Heat Pumps and Listed Buildings in B&NES

As Bath is a UNESCO World Heritage Site and contains around 5,000 Listed Buildings, installing Heat Pumps on Listed Buildings requires Planning Permission/Listed Building Approval. Here is some information that is provided by B&NES Council with respect to what to consider when thinking about installing an Air Source Heat Pump in a Listed Building:

Issues to be aware of:

Noise emissions should be considered and mitigated where needed with a silencing enclosure, or by locating the unit further from sensitive facades.

The location of the very cold air exhaust from ASHPs should be carefully considered to avoid 'cold plumes' to occupied external areas, or areas where ice may proliferate.

Heat pump systems cannot be used for instantaneous hot water like a combi boiler and space will be required for a correctly sized hot water tank.

When installed inside the building, ductwork may need to pass through the wall of the building and they will take up space internally.

Guidelines to Heritage Assets:

Buildings of a traditional construction require a level of passive natural ventilation and the design of the heat pump system will need to allow for the lower levels of insulation and higher rate of ventilation.

Care should be taken to locate the external unit of an air source heat pump in a discreet location away from the principal elevation – this could include behind greenery or fencing. You can also find ducted ASHP units which can be located indoors.

If under-floor heating is not possible, radiators may be considered. In some cases, historic radiators may survive and are likely to be considered as significant elements of the interior and therefore their retention is important. Where this is not the case, new radiators should be of a discreet design and sensitively-located.

Older properties often contain microbore pipework, which may need to be carefully replaced as it is not usually compatible with a heat pump.

When used for space heating, heat pumps work most efficiently with under-floor heating. This is unlikely to be appropriate where there are significant historic floor surfaces which could be harmed from being lifted. However, where there is not the case, such as where there is already modern, replacement flooring, under floor heating may be possible. In which case, it is highly recommended that limecrete is used which can be used in conjunction with insulation and under floor heating systems whilst allowing the transfer of moisture.

Heat Pumps & Listed Building Applications:

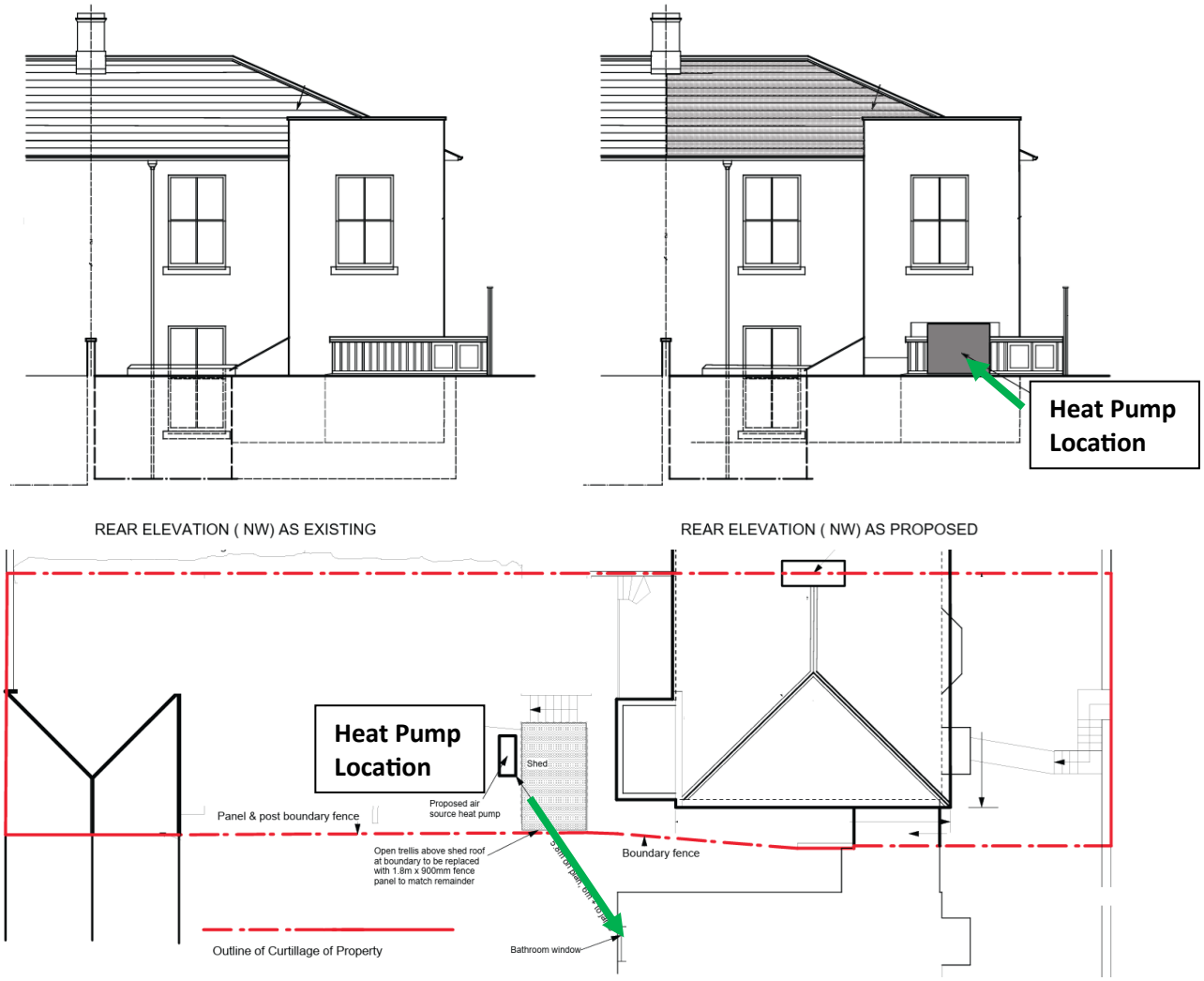
The easiest way to try to find out which Listed Buildings have had Heat Pump installations Approved by the Council is to carry out an "*Advanced Search*" using this link to the Council's website:- https://app.bathnes.gov.uk/webforms/planning/#advancedSearch

In the section titled "*Keyword*" Go Green Widcombe searched for various options, including "*Heat Pump*" and "*ASHP*". At the same time we specifically looked for the following "*Application Type*"... "*Listed Building Consent (Alts/exts)*".

The key issues that need to be considered when applying for Listed Building Approval for a Heat Pump is the location (ie. not easily visible) and the noise (which is reduced by having the Heat Pump installed as far away as possible from neighbouring buildings).

