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Agreement No. CB20180686 Term Traffic and Environmental Consultancy Services 2019 – 2021 for Kowloon Central and West and Islands Region

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12) Environmental Assessment Study (EAS)

Draft Final Report (Revision 1)

Hong Kong Housing Authority

December 2023

Contents

Chapter Page

Tables

Figures

Appendices

Executive Summary

An Environmental Assessment Study (EAS) has been carried out to evaluate the environmental feasibility for proposed redevelopment of Pak Tin Estate (Phase 12), with respect to Chapter 9 of the Hong Kong Planning Standards and Guidelines (HKPSG).

The proposed redevelopment consists of 3 public housing domestic blocks and one non-domestic block (welfare facilities). The proposed redevelopment site is abutting Nam Cheong Street and surrounded by man-made slope and existing estate road. Road traffic noise impact is the key environmental issue to be addressed for the proposed redevelopment.

Road traffic noise assessment results for public housing domestic blocks indicated that the base-case scenario would achieve a noise compliance rate of 66% at PM peak scenario with a total of 707 out of 2091 flats exposed to traffic noise levels exceeding $L_{10(1hour)}$ 70 dB(A) criterion. The maximum predicted peak hour L_{10} noise level is 72 dB(A).

Possible noise mitigation measures such as use of acoustic windows and fixed glazing are recommended to be provided for the affected NSRs in order to mitigate the road traffic impact. With the implementation of the proposed mitigation measures, the overall compliance rate for the public housing blocks is 100% and the maximum predicted peak hourly $L_{10(1hour)}$ noise level is 70 dB(A).

Based on the results of base-case scenario, no road traffic noise exceedance has been predicted at all noise sensitive uses in the welfare facilities at 1/F to 3/F.

Fixed plant noise impact assessment was conducted to evaluate the potential noise impact arising from operation of fixed plant in the vicinity of the proposed redevelopment. The results showed that the predicted noise levels at the worst affected NSR in the proposed redevelopment would comply with the relevant noise criteria. Adverse fixed plant noise impacts on the proposed public housing redevelopment are not anticipated.

Vehicular emission and industrial emission on the proposed redevelopment have been assessed. No adverse air quality impact is anticipated for the proposed redevelopment.

行政摘要

是次環境評估研究根據《香港規劃標準與準則》第九章的規定評估了擬議重建的白田邨 (第 12 階段) 的公營房屋重建項目的環境可行性。

是次擬議的重建項目包括三座公營住宅樓宇，基層底座一至三樓為社會福利設施，地面層為停車場。是次重建項目鄰近南昌街，被人造斜坡和現有的屋苑道路環繞。道路交通噪音為對是次擬議的重建項目的主要環境問題。

在基本方案下，道路交通噪音評估結果顯示，有 66%的單位將在最差交通情況下(下午高鋒時間)符合噪音標準，即 2091 個單位中有 707 個單位將受到交通噪音超過標準 70dB(A) 的影響。預測最高噪音聲級為 72dB(A) 。

對於超過交通噪音標準的噪音敏感受體，報告建議實施相應緩解措施，例如減音窗及固定玻璃，以減輕道路交通影響。在實施緩解措施後的情況下，預測最高的噪音聲級為 70dB(A), 而且 100% 的住宅單位將會符合噪音標準。

根據基本方案下的結果顯示，在一樓至三樓所有噪音敏感福利設施均沒有道路交通噪音超標。

是次環境評估研究亦評估在重建發展項目附近潛在的固定噪音源所產生的影響。結果顯示，在擬議的重建項目中受影響最嚴重的的噪音敏感受體將符合相關的噪音標準。預計固定噪音源對擬議的重建項目不會引致不良的噪音影響。

是次環境評估研究亦審查了來自車輛排放及工業排放對是次擬議重建項目在空氣質素方面的影響。預計該重建發展項目不會受到任何不良空氣質素影響。

1. Introduction

1.1. Project Background

1.1.1. The Hong Kong Housing Authority (HKHA) proposes to redevelop the existing Pak Tin Estate into a new public housing development.

1.1.2. Atkins China Limited was commissioned by HKHA to undertake an Environmental Assessment Study (EAS) for Phase 12 of the proposed redevelopment. This EAS focuses on Phase 12 of the redevelopment.

1.1.3. An EAS report was submitted to Environmental Protection Department (EPD) in April 2022 based on previous scheme versions and comments was received from EPD. The layout is then further updated to facilitate further population intake such that the number of building blocks increased from 1 to 3 as detailed in **Section 1.4** below. This updated EAS report will include the latest scheme version and also responds to EPD's comment.

1.1.4. A summary for report version, scheme and date are also provided in **Appendix 1.1**.

1.2. Scope

1.2.1. The scope of this EAS is outlined as follow:

- Assess the road traffic noise impacts upon the proposed re-development with reference to the Hong Kong Planning Standards and Guidelines (HKPSG);
- Assess the potential noise impacts of other fixed type noise sources upon the proposed redevelopment with reference to HKPSG;
- Assess the potential air quality impacts due to vehicular emissions from the surroundings road network upon the proposed re-development with reference to HKPSG;
- Assess the potential air quality impacts due to chimney emissions from the nearby industrial premises with reference to HKPSG; and
- Recommend appropriate environmental mitigation measures as required.

1.3. Site Location

1.3.1. Phase 12 of the proposed public housing redevelopment at Pak Tin Estate (The Site) is located at the existing Pak Tin Estate in Shek Kip Mei. The proposed public housing redevelopment has an area of approximately 11,300m^2 and is zoned "Residential (A)" on the Approved Shek Kip Mei Outline Zoning Plan (OZP) No. S/K4/31.

1.3.2. The Site is abutting Nam Cheong Street and surrounded by man-made slope and existing estate road. Location of the Site is shown in Error! Reference source not found..

1.4. Redevelopment Layout Details

1.4.1. Phase 12 of the proposed redevelopment comprises of three public housing domestic blocks and one non-domestic block (welfare facilities). The key development parameters of Phase 12 are summarised in **Table** 1.1. The location plan, layout and section drawings of the proposed redevelopment at Pak Tin Estate Phase 12 are provided in Error! Reference source not found. and **Appendix 1.2** respectively.

Table 1.1 Key Development Parameter for Phase 12

Parameters	Phase 12			
	Public Housing Domestic Block			Non-domestic Block (Welfare Facilities)
	Block 13	Block 12	Block 11	
Floor	4/F to 40/F	4/F to 40/F	5/F to 40/F	1/F to 3/F
No. of domestic storey	37	37	36	N/A
No. of flats per floor	21	18	18	-
Total No. of flats	777	666	648	-
	2091			
Proposed Population Intake Year	2028/ 2029			
Typical floor to floor height	2.75			4.5
First domestic floor level	+57.7 mpD	+57.7 mpD	+60.5 mpD	-

Noise during Construction Stage

1.4.2. The potential major noise sources associated with the construction activities include demolition of existing structures and the use of Powered Mechanical Equipment (PME) for foundation works. As the proposed re-development is in its preliminary design stage at the time of this report. Detail construction details including construction program, methodology, equipment inventory and location, etc. are to be developed and not available yet.

1.4.3. In view of its close proximity to the nearby noise sensitive receivers (e.g. Tsui Tin House & Pak Tin Catholic Primary School) and actual site condition, special care should be taken for when carrying out the design and execution of construction works.

1.4.4. It is anticipated that the construction works will be conducted during daytime, i.e., the non-restricted hours between 07:00 and 19:00 hours on any day except Sunday and general holiday. When any construction works involving PME is required to be carried out during the restricted hours (19:00 – 07:00 hours of the next day on any day and anytime during Sunday or general holiday), a Construction Noise Permit (CNP) shall be obtained under the Noise Control Ordinance.

1.4.5. In the future Particular Specification, it will be specified that the Contractor is required to comply with Noise Control Ordinance (Cap 400) and relevant regulations. It is recommended that noisy equipment shall be replaced by quieter alternatives where possible. Silenced diesel and gasoline generators and power units, as well as silenced and super-silenced air compressors can be readily obtained. Future Contractor will be required to make reference to the relevant Technical Circulars (e.g. ETWB TCW 13/2003) and ProPECC Note (e.g. PN2/93), to plan and implement the project to avoid causing adverse construction noise impact to the nearby NSRs.

2. Road Traffic Noise Impacts

2.1. Assessment Criteria

2.1.1. According to the HKPSG, road traffic noise impact has been assessed against the noise limit of L10 (peak hour) 70 dB(A) for domestic premises, hostels and offices, 65 dB(A) for educational institutions which require unaided voice communication and 55 dB(A) for hospitals, clinics, convalescences, and diagnostic rooms and wards of residential care homes for the elderly. These criteria only apply to uses which rely on opened windows for ventilation. Traffic noise assessment criteria for the identified noise sensitive uses are listed in **Table 2.1** below. The locations of the noise assessment point are illustrated in **Figures 2.1 to 2.4.**

Table 2.1 Summary of Traffic Noise Assessment Criteria

Floor	Facilities	Room Type	Noise Assessment Points	Noise Criterion $L_{10\ (1\text{-}hr)}$ in dB(A)
1/F	Integrated Community Center for Mental Wellness (Sub- base)	Occupation Therapy Room	WF1/F_1	70
		Training Activity Room	WF1/F_2	70
		Dining/Multi-Purpose Room	WF1/F_3	70
		Office	WF1/F_4	70
		Office	WF1/F_5	70
		Reception	WF1/F_6	70
1/F	Community Rehabilitation Day Center	Activity Area	WF1/F_7	70
		Physiotherapy/Exercise Room	WF1/F_8	70
		Medical Consultation	WF1/F_9	55
		Activity Daily Living Room	WF1/F_10	65
2/F	District Elderly Community Center (DECC)/	Office	WF2/F_1	70
		Activity Room	WF2/F_2	70
2/F	Home care Services (HCS) for Frail Elderly Person/	Working Area for PCW	WF2/F_3	70
		Office	WF2/F_4	70
2/F	Multi-Disciplinary Outreaching Support Team For Elderly (MOSTE)	Office	WF2/F_5	70
2/F	District Support Center for Persons with Disabilities	Common Room/Group Room	WF2/F_6	70
		Sick Bay	WF2/F_7- WF2/F_8	55
		Activity Room 1	WF2/F_9- WF2/F_10	70

Floor	Facilities	Room Type	Noise Assessment Points	Noise Criterion $L_{10\ (1\text{-}hr)}$ in dB(A)
		Physiotherapy/Exercise Room	WF2/F_11	70
		Occupational Therapy Area	WF2/F_12	70
		Speech Therapy Room	WF2/F_13	70
		Office	WF2/F_14 to WF2/F_ 16	70
3/F	HA Office	Office	WF3/F_1 to WF3/F_14	70
4/F to 39/F	Domestic	Residential	T1-A1 to T1-U4 T2-A1 to T2-R2 T3-A1 to T3-R2 [1]	70

Note: [1] The breakdown of noise assessment points for residential units are detailed in Figures 2.1 to 2.3.

2.2. Assessment Methodology

2.2.1. Road traffic noise level prediction has been carried out using the NoiseMap model, which is a computerized model developed on the basis of the UK Department of Transport's Calculation of Road Traffic Noise (CRTN) procedures, which is a method accepted by Environmental Protection Department (EPD) for use in Hong Kong.

2.2.2. Existing roads within 300 m from the sites of Phase 12 of the proposed redevelopment have been included in the assessment.

2.2.3. All openable windows for ventilation at the noise sensitive rooms in Phase 12 are considered to be noise sensitive receivers (NSRs) and have been selected for the assessment. Representative noise assessment points of the NSRs, i.e., noise sensitive facades, building structures with noise screening effects, topographical contours and road segments with traffic flow data have been input into the NoiseMap model in predicting the potential traffic noise impacts.

2.2.4. The assessment has been undertaken based on the projected peak hourly traffic flows in Year 2044. Year 2044 is adopted as this corresponds to the maximum projected traffic conditions within 15 years after the ultimate population intake year of the proposed redevelopment, i.e. Year 2029. Traffic Forecasting for Environmental Assessment describing the traffic forecast methodology for Year 2044 will be submitted to the Transport Department for approval separately. The traffic forecast data, including traffic flow, percentage of heavy vehicles, road types and speeds, are provided in **Appendix 2.1**.

2.3. Design Consideration for the Base-case Scenario

2.3.1. The design of the given layout scheme of the public housing domestic blocks studied in this EAS has implemented the following design consideration in order to minimize the road traffic noise impacts as much as practicable and with an aim to achieve a high compliance rate.

Provision of Elevated Open Landscape Deck

2.3.2. For the base-case scenario, elevated open landscape deck at 2/F to 4/F has been adopted as building feature for the Public Housing building blocks. The height of the elevated open landscape deck is from +49.2 mPD to +52.0mPD.

Internal Layout Design

2.3.3. In general, standard modular flat design (MFD) is adopted for public housing development. Revision of internal layout to the affected floors would not feasible.

Building Block Design

2.3.4. Building blocks should be arranged such that the angles of view to severe traffic noise sources are minimized as far as possible. In the current scheme, the building blocks are in "T – shapes" and is arranged with the protruding wing pointing towards Nam Cheong Street. Such arrangement offers a self-protecting effect as the protruding wings provides noise shielding to the remaining facades facing Nam Cheong Street.

2.3.5. The building block design has also been optimized in view of planning constraint to provide ventilation corridor for air ventilation across the central part of the proposed redevelopment. Further revision of building block design will be constrained by such consideration.

Further Setback

2.3.6. The Site is abutting Nam Cheong Street and surrounded by man-made slope, distance is restricted by the size of the redevelopment. Therefore, further setback is considered not feasible for Phase 12 of the proposed redevelopment.

Existing barriers at Nam Cheong Street

2.3.7. An existing 7m high roadside noise barrier is identified at the west of the Proposed Development along Nam Cheong Street. The road side barrier consist of 41 bays with each 4.5m width, i.e. total length of around 184.5m. The as-built drawing for the 7m high roadside noise barrier is obtained from HKHA as extracted in **Appendix 2.2**.

2.4. Traffic Noise Impact Assessment

Predicted Road Traffic Noise Impacts on Domestic Block - Base-case Scenario

2.4.1. The noise assessment points have been assigned to each openable windows for ventilation at the proposed redevelopment are shown in **Figure 2.1** to **Figure 2.3**. The predicted peak hourly road traffic noise levels are summarized in **Table 2.2** and the predicted road traffic noise levels at the representative NSRs under base-case scenario are detailed in **Appendix 2.3**.

Table 2.2 Summary of Predicted Peak Hourly Road Traffic Noise on Domestic Block - Base-case Scenario

Parameter	Phase 12 Domestic Block	
Total No. of Flats	2091	
Traffic scenario	AM Peak	PM Peak
Predicted Maximum $L_{10\ (peak\ hour)}$, dB(A)	72	72
No. of Flats with Noise Exceedance	583	707
Compliance Rate, %	72%	66%

Notes: Noise Criterion $L_{10\ (peak\ hour)}$ = 70 dB(A)

2.4.2. The predicted maximum road traffic noise level for the domestic block of the proposed public housing redevelopment is 72 dB(A). The worst case noise compliance rate for the domestic block of Phase 12 is 66% at PM peak scenario.

Predicted Road Traffic Noise Impacts on Non-Domestic Block (Welfare Facilities) - Base-case Scenario

2.4.3. The noise assessment points have been assigned to locations with openable windows for ventilation at the noise sensitive rooms on 1/F to 3/F. Locations of noise assessment points are indicated in **Figure 2.4a to Figure 2.4c**. The predicted maximum peak hourly road traffic noise levels at the proposed welfare facilities are shown in **Table 2.3** and detailed in **Appendix 2.3**.

Table 2.3 Summary of Predicted Peak Hourly Road Traffic Noise Results for the Non-Domestic Block (Welfare Facilities) - Base-case Scenario

Floor	Facilities	Room Type	Noise Assessment Points	Noise Criterion $L_{10\ (1\text{-hr})}$ in dB(A)	Predicted Maximum Traffic Noise Level, L_{10}(peak hour), dB(A)	Exceedance
1/F	Integrated Community Center for Mental Wellness (Sub- base)	Occupation Therapy Room	WF1/F_1	70	51	N
		Training Activity Room	WF1/F_2	70	52	N
		Dining/Multi-Purpose Room	WF1/F_3	70	52	N
		Office	WF1/F_4	70	40	N
		Office	WF1/F_5	70	40	N
		Reception	WF1/F_6	70	43	N
1/F	Community Rehabilitation Day Center	Activity Area	WF1/F_7	70	55	N
		Physiotherapy/ Exercise Room	WF1/F_8	70	55	N
		Medical Consultation	WF1/F_9	55	55	N
		Activity Daily Living Room	WF1/F_10	65	55	N
2/F	District Elderly Community Center (DECC)/	Office	WF2/F_1	70	<40	N
		Activity Room	WF2/F_2	70	<40	N
2/F	Home care Services (HCS) for Frail Elderly Person/	Working Area for PCW	WF2/F_3	70	58	N
		Office	WF2/F_4	70	57	N
2/F	Multi-Disciplinary Outreaching Support Team For Elderly (MOSTE)	Office	WF2/F_5	70	57	N
2/F		Common Room/Group Room	WF2/F_6	70	56	N

Floor	Facilities	Room Type	Noise Assessment Points	Noise Criterion $L_{10\ (1\text{-}hr)}$ in dB(A)	Predicted Maximum Traffic Noise Level, L_{10}(peak hour), dB(A)	Exceedance
	District Support Center for Persons with Disabilities	Sick Bay	WF2/F_7-WF2/F_8	55	54	N
		Activity Room 1	WF2/F_9-WF2/F_10	70	53	N
		Physiotherapy/ Exercise Room	WF2/F_11	70	48	N
		Occupational Therapy Area	WF2/F_12	70	47	N
		Speech Therapy Room	WF2/F_13	70	46	N
		Office	WF2/F_14 to WF2/F_ 16	70	45	N
3/F	HA Office	Office	WF3/F_1 to WF3/F_14	70	60	N

2.4.4. Based on the results of base-case scenario, no road traffic noise exceedance has been predicted at all noise sensitive uses in the welfare facilities at 1/F to 3/F.

List of Noise Sensitive Receivers of Public Housing Domestic Blocks with Noise Exceedances (Base-case Scenario)

2.4.5. Based on the results of traffic noise impact assessment under the base-case scenario for public housing domestic blocks at representative NSRs are summarized in **Table 2.4**.

Table 2.4 Summary of NSRs with Noise Exceedances (Base-case Scenario)

NSR Locations	Floors with Noise Exceedances	Noise Criteria, dB(A)	Predicted Maximum $L_{10\ (peak\ hour)}$, dB(A)
Domestic Blocks			
T1-A2	5/F - 40/F	70	72
T1-A3	5/F - 40/F	70	72
T1-B2	14/F - 28/F	70	71
T1-C2	5/F - 37/F	70	71
T1-D1	4/F - 40/F	70	72
T1-I1	18/F - 37/F	70	71
T1-I2	17/F - 39/F	70	71
T1-J2	13/F - 40/F	70	72
T1-K1	12/F - 40/F	70	72
T2-A2	7/F - 31/F	70	71
T2-B1	6/F - 40/F	70	72

NSR Locations	Floors with Noise Exceedances	Noise Criteria, dB(A)	Predicted Maximum $L_{10\ (peak\ hour)}$, dB(A)
T2-C2	6/F - 35/F	70	72
T2-C3	7/F - 31/F	70	71
T2-D2	17/F - 19/F	70	71
T2-E1	6/F - 30/F	70	71
T2-F2	8/F - 35/F	70	71
T2-H2	10/F - 34/F	70	71
T2-H3	9/F - 40/F	70	71
T2-I2	6/F - 40/F	70	72
T2-J1	12/F - 34/F	70	71
T3-A2	11/F - 32/F	70	71
T3-B1	7/F - 40/F	70	72
T3-C2	8/F - 38/F	70	72
T3-C3	9/F - 33/F	70	71
T3-D2	12/F - 25/F	70	71
T3-E1	8/F - 31/F	70	71
T3-F2	7/F - 36/F	70	72
T3-G1	8/F - 29/F	70	71
T3-H1	7/F - 36/F	70	72
T3-H2	7/F - 39/F	70	72
T3-I2	6/F - 40/F	70	72
T3-J1	8/F - 32/F	70	71

Mitigation Measures at the Domestic Block

2.4.6. Mitigation measures are proposed as detailed in the below sections for the worst case traffic flow scenario, i.e. PM peak traffic.

Provision of Acoustic Windows

2.4.7. According to results of the traffic noise impact assessment under the base-case scenario, noise exceedances are anticipated at some noise sensitive uses that are directly overlooking Nam Cheong Street. Acoustic windows have been proposed for the flats with noise exceedances to mitigate road traffic noise impact. Modular Flat Design (MFD) has been adopted for those flats proposed with acoustic windows.

2.4.8. With reference to HD's Technical Note on "Noise Attenuation for Modular Flat Design (MFD) with Acoustic Windows" as extracted in **Appendix 2.5**, sound attenuations of 5.8 dB(A) for MFD Type A, 5.5 dB(A) for MFD Type B Living Room, 5.6 dB(A) for MFD Type C Living Room can be achieved for acoustic window system without sound absorptive lining. It should be noted that the sound attenuation performance is subjected to actual design and configurations of the acoustic window as well as setting and orientation of the acoustic window. For conservative assessment, the minimum reduction performance among the three variations of acoustic windows (i.e. 5.5 dB(A)), will be adopted for all acoustic windows adopted in this assessment.

2.4.9. To achieve the sound attenuation performance, the setting and orientation of the acoustic window shall follow the Final Report of Acoustic Design and Performance Evaluation of the Acoustic Window (ADPEAW).

2.4.10. Acoustic windows are recommended to be provided to the affected flats. The windows specified for use of acoustic windows are listed in **Table 2.5**. The locations of the acoustic windows are shown in Error! Reference source not found. to Error! Reference so urce not found..

Table 2.5 Summary of Proposed Acoustic Window Locations (Without Sound Absorptive Lining)

Acoustic Windows Locations	Floors with Acoustic Windows	Adopted Reduction Performance[1], dB(A)
T1-A2	5/F - 40/F	5.5dB(A)
T1-A3	5/F - 40/F	5.5dB(A)
T1-B2	14/F - 28/F	5.5dB(A)
T1-C2	5/F - 37/F	5.5dB(A)
T1-D1	4/F - 40/F	5.5dB(A)
T1-I1	17/F - 39/F	5.5dB(A)
T1-I2	17/F - 39/F	5.5dB(A)
T1-J2	13/F - 40/F	5.5dB(A)
T1-K1	12/F - 40/F	5.5dB(A)
T2-A2	7/F - 31/F	5.5dB(A)
T2-B1	6/F - 40/F	5.5dB(A)
T2-C2	6/F - 35/F	5.5dB(A)
T2-C3	6/F - 35/F	5.5dB(A)
T2-D2	17/F - 19/F	5.5dB(A)
T2-E1	6/F - 30/F	5.5dB(A)
T2-F2	8/F - 35/F	5.5dB(A)
T2-H2	9/F - 40/F	5.5dB(A)
T2-H3	9/F - 40/F	5.5dB(A)
T2-I2	6/F - 40/F	5.5dB(A)

Acoustic Windows Locations	Floors with Acoustic Windows	Adopted Reduction Performance[1], dB(A)
T2-J1	12/F - 34/F	5.5dB(A)
T3-A2	11/F - 32/F	5.5dB(A)
T3-B1	7/F - 40/F	5.5dB(A)
T3-C2	8/F - 38/F	5.5dB(A)
T3-C3	8/F - 38/F	5.5dB(A)
T3-D2	12/F - 25/F	5.5dB(A)
T3-E1	8/F - 31/F	5.5dB(A)
T3-F2	8/F - 31/F	5.5dB(A)
T3-G1	8/F - 29/F	5.5dB(A)
T3-H1	7/F - 39/F	5.5dB(A)
T3-H2	7/F - 39/F	5.5dB(A)
T3-I2	6/F - 40/F	5.5dB(A)
T3-J1	8/F - 32/F	5.5dB(A)

[1] For conservative assessment, the minimum reduction performance among the 3 variations of acoustic windows (i.e. 5.5dB(A)) is adopted.

[2] According to the ADPEAW report, the noise attenuation effect of the acoustic window located in the living room and the bedroom of Type C (1B) is assessed together as a combined measure. Thus, acoustic window shall be provided for both living room and bedroom of Type C (1B) flats.

Acoustic Window Configuration

2.4.11. The sound attenuation of the acoustic window system is dependent on the window configuration. The summary of acoustic window configuration (Retrieved from HD's Technical Note on "Noise Attenuation for Modular Flat Design (MFD) with Acoustic Windows") configuration of the proposed acoustic window system is listed in **Table 2.6**. Indicative details of the proposed acoustic windows adopted in the current design is also attached in **Appendix 2.4**.

Table 2.6 Summary of Acoustic Window Configuration (Retrieved from HD's Technical Note on "Noise Attenuation for Modular Flat Design (MFD) with Acoustic Windows")

Flat Type	Inner Window Opening	Outer Window Opening	Window Overlap-ping Length	Gap Width Between Window Panel	Window Pane Thickness	Noise Reduction Performance dB(A)	
						From HD's TN[1] (Without Sound Absorptive Lining)	Adopted in this assessment, dB(A) [2]
Type A-3 (1/2P)	1383mm (H) x 840mm (W)	1383mm (H) x 870mm (W)	340mm	175mm	6mm	5.8dB(A)	5.5 dB(A)
Type B-5 (2/3P)	1383mm (H) x 940mm(W)	1383mm (H) x 1010mm(W)	200mm	175 mm	6mm	5.5 dB(A)	
Type C-8 (1B) Living Room	1383mm (H) x 1060mm(W)	1383mm (H) x 1050mm(W)	330mm	175 mm	6mm	5.6 dB(A)	
Type C-8 (1B) Bed Room	1383mm (H) x 675mm(W)	1383mm (H) x 600mm(W)	525mm	175 mm	6mm		

Note:

[1] HD's Technical Note on "Noise Attenuation for Modular Flat Design (MFD) with Acoustic Windows"

[2] For conservative assessment, the minimum reduction performance among the 3 variations of acoustic windows (i.e. 5.5dB(A)) is adopted.

2.4.12. Based on the acoustic window system design, the outer layer of the window system shall consist of fixed glazing and side-hung openable gasketted window, and the inner layer shall consist of one sliding window. The basic configurations of the acoustic window for Type A, Type B and Type C in the Development is shown in **Plate 2-1**.

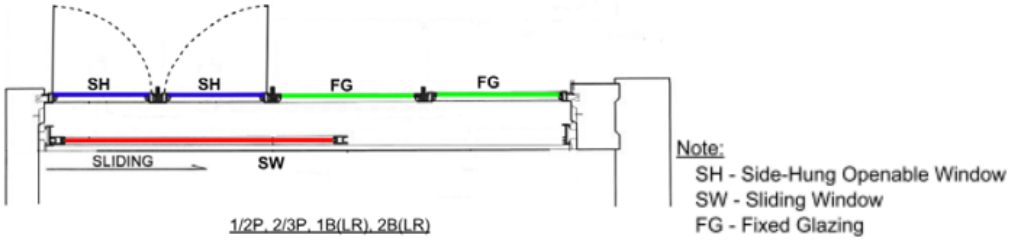

Plate 2-1 Acoustic Window Configuration for Type A, Type B and Type C

2.4.13. For fixed glazing equipped with side-hung openable window, the provision of special window opening device like Allen Key should be provided in order to keep the side-hung window normally closed. However, as advised by the ADPEAW, the future residents shall be advised of the caution that such window should be closed to achieve the intended sound attenuation and that opening of the windows for purpose of other operation, maintenance or additional ventilation would compromise the indoor noise level in the flat.

2.4.14. The design of the proposed acoustic window meets the relevant natural ventilation requirement under the Building (Planning) Regulations. The inner sliding glass panel need to be slid behind the opened outer window for creating an air gap for the supply of fresh air with noise mitigation effect. According to the Practice Note on Lighting and Ventilation Requirements – Performance- based Approach (APP-130) issued by Buildings Department, for optimum performance with the inner sliding glass panel in a closed position, the air gap should have a length of not less than 100mm and a width between 100mm and 175mm. The length and width of the air gap of the proposed acoustic window also meet these conditions.

Acoustic Window Settings

2.4.15. For achieving the sound attenuation assessed in the study, the acoustic window should be set at the intended orientation as described in the Final Report of ADPEAW. The setting and orientation are summarized and described below:

2.4.16. In case a flat is fronting a major noisy road running in parallel with the façade, the left or right settings of the openings of its acoustic window are only mutual images; both of which could achieve the intended sound attenuation.

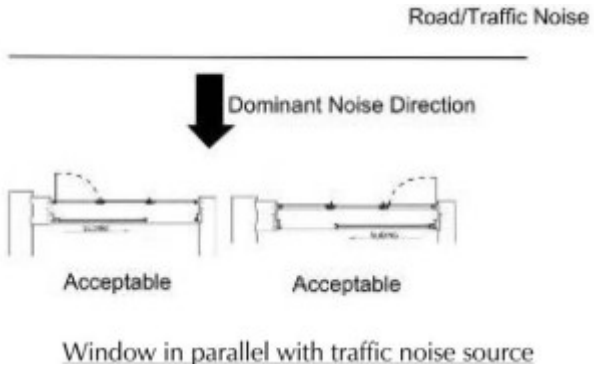

Plate 2-3 Acoustic Window in Parallel with Traffic Noise Source

2.4.17. In case the road is located at one side of the flat, the traffic noise would propagate to the façade more from the side of the road rather than right in front of it. The staggered openings of the acoustic window should be set to intercept direct propagation of noise through the openings and the gap between outer and inner panes.

2.4.18. The setting of acoustic windows are also shown graphically in Error! Reference source n ot found. to Error! Reference source not found..

Advice to Future Residents for the Use of Acoustic Window

2.4.19. The sound attenuation achieved by the acoustic window refers to the designated setting of window. Hence the future residents in the flats equipped with acoustic windows should be advised of such settings stated in **Sections 2.4.15** to **2.4.18** for achieving the intended attenuation. Deviation from the recommended setting might affect the noise level in the flat.

2.4.20. The noise reduction purpose of the acoustic window and its setting to achieve the noise reduction effect would be incorporated in the Decoration Handbook/ Deed of Mutual Covenant (DMC) and Sales Brochure (subject to the housing type) to inform the future occupants.

2.4.21. Acoustic windows are recommended to be provided for the affected NSRs as noise mitigation measures. The locations of the acoustic windows are shown in Error! R eference source not found. **to** Error! Reference source not found..

Predicted Road Traffic Noise Impacts on Domestic Block of Public Housing Units (Mitigated Scenario)

2.4.22. Acoustic windows are recommended to be provided for the affected NSRs. With the recommended noise mitigation measure in place, the predicted peak hourly road traffic noise levels are summarised in **Table 2.7** and the predicted road traffic noise levels at the representative NSRs under the mitigated scenario are detailed in **Appendix 2.6**.

Table 2.7 Summary of Predicted Peak Hourly Road Traffic Noise Results for the Domestic Block of Public Housing Units (Mitigated Scenario)

Parameter	Phase 12 Domestic Block
Total No. of Flats	2091
Predicted Maximum $L_{10\ (peak\ hour)}$, dB(A)	70
No. of Dwellings with Noise Exceedance	0
Compliance Rate, %	100.0

Notes: Noise Criterion $L_{10\ (peak\ hour)}$ = 70 dB(A)

2.4.23. The predicted maximum road traffic noise level for the domestic block of the proposed public housing redevelopment is 70 dB(A). The noise compliance rate for the domestic block of Phase 12 is 100%. No traffic noise exceedance has been predicted.

2.5. Summary

2.5.1. The predicted maximum road traffic noise level under the base-case scenario for the domestic block of the proposed public housing redevelopment is 72 dB(A). The noise compliance rate under the base-case scenario for domestic block of the proposed public housing re-development is 66%. With incorporation of acoustic windows as mitigation measures, the compliance rate for the domestic block of the proposed public housing redevelopment is 100%, and the predicted maximum peak hourly road traffic noise level is 70 dB(A).

2.5.2. Based on the results of base-case scenario, no traffic noise exceedance has been predicted at all noise sensitive uses in the welfare facilities at 1/F to 3/F.

3. Fixed Plant Noise Impacts

3.1. Assessment Criteria

3.1.1. According to the HKPSG, noise assessments for fixed noise sources would normally be conducted in accordance with the Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places Or Construction Sites (IND-TM), published under the Noise Control Ordinance. IND-TM lays down statutory Acceptable Noise Levels (ANL). The HKPSG also stated that in order to plan for a better environment, all planned fixed noise sources should be located and designed that when assessed in accordance with IND-TM, the level of the intruding noise at the facade of the nearest sensitive use should be at least 5 dB(A) below the appropriate ANL shown in Table 2 of IND-TM or, in the case of the background being 5 dB(A) lower than the ANL, should not be higher than the background. As there are no planned noise sources at the proposed re-development, ANL is adopted in the fixed noise assessment. The ANLs provided in the IND-TM is detailed in **Table 3.1**.

Table 3.1 Acceptable Noise Level in IND-TM

Time Period	Acceptable Noise Level, $L_{eq\ 30\ min}$, dB(A)		
	ASR "A"	ASR "B"	ASR "C"
Day time (0700 – 1900 hours)	60	65	70
Evening (1900 – 2300 hours)			
Night-time (2300 – 0700 hours)	50	55	60

Notes: ASR = Area Sensitivity Rating

3.1.2. The Acceptable Noise Levels (ANLs) are dependent on the Area Sensitivity Rating (ASR) defined and the time period of the day. The ASR of the NSR is determined by the type of area containing it and the presence of any influencing factors (IF) such as industrial areas, major roads, etc.

3.1.3. Phase 12 of the proposed redevelopment of Pak Tin Estate are located in Shek Kip Mei and the study area contains high-rise residential developments (e.g. Pak Tin Estate Redevelopment Phase 7, 8, 10, 11), commercial centres with market and shops (e.g. Pak Tin Community Complex), leisure facilities (e.g. Shek Kip Mei Park and Shek Kip Mei Park Sports Centre) and schools, which extend continuously. However, there is no major trade or commercial activities in the vicinity. Therefore, the type of area is taken as "Areas other than above" based on IND-TM. According to the Annual Traffic Census 2022, Nam Cheong Street (between Cornwall Street and Pak Tin Street, a District Distributor) and Cornwall Steet (between Waterloo Road and Nam Cheong Street, a District Distributor) runs along the north of the proposed redevelopment with annual average daily traffic flows (AADT) of 9,840 and 17,640. As the AADT of Nam Cheong Street is less than 30,000, it is not considered as an IF. Therefore, ASR of "B" is adopted in the assessment as conservative approach.

3.2. Identified Fixed Plant Noise Sources

3.2.1. Fixed noise sources in the vicinity of the proposed redevelopment have been identified. Fixed plant noise sources were identified based on the desktop study and the site visits on 11 January 2022 and 19 January 2022 respectively. The identified fixed plant noise sources were mainly air ventilation systems installed on the buildings. The identified fixed plant noise sources are summarised in **Table 3.2** and their locations are shown in **Figure 3.1**. The photograph record of the identified fixed plant noise sources is provided in **Appendix 3.1**. Detailed information of the identified fixed plants obtained from the operators are provided in **Appendix 3.2**.

Table 3.2 Identified Fixed Plant Noise Sources

Building Name	Identified Fixed Plant Noise Source			
	Type	Location	Operation Hours	Remarks
Shek Kip Mei Fire Station (SKMFS)	4 sets of air-cooled chillers	Rooftop	24 hours	Noise measurement results provided in the approved EAS for Phases 7, 8, 10 of Pak Tin Estate re-development [1] were adopted for the assessment.
	Emergency Broadcasting System (EBS)	G/F	During emergency	Facing north and no direct line of slight from the proposed re-development.
	Façade speakers	G/F	On need basics	Operates at a on need basics only and normally inactive
Public Health Laboratory Centre (PHLC)	6 sets of air-cooled chillers (1 set standby)	Rooftop	24 hours	1 set standby ACC. Information provided by Department of Health.
Tung Wah Group of Hospitals Chang Ming Thien College (CMTC)	3 sets of air-cooled chillers	Rooftop	0800-1800	Operation details provided by staff of CMTC.
Shek Kip Mei Park Sports Center	4 sets of air cooled chiller	Rooftop	0700 – 2300	Acoustic silencers were installed for all of the air cooled chillers

Notes: [1] Extracted in Appendix 3.2.

Shek Kip Mei Fire Station

3.2.2. Shek Kip Mei Fire Station (SKMFS) is located approximately 80 m to the north of the Project site boundary. Based on the observations dated 19 January 2022, four sets of air-cooled chillers are located on the rooftop of SKMFS (shown in **Appendix 3.1**). An Emergency Broadcasting System (EBS) was identified on G/F of the SKMFS facing north. The line of sight from the noise sensitive facades of the nearest public housing block of Phase 12 is blocked by the building structure of the SKMFS itself. Hence, the noise impact from the Emergency Broadcasting System of the SKMFS is anticipated to be insignificant and thus it is not included in the fixed plant noise impact assessment. 2 speakers were also found at the front façade facing Nam Cheong Street based on the observations dated 19 January 2022. These speakers operate at a on need basics only and normally inactive such that significant prolonged noise impact due to the speakers is not envisaged.

Public Health Laboratory Centre

3.2.3. Public Health Laboratory Centre (PHLC) is located approximately 70m to the northwest of the Project site boundary. Based on the observations dated 19 January 2022, six sets of air-cooled chillers are located on the rooftop of PHLC (shown in **Appendix 3.1**), separation distance between the closest set of air-cooled chiller and the site boundary of Phase 12 of the proposed re-development is 80m. Based on the information provided by the Department of Health on 20 November 2017, one set of air-cooled chillers is served as standby purpose. Phone interview was conducted with PHLC on 22 October 2021 and the record is attached **Appendix 3.2**. There is no change to the identified fixed noise sources on the rooftop of PHLC.

Tung Wah Group of Hospitals Chang Ming Thien College

3.2.4. Tung Wah Group of Hospitals Chang Ming Thien College (CMTC) is located approximately 40m to the northeast of the Project site boundary and around 70m to Block 13 of the Proposed Development. Based on the observations dated 19 January 2022, three sets of air-cooled chillers are located on the rooftop of the CMTC (shown in **Appendix 3.1**). As advised by the staff of the CMTC, the identified air-cooled chillers are in operation from 8 am to 6 pm. The correspondence is provided in **Appendix 3.2**.

Shek Kip Mei Park Sports Center

3.2.5. Shek Kip Mei Park Sports Center (SKMPSC) is located approximately 70m to the west of the Project site boundary. Based on earlier aerial images, four sets of air-cooled chillers are located on the rooftop of the SKMPC with around 150m from the nearest Block 13 of the Proposed Development, however, it is found that the chillers are now enclosed with acoustic silencers/ enclosure from the observations dated 19 January 2022.

3.2.6. Given the air-cooled chillers are already provided with acoustic enclosures and the large separation from the Proposed Development, the fixed noise impact due to air cooled chillers at SKMPSC is considered insignificant and thus it is not included in the fixed plant noise impact assessment.

3.2.7. Based on the findings above, fixed plant noise sources located on the following buildings will be included in the noise assessment: Shek Kip Mei Fire Station (SKMFS), Public Health Laboratory Centre (PHLC) and Tung Wah Group of Hospitals Chang Ming Thien College (CMTC).

3.3. Impact Assessment

Assessment Methodology

3.3.1. The assessment of the fixed noise sources was undertaken in accordance with the following standard acoustic principle:

$$SPL = SWL - DC + FC + BC$$

Where SPL = Predicted façade noise level, dB(A)

SWL = Sound Power Level, dB(A

DC = Distance attentuation correction, $20 \log_{10} D_i + 8$ in dB(A)

D_i = Distance in m between the source and the receiver

FC = Façade correction of 3 dB(A)

BC = Barrier correction

3.3.2. As the noise sources in this assessment are mostly origin from building services equipment (i.e. air-cooled chillers), the operation and noise levels of such equipment are typically fairly constant, i.e. Intermittency nor impulsiveness of the noise levels are insignificant. Neither corrections for intermittency nor impulsiveness are adopted. Furthermore, based on findings in site observation, the concerned buidlign equipment noise soursce are in good conditions and tonal characteristics were not observed. Therefore, no tonal correction is adopted.

3.3.3. The total predicted façade noise level (SPL) contributed from adjacent identified fixed noise sources at representative NSR is then calculated by the following formula:

$$\text{Total SPL} = 10 \log_{10} \sum 10 \exp (SPL_i / 10)$$

Where Total SPL = Total Predicted façade noise level from all noise sources in the calculations, dB(A)

SPLi = Predicted façade noise level at receiver by individual noise source, dB(A)

Selection of Representative Noise Sensitive Receivers

3.3.4. The fixed plants located on buildings along Nam Cheong Street will potentially affect the northwest-facing and northeast-facing NSRs in Phase 12. However, there is no line of sight from the noise sensitive façade of welfare facilities of Phase 12 to the identified fixed plant noise source. Therefore, the noise impacts from the identified fixed plants to the welfare facilities of Phase 12 are anticipated to be insignificant and are not included in the fixed plant noise impact assessment.

3.3.5. Three representative NSRs, namely T1-E2, T3-A2 and T3-E1 on the domestic block of Phase 12, have been selected for the noise assessment. This representative assessment points are located closest to the identified fixed plant with direct line of sight, it is considered as the worst-case scenario. The shortest horizontal separation distance between representative NSRs and the fixed noise sources have been used for the assessment. The assessment criteria of the selected NSRs are provided in **Table 3.3**.

Table 3.3 Fixed Plant Noise Impact Assessment Criteria

NSR ID	ASR	ANL (0700-2300 hour)	ANL (2300-0700 hours)
T1-E2	"B"	65 dB(A)	55 dB(A)
T3-A2	"B"	65 dB(A)	55 dB(A)
T3-E1	"B"	65 dB(A)	55 dB(A)

Cumulative Fixed Plant Noise Impact Assessment

3.3.6. The cumulative noise impact assessment results for the identified fixed noise sources are summarized in **Table 3.4**. The detailed fixed plant noise assessment results are provided in **Appendix 3.3**.

Table 3.4 Summary of Fixed Plant Noise Impact Assessment Results

NSR ID	Fixed Plant Noise Source Building Location	Plant Type	Operation Time Period		Predicted Noise Level dB(A)	
			0700-2300	2300-0700	0700-2300	2300-0700
T1-E2	SKMFS	Air-cooled chiller	✓	✓	58 (ANL [1] = 65)	<45 (ANL [1] = 55)
	PHLC	Air-cooled chiller	✓	✓		
	CMTC	Air-cooled chiller	✓	-		
T3-A2	SKMFS	Air-cooled chiller	✓	✓	52 (ANL [1] = 65)	49 (ANL [1] = 55)
	PHLC	Air-cooled chiller	✓	✓		
	CMTC	Air-cooled chiller	✓	-		
T3-E1	SKMFS	Air-cooled chiller	✓	✓	53 (ANL [1] = 65)	49 (ANL [1] = 55)
	PHLC	Air-cooled chiller	✓	✓		
	CMTC	Air-cooled chiller	✓	-		

3.3.7. Based on the results in **Table 3.4**, the predicted noise level at the selected NSRs due to the operation of the identified fixed plant will comply with the relevant daytime and evening time as well as night-time criteria.

3.4. Fixed Plant Noise Impacts from Proposed Development

3.4.1. To ensure the fixed plant noise generated by the proposed development would not cause excessive impact to neighbouring noise sensitive uses, potential noise sources from the proposed development (e.g., pump rooms, transformer rooms, lift machine rooms, emergency generator rooms, etc.) should be designed to meet the relevant noise criteria as stipulated in the HKPSG.

3.4.2. Provisions shall be made to control the noise sources by suitable at source noise control measures such as silencers and acoustic linings when necessary. As such, it is anticipated that the fixed plant noise impact on the surrounding NSRs due to the operation of the proposed development will not exceed the relevant noise criteria of the HKPSG and NCO.

3.5. Summary

3.5.1. Based on the fixed plant noise impact assessment results, the predicted cumulative noise levels at NSRs from the identified fixed plant noise sources will comply with the daytime and evening and night-time noise criteria. Adverse fixed plant noise impacts on Phase 12 of the proposed public housing redevelopment are not anticipated.

4. Air Quality Impacts

4.1. Assessment Criteria

The Hong Kong Planning Standards and Guidelines

4.1.1. The HKPSG recommends a buffer distance on usage of "open space" site for active and passive recreational from roads and industrial areas. Evaluation of potential air quality impacts on the proposed public housing development due to roads and industrial chimney emissions has made reference to the HKPSG guidelines. **Table 4.1** provides the HKPSG recommended buffer distances for recreational uses in open space.

Table 4.1 HKPSG Recommended Buffer Distance for Open Space

Source	Parameter	Buffer Distance	Permitted Uses
Road and Highways	*Type of Road*		
	Trunk Road and Primary Distributor	>20m	Active and passive recreation uses
		3 - 20m	Passive recreational uses
		<3m	Amenity areas
	District Distributor	>10m	Active and passive recreational uses
		<10m	Passive recreational uses
	Local Distributor	>5m	Active and passive recreational uses
		<5m	Passive recreational uses
	Under Flyovers		Passive recreational uses
Industrial Areas	*Difference in Height between Industrial Chimney Exit and the Site*		
	<20m	>200m	Active and passive recreational uses
		5 - 200m	Passive recreational uses
	20 - 30m (*)	>100m	Active and passive recreational uses
		5 - 100m	Passive recreational uses
	30m - 40m	>50m	Active and passive recreational uses
		5 - 50m	Passive recreational uses
	>40m	>10m	Active and passive recreational uses

Remarks (*):

(a) In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available.

(b) The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb, to the boundary of open space sites.

(c) The guidelines are generally applicable to major industrial areas but **NOT** individual large industrial establishments which are likely to be significant air pollution sources. Consult EPD when planning open space sites close to such establishments.

(d) Amenity areas are permitted in any situation.

Air Pollution Control (Construction Dust) Regulation

4.1.2. Notifiable and regulatory works are under the control of the Air Pollution Control (Construction Dust) Regulation. Notifiable works are site formation, reclamation, demolition, foundation and superstructure construction for buildings and road construction. Regulatory works are building renovation, road opening and resurfacing slope stabilisation and other activities including stockpiling, dusty material handling, excavation, concrete production etc. This Project is expected to include both notifiable and regulatory works. Contractors and site agents are required to inform EPD on carrying out construction works and to adopt dust reduction measures to reduce dust emissions to the acceptable levels.

Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation

4.1.3. To control potential emissions from non-road mobile machinery during construction phase, Non-road Mobile Machinery (NRMM) including Regulated Machines and Non-road Vehicles except those exempted, are required to comply with the prescribed emission standards under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. Only approved or exempted NRMMs are allowed to be used in specified activities and locations including construction sites, container terminals and back up facilities, restricted areas of the airport, designated waste disposal facilities and specified processes. It is recommended to use approved NRMMs during construction as far as possible to minimize air emissions from the construction activities.

Control of Air Pollution in Car Parks

4.1.4. Design and operation of the proposed car park shall follow ProPECC PN2/96 on Control of Air Pollution in Car Parks in order to comply with the air quality guidelines required for the protection of public health.

4.2. Industrial Emissions

4.2.1. According to HKPSG chapter 9 Table 1.3, the recommended buffer distance for industrial chimneys should be minimum 200m for high-rise buildings. Initial desktop study was first conducted to review the nature of all buildings within the study area based on latest street maps and statutory plans. Followed by the desktop review, chimneys within study area were then identified by site walks, with focus on the industrial buildings identified from the desktop study. Chimney surveys were undertaken on 19 October 2017 to obtain the chimney details. One installed industrial chimney was identified during the on-site chimney surveys. It is located at the PCCW Telephone Exchange Building. Further site walks were conducted on 19 January 2022 and 8 August 2023 to find out the latest updates over year and it is confirmed that no new chimney or changes to the identified chimney. The location of the chimney and the corresponding photo is provided in **Figure 4.1** and **Appendix 4.1**, respectively.

PCCW Telephone Exchange Building

4.2.2. A chimney was identified at the roof of PCCW Telephone Exchange Building. The shortest separation distance between the chimney of PCCW Telephone Exchange Building and the Project site boundary of Phase 12 is about 300m. During the site survey/site walk, no emissions from this chimney were seen. An on-site interview was conducted with the staff officer of the PCCW Telephone Exchange Building. As advised by the PCCW staff, this chimney is connected to the exhaust of an emergency generator (diesel-fuelled) which operates only under very extreme condition when there is no electricity supply from the power grid system. As highlighted from the CLP website, the electricity delivery from CLP is highly reliable (99.999%). Therefore, the possibility to operate the emergency generator can be concluded to be extremely low. As such, adverse air quality impacts due to the chimney emissions from the operation of this emergency generator is not anticipated.

4.3. Vehicular Emissions

4.3.1. The proposed redevelopment is abutting Nam Cheong Street. With reference to the Annual Traffic Census (2022) published by the Transport Department (TD), the corresponding section of Nam Cheong Street in the vicinity of the Site is classified as a District Distributor.

4.3.2. The minimum setback distance of the nearest flat at the proposed redevelopment from the kerb of the nearby roads are summarised in **Table 4.2** and illustrated in **Figure 4.2**.

