



HODKINSON



**Dynamic
Overheating Report**

Peabody Trust, Catalyst by Design
and Hill Residential Limited

St Ann's Phase 1A

Final

Kate Paxton

MSc, CEng, CSci, MCIBSE, MEnvSc

July 2025

DOCUMENT CONTROL RECORD
REPORT STATUS: FINAL

Version	Date	Reason for issue	Author	Checked by	Approved for Issue by Project Manager
v.1	27/10/2023	Draft	K Paxton	P Mohajerani	Z Stebbings
v.2	29/11/2023	Final	K Paxton	P Mohajerani	Z Stebbings
v.3	16/09/2024	Final	K Paxton	Harry Fry	Z Stebbings
v.4	23/10/2024	Final	K Paxton	R Guedes	R Guedes
v.5	05/03/2025	Final	U Shaikh	Harry Fry	R Guedes
v.6	16/07/2025	Appendices updated	K Paxton	Harry Fry	R Guedes

ABOUT HODKINSON CONSULTANCY

Our team of technical specialists offer advanced levels of expertise and experience to our clients. We have a wide experience of the construction and development industry and tailor teams to suit each individual project.

We are able to advise at all stages of projects from planning applications to handover.

Our emphasis is to provide innovative and cost-effective solutions that respond to increasing demands for quality and construction efficiency.

This report has been prepared by Hodkinson Consultancy using all reasonable skill, care and diligence and using evidence supplied by the design team, client and where relevant through desktop research.

Hodkinson Consultancy can accept no responsibility for misinformation or inaccurate information supplied by any third party as part of this assessment.

This report may not be copied or reproduced in whole or in part for any purpose, without the agreed permission of Hodkinson Consultancy of Rickmansworth, Hertfordshire.

Executive Summary

The purpose of this report is to demonstrate compliance with Condition 29 (planning reference HGY/2022/1833) and Part O (2021) of the Building Regulations, for Phase 1A of the St Ann's New Neighbourhood in the London Borough of Haringey.

The performance of dwellings and communal corridors has been assessed against the Chartered Institution of Building Services Engineers (CIBSE) guidance TM59 *Design methodology for the assessment of overheating risk in homes* (2017) and Approved Document O *Overheating* (2021) (AD(O)).

A sample of dwellings and communal corridors has been selected for the dynamic overheating assessment based on design characteristics that establish them as representative of the overall proposed scheme. This selection of dwellings includes consideration of varying floors, orientations and with different levels of external noise constraints. Additional units have been tested since the previous version of this report, taking the total sample size to 8% of dwellings within Phase 1A.

The following passive mitigation measures have been explored and incorporated as far as practicable to avoid the need for active cooling, following the London Plan cooling hierarchy:

- > Reduce amount of heat entering the building:
 - > Reduced areas of fixed glazing
 - > Introduction of solar control glazing
 - > External shading from balconies and window reveals
- > Minimise internal heat generation:
 - > Efficient building services design to reduce heat distribution losses
- > Manage the heat:
 - > Thermal mass from concrete frame
- > Passive ventilation:
 - > Natural ventilation through openable windows
 - > Increased areas of window opening
- > Mechanical ventilation:
 - > MVHR system providing background ventilation rates that meet or exceed minimum Part F levels

Air tempering (also known as 'peak lopping') will be provided as a bolt-on to the MVHR system for only those dwellings which cannot rely on openable windows during sleeping hours, due to external noise constraints (based on the noise limits set within AD(O)). Passive overheating mitigation measures have been prioritised first, before the air tempering (also known as peak lopping) system, and this report demonstrates that the dwellings would pass the CIBSE TM59 and AD(O) criteria using passive means alone if there were no usability issues limiting window openability. External shading measures would not be sufficient to mitigate the overheating risk for these dwellings.

All dwellings tested demonstrate compliance with the CIBSE TM59 and AD(O) overheating assessment criteria under the mandatory weather file (DSY1 for the 2020s, high emissions, 50% percentile scenario). The results are based on key design features and passive mitigation measures, as outlined within Table i.

Table i: Approved Document O (2021) Compliance Checklist

Modelling details	
Dynamic software name and version	Design Builder Software v.7
Weather file location used, including any additional, more extreme weather files	CIBSE DSY 1 (1989) for London Weather Centre (representative of inner urban areas within the Greater London Authority Central Activity Zone) for the 2020s, high emissions, 50 % percentile scenario
Number of sample units modelled, including an explanation of why the size/selection has been chosen	20 units modelled (8% of all dwellings in Phase 1A) Refer to Chapter 4 for additional details and to Appendix A for the unit selection
Modelled Occupancy	
Has the project passed the assessment described in CIBSE’s TM59, taking into account the limits detailed in paragraphs 2.5 and 2.6?	Yes Refer to Appendix B for Modelling Inputs Refer to Chapters 5 & 6 for Modelling Results
Details of the occupancy profiles used	Occupancy and equipment profiles following CIBSE TM59 Refer to Appendix B for further details Window opening profiles following AD(O)
Details of the equipment profiles used	
Details of the opening profiles used	
Modelled Overheating Mitigation Strategy	
Free areas	Windows are modelled as per elevation drawings (KCA, September 2023) Discharge coefficients for openable windows (as calculated for the equivalent area) vary between 0.53 - 0.55 for fully openable windows and between 0.11 - 0.43 for those restricted due to external noise constraints

Infiltration and mechanical flow rates	Air permeability of 3.0 m³/hr·m² @ 50 Pa for houses Air permeability of 2.5 m³/hr·m² @ 50 Pa for houses Mechanical ventilation flow rates ranging from 60 l/s for 1- and 2-bedroom dwellings with no external noise constraints, to 90 l/s for larger dwellings and those with external noise constraints limiting reliance on openable windows during sleeping hours (Refer to Appendix B for full details)
Window G values	Glazing G-value of 0.50 for north facades Glazing G-value of 0.42 for east, south and west facades Frame factor of 0.80
Shading strategy	External reveal depths of 185 mm Overshadowing from balconies and neighbouring buildings included in the model where applicable Refer to model images in Chapter 4
Mechanical cooling	Active cooling not required Air tempering (also known as ‘peak lopping’) to be provided to 56 dwellings due to window opening constraints from external noise. This is a small amount of localised cooling provided as a bolt-on to the MVHR system, to slightly cool the incoming air supply during the summer months
Modelling results	
Has the project passed the assessment described in CIBSE’s TM59, taking into account the limits detailed in paragraphs 2.5 and 2.6?	Yes Refer to Appendix B for Modelling Inputs Refer to Chapters 5 and 6 for Modelling Results
What is the overall overheating strategy (i.e., what design features are key to the project passing)?	Refer to Chapter 7

CONTENTS

Executive Summary	2
1. INTRODUCTION	6
2. PLANNING CONDITION	8
3. OVERHEATING CRITERIA	9
4. MODELLING APPROACH	10
5. PASSIVE MITIGATION STRATEGY	15
6. WINDOW OPENING CONSTRAINTS	21
7. CONCLUSION	29
APPENDICES	31
Appendix A Assessed Dwellings and Communal Corridors	32
Appendix B Design Modelling Inputs	45
Appendix C Results of More Extreme Weather Scenarios	49
Appendix D Glazing G-value Mark-up	60
Appendix E Ground Floor Security Grille Requirements	61
Appendix F Ventilation Strategy Schedule (JSW, August 2024)	62
Appendix G Block C Vulnerable Occupancy Results	63

1. INTRODUCTION

- 1.1** This document has been prepared by Hodkinson Consultancy, a specialist energy and environmental consultancy for planning and development, to present the overheating mitigation strategy for Phase 1A of St Ann's New Neighbourhood by Peabody and Hill Partnership in the London Borough of Haringey.

Site Location

- 1.2** The development is located on the site of the former St Ann's General Hospital in Haringey, as shown in Figure 1 below.

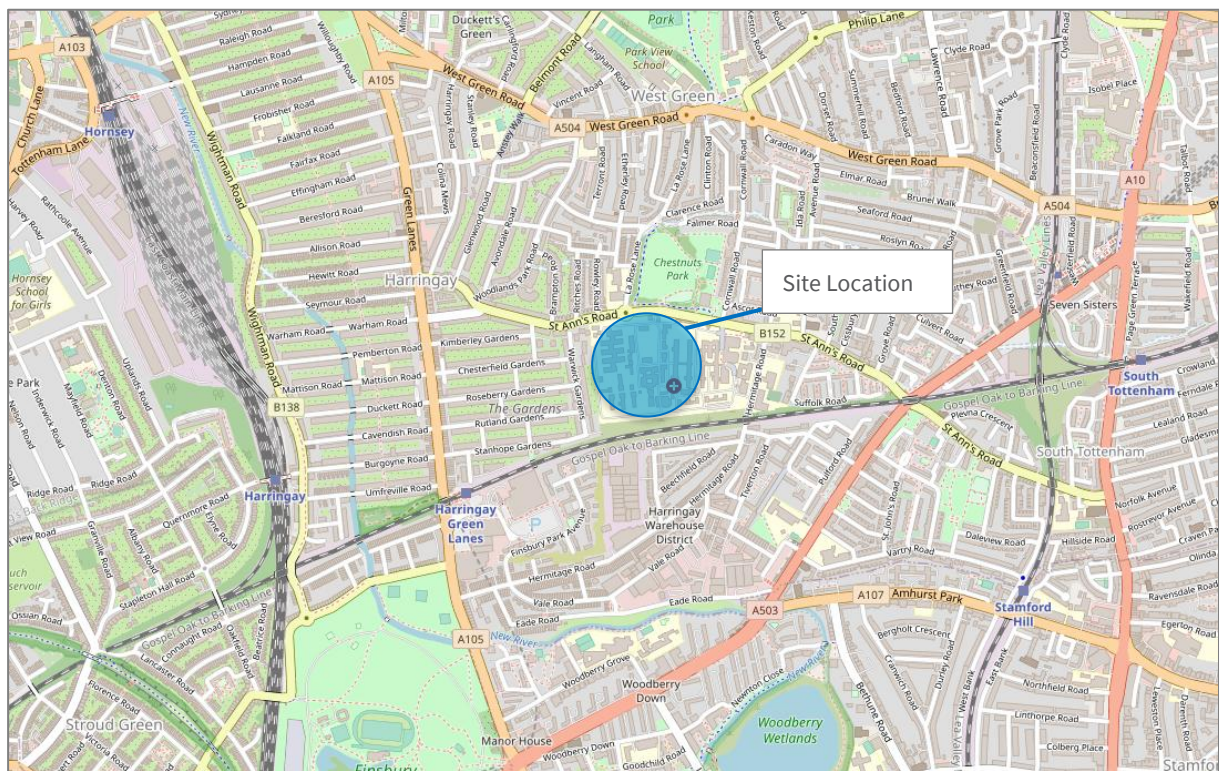


Figure 1: Site location circled in blue (OpenStreetMap, October 2023)

Development Description

- 1.3** The development is described as follows:

“(a) the change of use, conversion and alteration of seven existing hospital buildings for a flexible range of non-residential uses within Use Class E, F1/F2; (b) the demolition of other existing buildings (in accordance with the demolition plan); (c) the erection of new buildings for residential uses (Use Class

C3); (d) alterations to the existing access roads and site boundaries to enable the provision of new vehicular, pedestrian and cycle accesses; (e) landscaping including enlargement of the Peace Garden; and, (f) associated car and cycle parking spaces and servicing spaces.”

- 1.4** Figure 2 below indicates the site wide ground floor plan. Phase 1A comprises Plots A, B, C and D within the top left-hand corner of the site plan.

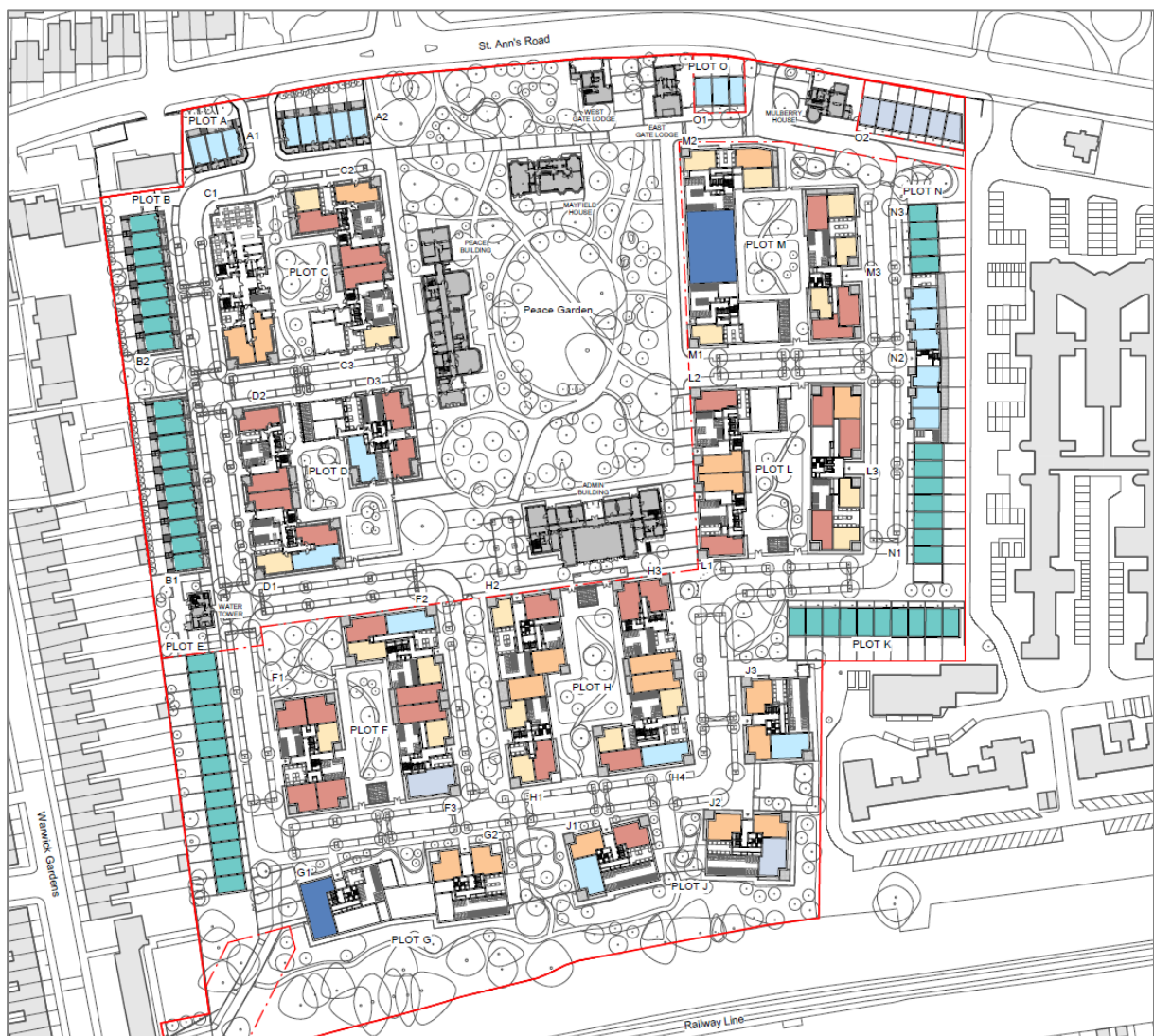


Figure 2: Ground floor site layout plan (KCA, May 2022)

Overheating and Thermal Comfort

- 1.5** Maintaining acceptable thermal comfort conditions in the face of climate change and increasing temperatures is one of the greatest challenges to be addressed by designers. The main objective is to achieve thermal comfort and minimise summertime overheating without the use of conventional

air conditioning systems, which typically have associated greenhouse gas emissions and impact on the urban heat island effect.

- 1.6** Dynamic thermal simulations have been carried out for representative dwellings, to determine whether there is a risk of overheating. Appropriate mitigation measures have been recommended to mitigate the overheating risk and ensure that comfortable thermal conditions are achieved.

2. PLANNING CONDITION

- 2.1** Phase 1A must comply with the following planning Condition 29 outlined within the Decision Notice dated 10 July 2023 (reference HGY/2022/1833):

Prior to the commencement of above ground works to Phase 1a, a Revised Overheating Model and report shall be submitted to and approved by the Local Planning Authority, based on acceptable principles as approved, taking into account any detailed design changes and responding the outstanding actions at application stage. The model will assess the overheating risk in line with CIBSE TM52 and TM59 (using the London Weather Centre TM49 weather DSY1-3 files for the 2020s, and DSY1 for the 2050s and 2080s) for the residential units and demonstrate how the overheating risks have been mitigated and removed through design solutions.

This report will include:

- > Reconfirmed details of the design measures incorporated within the scheme in line with the Cooling Hierarchy (including details of the feasibility of prioritising passive cooling and ventilation measures) to ensure adaptation to higher temperatures are addressed, the spaces do not overheat, and the use of active cooling is avoided;*
- > Specification of mitigation measures;*
- > Modelled pipework heat losses from the communal heating system that comply with CP1 2020, reducing the heat losses to reduce energy demand of extract ventilation in corridors;*
- > A retrofit plan to mitigate the future risks of overheating by setting out how the future mitigation measures are shown to help pass future weather files and confirming that the retrofit measures can be integrated within the design (e.g., if there is space for pipework to allow the retrofitting of cooling and ventilation equipment) and include any replacement / repair cycles and the annual running costs for the occupiers;*
- > Submit a clearer annotated plan and a list of the modelled dwellings, making it clear what building they are in and ensuring all habitable rooms have easy-to-identify numbers. Set out what number of dwellings are modelled per block; and*

- > *Specification and visual appearance of the proposed security shutters, and any further external shading measures proposed.*

These mitigation measures shall be operational prior to the first occupation of the development hereby approved and retained (through a like-for-like in specification) thereafter for the lifetime of the development.

3. OVERHEATING CRITERIA

- 3.1** The following building regulations and guidance provide a standardised approach to predicting overheating risk in residential dwellings within the UK. They set out the criteria by which the risk of overheating can be assessed or identified.

Approved Document O (2021)

- 3.2** The scheme will be subject to Part O of the Building Regulations, for which requirements are set out within Approved Document O (AD(O)) for Overheating (2021). Compliance is based on meeting the following requirements:
- > Reasonable provision to limit unwanted solar gains in summer and to provide adequate means to remove excess heat;
 - > Taking account of safety, noise, pollution, protection of falling and entrapment when developing the strategy. Mechanical cooling should only be considered when feasible passive means are insufficient.
- 3.3** There are two methods for demonstrating compliance under AD(O):
- > **Simplified:** The simplified method requires dwellings to accommodate design limitations on maximum glazed areas, minimum openable areas for natural ventilation and external shading.
 - > **Dynamic:** The dynamic method requires dwellings to demonstrate compliance with CIBSE TM59 criteria (with a few specific limitations on use of the TM59 methodology) via dynamic thermal modelling.
- 3.4** The dynamic method has been used to assess this development.

CIBSE TM59 (2017) Assessment Criteria

- 3.5** The criteria for the assessment of overheating risk have been specified by the Chartered Institute of Building Services Engineers (CIBSE) in TM59 *Design methodology for the assessment of overheating*

risk in homes (2017). CIBSE TM59 provides a standardised approach to predicting overheating risk for both naturally and mechanically ventilated residential buildings.

3.6 The following criteria must be met in order to demonstrate compliance:

- > **Criterion A:** The indoor operative temperature should not exceed the threshold comfort temperature by 1°C or more for more than 3% of occupied hours in living rooms, kitchens and bedrooms.
- > **Criterion B:** To guarantee comfort during the sleeping hours the operative temperature in the bedroom from 10 pm to 7 am should not exceed 26°C for more than 1% of annual hours.

3.7 Whilst there is no mandatory target to meet for communal corridors, TM59 suggests a threshold temperature of 28°C to be exceeded for no more than 3% of the total annual hours.

4. MODELLING APPROACH

4.1 Dynamic thermal modelling has been undertaken using DesignBuilder Software (v.7). The performance of the units has been assessed following CIBSE TM59 and the adaptive thermal comfort method for a primarily natural ventilated scenario. Additional modelling limitations set by AD(O) have also been applied.

4.2 Thermal comfort category II has been used, representing normal expectation (for new buildings and renovations). This follows the same approach as the approved planning strategy. Additional results for Block C1 under thermal comfort category II (representing high level of expectation only used for spaces occupied by very sensitive and fragile persons) are shown in Appendix G.

Unit Selection

4.3 Representative dwelling units with different layouts, sizes, orientation and external shading have been assessed. The selection of the units for overheating risk assessment comprises 8% of dwellings within Phase 1A and is based on the following:

- > Flats and houses of varying unit type, layout, size and tenure;
- > Various floor levels and orientations;
- > A variety of single and dual aspect dwellings;
- > Ground floor units with restrictions on night-time window opening due to security;

- > Dwellings identified as being at risk of external noise during the night (AF Acoustics, July 2023), subsequently with restrictions on night-time window opening.

4.4 The table below outlines the units selected for overheating assessment. Indicative locations for each are shown on the Phase 1 site plan in Figure 3, numbered as per 'plan ref' in the table.

Table 1: Phase 1A dwelling unit selection for overheating analysis

Plan Ref	Unit	Type	Size (m ²)	Floor Level	Tenure	Orientation	Aspect	Noise Zone
1	AX-00-06	3B5P-A-05	119.76	00-02	Private	North/South	Dual	1/3
2	BX-00-02	4B6P-B-02	119.29	00-02	Private	East/West	Dual	2
3	BX-00-15	4B6P-B-02	119.29	00-02	Private	East/West	Dual	4
4	C1-04-01	1B2P-C1-01	55.33	04	Affordable	North/West	Dual	2
5	C1-04-07	1B2P-C1-04	58.22	04	Affordable	West	Single	3
6	C2-04-02	2B4P-CX-02	74.02	04	Private	North/West	Dual	2
7	C3-02-05	2B4P-CX-02	74.02	02	Private	South/West	Dual	4
8	C3-05-03	1B2P-CX-02	51.23	05	Private	East	Single	2
9	D1-05-04	1B2P-D1-02	51.38	05	Shared	West	Single	4
10	D1-00-02	3B5P-D1-01	86.11	00	Shared	East/South	Dual	4
11	D3-05-04	1B2P-D3-01	52.55	05	Private	East	Single	3
12	D3-08-01	1B2P-D3-02	51.03	08	Private	West	Dual	4
13	C1-04-03	1B2P-C1-03	54.35	04	Affordable	East	Single	3
14	C2-02-03	2B4P-CX-01	73.49	02	Private	North/East	Dual	2
15	C3-05-01	2B3P-CX-01	77.60	05	Private	East/West	Dual	2/4
16	C3-06-02	1B2P-CX-01	51.66	06	Private	East	Single	2
17	D3-05-06	2B4P-D3-01	74.06	05	Private	South/West	Dual	4

Plan Ref	Unit	Type	Size (m ²)	Floor Level	Tenure	Orientation	Aspect	Noise Zone
18	D3-08-02	2B4P-D3-01	74.06	08	Private	North/West	Dual	4
19	D2-03-03	1B2P-D2-02	52.69	03	Living Rent	North	Single	4
20	D2-01-03	1B2P-D2-01	51.33	01	Living Rent	North	Single	4

Ref	Colour	Outside-to-inside noise reduction requirement	Open window area, bedrooms only (23:00 – 07:00)
Zone 1		>18 dB	Not possible to achieve with openable windows
Zone 2		11 dB	Estimated to result in noise levels compliant with ADO limits with windows partially open up to ~3% of floor area (e.g.0.3m ² for an indicative bedroom of 10m ² floor area).
Zone 3		5 dB	Estimated to result in noise levels compliant with ADO limits with windows partially open up to ~12% of floor area (e.g.1.2m ² for an indicative bedroom of 10m ² floor area).
Zone 4		0 dB	Estimated to result in noise levels compliant with ADO limits with windows partially open up to >30% of floor area (e.g.3m ² for an indicative bedroom of 10m ² floor area).

