Sustainability Strategy Addendum

Camden Goods Yard

On Behalf Of St George West London Ltd

Date: 06th June 2020

CONTENTS

1. Revision History

Revision	Issue Date	Description	Issued By	Checked By
A	28.04.2020	Initial Draft	CC	
B	04.05.2020	Internal review	CC	
B	05.05.2020	First draft for comment	CC	
C	08.06.2020	Second Draft for Comment	CC	WOB
D	29.06.2020	Final Draft	CC	WOB
E	06.07.2020	Final Issue	CC	WOB

Calculations contained within this report have been produced based on information supplied by St George West London Ltd and the design team. Any alterations to the technical specification on which this report is based will invalidate its findings.

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2. Introduction

2.1. Background & Overview

This sustainability strategy addendum has been prepared to accompany an S73 application for the proposed development at Camden Goods Yard. The site has been approved for redevelopment through an earlier planning application in 2018, that was amended in May 2020 via an earlier S73 application. This document seeks to clarify the changes made to the approved scheme in order to improve the sustainability credentials of the application.

This document seeks to establish the revised proposals for the development, and confirm any alterations to the proposals from a sustainability perspective. Where applicable, compliance with recent policy and guidance changes, that have been adopted since the original grant of planning consent, has also been evaluated for feasibility.

The general strategy approach is broadly similar to the consented scheme, with the primary alterations relating to the energy and carbon emissions predictions of the development, which have been re-evaluated and optimised. The revisions fall within Phase 2A, comprising Buildings A, B, C & F. Buildings D, E1, E2 and the PFS site, remain largely unchanged from the approved scheme.

This addendum shall report the headline details from these revisions, with the full details available in the revised reports and addendums submitted in support of the application.

For ease of reference, this document has been formatted to follow the outline structure of the approved sustainability statement document, which should be referred to where this document indicates no alterations have occurred.

2.2. Development Proposals

Planning permission was granted 15th June 2018 for the redevelopment of the existing Morrisons supermarket, surface car park and Petrol Filling Station (PFS) (ref. 2017/3847/P) – to be referred to as the 'extant scheme'. The approved development would deliver 573 new homes and circa 39,500 sq m GEA of non-residential floorspace, including a replacement supermarket, replacement PFS and new A1, A3, B1, D2 and SG floorspace, together with associated public realm and landscaping. This permission was amended on 5 May 2020 via a s73 application, and all references to the 'approved scheme' within this document is with reference to the amended, approved May 2020 permission.

This current application is for an optimisation of the approved May 2020 scheme. The 'optimisation scheme' makes amendments to predominantly to Blocks A, B, C, F, including inserting additional storeys as a result of reducing floor-to-ceiling

heights to 2.5m, inserting extra storeys in addition, as well as alterations to floorplans and reconfiguration of internal layouts. The scheme will deliver 71 additional homes, for a total of 644 new homes. Commercial floorspace will remain largely unchanged.

The overall approach to the optimisation scheme is to increase the delivery of new homes whilst maintaining and building upon the design quality and sense of place of the extant permission. Scheme amendments are being developed with the aim to be as consistent as possible with both the extant permission and with adopted and emerging policy, including in relation to housing mix, affordable housing quantum and mix, commercial floorspace including affordable workspace, architectural quality and the quality of homes

3. Design Response

3.1. Resource Management

3.11 Land Use

The underlying objectives of the proposal have not changed, and remain to:

- Increase the intensity of use on the site from its existing under-used capacity to a level commensurate with its central, accessible location;
- To create a mixed-use development of high-quality that will contribute positively to the character of the neighbourhood;
- To use the latest technologies and construction practices to create a development of low environmental impact;
- To expand the employment opportunities within the local area; and
- To provide much needed dwellings for local people

However, on review of the proposals, it was found that the site could be optimised, in order to improve the above.

From optimisation of the scheme by the architects and engineering design team the number of dwellings on the site is proposed to increase, with a total of 644 dwellings proposed for the total scheme, an increase of 71.

