

# VITAL ENERGI UTILITIES LIMITED

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**Liverpool City Region Combined Authority**

**Site: Prescot Soccer Centre**

**Public Sector Decarbonisation Scheme – Phase 3c  
Heat Pump Installation**

**50890-VE-SW-XX-RP-Z-XX02  
Design and Access Statement**

|             |              |                       |      |            |
|-------------|--------------|-----------------------|------|------------|
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## 1. Introduction

This Design and Access statement serves to provide information in sufficient detail for the proposed works at Prescott Soccer Centre to aid the decarbonisation across the site, namely Public Sector Decarbonisation Scheme – Phase 3c - Heat Pump Installation at Prescott Soccer Centre, 119 Warrington Rd, Prescott, L35 5AD

This Design and Access Statement has been prepared on behalf of the Liverpool City Region Combined Authority (LCRCA) as part of its application for planning permission. This document has been prepared in accordance with the requirements of Circular 01/06 and the CABE Guidance “Design and Access Statements – How to Read, Write and Use Them”.

The report covers:

- Background to the Project
- Scope of work
- Outline Description
- Acoustic Report
- Flood Risk Assessment
- BNG Calculation

The site is supplied with 2 off LTHW Air Source Heat Pump. The Liverpool City Region Combined Authority (LCRCA) has engaged Vital Energi to carry out a comprehensive installation of new heat pump equipment which will reduce the carbon emissions.

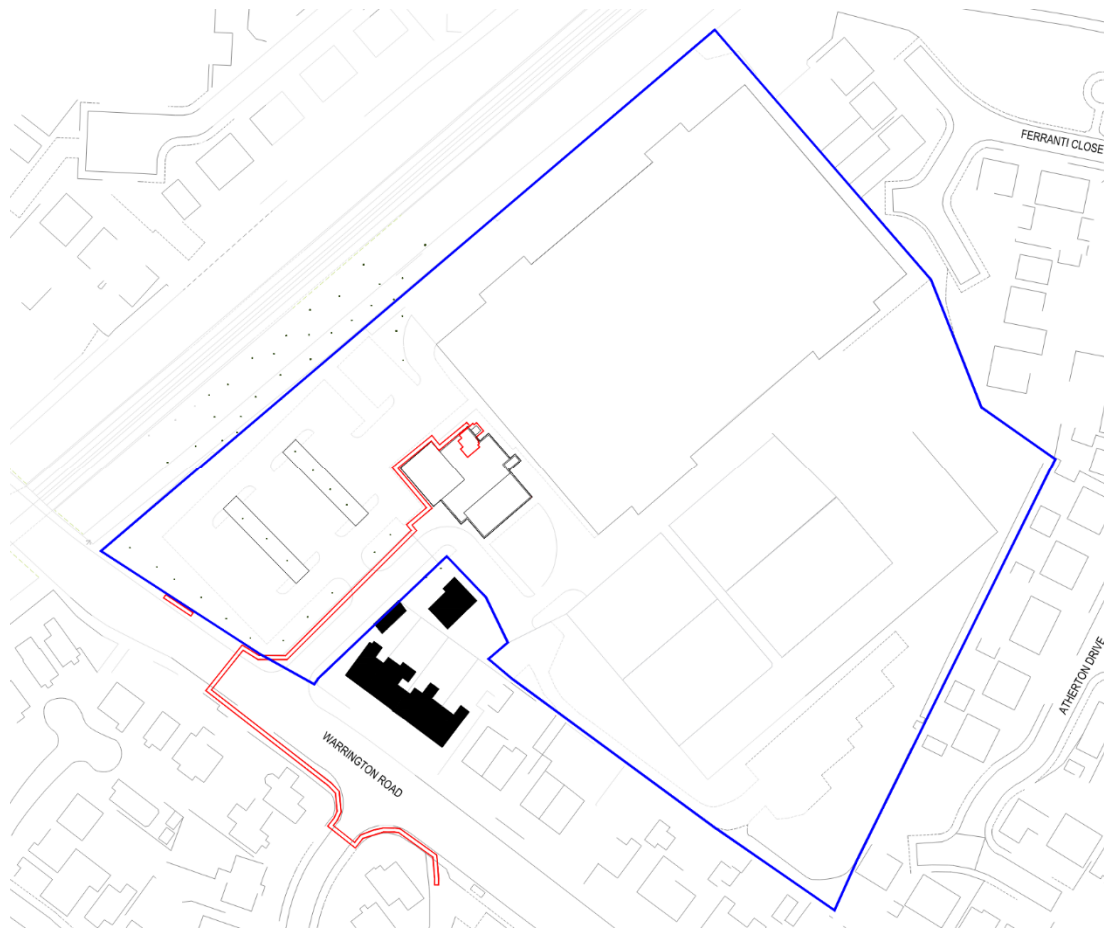
This application concerns the installation of two 33kW heat pump systems, which will be permanently installed on the roof of Prescott Soccer Centre. Additionally, a 2000L buffer vessel will be installed at ground level on the north side of the Prescott Soccer Centre.

