

Sustainability Statement
for
Manchester College – Openshaw Campus
Sports Hall and New Workshop Development

Introduction

QED have been commissioned to carry out a review of the building engineering systems to evaluate the performance, adaptability and integration for college use, whilst maximising the sustainability and energy efficiency of the buildings.

Dynamic thermal simulation has been undertaken and evaluated against building regulations part L2a and planning policies EN4 & EN6 relating to CO2 reduction and LZC technologies.

Design Evaluation

A reliance on gas fired systems and central mechanical ventilation was noted together with a lack of zoning and flexibility for a building that has multi uses.

The energy hierarchy has been adopted to determine the solutions going forward.

The approach has been to reduce the reliance on gas fired systems and move to grid connected electrical systems, using heat pumps, adopting natural ventilation with night time cooling and thermal mass where possible, and utilise local mechanical ventilation with heat recovery, which offers flexibility and energy efficiency.

Environmental conditions can now be selected based on Individual space occupancy and demand.

Maintaining high levels of fabric thermal performance has achieved a building that exceeds building regulations compliance.

Through utilising localised mechanical ventilation and natural ventilation, this has resulted in the introduction of a louvre band on the façade of the sports hall building and also wind catcher louvres on the roof of the sports hall and workshop buildings.

Results

The building is both sustainable and energy efficient and meets the targets set within the building regulations Part L2a and also planning policies EN04 & EN06. The LZC technologies adopted and using the Energy hierarchy are:

- High performance building fabric
- Natural Ventilation with night time cooling
- Local control Mechanical Ventilation with heat recovery
- Air Source heat recovery heat pumps with independent room control