

Ventilation

It is proposed that the new Kitchen spaces within the new extension at New Moston Primary School will not have openable windows. All areas of sanitary accommodation or changing rooms will be mechanically ventilated.

It is proposed that the Kitchen ventilation system will use a Swegon Air Handling Unit (AHU) incorporating a thermal wheel to meet the ventilation requirements within the Kitchen. The AHU shall also incorporate a reverse cycle heat pump providing background heating and cooling to the space.

The AHU shall have an Specific Fan Power (SFP) of 1.9 kW/(m³/s) and a Eurovent Certified Performance of A* in the winter and B in the summer.

The Air Handling Unit will capture heat (via a thermal wheel heat exchanger) from the stale extract air, transferring it to incoming air. Systems with heat recovery efficiency of at least 80% will be specified and will be capable of providing the majority of tempering required for incoming air. The use of mechanical heat recovery ventilation will reduce heat loss in the air exchange process and will reduce the demand on the active heating system in winter. The air within the Kitchen will be further controlled by the use of an air source heat pumps within the air handling unit, this renewable technology will ensure that air is delivered to rooms at a condition to improve thermal comfort. Variable speed fans will be used throughout which will allow all systems and zones to be capable of being individually regulated in terms of ventilation rates

The sanitary accommodation ventilation will incorporate heat recovery units (MVHR) or local extract fans within the single WC's/Changing space.

The local extract fans will be Low Carbon wall mounted extract fans operating with a trickle and boost arrangement via a PIR within the room. The fans shall operate with continuous background ventilation and boost upon activation of the occupancy sensor (PIR)

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The heat recovery unit shall provide a continuous background ventilation and boost to high speed upon activation of an occupancy sensor (PIR) or via an Air Quality Sensor.

Domestic Hot Water

With measures to improve the carbon reduction, an Air Source Heat Pumps (ASHP) are being considered for the generation of domestic hot water for use within the kitchen.

Air source heat pumps ASHP absorbs heat from the surrounding external air. The heat is then used for the generation of DHW by piping the heat extracted through a coil in a hot water cylinder. It is estimated that the DHW ASHP will have seasonal COP's (2.5 – 3 range)

Lighting

All lighting will be provided by highly efficient LED luminaires with automatic presence detection in the stores WCs & changing spaces. Kitchen lighting will be manually switched.

Energy Metering

Lighting, power and mechanical power will be separately metered, and recorded by the school.