum aureum</i>	黃金葛	250 x 250
<i>Hedera helix</i>	常春藤	250 x 250

Remarks: * Native Species

7.3 Greening

The proposed development site has an application site area of approx. 5,648.5m². There are approx. 1303m² of total open green area (approx. 23% of the site area) is proposed in this scheme. Compensatory trees are proposed to compensate for the loss of the existing trees that are proposed to be felled. To maximize the greenery and increase visual amenity, vertical green walls, buffer plantings, shrubs and groundcover mix vegetation are also proposed to help integrate the development with hillside surroundings. (refers to Appendix J).

7.4 Soil Depth and Drainage Provision for the Planted Area

7.3.1 The need for adequate soil depths to ensure proper plant growth is taken into account for all planting areas. The appropriate soil depths (approximate and excluding drainage layers) are:

- Trees: 1200mm
- Shrub / groundcover: 600mm
- Grass / vines: 300mm

7.3.2 Structural engineers have made sufficient allowances to accommodate the necessary planting components, i.e., plant stock, soil volume and sub-surface drainage materials loading.

7.3.3 Closed bottom planters will have proper and adequate subsoil drainage system and drain outlets to the storm water drainage system.

7.3.4 The landscape works are designed to avoid obstruction of the maintenance of drainage works. Adequate clearance between drainage works and landscape works will be maintained so as to prevent any potential damage to drainage works.

7.5 Irrigation and Proposed Source of Water Supply

7.4.1 Water points (not more than 40m apart c/c) are located throughout the Site for irrigation.

8.0 FUTURE MAINTENANCE AND MANAGEMENT

Maintenance and establishment works to soft landscape areas within Site shall be undertaken by the softworks contractor for an Establishment Period of a minimum of 12 months following Practical Completion. This will ensure the proper establishment of the planted material. Tree risk assessment will be conducted by future property management at appropriate time for appropriate tree as instructed by the owner in accordance with the Handbook of Tree Management by DEVB.

Soft Landscape Maintenance Schedule

Watering:	Water all plants as necessary, adjusted to rainfall, to ensure adequate water supply for plant consumption during the establishment period.
Pruning:	Cut back annuals after flowering period. Healthy cuttings may be used for propagation. Prune shrubs and groundcover in early March to encourage flowering. Prune woody shrubs and trees selectively according to species (annually). Remove dead fronds from palm trees. Utilise established and approved tree surgery techniques as necessary and seal all sharp cut wounds with approved material to resist disease attack.
Fertilizing:	Two to three times annually, emphasis shall be in the March application. Test soil in January to analyse quality ameliorates as necessary.
Fungicide / Insecticide:	Spray only as necessary with approved chemical.
Weeding:	Manually or use selective non-toxic, biodegradable herbicide to keep the weed growth and its establishment under control.
Securing:	Adjust tree stakes in spring and as necessary to taut up the staking. Care shall be applied to avoid chaffing of tree bark.
Mulching:	Top up the mulching inside all planting beds twice a year and as necessary.
Thinning:	Reduce overcrowding and transplant as necessary at selected periods: <ul style="list-style-type: none">• Evergreens: Spring• Deciduous: Winter• Palms: June to August

Table 8: Maintenance Schedule

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Watering	●	●	●	●	●	●	●	●	●	●	●	●
Pruning		D	GC									
Fertilizing	soil test		X								X	
Fungicide / Insecticide			X						X			X
Weeding		X	X	X	X	X	X	X		X		X
Securing			X									
Thinning			EG								D	

Remarks: Tree risk assessment will be conducted by future property management at appropriate time for appropriate tree as instructed by the owner in accordance with the Handbook of Tree Management by DEVB.

Schedule Legend:

GC	Groundcover	EG	Evergreen	D	Deciduous
●	Size proportional to quantity	X	Application		

9.0 SUMMARY OF TREE FELLING AND COMPENSATORY PROPOSAL

A summary of Tree Felling and Compensatory Proposal in the Current Scheme is shown in **Table 5:**

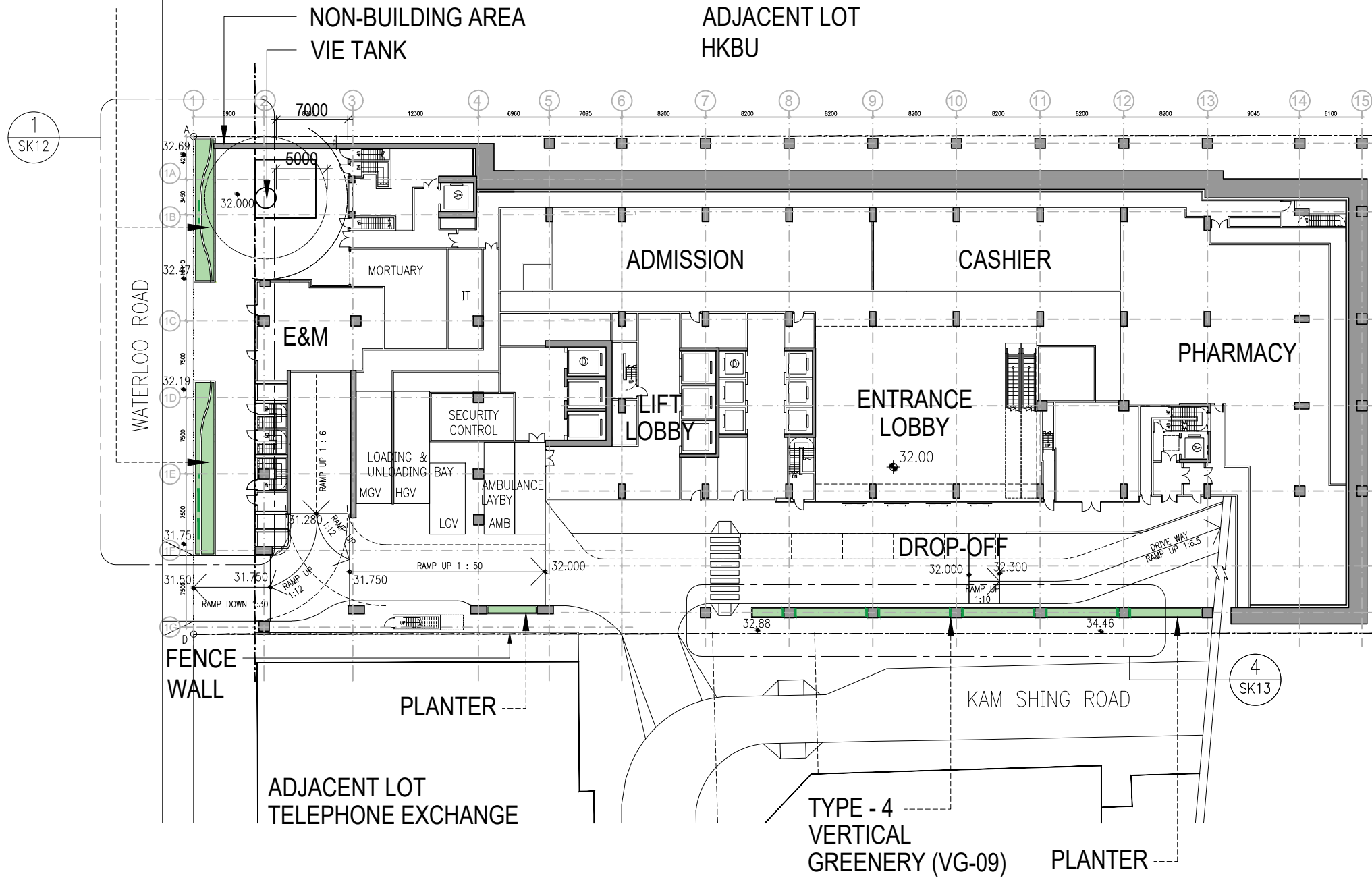
Table 5: Tree Felling and Compensation Proposal

Description	Current Scheme
Total Nos. of Trees Surveyed	4
Nos. of Trees Proposed to be Felled	4
Aggregated DBH Loss	1386 mm
Nos. of Compensatory Trees	4
Aggregated DBH Compensated	375 mm
Compensation Ratio	
- In terms of Quantity	1 : 1
- In terms of Quality	1 : 0.27

Appendix A

Architectural Layout Plan

FENCE WALL
 WITH F.S. INLET/ SPRINKLER CONTROL VALVE
 / AUTOMATIC METER READING CABINET
 / WATER METER CABINET
 WITH GREEN ROOF



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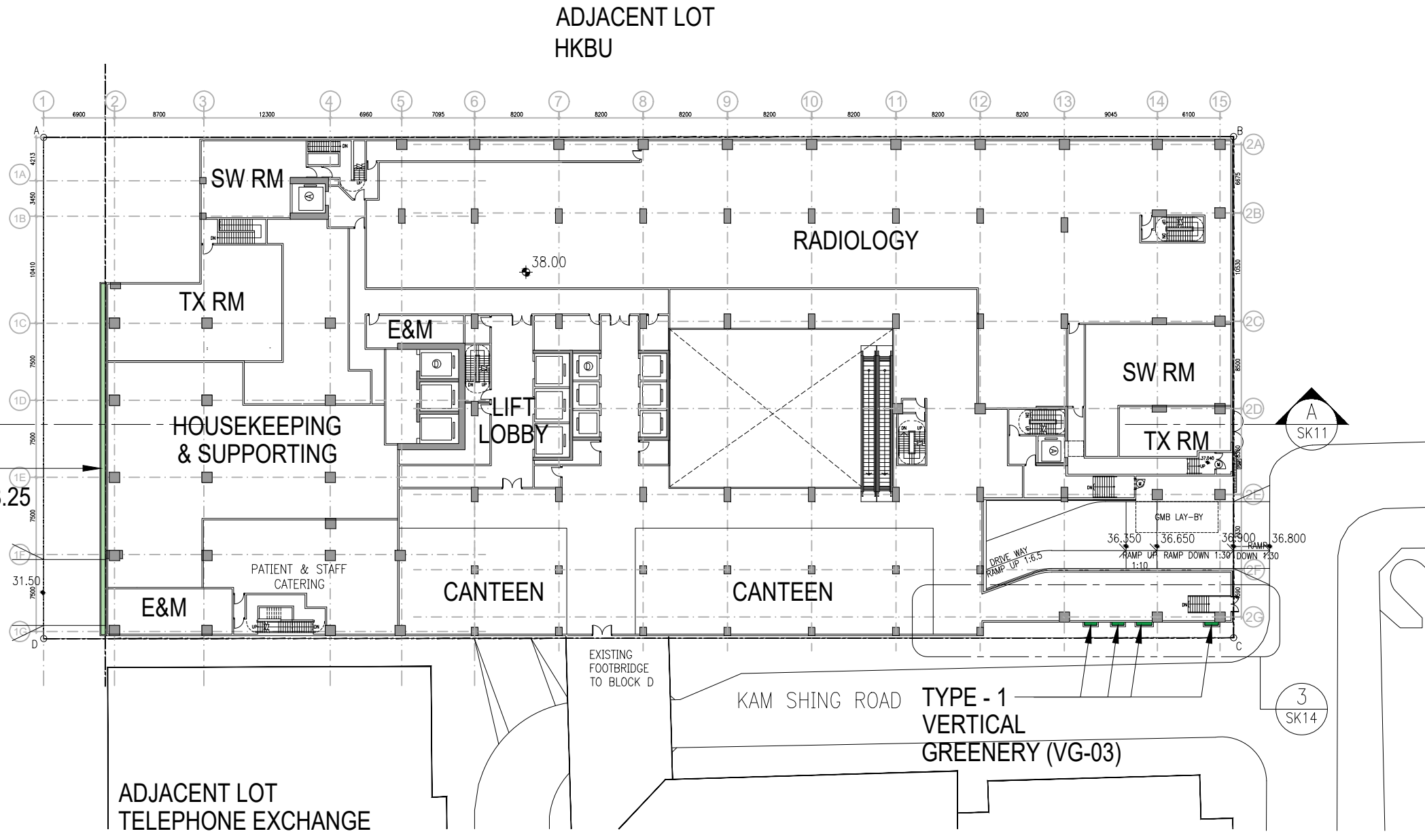
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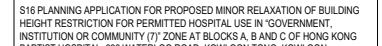
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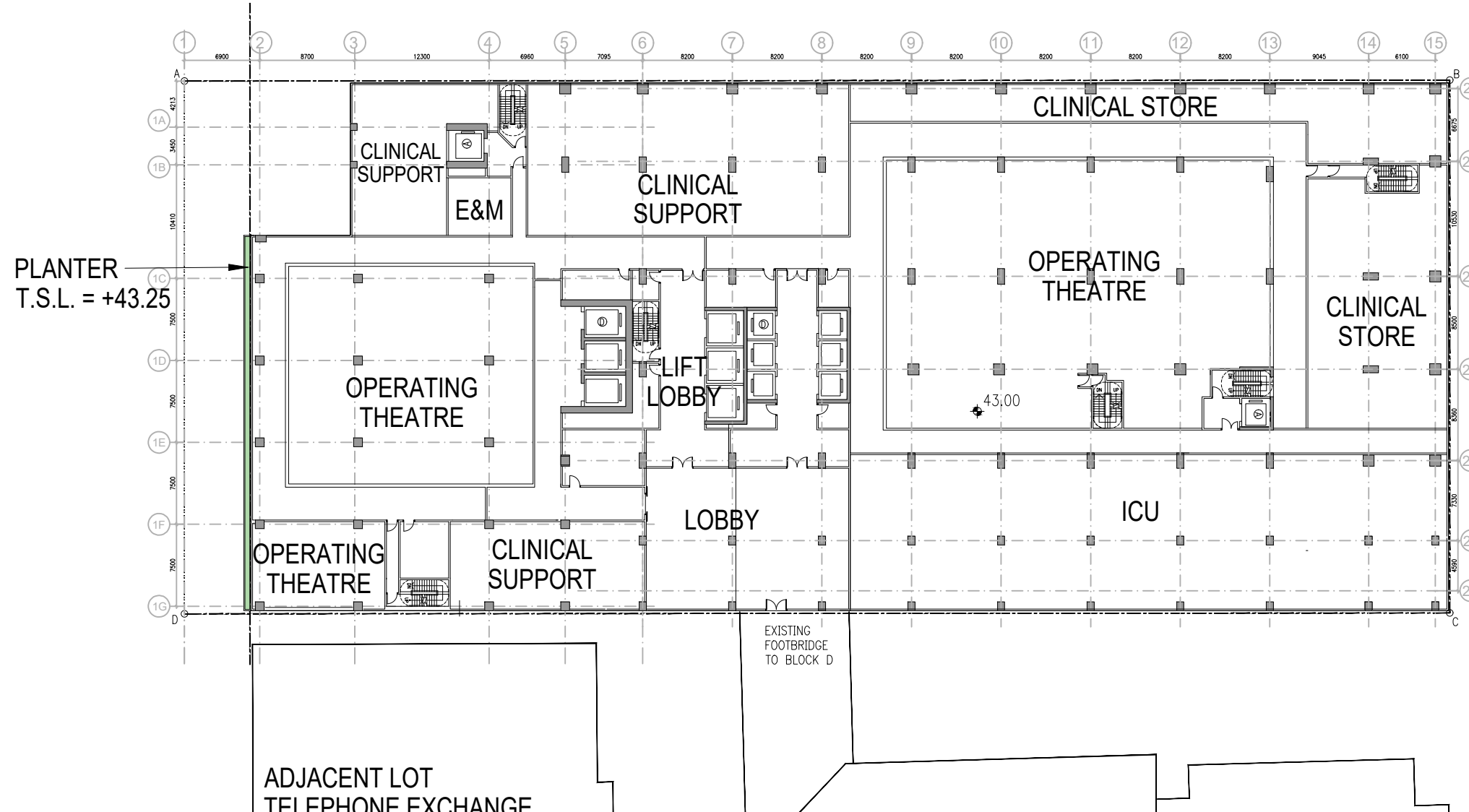
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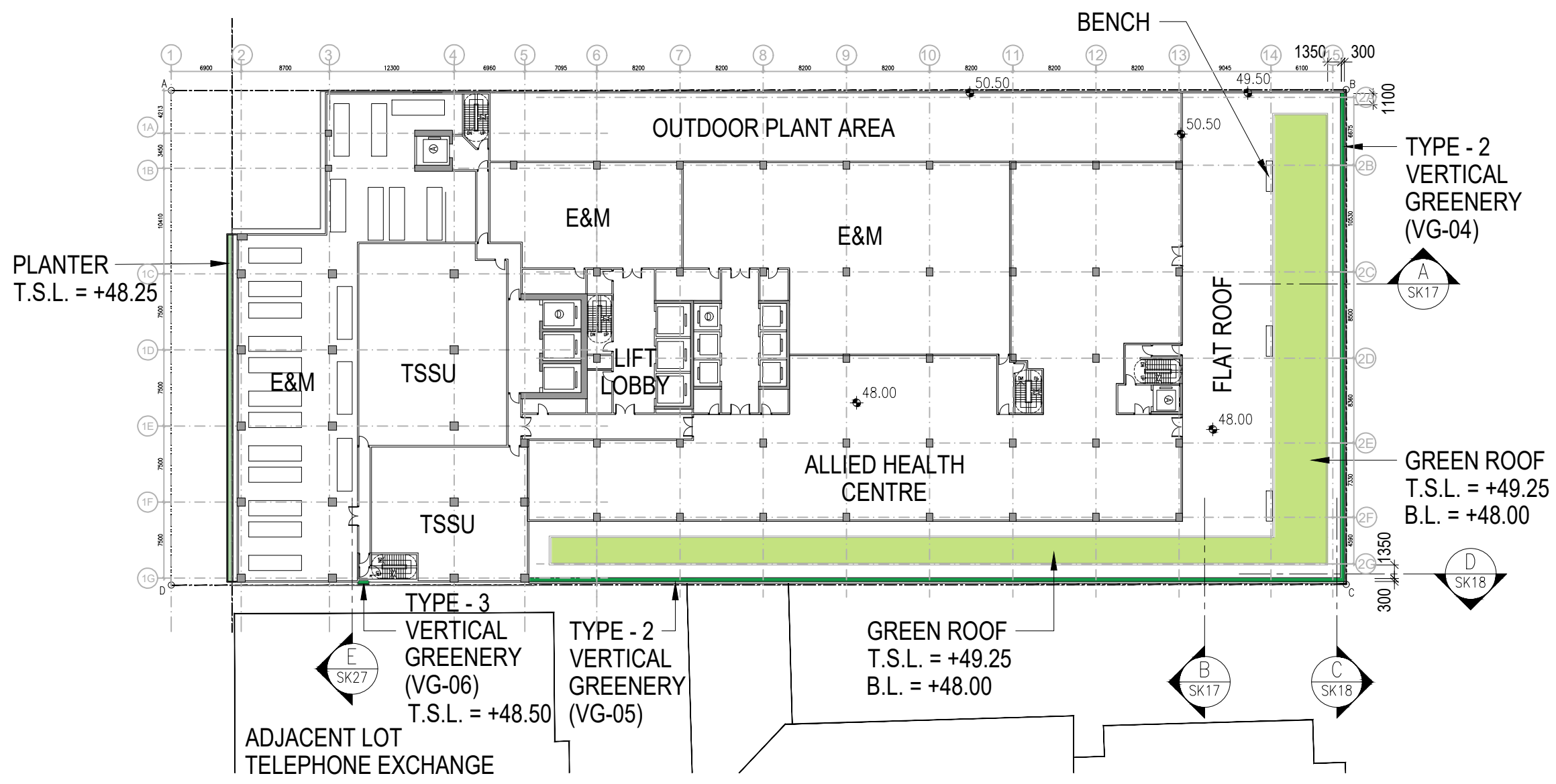

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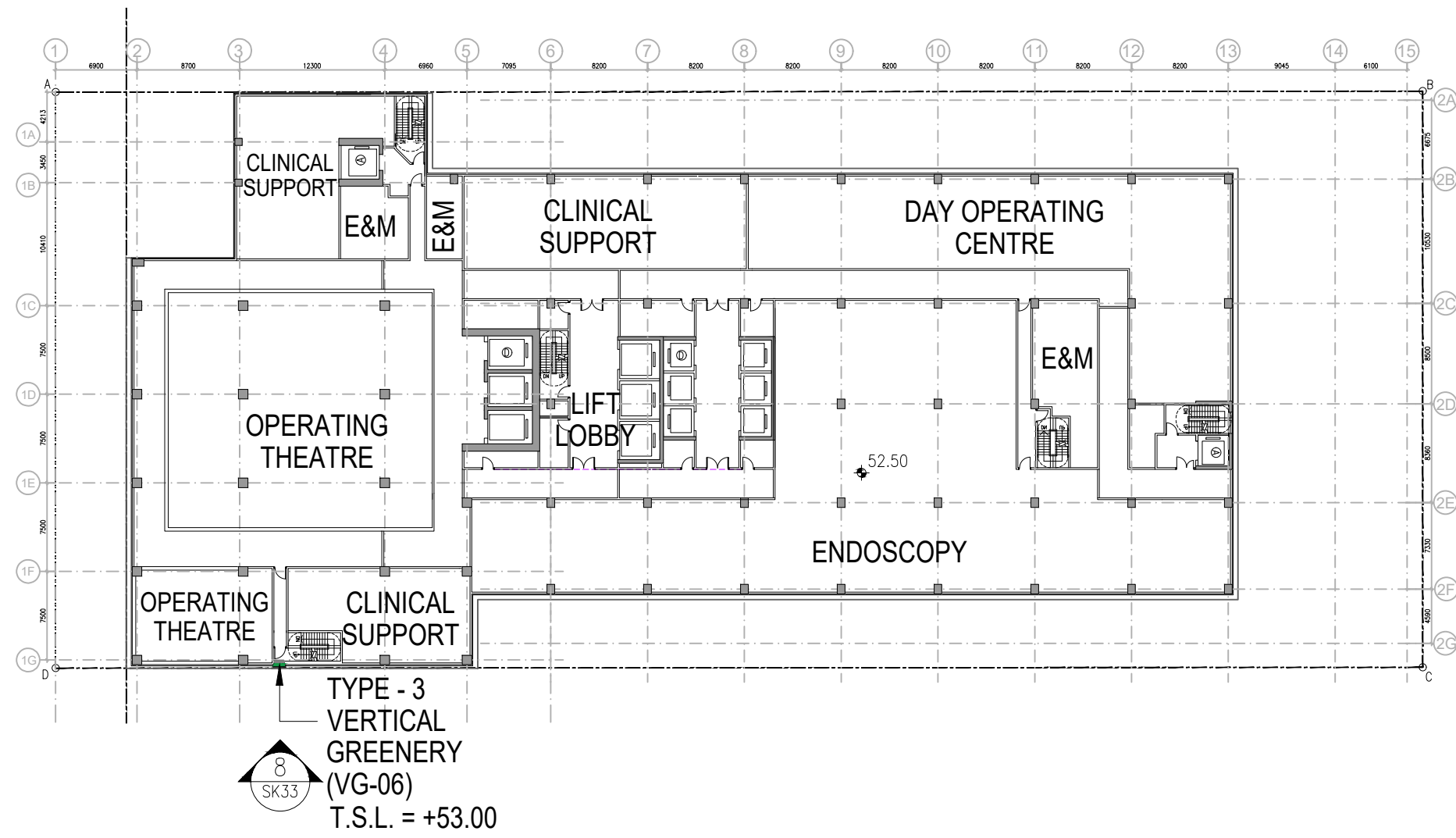