Figure 3: Noise risk zone definitions (AF Acoustics, July 2023)

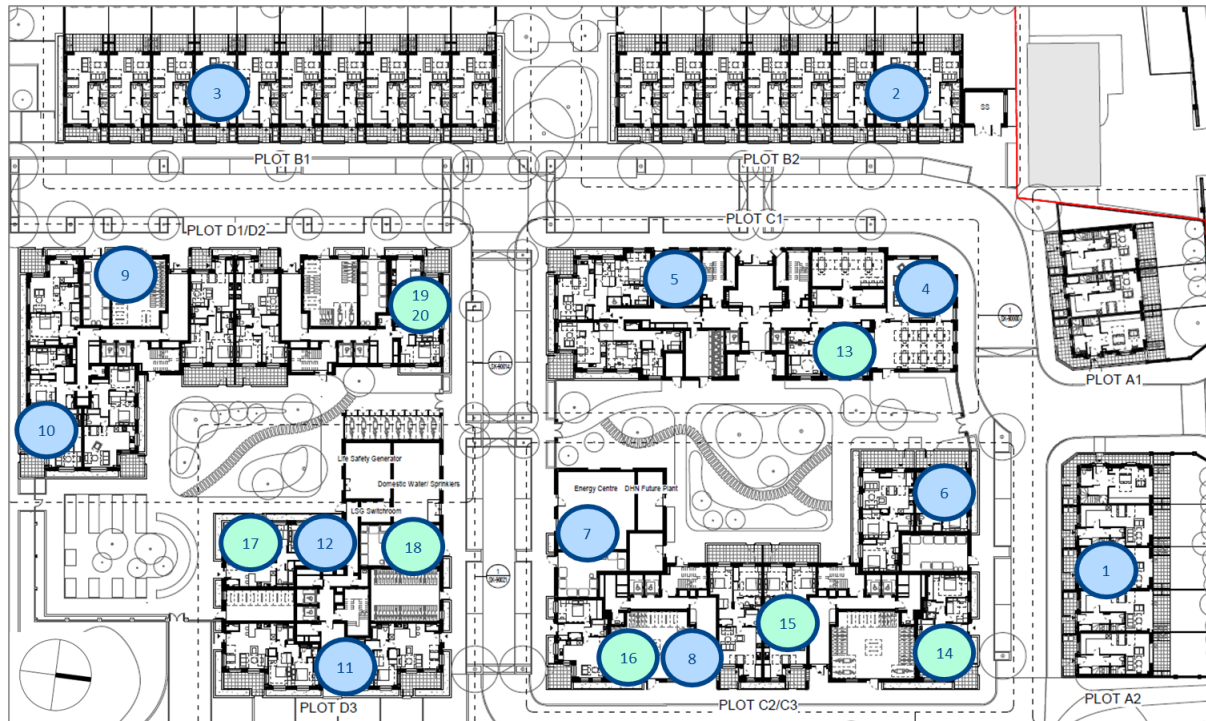


Figure 4: Phase 1A site plan showing locations of dwellings selected for overheating assessment (with the additional units shown in green)

- 4.5** Internal layouts of the homes and communal corridors selected for assessment are presented in Appendix A. Design modelling inputs for the assessed dwellings can be found in Appendix B.

Site External Weather Conditions

- 4.6** External temperatures and incident solar gains are greatest during summer months, coinciding with periods of lower wind speeds. Solar altitude is also highest during summer months, increasing the effects of façade shading from balcony overhangs and window reveals. Such considerations should be accounted for when designing for overheating risk.
- 4.7** The effects of external conditions are vital in an overheating assessment as they influence:
- > Solar heat gains (a function of incident direct and diffuse solar radiation and solar altitude); and
 - > Calculated natural ventilation rates (a function of external temperature, wind directions and speeds).
- 4.8** CIBSE design summer year (DSY) weather data for London Weather Centre (representative of inner urban areas within the Greater London Authority Central Activity Zone) has been used for the 2020s, high emissions, 50 % percentile scenario as required by Condition 29.

- 4.9** The assessment of overheating risk has been undertaken using the DSY1 weather file, in accordance with the requirements of TM59 and AD(O). The final mitigation strategy has also been tested under the more extreme DSY 2 and 3 for the 2020s, along with DSY 1 for the 2050s and 2080s as required by Condition 29, and the results are presented in Appendix C.

Model Geometry and Local Shading

- 4.10** Overshadowing from the building blocks has been taken into account during the simulation, based on the model geometry and the site orientation.
- 4.11** Solar control forms an integral part of overheating mitigation strategies. External shading in the form of balconies is applied across many of the façades as part of the design proposals. These were incorporated in the simulation model as shown in Figures 5 and 6.
- 4.12** Horizontal shading devices such as balconies and overhangs are more efficient when applied in south oriented façades and during midday when the solar angle is high. Their role in reducing solar gains in the summer period is considered to be paramount.



Figure 5: Building simulation model from Design Builder Software, viewed from the north, with shadows generated from sun path diagram for 21 June 15:00



Figure 6: Building simulation model from Design Builder Software, viewed from the south west, with shadows generated from sun path diagram for 21 June 15:00

5. PASSIVE MITIGATION STRATEGY

Design Development

- 5.1** The scheme submitted for the planning application (reference HGY/2022/1833) was not compliant with Part O (2021) of the Building Regulations. However, the Overheating Design Note (XCO2, May 2022) did demonstrate compliance with CIBSE TM59.
- 5.2** Due to the introduction of Part O and the requirement for this development to comply with the criteria set out in AD(O), a variety of passive overheating mitigation measures were explored to uplift the scheme to the new regulations. The London Plan cooling hierarchy has been followed in order to find a suitable overheating mitigation strategy.
- 5.3** The most significant passive mitigation measure that has been incorporated into the latest elevation design is to remove fixed panes of glazing below the transom and incorporate a guarding rail to ensure both windowpanes can be fully openable, thereby increasing natural ventilation, as shown in Figure 7 below:

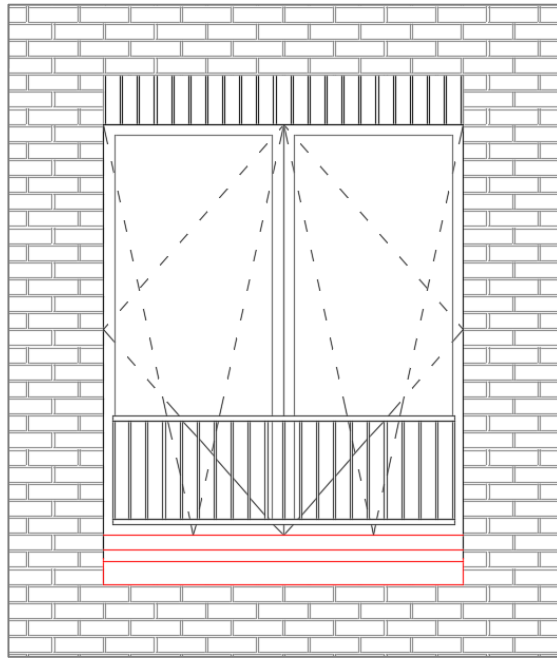


Figure 7: Updated window types to increase availability of natural ventilation

- 5.4** Guarding heights are at 1.1m from FFL in line with the requirements of AD(O), to allow windows to be safely fully openable. Windows are inward opening, to prevent residents from reaching out of the window to close it.
- 5.5** Ground floor bedrooms will be provided with security grilles to allow full, secure, nighttime window opening. Refer to Appendix E for further details.

Final Passive Strategy

- 5.6** The following passive design measures have been incorporated in order to reduce the risk of overheating to an acceptable level, as determined by CIBSE TM59 and AD(O), incorporated into the design in accordance with the London Plan cooling hierarchy:
 - > High performance solar control glazing with g-values optimised to mitigate overheating risk whilst achieving fabric energy efficiency targets and natural daylight provision (0.42 for east, south and west facades and 0.50 for north facades);
 - > External shading is provided to some windows in form of balconies and external reveal depths of 185mm;
 - > Highly efficient fabric envelope and high efficiency building services heating system, lighting and appliances are proposed in all dwellings to reduce internal gains;
 - > Communal heat network designed to minimise heat losses;

- > A concrete floor slab within the apartment blocks provides some thermal capacity to absorb excessive heat within the building;
- > Openable areas of windows have been maximised, to ensure adequate natural ventilation:
 - > For dwellings at first floor level and above, window casements open inwards to allow maximum openability;
 - > Guarding heights are 1.1m from finished floor level, enabling windows to be fully open without the need for safety restrictors;
 - > For dwellings with bedrooms at ground floor level, lockable louvred shutters are provided so windows can be securely open through the night. These shutters are located internally, with window casements opening outwards;
- > A background mechanical ventilation system providing minimum Part F ventilation rates to dwellings, with the capacity to achieve up to 60 l/s or 90l/s (depending on dwelling type) boosted air flow during hot weather;
- > Corridors ventilated through AOV system providing a minimum ventilation rate of 1 ach. For corridors with windows, these will have automatic opening based on internal temperature, with maximum opening restricted to 100mm.

Dwelling Results

5.7 The following results presented in Table 2 indicate that, based on the design modelling inputs in Appendix B and passive overheating mitigation measures outlined above, all assessed rooms meet the CIBSE TM59 criteria and therefore demonstrate an acceptable level of overheating risk.

5.8 These results are based on windows being open with no usability constraints, in accordance with paragraph 2.6 of AD(O):

- > *When a room is occupied during the day (8am to 11pm), openings should be modelled to do all of the following:*
 - > *Start to open when the internal temperature exceeds 22°C;*
 - > *Be fully open when the internal temperature exceeds 26°C;*
 - > *Start to close when the internal temperature falls below 26°C;*
 - > *Be fully closed when the internal temperature falls below 22°C.*
- > *At night (11pm to 8am), openings should be modelled as fully open if both of the following apply:*

- > The opening is on the first floor or above and not easily accessible;
- > The internal temperature exceeds 23°C at 11pm.
- > When a ground floor or easily accessible room is unoccupied, both of the following apply:
 - > In the day, windows, patio doors and balcony doors should be modelled as open, if this can be done securely;
 - > At night, windows, patio doors and balcony doors should be modelled as closed.

Table 2: TM59 overheating results for dwellings (assuming no window opening constraints) under DSY1 2020s

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	22	Pass
	SINGLEBED	0.0	25	Pass
	DOUBLEBED	0.0	25	Pass
02 B 00 02 0F 02 B 00 02 1F 02 B 00 02 2F	LKD	0.6	N/A	Pass
	DOUBLEBED	0.2	29	Pass
	SINGLEBED	0.1	28	Pass
	DOUBLEBED	0.2	26	Pass
	SINGLEBED	0.1	32	Pass
03 B 00 15 0F 03 B 00 15 1F 03 B 00 15 2F	LKD	0.6	N/A	Pass
	DOUBLEBED	0.2	25	Pass
	SINGLEBED	0.1	28	Pass
	DOUBLEBED	0.3	26	Pass
	SINGLEBED	0.1	23	Pass
04 C1 04 01	DOUBLEBED	0.1	27	Pass
	LKD	0.5	N/A	Pass
05 C1 04 07	DOUBLEBED	0.1	30	Pass
	LKD	0.3	N/A	Pass
06 C2 04 02	BED1	0.0	20	Pass
	BED2	0.0	21	Pass
	LKD3	0.4	N/A	Pass
07 C3 02 05	BED1	0.0	24	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
	BED2	0.0	25	Pass
	LKD	0.1	N/A	Pass
08 C3 05 03	BED1	0.1	24	Pass
	LKD	0.2	N/A	Pass
09 D1 05 04	BED1	0.0	24	Pass
	LKD	0.1	N/A	Pass
10 D1 00 02	BED1	0.0	28	Pass
	BED2	0.0	30	Pass
	LKD	1.0	N/A	Pass
	SINGLEBED3	0.1	32	Pass
11 D3 05 04	BED1	0.2	31	Pass
	LKD	0.3	N/A	Pass
12 D3 08 01	BED1	0.2	29	Pass
	LKD	0.3	N/A	Pass
13 C1 04 03	BEDROOM	0.1	31	Pass
	LKD	0.2	N/A	Pass
14 C2 02 03	BEDROOM1	0.0	21	Pass
	BEDROOM2	0.0	22	Pass
	LKD	0.3	N/A	Pass
15 C3 05 01	BEDROOM1	0.2	32	Pass
	BEDROOM2	0.2	32	Pass
	LKD	0.3	N/A	Pass
16 C3 06 021	BEDROOM	0.0	30	Pass
	LKD	0.3	N/A	Pass
17 D3 05 06	BEDROOM1	0.0	25	Pass
	BEDROOM2	0.2	26	Pass
	LKD	0.4	N/A	Pass
18 D3 08 02	BEDROOM1	0.0	22	Pass
	BEDROOM2	0.2	22	Pass
	LKD	0.7	N/A	Pass
19 D2 03 03	BEDROOM	0.0	31	Pass
	LKD	0.2	N/A	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass $\leq$ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass $\leq$ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
20 D2 01 03	BEDROOM	0.0	29	Pass
	LKD	0.2	N/A	Pass

Corridor Results

5.9 The following results presented in Table 3 indicate that, based on the design modelling inputs in Appendix B and passive overheating mitigation measures outlined above, all assessed corridors meet the CIBSE TM59 criteria and therefore demonstrate an acceptable level of overheating risk.

Table 3: TM59 overheating results for corridors under DSY1 2020s

Zone	TM59 Criterion: $\leq$ 3 % hours over 28°C	Overall compliance with TM59
	% Hours of overheating	
CORRIDOR1	0.0	Pass
CORRIDOR2	0.0	Pass
CORRIDOR3	0.0	Pass
STAIRCASE	0.0	Pass
CORRIDOR1	0.6	Pass
CORRIDOR2	0.0	Pass
CORRIDOR3	0.0	Pass
STAIRCASE	0.0	Pass

6. WINDOW OPENING CONSTRAINTS

- 6.1** A noise impact assessment has been undertaken by AF Acoustics (July 2023). This report outlines the extent of open window area within bedrooms during the night that would result in compliance with the noise limits set within section 3.3 of AD(O).
- 6.2** The following mark-ups shown in Figures 7-10 have been taken from the Acoustic Report. They should be read in conjunction with the noise risk zone definitions provided in Figure 3.

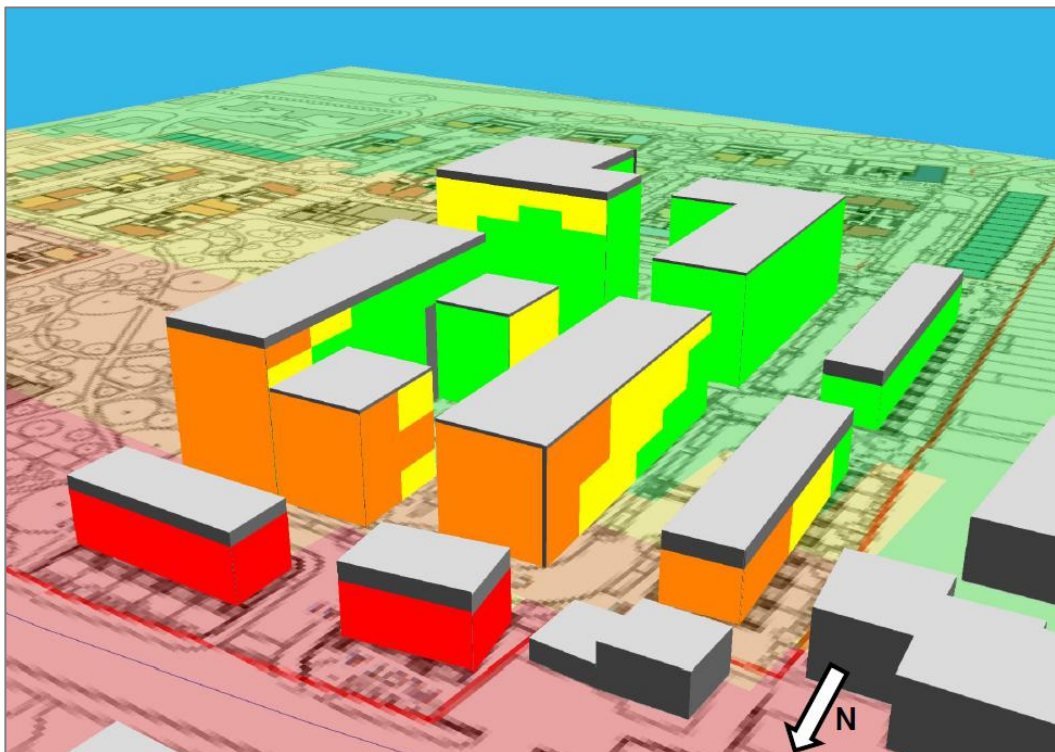


Figure 8: Noise risk assessment mark-up, viewed from the north west (AF Acoustics, July 2023)

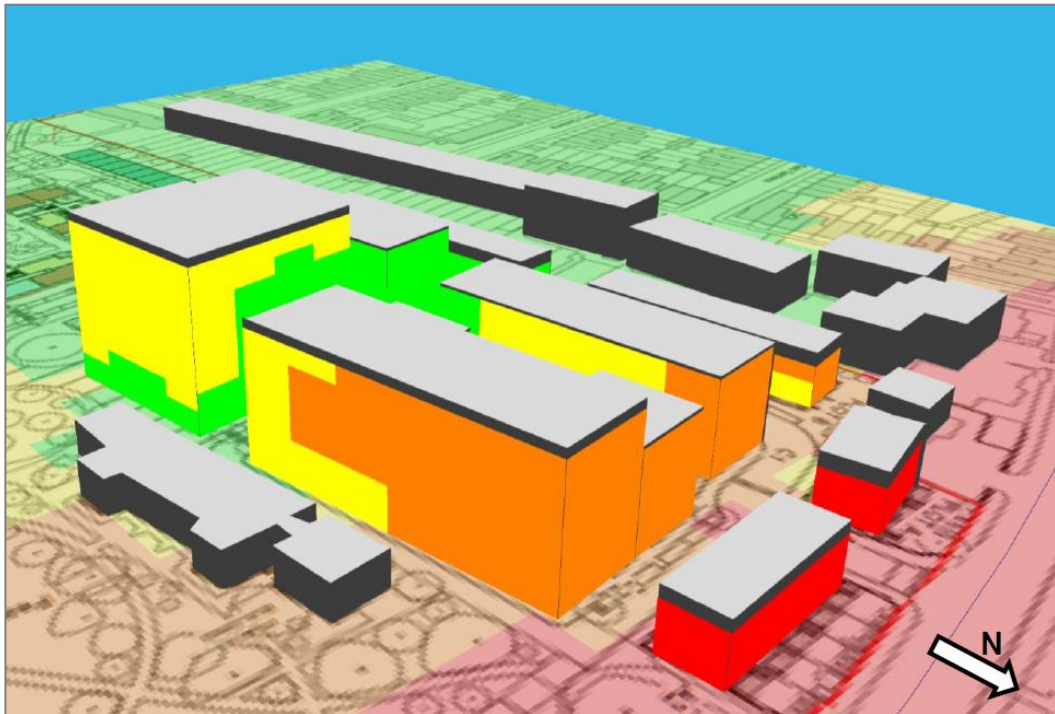


Figure 9: Noise risk assessment mark-up, viewed from the north east (AF Acoustics, July 2023)

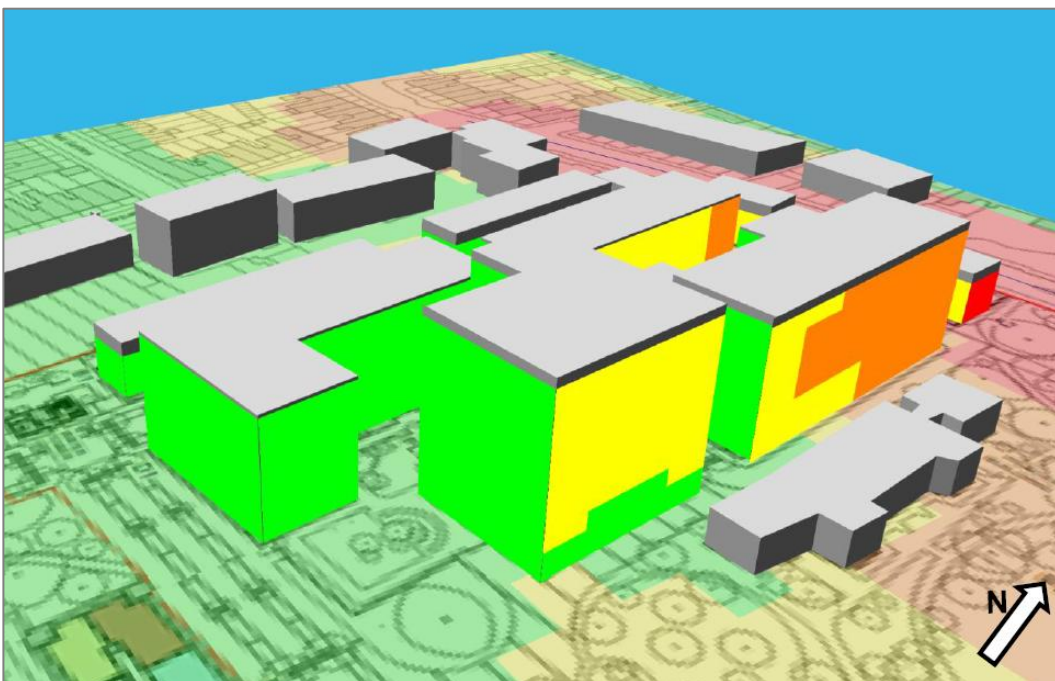


Figure 10: Noise risk assessment mark-up, viewed from the south east (AF Acoustics, July 2023)