Table 4.2 Separation Distance between Nearby Road and Nearest Public Housing Block

Road	Road Type	Recommended Buffer Distance for Active and Passive Recreation Uses	Horizontal Distance to the Nearest Air Sensitive Uses	
			Location	Distance
Nam Cheong Street	District Distributor	> 10m	Domestic Block of Phase 12	approximate 23m

4.3.3. As the minimum separation distance between the nearest facade of the air sensitive uses (including domestic block and social welfare) to the road kerbs of abutting open roads are found to be complied with the minimum setback distances as stipulated in Ch.9 the HKPSG for all air sensitive uses in the proposed re-development, there is no air sensitive uses within the buffer distance and adverse air quality impact arising from vehicular emissions is not anticipated.

4.4. Construction Dust

4.4.1. Requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation shall be followed to control potential emissions from NRMM during construction phase. For each NRMM to be used, the Contractors shall provide relevant supporting documents to EPD to obtain approval for use. Proper labels shall be provided to the approved NRMM to be used on site.

4.4.2. The potential dust sources of construction activities during the construction phase were identified and these include:

- Site Clearance and Demolition;
- Concreting works;
- Handling of construction materials;
- Wind erosion of open sites and stockpiling areas; and
- On-site vehicle on haul roads and use of diesel-powered plants.

4.4.3. The major potential source of air quality impact during the construction phase is expected to be fugitive dust generated from the excavation works, construction materials storage and handling. All potential dust generation works areas would be watered regularly and all vehicles would be washed at the site exit before leaving the site. Exhaust emissions would be generated from on-site vehicles and diesel-powered plants. The exhaust emission would be limited as the intermitted use on-site vehicles and diesel-powered plants would be shut down between work periods or throttled down to a minimum. Additionally, with consideration of the small scale of the Project and the localised nature of the construction works, potential construction dust and exhaust emissions impacts are anticipated to be minor.

4.4.4. To ensure that dust emissions are minimized during the construction phase of the Project, relevant dust control requirements stipulated in Air Pollution Control (Construction Dust) Regulation should be met. The following dust suppression measures are recommended to control the potential dust impacts during the construction phase of the Project. Typical measures include:

Demolition

- Enclose the building with impervious dust screens.
- Wet the working area prior to, during and after demolition.

Transport and removal of materials

- Vehicles used for the transportation of dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards.
- The areas where vehicle washing activities are carried out and the section of the construction site between the vehicle washing facilities and the exit should be paved with concrete or bituminous materials.

Construction works within work sites

- Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from Air Sensitive Receivers.
- All demolished materials that may generate dust should be covered entirely by impervious sheeting or placed in a covered area with the top and three sides enclosed within a day of demolition.
- At construction works areas where demolition takes place, water or dust suppression chemicals should be sprayed prior to, during and immediately after the demolition activities to ensure that the top surface remains wet.
- Surfaces with proposed drilling, cutting, polishing or other mechanical breaking operations should be sprayed with water or dust suppression chemicals continuously.
- At locations where scaffolding is to be erected around the perimeter of a building under construction, dust screens, sheeting, netting or a canopy should be provided.
- All skip hoists should be totally enclosed by impervious sheeting.

Access Road

- All main haul roads should be paved with concrete, bituminous materials or metal sheets, and regularly sprayed with water or dust suppression chemicals to maintain the road surface to be wet.
- Imposition of speed controls for vehicles on site haul roads.

Handling of Cement

- Stock of more than 20 bags of cement should be covered entirely by impervious sheeting or placed in a covered area with the top and three sides enclosed.
- Cement should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line during delivery. Overfilling should be strictly prohibited.
- A completely enclosed facility should be used for the loading, unloading, transfer, handling or storage activities of cement. All vents or exhausts should be fitted with fabric filter or equivalent air pollution control system.

Site Cleanliness and Tidiness

- The requirements stipulated in the Works Branch Development Bureau Technical Circular No. 6/2002 Enhanced Specification for Site Cleanliness and Tidiness should be followed as far as practicable to enhance the cleanliness and tidiness of construction sites. With the implementation of the dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices, fugitive dust impacts during the construction phase are expected to be controlled to acceptable level. The Contractor will be required to properly maintain the construction plants in a good condition to prevent exhaust emissions. Wherever possible, connection to the main power supply should be considered to minimize the need for use of diesel fuel generator.

4.4.5. Only approved or exempted non-road mobile machinery with a proper label are allowed to be used for the construction activities. The Contractor is required to ensure the adopted machines or non-road vehicle under the Project could meet the prescribed emission standards and requirements to comply with the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. It is recommended to use approved NRMMs during construction as far as possible to minimize air emissions from construction activities.

5. Overall Conclusion

5.1. Noise

5.1.1. The noise compliance rate under the base-case scenario for domestic block of the proposed public housing re-development is 66%. With incorporation of acoustic windows as mitigation measures, the compliance rate for the domestic block of the proposed public housing redevelopment is 100%, and the predicted maximum peak hourly road traffic noise level is 70 dB(A).

5.1.2. Based on the results of base-case scenario, no road traffic noise exceedance has been predicted at all noise sensitive uses in the welfare facilities at 1/F to 3/F.

5.1.3. The predicted cumulative noise levels at NSRs from the identified fixed plant noise sources will comply with the daytime and evening and night-time noise criteria. Adverse fixed plant noise impacts on Phase 12 of the proposed public housing redevelopment is not anticipated.

5.2. Air Quality

5.2.1. Potential air quality impact due to vehicular emissions and chimney emissions have been reviewed. No adverse air quality impacts due to vehicular emissions and chimney emissions are anticipated as the recommended buffer distances stipulated in the HKPSG can be met for the proposed redevelopment.

Figures

N

Nam Cheong Street

Nam Cheong Street

Proposed Development

300m Assessment Area for Noise Impact Assessment

500m Assessment Area for Air Quality Impact Assessment

香港房屋委員會
Hong Kong Housing Authority

SNC·LAVALIN

ATKINS
Member of the SNC-Lavalin Group

AGREEMENT NO. : CB 20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019 - 2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION INSTRUCTION NO. K14 : PUBLIC RENTAL HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title

Location of the Project Site

Scale at A3	Date	Figure No.
NTS	May 2023	1.1

PRINTED BY: $USER$ $DATE$ $TIME$
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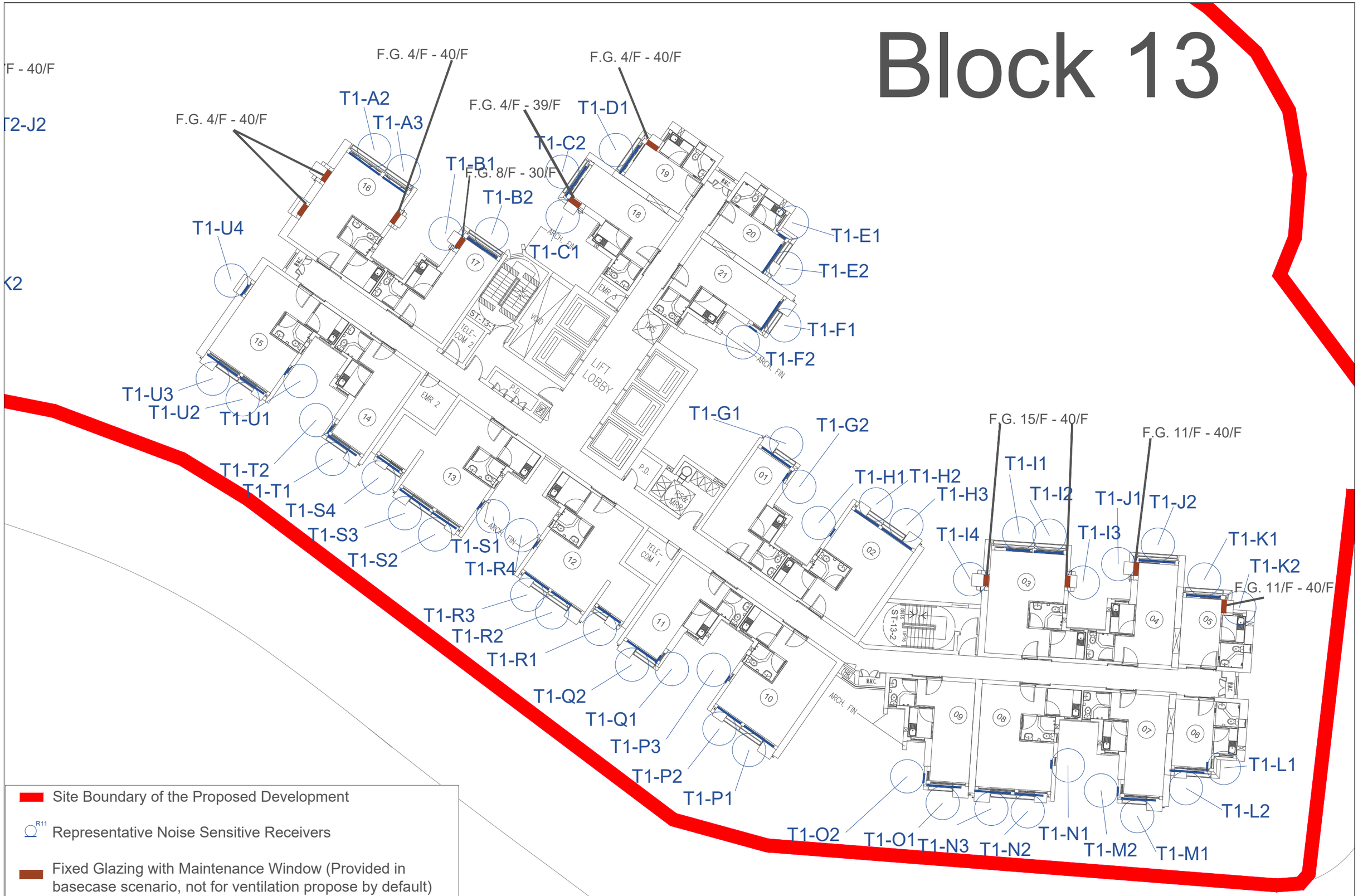
Block 13



Site Boundary of the Proposed Development

R11 Representative Noise Sensitive Receivers

Fixed Glazing with Maintenance Window (Provided in basecase scenario, not for ventilation propose by default)

香港房屋委員會
Hong Kong Housing Authority

SNC·LAVALIN

ATKINS
Member of the SNC-Lavalin Group

AGREEMENT NO. : CB 20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019 - 2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION INSTRUCTION NO. K14 : PUBLIC RENTAL HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title

Location Plan of the Representative Noise Sensitive Receivers at Domestic Floors -Block 13

Scale at A3	Date	Figure No.
NTS	Apr 2023	2.1

PRINTED BY: $USER$ $DATE$ $TIME$
FILENAME: $FILE$
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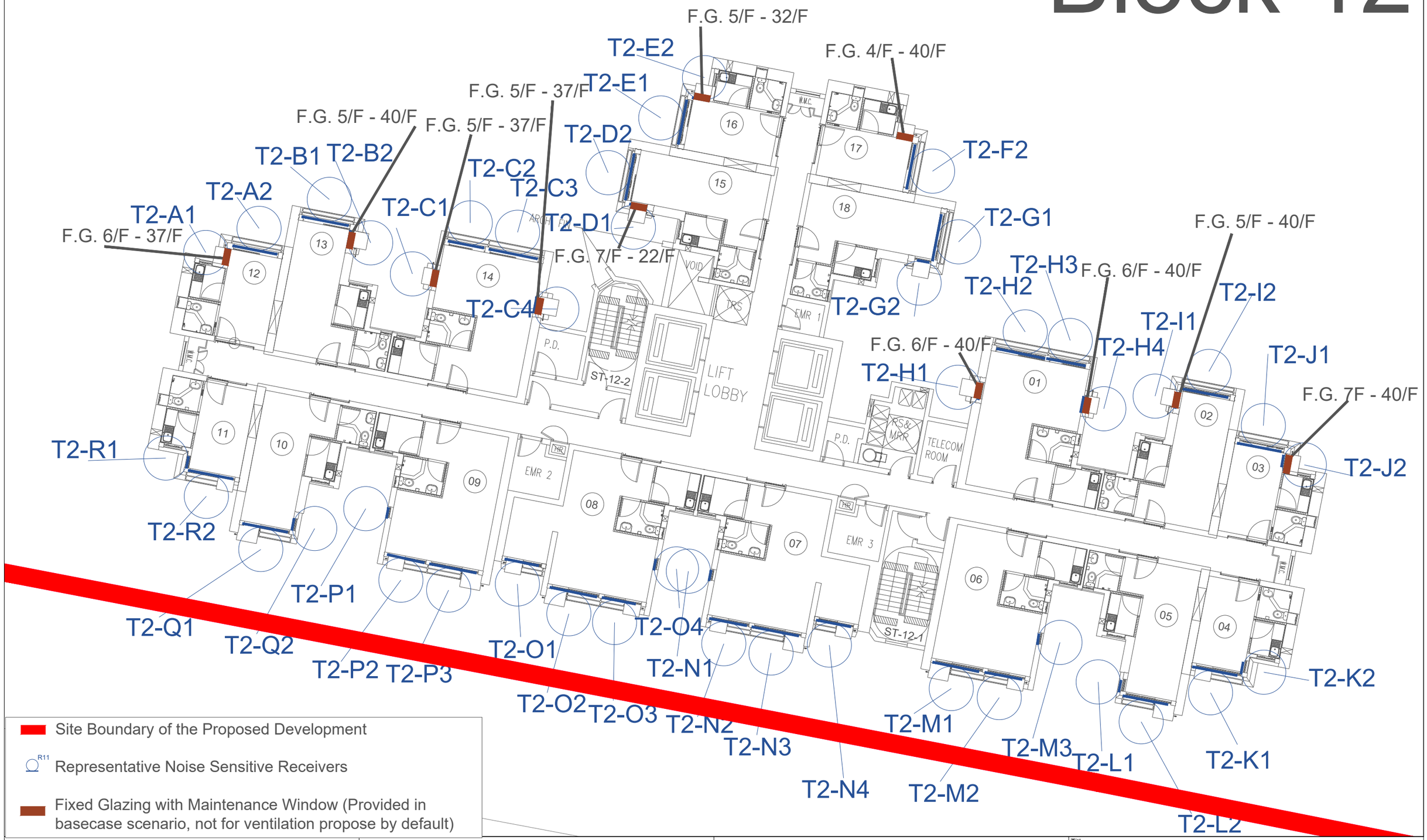
Block 12



Site Boundary of the Proposed Development

R11 Representative Noise Sensitive Receivers

Fixed Glazing with Maintenance Window (Provided in basecase scenario, not for ventilation propose by default)

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Title

Location Plan of the Representative Noise Sensitive Receivers at Domestic Floors -Block 12

Scale at A3	Date	Figure No.
NTS	Apr 2023	2.2

PRINTED BY: $USER$ $DATE$ $TIME$
FILENAME: $FILE$
MODEL NAME: $MODEL$

Block 11

Site Boundary of the Proposed Development

R11 Representative Noise Sensitive Receivers

Fixed Glazing with Maintenance Window (Provided in basecase scenario, not for ventilation propose by default)

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Title

Location Plan of the Representative Noise Sensitive Receivers at Domestic Floors -Block 11

Scale at A3	Date	Figure No.
NTS	Aug 2023	2.3

PRINTED BY: $USER$ $DATE$ $TIME$
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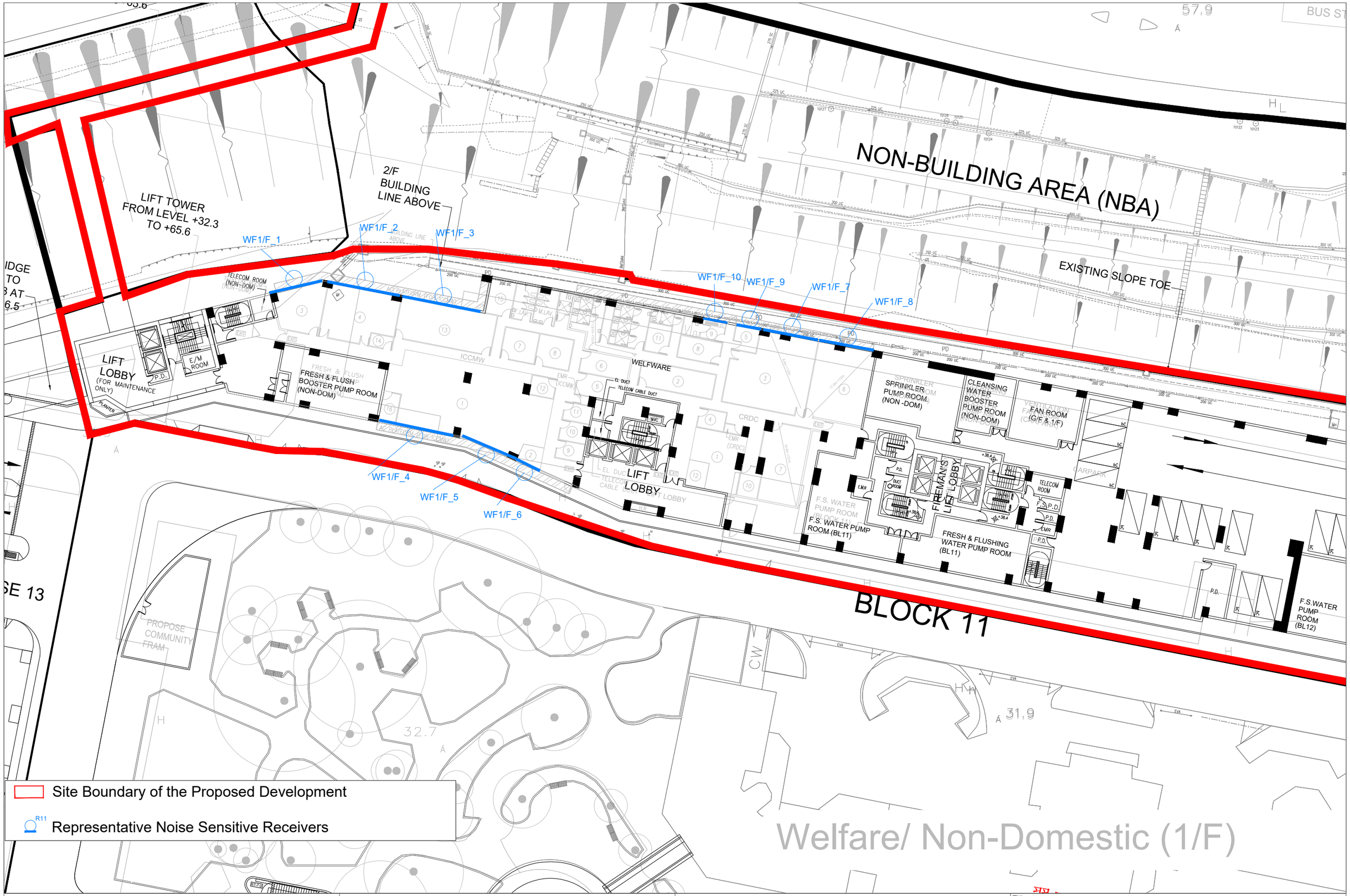

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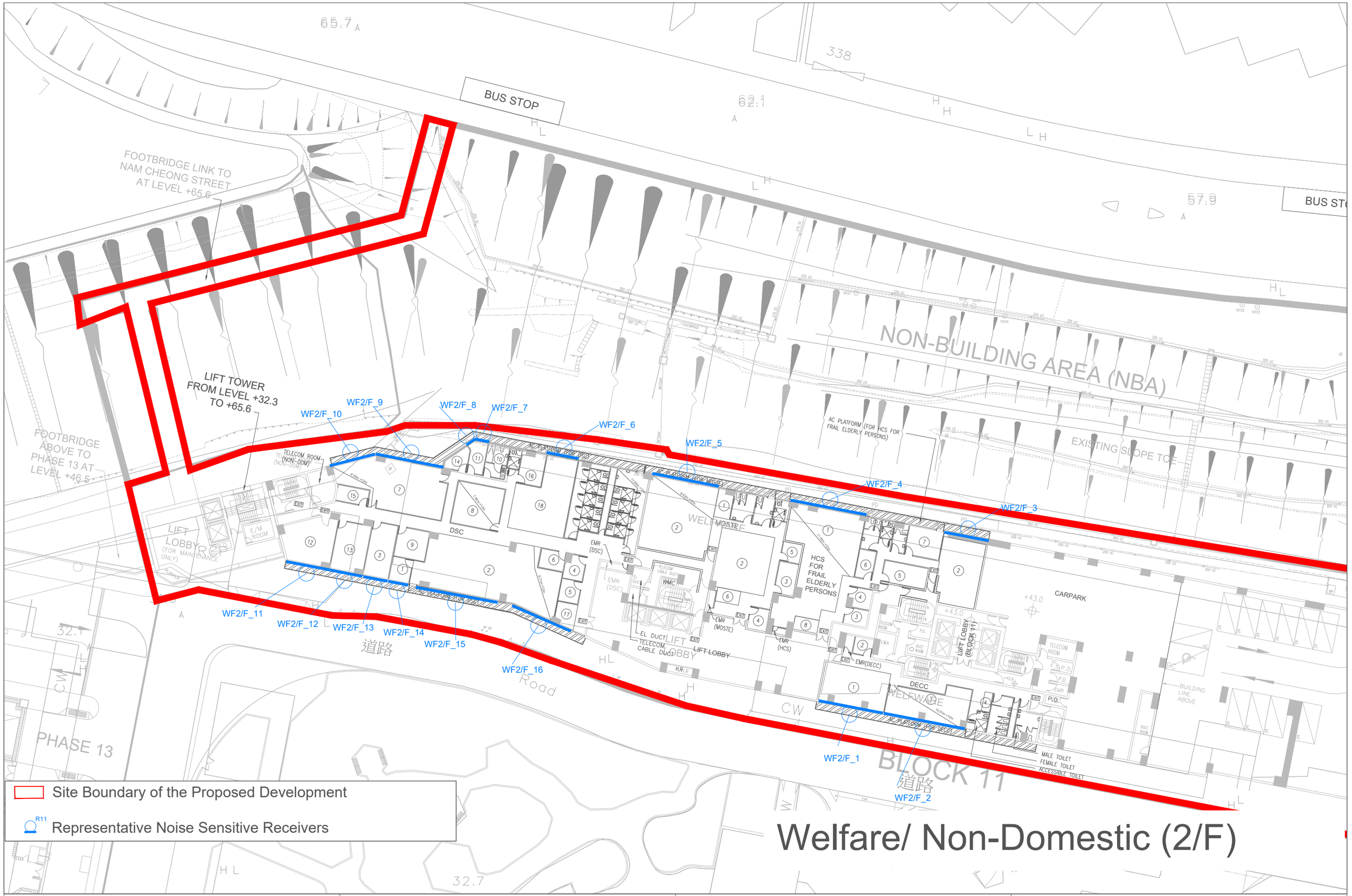
AGREEMENT NO. : CB 20160162 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2016 - 2019 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION INSTRUCTION NO. K10 : REDEVELOPMENT OF MEI TUNG ESTATE AT TUNG TAU TSUEN ROAD, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title

Location Plan of the Representative Noise Sensitive Receivers at Welfare/ Non-Domestic Floors - 1/F

Scale at A3	Date	Figure No.
NTS	Apr 2023	2.4a



Welfare/ Non-Domestic (2/F)

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AGREEMENT NO. : CB 20160162 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2016 - 2019 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION INSTRUCTION NO. K10 : REDEVELOPMENT OF MEI TUNG ESTATE AT TUNG TAU TSUEN ROAD, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title: Location Plan of the Representative Noise Sensitive Receivers at Welfare/ Non-Domestic Floors - 2/F

Scale at A3	Date	Figure No.
NTS	Apr 2023	2.4b

PRINTED BY: _____ 3/8/2022 1:41:55 pm
FILENAME: P:\GNHKA\Environment\PROJECT\Hong Kong\INTERNAL\51934425 Term Con T&E (2019-2021)\K14 PokTin12\05 Deliverable\v5_3rd schme to EPD\Figures_CAD\Figure 2.4b Location of NSRs (2F).dwg
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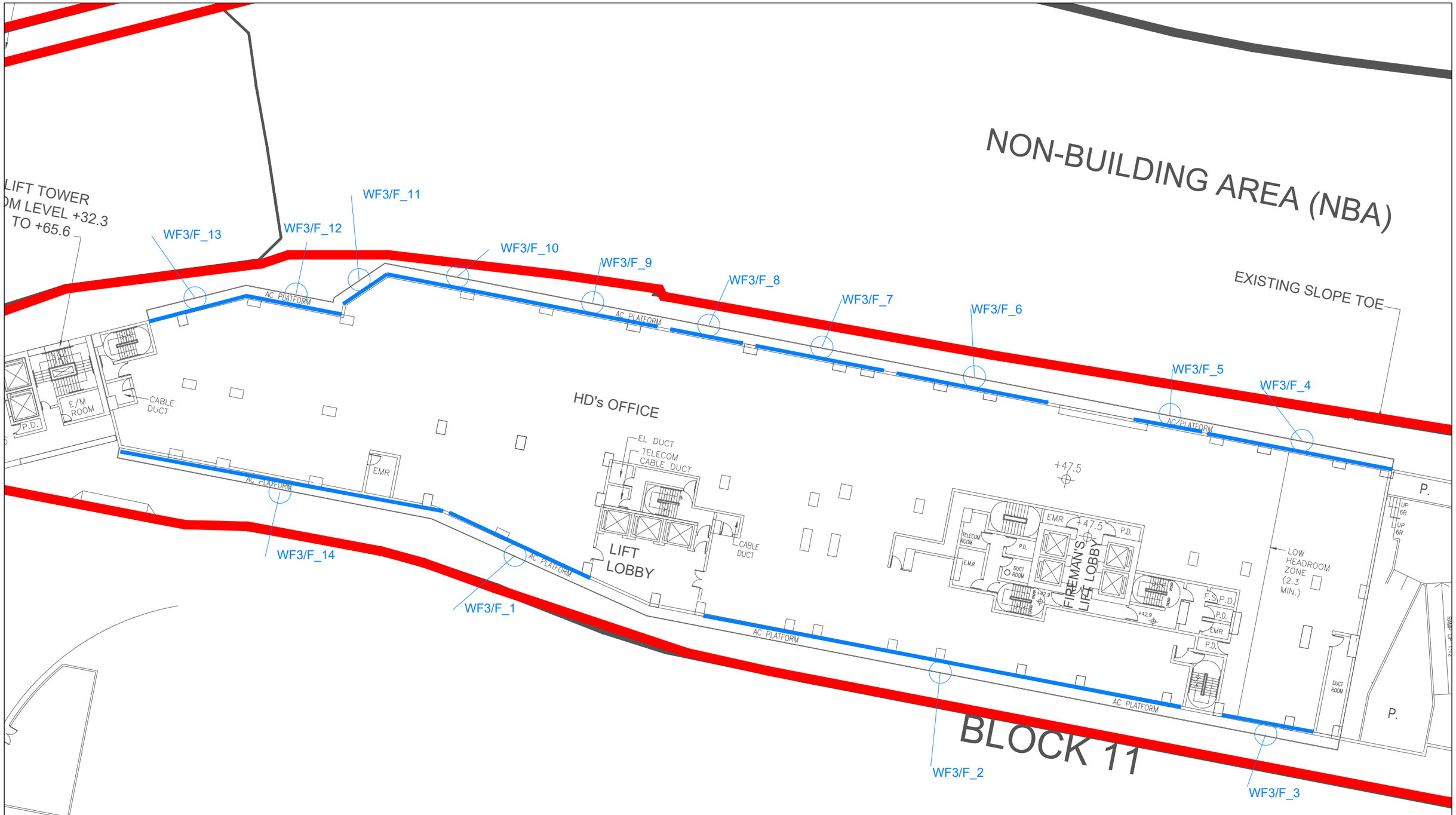

Site Boundary of the Proposed Development

R11 Representative Noise Sensitive Receivers

Welfare/ Non-Domestic (3/F)

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Title: Location Plan of the Representative Noise Sensitive Receivers at Welfare/ Non-Domestic Floors - 3/F

Scale at A3	Date	Figure No.
NTS	Apr 2023	2.4c

PRINTED BY: ____ 3/8/2022 1:41:55 pm
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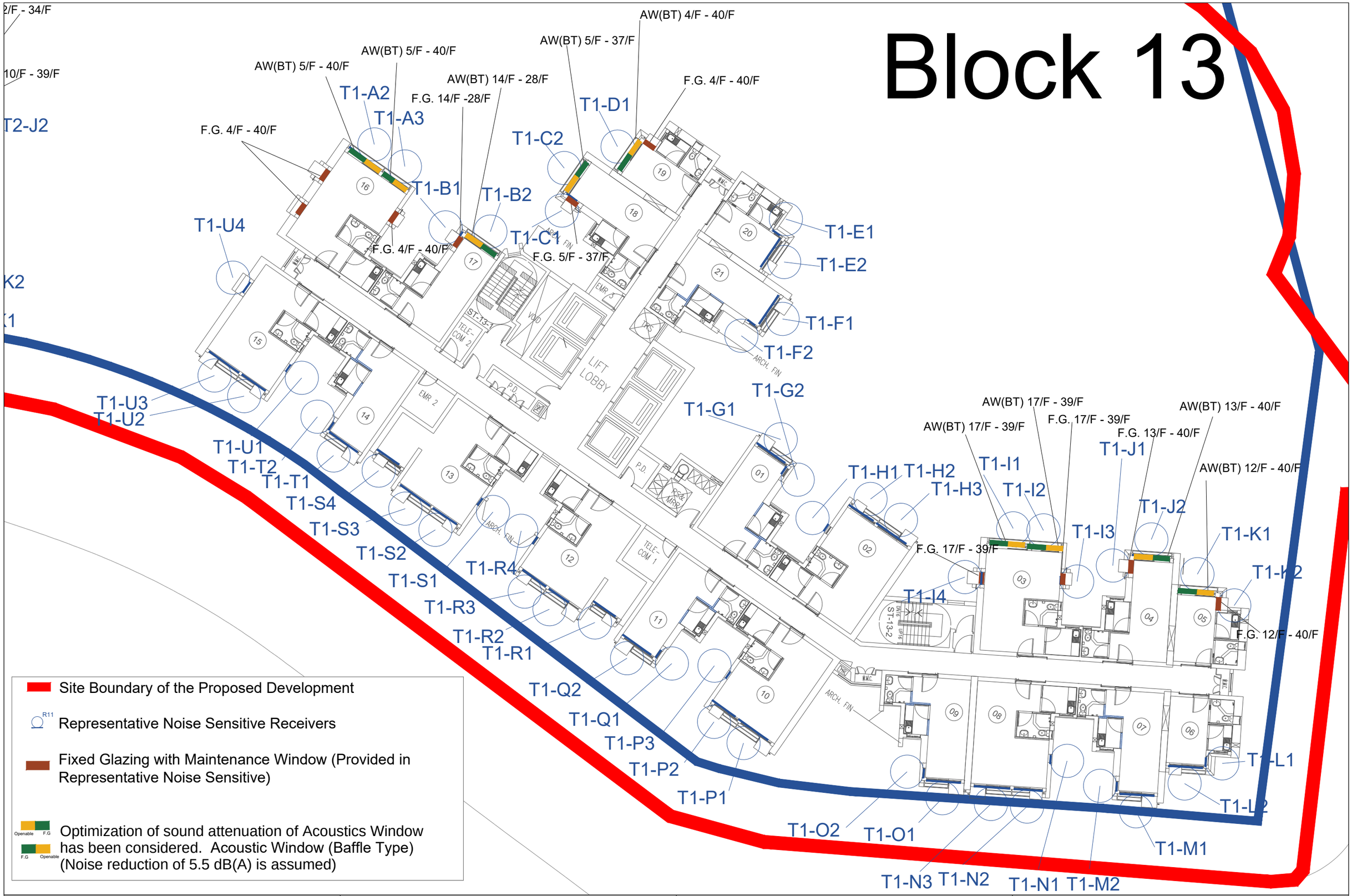
MODEL NAME: Default

Block 13



Site Boundary of the Proposed Development

R11 Representative Noise Sensitive Receivers

Fixed Glazing with Maintenance Window (Provided in Representative Noise Sensitive)

Openable F.G / F.G Openable

Optimization of sound attenuation of Acoustics Window has been considered. Acoustic Window (Baffle Type) (Noise reduction of 5.5 dB(A) is assumed)

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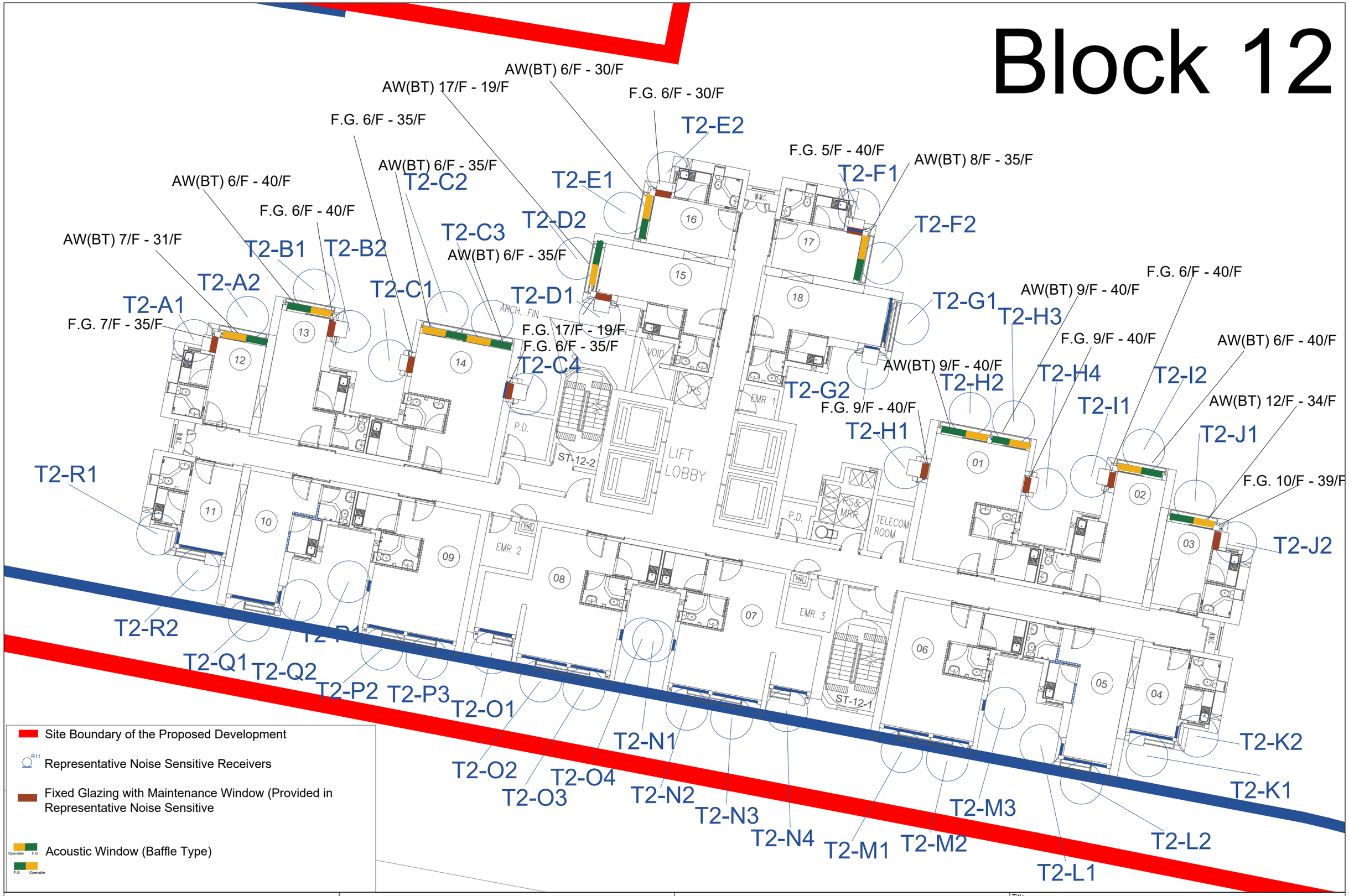
Title

Location Plan of the Noise Mitigation Measures at Domestic Block - Block 13

Scale at A3	Date	Figure No.
NTS	Dec 2023	2.5

PRINTED BY: $USER$ $DATE$ $TIME$
FILENAME: $FILE$
MODEL NAME: $MODEL$

Block 12



Site Boundary of the Proposed Development

R11 Representative Noise Sensitive Receivers

Fixed Glazing with Maintenance Window (Provided in Representative Noise Sensitive

Acoustic Window (Baffle Type)

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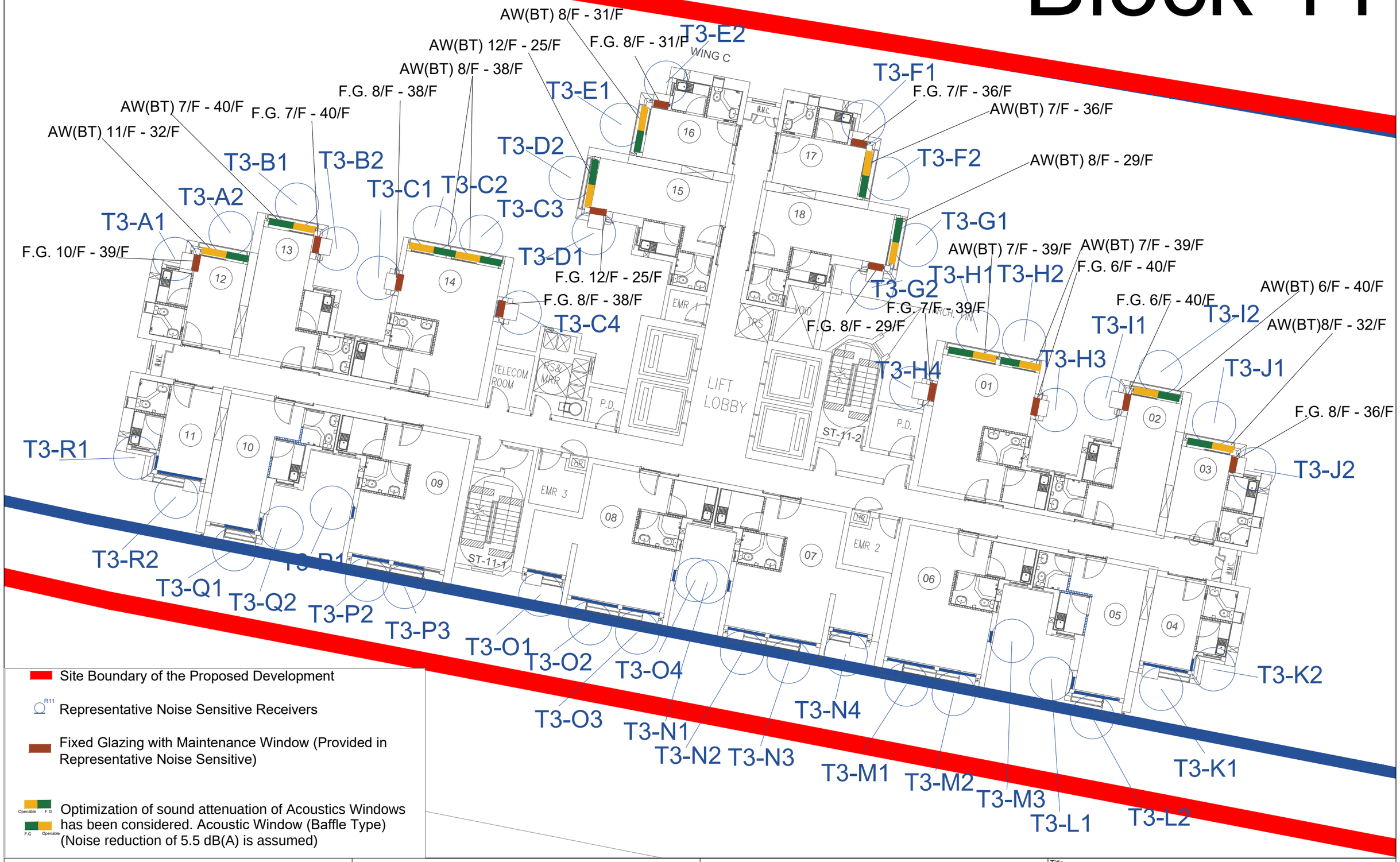
Title

Location Plan of the Noise Mitigation Measures at Domestic Block - Block 12

Scale at A3	Date	Figure No.
NTS	Dec 2023	2.6

PRINTED BY: $USER$ $DATE$ $TIME$
FILENAME: $FILE$
MODEL NAME: $MODEL$

Block 11



Site Boundary of the Proposed Development

R11 Representative Noise Sensitive Receivers

Fixed Glazing with Maintenance Window (Provided in Representative Noise Sensitive)

Optimization of sound attenuation of Acoustics Windows has been considered. Acoustic Window (Baffle Type) (Noise reduction of 5.5 dB(A) is assumed)

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Title

Location Plan of the Noise Mitigation Measures at Domestic Block - Block 11

Scale at A3	Date	Figure No.
NTS	Dec 2023	2.7

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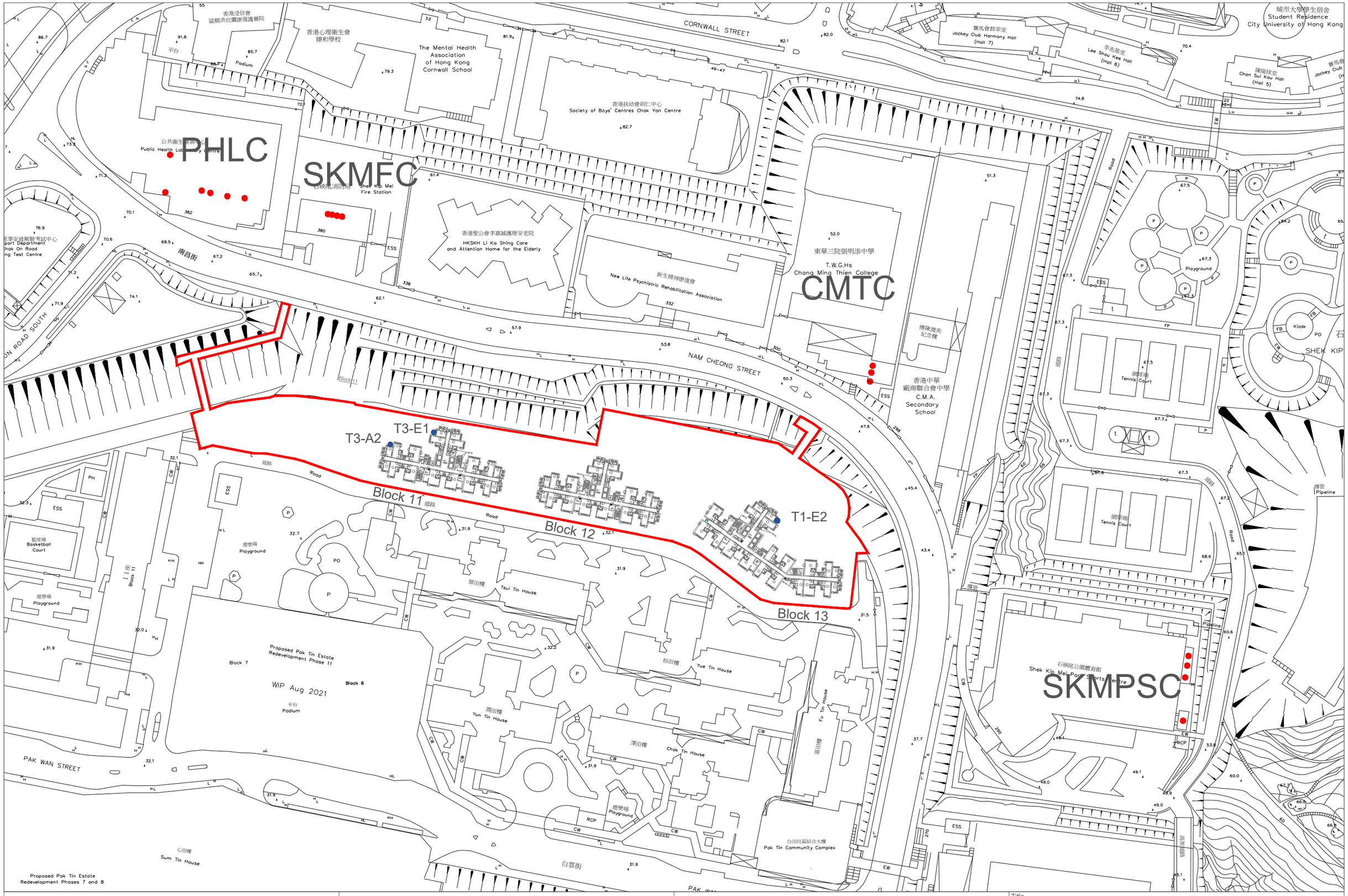

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Title

Location Plan of Identified Fixed Plant Noise Sources

Scale at A3	Date	Figure No.
NTS	May 2023	3.1

PRINTED BY: $USER$ $DATE$ $TIME$
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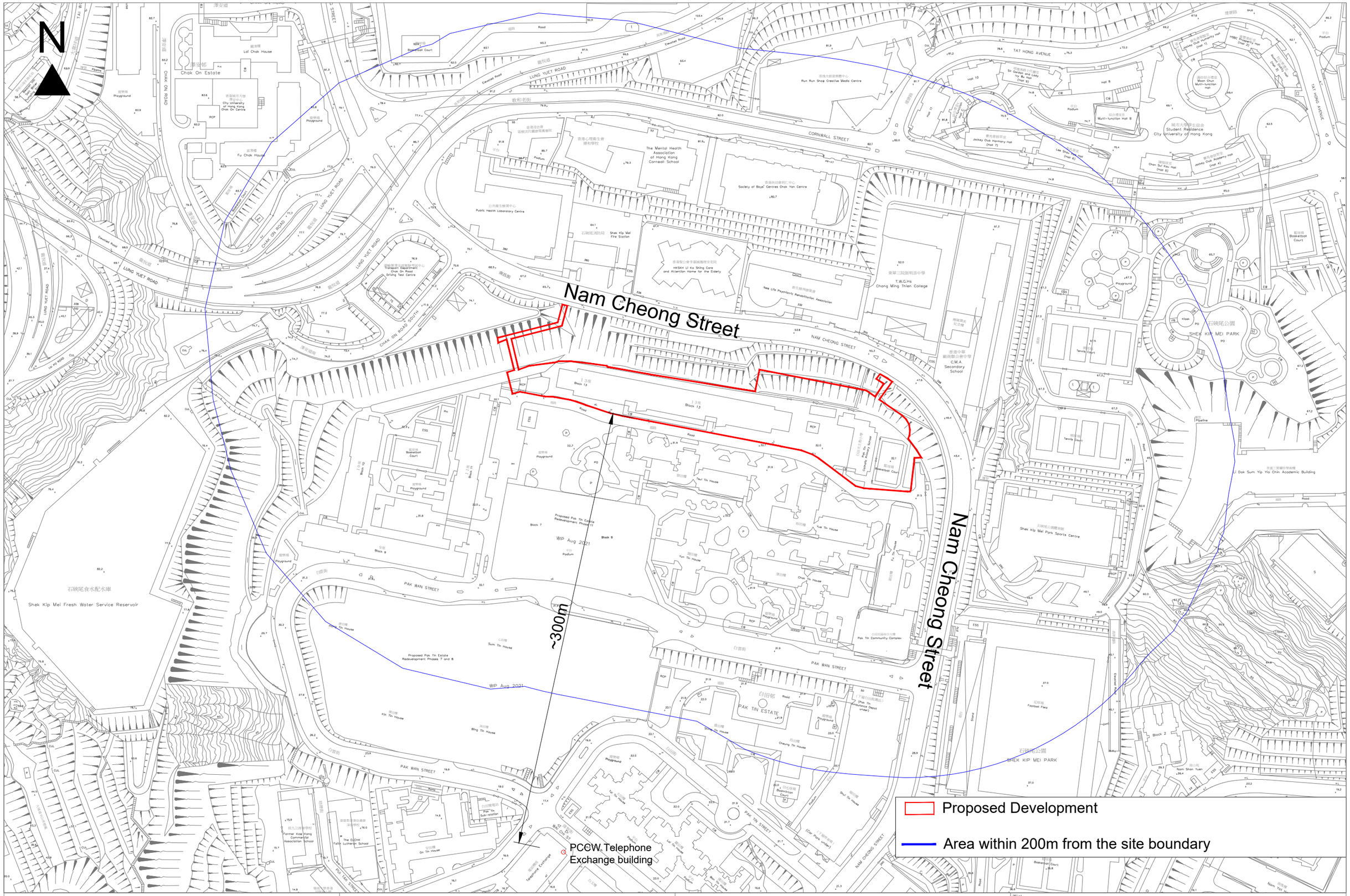

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Title

Area within 200m from Project Site

Scale at A3	Date	Figure No.
NTS	Apr 2023	4.1

PRINTED BY: $USER$ $DATE$ $TIME$
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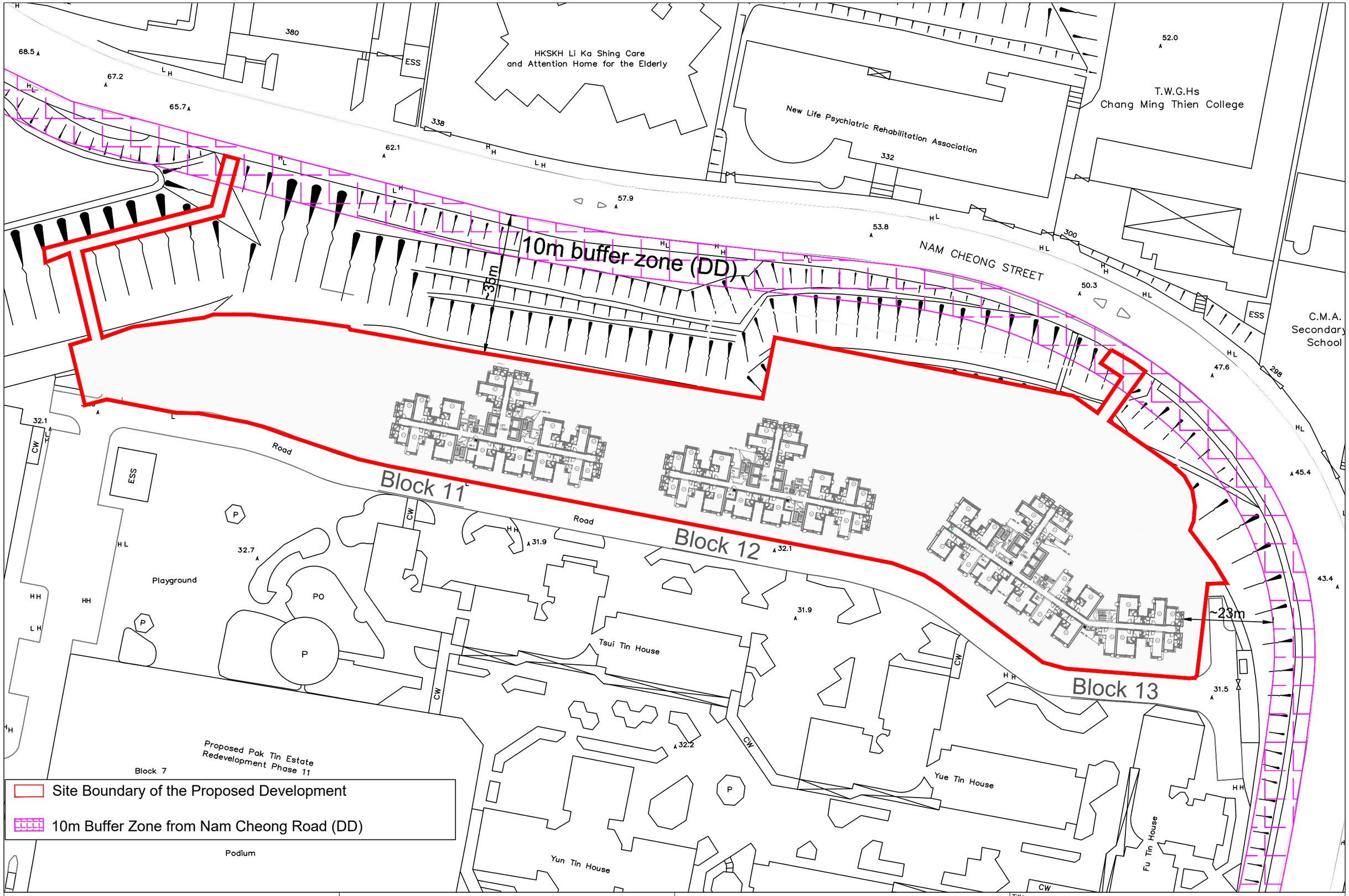

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Title

Separation Distance between Public Housing Domestic Block and Abutting Road

Scale at A3	Date	Figure No.
NTS	Apr 2023	4.2

PRINTED BY: $USER$ $TIME$
FILENAME: $FILE$ $DATE$
MODEL NAME: $MODEL$

Appendix 1.1

Report Version History

Document History

Report Revision	Version of drawing scheme	Date
0.0	First Submission (SK-01)	18/02/2022
1.0	First Submission (SK-01)	17/05/2022
2.0	Preliminary Submission (Scheme 9)	16/08/2022
3.0	Draft Report (Scheme 14)	18/11/2022
4.0	Draft Report (Scheme 17)	05/06/2023
5.0	Draft Report (Scheme 17)	18/9/2023
6.0	Draft Report (Scheme 17)	12/12/2023

Appendix 1.2

Sectional View of the Proposed Redevelopment at Pak Tin Estate Phase 12

Public Health
boratory Centre
共衞生檢測中心

Shek Kip Mei
Fire Station
石硤尾消防局

ESS

SKH Li Ka Shing
Care And Attention Home
For The Elderly
聖公會李嘉誠護理安老院

新生精神康復會
New Life Psychiatric Rehabilitation Association

T.W.G.Hs.
Chang Ming Thien College
東華三院張明添中學

南昌街 NAM CHEONG STREET

南昌街

BUS STOP

BUS STOP

ESS

FOOTBRIDGE LINK TO NAM CHEONG STREET AT LEVEL +65.6

NON-BUILDING AREA (NBA)

EXISTING SLOPE TOE

1/F BUILDING LINE ABOVE

OPEN STORE FOR MAINTENANCE CONTRACTOR

BUILDING LINE ABOVE

BUILDING LINE ABOVE

LIFT TOWER FROM LEVEL +32.3 TO +65.6

2500mm MAINTENANCE PATH AT G/F

2500mm MAINTENANCE PATH AT G/F

MOE ROUTE

LIGHT BUS (WELFARE) : 4 nos.
L/UL : 6 nos.

