



Workspace 11

Woodsland Road, Hassocks, BN6

Energy Statement for Planning

Job No: 6079

Issued: January, 2025

Issue No: 2



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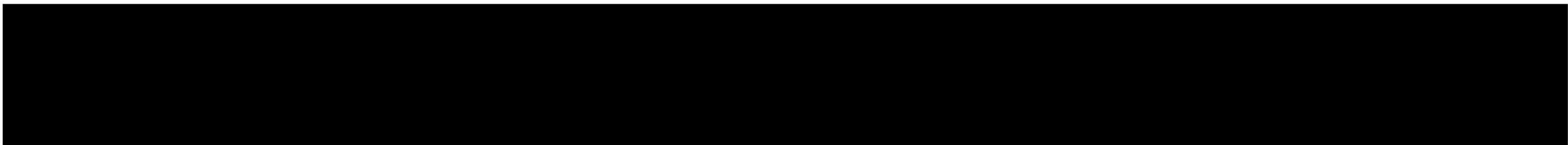
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Signed:

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1.0 Introduction

- 1.1 T16 Design has been appointed to produce this Energy Statement for the proposed development at the Workspace 11, Woodland Road, Hassocks, BN6.
- 1.2 The report assesses the predicted energy performance and carbon dioxide emissions of the proposed development in the context of local and nationwide policy requirements and best practice methods.
- 1.3 The methodology used to demonstrate the effects of the proposed energy efficiency measures is iSBem.
- 1.4 Emissions reductions are shown for the proposed scheme and the strategy underpinning them is detailed in relevant sections of the report.
- 1.5 The key policy consider within this report is policy DPS1, DPS2, DPS3 of the Mid Sussex District Plan:
 - 1.5.1 Major developments should achieve net zero carbon unless can be demonstrated it is not feasible possible
 - 1.5.2 Proposal are encouraged to use renewable technology

2.0 Project Summary

- 2.1 The proposed development is located at the Royal British Legion, Woodland Road and it is currently occupied by an old British Legion social club.
- 2.2 The proposal is for a an internal refurbishment and first floor extension to provide an office and work space.
- 2.3 All the proposed dwellings have been included in the energy calculations to allow for the best understanding of climate impact of the building.
- 2.4 The site location is shown below.



Site Location

3.0 Policy Requirements and Drivers

3.1 The relevant planning policy documents for this site, relating to energy are:

3.1.1 National Planning Policy Framework (NPPF 2023)

- NPPF 11a - Plans should promote sustainable development that seeks to: meet the development needs of their; align growth and infrastructure; improve the environment; mitigate climate change
- NPPF 154 - New development should be planned in ways that can help to avoid increased vulnerability to the range of impacts arising from climate change and reduce greenhouse gas emissions.
- NPPF 155 - Help increase use and supply of renewable and low carbon energy through providing a positive strategy for energy.

3.1.2 Mid Sussex District Plan 2021-2039 (2021)

- DPS1 – Climate Change
- DPS2 – Sustainable Design and Construction
- DPS3 – Renewable and Low Carbon Energy Schemes

3.2 In light of these policy requirements and through the developer and design team's commitment to reducing the impact of the development on the environment, this report sets out some of the measures that will be adopted to meet the policy target.

4.0 Energy Strategy and Approach

- 4.1 The Local Plan states that major developments should achieve as close to zero carbon as much as feasibly possible.
- 4.2 This will should be done in three stages in accordance with the local plan these are:
 - 4.2.1 Minimise energy demand
 - 4.2.2 Maximise energy efficiency
 - 4.2.3 Utilise renewable energy
- 4.3 Firstly, the baseline energy emissions must be established this is done using iSBEM assessment tool and backstop U-values set out in Part L2 of the building regulations
- 4.4 Secondly, the energy demand of the proposal needs to be reduced by improving fabric efficiency and ensuring the efficiency of M&E is high.
- 4.5 The final stage is the addition, where feasible to introduce renewable technology, which includes Heat pumps (Air and Ground), PV panel, Solar Hot Water panels and Wind Power.
- 4.6 These calculations are done using sBEM (Standard Building Energy Model) for non-residential units.

