chapmanbdsp

Response to London Borough of Camden Sustainability and Energy comments

13 Blackburn Road

Project No: 55186 **Rev:** 00

Date: 10/03/2021

This note has been prepared in response to comments received 18/01/2021 from the London Borough of Camden on the Sustainability and Energy Statements prepared in support of the Clockwork Factory (2020/2940/P) planning submission and related to the proposed sustainability and energy strategy of the development.

Comment: Statement has assumed old CO_2 offset rate, £60/t; above figures are using current rate (applied since Jan 2020), £95/t, see Camden website. Please tweak the Statement to provide all stage emissions and reduction figures to 1 or 2 dp.

All stage emissions and reductions figures are updated in the table below to 1 dp and using the latest CO_2 offset rate of £95/t.

Site-wide energy hierarchy

	Carbon dioxide emissions (Tonnes CO_2 per annum)		
	Regulated	Unregulated	Total
Part L 2013 compliant building	106.2	56.1	162.3
Be Lean	83.7	56.1	139.7
Be Clean	83.6	56.1	139.7
Be Green	48.8	56.1	104.9

Table 1 - CO_2 emissions after each stage of the energy hierarchy for the proposed development

		Carbon dioxide savings			
		(Tonnes CO_2 per annum)		%	
		Regulated	Total	Regulated	Total
Be Lean	Reduce demand	22.6	22.6	21.2%	13.9%
Be Clean	Deliver energy efficiently	0.0	0.0	0.0%	0.0%
Be Green	Maximise renewable energy	34.8	34.8	32.8%	21.4%
Total cumulative savings		57.4	57.4	54.0%	35.3%

Carbon shortfall	48.8
Cash-in-lieu contribution	£139,207

Table 2 - Regulated & unregulated CO_2 savings from each stage of the energy hierarchy for the proposed development

Domestic energy hierarchy

	Carbon dioxide emissions (Tonnes CO_2 per annum)		
	Regulated	Unregulated	Total
Part L 2013 compliant building	50.4	14.4	64.8
Be Lean	42.1	14.4	56.5
Be Clean	42.1	14.4	56.5
Be Green	19.7	14.4	34.0

Table 3 - CO_2 emissions after each stage of the energy hierarchy for the domestic areas of the proposed development

		Carbon dioxide savings			
		(Tonnes CO_2 per annum)		%	
		Regulated	Total	Regulated	Total
Be Lean	Reduce demand	8.3	8.3	16.5%	12.8%
Be Clean	Deliver energy efficiently	0.0	0.0	0.0%	0.0%
Be Green	Maximise renewable energy	22.5	22.5	44.6%	34.7%
Total cumulative savings		30.8	30.8	61.0%	47.5%

Carbon shortfall	19.7
Cash-in-lieu contribution	£56,017

Table 4 - Regulated & unregulated CO_2 savings from each stage of the energy hierarchy for the domestic areas of the proposed development

Non-Domestic energy hierarchy

	Carbon dioxide emissions (Tonnes CO_2 per annum)		
	Regulated	Unregulated	Total
Part L 2013 compliant building	55.8	41.7	97.5
Be Lean	41.5	41.7	83.2
Be Clean	41.5	41.7	83.2
Be Green	29.2	41.7	70.9

Table 5 - CO_2 emissions after each stage of the energy hierarchy for the non-domestic areas of the proposed development

		Carbon dioxide savings			
		(Tonnes CO_2 per annum)		%	
		Regulated	Total	Regulated	Total
Be Lean	Reduce demand	14.3	14.3	25.6%	14.6%
Be Clean	Deliver energy efficiently	0.0	0.0	0.0%	0.0%
Be Green	Maximise renewable energy	12.3	12.3	22.1%	12.6%
Total cumulative savings		26.6	26.6	47.7%	27.3%

Carbon shortfall	29.2
Cash-in-lieu contribution	£83,190

Table 6 - Regulated & unregulated CO_2 savings from each stage of the energy hierarchy for the non-domestic areas of the proposed development

Comment: Efficiency measures are generally accepted but please explain the:
- High proposed U-value for floors (residential parts);
- Missing proposed U-value for windows (non-residential parts);
- Missing proposed Y-value for thermal bridging (both parts).

The only 'exposed' floors for the residential elements are at Level 01, where these are not exposed to the outside conditions, but to the commercial spaces below which are heated. Therefore, it is anticipated that there will be minimal heat losses through these elements. Note that the SAP procedure takes this fact into account; in the case of a dwelling that is part of a larger building, for example, a block of flats or where the remainder of the building is used for non-domestic purposes, the elements between the dwelling and the remainder of the building are considered as if they were external elements, but with their U-value reduced by a factor of 2 if the adjacent spaces are heated to a different pattern to that of the dwelling, e.g. commercial premises. Based on the aforementioned procedure and the anticipated minimal heat losses through this building element, a U-Value of 0.20 W/m^2.K is proposed.