CARPARK
(CLEAR HEADROOM 4.7m min.)

LIFT LOBBY

LIFT LOBBY

NON-DOMESTIC ENTRANCE

DOMESTIC ENTRANCE

BLOCK 11

RUN IN OUT

DOMESTIC ENTRANCE

BLOCK 12

NON-DOMESTIC ENTRANCE

DOMESTIC ENTRANCE

BLOCK 13

ESTATE ROAD IMPROVEMENT

ORIGINAL ESTATE ROAD ALIGNMENT

FOOTBRIDGE ABOVE TO PHASE 13 AT LEVEL +46.5

PHASE 13

翠田樓 Tsui Tin House

裕田樓 Yue Tin House

N

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
LAYOUT PLAN - GROUND FLOOR (LEV. +32.0) (SCHEME 17)

1:800 (A3)

機密 CONFIDENTIAL

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/SITE/A/S17/PLO-04/P03

DATE: 29/03/2023

-

N

Public Health
boratory Centre
共 生檢測中心

Shek Kip Mei
Fire Station
石硤尾消防局

ESS

SKH Li Ka Shing
Care And Attention Home
For The Elderly
聖公會李嘉誠護理安老院

新生精神康復會
New Life Psychiatric Rehabilitation Association

T.W.G.Hs.
Chang Ming Thien College
東華三院張明添中學

南昌街 NAM CHEONG STREET

BUS STOP

BUS STOP

FOOTBRIDGE LINK TO NAM CHEONG STREET AT LEVEL +65.6

NON-BUILDING AREA (NBA)

EXISTING SLOPE TOE

2/F BUILDING LINE ABOVE

LIFT TOWER FROM LEVEL +32.3 TO +65.6

LIFT LOBBY (FOR MAINTENANCE ONLY)

FOOTBRIDGE ABOVE TO PHASE 13 AT LEVEL +46.5

PHASE 13

2500mm MAINTENANCE PATH AT 1/F

CARPARK
(CLEAR HEADROOM 2.4m min.)

PC :88
MC :7

RAMP UP

RAMP DN

3/F BUILDING LINE ABOVE

BLOCK 11

BLOCK 12

BLOCK 13

翠田樓 Tsui Tin House

裕田樓 Yue Tin House

Tin House

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
LAYOUT PLAN - FIRST FLOOR (LEV. +38.4) (SCHEME 17)

1:800 (A3)

機密 CONFIDENTIAL

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/SITE/A/S17/PLO-05/P03

DATE: 29/03/2023

-

COMMUNITY REHABILITATION DAY CENTRE (CRDC) - SoA

	DESCRIPTION OF FACILITIES	AREA REQUIRED	AREA PROVIDED	±%
1	OFFICE	33.00	35.56	7.76
2	COMMON/ ACTIVITY ROOM	28.00	26.39	-5.75
3	ACTIVITY AREA	79.40	80.24	1.06
4	INTERVIEW ROOM	7.00	7.25	3.57
5	MEDICAL CONSULTATION	8.00	8.07	0.88
6	PHYSIOTHERAPY/ EXERCISE ROOM	61.00	61.63	1.03
7	OCCUPATIONAL THERAPY	44.00	46.88	6.55
8	AIDS/ ADAPTATION WORKSHOP	12.00	13.00	8.33
9	ACTIVITY DAILY LIVING (ADL) ROOM	10.00	10.84	8.40
10	GENERAL STORE	8.00	8.57	7.13
11	STAFF CHANGING ROOM	9.00	9.34	3.78
12	RECEPTION	7.00	7.45	6.43
	TOTAL	306.40	307.77	0.45

CFA

- CRDC: 509.75m²
- ICCMW: 592.19m²
- LIFTS, LIFT LOBBY & STAIRCASE FOR WELFARE FACILITES
- COMMON FACILITIES

IFA

CRDC: 483.86m²

ICCMW: 557.82m²

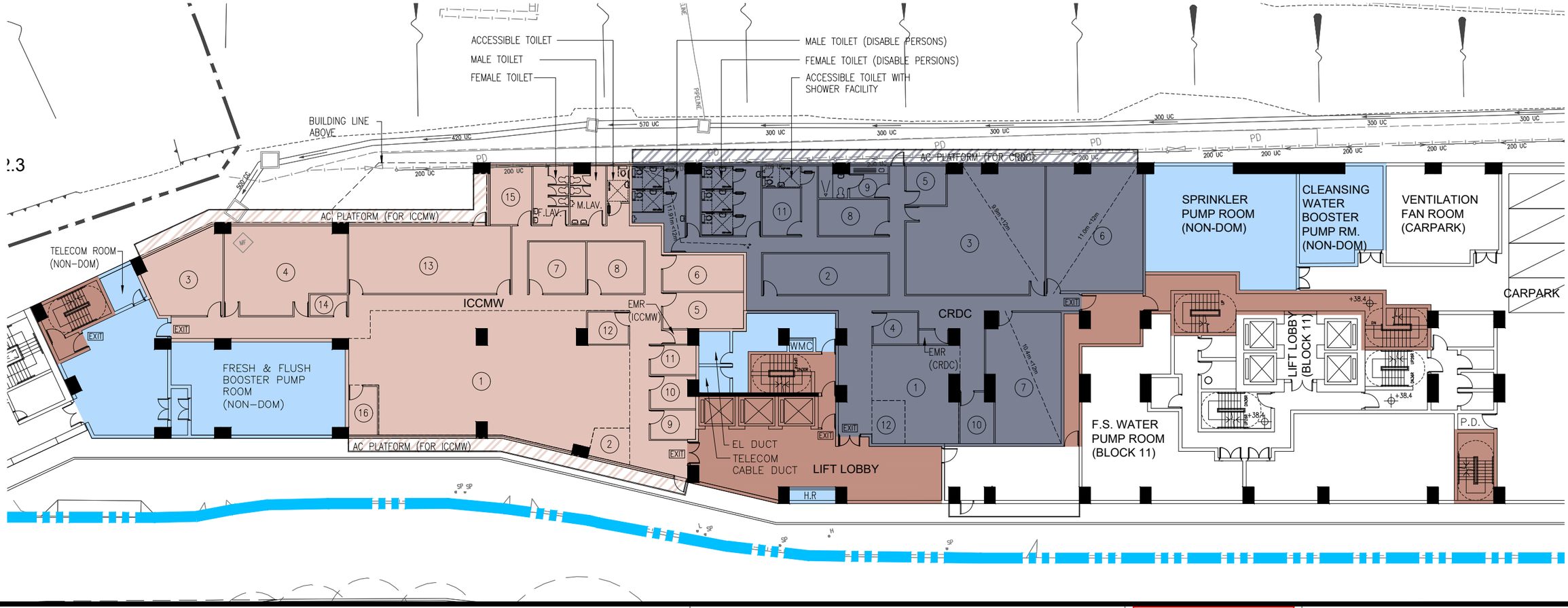
INTEGRATED COMMUNITY CENTRE FOR MENTAL WELLNESS (SUB-BASE) (ICCMW) - SoA

	DESCRIPTION OF FACILITIES	AREA REQUIRED	AREA PROVIDED	±%
1	OFFICE	165.00	170.34	3.24
2	RECEPTION	6.00	6.46	7.67
3	OCCUPATION THERAPY ROOM	29.00	29.28	0.97
4	TRAINING ACTIVITY ROOM	49.00	49.59	1.20
5	SMALL GROUP ROOM A	15.00	15.15	1.00
6	SMALL GROUP ROOM B	15.00	15.15	1.00
7	SMALL GROUP ROOM C	15.00	15.12	0.80
8	SMALL GROUP ROOM D	15.00	15.12	0.80
9	INTERVIEW ROOM A	6.50	6.83	5.08
10	INTERVIEW ROOM B	6.50	6.98	7.38
11	INTERVIEW ROOM C	6.50	6.88	5.85
12	INTERVIEW ROOM D	6.50	6.71	3.23
13	DINING/ MULTI-PURPOSE ROOM	53.00	56.44	6.49
14	STORE ROOM	4.00	4.04	1.00
15	KITCHEN	13.00	12.68	-2.46
16	CLINICAL PSYCHOLOGIST OFFICE	7.00	7.17	2.43
	TOTAL	412.00	423.94	2.90

N

FOR INTERNAL REFERENCE ONLY (SUBJECT TO DETAIL DESIGN)

DRAFT



PROJECT

PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE

NOTIONAL LAYOUT OF WELFARE FACILITIES (FIRST FLOOR)

1:300 (A3)

機密 CONFIDENTIAL

房屋署 HOUSING DEPARTMENT

DRAWING NO.: SP14/12/SWD/A/LO-01_P02

DATE: 21/03/2023

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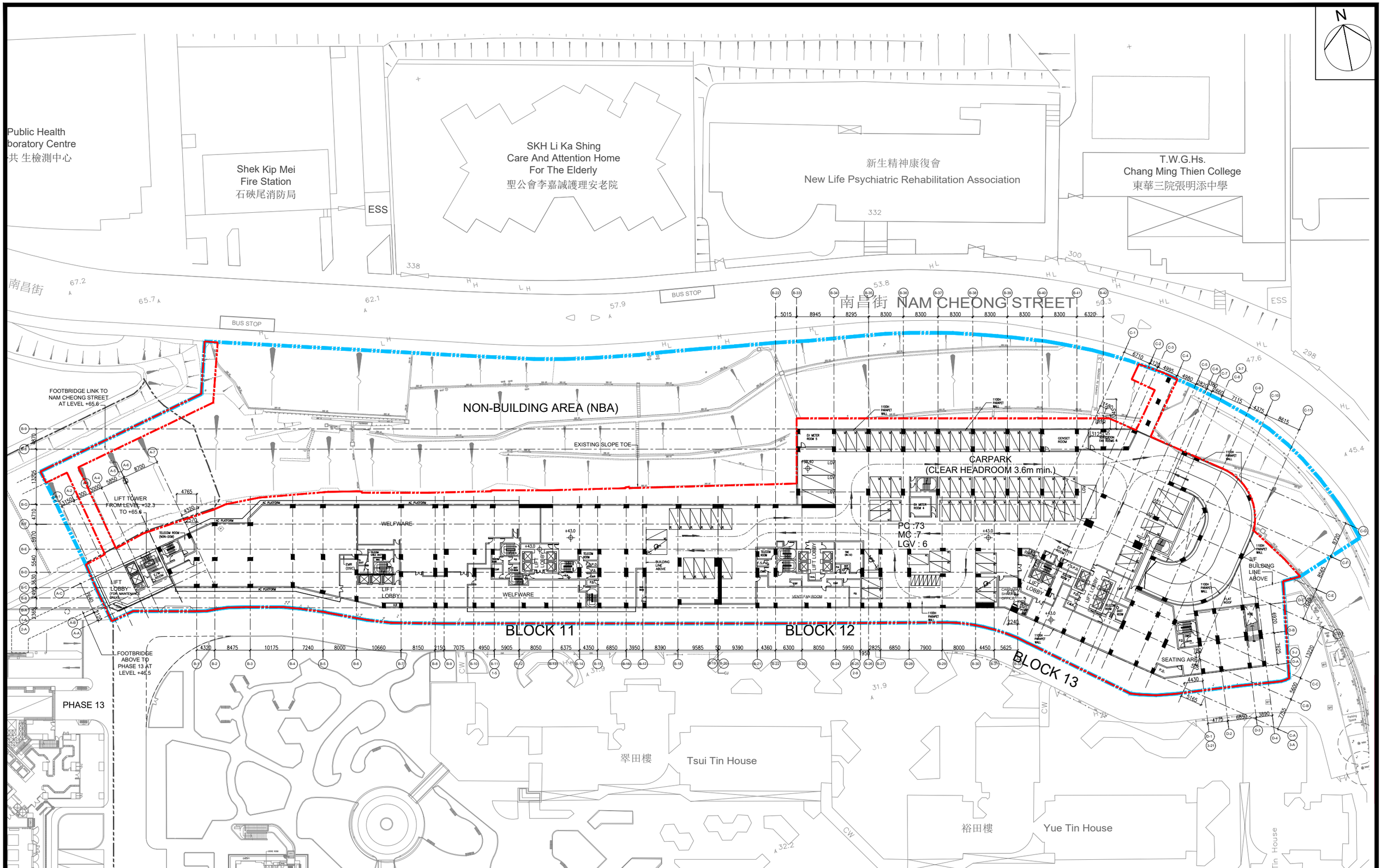


PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
LAYOUT PLAN - SECOND FLOOR (LEV. +43.0) (SCHEME 17)

1:800 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/SITE/A/S17/PLO-06/P03

DATE: 29/03/2023

-

DISTRICT SUPPORT CENTRE FOR PERSONS WITH DISABILITIES (DSC) - SoA

	DESCRIPTION OF FACILITIES	AREA REQUIRED	AREA PROVIDED	±%
1	OFFICE FOR CENTRE-IN-CHAGE	7.30	7.62	4.38
2	OFFICE	115.10	122.27	6.23
3	SPEECH THERAPY ROOM	20.00	21.92	9.60
4	INTERVIEW ROOM 1	7.00	7.18	2.57
5	INTERVIEW ROOM 2	7.00	7.19	2.71
6	INTERVIEW ROOM 3	7.00	7.62	8.86
7	ACTIVITY ROOM 1	75.00	73.71	-1.72
8	ACTIVITY ROOM 2/ CONFERENCE ROOM	30.00	32.47	8.23
9	COMMON/ ACTIVITY ROOM	14.00	15.15	8.21
10	ACTIVITY DAILY LIVING (ADL) ROOM	10.00	10.96	9.60
11	SICK BAY	8.00	8.29	3.63
12	PHYSIOTHERAPY/ EXERCISE ROOM	35.00	34.35	-1.86
13	OCCUPATIONAL THERAPY AREA	25.00	25.36	1.44
14	PANTRY	6.00	6.18	3.00
15	STORE	8.00	8.04	0.50
16	STAFF CHANGING ROOM	11.00	11.72	6.55
17	RECEPTION	7.00	7.27	3.86
18	COMMON ROOM/ GROUP ROOM	55.00	58.58	6.51
	TOTAL	447.40	465.88	4.13

MULTI-DISCIPLINARY OUTREACHING SUPPORT TEAM FOR THE ELDERLY (MOSTE) - SoA

	DESCRIPTION OF FACILITIES	AREA REQUIRED	AREA PROVIDED	±%
1	OFFICE FOR SUPERVISOR	6.90	6.87	-0.43
2	GENERAL OFFICE	131.88	131.99	0.08
3	MULTI-FUNCTION/ TRAINING/ ACTIVITY ROOM	10.00	10.04	0.40
4	INTERVIEW ROOM	6.50	6.65	2.31
5	STORE ROOM	6.00	6.00	0.00
6	RECEPTION/ WAITING AREA	5.00	5.39	7.80
	TOTAL	166.28	166.94	0.40

CENTRE FOR HOME CARE SERVICES FOR FRAIL ELDERLY PERSONS (HCS FOR FRAIL ELDERLY PERSONS) - SoA

	DESCRIPTION OF FACILITIES	AREA REQUIRED	AREA PROVIDED	±%
1	GENERAL OFFICE	106.20	106.03	-0.16
2	WORKING AREA FOR PCW	44.00	44.18	0.41
3	INTERVIEW ROOM 1	6.50	6.24	-4.00
4	INTERVIEW ROOM 2	6.50	6.66	2.46
5	ACTIVITY/ TRAINING ROOM	15.00	15.00	0.00
6	PANTRY	7.60	7.65	0.66
7	LAUNDRY, WORKROOM & LINEN STORE	16.00	16.07	0.44
8	RECEPTION	5.00	5.27	5.40
	TOTAL	206.80	207.10	0.15

DISTRICT ELDERLY COMMUNITY CENTRE (DECC) - SoA

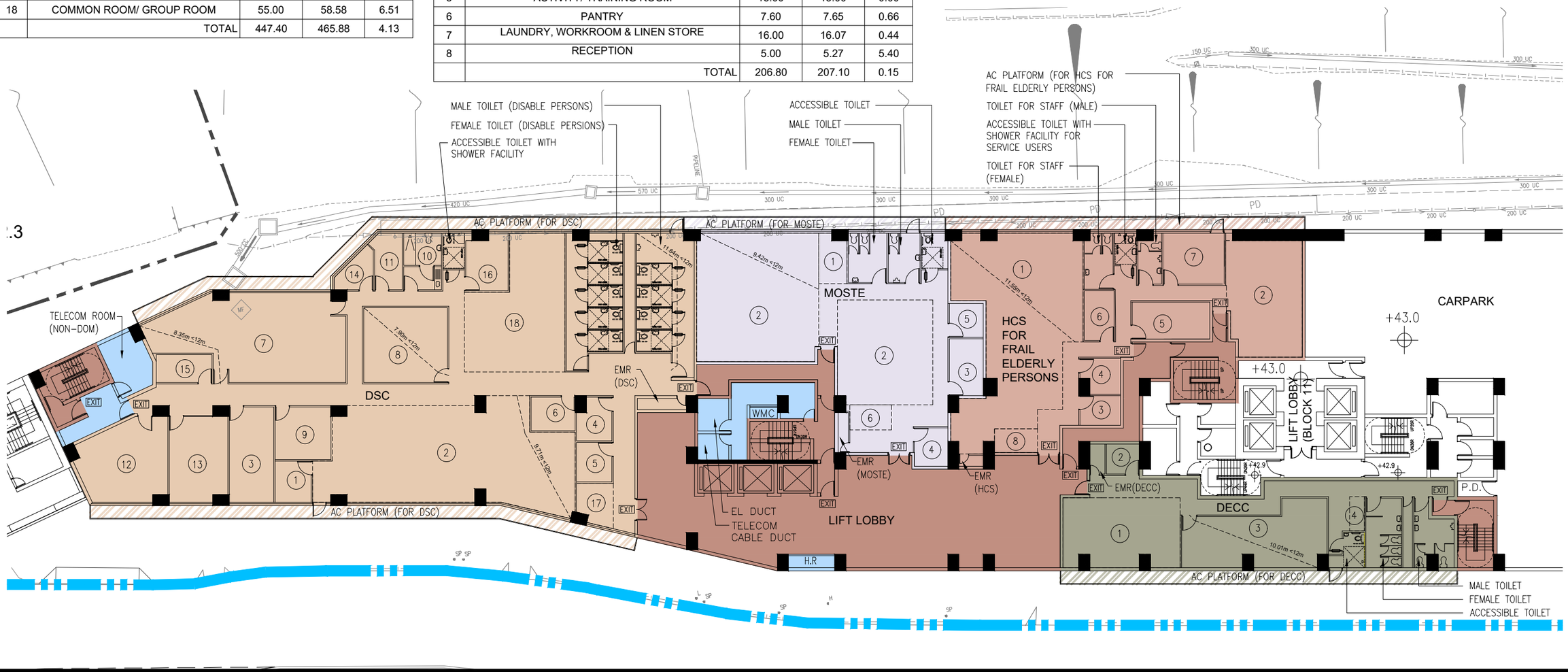
	DESCRIPTION OF FACILITIES	AREA REQUIRED	AREA PROVIDED	±%
1	OFFICE	40.00	40.92	2.30
2	STORE	5.00	5.10	2.00
3	ACTIVITY ROOOM	40.00	41.32	3.30
4	PANTRY	2.50	2.59	3.60
	TOTAL	87.50	89.93	2.78

CFA
- DSC: 732.42m²
- DECC: 193.56m²
- MOSTE: 251.11m²
- HCS FOR FRAIL ELDERLY PERSONS: 289.37m²
- LIFTS, LIFT LOBBY & STAIRCASES FOR WELFARE FACILITES
- COMMON FACILITIES

IFA
- DSC: 691.06m²
- DECC: 170.20m²
- MOSTE: 234.94m²
- HCS FOR FRAIL ELDERLY PERSONS: 263.78m²

FOR INTERNAL REFERENCE ONLY (SUBJECT TO DETAIL DESIGN)

DRAFT



PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
NOTIONAL LAYOUT OF WELFARE FACILITIES (SECOND FLOOR)
1:300 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/SWD/A/LO-02_P02
DATE: 21/03/2023
-

N

Public Health
boratory Centre
共 生檢測中心

Shek Kip Mei
Fire Station
石硤尾消防局

ESS

SKH Li Ka Shing
Care And Attention Home
For The Elderly
聖公會李嘉誠護理安老院

新生精神康復會
New Life Psychiatric Rehabilitation Association

T.W.G.Hs.
Chang Ming Thien College
東華三院張明添中學

南昌街 NAM CHEONG STREET

BUS STOP

BUS STOP

ESS

FOOTBRIDGE LINK TO
NAM CHEONG STREET
AT LEVEL +65.6

NON-BUILDING AREA (NBA)

EXISTING SLOPE TOE

OPEN SPACE

EASTING NOISE
BARRIER

LIFT TOWER
FROM LEVEL +32.3
TO +65.6

FOOTBRIDGE
ABOVE TO
PHASE 13 AT
LEVEL +46.5

TO PHASE 13

LIFT
LOBBY
+46.5

HD's OFFICE

LIFT
LOBBY

COVERED
WALKWAY

CANOPY
ABOVE

BLOCK 11

BLOCK 12

BLOCK 13

PODIUM GARDEN BELOW

PHASE 13

翠田樓
Tsui Tin House

裕田樓
Yue Tin House

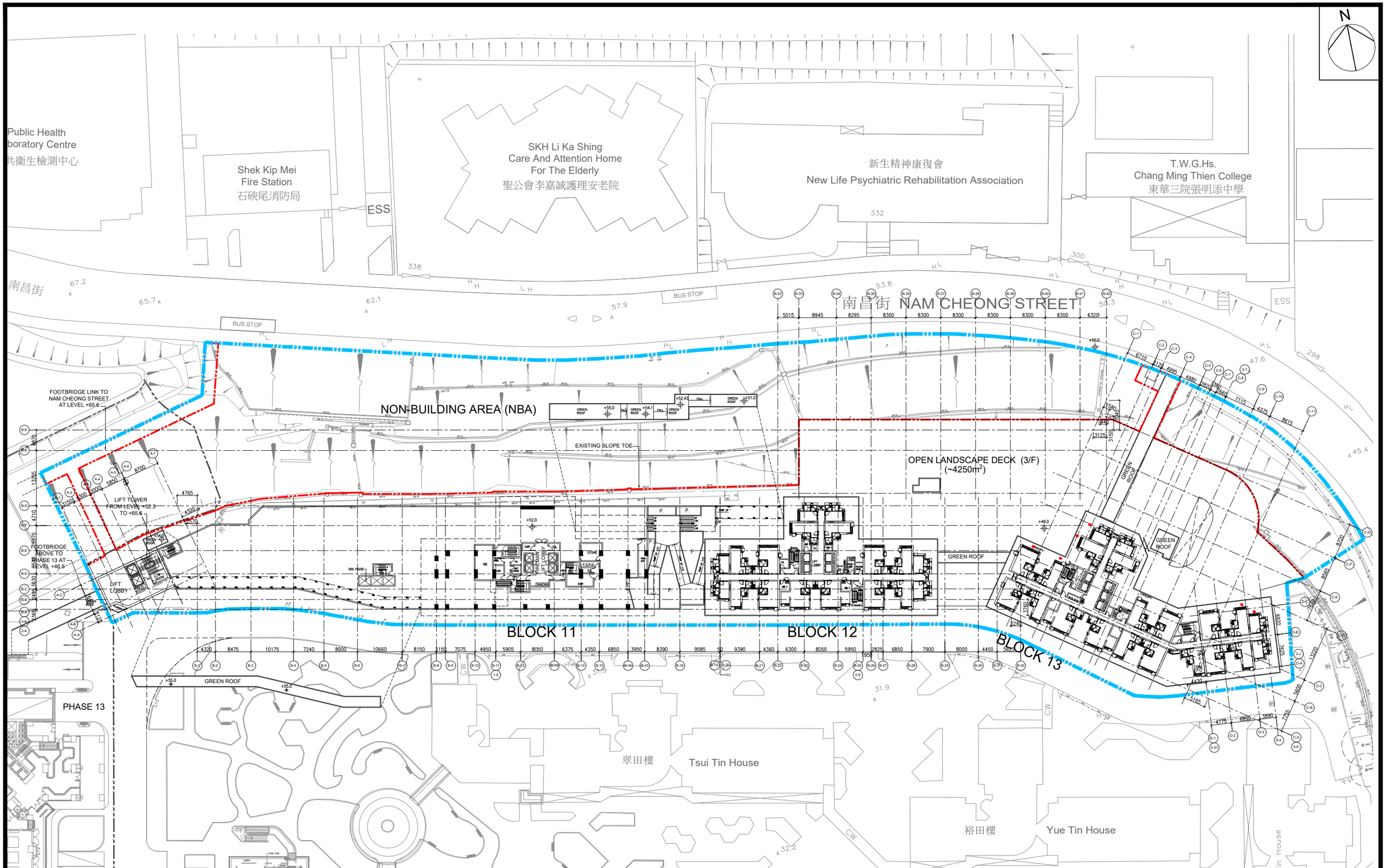
Tin House

PROJECT	PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12
DRAWING TITLE	LAYOUT PLAN - THIRD FLOOR (LEV. +49.15) (SCHEME 17)
1:800 (A3)	

機密 CONFIDENTIAL

房屋署
HOUSING DEPARTMENT

DRAWING NO.:	SP14/12/SITE/A/S17/PLO-07/P03
DATE:	29/03/2023
-	



PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
LAYOUT PLAN - FOURTH FLOOR (LEV. +51.5)
(SCHEME 17)

1:800 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/SITE/A/S17/PLO-08/P03

DATE: 29/03/2023

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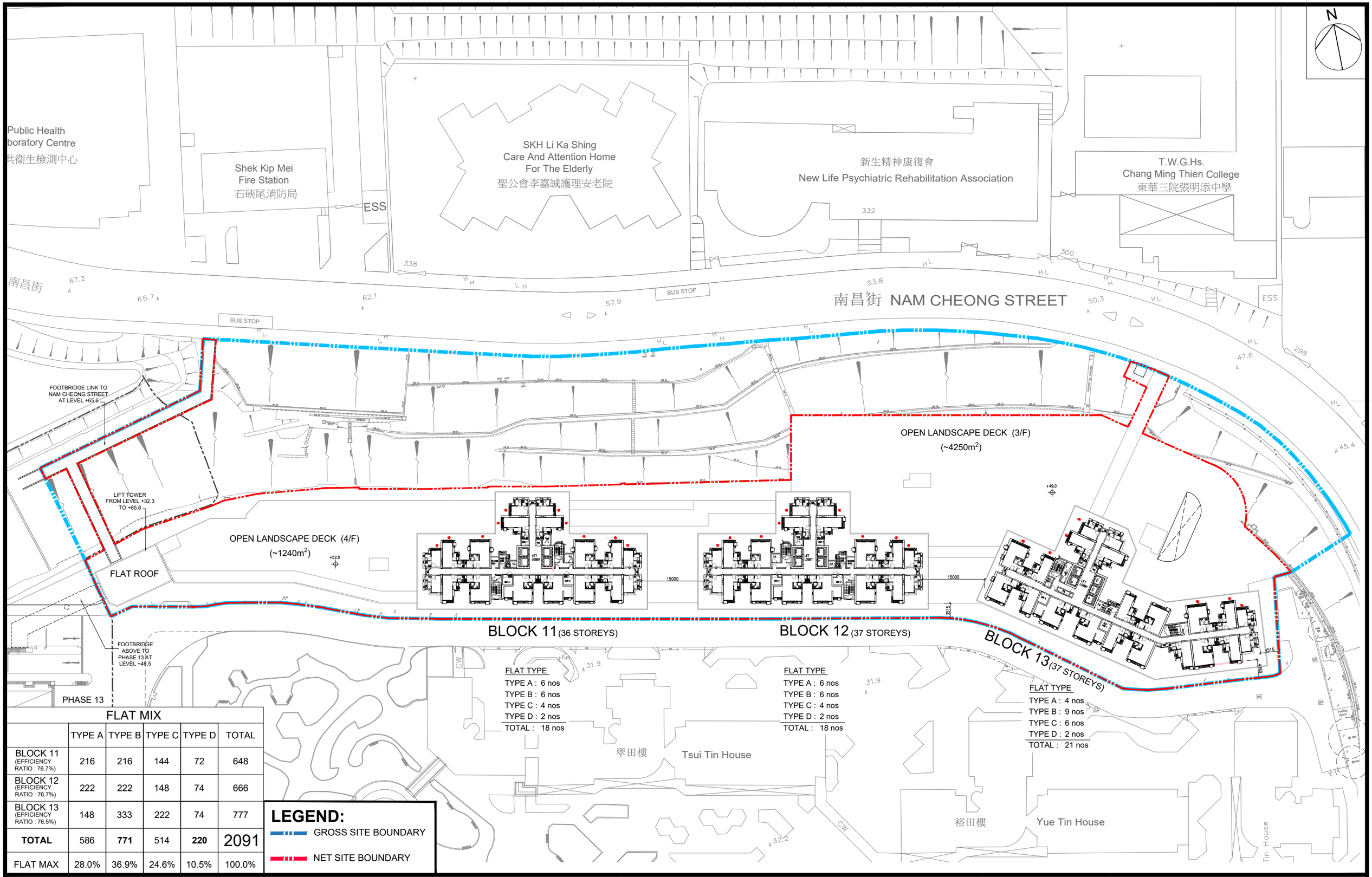

FLAT MIX

	TYPE A	TYPE B	TYPE C	TYPE D	TOTAL
BLOCK 11 (EFFICIENCY RATIO : 76.7%)	216	216	144	72	648
BLOCK 12 (EFFICIENCY RATIO : 76.7%)	222	222	148	74	666
BLOCK 13 (EFFICIENCY RATIO : 76.5%)	148	333	222	74	777
TOTAL	586	**771**	514	**220**	2091
FLAT MAX	28.0%	36.9%	24.6%	10.5%	100.0%

LEGEND:

GROSS SITE BOUNDARY

NET SITE BOUNDARY

PROJECT

PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE

LAYOUT PLAN - TYPICAL FLOOR (SCHEME 17)

1:800 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/SITE/A/S17/PLO-09/P06

DATE: 01/06/2023

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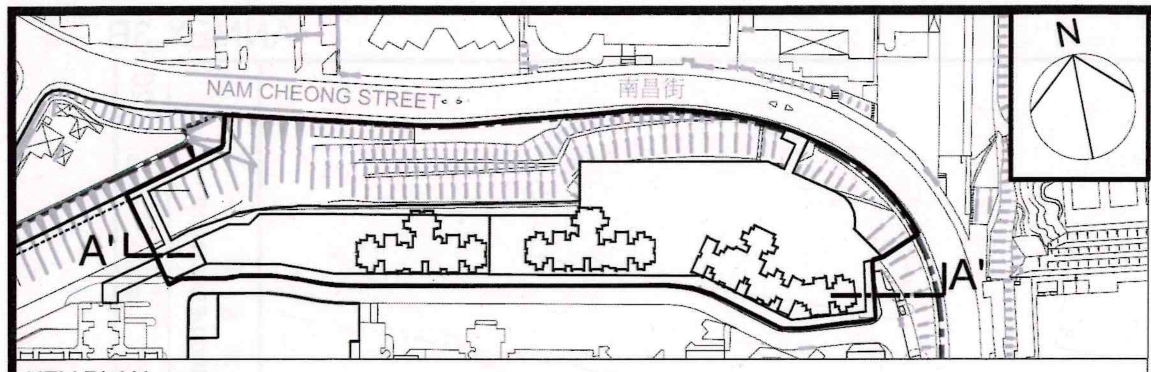

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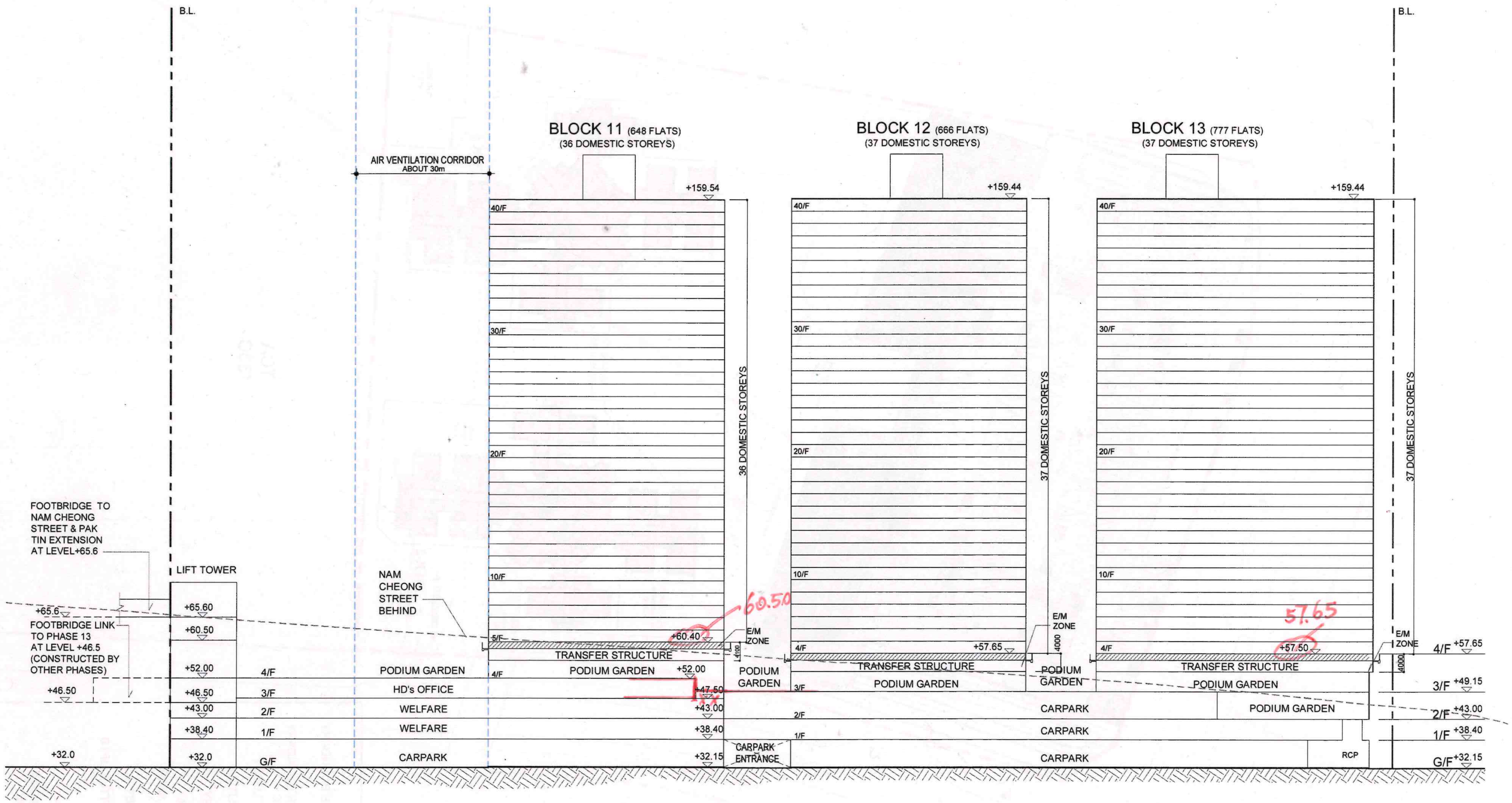
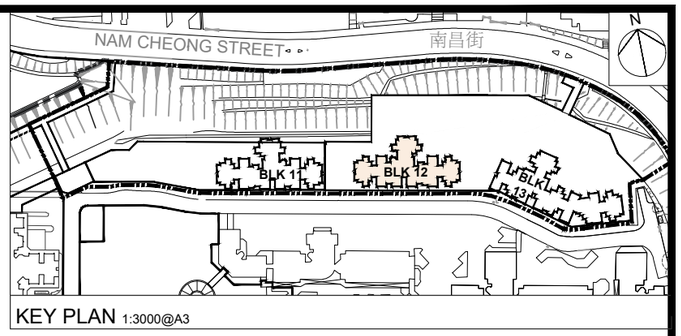


PROJECT	DRAWING TITLE			
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12	SITE SECTION A-A (SCHEME 17)	1:1000 (A3)	機密 CONFIDENTIAL	房屋署 HOUSING DEPARTMENT
				DRAWING NO.: SP14/12/SITE/A/S17/PLO-11/P04
				DATE: 04/04/2023
				-



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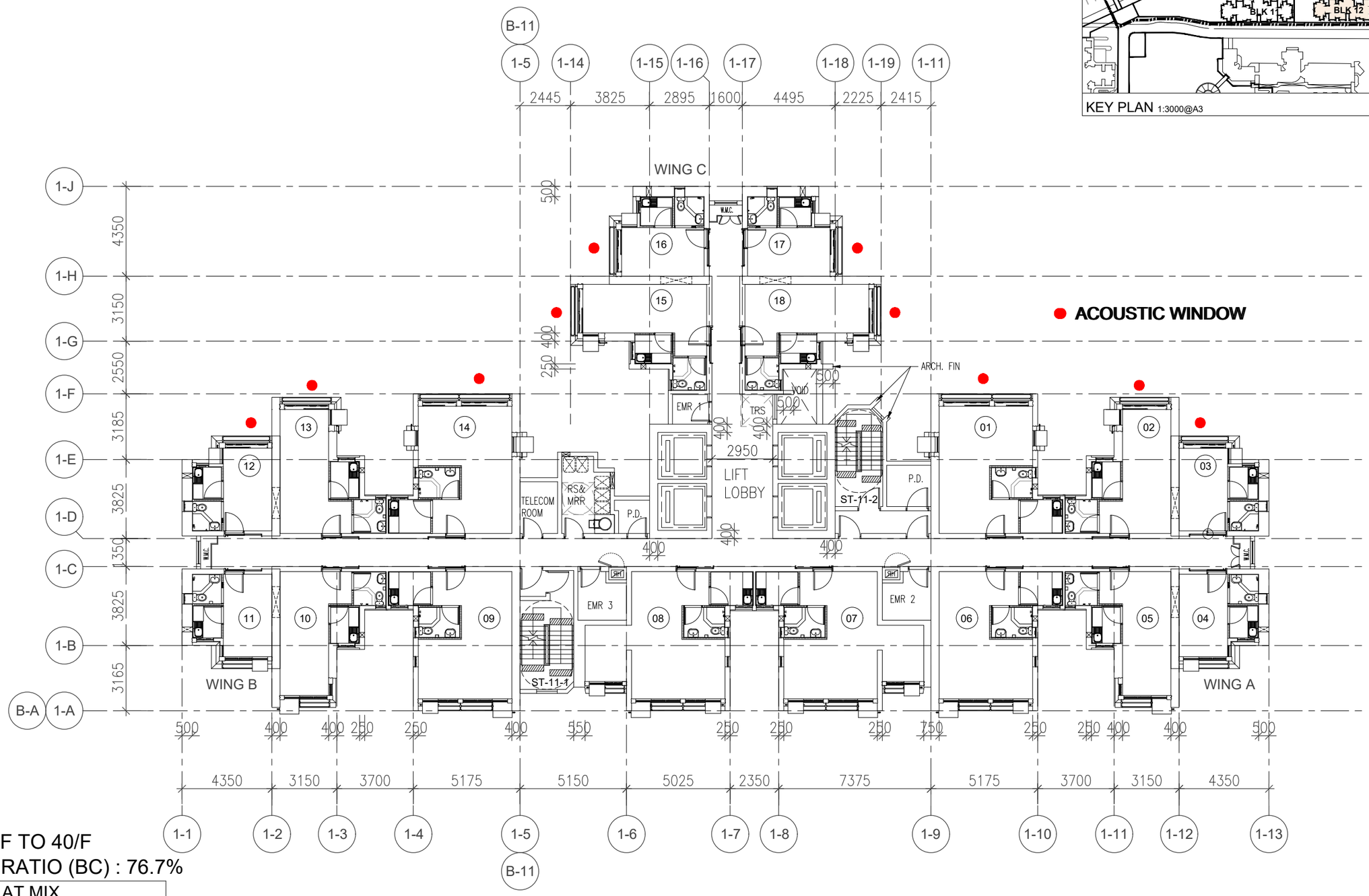

BLOCK 11: 5/F TO 40/F

EFFICIENCY RATIO (BC) : 76.7%

FLAT MIX				
TYPE A	TYPE B	TYPE C	TYPE D	TOTAL
6	6	4	2	18

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
BLOCK 11 - TYPICAL FLOOR PLAN

1:200 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/BL11/A/S17/PLO-01/P03

DATE: 29/03/2023

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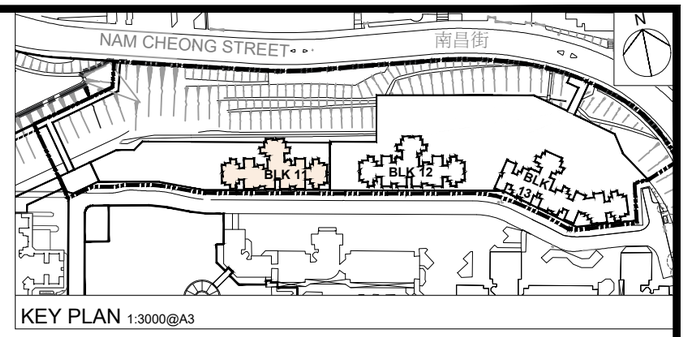

KEY PLAN 1:3000@A3

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
BLOCK 11 - MAIN ROOF PLAN

1:200 (A3)

機密 CONFIDENTIAL

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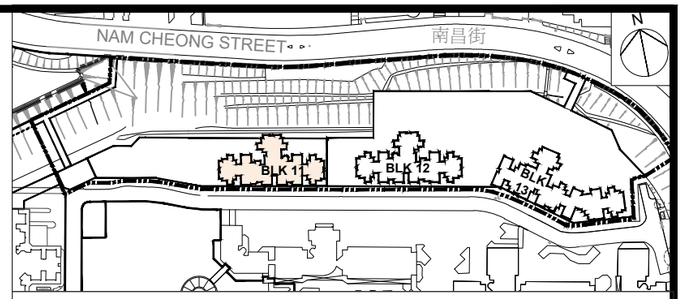
房屋署
HOUSING DEPARTMENT

DRAWING NO.:	DATE:	
SP14/12/BL11/A/S17/PLO-02/P03	29/03/2023	-



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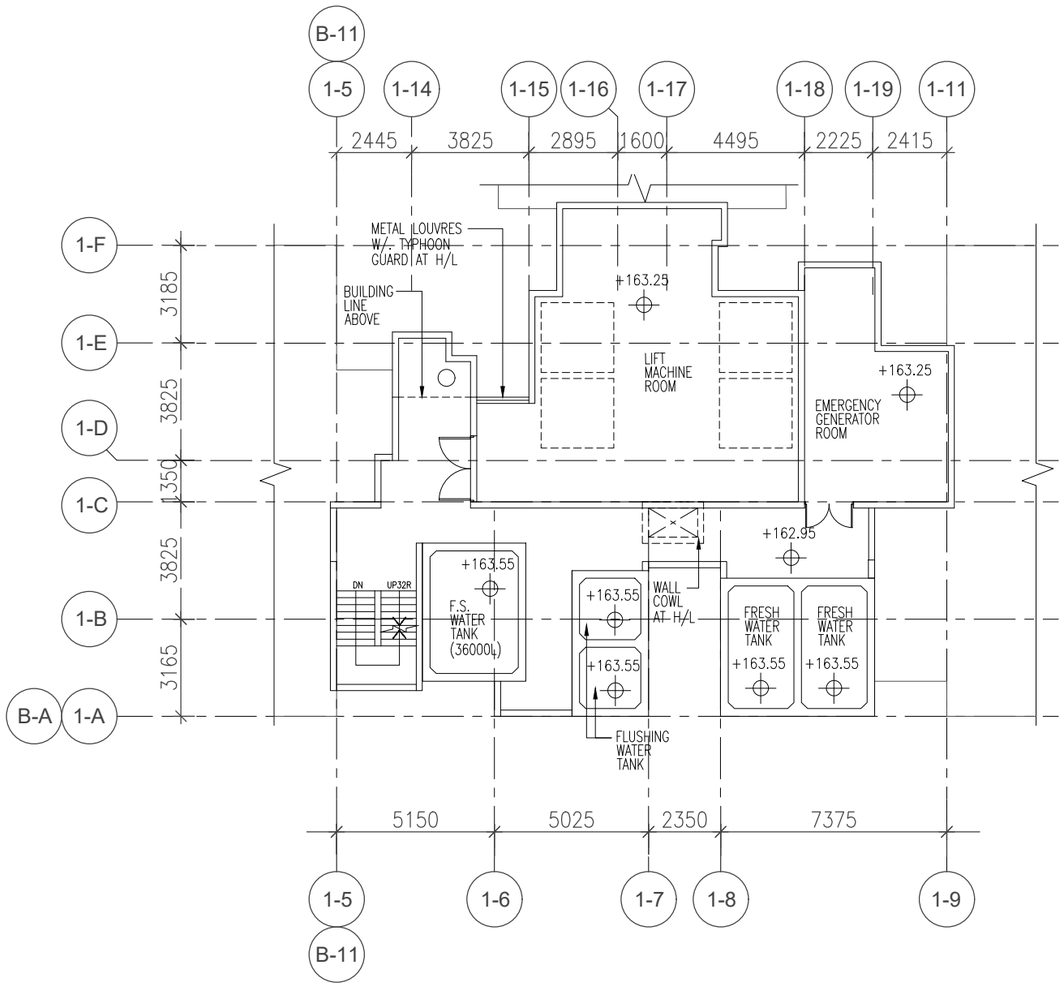
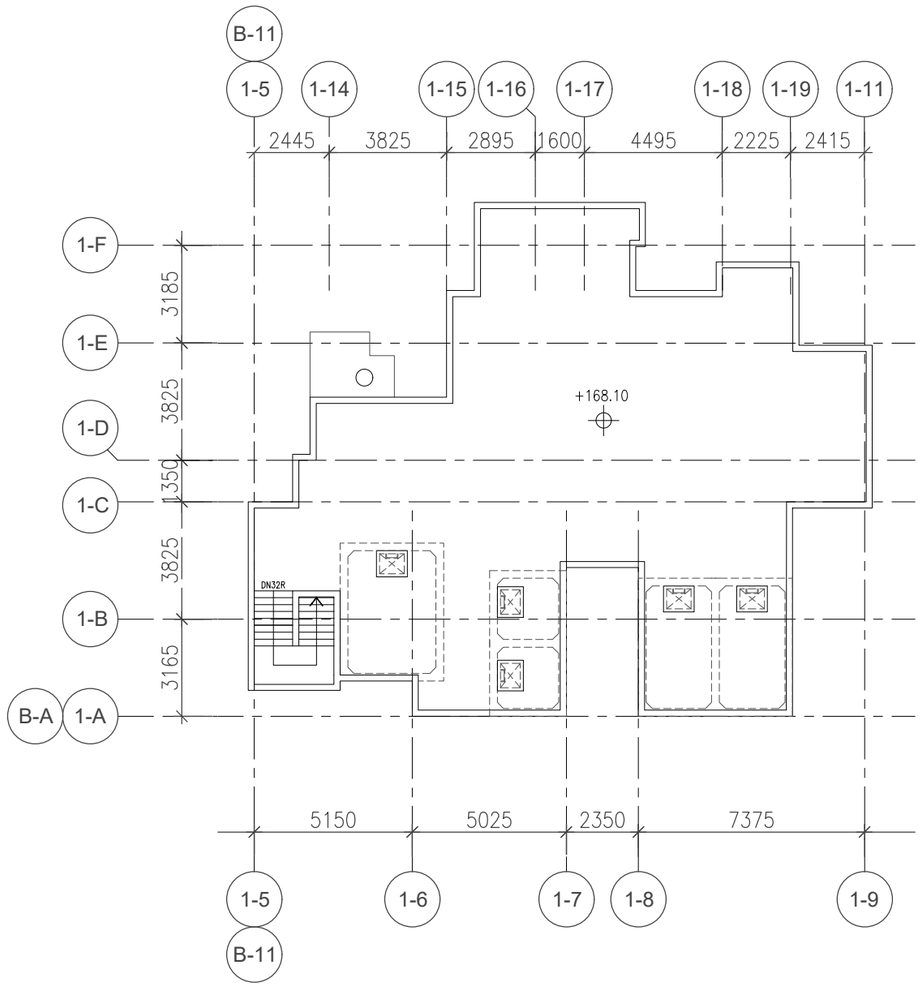
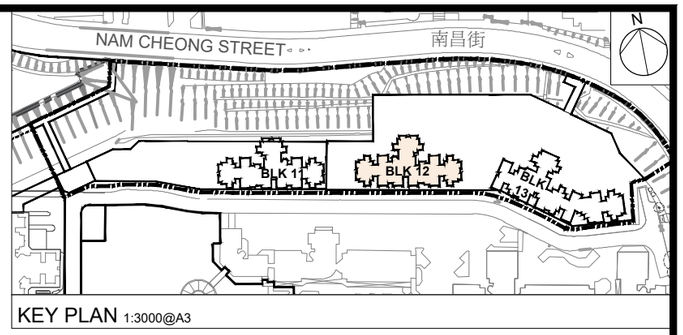


BLOCK 11
LIFT MACHINE ROOM FLOOR PLAN

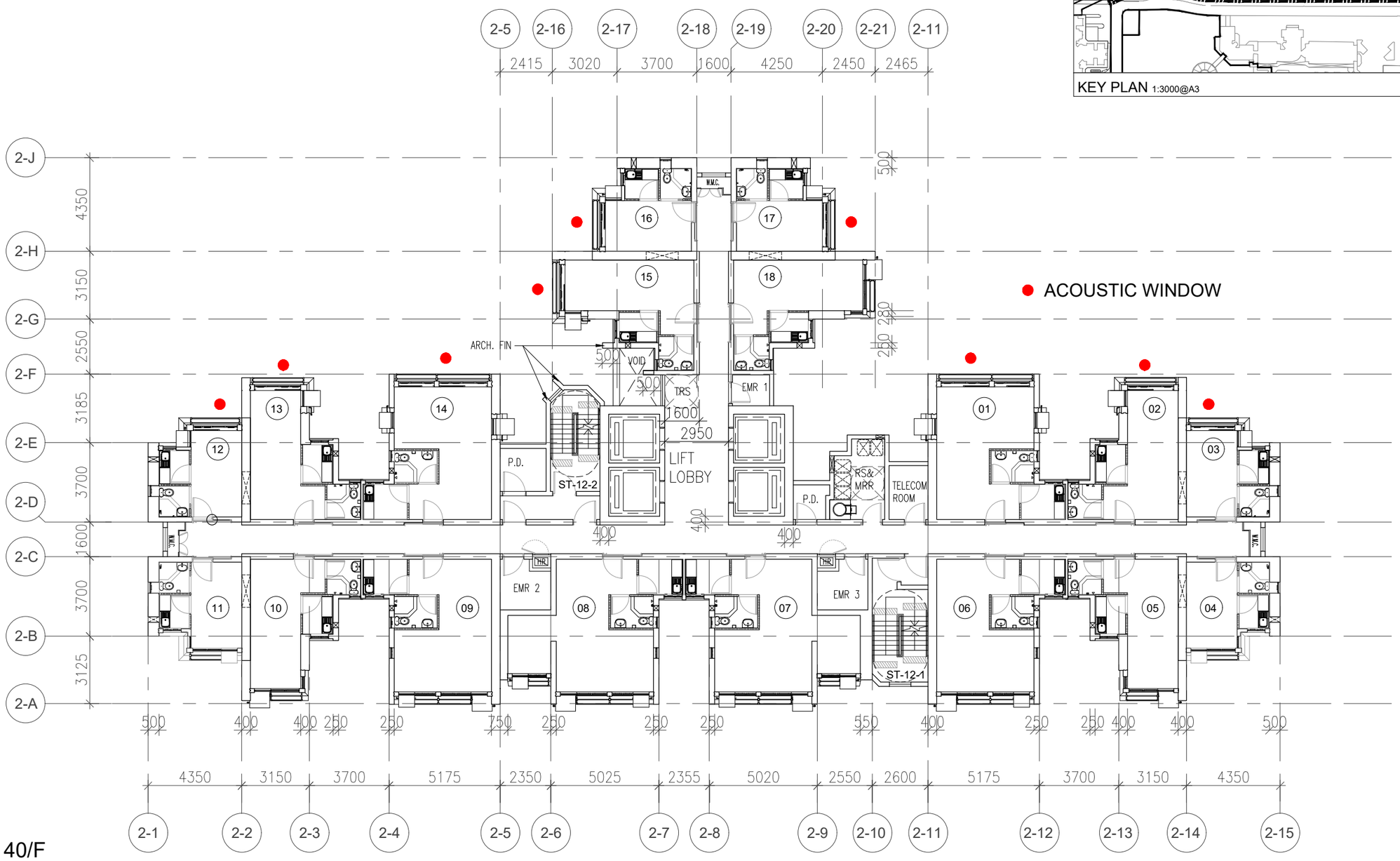


BLOCK 11
UPPER ROOF PLAN

PROJECT **PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12**	DRAWING TITLE **BLOCK 11 - LIFT MACHINE ROOM AND UPPER ROOF PLAN** **1:200 (A3)**	機密 CONFIDENTIAL 責任聲明 有關圖則可能載有受保密權涵蓋的資料，只供特定對象使用。任何在未獲授權下發布、分發或複製該等圖則的行為，一律嚴格禁止。 Disclaimer: The drawings may contain privileged information and is solely for the use of the intended recipient(s). Any unauthorised dissemination, distribution or copying of these drawings are strictly prohibited.	房屋署 HOUSING DEPARTMENT DRAWING NO.: SP14/12/BL11/A/S17/PLO-03/P03 DATE: 29/03/2023 -



KEY PLAN 1:3000@A3



BLOCK 12: 4/F TO 40/F

EFFICIENCY RATIO (BC) : 76.7%

FLAT MIX				
TYPE A	TYPE B	TYPE C	TYPE D	TOTAL
6	6	4	2	18

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
BLOCK 12 - TYPICAL FLOOR PLAN

1:200 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/BL12/A/S17/PLO-01/P06

DATE: 01/06/2023

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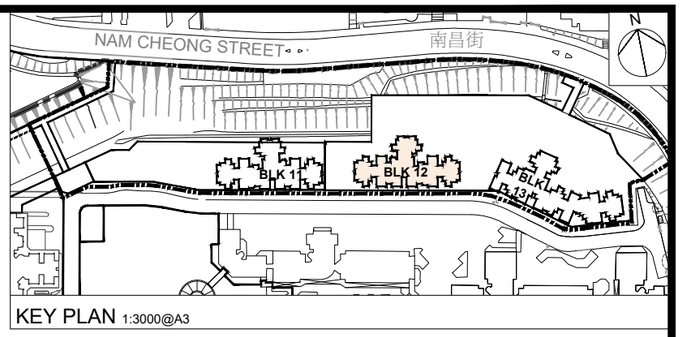

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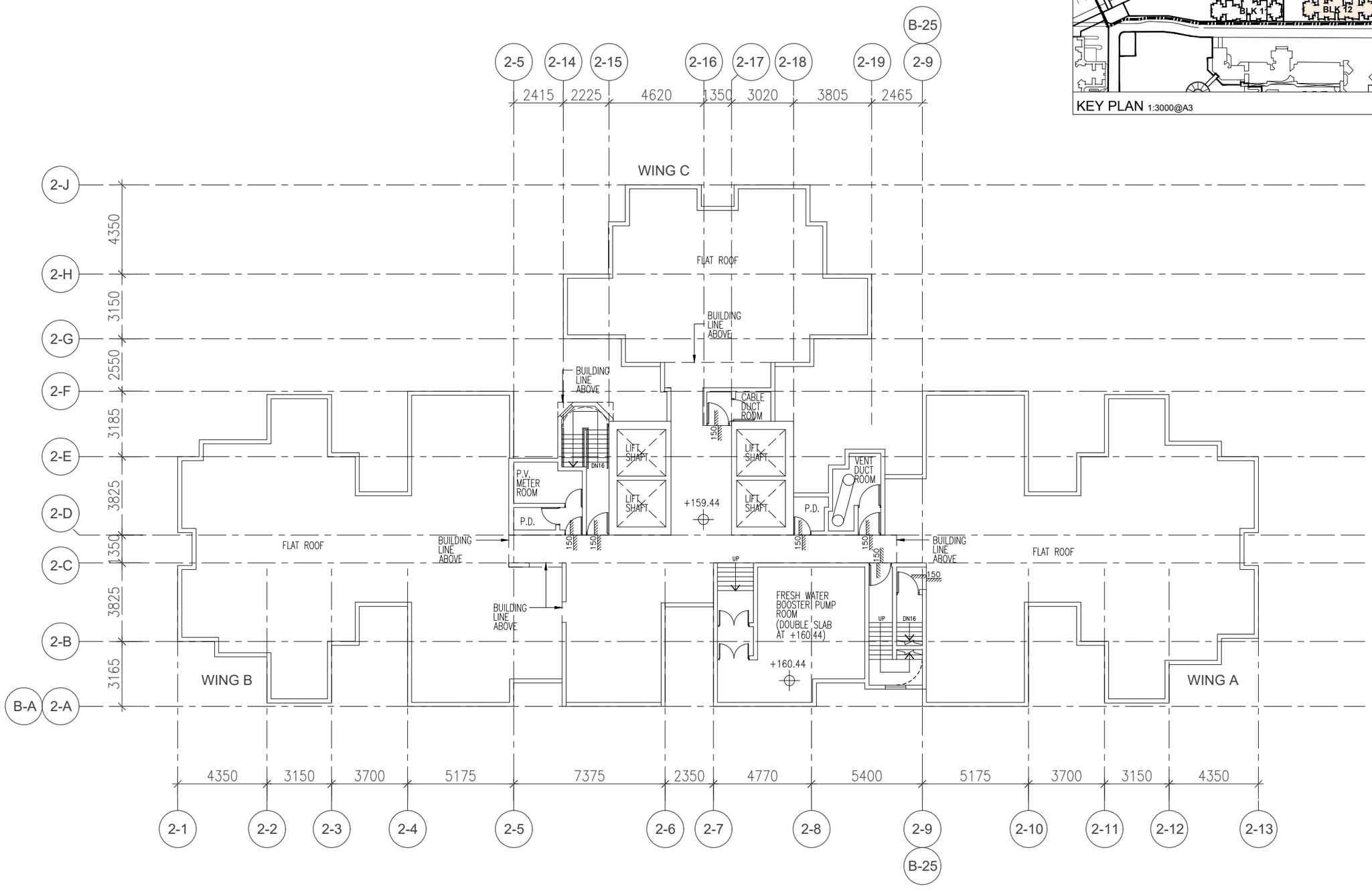

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
BLOCK 12 - MAIN ROOF PLAN

1:200 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/BL12/A/S17/PLO-02/P03

DATE: 29/03/2023

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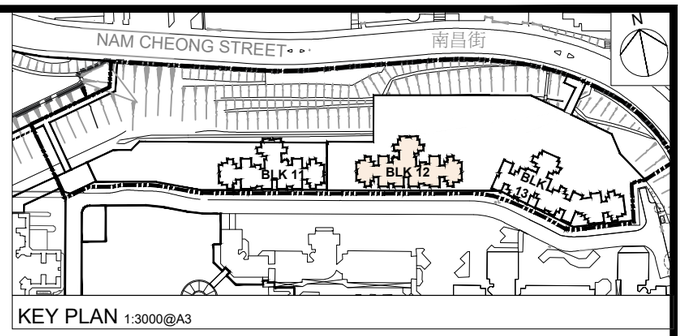

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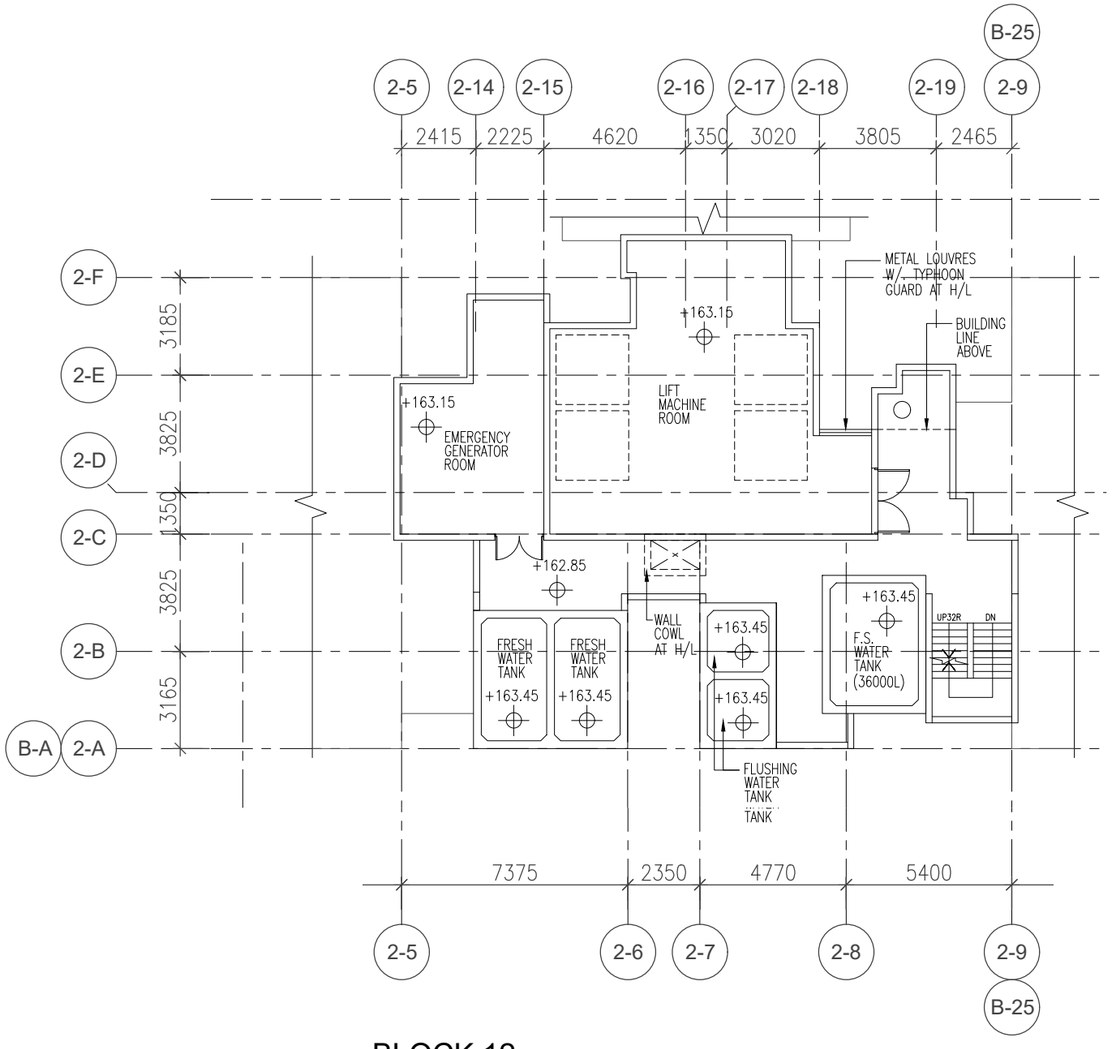
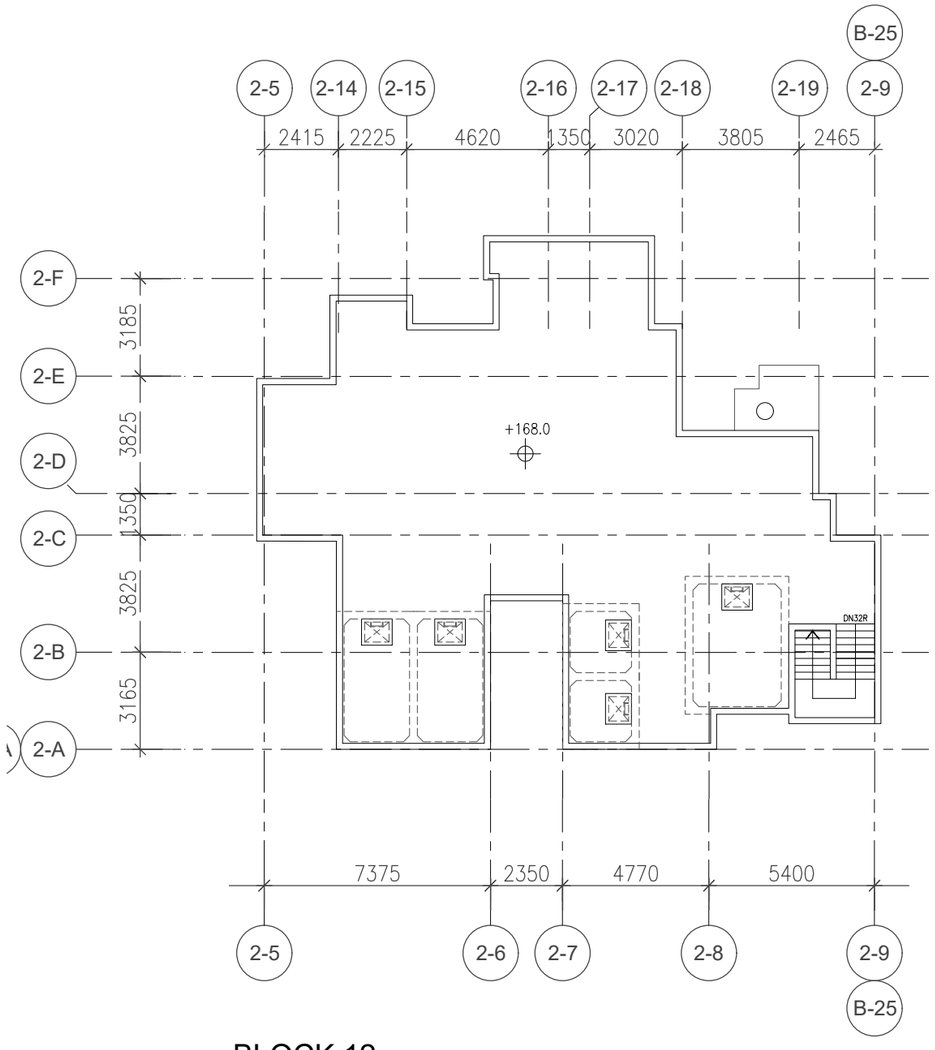


BLOCK 12
LIFT MACHINE ROOM FLOOR PLAN



BLOCK 12
UPPER ROOF PLAN

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
BLOCK 12 - LIFT MACHINE ROOM AND UPPER ROOF PLAN

1:200 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/BL12/A/S17/PLO-03/P03

DATE: 29/03/2023

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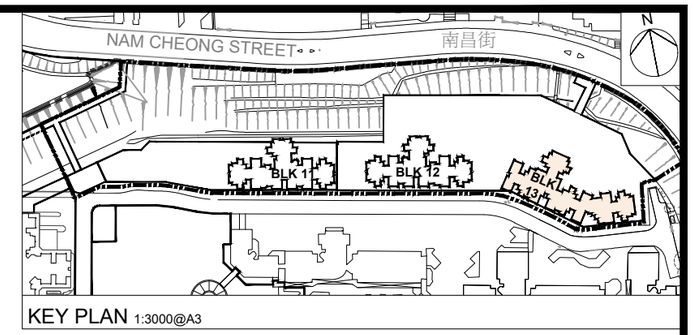

KEY PLAN 1:3000@A3

● ACOUSTIC WINDOW

WING C

WING B

WING A

LIFT LOBBY

VOID

EMR

EMR 2

TELE-COM 1

TELE-COM 2

TRS

RS&MRR

P.D.

ARCH. FIN

ST-13-1

ST-13-2

BLOCK 13: 4/F TO 40/F

EFFICIENCY RATIO (BC) : 76.5%

FLAT MIX				
TYPE A	TYPE B	TYPE C	TYPE D	TOTAL
4	9	6	2	21

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
BLOCK 13 - TYPICAL FLOOR PLAN

1:200 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/BL13/A/S17/PLO-01/P03

DATE: 29/03/2023

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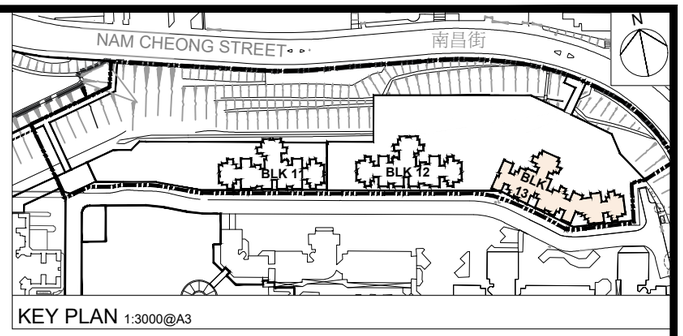

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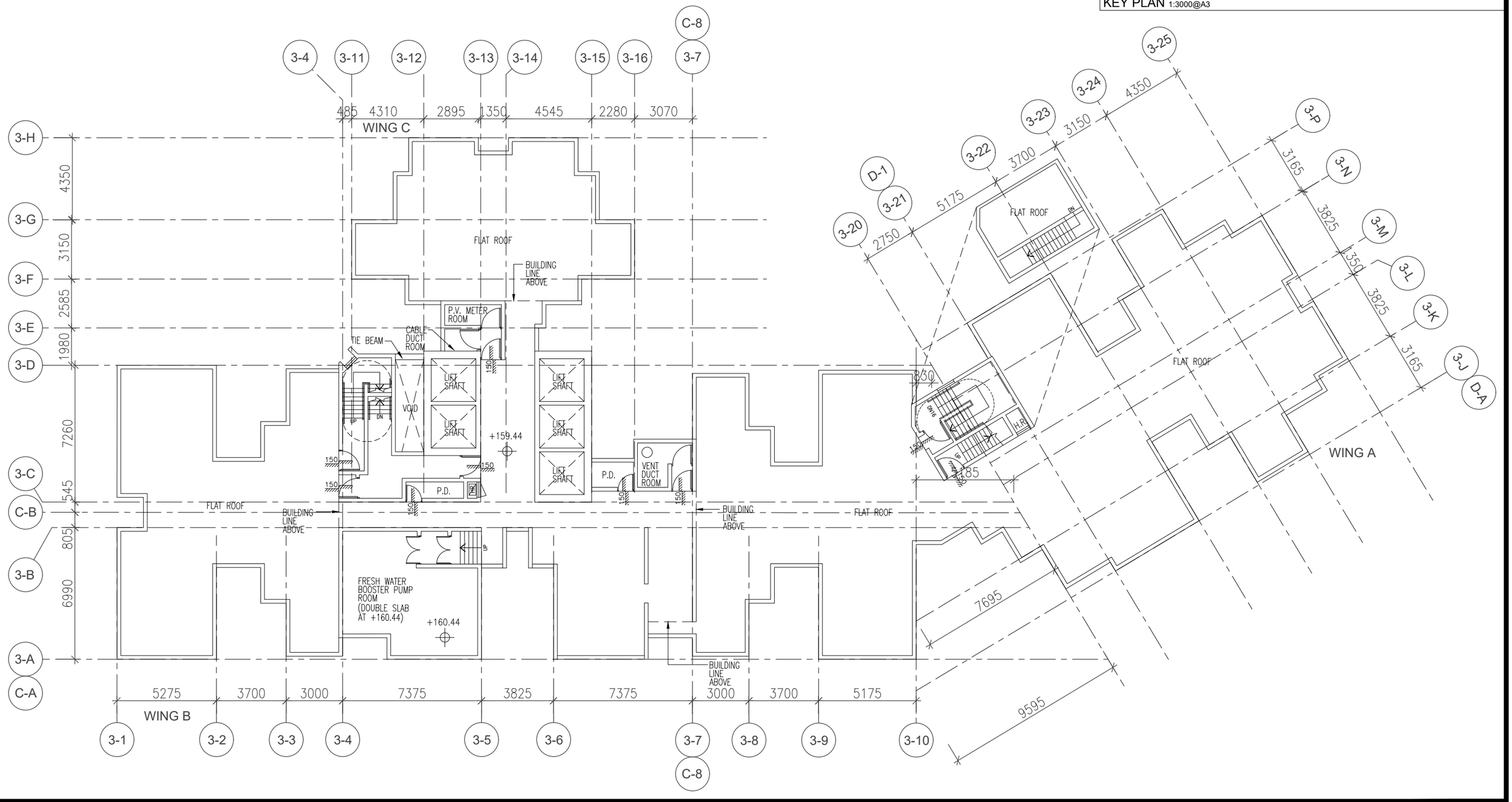


PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

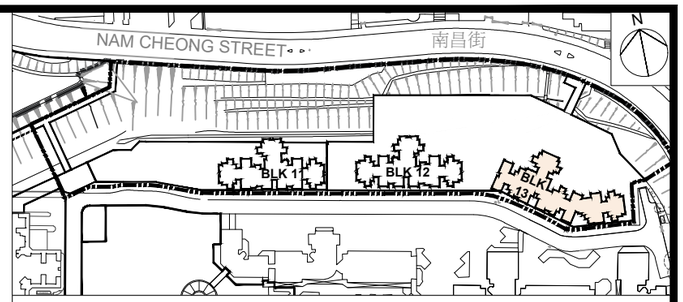
DRAWING TITLE
BLOCK 13 - MAIN ROOF PLAN

1:200 (A3)

機密 CONFIDENTIAL

房屋署
HOUSING DEPARTMENT

DRAWING NO.:	DATE:	
SP14/12/BL13/A/S17/PLO-02/P03	29/03/2023	-



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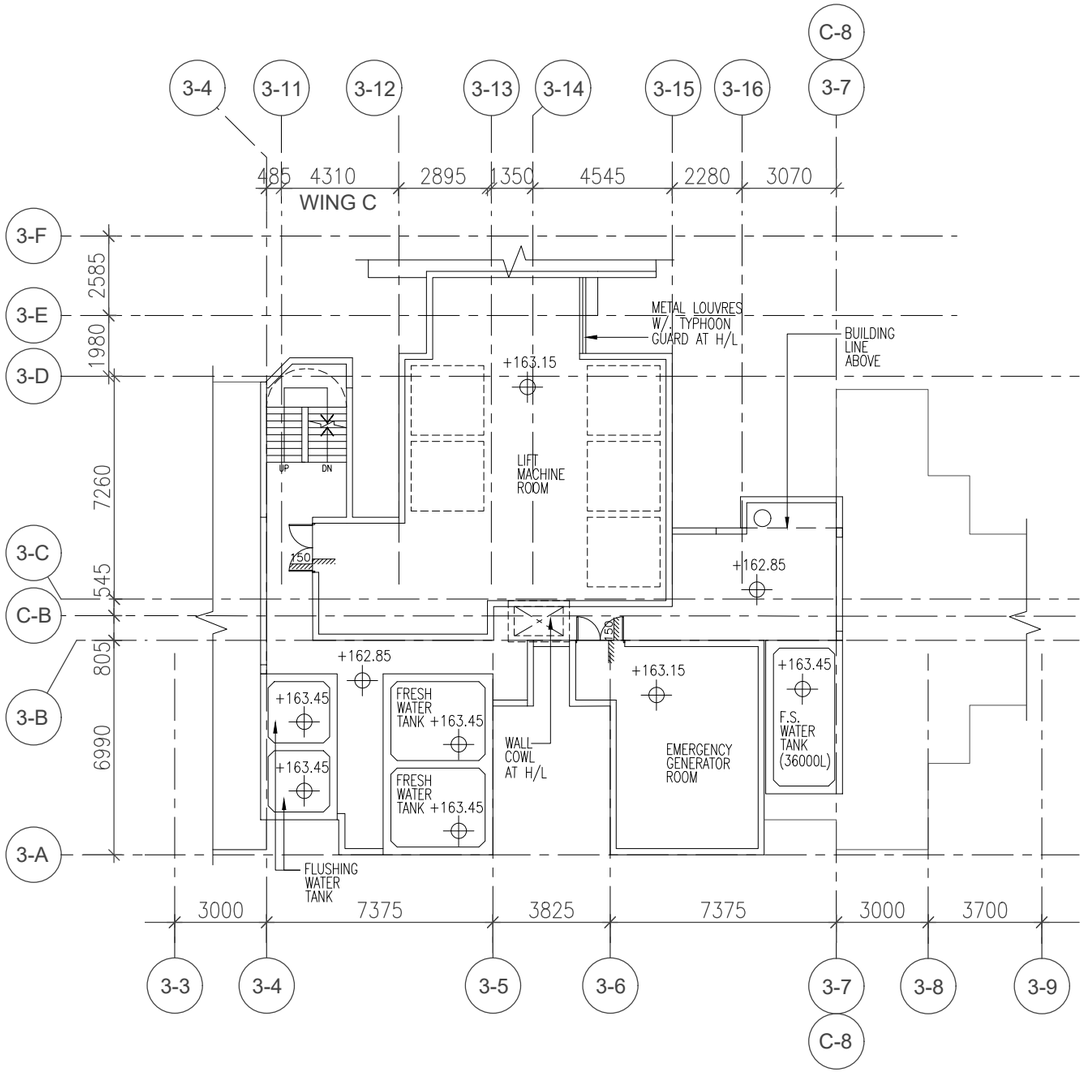
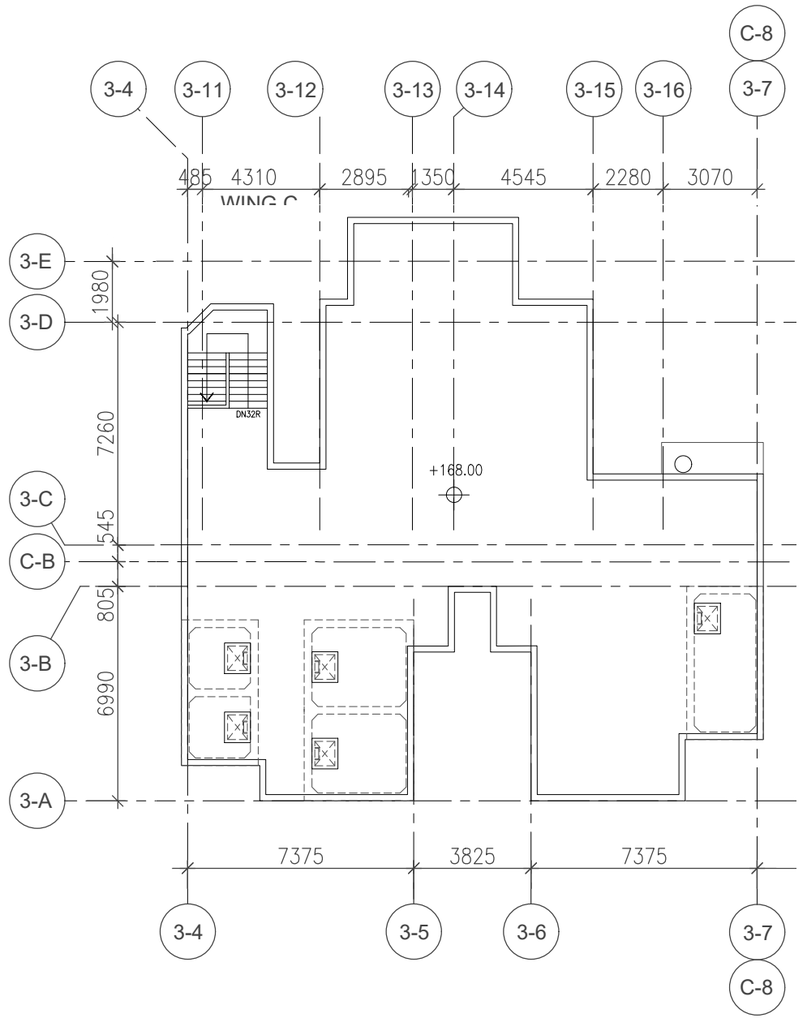


LIFT MACHINE ROOM FLOOR PLAN



UPPER ROOF PLAN

PROJECT
PUBLIC HOUSING REDEVELOPMENT AT PAK TIN ESTATE PHASE 12

DRAWING TITLE
BLOCK 13 - LIFT MACHINE ROOM AND UPPER ROOF PLAN
1:200 (A3)

房屋署
HOUSING DEPARTMENT

DRAWING NO.: SP14/12/BL13/A/S17/PLO-03/P03
DATE: 29/03/2023
-

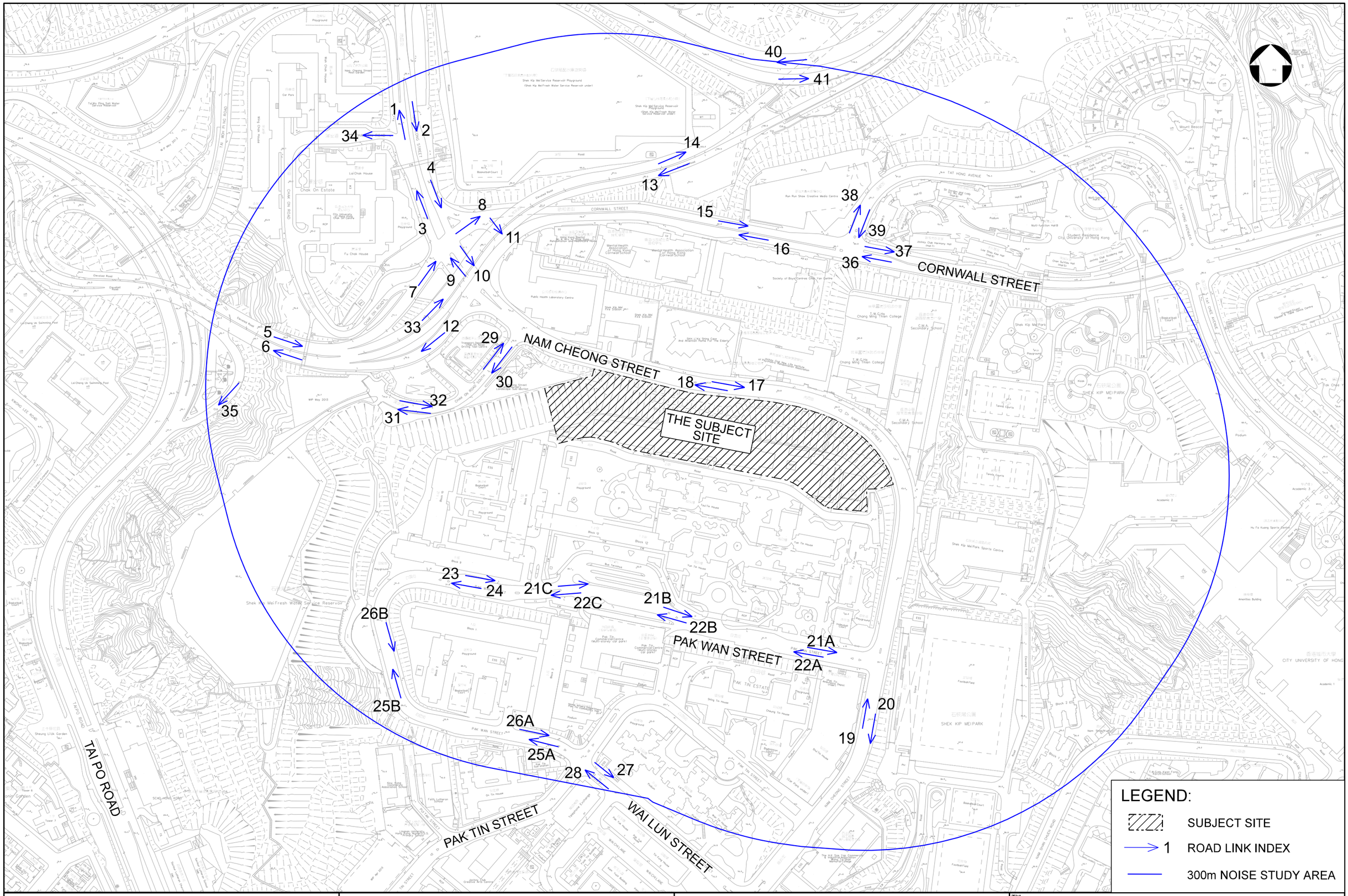
Appendix 2.1

Traffic Forecast Data (Year 2044)

Year 2044 Traffic Forecast

ID (1)	Road	Direction	AM Peak		PM Peak	
			Total Flows (veh/hr)	HV%	Total Flows (veh/hr)	HV%
1	Nam Cheong Street	NB	440	25%	605	25%
2	Nam Cheong Street	SB	410	25%	345	25%
3	Nam Cheong Street	NB	475	25%	645	25%
4	Nam Cheong Street	SB	410	25%	345	25%
5	Lung Yuet Road	EB	1,335	15%	1,385	15%
6	Lung Yuet Road	WB	1,400	15%	1,830	15%
7	Lung Yuet Road	EB	1,145	15%	955	15%
8	Cornwall Street	EB	965	10%	740	15%
9	Nam Cheong Street	NB	540	25%	640	25%
10	Nam Cheong Street	SB	480	25%	425	30%
11	Cornwall Street U-turn	SB	20	35%	25	20%
12	Lung Yuet Road	WB	980	10%	1,130	20%
13	Lung Yuet Road	WB	380	25%	430	5%
14	Lung Yuet Road	NB	445	15%	680	15%
15	Corwall Street	EB	1,095	15%	865	15%
16	Corwall Street	WB	885	15%	995	20%
17	Nam Cheong Street	EB	540	25%	450	30%
18	Nam Cheong Street	WB	695	20%	770	25%
19	Nam Cheong Street	NB	700	25%	595	30%
20	Nam Cheong Street	SB	630	25%	410	30%
21A	Pak Wan Street	EB	335	20%	245	25%
21B	Pak Wan Street	EB	265	20%	225	25%
21C	Pak Wan Street	EB	265	20%	225	25%
22A	Pak Wan Street	WB	165	25%	225	30%
22B	Pak Wan Street	WB	100	40%	185	35%
22C	Pak Wan Street	WB	100	40%	185	35%
23	Pak Wan Street	EB	230	25%	175	30%
24	Pak Wan Street	WB	110	40%	145	45%
25A	Pak Wan Street	WB	205	10%	170	20%
25B	Pak Wan Street	NB	225	20%	190	30%
26A	Pak Wan Street	EB	95	25%	160	35%
26B	Pak Wan Street	SB	115	40%	175	40%
27	Wan Lun Street	EB	80	10%	125	25%
28	Wan Lun Street	WB	210	20%	205	20%
29	Chak On Road South	EB	45	0%	25	15%
30	Chak On Road South	WB	40	20%	35	30%
31	Chak On Road South	WB	40	20%	40	25%
32	Chak On Road South	EB	45	0%	25	15%
33	Lung Yuet Road	NB	445	15%	680	15%
34	Chak On Road	WB	30	30%	40	20%
35	Tai Po Road Slip Road	SB	15	50%	40	15%
36	Cornwall Street	WB	860	15%	995	20%
37	Cornwall Street	EB	1,035	15%	815	15%
38	Tat Hong Avenue	NB	85	15%	95	15%
39	Tat Hong Avenue	SB	50	30%	35	60%
40	Lung Cheung Road	WB	3,600	35%	3,800	35%
41	Lung Cheung Road	EB	4,700	35%	2,820	40%

Remarks: *(1) Refer to* ***Figure 1***



LEGEND:

- SUBJECT SITE
- 1 ROAD LINK INDEX
- 300m NOISE STUDY AREA

香港房屋委員會
Hong Kong Housing Authority

SNC·LAVALIN

ATKINS
Member of the SNC-Lavalin Group

AGREEMENT NO. : CB 20180686 - TERM TRAFFIC AND ENVIRONMENTAL CONSULTANCY SERVICES 2019 - 2021 FOR KOWLOON CENTRAL AND WEST AND ISLANDS REGION INSTRUCTION NO. K14 : PROPOSED PUBLIC HOUSING DEVELOPMENT AT PAK TIN ESTATE PHASE 12, ENVIRONMENTAL ASSESSMENT STUDY (EAS)

Title: Index Plan

Scale at A3	Date	Figure No.
N.T.S.	MAR 2023	3.1

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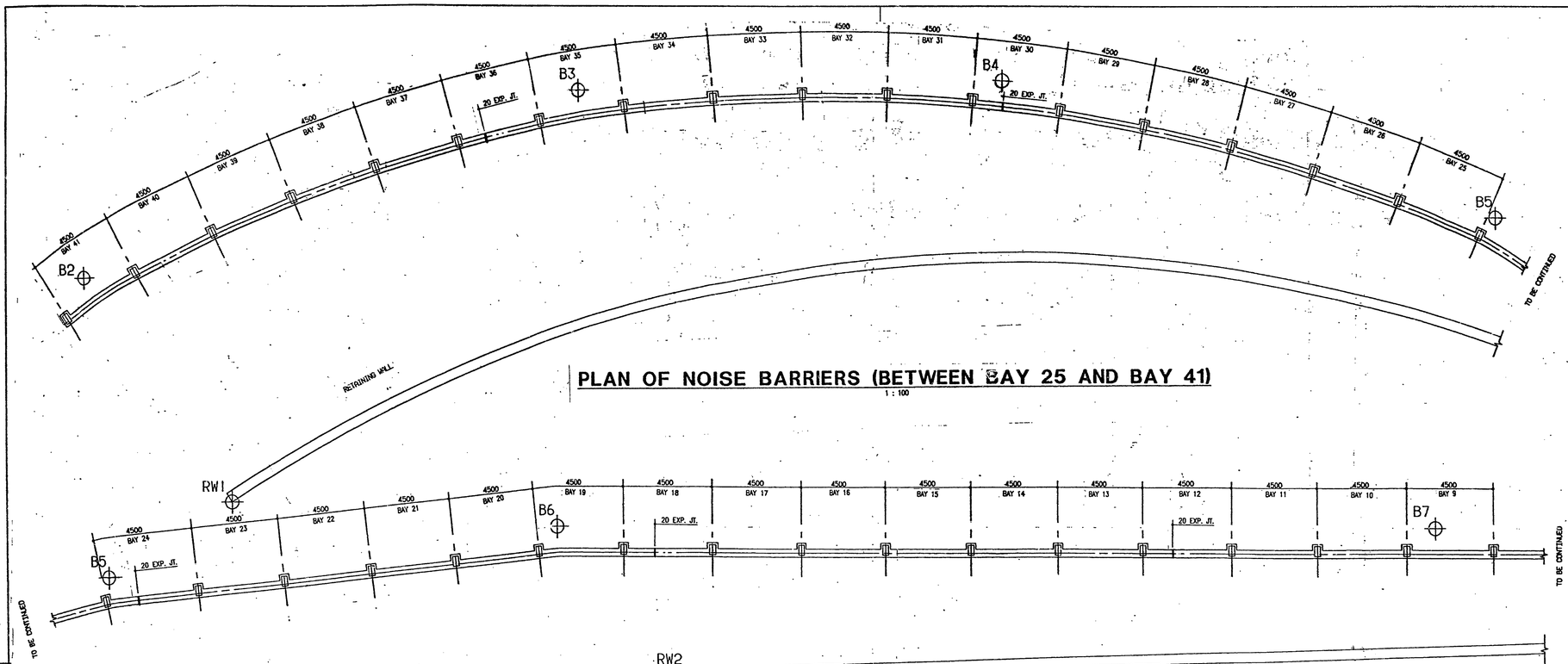
Appendix 2.2

As built drawings for road side barrier along Nam Cheong Street



PLAN OF NOISE BARRIERS (BETWEEN BAY 25 AND BAY 41)

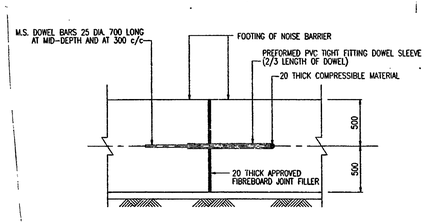
1 : 100

PLAN OF NOISE BARRIERS (BETWEEN BAY 9 AND BAY 25)

1 : 100

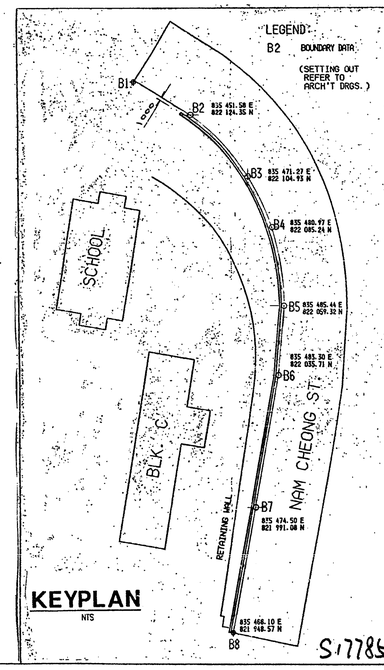
PLAN OF NOISE BARRIERS (BETWEEN BAY 1 AND BAY 9)

1 : 100



EXPANSION JOINT DETAILS

N.T.S.



KEYPLAN

NTS

NOTES :

FOR ALL DETAILS REFER TO DRAWING NOS. C124/B03/001 & 002.

ORIGINAL

revision	date	description	initial
	1-8-98	AS-BUILT RECORD	
	designed	checked	drawn	checked
initial	KYC	WKY	TKY	WKY
date	8/98	8/98	8/98	8/98

approved

project

REDEVELOPMENT OF PAK TIN ESTATE PHASE 2

drawing title

PLAN OF NOISE BARRIERS

plan register no.

