

Energy Statement

Proposed New Development to provide
12 new flats (8 x 2 bed and 4 x 1 bed units)

Rear of 75-77 London Street, Reading, RG1 4QA

Planning ref 220244

CLIENTS: Woodside (Reading) Ltd

PLANNING CONSULTANTS:
The Keen Partnership



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Prepared by:



accredited SAP assessors

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BRIEF

Monitor Energy Consultancy has been instructed to undertake an Energy Statement, to demonstrate how the proposed development for **12 new flats at 75-75 London Street, Reading, RG1 4QA** will comply with the requirement of Reading Borough Council's Planning permission reference **220244** Condition 26 which requires that this development must achieve a **35% improvement in the dwelling emission rate over the target emission rate as defined in the Building Regulations Part L 2013**. In order to comply with the current 2021 Building Regulations, the development would need to achieve a **31% reduction** compared with the 2013 Regulations, therefore a minimum of **4%** beyond 2021 Regulations would be the minimum reduction required.

ESTABLISHING CO₂ EMISSIONS

This energy statement seeks to identify the carbon footprint for this development and to demonstrate that the requirements of Policy 3.3 have been met.

The Standard Case TER and Actual DER Carbon Emissions have been calculated by SAP 10.2 in accordance with Building Regulations Part L 2021 with the results detailed below.

Table 1 illustrates the CO₂ emissions for the regulated loads (for heating, hot water, pumps, fans and lighting) associated with the dwelling if built to comply with Building Regulations Part L 2021. A summary of the SAP calculations confirming the TERs can be found in the Appendix

Flat Number	Total Area GIA	Standard Case TER (CO ₂ kg/m ² /yr)	Total CO ₂ (kg/yr)
Block 1 – Flat 1	80.6	12.8	1031.68
Flat 2	91.83	12.09	1110.22
Flat 3	78.03	10.9	850.53
Flat 4	82.92	10.23	848.27
Flat 5	59.90	11.23	672.68
Flat 6	68.40	10.46	715.46
Block 2 - Flat 1	80.6	13.43	1082.46
Flat 2	91.83	12.67	1163.49
Flat 3	78.48	11.45	898.49
Flat 4	82.92	10.64	882.27
Flat 5	59.90	11.91	713.41
Flat 6	68.40	11.06	756.50
	923.81		10 725.57

Table 1: Standard (Notional) Case SAP 10 results for proposed new dwellings.

To comply with Building Regulations 2021, the total site wide carbon dioxide emissions for the dwellings would be **10 725.57 kgCO₂/yr**. To satisfy the minimum Planning requirement, an additional 4% of carbon dioxide emissions to be off-set for this development would be **10 725.57 x .04 = 429.02 kg CO₂/yr**. The total CO₂ emissions for all 12 dwellings would need to be **10 725.57 – 429.02 = 10 029.54 kg CO₂/yr** or lower as indicated in **Table 2** below.

Standard Case total regulated CO ₂ Emissions	10 725.57
Minimum 4% reduction of regulated emissions required	429.02
Target total Regulated Emissions to be achieved	10 296.54

Table 2. Site wide regulated CO₂ emissions used to derive the required additional 4% carbon off-set of regulated emissions compared with Building Regulations 2021 Part L.

ENERGY EFFICIENCY MEASURES

In order to achieve the required target CO₂ emissions, a fabric first approach has been adopted, using enhanced standards of insulation for floor, walls and roof together with a low carbon heating system:

- U-Value for the ground floor of 0.10 W/m²K using 90mm Celotex or similar PIR insulation compared to Building Regulations standard of 0.18 W/m²K,
- U-Value for cavity walls of 0.18 W/m²K using Aircrete blocks and 150mm Dritherm 32 insulation, compared to Building Regulations standard of 0.26 W/m²K,
- U-Value for party walls of 0.00 W/m²K using sealed and fully insulated cavities, compared to Building Regulations standard of 0.20 W/m²K,
- U-value for the roof areas with flat ceilings of 0.11 W/m²K using 400mm mineral wool 160mm Celotex or similar PIR insulation, compared to Building Regulations standard of 0.16W/m²K
- U-value for the roof areas with sloping ceilings and flat roofs of 0.14 W/m²K using 160mm Celotex or similar PIR insulation, compared to Building Regulations standard of 0.16W/m²K
- High performing double-glazed windows and rooflights with low e glass and 16mm minimum gap, argon filled to achieve a maximum U-Value of 1.4 W/m²K compared to Building Regulations standard of 1.6 W/m²K,
- BRE approved thermal details eg Knauf, to be used for all junctions where applicable, to limit cold bridging at linear junctions with a calculated user defined psi values,
- High levels of air tightness with a design air permeability rate of 5m³/hr/m³ at 50 Pa pressure compared to Building Regulations standard of 8m³/hr/m³