5.0

Baseline Emissions

- 5.1
- The baseline emissions on which reduction figures are based are calculated using sBEM for non-residential units.
- 5.2
- The proposal is a conversion and extension so a backstop calculation is undertaken using backstop U-values and M&E design as set out in Part L2 of the building regulations.
- 5.3
- The baseline emissions of the proposal are shown below.

Baseline Emissions	
Unit	Emissions Tonnes/CO ₂
Workspace 11	2.75

Table 1 – Baseline Energy

6.0

Energy Efficiency Strategy

- 6.1
- The next stage, once the baseline has been established, is to make improvements within the energy demand and energy efficiency category.
- 6.2
- Improved lighting is proposed with 130 lms/W with auto on/off occupancy..
- 6.3
- An MVHR system with 80% efficiency and specific fan power of 0.8 is proposed.
- 6.4
- The proposed U-values, with the relevant Part L backstop are shown below

Energy Efficiency Strategy		
Element or system	Backstop Value	Proposed Value
Existing Wall	U = 0.30 W/(m²k)	U = 0.25 W/(m²k)
Proposed Wall	U = 0.26 W/(m²k)	U = 0.20 W/(m²k)
Existing Ground Floor	U = 0.25 W/(m²k)	U = 0.20 W/(m²k)
Existing Roofs	U = 0.30 W/(m²k)	U = 0.30 W/(m²k)
Proposed Roofs	U = 0.30 W/(m²k)	U = 0.30 W/(m²k)
Windows and rooflights	U = 1.2 W/(m²k)	U = 1.2 W/(m²k) (G-Value 0.57)
Air Permeability	25 m³ /(hm²) at 50 Pa	8 m³ /(hm²) at 50 Pa
Lighting	Efficacy of all fixed lighting = 95 lm/W	Efficacy of all fixed lighting = 130 lm/W

Table 2 – Fabric Specification

Energy Efficiency Reduction			
Unit	Baseline Emissions Tonnes/CO ₂	Energy Efficiency Emissions Tonnes/CO ₂	Reduction %
Workspace 11	2.75	1.58	42.5

Table 3 – Energy Demand reduction

7.0 Renewable Energy Strategy

- 7.1 The renewable section of the strategy requires the consideration of renewable technologies to provide energy demand.
- 7.2 The technologies that are considered here are wind power and solar panels (photovoltaic (PV) or Solar Thermal) and heat pumps (ground, air and water)
- 7.3 Wind power is not suitable in a location such as this. Wind turbines tend to perform poorly in built-up areas.
- 7.4 Any wind that is received on the site would be too intermittent and turbulent to provide any meaningful reduction in emissions.
- 7.5 Ground Source Heat pumps are also unlikely to be a viable proposition due to the ground disturbance required in their installation.
- 7.6 Air Source Heat Pumps (ASHP) however are a suitable solution in this instance and provide substantial improvements in CO₂ emissions when combined with a high-performing fabric such as proposed here.
- 7.7 It is proposed that individual 450% efficient heat pumps will provide heating for the proposal.
- 7.8 12kWp of PV facing South is proposed this maximises unshaded usable roof area to reduce emissions further.



8.0

Summary of Results

- 8.1
- The table below shows the total reduction in CO₂ emissions from the proposal at Workspace 11, Woodsland Road, BN6.
- 8.2
- The proposal will be provided with increased U values, ASHPs and photovoltaic.
- 8.3
- The figures below have been calculated using an approved SBEM calculation tool.

