

Applicant: Peter Gudde

Site: 223 Mellis Road, Thornham Parva, Eye Suffolk IP23 8ET

Proposal description: Installation of Air Source Heat Pump

Planning Supporting Statement

Background

The application is being submitted to gain planning permission to install an Air Source Heat Pump to heat 223 Mellis Road (Annex 1 – Location and layout plans). The current heating system is an oil-fired boiler with associated internal wet central distribution system and room emitters. The Heat Pump will replace the oil-fired boiler resulting in the removal of the internal boiler and externally located associated oil storage tank.

Under the current planning regime, the installation of air source heat pumps is considered to be permitted development not needing an application for planning permission provided specified limits and conditions are met. The application proposal meets all the limits to be treated as permitted development with one exception; the proposed location of the heat pump is less than one metre from the property boundary. An application for planning consent is therefore being submitted.

Proposed installation details

A heat pump engineer has been engaged (CB Heating Limited of Clacton) and proposals have been supplied on which this application is based. The proposed heat pump is a Daikin Altherma 12kW unit which will be the sole externally located part of the installation except for associated connection pipework and electrical power supply which will connect from the heat pump within enclosed ductwork to the property's utility room in the same location as the existing oil boiler. Images of the proposed unit is shown in Figure 1. The proposed dimension of the heat pump is shown in Table 1 below.



Figures 1a and 2b: Daikin Altherma 12kW heat pump (front and side views)

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Fixture/Base:	Rubber feet
Height of fixture/Base (if applicable):	N/A
Unit Dimensions:	
Width (mm)	1270
Height (mm)	1003
Depth (mm)	533
Weight (Kg):	146

Table 1: Heat pump dimensions and seating arrangements.

Reasons for application

The primary reason why Permitted Development rights are not granted to heat pumps within one metre of the property boundary is the perceived noise impact on neighbours. The proposed location of the heat pump at 223 Mellis Road will be within one metre from the property boundary shown indicatively in Figure 2. The property boundary in the proposed location comprises of a six-foot high wooden fence to the south and the external brick façade of the ground floor bathroom of the neighbouring property. The proposed siting of the heat pump will be approximately 0.4 metres from the fence and 1 metre from the external wall façade of the bathroom to the west. The heat pump will sit on an existing concrete pad which is free floating from any other building structure. The heat pump will be mounted on rubber feet. Both mitigations will minimise any residual vibration although the unit is designed not to create any vibration.

The technical specification submitted by the supplier covers the issue of perceived noise from the operation of the heat pump, with a modelled noise assessment presented in Annex 2. The noise assessment demonstrates that in general terms the additional sound power level contribution of the heat pump will not exceed the background noise limit set out in the current industry code MCS020.

Actions taken to consult with those who may be affected by the development

We recognise that the location's background noise level may be lower than that applied in the MCS standard. In order to consider the real situation, and also to understand the likely impact on our neighbours at 222 Mellis Road, we have discussed the proposal with our neighbours. We also undertook a site visit on the 20th September 2021 with our neighbours to allow them to observe an equivalent unit in operation and ask questions of a senior member of the CB heating team.

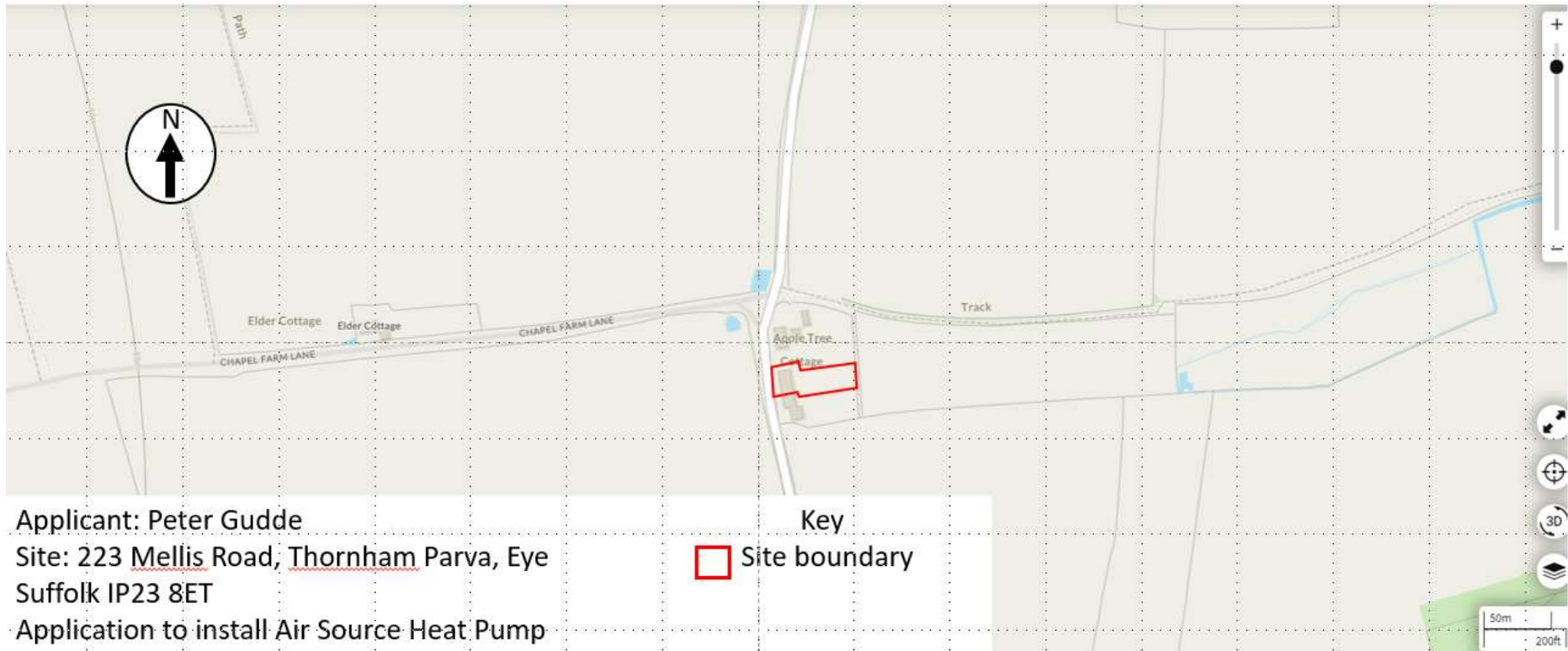
Based on the visit, we feel confident that our neighbours will not experience adverse noise impact during operation. Furthermore, our neighbours have stated that they see no issue in principle and that in the unlikely event that any adverse noise is perceived, they would accept mutually agreed mitigations.

