

Bianco Sale 9<sup>th</sup> July 2020

Royal Free Hospital Trust

3NA ITU Feasibility Study

Design and access statement pertaining to mechanical and electrical services

The existing day surgery ward area on the 3<sup>rd</sup> floor of the North Block is to be repurposed to serve as an Intensive Treatment Unit providing 12 ITU beds. The space will be used to nurse very ill patients including those suffering from Covid 19. The infection control requirements for the best outcome for the patients dictate that a dedicated specialised supply and extract ventilation systems be provided to serve the ward. The ventilation system needs to be separated from the main hospital systems in order to limit the chances of contamination between hospital and the ward.

To this end it is proposed to install an air handling unit on the 2<sup>nd</sup> floor roof to the east of the ward and to run new ductwork from there up to the ward at high level 3<sup>rd</sup> floor where it will enter the building. The air handling unit, which houses the fans, filters, heating and cooling coils necessary to condition the air, has dimensions of 11m long, 3m wide and 3.5m tall. The unit weighs 10 tons and will sit on a new steel deck above the existing roof. The unit will be painted goosewing grey in order to blend in with the building. The ductwork will consist of two ducts, supply and extract, with dimensions 1.5m by 1m as it rises up from the 2<sup>nd</sup> floor to the 3<sup>rd</sup> floor.

In addition, there will be a set of steam and condense pipes as well as chiller water flow and return pipes. The pipework will be 300 diameter at its largest and will be clad in aluminium known as "hammerclad". These pipes will transport steam and chilled water from the existing central plant to the coils of the air handling unit in order to effect the heating and cooling to the treated air to provide temperature control to the space.

The casing of the air handling unit will be designed attenuate noise from the fans in order to meet the design noise level as recommended in the acoustician's report. Similarly, the air inlet and exhaust will be fitted with attenuation in order to meet the design noise level.

We would note that the exhaust air will be filtered.