- Ecodan or similar air source heat pumps have been chosen as a low carbon option for the heating system with individual time and temperature zone controls,
- Water efficient sanitaryware, in particular dual flush WCs, flow restriction to the showers and water efficient appliances will be installed to reduce the demand for hot water,
- 100% Low energy lights with a minimum efficiency of 100 lumens per watt,

The resulting CO₂ emissions have been calculated for the dwellings incorporating the above specification and the results shown in Table 2 below. A summary of the SAP calculations confirming the DERs can be found in the Appendix.

Flat Number	Total Area GIA	Actual Case DER (CO ₂ kg/m ² /yr)	Total CO ₂ (kg/yr)
Block 1 – Flat 1	80.6	4.86	391.72
Flat 2	91.83	4.68	429.76
Flat 3	78.03	4.49	350.35
Flat 4	82.92	4.36	361.53
Flat 5	59.90	4.67	279.73
Flat 6	68.40	4.43	303.01
Block 2 - Flat 1	80.6	5.08	409.45
Flat 2	91.83	4.88	448.13
Flat 3	78.48	4.66	365.72
Flat 4	82.92	4.51	373.97
Flat 5	59.90	4.92	294.71
Flat 6	68.40	4.65	318.06
	923.81		4 326.14

Table 2: Actual proposed Case SAP 10 results for proposed new dwellings.

CONCLUSION

The total carbon emissions for the development as proposed **4 326.14 kgCO₂/yr** compared to the Planning requirement of **10 296.54 kg CO₂/yr**, a reduction of **59.66%** compared with 2021 Building Regulations or **90.66%** compared to the 2013 Building Regulations. The proposals therefore satisfy Reading Borough Council's Planning requirement. Full SAP calculations are available on request, and a summary of the SAP calculations are appended with the TER calculation indicating the Building Regulation compliant case and the DER calculation indicating the dwelling as actually proposed.

APPENDIX TER AND DER CALCULATIONS

Block Compliance



Block Reference	75-77 London St, Block 1	Issued on Date	24/04/2026
Block Name			
Calculation Type	New Build (As Designed)	SAP Version	10.2
Assessor Details	Mrs. Nicola Battista	Assessor ID	L706-0001
Client			

Block Compliance Report - DER				
Block Reference: 75-77 London St, Block 1		Block Name:		
Property-Assessment Reference	Floor area (m ²)	DER (kgCO ₂ /m ²)	TER (kgCO ₂ /m ²)	% DER/TER
1.06 - 06	68.40	4.43	10.46	57.65 %
1.05 - 05	59.90	4.67	11.23	58.41 %
1.04 - 04	82.92	4.36	10.23	57.38 %
1.03 - 03	78.03	4.49	10.90	58.81 %
1.02 - 02	91.83	4.68	12.09	61.29 %
1.01 - 01	80.60	4.86	12.80	62.03 %
Totals:	461.68	27.49	67.71	
Average DER = 4.58 kgCO ₂ /m ²	% DER/TER		PASS	
Average TER = 11.33 kgCO ₂ /m ²	59.53 %			

Block Compliance Report - DFEE				
Block Reference: 75-77 London St, Block 1		Block Name:		
Property-Assessment Reference	Floor area (m ²)	DFEE (kWh/m ² /yr)	TFEE (kWh/m ² /yr)	% DFEE/TFEE
1.06 - 06	68.40	24.13	23.02	-4.79 %
1.05 - 05	59.90	24.90	23.81	-4.59 %
1.04 - 04	82.92	27.41	26.65	-2.83 %
1.03 - 03	78.03	27.94	28.42	1.70 %
1.02 - 02	91.83	33.08	37.28	11.26 %
1.01 - 01	80.60	33.40	37.97	12.03 %
Totals:	461.68	170.86	177.16	
Average DFEE = 28.86 kWh/m ² /yr	% DFEE/TFEE	PASS		
Average TFEE = 30.13 kWh/m ² /yr	4.23 %			