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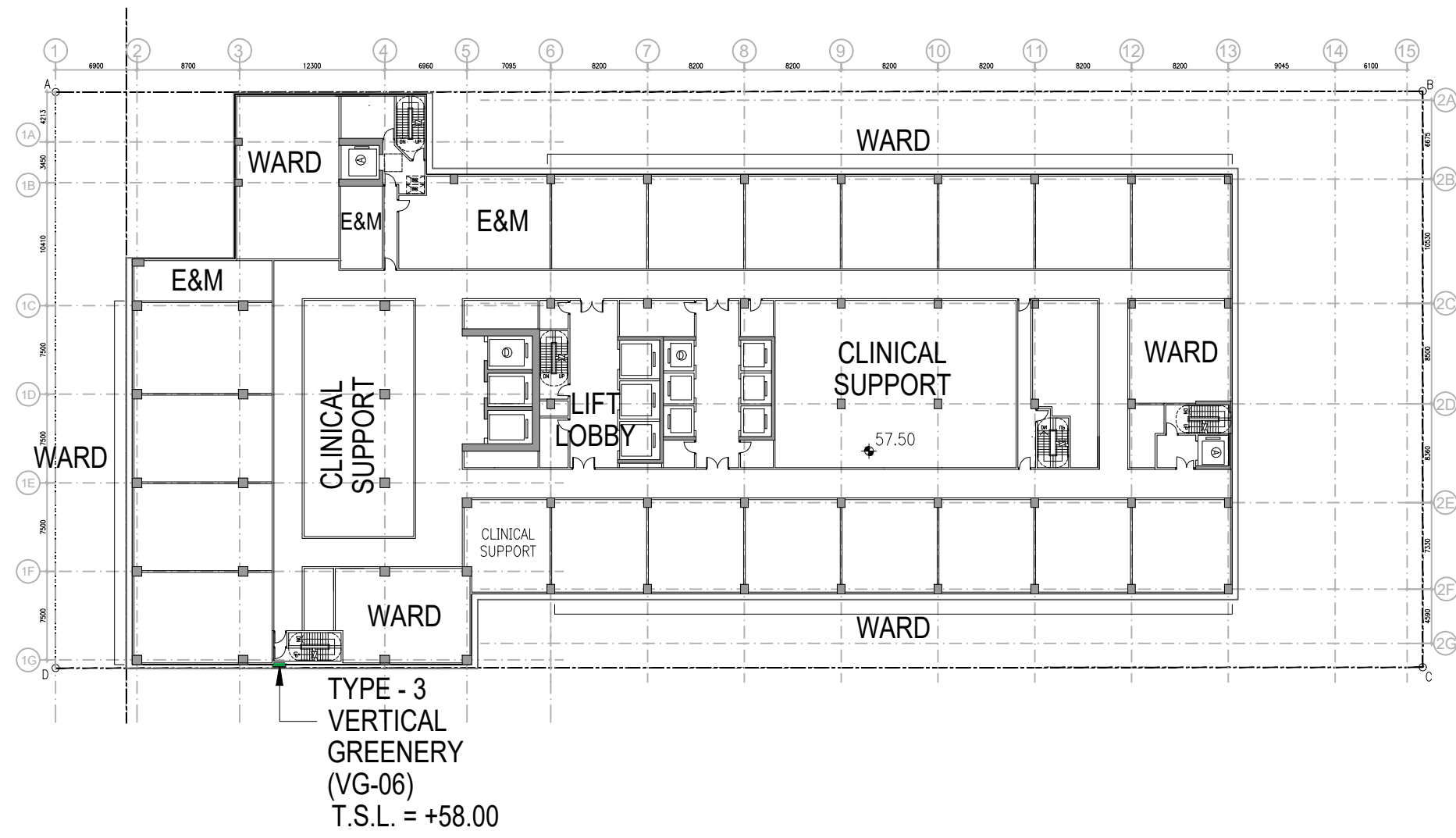
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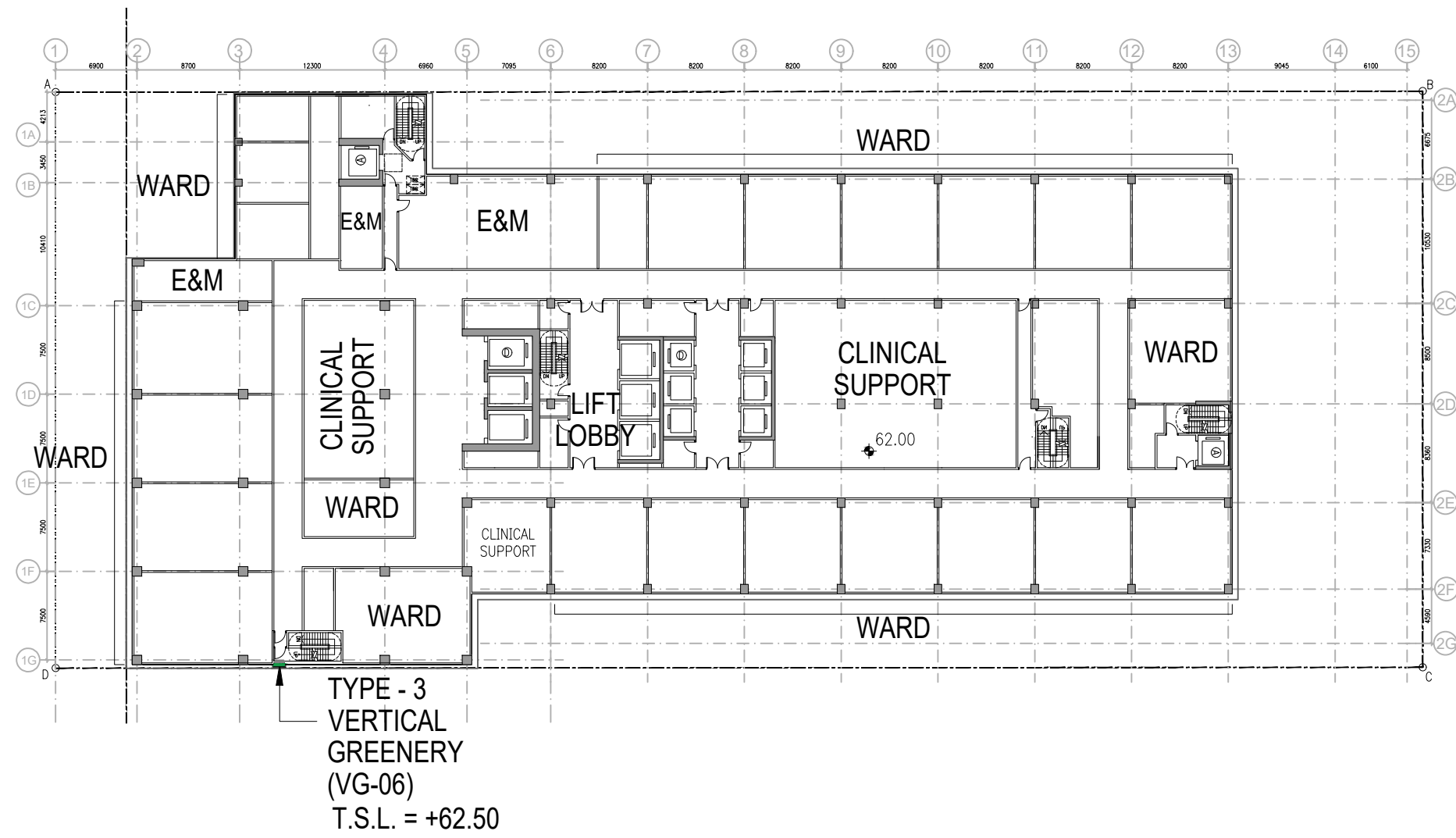
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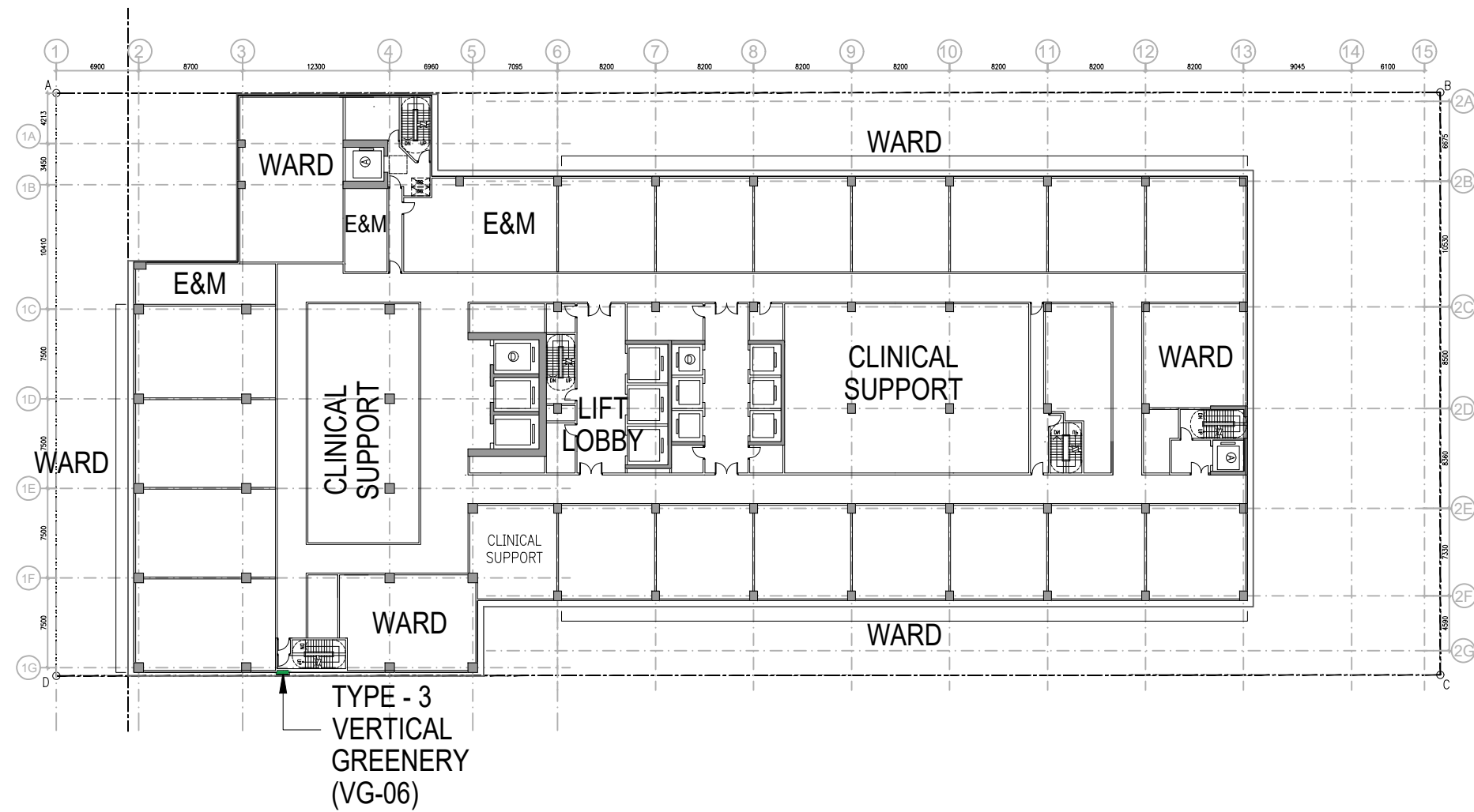

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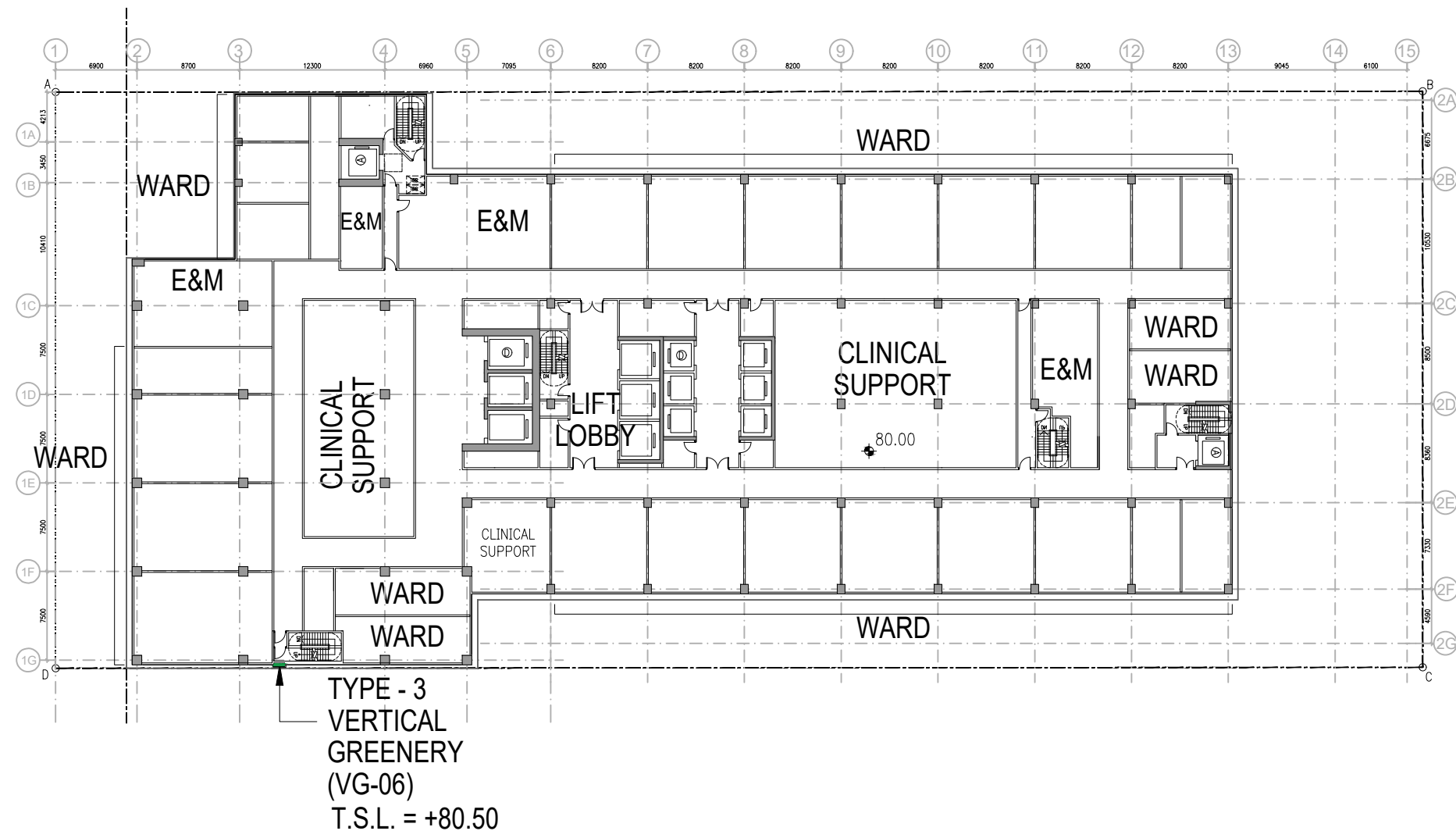
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 AEC

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DRAWING TITLE
 7-9/F PLAN

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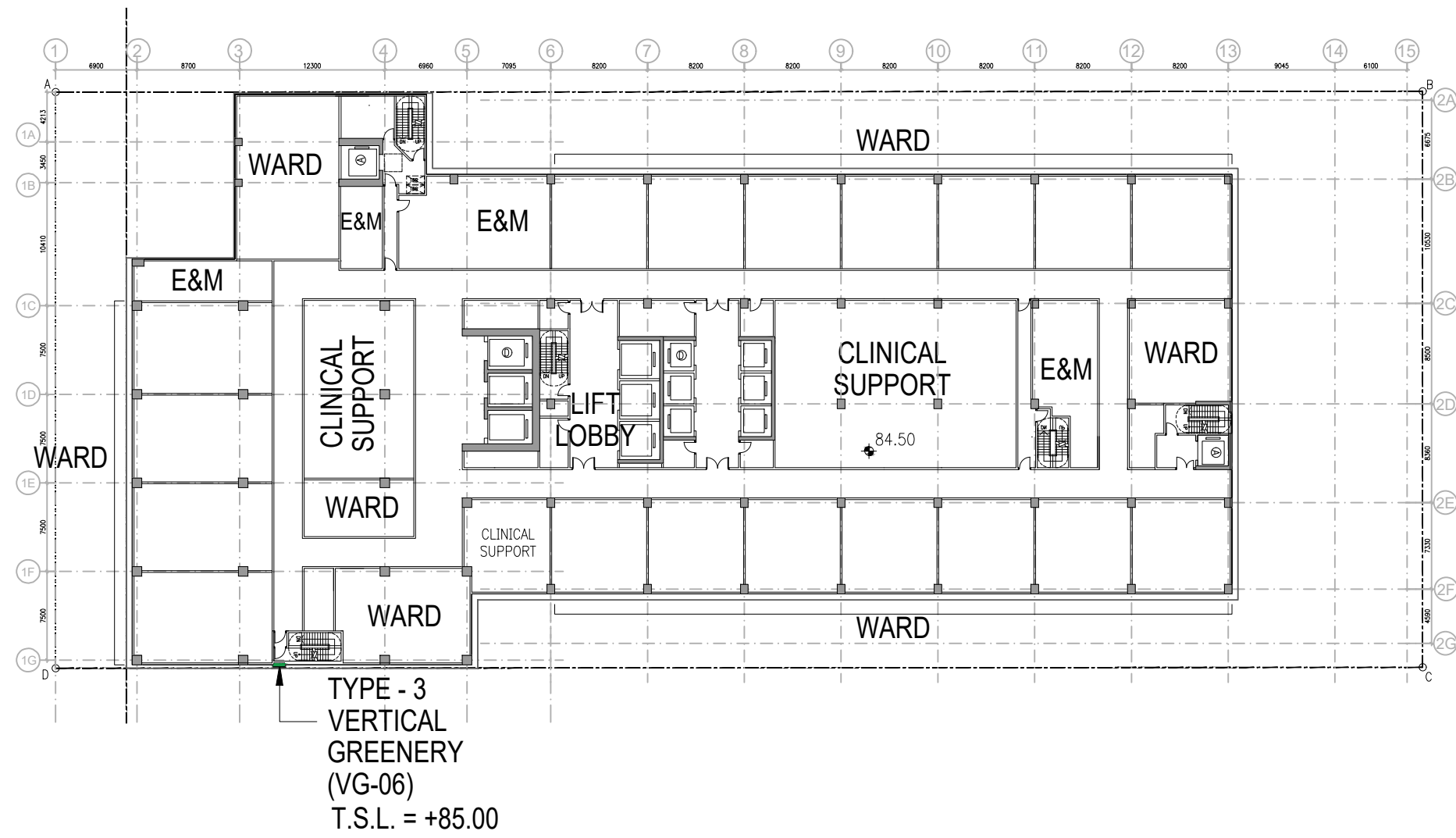

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JOB TITLE
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 10/F PLAN

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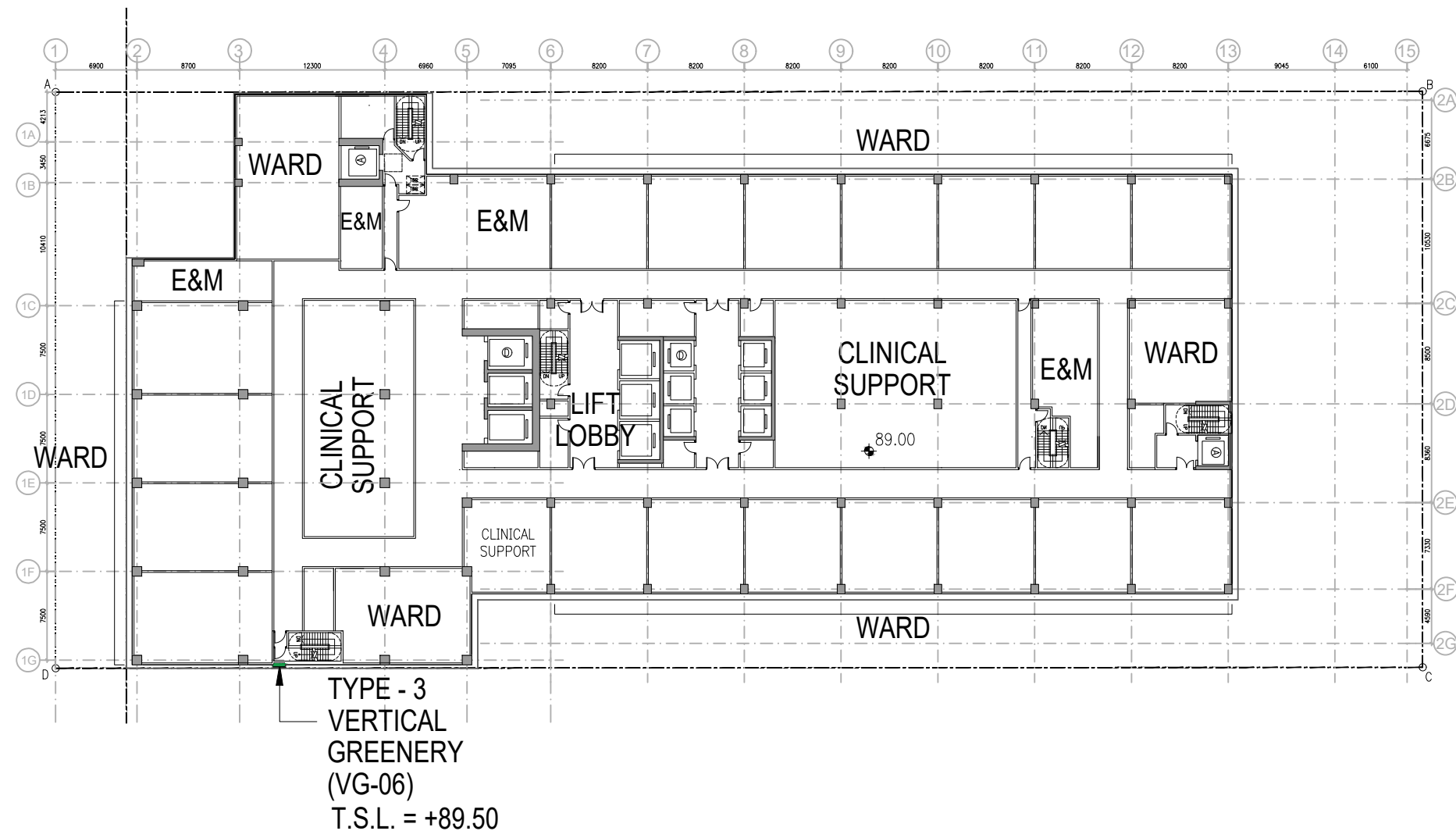
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 11/F PLAN

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CONTRACT NO.

DRAWING NO.	REV.
20240119-SK25	03

12:02 11JUL24 BW PC441 C:\TEMP\ACUPUBUSH_32012\20240708 ARCHITECTURAL PLAN R2



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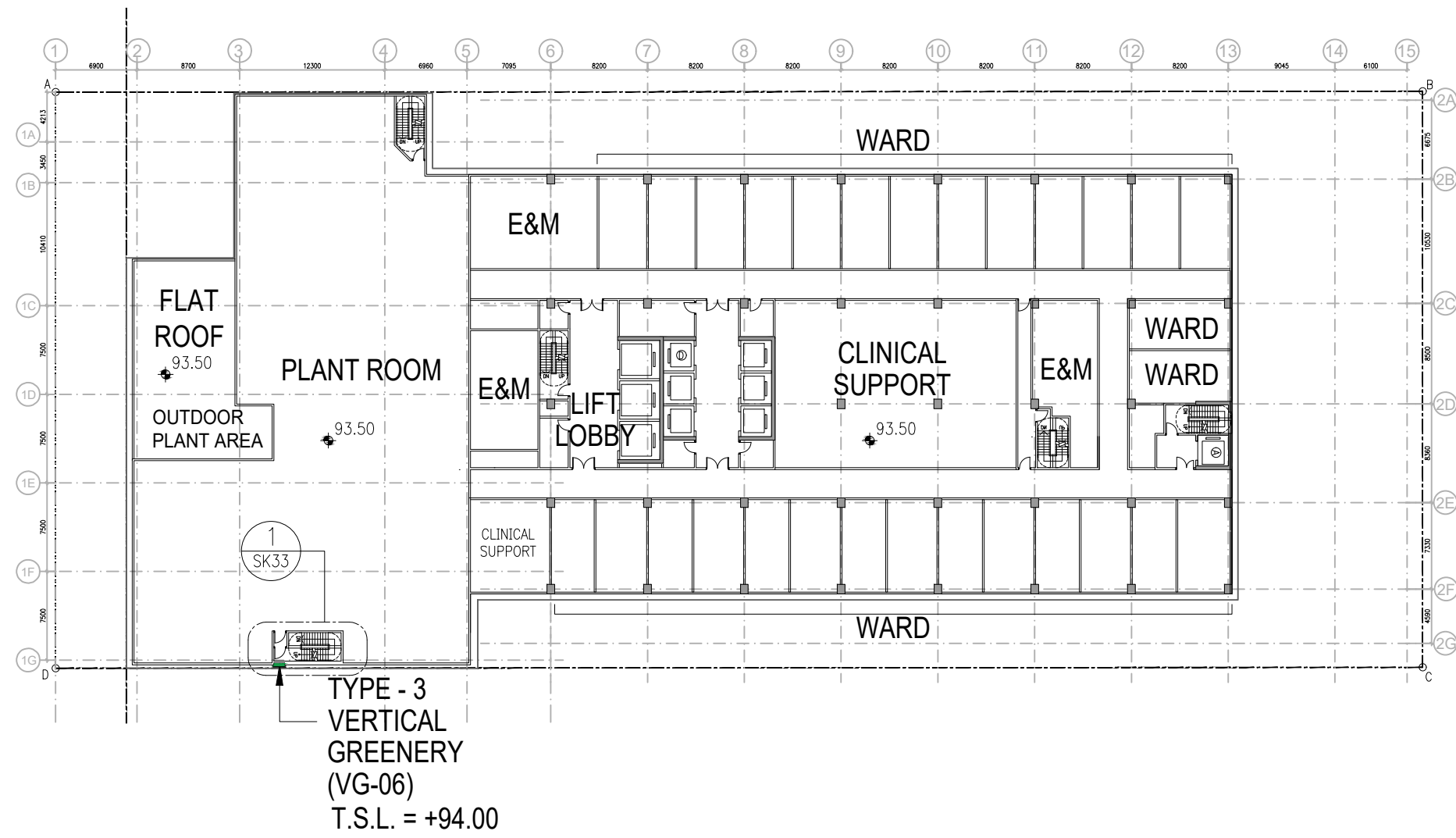
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 12/F PLAN

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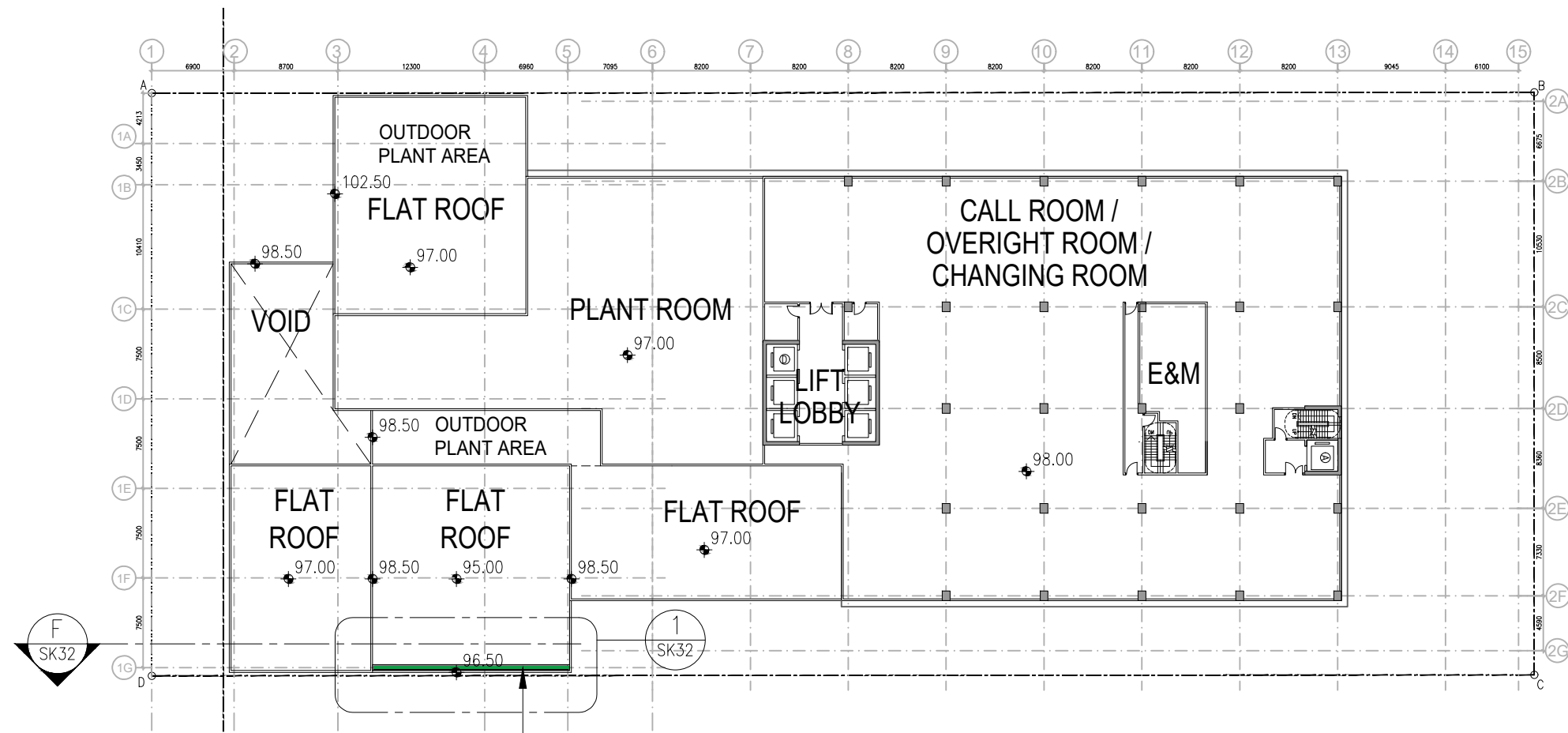
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S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

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13/F PLAN

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TYPE - 2
VERTICAL
GREENERY (VG-07)
T.S.L. = +95.50

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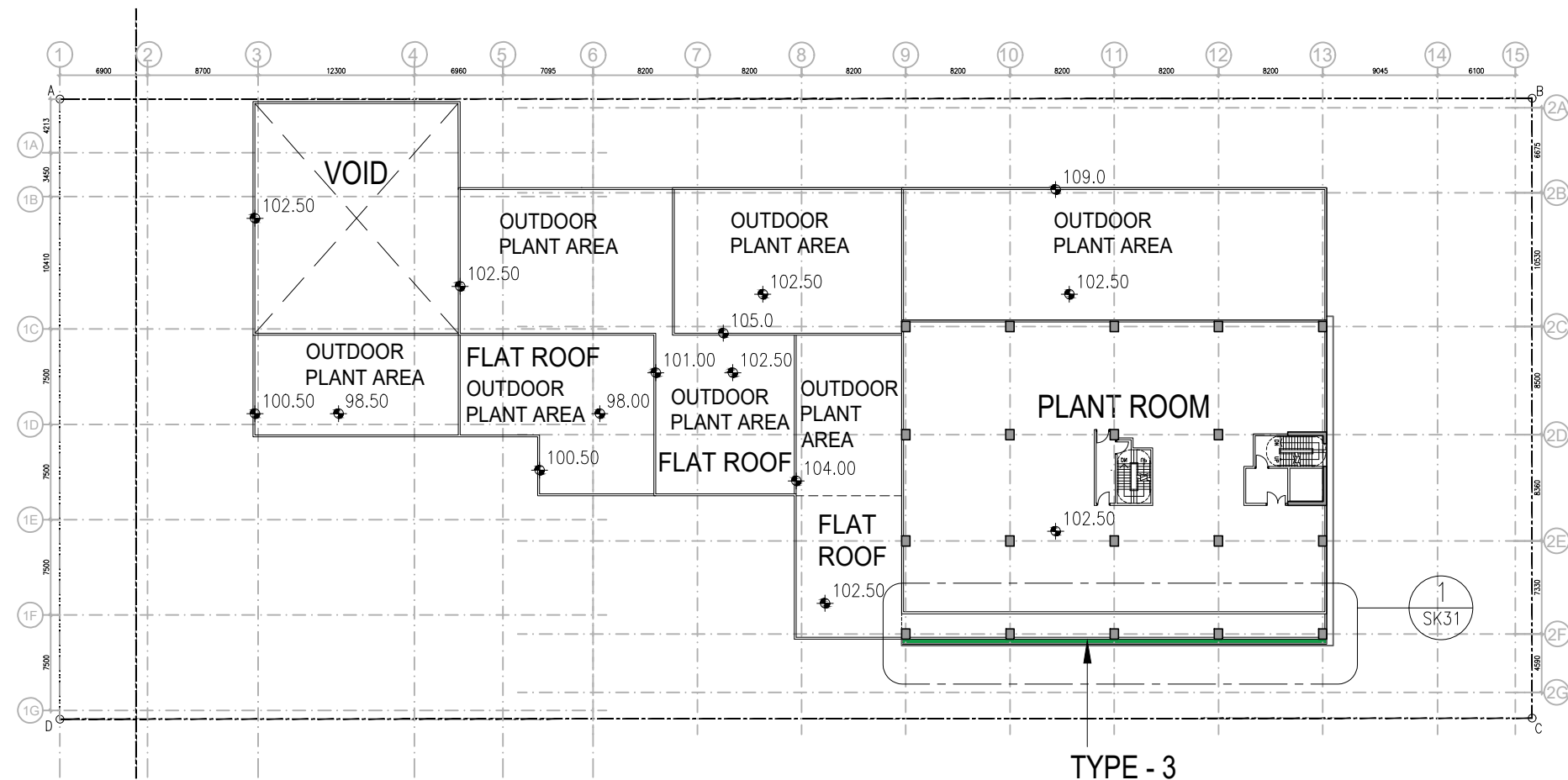
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S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

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14/F PLAN

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TYPE - 3
VERTICAL
GREENERY (VG-08)
T.S.L. = +103.00

