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BARRATT HOMES

LINGLONGS ROAD, WHALEY BRIDGE

DETAILED NOISE ASSESSMENT REPORT

MAY 2017

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LINGLONGS ROAD, WHALEY BRIDGE

DETAILED NOISE ASSESSMENT REPORT

MAY 2017

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1 INTRODUCTION

- 1.1.1 By e-mail instruction dated 2nd March 2017, from Mr Kevin Furey on behalf of Barratt Homes (BDW Trading Limited), Wardell Armstrong LLP was commissioned to undertake a noise assessment to discharge a planning condition for the proposed residential development at land off Linglongs Road, Whaley Bridge.
- 1.1.2 The proposed development site is located to the south of Whaley Bridge and currently comprises open land. To the north, the site is bordered by existing residential dwellings on Macclesfield Road, with Macclesfield Road and further existing residential dwellings beyond. To the east, the site is bordered by woodland, with the premises of Clover Chemicals, Botany Business Park and Buxton Road beyond. To the south, the site is bordered by a school and open land. To the west, the site is bordered by Linglongs Road, with existing residential dwellings off Linglongs Avenue and The Rise beyond.
- 1.1.3 It is understood that outline planning permission was approved for up to 107 residential dwellings in May 2015 (Application Number: HPK/2014/0119). A noise assessment is required to discharge Condition 8 of the permission. The condition is stated below:
- 'No development shall take place until a mitigation scheme for protecting the proposed dwellings from traffic noise has been submitted to and approved in writing by the Local Planning Authority. No dwelling which forms part of the scheme shall be occupied until the approved works to that dwelling have been completed.'*
- 1.1.4 As part of the application, a layout has been provided, ref 466/P/PL/01 Revision A, showing the proposed location of the residential dwellings. This layout has been used to predict the noise levels at the façades of the proposed dwellings.
- 1.1.5 This report assesses the development in accordance with the planning condition and includes recommendations for noise mitigation as appropriate.

2 ASSESSMENT METHODOLOGY

2.1 Introduction

2.1.1 A noise assessment has been undertaken to discharge Condition 8, of the planning permission.

2.2 Consultation and Scope of Works

2.2.1 Consultation has been undertaken with Mr. Matthew Rhodes, Environmental Health Officer at High Peak Borough Council, who confirmed that the noise levels measured for the noise assessment prepared in support of the outline application prepared by Wardell Armstrong and dated November 2013, could be used to assess the potential noise impact at the proposed scheme. However, Mr. Rhodes has requested that a +5dB weighting be added to the measured noise levels to account for any increase in the noise at the site since the noise survey was undertaken in 2013.

2.2.2 The additional weighting is considered by Wardell Armstrong to be very robust and is equivalent to an approximate a 250% increase in road traffic flows.

2.2.3 The potential impacts of the existing sources of noise on the proposed residential areas of the development have been assessed with reference to following guidance:

- The World Health Organisation Guidelines for Community Noise 1999 (WHO); and
- British Standard 8233: 2014 Guidance on Sound Insulation and noise reduction for buildings (BS8233).

2.3 Assessment Guidnace

2.3.1 The Noise Policy Statement for England refers to the World Health Organisation (WHO) when discussing noise impacts. The WHO Guidelines for Community Noise 1999 suggest guideline values for internal noise exposure which take into consideration the identified health effects and are set, based on the lowest effect levels for general populations. Guideline values for annoyance which relate to external noise exposure are set at 50 or 55 dB(A), representing day time levels below which a majority of the adult population will be protected from becoming moderately or seriously annoyed respectively.

2.3.2 The following guideline values are suggested by WHO:

- 35 dB L_{Aeq} (16 hour) during the day time in noise sensitive rooms
- 30 dB L_{Aeq} (8 hour) during the night time in bedrooms

- 45 dB L_{Amax} (fast) during the night time in bedrooms
- 50 dB L_{Aeq} (16 hour) to protect majority of population from becoming moderately annoyed
- 55 dB L_{Aeq} (16 hour) to protect majority of population from becoming seriously annoyed

2.3.3 British Standard 8233 “Guidance on sound insulation and noise reduction for buildings” 2014 bases its advice on the WHO Guidelines. In addition, for internal noise levels it states;

“Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.”

2.3.4 Furthermore, with regard to external noise, the Standard states;

“For traditional external areas that are used for amenity space such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq, T}$ with an upper guidance value of 55 dB $L_{Aeq, T}$ which would be acceptable in noisier environments. However, it is also recognised that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited”.

3 NOISE ATTENUATION SCHEME

3.1 Daytime Noise Levels in Outdoor Living Areas

- 3.1.1 The noise levels, as detailed the noise assessment report prepared by Wardell Armstrong (LE11989/001 Dated January 2014), indicates that, during the daytime, the noise levels affecting the proposed development site are between 47dB L_{Aeq} and 48dB L_{Aeq} . When 5dB is added to these noise levels, as requested by Mr. Rhodes of High Peak Borough Council, the noise levels remain below the guideline level of 55dB L_{Aeq} recommended by WHO. Therefore, mitigation measures are not required for outdoor living areas of proposed dwellings located across the development site.

