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**Hopwood Hall College
Middleton Campus Air Source Heat Pump and Solar PV**

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1 Background

Located across 2 sites in Middleton and Rochdale, Hopwood Hall College occupies 33,000 m² of floor space and provides office accommodation and educational facilities for nearly 6,000 Staff and Students, both full and part time.

The colleges greenhouse gas emissions are driven by 4 key aspects:

1. Buildings Energy use.
2. Transport.
3. Water and Waste.
4. The consumption of 3rd party goods and services for curriculum activity.

Hopwood Hall College has recognised the need to pursue a net-zero strategy and commissioned an evaluation of its sources of greenhouse gases, alongside the development of a plan to achieve Net Zero by 2040 or earlier if it can be achieved.

The College recognises the wider social and commercial opportunities that can follow the net zero journey including:

- **Climate Anxiety** – Helping stakeholders visualise the path to environmental harmony.
- **Energy Security** – Decoupling from the grid & protecting against market shocks.
- **Reputation** - Leading community action against climate change.
- **Future proofing** – preparing for emerging low carbon regulatory and market opportunities.
- **Business Development** – building environmental stewardship into all curricula to:
 - Prepare students for the low carbon economy.
 - Support employers and business partners with environmental up-skilling of workforces.

To support their aims, the college leadership team commissioned a benchmarking exercise across their estate, which identified an annual carbon emissions profile of:

3,067 TCO₂e

This included **1120 TCO₂e** of Scope 1 & 2 carbon emissions primarily arising from Energy consumption across their two campuses.

This Design and Access Statement has been prepared by HI Group Ltd to accompany an application for planning permission, for the installation of an Air Source Heat Pump system, Solar PV, Electrical and Thermal battery storage to support the Middleton campus heat demand.

2 Introduction

2.1 Location

This Design and Access Statement forms part of the planning application for the proposed Air Source Heat Pump & Solar PV Installation at the Middleton Campus.

The site is accessed from the A664 Rochdale Road.

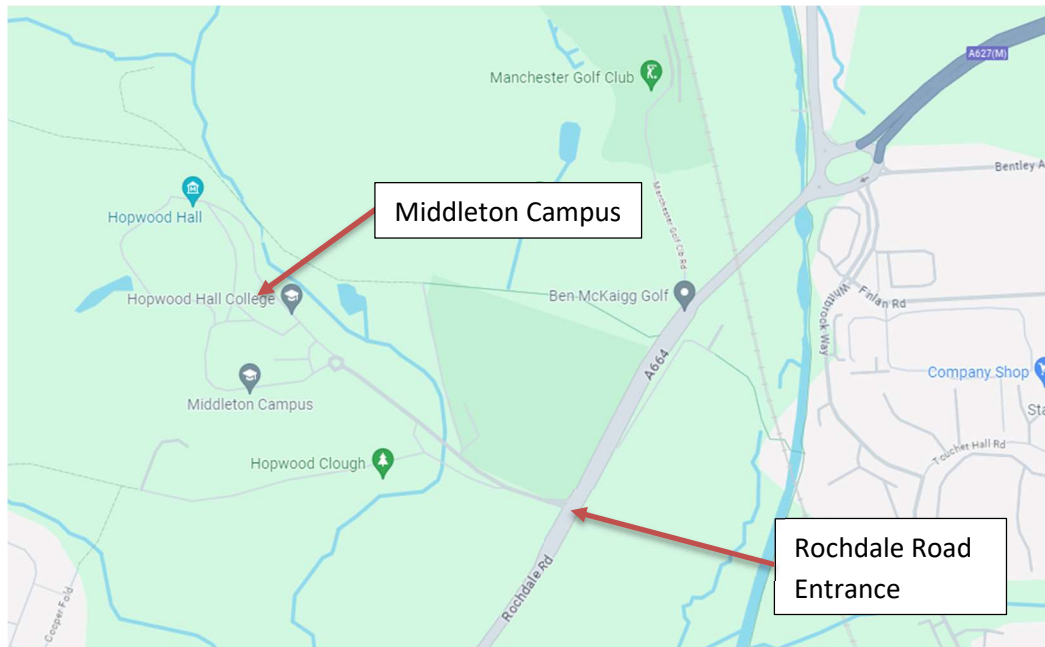


Figure 1 – Site Location Map

The location of the proposed Energy Centre is within the boundary of the college campus West of the entrance on hard standing currently occupied by storage containers (grid reference 53.56817 - 2.18966 - Google Maps).

