



ENERGYREPORT
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SAP Calculation Report

640 Oxford Road, Reading, Berkshire RG30 1EH

J03806

VX KVA Ltd

12th December 2025

This Discharge of Planning Condition has been produced for the Planning Application PL/22/0780 at 640 Oxford Road, Reading, Berkshire RG30 1EH, consisting of a mixed-use development comprised of 3x separate commercial units and 4x self-contained dwellings.

Condition 18 of the Reading Borough Council Decision Notice requires “*Demonstration that the dwellings permitted have achieved a minimum of a 19% improvement in the dwelling emission rate over the target emission rate as defined in The Building Regulations for England Approved Document L1a: Conservation of Fuel and Power in New Dwellings (2013 edition).*”

Table 1 below shows the final CO₂ emissions (t/yr) of the proposed residential development at 640 Oxford Road. It can be seen that each dwelling exceeds the required 19% improvement over the baseline CO₂ emissions ((t/yr). The full SAP Reports can be found proceeding this.

Summary of CO₂ emission and energy reduction using L1B 2013 carbon factors

Unit	Baseline CO ₂ emissions (t/yr)	Proposed CO ₂ emissions (t/yr)	Saving achieved (%)
Unit E1	1.06	0.74	30.2
Unit E2	1.11	0.85	23.4
Unit P1	1.00	0.75	25.0
Unit P2	1.04	0.78	25.0
Total reduction:			25.9

Table 1 - summary of Dwelling Emission Rates

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit E1	Issued on Date	08/12/2025
Assessment Reference	Proposed gas	Prop Type Ref	Floor 01
Property	Unit E1, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
SAP Rating	82 B	DER	N/A
Environmental	87 B	% DER<TER	N/A
CO ₂ Emissions (t/year)	0.74	DFEE	N/A
General Requirements Compliance	N/A	% DFEE<TFEE	N/A
Assessor Details	Mr. Thomas Pope, Energy Report Ltd, Tel: 07879 675 944, tom@energyreport.co.uk	Assessor ID	F764-0001
Client	VX KA Ltd, VX KA Ltd		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	North East					
Property Tenure	Unknown					
Transaction Type	New dwelling					
Terrain Type	Suburban					
1.0 Property Type	Flat, Semi-Detached					
2.0 Number of Storeys	1					
3.0 Date Built	2025					
4.0 Sheltered Sides	1					
5.0 Sunlight/Shade	Average or unknown					
6.0 Measurements						
Ground Floor:		Heat Loss Perimeter		Internal Floor Area		Average Storey Height
		17.39 m		40.12 m²		2.40 m
7.0 Living Area	23.10			m²		
8.0 Thermal Mass Parameter	Precise calculation					
Thermal Mass	159.13			kJ/m²K		
9.0 External Walls						
Description	Type	Construction		U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)
						Nett Area (m²)
Existing Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure		0.30	60.00	41.74
9.1 Party Walls						
Description	Type	Construction		U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity		0.00	45.00	24.12
9.2 Internal Walls						
Description					Kappa (kJ/m²K)	Area (m²)
Internal Walls	Plasterboard on timber frame				9.00	72.50
10.1 Party Ceilings						
Description					Kappa (kJ/m²K)	Area (m²)
Party Ceilings	Timber I-joists, carpeted				20.00	40.12
11.1 Party Floors						

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	40.12

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
NW Window	Window	[1] Existing Walls	North West	Dark-coloured curtain or roller blind	0.00					0.95	100
SW Windows	Window	[1] Existing Walls	South West	Dark-coloured curtain or roller blind	0.00					3.47	100

14.0 Conservatory

15.0 Draught Proofing

%

16.0 Draught Lobby

17.0 Thermal Bridging

Y-value

W/m²K

18.0 Pressure Testing

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Cross ventilation possible

Night Ventilation

Air change rate

Mechanical Ventilation

Mechanical Ventilation System Present

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				2
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System