The buffer vessel will be installed to the north of the site, within an existing tarmac area designated for engineering use at Prescott Soccer Centre, inside the fenced enclosure.

Further heat pump equipment and mechanical and electrical services shall be located within the roof of Prescott Soccer Centre.

In summary the works shall include:-

- Installation of heat pumps located to the roof of Prescott Soccer Centre and Installation of buffer vessel at north of the site
  - 2 Off air sourced modules (ASHP's)
  - 1 Off Hot water buffer vessels.
- Installation of underground HV cable capacity of 140kVA with load balanced over three phases, be 400/246 Volts, 50 hertz, 3phase, 4 wire, protective multiple earthing (PME). The point of connection at the LV fuses in the terminal & Metering equipment.
- Interconnecting mechanical and electrical services shall be installed between the heat pumps and buffer vessel.



*Figure 1 Prescott Soccer Centre - Heat Decarbonisation Project- Heat Pump Installation.*

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The Liverpool City Region Combined Authority(LCRCA) in common with other public sector bodies has an obligation to meet Government climate change targets and legislation.

The LCRCA planned to deliver a wide variety of Energy Conservation Measures (ECMs) and Solar PV schemes across a number of LCRCA owned buildings and engaged Vital Energi to carry out a comprehensive installation of new energy generation equipment at the Prescott Soccer Centre which will significantly reduce the carbon emissions at this building.

In common with other public sector bodies, the LCRCA has an obligation to meet the UK Government climate change targets and legislation. The Climate Change Act 2009 sets legally binding targets to cut carbon emissions by at least 80% by 2050.

Knowsley Metropolitan Borough Council declared a climate emergency in January 2020, the proposed works will assist in Knowsley Metropolitan Borough Council goal of reaching net zero by 2040 through the reduction of carbon emissions.

## **2. Background to the Project**

Knowsley Council declared a climate emergency in 2020 and recognises that we all have a part to play in tackling climate change and protecting the planet.

To enable the council to focus its resources and maximise its impact on this agenda in the short-term, a Net Zero Delivery Plan has been developed with a focus on priority actions to be delivered from 2022 to 2025.

The council's Net Zero Delivery Plan is working to:

- Manage its use of energy
- Decarbonise heating in its buildings
- Decarbonise the Council's fleet of vehicles
- Decarbonise staff travel
- Make climate emergency integral to the Council's decision-making, service delivery and resource allocation
- Promote sustainable resource use more widely and encourage the transition to a less wasteful 'circular economy'
- Increase the biodiversity value of the borough's parks and green spaces
- Improve the borough's resilience to potential flooding incidents

For the reasons above, Vital Energi are proposing to install the 2 off 33kW heat pump at Prescott Soccer Centre. Together with the improvement work, to provide 66,200kWh of heat per annum, covering a significant percentage of the building’s heat load and reducing natural gas usage by 86,800kWh. It is envisaged that the proposed works will potentially provide carbon savings of 16.6 Tonnes CO<sub>2</sub> and cost savings of £13,346 per annum.

3. Programme of works

Please see the Figure 2. for a high-level programme of works across the site.

| Location             | Description             | Start Date | Finish Date |
|----------------------|-------------------------|------------|-------------|
| ASHP & Buffer Vessel | Mechanical installation | Jan 2026   | Apr 2026    |
| Warrington Road      | DNO installation        | Jan 2026   | Apr 2026    |

Figure 2 Programme of Works

4. Outline Description

The new enclosure housing the 2 off ASHP and 1 off buffer vessel is positioned within Prescott Soccer Centre. This location was selected to avoid the removal of existing trees and to facilitate easy connection to the existing pipework and electrical infrastructure. Additionally, it minimizes visual impact by being centrally situated within the site grounds and not visible from the highway. Both the acoustic enclosure and the buffer vessel will be placed inside a fenced area, with the fence colour-matched to the adjacent new ARK building to maintain visual cohesion.

The installation includes an underground HV cable with a capacity of 140 kVA, load balanced across three phases, operating at 400/246 volts, 50 Hz, 3-phase, 4-wire, with Protective Multiple Earthing (PME). The point of connection will be at the existing HV substation on Warrington Road. The LV fuses and metering equipment will be housed in a new LV pillar, proposed to be located in the car park near the main entrance of Prescott Soccer Centre.

The ASHP enclosure, LV pillar, and underground HV cable are positioned within pedestrian, car park, and redundant engineering areas to avoid removing existing trees and to allow easy connection to the existing

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electrical infrastructure. This location minimizes visual impact and ensures the installation is not visible from the highway.

## **5. Scope of Works**

### **5.1 Heat Pump System**

The proposed development includes the installation of 2 off 33kw heat pump system, comprising of 2 Off ASHP's and 1 Off 2700L buffer vessels, located roof of the existing building.

