BP FINCHLEY ROAD

SUSTAINABILITY STATEMENT

ISSUE AND REVISION RECORD

Revision	Date	Originator	Checked	Approved	Description
00	02/08/22	FH	NA	JALW	Issued for Review
01	12/08/22	FH	NA	JALW	Issued for Planning
02	15/08/22	FH	NA/MI	JALW	Issued for Planning

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INTRODUCTION

In line with the London Plan 2021, the sustainability statement is supported by a number of studies and design development to enable multiple facets of sustainable development, social, economic and environmental.

This report is supported by the following reports:
P150051-RPT-8001: Energy Statement
P150051-RPT-8005: BREEAM Pre Assessment
P150051-RPT-8006: Air Quality Assessment
Biodiversity Net Gain Report – Wychwood Environmental
Flood Risk Assessment Report – Robert West

Additionally this Sustainability statement will highlight the developments adaption to climate change through Policy CC2 :

Policy CC2
All developments should adopt appropriate climate change adaptation measures such as:

- *The protection of existing green spaces and promoting new appropriate green infrastructure;*
- *Not increasing, and wherever possible reducing, surface water runoff through increasing permeable surfaces and use of Sustainable Drainage Systems;*
- *Incorporating bio-diverse roofs, combination green and blue roofs and green walls where appropriate; and*
- *Measures to reduce the impact of urban and dwelling overheating, including application of the cooling hierarchy.*

Any development involving 5 or more residential units or 500 sqm or more of any additional floorspace is required to demonstrate the above in a Sustainability Statement.

The Energy strategy has been developed to provide a quality built environment, focusing on the comfort of the occupants as well as the Whole Life Cost (WLC) considerations of life cycle analysis, value for money, benefits to the environment, and their social impact.

The overheating risk assessment has led to a refinement in the fenestration, to provide effective natural ventilation solutions, supported by a mechanical ventilation heat recovery unit that boosts to provide enhanced air change rates to the dwellings, reducing the need for openable windows.

The Air Quality assessment has identified that the area is suitable for natural ventilation, and then seeks to further identify how the construction will not be

detrimental to the neighbouring sites and their air quality, complete with recommendations on how to minimise the impact of construction.
Flood Risk and Drainage assessments have resulted in the proposed development incorporating a Sustainable Drainage System (SuDS) which will discharge surface water by at a suitably restricted rate into the Thames Water Combined Sewer that crosses the south of the site. Additionally a Surface Water Drainage Statement (SWDS) demonstrates that the site can manage the surface water run-off from the new development in such a way to mitigate the impact of the new development on persons and property downstream.

Biodiversity Assessment of the area concluded that the site supports no habitat units prior to development as it consisted entirely of hardstanding and buildings which is classed as developed land. The proposed development meets the required minimum 10% net gain in Habitat Units with small areas of planting provided on the first, fourth and fifth floor roof.

The building as a whole has been designed to meet sustainable goals, such as reducing water, energy, waste, avoid overheating both in dwellings, workspace and communal areas, increase biodiversity, etc. The non-residential areas have been assessed using the BREEAM environment assessment methodology, and secures an 'Excellent' level of credits.

ENERGY STRATEGY

Please see document: P150051-RPT-8001 Energy Statement for the presented detailed Energy Strategy for BP Finchley Road.

The planning application is subject to London Borough of Camden Council and as such there are expectations for the scheme to meet or exceed the requirements of the Camden London Plan 2017. Whilst the proposals are not referrable to the GLA, the current London Plan (2021) will be referred to and used for compliance guidance. This is summarised as using the London Plan Hierarchy to reduce operational energy by 15% (against SAP 2012 methodology) using energy saving measures, and a further 20% reducing using onsite carbon reduction, (i.e. through the use of renewables). These figures can be exceeded. Any difference between the stated target and zero carbon target will be factored into a Carbon offsetting fund, as part of the London Plan for Zero Carbon development.

