

Technical Note



Project Name: Moston Campus

Design Phase: Energy Strategy

Date: 21st March 2022

ENERGY STRATEGY

This technical note has been produced to provide a summary of the revised Sap calculations for the Moston Campus, and to show how the revised Part L energy calculations are in line with the original Moston Campus Energy Statement and strategy defined within the original Energy statement dated 3rd November 2020.

The project consists of 50 new build houses and an apartment block containing 10 apartments, located at the former Moston Campus Manchester.

ORIGINAL ENERGY STATEMENT SPECIFICATION AND STRATEGY

The original Energy Statement for the Moston Campus scheme was produced by Hydrock Consultants Limited, dated, 3rd November 2020. The below highlights the energy requirements defined within this report.

'Following the principle of the Energy Hierarchy and fabric first approach, all building fabric performance has been designed to be a significant improvement on the requirements of Building Regulations Part L1A.'

'The proposed building fabric performances are as follows:'

Table 1 - Proposed fabric performance

Building element	Building Regulations U-value W/m ² k	Proposed Building U-value W/m ² k
External wall	0.18 W/m ² k	0.15 W/m ² k
Roof	0.13 W/m ² k	0.11 W/m ² k
Floor	0.13 W/m ² k	0.11 W/m ² k
Glazing	1.4 W/m ² k	1.2 W/m ² k

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'The dwellings will be provided with efficient electric ASHP for heating and domestic hot water.

Ventilation shall be via local mechanical extract for WCs and Kitchens.

LED lighting with efficient controls shall be provided throughout.

Photovoltaics shall be installed on the roof of each dwelling, to provide some energy offset.'

'A summary of the carbon emissions that can be achieved using a fabric first approach and the designed systems are shown, as average values, in the following table.'

Table 2 - Carbon emissions summary

Emissions Rate	Carbon Emissions kgCO ₂ /m ² yr
Target (TER) Housing	27.68
Dwelling (DER) Housing	20.54
Target (TER) Apartments	27.99
Dwelling (DER) Apartments	21.77

'The application of passive design principles will achieve significant reductions in CO₂ emissions compared with the requirements of Part L of the Building Regulations (2013) and the Manchester Core strategy targets set in EN6 Core strategy (15% improvement over Part L 2010). The current Part L 2013 carbon emission targets set a 9% improvement on the part L 2010 for new dwellings.'

'The fabric and energy efficiency measures for the houses and apartments on this development are predicted to deliver emissions reductions of 25.8% and 22.2% respectively compared with Part L (2013) meeting all the requirements for the Manchester Core Strategy.'

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REVISED STRATEGY AND UPDATED SAP CALCULATIONS FOR DESIGN STAGE 3-4

Following the planning application and the strategies set out above and within the Energy Statement dated 3rd November 2020. The following SAP calculations have been produced (25/02/2022) during the design phase to demonstrate compliance with the planning requirements, a summary of the results are below;

Block Compliance Report - DER

Block Reference: Moston, Houses		Block Name: Moston, Houses			
Property-Assessment Reference	Multiplier	Floor Area (m ²)	DER (kgCO ₂ /m ²)	TER (kgCO ₂ /m ²)	% DER/TER
Moston, Plot 02-002	1	88.27	16.96	23.64	28.25 %
Moston, Plot 03-003	1	88.27	18.88	25.56	26.13 %
Moston, Plot 04-004	1	69.55	20.57	28.24	27.16 %
Moston, Plot 05-005	1	69.55	21.11	28.72	26.49 %
Moston, Plot 06-006	1	69.55	20.57	28.24	27.16 %
Moston, Plot 08-008	1	69.55	20.57	28.24	27.16 %
Moston, Plot 10-010	1	69.55	20.57	28.24	27.16 %
Moston, Plot 12-012	1	69.55	20.57	28.24	27.16 %
Moston, Plot 14-014	1	69.55	20.57	28.24	27.16 %
Moston, Plot 07-007	1	69.55	21.11	28.72	26.49 %
Moston, Plot 09-009	1	69.55	21.11	28.72	26.49 %
Moston, Plot 11-011	1	69.55	21.11	28.72	26.49 %
Moston, Plot 13-013	1	69.55	21.11	28.72	26.49 %
Moston, Plot 15-015	1	69.55	21.11	28.72	26.49 %
Moston, Plot 16-016	1	69.55	21.11	28.72	26.49 %
Moston, Plot 17-017	1	69.55	20.57	28.24	27.16 %
Moston, Plot 43-043	1	69.55	20.57	28.24	27.16 %
Moston, Plot 45-045	1	69.55	20.57	28.24	27.16 %
Moston, Plot 47-047	1	69.55	20.57	28.24	27.16 %
Moston, Plot 49-049	1	69.55	20.57	28.24	27.16 %
Moston, Plot 44-044	1	69.55	21.11	28.72	26.49 %
Moston, Plot 46-046	1	69.55	21.11	28.72	26.49 %
Moston, Plot 48-048	1	69.55	21.11	28.72	26.49 %
Moston, Plot 50-050	1	69.55	21.11	28.72	26.49 %
Moston, Plot 31-031	1	69.55	20.76	28.41	26.93 %
Moston, Plot 33-033	1	69.55	20.76	28.41	26.93 %
Moston, Plot 35-035	1	69.55	20.76	28.41	26.93 %
Moston, Plot 32-032	1	69.55	20.23	27.94	27.59 %
Moston, Plot 34-034	1	69.55	20.23	27.94	27.59 %
Moston, Plot 36-036	1	69.55	20.23	27.94	27.59 %
Moston, Plot 28-028	1	97.07	20.32	26.36	22.91 %
Moston, Plot 18-018	1	88.29	18.68	25.37	26.37 %
Moston, Plot 19-019	1	88.29	18.43	25.14	26.68 %
Moston, Plot 20-020	1	88.29	18.68	25.37	26.37 %
Moston, Plot 22-022	1	88.29	18.68	25.37	26.37 %
Moston, Plot 37-037	1	88.29	18.68	25.37	26.37 %
Moston, Plot 39-039	1	88.29	18.68	25.37	26.37 %

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BLOCK COMPLIANCE

Calculation Type: New Build (As Designed)



Moston, Plot 41-041	1	88.29	18.68	25.37	26.37 %
Moston, Plot 21-021	1	88.29	18.43	25.14	26.68 %
Moston, Plot 23-023	1	88.29	18.43	25.14	26.68 %
Moston, Plot 38-038	1	88.29	18.43	25.14	26.68 %
Moston, Plot 40-040	1	88.29	18.43	25.14	26.68 %
Moston, Plot 42-042	1	88.29	18.43	25.14	26.68 %
Moston, Plot 29-029	1	88.29	18.62	25.32	26.46 %
Moston, Plot 30-030	1	88.29	18.37	25.08	26.77 %
Moston, Plot 24-024	1	88.29	18.37	25.08	26.77 %
Moston, Plot 26-026	1	88.29	18.37	25.08	26.77 %
Moston, Plot 25-025	1	88.29	18.62	25.32	26.46 %
Moston, Plot 27-027	1	88.29	18.62	25.32	26.46 %
Moston, Plot 01-001	1	88.27	18.72	25.41	26.33 %
Totals:	50	3898.5	989.96	1,350.79	
Average DER = 19.67 kgCO ₂ /m ²		% DER/TER	PASS		
Average TER = 26.83 kgCO ₂ /m ²		26.69 %			

Apartment	% improvement	TER kgCO ₂ /m ² /yr	DER KgCO ₂ /m ² /yr
Plot 51	22	27.59	21.66
Plot 52	24	26.15	19.94
Plot 53	32	24.29	16.64
Plot 54	24	26.10	19.73
Plot 54	25	26.19	19.73
Plot 55	34	21.84	14.56
Plot 56	24	25.74	19.94
Plot 57	20	27.36	22.04
Plot 58	15	29.33	25.44
Plot 59	21	24.71	19.58
Plot 60	16	26.29	22.25

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CONCLUSION

The technical note has identified the proposed energy improvements outlined within the original Energy statement dated 3d November 2020 and the potential improvements over the building regulation target emission rates, and thus complying with the Manchester City Council Core Strategy requirements.

Manchester City Council Policy EN6 requires a 15% improvement over Part L 2010.

The SAP calculations highlighted within his technical note have been produced using SAP2012 which is in line with the Part L 2013 carbon emission targets, these targets set a 9% improvement on the part L 2010 for new dwellings, so by complying with 2013 regulations Target Emission Rates, these properties are already 9% improved over any 2010 requirements.

The figures within the original energy statement show anticipated emission reductions rates of 25.8% and 22.2% respectively for the house types and apartments.

The figures highlighted within his technical note for the SAP calculations produced at design stage show a 26.69% emission improvement for the houses and a 23.3% emission improvement for the apartments.

Thus highlighting the design stage SAP calculations fall in-line with the original emission targets both within the original energy statement and meeting the Manchester City Council Core Strategy requirements.