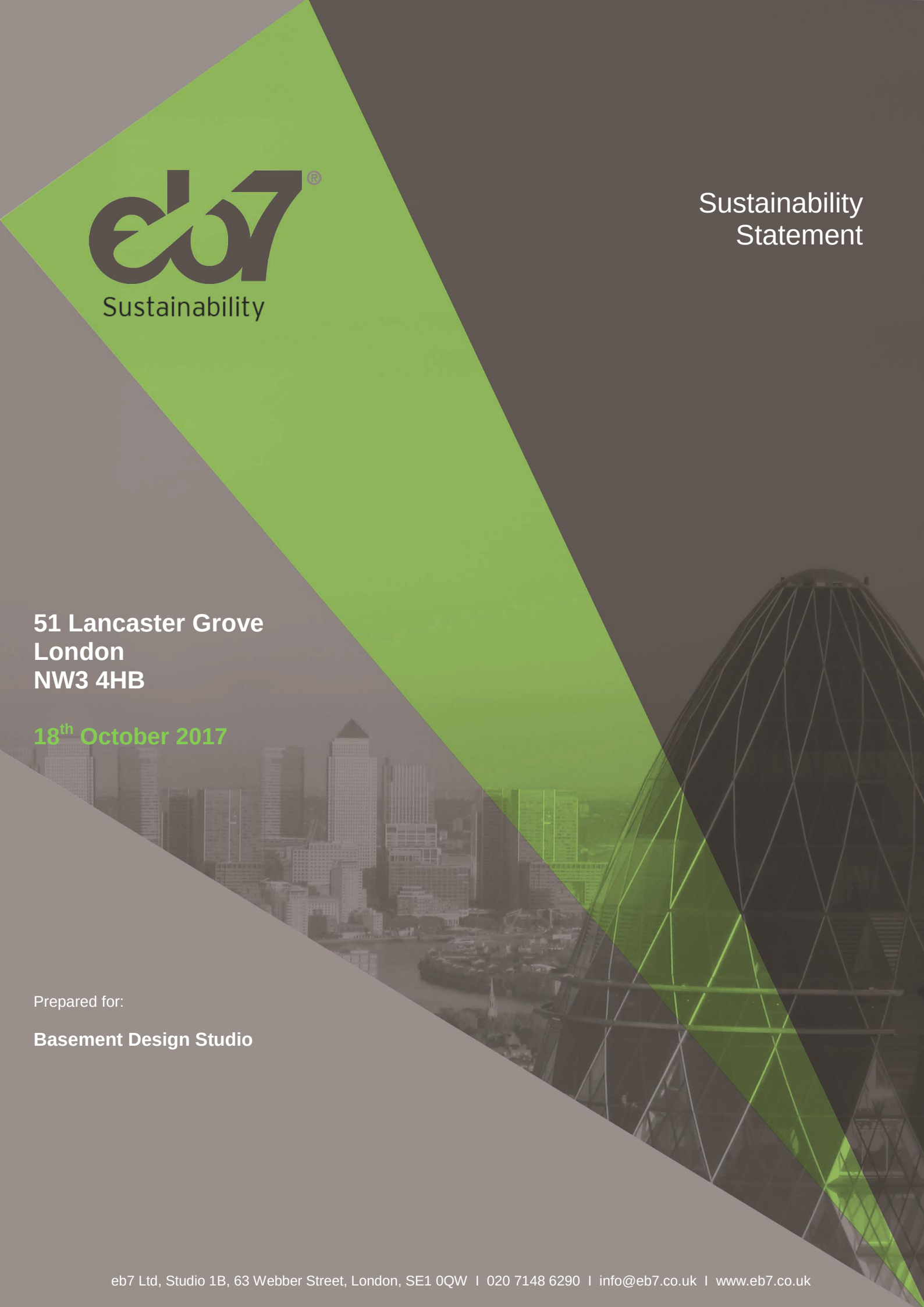
# Sustainability Statement



## 51 Lancaster Grove
## London
## NW3 4HB

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Prepared for:

**Basement Design Studio**

eb7 Ltd, Studio 1B, 63 Webber Street, London, SE1 0QW I 020 7148 6290 I info@eb7.co.uk I www.eb7.co.uk

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## 1.0 INTRODUCTION

This report sets out the sustainability issues and targets intended for the proposed development at 51 Lancaster Grove.