22.0 Lighting

Internal

Total number of light fittings

Total number of L.E.L. fittings

Percentage of L.E.L. fittings

%

External

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

External lights fitted	No	
23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	Database	
Percentage of Heat	100	%
Database Ref. No.	17953	
Fuel Type	Mains gas	
Main Heating	BGW	
SAP Code	104	
In Winter	90.6	
In Summer	85.0	
Controls	CBI Time and temperature zone control	
PCDF Controls	0	
Delayed Start Stat	Yes	
Sap Code	2110	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
Community Heating	None	
28.0 Water Heating	HWP From main heating 1	
Water Heating	Main Heating 1	
Flue Gas Heat Recovery System	Yes	
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	
SAP Code	901	
28.1 Flue Gas Heat Recovery System		
29.0 Hot Water Cylinder	None	
Recommendations		
Lower cost measures	None	
Further measures to achieve even higher standards	None	

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit E1	Issued on Date	08/12/2025
Assessment Reference	Baseline gas	Prop Type Ref	Floor 01
Property	Unit E1, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
SAP Rating	78 C	DER	N/A
Environmental	81 B	% DER<TER	N/A
CO ₂ Emissions (t/year)	1.06	DFEE	N/A
General Requirements Compliance	N/A	% DFEE<TFEE	N/A
Assessor Details	Mr. Thomas Pope, Energy Report Ltd, Tel: 07879 675 944, tom@energyreport.co.uk	Assessor ID	F764-0001
Client	VX KA Ltd, VX KA Ltd		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	North East						
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Transaction Type	New dwelling						
Terrain Type	Suburban						
1.0 Property Type	Flat, Semi-Detached						
2.0 Number of Storeys	1						
3.0 Date Built	2025						
4.0 Sheltered Sides	1						
5.0 Sunlight/Shade	Average or unknown						
6.0 Measurements							
Ground Floor:		Heat Loss Perimeter		Internal Floor Area		Average Storey Height	
		17.39 m		40.12 m²		2.40 m	
7.0 Living Area	23.10			m²			
8.0 Thermal Mass Parameter	Precise calculation						
Thermal Mass	159.13			kJ/m²K			
9.0 External Walls							
Description	Type	Construction		U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
Existing Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure		0.55	60.00	41.74	37.32
9.1 Party Walls							
Description	Type	Construction		U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity		0.00	45.00	24.12	
9.2 Internal Walls							
Description	Construction				Kappa (kJ/m²K)	Area (m²)	
Internal Walls	Plasterboard on timber frame				9.00	72.50	
10.1 Party Ceilings							
Description	Construction				Kappa (kJ/m²K)	Area (m²)	
Party Ceilings	Timber I-joists, carpeted				20.00	40.12	
11.1 Party Floors							

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	40.12

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.60

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
NW Window	Window	[1] Existing Walls	North West	Dark-coloured curtain or roller blind	0.00					0.95	100
SW Windows	Window	[1] Existing Walls	South West	Dark-coloured curtain or roller blind	0.00					3.47	100

14.0 Conservatory

None

15.0 Draught Proofing

100

%

16.0 Draught Lobby

No

17.0 Thermal Bridging

Default

Y-value

0.150

W/m²K

18.0 Pressure Testing

No

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Windows half open

Cross ventilation possible

No

Night Ventilation

No

Air change rate

2.00

Mechanical Ventilation

Mechanical Ventilation System Present

No

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				2
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System