In addition, the energy proposals have been re-evaluated in order to reduce energy demand and improve the inherent energy efficiency of the scheme. Alterations to the energy centre have also been proposed in order to minimise on-site CO_2 emissions.

The revisions to the proposals are shown as an improvement to the previous scheme with regard to maximising land use and making efficient use of London's limited land.

3.12 Site Layout and Building Design

The general layout and building design is per the approved planning consent, with minor changes only relative to massing and building heights.

The massing changes have been discussed extensively via pre-application discussions with LBC, and additional modelling has been undertaken to ensure that the alterations shall not adversely affect daylight, accessibility or general townscape views.

The revised Design & Access Statement, along with addendums to other supplementary specialist reports (such as the flood risk and drainage strategy)

address the specific revisions in greater detail, and should be referred to for clarity on divergence with the approved scheme.

For clarity, the below highlights of the design are all still applicable:

- Careful façade design to balance heat loss, daylight and overheating;
- Designing 90% of homes to be accessible or adaptable (Part M42);
- Designing 10% of homes for wheelchair users (Part M43);
- Using a concrete frame construction which allows future re-use of the frame;
- Specifying fabric thermal performance to a level that exceeds current standards;
- Constructing an ASHP-led communal heating system;
- Implementing a series of PV arrays to maximise renewable energy generation on-site;
- Implementing a sustainable drainage system with significant on site water storage; and
- Providing bio-diverse roofs to all feasible roof spaces

3.13 Energy and CO_2 emissions

This section outlines the more significant changes to the proposals, and as such a revised energy strategy has been prepared to accompany the application.

This strategy concludes that the predicted on-site emissions shall be reduced substantially, with a 40% reduction over the Building Regulations baseline achieved for the site, compared to only a 27% reduction achieved for the approved scheme. This constitutes a marked improvement on the approved proposals, and should be welcomed.

The revised design has also sought to target the latest requirement of GLA guidance, updated since the prior grant of planning permission, and to adhere to the requirements of the emerging Draft London Plan, where feasible within the constraints of the design.

Full details of the revisions are provided in the accompanying Energy Statement. However, the below key efficiency measures are as follows:

- Enhanced U-values to all thermal elements to reduce heat losses
- Careful detailing of non-repeating thermal bridging to limit the rate of linear thermal loss to ACD standards or better
- Careful construction to achieve an air leakage rate <4m³/hour/m²
- Optimised fenestration design to achieve a healthy balance between heat loss, daylight and overheating risk
- Low energy lighting with automatic controls throughout the development
- High efficiency mechanical ventilation systems complete with heat recovery and summer bypass functions
- Low water use showers and taps to reduce domestic water consumption to <105 litres/person/day

In addition to the above, all relevant white goods (eg fridges, washing machines etc) shall be specified as energy efficient (A rated or better). This is not reflected within the energy calculations, as they are excluded from the approved methodology. However, this shall assist further in reducing energy consumption in-use.

Non-residential spaces shall vary depending on the level of provision by the applicant. However, all non-residential spaces on the main site are expected to connect to the site-wide heat network, and shell only units shall be provided with capped connections. In addition, all non-residential spaces are expected to benefit from the following:

- Automatic daylight-dimming controls to perimeter lighting
- Power factor correction equipment to maintain a power factor >0.95
- Automatic monitoring and targeting of all services, via sophisticated BMS controls
- Heat-recovery mechanical ventilation

These energy efficiency measures have reduced the energy demand at the site to levels in line with the latest guidance from the GLA, and the levels outlined within the Draft New London Plan. 'Be Lean' performance from the residential and non-residential aspects of the site are shown to exceed the emerging policy requirements of 10% and 15% carbon reductions respectively, and substantially exceed the adopted requirements of meeting the baseline emissions.

In addition to the energy efficiency measures above, the site heating strategy had also been re-evaluated to optimise efficiency. The proposed heating type remains unchanged from the approved scheme, as a combination of gas boilers and ASHPs. However, the design and operation has been optimised to maximise contribution from the heat pumps, which in turn shall minimise combustion and air quality impacts from the energy centre.

The proposed heat network is based on a low temperature design, and instantaneous hot water systems have been selected so that the heat network temperature can be minimised. The aim is to achieve a flow temperature of 70C and a return of <40C. The ASHPs will be connected on the return side (<40C) to pre-heat the water to a temperature to 61C before feeding into thermal stores. Water from the thermal stores will then flow through an array of gas condensing boilers which will top-up the temperature further, to the required 70C flow temperature. During periods of low demand, excess heat from the ASHPs will be stored in the thermal store.

This design and operation strategy shall ensure that the ASHPs shall be able to provide beneficial heat to the network for the majority of the year, whilst maintaining a high COP.

The location of the Energy centre remains within the Building A undercroft, to allow the boiler flues to be discharged at the highest point on the site, and to

allow easy retrofitting into an area-wide heat network, should one become available in the future. The ASHP plant is located on the roof of building A, to maximise efficiency by allowing high levels of airflow across the units.

In summary, the general principles of the scheme have not changed from the approved proposals. However, the applicant has taken the opportunity to optimise the operation, and specify the latest high-efficiency equipment, in order to maximise the sustainability credentials of the development.

3.14 Renewable Energy

In addition to the Air Source heat pumps, multiple photovoltaic arrays are proposed in order to generate renewable energy on site. It is noted that the extant scheme has maximised PV provision across the site, and that the increase in heat pump capacity within the revised proposals has reduced the roof space available for PV panels on building A. Therefore, a reduction in PV output was expected.

However, following a review of the design, it has been calculated that an upgrade to the specified panel efficiency, along with careful design, should allow the PV proposals for the scheme to be maintained per the approved scheme, despite the reduction in available space for arrays. The below table details the differences in PV provision per building, between the extant scheme and new proposals.

Building	Approved Scheme (kWp)	New Proposals (kWp)
Building A	27.75	17.00
Building B	0.00	0.00
Building C	17.60	15.40
Building D	22.00	38.5
Building E1	13.75	13.75
Building E2	26.95	26.95
Building F	22.55	16.00
PFS	37.40	37.40
Totals	165.00	165

The proposals with regard to renewable energy are therefore in line with the extant proposal, and are also in line with the emerging policy requirements with regard to maximising renewable energy generation on site.

3.15 Water Efficiency

The proposals relating to water efficiency have not changed from the approved scheme. Highlights of the design include the following:

- Reducing residential water consumption to <105 litres/person/day
- Rainwater harvesting systems are to be integrated into Buildings B & F, in order to serve the part of the irrigation requirements for the Urban Farm and communal gardens.
- Individual water meters shall be fitted to all homes, and all individual commercial premises.
- All non-residential sanitary facilities shall use low-water fittings in accordance with BREEAM guidance
- An automatic water leak detection system shall be incorporated to the main water supply

3.16 Materials and Waste

The revised proposals with regard to material selection and waste reduction have not altered from the consented development. The key highlights of the design are as follows:

- A pre-demolition audit shall be undertaken prior to the commencement of demolition works, in line with the ICE demolition protocol. This shall identify the most appropriate approach to demolition and ways to maximise recycling of materials.
- A SWMP shall be produced to outline the proposals for the monitoring, reducing and recycling of waste. The applicant has an excellent track record of reusing construction waste where feasible, and evidence from previous projects indicates that over 90% of construction waste is typically diverted from landfill
- Due regard shall be given to maximising the use of materials which gain higher ratings in the BRE green guide, and using local suppliers where feasible
- All timber shall be sourced from forests covered by third-party certification schemes such as FCS
- Waste in use has been addressed by designing all bin stores in accordance with BS8300:2009, and waste storage for dry recyclables and food waste shall be provided within every dwelling, and within the communal bin stores

3.17 Nature Conservation and Biodiversity

The existing site has been previously developed for industrial use, and contains no natural habitat. The consented proposals identified that the extensive nature of the works would not allow for retainment of many of the existing trees within the current car park. However, that these trees were generally of low quality, and limited biodiversity.

