

HGA/6270

The Abbey: Junior School, Christchurch Road, Reading: Extension Project

Preliminary Energy Statement

Building Fabric

The permanent building will be constructed in materials to achieve or exceed current Building Regulations compliance for thermal conductivity of fabric components.

Heating System

In preparation for this project and as part of a rolling 'planned maintenance programme', the school are undertaking a replacement boiler plant in 2018. The new plant has been designed using gas fired high efficiency condensing boilers (95% efficiency & low NOx), with compensation and optimisation control. This replaces existing plant with an estimated <70% efficiency.

New space heating will be extended from the new boiler plant. Heat emitters will be LPHW heated ceiling panels with individual controls for each room.

Note: If the building structure permits, underfloor heating with LPHW from air source heat pumps can be considered.

Domestic Hot Water Services

Due to intermittent and very peaky load profile, domestic hot water will need to be via gas fired high efficiency fan flued condensing water heaters. Equipment will comply with The Energy Related Products Directive (ErP): September 2015.

The efficiency of hot water generation may be improved by use of solar heating for pre-heating.

Domestic Cold Water Services

All outlets will be direct mains cold water. Flow restrictors to 9 l/m will be fitted to each shower, time flow control to taps and dual volume flush for WC cisterns.

Lighting

Space lighting will be provided by high efficiency LED luminaires with local absence detection control to ensure economy of operation.

Power

Power requirements will be provided via a 400-volt metered supply, with consideration of supplementation by photo-voltaic panels contributing to supply via an inverter control.

Reduction in Energy Demand

The above measures should enable a 10% to 20% reduction in demand and reduction in carbon dioxide emissions.

SBEM

Full SBEM calculations will be provided once building design is confirmed and submitted.

PEA / EPC

PEA certificates will be provided requested from the temporary building provider. Then EPC check at completion.