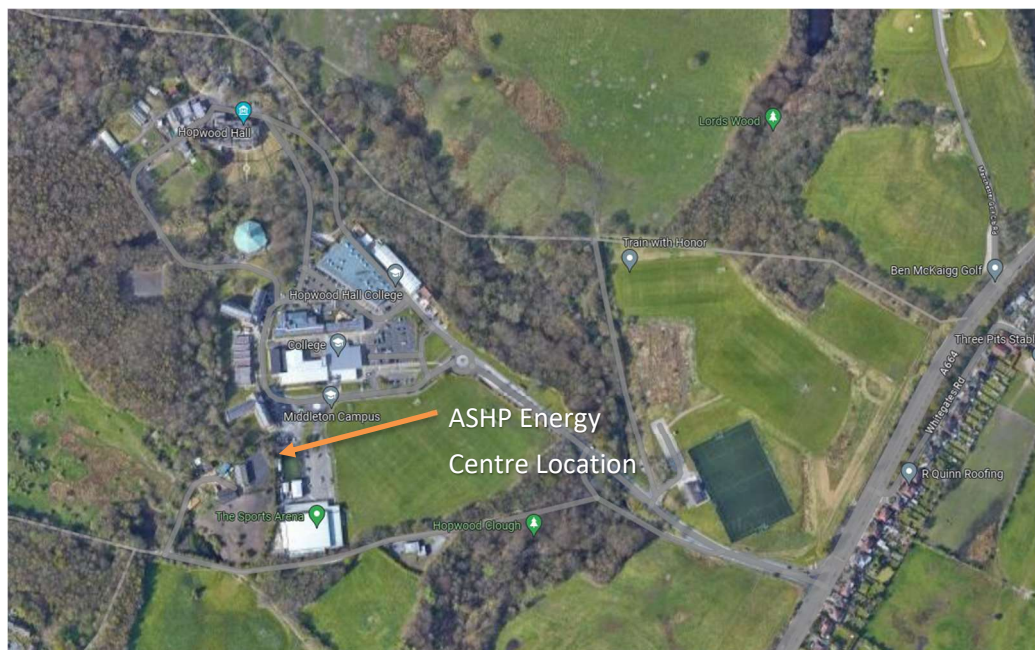


Figure 2 – Middleton Campus

2.2 Proposed Development

The proposed development consists of the installation of a Clade Air Source Heat Pump system supported by a thermal storage battery and 0.25mW battery, to provide a non-polluting and sustainable energy source. This facility will enable the Middleton Campus to significantly reduce its gas and electrical baseload.

2.3 Middleton Campus Site Access

The site entrance is on the A664 Rochdale Road.

This can be accessed from the M62 onto the A627(M) from the North leading on to the A664 with the campus entrance on the right-hand side approximately 0.6km from Slattocks Roundabout.

During the installation phase the site will be visited by contractors and delivery vehicles which will be coordinated by the site manager to avoid congestion issues.

2.4 Construction

It is proposed to begin mobilisation of the development in Q2 2024 and complete by Q4 2024 with commissioning following on.

A temporary office compound will be installed on site to provide welfare facilities for the construction team for the duration of the project.

2.4.1 Hours of Construction

It is envisaged that the installation of the ASHP and associated works will be 28 weeks. The only hours in which construction would take place is from 08:00 to 18:00 Monday to Friday, Saturday mornings subject to local by-laws.

2.4.2 Vehicle Movements

It is not envisaged that more than 10 vehicles movements per day will occur including existing HGV movements.

2.4.3 Noise

A Noise Impact Assessment has been carried out for the Energy Centre (P2436-REP01-BDH) and is included in the application documentation.