No

22.0 Lighting

Internal

Total number of light fittings

5

Total number of L.E.L. fittings

5

Percentage of L.E.L. fittings

100.00

%

External

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

External lights fitted	No	
23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	SAP table	
Percentage of Heat	100	%
Main Heating	BGW	
SAP Code	104	
Efficiency (SAP Table)	84.0	%
Controls	CBX TRVs and bypass	
PCDF Controls	0	
Delayed Start Stat	No	
Sap Code	2111	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
Community Heating	None	
28.0 Water Heating	HWP From main heating 1	
Water Heating	Main Heating 1	
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	
SAP Code	901	
29.0 Hot Water Cylinder	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit E2	Issued on Date	08/12/2025
Assessment Reference	Proposed gas	Prop Type Ref	Floor 02
Property	Unit E2, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
SAP Rating	80 C	DER	N/A
Environmental	85 B	% DER<TER	N/A
CO ₂ Emissions (t/year)	0.85	DFEE	N/A
General Requirements Compliance	N/A	% DFEE<TFEE	N/A
Assessor Details	Mr. Thomas Pope, Energy Report Ltd, Tel: 07879 675 944, tom@energyreport.co.uk	Assessor ID	F764-0001
Client	VX KA Ltd, VX KA Ltd		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	North West						
Property Tenure	Unknown						
Transaction Type	New dwelling						
Terrain Type	Suburban						
1.0 Property Type	Flat, Semi-Detached						
2.0 Number of Storeys	1						
3.0 Date Built	2025						
4.0 Sheltered Sides	1						
5.0 Sunlight/Shade	Average or unknown						
6.0 Measurements							
Ground Floor:		Heat Loss Perimeter		Internal Floor Area		Average Storey Height	
		17.10 m		38.98 m ²		2.36 m	
7.0 Living Area	35.41		m ²				
8.0 Thermal Mass Parameter	Precise calculation						
Thermal Mass	117.9		kJ/m ² K				
9.0 External Walls							
Description	Type	Construction		U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area (m ²)	Nett Area (m ²)
New Cavity Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure		0.18	60.00	26.14	26.14
New Mansard Walls	Timber Frame	Timber framed wall (one layer of plasterboard)		0.18	9.00	11.95	11.95
New Cheeks and Faces	Timber Frame	Timber framed wall (one layer of plasterboard)		0.18	9.00	6.34	2.87
9.1 Party Walls							
Description	Type	Construction		U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity		0.00	45.00	24.61	
9.2 Internal Walls							
Description	Construction		Kappa (kJ/m ² K)			Area (m ²)	
Internal Walls	Plasterboard on timber frame		9.00			30.26	
10.0 External Roofs							

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
Dormer Roofs	External Flat Roof	Plasterboard, insulated flat roof	0.15	9.00	1.10	1.10
Mansard Roof	External Slope Roof	Plasterboard, insulated slope	0.15	9.00	9.39	9.39
Main Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.15	9.00	27.83	27.83

11.1 Party Floors

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	38.98

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
SW Windows	Window	[3] New Cheeks and Faces	South West	Dark-coloured curtain or roller blind	0.00					3.47	100

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

Y-value W/m²K

18.0 Pressure Testing

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Cross ventilation possible

Night Ventilation

Air change rate

Mechanical Ventilation

Mechanical Ventilation System Present

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				2
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System

22.0 Lighting

Internal

Total number of light fittings

Total number of L.E.L. fittings

Percentage of L.E.L. fittings

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

External		%
External lights fitted	No	
23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	Database	
Percentage of Heat	100	%
Database Ref. No.	17953	
Fuel Type	Mains gas	
Main Heating	BGW	
SAP Code	104	
In Winter	90.6	
In Summer	85.0	
Controls	CBI Time and temperature zone control	
PCDF Controls	0	
Delayed Start Stat	Yes	
Sap Code	2110	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
Community Heating	None	
28.0 Water Heating	HWP From main heating 1	
Water Heating	Main Heating 1	
Flue Gas Heat Recovery System	Yes	
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	
SAP Code	901	
28.1 Flue Gas Heat Recovery System		
29.0 Hot Water Cylinder	None	
Recommendations		
Lower cost measures		
None		
Further measures to achieve even higher standards		
None		

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit E2	Issued on Date	08/12/2025
Assessment Reference	Baseline gas	Prop Type Ref	Floor 02
Property	Unit E2, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
SAP Rating	77 C	DER	N/A
Environmental	80 C	% DER<TER	N/A
CO ₂ Emissions (t/year)	1.11	DFEE	N/A
General Requirements Compliance	N/A	% DFEE<TFEE	N/A
Assessor Details	Mr. Thomas Pope, Energy Report Ltd, Tel: 07879 675 944, tom@energyreport.co.uk	Assessor ID	F764-0001
Client	VX KA Ltd, VX KA Ltd		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	North West					
Property Tenure	Unknown					
Transaction Type	New dwelling					
Terrain Type	Suburban					
1.0 Property Type	Flat, Semi-Detached					
2.0 Number of Storeys	1					
3.0 Date Built	2025					
4.0 Sheltered Sides	1					
5.0 Sunlight/Shade	Average or unknown					
6.0 Measurements						
Ground Floor:		Heat Loss Perimeter	Internal Floor Area		Average Storey Height	
		17.10 m	38.98 m ²		2.36 m	
7.0 Living Area	35.41		m ²			
8.0 Thermal Mass Parameter	Precise calculation					
Thermal Mass	117.9		kJ/m ² K			
9.0 External Walls						
Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area (m ²)	Nett Area (m ²)
New Cavity Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.28	60.00	26.14	26.14
New Mansard Walls	Timber Frame	Timber framed wall (one layer of plasterboard)	0.28	9.00	11.95	11.95
New Cheeks and Faces	Timber Frame	Timber framed wall (one layer of plasterboard)	0.28	9.00	6.34	2.87
9.1 Party Walls						
Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity	0.00	45.00	24.61	
9.2 Internal Walls						
Description	Construction				Kappa (kJ/m ² K)	Area (m ²)
Internal Walls	Plasterboard on timber frame				9.00	30.26
10.0 External Roofs						