The development comprises the extension of an existing 5 storey dwelling; the dwelling currently arranged over lower ground, upper ground, 1st to 3rd floors.

The proposal is for an extension to the existing lower ground floor level providing a games room, a gym area and storage.

The project sits within the Belsize Park Conservation area.

The project sits within the London Borough of Camden (Camden); the relevant policies are: -

- London Plan Policy
- Camden Local Plan adopted June 2017 – Policies CC1, CC3, CC4 & CC5
- Camden's CPG 3 Sustainability
- Energy Efficiency - planning guidance for conservation areas (Sept 2014)

Further guidance is taken from the principles behind the Code for Sustainable Home and/or Eco Homes 2006; where possible and feasible.

The Developer of the site acknowledges the current issue with regard to concerns about climate change and the contribution that building stock makes in the form of emissions to the atmosphere, the use of water, waste generation and the use of polluting materials.

## 2.0 SUSTAINABILITY

### 2.1 Energy Efficiency

The scheme will be designed to limit the emissions of carbon dioxide to the atmosphere from the operation of the building services via the use of good building fabric, i.e. be lean – use less energy; step 1 of the Mayor's energy hierarchy. To achieve this, the development will adopt the principles of "best practice" u-values for the new build extension as noted in CPG 3:-

- New (basement) walls – u=0.20
- New basement floor – u=0.20
- New glazing – u=1.5

To further improve fabric efficiency in the ground floor element to be converted, the developer will investigate the following retrofitting works as identified in Appendix 1 of CPG 3:-

Replace existing glazing to the rear elevation with new double glazed units - u=1.5 - subject to the appropriate consents.

In terms of the operation of building services, the following strategies will be adopted:-

Investigate current HVAC plant and if appropriate, upgrade to a new high efficiency gas condensing boilers will be installed with flue gas heat recovery to further enhance efficiency

Again, if appropriate, controls will be upgraded via the use of TRVs, wall stats and timers to provide full interlock mechanism to ensure that boilers are only firing when required

Under floor heating will be installed in the new build basement element to take advantage of the thermal mass of the basement structure and to enable the heating system to run at lower temperatures and therefore more efficiently.

Internal service pipework will be insulated to reduce transmissions losses.

Where possible the use of LED low energy lighting will be adopted, where this is not possible, dedicated compact fluorescent lighting pendants will be installed.

Further energy efficiency measures to assist the reduction of consumption of unregulated energy use is noted under 2.4, below.

## 2.2 Efficient Energy Supply

The energy hierarchy goes on to consider how energy can be supplied more efficiently via connection to decentralised supplies such as community heating or CHP provisions.

Clearly, for a small refurbishment/extension project of <100sqm, the provision of community heating within the development is not practical and would offer no efficiency savings. However, the use of "traditional" gas boilers, with the flow and return temperatures similar to community schemes, does mean that, as and when such a network was available in the area – the property at Lancaster Grove would have the facility to connect to the network.

## 2.3 Sustainable Energies

Camden's guidance on renewable technologies within CPG3 states:-

"Buildings can also reduce their energy consumption by generating their own energy in the form of heat or electricity using low carbon and renewable technologies which use little or no energy"

Specifically, the guidance requires the consideration of the retro-fitting of

- Solar thermal (hot water) panels
- Solar PV panels
- Ground source heat pumps

Therefore this report will briefly considered the feasibility of these technologies:

### Solar hot water

Solar thermal systems harness the suns energy to heat hot water via roof mounted panels. Due to the roof pitch configuration at 51 Lancaster Grove, there is only very limited roof space with a southerly aspect to the front elevation.

However, in terms of greater contribution to carbon emissions and return on capital, it is considered that solar PV would be the preferable option.

