

British Museum. Water Ingress Protection.

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Overheating Statement

The water ingress protection project involves the repair and replacement of a number of low level roofs at the British Museum, some of which accommodate existing air handling units and air conditioning condenser plant.

As part of the roof replacement works, the thermal performance of the roofs is to be improved to comply with current Building Regulations Part L.

As the existing air handling plant is beyond its economic life and does not incorporate energy recovery for heat and coolth, new plant is proposed.

The 2No. air handling units will be arranged to incorporate heat and coolth energy recovery and are selected with fans that have a specific fan power (SFP) of 0.448W/(l/s). The permissible SFP for a central balanced mechanical ventilation system with heating in an existing building is 1.8W/(l/s).

As a consequence of the improved fabric performance, the improved SFP and the introduction of energy recovery to the AHUs, operational carbon emissions are improved from the current installation.

The condenser load has been assessed to meet the minimum cooling requirements of the spaces served. The spaces served are internal occupied rooms without access to openable windows whereby the cooling load is driven by equipment and people heat gains. As such there is little or no opportunity to reduce the cooling loads through further passive means.

The 2No. condensers are selected with a seasonal energy efficiency ratio (SEER) of 6.5 and 6.3 respectively which whilst cannot be quantified, would be a significant improvement on the existing 20 year old condensers.