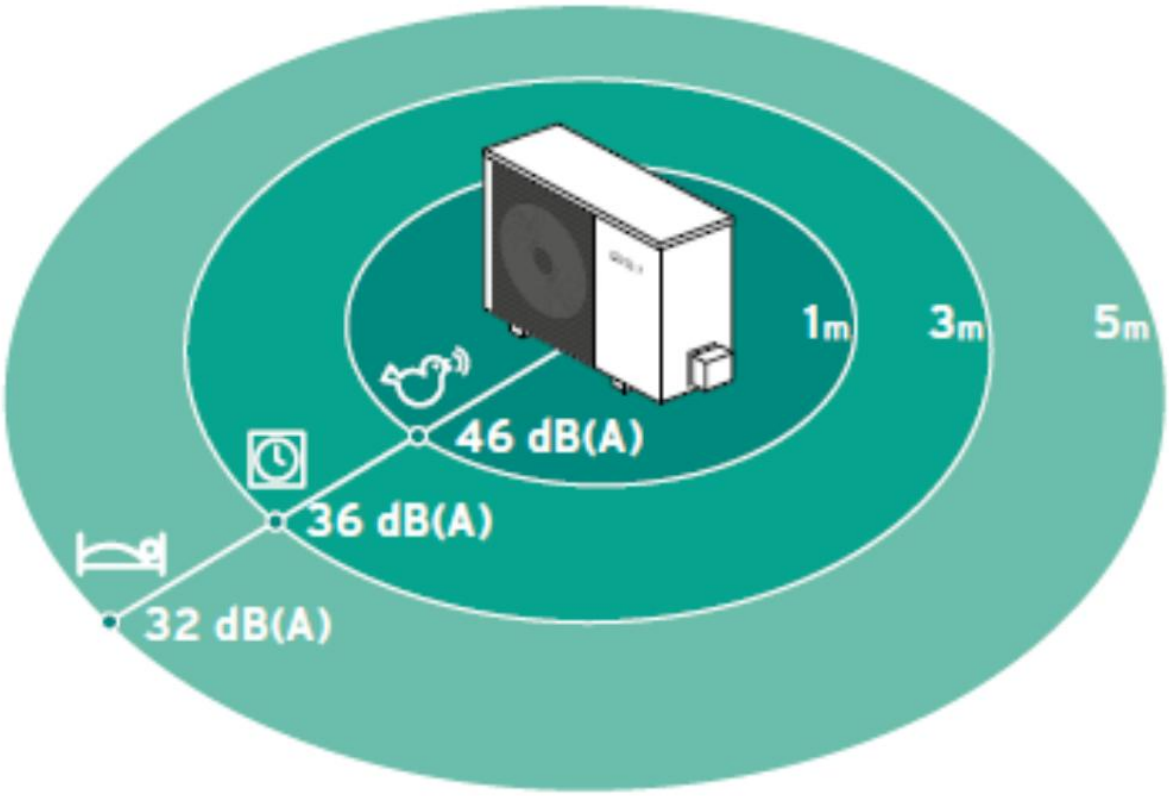
Go Green Widcombe also keeps a regular check on the number of Listed Building Applications for certain projects, including Heat Pumps. Using the "*Keyword*" search option mentioned earlier, Go Green Widcombe have uncovered 33 Listed Building Approval (LBA) Applications on the Council Records. However, these 33 Applications were from 30 separate Properties, as 2 Properties made more than 1 LBA Application and one removed "*Heat Pump*" from its Application during the time that the Application was being considered... because a neighbour had expressed concerns about noise.

Here's an example of a proposed location for a Heat Pump in the back garden of a Listed Building in Bath.



The green arrow highlights the distance between the Heat Pump and the closest window on a neighbour's house (5.8 metres away).

This sort of detail is important as the noise generated by a Heat Pump decreases with distance, as is shown below in a diagram from the "*Source Energy, Heat Pumps Scotland*" website (see https://sehps.co.uk/air-source-heat-pump-noise-levels-and-regulations-in-the-uk/). At 1 metre the sound of the Heat Pump will be like birdsong, at 3 metres it's like a clock ticking and at 5 metres it's quiet enough for people to be sleeping.



