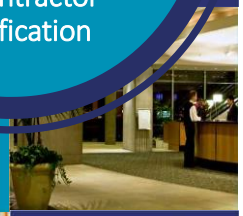
Amazon Warehouse, Warrington

Noise assessment for contractor specification



Further Information

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Background

When Amazon opened its cutting-edge, robotics-enabled fulfilment centre in Warrington, it created 1,200 jobs and helped to stimulate the region's economic expansion. Before the centre opened, Miller Goodall was appointed by Amazon to undertake an assessment of internal noise levels within the main warehouse and associated office spaces due to the operation of 14 air handling units (AHUs) and a large kitchen extract fan.

Proposition

When Amazon opened its cutting-edge, robotics-enabled fulfilment centre in Warrington, it created 1,200 jobs and helped to stimulate the region's economic expansion. Before the centre opened, Miller Goodall was appointed by Amazon to undertake an assessment of internal noise levels within the main warehouse and associated office spaces due to the operation of 14 air handling units (AHUs) and a large kitchen extract fan.

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ACOUSTICS - AIR QUALITY - LIGHTING

Investigation

Extensive calculations were undertaken to assess the relative contributions to internal noise levels in occupied spaces due to AHU fan noise travelling through the façade of the building and via the ventilation ductwork. The accumulated loss of noise level as it passed through various components within the ventilation ductwork throughout the building was also calculated, as were overall noise levels for occupied spaces and plant rooms.

Action and Outcome

The predicted noise levels were compared to the criteria provided by Amazon and found to be too high. In order to achieve Amazon's internal noise levels, attenuators for the air handling plant were specified. Suitable wall and ceiling constructions were also specified to ensure that noise travelling through the façade of the building did not cause any exceedance of the internal noise level criteria. Insertion loss requirements were provided for the attenuators, to be installed into each AHU and the kitchen extract fan plant. Construction advice for the building facades adjacent to the plant rooms was also provided. The combination of these measures was carefully balanced to achieve suitable internal noise levels within the various occupied spaces without over-specifying the attenuators and construction materials.