In addition, the carbon intensity of the electrical infrastructure has changed, and the London Plan recognises this, whilst the SAP 2012 calculation methodology does not, therefore an adjustment has been made to de-carbonise the electrical conversion factors inline. Ultimately the development will have to comply with the new Part L SAP process 10.2 and has been designed with this compliance in mind.

The building form has created an efficient balance of dwellings around a core, providing some single and some double aspect apartments. The building fabric has addressed reducing energy consumption by either meeting or dropping below the 'notional' building against which the model is compared. The improvements have included the adoption of triple glazing, dropping the U-value form 1.4 to 0.9.

All apartments will be provided with a MVHR for continuous supply and extract ventilation with heat recovery located in the utility cupboards. This method will allow each apartment to meet the continuous ventilation requirements of the Building Regulations Approved Document F, whilst delivering the thermal efficiency required to comply with the Building Regulations Approved Document L1A and maintain the acoustic integrity of the façade.

As per Approved Document part F, there is a requirement for purge ventilation. This is to allow for the removal of pollutants, such as the smell of burnt toast and paint fumes. This is a short-term means of gaining a higher rate of ventilation. This requirement will be met by openable windows and balcony doors (where applicable) to each habitable space. This will also have the benefit of allowing the occupants to open a window to enhance ventilation during suitable periods of their choosing.

Utilising low energy lighting solutions (i.e. LED) throughout the building, both in the dwellings, in the commercial spaces and in the community areas. This is both to help reduce energy consumption and also operational costs, based on whole life costs.

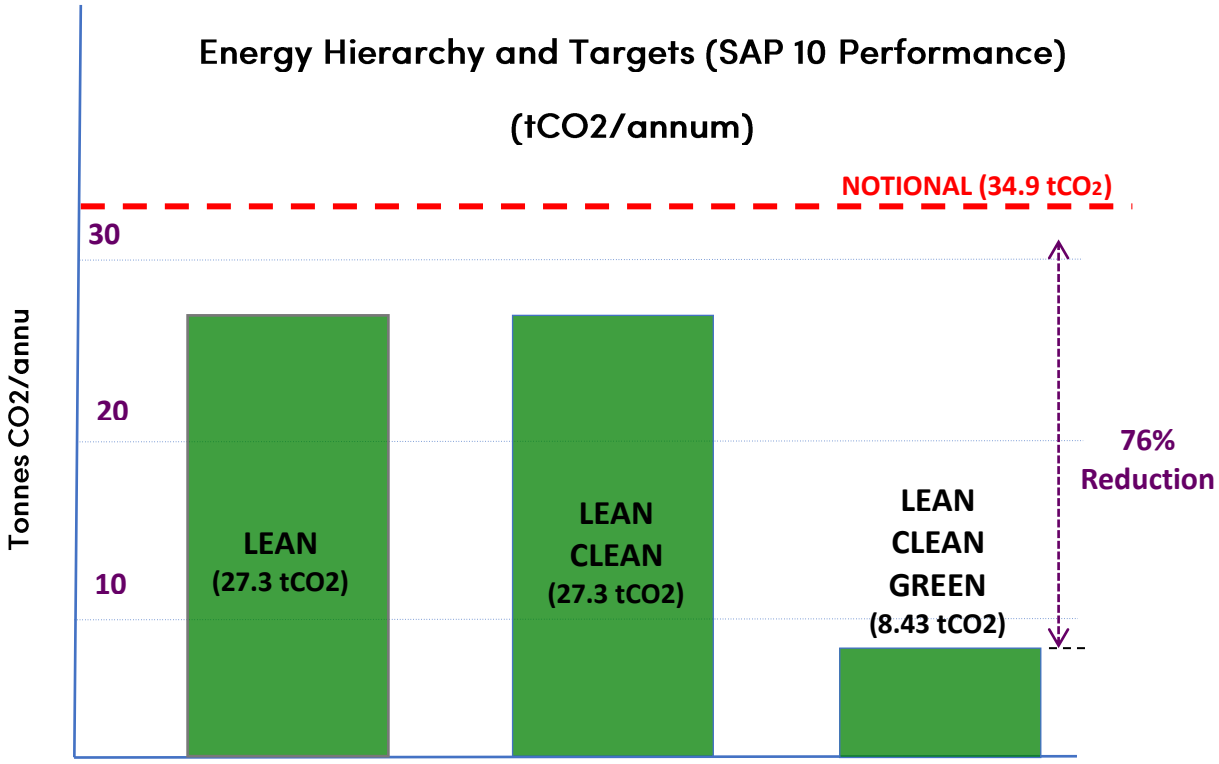
Heating to the building will be provided by a low temperature hot water (LTHW) system. The LTHW will be generated on the roof via 4 no. Air Source Heat Pumps (ASHP) which will connect to central buffer vessel / thermal store. The LTHW will deliver heat to the apartments via heat interface units located in the utility cupboard, which will generate the apartment heating and hot water.

