Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed by Array SAP 10 program, Array

Date: Tue 18 Jun 2024 14:06:12

Project Information			
Assessed By	Sean Hunter	Building Type	Flat, Detached
OCDEA Registration	EES/026592	Assessment Date	2024-06-18

Dwelling Details			
Assessment Type	As designed	Total Floor Area	75 m^2
Site Reference	4907-YO71-6328-917	Plot Reference	917 - SF Block 1
Address	Apartment		

Client Details	
Name	Vistry Southern
Company	Vistry
Address	Central 40, Chineham Park, House/Flat Types 2020, Basingstoke, RG24 8GU

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Mains gas	
Target carbon dioxide emission rate	*13.12 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	12.39 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*69.06 kWh_{PE}/m^2*	
Dwelling primary energy	66.74 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*36.1 kWh/m^2*	
Dwelling fabric energy efficiency	34.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.19	Walls (1) (0.21)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.32	LHS Windows (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	50.957	0.21
Sheltered wall: Walls (2)	18.999	0.15
Exposed roof: Roof (1)	75	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Door to Corridor, Door to Corridor	2.121	South West	N/A	1.2
RHS Windows, Window	2.4435	South East	1.0	1.3
RHS Windows, Window	0.9555	South East	1.0	1.3
Rear Windows, Window	1.2285	North East	1.0	1.3
Rear Windows, Window	1.2285	North East	1.0	1.3
LHS Windows, Window	1.2285	North West	1.0	1.3
LHS Windows, French Door	5.2185	North West	1.0	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part **1 - Main Dwelling**: Thermal bridging calculated from linear thermal transmittances for each junction				
Main element	**Junction detail**	**Source**	**Psi value [W/mK]**	**Drawing / reference**
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.046	E02 - Hi Therm

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.71	E02 - Default*SF
External wall	E3: Sill	Calculated by person with suitable expertise	0.022 **(!)**	E3 - KI_PSI_E3_SF34_0001
External wall	E4: Jamb	Calculated by person with suitable expertise	0.017 **(!)**	E4 - KI_PSI_E4_SF34_0001
External wall	E4: Jamb	Calculated by person with suitable expertise	0.071	E04 - Door to Corridor * SF
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.039 **(!)**	E7 - KI_PSI_E7_SF34_0001
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.0235 **(!)**	E7 - KI_PSI_E7_SF34_0001 - Cor
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.042	E16 - KI_PSI_E16_SF34_0001
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.05	MFF-125-E10-01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	E12 - KI_PSI_E12_DT34_0001
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.05	KI_PSI_E12_SF34_0001 - Cor
External wall	E9: Balcony between dwellings - wall insulation continuous	Calculated by person with suitable expertise	0.075	E9-Default/2

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	92.5%
Emitter type	Radiators
Flow temperature	55°C
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC COMBI
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls	
Main heating 1 - type: Programmer, room thermostat, and TRVs	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: Cylinder thermostat and HW separately timed	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	90 lm/W	**OK**
External lights control	N/A	

8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	*0.7 W/(l/s)*	
Specific fan power	0.17 W/(l/s)	**OK**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	0.8 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Summary for Input Data

elmhurst energy

Property Reference	4907-YO71-6328-917	**Issued on Date**	18/06/2024
Assessment Reference	917 - SF Block 1	**Prop Type Ref**	Block 1 - GF
Property	Apartment		

SAP Rating	89 B	**DER**	12.39	**TER**	13.12
Environmental	90 B	**% DER < TER**			5.56
CO_2 Emissions (t/year)	0.8	**DFEE**	34.39	**TFEE**	36.13
Compliance Check	See BREL	**% DFEE < TFEE**			4.80
% DPER < TPER	3.36	**DPER**	66.74	**TPER**	69.06