Proposed Emissions			
Unit	Baseline Emissions Tonnes/CO ₂	Proposed Emissions Tonnes/CO ₂	Reduction %
Workplace 11	2.75	-0.01	100%

Table 3 – Residential Carbon emissions savings

9.0 Conclusions

- 9.1 This energy statement has been produced to accompany an application for the redevelopment of the site at Workspace 11, Woodland Road, Hassocks, BN6 to show how the proposal will comply with local renewable and energy standards.
- 9.2 In doing so, preliminary SAP calculations have been undertaken using the information available and sensible assumptions on construction and M&E parameters.
- 9.3 The baseline figures have been calculated and improvements made to the fabric and plant proposed for the scheme.
- 9.4 The passive design measures can be summarised as:
- Significant fabric improvements
 - Good air tightness..
- 9.5 The renewable measures can be summarised as:
- Air Source Heat Pumps with an Efficiency of 450%
 - 12kWp of PV
- 9.6 The results in Section 8 shows that the proposal will reduce its carbon emissions by 100%. .



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Appendix A – SBEM Calculations

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

**Former British Legion Hassocks
Backstop**

As designed

Date: Fri Jan 10 17:12:34 2025

Administrative information

Building Details

Address: Former Royal British Legion, Woodland Road,
Hassocks, BN6 8HE

Certifier details

Name: Jim Westover

Telephone number: 07969 220992

Address: 28 Florida Street, London, E2 6AL

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.d.0

Interface to calculation engine: iSBEM

Interface to calculation engine version: v6.1.d

BRUKL compliance module version: v6.1.d.0

Foundation area [m²]: 136.33

The CO₂ emission and primary energy rates of the building must not exceed the targets

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	3.24
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	6.73
Target primary energy rate (TPER), kWh/m ² annum	34.24
Building primary energy rate (BPER), kWh/m ² annum	70.94
Do the building's emission and primary energy rates exceed the targets?	BER > TER BPER > TPER

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

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.29	0.3	North
Floors	0.18	0.2	0.25	Floor
Pitched roofs	0.16	0.17	0.18	Ceiling
Flat roofs	0.18	0.32	0.45	Ceiling
Windows** and roof windows	1.6	1.77	2.2	Combined 7 & 8 Rooflights
Rooflights***	2.2	2.5	2.5	GF hallway rooflights
Personnel doors [^]	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]

U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]

U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]

* 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.

*** Values for rooflights refer to the horizontal position.

[^] For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	25

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

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- heat pump

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.5	-	-	-	-
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.					

1- Instantaneous hot water

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

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1		
Basement Podcast studio		-	-	-	-	1.5	-	-	-	-	0.65	N/A
Combined GF Wcs		-	-	-	-	1.5	-	-	-	-	0.65	N/A
GF lounge/hot desks/kitchenette		-	-	-	-	1.5	-	-	-	-	0.65	N/A
Permaserv/store		-	-	-	-	1.5	-	-	-	-	0.65	N/A
Office 3 and Pod		-	-	-	-	1.5	-	-	-	-	0.65	N/A
Meeting Room/Offices 1/2		-	-	-	-	1.5	-	-	-	-	0.65	N/A
GF circ next to toilets/lift		-	-	-	-	1.5	-	-	-	-	0.65	N/A
GF single WC/cupboard		-	-	-	-	1.5	-	-	-	-	0.65	N/A
Combined Offices 7 & 8		-	-	-	-	1.5	-	-	-	-	0.8	N/A
FF hot desking		-	-	-	-	1.5	-	-	-	-	0.65	N/A
FF Offices 4-6		-	-	-	-	1.5	-	-	-	-	0.65	N/A
FF Pod		-	-	-	-	1.5	-	-	-	-	0.65	N/A

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
	Standard value	95		80	0.3
Basement Podcast studio		95		-	-
Basement Circulation		95		-	-
Ground floor hallway		95		-	-
Combined GF Wcs		95		-	-
GF lounge/hot desks/kitchenette		95		-	-
Permaserv/store		95		-	-
Circulation area below permaserv		95		-	-
Office 3 and Pod		95		-	-
Meeting Room/Offices 1/2		95		-	-
GF central hallway		95		-	-
GF circ next to toilets/lift		95		-	-
GF single WC/cupboard		95		-	-
FF Combined storage		95		-	-
Combined Offices 7 & 8		95		-	-
FF hot desking		95		-	-
FF Offices 4-6		95		-	-
FF Pod		95		-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Basement Podcast studio	N/A	N/A
GF lounge/hot desks/kitchenette	NO (-59%)	NO
Permaserv/store	N/A	N/A
Office 3 and Pod	NO (-51.6%)	NO
Meeting Room/Offices 1/2	NO (-43.5%)	NO
Combined Offices 7 & 8	YES (+36%)	NO
FF hot desking	YES (+30.2%)	NO
FF Offices 4-6	NO (-9.5%)	NO
FF Pod	NO (-0.6%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