The roof will be used for solar PV, as it is exposed and free from overshadowing. The roof space also accommodates a biodiverse roof as well as a blue roof for rainwater attenuation. A 40-panel system has been recommended by PV specialists, equating to circa 78sqm and accounting for approximately 2% carbon savings.

Whilst the PV coverage might seem light given the available roof space, it is considered the optimum solution which will be structurally feasible considering the combination with the biodiverse roof and the blue roof for water attenuation.

All energy calculations are to be revisited and updated at the next stage of the design, in line with the release of the new FSAP Building Regulations 2022 software.

Summary of results is presented below;



	CO2 emissions (tonnes per annum)	
	Regulated	Unregulated
Notional	34.9	24.01
Be Lean	27.3	24.01
After Clean	27.3	24.01
After Green	8.43	24.01

	Regulated CO2 emissions (tonnes per annum)	
	Regulated	% savings
Savings from Lean	7.55	21.64
Savings from Clean	0	0
Savings from Green	18.91	54.20
Cumulative Savings	26.45	75.83

The calculation below, outlines our approach to calculating the Financial Contributions required.

SAP 10 Performance
Carbon Target (tCO2/annum) = 0
Carbon Emissions (tCO2/annum) = 8.43
Financial Contributions = £95/year/ tCO2 over target
Time Scale = 30 years
Total Financial Contributions = £24,026 (nearest £)

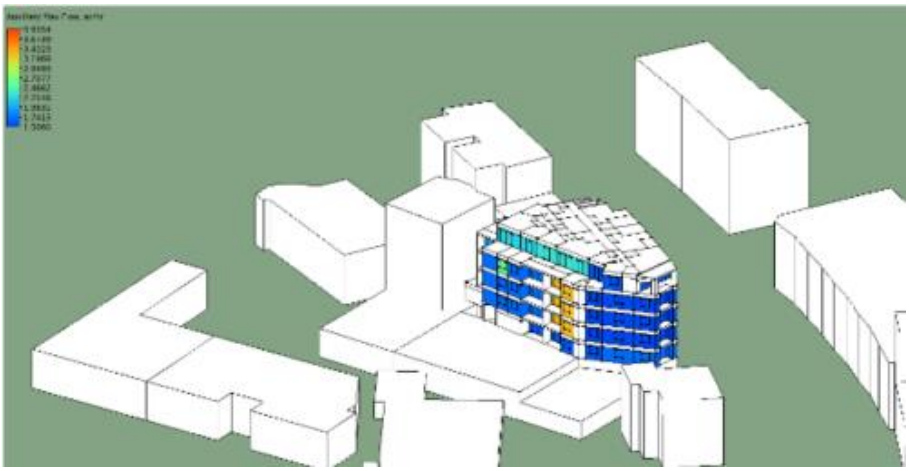
The above figures should be considered as approximate only, at this current stage. They will be updated throughout the different stages of design, in line with the refined design and more detailed energy calculation updates.

COOLING AND OVERHEATING

To develop an understanding of the cooling and overheating demands at Finchley Road, an Overheating Risk Assessment on the proposed new build was undertaken.