Assessor Details	Mr. Sean Hunter	**Assessor ID**	Y071-0001
Client			

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	Southwest	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Detached	
Position of Flat	Top-floor flat	
Which Floor	2	
2.0 Number of Storeys	1	
3.0 Date Built	2020	
3.0 Property Age Band	L	
4.0 Sheltered Sides	1	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	35.00 m	75.00 m²	2.40 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	29.24	m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
125 mm Knauf Supafil 34	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.21	60.00	63.26	50.96	0.00	None	12.30	Enter Gross Area
E-WM-30 to Corridor	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	21.12	19.00	2.50	Stairwell Stairwell 2	2.12	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
E-WM-30	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity	0.00	45.00	17.21	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Timber GF	Plasterboard on timber frame	9.00	128.70

Summary for Input Data

elmhurst energy

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	75.00	75.00	None	0.00	Enter Gross Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Lowest occupied	Precast concrete plank floor (screed laid on rubber), carpeted	30.00	75.00

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Solid Door	Manufacturer	Solid Door			None	0.00	Wood	0.70	1.20
Half Glaze	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05		None	0.71	Wood	0.70	1.10
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05		None	0.47	Wood	1.00	1.30
Window Type 2	Manufacturer	Window	Double Low-E Soft 0.05		None	0.63	Wood	0.70	0.90
Window Type 3	Manufacturer	Window	Double Low-E Soft 0.05		None	0.71	Wood	0.70	1.30
French Door	BFRC, BSI or CERTASS data	Window	Double Low-E Hard 0.2		None	0.40	Wood	1.00	1.40
French Door Type 2	Manufacturer	Window	Double Low-E Soft 0.05		None	0.63	Wood	0.70	1.50
Roof Window	Manufacturer	Roof Window	Double Low-E Soft 0.05		None	0.71	Wood	0.70	1.80
Roof Window Type 2	Manufacturer	Roof Window	Double Low-E Soft 0.05		None	0.63	Wood	0.70	1.50
Door to Corridor	Manufacturer	Door to Corridor			None	0.00	Wood	0.70	1.20

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door to Corridor	Door to Corridor	E-WM-30 to Corridor	South West	2.12	0
RHS Windows	Window	125 mm Knauf Supafil 34	South East	3.40	0
Rear Windows	Window	125 mm Knauf Supafil 34	North East	2.46	0
LHS Windows	Window	125 mm Knauf Supafil 34	North West	1.23	0
LHS Windows	French Door	125 mm Knauf Supafil 34	North West	5.22	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	7.95	0.05	0.05	E02 - Hi Therm	No
E2 Other lintels (including other steel lintels)	Independently assessed	1.00	0.71	0.71	E02 - Default*SF	No
E3 Sill	Independently assessed	5.46	0.02	0.02	E3 - KI_PSI_E3_SF34_0001	No
E4 Jamb	Independently assessed	17.10	0.02	0.02	E4 - KI_PSI_E4_SF34_0001	No
E4 Jamb	Independently assessed	4.20	0.07	0.07	E04 - Door to Corridor * SF	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	23.01	0.04	0.04	E7 - KI_PSI_E7_SF34_0001	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	8.80	0.02	0.02	E7 - KI_PSI_E7_SF34_0001 - Cor	No
E16 Corner (normal)	Independently assessed	9.60	0.04	0.04	E16 - KI_PSI_E16_SF34_0001	No
E10 Eaves (insulation at ceiling level)	Independently assessed	11.76	0.05	0.05	MFF-125-E10-01	No
E12 Gable (insulation at ceiling level)	Independently assessed	14.60	0.05	0.05	E12 - KI_PSI_E12_DT34_0001	No
E12 Gable (insulation at ceiling level)	Independently assessed	8.80	0.05	0.05	KI_PSI_E12_SF34_0001 - Cor	No
E9 Balcony between dwellings, wall insulation continuous	Independently assessed	3.35	0.07	0.07	E9-Default/2	No

Y-value	0.00	W/m²K

18.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	
As Built AP_{50}	15.00	m³/(h.m²) @ 50 Pa

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes	
Approved Installation	No	
Mechanical Ventilation data Type	Database	
Type	Mechanical extract ventilation - decentralised	
MV Reference Number	500776	