Building Use

	Actual	Notional
Floor area [m²]	409.2	409.2
External area [m²]	794.9	794.9
Weather	SOU	SOU
Infiltration [m³/hm²@ 50Pa]	25	3
Average conductance [W/K]	277.79	299.54
Average U-value [W/m²K]	0.35	0.38
Alpha value* [%]	20.99	25.21

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

% Area	Building Type
34	Retail/Financial and Professional Services Restaurants and Cafes/Drinking Establishments/Takeaways
66	Offices and Workshop Businesses General Industrial and Special Industrial Groups Storage or Distribution Hotels Residential Institutions: Hospitals and Care Homes Residential Institutions: Residential Schools Residential Institutions: Universities and Colleges Secure Residential Institutions Residential Spaces Non-residential Institutions: Community/Day Centre Non-residential Institutions: Libraries, Museums, and Galleries Non-residential Institutions: Education Non-residential Institutions: Primary Health Care Building Non-residential Institutions: Crown and County Courts 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	20.93	8.47
Cooling	0	0
Auxiliary	7.42	3.28
Lighting	15.06	8.44
Hot water	2.64	2.64
Equipment*	35.18	35.18
TOTAL**	46.05	22.83

* 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	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	249.77	180
Primary energy [kWh/m²]	70.94	34.24
Total emissions [kg/m²]	6.73	3.24

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 SSEF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	168.1	81.7	20.9	0	7.4	2.23	0	2.5	0
	Notional	80.5	99.5	8.5	0	3.3	2.64	0	----	----

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 (for notional building, value depends on activity glazing class)
- 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

BRUKL Output Document



HM Government

Compliance with England Building Regulations Part L 2021

Project name

Former British Legion Hassocks

As designed

Date: Fri Jan 10 16:57:54 2025

Administrative information

Building Details

Address: Former Royal British Legion, Woodland Road, Hassocks, BN6 8HE

Certifier details

Name: Jim Westover

Telephone number: 07969 220992

Address: 28 Florida Street, London, E2 6AL

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.d.0

Interface to calculation engine: iSBEM

Interface to calculation engine version: v6.1.d

BRUKL compliance module version: v6.1.d.0

Foundation area [m²]: 136.33

The CO₂ emission and primary energy rates of the building must not exceed the targets

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	3.26
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	3.87
Target primary energy rate (TPER), kWh/m ² annum	34.46
Building primary energy rate (BPER), kWh/m ² annum	41.14
Do the building's emission and primary energy rates exceed the targets?	BER > TER BPER > TPER

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

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.23	0.25	North
Floors	0.18	0.16	0.2	Floor
Pitched roofs	0.16	0.14	0.16	Ceiling
Flat roofs	0.18	0.15	0.18	Ceiling
Windows** and roof windows	1.6	1.2	1.2	Ground floor hallway doors
Rooflights***	2.2	1.5	1.5	GF hallway rooflights
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]

U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]

U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]

* 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.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	8

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

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- heat pump

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.5	-	-	-	-
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.					

