Beacon College

Hereford

Draft Contractors Proposals

ENERGY STRATEGY REPORT

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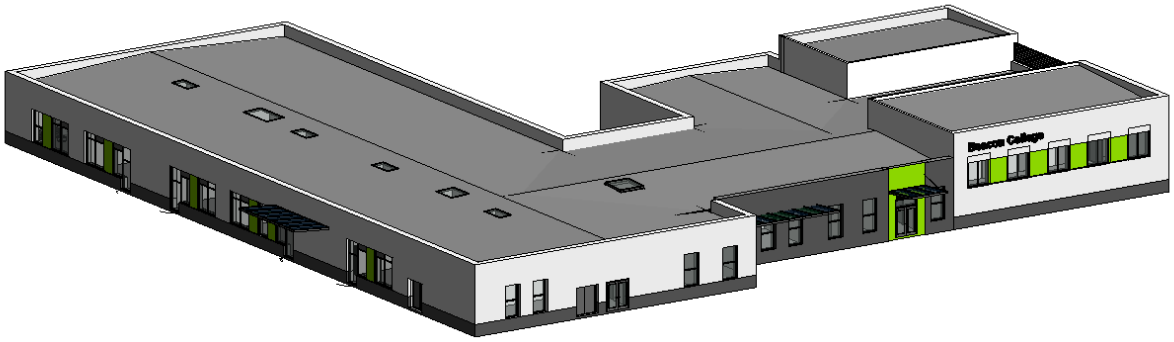

BEACON COLLEGE

ENERGY STRATEGY REPORT

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v1	June 2019	Draft Contractors Proposals

1.0 Description of Development

The development is a new single-storey SEN college comprising of; teaching spaces, offices, kitchen & café, main hall, hydrotherapy pool and ancillary areas.

2.0 Local Planning Requirements

At present there are no known specific local planning requirements for the project in relation to energy consumption and sustainability. In lieu of any more onerous requirements, the project shall be designed to meet the energy performance criteria set out in Approved Document L2A with a 'fabric first' approach being taken in favour of any LZC technologies.

3.0 Energy & Sustainability Statement

The M&E services shall be designed to have the minimum environmental impact and keep energy consumption as low as possible.

The building shall be designed in compliance with Building Regulations Part L2A 2013 with the inclusion of a number of energy saving solutions and without the need for any renewable energy methods, as follows;

- The building envelope will be designed to perform significantly better than the minimum Building Regulations standards. This will include improved U values for walls, floor, roof and glazing.
- Building glazing will have appropriate sun reflecting properties (G value) to limit solar gains.
- Building air permeability will be limited to $5m^3/hr/m^2$ @ 50Pa.
- Natural daylighting will improve occupational comfort and reduce artificial lighting.
- Internal electrical lighting will be provided using dimmable LED driver technology in line with all CIBSE/BS EN applicable guidelines and will be chosen to achieve a minimum 75 luminaire lumens/circuit watt
- A fully addressable lighting control system will be installed to include daylight linked presence and absence detection throughout all areas except plant spaces
- Lighting and power sources will be separately metered to comply with GIL 65/CIBSE TM22 guidelines
- External lighting will be provided using LED driver technology to reduce night time pollution in line with ILE Guidance Notes for the Reduction of Obtrusive Light and CIBSE Lighting Guides. The scheme will be controlled via a time clock/photocell arrangement
- Wherever possible natural ventilation will be employed in favour of mechanical ventilation. Where this is not possible, hybrid mechanical air mixing units with low energy fans will be used in north facing classrooms or HRU mechanical ventilation in south facing classrooms.
- Mechanical ventilation systems will be complete with heat recovery sections in line with 2018 ERP requirements.
- LTHW heating will be provided using high efficiency condensing boilers.
- Wherever possible pumps and fans will be provided with inverter speed control to minimise operating energy costs.

4.0 Zoning

The heating system will be zoned to suit the proposed curriculum and community usage of the building with separate sensors and control valves for each zone. Local temperature control of each occupied room will be provided to facilitate user adjustment.

The ventilation systems will be appropriately zoned based on function and usage. Occupied rooms will be provided with an amount of user control where a natural or hybrid solution is implemented.

The electrical services will be zoned on a floor per floor basis with separately metered lighting and power systems. Mechanical services will be supplied from a dedicated, metered MCB board.

5.0 Monitoring & Targeting Strategy

All energy consumption shall be monitored in accordance with the requirements of Part L2, GIL 65 and CIBSE TM22 and logged via the Building Management System (BMS).

The BMS shall incorporate the facility to collate and relay the information as required by the iSERV methodology detailed in the ESFA Output Specification should the end user with to initiate this service upon completion of the project.