

# The Richard Stephens Partnership Limited

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Building Services  
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ROYAL FREE HOSPITAL

## Air Source Heat Pump Scheme

EXTERNAL PLANT FOR ANNE BRYAN'S HOUSE & STAFF RECREATION CLUB

RSP JOB NO: 2353

### DESIGN AND ACCESS STATEMENT

2<sup>nd</sup> February 2023

#### 1. Description of the proposal and plant summary

The work involves the decommissioning and removal of a number of Natural Gas fired boilers and domestic hot water generators, with the heat source being replaced with Air Source Heat Pumps (ASHP). This project is funded by Salix, from the Public Sector Decarbonisation Scheme having demonstrated Carbon savings within the funding threshold (£/tonne of Carbon) to the Trust.

There are 2no buildings affected by these works.

Anne Bryans House will require a new acoustic enclosure to be constructed and located outside the footprint of the building. This will reduce sound levels from the proposed external condensing units to below the measured background noise as per the supporting acoustic report. Clear access for maintenance will also be maintained within this enclosure. Refrigerant pipework will pass over the existing access walkway and enter the plant room at high level. Within the plant room there will be a number of Hydroboxes to exchange heat from the refrigerant circuit to low temperature hot water (LTHW). The LTHW will be connected to the existing services and maintain space heating and hot water demand.

Within the Staff Recreation Club there are 3no existing plant rooms affected by the works. The main boiler house has Natural Gas boilers, and a direct fired Natural Gas domestic hot water cylinder. To the rear of the building there are 2no further plant rooms, 1no with Natural Gas boilers providing heating for the mechanical services plant serving the swimming pool, and a further Natural Gas boiler providing space heating. The existing electrical immersion domestic hot water cylinder shall also be removed. These latter 2no plant rooms shall be combined under the proposals with a new extended plant room being created within the Gym store, accessible from the swimming pool. All of the above will be replaced with new ASHP condensing units, with the plant located within an existing, gated, external compound associated with the Recreation Club. Hydroboxes will be provided within the 2no plant rooms to exchange heat between the refrigerant circuits to LTHW. Again, the LTHW will be connected to the existing services and maintain space heating and hot water demand.

The internal works shall include circulatory pumps for correct hydraulic operation, and all associated power and controls to operate the plant.

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The LTHW flow and return temperatures for the ASHP systems have been specifically selected to match the existing Natural Gas boiler duties, which mitigates the requirement to carry out any improvement/upgrade works elsewhere within the buildings.

## **2. Access proposals**

The new plant areas will not impact on public access around or within the hospital. Access to the plant area will be from the existing hospital and restricted for maintenance personnel.

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