1- Instantaneous hot water

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

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
Basement Podcast studio	-	-	-	-	0.8	-	-	-	-	0.8	N/A
Combined GF Wcs	-	-	-	-	0.8	-	-	-	-	0.8	N/A
GF lounge/hot desks/kitchenette	-	-	-	-	0.8	-	-	-	-	0.8	N/A
Permaserv/store	-	-	-	-	0.8	-	-	-	-	0.8	N/A
Office 3 and Pod	-	-	-	-	0.8	-	-	-	-	0.8	N/A
Meeting Room/Offices 1/2	-	-	-	-	0.8	-	-	-	-	0.8	N/A
GF single WC/cupboard	-	-	-	-	0.8	-	-	-	-	0.8	N/A
Combined Offices 7 & 8	-	-	-	-	0.8	-	-	-	-	0.8	N/A
FF hot desking	-	-	-	-	0.8	-	-	-	-	0.8	N/A
FF Offices 4-6	-	-	-	-	0.8	-	-	-	-	0.8	N/A
FF Pod	-	-	-	-	0.8	-	-	-	-	0.8	N/A

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Basement Podcast studio		130	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Basement Circulation		130	-	-
Ground floor hallway		130	-	-
Combined GF Wcs		130	-	-
GF lounge/hot desks/kitchenette		130	-	-
Permaserv/store		130	-	-
Circulation area below permaserv		130	-	-
Office 3 and Pod		130	-	-
Meeting Room/Offices 1/2		130	-	-
GF central hallway		130	-	-
GF circ next to toilets/lift		130	-	-
GF single WC/cupboard		130	-	-
FF Combined storage		130	-	-
Combined Offices 7 & 8		130	-	-
FF hot desking		130	-	-
FF Offices 4-6		130	-	-
FF Pod		130	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Basement Podcast studio	N/A	N/A
GF lounge/hot desks/kitchenette	NO (-59%)	NO
Permaserv/store	N/A	N/A
Office 3 and Pod	NO (-51.6%)	NO
Meeting Room/Offices 1/2	NO (-43.5%)	NO
Combined Offices 7 & 8	YES (+36%)	NO
FF hot desking	YES (+30.2%)	NO
FF Offices 4-6	NO (-9.5%)	NO
FF Pod	NO (-0.6%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	409.2	409.2
External area [m ²]	794.9	794.9
Weather	SOU	SOU
Infiltration [m ³ /hm ² @ 50Pa]	8	3
Average conductance [W/K]	205.75	299.54
Average U-value [W/m ² K]	0.26	0.38
Alpha value* [%]	28.34	25.21

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

Building Use

% Area	Building Type
34	Retail/Financial and Professional Services Restaurants and Cafes/Drinking Establishments/Takeaways
66	Offices and Workshop Businesses General Industrial and Special Industrial Groups Storage or Distribution Hotels Residential Institutions: Hospitals and Care Homes Residential Institutions: Residential Schools Residential Institutions: Universities and Colleges Secure Residential Institutions Residential Spaces Non-residential Institutions: Community/Day Centre Non-residential Institutions: Libraries, Museums, and Galleries Non-residential Institutions: Education Non-residential Institutions: Primary Health Care Building Non-residential Institutions: Crown and County Courts 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	8.83	8.7
Cooling	0	0
Auxiliary	4.9	3.19
Lighting	10.44	8.44
Hot water	2.64	2.64
Equipment*	35.18	35.18
TOTAL**	26.81	22.98

* 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	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	184.18	182.16
Primary energy [kWh/m ²]	41.14	34.46
Total emissions [kg/m ²]	3.87	3.26

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 SSEF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	70.9	113.3	8.8	0	4.9	2.23	0	2.5	0
	Notional	82.7	99.5	8.7	0	3.2	2.64	0	----	----

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 (for notional building, value depends on activity glazing class)
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

BRUKL Output Document



HM Government

Compliance with England Building Regulations Part L 2021

Project name

**Former British Legion Hassocks
RENEWABLES**

As designed

Date: Fri Jan 10 17:18:36 2025

Administrative information

Building Details

Address: Former Royal British Legion, Woodland Road,
Hassocks, BN6 8HE

Certifier details

Name: Jim Westover

Telephone number: 07969 220992

Address: 28 Florida Street, London, E2 6AL

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.d.0

Interface to calculation engine: iSBEM

Interface to calculation engine version: v6.1.d

BRUKL compliance module version: v6.1.d.0

Foundation area [m²]: 136.33

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	3.26
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	-0.03
Target primary energy rate (TPER), kWh/m ² annum	34.46
Building primary energy rate (BPER), kWh/m ² annum	-2.43
Do the building's emission and primary energy rates exceed the targets?	BER =< TER BPER =< TPER