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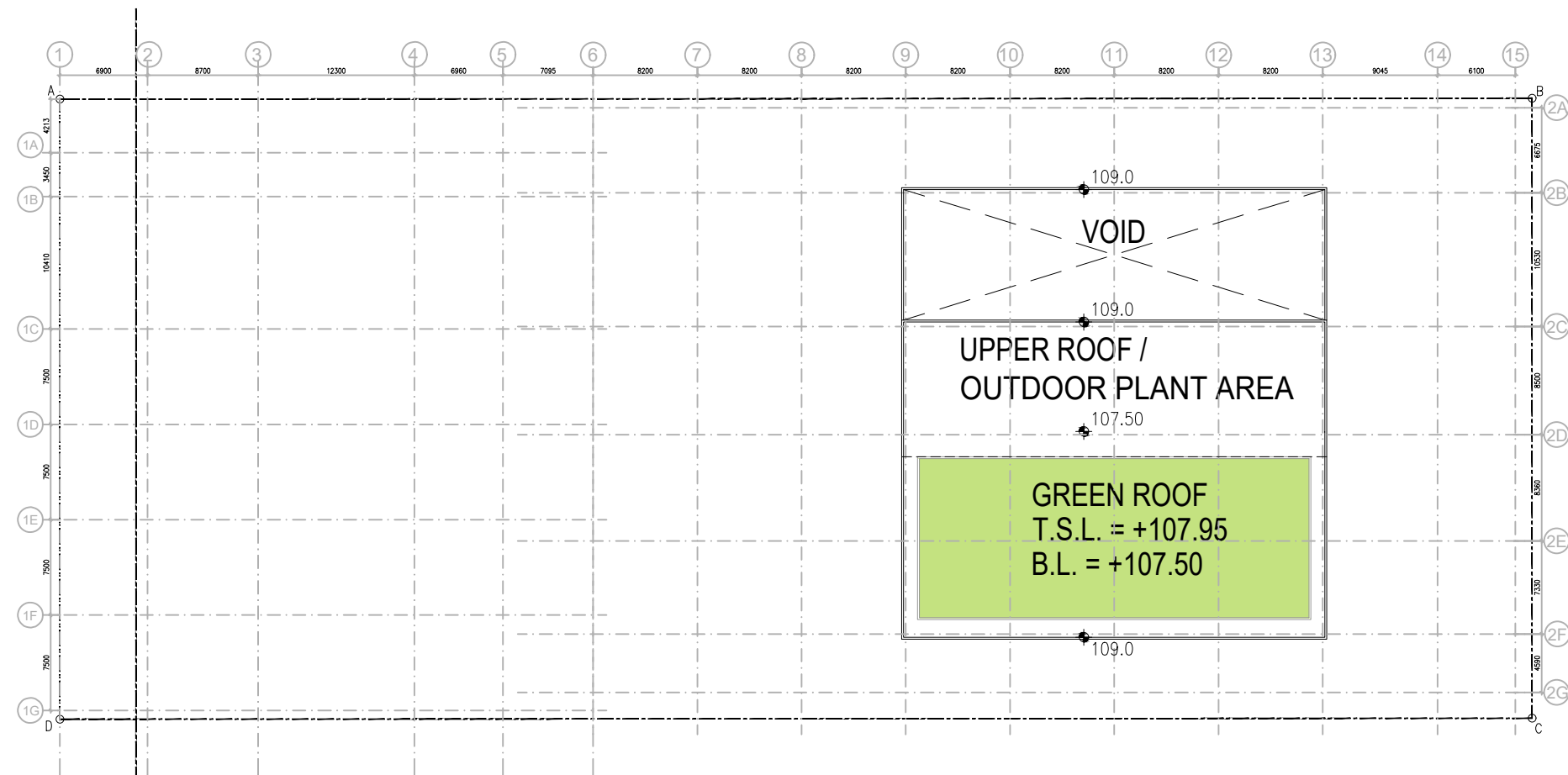
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DRAWING TITLE
R/F PLAN

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LANDSCAPE CONSULTANT

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QUANTITY SURVEYOR

TRAFFIC CONSULTANT

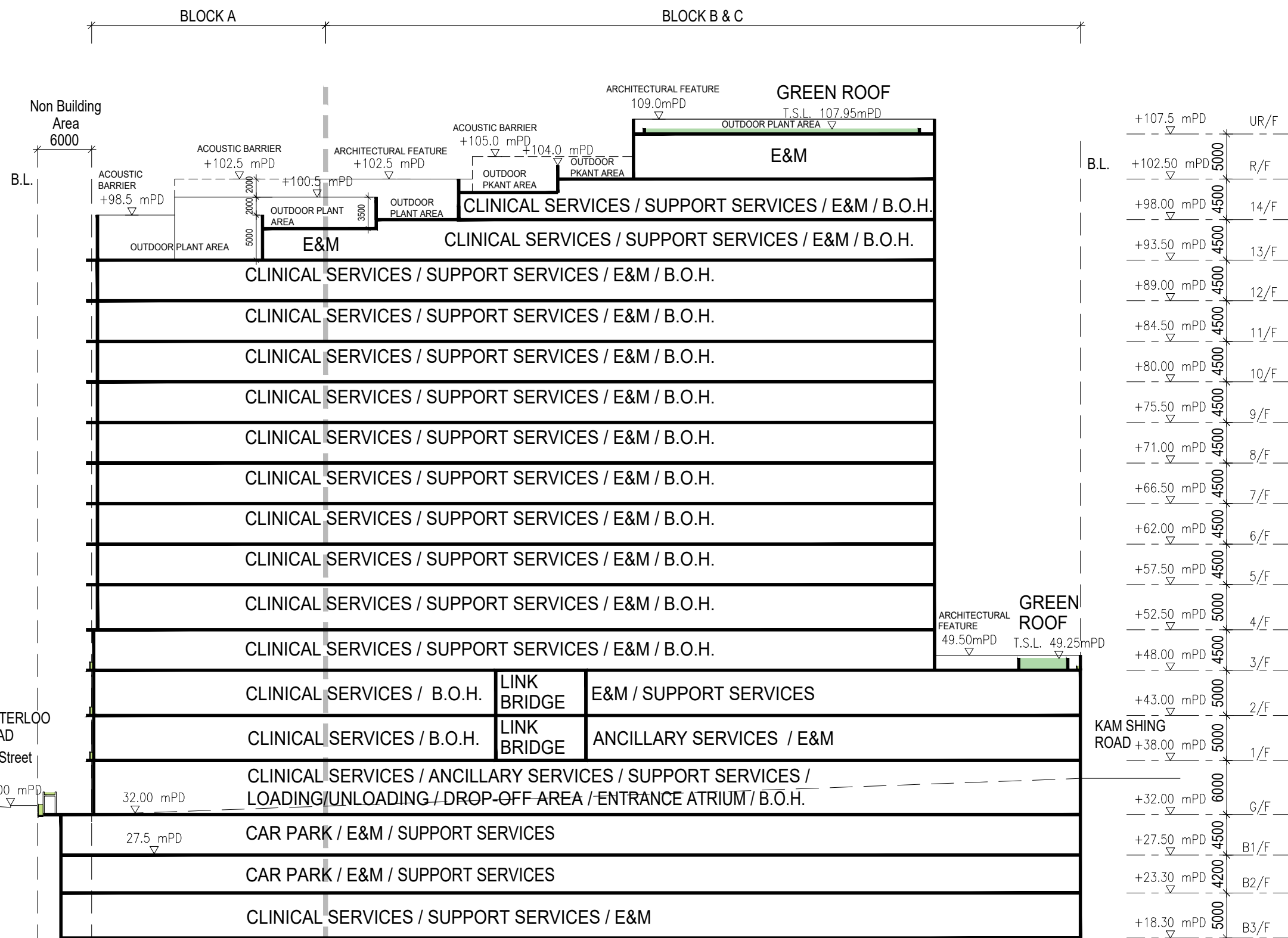
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03	JUL 2024	FURTHER INFORMATION	OK
02	MAY 2024	FURTHER INFORMATION	OK
01	JAN 2024	PD FORMAL SUBMISSION	OK
-	OCT 2023	PD PRE-SUBMISSION	OK

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QUANTITY SURVEYOR



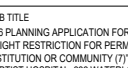
LANDSCAPE CONSULTANT



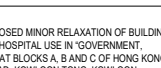
TRAFFIC CONSULTANT



FAÇADE CONSULTANT



ENVIRONMENTAL CONSULTANT



JOB TITLE

S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE

SECTION A-A

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DRAWING NO.	REV.
20240119-SK11	03

APPENDIX B

Tree Assessment Schedule

Tree Assessment Schedule

Address: Block A, B and C of Hong Kong Baptist Hospital at No. 222 Waterloo Road, Kowloon Tong, Hong Kong

Lot: in D.D.

Prepared by: Chan Ka Yin Celeste (CA No.: HK-1464A) on 10 Oct 2023

Field Survey was conducted / updated on :

To be read in conjunction with Drawing Nos.: TSP-01a

Tree ID number	Tree Species (in Scientific names)	Tree Species (in Chinese names)	Original Location (Lot/ GA/ YA/ GHBA, etc.)	Measurements			Amenity Value (High/Medium/Low)	Form (Good/Average/Poor)	Health Condition (Good/Average/Poor)	Structural Condition (Good/Average/Poor)	Suitability for Transplanting (High/ Medium/ Low)	Conservation Status	Recommendation		Remarks (e.g. justification for proposed tree removal; anticipated root-ball size to be preserved (with Ø, x depth in mm), and any other on-site conditions, etc.)
				Height (m)	DBH (mm)	Crown Spread (m)							in initial/ approved application (Retain/ Transplant/ Fell)	in this revision, if applicable (Retain/ Transplant/ Fell)	
T1	<i>Melia azedarach</i>	苦楝	Lot	20	800	28	Low	Poor	Average	Poor	Low	NIL	Fell	-	a, b, c, e restricted root; dead stub; broken branches
T13	<i>Delonix regia</i>	鳳凰木	Lot	8.5	380	7	Low	Poor	Average	Poor	Low	NIL	Fell	-	a, b, c, e crooked trunk; in planter
T14	<i>Juniperus chinensis 'Kaizuca'</i>	龍柏	Lot	4	96	1.5	Low	Poor	Average	Poor	Low	NIL	Fell	-	a, b, c in planter
T15	<i>Juniperus chinensis 'Kaizuca'</i>	龍柏	Lot	4	110	1.5	Low	Poor	Average	Poor	Low	NIL	Fell	-	a, b, c crooked trunk; in planter

* Note for Justification	
a	Conflict with proposed layout/ site formation works/ vehicular access/ EVA/ boundary fence/ hoarding
b	Poor condition/ poor form
c	Low survival rate after transplanting
d	Located on steep slope and inaccessible for transplanting
e	Overpruned/ topped after transplanting
f	Dead tree

Summary:

Total Nos. of Trees Surveyed	4
Trees Proposed to be Retained	0
Trees Proposed to be Transplanted	0
Trees Proposed to be Felled (incl. DEAD trees)	4
Total DBH Loss (mm)	1386

APPENDIX C

Photographic Record of Existing Trees



(T1) Overall View



(T1) Tree Tag



(T1) Close-Up



(T1) Close-Up

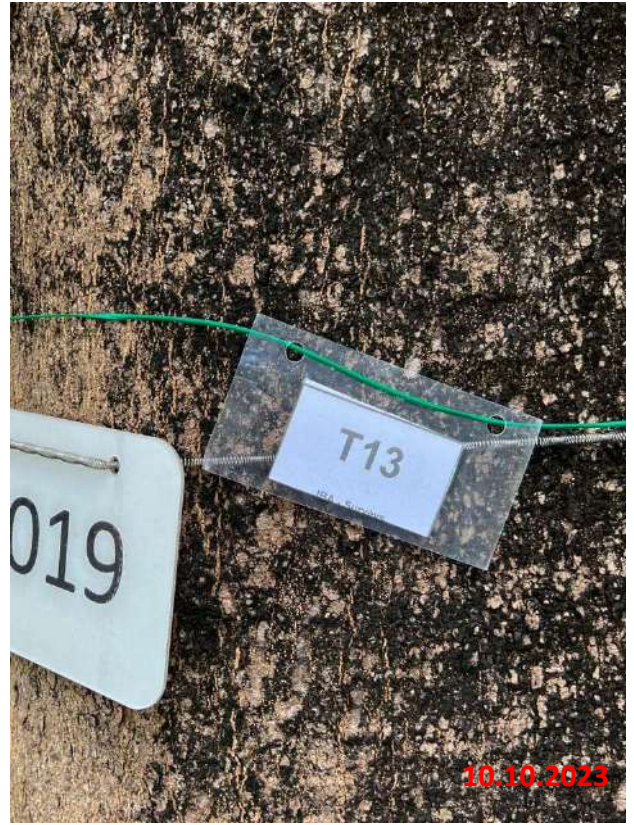
R = Retain T = Transplant F = Fell D = Dead Tree

F

Tree Photographic Record
Hong Kong Baptist Hospital



(T13) Overall View



(T13) Tree Tag



(T13) Close-Up



(T13) Close-Up

R = Retain T = Transplant F = Fell D = Dead Tree

F

Tree Photographic Record
Hong Kong Baptist Hospital



(T14) Overall View



(T14) Tree Tag



(T14) Close-Up



(T14) Close-Up

R = Retain T = Transplant F = Fell D = Dead Tree

F

Tree Photographic Record
Hong Kong Baptist Hospital



(T15) Overall View



(T15) Tree Tag



(T15) Close-Up



(T15) Close-Up

R = Retain T = Transplant F = Fell D = Dead Tree

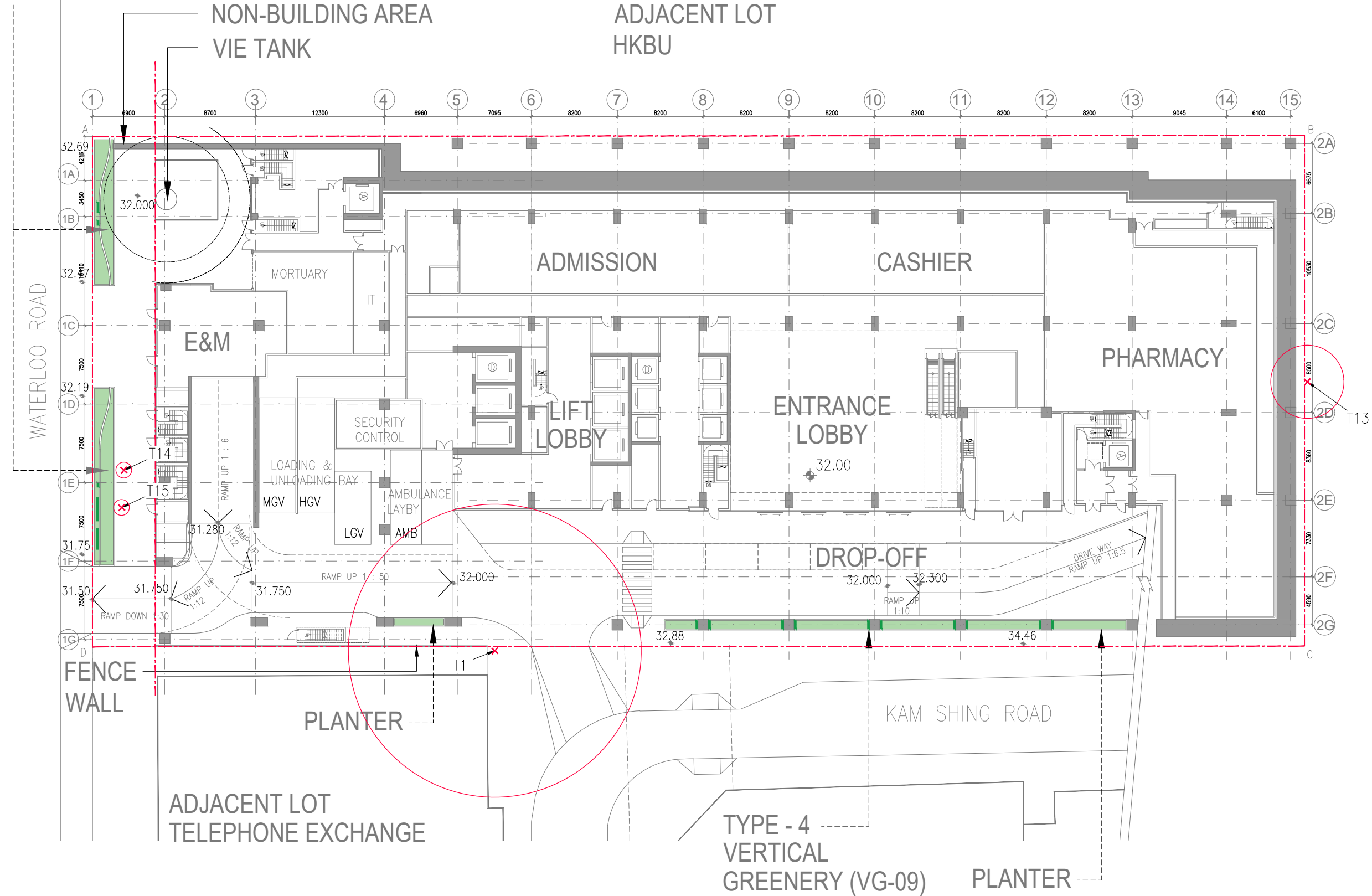
F

Tree Photographic Record
Hong Kong Baptist Hospital

APPENDIX D

Tree Survey Plan

FENCE WALL
WITH F.S. INLET/ SPRINKLER CONTROL VALVE
/ AUTOMATIC METER READING CABINET
/ WATER METER CABINET
WITH GREEN ROOF



B.D. REF :
F.S.D. REF :

KEY PLAN

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LEGEND:

--- SITE BOUNDARY

(X) 4 Nos. OF EXISTING TREE PROPOSED TO BE FELLED

REV.	DATE	DESCRIPTION	APPROVED
-	MAY 2023	BD SUBMISSION	CK

EMPLOYER
香港浸信會醫院
Hong Kong Baptist Hospital

PROJECT MANAGER
ARUP

ARCHITECT / AP
ROCCO

STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT
ARUP

MEDICAL PLANNER
lewelyn daves

LANDSCAPE CONSULTANT
TECHNOLOGY

TRAFFIC CONSULTANT
OZZO

ENVIRONMENTAL CONSULTANT
AEC

QUANTITY SURVEYOR
Rider Levett Bucknall

FACEADE CONSULTANT
AECOM

JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN 'GOVERNMENT, INSTITUTION OR COMMUNITY (7)' ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
TREE SURVEY PLAN

SCALE	1:400@A3	PRINTED	MAY 2023
CHECKED	WKK	DATE	MAY 2023
APPROVED	CK	DATE	MAY 2023
DRAWN		DATE	MAY 2023

CONTRACT NO.
DRAWING TSP-01

PLAN
SCALE 1:400

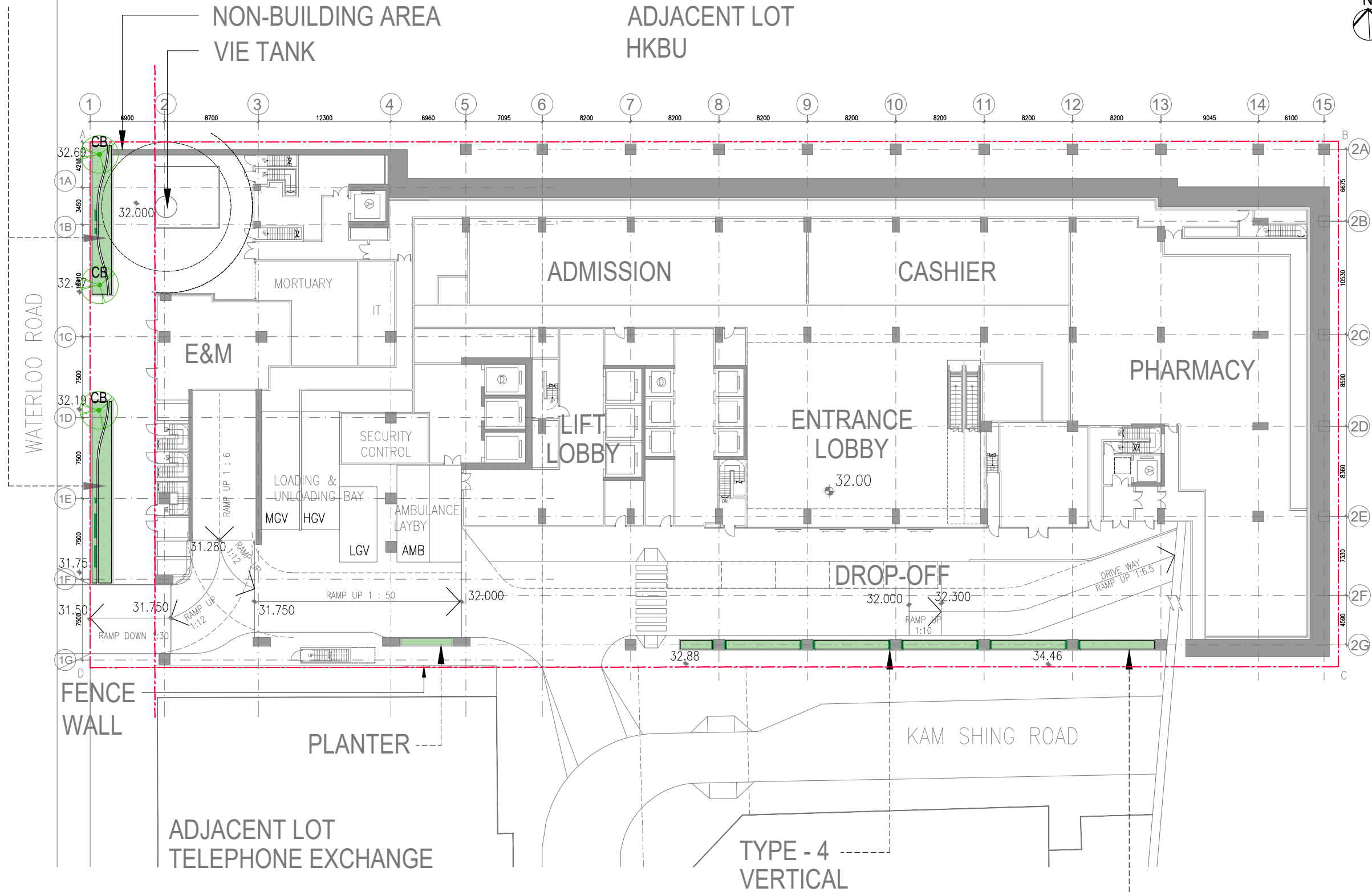
APPENDIX E

Compensatory Tree Planting Plan

FENCE WALL
WITH F.S. INLET/ SPRINKLER CONTROL VALVE
/ AUTOMATIC METER READING CABINET
/ WATER METER CABINET
WITH GREEN ROOF

COMPENSATORY TREE PLANTING LIST

Item	Qty.	Botanical Name / Common Name	Chinese Name	Height (mm)	Spread (mm)	DBH (mm)	Remarks
CB	3	<i>Cinnamomum burmannii</i>	陰香	5000	3000	100	
GO	1	<i>Garcinia oblongifolia Champ. ex Benth.</i>	嶺南山竹子	2500	1500	75	



B.D. REF :
F.S.D. REF :

KEY PLAN

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LEGEND:

--- SITE BOUNDARY

○ 4 Nos. OF PROPOSED COMPENSATORY TREE

REV.	DATE	DESCRIPTION	APPROVED
-	MAY 2023	BD SUBMISSION	CK

EMPLOYER
香港浸信會醫院
Hong Kong Baptist Hospital

PROJECT MANAGER
ARUP

ARCHITECT / AP
ROCCO

STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT
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MEDICAL PLANNER
lewelyn davis

LANDSCAPE CONSULTANT
TECHNOLOGY

TRAFFIC CONSULTANT
OZZO

ENVIRONMENTAL CONSULTANT
AECOM

QUANTITY SURVEYOR
Rider Levett Bucknall

JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
COMPENSATORY TREE PLANTING PLAN - GF

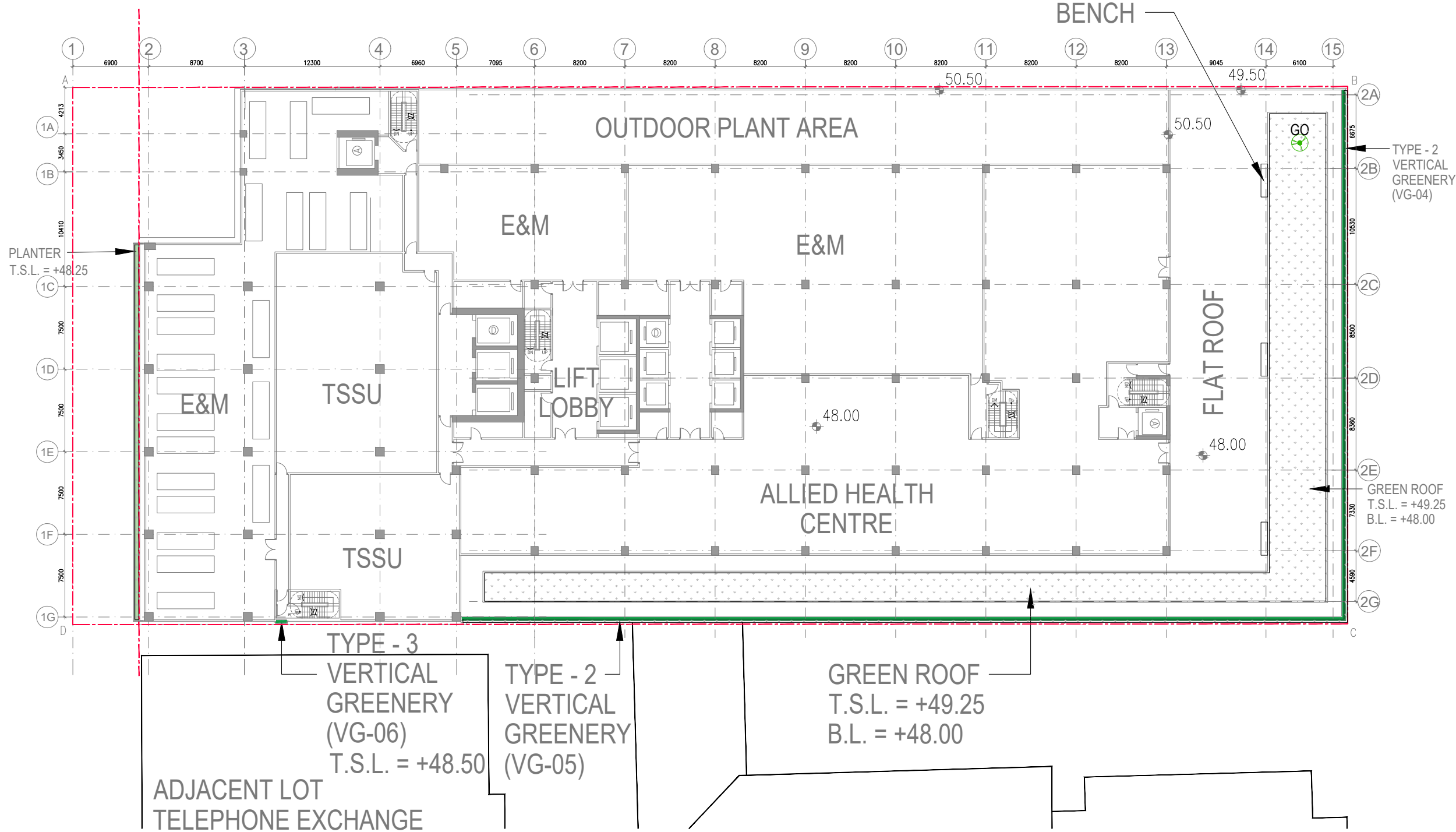
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CHECKED	WKK	DATE	MAY 2023
APPROVED	CK	DATE	MAY 2023
DRAWN		DATE	MAY 2023
CONTRACT NO.			
DRAWING NO.	CTP-01	REV.	04

A GF PLAN
SCALE 1:400



COMPENSATORY TREE PLANTING LIST

Item	Qty.	Botanical Name / Common Name	Chinese Name	Height (mm)	Spread (mm)	DBH (mm)	Remarks
CB	3	<i>Cinnamomum burmannii</i>	陰香	5000	3000	100	
GO	1	<i>Garcinia oblongifolia</i> Champ. ex Benth.	嶺南山竹子	2500	1500	75	



B.D. REF :
F.S.D. REF :

KEY PLAN

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LEGEND:
- - - - - SITE BOUNDARY
 4 Nos. OF PROPOSED COMPENSATORY TREE

REV.	DATE	DESCRIPTION	APPROVED
-	MAY 2023	BD SUBMISSION	CK

EMPLOYER
 香港浸信會醫院
 Hong Kong Baptist Hospital

PROJECT MANAGER
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STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT
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MEDICAL PLANNER
 Jewelyn Davies