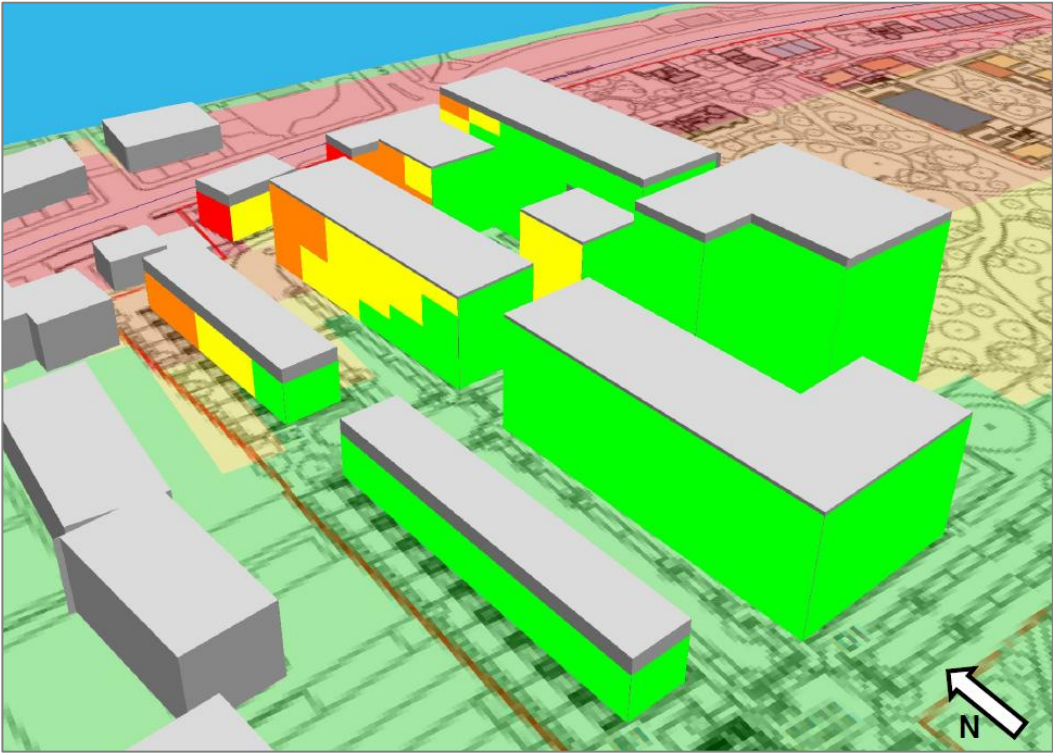


Figure 11: Noise risk assessment mark-up, viewed from the south west (AF Acoustics, July 2023)

Dwelling Results

- 6.3 The following results presented in Table 5 demonstrate the impact that night-time window opening constraints due to external noise has on the risk of overheating within dwellings.
- 6.4 These results are based on the following limitations applied to bedroom windows:

Table 4: Window opening limitations in bedrooms at night

Noise Risk Zone Reference	Façade Colour (Figures 7-10)	Window Openability (Bedrooms, 23:00-07:00)
Zone 1	Red	Windows closed during sleeping hours
Zone 2	Orange	Windows restricted to an opening no greater than 3% of the floor area during sleeping hours
Zone 3	Yellow	Windows restricted to an opening no greater than 12% of the floor area during sleeping hours
Zone 4	Green	No limitations, windows open as per AD(O) rules

Table 5: TM59 overheating results for dwellings (with window opening constraints due to noise) under DSY1 2020s

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	36	Fail
	SINGLEBED	0.0	48	Fail
	DOUBLEBED	0.1	43	Fail
02 B 00 02 0F 02 B 00 02 1F 02 B 00 02 2F	LKD	0.6	N/A	Pass
	DOUBLEBED	0.2	43	Fail
	SINGLEBED	0.2	38	Fail
	DOUBLEBED	0.2	37	Fail
	SINGLEBED	0.1	58	Fail
04 C1 04 01	DOUBLEBED	0.1	44	Fail
	LKD	0.5	N/A	Pass
05 C1 04 07	DOUBLEBED	0.1	30	Pass
	LKD	0.3	N/A	Pass
06 C2 04 02	BED1	0.0	34	Fail
	BED2	0.0	41	Fail
	LKD3	0.4	N/A	Pass
08 C3 05 03	BED1	0.1	30	Pass
	LKD	0.2	N/A	Pass
11 D3 05 04	BED1	0.2	31	Pass
	LKD	0.3	N/A	Pass
13 C1 04 03	BEDROOM	0.1	31	Pass
	LKD	0.2	N/A	Pass
14 C2 02 03	BEDROOM1	0.0	45	Fail
	BEDROOM2	0.0	46	Fail
	LKD	0.4	N/A	Pass
15 C3 05 01	BEDROOM1	0.2	34	Fail
	BEDROOM2	0.2	35	Fail
	LKD	0.3	N/A	Pass
16 C3 06 021	BEDROOM	0.0	35	Fail

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
	LKD	0.3	N/A	Pass

- 6.5** The failures noted within Table 5 above are a result of usability constraints limiting window opening at night-time due to external noise. The cooling hierarchy has been followed to ensure that all dwellings could pass the TM59 and AD(O) criteria passively without any window usability constraints.

Additional Passive Mitigation Measures

- 6.6** Further testing has been undertaken to determine whether any further passive measures can be explored to mitigate overheating within the noise-affected dwellings, prior to utilising mechanical means. However, the impacted dwellings are primarily on the north facades which are not exposed to solar gains, therefore additional shading measures do not provide any benefit to the overheating results.
- 6.7** External shading in the form of 300mm overhang to each window has been tested for the dwellings showing failures in Table 5, to see if the residual overheating risk can be mitigated using passive measures alone. The results are shown in Table 6.

Table 6: TM59 overheating results for dwellings (with window opening constraints due to noise) under DSY1 2020s, with 300mm overhang to windows

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	33	Fail
	SINGLEBED	0.1	45	Fail
	DOUBLEBED	0.3	41	Fail
02 B 00 02 0F 02 B 00 02 1F	LKD	1.0	N/A	Pass
	DOUBLEBED	0.4	40	Fail

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
02 B 00 02 2F	SINGLEBED	0.3	36	Fail
	DOUBLEBED	0.3	35	Fail
	SINGLEBED	0.3	53	Fail
04 C1 04 01	DOUBLEBED	0.3	39	Fail
	LKD	1.0	N/A	Pass
06 C2 04 02	BED1	0.1	33	Fail
	BED2	0.2	40	Fail
	LKD3	0.7	N/A	Pass
13 C1 04 03	BEDROOM	0.2	25	Pass
	LKD	0.6	N/A	Pass
14 C2 02 03	BEDROOM1	0.2	43	Fail
	BEDROOM2	0.2	44	Fail
	LKD	1.0	N/A	Pass
15 C3 05 01	BEDROOM1	0.4	32	Pass
	BEDROOM2	0.4	33	Fail
	LKD	0.8	N/A	Pass
16 C3 06 021	BEDROOM	0.1	32	Pass
	LKD	0.7	N/A	Pass

Mechanical Mitigation Measures

- 6.8** To mitigate the residual risk of overheating as a result of external noise constraints, mechanical measures have been explored, as the next step in the cooling hierarchy.
- 6.9** It is proposed to install an ‘air tempering’ (also known as ‘peak lopping’) cooling coil bolt-on to the MVHR system within the affected dwellings in Blocks A1, A2, B2, C1, C2 and C3.
- 6.10** The air tempering system will be designed to provide 1.03 kW of DX cooling capacity and an air flow rate of 90 l/s. The following results in Table 7 demonstrate that this system will be capable of reducing the risk of overheating to an acceptable level, within the CIBSE TM59 criteria. The criteria

for predominantly naturally ventilated dwellings has been used, as windows can still be relied upon for daytime ventilation.

Table 7: TM59 overheating results for dwellings with air tempering strategy, under DSY1 2020s

Unit	Room	TM59 Criterion A: Hours of exceedance (pass $\leq$ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass $\leq$ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	17	Pass
	SINGLEBED	0.0	9	Pass
	DOUBLEBED	0.0	29	Pass
02 B 00 02 0F 02 B 00 02 1F 02 B 00 02 2F	LKD	0.4	N/A	Pass
	DOUBLEBED	0.1	31	Pass
	SINGLEBED	0.1	21	Pass
	DOUBLEBED	0.1	26	Pass
	SINGLEBED	0.0	32	Pass
04 C1 04 01	DOUBLEBED	0.0	21	Pass
	LKD	0.3	N/A	Pass
06 C2 04 02	BED1	0.0	17	Pass
	BED2	0.0	22	Pass
	LKD3	0.3	N/A	Pass
13 C1 04 03	BEDROOM	0.0	26	Pass
	LKD	0.0	27	Pass
14 C2 02 03	BEDROOM1	0.4	N/A	Pass
	BEDROOM2	0.1	24	Pass
	LKD	0.1	26	Pass
15 C3 05 01	BEDROOM1	0.3	N/A	Pass
	BEDROOM2	0.0	8	Pass
	LKD	0.3	N/A	Pass
16 C3 06 021	BEDROOM	0.0	N/A	Pass
	LKD	0.0	17	Pass

6.11 The final overheating mitigation strategy is shown as a mark-up in Appendix D. Details of the window grilles to ground floor apartments are provided in Appendix E.

6.12 Specified mechanical ventilation rates are provided in Appendix F. These are based on the following principles:

- > Air tempering providing up to 90 l/s ventilation for all dwellings in noise zones 1 & 2
- > MVHR providing up to 90 l/s ventilation for 2-, 3- and 4-bed dwellings in noise zone 3
- > MVHR providing up to 60 l/s ventilation for 1-bed dwellings in noise zone 3
- > MVHR providing up to 90 l/s ventilation for 3- and 4-bed dwellings in noise zone 4
- > MVHR providing up to 60 l/s ventilation for 1- and 2-bed dwellings in noise zone 4
- > Ventilation rates split equally between habitable rooms, with supply grilles provided to habitable zones only.

7. CONCLUSION

- 7.1** The purpose of this report is to demonstrate compliance with Condition 29 (planning reference HGY/2022/1833) and Part O (2021) of the Building Regulations, for Phase 1A of the St Ann's New Neighbourhood in the London Borough of Haringey.
- 7.2** The performance of dwellings and communal corridors has been assessed against the Chartered Institution of Building Services Engineers (CIBSE) guidance TM59 Design methodology for the assessment of overheating risk in homes (2017) and Approved Document O Overheating (2021) (AD(O)).
- 7.3** A sample of dwellings and communal corridors has been selected for the dynamic overheating assessment based on design characteristics that establish them as representative of the overall proposed scheme. This selection of dwellings includes consideration of varying floors, orientations and with different levels of external noise constraints. Additional units have been tested since the previous version of this report, taking the total sample size to 8% of dwellings within Phase 1A.
- 7.4** The following passive mitigation measures have been explored and incorporated as far as practicable to avoid the need for active cooling, following the London Plan cooling hierarchy:
- > Reduce amount of heat entering the building:
 - > Reduced areas of fixed glazing
 - > Introduction of solar control glazing
 - > External shading from balconies and window reveals
 - > Minimise internal heat generation:
 - > Efficient building services design to reduce heat distribution losses
 - > Manage the heat:
 - > Thermal mass from concrete frame
 - > Passive ventilation:
 - > Natural ventilation through openable windows
 - > Increased areas of window opening
 - > Mechanical ventilation:

- > MVHR system providing background ventilation rates that meet or exceed minimum Part F levels

- 7.5** Air tempering (also known as ‘peak lopping’) will be provided as a bolt-on to the MVHR system for only those dwellings which cannot rely on openable windows during sleeping hours, due to external noise constraints (based on the noise limits set within AD(O)). Passive overheating mitigation measures have been prioritised first, before the air tempering (also known as peak lopping) system, and this report demonstrates that the dwellings would pass the CIBSE TM59 and AD(O) criteria using passive means alone if there were no usability issues limiting window openability.
- 7.6** All dwellings tested demonstrate compliance with the CIBSE TM59 and AD(O) overheating assessment criteria under the mandatory weather file (DSY1 for the 2020s, high emissions, 50% percentile scenario). The results are based on key design features and passive mitigation measures.

APPENDICES

Appendix A

Assessed Dwellings and Communal Corridors

Appendix B

Design Modelling Inputs

Appendix C

Results of More Extreme Weather Scenarios

Appendix D

Glazing G-value Mark-up

Appendix E

Ground Floor Security Grille Requirements

Appendix F

Ventilation Strategy Schedule (JSW, August 2024)

Appendix G

Block C1 Vulnerable Occupancy Results

Appendix A

Assessed Dwellings and Communal Corridors

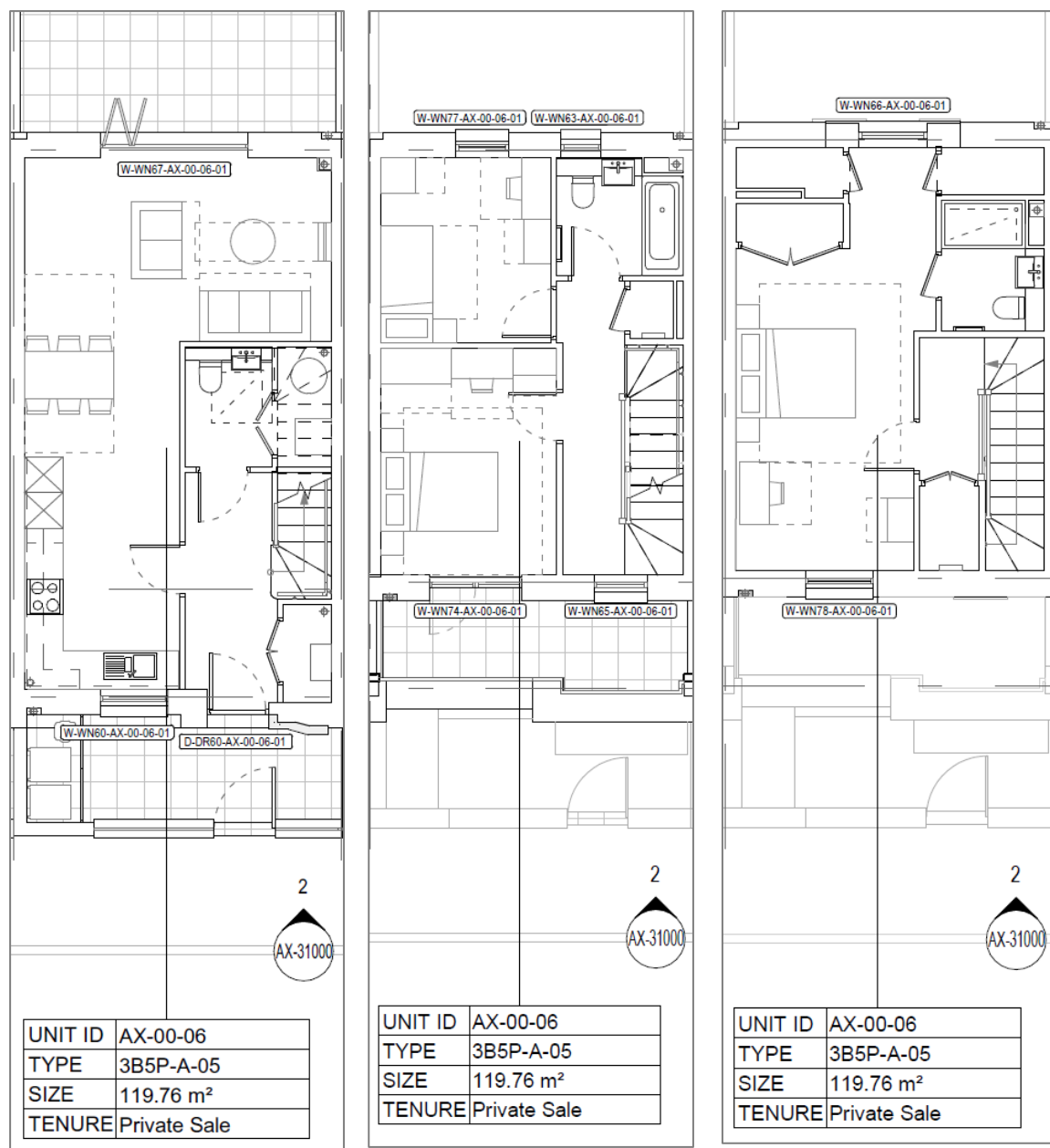


Figure A.1: House AX-00-06, ground, 1st and 2nd floor plans (KCA, September 2023)



Figure A.2: House BX-00-02, ground, 1st and 2nd floor plans (KCA, September 2023)

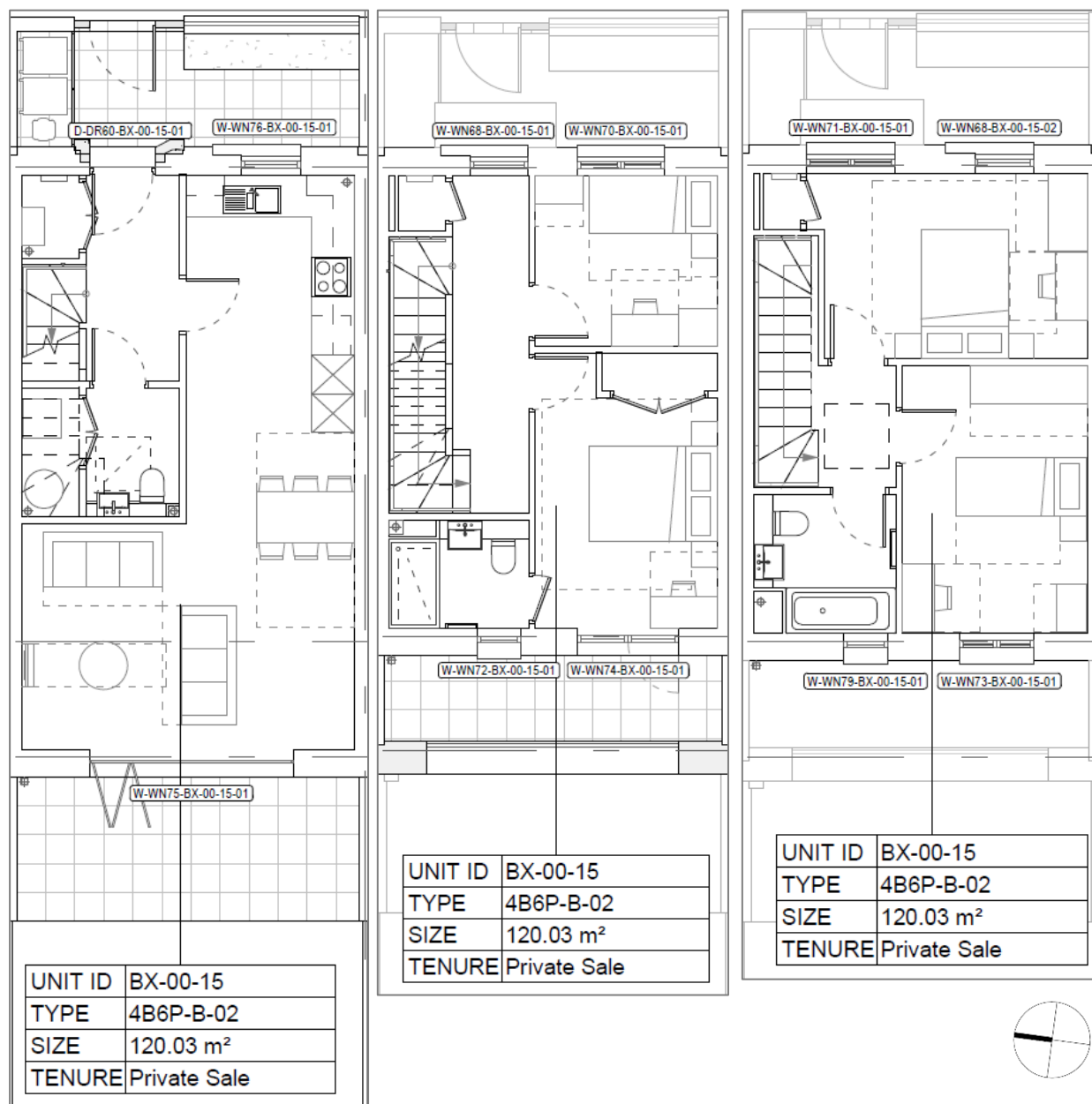


Figure A.3: House BX-00-15, ground, 1st and 2nd floor plans (KCA, September 2023)

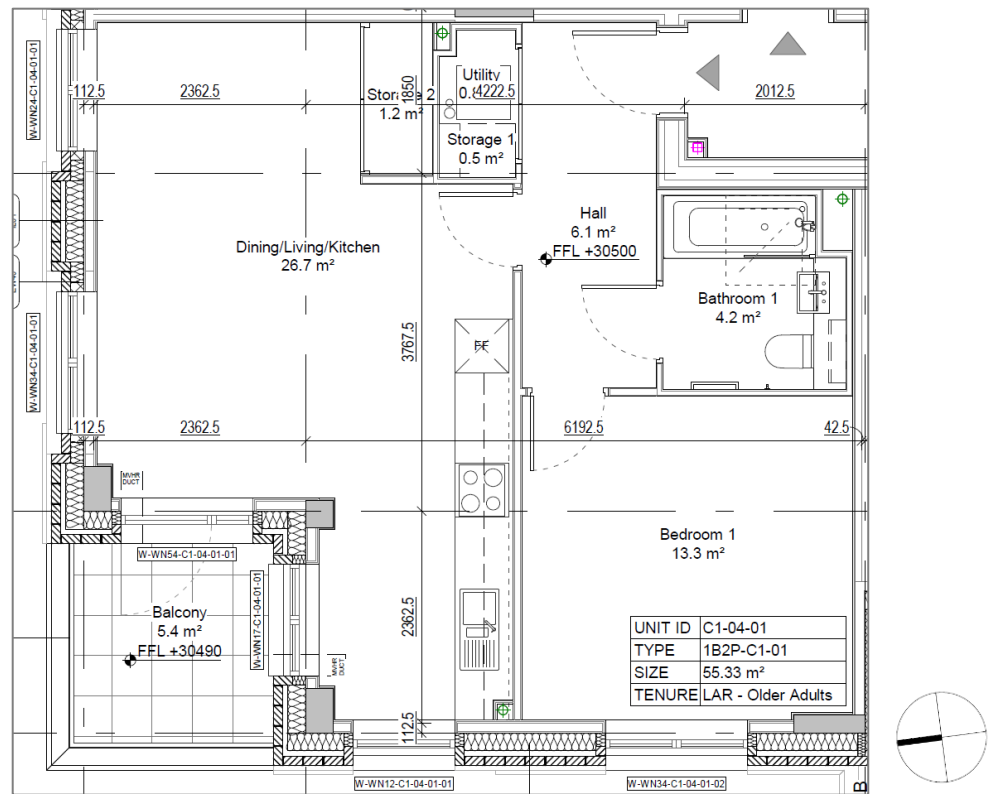


Figure A.4: Apartment C1-04-01 4th floor plan (KCA, September 2023)

