

Unit 1, Parc Business Rhyd Y Blew, Bryn Serth Road, Ebbw Vale
As Built SBEM and Commercial EPC
Carbon Emissions Calculation – Part L2a

For

Jones Brothers (Henllan) Ltd
20th March 2024

The Beacon,
Dafen Business Park,
Llanelli,
Carmarthenshire,
SA14 8LQ
0845 094 1593
llanelli@melinconsultants.co.uk

Park House,
10 Park Street,
Bristol,
BS1 5HX
0845 094 1279
bristol@melinconsultants.co.uk

4th Floor,
Rex House,
4-12 Regent Street, London,
SW1Y 4RG.
0845 094 1847
london@melinconsultants.co.uk

www.melinconsultants.co.uk



Melin Consultants are accredited to provide a range of calculation, assessment and testing services. They are members of CIBSE Low Carbon Consultants.

Melin Consultants fully check all work prior to completion and a robust audit trail exists to demonstrate accountability.

All information within this document is based on evidence provided in the form of drawings and specifications.

CPD (Continual Professional Development) records are kept and all technical staff are required to complete a minimum 20 hours per year in training activities.

Low Carbon Consultants have the expertise and necessary qualifications to offer advice in a professional capacity on matters relating to Part L of the Building Regulations and sustainability within the construction sector.

This document contains the following information:

- As Built Building Regulations Reports, Commercial EPC, Recommendations Report

Project Ref: 607424

Report Date: 20th March 2024

Report author: Darren Baker

Function: Senior Consultant

Authorised by: Jamie Best

Function: Director

Energy performance certificate (EPC)

Unit 1
Parc Business Rhyd Y Blew
Bryn Serth Road
Ebbw Vale
NP23 5WT

Energy rating

A+

Valid until:

19 March 2034

Certificate
number:

6791-8690-9498-2422-4031

Property type	B2 to B7 General Industrial and Special Industrial Groups
Total floor area	5,079 square metres

Rules on letting this property

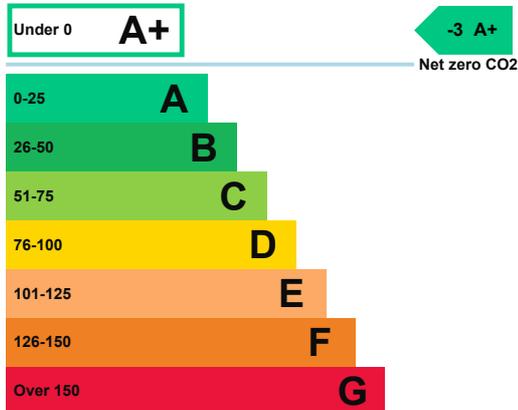
Properties can be let if they have an energy rating from A+ to E.

Energy rating and score

This property's energy rating is A+.

Properties get a rating from A+ (best) to G (worst) and a score.

The better the rating and score, the lower your property's carbon emissions are likely to be.



How this property compares to others

Properties similar to this one could have ratings:

If newly built

21 A

If typical of the existing stock

70 C

Breakdown of this property's energy performance

Main heating fuel	Grid Supplied Electricity
Building environment	Heating and Natural Ventilation
Assessment level	4
Building emission rate (kgCO ₂ /m ² per year)	-3.81
Primary energy use (kWh/m ² per year)	151

Recommendation report

Guidance on improving the energy performance of this property can be found in the [recommendation report \(/energy-certificate/3737-8761-9656-1110-3554\)](/energy-certificate/3737-8761-9656-1110-3554).

Who to contact about this certificate

Contacting the assessor

If you're unhappy about your property's energy assessment or certificate, you can complain to the assessor who created it.

Assessor's name	Darren Baker
Telephone	0845 094 1593
Email	darren@melinconsultants.co.uk

Contacting the accreditation scheme

If you're still unhappy after contacting the assessor, you should contact the assessor's accreditation scheme.

Accreditation scheme	CIBSE Certification Limited
Assessor's ID	LCEA125299
Telephone	020 8772 3649
Email	epc@cibsecertification.org

About this assessment

Employer	Melin Consultants
Employer address	The Beacon, Llanelli, SA14 8LQ
Assessor's declaration	The assessor is not related to the owner of the property.
Date of assessment	1 March 2024
Date of certificate	20 March 2024

BRUKL Output Document

Compliance with Wales Building Regulations Part L 2014



Llywodraeth Cymru
Welsh Government

Project name

Unit 1 - As Built

As built

Date: Wed Mar 20 07:44:42 2024

Administrative information

Building Details

Address: Unit 1 , Parc Business Rhyd Y Blew, Bryn Serth Rd , Ebbw Vale, NP23 5WT

Certification tool

Calculation engine: SBEM

Calculation engine version: v5.6.b.0

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: v7.0.24

BRUKL compliance check version: v5.6.b.0

Certifier details

Name: Darren Baker

Telephone number: 0845 094 1593

Address: Melin Consultants, The Beacon, Llanelli, SA14 8LQ

Criterion 1: The calculated BER and BPEC for the building must not exceed the targets

Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	-3.8
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	24
Building Primary Energy Consumption (BPEC), kWh/m ² .annum	151.24
Target Primary Energy Consumption (TPEC), kWh/m ² .annum	156.71
Do the building's emissions and primary energy consumption exceed the targets?	BER =< TER BPEC =< TPEC

Criterion 2: The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Values which do not achieve the standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.15	0.15	"SP000003_W-1"
Floor	0.25	0.2	0.2	"SP000003_F"
Roof	0.25	0.15	0.15	"SP000003_C"
Windows***, roof windows, and rooflights	2.2	1.19	1.5	"SP000003_W-1_O0"
Personnel doors	2.2	1.5	1.5	"SP000003_W1_O4"
Vehicle access & similar large doors	1.5	0.7	0.7	"SP000003_W1_O0"
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]
U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]
U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]

* There might be more than one surface where the maximum U-value occurs.
** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.
*** Display windows and similar glazing are excluded from the U-value check.
N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air Permeability	Worst acceptable standard	This building
m ³ /(h.m ²) at 50 Pa	10	3.47

Building services

The standard values listed below are minimum values for efficiencies and maximum values for SFPs. Refer to the Non-Domestic Building Services Compliance Guide for details.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	<0.9

1- Production Area

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.54	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

2- LTHW System

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.54	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

3- Office GF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.91	4.05	-	-	-
Standard value	N/A	2.6	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

4- Office FF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.63	3.39	-	-	-
Standard value	2.5*	2.6	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

1- SYST0000-DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	-
Standard value	1	N/A

"No zones in project where local mechanical ventilation, exhaust, or terminal unit is applicable"

General lighting and display lighting	Luminous efficacy [lm/W]			General lighting [W]
	Luminaire	Lamp	Display lamp	
Zone name				
Standard value	60	60	22	
Warehouse	173	-	-	11367
Stairwell GF	-	121	-	62
Stairwell FF	-	121	-	63
Stairs	-	121	-	64

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
WC		-	112	-	94
Circulation		-	112	-	49
Shower		-	112	-	17
WC		-	112	-	43
Shower		-	112	-	17
Stairs		-	121	-	65
Circulation		-	112	-	51
Shower		-	112	-	18
WC		-	112	-	45
Shower		-	112	-	18
Plant		144	-	-	28
Lockers		112	-	-	11
Cleaners Store		144	-	-	5
Office		121	-	-	854
Office		121	-	-	859
Managers Office		121	-	-	90

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Warehouse	NO (-46.8%)	NO
Office	YES (+58.4%)	NO
Office	NO (-37.9%)	NO
Managers Office	N/A	N/A

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER and BPEC

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	YES
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	5078.5	5078.5
External area [m ²]	13409.9	13409.9
Weather	CAR	CAR
Infiltration [m ³ /hm ² @ 50Pa]	3	5
Average conductance [W/K]	3193.1	4775.7
Average U-value [W/m ² K]	0.24	0.36
Alpha value* [%]	8.75	28.92

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area Building Type

	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
	B1 Offices and Workshop businesses
100	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger terminals
	Others: Emergency services
	Others: Miscellaneous 24hr activities
	Others: Car Parks 24 hrs
	Others: Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	23.01	72.71
Cooling	2.12	1.02
Auxiliary	0.75	0.59
Lighting	15.34	17.26
Hot water	8.18	9.46
Equipment*	30.98	30.98
TOTAL**	49.4	101.03

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	56.61	6.36
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	378.33	349.72
Primary energy* [kWh/m ²]	151.25	156.71
Total emissions [kg/m ²]	-3.8	24

* Primary energy is net of any electrical energy displaced by CHP generators, if applicable.

HVAC Systems Performance

System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Other local room heater - fanned, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	243.9	134	23.9	0	0.5	2.83	0	3.54	0	
Notional	176.3	128.8	59.8	0	0	0.82	0	----	----	
[ST] Central heating using water: radiators, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	294.7	94.3	25.9	0	3.8	3.16	0	3.54	0	
Notional	707.7	165.3	240	0	1.8	0.82	0	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Natural Gas, [CFT] Electricity										
Actual	91.4	269.5	7.1	28.9	1.7	3.6	2.59	3.91	4.05	
Notional	176.7	186.3	59.9	14.4	7.2	0.82	3.6	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	123	263.7	10.2	33.8	1.7	3.34	2.17	3.63	3.39	
Notional	386.7	202.3	131.2	15.6	7.2	0.82	3.6	----	----	

Key to terms

Heat dem [MJ/m2]	= Heating energy demand
Cool dem [MJ/m2]	= Cooling energy demand
Heat con [kWh/m2]	= Heating energy consumption
Cool con [kWh/m2]	= Cooling energy consumption
Aux con [kWh/m2]	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type