LANDSCAPE CONSULTANT
 AECOM

QUANTITY SURVEYOR
 Rider Levett Bucknall

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

ENVIRONMENTAL CONSULTANT
 AEC

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN "GOVERNMENT, INSTITUTION OR COMMUNITY (7) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 COMPENSATORY TREE PLANTING PLAN - 3F

SCALE	1:400@A3	PRINTED	MAY 2023
CHECKED	WKK	DATE	MAY 2023
APPROVED	CK	DATE	MAY 2023
DRAWN		DATE	MAY 2023

3F PLAN
 SCALE 1:400

DRAWING NO. CTP-02
 REV. 03

APPENDIX F

Typical Planter Detail

B.D. REF :

F.S.D. REF :

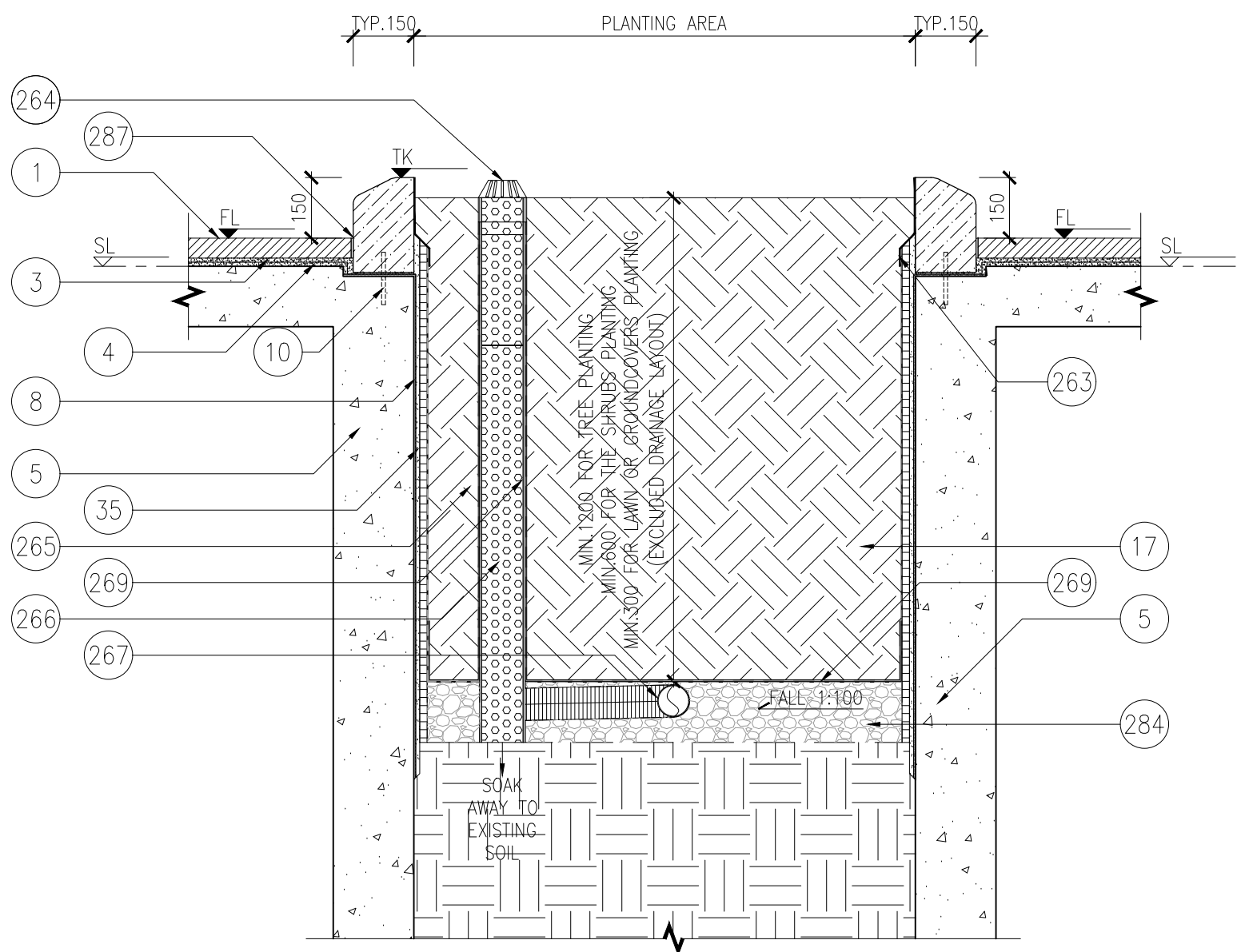
KEY PLAN

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LEGEND:

- 1 APPROVED PAVING MATERIAL (REFER TO MATERIAL PLAN)
- 3 'KERACRETE' CEMENT MORTAR ADHESIVE OR APPROVED EQUAL
- 4 1:3 CEMENT & SAND SCREEDING
- 5 REINFORCED CONCRETE STRUCTURE TO ENGINEER'S DETAIL
- 8 WATERPROOFING TO ARCHITECT'S SPECIFICATION
- 10 STAINLESS STEEL AISI316 DOWEL
- 17 SOIL MIXED AS SPECIFIED
- 35 MiraDRAIN 9000 COMPOSITE DRAINAGE SYSTEM OR APPROVED EQUAL
- 263 1mm THK. STAINLESS STEEL AISI 316 FLASHING W/ LAP 100mm MAX. FIXED BY APPROVED SEALANT
- 264 'ADS' PVC DOME GRATING
- 265 DRAIN-SLEEVE® FILTER FABRIC SOCK OR EQUIVALENT
- 266 Ø150mm 'ADS' SINGLE WALL CORRUGATED HDPE DRAINAGE PIPE TO BE CONNECTED TO BUILDING DRAINAGE SYSTEM INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS
- 267 Ø100mm 'ADS' SINGLE HDPE DRAIN PIPE WRAPPED IN PROPRIETARY GEO-FABRIC 'ADS' DRAIN FILTER SOCK TO BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS
- 269 'TERRAM 700' GEO-TEXTILE FILTER FABRIC w/ LAP 150mm MAX
- 284 MIN.100mm THK. GRANULAR DRAINAGE LAYER BY MC
- 287 GROUTING



A DETAIL (ON GRADE)
 1:15 @A3

REV.	DATE	DESCRIPTION	APPROVED
-	MAY 2023	BD SUBMISSION	CK

EMPLOYER
 香港浸信會醫院
 Hong Kong Baptist Hospital

PROJECT MANAGER

ARCHITECT / AP

STRUCTURAL, CIVIL, GEOTECHNICAL, BUILDING SERVICES CONSULTANT

MEDICAL PLANNER

LANDSCAPE CONSULTANT

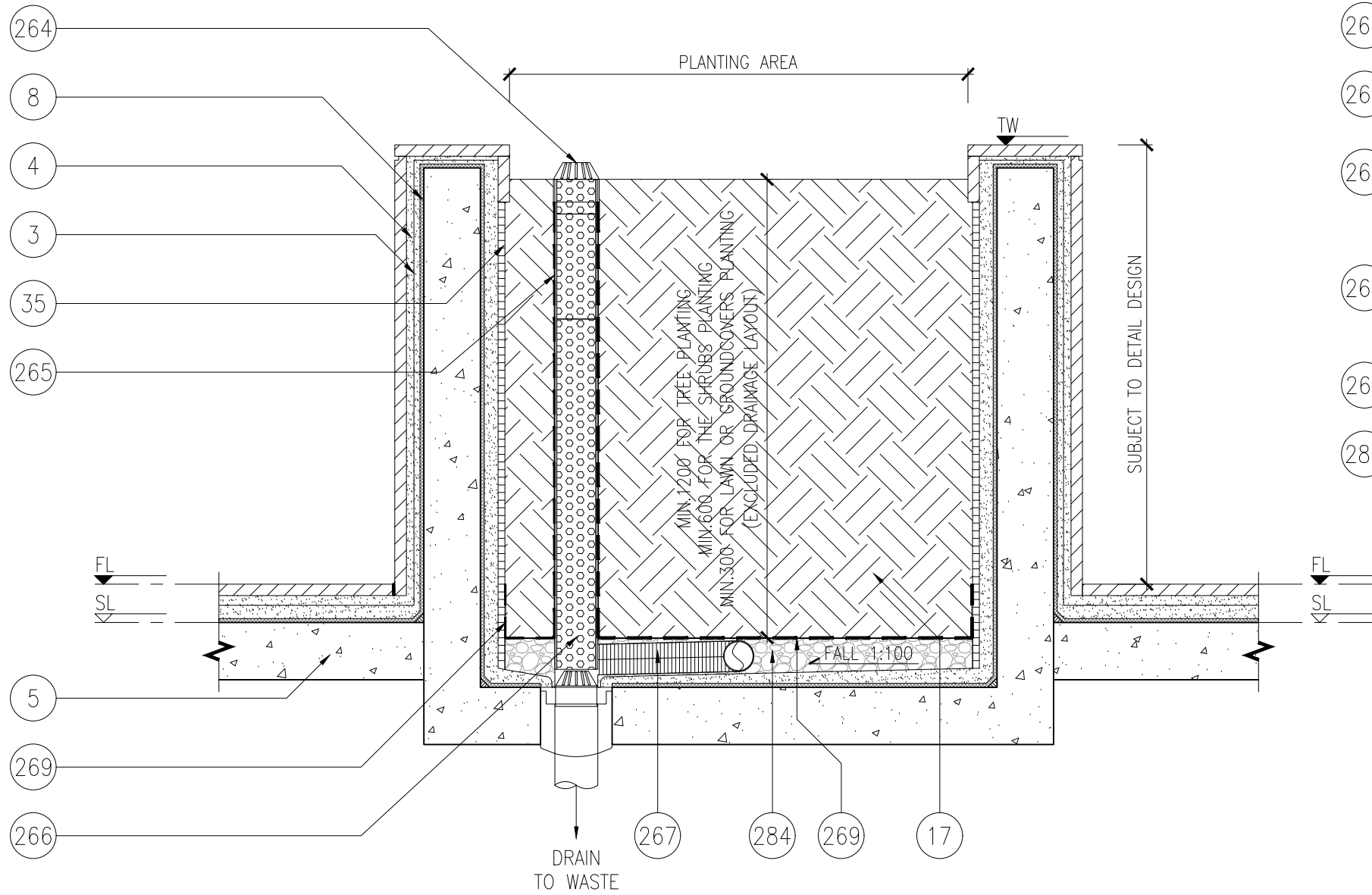
FAÇADE CONSULTANT

JOB TITLE
 S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN 'GOVERNMENT, INSTITUTION OR COMMUNITY (7)' ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 TYPICAL PLANTER DETAILS (ON GRADE)

SCALE	AS SHOWN	PRINTED	MAY 2023
CHECKED	WKK	DATE	MAY 2023
APPROVED	CK	DATE	MAY 2023
DRAWN		DATE	MAY 2023

DRAWING NO.	REV.
LD-01-01	



A DETAIL
1:15 @A3

LEGEND

- 3 'KERACRETE' CEMENT MORTAR ADHESIVE OR APPROVED EQUAL
- 4 1:3 CEMENT & SAND SCREEDING
- 5 REINFORCED CONCRETE STRUCTURE TO ENGINEER'S DETAIL
- 8 WATERPROOFING TO ARCHITECT'S SPECIFICATION
- 17 SOIL MIXED AS SPECIFIED
- 35 MiraDRAIN 9000 COMPOSITE DRAINAGE SYSTEM OR APPROVED EQUAL
- 264 'ADS' PVC DOME GRATING
- 265 DRAIN-SLEEVE® FILTER FABRIC SOCK OR EQUIVALENT
- 266 ø150mm 'ADS' SINGLE WALL CORRUGATED HDPE DRAINAGE PIPE TO BE CONNECTED TO BUILDING DRAINAGE SYSTEM INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS
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- 269 'TERRAM 700' GEO-TEXTILE FILTER FABRIC w/ LAP 150mm MAX
- 284 MIN.100mm THK. GRANULAR DRAINAGE LAYER BY MC

B.D. REF :
F.S.D. REF :

KEY PLAN

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REV.	DATE	DESCRIPTION	APPROVED
-	MAY 2023	BD SUBMISSION	CK

EMPLOYER

香港浸信會醫院
Hong Kong Baptist Hospital

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Rider Levett Bucknall

TRAFFIC CONSULTANT

OZZO

ENVIRONMENTAL CONSULTANT

AEC

JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN 'GOVERNMENT, INSTITUTION OR COMMUNITY (7)' ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
TYPICAL PLANTER DETAILS (ON STRUCTURAL)

SCALE	AS SHOWN	PRINTED	MAY 2023
CHECKED	WKK	DATE	MAY 2023
APPROVED	CK	DATE	MAY 2023
DRAWN		DATE	MAY 2023
CONTRACT NO.			
DRAWING NO.	LD-01-02	REV.	

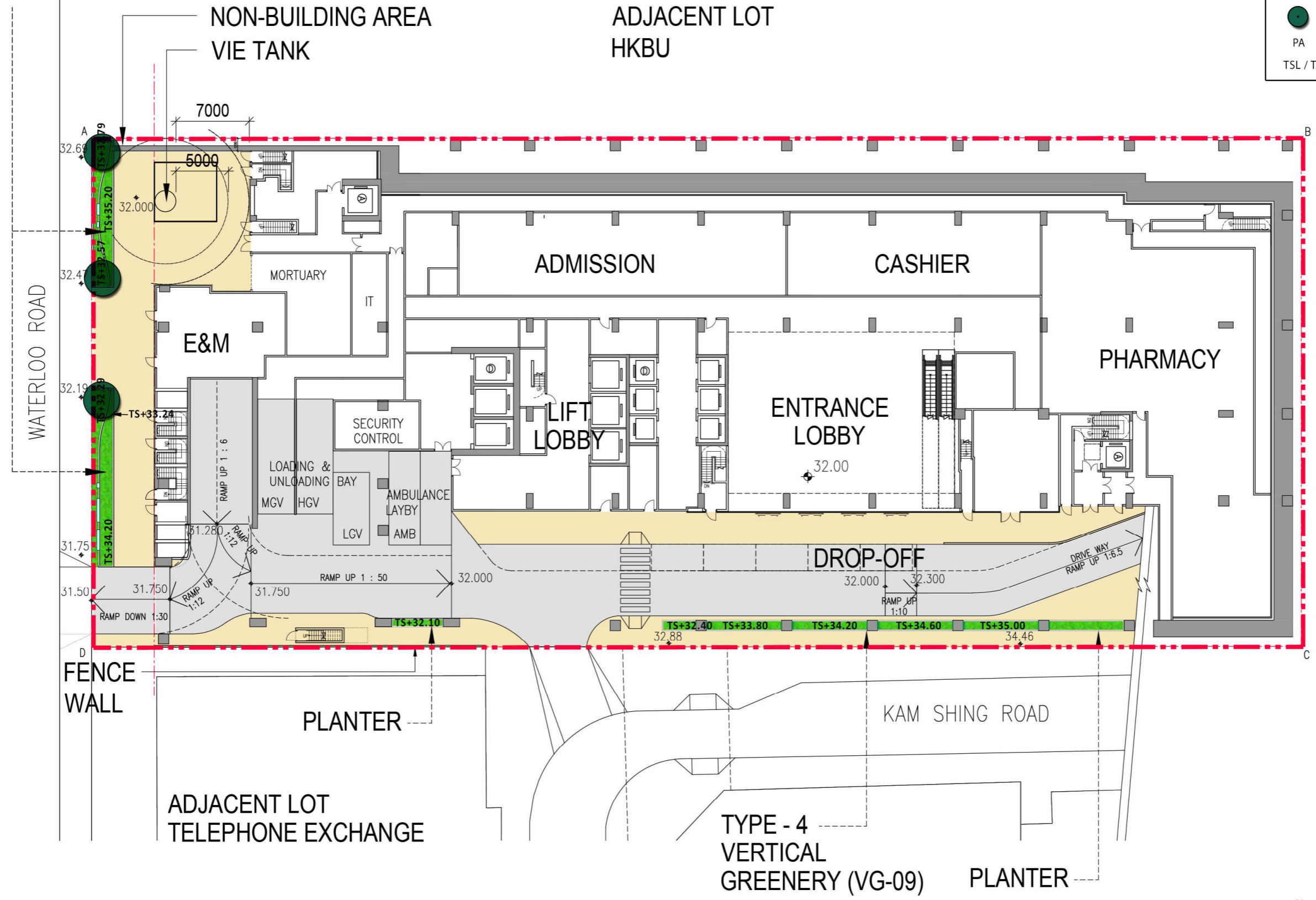
APPENDIX G

Landscape Master Plan

FENCE WALL
 WITH F.S. INLET/ SPRINKLER CONTROL VALVE
 / AUTOMATIC METER READING CABINET
 / WATER METER CABINET
 WITH GREEN ROOF

LEGEND:

- - - LOT BOUNDARY
- EVA
- HARDBAVED AREA
- PROPOSED SHRUBS & GROUND COVER MIX
- VERTICAL GREEN
- COMPENSATORY TREE
- PA PLANTING AREA
- TSL / TS TOP SOIL LEVEL



0m 2m 4m 8m 16m

 SCALE : 1:400

S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in "Government, Institution or Community (7)" Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

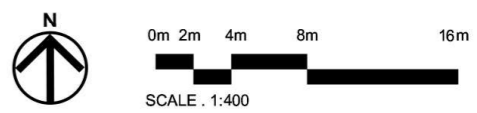
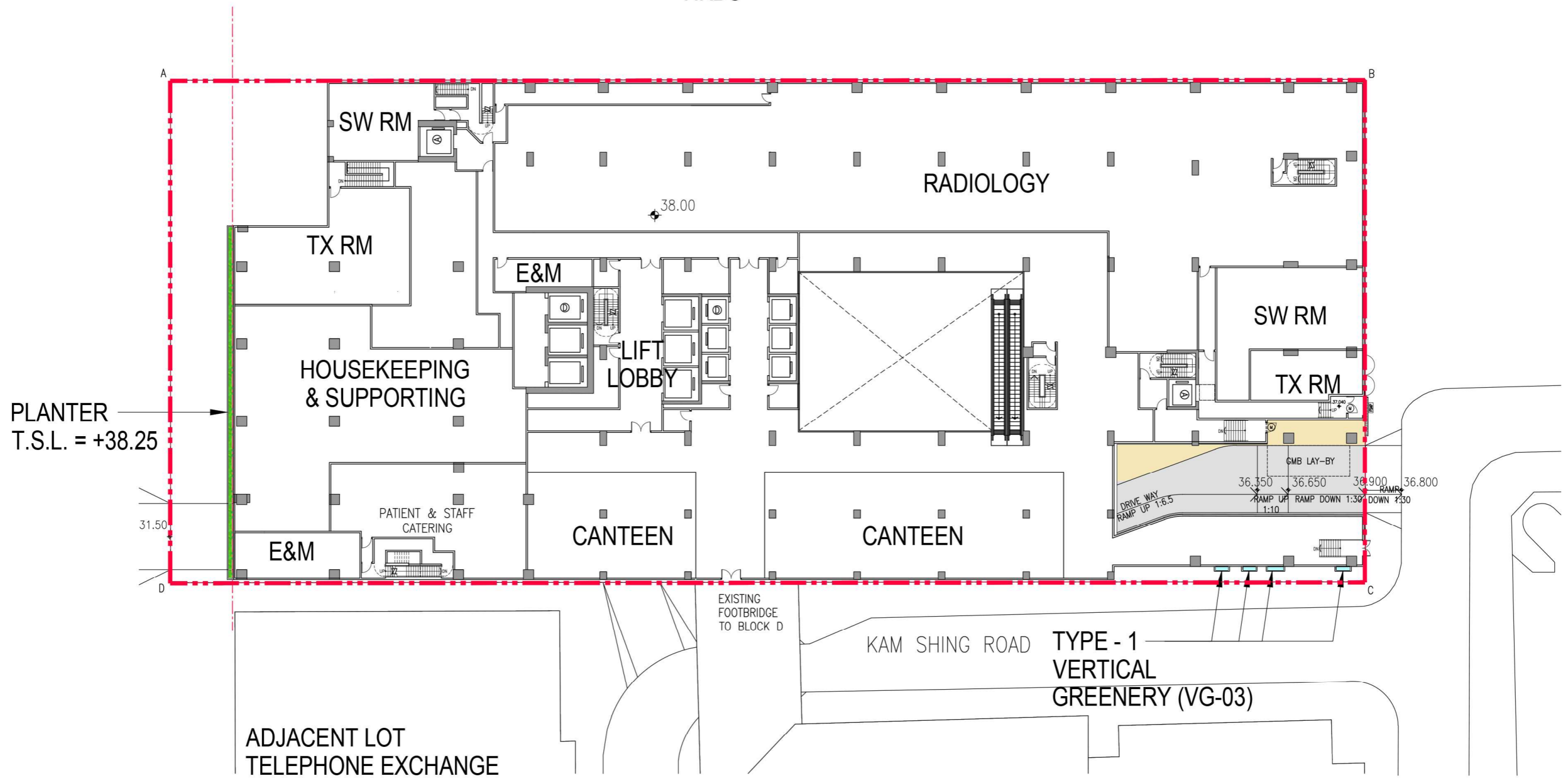
Landscape Plan - G/F
 Dwg. No. : 2023312-LP-01c
 Scale : 1:400 (A3-size)
 Date : JULY 2024



LEGEND:

- - - LOT BOUNDARY
- EVA
- HARDBAVED AREA
- PROPOSED SHRUBS & GROUND COVER MIX
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL

ADJACENT LOT
HKBU



S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in “Government, Institution or Community (7)” Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

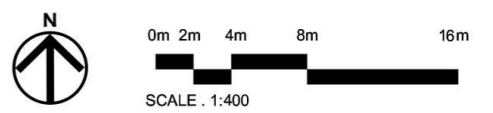
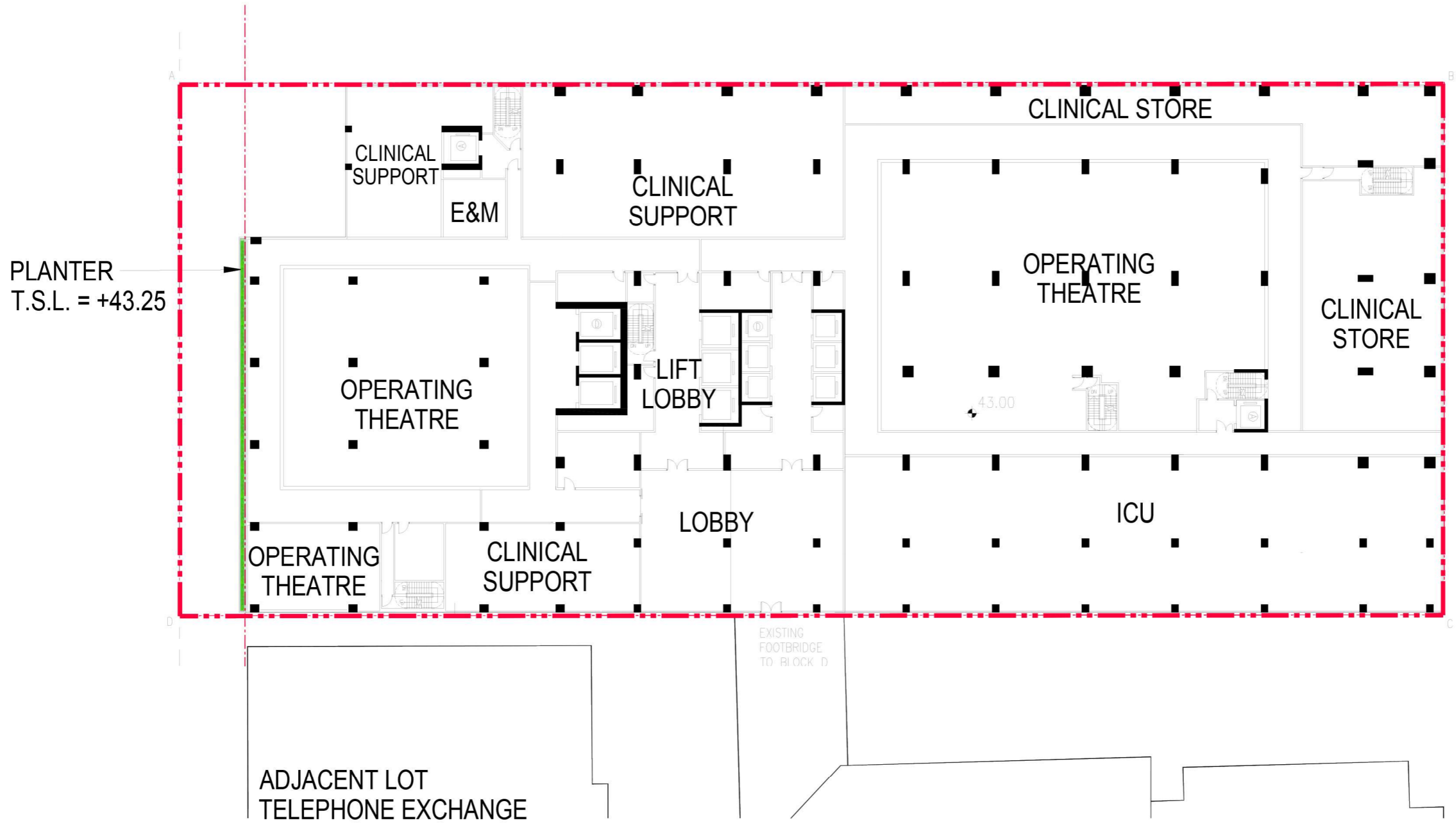
Landscape Plan - 1/F

Dwg. No. : 2023312-LP-02c
Scale : 1:400 (A3-size)
Date : JULY 2024



LEGEND:

- LOT BOUNDARY
- PROPOSED SHRUBS & GROUND COVER MIX
- TSL / TS TOP SOIL LEVEL



S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in "Government, Institution or Community (7)" Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

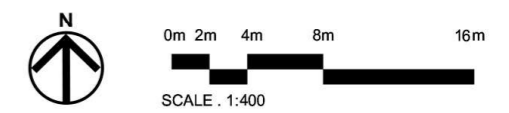
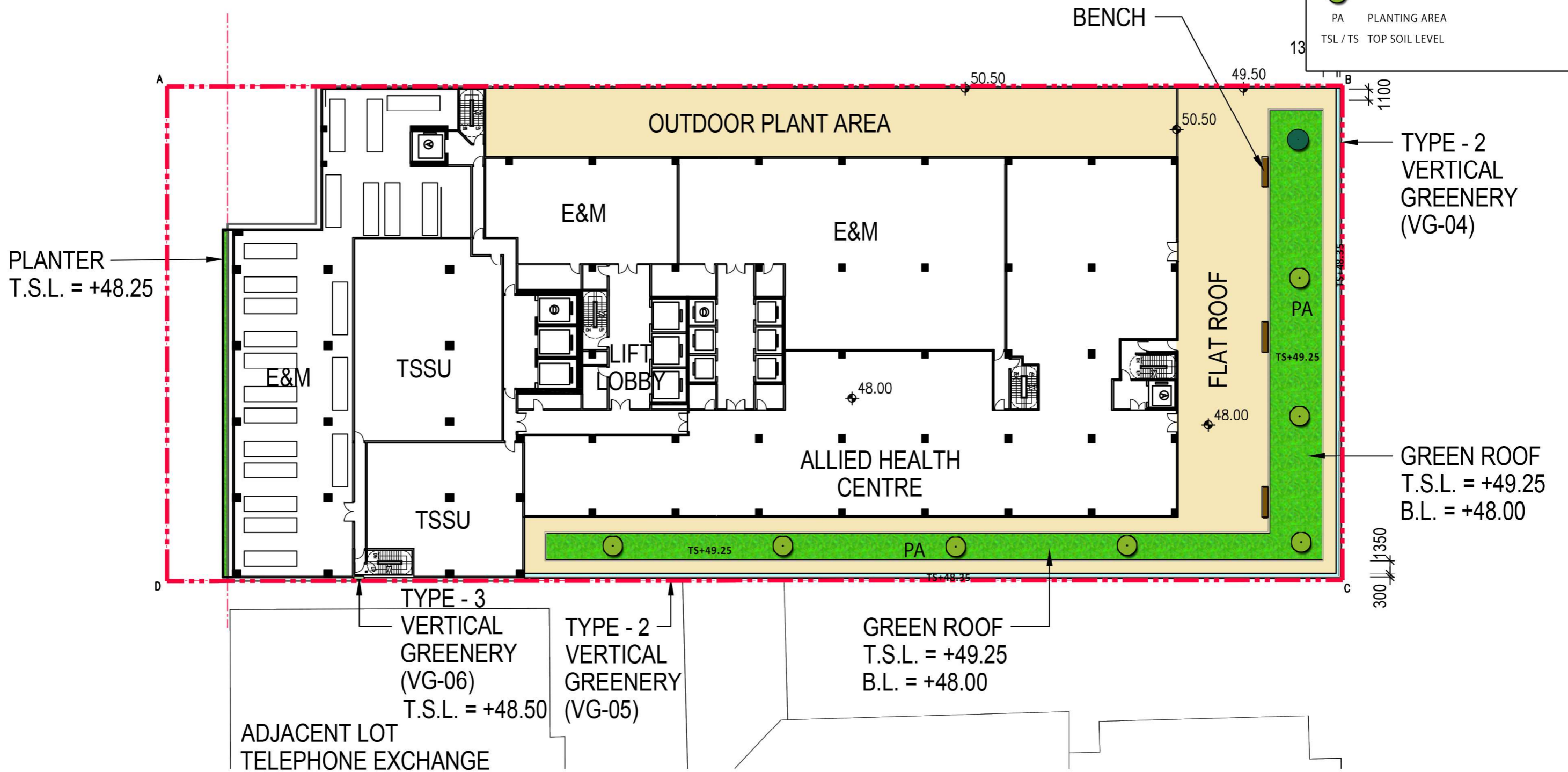
Landscape Plan - 2/F

Dwg. No. : 2023312-LP-03b
 Scale : 1:400 (A3-size)
 Date : JULY 2024



LEGEND:

- LOT BOUNDARY
- PROPOSED SHRUBS & GROUND COVER MIX
- HARD PAVED
- BENCH
- VERTICAL GREEN
- COMPENSATORY TREE
- NEW TREE
- PA PLANTING AREA
- TSL / TS TOP SOIL LEVEL



S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in "Government, Institution or Community (7)" Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

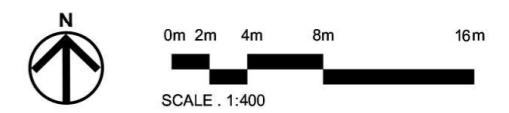
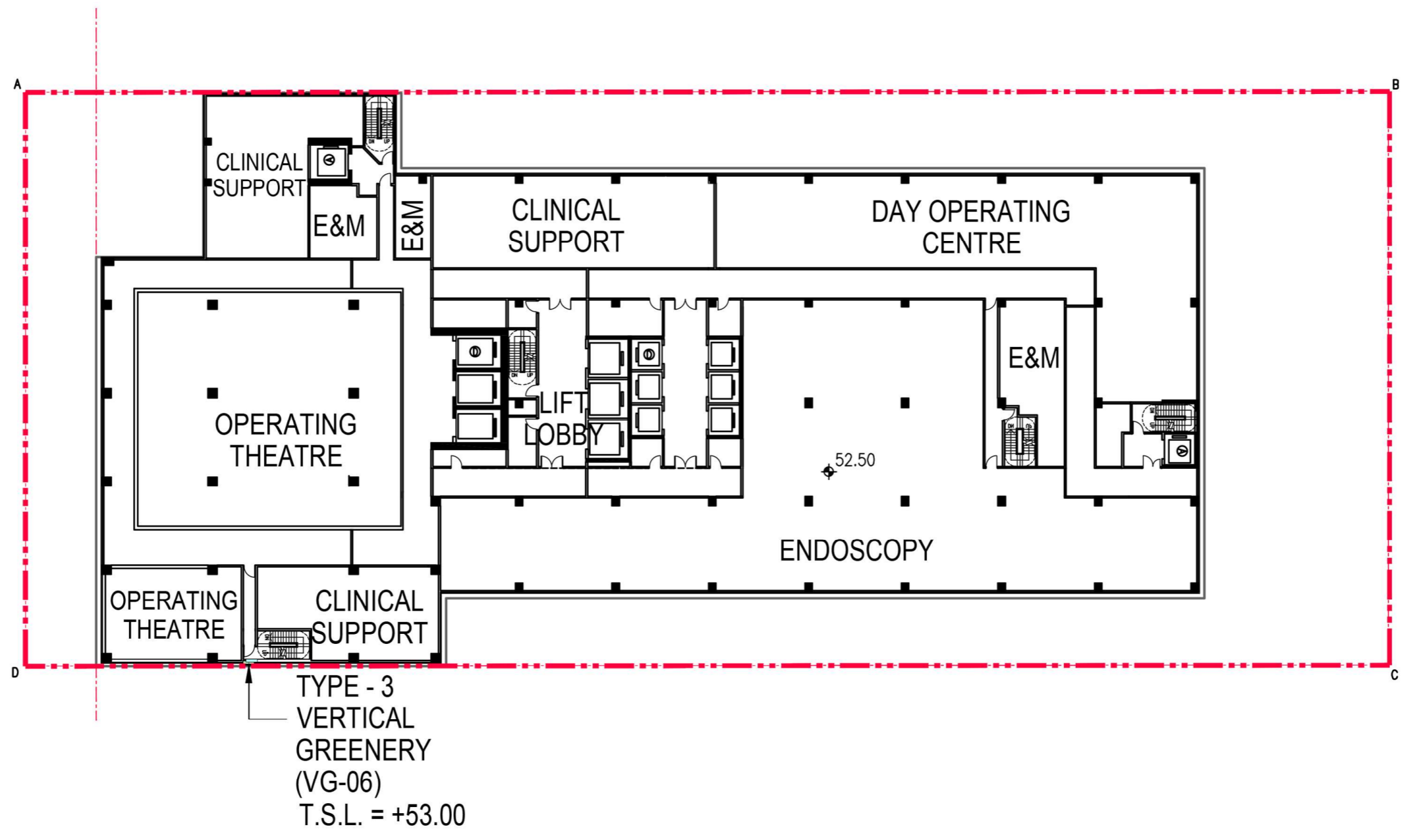
Landscape Plan - 3/F

Dwg. No. : 2023312-LP-04c
 Scale : 1:400 (A3-size)
 Date : JULY 2024



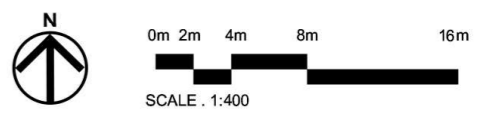
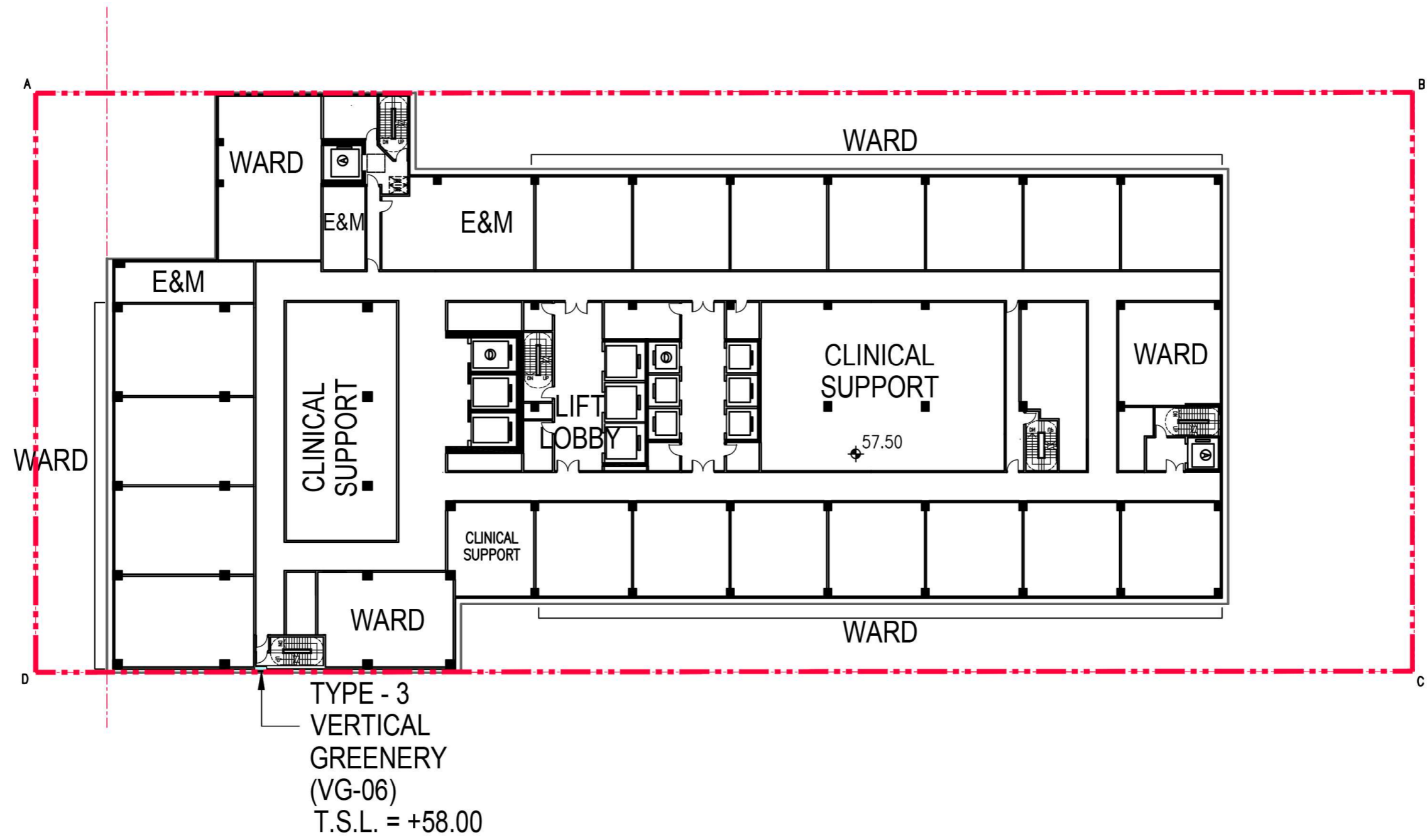
LEGEND:

- · - · - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



LEGEND:

- · - · - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in “Government, Institution or Community (7)” Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

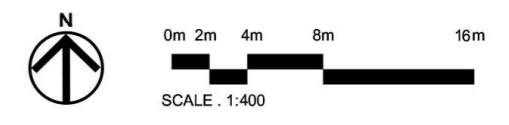
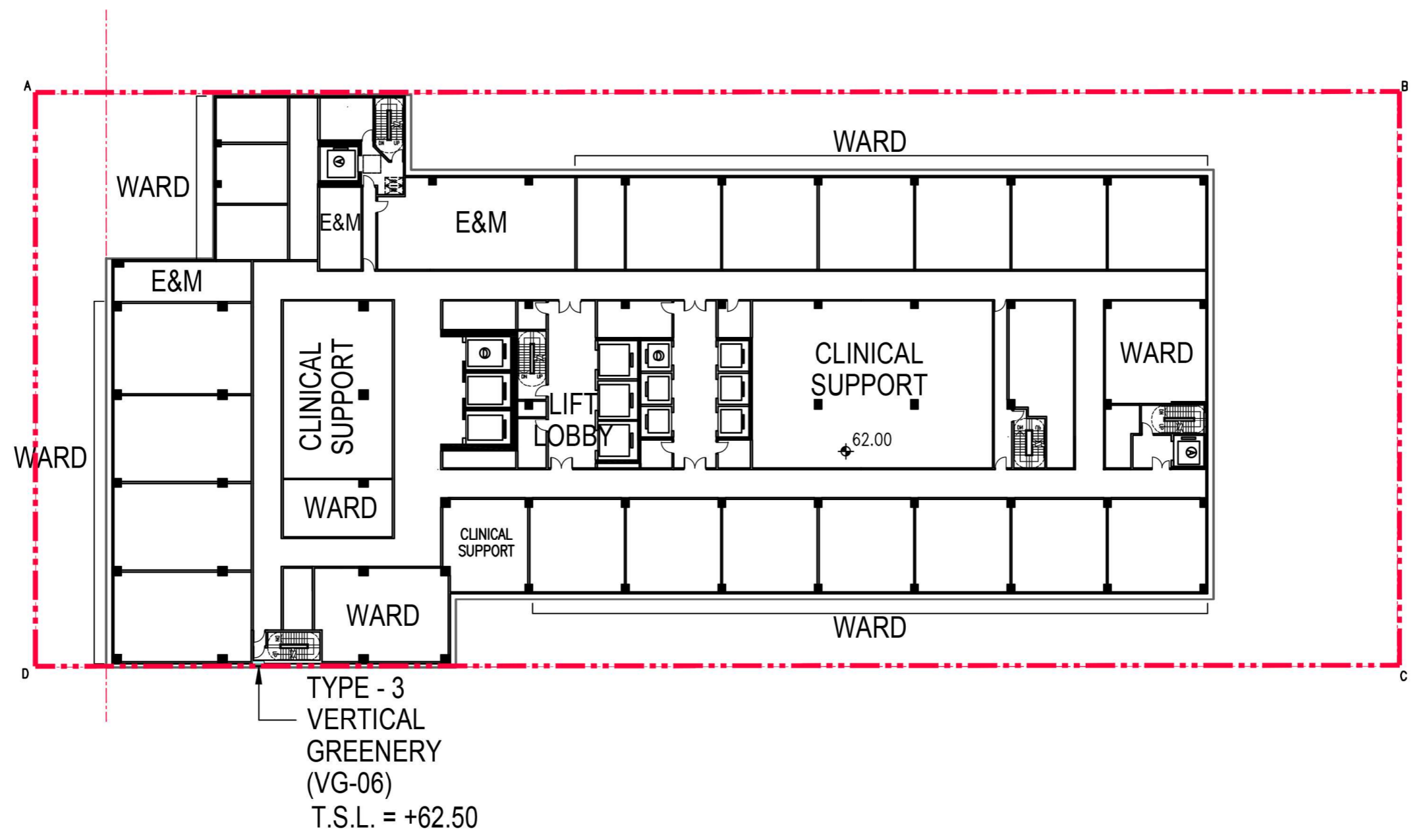
Landscape Plan - 5/F

Dwg. No. : 2023312-LP-06d
 Scale : 1:400 (A3-size)
 Date : JULY 2024



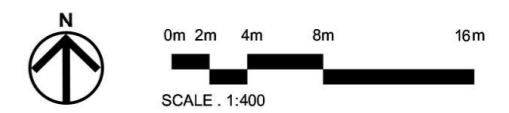
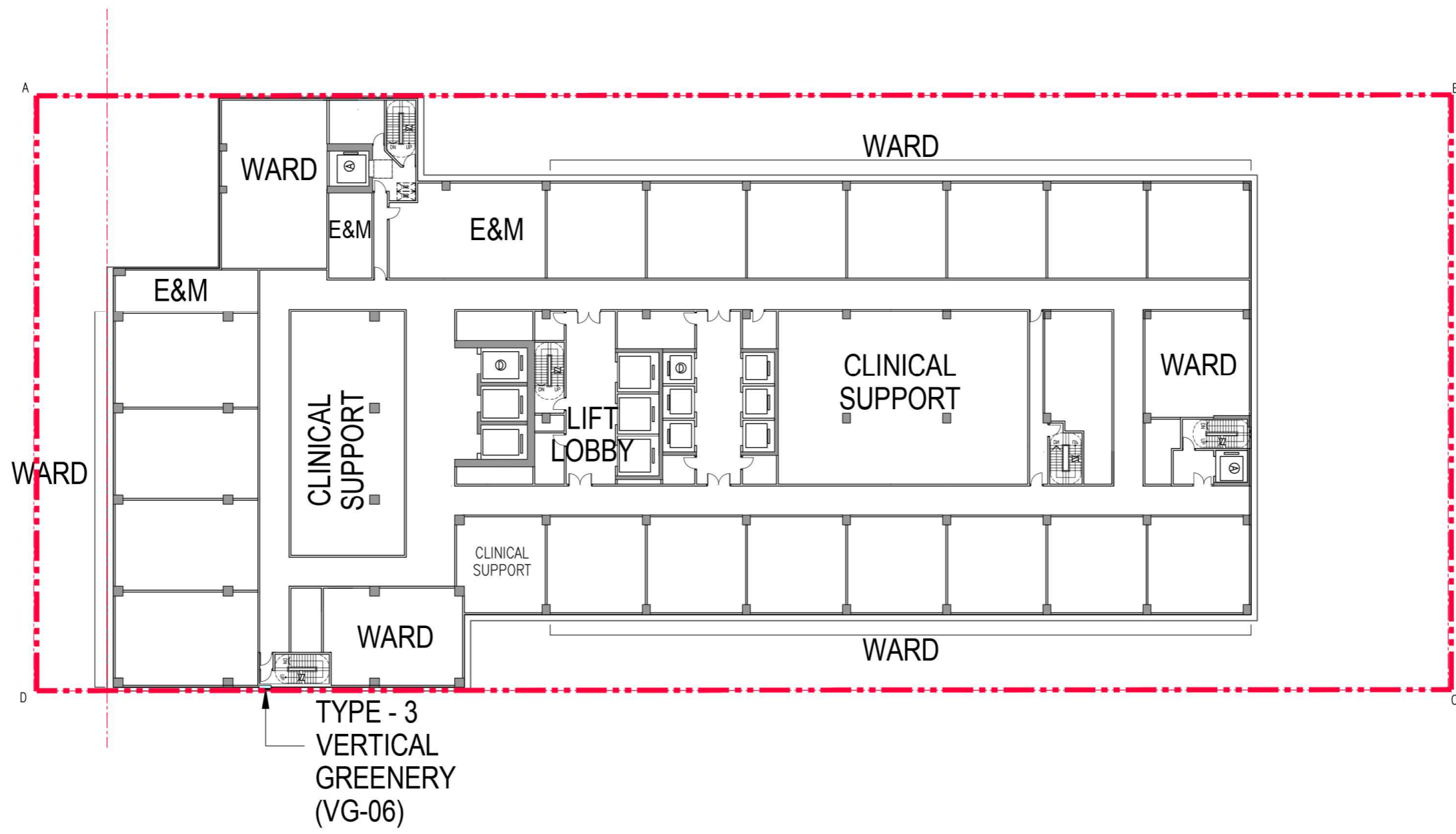
LEGEND:

- · - · - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



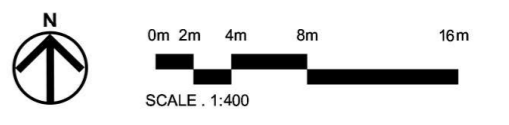
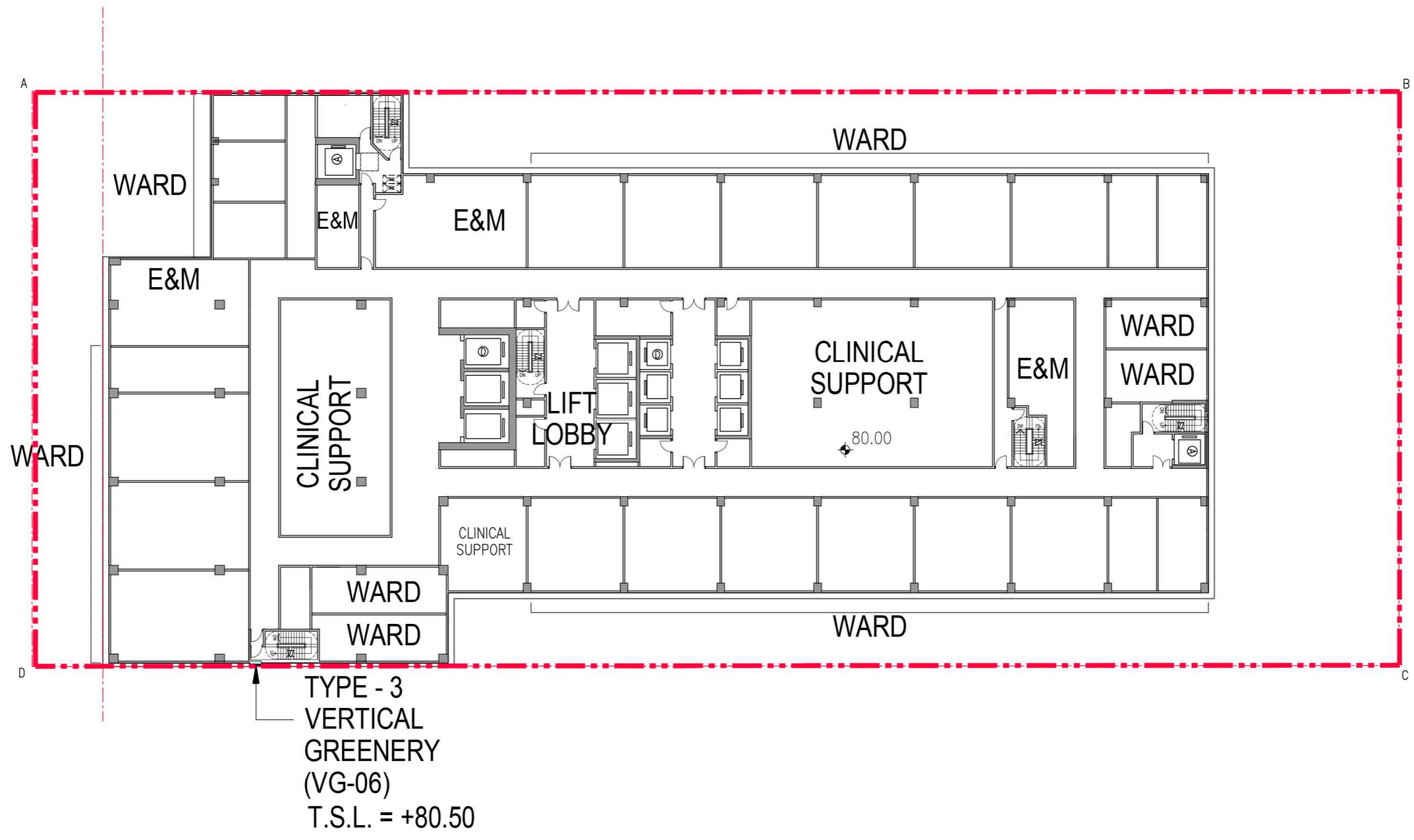
LEGEND:

- - - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



LEGEND:

- - - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in “Government, Institution or Community (7)” Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

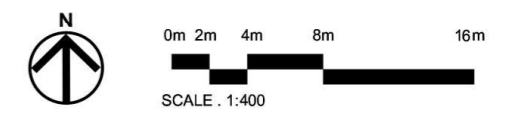
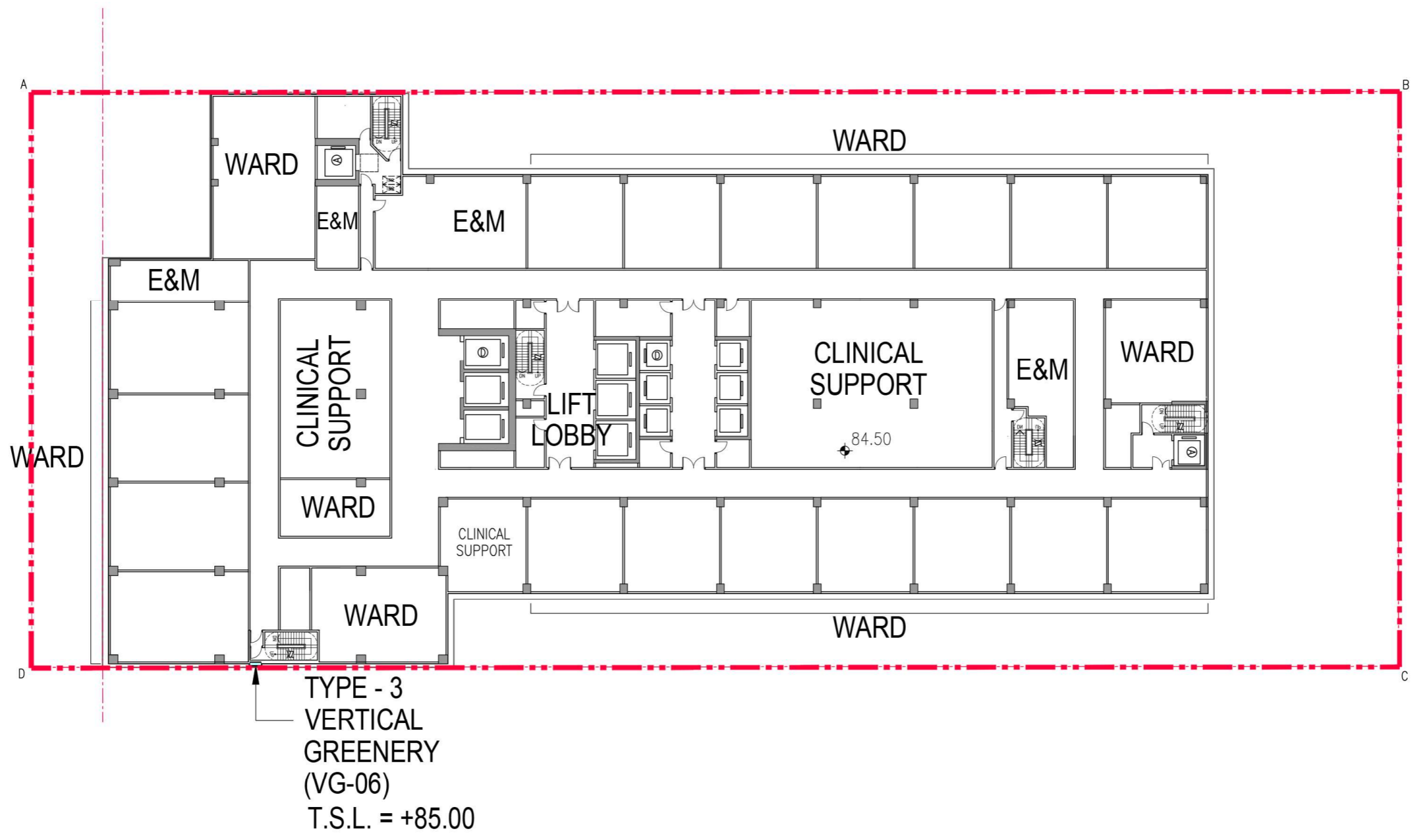
Landscape Plan - 10/F

Dwg. No. : 2023312-LP-09
 Scale : 1:400 (A3-size)
 Date : JULY 2024



LEGEND:

- LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



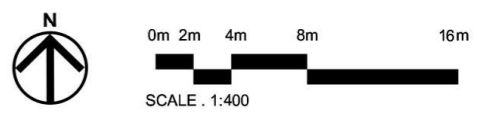
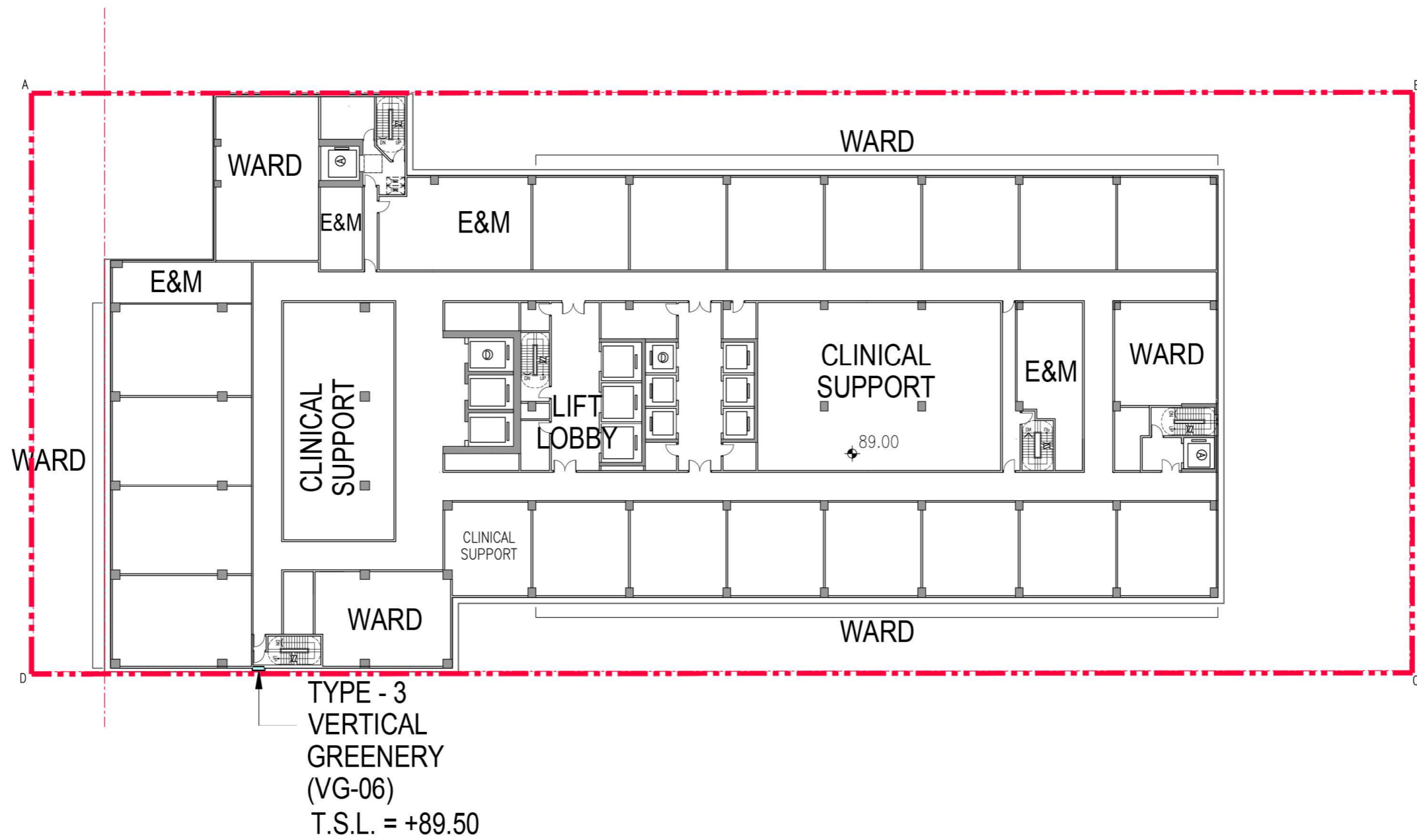
S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in "Government, Institution or Community (7)" Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon

Landscape Plan - 11/F
 Dwg. No. : 2023312-LP-10
 Scale : 1:400 (A3-size)
 Date : JULY 2024



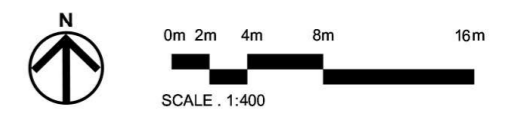
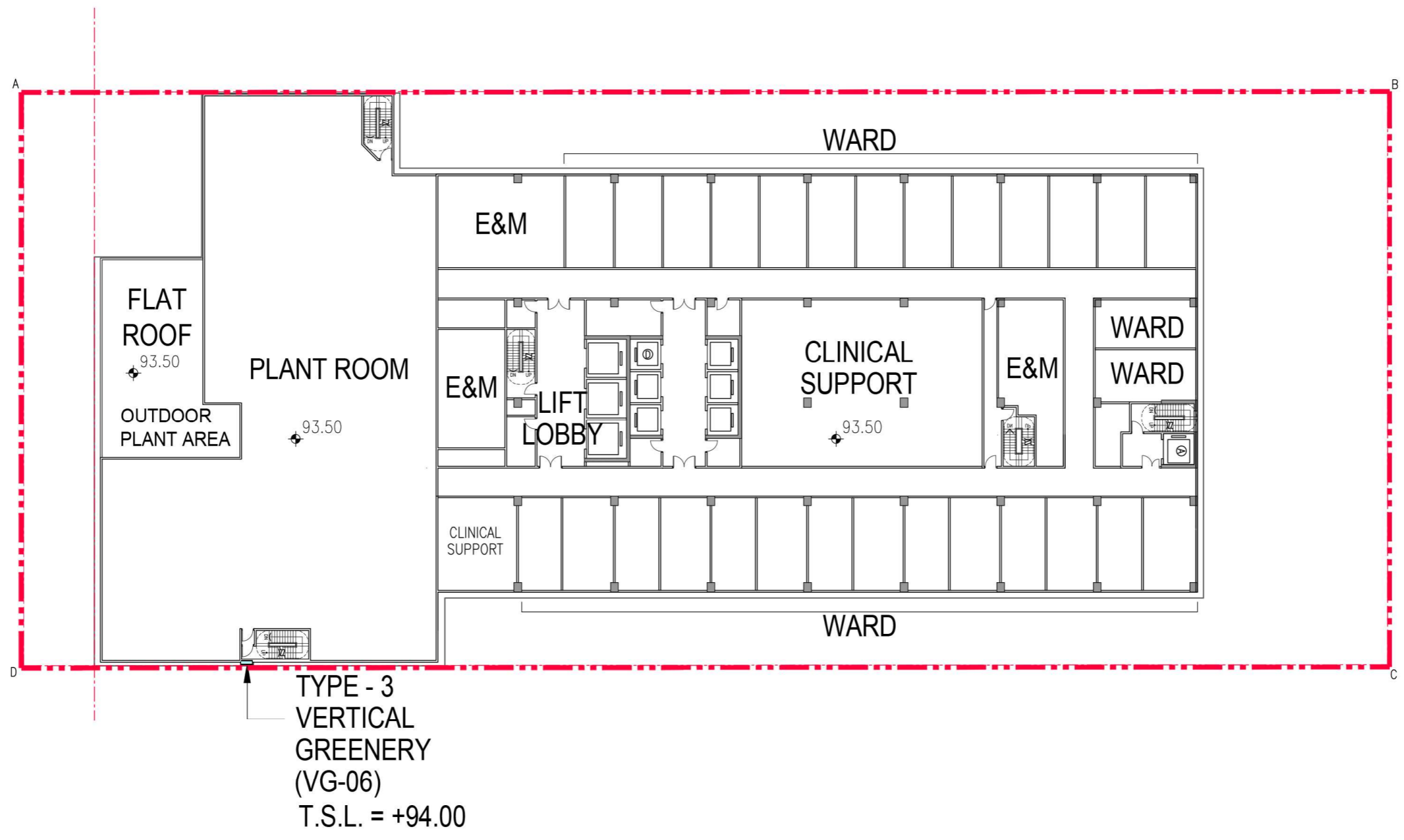
LEGEND:

- - - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



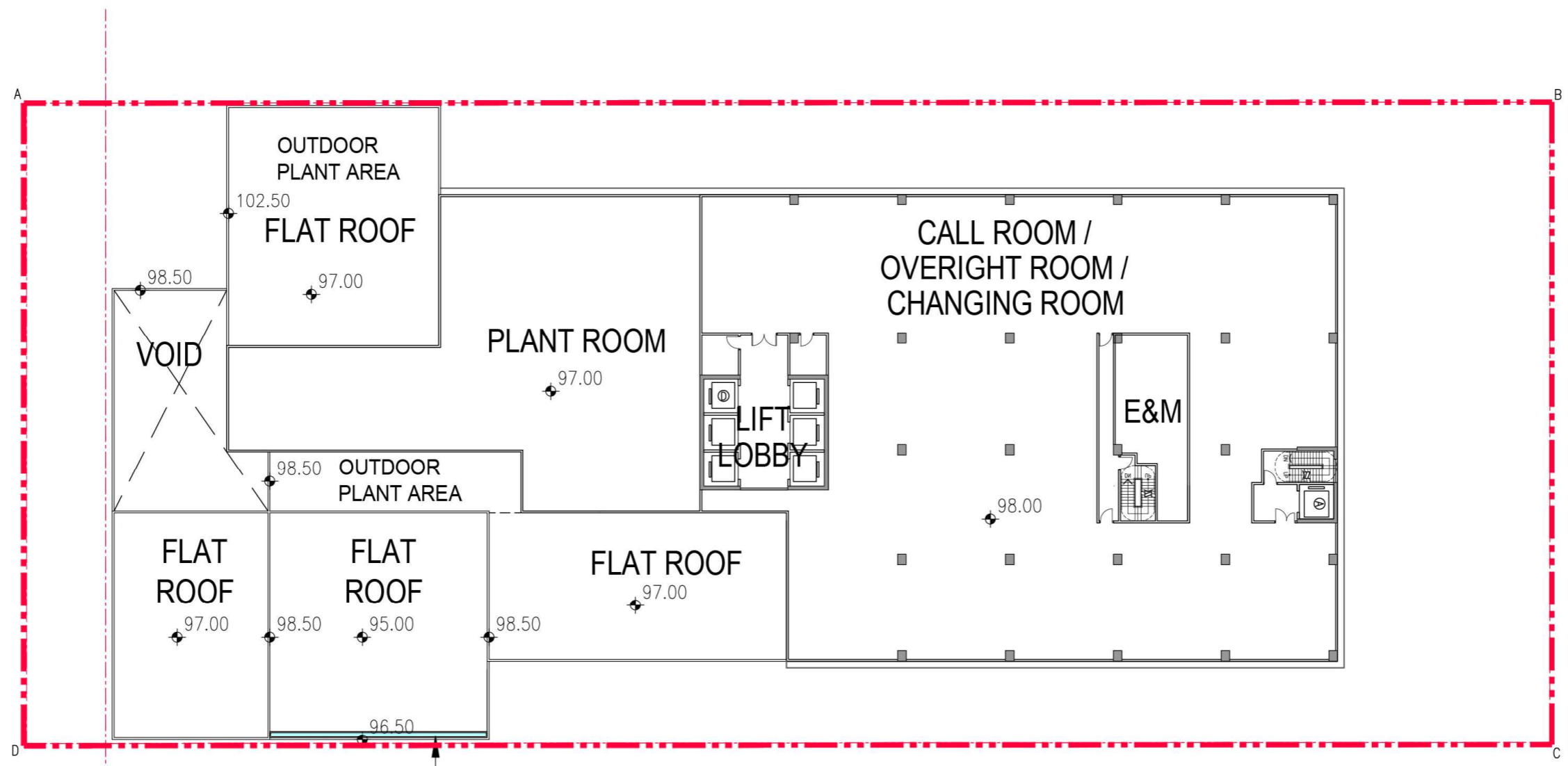
LEGEND:

- - - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL

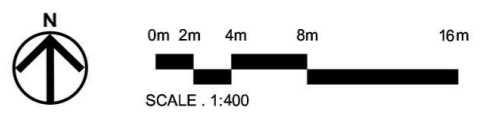


LEGEND:

- - - LOT BOUNDARY
- VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL

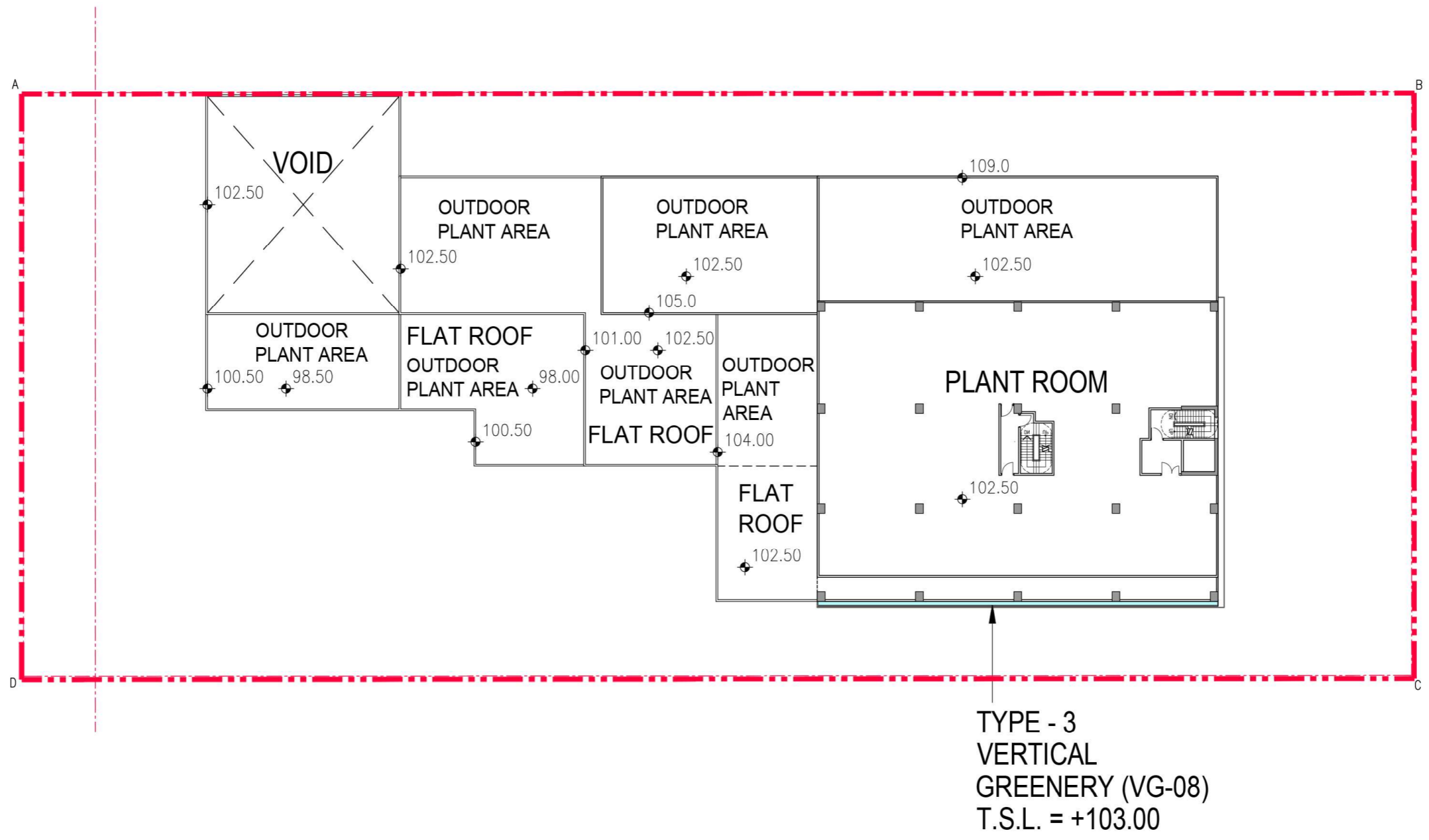


TYPE - 2
VERTICAL
GREENERY (VG-07)
T.S.L. = +95.50



LEGEND:

- · - · - LOT BOUNDARY
- ▬ VERTICAL GREEN
- TSL / TS TOP SOIL LEVEL



N

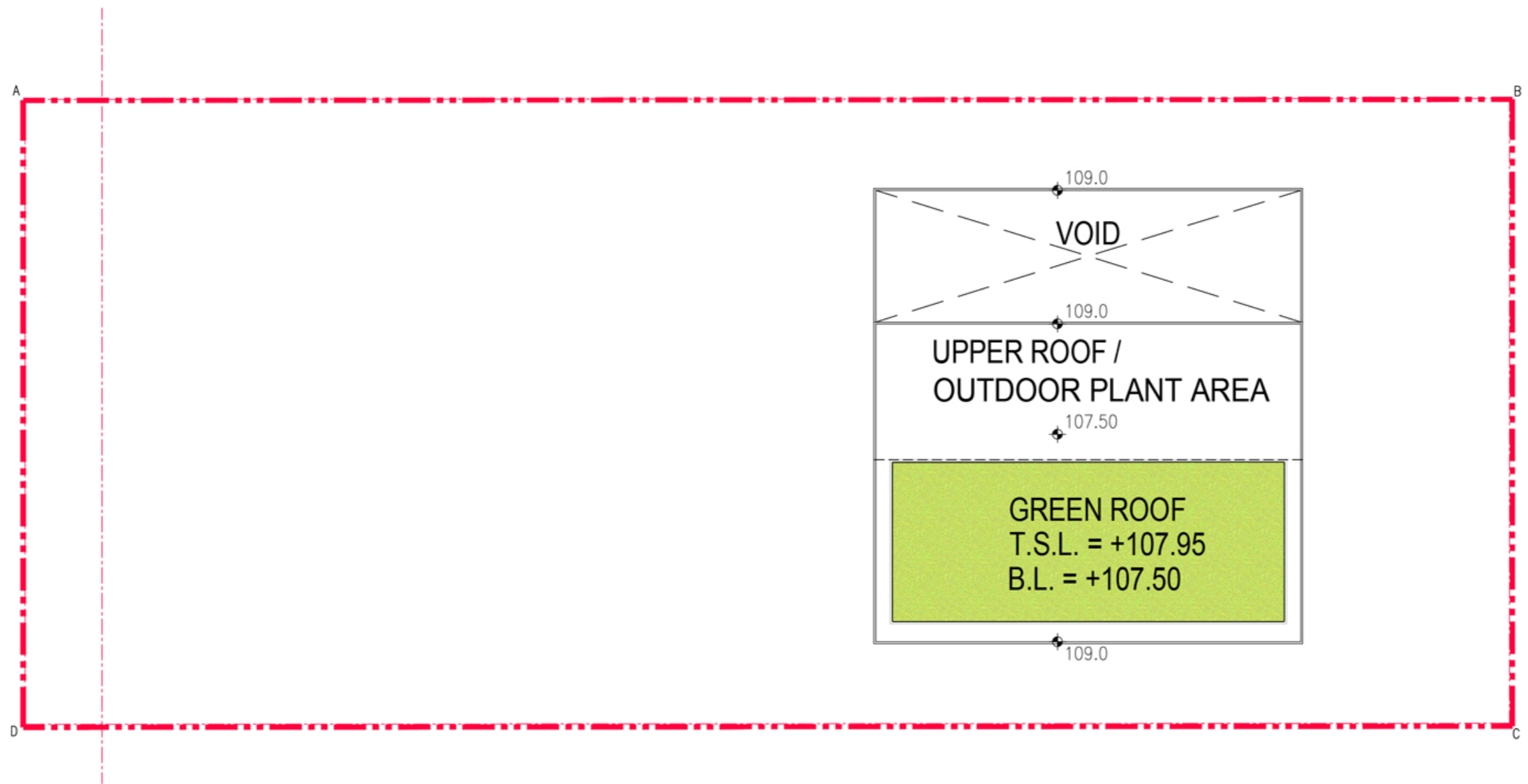
0m 2m 4m 8m 16m

SCALE : 1:400



LEGEND:

- · - · - LOT BOUNDARY
- PROPOSED LAWN
- TSL / TS TOP SOIL LEVEL



N

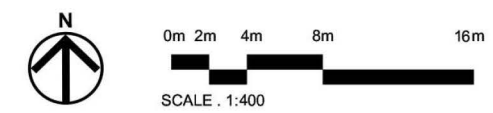
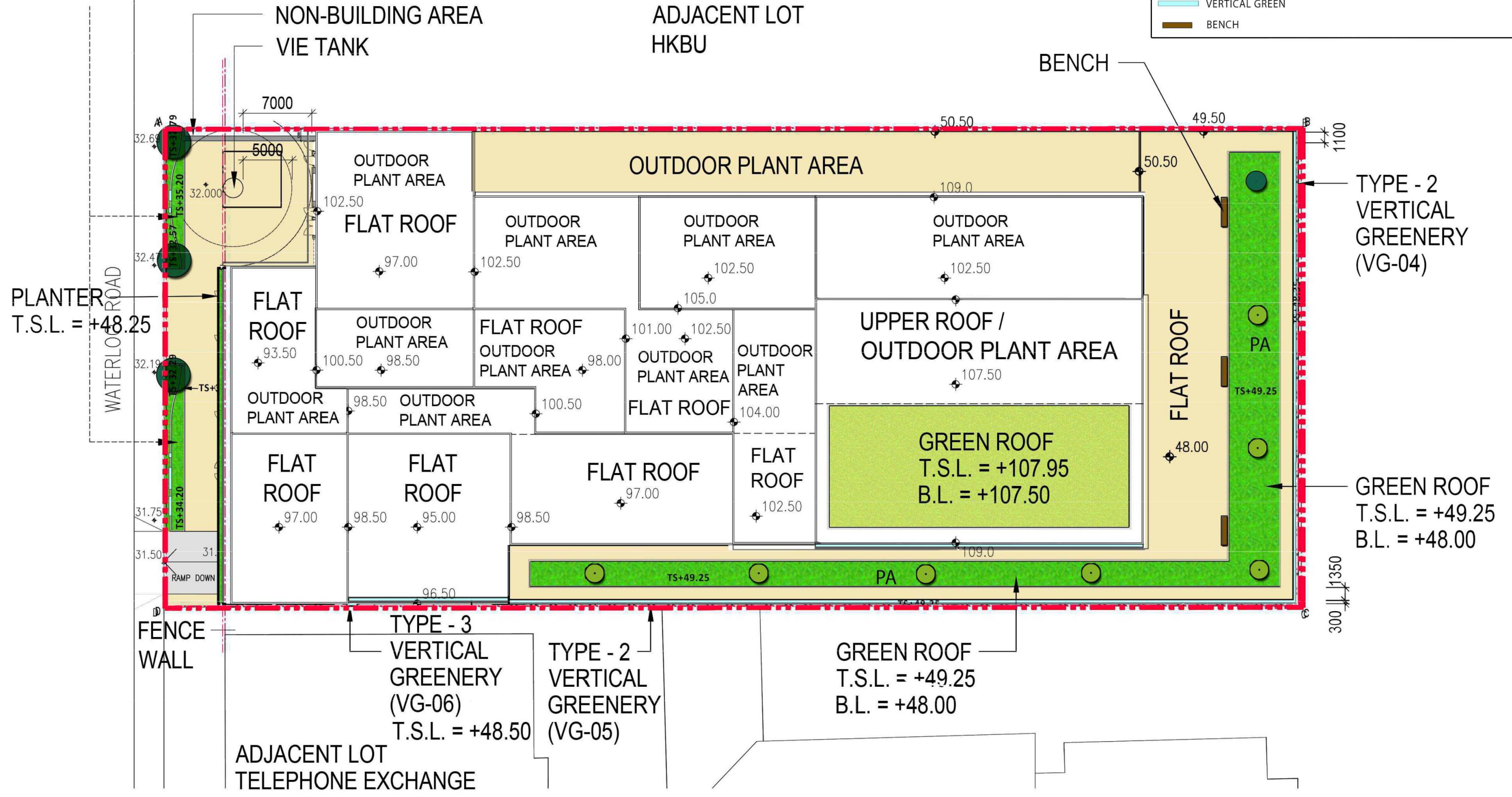
0m 2m 4m 8m 16m

SCALE : 1:400



FENCE WALL
 WITH F.S. INLET/ SPRINKLER CONTROL VALVE
 / AUTOMATIC METER READING CABINET
 / WATER METER CABINET
 WITH GREEN ROOF

LEGEND:			
	LOT BOUNDARY		COMPENSATORY TREE
	EVA		NEW TREE
	HARDBAVED AREA	PA	PLANTING AREA
	PROPOSED SHRUBS & GROUND COVER MIX	TS	TOP SOIL LEVEL
	PROPOSED LAWN	FL	FINISHED LEVEL
	VERTICAL GREEN		
	BENCH		



S16 Planning Application for Proposed Minor Relaxation of Building Height Restriction for Permitted Hospital Use in "Government, Institution or Community (7)" Zone at Blocks A, B and C of Hong Kong Baptist Hospital, 222 Waterloo Road, Kowloon Tong, Kowloon
 Landscape Plan - Combined Plan

Dwg. No. : 2023312-LP-16
 Scale : 1:400 (A3-size)
 Date : JULY 2024





APPENDIX H

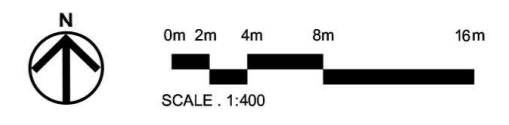
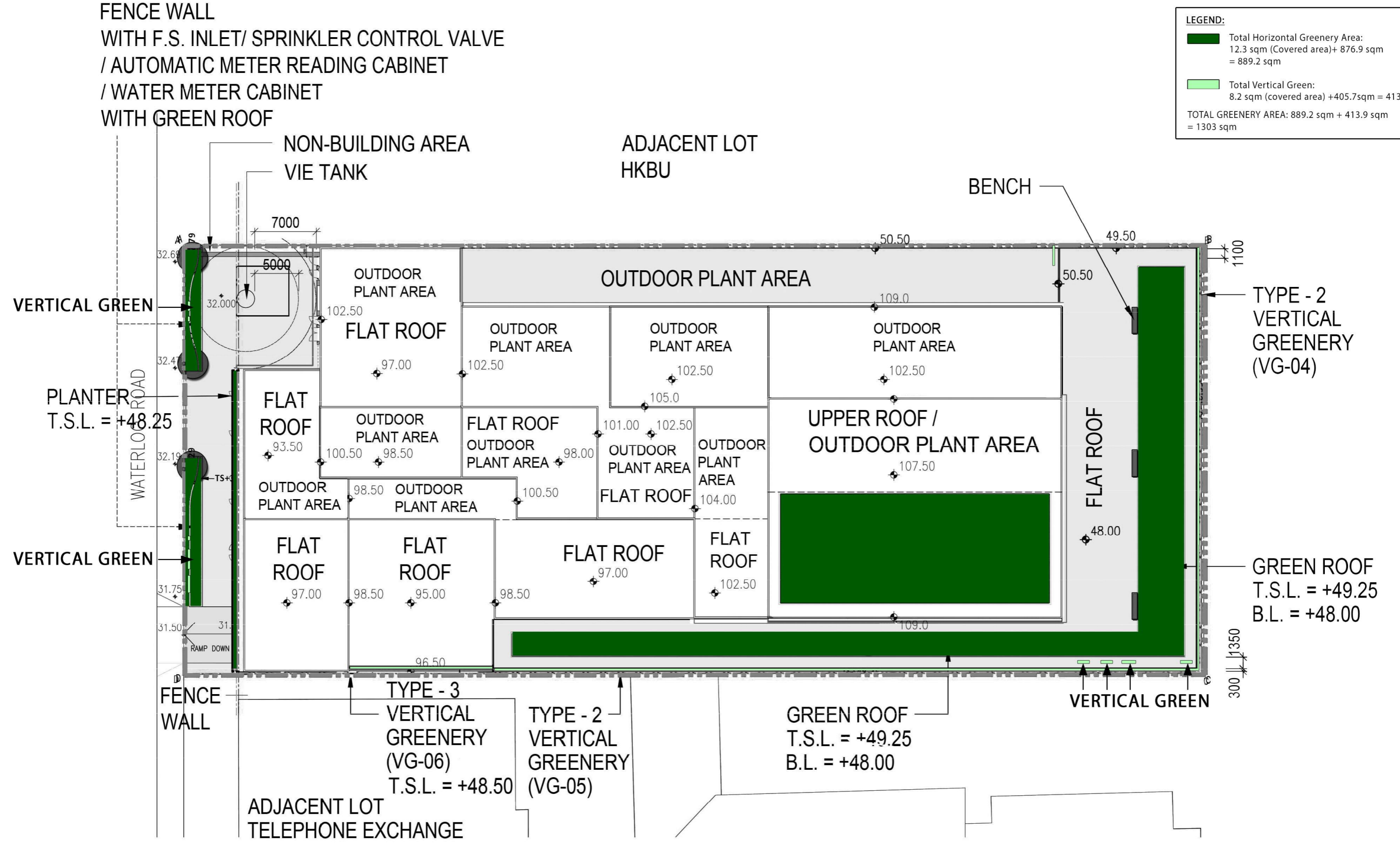
Landscape Section

APPENDIX J

Greenery Demarcation Plan

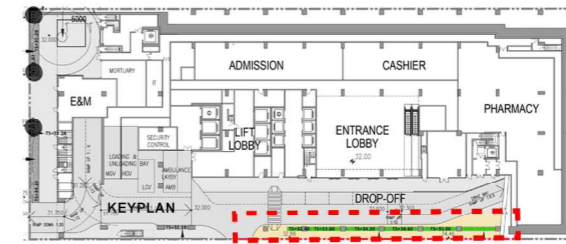
LEGEND:

	Total Horizontal Greenery Area: 12.3 sqm (Covered area)+ 876.9 sqm = 889.2 sqm
	Total Vertical Green: 8.2 sqm (covered area) + 405.7sqm = 413.9 sqm
TOTAL GREENERY AREA: 889.2 sqm + 413.9 sqm = 1303 sqm	



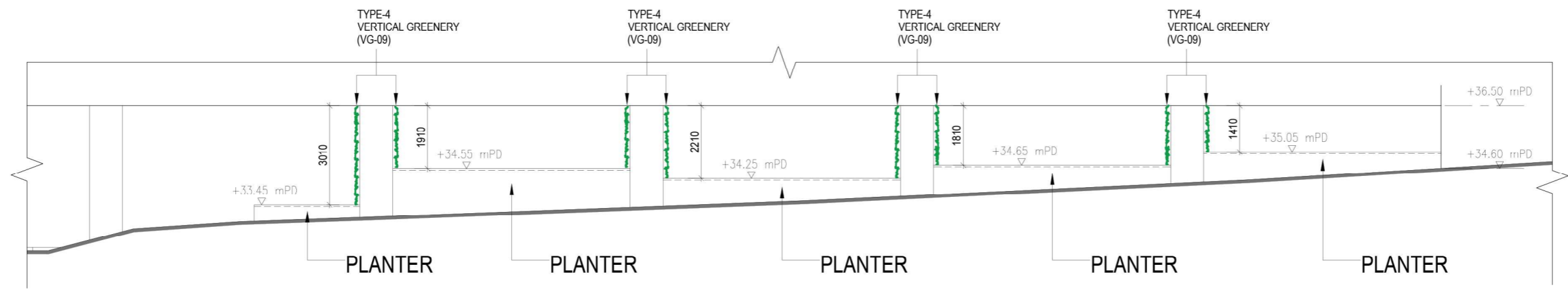
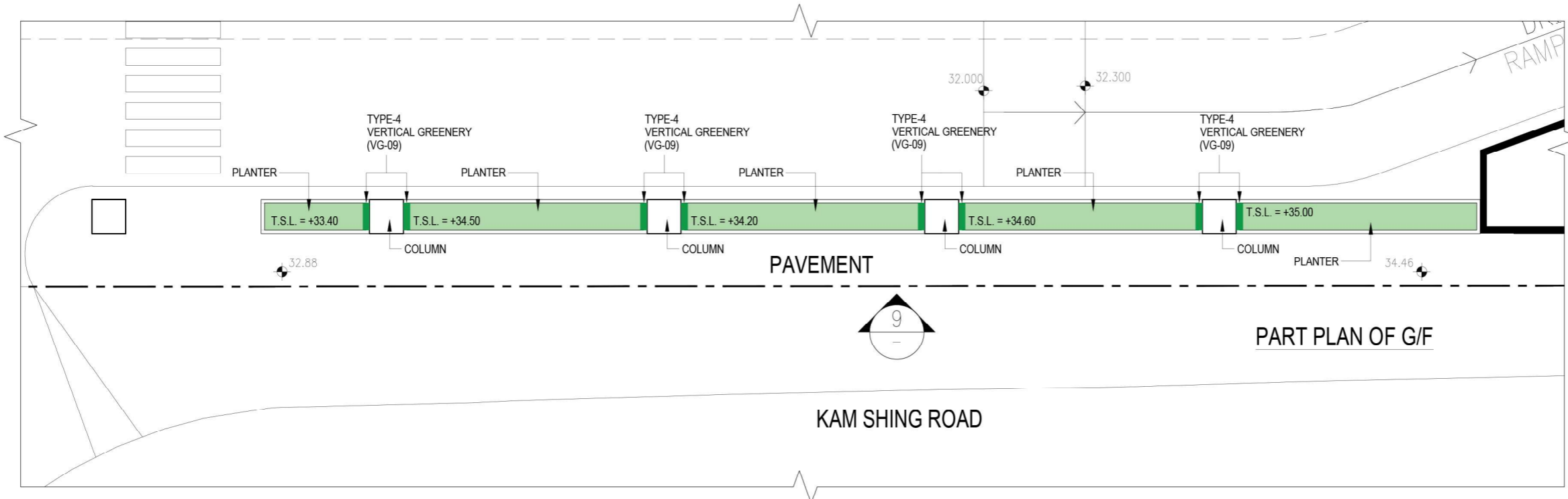
APPENDIX K

Vertical Green Elevation and Detail



B.D. REF :
F.S.D. REF :
KEY PLAN

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03	JUL 2024	FURTHER INFORMATION	OK
-	JAN 2024	PD FORMAL SUBMISSION	OK
REV.	DATE	DESCRIPTION	APPROVED

EMPLOYER
 香港浸信會醫院
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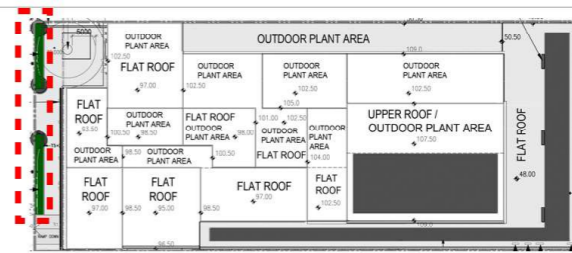
JOB TITLE
 S10 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN 'GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

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DRAWN	BW	DATE	JAN 2024

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DRAWING NO.	REV.
20240119-SK13	03

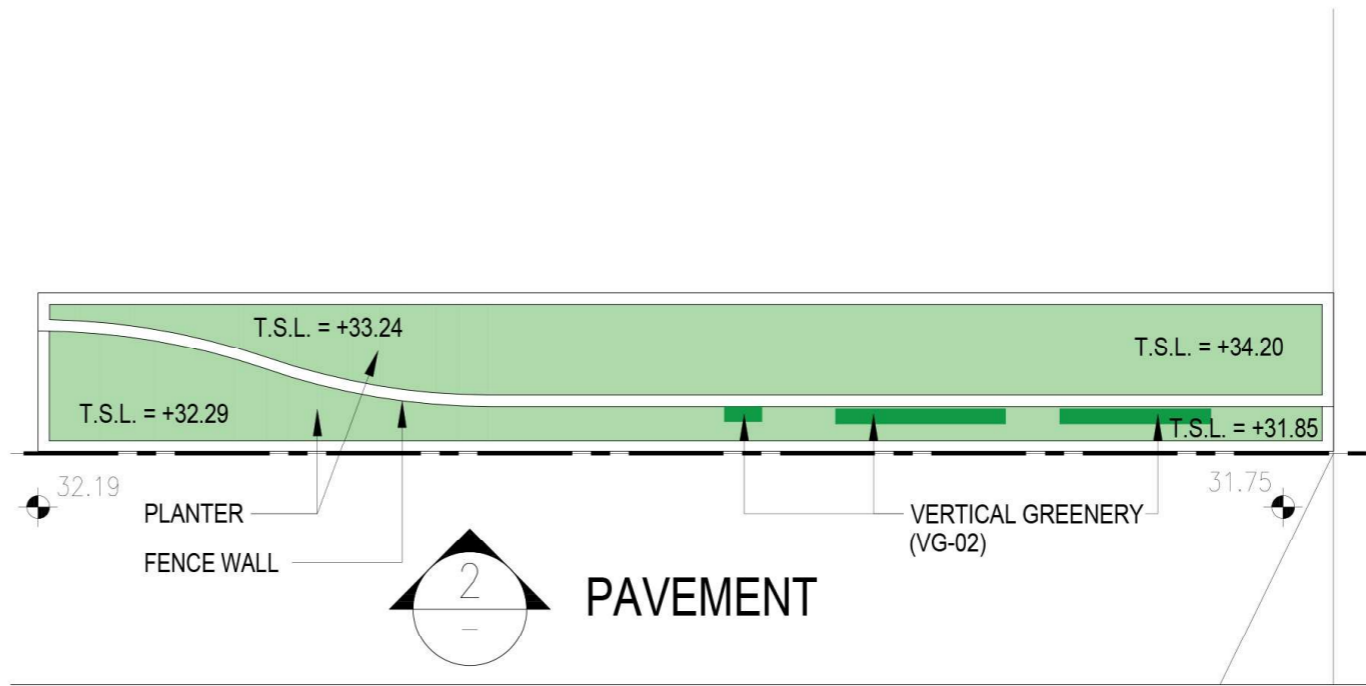
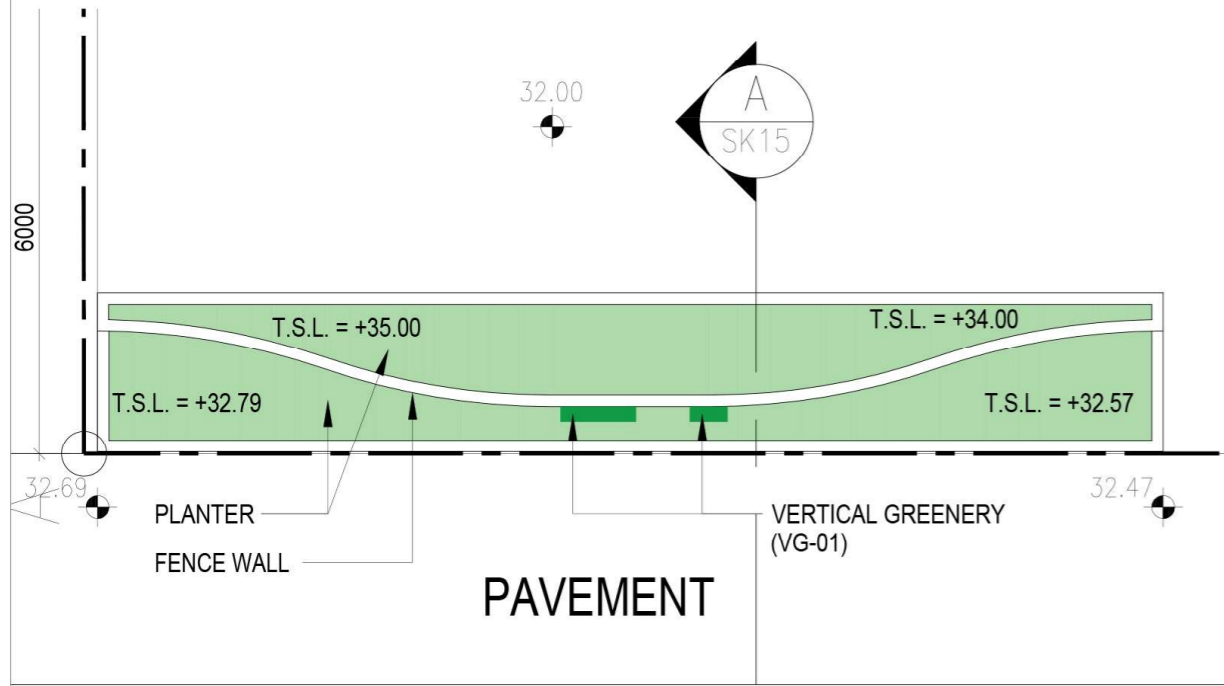


KEY PLAN

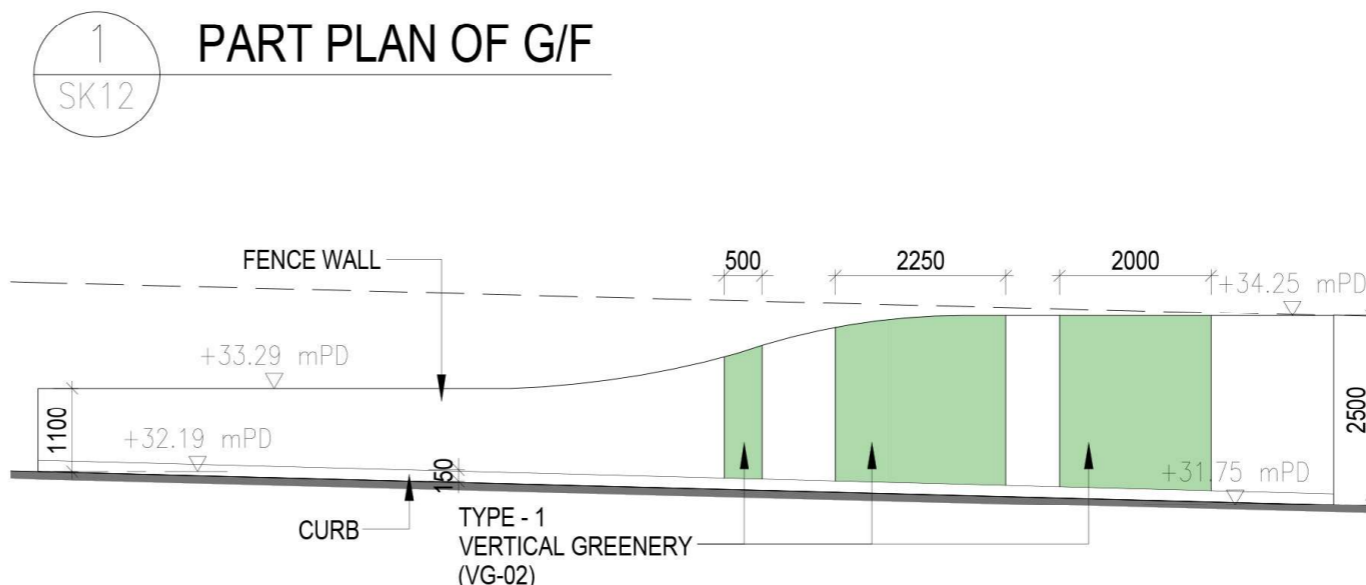
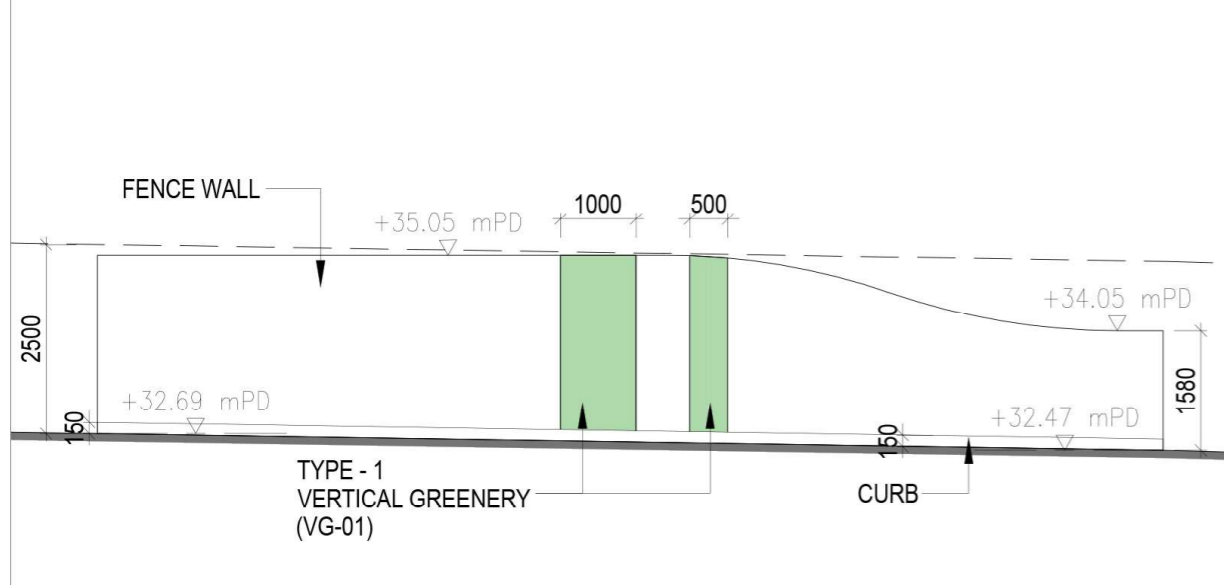
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1 PART PLAN OF G/F
SK12



2 ELEVATION

REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	CK
02	MAY 2024	FURTHER INFORMATION	CK
-	JAN 2024	PD FORMAL SUBMISSION	CK

EMPLOYER
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Rider Levett Bucknall

TRAFFIC CONSULTANT
ozzo TECHNOLOGY

ENVIRONMENTAL CONSULTANT
AEC

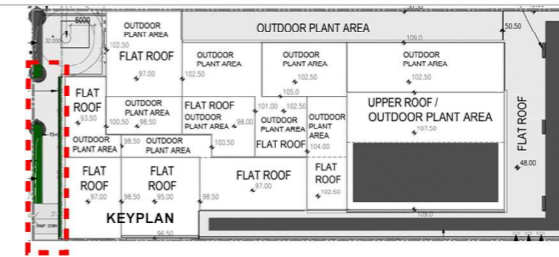
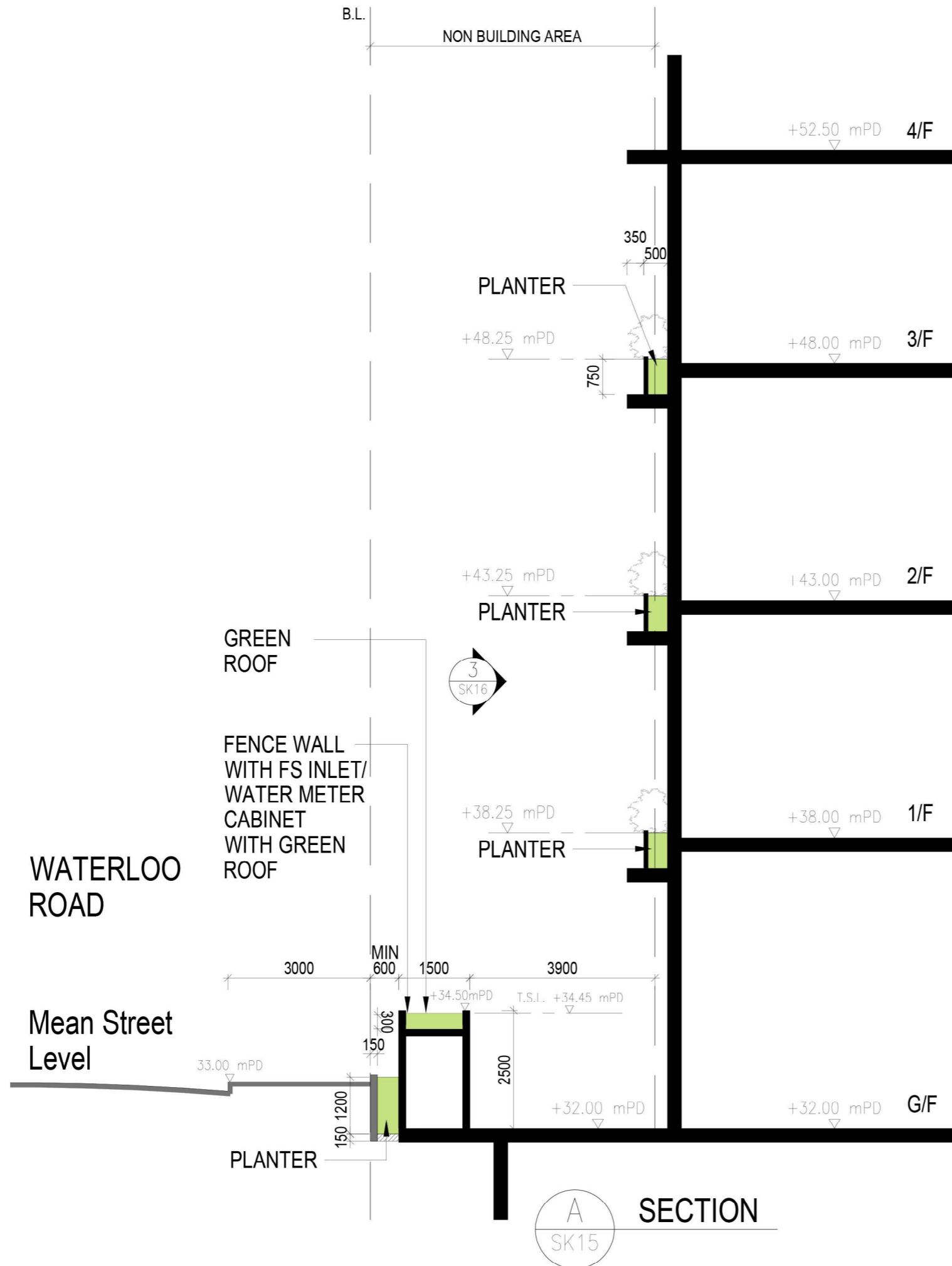
JOB TITLE
S16 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN 'GOVERNMENT, INSTITUTION OR COMMUNITY' ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
PART PLAN OF G/F (1)

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20240119-SK12	03



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REV.	DATE	DESCRIPTION	APPROVED
03	JUL 2024	FURTHER INFORMATION	OK
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-	JAN 2024	PD FORMAL SUBMISSION	OK

EMPLOYER

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Hong Kong Baptist Hospital

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DRAWING TITLE

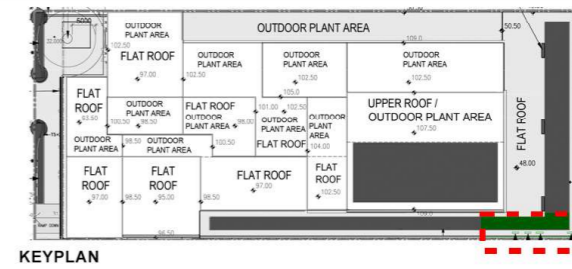
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APPROVED	CK	DATE	JAN 2024
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CONTRACT NO.

DRAWING NO. 20240119-SK15

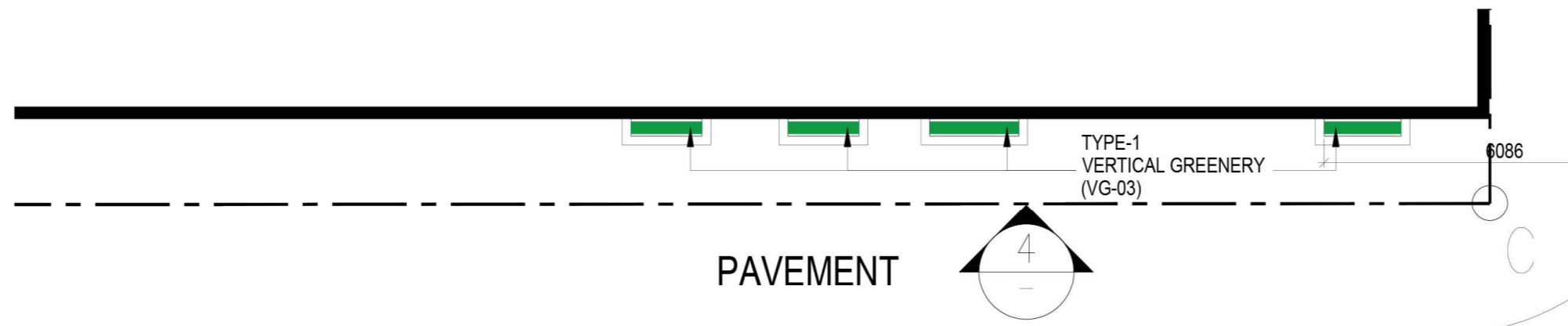
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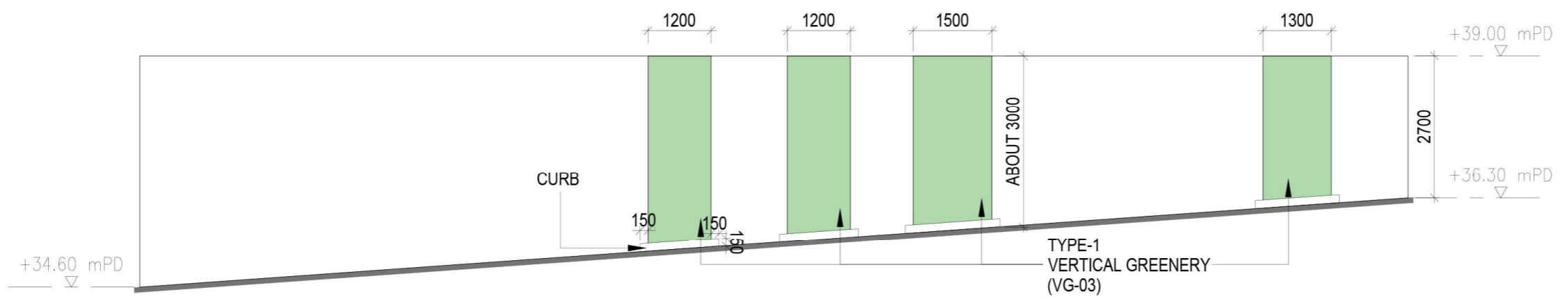
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3 PART PLAN OF 1/F
SK14



4 ELEVATION
SK14

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03	JUL 2024	FURTHER INFORMATION	CK
02	MAY 2024	FURTHER INFORMATION	CK
-	JAN 2024	PD FORMAL SUBMISSION	CK

EMPLOYER
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ENVIRONMENTAL CONSULTANT
AEC

ENVIRONMENTAL CONSULTANT
AEC

JOB TITLE
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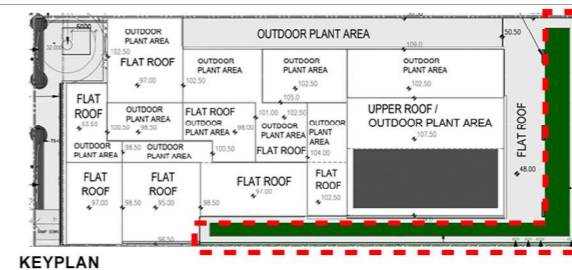
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PART PLAN OF 1/F

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DRAWN	BW	DATE	JAN 2024

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DRAWING NO.
20240119-SK14

REV.
02



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02	MAY 2024	FURTHER INFORMATION	CK
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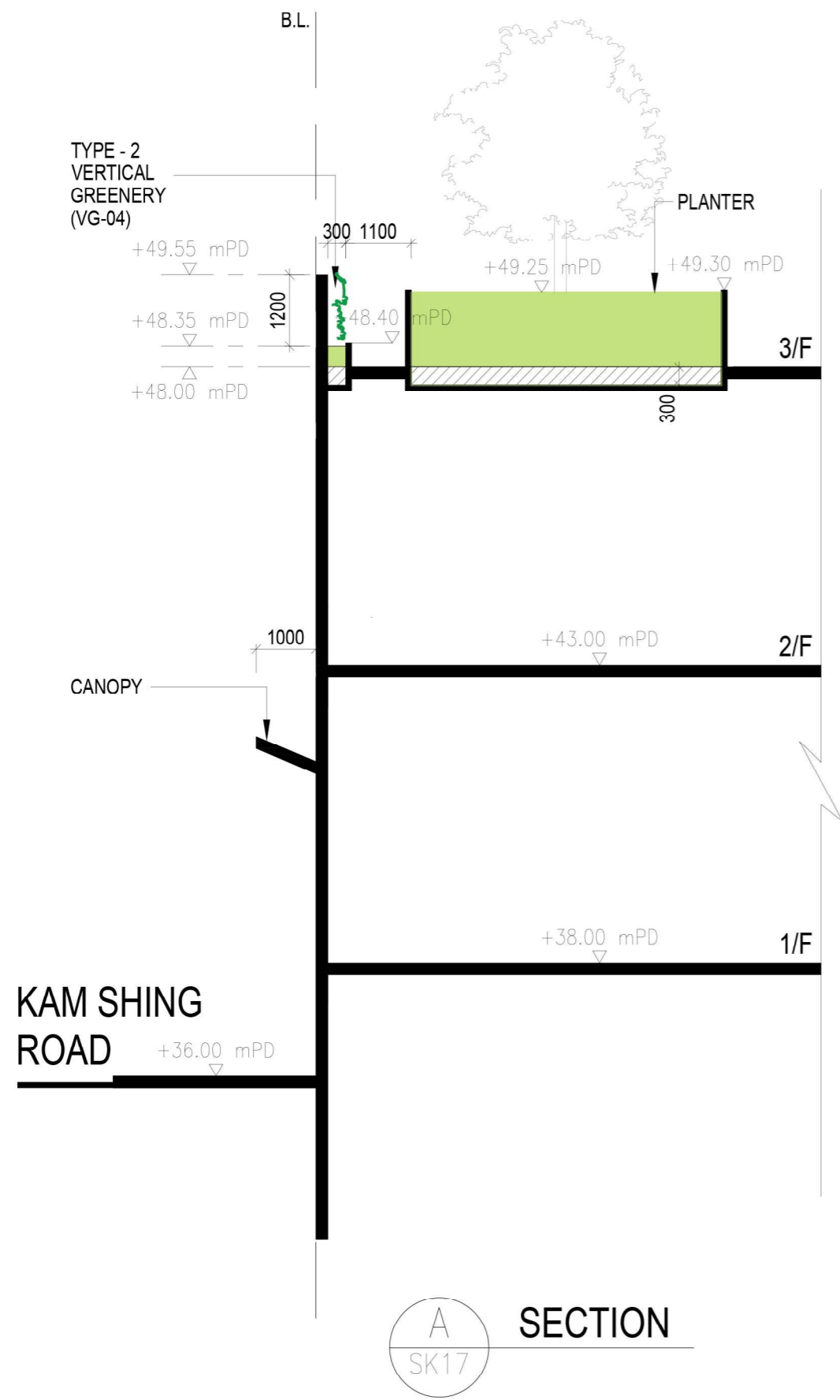
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S10 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN 'GOVERNMENT, INSTITUTIONAL OR COMMUNITY (7) ZONE' AT PLCKS A, R AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
SECTIONS

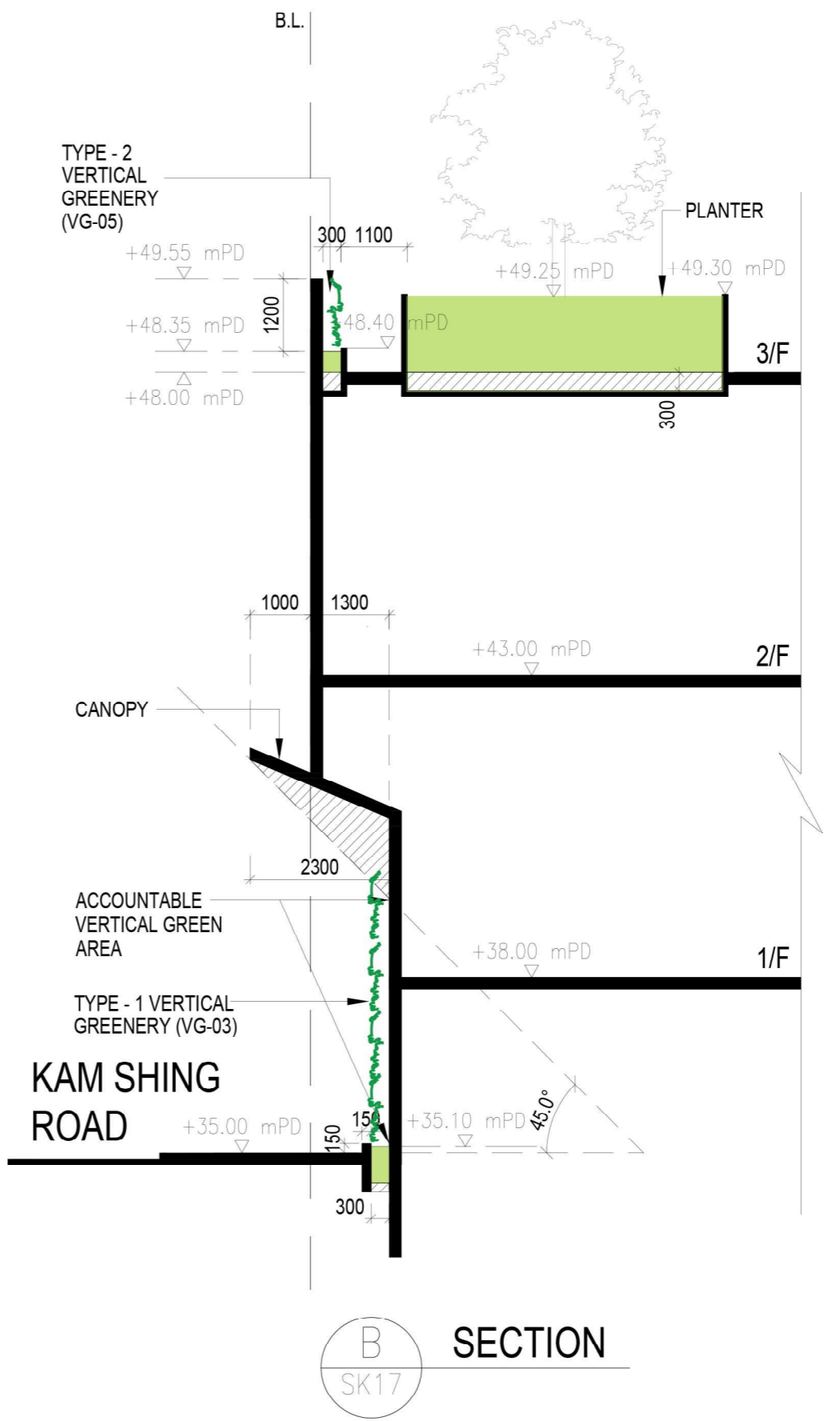
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APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.

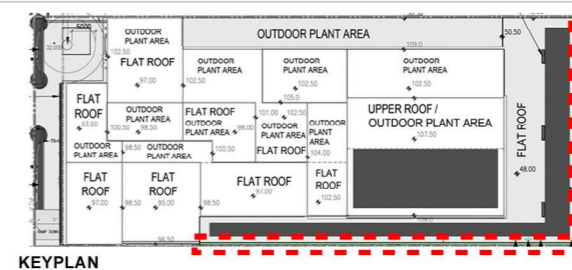
DRAWING NO.	REV.
20240119-SK17	02



A SECTION
SK17

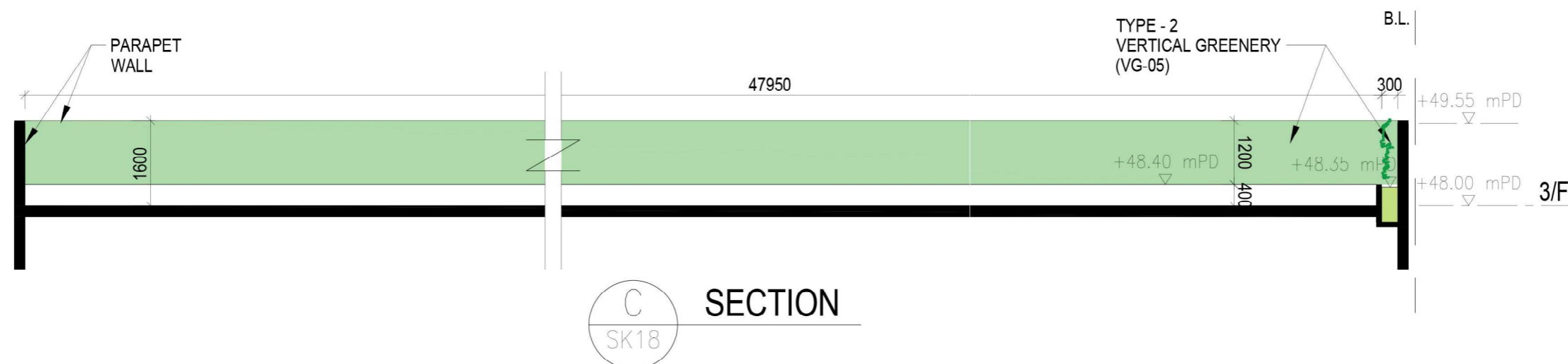


B SECTION
SK17

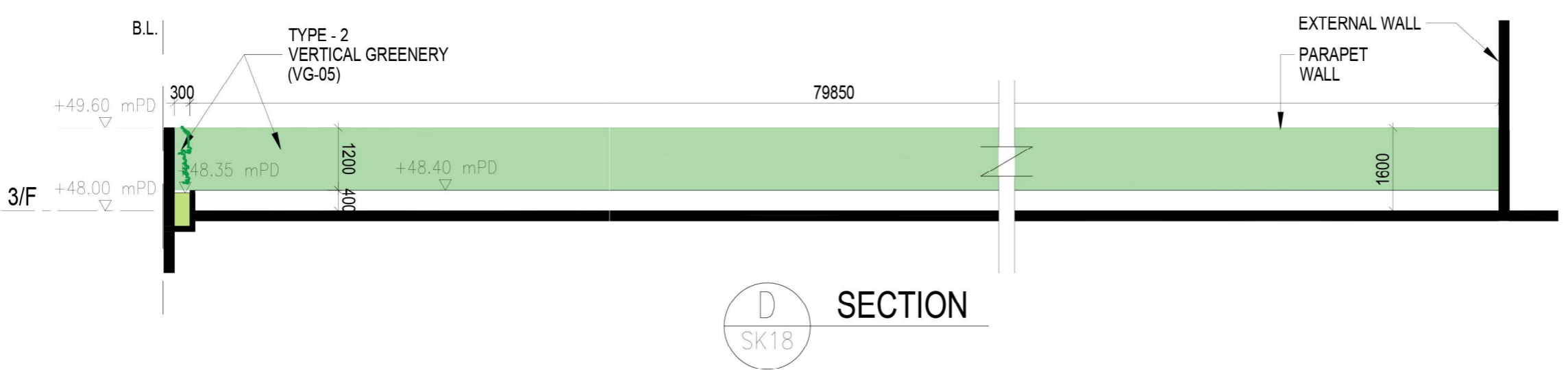


B.D. REF :
F.S.D. REF :
KEY PLAN

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SECTION C



SECTION D

REV.	DATE	DESCRIPTION	APPROVED
02	MAY 2024	FURTHER INFORMATION	CK
-	JAN 2024	PD FORMAL SUBMISSION	CK

EMPLOYER
香港浸信會醫院
Hong Kong Baptist Hospital

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ROCCO

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lewelyn davis

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FAÇADE CONSULTANT
AECOM

QUANTITY SURVEYOR
Rider Levett Bucknall

TRAFFIC CONSULTANT
ozzo TECHNOLOGY

ENVIRONMENTAL CONSULTANT
AEC

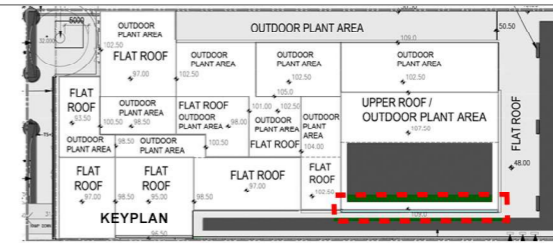
JOB TITLE
S10 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN 'GOVERNMENT, INSTITUTION OR COMMUNITY (I) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
SECTIONS

SCALE	1:100	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.
DRAWING NO.
20240119-SK18

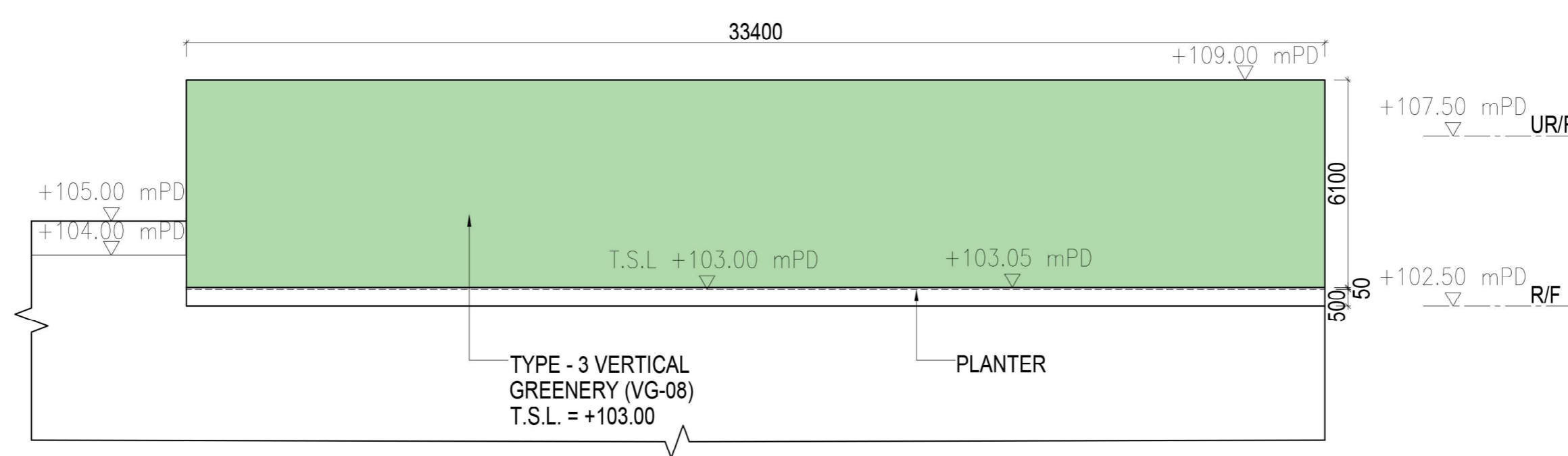
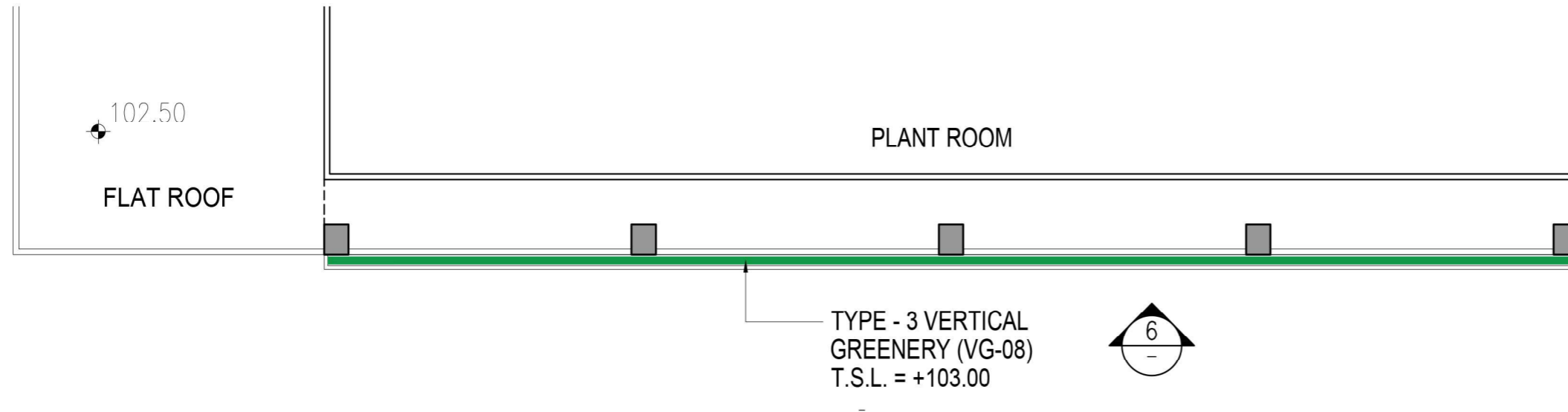
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B.D. REF :
F.S.D. REF :


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6 ELEVATION
SK31


REV.	DATE	DESCRIPTION	APPROVED
-	JUL 2024	FURTHER INFORMATION	OK


EMPLOYER
 香港浸信會醫院
 Hong Kong Baptist Hospital


PROJECT MANAGER
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 Llewellyn Davies

QUANTITY SURVEYOR
 Rider Levett Bucknall

LANDSCAPE CONSULTANT
 OZZO TECHNOLOGY

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

ENVIRONMENTAL CONSULTANT
 AECOM

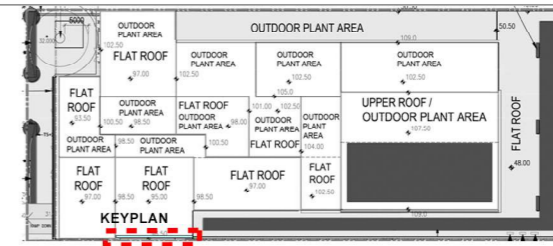
JOB TITLE
 S10 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN GOVERNMENT INSTITUTION OR COMMUNITY (7) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 UR/F PART PLAN

SCALE	1:150	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

CONTRACT NO.

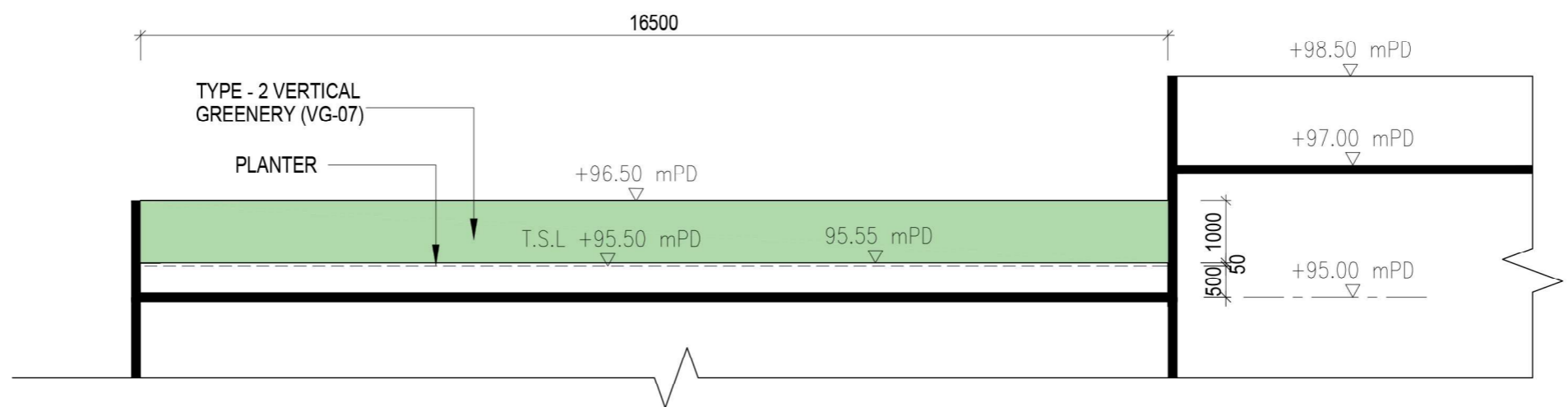
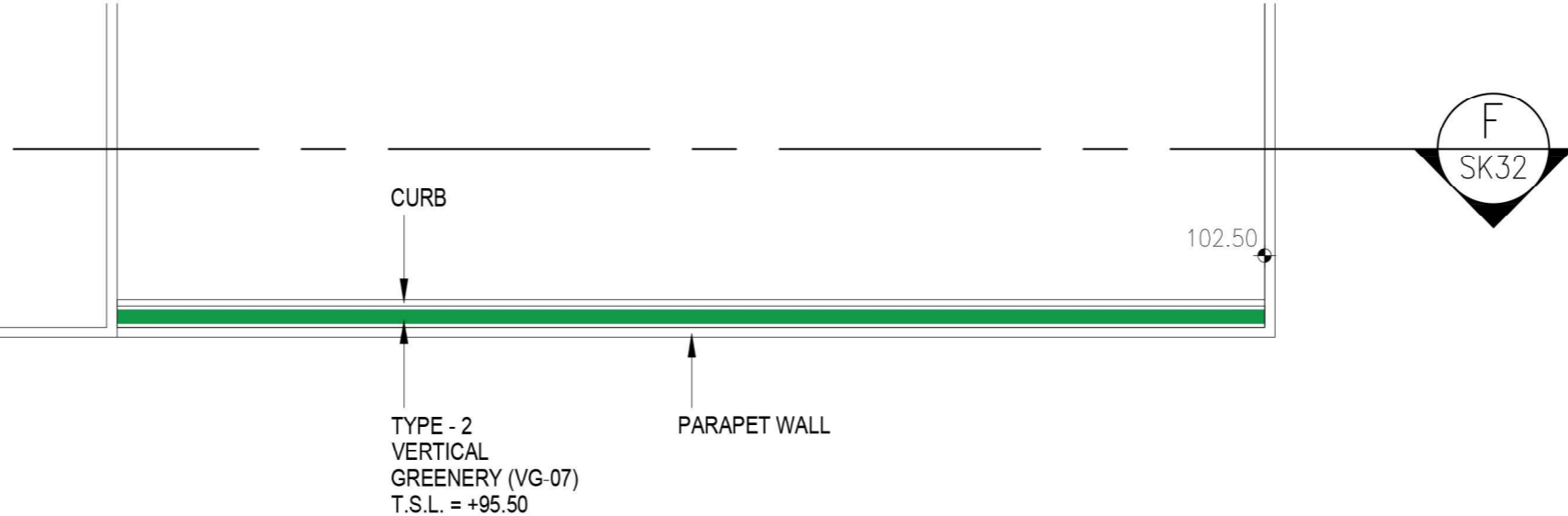
DRAWING NO.	REV.
20240704-SK31	-



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F.S.D. REF :

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F SECTION
SK32

REV.	DATE	DESCRIPTION	APPROVED
-	JUL 2024	FURTHER INFORMATION	OK

EMPLOYER
 香港浸信會醫院
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MEDICAL PLANNER
 Rider Levitt Bucknall

LANDSCAPE CONSULTANT
 OZZO TECHNOLOGY

TRAFFIC CONSULTANT
 OZZO TECHNOLOGY

ENVIRONMENTAL CONSULTANT
 AECOM

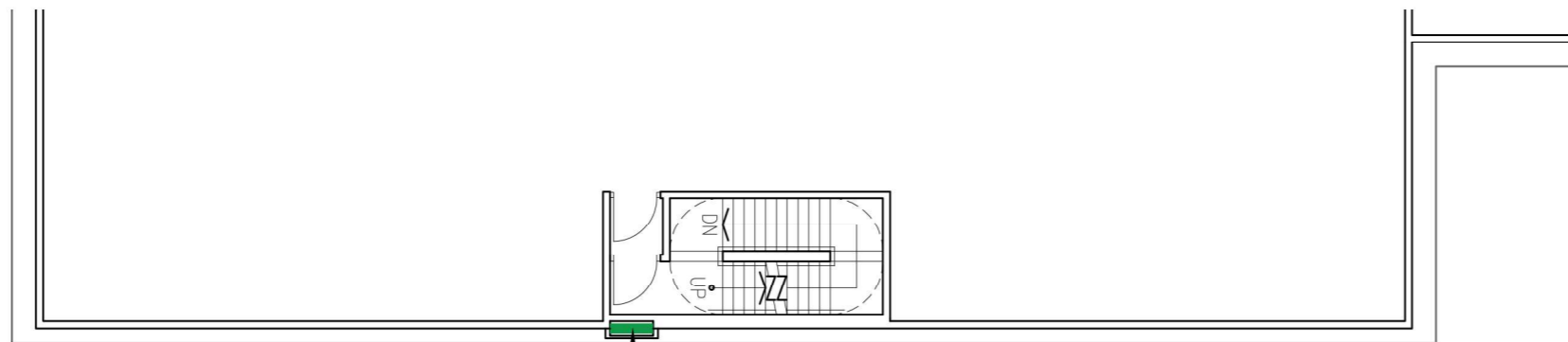
JOB TITLE
 S10 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN GOVERNMENT INSTITUTION OR COMMUNITY (TY ZONE) AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
 R/F PART PLAN

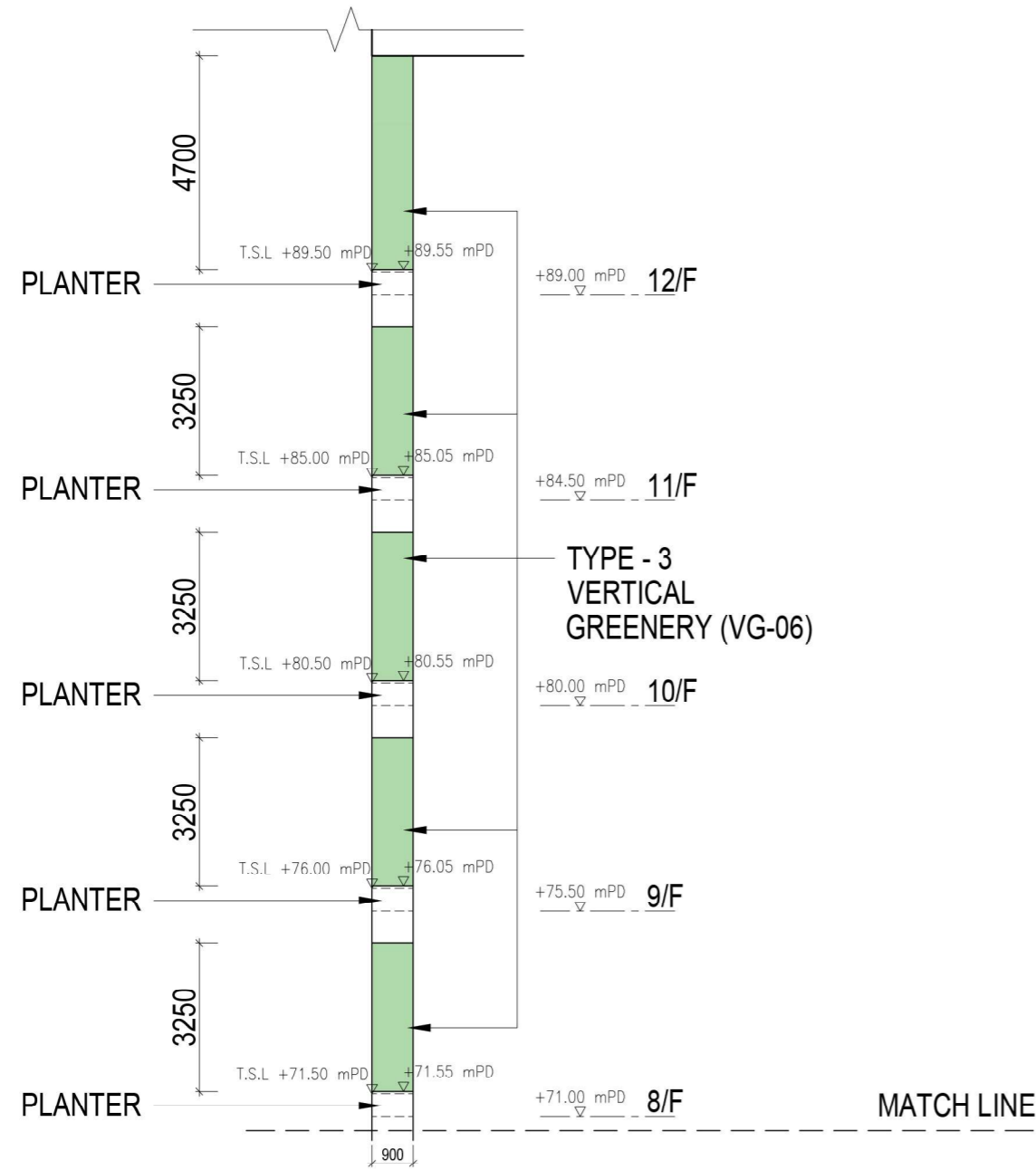
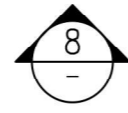
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APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

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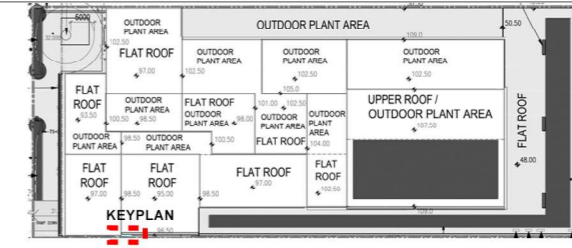
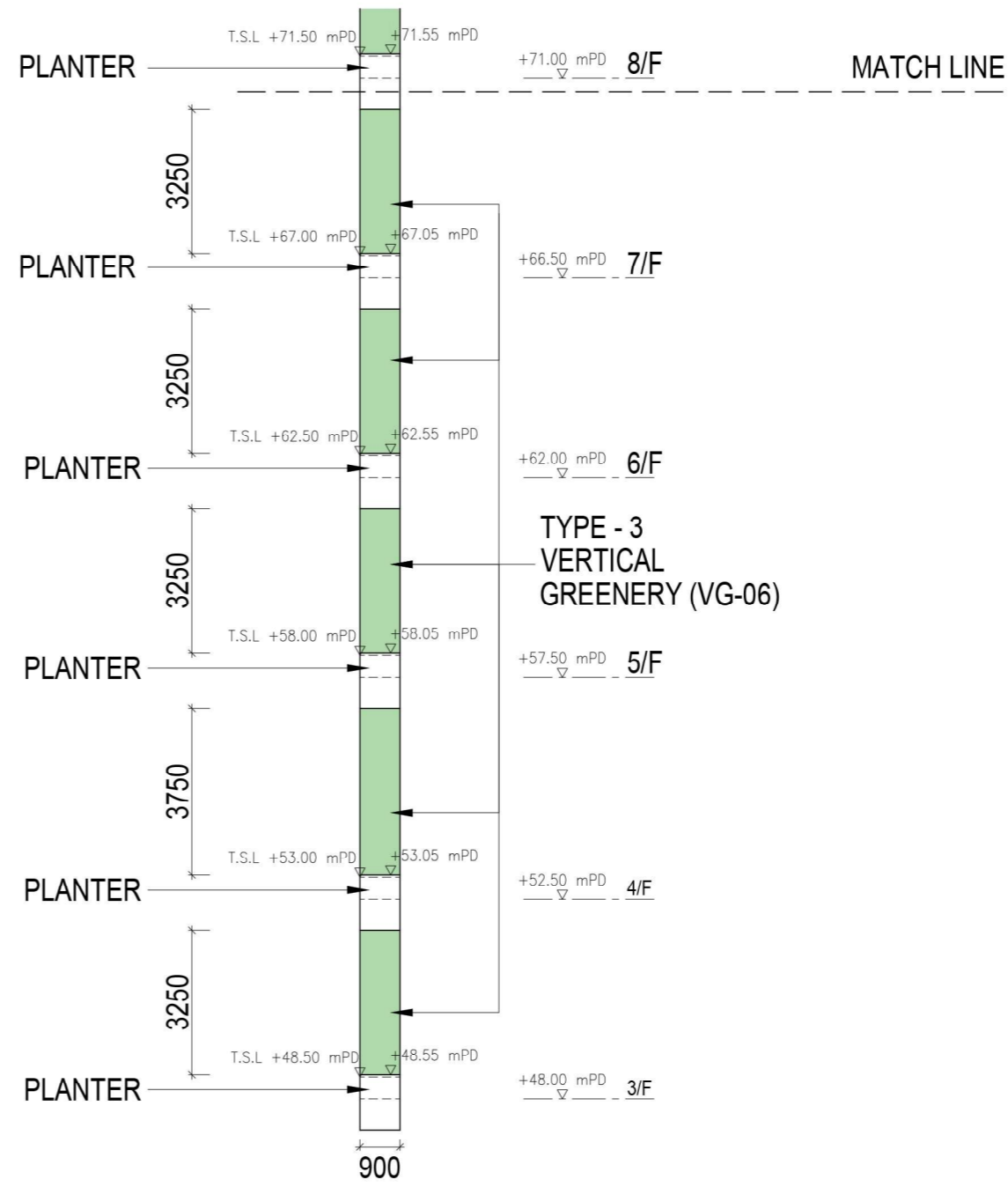
DRAWING NO.	REV.
20240704-SK32	-



TYPE - 3
VERTICAL
GREENERY (VG-06)



8
SK33 ELEVATION



B.D. REF :
F.S.D. REF :

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REV.	DATE	DESCRIPTION	APPROVED
-	JUL 2024	FURTHER INFORMATION	OK

EMPLOYER
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PROJECT MANAGER
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AECOM

QUANTITY SURVEYOR
Rider Levett Bucknall

TRAFFIC CONSULTANT
ozzo TECHNOLOGY

ENVIRONMENTAL CONSULTANT
AEC

JOB TITLE
S10 PLANNING APPLICATION FOR PROPOSED MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION FOR PERMITTED HOSPITAL USE IN GOVERNMENT INSTITUTION OR COMMUNITY (7) ZONE AT BLOCKS A, B AND C OF HONG KONG BAPTIST HOSPITAL, 222 WATERLOO ROAD, KOWLOON TONG, KOWLOON.

DRAWING TITLE
FENCE WALL DETAIL

SCALE	1:150	PRINTED	JAN 2024
CHECKED	WKK	DATE	JAN 2024
APPROVED	CK	DATE	JAN 2024
DRAWN	BW	DATE	JAN 2024

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20240704-SK33

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