The report assesses the schemes compliance with CIBSE TM59 and the new Building Regulations Part O. Additionally the study is based on dynamic simulation modelling (DSM), which estimates the indoor climate of the buildings based on a range of factors including:

- Weather and climate predictions
- Solar heat gain through building façade
- Heat loss through building thermal envelope
- Heat gain caused by the internal gain analysis of each building
- Building Heating, Ventilation and Air-conditioning



A natural ventilation approach has been taken to mitigating the risk of overheating. However recognising that extreme hot weather periods are becoming more frequent and that it will be undesirable to have windows open at night, a MVHR unit will be able to provide mechanical cooling through the use of a refrigerant based cooling module.

The primary means of adopting natural ventilation as a means of mitigating risk of overheating has resulted in a generous provision of openable windows. The ventilation is assisted by mechanical ventilation with heat recovery (MVHR) to both ventilate the WC's, shower rooms, utility areas and kitchen areas, plus provide some useful reduction in energy consumption, recovering waste heat. On extreme hot weather days where it might not be desirable to have windows open, the MVHRs cooling module can provide mechanical cooling.

Further Ventilation Strategy Development, Model analysis and Data presentation can be found within the Overheating Risk Assessment.

AIR QUALITY ASSESSMENT

WME's Air Quality Assessment has been developed in line with Policy SI1 of the London Plan 2021, Policy CC4 Air Quality in the Camden Local Plan as well as Camden Planning Guidance Document, Air Quality 2021.

The closest monitoring station to the proposed development is Swiss Cottage (Camden Kerbside). Data from this station show that NO2 particulates have varied over the last 4 monitoring years. In 2019 a figure of 43 µg/m3 was recorded, followed by 33 µg/m3 in 2020, 41 µg/m3 in 2021 and 34 µg/m3 in 2022 (present). As the 2020 figure is likely to have been distorted by a reduction in traffic caused by COVID restrictions, this figure should be discounted. PM2.5 levels have sat on the baseline of 10 µg/m3 since 2021. To summarise:- none of the local measured levels of air quality currently exceed WHO guidance, and these levels are expected to reduce further in the coming years.

Openable windows are provided to ventilate the dwellings. This is supported by MVHR system is proposed to ventilate the apartments. Despite the current measured levels of air quality meeting WHO guidance, dwellings with an aspect over the Finchley Road will be supplied with air from the roof of the building to mitigate against any perception of 'low' air quality. All other dwellings will have air intake at balcony level.

The risk of dust was assessed according to a widely used method published by the Institute of Air Quality Management. Mitigation measures appropriate to the construction phase will be specified by a dust management plan to be agreed with Camden significant residual effects are not anticipated.

The proposed development is not expected to increase the road traffic in terms of the number of trips per day. In part, the site has no carpark. Therefore, it could be said that the proposed new development is favourable for mitigating air pollution from the aspect of transport, as residents will be reliant on public transport.

Overall, the construction and operational air quality effects are judged to be 'not significant'.

Refer to document: P150051-RPT-8006, Air Quality Assessment for further details.

WATER USE

Low water use sanitary fittings will be specified for the residential units, targeting a maximum of 105L/person/day for internal use.

This is an improvement on the Part G Building Regulations requirement and can achieved through the below specification;

WC – 4/2.6L dual flush
Taps (excluding kitchen taps) – 4 L/min
Bath – 180L
Shower – 8L/min
Kitchen sink Taps – 6L/min
Washing Machine – 8.17 (not supplied)
Dishwasher – 1.25 (not supplied)
Water Recycling – 0
Predicted per capita consumption - **<105L/person/day**

NOTE: the individual specification of the different sanitary fittings may change, however the target remains unchanged in line with Camden Council requirements.

SUSTAINABLE DRAINAGE AND FLOOD RISK

In line with London Borough of Camden planning policy, a Surface Water Drainage Statement (SWDS) to demonstrate that the site can manage the surface water run-off from the new development in such a way to mitigate the impact of the new development on persons and property downstream.

The proposed development is classified as 'More Vulnerable' and the development area of the site falls completely within Flood Zone 1.

The FRA concludes that the development can appropriately proceed without any potential risks to the surrounding areas.

The preferred surface water drainage strategy should where possible be based on infiltration to ground, however, the site is underlain by London Clay. Due to this and the limited available space on the site to locate soakaways a minimum of 5m for the building foundations infiltration is not a practical method of discharging surface water runoff from this site.

Due to the absence of an available watercourse or surface water sewer, the proposed surface water drainage strategy will be based on a restricted discharge to the Thames Water combined sewer which crosses the south of site. The existing site currently discharges to this sewer.

Due to the size of the site, the greenfield rates calculated above are extremely low. The Sustainable Design and Construction SPG states that where greenfield rates are so low, "an appropriate minimum discharge rate would be 5 litres per second per outfall". However due to the low discharge rates achievable from a Blue / Green Roof sustainable drainage system and to aim to achieve as close to as possible or less than the greenfield run-off rates in accordance with the above policies a lower discharge rate than the allowable 5l/s is proposed for this site.

It is considered appropriate to use a target post-development rate of 3.1l/s applicable to all storm events achieving a discharge rate from the proposed site significantly lower than the Brownfield rates calculated and the 30% reduction required within The London Plan Policy SI 13 therefore reducing the risk of flooding to persons and property downstream of the site compared to the existing scenario.

The proposed surface water drainage system for the site comprises 6 separate SuDS attenuation structures, 4 of which comprise a Blue / Green Roof System with the remaining 2 forming a permeable surface 30% voided drainage blanket system.

The Blue / Green Roof Systems are all restricted at roof level and will drain via downpipes to the lower ground floor level of the building where they discharge into the existing 1168mm x 762mm combined public sewer which crosses the

southern part of the site though the existing onsite connection via a proposed lower ground conveyance system.

The permeable surface 30% voided drainage blanket systems also drain to the lower ground floor level of the building where they discharge into the existing 1168mm x 762mm combined public sewer which crosses the southern part of the site though the existing onsite connection via a proposed lower ground conveyance system.

All proposed storage systems will be sized with sufficient storage to accommodate a 1:100 year storm event including an additional 40% to account for the predicted effects of future climate change.

For the 4 Blue / Green roofs systems proposed a combination of the Bauder Extensive Biodiverse Green Roof Solution, Bauder Blue Roof – Sedum on Substrate System and the Bauder Blue Roof – Ballasted System are proposed.

BREEAM SUMMARY

A BREEAM pre-assessment framework has been undertaken in coordination with the appointed design team.

