SUSTAINABILITY STATEMENT – MIXED USE SCHEME

– Rev 1

in relation to

195 – 199 GRAYS INN ROAD, LONDON WC1X 8JR

for

EUROPEAN URBAN DEVELOPMENTS

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1.0 LB CAMDEN SUSTAINABILITY POLICIES

The main Sustainability requirements are described in the London Borough of Camden's Core Strategy policy CS13 – Tackling Climate Change. This policy also refers to the Borough's Development Plan policies DP22 – Promoting Sustainable Design and Construction; DP23 – Water; and DP32 – Air quality and Camden's Clear Zone. Further details are included with the Supplementary Planning Guidance document CPG 3-Sustainability. The main policies have been provided below for ease of reference:

DP22 – Promoting sustainable design and construction

The Council will require development to incorporate sustainable design and construction measures. Schemes must:

a) Demonstrate how sustainable development principles, including the relevant measures with respect to:
    a. The accessibility of its location;
    b. Its density and mix of uses;
    c. Its detailed design taking into account the orientation of the site;
    d. The mechanical services; and
    e. The materials chosen
b) Incorporate green or brown roofs and green walls wherever suitable.

The Council will promote and measure sustainable design and construction by:

a) adopting the government target that all new build housing will be zero carbon by 2016 (Code for Sustainable Homes Level 6), along with the stepped targets of Code 3 by 2010 and Code 4 by 2013;
b) expecting developments (except new build) of 500sqm of residential floorspace or above or 5 or more dwellings to achieve 'excellent' in EcoHomes assessments from 2013 and at least 'very good' prior to 2013;
c) expecting non-domestic developments of 500sqm of floorspace or above to achieve 'very good' in BREEAM assessments, with the aim of increasing the target to a rating of at least 'excellent' in 2016, if feasible, and zero carbon from 2019, in line with the government's ambitions.

The Council will require development to be resilient to climate change by ensuring schemes include appropriate climate change adaptation measures, such as:

a) summer shading and planting;
b) limiting run-off;
c) reducing water consumption;
d) reducing air pollution; and
e) not locating vulnerable uses in basements in flood-prone areas.

DP23 – Water

The Council will require developments to reduce their water consumption, the pressure on the combined sewer network and the risk of flooding by:

a) incorporating water efficient features and equipment and capturing, retaining and re-using surface water and grey water on-site;
b) limiting the amount and rate of run-off and waste water entering the combined storm water and sewer network through the methods outlined in part a) and other sustainable urban drainage methods to reduce the risk of flooding;
c) reducing the pressure placed on the combined storm water and sewer network from foul water and surface water run-off and ensuring developments in the areas identified by the North London Strategic Flood Risk Assessment as being at risk of surface water flooding are designed to cope with the potential flooding;
d) ensuring that developments are assessed for upstream and downstream groundwater flood risks in areas where historic underground streams are known to have been present; and
e) encouraging the provision of attractive and efficient water features.

DP32 – Air quality and Camden's Clear Zone

The Council will require air quality assessments where a development could potentially cause significant harm to air quality. Mitigation measures will be expected in developments that are located in areas of poor air quality.

2.0 RESPONSE TO POLICIES

Accessibility of location

The site is located directly in front of a bus stop that is served regularly during peak hours, and is within 0.4 miles of Kings Cross St Pancras and 0.6 miles of Chancery Lane tube station.

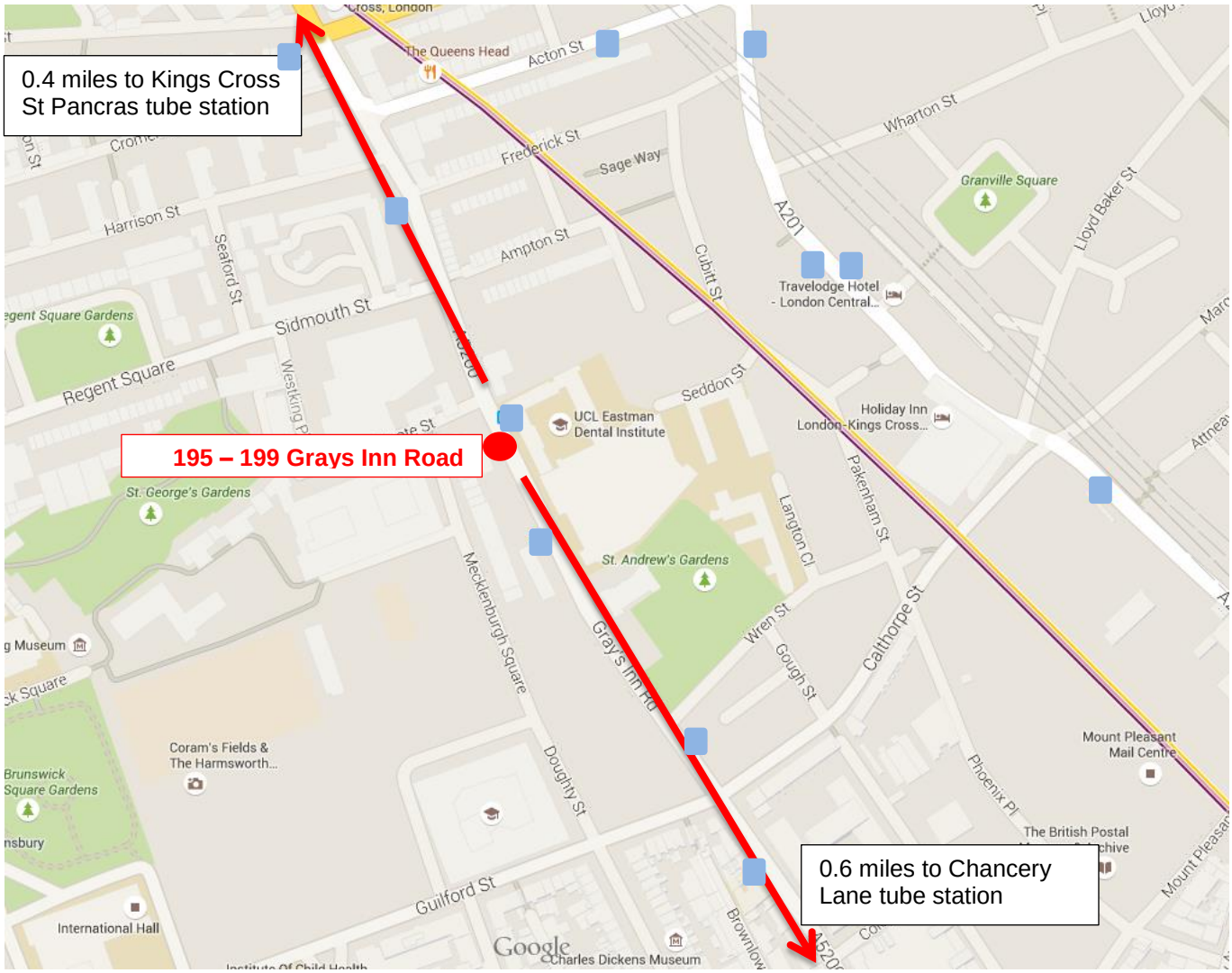

Figure 1: public transport links in proximity to 195 – 199 Grays Inn Road

Bus stops

Density and mix of uses

The development comprises of office space on the lower ground floor and 2 no. residential units on the first floor, optimising the density of the proposed development. The site is in an area where there is an existing mix of uses

Orientation of the site

The orientation of the building is broadly parallel with Grays Inn Road and with majority of glazing facing East. This maximises daylight to the dwellings and provides privacy from the overlooking houses located immediately west of proposed development.

Mechanical services

Highly energy-efficient, low NOx boilers will provide space heating and hot water.