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
Dormer Roofs	External Flat Roof	Plasterboard, insulated flat roof	0.18	9.00	1.10	1.10
Mansard Roof	External Slope Roof	Plasterboard, insulated slope	0.18	9.00	9.39	9.39
Main Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.16	9.00	27.83	27.83

11.1 Party Floors

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	38.98

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.60

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
SW Windows	Window	[3] New Cheeks and Faces	South West	Dark-coloured curtain or roller blind	0.00					3.47	100

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

Y-value

 W/m²K

18.0 Pressure Testing

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Cross ventilation possible

Night Ventilation

Air change rate

Mechanical Ventilation

Mechanical Ventilation System Present

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				2
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System

22.0 Lighting

Internal

Total number of light fittings

Total number of L.E.L. fittings

Percentage of L.E.L. fittings

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

External		%
External lights fitted	No	
23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	SAP table	
Percentage of Heat	100	%
Main Heating	BGW	
SAP Code	104	
Efficiency (SAP Table)	84.0	%
Controls	CBX TRVs and bypass	
PCDF Controls	0	
Delayed Start Stat	No	
Sap Code	2111	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	

Community Heating	None
28.0 Water Heating	HWP From main heating 1
Water Heating	Main Heating 1
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
SAP Code	901
29.0 Hot Water Cylinder	None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit P1	Issued on Date	08/12/2025
Assessment Reference	Proposed gas	Prop Type Ref	Floor 01
Property	Unit P1, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
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Environmental	86 B	% DER<TER	N/A
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General Requirements Compliance	N/A	% DFEE<TFEE	N/A
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Client	VX KA Ltd, VX KA Ltd		

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3.0 Date Built	2025							
4.0 Sheltered Sides	1							
5.0 Sunlight/Shade	Average or unknown							
6.0 Measurements								
Ground Floor:		Heat Loss Perimeter		Internal Floor Area		Average Storey Height		
		21.21 m		37.87 m²		2.40 m		
7.0 Living Area	31.05					m²		
8.0 Thermal Mass Parameter	Precise calculation					kJ/m²K		
Thermal Mass	159.3							
9.0 External Walls								
Description	Type	Construction			U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
New Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure			0.18	60.00	50.90	47.42
9.1 Party Walls								
Description	Type	Construction			U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity			0.00	45.00	15.24	
9.2 Internal Walls								
Description	Construction					Kappa (kJ/m²K)	Area (m²)	
Internal Walls	Plasterboard on timber frame					9.00	25.50	
10.1 Party Ceilings								
Description	Construction					Kappa (kJ/m²K)	Area (m²)	
Party Ceilings	Timber I-joists, carpeted					20.00	37.87	
11.1 Party Floors								

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	37.87

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
NW Window	Window	[1] New Walls	North West	Dark-coloured curtain or roller blind	0.00					1.74	100
NE Windows	Window	[1] New Walls	North East	Dark-coloured curtain or roller blind	0.00					1.74	100

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	Default	
Y-value	0.150	W/m²K
18.0 Pressure Testing	No	

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather	Windows half open
Cross ventilation possible	No
Night Ventilation	No
Air change rate	2.00

Mechanical Ventilation

Mechanical Ventilation System Present	No
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20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				2
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System	No
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22.0 Lighting

Internal

Total number of light fittings	4
Total number of L.E.L. fittings	4
Percentage of L.E.L. fittings	100.00