0124/B03/S01

scale

AS SHOWN

revision

-

client

WECON LIMITED
CONSTRUCTION & ENGINEERING

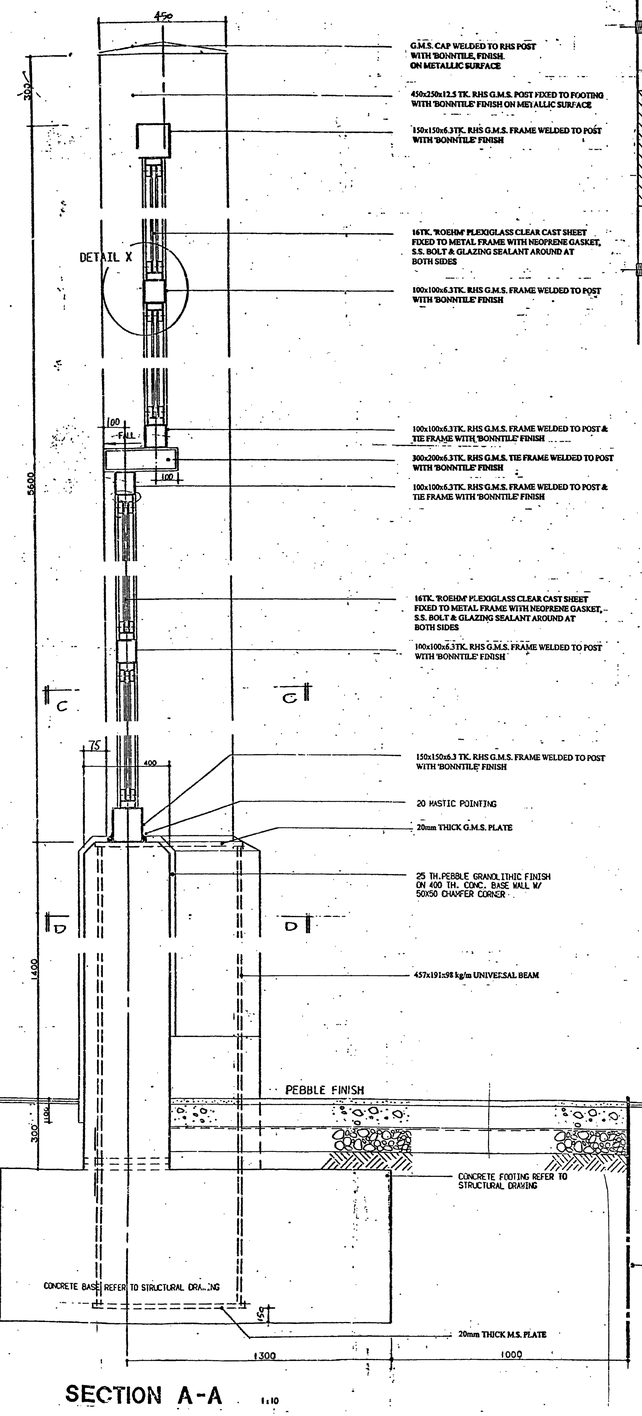
architect

BINNIE CONSULTANTS LIMITED
賓尼工程諮問有限公司
CONSULTING ENGINEERS
賓尼

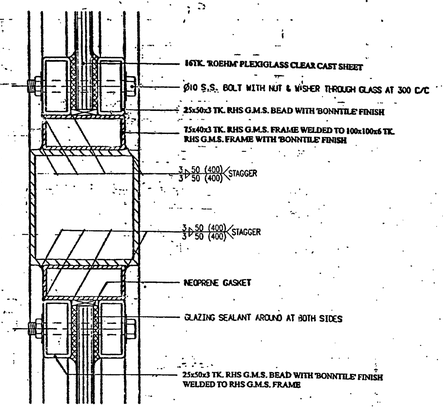
S:7785

NOTES :

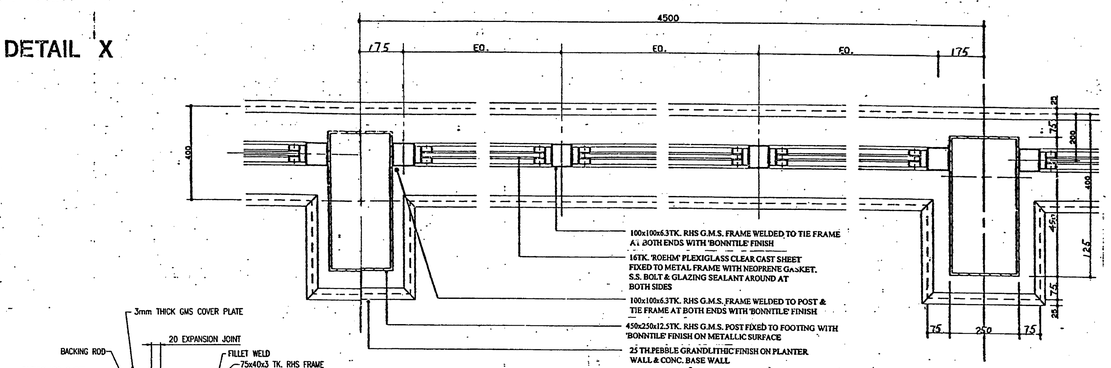
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NO. 0124/B03/S01.
2. ALL WELDS ARE 5mm FILLET WELD FULL LENGTH ALL ROUND UNLESS OTHERWISE STATED.

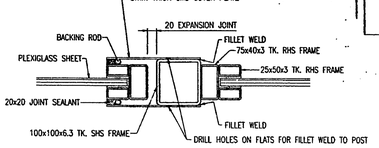


SECTION A-A 1:10

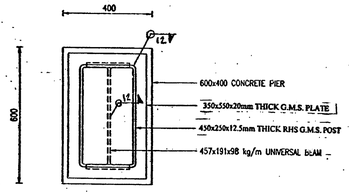


DETAIL X





SECTION E-E 1:5



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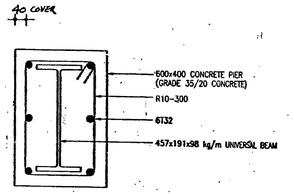
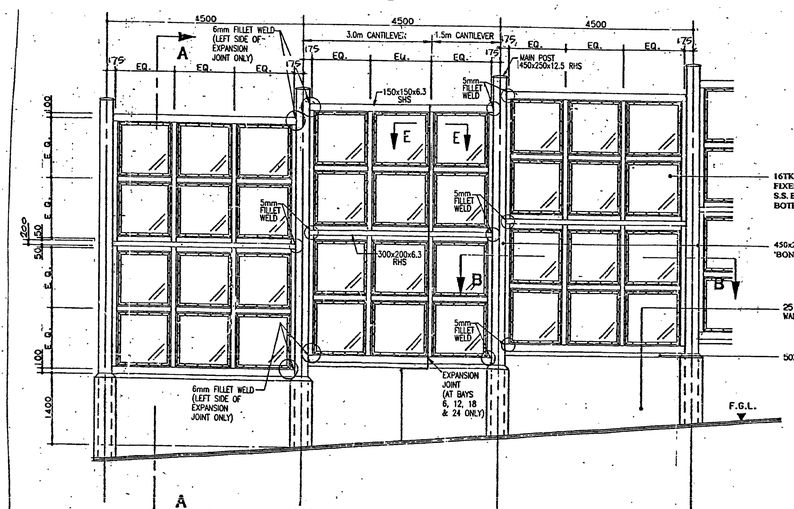


SECTION D-D

SECTION B-B 1:10



TYPICAL ELEVATION OF STRAIGHT NOISE BARRIER FACING NAM CHEONG STREET (FROM BAY 1 TO BAY 24) 1:50

S/7787

ORIGINAL

revision	date	description	drawn	initial
	1-8-98	AS-BUILT RECORD		
B	1-8-98	GENERAL REVISION	TKY	WKY
A	5-5-97	CONCRETE GRADE REVISED	WLS	WKY

	designed	checked	drawn	checked
initial	KYC	WKY	WLS	WKY
date	2/97	2/97	2/97	2/97

approved

project: REDEVELOPMENT OF PAK TIN ESTATE PHASE 2

drawing title: DETAILS OF NOISE BARRIER (SHEET 1)

plan register no.: 0124/B03/001

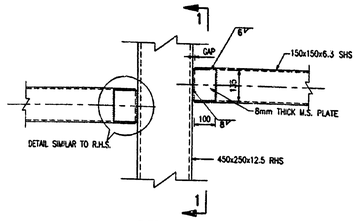
scale: AS SHOWN

revision: B

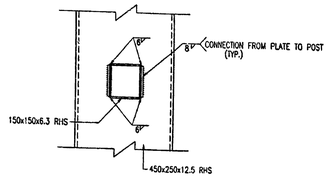
client: WECON LIMITED CONSTRUCTION & ENGINEERING

architect:

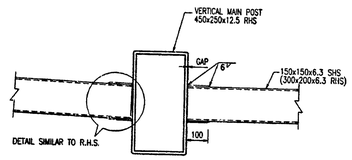
BINNIE CONSULTANTS LIMITED 賓尼工程顧問有限公司 CONSULTING ENGINEERS 賓尼



DETAIL A 1:10
(FOR EXPANSION JOINT AT BAYS 30 & 36 ONLY)

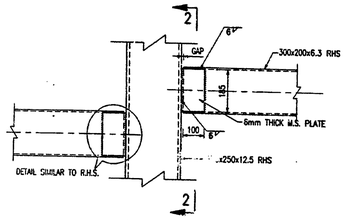


SECTION 1-1
1:10

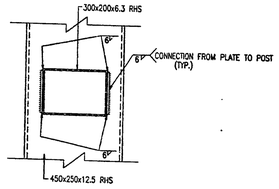


PLAN 1:10
(FROM BAY 25 TO BAY 41 EXCEPT AT EXPANSION JOINT BAYS 30 & 36)

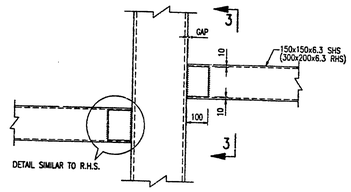
NOTES : ALL STEEL PLATES TO BE 6mm THICK, 100mm LONG AND THE WIDTH TO BE 20mm LESS THAN THE SIZE OF THE TUBE.



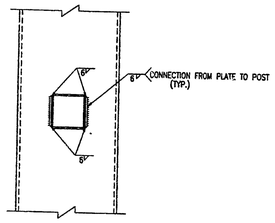
DETAIL B 1:10
(FOR EXPANSION JOINT AT BAYS 30 & 36 ONLY)



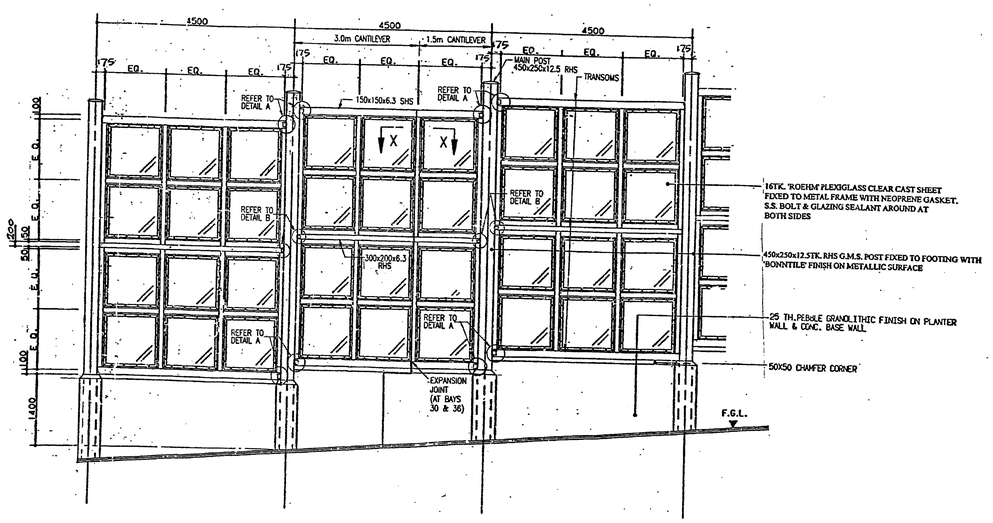
SECTION 2-2
1:10



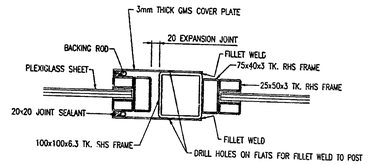
ELAVATION
1:10



SECTION 3-3
1:10



TYPICAL ELEVATION OF CURVED NOISE BARRIER FACING NAM CHEONG STREET (FROM BAY 25 TO BAY 41) 1 : 50



SECTION X-X
1 : 5

NOTES :

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NO. 0124/B03/S01.
2. ALL WELDS ARE 5mm FILLET WELD FULL LENGTH ALL ROUND UNLESS OTHERWISE STATED.

CANCEL

revision	date	description			initial
	1-8-98	AS-BUILT RECORD			
	designed	checked	drawn		checked
initial	KYC	WKY	WLS		WKY
date	2/97	2/97	2/97		2/97

approved

project
REDEVELOPMENT OF PAK TIN ESTATE PHASE 2

drawing title
DETAILS OF NOISE BARRIER (SHEET 2)

plan register no.
0124/B03/002

scale
AS SHOWN

revision
—

client
WECON LIMITED
CONSTRUCTION & ENGINEERING

architect

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CONSULTING ENGINEERS

S/7786

Appendix 2.3

Road Traffic Noise Prediction Results (Year 2044) - Base-case Scenario

Result Summary - Social Welfare (AM)

RECEIVER	Criteria, dB(A)	SPL, dB(A)	Exceedance
WF1/F_1	70	50	N
WF1/F_2	70	51	N
WF1/F_3	70	52	N
WF1/F_4	70	<40	N
WF1/F_5	70	<40	N
WF1/F_6	70	42	N
WF1/F_7	70	55	N
WF1/F_8	70	55	N
WF1/f_9	55	55	N
WF1/f_10	70	55	N
WF2/F_1	70	<40	N
WF2/F_2	70	<40	N
WF2/F_3	70	57	N
WF2/F_4	70	57	N
WF2/F_5	70	56	N
WF2/F_6	70	55	N
WF2/F_7	55	54	N
WF2/F_8	55	53	N
WF2/F_9	70	52	N
WF2/F_10	70	52	N
WF2/F_11	70	48	N
WF2/F_12	70	47	N
WF2/F_13	70	45	N
WF2/F_14	70	45	N
WF2/F_15	70	42	N
WF2/F_16	70	40	N
WF3/F_1	70	42	N
WF3/F_2	70	<40	N
WF3/F_3	70	<40	N
WF3/F_4	70	60	N
WF3/F_5	70	60	N
WF3/F_6	70	59	N
WF3/F_7	70	59	N
WF3/F_8	70	59	N
WF3/F_9	70	58	N
WF3/F_10	70	57	N
WF3/F_11	70	55	N
WF3/F_12	70	54	N
WF3/F_13	70	54	N
WF3/F_14	70	45	N

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary - Basecase- Domestic Units -AM

	T1 (Block 13)																				T2 (Block 12)																				T3 (Block 11)																	
Units	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Max SPL	72	71	71	71	69	68	68	70	71	72	72	68	67	66	65	64	62	62	60	59	70	71	72	71	70	71	71	70	71	71	71	56	56	56	56	55	55	54	53	71	72	71	71	71	72	71	72	72	71	53	53	53	53	54	54	59	60
Total no. of units with exceedance	33	6	24	32	0	0	0	0	17	26	27	0	0	0	0	0	0	0	0	0	0	18	34	25	0	22	20	0	24	31	14	0	0	0	0	0	0	0	0	16	32	25	9	21	28	16	29	34	20	0	0	0	0	0	0	0	0
Total no. of units	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36

No. of Exceedance	
Max SPL	72
Total no. of units with exceedance	583
Total no. of units	2091
Compliance %	72%

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary (Detail)- Base Case - Domestic Floors - T1 (Block 13) - 4/F to 40/F - AM

	T1 (Block 13)															
	A		B		C		D	E		F		G		H		
GBP Floor	T1-A2	T1-A3	T1-B1	T1-B2	T1-C1	T1-C2	T1-D1	T1-E1	T1-E2	T1-F1	T1-F2	T1-G1	T1-G2	T1-H1	T1-H2	T1-H3
4/F	70	70	68	69	67	70	70	55	61	54	49	60	61	61	63	64
5/F	70	70	68	69	/	70	70	56	61	55	50	61	62	62	64	64
6/F	70	70	68	69	/	70	70	57	62	57	51	61	62	62	64	65
7/F	70	70	69	69	/	70	70	58	62	58	52	62	63	62	64	65
8/F	71	70	69	70	/	70	70	60	63	59	53	63	63	63	65	65
9/F	71	70	69	70	/	70	71	61	64	61	54	63	64	64	65	66
10/F	71	70	69	70	/	71	71	63	65	63	55	64	65	64	66	67
11/F	71	71	69	70	/	71	71	64	66	64	56	65	65	65	67	67
12/F	71	71	69	70	/	71	71	65	67	65	57	66	66	65	67	68
13/F	71	71	69	70	/	71	71	66	67	66	58	66	67	65	68	68
14/F	71	71	/	70	/	71	71	66	67	66	59	67	67	66	68	68
15/F	71	71	/	70	/	71	71	67	68	66	60	67	67	66	68	69
16/F	71	71	/	70	/	71	71	67	68	67	60	67	67	66	69	69
17/F	71	71	/	70	/	71	71	67	68	67	60	67	67	66	69	69
18/F	71	71	/	70	/	71	71	67	68	67	61	67	68	66	69	69
19/F	72	71	/	71	/	71	71	68	68	67	61	67	68	66	69	70
20/F	72	71	/	71	/	71	71	68	68	67	61	67	68	66	69	70
21/F	72	71	/	71	/	71	71	68	69	68	61	68	68	67	69	70
22/F	72	71	/	71	/	71	71	68	69	68	62	68	68	67	70	70
23/F	72	71	/	71	/	71	71	68	69	68	62	68	68	67	70	70
24/F	72	71	/	71	/	71	71	68	69	68	62	68	68	67	70	70
25/F	71	71	/	70	/	71	71	68	69	68	62	68	68	67	70	70
26/F	71	71	/	70	/	71	71	68	69	68	62	68	68	67	70	70
27/F	71	71	/	70	/	71	71	68	69	68	62	68	68	67	70	70
28/F	71	71	/	70	/	71	71	68	69	68	62	68	68	67	70	70
29/F	71	71	70	70	/	71	71	68	69	68	62	68	68	67	70	70
30/F	71	71	70	70	/	71	71	68	69	68	62	68	68	67	70	70
31/F	71	71	70	70	/	71	71	68	69	68	62	68	68	67	70	70
32/F	71	71	70	70	/	71	71	68	69	68	62	68	68	67	70	70
33/F	71	71	70	70	/	71	71	68	68	68	62	68	68	67	70	70
34/F	71	71	70	70	/	70	71	68	68	68	62	68	68	67	70	70
35/F	71	71	70	70	/	70	71	68	68	68	62	68	68	67	69	70
36/F	71	71	70	70	/	70	71	68	68	68	62	68	68	67	69	70
37/F	71	71	70	70	/	70	71	67	68	67	62	68	68	67	69	70
38/F	71	71	70	70	66	70	71	67	68	67	62	68	68	66	69	70
39/F	71	71	70	70	66	70	71	67	68	67	62	68	68	66	69	70
40/F	71	71	70	70	66	70	71	67	68	67	62	67	68	66	69	70
Max SPL, dB(A)	72	71	70	71	67	71	71	68	69	68	62	68	68	67	70	70

	T1 (Block 13)																			
	I				J		K		L		M		N			O		P		
GBP Floor	T1-I1	T1-I2	T1-I3	T1-I4	T1-J1	T1-J2	T1-K1	T1-K2	T1-L1	T1-L2	T1-M1	T1-M2	T1-N1	T1-N2	T1-N3	T1-O1	T1-O2	T1-P1	T1-P2	T1-P3
4/F	65	65	61	64	65	66	65	65	57	57	56	53	51	53	52	50	45	45	41	30
5/F	65	66	62	64	65	66	65	66	58	58	57	54	52	54	53	51	45	46	42	30
6/F	66	66	62	64	66	66	66	66	61	60	58	55	53	55	54	52	46	46	42	31
7/F	66	66	63	64	66	67	67	67	62	62	60	56	54	56	55	53	47	47	43	31
8/F	67	67	64	65	67	68	68	68	64	64	62	57	55	58	56	55	48	48	44	32
9/F	67	67	65	65	67	69	69	69	64	64	63	58	56	59	57	56	50	49	44	32
10/F	68	68	66	65	68	69	69	69	65	65	63	59	57	60	59	57	51	50	45	33
11/F	68	69	66	66	68	70	70	70	66	66	64	60	58	61	60	58	52	51	46	33
12/F	69	69	67	66	69	70	70	/	66	66	64	60	58	61	60	59	53	52	47	34
13/F	69	69	67	66	/	70	70	/	66	66	65	61	59	62	61	60	54	53	48	34
14/F	69	70	68	67	/	70	71	/	67	67	65	61	59	62	61	60	54	54	49	35
15/F	70	70	68	67	/	71	71	/	67	67	66	62	60	63	62	61	55	54	50	36
16/F	70	70	68	67	/	71	71	/	67	67	66	62	60	63	62	61	56	55	50	36
17/F	70	70	/	/	/	71	71	/	67	68	66	63	61	64	63	62	57	55	51	38
18/F	70	71	/	/	/	71	71	/	67	68	67	63	62	64	63	62	57	56	52	39
19/F	71	71	/	/	/	71	72	/	67	68	67	64	62	65	64	63	58	56	53	41
20/F	71	71	/	/	/	71	72	/	67	68	67	64	63	65	64	63	59	57	53	42
21/F	71	71	/	/	/	71	72	/	67	68	67	64	63	65	65	64	60	58	54	42
22/F	71	71	/	/	/	72	72	/	67	68	67	64	63	65	65	64	61	58	55	43
23/F	71	71	/	/	/	72	72	/	67	68	67	65	63	66	65	64	61	59	56	43
24/F	71	71	/	/	/	71	72	/	67	68	67	65	64	66	65	65	62	60	57	43
25/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	65	65	62	60	58	44
26/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	66	65	62	61	59	44
27/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	66	65	63	62	60	44
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32/F	71	71	/	/	/	71	71	/	67	67	67	65	64	66	66	65	63	63	62	48
33/F	70	71	/	/	/	71	71	/	67	67	67	65	64	66	66	65	64	63	62	48
34/F	70	71	/	/	/	71	71	/	67	67	67	65	64	66	66	65	64	63	62	49
35/F	70	70	/	/	/	71	71	/	67	67	67	65	64	66	66	65	64	63	62	50
36/F	70	70	/	/	/	71	71	/	66	67	67	65	64	66	66	65	64	64	63	51
37/F	70	70	/	/	/	71	71	/	66	67	67	65	64	66	66	65	64	64	63	51
38/F	70	70	/	/	/	71	71	/	66	67	66	65	64	66	66	65	64	64	63	52
39/F	70	70	/	/	/	71	71	/	66	67	66	65	64	66	66	65	64	64	63	53
40/F	70	70	69	68	/	71	71	/	66	67	66	65	64	66	66	65	64	64	63	53
Max SPL, dB(A)	71	71	69	68	69	72	72	70	67	68	67	65	64	66	66	65	64	64	63	53

	T1 (Block 13)															
	Q		R				S				T		U			
GBP Floor	T1-Q1	T1-Q2	T1-R1	T1-R2	T1-R3	T1-R4	T1-S1	T1-S2	T1-S3	T1-S4	T1-T1	T1-T2	T1-U1	T1-U2	T1-U3	T1-U4
4/F	36	39	38	39	39	30	34	38	38	37	38	36	35	38	38	68
5/F	37	39	38	39	39	30	35	39	39	37	39	36	35	38	39	68
6/F	38	40	39	39	39	31	35	39	39	37	39	36	36	39	39	68
7/F	38	40	39	40	40	31	36	40	40	38	39	37	36	39	39	69
8/F	39	41	40	40	40	32	36	40	40	38	40	37	37	39	40	69
9/F	40	41	40	41	41	32	37	41	40	39	40	38	37	40	40	69
10/F	40	42	41	42	41	33	38	41	41	39	41	38	38	40	40	69
11/F	41	43	41	42	42	33	38	42	41	40	41	39	38	41	41	69
12/F	42	43	42	43	42	34	39	42	42	40	42	39	39	41	41	69
13/F	42	44	43	43	43	34	39	43	42	41	42	40	40	42	42	69
14/F	43	45	43	44	44	35	40	43	43	41	43	41	40	43	43	69
15/F	44	45	44	45	44	36	40	44	44	42	44	42	41	43	43	69
16/F	45	46	45	45	45	37	41	45	44	43	44	42	42	44	44	70
17/F	46	47	46	46	46	39	42	45	45	44	45	43	43	45	45	70
18/F	47	48	47	47	47	40	43	46	46	45	46	44	44	47	47	70
19/F	48	49	48	48	48	42	45	48	47	46	47	46	46	48	48	70
20/F	48	50	48	49	49	44	46	48	48	47	48	47	47	48	48	70
21/F	49	50	49	50	49	44	47	49	49	48	49	47	47	49	49	70
22/F	50	51	50	50	50	45	47	50	49	48	49	48	48	49	49	70
23/F	51	52	51	51	51	45	47	50	50	48	49	48	48	49	49	70
24/F	52	53	51	52	51	45	48	51	50	49	50	48	48	50	49	70
25/F	53	54	52	53	52	45	48	51	51	49	50	49	48	50	50	70
26/F	54	55	53	54	53	45	49	52	51	50	51	49	49	50	50	70
27/F	55	56	54	55	54	46	50	53	52	50	51	50	49	51	50	70
28/F	56	57	55	56	55	46	50	54	53	51	52	50	49	51	51	70
29/F	57	58	56	57	56	46	51	54	54	52	53	51	50	51	51	70
30/F	58	59	57	57	57	46	51	55	55	52	53	51	51	52	52	70
31/F	58	60	58	58	58	47	52	56	56	53	54	52	51	53	52	70
32/F	59	60	58	59	58	47	52	57	56	54	55	53	52	53	53	70
33/F	59	60	59	59	59	48	53	57	57	54	56	53	53	54	54	70
34/F	59	61	59	60	59	48	53	58	57	55	56	54	53	55	54	69
35/F	60	61	60	60	60	49	53	59	58	55	57	54	54	56	55	69
36/F	60	61	60	61	60	50	54	59	59	56	57	55	54	56	56	69
37/F	60	62	60	61	60	51	54	59	59	56	58	55	54	57	56	69
38/F	60	62	61	61	61	51	55	60	59	57	59	56	55	57	57	69
39/F	61	62	61	61	61	52	55	60	60	57	59	56	55	58	57	69
40/F	61	62	61	62	61	52	56	60	60	58	59	56	56	58	58	69
Max SPL, dB(A)	61	62	61	62	61	52	56	60	60	58	59	56	56	58	58	70

Legend	
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary (Detail)- Base Case - Domestic Floors - T2 (Block 12) - 4/F to 40/F - AM

T2 (Block 12)

	A		B		C				D		E		F		G	
GBP Floor	T2-A1	T2-A2	T2-B1	T2-B2	T2-C1	T2-C2	T2-C3	T2-C4	T2-D1	T2-D2	T2-E1	T2-E2	T2-F1	T2-F2	T2-G1	T2-G2
4/F	68	68	69	67	66	68	68	62	64	68	69	68	69	69	68	63
5/F	69	69	70	68	67	69	69	63	65	69	70	69	/	69	68	64
6/F	70	70	70	/	/	70	70	/	66	69	70	/	/	70	69	64
7/F	/	70	71	/	/	70	70	/	66	70	70	/	/	70	69	64
8/F	/	70	71	/	/	70	70	/	66	70	71	/	/	70	69	64
9/F	/	70	71	/	/	71	70	/	66	70	71	/	/	70	69	65
10/F	/	70	71	/	/	71	70	/	66	70	71	/	/	70	69	65
11/F	/	70	71	/	/	71	70	/	66	70	71	/	/	70	69	65
12/F	/	71	71	/	/	71	71	/	66	70	71	/	/	70	69	65
13/F	/	71	71	/	/	71	71	/	66	70	71	/	/	70	70	65
14/F	/	71	71	/	/	71	71	/	66	70	71	/	/	71	70	65
15/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	65
16/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	65
17/F	/	71	72	/	/	71	71	/	/	70	71	/	/	71	70	65
18/F	/	71	72	/	/	71	71	/	/	70	71	/	/	71	70	65
19/F	/	71	72	/	/	71	71	/	/	70	71	/	/	71	70	65
20/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	65
21/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	65
22/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	65
23/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	65
24/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	65
25/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	65
26/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	70	65
27/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	70	65
28/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	70	65
29/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	70	65
30/F	/	70	71	/	/	71	70	/	64	70	70	/	/	71	70	65
31/F	/	70	71	/	/	71	70	/	64	70	70	70	/	71	70	65
32/F	/	70	71	/	/	71	70	/	64	70	70	70	/	71	70	65
33/F	/	70	71	/	/	71	70	/	64	70	70	70	/	71	70	65
34/F	/	70	71	/	/	70	70	/	64	70	70	70	/	70	69	65
35/F	/	70	71	/	/	70	70	/	64	70	70	70	/	70	69	65
36/F	70	70	71	/	69	70	70	66	64	70	70	70	/	70	69	65
37/F	70	70	71	/	69	70	70	66	64	69	70	69	/	70	69	65
38/F	70	70	71	/	69	70	70	66	63	69	70	69	/	70	69	65
39/F	70	70	71	/	69	70	70	66	63	69	70	69	/	70	69	65
40/F	70	70	71	/	69	70	70	66	63	69	70	69	/	70	69	65
Max SPL, dB(A)	70	71	72	68	69	71	71	66	66	70	71	70	69	71	70	65

	H				I		J		K		L		M			N				O			
GBP Floor	T2-H1	T2-H2	T2-H3	T2-H4	T2-I1	T2-I2	T2-J1	T2-J2	T2-K1	T2-K2	T2-L1	T2-L2	T2-M1	T2-M2	T2-M3	T2-N1	T2-N2	T2-N3	T2-N4	T2-O1	T2-O2	T2-O3	T2-O4
4/F	62	68	69	67	68	69	68	69	49	49	49	50	50	50	49	42	47	48	49	36	38	38	39
5/F	63	69	69	68	69	70	69	69	49	49	49	50	50	50	49	42	47	48	49	36	38	38	40
6/F	63	69	70	68	/	70	69	69	49	49	49	50	50	50	49	42	47	48	49	36	39	39	40
7/F	63	69	70	68	/	70	69	69	49	49	49	49	50	50	49	42	47	48	49	37	39	39	40
8/F	63	70	70	68	/	70	69	70	49	49	49	50	50	50	49	42	47	48	49	37	39	39	40
9/F	/	70	70	/	/	70	70	70	49	49	49	50	50	50	49	42	47	48	49	38	40	40	40
10/F	/	70	70	/	/	71	70	/	49	49	49	50	50	50	49	42	47	48	49	38	40	40	40
11/F	/	70	70	/	/	71	70	/	49	49	49	50	50	50	49	42	47	48	49	39	41	41	40
12/F	/	70	70	/	/	71	70	/	49	49	49	50	50	50	49	42	47	49	49	39	41	41	40
13/F	/	70	71	/	/	71	70	/	49	49	49	50	50	50	49	42	47	49	49	40	42	42	41
14/F	/	70	71	/	/	71	70	/	49	49	49	50	50	50	49	43	47	49	50	41	43	43	42
15/F	/	71	71	/	/	71	70	/	49	49	49	50	50	50	49	44	48	49	50	42	44	44	43
16/F	/	71	71	/	/	71	70	/	49	49	50	50	50	50	50	45	48	49	50	44	46	46	45
17/F	/	71	71	/	/	71	71	/	50	49	50	50	50	50	50	47	49	50	50	47	48	48	46
18/F	/	71	71	/	/	71	71	/	50	49	50	50	50	50	50	48	50	50	50	48	49	49	48
19/F	/	71	71	/	/	71	71	/	50	49	50	50	50	50	50	49	50	50	50	49	50	50	49
20/F	/	71	71	/	/	71	71	/	50	50	50	50	50	50	50	49	50	50	50	49	50	50	49
21/F	/	71	71	/	/	71	71	/	50	50	50	50	50	51	50	49	50	50	50	49	50	50	49
22/F	/	71	71	/	/	71	71	/	50	50	50	50	51	51	50	49	50	51	50	49	50	50	49
23/F	/	71	71	/	/	71	71	/	50	50	50	51	51	51	50	49	51	51	50	50	50	50	49
24/F	/	71	71	/	/	71	71	/	50	50	50	51	51	51	50	49	51	51	51	50	50	50	49
25/F	/	71	71	/	/	71	71	/	51	50	50	51	51	51	50	49	51	51	51	50	50	51	49
26/F	/	71	71	/	/	71	71	/	51	51	51	51	51	51	50	49	51	51	51	50	51	51	49
27/F	/	71	71	/	/	71	71	/	51	51	51	52	52	52	51	49	51	51	51	50	51	51	49
28/F	/	71	71	/	/	71	71	/	52	51	51	52	52	52	51	49	51	51	51	50	51	51	49
29/F	/	71	71	/	/	71	71	/	52	52	52	52	52	52	51	49	52	52	52	50	51	51	49
30/F	/	71	71	/	/	71	71	/	52	52	52	53	52	53	52	49	52	52	52	50	51	51	49
31/F	/	71	71	/	/	71	70	/	53	53	52	53	53	53	52	49	52	52	52	51	52	52	49
32/F	/	71	71	/	/	71	70	/	53	53	53	54	53	53	52	49	52	52	53	51	52	52	49
33/F	/	70	71	/	/	71	70	/	54	53	53	54	54	54	53	49	53	53	53	51	52	52	49
34/F	/	70	71	/	/	71	70	/	54	54	54	54	54	54	53	49	53	53	53	51	52	53	50
35/F	/	70	71	/	/	71	70	/	54	54	54	55	54	54	53	49	53	54	54	52	53	53	50
36/F	/	70	71	/	/	71	70	/	54	54	54	55	55	55	54	50	54	54	54	52	53	53	50
37/F	/	70	70	/	/	71	70	/	55	55	54	55	55	55	54	50	54	55	55	53	54	54	50
38/F	/	70	70	/	/	71	70	/	55	55	55	56	55	56	54	50	55	55	55	53	54	54	51
39/F	/	70	70	/	/	71	70	/	56	55	55	56	56	56	55	50	55	55	55	54	55	55	51
40/F	/	70	70	/	/	71	70	70	56	56	55	56	56	56	55	51	56	56	56	54	55	55	52
Max SPL, dB(A)	63	71	71	68	69	71	71	70	56	56	55	56	56	56	55	51	56	56	56	54	55	55	52

	P			Q		R	
GBP Floor	T2-P1	T2-P2	T2-P3	T2-Q1	T2-Q2	T2-R1	T2-R2
4/F	31	38	38	38	36	35	35
5/F	32	38	38	38	36	36	36
6/F	32	38	38	39	36	36	36
7/F	32	39	39	39	37	36	36
8/F	33	39	39	39	37	37	36
9/F	33	39	40	39	37	37	36
10/F	34	40	40	40	38	37	37
11/F	35	40	40	40	38	38	37
12/F	35	41	41	41	39	38	38
13/F	36	41	42	41	40	39	38
14/F	38	42	42	42	41	40	39
15/F	40	43	44	43	42	41	41
16/F	42	45	46	45	44	43	43
17/F	44	47	47	47	46	45	45
18/F	47	49	49	48	48	47	47
19/F	48	49	49	49	48	47	48
20/F	48	49	49	49	49	48	48
21/F	48	50	50	49	49	48	48
22/F	48	50	50	49	49	48	48
23/F	48	50	50	49	49	48	48
24/F	48	50	50	49	49	48	48
25/F	48	50	50	49	49	48	48
26/F	48	50	50	50	49	48	48
27/F	48	50	50	50	49	48	48
28/F	49	50	50	50	49	48	48
29/F	48	51	51	50	50	49	48
30/F	49	51	51	50	50	49	48
31/F	48	51	51	51	50	49	49
32/F	49	51	51	51	50	49	49
33/F	49	52	52	51	50	49	49
34/F	49	52	52	52	51	50	49
35/F	49	52	52	52	51	50	50
36/F	49	53	53	52	52	51	50
37/F	50	53	53	53	52	51	50
38/F	50	54	54	53	53	51	51
39/F	50	54	54	54	53	52	51
40/F	50	55	55	54	54	53	52
Max SPL, dB(A)	50	55	55	54	54	53	52

Legend	
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary (Detail)- Base Case - Domestic Floors - T3 (Block 11) - 5/F to 40/F - AM

	T3 (Block 11)																						
	A		B		C				D		E		F		G		H				I		J	
GBP Floor	T3-A1	T3-A2	T3-B1	T3-B2	T3-C1	T3-C2	T3-C3	T3-C4	T3-D1	T3-D2	T3-E1	T3-E2	T3-F1	T3-F2	T3-G1	T3-G2	T3-H1	T3-H2	T3-H3	T3-H4	T3-I1	T3-I2	T3-J1	T3-J2
4/F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5/F	67	67	68	67	66	68	67	62	61	67	68	67	68	69	68	64	68	69	67	61	69	69	68	68
6/F	68	68	69	68	67	69	68	63	62	68	69	68	69	70	69	65	69	70	68	62	/	70	69	69
7/F	69	69	70	/	68	69	69	64	63	69	70	69	/	70	70	66	70	70	/	/	/	71	70	70
8/F	69	69	70	/	/	70	70	/	63	69	70	/	/	71	70	/	70	70	/	/	/	71	70	/
9/F	70	69	71	/	/	70	70	/	64	70	70	/	/	71	70	/	70	71	/	/	/	71	70	/
10/F	/	70	71	/	/	70	70	/	64	70	71	/	/	71	70	/	71	71	/	/	/	71	70	/
11/F	/	70	71	/	/	71	70	/	64	70	71	/	/	71	70	/	71	71	/	/	/	71	70	/
12/F	/	70	71	/	/	71	70	/	/	70	71	/	/	71	71	/	71	71	/	/	/	71	71	/
13/F	/	70	71	/	/	71	71	/	/	70	71	/	/	71	71	/	71	71	/	/	/	72	71	/
14/F	/	71	72	/	/	71	71	/	/	70	71	/	/	71	71	/	71	71	/	/	/	72	71	/
15/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/	/	72	71	/
16/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	72	/	/	/	72	71	/
17/F	/	71	72	/	/	71	71	/	/	71	71	/	/	72	71	/	71	72	/	/	/	72	71	/
18/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	72	/	/	/	72	71	/
19/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/	/	72	71	/
20/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/	/	72	71	/
21/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/	/	72	71	/
22/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/	/	72	71	/
23/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/	/	72	71	/
24/F	/	71	72	/	/	71	71	/	/	70	71	/	/	71	71	/	71	71	/	/	/	72	71	/
25/F	/	71	71	/	/	71	71	/	/	70	71	/	/	71	71	/	71	71	/	/	/	71	71	/
26/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	71	/	71	71	/	/	/	71	71	/
27/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	71	/	71	71	/	/	/	71	71	/
28/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	70	/	71	71	/	/	/	71	71	/
29/F	/	71	71	/	/	71	71	/	64	70	71	/	/	71	70	/	71	71	/	/	/	71	71	/
30/F	/	70	71	/	/	71	71	/	64	70	71	/	/	71	70	66	71	71	/	/	/	71	71	/
31/F	/	70	71	/	/	71	70	/	64	70	70	/	/	71	70	66	71	71	/	/	/	71	71	/
32/F	/	70	71	/	/	71	70	/	64	70	70	69	/	71	70	66	71	71	/	/	/	71	70	/
33/F	/	70	71	/	/	71	70	/	64	70	70	69	/	71	70	66	71	71	/	/	/	71	70	/
34/F	/	70	71	/	/	71	70	/	64	70	70	69	/	71	70	65	71	71	/	/	/	71	70	/
35/F	/	70	71	/	/	71	70	/	64	70	70	68	/	71	70	65	70	71	/	/	/	71	70	/
36/F	/	70	71	/	/	70	70	/	64	70	70	68	/	70	70	65	70	71	/	/	/	71	70	/
37/F	/	70	71	/	/	70	70	/	64	70	70	68	70	70	70	65	70	71	/	/	/	71	70	70
38/F	/	70	71	/	/	70	70	/	64	70	70	68	70	70	70	65	70	70	/	/	/	71	70	70
39/F	/	70	71	/	69	70	70	67	63	70	70	68	70	70	70	65	70	70	/	/	/	71	70	70
40/F	70	70	71	/	69	70	70	67	63	70	70	68	70	70	70	65	70	70	69	65	/	71	70	70
Max SPL, dB(A)	70	71	72	68	69	71	71	67	64	71	71	69	70	72	71	66	71	72	69	65	69	72	71	70

	T3 (Block 11)																					
	K		L		M			N				O				P			Q		R	
GBP Floor	T3-K1	T3-K2	T3-L1	T3-L2	T3-M1	T3-M2	T3-M3	T3-N1	T3-N2	T3-N3	T3-N4	T3-O1	T3-O2	T3-O3	T3-O4	T3-P1	T3-P2	T3-P3	T3-Q1	T3-Q2	T3-R1	T3-R2
4/F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5/F	38	37	35	38	37	37	34	30	38	38	36	35	39	39	30	31	39	39	45	36	47	49
6/F	38	38	36	38	38	38	35	30	38	38	36	36	39	39	30	32	40	39	45	36	47	49
7/F	38	38	36	38	38	38	35	31	39	39	36	36	40	40	31	33	40	40	46	37	48	50
8/F	39	38	36	38	38	38	36	31	39	39	37	37	40	40	31	33	40	40	46	37	48	50
9/F	39	39	37	39	39	39	36	32	39	39	37	37	40	40	31	34	41	40	47	38	49	51
10/F	39	39	37	39	39	39	36	33	40	40	38	38	41	40	32	35	41	41	48	39	49	51
11/F	40	39	38	40	39	39	37	33	40	40	38	38	41	41	33	36	42	41	48	40	50	52
12/F	40	40	38	40	40	40	38	35	41	40	39	39	41	41	33	38	42	42	49	41	50	52
13/F	40	40	39	40	40	40	38	36	41	41	39	40	42	42	34	39	43	43	50	43	51	53
14/F	41	41	40	41	41	41	39	37	42	42	40	41	43	42	35	41	44	43	51	44	51	53
15/F	42	42	41	42	42	42	40	38	43	43	41	42	44	43	37	42	45	45	51	45	52	54
16/F	44	43	43	44	44	44	42	40	44	44	43	44	45	45	38	44	46	46	52	46	53	54
17/F	45	45	45	46	46	46	44	42	46	46	45	46	47	46	41	46	48	48	53	48	53	55
18/F	46	46	46	47	47	47	46	44	47	47	47	48	48	48	43	48	49	49	54	49	55	56
19/F	47	47	47	47	48	48	47	46	48	48	48	49	49	49	45	48	50	50	55	50	55	57
20/F	47	47	47	48	48	48	47	47	48	48	48	49	49	49	46	49	50	50	56	50	56	57
21/F	48	47	47	48	48	48	47	47	49	48	48	49	50	49	46	49	50	50	56	51	57	58
22/F	48	47	48	48	48	48	48	47	49	49	48	50	50	50	46	50	51	50	57	51	57	58
23/F	48	48	48	48	48	48	48	47	49	49	48	50	50	50	46	50	51	51	57	51	57	58
24/F	48	48	48	48	48	48	48	47	49	49	48	50	50	50	46	50	51	51	57	51	58	59
25/F	48	48	48	48	49	48	48	47	49	49	48	50	50	50	46	50	51	51	57	51	58	59
26/F	48	48	48	48	49	49	48	47	49	49	48	50	50	50	46	50	51	51	58	52	58	59
27/F	48	48	48	48	49	49	48	48	49	49	49	50	50	50	46	50	51	51	58	52	58	59
28/F	48	48	48	49	49	49	48	48	49	49	49	50	51	50	46	51	52	51	58	52	58	59
29/F	49	48	48	49	49	49	48	48	50	49	49	50	51	50	46	51	52	51	58	52	58	59
30/F	49	49	49	49	49	49	48	48	50	50	49	51	51	51	46	51	52	52	58	52	58	60
31/F	49	49	49	49	50	50	49	48	50	50	49	51	51	51	46	51	52	52	58	52	58	60
32/F	50	49	49	50	50	50	49	48	50	50	50	51	51	51	46	51	52	52	58	52	58	60
33/F	50	50	50	50	50	50	49	48	51	51	50	51	52	51	46	51	52	52	58	53	58	60
34/F	50	50	50	51	51	51	50	48	51	51	50	52	52	52	46	51	53	53	58	53	59	60
35/F	51	50	50	51	51	51	50	48	52	51	51	52	52	52	47	51	53	53	58	53	59	60
36/F	51	51	51	51	52	51	50	48	52	52	51	52	53	52	47	51	53	53	59	53	59	60
37/F	51	51	51	52	52	52	51	48	52	52	52	53	53	53	47	51	53	53	59	53	59	60
38/F	52	52	52	52	52	52	51	48	53	53	52	53	53	53	47	51	54	54	59	54	59	60
39/F	52	52	52	53	53	53	52	49	53	53	52	53	53	53	47	51	54	54	59	54	59	60
40/F	53	53	52	53	53	53	52	49	53	53	53	53	54	54	48	51	54	54	59	54	59	60
Max SPL, dB(A)	53	53	52	53	53	53	52	49	53	53	53	53	54	54	48	51	54	54	59	54	59	60

Legend	
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Result Summary - Social Welfare (PM)

RECEIVER	Criteria, dB(A)	SPL, dB(A)	Exceedance
WF1/F_1	70	51	N
WF1/F_2	70	52	N
WF1/F_3	70	52	N
WF1/F_4	70	40	N
WF1/F_5	70	<40	N
WF1/F_6	70	43	N
WF1/F_7	70	55	N
WF1/F_8	70	55	N
WF1/f_9	55	55	N
WF1/f_10	70	55	N
WF2/F_1	70	<40	N
WF2/F_2	70	<40	N
WF2/F_3	70	58	N
WF2/F_4	70	57	N
WF2/F_5	70	57	N
WF2/F_6	70	56	N
WF2/F_7	55	54	N
WF2/F_8	55	54	N
WF2/F_9	70	53	N
WF2/F_10	70	52	N
WF2/F_11	70	48	N
WF2/F_12	70	47	N
WF2/F_13	70	46	N
WF2/F_14	70	45	N
WF2/F_15	70	42	N
WF2/F_16	70	41	N
WF3/F_1	70	43	N
WF3/F_2	70	<40	N
WF3/F_3	70	<40	N
WF3/F_4	70	60	N
WF3/F_5	70	60	N
WF3/F_6	70	60	N
WF3/F_7	70	60	N
WF3/F_8	70	59	N
WF3/F_9	70	59	N
WF3/F_10	70	57	N
WF3/F_11	70	56	N
WF3/F_12	70	55	N
WF3/F_13	70	54	N
WF3/F_14	70	45	N

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary - Basecase- Domestic Units -PM

	T1 (Block 13)																				T2 (Block 12)																				T3 (Block 11)																	
Units	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Max SPL	72	71	71	72	69	69	69	70	71	72	72	69	68	67	66	64	63	62	61	60	70	71	72	72	71	71	71	70	71	72	71	56	56	56	56	56	55	54	53	71	72	72	71	71	72	71	72	72	71	53	54	54	54	54	55	60	61
Total no. of units with exceedance	36	15	33	37	0	0	0	0	23	28	29	0	0	0	0	0	0	0	0	0	0	25	35	30	3	25	28	0	32	35	23	0	0	0	0	0	0	0	0	22	34	31	14	24	30	22	33	35	25	0	0	0	0	0	0	0	0
Total no. of units	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36

No. of Exceedance	
Max SPL	72
Total no. of units with exceedance	707
Total no. of units	2091
Compliance %	66%

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary (Detail)- Base Case - Domestic Floors - T1 (Block 13) - 4/F to 40/F - PM

T1 (Block 13)

	A		B		C		D	E		F		G		H		
GBP Floor	T1-A2	T1-A3	T1-B1	T1-B2	T1-C1	T1-C2	T1-D1	T1-E1	T1-E2	T1-F1	T1-F2	T1-G1	T1-G2	T1-H1	T1-H2	T1-H3
4/F	70	70	69	69	67	70	71	55	62	55	50	61	62	62	64	64
5/F	71	71	69	70	/	71	71	56	62	56	51	61	62	62	64	65
6/F	71	71	69	70	/	71	71	57	62	57	51	62	63	63	64	65
7/F	71	71	69	70	/	71	71	58	63	58	52	63	63	63	65	66
8/F	71	71	69	70	/	71	71	60	64	60	53	63	64	64	65	66
9/F	71	71	69	70	/	71	71	62	65	61	54	64	65	64	66	67
10/F	71	71	70	70	/	71	71	63	66	63	55	65	65	65	67	67
11/F	71	71	70	70	/	71	71	65	66	64	56	66	66	65	67	68
12/F	72	71	70	70	/	71	71	66	67	65	57	66	66	66	68	68
13/F	72	71	70	70	/	71	72	66	67	66	59	67	67	66	68	68
14/F	72	71	/	71	/	71	72	67	68	66	59	67	67	66	68	69
15/F	72	71	/	71	/	71	72	67	68	67	60	67	67	66	69	69
16/F	72	72	/	71	/	71	72	67	68	67	60	67	68	66	69	69
17/F	72	72	/	71	/	71	72	68	68	67	61	67	68	67	69	69
18/F	72	72	/	71	/	71	72	68	69	67	61	68	68	67	69	70
19/F	72	72	/	71	/	71	72	68	69	68	61	68	68	67	69	70
20/F	72	72	/	71	/	71	72	68	69	68	62	68	68	67	70	70
21/F	72	72	/	71	/	71	72	68	69	68	62	68	68	67	70	70
22/F	72	72	/	71	/	71	72	68	69	68	62	68	68	67	70	70
23/F	72	72	/	71	/	71	72	69	69	68	62	68	69	67	70	70
24/F	72	72	/	71	/	71	72	69	69	68	63	68	69	67	70	70
25/F	72	72	/	71	/	71	72	69	69	68	63	69	69	67	70	70
26/F	72	72	/	71	/	71	72	69	69	69	63	69	69	67	70	70
27/F	72	71	/	71	/	71	72	69	69	69	63	69	69	67	70	70
28/F	72	71	/	71	/	71	71	69	69	69	63	69	69	67	70	70
29/F	72	71	70	70	/	71	71	69	69	69	63	69	69	67	70	70
30/F	72	71	70	70	/	71	71	69	69	68	63	69	69	67	70	70
31/F	71	71	70	70	/	71	71	68	69	68	63	69	69	67	70	70
32/F	71	71	70	70	/	71	71	68	69	68	63	69	69	67	70	70
33/F	71	71	70	70	/	71	71	68	69	68	63	68	69	67	70	70
34/F	71	71	70	70	/	71	71	68	69	68	63	68	69	67	70	70
35/F	71	71	70	70	/	71	71	68	69	68	63	68	69	67	70	70
36/F	71	71	70	70	/	71	71	68	69	68	63	68	69	67	70	70
37/F	71	71	70	70	/	71	71	68	69	68	63	68	68	67	70	70
38/F	71	71	70	70	67	70	71	68	69	68	63	68	68	67	70	70
39/F	71	71	70	70	67	70	71	68	69	68	63	68	68	67	70	70
40/F	71	71	70	70	66	70	71	68	69	68	63	68	68	67	69	70
Max SPL, dB(A)	72	72	70	71	67	71	72	69	69	69	63	69	69	67	70	70