3.2 Assessment of Noise Levels in Living Room and Bedroom Areas

- 3.2.1 The noise guideline value for living room and bedroom areas during the daytime is 35dB L_{Aeq} , the noise guideline value for dining areas is 40dB L_{Aeq} and the noise guideline values for bedrooms at night is 30 dB L_{Aeq} . These levels reflect the advice in WHO and BS8233.
- 3.2.2 The noise levels likely at the facades of the properties in the vicinity of the monitoring locations have been determined, during the daytime and night time periods. The assessment is based on the noise level measurements of each source as detailed in the Wardell Armstrong noise report prepared in support of the outline planning application (Report Reference LE11989/001 Dated January 2014). As requested by Mr. Rhodes of High Peak Borough Council, 5dB has been added to the measured noise levels.
- 3.2.3 The noise levels likely at the facades of the properties closest to the main sources of noise have been calculated. This has been done for the daytime and night time periods. Detailed break in calculations have then been undertaken for all noise sensitive rooms (i.e. living rooms, dining areas and bedrooms) for each plot type. The required glazing and ventilation schemes to achieve 35dB L_{Aeq} in the living rooms and 30 dB L_{Aeq} / 45 dB $L_{Amax,fast}$ in bedrooms are detailed in Appendix A.
- 3.2.4 The glazing and ventilation scheme detailed in Appendix A will allow for passive ventilation to be provided in noise sensitive rooms with windows closed. It is considered that purge ventilation can be provided via extractor fans in kitchens and bathrooms and through the occasional opening of windows as required.

- 3.2.5 The sound reduction data for the glazing specified is detailed in Appendix B. It is important to note that the brand of ventilation stated is illustrative and other brands are available. The sound attenuation of any alternative product must be equal to or greater than those stated.

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4 CONCLUSIONS

- 4.1.1 Wardell Armstrong has carried out a detailed noise assessment for the proposed residential development located at land off Linglongs Lane, Whaley Bridge.
- 4.1.2 This report assesses the noise at the proposed development site and recommends a noise mitigation scheme as appropriate.
- 4.1.3 The noise levels likely at the façades of properties during the daytime and at night, including the additional 5dB weighting as requested by High Peak Borough Council.
- 4.1.4 Mitigation measures are not required in outdoor living areas to achieve the guideline value of 55dBL_{Aeq}.
- 4.1.5 The proposed glazing and ventilation scheme will ensure that the relevant noise guideline values are met across the site and will allow for passive ventilation to be provided in noise sensitive rooms with windows closed. It is considered that purge ventilation can be provided via extractor fans in kitchen/bathrooms and through the occasional opening of windows as required.

Plot	House Type	Room	Living rooms
1	Tamerton	Lounge	Opening Windows
		Kitchen	Opening Windows
		Dining	4/12/4 with Passivent TVAL450
		Study	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	Opening Windows
		Bedroom 4	Opening Windows
2	Hertford	Lounge	4/12/4 with Passivent TVAL450
		Dining / Kitchen	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	Opening Windows
3	Tamerton	Lounge	Opening Windows
		Kitchen	Opening Windows
		Dining	4/12/4 with Passivent TVAL450
		Study	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	Opening Windows
		Bedroom 4	Opening Windows
4	Hale	Lounge	4/12/4 with Passivent TVAL450
		Dining / Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	4/12/4 with Passivent TVAL450
5	Hertford	Lounge	4/12/4 with Passivent TVAL450
		Dining / Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	4/12/4 with Passivent TVAL450
6	Any	Any	Opening Windows
7	Any	Any	Opening Windows
8	Any	Any	Opening Windows
9	Any	Any	Opening Windows
10	Any	Any	Opening Windows
11	Any	Any	Opening Windows
12	Any	Any	Opening Windows
13	Any	Any	Opening Windows
14	Any	Any	Opening Windows
15	Any	Any	Opening Windows
16	Any	Any	Opening Windows
17	Any	Any	Opening Windows
18	Any	Any	Opening Windows
19	Any	Any	Opening Windows
20	Any	Any	Opening Windows
21	Any	Any	Opening Windows
22	Any	Any	Opening Windows
23	Any	Any	Opening Windows
24	Washington	Lounge	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
25	Washington	Lounge	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
26	Barton	Lounge	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
27	Barton	Lounge	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
28	Any	Any	Opening Windows
29	Any	Any	Opening Windows