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Annex 1: Plans



Site location plan

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Layout plan

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Annex 2: Noise assessment, extract from the detailed design specification supplied by CB Heating

Noise Assessment

This assessment is prepared in accordance to MCS 020, The Planning Standard for air source heat pumps. This is to establish that the proposed location of the air source has a noise level lower than 42 dB (A) and would not require planning permission from the local authorities.	
For the purpose of the calculation procedure the following notes have been issued:	
·Assessment position means a position one metre external to the centre point of any door or window to a habitable room of a neighbouring property as measured perpendicular to the plane of the door or window.	
·Habitable room means a room other than a bathroom, shower room, water closet or kitchen;	
·Neighbouring property means any building used for any of the purposes of Class C Town and Country Planning (Use Classes) Order 1987 (as amended) (includes dwelling houses, hotels, residential institutions and houses in multiple occupation). In instances where the air source heat pump would be installed on a block of flats, neighbouring property includes flats within the same block of flats (excluding the flat of the "owner(s)" of the air source heat pump).	
Assessment position:	Neighbouring property
Relevative Assessment property position:	Rear Elevation
Assessment Position - Door or Window:	Window
Distance to assessment position (m):	4
From manufacturers data, obtain the A-weighted sound power level of the heat pump. See "Note 1: Sound Power Level" below. The highest sound power level specified should be used (the power in "low noise mode" should not be used).	
Manufacturers data states the sound power levels are (dB(A)):	54
Use "Sound Pressure level" and "Determination of directivity" to establish the directivity "Q" of the heat pump noise.	
Directivity:	Q4
dB Distance reduction:	-17.00
Barrier (wall/fence) between ASHP and assessment position:	No
Sound pressure level from the ASHP at the assessment:	37.00
Background noise level. For the purposes of the MCS Planning Standard for air source heat pumps the background noise level is assumed to be 40 dB (A)Lp. For information see "Note 6: MCS Planning Standard for air source heat pumps background noise level"	
Background noise level dB(A)	40
Differential Noise (ASHP-Background, dB(A)):	3.00
Decibel correction adjustment:	1.8
Air Source Heat Pump Noise Level	41.8
Noise Assessment Summary	
The Air Source Heat Pump noise level is lower than the permitted noise development limit of 42 dB(A). Therefore, the air source heat pump will comply with the permitted development noise limit for this assessment position and may be permitted development (subject to compliance with other permitted development limitations/conditions and parts of the MCS 020 standard.)	

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Sound Power Level
Sound Power is the total acoustical energy emitted by a sound source and is an absolute value. It is not affected by the environment or the location of the listener.
Sound Pressure level
Sound pressure is what we hear. It is a pressure disturbance at a specific point in the atmosphere whose intensity is influenced not only by the sound power of the source, but also by the surroundings and the distance from the source to the point at which the sound is heard.
Determination of "Directivity"
The sound pressure level increases with the number of reflecting surfaces. A reflective surface is any surface (including the ground) within 1 metre of the air source heat pump.
Barriers between the heat pump and the assessment position
A correction should be made for attenuation due to barriers between the air source heat pump and an assessment position. A correction will be necessary if an installer is unable to see an assessment position from the top edge of the air source heat pump. Use the following instructions to determine whether a correction is appropriate: <ul style="list-style-type: none">• For a solid barrier (e.g. a brick wall or a fence) that completely obscures an installer's vision of an assessment position from the top edge of the air source heat pump attenuation of -10 dB may be assumed;• Where a solid barrier completely obscures an installer's vision of an assessment position from the top or side edges of the air source heat pump, but moving a maximum distance of 25cm in any direction to the air source heat pump allows an assessment position to be seen, attenuation of -5 dB may be assumed;• If it is possible for an installer to see any part of an assessment position from the top or side edges of an air source heat pump no attenuation may be assumed.
MCS Planning Standard for an air source heat pumps background noise level
The MCS Planning Standard assumes a background noise level of 40 dB (A) for the purposes of the air source heat pump calculation procedure. A different value for background noise should not be used as part of this calculation procedure.