External

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

External lights fitted	No	
23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	Database	
Percentage of Heat	100	%
Database Ref. No.	17953	
Fuel Type	Mains gas	
Main Heating	BGW	
SAP Code	104	
In Winter	90.6	
In Summer	85.0	
Controls	CBI Time and temperature zone control	
PCDF Controls	0	
Delayed Start Stat	Yes	
Sap Code	2110	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
Community Heating	None	
28.0 Water Heating	HWP From main heating 1	
Water Heating	Main Heating 1	
Flue Gas Heat Recovery System	Yes	
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	
SAP Code	901	
28.1 Flue Gas Heat Recovery System		
29.0 Hot Water Cylinder	None	
Recommendations		
Lower cost measures	None	
Further measures to achieve even higher standards	None	

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit P1	Issued on Date	08/12/2025
Assessment Reference	Baseline gas	Prop Type Ref	Floor 01
Property	Unit P1, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
SAP Rating	78 C	DER	N/A
Environmental	82 B	% DER<TER	N/A
CO ₂ Emissions (t/year)	1.00	DFEE	N/A
General Requirements Compliance	N/A	% DFEE<TFEE	N/A
Assessor Details	Mr. Thomas Pope, Energy Report Ltd, Tel: 07879 675 944, tom@energyreport.co.uk	Assessor ID	F764-0001
Client	VX KA Ltd, VX KA Ltd		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	South West						
Property Tenure	Unknown						
Transaction Type	New dwelling						
Terrain Type	Suburban						
1.0 Property Type	Flat, Semi-Detached						
2.0 Number of Storeys	1						
3.0 Date Built	2025						
4.0 Sheltered Sides	1						
5.0 Sunlight/Shade	Average or unknown						
6.0 Measurements							
Ground Floor:		Heat Loss Perimeter		Internal Floor Area		Average Storey Height	
		21.21 m		37.87 m²		2.40 m	
7.0 Living Area	31.05			m²			
8.0 Thermal Mass Parameter	Precise calculation			kJ/m²K			
Thermal Mass	159.3						
9.0 External Walls							
Description	Type	Construction		U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
New Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure		0.28	60.00	50.90	47.42
9.1 Party Walls							
Description	Type	Construction		U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity		0.00	45.00	15.24	
9.2 Internal Walls							
Description	Construction				Kappa (kJ/m²K)	Area (m²)	
Internal Walls	Plasterboard on timber frame				9.00	25.50	
10.1 Party Ceilings							
Description	Construction				Kappa (kJ/m²K)	Area (m²)	
Party Ceilings	Timber I-joists, carpeted				20.00	37.87	
11.1 Party Floors							

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	37.87

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.60

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
NW Window	Window	[1] New Walls	North West	Dark-coloured curtain or roller blind	0.00					1.74	100
NE Windows	Window	[1] New Walls	North East	Dark-coloured curtain or roller blind	0.00					1.74	100

14.0 Conservatory

None

15.0 Draught Proofing

100

%

16.0 Draught Lobby

No

17.0 Thermal Bridging

Default

Y-value

0.150

W/m²K

18.0 Pressure Testing

No

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Windows half open

Cross ventilation possible

No

Night Ventilation

No

Air change rate

2.00

Mechanical Ventilation

Mechanical Ventilation System Present

No

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				2
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System

No

22.0 Lighting

Internal

Total number of light fittings

4

Total number of L.E.L. fittings

4

Percentage of L.E.L. fittings

100.00

%

External

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

External lights fitted	No	
23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	SAP table	
Percentage of Heat	100	%
Main Heating	BGW	
SAP Code	104	
Efficiency (SAP Table)	84.0	%
Controls	CBX TRVs and bypass	
PCDF Controls	0	
Delayed Start Stat	No	
Sap Code	2111	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
Community Heating	None	
28.0 Water Heating	HWP From main heating 1	
Water Heating	Main Heating 1	
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	
SAP Code	901	
29.0 Hot Water Cylinder	None	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit P2	Issued on Date	08/12/2025
Assessment Reference	Proposed gas	Prop Type Ref	Floor 02
Property	Unit P2, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
SAP Rating	80 C	DER	N/A
Environmental	86 B	% DER<TER	N/A
CO ₂ Emissions (t/year)	0.78	DFEE	N/A
General Requirements Compliance	N/A	% DFEE<TFEE	N/A
Assessor Details	Mr. Thomas Pope, Energy Report Ltd, Tel: 07879 675 944, tom@energyreport.co.uk	Assessor ID	F764-0001
Client	VX KA Ltd, VX KA Ltd		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	South West					
Property Tenure	Unknown					
Transaction Type	New dwelling					
Terrain Type	Suburban					
1.0 Property Type	Flat, Semi-Detached					
2.0 Number of Storeys	1					
3.0 Date Built	2025					
4.0 Sheltered Sides	1					
5.0 Sunlight/Shade	Average or unknown					
6.0 Measurements						
Ground Floor:		Heat Loss Perimeter		Internal Floor Area		Average Storey Height
		20.76 m		36.77 m ²		2.03 m
7.0 Living Area	31.55		m ²			
8.0 Thermal Mass Parameter	Precise calculation					
Thermal Mass	93.29		kJ/m ² K			
9.0 External Walls						
Description	Type	Construction		U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area (m ²) Nett Area (m ²)
New Cavity Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure		0.18	60.00	16.31 13.87
New Mansard Walls	Timber Frame	Timber framed wall (one layer of plasterboard)		0.18	9.00	20.50 20.50
New Cheeks and Faces	Timber Frame	Timber framed wall (one layer of plasterboard)		0.18	9.00	6.34 3.90
9.1 Party Walls						
Description	Type	Construction		U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity		0.00	45.00	15.86
9.2 Internal Walls						
Description	Construction				Kappa (kJ/m ² K)	Area (m ²)
Internal Walls	Plasterboard on timber frame				9.00	31.08
10.0 External Roofs						

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
Dormer Roofs	External Flat Roof	Plasterboard, insulated flat roof	0.15	9.00	1.10	1.10
Mansard Roof	External Slope Roof	Plasterboard, insulated slope	0.15	9.00	30.21	30.21

11.1 Party Floors

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	36.77

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
NE Window 1	Window	[3] New Cheeks and Faces	North East	Dark-coloured curtain or roller blind	0.00					1.22	100
NE Window 2	Window	[1] New Cavity Walls	North East	Dark-coloured curtain or roller blind	0.00					1.22	100
NW Windows 1	Window	[3] New Cheeks and Faces	North West	Dark-coloured curtain or roller blind	0.00					1.22	100
NW Windows 2	Window	[1] New Cavity Walls	North West	Dark-coloured curtain or roller blind	0.00					1.22	100

14.0 Conservatory

None

15.0 Draught Proofing

100

%

16.0 Draught Lobby

No

17.0 Thermal Bridging

Y-value

Default

0.150

W/m²K

18.0 Pressure Testing

No

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Windows half open

Cross ventilation possible

No

Night Ventilation

No

Air change rate

2.00

Mechanical Ventilation

Mechanical Ventilation System Present

No

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Number of open flues	0	0	0
Number of intermittent fans			2
Number of passive vents			0
Number of flueless gas fires			0

21.0 Fixed Cooling System

No

22.0 Lighting

Internal

Total number of light fittings	4	
Total number of L.E.L. fittings	4	
Percentage of L.E.L. fittings	100.00	%

External

External lights fitted	No
------------------------	----

23.0 Electricity Tariff

Standard

24.0 Main Heating 1

	Database	
Percentage of Heat	100	%
Database Ref. No.	17953	
Fuel Type	Mains gas	
Main Heating	BGW	
SAP Code	104	
In Winter	90.6	
In Summer	85.0	
Controls	CBI Time and temperature zone control	
PCDF Controls	0	
Delayed Start Stat	Yes	
Sap Code	2110	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	

25.0 Main Heating 2

None

Community Heating	None
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28.0 Water Heating

	HWP From main heating 1
Water Heating	Main Heating 1
Flue Gas Heat Recovery System	Yes
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

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

SAP Code

901

28.1 Flue Gas Heat Recovery System

29.0 Hot Water Cylinder

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Property Reference	Unit P2	Issued on Date	08/12/2025
Assessment Reference	Baseline gas	Prop Type Ref	Floor 02
Property	Unit P2, 640, Oxford Road, Reading, Berkshire, RG30 1EH		
SAP Rating	77 C	DER	N/A
Environmental	81 B	% DER<TER	N/A
CO ₂ Emissions (t/year)	1.04	DFEE	N/A
General Requirements Compliance	N/A	% DFEE<TFEE	N/A
Assessor Details	Mr. Thomas Pope, Energy Report Ltd, Tel: 07879 675 944, tom@energyreport.co.uk	Assessor ID	F764-0001
Client	VX KA Ltd, VX KA Ltd		