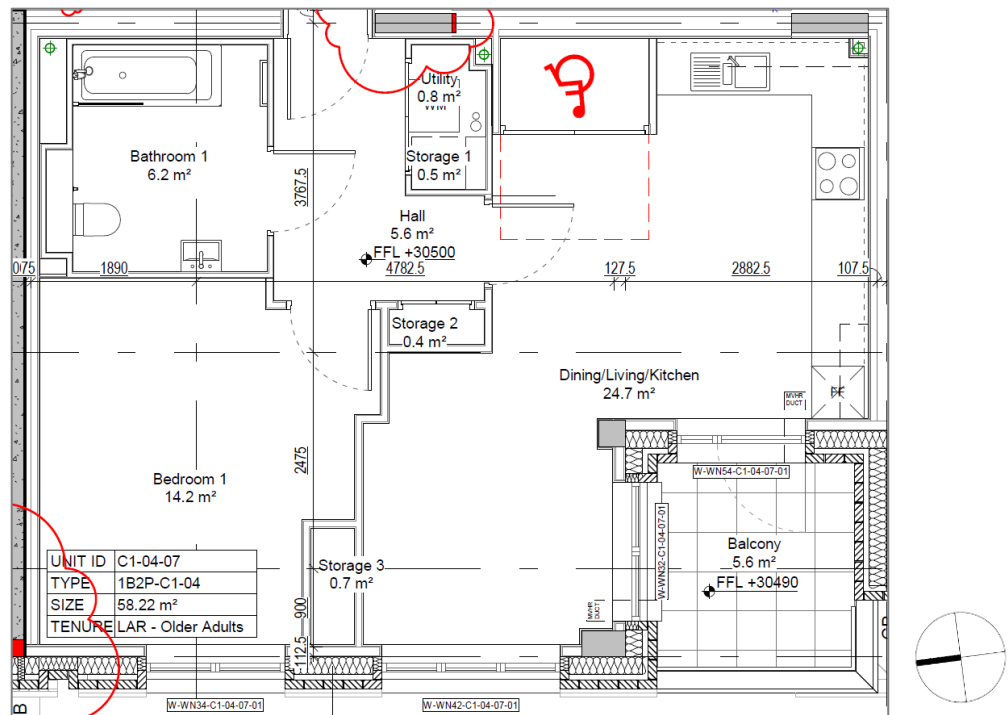


Figure A.5: Apartment C1-04-07 4th floor plan (KCA, September 2023)

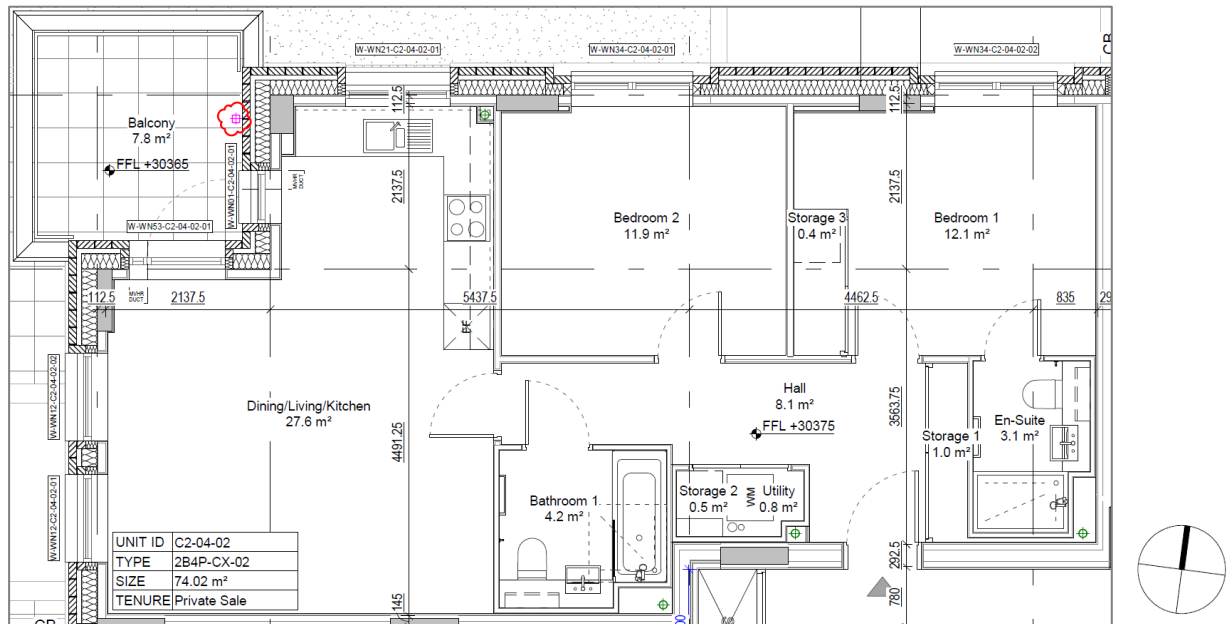


Figure A.6: Apartment C2-04-02 4th floor plan (KCA, September 2023)

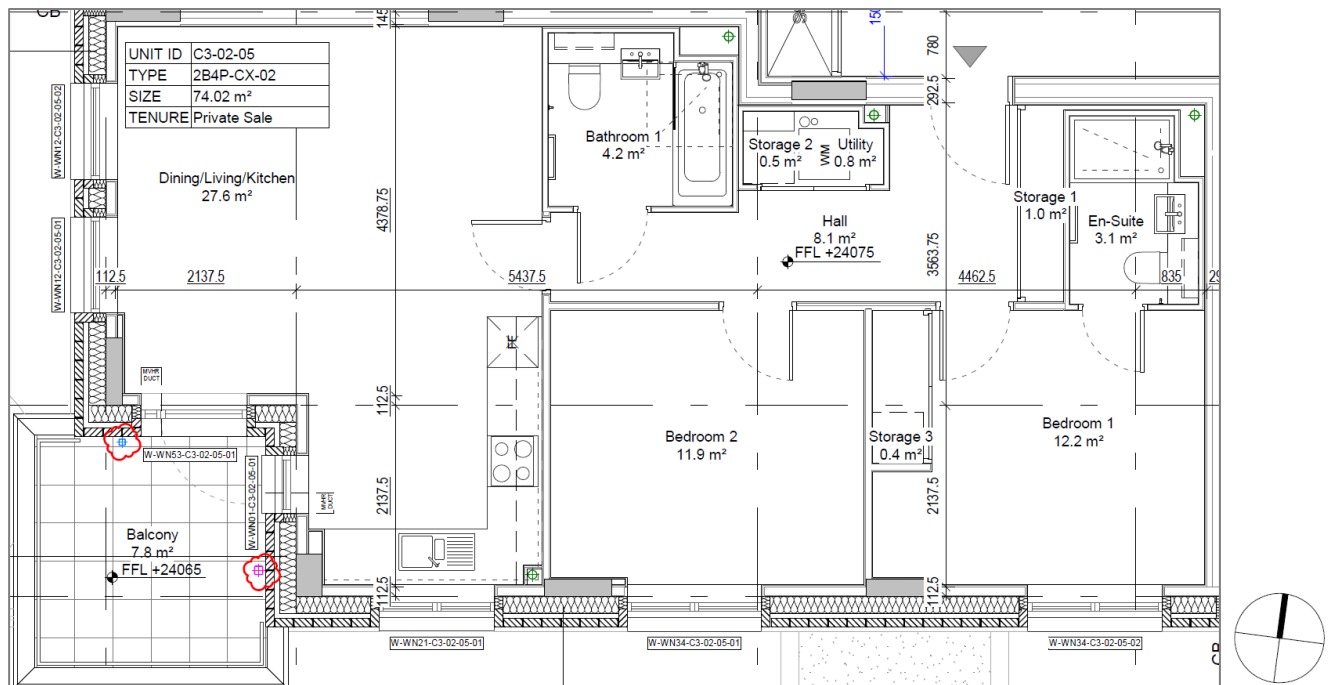


Figure A.7: Apartment C3-02-05 2nd floor plan (KCA, September 2023)

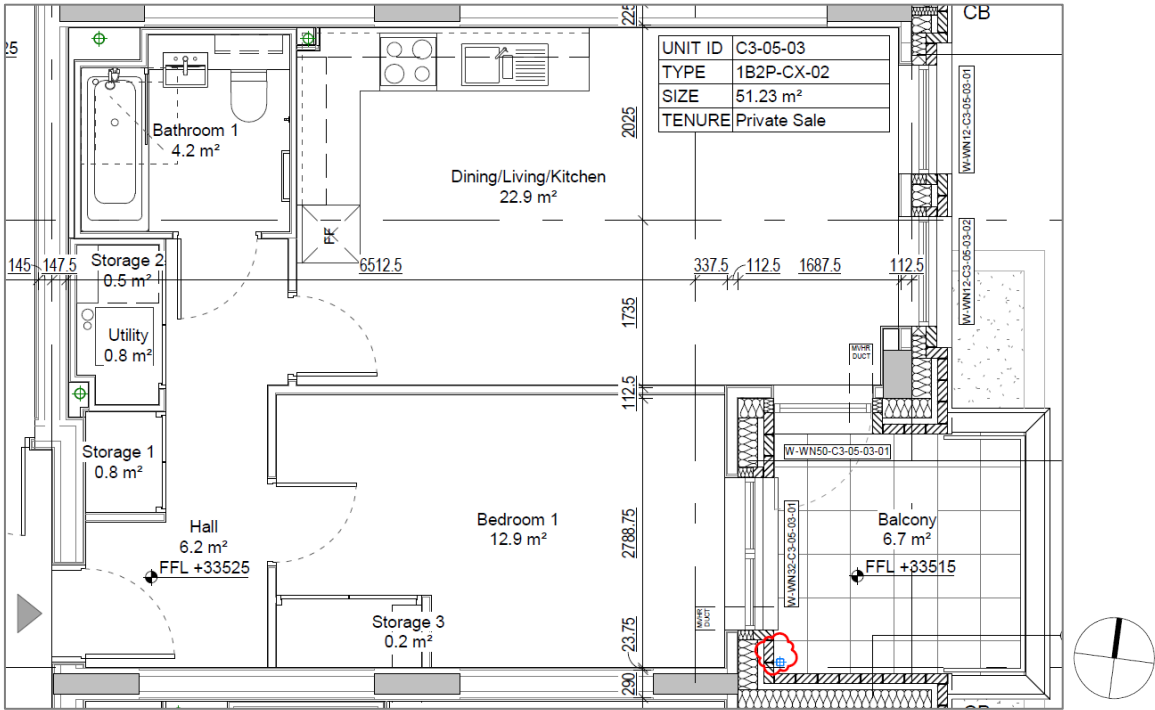


Figure A.8: Apartment C3-05-03 5th floor plan (KCA, September 2023)

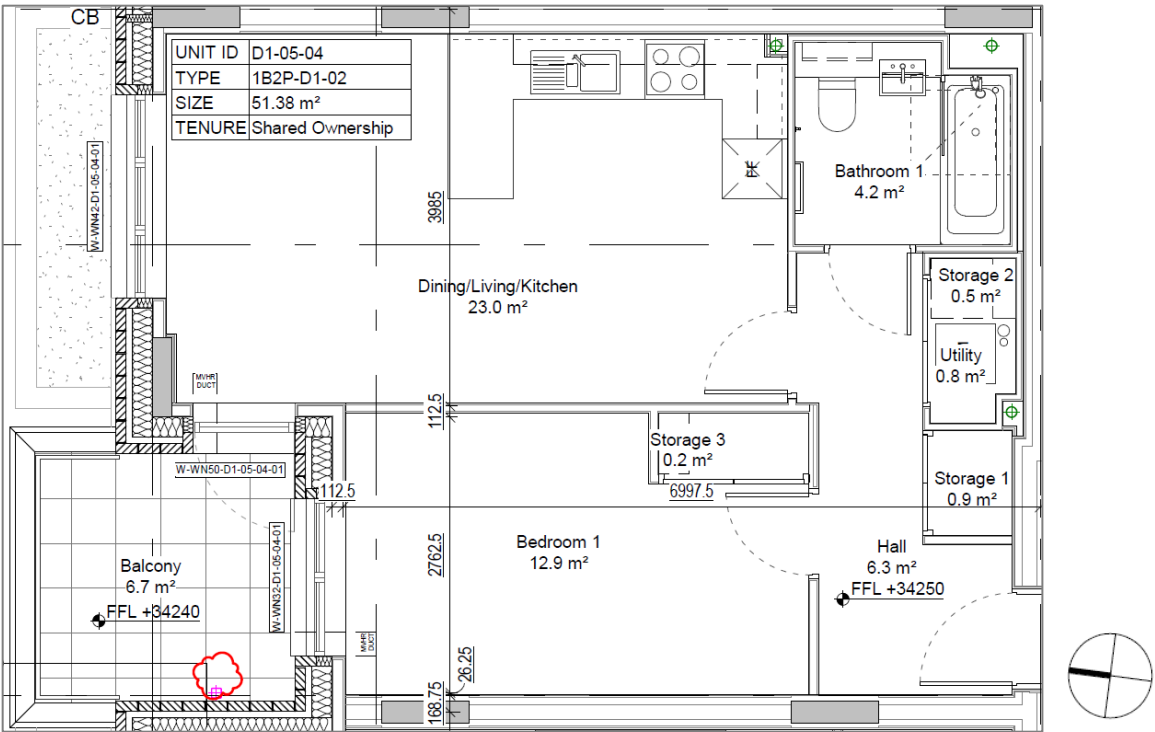


Figure A.9: Apartment D1-05-04 5th floor plan (KCA, September 2023)

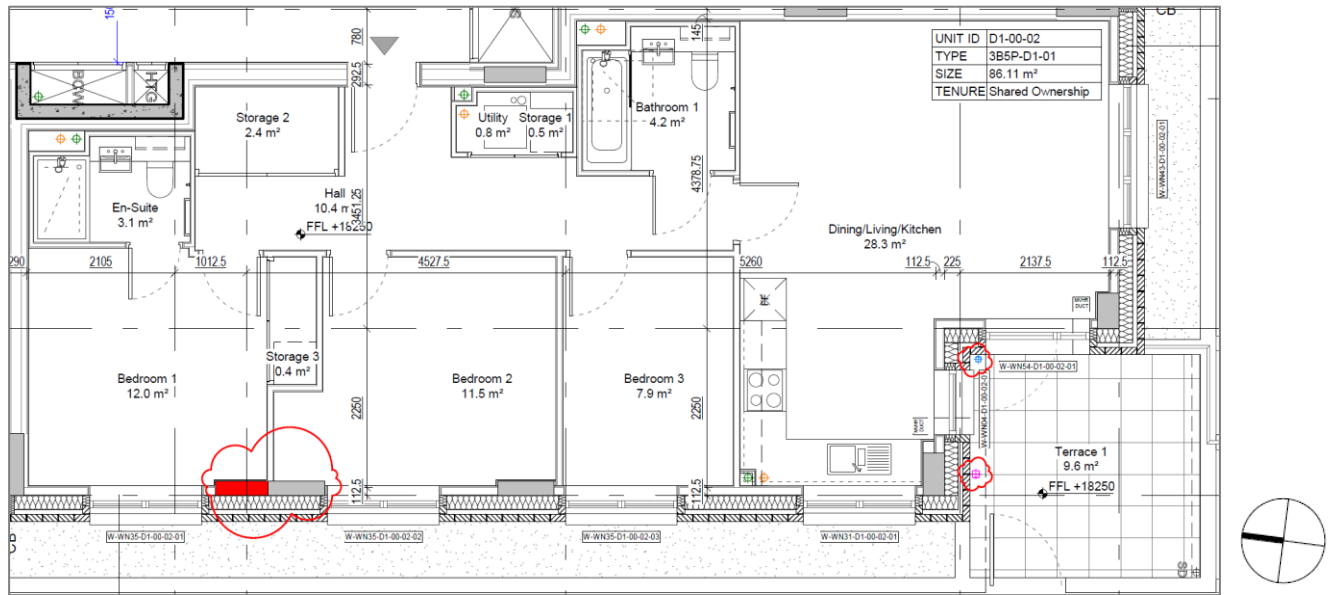


Figure A.10: Apartment D1-00-02 ground floor plan (KCA, September 2023)

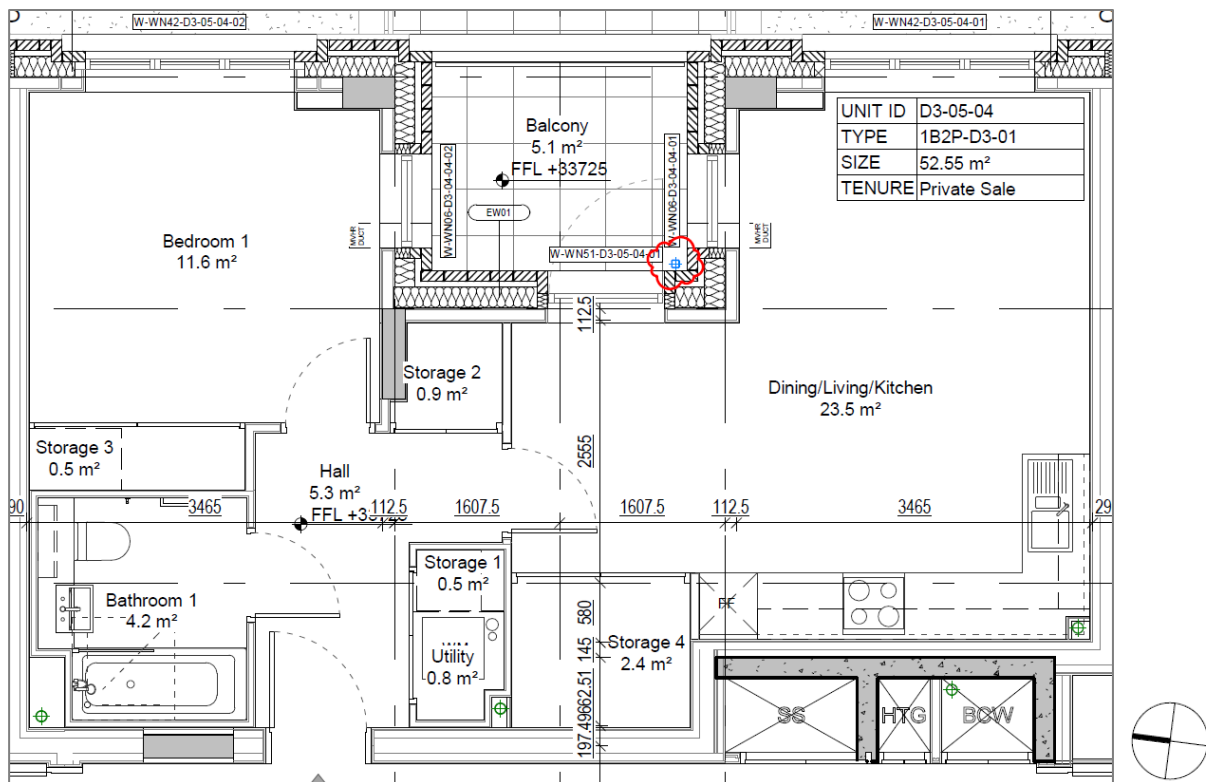


Figure A.11: Apartment D3-05-04 5th floor plan (KCA, September 2023)

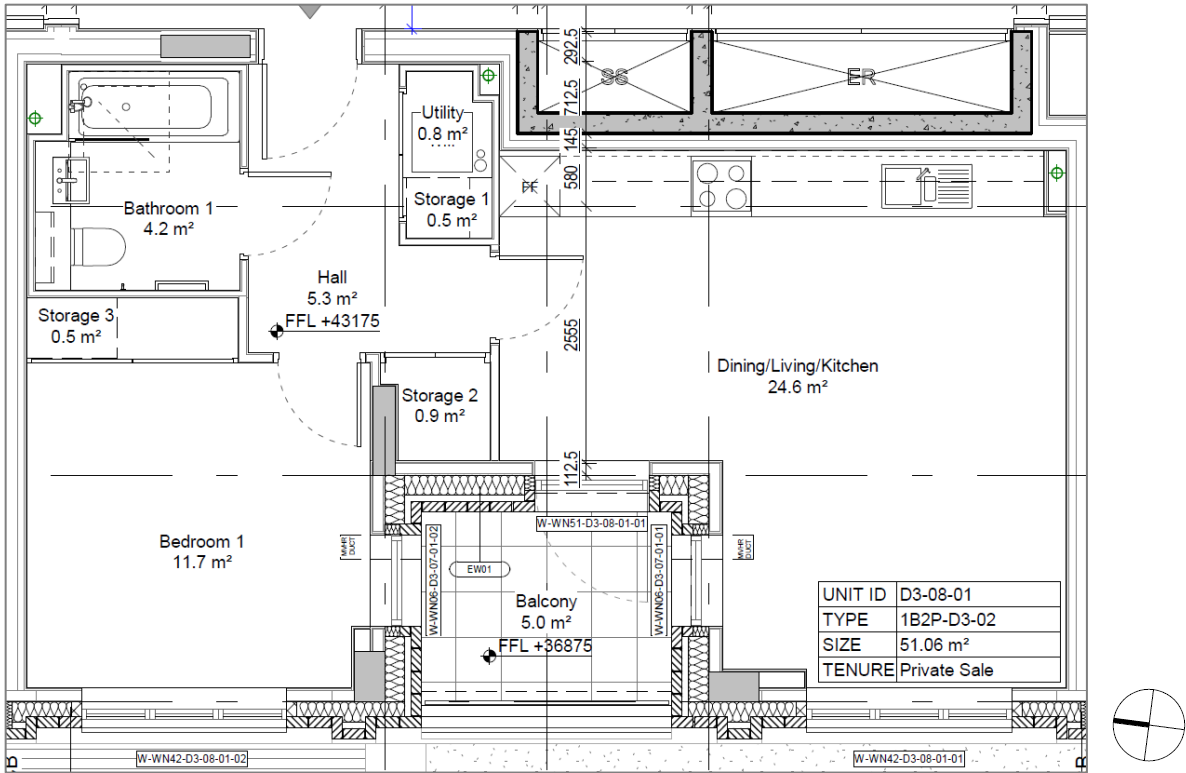


Figure A.12: Apartment D3-08-01 8th floor plan (KCA, September 2023)