Block Compliance

Block Compliance Report - DPER

Block Reference: 75-77 London St, Block 1		Block Name:		
Property-Assessment Reference	Floor area (m ²)	DPER (kWh/m ² /yr)	TPER (kWh/m ² /yr)	% DPER/TPER
1.06 - 06	68.40	46.72	54.94	14.96 %
1.05 - 05	59.90	49.31	59.13	16.61 %
1.04 - 04	82.92	45.79	53.51	14.43 %
1.03 - 03	78.03	47.16	57.16	17.49 %
1.02 - 02	91.83	48.98	63.50	22.87 %
1.01 - 01	80.60	50.90	67.29	24.36 %
Totals:	461.68	288.86	355.53	
Average DPER = 48.14 kWh/m ² /yr	% DPER/TPER	PASS		
Average TPER = 59.46 kWh/m ² /yr	19.03 %			

Block Compliance



Block Reference	75-77 London St, Block 2	Issued on Date	24/04/2026
Block Name	75-77 London St , Block 2		
Calculation Type	New Build (As Designed)	SAP Version	10.2
Assessor Details	Mrs. Nicola Battista	Assessor ID	L706-0001
Client			

Block Compliance Report - DER

Block Reference: 75-77 London St, Block 2		Block Name: 75-77 London St , Block 2		
Property-Assessment Reference	Floor area (m ²)	DER (kgCO ₂ /m ²)	TER (kgCO ₂ /m ²)	% DER/TER
2.01 - 01	80.60	5.08	13.43	62.17 %
2.02 - 02	91.83	4.88	12.67	61.48 %
2.03 - 03	78.03	4.66	11.45	59.30 %
2.04 - 04	82.92	4.51	10.64	57.61 %
2.05 - 05	59.90	4.92	11.91	58.69 %
2.06 - 06	68.40	4.65	11.06	57.96 %
Totals:	461.68	28.70	71.16	
Average DER = 4.78 kgCO ₂ /m ²	% DER/TER		PASS	
Average TER = 11.89 kgCO ₂ /m ²	59.79 %			

Block Compliance Report - DFEE

Block Reference: 75-77 London St, Block 2		Block Name: 75-77 London St , Block 2		
Property-Assessment Reference	Floor area (m ²)	DFEE (kWh/m ² /yr)	TFEE (kWh/m ² /yr)	% DFEE/TFEE
2.01 - 01	80.60	36.14	40.80	11.42 %
2.02 - 02	91.83	35.58	39.85	10.72 %
2.03 - 03	78.03	29.82	30.57	2.45 %
2.04 - 04	82.92	29.31	28.53	-2.71 %
2.05 - 05	59.90	28.18	27.03	-4.25 %
2.06 - 06	68.40	27.02	25.87	-4.46 %
Totals:	461.68	186.05	192.65	
Average DFEE = 31.35 kWh/m ² /yr	% DFEE/TFEE	PASS		
Average TFEE = 32.68 kWh/m ² /yr	4.07 %			

Block Compliance

Block Compliance Report - DPER

Block Reference: 75-77 London St, Block 2		Block Name: 75-77 London St , Block 2		
Property-Assessment Reference	Floor area (m ²)	DPER (kWh/m ² /yr)	TPER (kWh/m ² /yr)	% DPER/TPER
2.01 - 01	80.60	53.10	70.68	24.87 %
2.02 - 02	91.83	51.00	66.59	23.41 %
2.03 - 03	78.03	48.94	60.16	18.65 %
2.04 - 04	82.92	47.29	55.73	15.14 %
2.05 - 05	59.90	51.83	62.77	17.43 %
2.06 - 06	68.40	48.96	58.20	15.88 %
Totals:	461.68	301.12	374.13	
Average DPER = 50.16 kWh/m ² /yr	% DPER/TPER	PASS		
Average TPER = 62.53 kWh/m ² /yr	19.78 %			