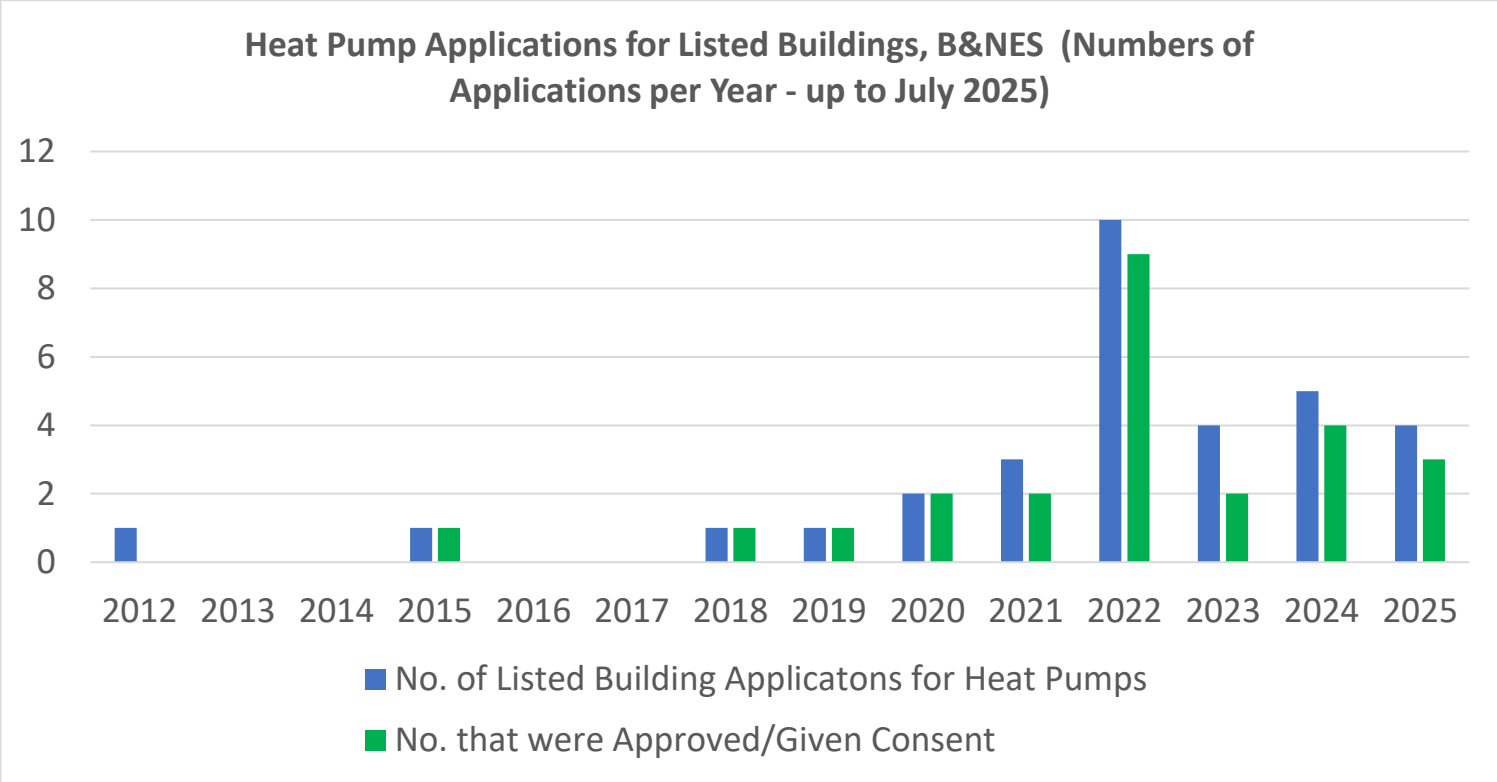
The TLC Electrical Supplies website, gives a more detailed summary of what sort of sounds are associated with different dB(A) levels - see https://www.tlc-direct.co.uk/Technical/Sounds/Decibles.htm. In this website 30dB is said to be equivalent to a whisper.

Here are two other links to websites which specifically deal with the levels of noise associated with Heat Pumps:

https://www.greenbuildingrenewables.co.uk/are-heat-pumps-noisy/
This link shows how Heat Pumps compare to other Domestic Appliances... they are said to be quieter than a fridge.

https://heat-pumps.org.uk/how-noisy-are-heat-pumps/
This website explains that the UK legal limit for Heat Pump noise, as heard at a neighbouring property, is 42 dB (which is said to be equivalent to the noise generated by a Laptop computer).