### **5.2 DNO Cable Routing**

The installation includes an underground HV cable with a capacity of 140 kVA, load balanced across three phases, operating at 400/246 volts, 50 Hz, 3-phase, 4-wire, with Protective Multiple Earthing (PME). The point of connection will be at the existing HV substation on Warrington Road. The LV fuses and metering equipment will be housed in a new LV pillar, proposed to be located in the car park of existing building.

### **5.3 Pipework Routing**

It is proposed the low temperature hot water connecting from the ASHP's and buffer vessels, shall exit the building, via a distribution of surface mounted pipework, connecting onto the distribution pipework at Prescott Soccer Centre..

All fire barriers and weatherproof details shall be maintained through pipework penetrations.

### **5.4 Electrical Cable Routing**

To power the new heat pump system, a new power supply is to be provided with the building. The power cables will exit Prescott Soccer Centre., mounted alongside the pipework distribution.

## **6. Site Appraisal**

The site is set adjacent to the Prescott Soccer Centre.. The proposed site is predominantly surrounded by residential housing. The main routes for deliveries will be direct to the site as indicated on Figure 3.

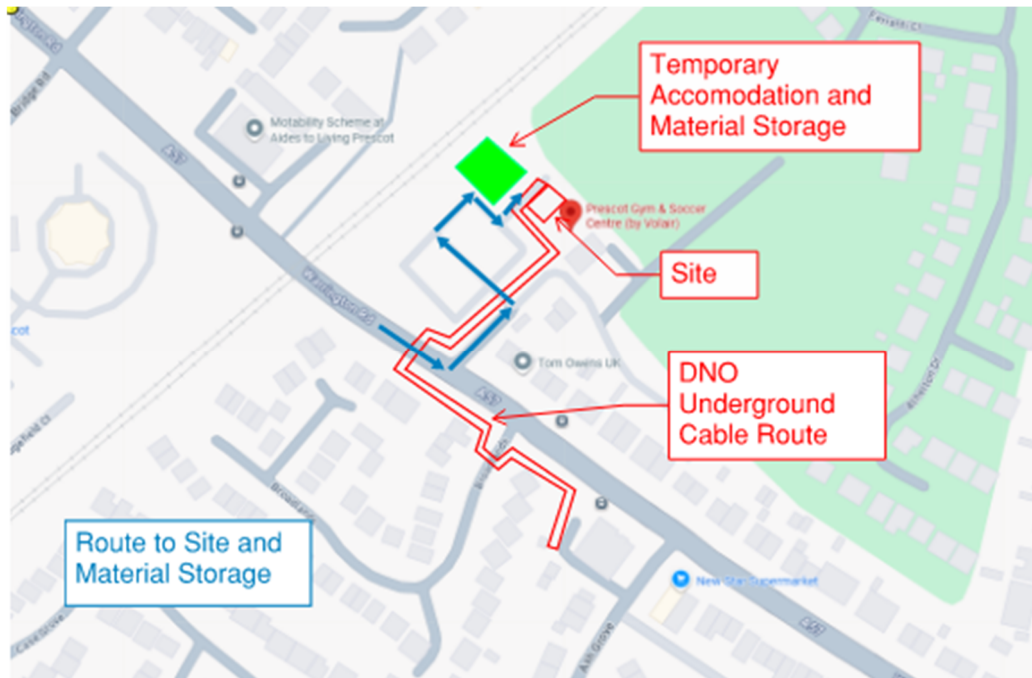
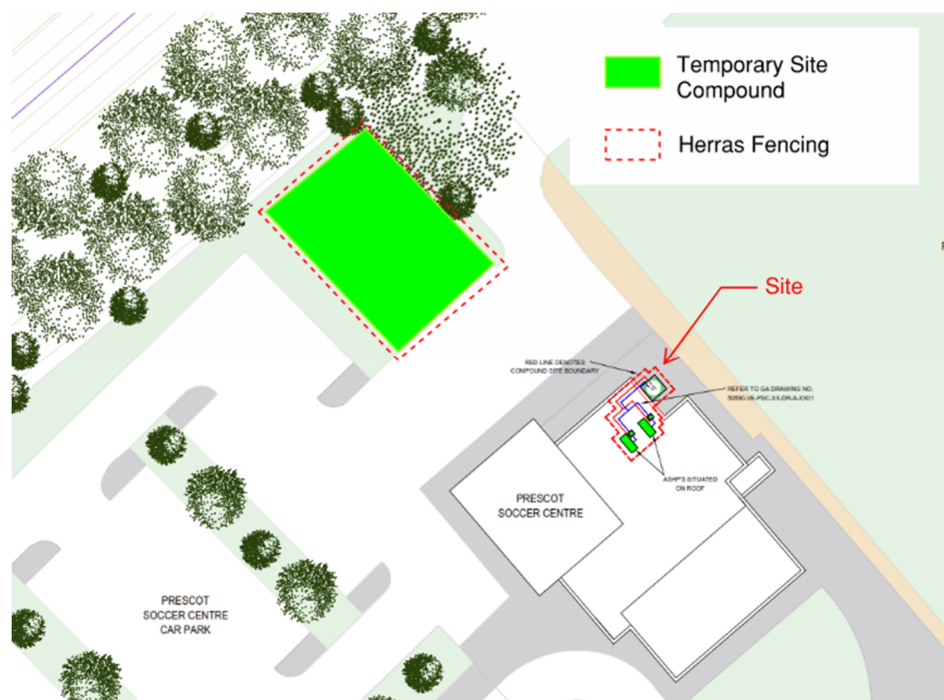


Figure 3 Site Plan with Traffic Flow

There will be a main area for site set up adjacent existing Prescott Soccer Centre. (Figure 4). The material will be stored in the site. Material will be delivered to the site by an appropriately sized vehicle. The main site office and storage area will be located within the site inclusive of welfare facilities, contractor parking, storage of materials



Construction and general vehicle deliveries shall be directed onto the Site and hard standing within the construction area, ensuring that site access is always kept clear of site traffic.

## 7. Noise Levels

The nearest sensitive noise receptors in relation to the proposed plant location is the residential dwelling located approximately 30m from the proposed plant location. The bungalow does not have direct line of sight to the proposed plant location.

Vital Energi have employed at suitably qualified Acoustic Consultant to survey the works area and make recommendations as to the requirements of the site, taking into consideration legislative requirements.

The results of the assessment (ref.: 14684.RP01.PNA.0.14102025.JPG (Prescot Gym & Soccer Centre - Plant Noise Assessment)) indicate atmospheric noise emissions from the proposed plant are within the criteria required by Knowsley Metropolitan Borough Council. As such, the proposed plant installations should be considered acceptable in terms of noise.

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## 8. Flood Risk Assessment

Undertaking a search of the Flood Mapping for the proposed works across the site which are on ground level (<https://flood-map-for-planning.service.gov.uk/>) indicates that the area for the proposed works across the site are in a flood Zone 1 as shown in Figure 5. Land within flood zone 1 has a low probability of flooding from rivers and the sea. This proposed development will not increase the surface water levels or water levels and hence will not impact flooding.

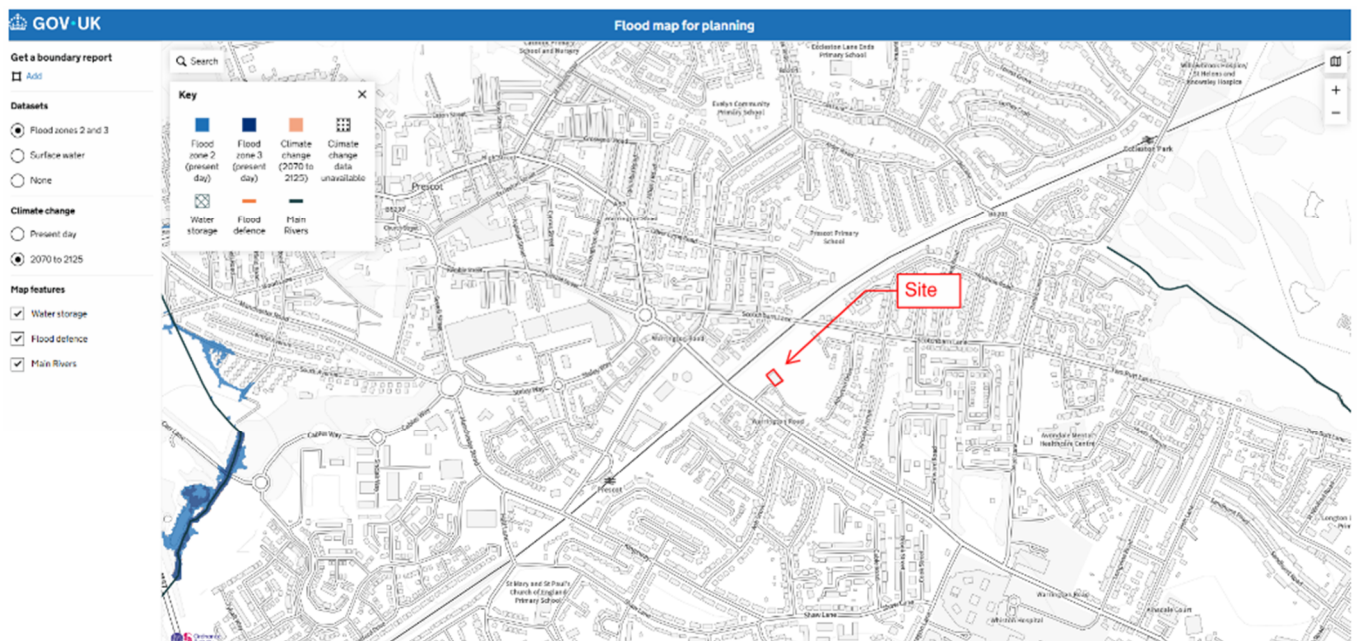


Figure 5 Flood Map

## 9. Arboriculture

Following a site survey and walk over, the assessment finds that the proposed do not affect the surround trees or Root protection zone.

## 10. Heritage and Archaeology

Site investigations with Historic England confirm there are no statutory or non-statutory archaeological designations within the boundary of the site. There are also no landscapes or ecological designations covering the site.

## 11. Ecology and Biodiversity(BNG)

The existing surfaces is sealed tarmac surface, pedestrian and carriageway which are assigned a zero score in the statutory biodiversity metric, meaning that these surfaces are effectively exempted from the 10% net gain requirement of BNG.

## 12. Right of way

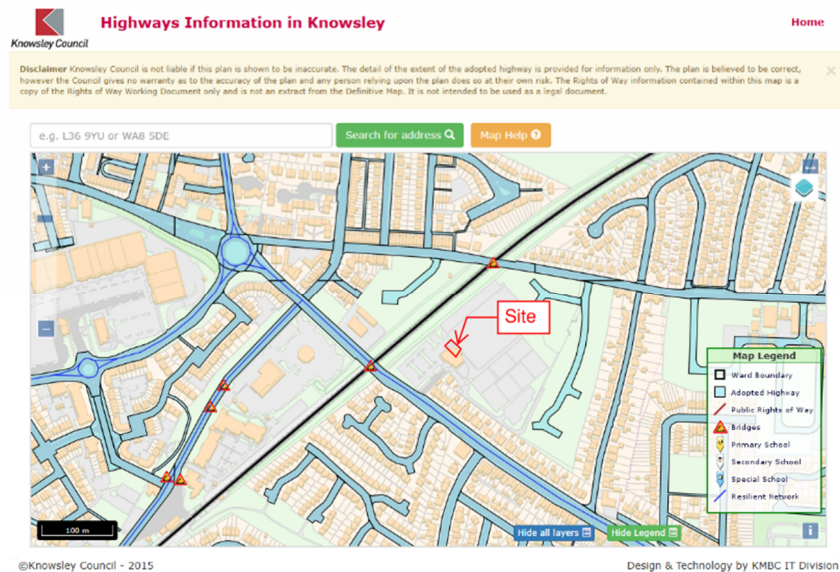


Figure 6 Rights of Way.

As can be seen in Figure 7 there are no public rights of way affecting the proposed development. Site Access-site entry around the proposed development area shall be well maintained, during and after development.

## 13. Environmental Considerations.

### 13.1 Carbon Reduction

This project off-sets the demand on the Natural Gas firing plant, which significantly reduces the Carbon footprint onsite. The Scheme further reduces the site carbon footprint through the remedial works to be carried out, to reduce the operating temperatures of the heating systems, thus increasing the plant efficiencies.

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This system will significantly contribute to meeting the building's heat demand while reducing natural gas consumption by 86,800kWh. It is anticipated that the proposed installation will yield potential carbon savings of 16.6 tonnes of CO2 per annum.

### **13.2 Pollution**

#### **Emissions to air**

No emissions will be introduced as part of this scheme.

#### **Emissions to water**

No process water emissions will be introduced as part of this scheme.

#### **Light pollution**

To reduce light pollution and running costs, lighting to the site is to be kept to a minimum, there will be a limited amount of lighting installed to the proposed area to allow staff to safely move around the site after dark. Full lighting will only operate when personnel are on site.

## **14. Visual Impact**

Throughout the design process there has been an extensive design development with the prime consideration to ensure the technical solution can operate effectively whilst minimising the visual impact of the proposed area. In achieving this following has been considered.

- Rationalisation of process equipment and minimisation within the proposed area.

The amount of developed proposed is determined by the requirements to provide the necessary operational equipment ensuring it can be contained within the proposed area.

#### **Dimension of Air Sourced Heat Pump and Buffer Vessel**

|                      | Air Source Heat Pump (2nos) | Buffer Vessel      |
|----------------------|-----------------------------|--------------------|
| Dimensions LxWxH (m) | 1750x740x1710               | 2350x1400 Diameter |

## **15. Layout**

Overall, the design has considered the location of equipment in relation to the existing ground conditions and accessibility to plant for future maintenance.

Other layout considerations:

- The equipment layout has been heavily influenced by the requirements of the plant within.
- Location of air sourced heat pump compound was influenced by the need to have interconnecting services within the site

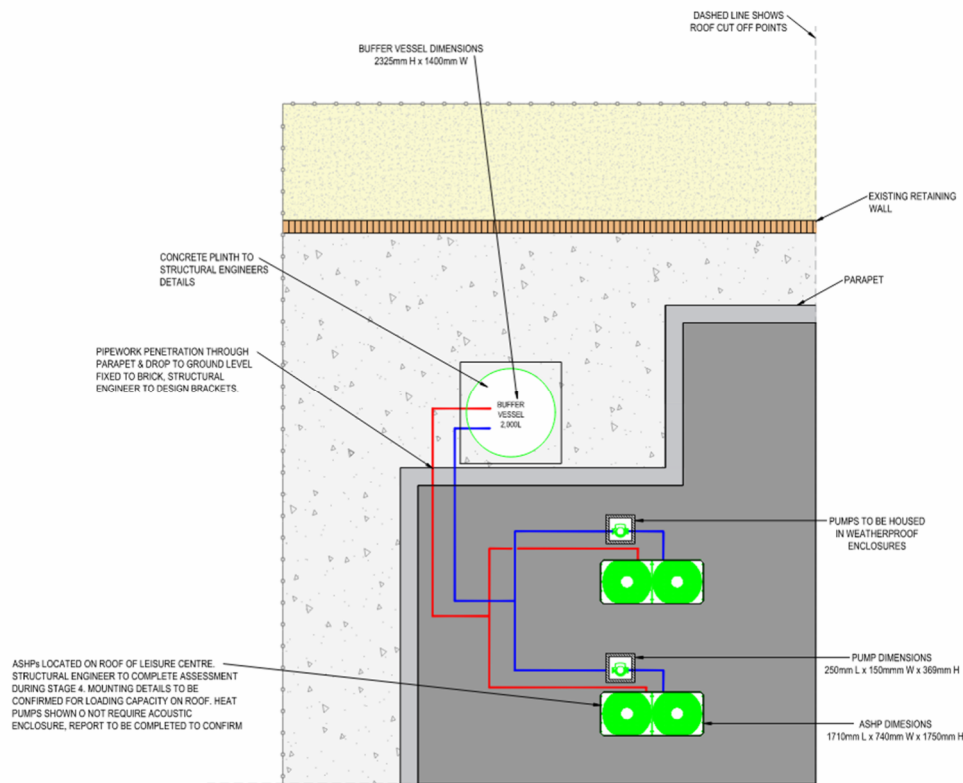


Figure 7 Prescott Soccer Centre - Heat Decarbonisation Project- Heat Pump Installation GA

## 16. Scale and Appearance

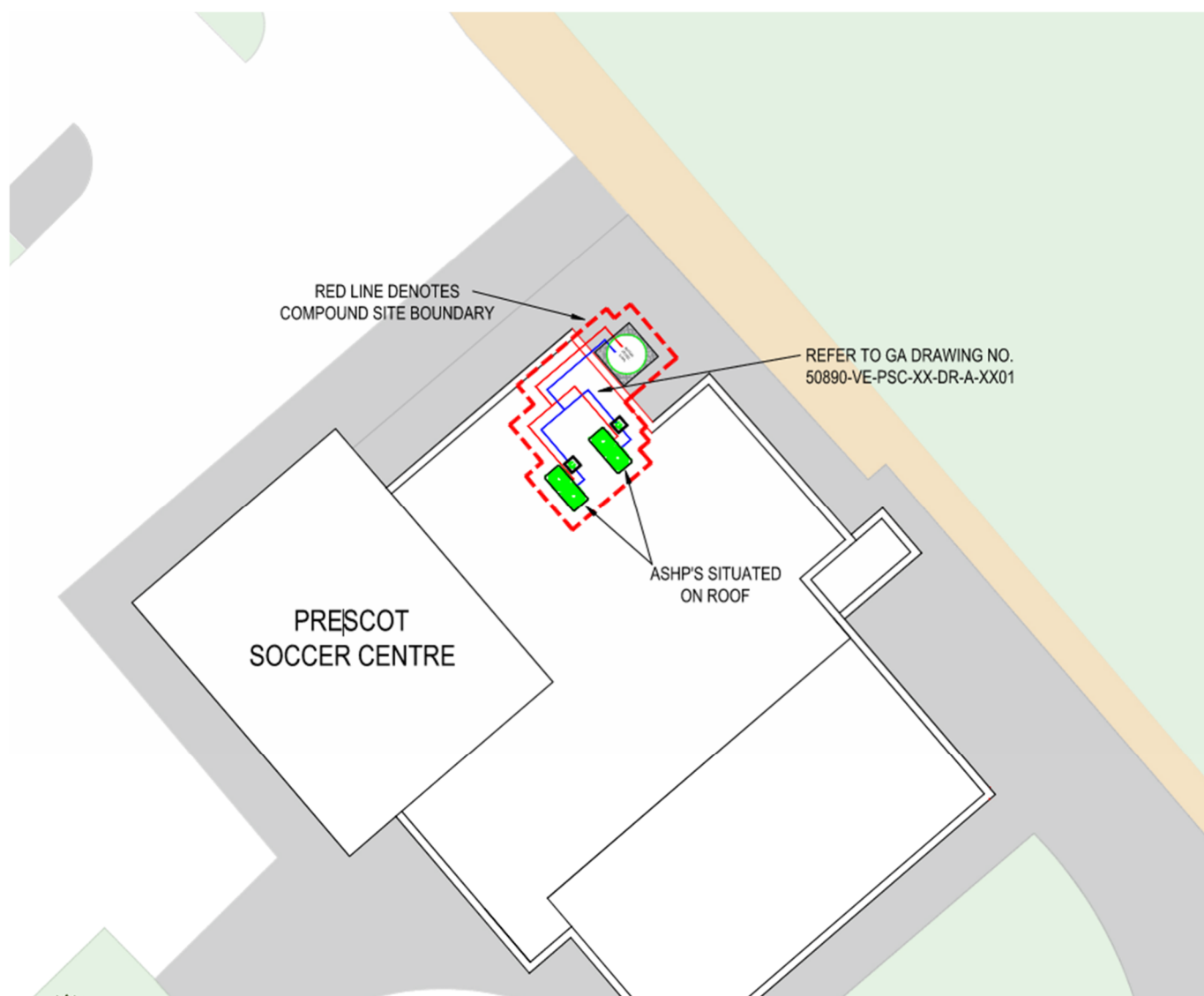
Given that the proposed development shall be seen from the site boundary, the scale of the compound has been reduced as much as possible given the process and plant within.

The aesthetic have also been considered the screening created by the existing tree line between the proposed development and Prescott Soccer Centre.

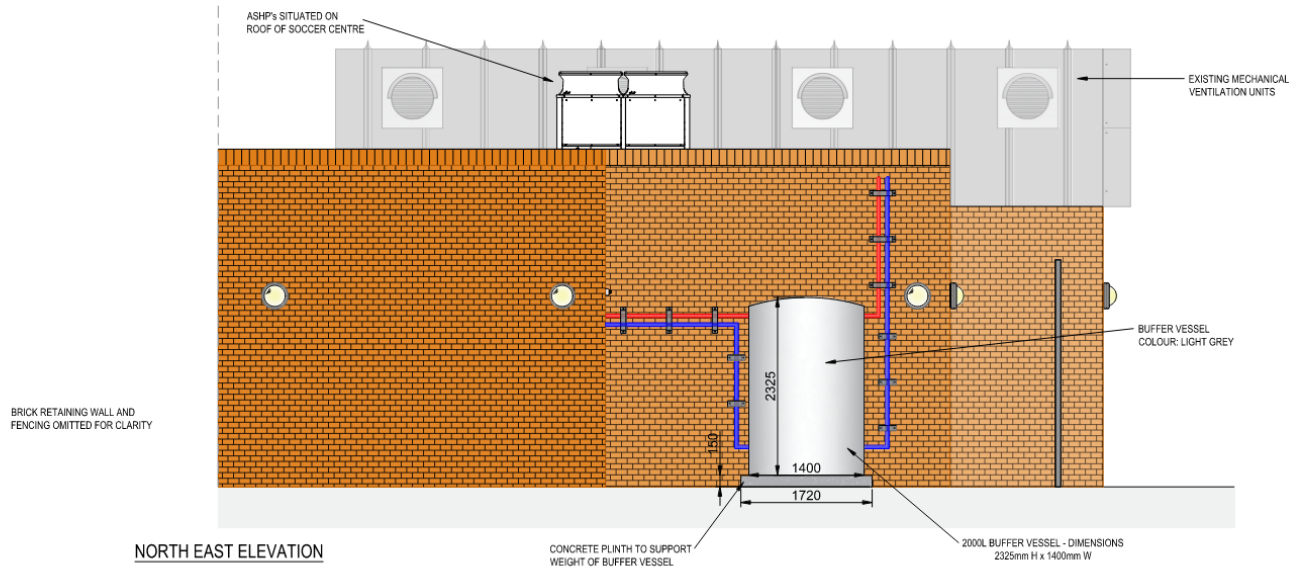
The scale of the compound is determined by the requirement to contain all the plant and ancillary equipment necessary to provide the site with a Low-carbon energy solution.

The overall size of the Air sourced heat pump is 1.71m long, 0.74m wide. The height is 1.75m

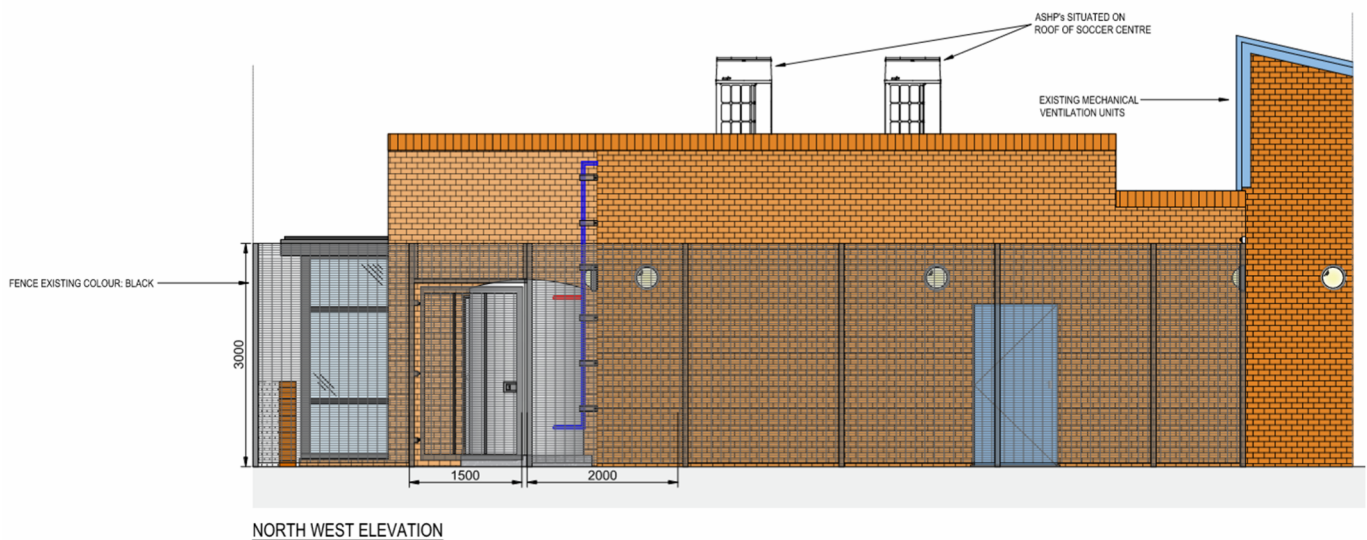
Figure [9, 10,11&12]: Indicate the plan and elevation detail of the air sourced heat pump & buffer vessel.



*Figure 8 Plan View of Air Sourced Heat Pump and buffer vessel*



*Figure 9 Northeast Elevation of Air Sourced Heat Pump and Buffer Vessel*



*Figure 10 Northwest Elevation of Air Sourced Heat and Buffer Vessel*

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## 17. Air Source Heat Pumps



*Figure 11 Typical Arrangement of one Air Source Heat Pump– Excluding Acoustic Enclosure*

## 18. Buffer Vessel

The overall size of the 2000L buffer Vessel is 2.3m tall and 1.4m Diameter.



*Figure 12 Typical Arrangement of Buffer Vessel*

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## 19. Pipework Insulation – External Finish



*Figure 13 Typical Pipework Insulation and External Finish (Typical silver exterior and aluminium finish)*

All external pipework will be insulated and finished in aluminium clad sheeting to match the existing installation, to prevent impact damage and provide weather protection to insulation.

## 20. Pipe Support Bracket

All internal and external ASHP pipework will be supported by a ring support bracket to allow single drop rod supports to be used. Support brackets will be made from galvanised steel.



*Figure 14 Typical Two-Piece Pipe Support Clip (Typical silver exterior finish)*

## 21. Electrical Containment

The new ASHP power supply cables will be supported on heavy duty, perforated, galvanised cable tray/ladder.



*Figure 15 Typical Electrical Containment (Typical silver exterior finish)*



*Figure 16 Typical LV Distribution Pillar*

## **22.Access**

### **Access**

There will be sufficient space and access within the enclosure to maintain and remove equipment in the event of routine or reactive maintenance. The equipment will not require human intervention in normal operation, thus would be considered as an unoccupied space.

Deliveries should not have any effect on public highways as all offloading will be on the property.

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### ***Car Parking***

The parking of service and maintenance vehicles shall use the existing lay-by/parking bay of Prescott Soccer Centre. The area is presently unused for parking due to permanent access restrictions, meaning there will be no reduction in available parking spaces.

### ***Pavements***

Pavements will be left clear for pedestrians where possible, safe and suitable diversions will be set up if required.

### ***Disabled Access***

Disabled access will always be maintained around work areas.

### ***Emergency Access***

Vital Energi will work closely with our traffic management contractor to ensure emergency access is always maintained. This may possibly require a gated system within the fencing, with a coded padlock and the code provided to emergency services.

### ***Security***

The site will incorporate adequate security features to ensure it deters potential intruders. Fencing/wall shall be installed around the perimeter of the proposed compound, access door/gates shall be securely locked with Trust approved high security padlocks.

## ***23. Conclusion.***

The proposed installation of the air sourced heat pumps gives the opportunity for cutting edge technology to off-set the use of gas fired boiler raising equipment and reduction in carbon emissions from the site.

The compound has been designed around the minimum footprint possible and is economic in its land-take and use of materials. Consideration will also be given to how the equipment will be disposed of when the plant is eventually decommissioned.

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## 24. Appendix A – Drawing List

|                                                                  |
|------------------------------------------------------------------|
| <b>Drawing</b>                                                   |
| <b>50890-VE-PSC-XX-DR-A-XX01 PA1 General Arrangement</b>         |
| <b>50890-VE- PSC -XX-DR-A-XX02 PA1 Proposed Site Plan</b>        |
| <b>50890-VE- PSC -XX-DR-A-XX03 PA1 Location Plan</b>             |
| <b>50890-VE- PSC -XX-DR-A-XX06 PA1 Existing Site Plan</b>        |
| <b>50890-VE- PSC -XX-E-A-XX01 PA1 Existing Elevations</b>        |
| <b>50890-VE- PSC -XX-E-A-XX02 PA1 Proposed Elevations (site)</b> |
| <b>Traffic Management Combined 20251121A</b>                     |
| <b>Prescot Soccer Centre DNO Routing drawing 20251119</b>        |