No pile driving or use of percussion equipment shall take place on the site on any Sunday / Bank Holiday.

2.4.4 Lighting

The Energy Centre shall not be artificially illuminated except during construction, routine maintenance, and emergencies.

2.4.5 Ground and Surface Water

The proposed development will not change the ground and surface water runoffs.

2.4.6 Security

The energy centre will be surrounded by 3.0m high welded mesh fencing and 2.0m & 3.0m high wooden fencing around the ASHP.

3 The Site

3.1 Surrounding Area

- The site is located in the Borough of Rochdale.
- The land is owned by Hopwood Hall College.
- The Middleton Campus covers 29 hectares with the site comprising of woodland, sports fields, training, and educational buildings. Hopwood Hall is located within the college boundary.

3.2 The Development Site

The proposed location of the Air Source Heat pumps and Energy Centre is a hard standing area on the west side of the campus. To connect to the various building plant rooms and electrical infrastructure, trenching, new insulated pipe heat mains and electrical cables will be installed.

3.3 Electrical Grid Connection

DNO reinforcement works are to be undertaken to accommodate the import/export of solar electricity via the battery store.

3.4 Location Constraints

3.4.1 Heat Pump and Energy Centre Location Options

Locations were evaluated from an access, operational, and environmental point of view. Based on the analysis, the location of the hard standing area next to the AWP is the preferred location with least amount of impact on the campus during installation and the operational phase.

3.4.2 Visual Impact

The proposed site is located next to the campus all weather training pitch and will have little visual impact. The installation is mainly a low-level installation (thermal store approximately 7m) surrounded by timber and welded mesh fencing.

3.4.3 Ecological Factors

The existing site comprises of educational buildings, tarmac & hard standing car parks, sports fields, and woodland. The areas of installation activity are restricted to the buildings and surrounding hard standing.

3.4.4 Archaeological and Historic Environment Factors

Hopwood Hall is a Grade II* listed building, which is located within the Hopwood Hall College Middleton Campus. The buildings include elements dating back to 1420, with various additions from the 16th, 17th, and 18th centuries. In addition to this is a later 20th century extension, which is not considered to be of special historic interest.

There are no SSSI located on the campus.

3.4.5 Public Access

There are no public rights of way that pass through the campus.

3.4.6 Proposed Landscaping Features

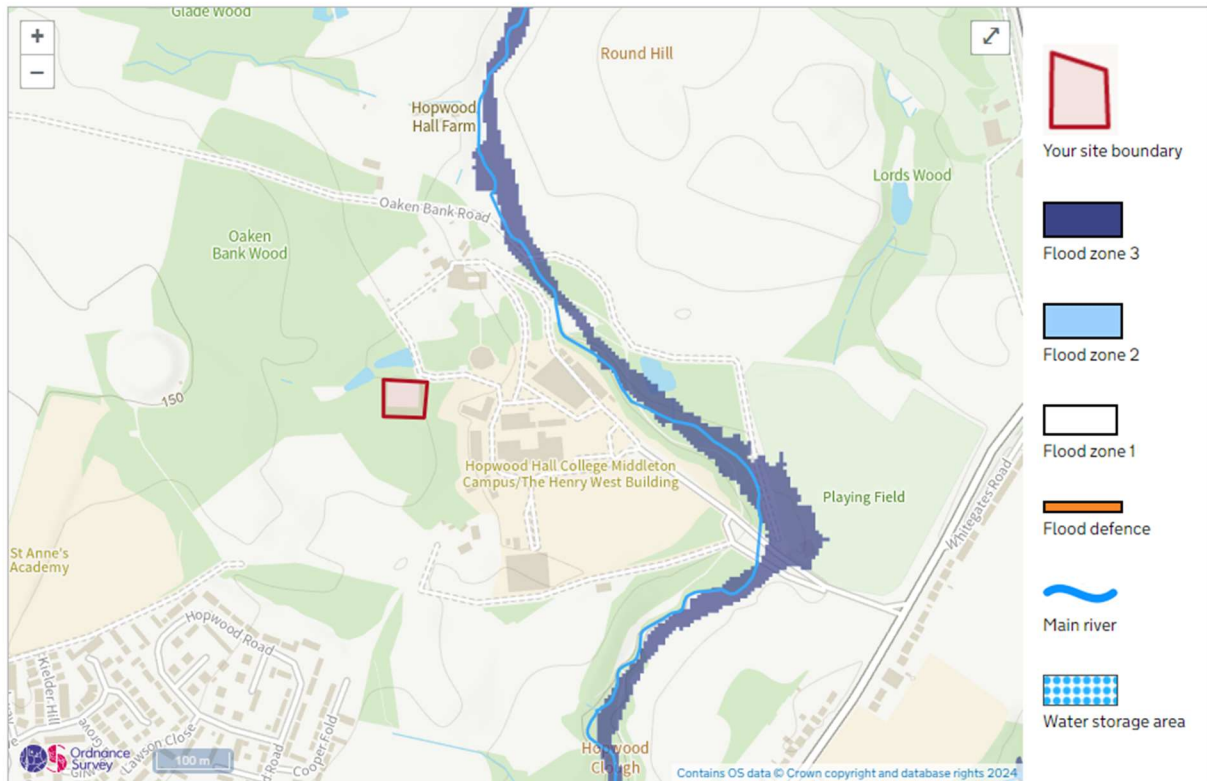
It is not proposed to add any new landscaping features.