The proposed landscaping has been slightly revised in order to further enhance biodiversity and greening within the development. Full details of the revisions can be found within the revised DAS, and EIA. However, the proposals can be seen to provide a substantial improvement to biodiversity and nature on the existing site, and a minor improvement on the extant permission proposals.

The proposals include for deep substrate living roofs, new grassland, shrub, tree and ground flora planting, and the linking/accessing of the natural green corridors to the northeast and southwest of the site.

As a further benefit to the community, food growing facilities, in the form of allotments, are to be provided to the east of the site.

3.2. CLIMATE CHANGE ADAPTION

3.21 TACKLING INCREASED TEMPERATURE AND DROUGHT

A revised overheating assessment has been carried out, in order to assess the proposals to the latest industry guidance, which was not published at the time of the consented scheme's planning submission.

The results of the overheating assessment have been provided separately within the specialist report, and a range of measures are identified within the design in order to reduce overheating risk, in line with the London Plan cooling hierarchy.

These measures include:

- Optimised window sizes in order to allow a good balance between heat loss, daylight provision and overheating
- Shading is provided by overhanging balconies, and windows are typically recessed by up to 200mm
- Internal heat gains have been minimised by design of the heat network in line with CIBSE CP1, and the specification of low energy lighting and appliances where applicable
- Most apartment buildings shall benefit from bio-diverse roofs, to absorb less heat into the structure. This, along with the general landscaping proposals, shall also improve the site microclimate, providing natural cooling from evapotranspiration
- Materials shall be relatively high albedo, and serve to reflect some unwanted summer gains
- A low glazing g-value has been specified to further reduce solar gains into the apartments
- Apartments have been designed with large openable windows or Juliet balconies, to maximise the rate of heat purge during hot weather
- All spaces shall benefit from heat recovery ventilation, fitted with summer bypass', in order to lower heating gain in winter, and cooling gain in summer

The accompanying report confirms that the applicable requirements of the latest overheating guidance can be met by the proposals, subject to occupant operation of blinds and windows. Whilst comfort cooling is also provided to certain units for commercial reasons, the residential cooling accounts for <0.5% of the total site-wide regulated carbon emissions, and should therefore not be considered significant from a regulated carbon emissions perspective.

Commercial units shall also be provided with cooling, however the passive design measures outlined within the accompanying reports have reduced the regulated cooling demand 18% less than the notional demand, which exceeds the requirements of current and emerging policy requirements. Where feasible, the cooling systems shall be designed to reject heat into the communal heating

system, for use within the development for DHW purposes, further improving the energy efficiency of the system, and reducing the impact of the cooling systems on the environment and local microclimate.

Low water use planting shall be specified where appropriate, however, there is a need to carefully balance its use to ensure that the planting has amenity value and local biodiversity. Therefore, whilst the ground level and podium planting may require some supplementary watering in dry weather (offset by the proposed rainwater harvesting system), the bio-diverse roofs shall develop over time with species that shall not require supplementary watering.

3.22 Increasing green cover

The changes to the landscaping proposals are explained in detail within the revised DAS. However, it is confirmed that the revisions demonstrate a net improvement to green cover across the development.

Living roofs shall be implemented to all feasible spaces, with extensive tree, shrub and ground flora planting proposed for ground and podium spaces.

The landscaping proposals have been carefully developed, including LBC in discussions in order to create a flowing site, that will develop over time to provide a wide range of habitats for insects, birds and small mammals.

For further details of the changes to the landscaping proposals, please refer to the revised DAS submitted in support of the application.

