

1094 St Mary's

St Mary's Community Centre, 25 East Street, Shoreham, BN43 5ZQ

ADLV2 SBEM Calculation

We have undertaken a preliminary 2021 SBEM calculation under the ADLV2 Flexibility of Design methodology as detailed below.

The building has been modelled as it is actually specified. The assumed ACTUAL Building Emission Rate (BER) has been determined for the building as shown below.

The building has then been re modelled using the minimum requirements for new and refurbished thermal elements, controlled fittings and controlled services as detailed in the tables in ADLV2 and the 'notional' Building Emission Rate determined.

In order for the refurbishment to meet the requirements of the flexibility of design approach in ADLV2, the 'actual' buildings BER and BPER must be equal or better than the 'notional' building BER and BPER. Please note that other than the BER result, no other details on the SBEM 'BRUKL' output document are relevant.

Flexibility of Design SBEM Results

Actual Building Emission Rate (BER) 38.69 kgCO₂/m²

Notional Building Emission Rate (BER) 40.36 kgCO₂/m²

Actual Building Primary Energy Rate (BPER) 264.05 kWh/m²

Notional Building Primary Energy Rate (BPER) 273.06 kWh/m²

ADLV2 PASS

'Actual' Building Specification

U values

*Existing Wall (assumed) 0.70 W/m².K

Existing Ground floor(assumed) 1.20 W/m².K

Existing Glazing (assumed) 3.30 w/m².k Light Trans. 0.71 g value 0.76

*Existing walls may need to be upgraded if they exceed the limiting u value as per table 4.2 column a.

Air Tightness Test

An air permeability of 25m³/m²/annum at 50 Pascals has been assumed.

Heating and Cooling

Heating throughout the building is assumed to be provided by a Gas Fired Boiler serving radiators, with a minimum assumed seasonal efficiency of 91%

DHW

DHW is being assumed as instantaneous electric water heaters with a minimum efficiency of 100%.

Ventilation

The Function spaces, office, WCs and Kitchen are all served by a mechanical ventilation heat recovery unit with an assumed specific fan power (SFP) of 2.0 W/l/s and heat recovery efficiency of 75%.

All other areas are assumed naturally ventilated.

Lighting

All lighting throughout is LED lighting with an efficacy of 100lumens/watt throughout. Lighting controls have been assumed as follows

- WCs Presence Detection
- All Other Areas Manual Controls

Power Factor

Assumed building power factor is <0.90.

Metering and Out of Range Alarms

We have assumed no metering will be installed for the separate mechanical services.

Renewables

No renewables have been assumed.

'Notional' Building Specification used in the Calculation

The notional building specification differs from the actual building specification as follows:

Heating

Heating throughout the building is provided by a Gas Fired Boiler serving radiators, with a minimum assumed seasonal efficiency of 86%

Lighting

All lighting throughout is LED lighting with an efficacy of 95 lumens/watt throughout. Lighting controls have been assumed as follows

- WCs, Lobbies, Stores Presence Detection
- All Other Rooms Absence Detection

Conclusion

The actual CO2 emissions from the building are less than the CO2 emissions from the building built to ADLV2 minimum requirements. Consequently, the building complies with the ADLV2 regulations.

The final design strategy will influence the final outcome, this assessment has been undertaken initially to demonstrate basic compliance can be achieved.