3.4.7 Trees

No trees are to be removed as part of this development.

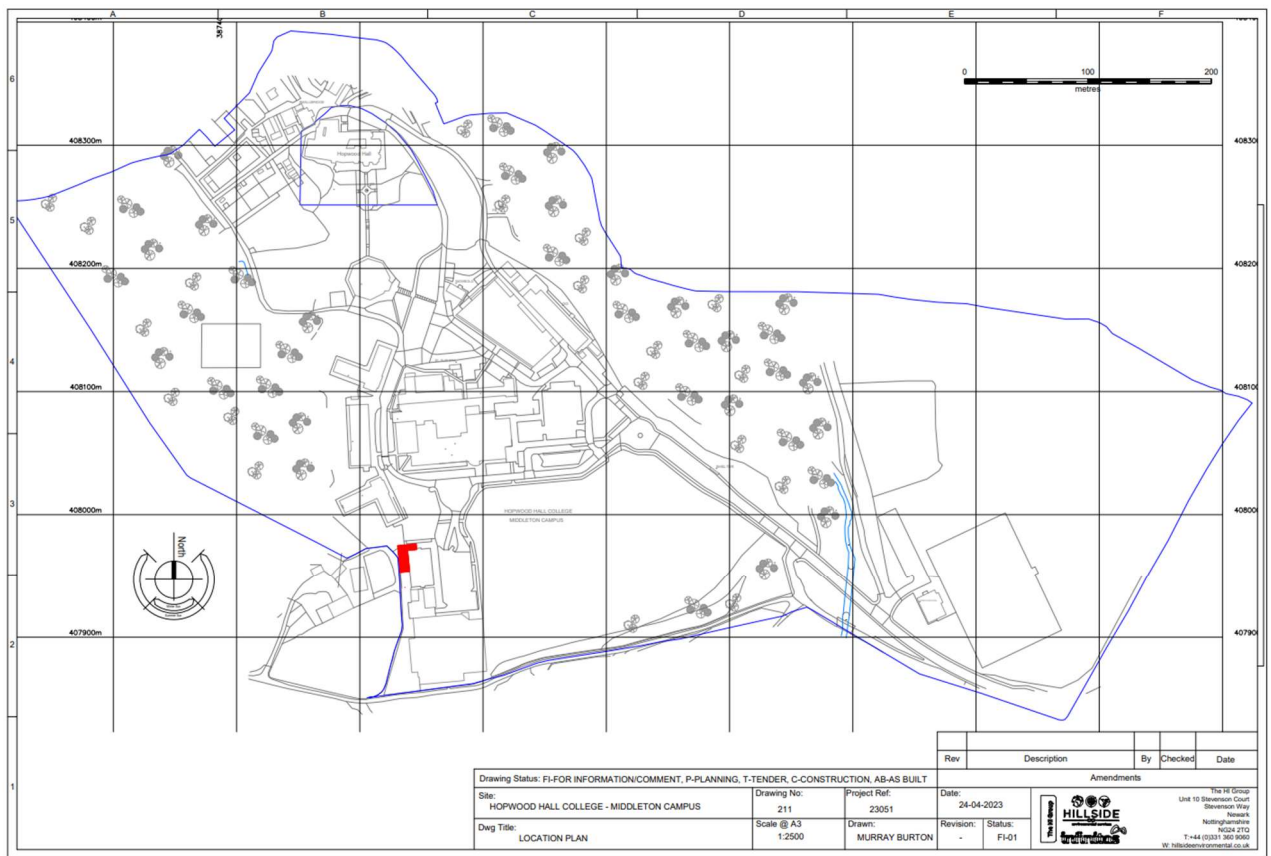
3.4.8 Flooding

Trub Brook runs through the college boundary to the NE of the campus buildings, 115m AOD. This is Flood Zone 3. The Energy Centre location is 130m AOD and 300m to the west of Trub Brook and is in Flood Zone 1. The proposed Energy Centre location is on existing hard standing surface.