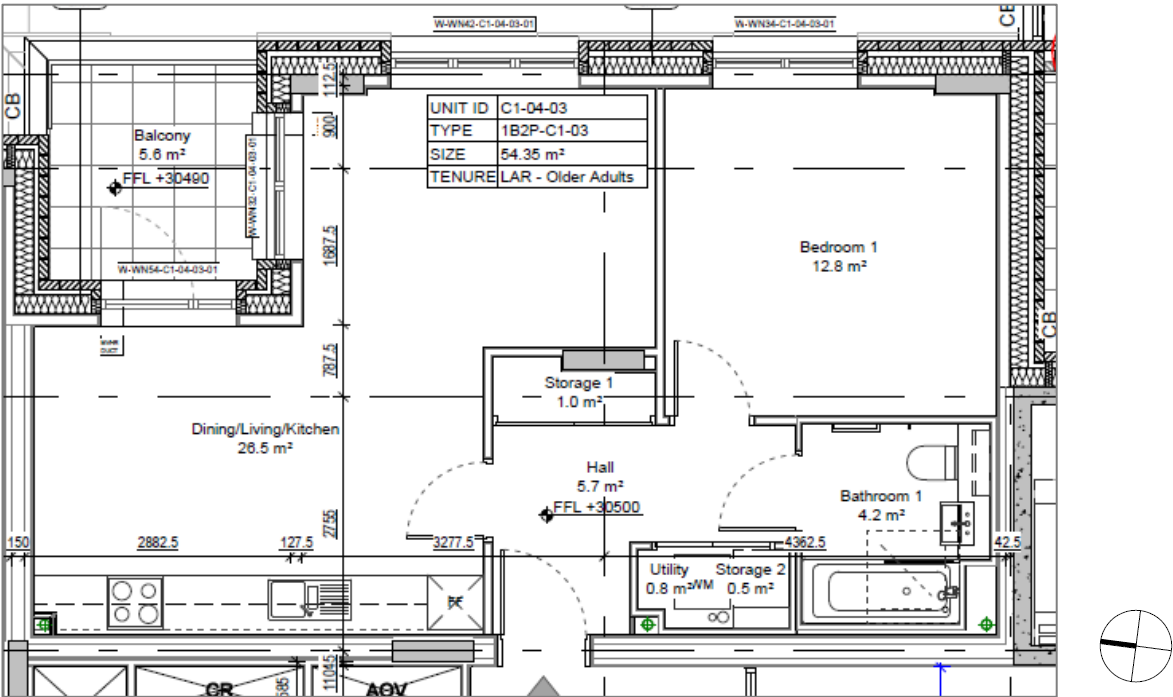


Figure A.13: Apartment C1-04-03 4th floor plan (KCA, September 2023)

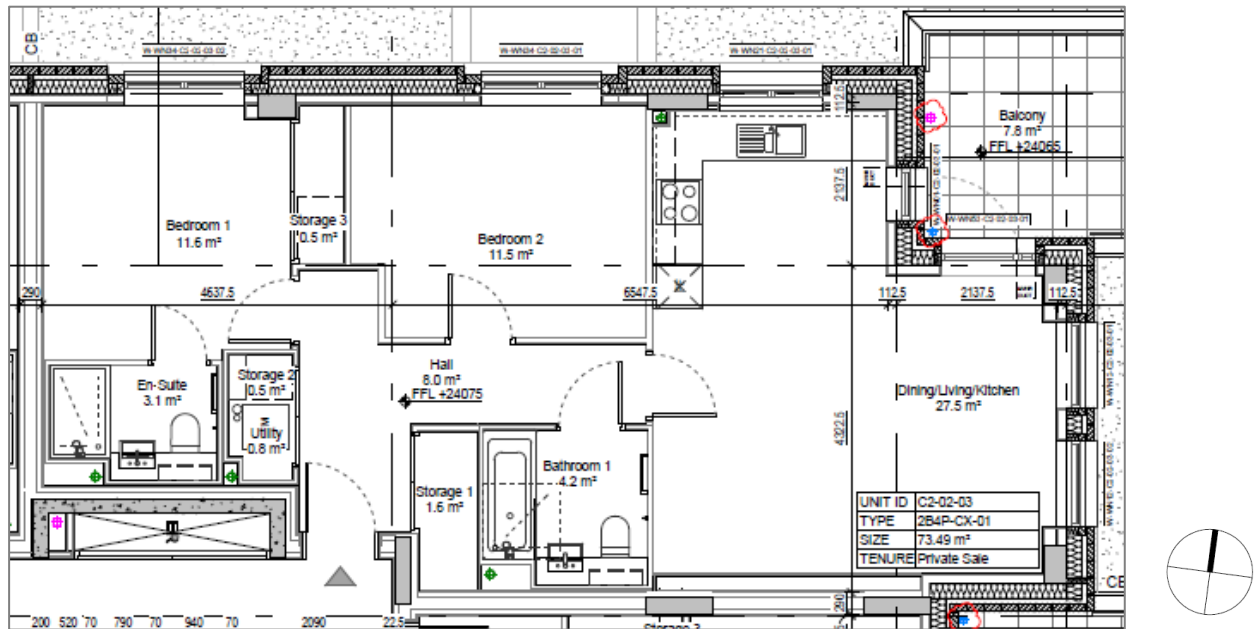


Figure A.14: Apartment C2-02-03 2nd floor plan (KCA, September 2023)

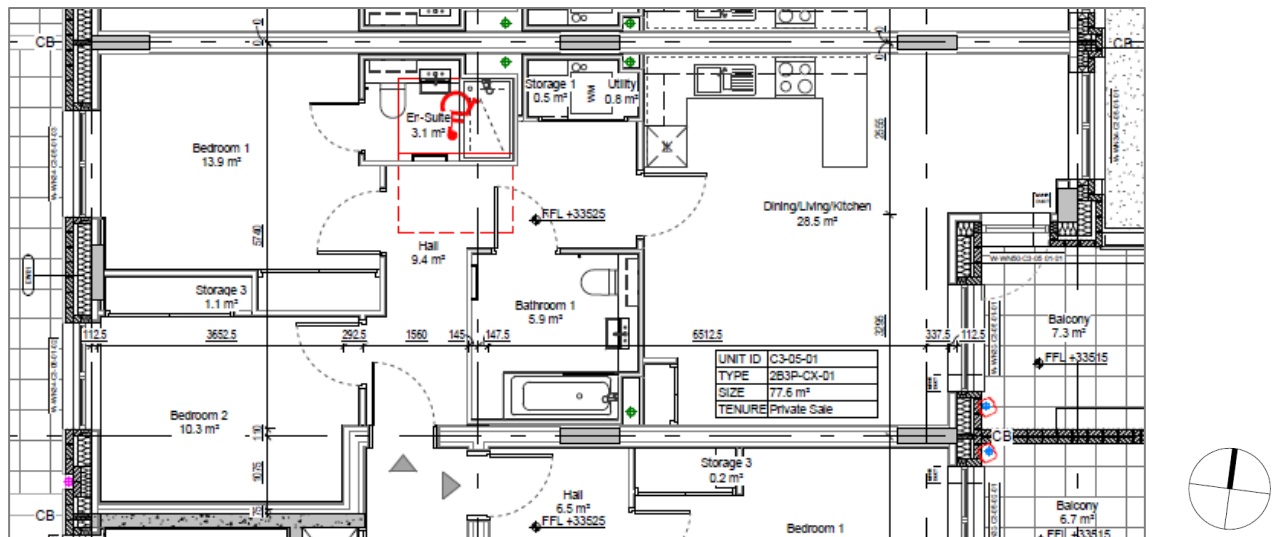


Figure A.15: Apartment C3-05-01 5th floor plan (KCA, September 2023)

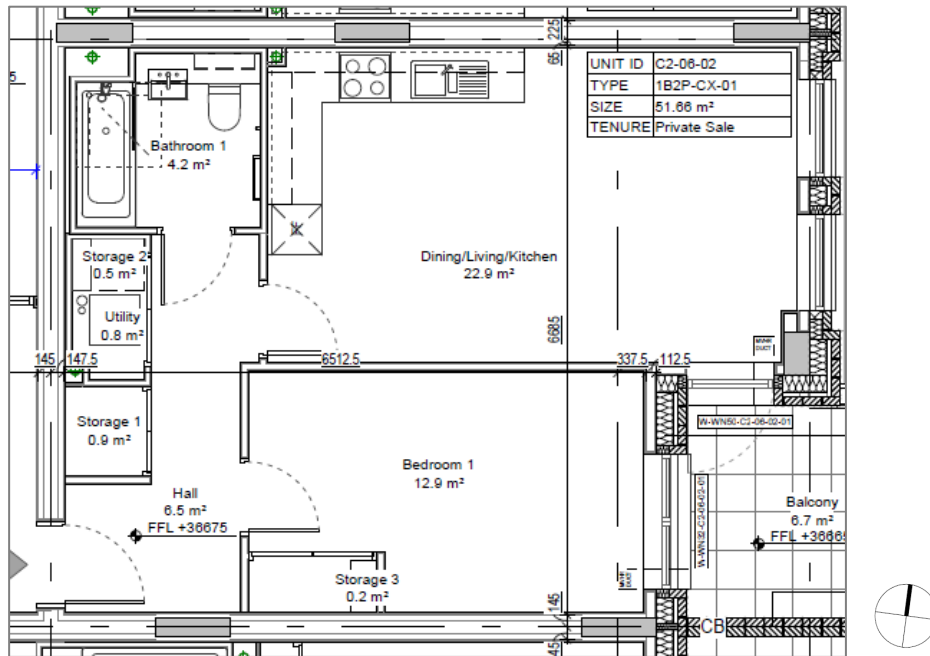


Figure A.16: Apartment C3-06-02 6th floor plan (KCA, September 2023)

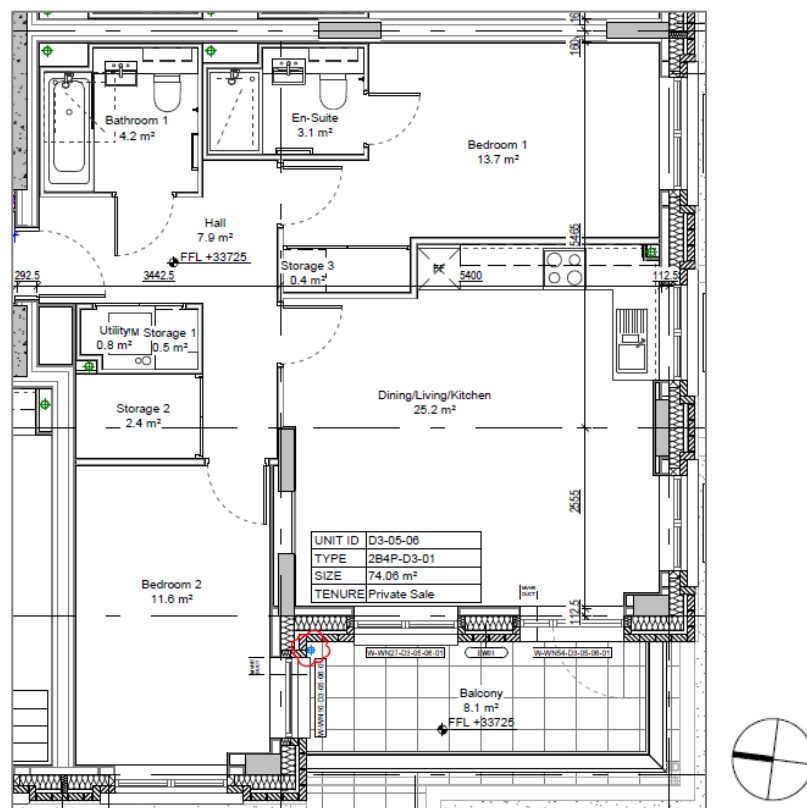


Figure A.17: Apartment D3-05-06 5th floor plan (KCA, September 2023)

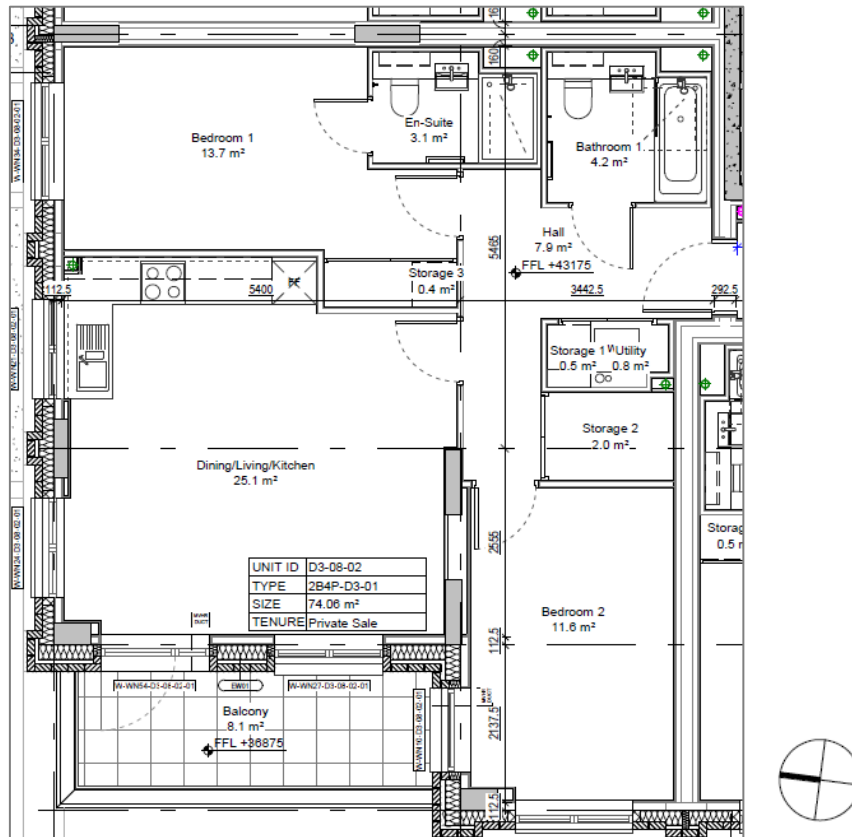


Figure A.18: Apartment D3-08-02 8th floor plan (KCA, September 2023)

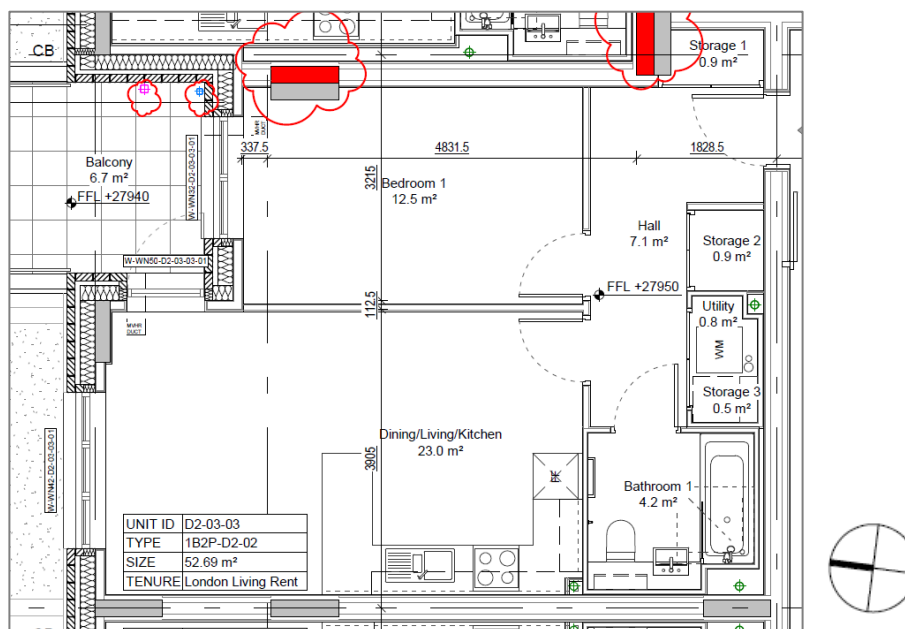


Figure A.19: Apartment D2-03-03 3rd floor plan (KCA, September 2023)



44

Appendix B

Design Modelling Inputs

The following modelling inputs have been included in the baseline dynamic thermal simulation.

Table B.1: Baseline dynamic thermal modelling design assumptions

Data Input			Discussion
Weather data	Location	CIBSE London Weather Centre Design Summer Years (DSYs) for 2020s, high emissions, 50% percentile scenario	<i>Industry-standard CIBSE weather data file requested for the location by London Borough of Haringey</i>
Building Fabric Construction details	External walls	0.15 W/m ² K Flats: SFS construction with RC frame Houses: Traditional brick & block	<i>As per the Energy Statement (Hodkinson Consultancy, November 2023)</i>
	Roofs	0.10 W/m ² K	<i>As per the Energy Statement (Hodkinson Consultancy, November 2023)</i>
	Ground floor	0.13 W/m ² K	<i>As per the Energy Statement (Hodkinson Consultancy, November 2023)</i>
	Ceilings/floors	Assumed to be adiabatic between adjacent floors	<i>Concrete slabs in apartment blocks will add to the thermal capacity of the building When dwelling units above / below heat loss is assumed to be zero</i>
	Party walls between units and houses	Assumed to be adiabatic between adjacent dwellings	<i>Walls adjacent to other units are assumed to be lightweight partitions Adjacent units have been included in the dynamic simulation calculations</i>
	Partitions within units	Plasterboard partitions	<i>Walls within units are assumed to be lightweight partitions</i>
	Internal doors	0.90 m width	<i>As per floor plans (Karakusevic Carson Architects, November 2023)</i>
	Windows and glazed doors	U value 0.80 W/m ² K	<i>As per the Energy Statement (Hodkinson Consultancy, November 2023)</i>
Windows	Reveal depth	External reveal: 185 mm	<i>As per floor plans (Karakusevic Carson Architects, November 2023)</i>
	Sill / transom height	1.1 m	<i>In line with Part O requirements</i>

Data Input			Discussion
	Opening type	Windows: Inward opening to 90° Glazed doors: Outward opening to 90°	<i>Confirmed by Karakusevic Carson Architects (July 2023) Opening casements as per elevation drawings (Karakusevic Carson Architects, November 2023)</i>
	Discharge Coefficient	Discharge coefficients for openable windows (as calculated for the equivalent area) vary between 0.53 - 0.55 for fully openable windows and between 0.11 - 0.43 for those restricted due to external noise constraints	<i>Calculated from window dimensions as per elevation drawings (Karakusevic Carson Architects, November 2023) using the BB101 discharge coefficient calculator stated within Approved Document O (2021)</i>
Infiltration	Air Tightness	3.0 m ³ /hr-m ² @ 50 Pa for houses 2.5 m ³ /hr-m ² @ 50 Pa for apartments	<i>As per the Energy Statement (Hodkinson Consultancy, November 2023)</i>

The following occupancy schedules and internal gains assumptions have been used, in accordance with CIBSE TM59 guidance.

Table B.2: Occupancy and equipment gains for dwellings (CIBSE TM59)

Unit/room type	Occupancy	Equipment Load
1-bedroom apartment: living room/kitchen	1 person from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 450 W from 6 pm to 8 pm 200 W from 8 pm to 10 pm 110 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 85 W for the rest of the day
2-bedroom apartment: living room/kitchen	2 people from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 450 W from 6 pm to 8 pm 200 W from 8 pm to 10 pm 110 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 85 W for the rest of the day
3-bedroom apartment: living room/kitchen	3 people from 9 am to 10 pm; room is unoccupied for the rest of the day	Peak load of 450 W from 6 pm to 8 pm 200W from 8 pm to 10 pm 110 W from 9 am to 6 pm and from 10 pm to 12 pm Base load of 85 W for the rest of the day
Double bedroom	2 people at 70% gains from 11 pm to 8 am, 2 people at full gains from 8 am to 9 am and from 10 pm to 11 pm, 1 person at full gain in the bedroom from 9 am to 10 pm	Peak load of 80 W from 8 am to 11 pm Base load of 10 W during the sleeping hours
Single bedroom	1 person at 70% gains from 11 pm to 8 am, 1 person at full gains from 8 am to 11 pm	Peak load of 80 W from 8 am to 11 pm Base load of 10 W during sleeping hours
Utility cupboard	N/A	34 W on 24/7 as confirmed by DDS (February 2025)

Corridors

The same building fabric details and glazing properties used in the modelling of the selected homes (Table B.1) were used in the modelling of the corridors. The baseline assumptions were based on information received by JS Wright (October 2023) and updated heat loss calculations provided by JS Wright (October 2024) and involve:

- > Flow and return temperatures of 55°C and 30°C respectively;
- > 50 mm pipe insulation (Kingspan Phenolic FM) with maximum thermal conductivity of 0.0259W/mK;
- > The corridor will utilise an AVO ventilation system which will be capable of providing 1 ach;
- > LTHW heat gains used in the assessment were provided by JS Wright (October 2024):

Project	St Ann's - Block C2 & C3 Level 06 Rev 1					Engineer	TH				
System	LTHW Pipework Heatlosses					Date	17.10.24				



Service	Pipe Size	Insulation Thickness	Heatloss Flow 55 Deg C W/m	Heatloss Return 30 Deg C W/m	Flow Length (m)	10% Fittings Flow (m)	Return Length (m)	10% Fittings Return (m)	Flow Heatloss (W)	Return Heatloss (W)	Total (Kw)
LTHW	15										0.22
	20	50	3.36	0.91	38	41.8	38	41.8	140.45	38.04	
	25	50	3.76	1.02	7	7.7	7	7.7	28.95	7.85	
	32	50	4.25	1.15	0	0	0	0	0.00	0.00	
	40	50	4.58	1.24	0	0	0	0	0.00	0.00	
	50	50	5.22	1.41	0	0	0	0	0.00	0.00	
	65	50	6.05	1.64	0	0	0	0	0.00	0.00	

Based on Kingspan Kooltherm 50mm Insulation (Ambient Temperature 20°C)

Annual Calculation

Heating System	Kw	Hours/Day	Days	
LTHW	0.22	24	365	1885.96 Kw/h

Project	St Ann's - Block D3 Level 08 Rev 1					Engineer	TH				
System	LTHW Pipework Heatlosses					Date	17.10.24				



Service	Pipe Size	Insulation Thickness	Heatloss Flow 55 Deg C W/m	Heatloss Return 30 Deg C W/m	Flow Length (m)	10% Fittings Flow (m)	Return Length (m)	10% Fittings Return (m)	Flow Heatloss (W)	Return Heatloss (W)	Total (Kw)
LTHW	15										0.14
	20	50	3.36	0.91	18	19.8	18	19.8	66.53	18.02	
	25	50	3.76	1.02	10	11	10	11	41.36	11.22	
	32	50	4.25	1.15	0	0	0	0	0.00	0.00	
	40	50	4.58	1.24	0	0	0	0	0.00	0.00	
	50	50	5.22	1.41	0	0	0	0	0.00	0.00	
	65	50	6.05	1.64	0	0	0	0	0.00	0.00	

Based on Kingspan Kooltherm 50mm Insulation (Ambient Temperature 20°C)

Annual Calculation

Heating System	Kw	Hours/Day	Days	
LTHW	0.14	24	365	1201.22 Kw/h

Appendix C

Results of More Extreme Weather Scenarios

The dynamic overheating assessment has also been run under the more extreme DSY 2 and 3 for the 2020s, along with DSY 1 for the 2050s and 2080s as required by Condition 29, with results presented in the following Tables.

TM59 states that compliance should be met for the DSY1 weather scenario. Whilst it is best practice for additional testing to be undertaken using the more extreme weather scenarios, it is acknowledged that meeting the CIBSE compliance criteria for these is particularly challenging.

The overheating mitigation strategy presented within the main body of this report demonstrates the passive measures that have been implemented to reduce the risk of overheating as far as practicable. In the future, residents could use further adaptation measures to combat any additional overheating risk such as the use of fans and internal reflective blinds. If these measures are not sufficient to mitigate additional overheating caused by future climate change, the dwelling MVHR systems could be upgraded to provide air tempering.

