



Camden & Chester Road Proposed Hostels – Energy & Sustainability note

Background

In May 2020 e3 consulting engineers produced an energy and sustainability statement for planning permission 2020/3737/P for the redevelopment of Camden Road Hostel. Similarly, Richie & Daffin consulting engineers produced an energy and sustainability statement for Chester Road Hostel in March 2021, these were both based upon RIBA stage 3 level of information & the legislation current at the time namely Part L1a 2013. Carbon reporting was undertaken using the GLA spreadsheet which utilise SAP 10 carbon factors.

Morgan Sindall was subsequently appointed in August 2023 to develop the scheme to RIBA stage 4 level of detail under a PCSA agreement.

In June 2022 Part L was amended to Part L1 2021, Part O – overheating in buildings was introduced, as no meaningful works had commenced on site the stage 4 design were required to comply with this new legislation. In addition, the GLA updated their spreadsheet to utilise SAP10.2 carbon factors.

The implications of these changes to the electrical carbon factors are detailed in the table below:

Regulatory Methodology	Electricity Carbon Factor (kgCO ₂ /kWh)
Part L 2013 (SAP 2012)	0.519 (assumed for national grid electricity)
Part L 2013 with SAP 10 (Assumed Pre-2021)	0.233
Part L 2021 (SAP 10.2 - Current Live Factor)	0.136

These matters were initially discussed with officers in November 2023.

Within those discussions, Officers noted as follows:

"We must ensure that the project moves forward in energy terms on the basis on which it was approved and through the required submissions further to these conditions we need information to be provided using the standard 'as approved' to enable like for like comparison"

Accordingly, it was noted that:

"We would not accept submission in this case of information using the new SAP 10.2 Building Regs 2021 calculations for condition discharge or s106 discharge".

However, the response went on to state that:

"If there is a variation to the scheme which would have implications for the energy performance of the building (such as change in façade) we would expect the submission of an updated energy statement for approval."

Two AOD applications have been submitted, to discharge the relevant details relating to energy performance and sustainability associated with each site. It has been proven that the scheme complies broadly with Part L 2013 (per the condition/obligation) and Part L 2021 (per current regulations).

However, as noted within feedback from officers in January 2025, The Council consider that the required carbon reduction requirements have not been met, falling considerably short of the S106 figures, and therefore the conditions cannot be discharged at this time.

This note has been drafted to help move matters forward and identify a route towards approved the relevant details, to allow the developments to progress.

The scheme, for reasons set out, is unable to comply with the original terms of the planning permission. However, there are no material changes to the energy strategy for Camden Road which would necessitate a revised application.

Therefore, we are seeking, through this note and subsequent meeting with Officers, to identify an appropriate way forward to allow these conditions to be discharged.

Implications of the Differences:

Initial SAP 10 Assumptions (Pre-2021) Overestimated Carbon Savings:

- When SAP 10 was first considered (with an assumed electricity carbon factor of **0.233 kgCO₂/kWh**), the **carbon savings from the all-electric design and PV system were overestimated** and built into the 2013 GLA spreadsheet for assumed results.
- The expected reduction jumped to **72-73%**, largely because PV appeared to be offsetting **higher carbon electricity** more effectively in SAP 10 models.

Final SAP 10.2 (Part L 2021) Adjustments Reduced PV Contribution:

- The final SAP 10.2 electricity factor was further reduced to **0.136 kgCO₂/kWh**, reflecting the continued decarbonisation of the UK grid.
- As a result, the ability of **on-site PV** to reduce carbon emissions was diminished, because it is now offsetting a lower-carbon grid supply.
- This explains why the actual SAP 10.2 results (61% and 64%) are lower than initially expected in SAP 10 but still significantly better than the original Part L 2013 results (45% and 47%).

Whilst we have provided like-for-like SAP 10 calculations under Part L 2013, it is worth noting that SAP 10.2 is now the most accurate reflection of actual energy performance under current regulations.

Summary

Both schemes achieve compliance with Part L 2021 & Part O 2021 and exceed the 35 % carbon reduction requirements of the London Plan achieving reductions of: Camden 61% & Chester Road 64% when using Sap 10.2 carbon factors and 73% & 72% respectively when using SAP 10 carbon factors.



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The discrepancies in Carbon Reduction values for Camden Hostel can be explained by the reduction in the area of PV required to provide safe maintenance access in accordance with CDM regulations, the amount of PV included in the stage 3 energy model made no allowance for this. The values for Chester Road Hostel should be acceptable in this case as they are 4.5% greater than the original stage3 design.

Camden Road

The following table details the carbon reduction (residential) at the various design stages and carbon factors:

Scheme	Stage 3 Part L 2013 Reduction (SAP2012)	Stage 4 Part L 2013 Reduction (SAP2012)	Stage 3 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Actual SAP 10.2 (Part L 2021) Reduction (2021 GLA Spreadsheet)
% saving	55%	47%	77%	73%	61%
tCO ₂	13	16	12	16	12.1

The following table details the carbon reduction (non-residential) at the various design stages and carbon factors:

Scheme	Stage 3 Part L 2013 Reduction (SAP2012)	Stage 4 Part L 2013 Reduction (SAP2012)	Stage 3 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Actual SAP 10.2 (Part L 2021) Reduction (2021 GLA Spreadsheet)
% saving	20%	23%	49%	51%	45%
tCO ₂ saving	1	1	1	1	0.2



The following table details the inputs used at both stage 3 & Stage 4

Building Fabric

Stage 3

- External wall. 0.13W/m²k
 - Floor 0.11W/m²k
 - Roof 0.10W/m²k
 - Windows 1.2W/m²k
- Providing an airtight building to reduce heat loss during winter, 2.5m³/h/m² @ 50Pa.

Stage 4

CONSTRUCTION U-VALUES W/M ² k	Part L 2013	PROPOSED
ROOF	0.2	0.1
EXTERNAL WALL	0.3	0.13
GROUND FLOOR	0.25	0.11
PARTITIONS	0	-
WINDOWS	2	1.2
GLAZED DOORS	2	1.2
PEDESTRIAN DOORS	1	-
AIR PERMEABILITY	10	2.5
GLAZING PROPERTIES	G-VALUE	
WINDOWS	0.63	0.4
FRAME FACTOR	0.7	0.7

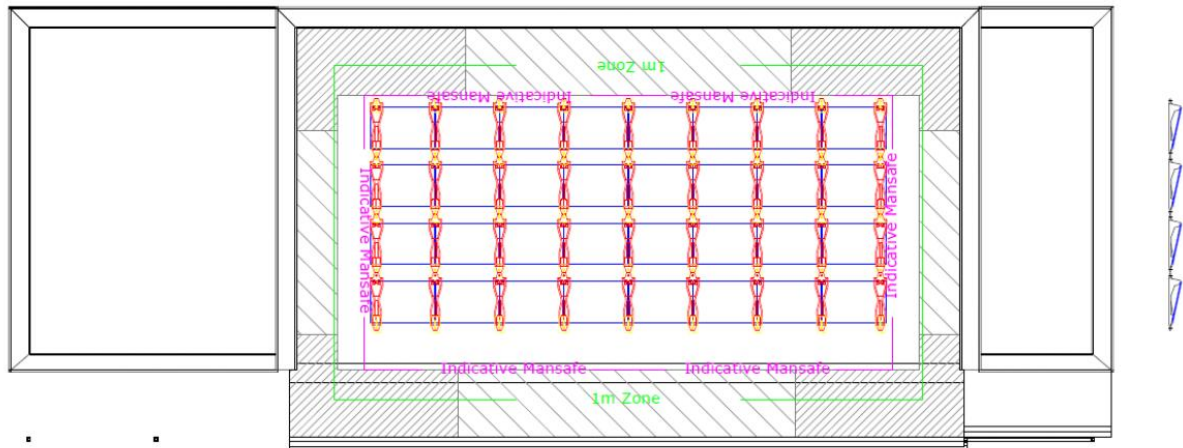
All building services efficiencies used within the stage 3 calculations are replicated within the stage 4 energy model.

The PV area at stage 4 has reduced to 62.95 m² from 90 m² used within the stage 3 energy model this is due to the stage 3 design not making any allowances for the maintenance zone required around the PV panels to comply with CDM regulations. As can be seen below:



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This along with slight differences in model production explains the reduce carbon reduction of 77% to 73% between stage 3 & 4.



Chester Road

The following table details the carbon reduction (residential) at the various design stages and carbon factors:

Scheme	Stage 3 Part L 2013 Reduction (SAP2012)	Stage 4 Part L 2013 Reduction (SAP2012)	Stage 3 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Actual SAP 10.2 (Part L 2021) Reduction (2021 GLA Spreadsheet)
% Saving	35%	45%	67.5%	72%	64%
tCO2 saving	14.9	20		23	16.5

The following table details the carbon reduction (non-residential) at the various design stages and carbon factors:

Scheme	Stage 3 Part L 2013 Reduction (SAP2012)	Stage 4 Part L 2013 Reduction (SAP2012)	Stage 3 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Assumed SAP 10 Reduction (2013 GLA Spreadsheet)	Stage 4 Actual SAP 10.2 (Part L 2021) Reduction (2021 GLA Spreadsheet)
% Saving	27%	17%	40.6%	50%	44%
tCO2 saving	1.6	1		0.7	0.3

The introduction of Part O in June 2022 had a significant impact on the proposed services strategy, at stage 3 several of the apartments had issues with comply with the overheating criteria which the council was aware of and had accepted, please see below extract from the stage 3 energy & sustainability report:



In conjunction with Camden's client team, it was considered - given the modelling margin for error and subjectivity of overheating more generally - that in the cases shaded orange where the modelling result is a marginal 'close call' of less than 10% exceedance that the development would perform satisfactorily. The apartments selected

Cooling therefore had to be introduced to the development as such no direct comparison between the stage 3 and stage 4 carbon emissions can be made. The stage 4 design has a higher overall carbon footprint but due to the high efficiency of the equipment gives a better carbon reduction using SAP 10 of 72% compared with stage 3 at 65%.

Building Fabric

As can be seen from the table below all fabric inputs from stage 3 have been maintained at stage 4

Stage 3

Construction Element	Building Regulations L1A Notional Spec	Target U- Value
External Wall	0.18 W/(m ² K)	0.13 W/(m ² K)
Floor	0.13 W/(m ² K)	0.11 W/(m ² K)
Roof	0.13 W/(m ² K)	0.10 W/(m ² K)
Rooflights	1.4 W/(m ² K)	1.2 W/(m ² K)
Entrance Doors (to flats)	2.00 W/(m ² K)	1.00 W/(m ² K)
Windows	1.4 W/(m ² K)	1.2 W/(m ² K)

Glazing Specification:
Solar transmittance (g-value) 0.4

Air Tightness

The design air permeability is 2.5 m³/(hr m²) at 50Pa.



Stage 4

CONSTRUCTION U-VALUES W/M ² k	Part L 2013	PROPOSED
ROOF	0.2	0.1
EXTERNAL WALL	0.3	0.13
GROUND FLOOR	0.25	0.11
PARTITIONS	0	-
WINDOWS	2	1.2
GLAZED DOORS	2	1.2
PEDESTRIAN DOORS	1	-
AIR PERMEABILITY	10	2.5
GLAZING PROPERTIES	G-VALUE	
WINDOWS	0.63	0.4
FRAME FACTOR	0.7	0.7