30	Washington	Lounge	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
31	Washington	Lounge	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
32	Any	Any	Opening Windows
33	Any	Any	Opening Windows
34	Any	Any	Opening Windows
35	Any	Any	Opening Windows
36	Any	Any	Opening Windows
37	Any	Any	Opening Windows
38	Any	Any	Opening Windows
39	Any	Any	Opening Windows
40	Any	Any	Opening Windows
41	Any	Any	Opening Windows
42	Any	Any	Opening Windows
43	Any	Any	Opening Windows
44	Any	Any	Opening Windows
45	Any	Any	Opening Windows
46	Any	Any	Opening Windows
47	Any	Any	Opening Windows
48	Any	Any	Opening Windows
49	Any	Any	Opening Windows
50	Any	Any	Opening Windows
51	Any	Any	Opening Windows
52	Any	Any	Opening Windows
53	Any	Any	Opening Windows
54	Any	Any	Opening Windows
55	Any	Any	Opening Windows
56	Any	Any	Opening Windows
57	Washington	Lounge	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
58	Washington	Lounge	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
59	Washington	Lounge	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
60	Alderney	Lounge	4/12/4 with Passivent TVAL450
		Dining	4/12/4 with Passivent TVAL450
		Family Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	Opening Windows
61	Derwent	Lounge	4/12/4 with Passivent TVAL450
		Kitchen/Dining	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
62	Woodley	Lounge Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
63	Woodley	Lounge Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
64	Woodley	Lounge Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
65	Woodley	Lounge Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
66	Woodley	Lounge Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
67	Woodley	Lounge Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
68	Derwent	Lounge	4/12/4 with Passivent TVAL450
		Kitchen/Dining	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	Opening Windows

69	Haltwistle	Lounge	4/12/4 with Passivent TVAL450
		Dining/Kitchen	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	4/12/4 with Passivent TVAL450
70	Any	Any	Opening Windows
71	Any	Any	Opening Windows
72	Alderney	Lounge	4/12/4 with Passivent TVAL450
		Dining	4/12/4 with Passivent TVAL450
		Family Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	Opening Windows
73	Any	Any	Opening Windows
74	Any	Any	Opening Windows
75	Any	Any	Opening Windows
76	Any	Any	Opening Windows
77	Any	Any	Opening Windows
78	Any	Any	Opening Windows
79	Any	Any	Opening Windows
80	Tamerton	Lounge	Opening Windows
		Kitchen	Opening Windows
		Dining	4/12/4 with Passivent TVAL450
		Study	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	Opening Windows
		Bedroom 4	Opening Windows
81	Haltwistle	Lounge	4/12/4 with Passivent TVAL450
		Dining/Kitchen	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	4/12/4 with Passivent TVAL450
82	Hale	Lounge	4/12/4 with Passivent TVAL450
		Dining / Kitchen	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
		Bedroom 3	Opening Windows
		Bedroom 4	4/12/4 with Passivent TVAL450
83	Haltwistle	Lounge	4/12/4 with Passivent TVAL450
		Dining/Kitchen	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	4/12/4 with Passivent TVAL450
84	Tamerton	Lounge	Opening Windows
		Kitchen	Opening Windows
		Dining	4/12/4 with Passivent TVAL450
		Study	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	Opening Windows
		Bedroom 4	Opening Windows
85	Alderney	Lounge	4/12/4 with Passivent TVAL450
		Dining	4/12/4 with Passivent TVAL450
		Family Kitchen	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	4/12/4 with Passivent TVAL450
		Bedroom 4	Opening Windows
86	Hale	Lounge	4/12/4 with Passivent TVAL450
		Dining / Kitchen	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	Opening Windows
		Bedroom 3	Opening Windows
		Bedroom 4	4/12/4 with Passivent TVAL450

87	Malvern	Lounge	4/12/4 with Passivent TVAL450
		Dining	4/12/4 with Passivent TVAL450
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	Opening Windows
		Bedroom 4	4/12/4 with Passivent TVAL450
		Bedroom 5	4/12/4 with Passivent TVAL450
88	Radleigh	Lounge	4/12/4 with Passivent TVAL450
		Study	4/12/4 with Passivent TVAL450
		Breakfast/Dining	Opening Windows
		Bedroom 1	4/12/4 with Passivent TVAL450
		Bedroom 2	4/12/4 with Passivent TVAL450
		Bedroom 3	Opening Windows
		Bedroom 4	Opening Windows
89	Any	Any	Opening Windows
90	Any	Any	Opening Windows
91	Any	Any	Opening Windows
92	Any	Any	Opening Windows
93	Any	Any	Opening Windows
94	Any	Any	Opening Windows
95	Any	Any	Opening Windows
96	Any	Any	Opening Windows
97	Any	Any	Opening Windows
98	Any	Any	Opening Windows
99	Any	Any	Opening Windows
100	Any	Any	Opening Windows
101	Any	Any	Opening Windows
102	Any	Any	Opening Windows
103	Any	Any	Opening Windows
104	Any	Any	Opening Windows
105	Any	Any	Opening Windows
106	Any	Any	Opening Windows
107	Any	Any	Opening Windows

Appendix B - Glazing and Ventilation Sound Reduction Data

Glazing Sound Reduction Data									
	Frequency (Hz)								
Description	31.5	63	125	250	500	1000	2000	4000	8000
4/12/4	12.0	18.0	24.0	20.0	25.0	23.0	29.0	35.0	35.0

Ventilation Sound Reduction Data									
	Frequency (Hz)								
Description	31.5	63	125	250	500	1000	2000	4000	8000
Passivent TVALdB 450 (Window Vent)	29.5	35.5	44.7	42.2	36.2	40.1	42.5	52.8	52.8

Note - This specification has been used in the assessment, the proposed glazing and ventilation products used should meet or exceed this specification.