	I				J		K		L		M		N			O		P		
GBP Floor	T1-I1	T1-I2	T1-I3	T1-I4	T1-J1	T1-J2	T1-K1	T1-K2	T1-L1	T1-L2	T1-M1	T1-M2	T1-N1	T1-N2	T1-N3	T1-O1	T1-O2	T1-P1	T1-P2	T1-P3
4/F	66	66	62	64	66	66	65	66	57	58	56	53	52	54	53	51	45	46	42	31
5/F	66	66	62	64	66	67	66	66	59	59	57	54	52	54	53	52	46	46	42	31
6/F	66	67	63	65	66	67	66	67	61	60	59	55	53	55	54	53	47	47	43	32
7/F	67	67	64	65	67	68	67	68	62	62	60	56	54	56	55	54	48	48	43	32
8/F	67	67	64	65	67	68	68	68	64	64	62	57	55	58	57	55	49	48	44	32
9/F	68	68	65	66	68	69	69	69	65	65	63	59	56	59	58	56	50	49	45	33
10/F	68	69	66	66	68	70	70	70	65	65	64	59	57	60	59	57	51	50	46	33
11/F	69	69	67	66	69	70	70	70	66	66	64	60	58	61	60	59	52	51	46	34
12/F	69	69	67	66	69	70	71	/	66	66	65	61	58	61	61	59	53	52	47	34
13/F	69	70	68	67	/	71	71	/	67	67	65	61	59	62	61	60	54	53	48	35
14/F	70	70	68	67	/	71	71	/	67	67	66	62	59	62	62	60	55	54	49	36
15/F	70	70	68	67	/	71	71	/	68	68	66	62	60	63	62	61	55	55	50	37
16/F	70	70	68	67	/	71	72	/	68	68	67	63	61	63	62	62	56	55	51	37
17/F	70	71	/	/	/	72	72	/	68	68	67	64	62	64	63	62	57	56	51	39
18/F	71	71	/	/	/	72	72	/	68	68	67	64	62	65	64	62	58	56	52	40
19/F	71	71	/	/	/	72	72	/	68	68	67	64	63	65	64	63	59	57	53	42
20/F	71	71	/	/	/	72	72	/	68	68	68	65	63	66	65	64	60	57	54	43
21/F	71	71	/	/	/	72	72	/	68	69	68	65	63	66	65	64	61	58	55	44
22/F	71	71	/	/	/	72	72	/	68	69	68	65	64	66	65	65	61	58	55	44
23/F	71	71	/	/	/	72	72	/	68	69	68	65	64	66	66	65	62	59	56	44
24/F	71	71	/	/	/	72	72	/	68	69	68	65	64	66	66	65	62	60	57	45
25/F	71	71	/	/	/	72	72	/	68	68	68	65	64	66	66	65	63	61	58	45
26/F	71	71	/	/	/	72	72	/	68	68	68	65	64	66	66	66	63	62	59	45
27/F	71	71	/	/	/	72	72	/	68	68	68	65	64	66	66	66	63	62	60	46
28/F	71	71	/	/	/	72	72	/	68	68	68	65	64	67	66	66	63	62	61	46
29/F	71	71	/	/	/	72	72	/	68	68	67	65	64	67	66	66	64	63	61	46
30/F	71	71	/	/	/	71	72	/	68	68	67	65	64	67	66	66	64	63	62	47
31/F	71	71	/	/	/	71	71	/	67	68	67	65	64	67	66	66	64	63	62	48
32/F	71	71	/	/	/	71	71	/	67	68	67	65	64	67	66	66	64	63	62	48
33/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	66	66	64	64	62	49
34/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	66	66	64	64	63	50
35/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	66	66	64	64	63	51
36/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	66	66	64	64	63	51
37/F	71	71	/	/	/	71	71	/	67	68	67	65	64	66	66	66	64	64	63	52
38/F	70	71	/	/	/	71	71	/	67	67	67	65	64	66	66	66	64	64	63	53
39/F	70	71	/	/	/	71	71	/	67	67	67	65	64	66	66	66	64	64	63	53
40/F	70	70	69	68	/	71	71	/	67	67	67	65	64	66	66	66	64	64	64	54
Max SPL, dB(A)	71	71	69	68	69	72	72	70	68	69	68	65	64	67	66	66	64	64	64	54

	Q		R				S				T		U			
GBP Floor	T1-Q1	T1-Q2	T1-R1	T1-R2	T1-R3	T1-R4	T1-S1	T1-S2	T1-S3	T1-S4	T1-T1	T1-T2	T1-U1	T1-U2	T1-U3	T1-U4
4/F	37	39	38	39	39	31	34	39	39	37	39	36	35	38	39	68
5/F	37	40	38	39	39	31	35	39	39	37	39	36	35	39	39	69
6/F	38	40	39	40	40	32	35	40	40	38	39	37	36	39	39	69
7/F	38	41	39	40	40	32	36	40	40	38	40	37	36	39	40	69
8/F	39	41	40	41	41	32	36	40	40	38	40	37	37	40	40	69
9/F	40	42	40	41	41	33	37	41	41	39	40	38	37	40	40	69
10/F	40	42	41	42	42	33	37	41	41	39	41	38	38	41	41	70
11/F	41	43	42	42	42	34	38	42	42	40	41	39	38	41	41	70
12/F	42	43	42	43	43	34	39	42	42	40	42	40	39	42	42	70
13/F	43	44	43	44	43	35	39	43	43	41	43	40	40	42	42	70
14/F	43	45	44	44	44	36	40	44	43	42	43	41	40	43	43	70
15/F	44	46	44	45	45	37	40	44	44	42	44	42	41	44	44	70
16/F	45	46	45	46	45	38	41	45	45	43	45	43	42	44	44	70
17/F	46	47	46	47	46	39	42	46	46	44	45	44	43	46	46	70
18/F	47	48	47	47	47	41	44	47	47	45	46	45	44	47	47	70
19/F	48	49	48	48	48	43	45	48	48	46	47	46	46	48	48	70
20/F	49	50	49	49	49	45	46	49	49	47	48	47	47	49	49	70
21/F	50	51	50	50	50	45	47	49	49	48	49	48	48	49	49	70
22/F	50	52	50	51	51	46	47	50	50	48	49	48	48	49	49	70
23/F	51	53	51	51	51	46	48	50	50	49	50	48	48	50	50	70
24/F	52	54	52	52	52	46	48	51	51	49	50	49	49	50	50	70
25/F	53	54	52	53	53	46	49	51	51	49	51	49	49	50	50	70
26/F	54	56	53	54	53	46	49	52	52	50	51	49	49	50	50	70
27/F	55	57	54	55	54	46	50	53	52	50	51	50	49	51	51	70
28/F	56	58	55	56	55	47	50	54	53	51	52	50	50	51	51	70
29/F	57	59	56	57	56	47	51	54	54	52	53	51	50	52	51	70
30/F	58	59	57	58	57	47	51	55	55	52	53	51	51	52	52	70
31/F	58	60	58	58	58	48	52	56	56	53	54	52	51	53	53	70
32/F	59	60	58	59	58	48	52	57	56	54	55	53	52	54	53	70
33/F	59	61	59	59	59	49	53	57	57	54	56	53	53	54	54	70
34/F	60	61	60	60	60	49	53	58	58	55	56	54	53	55	55	69
35/F	60	61	60	60	60	50	53	59	58	55	57	54	54	56	55	69
36/F	60	62	60	61	61	51	54	59	59	56	58	55	54	56	56	69
37/F	60	62	61	61	61	51	54	60	59	56	58	55	54	57	56	69
38/F	61	62	61	61	61	52	55	60	60	57	59	56	55	57	57	69
39/F	61	62	61	62	61	52	55	61	60	57	59	56	55	58	58	69
40/F	61	63	61	62	62	53	56	61	61	58	60	56	56	59	58	69
Max SPL, dB(A)	61	63	61	62	62	53	56	61	61	58	60	56	56	59	58	70

Legend	
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	(pink shading)

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Result Summary (Detail)- Base Case - Domestic Floors - T2 (Block 12) - 4/F to 40/F - PM

T2 (Block 12)

	A		B		C				D		E		F		G	
GBP Floor	T2-A1	T2-A2	T2-B1	T2-B2	T2-C1	T2-C2	T2-C3	T2-C4	T2-D1	T2-D2	T2-E1	T2-E2	T2-F1	T2-F2	T2-G1	T2-G2
4/F	68	68	69	68	67	69	69	63	65	68	69	69	70	69	68	64
5/F	70	70	70	69	68	70	70	63	66	69	70	70	/	70	69	64
6/F	70	70	71	/	/	71	70	/	66	70	71	/	/	70	69	65
7/F	/	71	71	/	/	71	71	/	67	70	71	/	/	70	69	65
8/F	/	71	71	/	/	71	71	/	67	70	71	/	/	71	70	65
9/F	/	71	72	/	/	71	71	/	67	70	71	/	/	71	70	65
10/F	/	71	72	/	/	71	71	/	67	70	71	/	/	71	70	65
11/F	/	71	72	/	/	71	71	/	67	70	71	/	/	71	70	66
12/F	/	71	72	/	/	71	71	/	66	70	71	/	/	71	70	66
13/F	/	71	72	/	/	71	71	/	66	70	71	/	/	71	70	66
14/F	/	71	72	/	/	72	71	/	66	70	71	/	/	71	70	66
15/F	/	71	72	/	/	72	71	/	66	70	71	/	/	71	70	66
16/F	/	71	72	/	/	72	71	/	66	70	71	/	/	71	70	66
17/F	/	71	72	/	/	72	71	/	/	71	71	/	/	71	70	66
18/F	/	71	72	/	/	72	71	/	/	71	71	/	/	71	70	66
19/F	/	71	72	/	/	72	71	/	/	71	71	/	/	71	70	66
20/F	/	71	72	/	/	72	71	/	66	70	71	/	/	71	70	66
21/F	/	71	72	/	/	71	71	/	66	70	71	/	/	71	70	66
22/F	/	71	72	/	/	71	71	/	66	70	71	/	/	71	70	66
23/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	66
24/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	66
25/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	66
26/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	70	66
27/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	66
28/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	66
29/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	66
30/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	66
31/F	/	71	71	/	/	71	71	/	65	70	70	70	/	71	70	66
32/F	/	70	71	/	/	71	70	/	65	70	70	70	/	71	70	66
33/F	/	70	71	/	/	71	70	/	65	70	70	70	/	71	70	66
34/F	/	70	71	/	/	71	70	/	64	70	70	70	/	71	70	65
35/F	/	70	71	/	/	71	70	/	64	70	70	70	/	71	70	65
36/F	70	70	71	/	69	70	70	65	64	69	70	69	/	70	70	65
37/F	70	70	71	/	69	70	70	65	64	69	70	69	/	70	70	65
38/F	70	70	71	/	69	70	70	65	64	69	70	69	/	70	70	65
39/F	70	70	71	/	69	70	70	65	64	69	70	69	/	70	69	65
40/F	70	70	71	/	69	70	70	65	64	69	70	69	/	70	69	65
Max SPL, dB(A)	70	71	72	69	69	72	71	65	67	71	71	70	70	71	70	66

	H				I		J		K		L		M		
GBP Floor	T2-H1	T2-H2	T2-H3	T2-H4	T2-I1	T2-I2	T2-J1	T2-J2	T2-K1	T2-K2	T2-L1	T2-L2	T2-M1	T2-M2	T2-M3
4/F	63	69	69	68	69	70	69	69	50	49	50	50	50	50	50
5/F	63	70	70	68	70	70	69	70	50	49	50	50	50	50	50
6/F	64	70	70	69	/	71	70	70	50	49	50	50	50	50	50
7/F	64	70	70	69	/	71	70	70	50	49	50	50	50	50	50
8/F	64	70	70	69	/	71	70	70	50	49	50	50	50	50	50
9/F	/	70	71	/	/	71	70	70	50	49	50	50	50	50	50
10/F	/	71	71	/	/	71	70	/	50	49	50	50	50	50	50
11/F	/	71	71	/	/	71	70	/	50	49	50	50	50	50	50
12/F	/	71	71	/	/	71	71	/	50	49	50	50	50	50	50
13/F	/	71	71	/	/	71	71	/	50	49	50	50	50	50	50
14/F	/	71	71	/	/	71	71	/	50	50	50	50	50	50	50
15/F	/	71	71	/	/	71	71	/	50	50	50	50	51	50	50
16/F	/	71	71	/	/	72	71	/	50	50	50	50	51	50	50
17/F	/	71	71	/	/	72	71	/	50	50	50	50	51	51	50
18/F	/	71	71	/	/	72	71	/	50	50	50	50	51	51	50
19/F	/	71	71	/	/	72	71	/	50	50	50	50	51	51	50
20/F	/	71	71	/	/	72	71	/	50	50	50	51	51	51	50
21/F	/	71	71	/	/	72	71	/	50	50	50	51	51	51	50
22/F	/	71	71	/	/	72	71	/	50	50	50	51	51	51	50
23/F	/	71	71	/	/	72	71	/	51	50	50	51	51	51	50
24/F	/	71	71	/	/	71	71	/	51	50	50	51	51	51	50
25/F	/	71	71	/	/	71	71	/	51	51	51	51	51	51	51
26/F	/	71	71	/	/	71	71	/	51	51	51	52	52	52	51
27/F	/	71	71	/	/	71	71	/	52	51	51	52	52	52	51
28/F	/	71	71	/	/	71	71	/	52	51	51	52	52	52	51
29/F	/	71	71	/	/	71	71	/	52	52	52	53	52	52	51
30/F	/	71	71	/	/	71	71	/	53	52	52	53	53	53	52
31/F	/	71	71	/	/	71	71	/	53	53	52	53	53	53	52
32/F	/	71	71	/	/	71	71	/	53	53	53	54	53	53	52
33/F	/	71	71	/	/	71	71	/	54	53	53	54	54	54	53
34/F	/	71	71	/	/	71	71	/	54	54	53	54	54	54	53
35/F	/	70	71	/	/	71	70	/	54	54	54	55	54	55	53
36/F	/	70	71	/	/	71	70	/	55	54	54	55	55	55	54
37/F	/	70	71	/	/	71	70	/	55	55	54	55	55	55	54
38/F	/	70	71	/	/	71	70	/	55	55	55	56	56	56	54
39/F	/	70	71	/	/	71	70	/	56	55	55	56	56	56	55
40/F	/	70	71	/	/	71	70	70	56	56	55	56	56	56	55
Max SPL, dB(A)	64	71	71	69	70	72	71	70	56	56	55	56	56	56	55

	N				O				P			Q		R	
GBP Floor	T2-N1	T2-N2	T2-N3	T2-N4	T2-O1	T2-O2	T2-O3	T2-O4	T2-P1	T2-P2	T2-P3	T2-Q1	T2-Q2	T2-R1	T2-R2
4/F	42	47	49	50	36	38	38	40	32	38	38	38	36	36	36
5/F	42	47	49	50	36	39	39	40	32	38	38	39	36	36	36
6/F	42	47	49	50	37	39	39	40	33	39	39	39	37	36	36
7/F	42	47	49	50	37	39	39	40	33	39	39	39	37	37	37
8/F	42	47	49	50	37	40	40	40	34	39	39	39	37	37	37
9/F	42	47	49	50	38	40	40	40	34	40	40	40	38	37	37
10/F	42	47	49	50	38	40	40	40	35	40	40	40	38	38	37
11/F	42	47	49	50	39	41	41	41	35	41	41	41	39	38	38
12/F	43	47	49	50	40	41	42	41	36	41	41	41	39	39	38
13/F	43	48	49	50	40	42	42	41	37	42	42	42	40	39	39
14/F	43	48	49	50	41	43	43	42	38	43	43	42	41	40	40
15/F	44	48	49	50	43	44	44	44	40	44	44	44	42	41	41
16/F	46	49	50	50	45	46	47	45	42	46	46	45	44	43	43
17/F	47	50	50	50	47	48	48	47	45	48	48	47	46	45	45
18/F	49	50	50	50	49	50	50	49	47	49	49	49	48	47	47
19/F	49	51	51	51	49	50	50	49	48	50	50	49	49	48	48
20/F	49	51	51	51	50	50	50	49	49	50	50	49	49	48	48
21/F	50	51	51	51	50	50	50	50	49	50	50	49	49	48	48
22/F	50	51	51	51	50	50	51	50	49	50	50	50	49	48	48
23/F	50	51	51	51	50	51	51	50	49	50	50	50	49	48	49
24/F	50	51	51	51	50	51	51	50	49	50	50	50	49	49	48
25/F	50	51	51	51	50	51	51	50	49	50	50	50	50	49	49
26/F	50	51	51	51	50	51	51	50	49	50	51	50	50	49	49
27/F	50	52	52	52	50	51	51	50	49	51	51	50	50	49	49
28/F	50	52	52	52	50	51	51	50	49	51	51	50	50	49	49
29/F	50	52	52	52	51	52	52	50	49	51	51	50	50	49	49
30/F	50	52	52	52	51	52	52	50	49	51	51	51	50	49	49
31/F	50	53	53	53	51	52	52	50	49	51	51	51	50	49	49
32/F	50	53	53	53	51	52	52	50	49	52	52	51	51	50	49
33/F	50	53	53	53	51	52	52	50	49	52	52	51	51	50	49
34/F	50	53	53	53	52	53	53	50	49	52	52	52	51	50	50
35/F	50	54	54	54	52	53	53	50	50	53	53	52	51	51	50
36/F	50	54	54	54	53	53	54	50	50	53	53	53	52	51	50
37/F	50	54	55	55	53	54	54	51	50	53	54	53	52	51	51
38/F	51	55	55	55	53	54	55	51	50	54	54	53	53	52	52
39/F	51	55	55	55	54	55	55	52	50	54	54	54	53	52	52
40/F	51	56	56	56	55	55	56	52	51	55	55	54	54	53	52
Max SPL, dB(A)	51	56	56	56	55	55	56	52	51	55	55	54	54	53	52

Legend	
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	(shaded)

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary (Detail)- Base Case - Domestic Floors - T3 (Block 11) - 5/F to 40/F - PM

	T3 (Block 11)																			
	A		B		C				D		E		F		G		H			
GBP Floor	T3-A1	T3-A2	T3-B1	T3-B2	T3-C1	T3-C2	T3-C3	T3-C4	T3-D1	T3-D2	T3-E1	T3-E2	T3-F1	T3-F2	T3-G1	T3-G2	T3-H1	T3-H2	T3-H3	T3-H4
4/F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5/F	67	67	68	68	67	68	68	62	61	68	69	68	69	69	69	65	69	69	68	61
6/F	69	69	70	69	68	69	69	63	62	69	70	69	70	70	70	66	70	70	69	62
7/F	70	69	71	/	69	70	70	64	63	70	70	69	/	71	70	67	71	71	/	/
8/F	70	70	71	/	/	71	70	/	64	70	71	/	/	71	71	/	71	71	/	/
9/F	70	70	71	/	/	71	71	/	64	70	71	/	/	71	71	/	71	71	/	/
10/F	/	70	71	/	/	71	71	/	65	70	71	/	/	72	71	/	71	71	/	/
11/F	/	71	72	/	/	71	71	/	65	70	71	/	/	72	71	/	71	72	/	/
12/F	/	71	72	/	/	71	71	/	/	71	71	/	/	72	71	/	71	72	/	/
13/F	/	71	72	/	/	71	71	/	/	71	71	/	/	72	71	/	71	72	/	/
14/F	/	71	72	/	/	72	71	/	/	71	71	/	/	72	71	/	72	72	/	/
15/F	/	71	72	/	/	72	71	/	/	71	71	/	/	72	71	/	72	72	/	/
16/F	/	71	72	/	/	72	71	/	/	71	71	/	/	72	71	/	72	72	/	/
17/F	/	71	72	/	/	72	71	/	/	71	71	/	/	72	71	/	72	72	/	/
18/F	/	71	72	/	/	72	71	/	/	71	71	/	/	72	71	/	72	72	/	/
19/F	/	71	72	/	/	72	71	/	/	71	71	/	/	72	71	/	72	72	/	/
20/F	/	71	72	/	/	71	71	/	/	71	71	/	/	72	71	/	72	72	/	/
21/F	/	71	72	/	/	71	71	/	/	71	71	/	/	72	71	/	71	72	/	/
22/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	72	/	/
23/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	72	/	/
24/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/
25/F	/	71	72	/	/	71	71	/	/	71	71	/	/	71	71	/	71	71	/	/
26/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	71	/	71	71	/	/
27/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	71	/	71	71	/	/
28/F	/	71	72	/	/	71	71	/	65	70	71	/	/	71	71	/	71	71	/	/
29/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	71	/	71	71	/	/
30/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	66	71	71	/	/
31/F	/	71	71	/	/	71	71	/	65	70	71	/	/	71	70	66	71	71	/	/
32/F	/	71	71	/	/	71	71	/	65	70	70	69	/	71	70	66	71	71	/	/
33/F	/	70	71	/	/	71	71	/	65	70	70	69	/	71	70	66	71	71	/	/
34/F	/	70	71	/	/	71	70	/	65	70	70	69	/	71	70	66	71	71	/	/
35/F	/	70	71	/	/	71	70	/	64	70	70	69	/	71	70	66	71	71	/	/
36/F	/	70	71	/	/	71	70	/	64	70	70	69	/	71	70	66	71	71	/	/
37/F	/	70	71	/	/	71	70	/	64	70	70	69	70	70	70	66	70	71	/	/
38/F	/	70	71	/	/	71	70	/	64	70	70	69	70	70	70	66	70	71	/	/
39/F	/	70	71	/	69	70	70	66	64	70	70	69	70	70	70	66	70	71	/	/
40/F	70	70	71	/	69	70	70	66	64	70	70	68	70	70	70	66	70	70	69	64
Max SPL, dB(A)	70	71	72	69	69	72	71	66	65	71	71	69	70	72	71	67	72	72	69	64

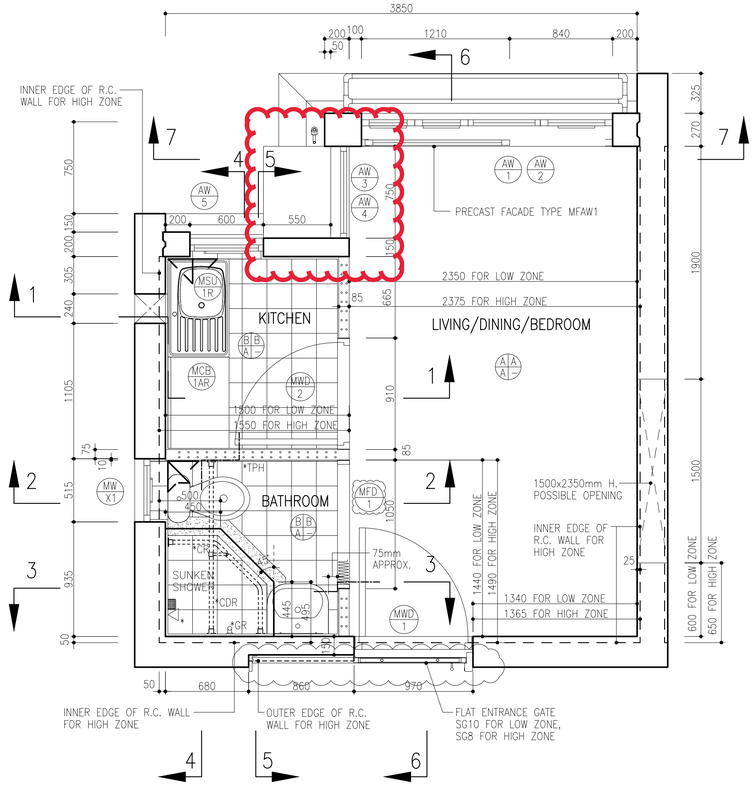
	T3 (Block 11)																									
	I		J		K		L		M			N				O				P			Q		R	
GBP Floor	T3-I1	T3-I2	T3-J1	T3-J2	T3-K1	T3-K2	T3-L1	T3-L2	T3-M1	T3-M2	T3-M3	T3-N1	T3-N2	T3-N3	T3-N4	T3-O1	T3-O2	T3-O3	T3-O4	T3-P1	T3-P2	T3-P3	T3-Q1	T3-Q2	T3-R1	T3-R2
4/F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5/F	69	70	69	69	38	38	36	38	38	38	34	31	39	39	36	36	40	40	31	32	40	40	46	36	48	50
6/F	/	71	70	70	38	38	36	38	38	38	35	31	39	39	36	36	40	40	31	33	40	40	46	37	49	50
7/F	/	71	70	70	39	38	36	39	38	38	35	32	39	39	37	37	40	40	31	34	41	40	47	37	49	51
8/F	/	72	71	/	39	39	37	39	39	39	36	32	40	39	37	37	40	40	32	34	41	41	47	38	50	51
9/F	/	72	71	/	39	39	37	39	39	39	36	33	40	40	37	37	41	41	32	35	41	41	48	39	50	52
10/F	/	72	71	/	40	39	38	39	39	39	37	34	40	40	38	38	41	41	33	36	42	41	49	40	51	52
11/F	/	72	71	/	40	40	38	40	40	40	37	34	41	40	38	39	41	41	33	37	42	42	50	41	51	53
12/F	/	72	71	/	40	40	39	40	40	40	38	35	41	41	39	40	42	42	34	39	43	42	50	42	52	53
13/F	/	72	71	/	41	41	39	41	41	41	39	37	42	41	40	41	43	42	35	40	44	43	51	44	52	54
14/F	/	72	71	/	42	41	40	42	42	41	39	38	42	42	41	42	43	43	36	42	44	44	52	45	53	54
15/F	/	72	71	/	42	42	41	43	43	43	41	39	43	43	42	43	44	44	37	43	46	45	53	46	53	55
16/F	/	72	71	/	44	43	43	44	44	44	42	41	45	45	43	45	46	45	39	45	47	47	54	47	54	56
17/F	/	72	71	/	46	45	45	46	46	46	45	43	46	46	46	47	47	47	42	47	49	49	54	49	55	56
18/F	/	72	71	/	47	47	47	47	48	48	46	45	48	48	47	49	49	49	44	49	50	50	55	50	56	57
19/F	/	72	71	/	47	47	48	48	48	48	47	47	49	49	48	49	50	49	46	49	51	50	56	51	56	58
20/F	/	72	71	/	48	48	48	48	49	49	48	48	49	49	49	50	50	50	47	50	51	51	57	51	57	58
21/F	/	72	71	/	48	48	48	48	49	49	48	48	49	49	49	50	50	50	47	50	51	51	57	52	58	59
22/F	/	72	71	/	48	48	48	48	49	49	48	48	49	49	49	50	51	50	47	51	52	51	58	52	58	59
23/F	/	72	71	/	48	48	48	48	49	49	48	48	50	49	49	50	51	50	47	51	52	52	58	52	58	60
24/F	/	72	71	/	48	48	48	48	49	49	48	48	50	49	49	51	51	50	47	51	52	52	58	52	59	60
25/F	/	72	71	/	48	48	48	49	49	49	48	48	50	50	49	51	51	51	47	51	52	52	58	52	59	60
26/F	/	72	71	/	49	48	48	49	49	49	48	48	50	50	49	51	51	51	47	51	52	52	59	53	59	60
27/F	/	72	71	/	49	48	49	49	49	49	49	48	50	50	49	51	51	51	47	51	52	52	59	53	59	60
28/F	/	71	71	/	49	49	49	49	50	49	49	49	50	50	49	51	51	51	47	51	52	52	59	53	59	60
29/F	/	71	71	/	49	49	49	49	50	50	49	49	50	50	50	51	51	51	47	52	53	52	59	53	59	61
30/F	/	71	71	/	49	49	49	50	50	50	49	49	51	50	50	51	52	51	47	52	53	52	59	53	59	61
31/F	/	71	71	/	50	49	49	50	50	50	49	49	51	51	50	52	52	52	47	52	53	53	59	53	59	61
32/F	/	71	71	/	50	50	50	50	50	50	50	49	51	51	50	52	52	52	47	52	53	53	59	53	60	61
33/F	/	71	70	/	50	50	50	51	51	51	50	49	51	51	51	52	52	52	47	52	53	53	59	53	60	61
34/F	/	71	70	/	51	50	50	51	51	51	50	49	52	52	51	52	53	52	47	52	54	53	59	54	60	61
35/F	/	71	70	/	51	51	51	51	52	52	51	49	52	52	51	53	53	53	47	52	54	54	59	54	60	61
36/F	/	71	70	/	51	51	51	52	52	52	51	49	53	52	52	53	53	53	48	52	54	54	60	54	60	61
37/F	/	71	70	70	52	52	52	52	52	52	51	49	53	53	52	53	54	53	48	52	54	54	60	54	60	61
38/F	/	71	70	70	52	52	52	53	53	53	52	49	53	53	53	54	54	54	48	52	54	54	60	55	60	61
39/F	/	71	70	70	53	53	52	53	53	53	52	49	54	53	53	54	54	54	48	52	55	54	60	55	60	61
40/F	/	71	70	70	53	53	53	54	54	54	53	50	54	54	53	54	54	54	48	52	55	55	60	55	60	61
Max SPL, dB(A)	69	72	71	70	53	53	53	54	54	54	53	50	54	54	53	54	54	54	48	52	55	55	60	55	60	61

Legend	
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	

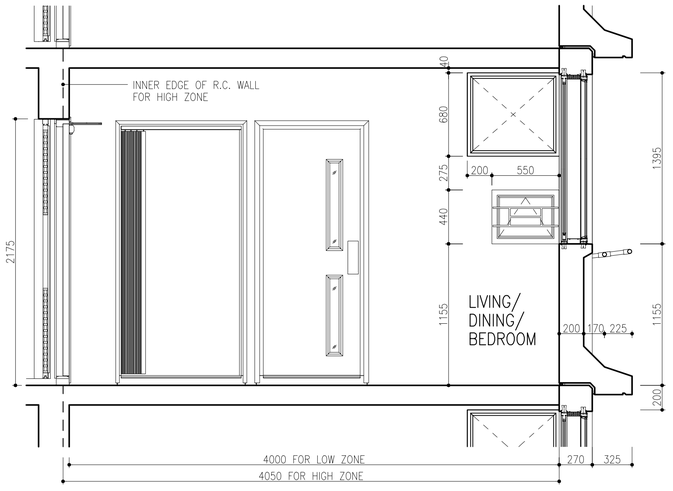
*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Appendix 2.4

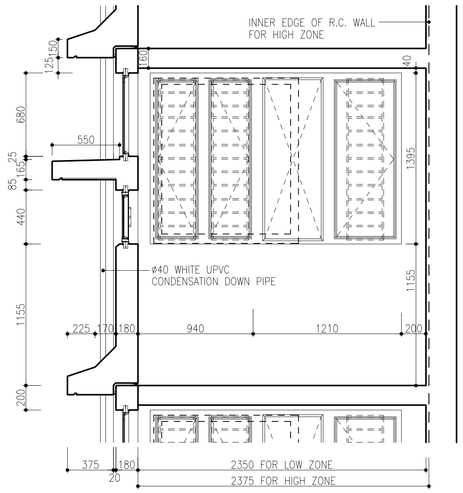
Details of the Proposed Acoustic Windows adopted in the Current Design



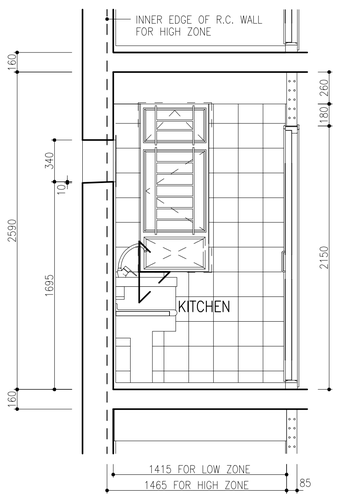
PLAN OF TYPE A-3 FLAT



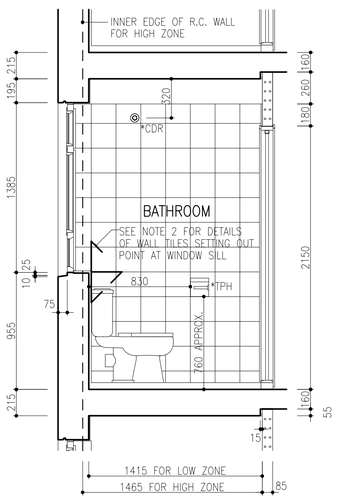
SECTION 6-6



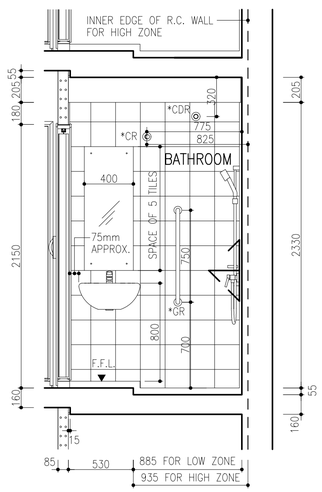
SECTION 7-7



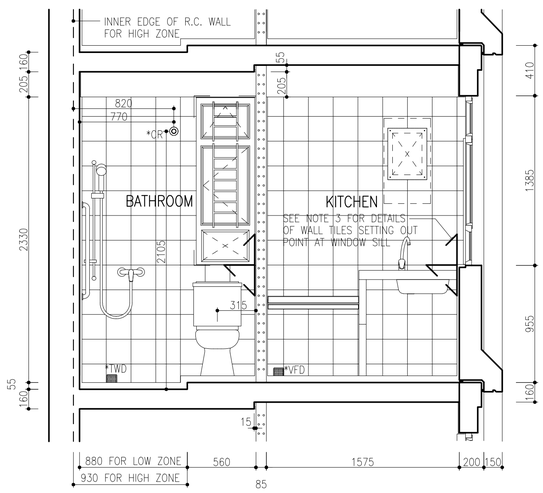
SECTION 1-1



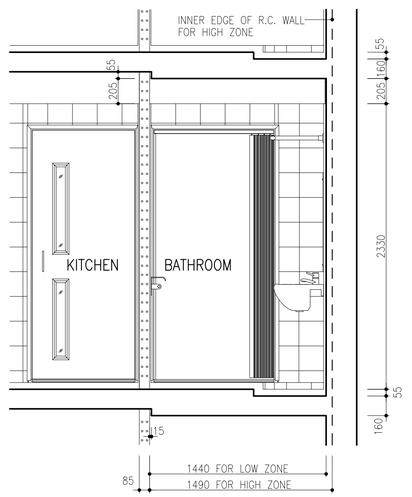
SECTION 2-2



SECTION 3-3



SECTION 4-4



SECTION 5-5

NOTES

1. PLEASE REFER TO DRAWING NO. MF/2/ACAD/A/LO-900 FOR ALL RELEVANT NOTES AND LEGENDS.
2. REFER TO DRAWING NO. MF/A/LO-951 FOR SETTING OUT OF TILE FINISHES AT BATHROOM.
3. REFER TO DRAWING NO. MF/A/LO-954 FOR SETTING OUT OF TILE FINISHES AT KITCHEN.
4. REFER TO DRAWING NO. MF/2/ACAD/A/BW-901 TO MF/2/ACAD/A/BW-906 FOR BUILDER'S WORK DETAILS.

REVISIONS

NO	DESCRIPTION AND DATE	INITIAL AND DESIGNATION DWN	CKD	AUTH
	2018 VERSION			
	ISSUED UNDER DCMBI No. D01/18 DATED 08/18.			
	ISSUED UNDER TF120913 DATED 01/2019.			
A	1. DOOR MARK ADDED. (01/19)	TOA/54 ORIGINAL	STOA/7 SIGNED	A/68
	ISSUED UNDER TF122894 DATED 08/2020.			
B	1. LAUNDRY RACK RELOCATED. (08/2020)	TOA/54 ORIGINAL	STOA/7 SIGNED	A/38
	2018 VERSION–2nd EDITION			
	ISSUED UNDER DCMBI No. D01/21 DATED 06/2021.			
C	1. DIRECTION OF FLAT ENTRANCE GATE REVISED. (06/21)	TOA/54 ORIGINAL	STOA/7 SIGNED	A/38

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED	STEPHEN YIM CA/D&S	ORIGINAL SIGNED	AUG. 18
CHECKED	CHIMMY CHU SA/27	ORIGINAL SIGNED	AUG. 18
	JO NGAI A/68	ORIGINAL SIGNED	AUG. 18
	H.M. WONG STO(A)/7	ORIGINAL SIGNED	AUG. 18
DRAWN	KINKI LEE TO(A)/11	ORIGINAL SIGNED	AUG. 18

PROJECT
MODULAR FLAT DESIGN (WITH ACOUSTIC WINDOW)

DRAWING TITLE
FLAT PLAN AND SECTIONS OF TYPE A-3 FLAT

SCALE 1:25

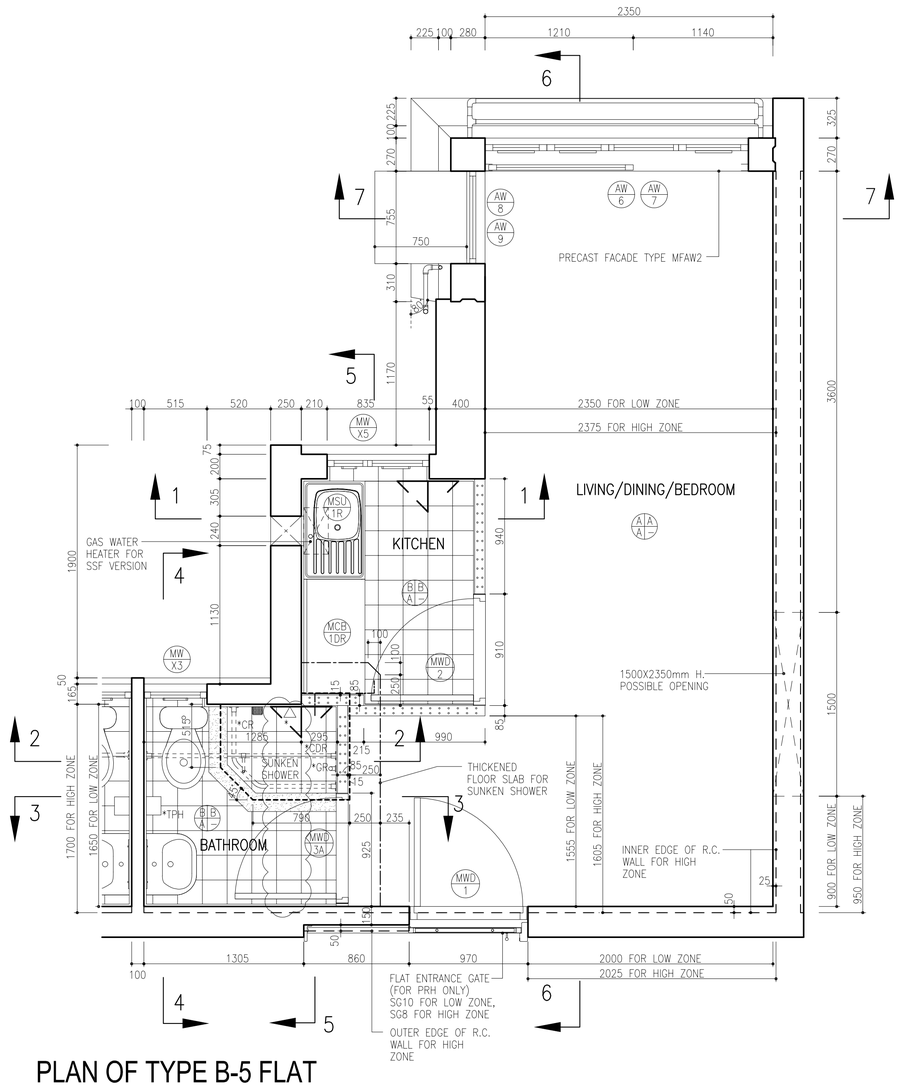
DRAWING NO.
MF/AW/ACAD/A/LO-901/C

SOURCE

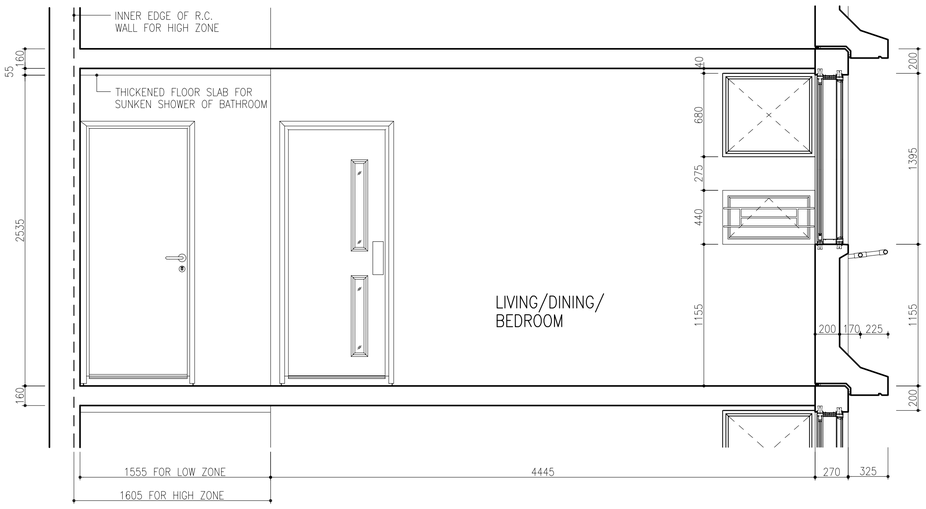
ICU NO.

AutoCAD 2000 A1 594 x 841

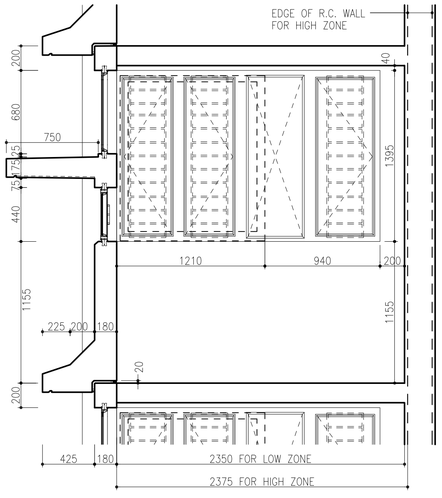
HOUSING DEPARTMENT



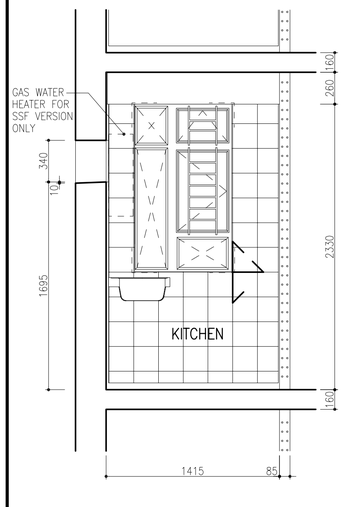
PLAN OF TYPE B-5 FLAT



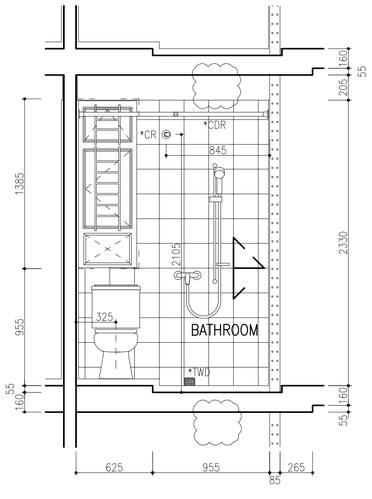
SECTION 6-6



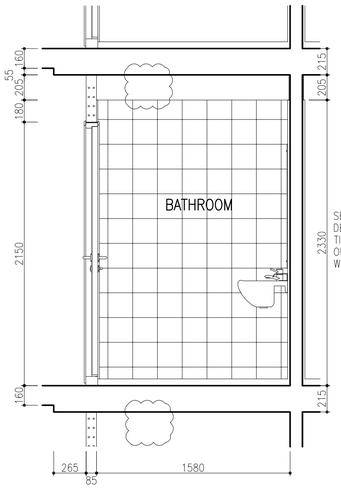
SECTION 7-7



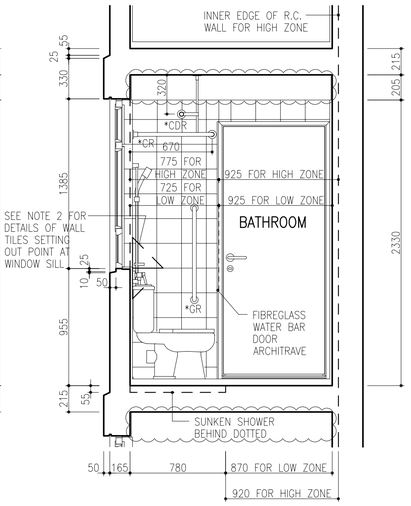
SECTION 1-1



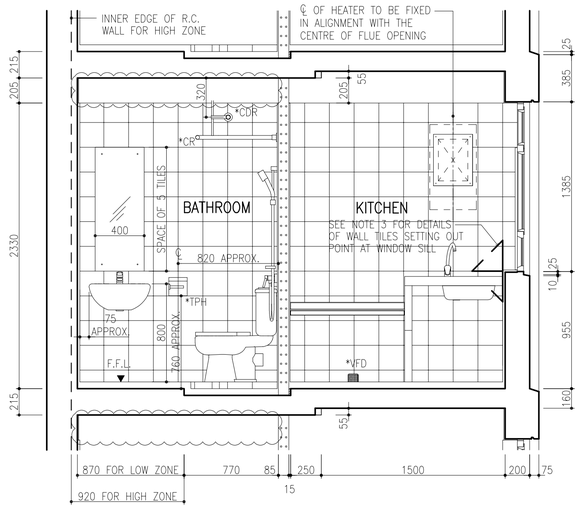
SECTION 2-2



SECTION 3-3



SECTION 4-4



SECTION 5-5

NOTES

1. PLEASE REFER TO DRAWING NO. MF/2/ACAD/A/LO-900 FOR ALL RELEVANT NOTES AND LEGENDS.
2. REFER TO DRAWING NO. MF/A/LO-952 FOR SETTING OUT OF TILE FINISHES AT BATHROOM.
3. REFER TO DRAWING NO. MF/A/LO-955 FOR SETTING OUT OF TILE FINISHES AT KITCHEN.
4. REFER TO DRAWING NO. MF/2/ACAD/A/BW-901 TO MF/2/ACAD/A/BW-906 FOR BUILDER'S WORK DETAILS.

REVISIONS

NO	DESCRIPTION AND DATE	INITIAL AND DESIGNATION DWN	CKD	AUTH
	2018 VERSION			
	ISSUED UNDER DCMBI No. D01/18 DATED 08/18.			
	ISSUED UNDER TF122894 DATED 08/2020.			
A	1. LAUNDRY RACK RELOCATED. (08/2020)	TOA/54 ORIGINAL	STOA/7 SIGNED	A/38
	2018 VERSION–2nd EDITION			
	ISSUED UNDER DCMBI No. D01/21 DATED 06/2021.			
B	1. R.C. BEAM DELETED. (06/21)	TOA/54 ORIGINAL	STOA/7 SIGNED	A/38

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED	STEPHEN YIM CA/D&S	ORIGINAL SIGNED	AUG. 18
CHECKED	CHIMMY CHU SA/27	ORIGINAL SIGNED	AUG. 18
	MABEL NG SA/40	ORIGINAL SIGNED	AUG. 18
	JO NGAI A/68	ORIGINAL SIGNED	AUG. 18
	H.M. WONG STO(A)/7	ORIGINAL SIGNED	AUG. 18
DRAWN	KINKI LEE TO(A)/11	ORIGINAL SIGNED	AUG. 18

PROJECT
MODULAR FLAT DESIGN (WITH ACOUSTIC WINDOW)

DRAWING TITLE
FLAT PLAN AND SECTIONS OF TYPE B-5 FLAT

SCALE 1:25

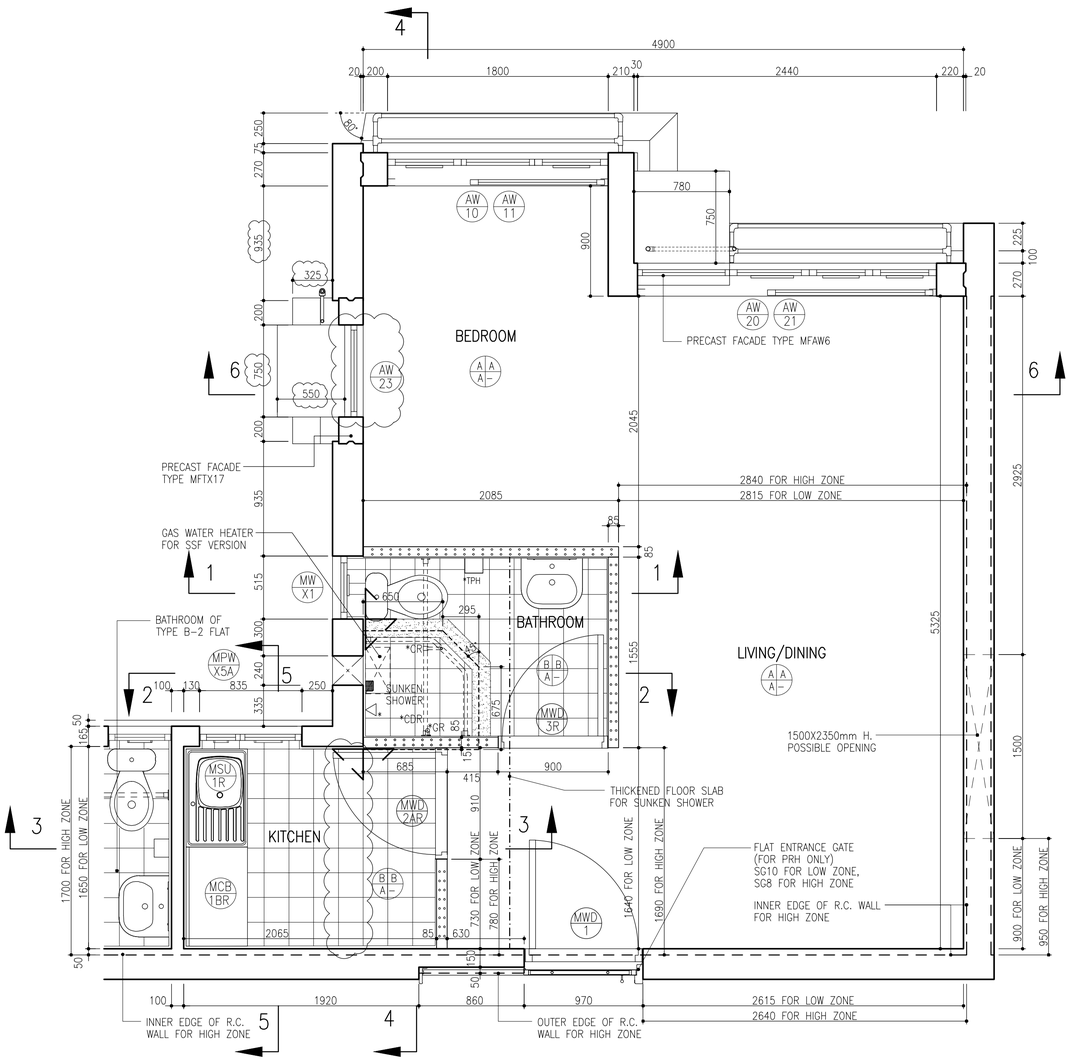
DRAWING NO.
MF/AW/ACAD/A/LO-902/B

SOURCE

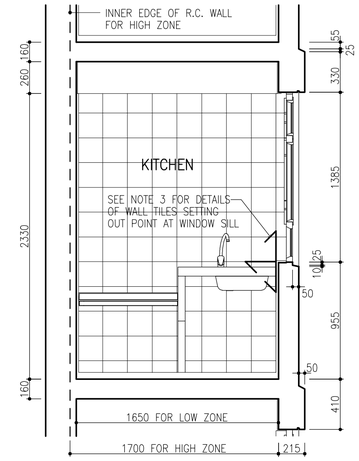
ICU NO.

AutoCAD 2000 A1 594 x 841

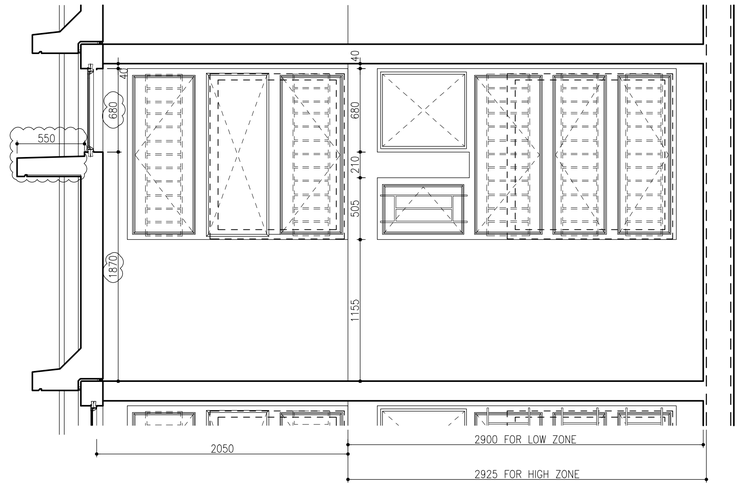
HOUSING DEPARTMENT



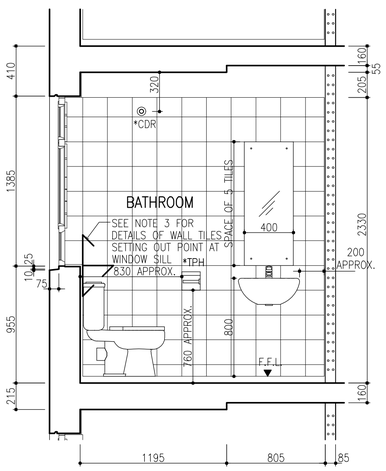
PLAN OF TYPE C-8(b) FLAT



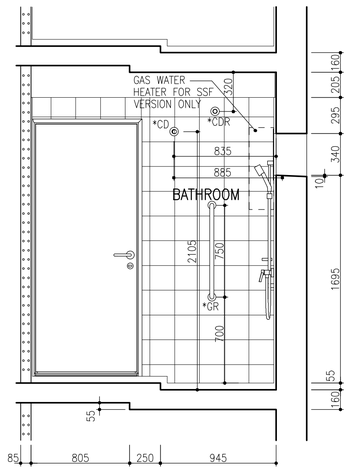
SECTION 5-5



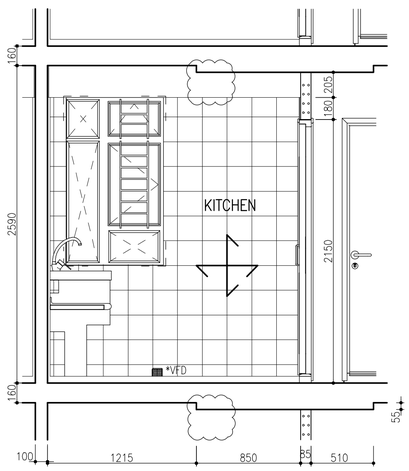
SECTION 6-6



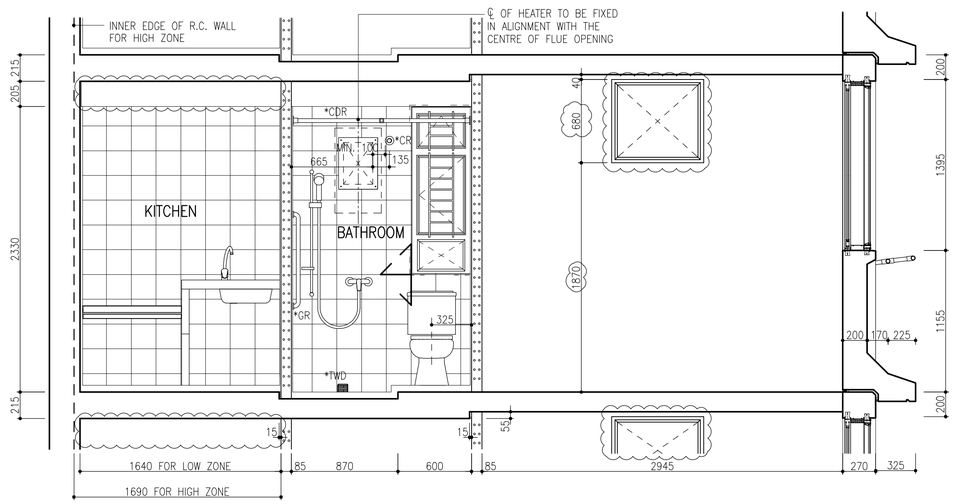
SECTION 1-1



SECTION 2-2



SECTION 3-3



SECTION 4-4

NOTES

1. PLEASE REFER TO DRAWING NO. MF/2/ACAD/A/LO-900 FOR ALL RELEVANT NOTES AND LEGENDS.
2. REFER TO DRAWING NO. MF/A/LO-953 FOR SETTING OUT OF TILE FINISHES AT BATHROOM.
3. REFER TO DRAWING NO. MF/A/LO-956 FOR SETTING OUT OF TILE FINISHES AT KITCHEN.
4. REFER TO DRAWING NO. MF/2/ACAD/A/BW-901 TO MF/2/ACAD/A/BW-906 FOR BUILDER'S WORK DETAILS.

REVISIONS

NO	DESCRIPTION AND DATE	INITIAL AND DESIGNATION DWN	CKD	AUTH
	2018 VERSION			
	ISSUED UNDER DCMBI No. D01/18 DATED 08/18.			
	ISSUED UNDER TF120913 DATED 01/2019.			
A	1. DIMENSIONS CLARIFIED. (01/19)	TOA/54 ORIGINAL SIGNED	STOA/7	A/68
	ISSUED UNDER TF122894 DATED 08/2020.			
B	1. LAUNDRY RACK RELOCATED. (08/2020)	TOA/54 ORIGINAL SIGNED	STOA/7	A/38
	2018 VERSION-2nd EDITION			
	ISSUED UNDER DCMBI No. D01/21 DATED 06/2021.			
C	1. R.C. BEAM DELETED. 2. DIMENSIONS OF AC HOOD REVISED. 3. WINDOW AW-23 REVISED. (06/21)	TOA/54 ORIGINAL SIGNED	STOA/7	A/38

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED	STEPHEN YIM CA/D&S	ORIGINAL SIGNED	AUG. 18
CHECKED	CHIMMY CHU SA/27	ORIGINAL SIGNED	AUG. 18
	MABEL NG SA/40	ORIGINAL SIGNED	AUG. 18
	JO NGAI A/68	ORIGINAL SIGNED	AUG. 18
	H.M. WONG STO(A)/7	ORIGINAL SIGNED	AUG. 18
DRAWN	KINKI LEE TO(A)/11	ORIGINAL SIGNED	AUG. 18

PROJECT
MODULAR FLAT DESIGN (WITH ACOUSTIC WINDOW)

DRAWING TITLE
FLAT PLAN AND SECTIONS OF TYPE C-8(b) FLAT

SCALE 1:25

DRAWING NO.
MF/AW/ACAD/A/LO-912/C

SOURCE

ICU NO.

AutoCAD 2000 A1 594 x 841

HOUSING DEPARTMENT

Appendix 2.5

Configurations and Noise Attenuation Performance of the Proposed Acoustic Window (Retrieved from HD's Technical Note on Summary of Noise Attenuation Performance for MFD with Acoustic Window)

Living Room	-1.0	-0.2	Nil	-1.2
Bedroom 1	Nil	-0.3	Nil	-0.3
Type C-8 (1B)				
Living Room	Nil	-0.3	Nil	-0.3
Bedroom 1	Nil	-1.0	Nil	-1.0
Type D-6 (2B) **& Type D-7** (2B)				
Bedroom 2	Nil	0.7	Nil	-0.8*

Remark: (*) floor size correction of -1.5 dB(A) is applied.

According to the ADPEAW report, the noise attenuation effect of the acoustic window located in the living room and the bedroom of **Type C** (1B) & **Type D** (2B) flat is assessed together as a combined measure. Thus, combined noise attenuation of acoustic windows in the living room and bedroom of **Type C-6** (1B) **& Type D-6** (2B), **Type C-7** (1B) **& Type D-7** (2B) and **Type C-8** (1B) are taken the lowest value of overall noise attenuation correction as stated in Table 7 above for the conservative purpose.

Conclusion

The noise attenuation of the MFD with acoustic window for the public housing development, with suitable correction applied are summarized in **Table 7**.

Table 7 – Summary of Noise Attenuation Performance for MFD with Acoustic Window

	Acoustic Window Configurations				**Noise Attenuation dB(A)**	
Flat Type	**Inner Window Opening (mm)**	**Outer Window Opening (mm)**	**Window Overlapping Length (mm)**	**Gap Width between Window Panel (mm)**	**With Sound Absorptive Lining**	**Without Sound Absorptive Lining**
Type A-3 (1/2P)	1383mm (H) x 840mm (W)	1383mm (H) x 870mm (W)	340mm	175mm	7.0	5.8
Type B-5 (2/3P)	1383mm (H) x 940mm	1383mm (H) x 1010mm (W)	200mm	175mm	6.6	5.5

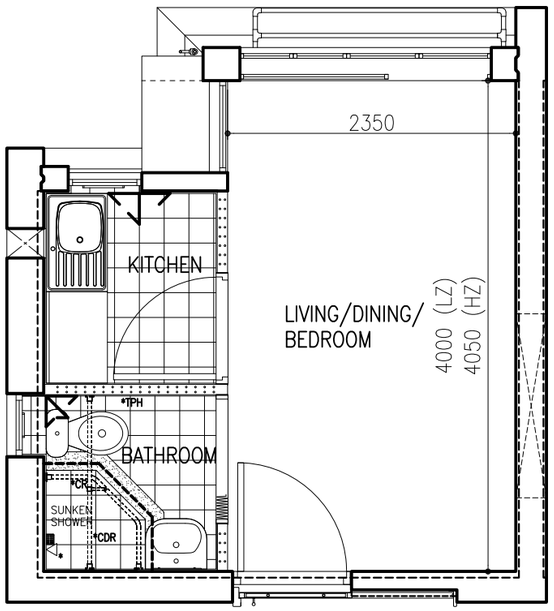
	(W)					
Type C-6 (1B) **& Type D-6** (2B)						
Living Room	1383mm (H) x 980mm (W)	1383mm (H) x 1040mm (W)	100mm	175mm	7.0	5.5
Bedroom 1	1383mm (H) x 675mm (W)	1383mm (H) x 600mm (W)	525mm	175mm		
Type C-7 (1B) **& Type D-7** (2B)						
Living Room	1383mm (H) x 1040mm (W)	1383mm (H) x 1060mm (W)	140mm	175mm	6.9	5.4
Bedroom 1	1383mm (H) x 575mm (W)	1383mm (H) x 550mm (W)	525mm	175mm		
Type C-8 (1B)						
Living Room	1383mm (H) x 1060mm (W)	1383mm (H) x 1050mm (W)	330mm	175mm	7.1	5.6
Bedroom 1	1383mm (H) x 675mm (W)	1383mm (H) x 600mm (W)	525mm	175mm		
Type D-6 (2B) **& Type D-7** (2B)						
Bedroom 2	1383mm (H) x 550mm (W)	1383mm (H) x 550mm (W)	500mm	175mm	3.9	2.7

The above values are estimated noise attenuation for interim use. HD will arrange to conduct further study such as on-site measurements, etc. for the acoustic windows in the MFD to refine the noise attenuation value as soon as possible. For the acoustic window configuration deviated from those considered in this technical note/ more refined estimation of the noise attenuation value is required during the interim period, further discussion with Environmental Protection Department (EPD) is required on project basis.

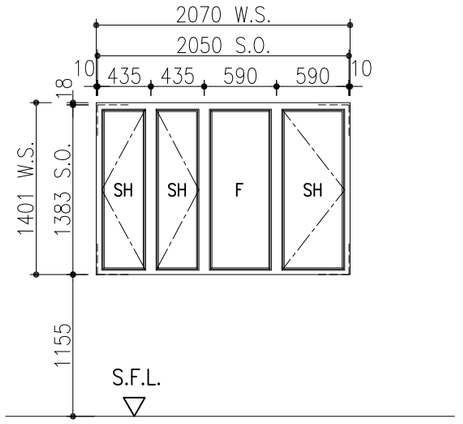
Annex A

MFD with Acoustic Window

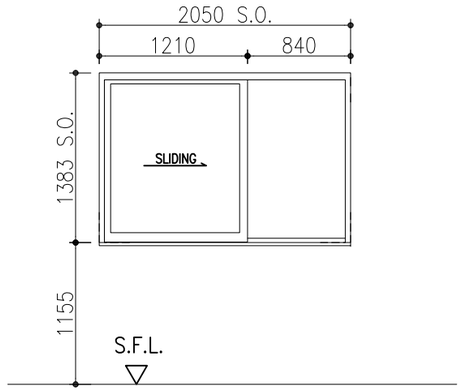
PRELIMINARY



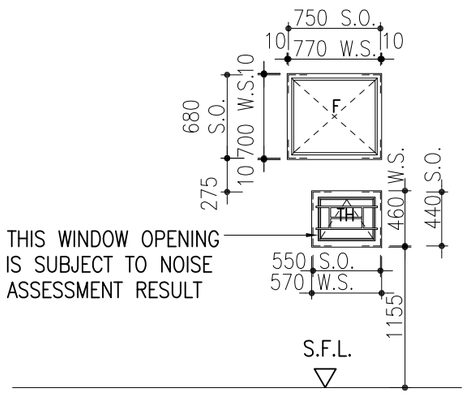
TYPE A–3 FLAT (WITH ACOUSTIC WINDOW)
SCALE 1:50(A3)



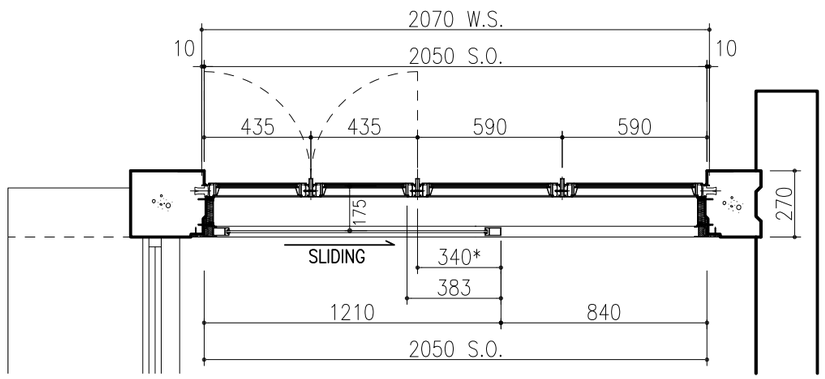
ELEVATION (OUTER LAYER)
SCALE 1:50(A3)



ELEVATION (INNER LAYER)
SCALE 1:50(A3)



SIDE ELEVATION–LIVING ROOM
SCALE 1:50(A3)



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)

IFA(LZ): 9.40m^2

IFA(HZ): 9.62m^2

NOTE: ELEVATIONS VIEWED FROM INSIDE

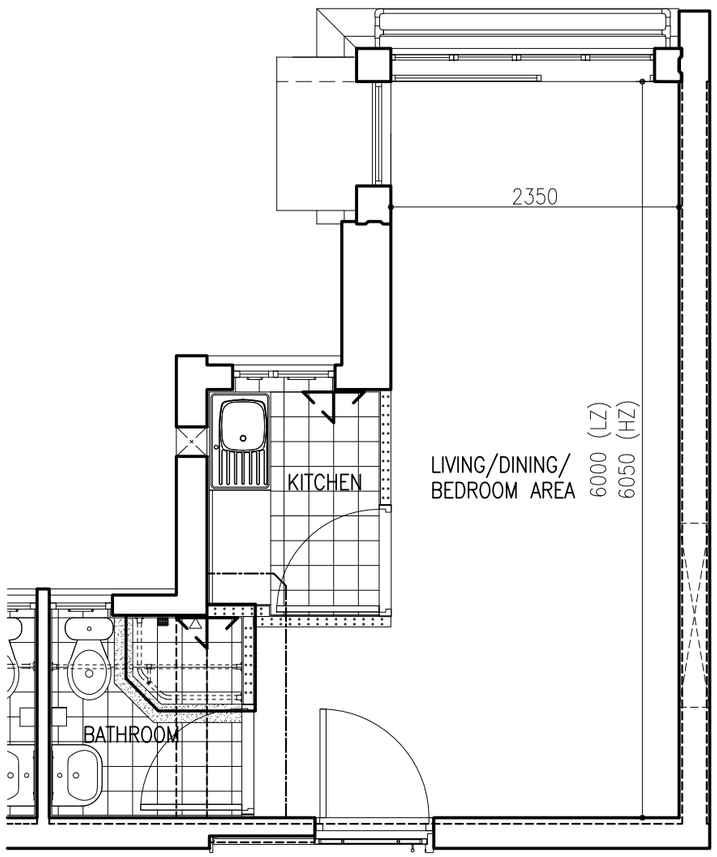
F – FIXED WINDOW
TH – TOP HUNG WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

MODULAR FLAT WITH ACOUSTIC WINDOW

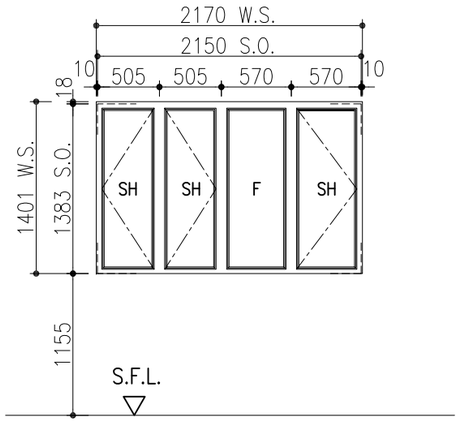
TYPE A - 3 FLAT

2018-04-23 (FOR EPD)

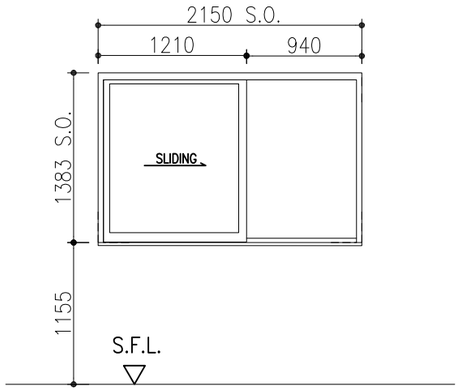
PRELIMINARY



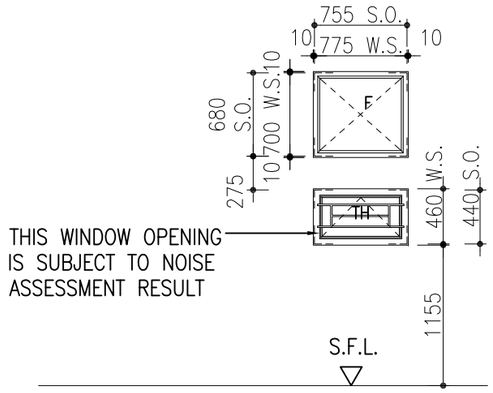
TYPE B–5 FLAT (WITH ACOUSTIC WINDOW) SCALE 1:50(A3)



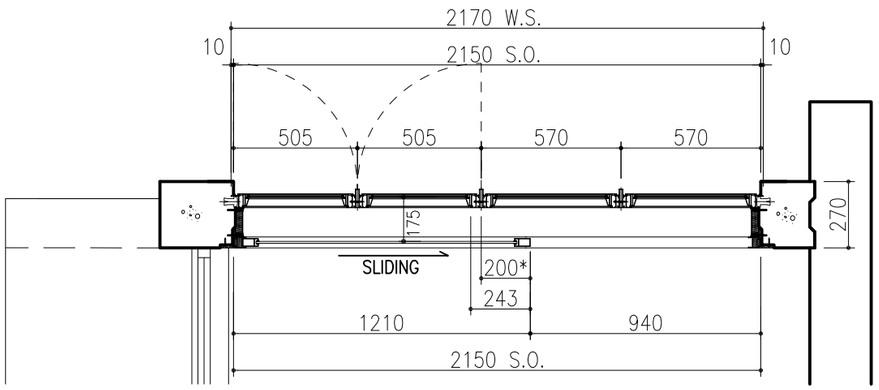
ELEVATION (OUTER LAYER)
SCALE 1:50(A3)



ELEVATION (INNER LAYER)
SCALE 1:50(A3)



SIDE ELEVATION–LIVING ROOM
SCALE 1:50(A3)



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)

IFA(LZ): 15.84m^2

IFA(HZ): 16.17m^2

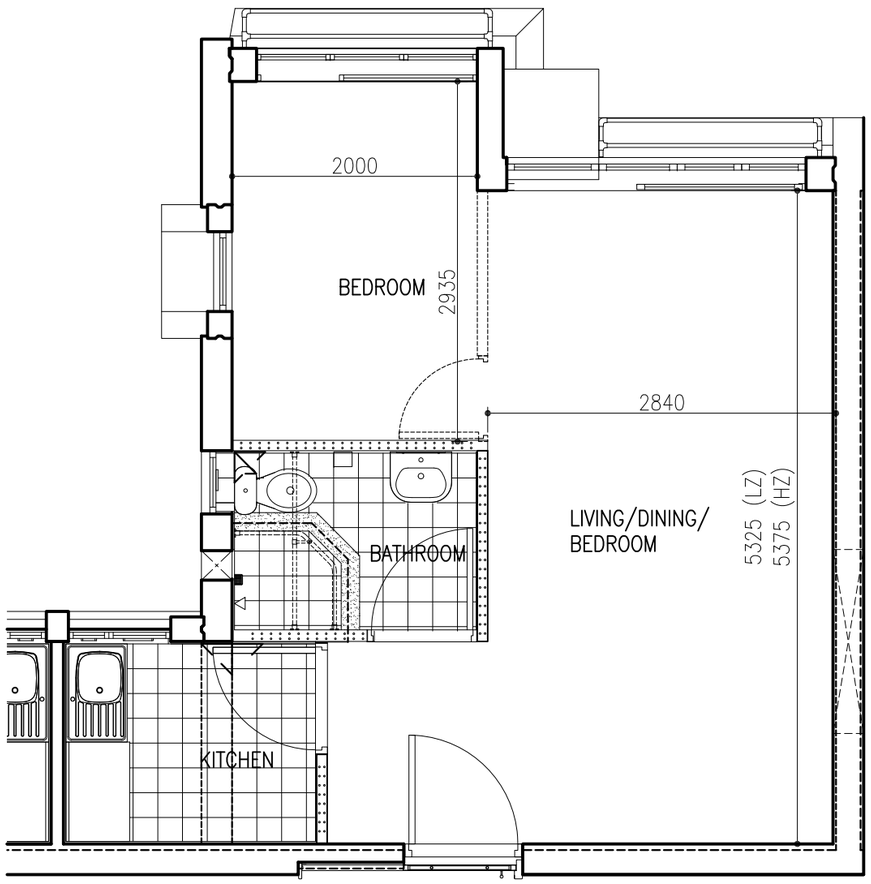
NOTE: ELEVATIONS VIEWED FROM INSIDE

F – FIXED WINDOW
TH – TOP HUNG WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

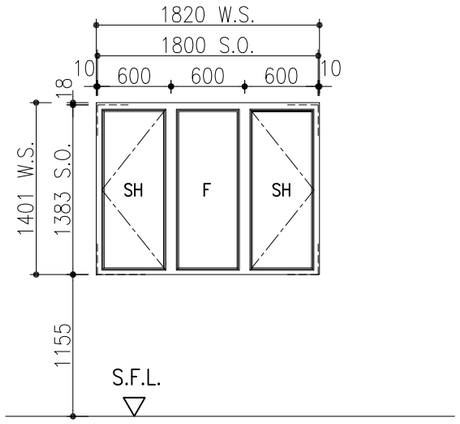
MODULAR FLAT WITH ACOUSTIC WINDOW TYPE B - 5 FLAT

2018-04-23 (FOR EPD)

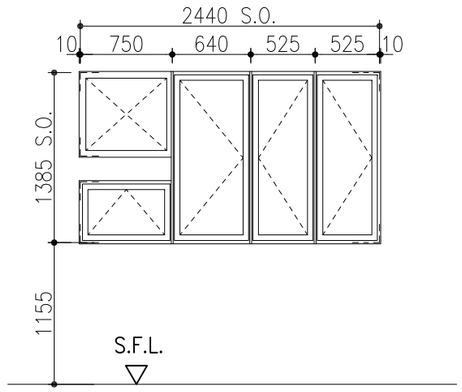
PRELIMINARY



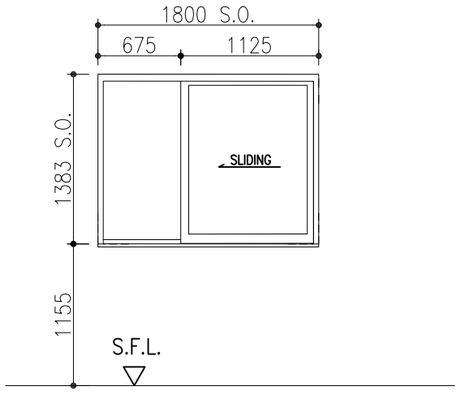
TYPE C–8 FLAT (WITH ACOUSTIC WINDOW) SCALE 1:50(A3)



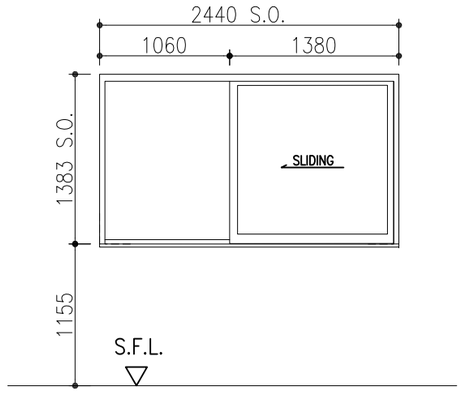
ELEVATION–BEDROOM (OUTER LAYER)
SCALE 1:50(A3)



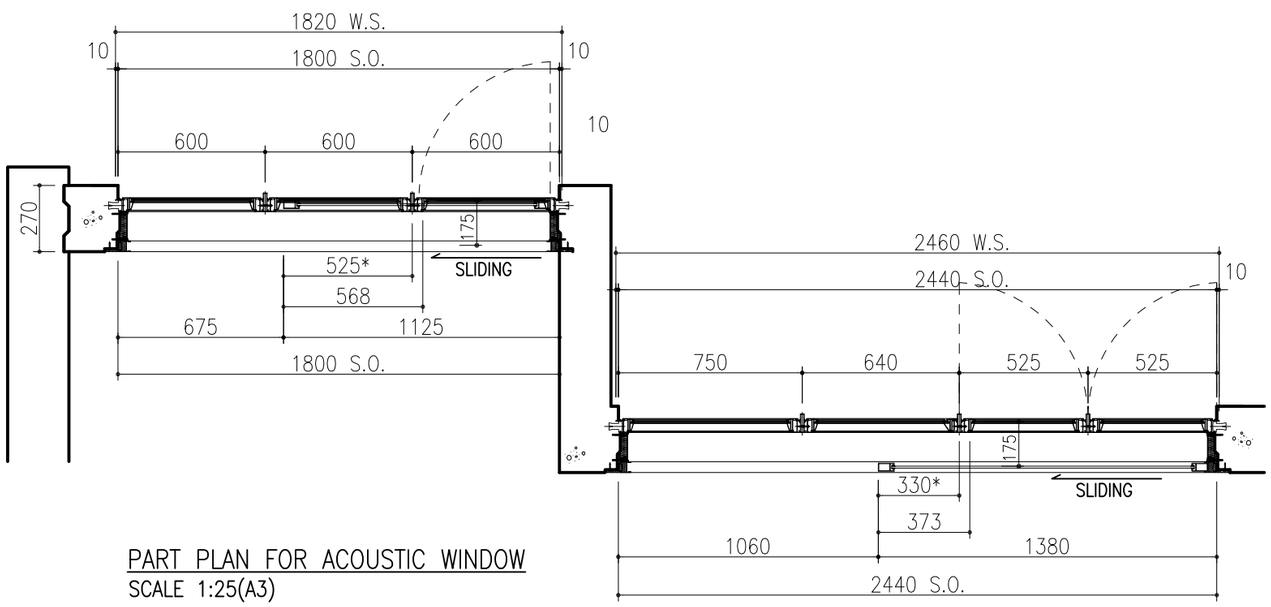
ELEVATION–LIVING ROOM (OUTER LAYER)
SCALE 1:50(A3)



ELEVATION–BEDROOM (INNER LAYER)
SCALE 1:50(A3)



ELEVATION–LIVING ROOM (INNER LAYER)
SCALE 1:50(A3)



PART PLAN FOR ACOUSTIC WINDOW
SCALE 1:25(A3)

IFA(LZ)
–LIVING: 17.14m^2
–BR1: 5.89m^2

IFA(HZ)
–LIVING: 17.48m^2
–BR1: 5.89m^2

NOTE: ELEVATIONS VIEWED FROM INSIDE

F – FIXED WINDOW
SH – SIDE HUNG WINDOW
S.O. – STRUCTURAL OPENING
W.S. – WINDOW DIMENSION

MODULAR FLAT WITH ACOUSTIC WINDOW TYPE C - 8 FLAT

2018-04-23 (FOR EPD)

Appendix 2.6

Road Traffic Noise Prediction Results (Year 2044) – Mitigated Scenario

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary - Mitigated case- Domestic Units -PM

	T1 (Block 13)																				T2 (Block 12)																				T3 (Block 11)																	
Units	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Max SPL	70	70	70	66	69	69	69	70	70	70	70	69	68	67	66	64	63	62	61	60	70	70	70	70	70	70	70	70	70	70	70	70	56	56	56	56	56	55	54	53	70	70	70	70	70	70	70	70	70	70	53	54	54	54	54	55	60	61
Total no. of units with exceedance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total no. of units	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36

No. of Exceedance	
Max SPL	70
Total no. of units with exceedance	N.A
Total no. of units	2091
Compliance %	100%

Result Summary (Detail)- Mitigated Case - Domestic Floors - T1 (Block 13) - 4/F to 40/F - PM

T1 (Block 13)

	A		B		C		D	E		F		G		H		
GBP Floor	T1-A2	T1-A3	T1-B1	T1-B2	T1-C1	T1-C2	T1-D1	T1-E1	T1-E2	T1-F1	T1-F2	T1-G1	T1-G2	T1-H1	T1-H2	T1-H3
4/F	70	70	69	69	67	70	65	55	62	55	50	61	62	62	64	64
5/F	65	65	69	70	/	65	65	56	62	56	51	61	62	62	64	65
6/F	65	65	69	70	/	65	66	57	62	57	51	62	63	63	64	65
7/F	66	65	69	70	/	65	66	58	63	58	52	63	63	63	65	66
8/F	66	65	69	70	/	66	66	60	64	60	53	63	64	64	65	66
9/F	66	65	69	70	/	66	66	62	65	61	54	64	65	64	66	67
10/F	66	66	70	70	/	66	66	63	66	63	55	65	65	65	67	67
11/F	66	66	70	70	/	66	66	65	66	64	56	66	66	65	67	68
12/F	66	66	70	70	/	66	66	66	67	65	57	66	66	66	68	68
13/F	66	66	70	70	/	66	66	66	67	66	59	67	67	66	68	68
14/F	66	66	/	65	/	66	66	67	68	66	59	67	67	66	68	69
15/F	66	66	/	65	/	66	66	67	68	67	60	67	67	66	69	69
16/F	66	66	/	65	/	66	66	67	68	67	60	67	68	66	69	69
17/F	66	66	/	65	/	66	66	68	68	67	61	67	68	67	69	69
18/F	66	66	/	65	/	66	66	68	69	67	61	68	68	67	69	70
19/F	66	66	/	65	/	66	66	68	69	68	61	68	68	67	69	70
20/F	66	66	/	65	/	66	66	68	69	68	62	68	68	67	70	70
21/F	66	66	/	65	/	66	66	68	69	68	62	68	68	67	70	70
22/F	66	66	/	65	/	66	66	68	69	68	62	68	68	67	70	70
23/F	66	66	/	65	/	66	66	69	69	68	62	68	69	67	70	70
24/F	66	66	/	65	/	66	66	69	69	68	63	68	69	67	70	70
25/F	66	66	/	65	/	66	66	69	69	68	63	69	69	67	70	70
26/F	66	66	/	65	/	66	66	69	69	69	63	69	69	67	70	70
27/F	66	66	/	65	/	66	66	69	69	69	63	69	69	67	70	70
28/F	66	66	/	65	/	66	66	69	69	69	63	69	69	67	70	70
29/F	66	66	70	70	/	65	66	69	69	69	63	69	69	67	70	70
30/F	66	66	70	70	/	65	66	69	69	68	63	69	69	67	70	70
31/F	66	66	70	70	/	65	66	68	69	68	63	69	69	67	70	70
32/F	66	66	70	70	/	65	66	68	69	68	63	69	69	67	70	70
33/F	66	66	70	70	/	65	66	68	69	68	63	68	69	67	70	70
34/F	66	66	70	70	/	65	66	68	69	68	63	68	69	67	70	70
35/F	66	66	70	70	/	65	66	68	69	68	63	68	69	67	70	70
36/F	66	66	70	70	/	65	65	68	69	68	63	68	69	67	70	70
37/F	66	65	70	70	/	65	65	68	69	68	63	68	68	67	70	70
38/F	66	65	70	70	67	70	65	68	69	68	63	68	68	67	70	70
39/F	66	65	70	70	67	70	65	68	69	68	63	68	68	67	70	70
40/F	65	65	70	70	66	70	65	68	69	68	63	68	68	67	69	70
Max SPL, dB(A)	70	70	70	70	67	70	66	69	69	69	63	69	69	67	70	70

	I				J		K		L		M		N			O		P			Q	
GBP Floor	T1-I1	T1-I2	T1-I3	T1-I4	T1-J1	T1-J2	T1-K1	T1-K2	T1-L1	T1-L2	T1-M1	T1-M2	T1-N1	T1-N2	T1-N3	T1-O1	T1-O2	T1-P1	T1-P2	T1-P3	T1-Q1	T1-Q2
4/F	66	66	62	64	66	66	65	66	57	58	56	53	52	54	53	51	45	46	42	31	37	39
5/F	66	66	62	64	66	67	66	66	59	59	57	54	52	54	53	52	46	46	42	31	37	40
6/F	66	67	63	65	66	67	66	67	61	60	59	55	53	55	54	53	47	47	43	32	38	40
7/F	67	67	64	65	67	68	67	68	62	62	60	56	54	56	55	54	48	48	43	32	38	41
8/F	67	67	64	65	67	68	68	68	64	64	62	57	55	58	57	55	49	48	44	32	39	41
9/F	68	68	65	66	68	69	69	69	65	65	63	59	56	59	58	56	50	49	45	33	40	42
10/F	68	69	66	66	68	70	70	70	65	65	64	59	57	60	59	57	51	50	46	33	40	42
11/F	69	69	67	66	69	70	70	70	66	66	64	60	58	61	60	59	52	51	46	34	41	43
12/F	69	69	67	66	69	70	65	/	66	66	65	61	58	61	61	59	53	52	47	34	42	43
13/F	69	70	68	67	/	65	65	/	67	67	65	61	59	62	61	60	54	53	48	35	43	44
14/F	70	70	68	67	/	65	66	/	67	67	66	62	59	62	62	60	55	54	49	36	43	45
15/F	70	70	68	67	/	66	66	/	68	68	66	62	60	63	62	61	55	55	50	37	44	46
16/F	70	70	68	67	/	66	66	/	68	68	67	63	61	63	62	62	56	55	51	37	45	46
17/F	70	65	/	/	/	66	66	/	68	68	67	64	62	64	63	62	57	56	51	39	46	47
18/F	65	65	/	/	/	66	66	/	68	68	67	64	62	65	64	62	58	56	52	40	47	48
19/F	65	65	/	/	/	66	66	/	68	68	67	64	63	65	64	63	59	57	53	42	48	49
20/F	65	66	/	/	/	66	66	/	68	68	68	65	63	66	65	64	60	57	54	43	49	50
21/F	65	66	/	/	/	66	66	/	68	69	68	65	63	66	65	64	61	58	55	44	50	51
22/F	66	66	/	/	/	66	66	/	68	69	68	65	64	66	65	65	61	58	55	44	50	52
23/F	66	66	/	/	/	66	66	/	68	69	68	65	64	66	66	65	62	59	56	44	51	53
24/F	66	66	/	/	/	66	66	/	68	69	68	65	64	66	66	65	62	60	57	45	52	54
25/F	66	66	/	/	/	66	66	/	68	68	68	65	64	66	66	65	63	61	58	45	53	54
26/F	66	66	/	/	/	66	66	/	68	68	68	65	64	66	66	66	63	62	59	45	54	56
27/F	66	66	/	/	/	66	66	/	68	68	68	65	64	66	66	66	63	62	60	46	55	57
28/F	65	66	/	/	/	66	66	/	68	68	68	65	64	67	66	66	63	62	61	46	56	58
29/F	65	66	/	/	/	66	66	/	68	68	67	65	64	67	66	66	64	63	61	46	57	59
30/F	65	66	/	/	/	66	66	/	68	68	67	65	64	67	66	66	64	63	62	47	58	59
31/F	65	65	/	/	/	66	66	/	67	68	67	65	64	67	66	66	64	63	62	48	58	60
32/F	65	65	/	/	/	66	66	/	67	68	67	65	64	67	66	66	64	63	62	48	59	60
33/F	65	65	/	/	/	66	66	/	67	68	67	65	64	66	66	66	64	64	62	49	59	61
34/F	65	65	/	/	/	66	66	/	67	68	67	65	64	66	66	66	64	64	63	50	60	61
35/F	65	65	/	/	/	66	66	/	67	68	67	65	64	66	66	66	64	64	63	51	60	61
36/F	65	65	/	/	/	66	66	/	67	68	67	65	64	66	66	66	64	64	63	51	60	62
37/F	65	65	/	/	/	66	66	/	67	68	67	65	64	66	66	66	64	64	63	52	60	62
38/F	70	65	/	/	/	65	65	/	67	67	67	65	64	66	66	66	64	64	63	53	61	62
39/F	70	65	/	/	/	65	65	/	67	67	67	65	64	66	66	66	64	64	63	53	61	62
40/F	70	70	69	68	/	65	65	/	67	67	67	65	64	66	66	66	64	64	64	54	61	63
Max SPL, dB(A)	70	70	69	68	69	70	70	70	68	69	68	65	64	67	66	66	64	64	64	54	61	63

	R				S				T		U			
GBP Floor	T1-R1	T1-R2	T1-R3	T1-R4	T1-S1	T1-S2	T1-S3	T1-S4	T1-T1	T1-T2	T1-U1	T1-U2	T1-U3	T1-U4
4/F	38	39	39	31	34	39	39	37	39	36	35	38	39	68
5/F	38	39	39	31	35	39	39	37	39	36	35	39	39	69
6/F	39	40	40	32	35	40	40	38	39	37	36	39	39	69
7/F	39	40	40	32	36	40	40	38	40	37	36	39	40	69
8/F	40	41	41	32	36	40	40	38	40	37	37	40	40	69
9/F	40	41	41	33	37	41	41	39	40	38	37	40	40	69
10/F	41	42	42	33	37	41	41	39	41	38	38	41	41	70
11/F	42	42	42	34	38	42	42	40	41	39	38	41	41	70
12/F	42	43	43	34	39	42	42	40	42	40	39	42	42	70
13/F	43	44	43	35	39	43	43	41	43	40	40	42	42	70
14/F	44	44	44	36	40	44	43	42	43	41	40	43	43	70
15/F	44	45	45	37	40	44	44	42	44	42	41	44	44	70
16/F	45	46	45	38	41	45	45	43	45	43	42	44	44	70
17/F	46	47	46	39	42	46	46	44	45	44	43	46	46	70
18/F	47	47	47	41	44	47	47	45	46	45	44	47	47	70
19/F	48	48	48	43	45	48	48	46	47	46	46	48	48	70
20/F	49	49	49	45	46	49	49	47	48	47	47	49	49	70
21/F	50	50	50	45	47	49	49	48	49	48	48	49	49	70
22/F	50	51	51	46	47	50	50	48	49	48	48	49	49	70
23/F	51	51	51	46	48	50	50	49	50	48	48	50	50	70
24/F	52	52	52	46	48	51	51	49	50	49	49	50	50	70
25/F	52	53	53	46	49	51	51	49	51	49	49	50	50	70
26/F	53	54	53	46	49	52	52	50	51	49	49	50	50	70
27/F	54	55	54	46	50	53	52	50	51	50	49	51	51	70
28/F	55	56	55	47	50	54	53	51	52	50	50	51	51	70
29/F	56	57	56	47	51	54	54	52	53	51	50	52	51	70
30/F	57	58	57	47	51	55	55	52	53	51	51	52	52	70
31/F	58	58	58	48	52	56	56	53	54	52	51	53	53	70
32/F	58	59	58	48	52	57	56	54	55	53	52	54	53	70
33/F	59	59	59	49	53	57	57	54	56	53	53	54	54	70
34/F	60	60	60	49	53	58	58	55	56	54	53	55	55	69
35/F	60	60	60	50	53	59	58	55	57	54	54	56	55	69
36/F	60	61	61	51	54	59	59	56	58	55	54	56	56	69
37/F	61	61	61	51	54	60	59	56	58	55	54	57	56	69
38/F	61	61	61	52	55	60	60	57	59	56	55	57	57	69
39/F	61	62	61	52	55	61	60	57	59	56	55	58	58	69
40/F	61	62	62	53	56	61	61	58	60	56	56	59	58	69
Max SPL, dB(A)	61	62	62	53	56	61	61	58	60	56	56	59	58	70

Legend	
Acoustic Window (Baffle Type) (Front Façade)	AW(BT)
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary (Detail)- Mitigated Case - Domestic Floors - T2 (Block 12) - 4/F to 40/F - PM

T2 (Block 12)

	A		B		C				D		E		F		G	
GBP Floor	T2-A1	T2-A2	T2-B1	T2-B2	T2-C1	T2-C2	T2-C3	T2-C4	T2-D1	T2-D2	T2-E1	T2-E2	T2-F1	T2-F2	T2-G1	T2-G2
4/F	68	68	69	68	67	69	69	63	65	68	69	69	70	69	68	64
5/F	70	70	70	69	68	70	70	63	66	69	70	70	/	70	69	64
6/F	70	70	65	/	/	65	65	/	66	70	65	/	/	70	69	65
7/F	/	65	66	/	/	65	65	/	67	70	66	/	/	70	69	65
8/F	/	65	66	/	/	66	65	/	67	70	66	/	/	65	70	65
9/F	/	65	66	/	/	66	65	/	67	70	66	/	/	65	70	65
10/F	/	65	66	/	/	66	66	/	67	70	66	/	/	65	70	65
11/F	/	66	66	/	/	66	66	/	67	70	66	/	/	65	70	66
12/F	/	66	66	/	/	66	66	/	66	70	66	/	/	65	70	66
13/F	/	66	66	/	/	66	66	/	66	70	66	/	/	66	70	66
14/F	/	66	66	/	/	66	66	/	66	70	66	/	/	66	70	66
15/F	/	66	67	/	/	66	66	/	66	70	66	/	/	66	70	66
16/F	/	66	67	/	/	66	66	/	66	70	66	/	/	66	70	66
17/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	70	66
18/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	70	66
19/F	/	66	66	/	/	66	66	/	/	65	66	/	/	66	70	66
20/F	/	66	66	/	/	66	66	/	66	70	66	/	/	66	70	66
21/F	/	66	66	/	/	66	66	/	66	70	66	/	/	66	70	66
22/F	/	66	66	/	/	66	66	/	66	70	66	/	/	66	70	66
23/F	/	66	66	/	/	66	66	/	65	70	66	/	/	66	70	66
24/F	/	66	66	/	/	66	65	/	65	70	65	/	/	66	70	66
25/F	/	65	66	/	/	66	65	/	65	70	65	/	/	66	70	66
26/F	/	65	66	/	/	66	65	/	65	70	65	/	/	65	70	66
27/F	/	65	66	/	/	66	65	/	65	70	65	/	/	65	70	66
28/F	/	65	66	/	/	65	65	/	65	70	65	/	/	65	70	66
29/F	/	65	66	/	/	65	65	/	65	70	65	/	/	65	70	66
30/F	/	65	66	/	/	65	65	/	65	70	65	/	/	65	70	66
31/F	/	65	66	/	/	65	65	/	65	70	70	70	/	65	70	66
32/F	/	70	66	/	/	65	65	/	65	70	70	70	/	65	70	66
33/F	/	70	66	/	/	65	65	/	65	70	70	70	/	65	70	66
34/F	/	70	66	/	/	65	65	/	64	70	70	70	/	65	70	65
35/F	/	70	65	/	/	65	65	/	64	70	70	70	/	65	70	65
36/F	70	70	65	/	69	70	70	65	64	69	70	69	/	70	70	65
37/F	70	70	65	/	69	70	70	65	64	69	70	69	/	70	70	65
38/F	70	70	65	/	69	70	70	65	64	69	70	69	/	70	70	65
39/F	70	70	65	/	69	70	70	65	64	69	70	69	/	70	69	65
40/F	70	70	65	/	69	70	70	65	64	69	70	69	/	70	69	65
Max SPL, dB(A)	70	70	70	69	69	70	70	65	67	70	70	70	70	70	70	66