The proposed average U-value for the windows of the non-residential part is 1.40 W/m^2.K.

The proposed thermal bridging values for the domestic parts of the proposed development are as follows:

Junction	Target value	Impact
Window lintel (E2)	≤ 0.30 W/m.K	-
Window jamb (E3)	≤ 0.05 W/m.K	-
Window sill (E4)	≤ 0.04 W/m.K	-
Party floor between any two dwellings (E7)	≤ 0.07 W/m.K	Spandrel and façade support brackets
Balcony between any two dwellings (E9)	0.02 W/m.K	Continuous wall insulation, thermally broken balcony supports
Party wall between two dwellings junction with an external wall (E18)	0.00 W/m.K	No disruption of thermal line due to internal party wall
External wall corner (E16)	0.00 W/m.K	Continuous insulation around corner.
Other details to be developed during detailed design		

Table 7 – Thermal bridging details

A dynamic simulation has been used to calculate the carbon performance of the non-residential parts of the proposed development. The software used to carry out the dynamic simulation includes the thermal bridging percentages prescribed in the NCM guide.

Comment: Please clarify solar PV proposals.

PV panels are not considered appropriate for the development due to part of the roofs being used as plant space and the potential of the roofs being used as amenity areas.

Comment: Please state the proposed minimum seasonal SCOP and SEER for heating and cooling modes.

The proposed SCOP for the residential parts of the development is 2.74, while the proposed SCOP and SEER for the non-residential parts of the development are 4.3 and 4.6 respectively.

Comment: Please include proposals to protect the future pipework routes from the basement plant room to the boundary (at likely incoming DEN connection points): street side and O2 centre side.

A proposed route for the future pipework from the basement plant room to the boundary to facilitate a future connection to the Finchley Road 'O2 Centre' extended plot that has potential as a major DEN is presented in the ground floor plan below.

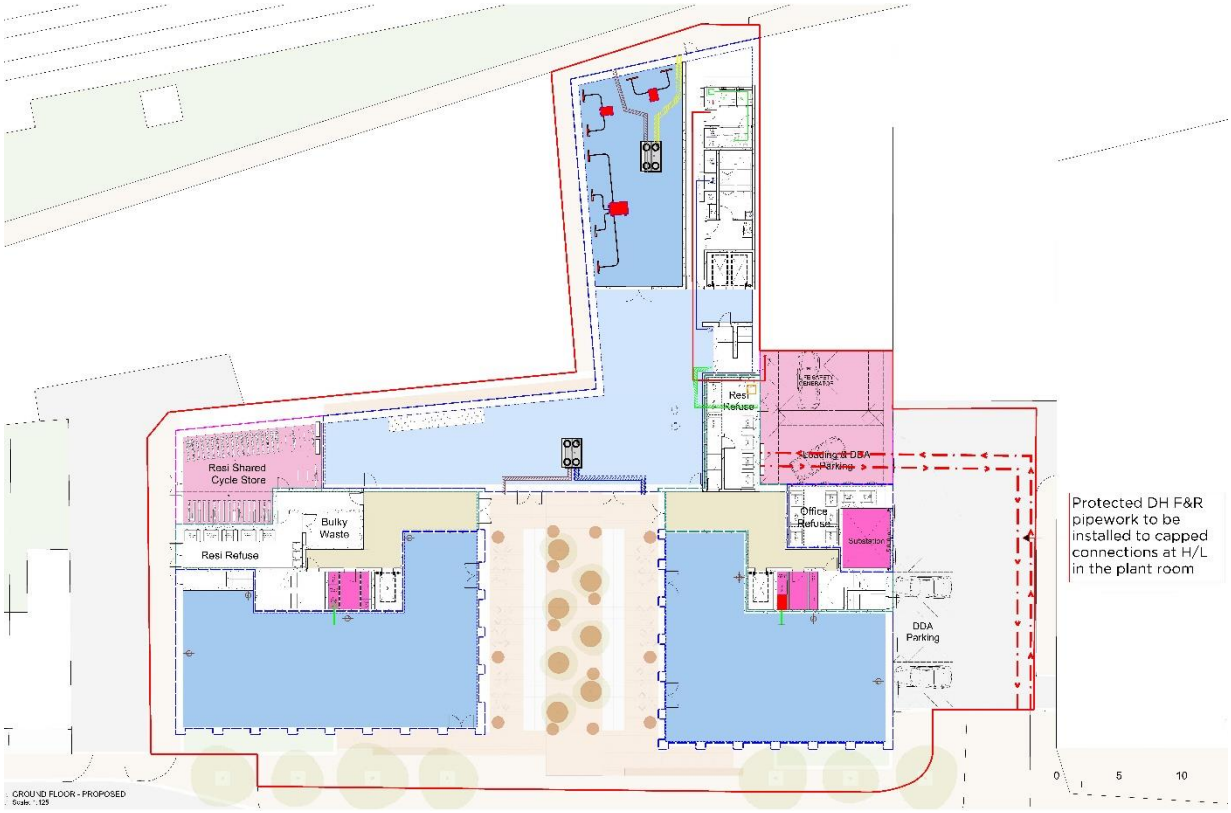

Figure 1 – Proposed route for the future pipework

Comment: Please revisit the BREEAM Energy section target. Should include at least 2 additional credits, in order to meet policy CC2.

Currently, 11 credits are targeted under the BREEAM Energy section (see table below), which equates to 52.4% of the unweighted Energy credits. At the next stage of the design, the design team will investigate possible ways to achieve at least 2 more credits under the Energy section in order to meet the London Borough of Camden's Policy CC2. The following two routes will be explored:

- Improve the MEP efficiencies in order to achieve 6 credits under Ene 01 'Energy Performance'; it should be noted that with the current design, the proposed development achieves 5 credits under Ene 01, but only 4 have been targeted at this stage as a more conservative approach has been followed; OR
- Target the 4 credits under the Ene 01 'Prediction of operational energy consumption' credit.

13 Blackburn Road – Office BREEAM 2018 NC Shell & Core						
Energy			A	T	P	NT
Ene 01	Energy Performance	Energy performance	9	4		5
		Prediction of operational energy consumption	4			4
Ene 02	Energy monitoring	Sub-metering of end-use categories	1	1		
		Sub-metering of high energy load and tenancy areas	1	1		
Ene 03	External lighting	External lighting	1	1		
Ene 04	Low Carbon Design	Passive design analysis	1	1		
		Free cooling	1			1
		Low and zero carbon technologies	1	1		
Ene 06	Energy Efficient Transportation Systems	Energy consumption	1	1		
		Energy-efficient features	1	1		
		Total	**21**	**11**		**10**

A: Available, T: Targeted, P: Potential, NT: Not targeted

Table 8 – BREEAM 2018 Energy targeted credits for the proposed developments

Comment: Please investigate rainwater and/or greywater harvesting systems potential as per policies CC2/CC3.

A Rainwater Harvesting System (RWH) sits as a standalone system from the main surface water drainage scheme. When considering rainwater re-use from a sustainability perspective (NPPF principles: environmental, social and economic) this basically translates as an order of priorities; reduce, reuse, recycle. Therefore, it makes much more sense to use less water (by using water efficient appliances) than it does to install a RWH system. Whilst the principles of RWH are endorsed, for this development it is not considered to be the most environmentally friendly solution, and due to the additional complex drainage installation requirements it is considered that this does not offset the limited quantity of water it removes from the surface water drainage system. Consequently, it would fail to meet the social, environmental and economic tests of the NPPF.

Comment: It should be confirmed that the green roofs will be fully integrated with blue roofs and of the intensive type wherever technically feasible, with minimum 150mm soil depth, as policies ask.

The scheme proposes blue/green roofs atop the development, which will be biodiverse, low fertelity, and low maintenance. These will be designed in detail at the next stage of the design – see next two figures for location, areas and typical details.