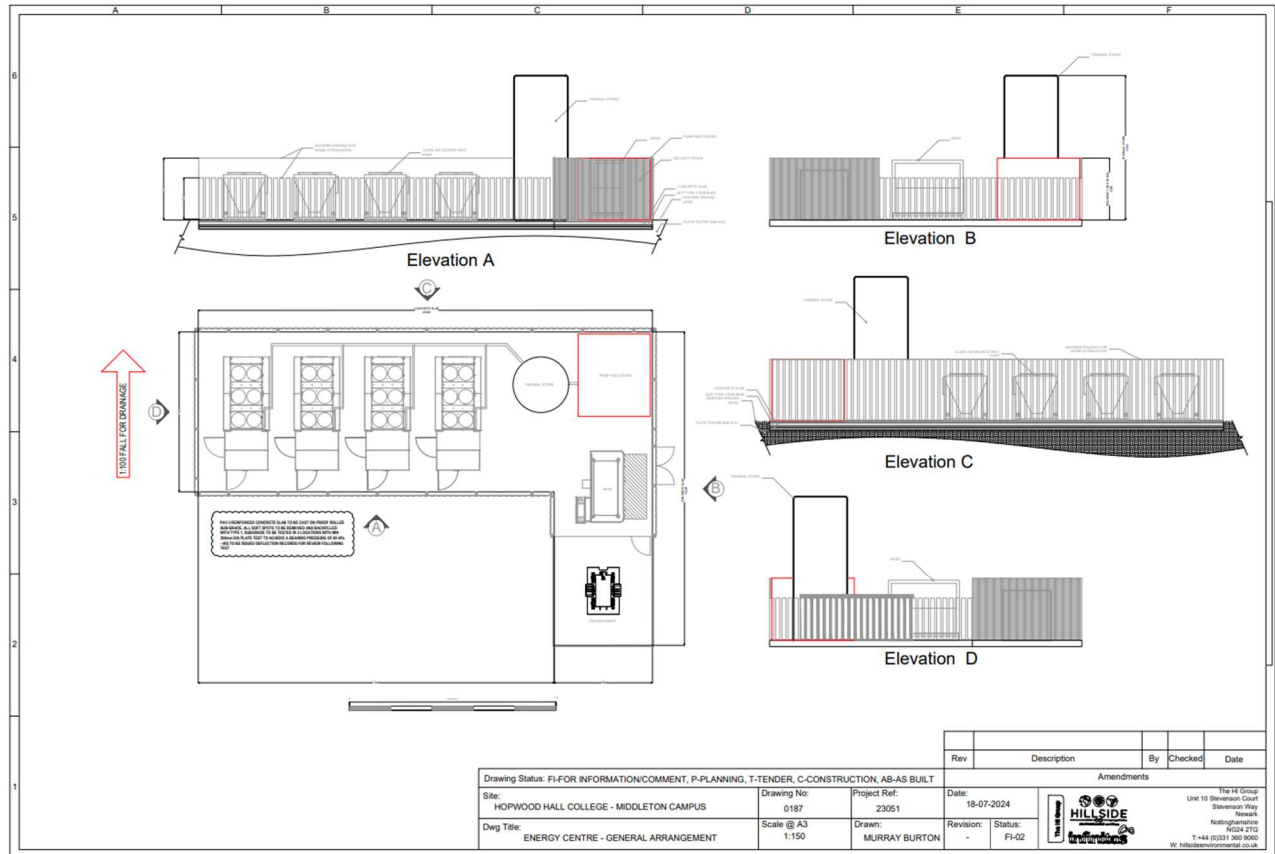


3.5 Design of the Scheme

3.5.1 Energy Centre Location



3.5.3 Energy Centre with ASHP, Thermal and Electric Battery Storage



3.5.4 Air Source Heat Pumps:

The installation of energy-efficient air source heat pumps for space heating and cooling will support the buildings comfort needs while reducing the college's reliance on fossil fuels.



Figure 5 – Typical Layout of an ASHP Installation

3.5.5 Battery Storage:

This systems aim is to maximize the utilisation of solar-generated power for the colleges use and support grid balancing, aligning with our commitment to sustainability and reducing our carbon footprint.

The project entails installing 499kWp of solar pv (submitted under Prior Approval) and a 0.25mW energy storage system comprising lithium-ion batteries on the campus with the primary objective of:

1. **Solar Power Optimisation:** To ensure efficient use of solar-generated electricity, the battery system will store excess energy during sunny days and discharge it when solar production is insufficient, thus reducing our reliance on fossil fuels and minimizing peak demand charges.
2. **Grid Balancing:** The battery system will actively participate in grid balancing by absorbing excess electricity during periods of high solar generation and injecting power back into the grid when demand exceeds supply. This enhances grid stability and reliability.

4 National Planning Policy Framework

Support the transition to a low carbon future in changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by development of renewable energy).

Planning plays a key role in helping shape places to secure radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social, and environmental dimensions of sustainable development.

As part of this focus on sustainable development the NPPF states the environmental role of sustainable development as contributing to protecting and enhancing our natural, built, and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

The NPPF states that a planning authority should support the transition to a low carbon future in a changing climate, encouraging the reuse of existing resources, promoting the use of renewable resources through development of renewable energy that makes a positive contribution to conserving and enhancing the natural environment whilst reducing pollution.