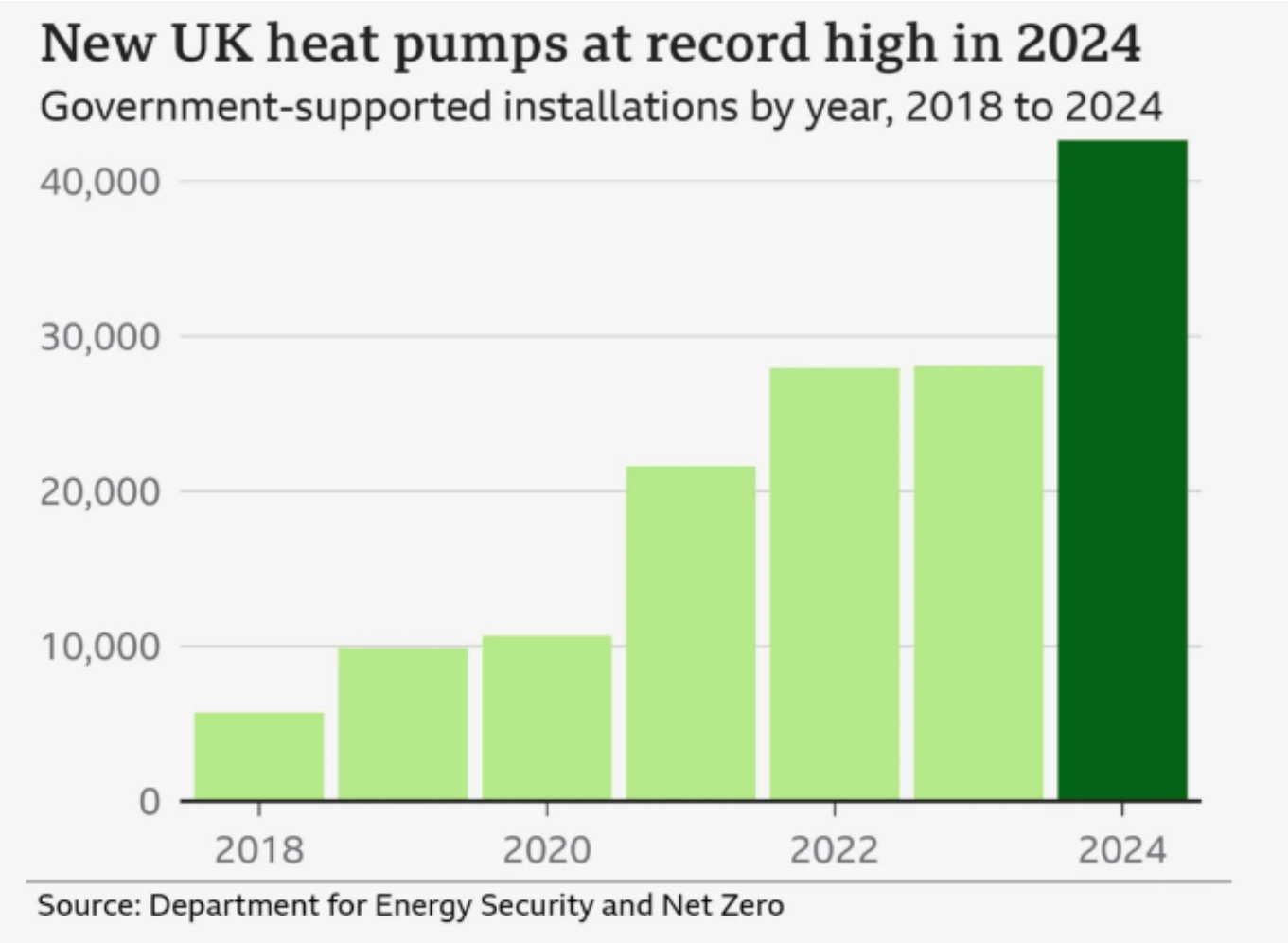
The graph below summarises the number of Listed Building Applications across B&NES for Heat Pumps/ASHP's (Air Source Heat Pumps) since 2012 (using the terms "*Heat Pump*" or "*ASHP*" in the search via B&NES Council's Planning Application "*Advanced Search*" option). It's clear that in the last few years the number of Listed Building applications has been increasing (with a peak in 2022). It's also interesting to see that, generally, most applications have been granted Consent.



