

Project:	2345 – Royal Free Hospital, Imaging Refurbishment
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1.0 Description of the Proposal and Plant Summary

The works include the creation of a new plant room, and provision of AHU and air source heat pump equipment, located on the 4th floor roof above H West plantroom, along with the replacement of 2 No AHUs located at first floor level currently serving the Imaging department at Ground Floor. The plant room would house the heating and cooling infrastructure, buffer vessel, pumps, pipework associated with providing the Air tempering.

The new centralised AHU will be provided at roof level to serve 4 No air tempering sub-AHU units at first floor level. The fog and reheat coils to the AHUs shall be served via Steam-to-LTHW new plate heat exchangers within the plant room with the steam distribution extending from the existing infrastructure within H West plant room below. The sub-AHU cooling coils shall be served by new packaged chiller units located outside of the new plant roof. The chillers shall be provided with acoustic screening, in line with the atmospheric plant noise report undertaken and issued by RSK Acoustics.

The fresh air intake and extract air discharge from the new centralised air handling unit ventilation system shall discharge to atmosphere via new external louvres. Each of the fresh air and extracted air discharge systems shall be installed with new duct mounted acoustic attenuators, in line with the atmospheric plant noise report undertaken and issued by RSK Acoustics.

The MRI 3 scanner shall be provided with chilled water from 2 No new packaged air-cooled chillers located externally to the H West plant room at 4th floor level. The MRI chillers shall run in a duty/standby configuration to provide 'N+1' resilience to the MRI service. The chillers shall be provided with an acoustic enclosure, in line with the atmospheric plant noise report undertaken and issued by RSK Acoustics. In order to maintain the existing roof access walkway, due to the clearances recommended by the chiller manufacturer for airflow, the acoustic enclosure shall extend out further towards the edge of the roof (Pond Street elevation) and include access doors at each end, such that roof access is maintained through, rather than in front of the acoustic screen/enclosure.

It is also proposed to install variable refrigerant flow (VRF) systems to serve the space heating and cooling to ancillary spaces, and technical/equipment rooms. There shall be 2 No VRF systems serving technical/equipment rooms which shall run in a duty/standby configuration to provide 'N+1' resilience, without the need to pepper the roof spaces with heat rejection equipment.

The external condensers shall be provided with acoustic screen, in line with the atmospheric plant noise report undertaken and issued by RSK Acoustics.

The proposed external plant is to be supported via a purpose designed roof support frame raised above the existing roof finish.

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2.0 Access Proposals

The new plant area does 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.

Where required, structural stepovers shall be provided to maintain safe access to all services, and escape routes.

3.0 Distribution:

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