Summary for Input Data

Duct Type	Rigid
MVHR Efficiency	0.00
Wet Rooms	2
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	1
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	0
0.08	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System	No

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
PL1 8.5 watt bayonet cap lamp PL1LED3K-BC	90.00	9	810	6

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	17956	
Fuel Type	Mains gas	
SAP Code	104	
In Winter	89.00	
In Summer	87.30	
Model Name	LOGIC COMBI	
Manufacturer	Ideal Boilers	
System Type	Combi boiler	
Controls SAP Code	2106	
PCDF Controls	0	
Delayed Start Stat	No	
Burner Control	Modulating	
Boiler Compensator	200005	
HETAS approved System	No	
Oil Pump Inside	No	
FI Case	0.00	
FI Water	0.00	
Flue Type	Balanced	
Smoke Control Area	Unknown	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Electric CPSU Temperature	0.00	

Summary for Input Data

Combi boiler type	Standard Combi
Combi keep hot type	None

25.0 Main Heating 2 — None

26.0 Heat Networks — None

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None			0.00	0.00	0.00	0.00	0.00		
Heat source 2	None			0.00	0.00	0.00	0.00	0.00		
Heat source 3	None			0.00	0.00	0.00	0.00	0.00		
Heat source 4	None			0.00	0.00	0.00	0.00	0.00		
Heat source 5	None			0.00	0.00	0.00	0.00	0.00		

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Baths connected to WWHRS	0
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness	0	
Cylinder Volume	170.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store	None	
Thermal Store Pipework	within a single casing	

32.0 Photovoltaic Unit	Multiple Dwellings – Not Connected	
Export Capable Meter?	Yes	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	0.00	

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate	Panel Manufacturer

Summary for Input Data

							Reference
0.80	South	45°	None Or Little	No	No	1.00	

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Predicted Energy Assessment

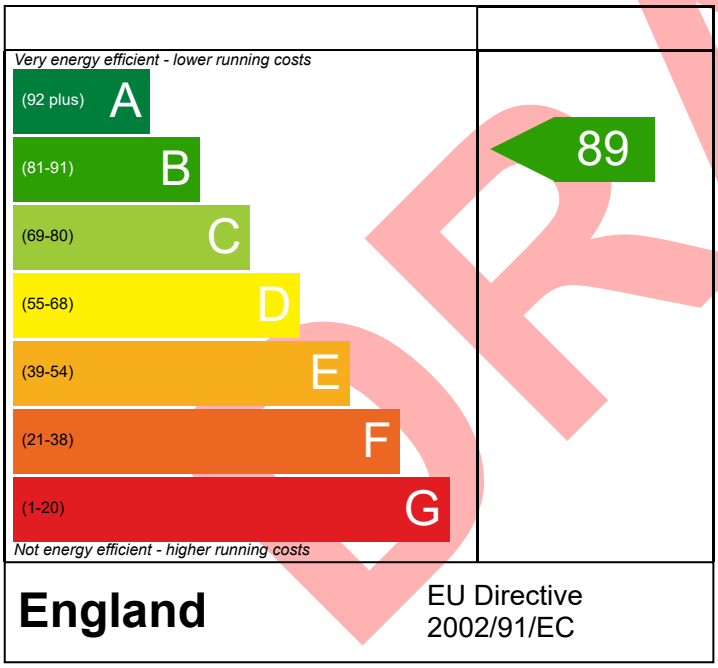
Apartment

Dwelling type:	Flat, Detached
Date of assessment:	18/06/2024
Produced by:	Sean Hunter
Total floor area:	75 m²
DRRN:	

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

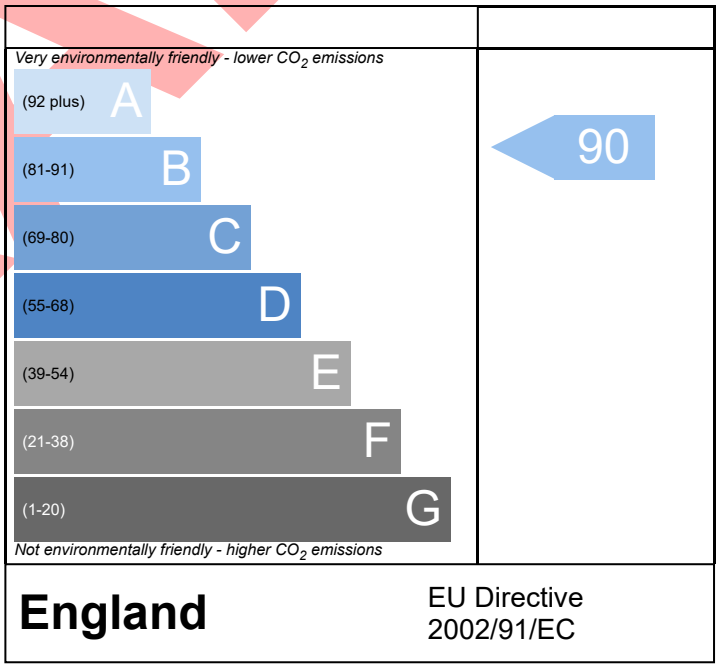
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO2) emissions.

Energy Efficiency Rating



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

Environmental Impact (CO_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating the less impact it has on the environment.

Thermal Bridging

Property Reference	4907-YO71-6328-917	**Issued on Date**	18/06/2024
Assessment Reference	917 - SF Block 1	**Prop Type Ref**	Detached Flat
Property	Apartment		

SAP Rating	89 B	**DER**	12.39	**TER**	13.12
Environmental	90 B	**% DER < TER**			5.56
CO_2 Emissions (t/year)	0.8	**DFEE**	34.39	**TFEE**	36.13
Compliance Check	See BREL	**% DFEE < TFEE**			4.80
% DPER < TPER	3.36	**DPER**	66.74	**TPER**	69.06

Assessor Details	Mr. Sean Hunter	**Assessor ID**	Y071-0001
Client			

	Junction details	Source Type	Psi (W/mK)	Length (m)	Result	Reference
External wall	E2 Other lintels (including other steel lintels)	Independently assessed	0.046	7.95	0.37	E02 - Hi Therm
External wall	E2 Other lintels (including other steel lintels)	Independently assessed	0.710	1.00	0.71	E02 - Default*SF
External wall	E3 Sill	Independently assessed	0.022	5.46	0.12	E3 - KI_PSI_E3_SF34_0001
External wall	E4 Jamb	Independently assessed	0.017	17.10	0.29	E4 - KI_PSI_E4_SF34_0001
External wall	E4 Jamb	Independently assessed	0.071	4.20	0.30	E04 - Door to Corridor * SF
External wall	E7 Party floor between dwellings (in blocks of flats)	Independently assessed	0.039	23.01	0.90	E7 - KI_PSI_E7_SF34_0001
External wall	E7 Party floor between dwellings (in blocks of flats)	Independently assessed	0.024	8.80	0.21	E7 - KI_PSI_E7_SF34_0001 - Cor
External wall	E16 Corner (normal)	Independently assessed	0.042	9.60	0.40	E16 - KI_PSI_E16_SF34_0001
External wall	E10 Eaves (insulation at ceiling level)	Independently assessed	0.050	11.76	0.59	MFF-125-E10-01
External wall	E12 Gable (insulation at ceiling level)	Independently assessed	0.048	14.60	0.70	E12 - KI_PSI_E12_DT34_0001
External wall	E12 Gable (insulation at ceiling level)	Independently assessed	0.050	8.80	0.44	KI_PSI_E12_SF34_0001 - Cor
External wall	E9 Balcony between dwellings, wall insulation continuous	Independently assessed	0.075	3.35	0.25	E9-Default/2

Total: 115.62 W/mK:

Y-Value: 0.00 W/m²K: