

WHITECHAPEL ROAD CLECKHEATON

Noise Assessment and Overheating Summary

Prepared for: Barratt & David Wilson Homes

Yorkshire West

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1.0 Introduction

Barratt & David Wilson Homes Yorkshire West (BDW) has appointed SLR Consulting Ltd (SLR) to provide a summary of noise mitigation measures required at identified Plots at Whitechapel Road, Cleckheaton, to mitigate the combined risks of noise and overheating.

Documents produced by SLR and submitted to BDW which are relevant to the mitigation summary are as follows:

- Noise Assessment report, SLR ref. 405.03696.00038 v10 (April 2021)
- Noise Input for the Overheating Assessment report, SLR ref. 416.17967.00001 v3 (April 2021)
- Overheating Analysis report, SLR ref. 425.04993.00070 v1 (April 2021)

1.1 Noise Assessment Summary

SLR produced the latest Noise Assessment report in April 2021. The Noise Assessment considered sound from the adjacent M62 Motorway, with reference to recommended external and internal sound level criteria contained within BS8233:2014, 'Guidance on sound insulation and noise reduction for buildings' and ProPG: Planning and Noise (as required by the LPA).

The noise assessment found that mitigation measures would be required to achieve recommended external and internal sound level criteria at identified Plots.

The proposed mitigation strategy comprises:

- The installation of acoustically sound barriers as follows:
 - A 2.1m acoustic fence along the upper half of the western boundary of the Site.
 - A 3m acoustic fence along the lower half of the western boundary of the Site.
 - A 1.8m stone wall to Plots 1 and 35.
 - A 1.8m stone wall and fence to plot 26 and 14.
- The installation of glazing and acoustically attenuated passive ventilation (to provide background ventilation).

Regarding the glazing and passive vents, drawings contained within Appendix 04 of the report showed the sound reduction that would need to be provided by glazing and passive vents at each façade, at living room and bedroom windows.

1.2 Noise Input for the Overheating Assessment Summary

SLR produced the latest Noise Input for the Overheating Strategy report in April 2021, with reference to the Acoustics Ventilation and Overheating Residential Design Guide (AVORDG).

The AVORDG guidance suggests that the internal sound level criteria should be achieved when providing adequate whole dwelling ventilation as defined within the Building Regulations Approved Document F. However, it is considered reasonable to allow higher levels of internal ambient noise from transport sources when higher rates of ventilation are required in relation to the overheating condition.

An AVORDG Level 2 Assessment was undertaken to identify facades at which windows would need to be closed most of the time due to noise. At these facades, if overheating was identified, then alternative ventilation to an open window would be required.

1.3 Overheating Analysis Summary

The Overheating Analysis included an assessment of overheating risk with reference to CIBSE TM59 guidance and the identification of effective ventilation strategies for all Plots.

The Report assessed the combined risk of overheating and noise (with cross reference to the AVORDG Level 2 noise risk assessment) to determine which Plots will require alternative ventilation for cooling.

For Plots not requiring mechanical ventilation, effective ventilation can be achieved via natural ventilation, i.e. opening of windows to the subsequent room

Following the results of assessment, it was concluded that for Plots requiring alternative ventilation, more than one solution could be implemented to provide effective ventilation. For example, the defined minimum ventilation rate to mitigate overheating to the noise-affected rooms could be achievable via either PIV, MEV or MVHR.

2.0 Mitigation Strategy Summary

This Section provides a combined summary of the required mitigation strategy, taking into account findings from the Noise Assessment, Noise Input for the Overheating Assessment and Overheating Analysis, for each Plot as follows:

- Acoustically sound external barriers at identified locations;
- The sound reduction to be provided by glazing (based on the highest requirement at each façade);
- The sound reduction to be provided by passive vents (for all Plots not requiring alternative ventilation); and
- The identification of Plots requiring alternative ventilation to open windows, to mitigate overheating.

2.1 Acoustic Barriers

The locations, height and extent of required acoustic barriers are shown on the Proposed Site Layout Drawing (ref. P17:5076:01 JJ) in Appendix 01. It is noted that if required, these barriers may be comprised of good quality close board fencing (without gaps between panels or gravel boards), solid walls or bunds.

2.2 Glazing and Passive Vents

The minimum sound reduction (dB $R_w + C_{tr}$ dB) to be achieved by the glazing (including framing) and passive vents at each façade is shown on the drawing in Appendix 02.

For information, it is understood that BDW’s standard glazing with passive vents when open provides a sound reduction value of 30dB; where this specification is suitable the façades are shown as green in Appendix 02. Where a higher specification is required, these façades are shown as blue and orange. The minimum specification for the three different requirements is listed below in Table 2-1.

Table 2-1
Minimum Specifications for Windows and Ventilators

Building Element and Location	Specification	Metric	Typical Configuration
Highest Specification (North and west elevations facing the roadside)	≥ 39	dB $R_w + C_{tr}$	Double glazing 6-10-8.8 acoustic laminate
	≥ 44	dB $D_{ne, w} + C_{tr}$	High performance acoustic ventilator
	≥ 34	dB $R_w + C_{tr}$	Double glazing 6-20-4 standard glass types
	≥ 40	dB $D_{ne, w} + C_{tr}$	High performance acoustic trickle ventilator
Lowest Specification (The majority of the development)	≥ 30	dB $R_w + C_{tr}$	Client test number L118-137 specification – double glazed window with an open vent; 6.8mm laminate glass, 18mm cavity, 4mm oak soft
	≥ 36	dB $D_{ne, w} + C_{tr}$	

2.3 Plots Requiring Alternative Ventilation

Those Plots identified as requiring alternative ventilation to mitigate overheating are listed in Table 2-2. It is noted that identified Plots are based on those dwellings where windows must be kept closed for most of the

time due to noise as identified within the Noise Input for the Overheating Assessment report (i.e. where internal noise levels would be above $L_{Aeq,T} 52d$ in the daytime and above 43dB in the night-time).

Table 2-2
Plots Requiring Alternative Ventilation to Open Windows

Plot Number	Plot Type	Rooms Requiring Alternative Ventilation
22	MAI	Lounge, Bed 1, 2, 3
23	MAI	Lounge, Bed 1, 2, 3
24	MAI	Lounge, Bed 1, 2, 3
25	DEN	Lounge, Bed 1, 2, 3
35	MOR	Dining Kitchen, Bed 1, 2, 3
36	MAI	Lounge, Bed 1, 2, 3
37	MAI	Lounge, Bed 1, 2, 3
38	MAI	Lounge, Bed 1, 2, 3
39	WOO	Kitchen, Bed 3
40	WOO	Kitchen, Bed 3
65	KEW	Lounge, Bed 1, 2
66	KEW	Lounge, Bed1, 2
67	KEW	Lounge, Bed1, 2
68	60/61	Bed 1
69	60/61	Bed 1
70	60/61	Bed 1
71	60/61	Bed 1
72	DEN	Lounge, Bed 1, 2, 3
73	WOO	Kitchen, Bed 3
74	WOO	Kitchen, Bed 3
75	WOO	Kitchen, Bed 3
76	DEN	Lounge, Bed 1, 2, 3
77	WOO	Kitchen, Bed 3
78	WOO	Kitchen, Bed 3
79	DEN	Lounge, Bed 1, 2, 3

Plot Number	Plot Type	Rooms Requiring Alternative Ventilation
80	MAI	Lounge, Bed 1, 2, 3
81	MAI	Lounge, Bed 1, 2, 3
82	MOR	Lounge, Bed 1, 2, 3
83	MOR	Dining Kitchen, Bed 1, 2, 3
84	KIN	Lounge, Bed 1, 3, 4
85	KIN	Lounge, Bed 1, 3, 4
86	KIN	Lounge, Bed 1, 3, 4
87	KIN	Bed 1, 3, 4
88	KIN	Lounge, Bed 1, 3, 4
89	KIN	Lounge, Bed 1, 3, 4
90	MAI	Lounge, Bed 1, 2, 3
91	MOR	Lounge, Bed 1, 2, 3

APPENDIX 01

Proposed Site Layout

Type	Bed	No
60	1B	6
61	1B	6
Kewdale	2B	10
Kirkbridge	3B	2
		24
Maidstone	3B	19
Lockton	3B	4
Moresby	3B	11
		98
Kingsville	4B	14
Brentford	3B	1
Woodcote	4B	17
		8
Denby	3B	8
		3
Kingsley	4B	3
Ashburton	4B	6
Alderney	4B	6
Radleigh	4B	9
		98
Total Site		122

- SITE LAYOUT LAYERS KEY:**
- 1800mm BRICK WALL
 - 1800mm STONE WALL
 - RETAINING WALL
 - 1800mm BRICK WALL & FENCE
 - 1800mm STONE WALL & FENCE
 - 1800mm TIMBER FENCE
 - ACOUSTIC FENCE
 - 450mm KNEE HIGH RAIL
 - SITE BOUNDARY
 - REAR ACCESS GATE (LOCKABLE)
 - DISCOUNT MARKET SALE
 - SOCIAL / AFFORDABLE RENT
 - BIN COLLECTION POINTS
 - BIN STORE
 - CYCLE STORE
 - ELECTRIC VEHICLE CHARGING POINT
 - REAR GARDEN CYCLE STORE
 - EXISTING PUBLIC RIGHT OF WAY SPE/24/40 & SPE/42/10
 - PROPOSED PUBLIC RIGHT OF WAY (DIVERTED THROUGH THE SITE)
 - PROPOSED MULTI-MODAL LINK ROUTE
 - GRASSED AREAS (FRONT GARDEN)
 - GRASSED AREAS (REAR GARDEN)
 - BLOCK PAVING
 - EXISTING TREES RETAINED
 - EXISTING TREES REMOVED

SITE BOUNDARIES SUBJECT TO TOPOGRAPHICAL SURVEY AND TITLES



SALES AREA PLAN:
 ASHBURTON - 7% FREESALE UNITS
 KINGSVILLE - 13% FREESALE UNITS
 MAIDSTONE - 19% FREESALE UNITS

* TEMPORARY SALES OFFICE TO BE REMOVED UPON COMPLETION.



REV	DATE	DESCRIPTION	BY	CHECK
JJ	19.03.21	LAYOUT REVISION TO PREVIOUS REV (0) WITH ADDITIONAL AMENDMENTS TO THE FRONT OF SITE (PLOTS 1-10)	SD	LM
I	12.03.21	AMENDMENT TO SHARED SURFACE ADJACENT PLOTS 30, 31, 32, 33 AND GREEN VERGE RELOCATED TO FRONT OF PLOTS 44, 45 AND PREVIOUS PARKING ARRANGEMENTS RELOCATED AS PER CLIENTS COMMENTS. PROPOSED BOUNDARY ADJUSTMENT ACCEPTED.	SD	LM
HH	10.03.21	FOOTPATH RELOCATED TO FRONT OF PLOTS 44, 45. PLOTS MOVED FORWARD AND PLOTS 46, 47 MOVED BACK FROM BOUNDARY. SHARED SURFACE TRANSITION ADJUSTED ADJACENT PLOTS 41, 42. ACOUSTIC FENCE RELOCATED TO PLOTS 1, 4, 5, 6, 7, 8, 9, 10. FORMERLY ADJACENT TO PRIVATE DRIVE ADJACENT PLOTS 1-10.	SD	LM
GG	08.03.21	AMENDMENTS TO SHARED SURFACE TRANSITIONS IN LINE WITH CLIENTS COMMENTS. SITE ENTRANCES AMENDED IN LINE WITH CLIENTS COMMENTS.	SD	LM
FF	26.02.21	SCHEMATIC DEVELOPED FOLLOWING CLIENTS REQUEST.	SD	LM
EE	19.02.21	AMENDMENTS TO LAYOUT AND ROAD PATTERN. OVERALL PLOTS REDUCED TO 120 UNITS AS PER CLIENTS REQUEST.	ADSD	LM
DD	20.01.21	PROPOSED MULTI-MODAL LINK ROUTE ADDED TO SITE. AFFORDABLE AND SOCIAL HOUSING UNITS ADDED AS PER CLIENTS REQUEST.	SD	LM
CC	20.01.21	FORMERLY VISIBILITY SPLAYS ADDED. KEY UPDATED TO REFLECT INTERNAL VISIBILITY SPLAYS AS PER CLIENTS REQUEST.	SD	LM
BB	15.01.21	ROADS AMENDED TO INCORPORATE ADJACENT AND FORMER VISIBILITY SPLAYS WITH ADAPTABLE HIGHWAY AS PER CLIENTS REQUEST.	SD	LM
AA	11.01.21	DIVERTED PUBLIC RIGHT OF WAY AND SHARED SURFACE TRANSITION ADJACENT PLOTS 44, 45. VISIBILITY SPLAYS SHOWN IN BLOCK PAVING ON FORMER WINDING DRIVE AS PER CLIENTS REQUEST.	SD	LM
Z	18.12.20	ROAD CURVE IN FRONT OF PLOTS 67, 68 REVISED TO PREVENT COLLISION WITH THE LATEST TRACKING INFORMATION.	JP	LM
Y	17.12.20	SITE LAYOUT AMENDED TO PROVIDE ELECTRICITY SUBSTATION AS PER CLIENTS REQUEST.	SD	LM
X	30.11.20	PLOTS 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122. THIS LAYOUT IS A CHANGE FROM PREVIOUS TO PROVIDE HOUSING TYPE PLOTS 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122. 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APPENDIX 02

Glazing and Passive Ventilation Requirements

Glazing and Passive Vents- Required Sound Reduction

Numbers relate to RW + C dB glazing specification

For the $D_{n,e,w}$ (C value) passive ventilator specification
ADD 6dB



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