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

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.23	0.25	North
Floors	0.18	0.16	0.2	Floor
Pitched roofs	0.16	0.14	0.16	Ceiling
Flat roofs	0.18	0.15	0.18	Ceiling
Windows** and roof windows	1.6	1.2	1.2	Ground floor hallway doors
Rooflights***	2.2	1.5	1.5	GF hallway rooflights
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]

U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]

U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]

* 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.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	8

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

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- heat pump

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.5	-	-	-	-
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.					

1- Instantaneous hot water

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

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1		
Basement Podcast studio		-	-	-	-	0.8	-	-	-	-	0.8	N/A
Combined GF Wcs		-	-	-	-	0.8	-	-	-	-	0.8	N/A
GF lounge/hot desks/kitchenette		-	-	-	-	0.8	-	-	-	-	0.8	N/A
Permaserv/store		-	-	-	-	0.8	-	-	-	-	0.8	N/A
Office 3 and Pod		-	-	-	-	0.8	-	-	-	-	0.8	N/A
Meeting Room/Offices 1/2		-	-	-	-	0.8	-	-	-	-	0.8	N/A
GF single WC/cupboard		-	-	-	-	0.8	-	-	-	-	0.8	N/A
Combined Offices 7 & 8		-	-	-	-	0.8	-	-	-	-	0.8	N/A
FF hot desking		-	-	-	-	0.8	-	-	-	-	0.8	N/A
FF Offices 4-6		-	-	-	-	0.8	-	-	-	-	0.8	N/A
FF Pod		-	-	-	-	0.8	-	-	-	-	0.8	N/A

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Basement Podcast studio		130	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Basement Circulation		130	-	-
Ground floor hallway		130	-	-
Combined GF Wcs		130	-	-
GF lounge/hot desks/kitchenette		130	-	-
Permaserv/store		130	-	-
Circulation area below permaserv		130	-	-
Office 3 and Pod		130	-	-
Meeting Room/Offices 1/2		130	-	-
GF central hallway		130	-	-
GF circ next to toilets/lift		130	-	-
GF single WC/cupboard		130	-	-
FF Combined storage		130	-	-
Combined Offices 7 & 8		130	-	-
FF hot desking		130	-	-
FF Offices 4-6		130	-	-
FF Pod		130	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Basement Podcast studio	N/A	N/A
GF lounge/hot desks/kitchenette	NO (-59%)	NO
Permaserv/store	N/A	N/A
Office 3 and Pod	NO (-51.6%)	NO
Meeting Room/Offices 1/2	NO (-43.5%)	NO
Combined Offices 7 & 8	YES (+36%)	NO
FF hot desking	YES (+30.2%)	NO
FF Offices 4-6	NO (-9.5%)	NO
FF Pod	NO (-0.6%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	409.2	409.2
External area [m ²]	794.9	794.9
Weather	SOU	SOU
Infiltration [m ³ /hm ² @ 50Pa]	8	3
Average conductance [W/K]	205.75	299.54
Average U-value [W/m ² K]	0.26	0.38
Alpha value* [%]	28.34	25.21

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

Building Use

% Area	Building Type
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Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	4.91	8.7
Cooling	0	0
Auxiliary	4.9	3.19
Lighting	10.44	8.44
Hot water	2.64	2.64
Equipment*	35.18	35.18
TOTAL**	22.89	22.98

* 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	25.29	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>25.29</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	184.18	182.16
Primary energy [kWh/m ²]	-2.43	34.46
Total emissions [kg/m ²]	-0.03	3.26

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 SSEF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	70.9	113.3	4.9	0	4.9	4.01	0	4.5	0
	Notional	82.7	99.5	8.7	0	3.2	2.64	0	----	----

Key to terms	
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Heat con [kWh/m2]	= Heating energy consumption
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