

Information Paper

Planning of domestic air source heat pumps to mitigate noise impacts

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Air source heat pumps (ASHPs) are often installed to reduce energy consumption. They work on the same principles as domestic refrigerators, transferring energy from one place to another using heat exchangers, with a refrigerant fluid going through a process of compression and expansion. These electro-mechanical devices are typically sited immediately adjacent to the buildings that they serve and are not silent in operation. The main sources of noise are the compressor and fan used to increase the flow of air over the heat exchanger.

The choices for location will often be limited and the noise produced will be a criterion in product selection. Mitigation of noise nuisance has to be considered for both the dwelling being served and adjacent dwellings. This is particularly important where dwellings are sited close together.

Regulatory requirements vary throughout the UK, with England, Wales, Scotland and Northern Ireland each subject to different guidance. The purpose of this publication is to give an overview of the planning requirements relating to ASHPs in the UK, and to provide a tool for the assessment of noise in accordance with Microgeneration Certification Scheme published guidelines before specifying, purchasing or installing a unit. It should not be used to assess the likelihood of, or in defence of, complaints regarding noise. This Information Paper is aimed at architects, specifiers and home owners.

Planning restrictions and controls

Planning permission is required for air source heat pumps (ASHPs) under certain circumstances in each of the four regions of the UK. In Northern Ireland planning permission is always required. In England, Wales and Scotland, ASHPs may be considered 'permitted development' if they meet certain requirements and thus do not require explicit planning



Figure 1: Air source heat pump installation on the BRE Innovation Park

permission. It is recommended that confirmation is obtained from the local planning office in every case as the conditions relating to permitted developments are kept under review and may change over time. The local authority's interpretation of the rules may also differ from the applicant's. General details for each region are given below but these are not comprehensive, eg additional conditions may apply in conservation zones. Details relating to additional local controls are generally found on the regional governments' websites, or may be obtained by contacting the local planning office.

In Northern Ireland, ASHPs will not be considered for permitted development until any issues regarding noise have been resolved. A planning application is required in every instance. Supporting information that may be required could include an assessment in accordance with Microgeneration Certification Scheme (MCS) Planning Standard MCS 020^[1] or by a specialist acoustic consultant.

In England, unless a wind turbine has already been installed at the property, ASHPs are classed as permitted development provided that: