

13th October 2022

Ref: HGY/2022/0044 Florentia Village Extension, 108 Vale Road. Haringey

AMENDMENT TO ENERGY STRATEGY

With respect to the Florentia Village Extension development, there is a planning condition requiring the development to achieve a 24% 'Be Lean' reduction in regulated carbon emissions (Part L 2013). As the design has developed, it has become apparent that this target cannot be met.

However, by demonstrating we can meet the overall self-imposed net-zero target, we hope this condition can be adjusted or removed.

This note sets out how we intend to achieve this.

Preamble

The RIBA stage 2 design used for the planning submission and accompanying energy report, achieved a 24% 'Be Lean' carbon reduction (Part L 2013) and 26% (SAP 10), comfortably above the minimum 15% required in the London Plan.

However, as the design has progressed to stage 4 (developed design) several technical and procurement/availability difficulties have arisen, and it has become necessary to revisit some of the building fabric elements. The alternative products under consideration have slightly different characteristics and thermal properties.

We remain committed to providing a net zero carbon development (Part L 2013) as per the London Plan, and hence we have recalculated the 'Be Lean' carbon reductions using the alternative products.

The differences in thermal performance are set out in the table below:

Building Element	U-values (W/m2.k)	
	As submitted	Revised
Roof	0.13	0.18
Wall	0.18	0.21
Exposed Ground Floors	0.15	0.18
Windows (inc. Glazed Door)	1.20	1.60
Vehicle/large doors	1.05	1.24
Pedestrian/high doors	1.80	1.80
Internal Wall	0.77	1.10
Internal Floor/ceiling	0.70	1.00

Results

As before, we have combined the results for the four blocks and area weighted them to obtain an overall Building Emission Rate (BER) for the development as a whole.

These are summarised below (in terms of Part L 2013 only):

BLOCK	AREA m2	SBEM 2013 BRUKL		As submitted		Revised	
		Target emission rate kg CO2/m2	Total/annum kg CO2	Building emission rate kg CO2/m2	Total/ annum kg CO2	Building emission rate kg CO2/m2	Total/ annum kg CO2
A	989.2	13.5	13354	10.20	10090	10.5	10387
B	2281.7	12.1	27609	9.60	21904	9.9	22589
C	2698.6	11	29685	9.40	25367	9.6	25907
D	4047.7	13.9	56263	9.60	38858	10.2	41287
Total	10017.2	12.67	126910	9.61	96219	10.00	100169
		TER		BER		BER	
				REDUCTION	24%		21%

As can be seen, 'Be Lean' is slightly reduced from 24% to 21%, though remains comfortably above the 15% London Plan minimum improvement. **To accommodate any further potential difficulties, we will be conservative and assume a 20% 'Be Lean' reduction.**

Mitigation

As noted, we remain committed to providing a net zero carbon development and will offset the reduced 'Be Lean' performance by increasing the contribution in the 'Be Green' element.

Using the same example photovoltaic panel as detailed in the energy report (1.7m² 400W 'Maxeon 3'), we have recalculated the solar photovoltaic contribution, as summarised below:

	As submitted	Revised
Required PV output (kWh/annum)	207814	218700*
Total number of panels	662	688
Area required (m ²)	1,125	1,170
Net increase	-	+35 panels /60m2
Be Green' BER (kg CO ₂ /m ² .annum)	-0.50	-0.50

*(*Note- these values have been extrapolated from the original 'Be Clean' BRUKL results which provide an average output of 785 kWh per m² of PV per annum. Due to nuances in orientation there may be slight differences when calculated within SBEM.)*

This demonstrates a relatively small amount of additional solar photovoltaic (35no 1.7m² panels/60m²) is required to offset the reduced fabric specification.

Proposal

We intend to maximise the available roof capacity suitable for photovoltaic installation. We believe there is sufficient unshaded areas to accommodate circa 714 example panels. This is an addition of 26 panels with an output circa 5,300 kWh per annum.

Recalculating for 714 panels with the 20% 'Be Lean' scenario:

	Proposed
Total number of panels	714
PV output (kWh/annum)	224,000
Area required (m2)	1,214
Net increase	+52 panels/88m ²
Be Green' BER (kg CO ₂ /m ² .annum)	-0.76

Hence, our system will generate circa 224,000 kWh of zero carbon energy per annum leading to a carbon negative (Part L 2013) development with a predicted area weighted Building Emission Rate of (minus) 0.76 kg CO₂/m².annum.

Note- all calculations have been based on the example PV panel as described. The system is to be fully designed and installed by a Specialist who may use alternative panels with differing dimensions and performance. The annual kWh output has been formally specified as the minimum standard and will not be compromised.

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