	H				I		J		K		L		M			N			
GBP Floor	T2-H1	T2-H2	T2-H3	T2-H4	T2-I1	T2-I2	T2-J1	T2-J2	T2-K1	T2-K2	T2-L1	T2-L2	T2-M1	T2-M2	T2-M3	T2-N1	T2-N2	T2-N3	T2-N4
4/F	63	69	69	68	69	70	69	69	50	49	50	50	50	50	50	42	47	49	50
5/F	63	70	70	68	70	70	69	70	50	49	50	50	50	50	50	42	47	49	50
6/F	64	70	70	69	/	65	70	70	50	49	50	50	50	50	50	42	47	49	50
7/F	64	70	70	69	/	65	70	70	50	49	50	50	50	50	50	42	47	49	50
8/F	64	70	70	69	/	65	70	70	50	49	50	50	50	50	50	42	47	49	50
9/F	/	65	65	/	/	66	70	70	50	49	50	50	50	50	50	42	47	49	50
10/F	/	65	65	/	/	66	70	/	50	49	50	50	50	50	50	42	47	49	50
11/F	/	65	65	/	/	66	70	/	50	49	50	50	50	50	50	42	47	49	50
12/F	/	65	65	/	/	66	65	/	50	49	50	50	50	50	50	43	47	49	50
13/F	/	65	66	/	/	66	65	/	50	49	50	50	50	50	50	43	48	49	50
14/F	/	65	66	/	/	66	65	/	50	50	50	50	50	50	50	43	48	49	50
15/F	/	65	66	/	/	66	65	/	50	50	50	50	51	50	50	44	48	49	50
16/F	/	66	66	/	/	66	65	/	50	50	50	50	51	50	50	46	49	50	50
17/F	/	66	66	/	/	66	65	/	50	50	50	50	51	51	50	47	50	50	50
18/F	/	66	66	/	/	66	65	/	50	50	50	50	51	51	50	49	50	50	50
19/F	/	66	66	/	/	66	65	/	50	50	50	50	51	51	50	49	51	51	51
20/F	/	66	66	/	/	66	65	/	50	50	50	51	51	51	50	49	51	51	51
21/F	/	66	66	/	/	66	65	/	50	50	50	51	51	51	50	50	51	51	51
22/F	/	66	66	/	/	66	65	/	50	50	50	51	51	51	50	50	51	51	51
23/F	/	66	66	/	/	66	65	/	51	50	50	51	51	51	50	50	51	51	51
24/F	/	66	66	/	/	66	65	/	51	50	50	51	51	51	50	50	51	51	51
25/F	/	65	66	/	/	66	65	/	51	51	51	51	51	51	51	50	51	51	51
26/F	/	65	66	/	/	66	65	/	51	51	51	52	52	52	51	50	51	51	51
27/F	/	65	66	/	/	66	65	/	52	51	51	52	52	52	51	50	51	51	51
28/F	/	65	66	/	/	66	65	/	52	51	51	52	52	52	51	50	52	52	52
29/F	/	65	66	/	/	66	65	/	52	52	52	53	52	52	51	50	52	52	52
30/F	/	65	65	/	/	66	65	/	53	52	52	53	53	53	52	50	52	52	52
31/F	/	65	65	/	/	66	65	/	53	53	52	53	53	53	52	50	52	52	52
32/F	/	65	65	/	/	66	65	/	53	53	53	54	53	53	52	50	53	53	53
33/F	/	65	65	/	/	66	65	/	54	53	53	54	54	54	53	50	53	53	53
34/F	/	65	65	/	/	66	65	/	54	54	53	54	54	54	53	50	53	53	53
35/F	/	65	65	/	/	65	70	/	54	54	54	55	54	55	53	50	54	54	54
36/F	/	65	65	/	/	65	70	/	55	54	54	55	55	55	54	50	54	54	54
37/F	/	65	65	/	/	65	70	/	55	55	54	55	55	55	54	50	54	55	55
38/F	/	65	65	/	/	65	70	/	55	55	55	56	56	56	54	51	55	55	55
39/F	/	65	65	/	/	65	70	/	56	55	55	56	56	56	55	51	55	55	55
40/F	/	65	65	/	/	65	70	70	56	56	55	56	56	56	55	51	56	56	56
Max SPL, dB(A)	64	70	70	69	70	70	70	70	56	56	55	56	56	56	55	51	56	56	56

	O				P			Q		R	
GBP Floor	T2-O1	T2-O2	T2-O3	T2-O4	T2-P1	T2-P2	T2-P3	T2-Q1	T2-Q2	T2-R1	T2-R2
4/F	36	38	38	40	32	38	38	38	36	36	36
5/F	36	39	39	40	32	38	38	39	36	36	36
6/F	37	39	39	40	33	39	39	39	37	36	36
7/F	37	39	39	40	33	39	39	39	37	37	37
8/F	37	40	40	40	34	39	39	39	37	37	37
9/F	38	40	40	40	34	40	40	40	38	37	37
10/F	38	40	40	40	35	40	40	40	38	38	37
11/F	39	41	41	41	35	41	41	41	39	38	38
12/F	40	41	42	41	36	41	41	41	39	39	38
13/F	40	42	42	41	37	42	42	42	40	39	39
14/F	41	43	43	42	38	43	43	42	41	40	40
15/F	43	44	44	44	40	44	44	44	42	41	41
16/F	45	46	47	45	42	46	46	45	44	43	43
17/F	47	48	48	47	45	48	48	47	46	45	45
18/F	49	50	50	49	47	49	49	49	48	47	47
19/F	49	50	50	49	48	50	50	49	49	48	48
20/F	50	50	50	49	49	50	50	49	49	48	48
21/F	50	50	50	50	49	50	50	49	49	48	48
22/F	50	50	51	50	49	50	50	50	49	48	48
23/F	50	51	51	50	49	50	50	50	49	48	49
24/F	50	51	51	50	49	50	50	50	49	49	48
25/F	50	51	51	50	49	50	50	50	50	49	49
26/F	50	51	51	50	49	50	51	50	50	49	49
27/F	50	51	51	50	49	51	51	50	50	49	49
28/F	50	51	51	50	49	51	51	50	50	49	49
29/F	50	51	51	50	49	51	51	50	50	49	49
30/F	51	52	52	50	49	51	51	51	50	49	49
31/F	51	52	52	50	49	51	51	51	50	49	49
32/F	51	52	52	50	49	52	52	51	51	50	49
33/F	51	52	52	50	49	52	52	51	51	50	49
34/F	52	53	53	50	49	52	52	52	51	50	50
35/F	52	53	53	50	50	53	53	52	51	51	50
36/F	53	53	54	50	50	53	53	53	52	51	50
37/F	53	54	54	51	50	53	54	53	52	51	51
38/F	53	54	55	51	50	54	54	53	53	52	52
39/F	54	55	55	52	50	54	54	54	53	52	52
40/F	55	55	56	52	51	55	55	54	54	53	52
Max SPL, dB(A)	55	55	56	52	51	55	55	54	54	53	52

Legend	
Acoustic Window (Baffle Type) (Front Façade)	AW(BT)
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Instruction No. K14
Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)
Environmental Assessment Study (EAS)

Result Summary (Detail)- Mitigated Case - Domestic Floors - T3 (Block 11) - 5/F to 40/F - PM

T3 (Block 11)

	A		B		C				D		E		F		G		H			
GBP Floor	T3-A1	T3-A2	T3-B1	T3-B2	T3-C1	T3-C2	T3-C3	T3-C4	T3-D1	T3-D2	T3-E1	T3-E2	T3-F1	T3-F2	T3-G1	T3-G2	T3-H1	T3-H2	T3-H3	T3-H4
4/F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5/F	67	67	68	68	67	68	68	62	61	68	69	68	69	69	69	65	69	69	68	61
6/F	69	69	70	69	68	69	69	63	62	69	70	69	70	70	70	66	70	70	69	62
7/F	70	69	65	/	69	70	70	64	63	70	70	69	/	65	70	67	65	65	/	/
8/F	70	70	65	/	/	65	65	/	64	70	65	/	/	66	65	/	65	66	/	/
9/F	70	70	66	/	/	65	65	/	64	70	65	/	/	66	65	/	66	66	/	/
10/F	/	70	66	/	/	66	65	/	65	70	66	/	/	66	65	/	66	66	/	/
11/F	/	65	66	/	/	66	65	/	65	70	66	/	/	66	65	/	66	66	/	/
12/F	/	65	66	/	/	66	65	/	/	65	66	/	/	66	66	/	66	66	/	/
13/F	/	65	66	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
14/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
15/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
16/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
17/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
18/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
19/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
20/F	/	66	67	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
21/F	/	66	66	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
22/F	/	66	66	/	/	66	66	/	/	65	66	/	/	66	66	/	66	66	/	/
23/F	/	66	66	/	/	66	66	/	/	65	66	/	/	66	65	/	66	66	/	/
24/F	/	65	66	/	/	66	66	/	/	65	66	/	/	66	65	/	66	66	/	/
25/F	/	65	66	/	/	66	65	/	/	65	65	/	/	66	65	/	66	66	/	/
26/F	/	65	66	/	/	66	65	/	65	70	65	/	/	66	65	/	66	66	/	/
27/F	/	65	66	/	/	66	65	/	65	70	65	/	/	66	65	/	66	66	/	/
28/F	/	65	66	/	/	66	65	/	65	70	65	/	/	66	65	/	66	66	/	/
29/F	/	65	66	/	/	65	65	/	65	70	65	/	/	65	65	/	65	66	/	/
30/F	/	65	66	/	/	65	65	/	65	70	65	/	/	65	70	66	65	66	/	/
31/F	/	65	66	/	/	65	65	/	65	70	65	/	/	65	70	66	65	65	/	/
32/F	/	65	66	/	/	65	65	/	65	70	70	69	/	65	70	66	65	65	/	/
33/F	/	70	66	/	/	65	65	/	65	70	70	69	/	65	70	66	65	65	/	/
34/F	/	70	66	/	/	65	65	/	65	70	70	69	/	65	70	66	65	65	/	/
35/F	/	70	66	/	/	65	65	/	64	70	70	69	/	65	70	66	65	65	/	/
36/F	/	70	66	/	/	65	65	/	64	70	70	69	/	65	70	66	65	65	/	/
37/F	/	70	66	/	/	65	65	/	64	70	70	69	70	70	70	66	65	65	/	/
38/F	/	70	66	/	/	65	65	/	64	70	70	69	70	70	70	66	65	65	/	/
39/F	/	70	65	/	69	70	70	66	64	70	70	69	70	70	70	66	65	65	/	/
40/F	70	70	65	/	69	70	70	66	64	70	70	68	70	70	70	66	70	70	69	64
Max SPL, dB(A)	70	70	70	69	69	70	70	66	65	70	70	69	70	70	70	67	70	70	69	64

	I		J		K		L		M			N				O				P			Q		R	
GBP Floor	T3-I1	T3-I2	T3-J1	T3-J2	T3-K1	T3-K2	T3-L1	T3-L2	T3-M1	T3-M2	T3-M3	T3-N1	T3-N2	T3-N3	T3-N4	T3-O1	T3-O2	T3-O3	T3-O4	T3-P1	T3-P2	T3-P3	T3-Q1	T3-Q2	T3-R1	T3-R2
4/F	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5/F	69	70	69	69	38	38	36	38	38	38	34	31	39	39	36	36	40	40	31	32	40	40	46	36	48	50
6/F	/	65	70	70	38	38	36	38	38	38	35	31	39	39	36	36	40	40	31	33	40	40	46	37	49	50
7/F	/	66	70	70	39	38	36	39	38	38	35	32	39	39	37	37	40	40	31	34	41	40	47	37	49	51
8/F	/	66	65	/	39	39	37	39	39	39	36	32	40	39	37	37	40	40	32	34	41	41	47	38	50	51
9/F	/	66	65	/	39	39	37	39	39	39	36	33	40	40	37	37	41	41	32	35	41	41	48	39	50	52
10/F	/	66	65	/	40	39	38	39	39	39	37	34	40	40	38	38	41	41	33	36	42	41	49	40	51	52
11/F	/	66	65	/	40	40	38	40	40	40	37	34	41	40	38	39	41	41	33	37	42	42	50	41	51	53
12/F	/	67	66	/	40	40	39	40	40	40	38	35	41	41	39	40	42	42	34	39	43	42	50	42	52	53
13/F	/	67	66	/	41	41	39	41	41	41	39	37	42	41	40	41	43	42	35	40	44	43	51	44	52	54
14/F	/	67	66	/	42	41	40	42	42	41	39	38	42	42	41	42	43	43	36	42	44	44	52	45	53	54
15/F	/	67	66	/	42	42	41	43	43	43	41	39	43	43	42	43	44	44	37	43	46	45	53	46	53	55
16/F	/	67	66	/	44	43	43	44	44	44	42	41	45	45	43	45	46	45	39	45	47	47	54	47	54	56
17/F	/	67	66	/	46	45	45	46	46	46	45	43	46	46	46	47	47	47	42	47	49	49	54	49	55	56
18/F	/	67	66	/	47	47	47	47	48	48	46	45	48	48	47	49	49	49	44	49	50	50	55	50	56	57
19/F	/	67	66	/	47	47	48	48	48	48	47	47	49	49	48	49	50	49	46	49	51	50	56	51	56	58
20/F	/	67	66	/	48	48	48	48	49	49	48	48	49	49	49	50	50	50	47	50	51	51	57	51	57	58
21/F	/	66	66	/	48	48	48	48	49	49	48	48	49	49	49	50	50	50	47	50	51	51	57	52	58	59
22/F	/	66	66	/	48	48	48	48	49	49	48	48	49	49	49	50	51	50	47	51	52	51	58	52	58	59
23/F	/	66	66	/	48	48	48	48	49	49	48	48	50	49	49	50	51	50	47	51	52	52	58	52	58	60
24/F	/	66	66	/	48	48	48	48	49	49	48	48	50	49	49	51	51	50	47	51	52	52	58	52	59	60
25/F	/	66	65	/	48	48	48	49	49	49	48	48	50	50	49	51	51	51	47	51	52	52	58	52	59	60
26/F	/	66	65	/	49	48	48	49	49	49	48	48	50	50	49	51	51	51	47	51	52	52	59	53	59	60
27/F	/	66	65	/	49	48	49	49	49	49	49	48	50	50	49	51	51	51	47	51	52	52	59	53	59	60
28/F	/	66	65	/	49	49	49	49	50	49	49	49	50	50	49	51	51	51	47	51	52	52	59	53	59	60
29/F	/	66	65	/	49	49	49	49	50	50	49	49	50	50	50	51	51	51	47	52	53	52	59	53	59	61
30/F	/	66	65	/	49	49	49	50	50	50	49	49	51	50	50	51	52	51	47	52	53	52	59	53	59	61
31/F	/	66	65	/	50	49	49	50	50	50	49	49	51	51	50	52	52	52	47	52	53	53	59	53	59	61
32/F	/	66	65	/	50	50	50	50	50	50	50	49	51	51	50	52	52	52	47	52	53	53	59	53	60	61
33/F	/	66	70	/	50	50	50	51	51	51	50	49	51	51	51	52	52	52	47	52	53	53	59	53	60	61
34/F	/	66	70	/	51	50	50	51	51	51	50	49	52	52	51	52	53	52	47	52	54	53	59	54	60	61
35/F	/	66	70	/	51	51	51	51	52	52	51	49	52	52	51	53	53	53	47	52	54	54	59	54	60	61
36/F	/	65	70	/	51	51	51	52	52	52	51	49	53	52	52	53	53	53	48	52	54	54	60	54	60	61
37/F	/	65	70	70	52	52	52	52	52	52	51	49	53	53	52	53	54	53	48	52	54	54	60	54	60	61
38/F	/	65	70	70	52	52	52	53	53	53	52	49	53	53	53	54	54	54	48	52	54	54	60	55	60	61
39/F	/	65	70	70	53	53	52	53	53	53	52	49	54	53	53	54	54	54	48	52	55	54	60	55	60	61
40/F	/	65	70	70	53	53	53	54	54	54	53	50	54	54	53	54	54	54	48	52	55	55	60	55	60	61
Max SPL, dB(A)	69	70	70	70	53	53	53	54	54	54	53	50	54	54	53	54	54	54	48	52	55	55	60	55	60	61

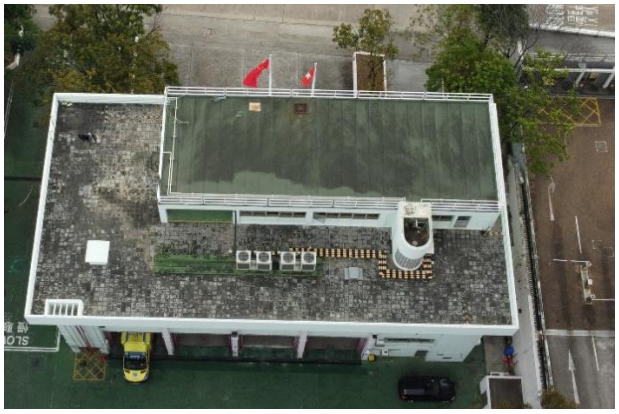
Legend	
Acoustic Window (Baffle Type) (Front Façade)	AW(BT)
Fixed Glazing with Maintenance Window	/
Exceeded Hong Kong Planning Standard Guidelines' Standard of 70 dB(A)	

*** The assessment point is located at 1m in front of the most exposed part of an openable window for ventilation at a habitable room (NSRs) and 1.2m above the floor level of individual floors of the residential towers of the proposed development.**

Appendix 3.1

Photograph Records of Identified Fixed Plant Noise Sources

Appendix 3.1 Photograph Records of Identified Fixed Plant Noise Sources

Shek Kip Mei Fire Station: Air-cooled chillers	Public Health Laboratory Centre: Air-cooled chillers
	
T.W.G.Hs Chang Ming Thien College: Air-cooled chillers	**Shek Kip Mei Park Sports Center**
	

Appendix 3.2

Information Related to the Identified Fixed Plant Noise Sources

Shek Kip Mei Fire Station

[redacted]

From: [redacted]_1@hkfsd.gov.hk
Sent: 10 February 2022 08:50
To: [redacted]
Subject: Re: Request for Operation Details of the Fixed Plant at the Shek Kip Mei Fire Station
Attachments: Appointment Letter.pdf; SKMFS_Response_20171013.pdf

Dear [redacted]

Please be informed that the 4 air-cooled chillers installed on the rooftop of this station are the same as the previous record.

Should you need further clarification, please contact the undersigned directly.

Best Regards,

[redacted]
Shek Kip Mei Fire Station
Tel: [redacted]
Fax [redacted]

From: "K[redacted] <Eva.Keung@atkinsglobal.com>
To: [redacted]nkfsd.gov.hk" <[redacted]@hkfsd.gov.hk>
Cc: '[redacted]@atkinsglobal.com>, '[redacted]@atkinsglobal.com>
Date: 09/02/2022 15:36
Subject: Request for Operation Details of the Fixed Plant at the Shek Kip Mei Fire Station

---

Dear Sir/ Madam,

Environmental Assessment Study for Pak Tin Estate Redevelopment
Request for Operation Details of the Fixed Plant at Shek Kip Mei Fire Station

Hong Kong Housing Authority (HKHA) is carrying out an Environmental Assessment Study (EAS) for the Pak Tin Estate Redevelopment in Shek Kip Mei (the Project). Atkins China Limited has been appointed by HKHA as consultants to conduct the EAS for the Project. The Appointment Letter of Consultant issued by HKHA is attached for your information.

Shek Kip Mei Fire Station is located within the noise assessment study area. As part of our study, we would like to request for some technical information regarding the operation details of the fixed plants. Based on the noise survey findings obtained by the previous consultant (Mott MacDonald Hong Kong Ltd.) for the Project and previous correspondence dated 13 October 2017 from your side (see attached SKMFS_Response_20171013), four sets of air-cooled chillers were identified on the rooftop of the Shek Kip Mei Fire Station and the all air-cooled chillers are running 24 hrs.

For the EAS purpose, please kindly confirm if the number of the air-cooled chillers, operating schedule, brand & model, cooling capacity and location of the air-cooled chillers on rooftop have been changed since November 2016.

It would be highly appreciated if you can provide your feedback for our study preferably **by 14 February 2022 (Monday)**. Should you have any enquiries, please feel free to contact our me at [redacted]@atkinsglobal.com or [redacted] We look forward to your prompt reply. Thank you for your assistance.

Best Regards,

[redacted]
Atkins China Ltd.
Tel: 2972 1198

[redacted]

From: [redacted]@hkfsd.gov.hk
Sent: 13 October 2017 16:53
To: [redacted]
Cc: [redacted]@hkfsd.gov.hk; [redacted]@housingauthority.gov.hk; [redacted]
Subject: Fw: Request for Operation Details of the Fixed Plant at the Shek Kip Mei Fire Station

Dear [redacted]

Your email this afternoon refers.

Please be informed that the 4 air-cooled chillers installed on the rooftop of this station are the same as your record as at November 2016.

All the 4 chiller units are running round-the-clock in line with the nonstop operation of this station.

Should you need further clarification, please contact the undersigned direct.

Best Regards,

([redacted]
Senior Station Officer
Shek Kip Mei Fire Station
[redacted]
[redacted]

----- Forwarded by [redacted]FSD/HKSARG on 13/10/2017 16:44 -----
From: [redacted] FSD/HKSARG
To: [redacted] FSD/HKSARG@FSD
Date: 13/10/2017 12:31
Subject: Fw: Request for Operation Details of the Fixed Plant at the Shek Kip Mei Fire Station

---

O/C C,

Please follow-up.

Best regards,

([redacted]
Station Commander,
Shek Kip Mei Fire Station
[redacted]
[redacted]

==========
----- Forwarded by [redacted] FSD/HKSARG on 13/10/2017 12:30 -----
From: [redacted]@atkinsglobal.com>
To: [redacted] kfsd.gov.hk" <[redacted] kfsd.gov.hk>
Cc: [redacted]@housingauthority.gov.hk>, [redacted]@atkinsglobal.com>, [redacted]@atkinsglobal.com>

Date: 13/10/2017 12:26
Subject: Request for Operation Details of the Fixed Plant at the Shek Kip Mei Fire Station

---

Dear Mr. [redacted]

Environmental Assessment Study for Pak Tin Estate Redevelopment
Request for Operation Details of Fixed Plant at the Shek Kip Mei Fire Station

Atkins China Ltd. has been appointed by Hong Kong Housing Authority (HKHA) to conduct an Environmental Assessment Study (EAS) for Pak Tin Estate Redevelopment (hereinafter referred to as "the Project"). The Appointment Letter of Consultant issued by HKHA is attached for your information and perusal.

Based on the noise survey findings obtained by the previous consultant (Mott MacDonald Hong Kong Ltd.) for the Project, four sets of air-cooled chillers were identified on the rooftop of the Shek Kip Mei Fire Station. The relevant photo record extracted from the previous EAS report is attached for your quick reference (see "Air-cooled chillers at SKMFS.pdf").

For the EAS purpose, please kindly confirm if the number, model, cooling capacity and location of the air-cooled chillers on rooftop have been changed since November 2016. Also, please advise us their operation hours of each chiller (e.g. 7a.m.-7p.m. and Mon-Sun).

It would be highly appreciated if you can provide the required information for our EAS preferably by 20 October 2017 if possible. Should you have any enquiries, please feel free to contact us. We look forward to your prompt reply. Thank you for your kindly assistance.

Regards,
[redacted] **Yeung**
Environmental Consultant, Environment (Hong Kong)

ATKINS

13/F., Wharf T&T Centre, Harbour City, TST, Kowloon, Hong Kong|T [redacted]
[redacted]@atkinsglobal.com | Web: www.atkinsglobal.com | LinkedIn: www.linkedin.com/company/atkins

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[attachment "Location of Air-cooled Chiller at SKMFS.JPG" deleted by [redacted] FSD/HKSARG] [attachment "Air-cooled chillers at SKMFS.PDF" deleted by [redacted] FSD/HKSARG] [attachment "Appointment Letter.pdf" deleted by [redacted] FSD/HKSARG]

nature in allocation and population intake stages. In addition, the noise insulation purpose of these window types would be stated in the decoration handbook or other relevant documents to be provided to the future occupant. Provision of air conditioning for those units with traffic noise level exceedance is not applicable under the current HKHA's prevailing policy. However, installation facilities such as A/C hood and power point would be provided for future occupants.

2.5.2 Fixed Noise Impact

2.5.2.1 Noise Assessment Results

Shek Kip Mei Fire Station (SKMFS)

The SKMFS is located at approx. 230m apart from the north boundary of the proposed redevelopment. Four sets of Air-Cooled Chiller (ACC) were identified on the rooftop of the SKMFS during the site survey dated 16 January 2014. Other potential noise source (i.e. Emergency Broadcasting System (EBS)) in SKMFS was identified facing north and the direct line of sight from the noise sensitive facades of the nearest PRH block (i.e. Block 4) was blocked by the building structure of SKMFS itself. Hence, the noise impact from the EBS is anticipated to be insignificant and thus it is not included in the fixed noise impact assessment.

Throughout the noise measurement with Type 1 sound level meter (namely Rion NL-31), only two ACCs at the rooftop of SKMFS were identified under operation. The sound level meter was checked using an acoustic calibrator generating a sound pressure level of 94.0 dB(A) at 1kHz immediately before and after the noise measurement. The measurement was accepted as valid only if the calibration levels before and after the noise measurement was agreed to within 1.0 dB(A). Moreover, the sound level meter and acoustic calibrator are calibrated in accredited laboratories annually to ensure reliable performance. Measurement location of the ACCs of SKMFS has been shown in **Figure 2.17**. Details of the noise measurement were summarized in **Table 2.12.**

Table 2.12 Details of the Noise Measurement at SKMFS

Description	Details
Date of Measurement	16-Jan-2014
Measurement Start and End Times	14:15 and 14:45
Measurement Time Length, min.	30
Weather Condition	Sunny
Noise Meter Model	Rion NL-31
Measurement Location	Rooftop of SKMFS
Remarks	Free Field Measurement
Measured Sound Pressure Level (Leq, 30min, dB(A))[1]	66
Distance between Source and Sound Level Meter, m	5
Distance between Source and NSR, m	250
Distance Correction, dB(A)	34
Facade Correction, dB(A)	3
Total Sound Pressure Level for 2 ACC Units at NSR, dB(A)[2]	35

Public Health Laboratory Centre

Phone interview was conducted with PHLC on 22 October 2021. There is no change to the identified fixednoise sources on the rooftop of PHLC and the below information is still valid.

[redacted]

From: [redacted]@dh.gov.hk
Sent: 20 November 2017 17:45
To: [redacted]
Cc: [redacted]@housingauthority.gov.hk; [redacted]@dh.gov.hk; [redacted]@dh.gov.hk
Subject: Fw: Request for Operation Details of the Fixed Plant at the Public Health Laboratory Centre in Shek Kip Mei
Attachments: Locations of air cooled chillers at Public Health Laboratory Centre.pdf; Appointment Letter (Atkins).pdf; Exisitng Trane Chiller.pdf

Dear Mr. [redacted]

Referring to the email below, I provide the information requested for your information.

1. Specification of the installed chillers, if not, please provide brand, model and cooling capacity (in terms of ton) of each chiller
   - Brand : TRANE
   - Model : CVAE 02B-D1-F

2. Operation schedule of each chiller (e.g. 7am-7pm and Mon-Sun)
   - 24 Hours operation to keep AC conditioned indoor environment, nos of chiller in operation is based upon cooling load demand.

3. Are the installed chillers all in services during the operation hours or is any of them provided as standby only?
   - 6 nos of chiller (5 Duty + 1 Standby)

4. Any acoustic treatment measures installed for the chillers? If so, please provide their details.
   - ArchSD installed the Acoustic Wall around the roof plant area as acoustic measure.

Regards,
[redacted]
PHLS)SD
T[redacted]

----- Forwarded by [redacted] DH/HKSARG on 20/11/2017 14:20 -----
----- Forwarded by DH Enquiry_Public/DH/HKSARG on 07/11/2017 上午 10:24 -----

From: "C[redacted]@atkinsglobal.com>
To: [redacted]@dh.gov.hk" <[redacted]@dh.gov.hk>
Cc: [redacted]@housingauthority.gov.hk" <[redacted]@housingauthority.gov.hk>, [redacted]@atkinsglobal.com>
Date: 06/11/2017 下午 04:37
Subject: Request for Operation Details of the Fixed Plant at the Public Health Laboratory Centre in Shek Kip Mei

---

Dear Building Management Officer of the Public Health Laboratory Centre,

Environmental Assessment Study for Pak Tin Estate Redevelopment
Request for Operation Details of the Fixed Plant at the Public Health Laboratory Centre in Shek Kip Mei

Housing Department, on behalf of Hong Kong Housing Authority (HKHA), is carrying out an Environmental Assessment Study (EAS) for the Pak Tin Estate Redevelopment in Shek Kip Mei (the Project). Atkins China Limited has been appointed by HKHA as consultants to conduct the EAS for the Project. The Appointment Letter of Consultant issued by HKHA is attached for your information and perusal.

Based on our recent site visit, six sets of air-cooled chillers have been identified on the rooftop of the Public Health Laboratory Centre in Shek Kip Mei (a location plan is attached for your reference). We would like to request for the following information regarding the operation details of the air-cooled chillers for our study:

1. Specification of the installed chillers, if not, please provide brand, model and cooling capacity (in terms of ton) of each chiller
2. Operation schedule of each chiller (e.g. 7am-7pm and Mon-Sun)
3. Are the installed chillers all in services during the operation hours or is any of them provided as standby only?
4. Any acoustic treatment measures installed for the chillers? If so, please provide their details.

It would be highly appreciated if you can provide your feedback for our study preferably by 9 November 2017. Should you have any enquiries, please feel free to contact our Environmental Consultant Ms [redacted] at [redacted]atkinsglobal.com or +[redacted] We look forward to your prompt reply. Thank you for your assistance.

Best regards,
[redacted]

ATKINS
Find out more about what we do and how we do it – www.atkinsglobal.com

13/F Wharf T&T Centre, Harbour City, TST Kowloon, Hong Kong
[redacted]
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Consider the environment. Please don't print this e-mail unless you really need to.

Section 3.1 Air Cooled Water Chiller Unit

Ref: ACC R-03, ACC R-04, ACC R-05, ACC R-06

Location: Roof

Description		Specified	Offered
Number of unit		4	4
Manufacturer			Trane
Country of origin		USA / Europe / Japan	France
Model			CVAE 02B-D1-F
Type		Air-oled/screw/centrifugal	Air Cooled Centrifugal
Refrigerant used		R134a	R134a
Chiller full load current (A)			660
Full load efficiency (max. input kW/ten) Including all condenser fans		1.19 kW/ton (max)	1.19
I. Compressor and Motor (per unit)			1
Type of compressor		Hermatic/Centrifugal/screw	Centrifugal
Number of compressor and motors		4 (max.)	1
Total cooling capacity per unit (kW)		1126	1134
Heat rejection (kW)			1495
Discharge temperature (° C)			52
Suction temperature (° C)			61266
Discharge pressure (kPa)			255
Suction pressure (kPa)			
Capacity Control	No. of steps	Continuous modulation	Continuous modulation
	Range	100% - 20%	100% - 20%
Compressor brake power (kW)			361
Volts / Phase / Hz		380/3/50	380/3/50
Motor speed (rev / sec)		50 (nominal)	50
Motor power (kW)			373
Type of motor		Hermetic refrigerant cooled	Yes
Type of motor starter		Star - Delta	Star – Delta
Type of drive		Direct	Gear driven
Lubrication system		Forced	Forced
Total oil charge (litre)			42
Ampere meter for compressor motor		One for each compressor	Provided
II. Compressor Accessories These shall be installed in the Factory Assembled Package Units Provided by the Manufacturer			
Refrigerant stop valve		2 sets for each compressor	Not required
Crank case heater		1 set for each compressor	Provide
H. P. safety switch and gauge		1 set for each compressor	HP cutout & gauge
L. P. safety switch and gauge		1 set for each compressor	LP cutout & gauge
Oil pressure safety switch and gauge		1 set for each compressor	OP cutout & gauge
Vibration eliminators		1 set for each compressor	Not appliable
Mufflers		1 set for each compressor	Not appliable
Oil separator		1 set for each compressor	Oil sump tank
External oil float valve		1 set for each compressor	Oil regulator

IX. Sound Power Level	63	125	250	500	1000	2000	4000	8000
Octave Band Centre Frequency (Hz)								
dB (re 10^{-12} Watt)	81	81	79.5	72.5	69	71.5	63	

Tung Wah Group of Hospitals Chang Ming Thien College

[redacted]

From: [redacted]@twghcmts.edu.hk>
Sent: 25 January 2022 13:54
To: [redacted]
Cc:
Subject: Re: Request for Fixed Plant Technical Information at T.W.G.Hs Chang Ming Thien College
Attachments: Rooftop Fixed Plant Enquiry Form_CMT_College.doc

Dear [redacted]

Please find the attached form for your information. Thank you.

Best regards,

[redacted]

Atkins China Limited was commissioned by Hong Kong Housing Authority (HKHA) to carry out an Environmental Assessment Study (EAS) for Pak Tin Estate Redevelopment (hereinafter referred to as "the Project"). According to our observations, air-cooled/water-cooled chiller plants and other machines are observed on the rooftop of the building (Photos of the fixed plant are attached for your reference). In order to have an effective and accuracy assessment, would you please provide the information related to the fixed plant on the rooftop of the building. Please fill the enclosed Form and return to us by email to Eva.Keung@atkinsglobal.com . If you have any enquiries, please contact Ms. Eva Keung at 2972 1198. Thank you for your cooperation.

阿特金斯顧問有限公司獲香港房屋署委聘為白田邨重建項目進行一項環境評估研究。根據我們的觀察，在下述建築物的屋頂上發現了水冷/風冷式冷風機及其他機器（隨附有關機器的相片，以供您參考）。

為更有效及精確作出評估，現希望貴公司能提供有關天台機器類型及運作的資料。煩請填完此份表格後，電郵至 Eva.Keung@atkinsglobal.com)。如有查詢，請與姜小姐聯絡(電話：2972 1198）。

謝謝您的合作。

Rooftop Fixed Plant Enquiry Form 天台機器查詢表格

Name of Property 物業名稱: Tung Wah Group of Hospitals Chang Ming Thien College

Address of Property 物業地址: 300 Nam Cheong Street, Kowloon

Name of Property Management Company 物業管理公司名稱: NA

Type of the fixed plant (e.g. air-cooled/water-cooled chiller? Water cooling tower? Other machine on the rooftop?) **機器類型 (例如,風冷式/水冷式製冷機? 淡水冷卻塔? 或其他在天台的機器?)**	**Number of the fixed plant** **機器數目**	**Brand & Model of the fixed Plant** **機器型號**	**Cooling capacity (in terms of ton)** **製冷量（噸）**	**Operation schedule of the fixed plant** **機器運作時段 (e.g. 8:00 to 18:00?)**	**Machine in use / no longer in use?** **機器使用中/不再使用?**
風冷式製冷機	1	VRV-R1 (Model: Mitsubishi Heavy Industries R407C) 68kw (cooling)/ 76.5 kw(heating)	68kw	**8:00 to 18:00**	**使用中**
風冷式製冷機	1	VRV-R1 (Model: Mitsubishi Heavy Industries R407C) 68kw (cooling)/ 76.5 kw (heating)	68kw	**8:00 to 18:00**	**使用中**

Type of the fixed plant (e.g. air-cooled/water-cooled chiller? Water cooling tower? Other machine on the rooftop?) **機器類型 (例如,風冷式/水冷式製冷機?淡水冷卻塔? 或其他在天台的機器?)**	**Number of the fixed plant** **機器數目**	**Brand & Model of the fixed Plant** **機器型號**	**Cooling capacity (in terms of ton)** **製冷量（噸）**	**Operation schedule of the fixed plant** **機器運作時段** **(e.g. 8:00 to 18:00?)**	**Machine in use / no longer in use?** **機器使用中/不再使用?**
風冷式製冷機	1	VRV-R1 (Model: Mitsubishi Heavy Industries R407C) 56kw (cooling)/ 63kw (heating)	56kw	**8:00 to 18:00**	**使用中**

Photo of Fixed Plant on the Rooftop of Tung Wah Group of Hospitals Chang Ming Thien College

東華三院張明添中學天台機器相片

Source: https://www.google.com/maps/@22.3387032,114.1694588,162m/data=!3m1!1e3

s

[redacted]

From: [redacted]
Sent: 21 January 2022 17:10
To: [redacted]twghcmts.edu.hk
Cc: [redacted]
Subject: Request for Fixed Plant Technical Information at T.W.G.Hs Chang Ming Thien College
Attachments: Rooftop Fixed Plant Enquiry Form.docx; Appointment Letter.pdf

REF: 5193425

Dear Sir/ Madam,

Environmental Assessment Study for Pak Tin Estate Redevelopment
Request for Operation Details of the Fixed Plant at T.W.G.Hs Chang Ming Thien College

Hong Kong Housing Authority (HKHA) is carrying out an Environmental Assessment Study (EAS) for the Pak Tin Estate Redevelopment in Shek Kip Mei (the Project). Atkins China Limited has been appointed by HKHA as consultants to conduct the EAS for the Project. The Appointment Letter of Consultant issued by HKHA is attached for your information.

T.W.G.Hs Chang Ming Thien College is located within the noise assessment study area. Based on our desktop findings, a number of fixed plants have been identified on the rooftop of the building. As part of our study, we would like to request for some technical information regarding the operation details of the fixed plants. Therefore, we would like to seek your assistance to complete the attached **Rooftop Fixed Plant Enquiry Form**.

It would be highly appreciated if you can provide your feedback for our study preferably **by 27 January 2022 (Thursday)**. Should you have any enquiries, please feel free to contact our Environmental Consultant [redacted] We look forward to your prompt reply. Thank you for your assistance.

Regards,

[redacted]
Assistant Environmental Consultant, Environment
Hong Kong Asia Pacific
Engineering Services

+[redacted]

Atkins, member of the SNC-Lavalin Group
13/F Wharf T&T Centre, Harbour City, Tsim Sha Tsui, Kowloon, Hong Kong

Atkins China Limited was commissioned by Hong Kong Housing Authority (HKHA) to carry out an Environmental Assessment Study (EAS) for Pak Tin Estate Redevelopment (hereinafter referred to as "the Project"). According to our observations, air-cooled/water-cooled chiller plants and other machines are observed on the rooftop of the building (Photos of the fixed plant are attached for your reference). In order to have an effective and accuracy assessment, would you please provide the information related to the fixed plant on the rooftop of the building. Please fill the enclosed Form and return to us by email to Eva.Keung@atkinsglobal.com . If you have any enquiries, please contact Ms. Eva Keung at 2972 1198. Thank you for your cooperation.

阿特金斯顧問有限公司獲香港房屋署委聘為白田邨重建項目進行一項環境評估研究。根據我們的觀察，在下述建築物的屋頂上發現了水冷/風冷式冷風機及其他機器（隨附有關機器的相片，以供您參考）。

為更有效及精確作出評估，現希望貴公司能提供有關天台機器類型及運作的資料。煩請填完此份表格後，電郵至 Eva.Keung@atkinsglobal.com)。如有查詢，請與姜小姐聯絡(電話：2972 1198）。

謝謝您的合作。

Rooftop Fixed Plant Enquiry Form 天台機器查詢表格

Name of Property 物業名稱: Tung Wah Group of Hospitals Chang Ming Thien College

Address of Property 物業地址: 300 Nam Cheong Street, Kowloon

Name of Property Management Company 物業管理公司名稱: _____

Type of the fixed plant (e.g. air-cooled/water-cooled chiller? Water cooling tower? Other machine on the rooftop?) **機器類型 (例如,風冷式/水冷式製冷機? 淡水冷卻塔? 或其他在天台的機器?)**	**Number of the fixed plant** **機器數目**	**Model of the fixed Plant** **機器型號**	**Cooling capacity (in terms of ton)** **製冷量（噸）**	**Operation schedule of the fixed plant** **機器運作時段 (e.g. 8:00 to 18:00?)**	**Machine in use / no longer in use?** **機器使用中/不再使用?**

Type of the fixed plant (e.g. air-cooled/water-cooled chiller? Water cooling tower? Other machine on the rooftop?) 機器類型 (例如,風冷式/水冷式製冷機? 淡水冷卻塔? 或其他在天台的機器?)	Number of the fixed plant 機器數目	Model of the fixed Plant 機器型號	Cooling capacity (in terms of ton) 製冷量（噸）	Operation schedule of the fixed plant 機器運作時段 (e.g. 8:00 to 18:00?)	Machine in use / no longer in use? 機器使用中/不再使用?

Photo of Fixed Plant on the Rooftop of Tung Wah Group Hospitals Chang Ming Thien College

東華三院張明添中學天台機器相片

Source: https://www.google.com/maps/@22.3387032,114.1694588,162m/data=!3m1!1e3

Appendix 3.3

Noise Assessment Results for the Identified Fixed Noise Sources

Appendix 3-3: Fixed Plant Noise Results

Nearest NSR	Fixed Plant Noise Sources	Location of Fixed Noise Sources	Type of Plant	Measured SPL, dB(A)	SWL, dB(A)	No. of Equipments	Total SWL, dB(A)	Measured SPL Distance between Source and Sound Level Meter, m	Distance between Source and NSR, m	Distance Attenuation, dB(A)	Façade Correction, dB(A)	Sceening Correction, dB(A)	Tonality Correction, dB(A)	Predicted Noise Level at NSR, $L_{eq(30min)}$ dB(A)	Total Predicted Noise Level at NSR, $L_{eq(30min)}$ dB(A)	Time Period	Noise Criteria ANL, dB(A)	Comply (Yes/No)
Operation of Identified Duty Fixed Noise Plant																		
Domestic Block of Phase 12 (T1-E2)	SKMFS	Shek Kip Mei Fire Station	Air-cooled chiller	66 (1)	88 (2)	4	94	5	224	55	3	0	0	42	58	Daytime & Evening (0700 - 2300 hours)	65	Yes
	PHLC	Public Health Laboratory Centre	Air-cooled chiller	--	77 (3)	5	84	--	262	56	3	0	0	31				
	CMTC	T.W.G.Hs Chang Ming Thien College	Air-cooled chiller	--	100 (4)	1	100	--	70	45	3	0	0	58				
	SKMFS	Shek Kip Mei Fire Station	Air-cooled chiller	66 (1)	88 (2)	4	94	5	224	55	3	0	0	42	42	Night-time (2300 - 0700 hours)	55	Yes
	PHLC	Public Health Laboratory Centre	Air-cooled chiller	--	77 (3)	5	84	--	262	56	3	0	0	31				
Domestic Block of Phase 12 (T3-A2)	SKMFS	Shek Kip Mei Fire Station	Air-cooled chiller	66 (1)	88 (2)	4	94	5	98	48	3	0	0	49	52	Daytime & Evening (0700 - 2300 hours)	65	Yes
	PHLC	Public Health Laboratory Centre	Air-cooled chiller	--	77 (3)	5	84	--	120	50	3	0	0	37				
	CMTC	T.W.G.Hs Chang Ming Thien College	Air-cooled chiller	--	100 (4)	1	100	--	204	54	3	0	0	49				
	SKMFS	Shek Kip Mei Fire Station	Air-cooled chiller	66 (1)	88 (2)	4	94	5	98	48	3	0	0	49	49	Night-time (2300 - 0700 hours)	55	Yes
	PHLC	Public Health Laboratory Centre	Air-cooled chiller	--	77 (3)	5	84	--	120	50	3	0	0	37				
Domestic Block of Phase 12 (T3-E1)	SKMFS	Shek Kip Mei Fire Station	Air-cooled chiller	66 (1)	88 (2)	4	94	5	99	48	3	0	0	49	53	Daytime & Evening (0700 - 2300 hours)	65	Yes
	PHLC	Public Health Laboratory Centre	Air-cooled chiller	--	77 (3)	5	84	--	127	50	3	0	0	37				
	CMTC	T.W.G.Hs Chang Ming Thien College	Air-cooled chiller	--	100 (4)	1	100	--	185	53	3	0	0	50				
	SKMFS	Shek Kip Mei Fire Station	Air-cooled chiller	66 (1)	88 (2)	4	94	5	99	48	3	0	0	49	49	Night-time (2300 - 0700 hours)	55	Yes
	PHLC	Public Health Laboratory Centre	Air-cooled chiller	--	77 (3)	5	84	--	127	50	3	0	0	37				

Remark:

(1) For ACC at SKMFS, the measured SPL of 66 dB(A) of one set at 5m (free-field measurement) obtained from the approved EAS Reports for Phases 7, 8, 10 and 11 by Mott MacDonald Limited

(2) The SWL for the ACC at SKMFS was calculated based on the measured sound pressure level (66 dB(A) at 5m) from the approved EAS Reports for Phase 7, 8, 10 and 11 by Mott MacDonald Limited. (i.e. SWL = SPL + 20log(distance) + 8)

(3) The SWL of 77 dB(A) was deduced based on the sound power levels and octave band centre frequencies of the subject fixed noise sources provided by Department of Health in Appendix 3.2. A-weighting corrections and standard acoustic principles were adopted to convert the sound power levels provided in the plant catalogue.

(4) There were 3 sets of air-cooled chillers identified at the CMTC. Based on the information provided by the T.W.G.Hs Chang Ming Thien College (see Appendix 3.2) , the total cooling capacity of these chillers is 192kW i.e. 54.59 tonnes. As a representative case scenario, the total SWL of the 3 air-cooled chillers is assumed to be equivalent to one air-cooled chiller with 50 tonnes cooling capacity thus the SWL of one air-colled chiller with 50 tonnes cooling capacity was adopted for noise assessment with reference to the guideline published by EPD "Good Practice on Ventilation System Noise Control".

Appendix 4.1

Photograph Record of the Identified Chimney

Photograph Records of Identified Chimneys

PCCW Telephone Exchange Building

AtkinsRéalis

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Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)

Environmental Assessment Study (EAS) EPD's comment regarding submission of the captioned EAS report (September 2023)

Comments received from EPD – Mr. Andy Wong (Email dated 25 October 2023)		
Items	**Major Comments**	**Responses**
	I refer to your email below seeking our comment on the revised EAS report (September 2023) for Pak Tin Phase 12.	
	Please find our further comments on the submission below.	
	Noise	
1.	Section 1.3 - Please provide more information of the site, such as site area and zoning on the relevant outline zoning plan, etc. for reference.	Section 1.3.1 is updated.
2.	Table 1.1 - Presenting non-domestic block with welfare facilities as domestic uses in the table would introduce confusion. Please amend.	Table 1.1 is updated.
3.	Section 2.2.4 and Appendix 2.1 -	
	(a) It seems that speed of traffic input in the road traffic noise modelling may be wrong. It is better for the consultants to clarify if speed of traffic assumed for Nam Cheong Street, Lung Cheung Road and slip road from Lung Cheung Road above Cornwall Street in modelling should be 50 km/hr or 70 km/hr, or other values as appropriate. The Transport Department (TD) should be	It is confirmed that the speed of Lung Cheung Road would be 70 km/hr and the remaining roads would be 50 km/hr.

Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)

Environmental Assessment Study (EAS) EPD's comment regarding submission of the captioned EAS report (September 2023)

Comments received from EPD – Mr. Andy Wong (Email dated 25 October 2023)		
Items	**Major Comments**	**Responses**
	consulted if necessary.	
	(b) According to Section 2.3.7, the existing roadside noise barrier is 7m high. Please clarify and check if the height of a section of existing barriers opposite to Shek Kip Mei Park Sports Centre has been input correctly or not.	The noise model is rectified.
	(c) As a reminder, the TD's written endorsement on the adopted traffic forecast data should be attached for reference once available. The Consultants should approach the TD for the availability of the endorsement.	Endorsement from TD is undergoing and would be included in the EAS once received.
4.	Table 2.4, Table 2.5 and Appendix 2.6 - It seems that the inconsistent data in Tables 2.4 and 2.5 may have been presented, e.g. those for assessment point "T2-G1", etc. Please check.	Based on the revised noise model, the affected floors of T1, T2 and T3 are updated, the use of acoustics window/ fixed glazing have also been updated. Table 2.4, Table 2.5 and Appendix 2.6 are then updated to match with the assessment results.
5.	Section 2.4.7 - The word "Fat" should read "Flat". Please check.	Text revised.
6.	Section 2.4.17 -	
	(a) Both window settings are proposed and indicated on Figures 2.5, 2.6 and 2.7. Please check if the settings are indicated	Figures 2.5, 2.6 and 2.7 are updated.

Proposed Public Housing Redevelopment at Pak Tin Estate (Phase 12)

Environmental Assessment Study (EAS) EPD's comment regarding submission of the captioned EAS report (September 2023)

Comments received from EPD – Mr. Andy Wong (Email dated 25 October 2023)		
Items	**Major Comments**	**Responses**
	correctly on the figures and optimization of sound attenuation of acoustic windows has been considered. Remark on relative noise reductions of both settings should be added if appropriate.	
	(b) The figure under this section which may not be representative to all situations in this report may be removed to avoid confusion.	Figure removed.
7.	Section 3.1.3 - Information of traffic should be updated according to the TD's Annual Traffic Census 2022.	Text revised.
8.	Appendix 1.2 - Should a red dot indicating acoustic window be missing at Unit 03 of Block 13 on Drawing No. SP14/12/BL13/A/S17/PLO-01/P03? Please check.	Drawing is updated.
	Air Quality	
9.	Section 4.3.1 - Annual Traffic Census 2022 has been published. Please review and update the road type of the roads nearby.	Section 4.3.1 is updated.
	To facilitate review, please also provide softcopy of the report (in pdf) and all Response to Comments, and also highlight the revised / updated content in next submission.	Changes are highlighted in yellow.