SUMMARY FOR INPUT DATA FOR: Conversion (As Designed)

Orientation	South West						
Property Tenure	Unknown						
Transaction Type	New dwelling						
Terrain Type	Suburban						
1.0 Property Type	Flat, Semi-Detached						
2.0 Number of Storeys	1						
3.0 Date Built	2025						
4.0 Sheltered Sides	1						
5.0 Sunlight/Shade	Average or unknown						
6.0 Measurements							
Ground Floor:		Heat Loss Perimeter		Internal Floor Area		Average Storey Height	
		20.76 m		36.77 m ²		2.03 m	
7.0 Living Area	31.55		m ²				
8.0 Thermal Mass Parameter	Precise calculation						
Thermal Mass	93.29		kJ/m ² K				
9.0 External Walls							
Description	Type	Construction		U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area (m ²)	Nett Area (m ²)
New Cavity Walls	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure		0.28	60.00	16.31	13.87
New Mansard Walls	Timber Frame	Timber framed wall (one layer of plasterboard)		0.28	9.00	20.50	20.50
New Cheeks and Faces	Timber Frame	Timber framed wall (one layer of plasterboard)		0.28	9.00	6.34	3.90
9.1 Party Walls							
Description	Type	Construction		U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	
Party Wall	Filled Cavity with Edge Sealing	Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity		0.00	45.00	15.86	
9.2 Internal Walls							
Description	Construction		Kappa (kJ/m ² K)			Area (m ²)	
Internal Walls	Plasterboard on timber frame		9.00			31.08	
10.0 External Roofs							

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area (m²)	Nett Area (m²)
Dormer Roofs	External Flat Roof	Plasterboard, insulated flat roof	0.18	9.00	1.10	1.10
Mansard Roof	External Slope Roof	Plasterboard, insulated slope	0.18	9.00	30.21	30.21

11.1 Party Floors

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor	Timber I-joists, carpeted	30.00	36.77

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.60

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
NE Window 1	Window	[3] New Cheeks and Faces	North East	Dark-coloured curtain or roller blind	0.00					1.22	100
NE Window 2	Window	[1] New Cavity Walls	North East	Dark-coloured curtain or roller blind	0.00					1.22	100
NW Windows 1	Window	[3] New Cheeks and Faces	North West	Dark-coloured curtain or roller blind	0.00					1.22	100
NW Windows 2	Window	[1] New Cavity Walls	North West	Dark-coloured curtain or roller blind	0.00					1.22	100

14.0 Conservatory

None

15.0 Draught Proofing

100

%

16.0 Draught Lobby

No

17.0 Thermal Bridging

Y-value

Default

0.150

W/m²K

18.0 Pressure Testing

No

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather

Windows half open

Cross ventilation possible

No

Night Ventilation

No

Air change rate

2.00

Mechanical Ventilation

Mechanical Ventilation System Present

No

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Number of open flues	0	0	0
Number of intermittent fans			2
Number of passive vents			0
Number of flueless gas fires			0

21.0 Fixed Cooling System

22.0 Lighting

Internal

Total number of light fittings	4	
Total number of L.E.L. fittings	4	
Percentage of L.E.L. fittings	100.00	%

External

External lights fitted	No
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23.0 Electricity Tariff

24.0 Main Heating 1

	SAP table	
Percentage of Heat	100	%
Main Heating	BGW	
SAP Code	104	
Efficiency (SAP Table)	84.0	%
Controls	CBX TRVs and bypass	
PCDF Controls	0	
Delayed Start Stat	No	
Sap Code	2111	
Flue Type	None or Unknown	
Fan Assisted Flue	No	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Radiators	
Flow Temperature	Normal (> 45°C)	
Combi boiler type	Standard Combi	
Combi keep hot type	None	

25.0 Main Heating 2

Community Heating

28.0 Water Heating

	HWP From main heating 1
Water Heating	Main Heating 1
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
SAP Code	901

29.0 Hot Water Cylinder

SUMMARY FOR INPUT DATA

Calculation Type: Conversion (As Designed)

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None