Ventilation

A natural ventilation strategy has been developed based upon low level openings on the rear of the building (i.e. away from Grays Inn Road) and with outlets at high level. This cross ventilation strategy will also be aided by a heat stack effect to ensure a sufficient air change rate. The lack of south facing glazing significantly reduces the risk of summertime overheating and the cross ventilation arrangement is considered more than adequate for purge ventilation requirements.

Materials

An initial review of materials have been undertaken against the *BRE's Green Guide to Specification.* The entirety of the rear walls are to be retained and would thus achieve an A+ rating. Timber windows are proposed throughout the development and would score an A or A+ rating, with all timber being FSC or PEFC certified. Furthermore, the steel roof construction is also expected to achieve an A or A+ rating, largely due to low water usage in its manufacture and the recycling/reuse opportunities it affords at the building's end of life.

Incorporate green or brown roofs and green walls wherever suitable

Green roofs has been considered although it is proposed to fully utilise the roof space for a PV array in order to comply with the mandatory Energy requirements of the Code for Sustainable Homes Level 4 i.e. t to improve upon Building Regulations 2013 by 19%. The array will reduce the grid electricity demand and the associated carbon dioxide emissions.

New build housing will be Code 3 by 2010 and Code 4 by 2013

Having reviewed the government's planning portal, we understand that the Code for Sustainable Homes was officially withdrawn in March 2015 and our understanding is that no new developments can be registered under the scheme. However, it is proposed to achieve the minimum standards for Code Level 4 in the form of meeting 105L/p/day (internal potable water consumption) and a carbon dioxide reduction of at least 19% below Building Regulations Part L 2013. The sanitaryware specified for the office space will include dual flush WC and low flow taps.

Summer shading and planting & Limiting surface water run-off (also responding to DP23b)

The windows are east/west facing and thus summer overheating is very unlikely. The frosted, rooflights will be provided with internal blinds. An underground rainwater harvesting tank will help minimise surface water run-off from the roof, and the proposed development does not increase impermeable area compared within the existing building.

Reducing water consumption (also responding to DP23a)

Internal water fittings will be specified in line with Regulation 17K of Building Regulations Approved Document G and the mandatory levels of Code for Sustainable Homes Level 4 i.e. no more than 105L/p/day. The fittings will include low flow taps, dual flush toilets and water-efficient white goods. **Appendix A** shows an indicative strategy to the meet the 105L/p/day requirements.

Rainwater collected will be used for irrigation of external planting to further reduce potable water consumption.

An initial sizing review[1] for the underground rainwater harvesting tank has been undertaken and is summarised below:

Tank size (L) = Annual rainfall[2] (mm) x collection area (m^2) x drainage coefficient x filter efficiency x sizing factor

= 557 *x* 85 *x* 0.8 *x* 0.9 *x* 0.05

= 1,704 Litres

It is proposed that the tank is located below the Ground Floor office area.

Reducing air pollution (also responding to policy DP32)

LB Camden was declared an Air Quality Management Area in 1999 for NOx and particulates. Space heating and hot water will be provided from highly efficient, low NOx boilers, meeting AQMA requirements. The ventilation strategy ensures that all air intakes are located solely on the rear elevations, therefore away from direct contact with Gray's Inn Road, with further protection from traffic fumes provided in the form of a 4m wall that runs along the pavement edge.

Not locating vulnerable uses in basements in flood-prone areas (also responding to DP23c and d)

The site is located in Flood Zone 1 (low flood risk) in accordance with the Environment Agency, therefore it is not considered to be a flood-prone area.

1 - Harvesting rainwater for domestic uses: an information guide (Environment Agency - October 2010)

2 - Met Office – City of London data 1981-2010 http://www.metoffice.gov.uk/public/weather/climate/gcpvn15h9

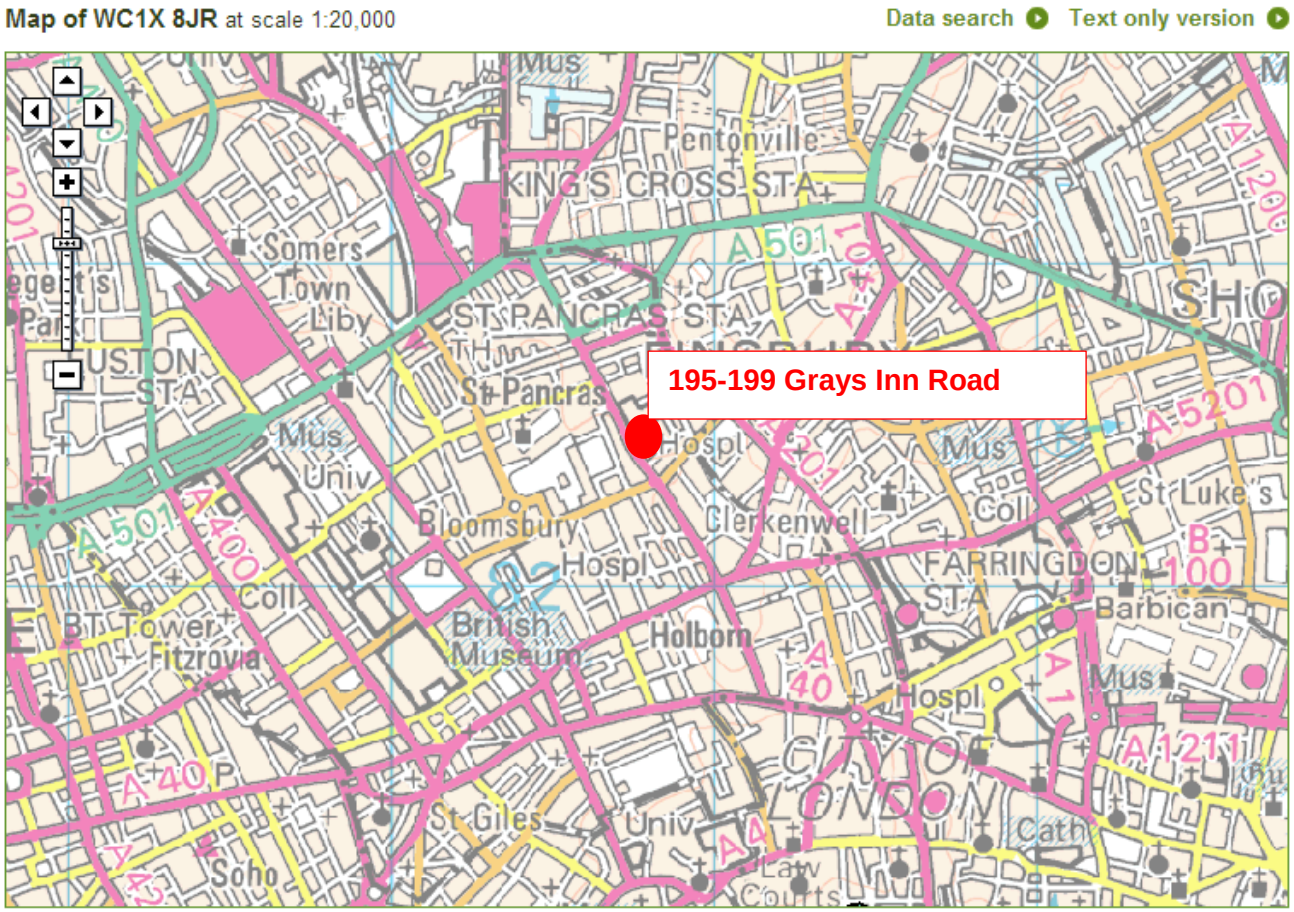

Figure 2: Environment Agency – Flood Risk Map – no risk indicated for the proposed development

Providing attractive and effective water features

The use of water butts have been considered. However, given the limited external space it has been deemed preferable to install an underground tank which will store harvested rainwater that will be available for external irrigation.

APPENDIX A

Indicative Water Strategy

WAT 1 - Calculator
Code for Sustainable Homes

The following internal water consumption strategy shows an indicative route achieving the 105L/p/day requirement.

Site Information	
Site Name	195-199 Grays Inn Road
Reg Number	
Street 1	195-199 Grays Inn Road
Street 2	
Area	
Town or City	Camden
Post Code	WC1X 8RJ

Installation Type	Average Capacity/Flow Rate	Litres/Person/Day
Single Flush WC's	0	0
Dual Flush WC's	5.34	23.6
All WC's	5.34	23.6
Kitchen/Utility Room Taps	4	12.12
Other Taps	4	7.9
Baths	0	0
Showers	6	33.6
Dishwashers	1.25	4.5
Washing Machines	8.17	17.16
Water Softener		
Waste Disposal Unit	Not Present	0
Total Water Use	98.88 Litres/Person/Day	
Contribution from Rain Water	0 Litres/Person/Day	
Contribution from Grey Water	0 Litres/Person/Day	
Normalisation Factor	0.91 Litres/Person/Day	

Code for Sustainable Homes - Consumptions & Credits	
Water Consumption (Code for Sustainable Homes)	90 Litres/Person/Day
Credits Scored	4

Building Regulations 2000 AD Part G (2010 Ed) - Consumption	
External Water Use	5 Litres/Person/Day
Water Consumption (Building Regulation 17 K)	95 Litres/Person/Day

Kitchen/Utility Room Taps						
Description	Flow Rate	Qty	Total Water	Grey Water	Rain Water	Net Water
Kitchen taps	4	1	4	0	0	4
Total Litres/Person/Day Gross						12.12
Total Litres/Person/Day Gross						12.12

Other Taps						
Description	Flow Rate	Qty	Total Water	Grey Water	Rain Water	Net Water
Bathroom taps	4	1	4	0	0	4
Total Litres/Person/Day Gross						7.9
Total Litres/Person/Day Gross						7.9

Baths						
Description	Capacity	Qty	Total Water	Grey Water	Rain Water	Net Water
Total Litres/Person/Day Gross						0
Total Litres/Person/Day Gross						0

Showers						
Description	Flow Rate	Qty	Total Water	Grey Water	Rain Water	Net Water
Showers	6	1	6	0	0	6
Total Litres/Person/Day Gross						33.6
Total Litres/Person/Day Gross						33.6

Washing Machines						
Description	L/Kg Dry Load	Qty	Total Water	Grey Water	Rain Water	Net Water
Typical washing machine	8.17	1	8.17			8.17
Total Litres/Person/Day Gross						17.16
Total Litres/Person/Day Gross						17.16

Dishwashers						
Description	L/Place Setting	Qty	Total Water	Grey Water	Rain Water	Net Water
Typical dishwasher	1.25	1	1.25	0	0	1.25
Total Litres/Person/Day Gross						4.5
Total Litres/Person/Day Gross						4.5

Single Flush WC's						
Description	Flush Volume	Qty	Total Water	Grey Water	Rain Water	Net Water
Total Litres/Person/Day Gross						0
Total Litres/Person/Day Gross						0

Dual Flush WC's						
Description	Flush Vol (P/F)	Qty	Total Water	Grey Water	Rain Water	Net Water
Dual flush toilets	6/4	1	5.34			0
Total Litres/Person/Day Gross						23.6
Total Litres/Person/Day Gross						23.6

Ion Exchange Water Softener	
% of Total Capacity Used Per	
Water Consumed Per Regeneration	
Average Regeneration Cycles Per Day	
Occupants Served by the System	
Water Consumed Beyond 4%	
Water Consumed Beyond 4%	