



EMG Consulting

Planning Statement & Noise Assessment

For

Westfield Academy

On behalf of: **Westfield Academy**

Date: **November 2023**



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1.0 General Background & Planning History

This planning statement has been prepared in support of a new planning application for Westfield Academy that comprises of the following:

- Conversion of an existing bin store located outside of the boiler house of the upper school site (Block B) to house 12no Air Source Heat Pump units
- Erection of an electrical sub-station within the curtilage of the site to accommodate the increased electrical demand of the air source heat pump plant.

The Upper School site is located off Stiby road in Yeovil and is within the authority control of South Somerset District Council.

The academy site has had various planning applications submitted in the past which have been successfully granted planning permission. These include the erection of various modular building and building extensions and installation of a large solar PV array.

Westfield Academy Stiby Road Yeovil Somerset BA21 3EP
'The erection of a single storey 6 bay double classroom modular building'
Ref. No 22/02281/FUL

Westfield Academy Stiby Road Yeovil Somerset BA21 3EP
'Single storey, 6 bay double classroom modular building'
Ref. No: 21/01635/FUL

Westfield Academy Stiby Road Yeovil Somerset BA21 3EP
'Erection of two storey and single storey extensions to sports building'
Ref. No: 19/02521/FUL

Westfield Academy Stiby Road Yeovil Somerset BA21 3EP
'The erection of 'Airdome' sports building (GR 354351/116952)'
Ref. No: 16/00417/FUL

Westfield Academy Stiby Road Yeovil Somerset BA21 3EP
'Installation of 961 No. solar PV panels (maximum 250 kW) to roof slopes (Part Retrospective)(GR 354392/116734)'
Ref. No: 15/05333/FUL

2.0 Planning Policy

We have reviewed our proposals with local planning policy, including South Somerset planning documents:

South Somerset Local plan 2016-2028

Section 13.9 states:

This term describes energy supply from 'renewable' sources such as from the wind, the fall of water, the sun, and biomass; and 'low carbon energy' that can help to reduce CO2 emissions e.g. Combined Heat and Power, air/ground source heat pumps and energy-from-

waste. National policy strongly supports renewable and low carbon energy, with the UK Renewable Energy Strategy (2009) setting a target of 15% of energy consumption to come from renewable sources by 2020 – a challenging target that will require a seven-fold increase from 2008 levels.

3.0 Business Case and Development Proposals

The project consists of a refurbishment of the original life expired and inefficient heating system within Block B at the Academy. The system has failed on a number of occasions, with re-active repairs and flood damage costing almost £170,000 in the last 18 months. At 55 years old the heating system is in desperate need of replacement and is well beyond its expected life. Inevitably if no action is taken there will be further failures, likely resulting in the Academy closure.

The system will be replaced with a zero carbon heat pump system, which will alleviate all the issues outlined above, providing a reliable and future proofed heating system, estimated to save circa 1,696 tonnes of CO₂e over its lifetime, a 88% improvement over a new gas fired boiler and reducing the Academy's total carbon emissions by 39%.

4.0 Noise Assessment

To calculate the impact of the ASHP plant on outdoor living at certain distances from the proposed development, the Inverse Square Law should be used to measure sound attenuation over distance from a point source:

$$Lp(R2) = Lp(R1) - 20 \cdot \log_{10}(R2/R1)$$

Where:

Lp(R1) = the Known sound pressure level at the first location. 64 db has been used based upon information taken from the technical data sheet of the loudest outdoor condenser unit manufactured by Toshiba.

Lp(R2) = Unknown sound pressure level at the second location.
R1 = Distance from the noise source to location of known sound pressure level. 1 metre has been used based upon information taken from the technical data sheet of the loudest outdoor condenser unit manufactured by Toshiba.

R2 = Distance from noise source to the second location. 10 metres has been used based upon the measured distance to the curtilage of nearest neighbouring property

The results of the test are as follows:

Time of Day	WHO Guidance	Calculated Noise level at 10m	Within Recommended Range by
Day (6am – 6pm)	55 dB	44 dB	11 dB
Evening (6pm – 10pm)	50 dB	44 dB	6 dB
Night (10pm – 6am)	45 dB	44 dB	1 dB

These results show that at all times of day the noise level of the loudest ASHP is below the recommended World Health Organisation (WHO) guidance, taken from '*The World Health Organisation (WHO) Guidance for Community Noise (1999)*'.

When considering the hours of 10pm – 6am, testing the noise level at 20 metres not 10 metres, is more appropriate as this is the distance to the nearest neighbouring building (not curtilage of the property). At this distance the sound level 38dB, 7 dB lower than the recommended guidance during the hours of 10pm – 6am. The consideration of building insulating materials and double glazing between the outside and inside of the property would reduce this noise impact further.

The operational procedure of the ASHP system will also rarely result in the units being switched on between the hours of 10pm and 6am as the School is closed and the heating system will not be operating. The only exception to this could be during a cold winters morning when the units switch on at say 5am to allow the school to heat up before the staff / students arrive.

In summary we would concluded that in any scenario, the heat pump system will be within the WHO recommended guidance at all times of the day based upon the impact at the nearest neighbouring property.