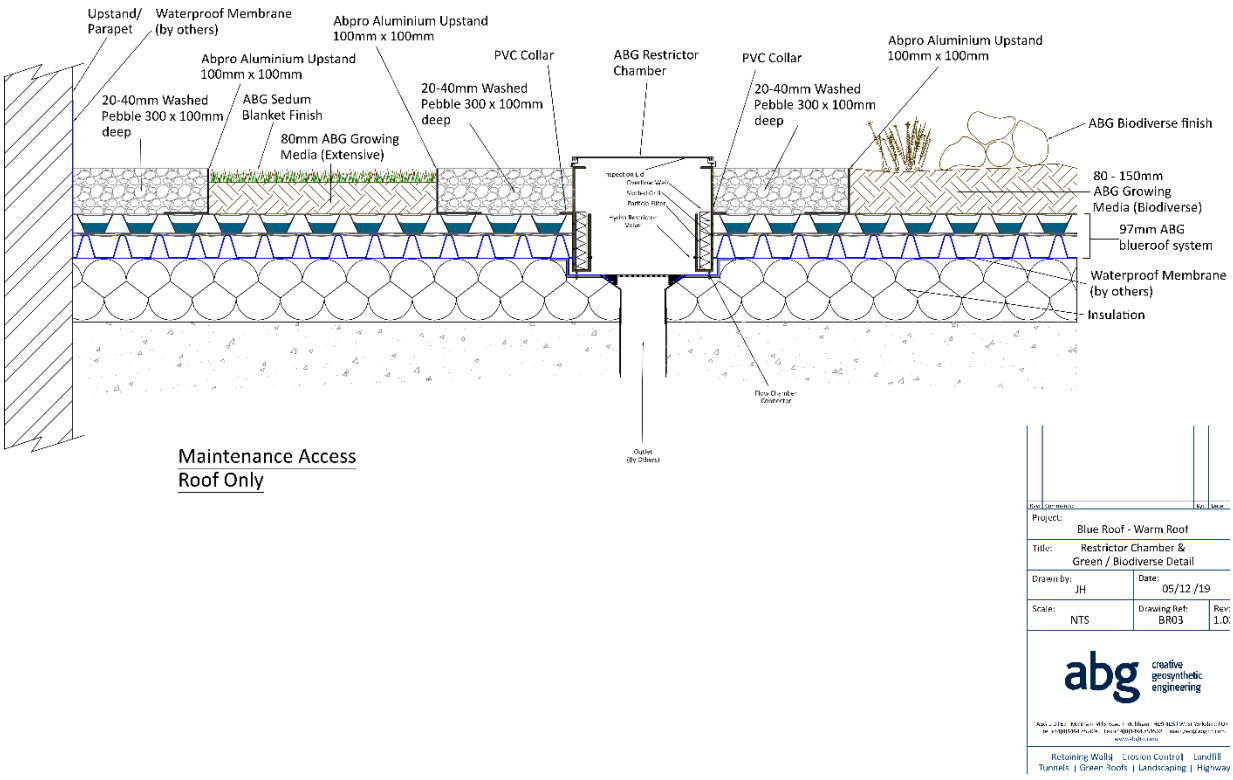

Figure 2 – Typical details provided by a specialist showing a blue roof build-up with extensive green roof

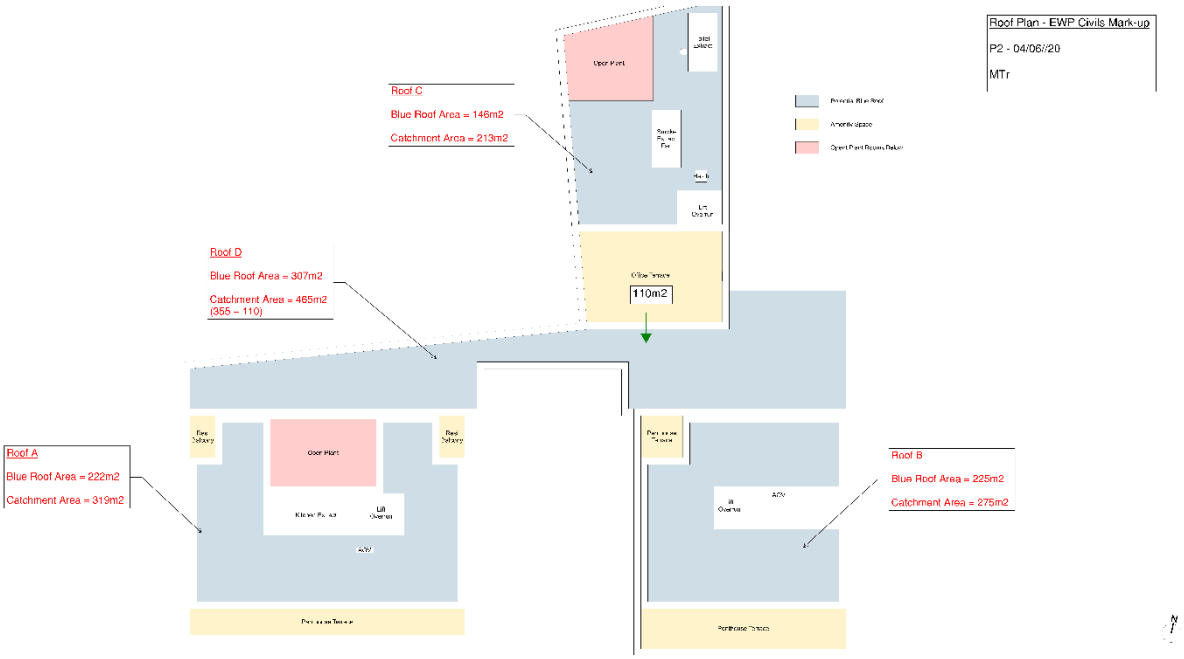

Figure 3 – Proposed roof plan showing extent of blue roofs