

REF: AS11489.210504.L2

05 May 2021

Sean Lystor
Crayfern Homes Ltd
Victoria House
14 St Johns Road
Hedge End
Southampton
SO30 4AB

Dear Sean

AS11489 LAND NORTH OF MAYFLOWER WAY, ANGMERING**Planning Condition 19**

Crayfern Homes Ltd proposes to develop the land north of Mayflower Way, Angmering for residential accommodation comprising a total of 24 new dwellings, subject to the following planning condition (application ref. A/46/19/PL):

"19. Prior to commencement of development an Acoustic Report which identifies noise sources in the vicinity of the new homes and appropriate mitigation measures shall be submitted to and approved by the Local Planning Authority. The scope and extent of such a report should be agreed with the Planning Authority before its commission. The works shall proceed in accordance with the details so approved and noise mitigation measures shall be provided prior to occupation and retained in perpetuity. Noise measurements shall be carried out and submitted to the Local Planning Authority for approval before occupation of any residential unit in order to demonstrate the effectiveness of such mitigation works."

Following our Noise Impact Assessment concerning the above condition (ref. AS11489.201217.NIA), Arun District Council decided to "approve in part details reserved by condition", stating:

"This condition is discharged in so far as submission of details relates and refers to the submitted Briary Energy Part L1a Compliance Assessment, which indicates all plots will be fitted with Daikin air source heat pumps to provide heating which when Combined with the fabric specification, offers a 23.6% reduction on the target emission rate for the development and Crayfern Homes drawing 56_14_101 Proposed Site Layout, which indicates positions for the proposed heat pumps."

However, the Environmental Health officer has advised that the proposal for a system of Daikin Air Source Heat Pumps which will be provided at each unit of accommodation can include external fans and pumps which has been associated with adverse noise to the detriment of neighbouring residential units.

It is therefore recommended that the Acoustic Report required under Condition 19 of the original Application A/46/19/PL includes investigation of this equipment to assess its likely effect on the acoustic environment and whether this is suitable in this case."

It is understood that plots 1 – 4 and 19 – 24 will include a Daikin EDLQ05CV3LT outdoor unit, and plots 5 – 18 will include a Daikin EDLQ07CV3LT outdoor unit. Maximum single-figure noise levels generated by these units have been confirmed by the manufacturer as follows. In the absence of spectral data provided by the manufacturer, a typical spectrum has been used. There are no tonal features which is consistent with our experience of these plant items whose sound profile is generally broadband in nature.

Frequency (Hz)	63	125	250	500	1k	2k	4k	8k	dB(A)
EDLQ05CV3LT (L_p @ 1m)	56	51	47	46	43	38	32	25	48
EDLQ07CV3LT (L_p @ 1m)	57	52	48	47	44	39	33	26	49

[dB ref. 20µPa]

The cumulative noise level at the nearest neighbouring window of each 'worst-case' dwelling within the development has been calculated using the noise data above, based on the architectural and building services drawings available at the time of writing, and compared to the measured typical background L_{A90} noise levels at the representative locations.

Plot*	Cumulative External Noise Level ($L_{Aeq,T}$)	Typical Background (L_{A90})
2/3^	26 dB	Night-time: 30 dB
5	20 dB	
6	28 dB	
7	28 dB	
9/10^	28 dB	
12	33 dB	Night-time: 31 dB
15	33 dB	Night-time: 30 dB
19	24 dB	
20/21/22/23/24^	31 dB	

*The above plots have been selected to cover the "worst-case" unique scenarios within the development.

^One calculation has been undertaken to cover each plot listed as they have the same layout/plan (i.e., one calculation has been undertaken to cover each of plots 20 – 24.)

Calculations assume that the units operate continuously throughout the night-time period. No time correction is applied nor is an intermittency penalty, which might be appropriate, since the likely time correction (50% time on) would be cancelled out by this 3dB intermittency penalty.

The calculations suggest that the absolute noise levels generated by the air source heat pumps will be lower than the typical background noise levels at the representative locations, suggesting they will not likely have an adverse effect on the acoustic environment.

With regards to plots 12 and 15, calculations suggest absolute noise levels generated by the air source heat pumps could be up to 2 and 3 dB higher than the typical background noise levels respectively. BS4142:2014 advises that this is below level where it is indicated that adverse impact may arise depending upon context. It should be noted that the above calculations are based on the air source heat pumps running at maximum capacity and are unlikely to reach these noise levels during the night-time period (23:00 – 07:00), when heating requirements are reduced. In addition, the absolute levels are very low. With allowance for approximately 15dB attenuation for a partially open window, internal noise levels are significantly lower than desirable internal noise levels in BS8233:2014.

It is, therefore, anticipated that the proposed plant selection and layout is unlikely to have an adverse effect on the acoustic environment, thus Condition 19 can be discharged.

Yours sincerely
for CLARKE SAUNDERS ASSOCIATES

Will Fairman



Proposed air source heat pump location

Rev A - 26.11.20: Plot 1-4 garages removed



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SITE LAYOUT | PROPOSED DEVELOPMENT AT:
LAND OFF MAYFLOWER WAY
ANGMERING, WEST SUSSEX
BN16 4AY
FOR
CRAYFERN HOMES LIMITED

Scale : 1:200 @ A1 Date : MAY 19
Drawing No : 56_14_101A