

The Old Forge
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**Energy Statement ref –
Huws Gray Builders Merchant, Parc Bryn Cegin, Llandygai, Gwynedd LL57 4SS**

EAS (Anglesey) Ltd are a fully Accredited provider of Part L/ SAP & SBEM related calculations used to demonstrate compliance to all versions of Part L of the Building Regulations. We have been carrying out these works to all sectors of the construction industry since 2005. All references to the scope and validity of our works can be supplied.

We have been asked to supply an energy statement to support the above development and to state the principles of how we will better the required Target Emissions Rate (TER) and Target Primary Energy Consumption (TPEC) as set by Building Regulations (2014) in Wales.

Within our supporting SBEM energy calculations we have adopted the use of a well-insulated thermal fabric that improves on the minimum U-values set within the Approved Document Part L2A in Wales.

We propose to use high performance building services to include low energy lighting throughout and well controlled gas fired heating and hot water systems.

As part of our remit, we have considered various renewable technology options such as Photovoltaic and Solar thermal arrays/ Air and Ground Source Heat Pumps/ Biomass systems/ Community systems/ Mechanical Ventilation Heat Recovery (MVHR)/ CHP systems etc.

With application to this specific site, it is noted that daily usage of the buildings will entail the main front doors of the warehouse to be open most of the time and options are therefore considered within this brief.

Therefore, our considered 'Design Stage' energy modelling accounts for the fitting of a min 8 kW Photovoltaic array that demonstrates an improvement of some 10% in the Target Emission Rate (TER) and a 15% improvement in the TPEC (Target Primary Energy Consumption).

Approved formal SBEM calculations are attached and confirm that the above improvements in current Building Regulations Part L2A in Wales have been achieved.

I trust that this meets with approval.

Nick Weston.



c/o Dylan Parry/ Mathew Davies

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22nd July 2022

Our Ref: **EAS22-093**

Re: 17321 - Huws Gray Builders Merchant, Bryn Parc Cegin, Llandygai

Dear Dylan/ Mathew,

We have now completed our works at the above project and can confirm that with the proposed thermal guidance specification and with space and water heating to be served from a gas fired boiler, and with the inclusion of a min 8kW PV array, the proposed building complies with Building Regulations (2014) Part L2A in Wales at 'Design Stage'.

I can also confirm that the units will meet the required Target Primary Energy Consumption (TPEC) specific to Wales.

Indeed, with the below specification the building will show an improvement of some 10% on the Target Emission Rate (TER) and a saving of some 15% in Target Primary Energy Consumption.

1 – Floor insulation –

We have assumed that this area will achieve a U-value not exceeding 0.17 W/m²K.

U-value calculations and exact insulation thickness to be confirmed, however it is likely that with the dimensions of the floor that only perimeters and upstands will need insulation.

2 – Wall insulation –

External walls –

As per guidance all new walls are to be an insulated cladding system to achieve a U-value not exceeding 0.25 W/m²K.

U-values and exact construction to be confirmed.

3 – Roof insulation –

All Roofs –

These areas are to be an insulated cladded system to achieve a U-value not exceeding 0.18 W/m²K

U-values and exact construction to be confirmed.

Whilst the above thermal calculations have been carried out with the best intent and comply with the Combined Method of calculation (BS EN ISO 6946), we would advise that the relevant manufacturer is contacted to confirm all U-value calculations.

4 – Heating and Hot Water –

Heating to amenity areas and sales floor –

All space heating is to be served from a mains gas fired condensing boiler supplying a wet radiator/underfloor system. Min Sedbuk of 95%.

Hot water served from instantaneous water heater.

Exact details to be confirmed by manufacturer.

Warehouse areas are to be unheated.

5 – Lighting –

We have assumed low energy lighting throughout.

6 – Glazing and Doors –

All glazing to be 'k glass' with a U-value not exceeding 1.6 W/m²K.

All personnel and vehicle doors to have a U-value not exceeding 1.6 W/m²K.

7 – Air permeability -

We have assumed a 'Design Stage' air permeability of 5 m³/hm².

8 – Renewables -

In order to reduce overall emissions in line with requirements in Wales there is a need to install a min 8kW PV array to each unit.

Exact detail and sizing to be confirmed by manufacturer.

An invoice for our works is attached, on payment of which we will forward confirmation of compliance 'at Design Stage' for submission to Building Control for approval. If required, we will also forward all supporting worksheets to you electronically.

Please note that we would strongly suggest that any on-site changes are kept to an absolute minimum in order to avoid any later problems at the 'Final' calculation stage with resultant remedial works. If you wish to discuss any proposed changes and their effects during the project, please do not hesitate to contact me at the time to ascertain the impact.

Once the project is completed, please notify us and we will carry out 'Final As-Built' calculations to ensure the original Target Emission Rate is still achieved and at this point final Approved Certification and proof of compliance will be issued.

Many thanks once again for the opportunity to work with you on this project, however if you require clarification of anything contained above, or I can be of any more help, please contact me directly.

Best Regards

Nick Weston