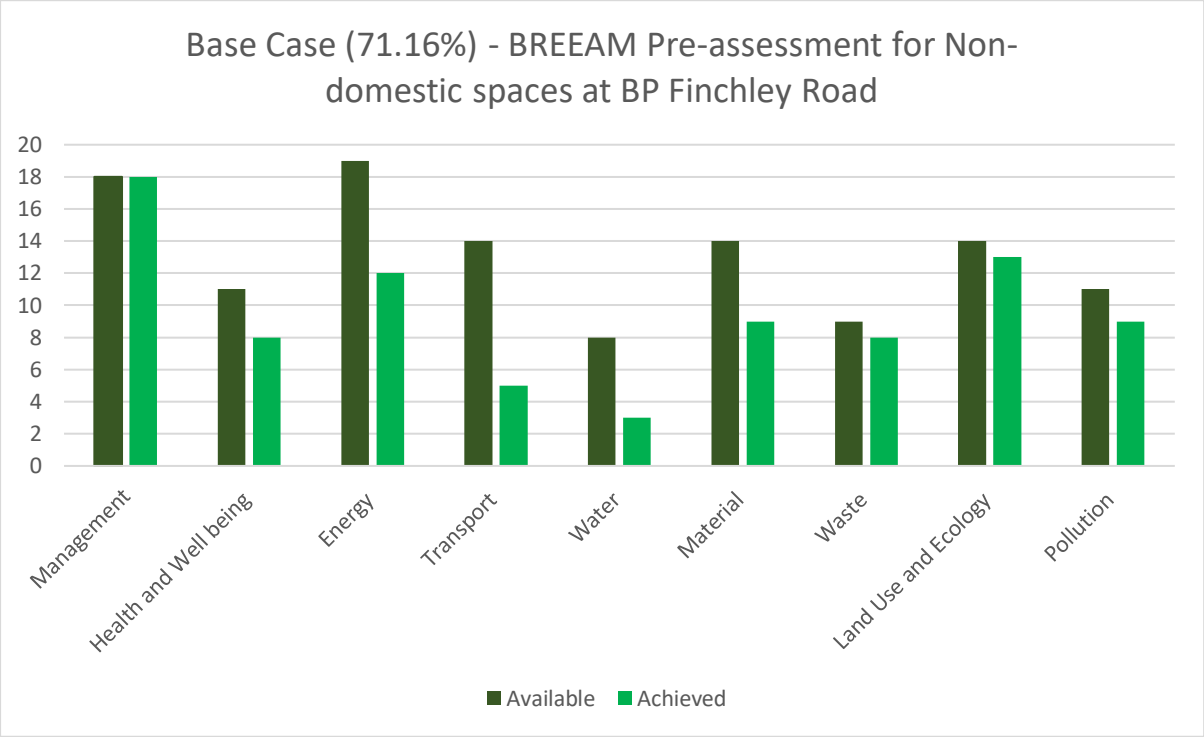
The route to achieving BREEAM Excellent on the commercial space and the education space has been set out in the preassessment with the prerequisite credits and score of 70% identified as obtainable. This was determined by establishing a 'base case', and then building up on issues where it was felt the greatest value was being provided to the occupants and area.

As the scope is Shell & Core only, we have taken a conservative approach and identified a route to achieving BREEAM Excellent (71.76%) targeting credits which are considered achievable, based on what reasonable expectations can made of the design and construction teams, without incurring extensive costs.

We have also identified a number of credits (circa. Additional 6%) which are considered 'stretch' targets. These are considered achievable with additional effort and funding beyond that required to obtain those identified within the base case.

In line with Camden Planning Guidance, 'Energy Efficiency and Adaption' the proposed BREEAM framework meets minimum performance requirements in Energy (60%) and Materials (40%).

Our performance in the Water section is below the minimum requirement, as this is a shell and core assessment only. The layouts are indicative for the non-residential space only and will not be fitted as such. Therefore, in line with BREEAM guidance, we must adapt default performance figures for Wat 01: Water Consumption which limits the overall performance in the Water Section. The team are fully committed to fitting a water meter and a leak detection system on the development.



Environmental Section	Available	Achieved	% Achieved	Section weighting	Indicative score
Management	18	18	1.00	11.00	11.00
Health and Well being	11	8	0.73	8.00	5.82
Energy	19	12	0.63	14.00	8.84
Transport	14	5	0.36	11.50	4.11
Water	8	3	0.38	7.00	2.63
Material	14	9	0.64	17.50	11.25
Waste	9	8	0.89	7.00	6.22
Land Use and Ecology	14	13	0.93	15.00	13.93
Pollution	11	9	0.82	9.00	7.36
					71.16

BIODIVERSITY

Additionally in the development assessment, Wychwood Environmental, Biodiversity and Ecology consultants undertook a Biodiversity Net Gain Report for the BP Finchley Road site. The below is a summary of their findings;

The existing site was occupied by a BP garage and therefore had no biodiversity present on site. The current proposals are for the introduction of a biodiverse roof at 4th level. This will provide an overall net gain in habitat units in line with Camden Council planning requirements.

To maximise the biodiversity and value to local wildlife it is recommended that the planting scheme uses plants which have value to pollinators. .

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