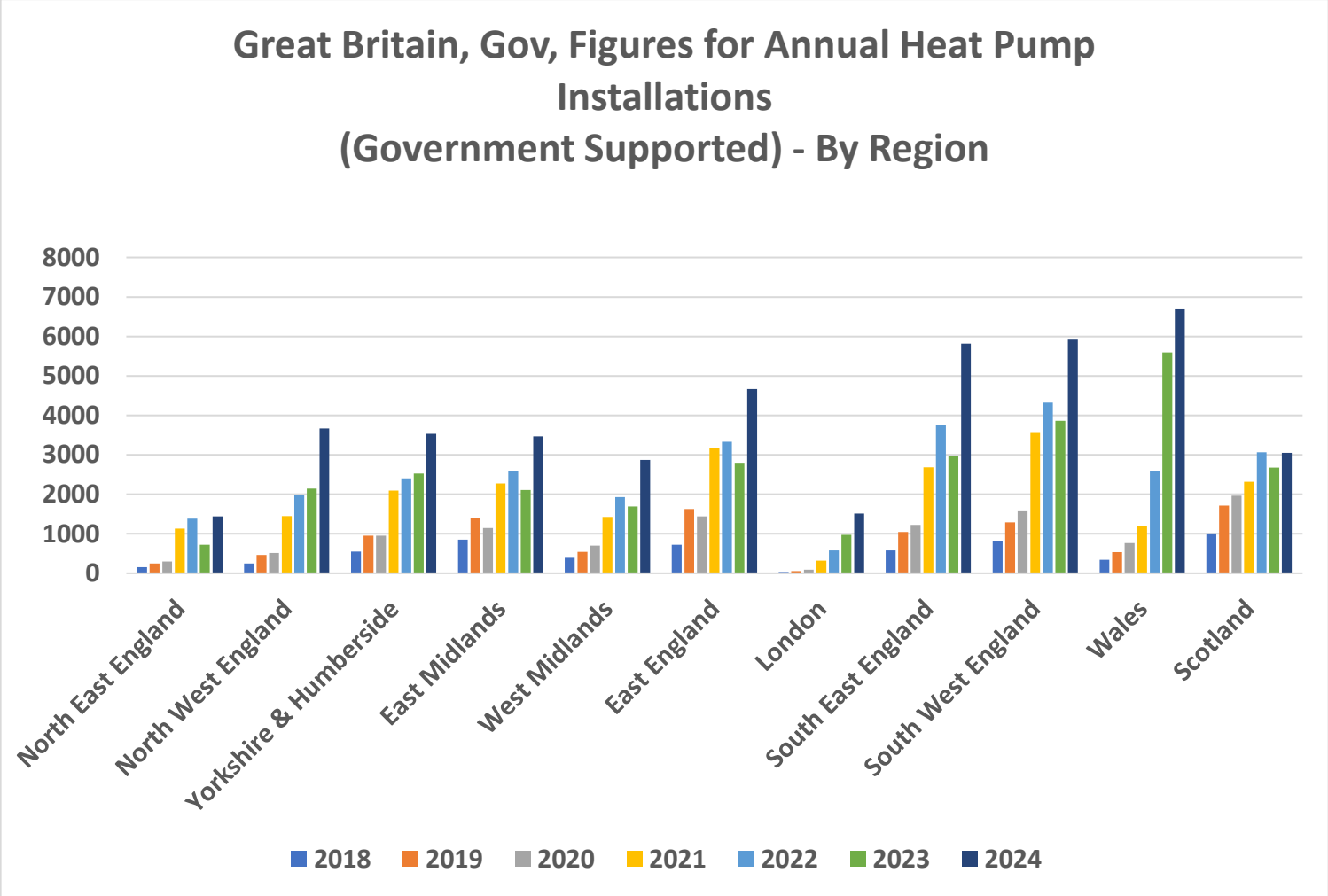
Heat Pumps are a key part of any local plan to reduce CO_2 emissions, by getting Households to move away from Gas Central Heating (which is typically around 90% efficient) to Heat Pumps (which are between 300% to 500% efficient).