Previous versions of this report presented results of these more extreme weather scenarios using the same strategy as presented within this report for the mandatory weather files. Following comments from London Borough of Haringey and also Peabody (via Max Fordham), the following tables C.1 to C.4 have been updated to present the results with the following measures added:

- > Internal blinds with high (80%) reflectivity; and
- > Air tempering (also known as peak lopping) cooling bolt-on to the MVHR with increased cooling capacity of up to 3.39kW.

Table C.1: Dwelling overheating results for DSY2 2020s – TM59

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.1	4	Pass
	SINGLEBED	0.0	1	Pass
	DOUBLEBED	0.2	18	Pass
02 B 00 02 0F 02 B 00 02 1F	LKD	0.4	N/A	Pass
	DOUBLEBED	0.1	13	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
02 B 00 02 2F	SINGLEBED	0.0	6	Pass
	DOUBLEBED	0.4	15	Pass
	SINGLEBED	0.3	13	Pass
03 B 00 15 0F 03 B 00 15 1F 03 B 00 15 2F	LKD	0.4	N/A	Pass
	DOUBLEBED	0.2	17	Pass
	SINGLEBED	0.0	7	Pass
	DOUBLEBED	0.4	17	Pass
	SINGLEBED	0.3	16	Pass
04 C1 04 01	BEDROOM	0.1	3	Pass
	LKD	0.3	N/A	Pass
05 C1 04 07	BEDROOM1	0.0	1	Pass
	LKD	0.0	N/A	Pass
06 C2 04 02	BED1	0.1	9	Pass
	BED2	0.1	10	Pass
	LKD3	0.9	N/A	Pass
07 C3 02 05	BEDROOM1	0.0	2	Pass
	BEDROOM2	0.0	2	Pass
	LKD	0.0	N/A	Pass
08 C3 05 03	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
09 D1 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
10 D1 00 02	BED1	0.3	27	Pass
	BED2	0.4	28	Pass
	LKD	1.2	N/A	Pass
	SINGLEBED3	0.5	27	Pass
11 D3 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
12 D3 08 01	BED1	0.0	3	Pass
	LKD	0.0	N/A	Pass
13 C1 04 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
14 C2 02 03	BEDROOM1	0.0	2	Pass
	BEDROOM2	0.0	3	Pass
	LKD	0.2	N/A	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
15 C3 05 01	BEDROOM1	0.1	8	Pass
	BEDROOM2	0.1	8	Pass
	LKD	0.0	N/A	Pass
16 C3 06 021	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
17 D3 05 06	BEDROOM1	0.0	0	Pass
	BEDROOM2	0.0	0	Pass
	LKD	1.3	N/A	Pass
18 D3 08 02	BEDROOM1	0.1	17	Pass
	BEDROOM2	0.5	26	Pass
	LKD	1.1	N/A	Pass
19 D2 03 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
20 D2 01 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass

Table C.2: Dwelling overheating results for DSY3 2020s – TM59

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	0	Pass
	SINGLEBED	0.0	0	Pass
	DOUBLEBED	0.0	0	Pass
02 B 00 02 0F 02 B 00 02 1F 02 B 00 02 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	3	Pass
	SINGLEBED	0.0	2	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
	DOUBLEBED	0.0	6	Pass
	SINGLEBED	0.0	0	Pass
03 B 00 15 0F 03 B 00 15 1F 03 B 00 15 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	5	Pass
	SINGLEBED	0.0	2	Pass
	DOUBLEBED	0.0	7	Pass
	SINGLEBED	0.0	1	Pass
04 C1 04 01	DOUBLEBED	0.0	0	Pass
	LKD	0.0	N/A	Pass
05 C1 04 07	DOUBLEBED	0.0	0	Pass
	LKD	0.0	N/A	Pass
06 C2 04 02	BED1	0.0	1	Pass
	BED2	0.0	2	Pass
	LKD3	0.0	N/A	Pass
07 C3 02 05	BED1	0.0	0	Pass
	BED2	0.0	0	Pass
	LKD	0.0	N/A	Pass
08 C3 05 03	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
09 D1 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
10 D1 00 02	BED1	0.0	7	Pass
	BED2	0.0	7	Pass
	LKD	0.5	N/A	Pass
	SINGLEBED3	0.0	8	Pass
11 D3 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
12 D3 08 01	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
13 C1 04 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
14 C2 02 03	BEDROOM1	0.0	0	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
	BEDROOM2	0.0	0	Pass
	LKD	0.0	N/A	Pass
15 C3 05 01	BEDROOM1	0.0	0	Pass
	BEDROOM2	0.0	0	Pass
	LKD	0.0	N/A	Pass
16 C3 06 021	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
17 D3 05 06	BEDROOM1	0.0	0	Pass
	BEDROOM2	0.0	0	Pass
	LKD	1.3	N/A	Pass
18 D3 08 02	BEDROOM1	0.0	13	Pass
	BEDROOM2	0.2	19	Pass
	LKD	1.2	N/A	Pass
19 D2 03 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
20 D2 01 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass

Table C.3: Dwelling overheating results for DSY1 2050s – TM59

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	0	Pass
	SINGLEBED	0.0	0	Pass
	DOUBLEBED	0.0	0	Pass
02 B 00 02 0F 02 B 00 02 1F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	5	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
02 B 00 02 2F	SINGLEBED	0.0	1	Pass
	DOUBLEBED	0.0	5	Pass
	SINGLEBED	0.0	2	Pass
03 B 00 15 0F 03 B 00 15 1F 03 B 00 15 2F	LKD	0.0	N/A	Pass
	DOUBLEBED	0.0	8	Pass
	SINGLEBED	0.0	2	Pass
	DOUBLEBED	0.0	7	Pass
	SINGLEBED	0.0	4	Pass
04 C1 04 01	DOUBLEBED	0.0	0	Pass
	LKD	0.0	N/A	Pass
05 C1 04 07	DOUBLEBED	0.0	0	Pass
	LKD	0.0	N/A	Pass
06 C2 04 02	BED1	0.0	4	Pass
	BED2	0.0	5	Pass
	LKD3	0.0	N/A	Pass
07 C3 02 05	BED1	0.0	0	Pass
	BED2	0.0	0	Pass
	LKD	0.0	N/A	Pass
08 C3 05 03	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
09 D1 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
10 D1 00 02	BED1	0.0	12	Pass
	BED2	0.0	13	Pass
	LKD	0.5	N/A	Pass
	SINGLEBED3	0.0	13	Pass
11 D3 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
12 D3 08 01	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
13 C1 04 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
14 C2 02 03	BEDROOM1	0.0	0	Pass
	BEDROOM2	0.0	0	Pass
	LKD	0.0	N/A	Pass
15 C3 05 01	BEDROOM1	0.0	0	Pass
	BEDROOM2	0.0	0	Pass
	LKD	0.0	N/A	Pass
16 C3 06 021	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
17 D3 05 06	BEDROOM1	0.0	0	Pass
	BEDROOM2	0.0	0	Pass
	LKD	0.8	N/A	Pass
18 D3 08 02	BEDROOM1	0.0	17	Pass
	BEDROOM2	0.3	23	Pass
	LKD	0.8	N/A	Pass
19 D2 03 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
20 D2 01 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass

Table C.4: Dwelling overheating results for DSY1 2080s – TM59

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
01 A 00 06 0F 01 A 00 06 1F 01 A 00 06 2F	LKD	0.1	N/A	Pass
	DOUBLEBED	0.0	42	Fail
	SINGLEBED	0.0	13	Pass
	DOUBLEBED	0.0	71	Fail
02 B 00 02 0F	LKD	0.5	N/A	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
02 B 00 02 1F 02 B 00 02 2F	DOUBLEBED	0.2	53	Fail
	SINGLEBED	0.2	35	Fail
	DOUBLEBED	0.4	57	Fail
	SINGLEBED	0.2	43	Fail
03 B 00 15 0F 03 B 00 15 1F 03 B 00 15 2F	LKD	0.5	N/A	Fail
	DOUBLEBED	0.2	58	Fail
	SINGLEBED	0.2	39	Fail
	DOUBLEBED	0.4	60	Fail
	SINGLEBED	0.2	50	Fail
04 C1 04 01	DOUBLEBED	0.0	12	Pass
	LKD	0.0	N/A	Pass
05 C1 04 07	DOUBLEBED	0.0	12	Pass
	LKD	0.0	N/A	Pass
06 C2 04 02	BED1	0.2	52	Fail
	BED2	0.0	52	Fail
	LKD3	1.3	N/A	Pass
07 C3 02 05	BED1	0.0	14	Pass
	BED2	0.0	16	Pass
	LKD	0.0	N/A	Pass
08 C3 05 03	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
09 D1 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
10 D1 00 02	BED1	0.3	66	Fail
	BED2	0.3	68	Fail
	LKD	1.7	N/A	Pass
	SINGLEBED3	0.3	66	Fail
11 D3 05 04	BED1	0.0	0	Pass
	LKD	0.0	N/A	Pass
12 D3 08 01	BED1	0.0	26	Pass
	LKD	0.0	N/A	Pass
13 C1 04 03	BEDROOM	0.0	0	Pass

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
	LKD	0.0	N/A	Pass
14 C2 02 03	BEDROOM1	0.1	45	Fail
	BEDROOM2	0.2	47	Fail
	LKD	0.8	N/A	Pass
15 C3 05 01	BEDROOM1	0.3	73	Fail
	BEDROOM2	0.3	72	Fail
	LKD	1.1	N/A	Pass
16 C3 06 021	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass
17 D3 05 06	BEDROOM1	0.0	0	Pass
	BEDROOM2	0.0	0	Pass
	LKD	1.5	N/A	Pass
18 D3 08 02	BEDROOM1	0.3	76	Fail
	BEDROOM2	0.7	94	Fail
	LKD	2.2	N/A	Pass
19 D2 03 03	BEDROOM	0.0	0.0	Pass
	LKD	0.0	N/A	Pass
20 D2 01 03	BEDROOM	0.0	0	Pass
	LKD	0.0	N/A	Pass

Corridors

The low heat losses from communal heat distribution pipework ensures that the corridors will maintain an acceptable level of overheating risk for most of the time.

Table C.5: TM59 overheating results for corridors under DSY2 2020s

Zone	TM59 Criterion: ≤ 3 % hours over 28°C	Overall compliance with TM59
	% Hours of overheating	
CORRIDOR1	0.0	Pass
CORRIDOR2	0.0	Pass
CORRIDOR3	0.0	Pass
STAIRCASE	0.0	Pass
CORRIDOR1	1.9	Pass
CORRIDOR2	2.2	Pass
CORRIDOR3	4.9	Fail
STAIRCASE	0.0	Pass

Table C.6: TM59 overheating results for corridors under DSY3 2020s

Zone	TM59 Criterion: ≤ 3 % hours over 28°C	Overall compliance with TM59
	% Hours of overheating	
CORRIDOR1	0.0	Pass
CORRIDOR2	0.0	Pass
CORRIDOR3	0.0	Pass
STAIRCASE	0.0	Pass
CORRIDOR1	1.8	Pass
CORRIDOR2	0.0	Pass
CORRIDOR3	0.0	Pass
STAIRCASE	0.0	Pass

Table C.7: TM59 overheating results for corridors under DSY1 2050s

Zone	TM59 Criterion: ≤ 3 % hours over 28°C	Overall compliance with TM59
	% Hours of overheating	
CORRIDOR1	0.0	Pass

Zone	TM59 Criterion: ≤ 3 % hours over 28°C	Overall compliance with TM59
	% Hours of overheating	
CORRIDOR2	0.0	Pass
CORRIDOR3	0.0	Pass
STAIRCASE	0.0	Pass
CORRIDOR1	2.5	Pass
CORRIDOR2	2.4	Pass
CORRIDOR3	6.0	Fail
STAIRCASE	0.0	Pass

Table C.8: TM59 overheating results for corridors under DSY1 2080s

Zone	TM59 Criterion: ≤ 3 % hours over 28°C	Overall compliance with TM59
	% Hours of overheating	
CORRIDOR1	14.3	Fail
CORRIDOR2	12.9	Fail
CORRIDOR3	12.0	Fail
STAIRCASE	15.7	Fail
CORRIDOR1	6.8	Fail
CORRIDOR2	12.5	Fail
CORRIDOR3	15.5	Fail
STAIRCASE	16.2	Fail

Appendix D

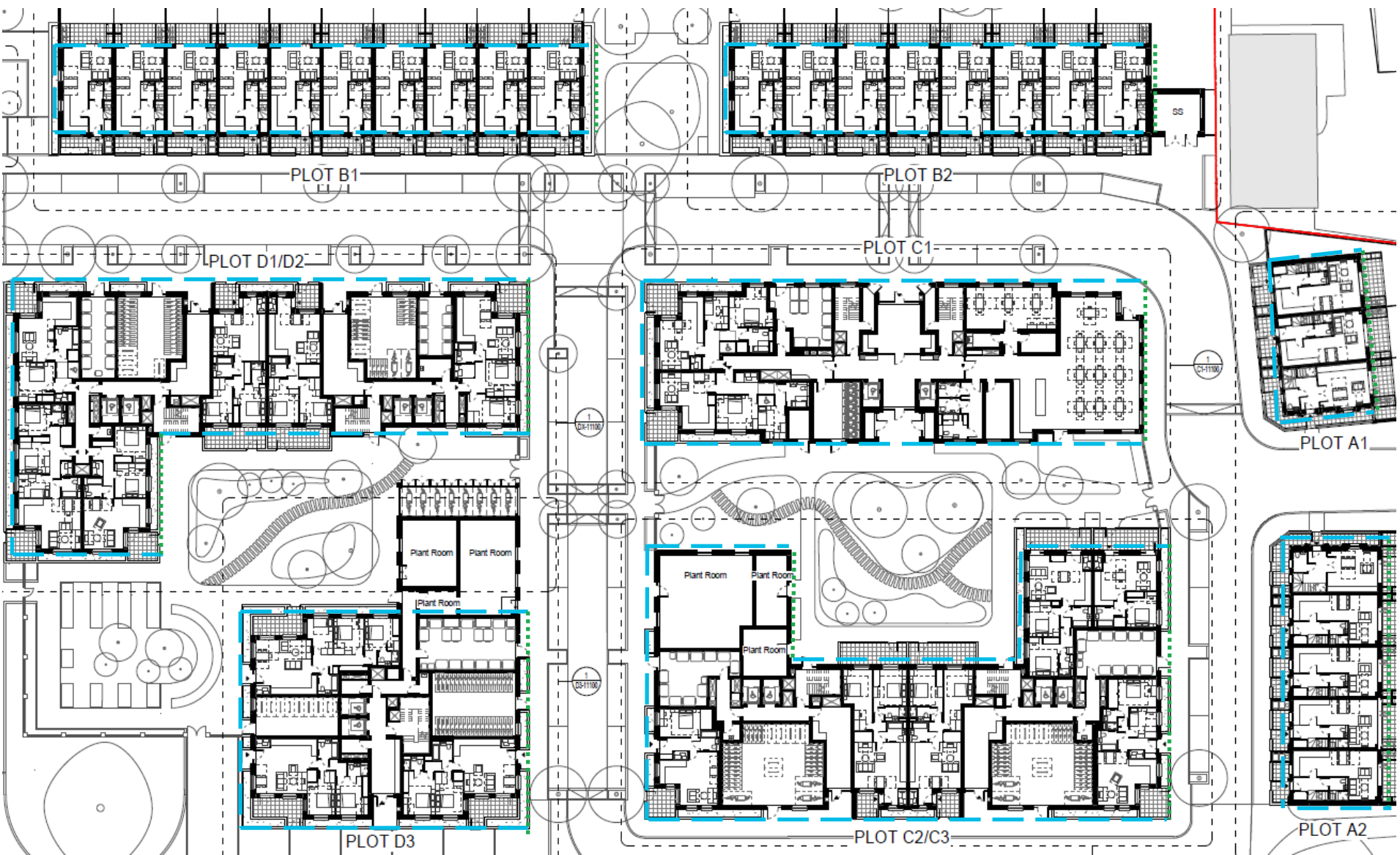
Glazing G-value Mark-up

Key:

— G-value 0.42

--- G-value 0.50

Glazing G-value Mark-up



Appendix E

Ground Floor Security Grille Requirements



St Ann's Phase 1A

Ground Floor Security Grille
Requirements

11/10/23

N15301-KCA-ZZ-ZZ-RP-A-0854-GEN

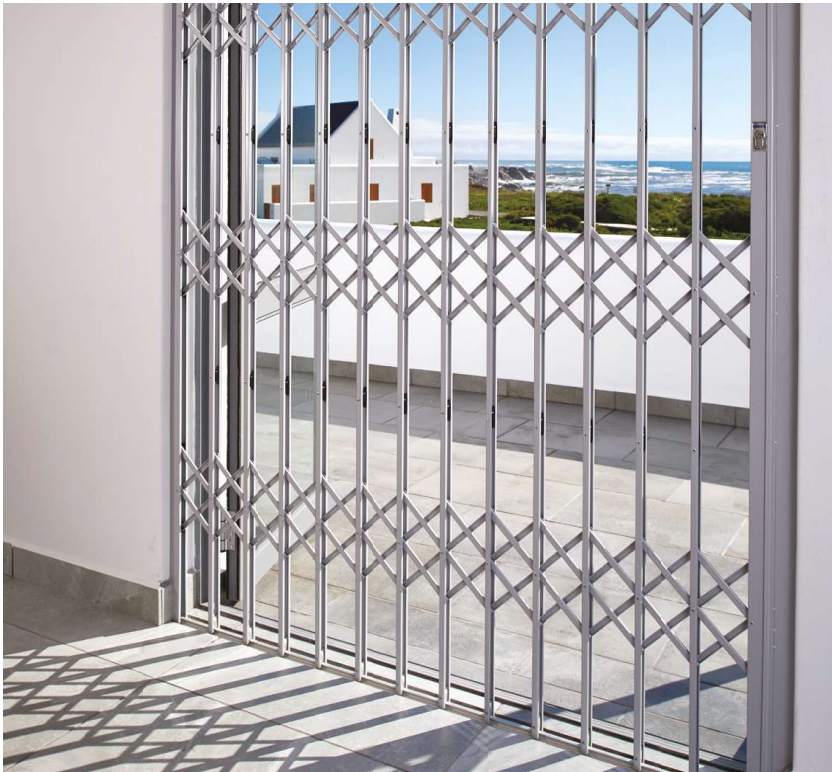
Karakusevic Carson Architects

C
catalyst **Hill**

Ground Floor Homes - SBD Requirements:

Bedroom Windows to be fitted with LPS1175 Level 1 rated security grilles for night-time ventilation

- 17 ground floor homes in total
- 33 ground floor bedrooms in total
- 34 ground floor bedroom windows/doors
- 34 Security shutters required



Building	Tenure	No. of Homes	No. of Bedrooms	1505mm Windows	1280mm Windows	Single Sash Security Shutters	Double Sash Security Shutters	Total Security Shutters
C1	LAR - Older Adults	2	4	4	-	1	3	4
CX	Private Sale	6	10	7	3	1	9	10
D3	Private Sale	3	7	7	-	0	7	7
DX	London Living Rent	2	4	5	-	0	5	5
	Shared Ownership	4	8	8	-	2	6	8
TOTAL	-	17	33	31	3	4	30	34

Security Grilles: Product Info

Trellidor Plus - T900

TRELLIDOR PLUS - T900

The Trellidor Retractable Security range of fully framed, galvanised steel sliding barriers is custom-made for doors, patios, passages, windows, stairways and retail outlet counters. Models differ in terms of strengthening features. The robust double trellis design helps protect homes and commercial buildings from a break-in. These gates are neat, compact and operate smoothly. All models are fitted with a patented Trellidor locking system that locks in multiple places using just one key in a single lock.

All Trellidor security barriers are manufactured at our LPCB ISO audited factory. The manufacturing process includes pre-treatment for enhanced corrosion and UV resistance before undergoing powder coating. This helps to retain the quality finish and increases the lifespan of the barrier, making them suitable for both coastal and inland conditions.

FEATURES AND BENEFITS

- Steel top track with cover
- Purpose designed semi-tubular stainless steel rivets
- Upright nylon wheel holder assembly with aluminium shaft
- Upright assembly with roll-formed steel uprights
- Multiple locking points in all door height ranges with one key point
- Lock cover
- Upright steel sill guide with semi-tubular rivets
- Link closures are joined together with steel spacer tubes and recess bushes
- Reinforced anchor plates at fixings into the wall
- Lattice link assembly at the bottom of the uprights
- Links cross over and connect three upright bars
- Fully framed
- Certified by London-based Loss Prevention Certification Board (LPCB) to Level 1



LPS 1175 : Issue 6
Cert/LPCB ref. 474b

WARRANTY

With the correct maintenance, our products will help keep both corrosion and criminals at bay. Ask your Trellidor Security Consultant about our recommended maintenance regime to ensure the validity of the full warranty.

- | | | |
|--------------------------------|--------------------------|-------------------------|
| • Materials | Coastal - 3 years | Inland - 5 years |
| • Locks & Cylinders | Coastal - 3 years | Inland - 3 years |
| • Electric Locks | Coastal - 1 year | Inland - 1 year |

Trellidor security barriers are only available through authorised Trellidor franchises. Our products are all custom-measured, manufactured and fitted by Trellidor trained and certified technicians.

AVAILABLE COLOURS



All Trellidor products are finished in a state-of-the-art powder coating plant, as such the colours on this brochure WILL differentiate from the actual product colour. Should you have any concerns or would like to see the actual powder coated colour, please speak to your Trellidor consultant who will be able to provide you with a physical sample.

www.trellidor.co.za | www.trellidor.com

Trellidor and The Ultimate Crime Barrier are registered trademarks of Trellidor (Pty) Limited. As a conscientious consumer please remember that given enough time and the right tools, all security barriers can be breached no matter how well they're constructed. As a responsible manufacturer, however, we endeavour to design, engineer, test and install all our products to give our customers the best possible security barriers the technology at the time allows.

Rev. 04 - 02/2018

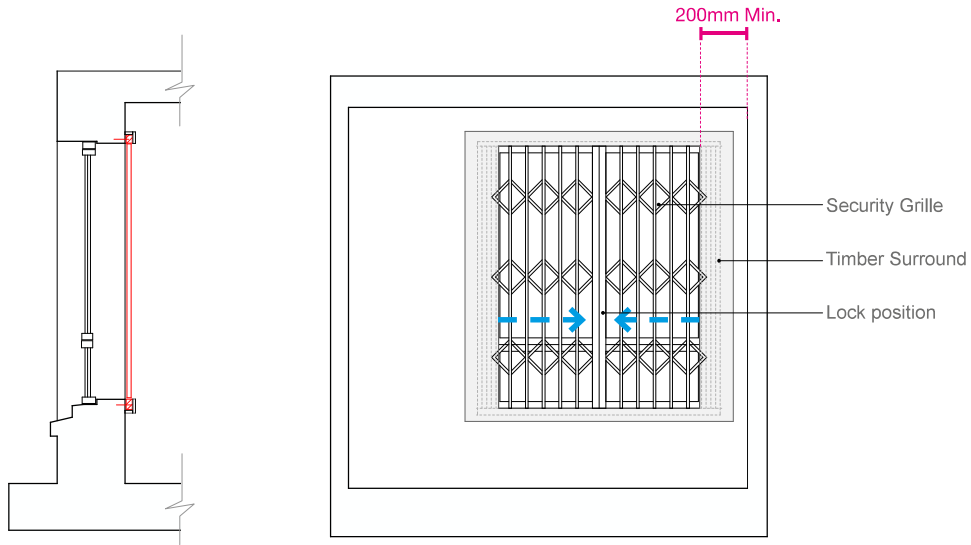
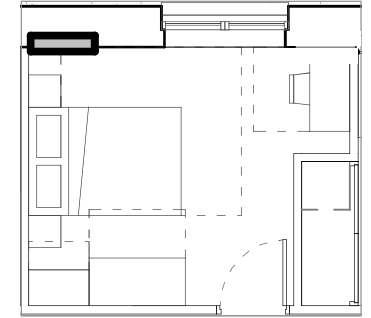


TRELLIDOR
THE ULTIMATE CRIME BARRIER

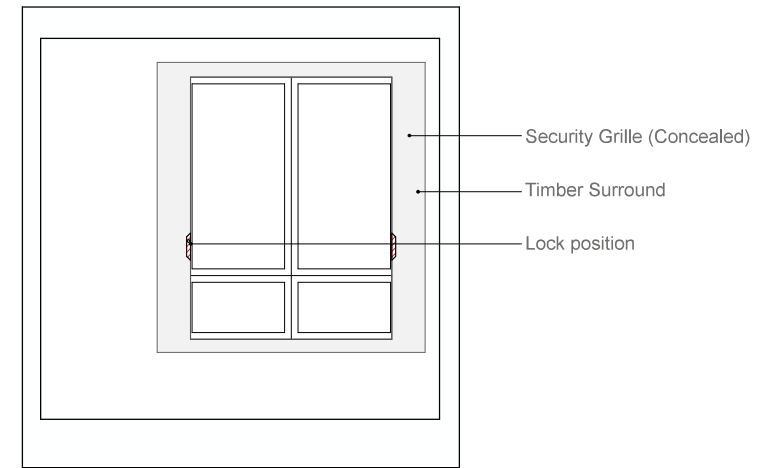
Type 1:

Double sash security grille

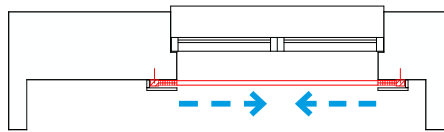
- Where there is adequate space on both sides of the window: security grilles retract to either side of the window.
- Timber enclosure conceals security grilles in their 'open' position
- Min. 200mm required between window reveal and nearest obstacle (e.g. partition wall, structural column etc.)



Internal Elevation - Closed Position

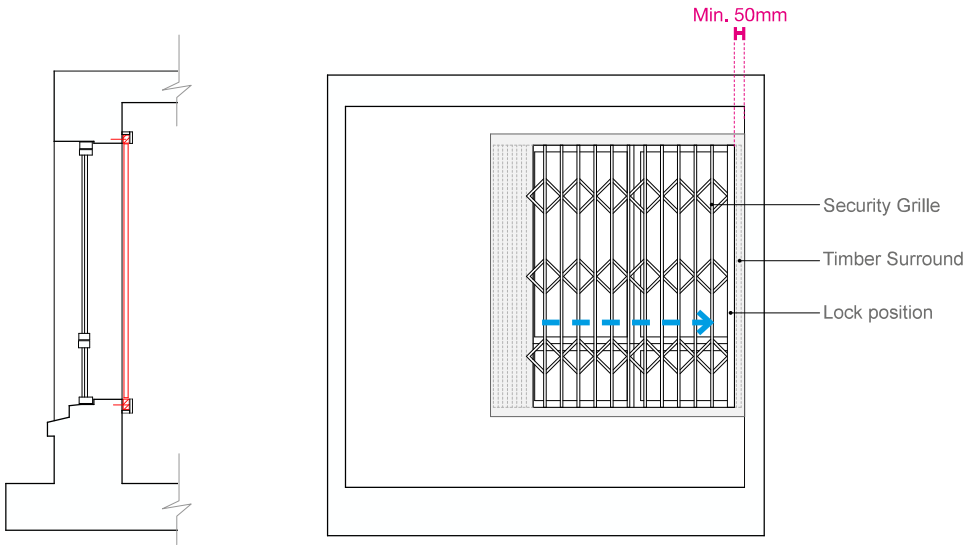
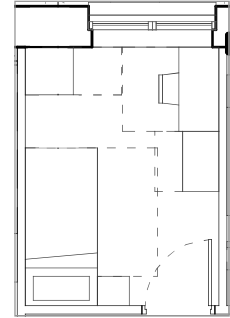


Internal Elevation - Open Position

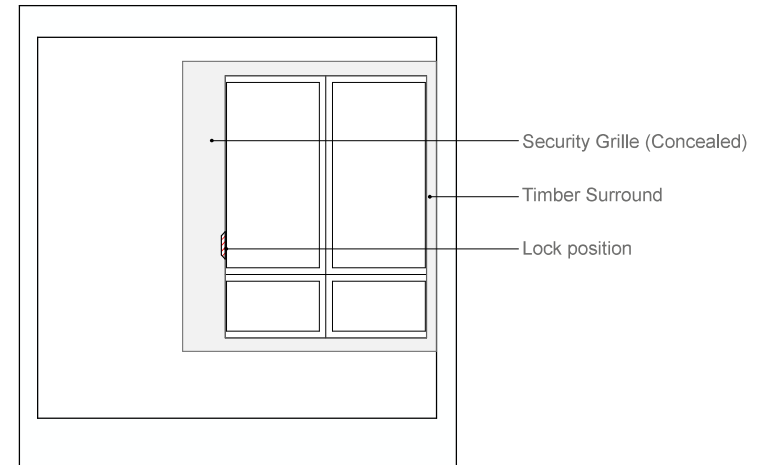


Type 2: Single sash security grille

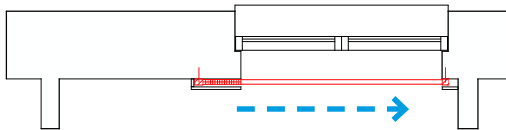
- Where there is NOT adequate space on both sides of the window: security grilles retract to one side.
- Timber enclosure conceals security grilles in their 'open' position
- Min. 50mm required between window reveal and nearest obstacle (e.g. partition wall, structural column etc.)



Internal Elevation - Closed Position



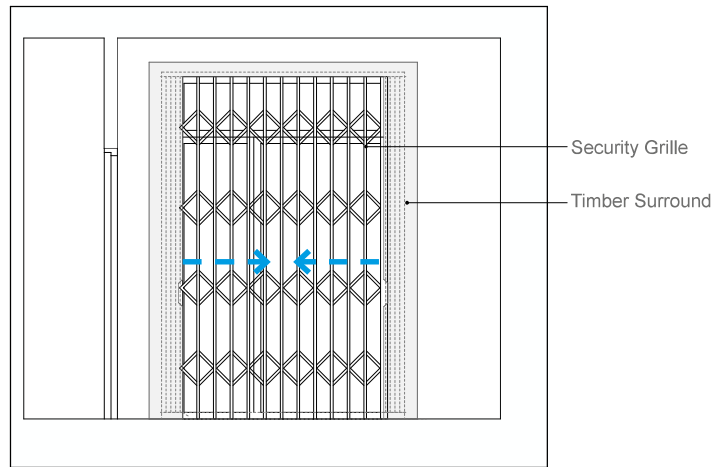
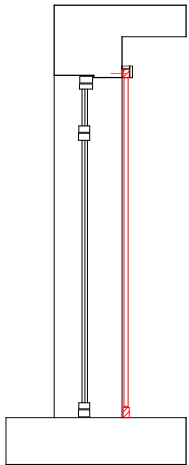
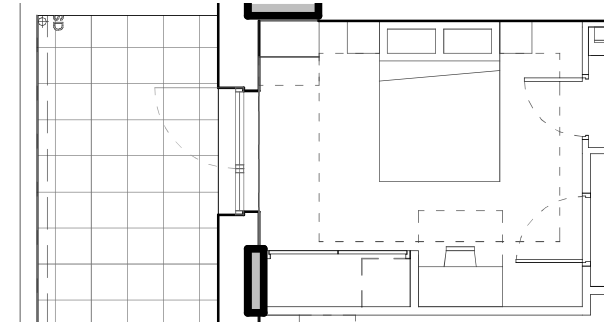
Internal Elevation - Open Position



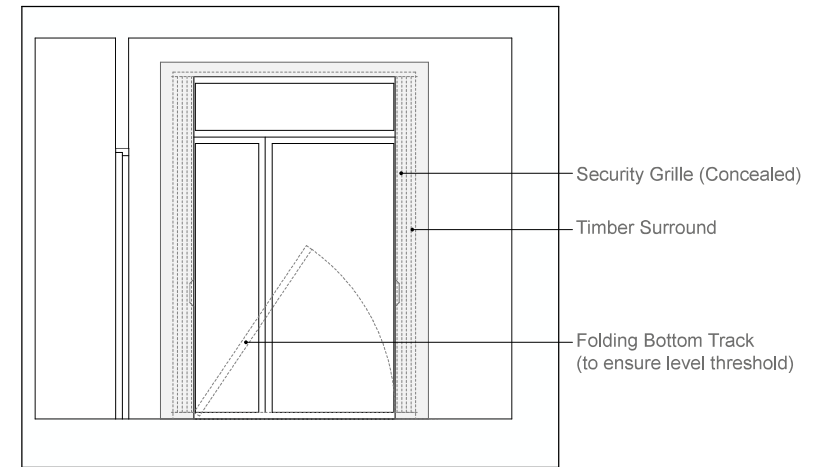
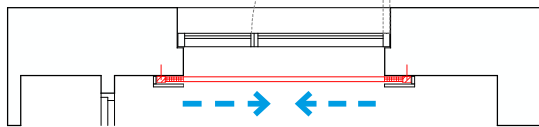
Type 3:

Double sash security grille to terrace door

- Occurs on 4no. bedrooms (CX & DX).
- Timber enclosure conceals security grilles in their 'open' position
- Level threshold ensured with folding bottom track

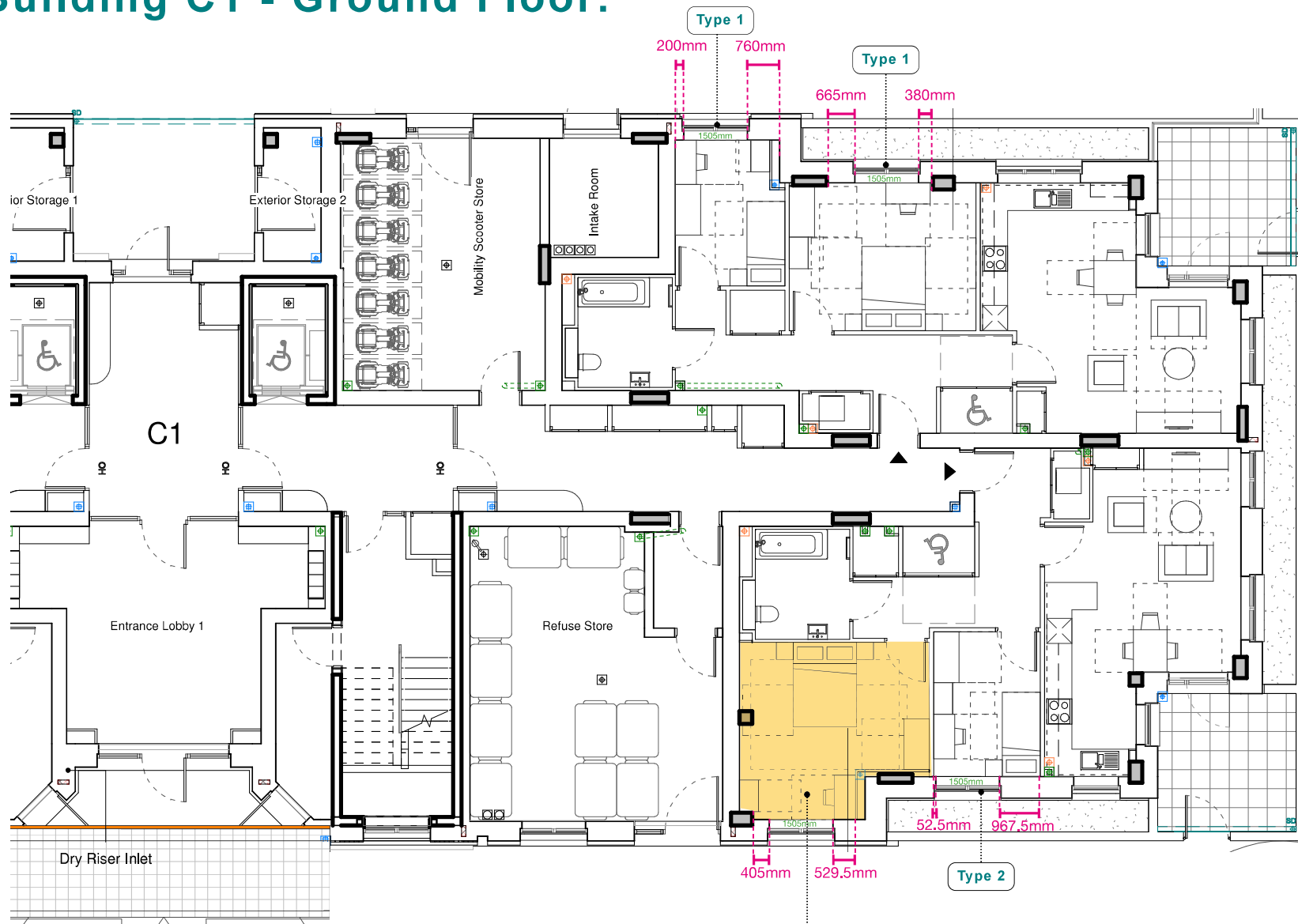


Internal Elevation - Closed Position



Internal Elevation - Open Position

Building C1 - Ground Floor:



UNIT ID	C1-00-01
TYPE	2B3P-C1-01
SIZE	80.04 m ²
TENURE	LAR - Older Adults

UNIT ID	C1-00-02
TYPE	2B3P-C1-02
SIZE	78.79 m ²
TENURE	LAR - Older Adults

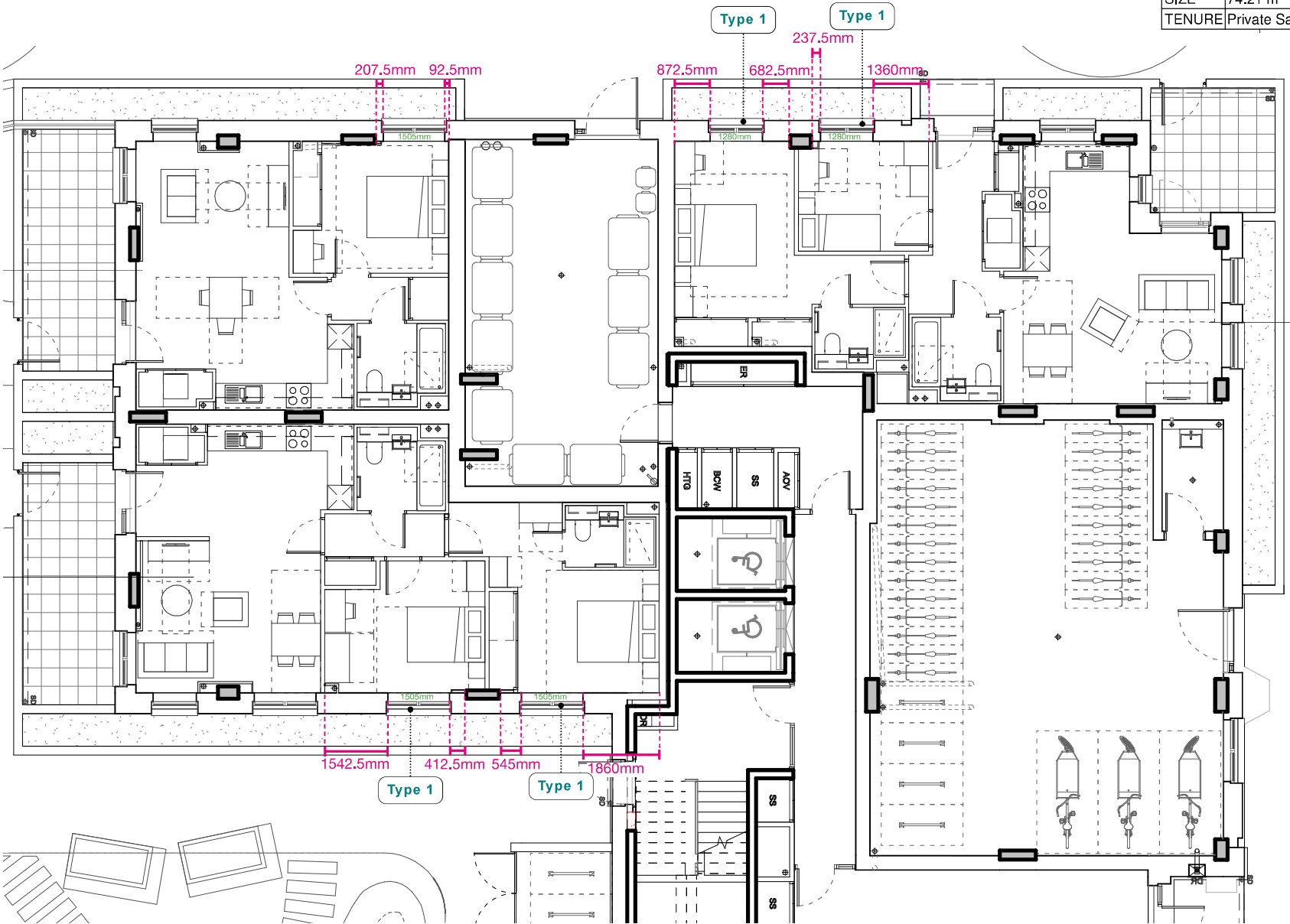
N.B. Inward opening window to highlighted bedroom due to Part K requirements.
Cooling coil to MVHR may be required for this unit.

Building CX - Ground Floor - 01:

UNIT ID	C2-00-03
TYPE	2B3P-CX-02
SIZE	74.21 m ²
TENURE	Private Sale

UNIT ID	C2-00-02
TYPE	1B2P-CX-03
SIZE	50.22 m ²
TENURE	Private Sale

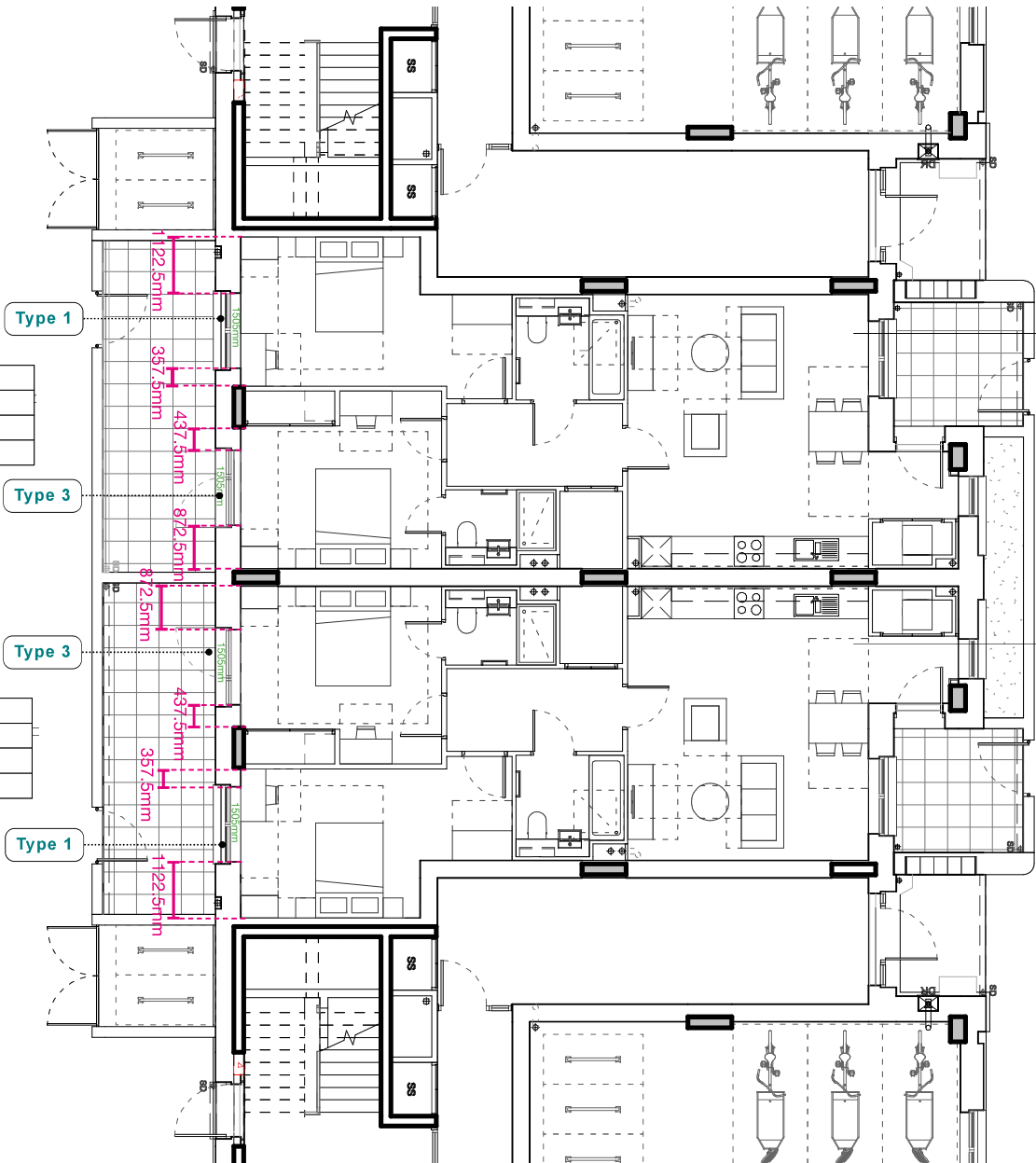
UNIT ID	C2-00-01
TYPE	2B4P-CX-03
SIZE	74.16 m ²
TENURE	Private Sale



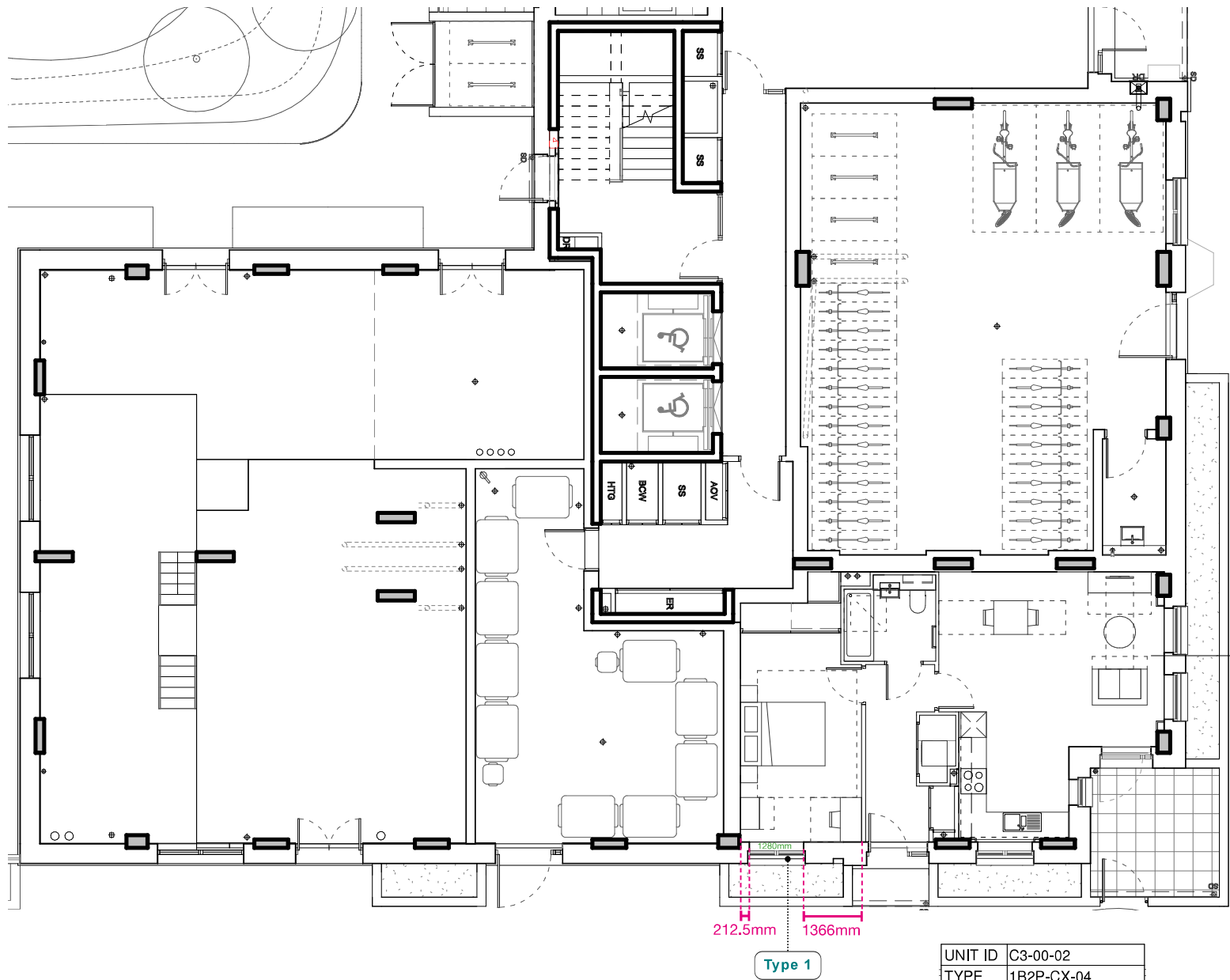
Building CX - Ground Floor - 02:

UNIT ID	C2-00-04
TYPE	2B4P-CX-04
SIZE	77.6 m ²
TENURE	Private Sale

UNIT ID	C3-00-01
TYPE	2B4P-CX-04
SIZE	77.6 m ²
TENURE	Private Sale



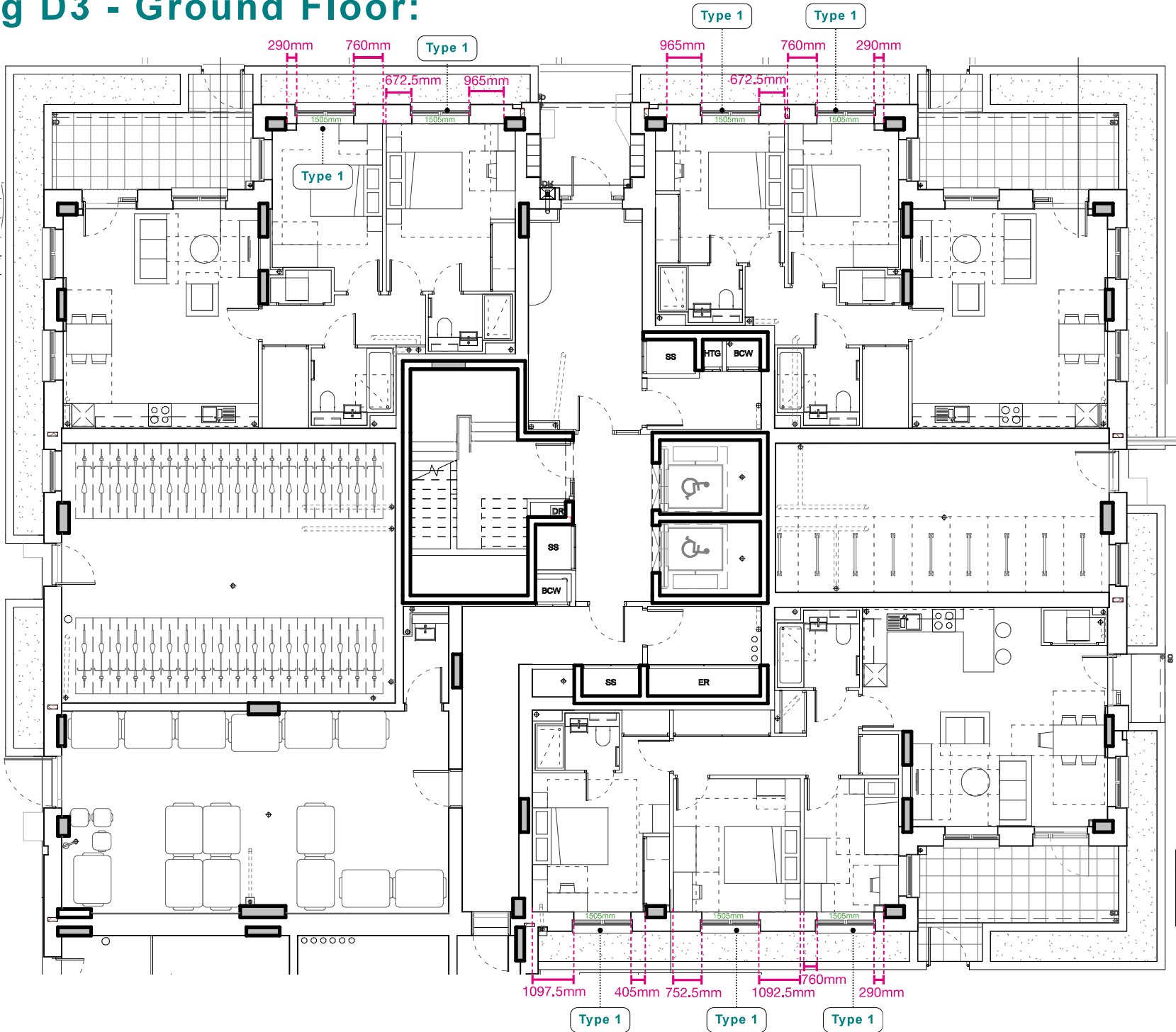
Building CX - Ground Floor - 03:



UNIT ID	C3-00-02
TYPE	1B2P-CX-04
SIZE	57.12 m²
TENURE	Private Sale

Building D3 - Ground Floor:

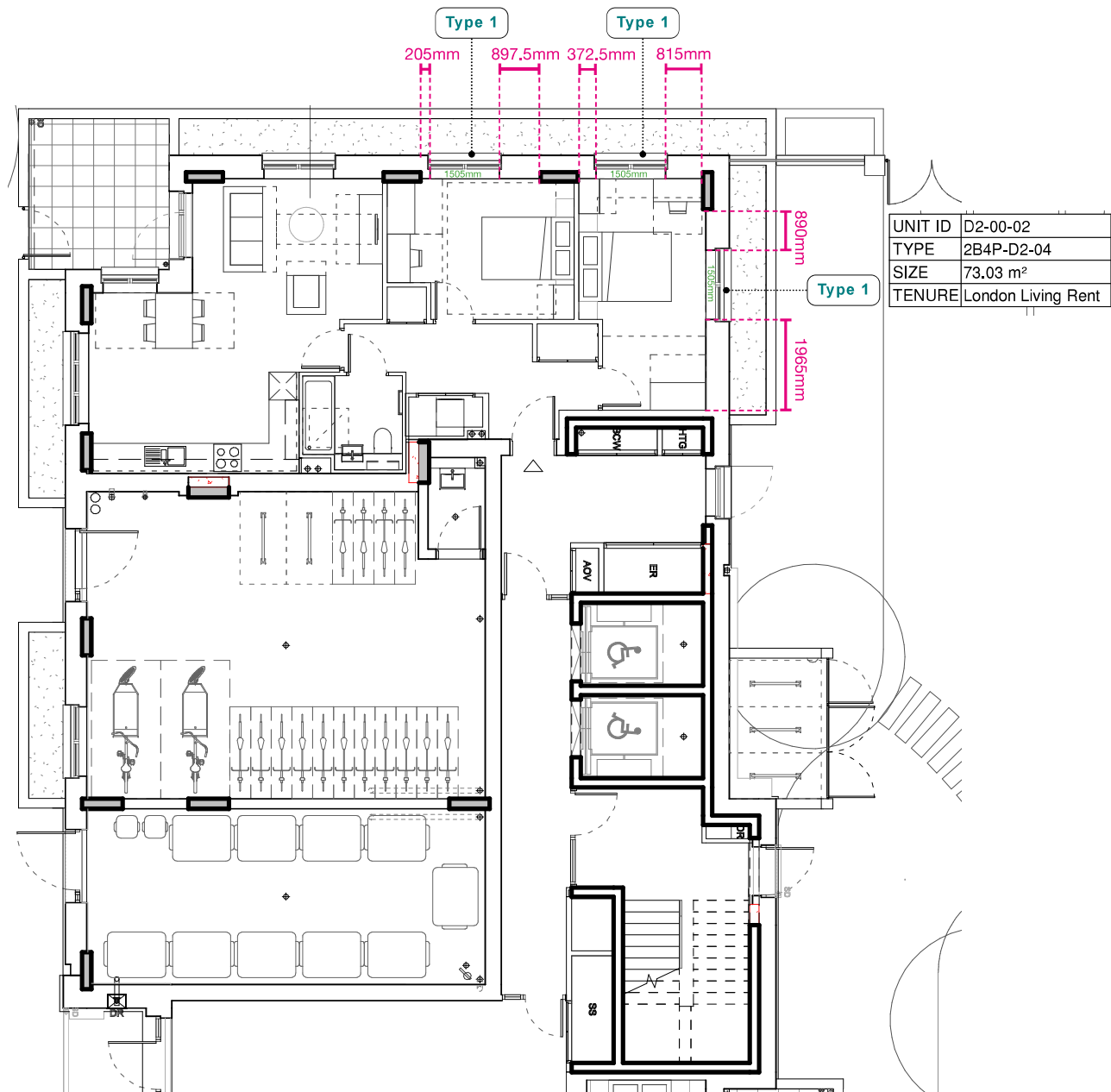
UNIT ID	D3-00-01
TYPE	2B4P-D3-02
SIZE	77.29 m²
TENURE	Private Sale



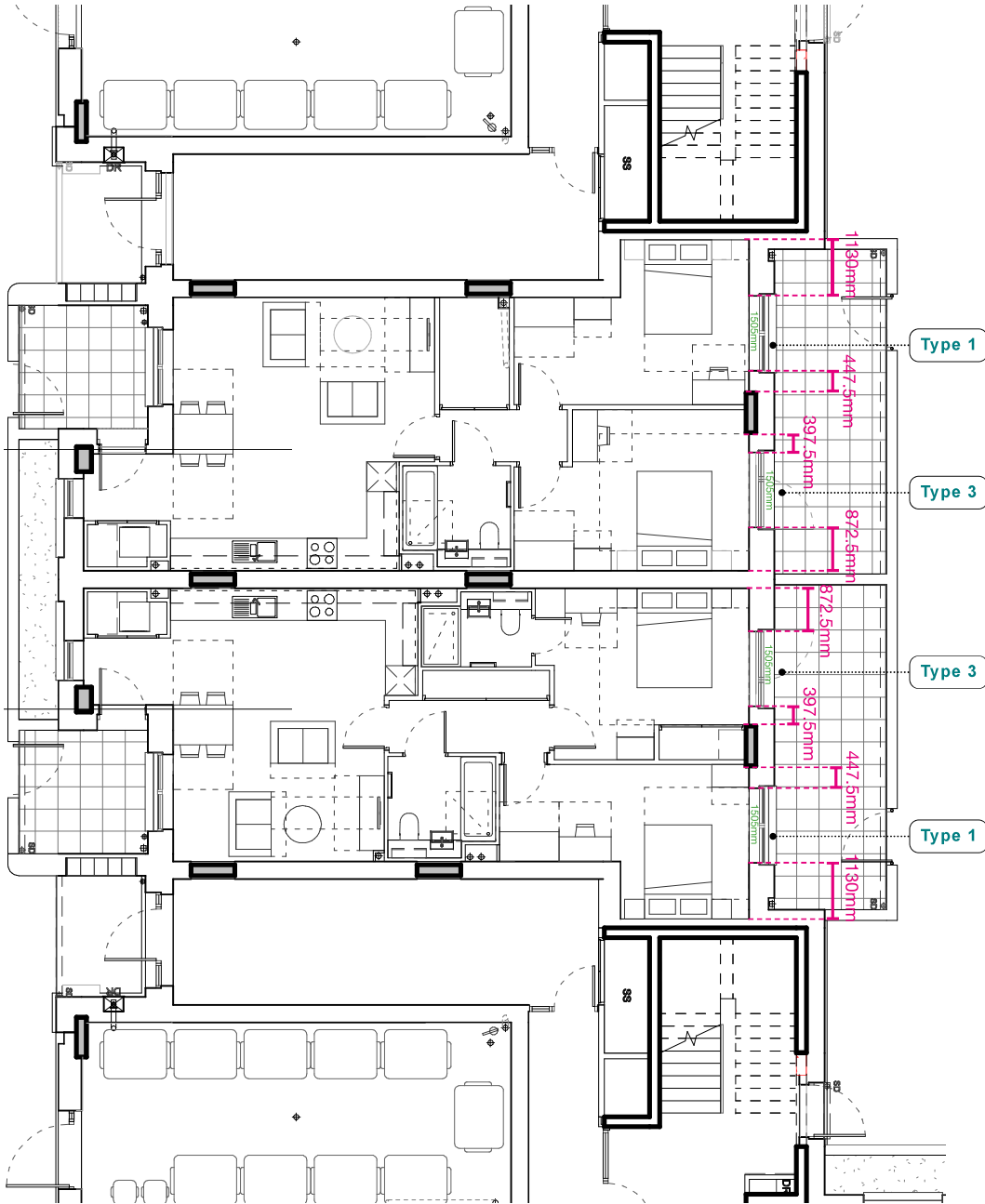
UNIT ID	D3-00-03
TYPE	2B4P-D3-03
SIZE	74.9 m²
TENURE	Private Sale

UNIT ID	D3-00-02
TYPE	3B5P-D3-01
SIZE	92.21 m²
TENURE	Private Sale

Building DX - Ground Floor - 01:



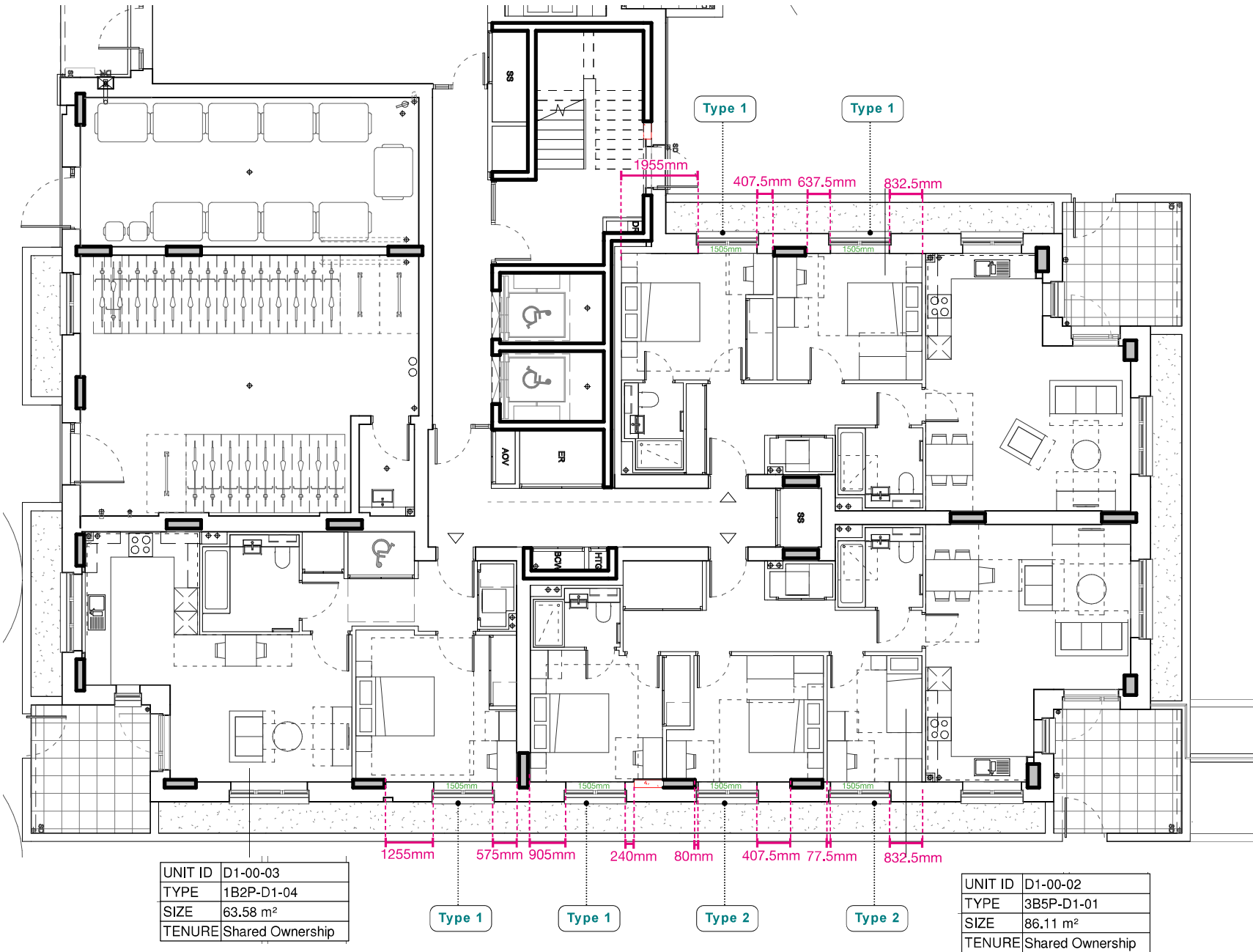
Building DX - Ground Floor - 02:



UNIT ID	D2-00-01
TYPE	2B4P-D2-03
SIZE	70.88 m ²
TENURE	London Living Rent

UNIT ID	D1-00-04
TYPE	2B4P-D1-04
SIZE	70.88 m ²
TENURE	Shared Ownership

Building DX - Ground Floor - 03:



Appendix F

Ventilation Strategy Schedule (JSW, August 2024)

Block	Level	Unit ID	Unit Type	Tenure	Accessibility	Area (m²)	Size	Beds	Persons	Bath	Shower	SS Only (PUC)	SVP Only (PUC)	SVP & SS (PUC)	MVHR	MVHR Flow Rate (l/s)	Purge Fan	Purge Fan Flow Rate (l/s)	Noise Zone	PUC Status	PUC Type	Duct Sizes off MVHR
D3	6	D3-06-06	2B4P-D3-01	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	4	No Change Required	PUC-08	150Ø
D3	7	D3-07-01	1B2P-D3-02	Private (silver)	M4(2)	51.28	1B2P	1	2	1			Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	4	No Change Required	PUC-08	150Ø
D3	7	D3-07-02	2B4P-D3-04	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	4	No Change Required	PUC-08	150Ø
D3	7	D3-07-03	2B4P-D3-01	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir Q350	90	Not Required	N/A	3	Larger MVHR Required	PUC-09	150Ø
D3	7	D3-07-04	1B2P-D3-01	Private (silver)	M4(2)	51.28	1B2P	1	2	1			Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	3	No Change Required	PUC-08	150Ø
D3	7	D3-07-05	2B4P-D3-04	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir Q350	90	Not Required	N/A	3	Larger MVHR Required	PUC-09	150Ø
D3	7	D3-07-06	2B4P-D3-01	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	4	No Change Required	PUC-08	150Ø
D3	8	D3-08-01	1B2P-D3-02	Private (silver)	M4(2)	51.28	1B2P	1	2	1			Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	4	No Change Required	PUC-08	150Ø
D3	8	D3-08-02	2B4P-D3-04	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	4	No Change Required	PUC-08	150Ø
D3	8	D3-08-03	2B4P-D3-01	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir Q350	90	Not Required	N/A	3	Larger MVHR Required	PUC-09	150Ø
D3	8	D3-08-04	1B2P-D3-01	Private (silver)	M4(2)	51.28	1B2P	1	2	1			Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	3	No Change Required	PUC-08	150Ø
D3	8	D3-08-05	2B4P-D3-04	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir Q350	90	Not Required	N/A	3	Larger MVHR Required	PUC-09	150Ø
D3	8	D3-08-06	2B4P-D3-01	Private (silver)	M4(2)	74.2	2B4P	2	4	1	1		Yes		Zehnder ComfoAir 155 Wme	60	Not Required	N/A	4	No Change Required	PUC-08	150Ø

Appendix G

Block C Vulnerable Occupancy Results

The dynamic overheating assessment for Block C1 has also been run under thermal comfort category I, representing a high level of expectation only used for spaces occupied by very sensitive and fragile persons. The results are shown in Table G.1 below.

With no change in overheating mitigation strategy, the results get worse but are still within the acceptable limits determined by CIBSE TM59 and Part O. Therefore, no additional mitigation measures are required.

Table G.1: Dwelling overheating results for DSY2 2020s – TM59 under thermal comfort category I

Unit	Room	TM59 Criterion A: Hours of exceedance (pass ≤ 3 %)	TM59 Criterion B: Bedroom temperature hours > 26 °C (pass ≤ 32)	Overall compliance with TM59
		% Hours of overheating	Hours of overheating	
04 C1 04 01	DOUBLEBED	0.6	28	Pass
	LKD	2.2	N/A	Pass
05 C1 04 07	DOUBLEBED	0.6	30	Pass
	LKD	1.8	N/A	Pass