3.23 Flooding

No significant alterations have occurred with regard to the flood risk and drainage strategy for the development, which largely remain per the consented scheme proposals.

A variety of SUDS measures are proposed to reduce the risk of flooding, including rainwater harvesting systems and living roofs to most buildings

For full details of all specific alterations and revised strategy. Please refer to the drainage strategy submitted in support of the application.

3.3. Pollution Management

3.31 Land Contamination

From the initial studies from the extant permission, elevated contaminant levels are not expected. However, as site works progress, appropriate investigations shall be undertaken to determine whether any contamination is present. If found, appropriate decontamination steps will be taken and mitigation measures implemented.

Full details are included within the Environmental statement submitted in support of the application.

3.32 Air Pollution

A detailed review of the proposals has been undertaken and an addendum prepared to the consented Air quality report. This report concludes that the development can be considered air quality neutral, and that the air quality impacts associated with construction and future operation of the development is deemed not significant. The energy strategy has strived to maximise contribution form the air source heat pumps, and therefore the minimised operation of the installed gas fired boilers shall also reduce associated emissions from the extant scheme

For full details of the findings associated with the revised proposals can be found in the separately submitted air quality assessment addendum

3.33 Noise

The acoustic strategy for the site is unchanged from the extant permissions. Nonetheless, an addendum to the acoustician's report has been produced by Ardent Consulting Engineers, which has been submitted in support of the application.

This addendum concludes that the alterations to the design are slight shall result in a negligible impact over the consented scheme

For further information please refer to the separately submitted noise and vibration assessment addendum

3.34 Light Pollution

The external lighting design shall be developed to be minimised as far as possible, whilst satisfying minimum requirements for safety and security.

Light pollution shall be minimised by incorporating timers and presence detection on external lighting where practical, and by designing in accordance with the Institute of Lighting Professionals guidance note *GN01 (2011): Guidance notes for the reduction of obtrusive light.*

3.35 Water Pollution

The drainage strategy is largely unchanged from the extant permission, and measures to reduce water pollution are maintained form the original consent, including extensive green roofs and attenuation. A construction environmental management plan shall be produced prior to commencement which shall include specific policies to minimise ground water contamination.

For full details, please refer to the separately submitted drainage strategy

4. Conclusions

The preceding report demonstrates that the revised proposals shall result in wholly positive changes to the sustainability credentials of the development, and as such can be shown to comply with the relevant policies with regard to resource management, climate change adaption and pollution management. It is therefore compliant with the broad range of policies that seek to promote sustainable development in Camden, across London, and within the National Planning Policy Framework.

In developing and optimising the proposals, the design team have sought to build on the positive aspects of the extant scheme permissions, whilst taking advantage of the latest developments in technology to maximise the site potential, and achieve compliance with additional emerging policy where feasible.

This document, along with the separately submitted technical reports, demonstrate that the proposals constitute *Sustainable Development*, as defined in the NPPF, and therefore no objections to the proposals should be raised from a sustainability perspective

APPENDIX A: REVISED ENERGY STRATEGY

Supplied as a separate report

APPENDIX B: BREEAM PRE-ASSESSMENTS

Supplied as a separate report

APPENDIX C: REVISED OVERHEATING ASSESSMENT

Supplied as a separate report

APPENDIX D: ACRONYMS

Acronym	Definition
BREEAM	Building Research Establishment Environmental Assessment Method
CIBSE	Chartered Institute of Building Services Engineers
TM	Technical Memorandum
GLA	Greater London Authority
UHI	Urban Heat Island
IES:VE	Integrated Environmental Solutions: Virtual Environment
LBC	London Borough of Camden
MEV	Mechanical Extract Ventilation
MVHR	Mechanical Ventilation with Heat Recovery
HIU	Heat Interface Unit
ASHP	Air Source Heat Pump
DHN	District Heat Network
DHW	Domestic Hot Water
COP	Coefficient of Performance
DSM	Dynamic Simulation Modelling