The Government produced this webpage about Heat Pumps in the last couple of years... https://energy-efficient-home.campaign.gov.uk/heat-pump/#:~:text=Heat%20pumps%20are%203%20times,with%20cheaper%20off%2Dpeak%20rates. This site also gives a summary about what Heat Pumps are, the benefits, the Government's Boiler Upgrade Scheme (BUS) Grant (worth £7,500) and other information.

The total number of Heat Pumps that were installed across the UK in 2024 was over 40,000 (a 53% increase vs 2023). The graph below, from the Government Department for Energy Security and Net Zero (DESNZ), shows how the number of installations has increased since 2018, and especially since the BUS Grant was introduced in 2022.



The next chart shows the Annual Number of Heat Pump Installations across Great Britain that have received Government Support (eg. via the Boiler Upgrade Scheme).



The final chart, below, summarises the list of Heat Pump List Building Applications that have been Approved. It's not clear how many of these have actually been installed.

Reference:	Date:	Address:
15/03671/LBA	14/08/2015	Cottles Farm House, Blackrock Lane, Publow, BS39 4JA
19/02103/LBA	13/05/2019	114 - 116 Walcot Street, Bath, BA1 5BG
20/00397/LBA	31/01/2020	Manor Barn, Farm Lane, Wellow, BA2 8QU
20/04881/LBA	21/12/2020	Dean Hill Manor, Kelston, BA1 9AB
21/01593/LBA	31/03/2021	Church House, Church Road, Dunkerton, BA2 8BJ
21/03123/LBA	29/06/2021	12 Dunsford Place, Bathwick, BA2 6HF
22/00802/LBA	21/02/2022	16 Springfield Place, Lansdown, Bath, BA1 5RA

22/01196/LBA	16/03/2022	54 Sydney Buildings, Bathwick, Bath, BA2 6DB
22/01713/LBA	25/04/2022	Kilowatt House , North Road, Bathwick, Bath, BA2 6HW
22/01973/LBA	13/05/2022	10 Lansdown Crescent, Lansdown, Bath, BA1 5EX
22/02089/LBA	19/05/2022	11 Lambridge Place, Lambridge, Bath, BA1 6RU
22/03147/LBA	05/08/2022	2 Alice Park , Gloucester Road, Lower Swainswick, BA1 7BL
23/04071/LBA	30/10/2023	Lomond House , 35 Bathwick Hill, Bathwick, Bath, BA2 6LD
24/01890/LBA	17/05/2024	Woodside House , Staples Hill, Freshford, BA2 7WJ
24/04074/LBA	29/10/2024	4 Hatfield Buildings, Widcombe, Bath, BA2 6AF
24/04629/LBA	16/12/2024	14 Sydney Buildings, Bathwick, Bath, BA2 6BZ
25/01748/LBA	01/05/2025	3 Stanley Villas , Camden Road, Beacon Hill, Bath, BA1 5JE
22/01196/LBA	16/03/2022	54 Sydney Buildings, Bathwick, Bath, BA2 6DB
22/01713/LBA	25/04/2022	Kilowatt House , North Road, Bathwick, Bath, BA2 6HW
22/01973/LBA	13/05/2022	10 Lansdown Crescent, Lansdown, Bath, BA1 5EX
22/02089/LBA	19/05/2022	11 Lambridge Place, Lambridge, Bath, BA1 6RU

Note: Some of these installations were Ground Source, rather than Air Source Heat Pumps.

Finally, in one of the LBA's above, the Council wrote that they supported the installation of an Air Source Heat Pump (ASHP) because... "*There was no detrimental impact on the architectural or historic interest of the building*". They added that the ASHP "*could likely be discretely sited without impact to the setting of the Listed Building*". Plus they sought "*further information detailing how the ASHP unit would be concealed*", which was to be added at the formal application stage. Finally, they said that "*a noise assessment would be needed to support a future application*", adding that the assessment should be in accordance with the British Standard 4142, in order to quantify the noise impact of the ASHP that was selected to be installed.