The NPPF requires that in order to help increase the use and supply of renewable and low carbon energy, LPAs should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. Indeed, the NPPF enhances this presumption in favour by stating that LPAs should design their policies to 'maximise renewable energy development,' while ensuring adverse impacts are addressed satisfactorily.

'To help increase the use and supply of renewable and low carbon energy, local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources. They should:

- Have a positive strategy to promote energy from renewable and low carbon sources.
- Design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts.
- Consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources.
- Support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning.
- Identify opportunities where development can draw its energy supply from decentralised, renewable, or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

The proposed development will have a valuable contribution to the Government's renewable energy targets. The solar panels will allow the applicant to reduce the sites energy consumption from the local electrical network. The ASHP will reduce the heat networks gas consumption by 95%.

When determining planning applications, local planning authorities should; Not require applicants for energy development to demonstrate the overall need for renewable or low carbon energy and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions.

5 Conclusion

This Design and Access Statement describes the proposed Air Source Heat Pump installation at Hopwood Hall College, Middleton Campus.

The scale of the proposed decarbonisation development and the design within the site followed several design iterations. The final design solution and current application has been adapted to maximise generation potential whilst minimising or eliminating potential adverse environmental effects.

6 Site Image



Proposed Energy Centre location.

6.1 Drawings

23051-0211-FI01

Middleton Site Location Plan

23051-0187-FI02

General Arrangement – Energy Centre