



Eco Classroom

(Accredited BREEAM
outstanding)

ENERGY

Energy monitoring:

- Building Management System (BMS) installed – panel situated in Plant Room.
- System to control Heating to all spaces and also monitor the energy usage of the building
- Each sub-category of energy use (small power / lighting / heating) to be metered in order to let the building user monitor the area(s) which are being heavily used.
- The data is made available to the buildings user by means of data readouts on the BMS panel.

Lighting:

- External Lighting to have average initial luminous efficacy of > 60 luminaire lumens per circuit Wattage.
- External lights to also be controlled by a timer to ensure they are only turned on at night time, and a PIR sensor.
- Lighting zones controlled via PIRs/daylight dimming with manual override;

-Lobby
-Store 1
-Store 2
-Classroom 1 teacher's wall
-Classroom 1 rest of room
-Classroom 2 teacher's wall
-Classroom 2 rest of room
-Plant
-Male WC
-Dis / Female WC
-Shower / Change

Heat:

- Classrooms – 2 No. Daikin FTXS wall mounted AC units with external condenser to each classroom.
- Lobby – Unheated / heated by adjoining spaces.
- WC's / Shower – Heat store HS2000X to each area.
- Store Rooms – Unheated / heated by adjoining spaces
- Plant Room – Unheated / heated by adjoining spaces
- Hot water systems;

-1 No. in line water heater to Male WC
-1 No. in line water heater to Female WC
-1 No. in line water heater to Dis WC
-1 No. in line water heater to Shower

Water

Water consumption:

- Water using components are as follows;

-Shower (1 No.) Electric shower fitted with a Low Flow Shower head (5.7 litres / min).

-Wc's (4 No.) Toilet pan with dual flush (6 or 3 litres per flush). All flush water supplied by rainwater harvesting system.

-Hand Wash Basins (5 No.) Taps with infrared sensor control unit. (3.5 litres/min).

-Urinals (2 No.) 65mm waterless urinal.

- The building will employ a rainwater harvesting system (with external storage tank) that will provide grey water (harvested rainwater) for the flushes on the WC's and Urinals.

Water Monitoring:

- A water meter is to be provided within entry to building (within Plant Room)
- Water meter to have a pulsed output and be linked to BMS system which will provide an up-to-date data output for the building user.

Ventilation:

- The building adopts a natural ventilation strategy to the occupied areas (Classrooms); Openable windows on opposing sides at high and low levels.
- Amount of ventilation / flow rate can be manually adjusted to adapt to the building occupants needs and climatic scenarios.
- The Ventilation to the plant room is provided naturally by means of large louvre grills in both doors.
- Ventilation to the WC's and showers is by mechanical extract to meet necessary extract flow rates. The extract fans are controlled by the same PIRs as the light fittings (occupancy controlled).
- CO₂ monitor to ensure optimization of air quality for occupants

Pollution

Wat O₂ NO_x Emissions:

- AC / Electric heating systems do not produce NO_x emissions, therefore 0 mg/kWh

Materials/Finish:

Insulation:

- The Pipe insulation will be Kingspan Kooltherm Pipe Insulation, with 15mm thick wall, 15mm bore Foil Faced Phenolic.
- Total volume: 15870000mm³ / 0.01587m³

Paint:

- Any internal surfaces / architrave / skirt etc. – Lakeland paints
- Any external paints – Lakeland paints
- Primers – Lakeland paints
- Lakeland paints are;

-VOC free
-Non Toxic
-Odourless
-Organic

Timber:

- All suppliers are trade members, and the timber supplied is FSC certified
- Wood panels – Wisa Spruce Ply Flooring and Birch Plywood.
- Glu Laminated Beams – Glulam beams to be purchased from manufacturer whom uses / is able to use a low emission VOC laminate (Formaldehyde E1 Class).

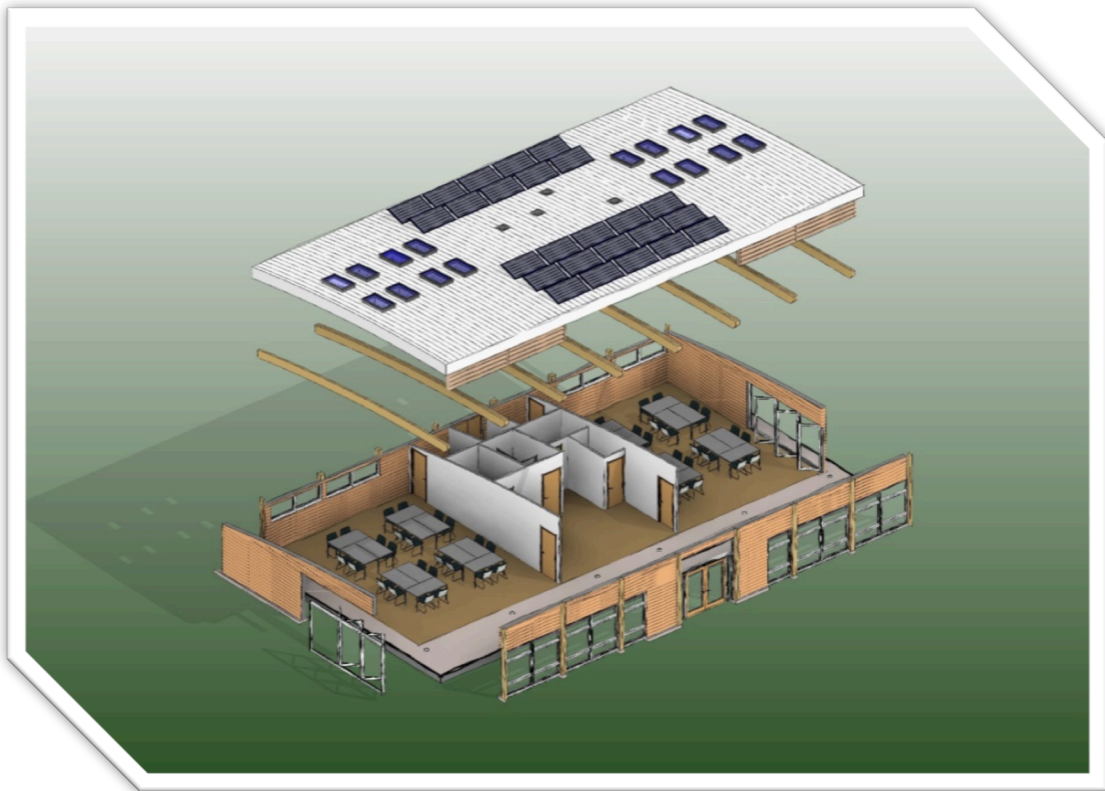
Floor:

- Flooring (vinyl / carpet / anti slip etc.) - Tarkett Vinyl and Heckmondwike carpet
- Flooring adhesives – Auro Floor covering adhesive

Transport

Cyclist Facilities:

- Cycle shelter to be installed adjacent main entrance doors, with the aim to encourage people to bike to school.
- Cycle shelter to be BREEAM Compliant.
- Within the building there has been provided a changing room with a shower within.



Exploded Model



Plan View