As such, a solar thermal system cannot be recommended.

The Renewable Heat Incentive (RHI) was introduced into the domestic market in April 2014 and will offer a financial return for renewable heat generated for such systems, albeit not as great as that achieved via the use of solar PV.

### Photovoltaic systems

Solar "PV" systems are roof mounted panels with photocells that generate electricity from the Sun's light. A relatively simple technology that is simple to install and offers a financial yield (circa 6-8%) via the Feed in Tariff.

The available third floor pitched roof space could be used for the installation of Solar PV – subject to the appropriate consents – however, given that the appropriate roof area looks over the street scene, consent is very unlikely to be forth coming given the project's location in the Belsize Park conservation area.

**Ground source heating**

Ground source heat pumps extract the heat from the ground (or bodies of water) through collector loops prior to passing through a refrigeration "evaporation/compression" heat exchange cycle which passes the heat into central heating systems.

Although a highly efficient system, its efficiency is derived from the use of low flow/return temperatures in well insulated properties and using the thermal mass via under floor heating systems set in screeded floors. It also requires either, large areas of external space for shallow collector loops, or deep bore thermal "wells" if ground area is limited.

Given the small scale nature of the basement extension and the lack of high level thermal efficiencies, a ground source heat pump cannot be recommended.

## 2.4 Eco Homes & Code for Sustainable Homes Principles

Due to the small scale nature of the development, LDF Policy DP22's requirement for a formal Eco Homes assessment does not apply - indeed, in March 2015, HM Government withdrew the Code for Sustainable Homes and any other technical housing standard; a fact acknowledged within Camden's draft Local Plan (2015).

However, the developer is committed to adopting many of the principles of Eco Homes and the Code for Sustainable Homes in line with the pre-application advice:-

**Materials**

- Newly construction elements will be considered against the BRE Green Guide to ensure that, where practical, the most environmentally friendly construction techniques are deployed.
- Construction materials will be sourced from suppliers capable of demonstrating a culture of responsible sourcing via environmental management certification, such as BES6001
- Insulation materials will be selected that demonstrate the use of blowing agents with a low global warming potential, specifically, a rating of 5 or less. Additionally, all insulants used will demonstrate responsible sourcing of material and key processes.
- The principle contractor will be required to produce a site waste management plan and a sustainable procure plan, in line with BREEAM requirements – this will include a pre-demolition audit to identify demolition/excavation materials to reuse on-site or salvage appropriate materials to enable their reuse or recycling off-site, with a requirement to divert 85% of waste from landfill and comply with the Institute for Civil Engineer's Demolition Protocol.
- The procurement plan will follow the waste hierarchy Reduce; Reuse & Recycle.
- A Site Waste Management Plan (SWMP) will be developed prior to commencement of development stage to inform the adoption of good practice waste minimisation in design. This will set targets to minimise the generation of non-hazardous construction waste using the sustainable procurement plan to avoid over-ordering and to use just-in-time delivery policies.
- The developer will also maximise the use of recycled and secondary aggregates.
- Waste and recycling – the project is to deliver a new and bespoke waste storage area capable to the separation and sorting of several recyclable waste streams ready for collection in line with Camden's collection policies.

**Pollution**

- The contractor will submit a construction management plan. This will include the requirement to monitor the use of energy and water during the construction phase and incorporate best site practices to reduce the potential for air (dust) and ground water pollution.
- The dwelling will use low NOx emission gas boilers, with a minimum NOx rating of 5 and emissions at less than 40mg/Kwh
- The main contractor will be required to register the site with the Considerate Constructors Scheme and achieve a best practice score of 25 or more.

**Energy**

- All the new dwellings will incorporate the energy efficient measures as set out within the main body of this report.

**Water**

- The dwelling will minimise water use as far as practicable by incorporating appropriate water efficiency and water recycling measures. The new extension will benefit from low flow/restricted water use taps, WCs and showers.

## 3.0 CONCLUSIONS/SUMMARY

It is the intention of the Developer to deliver a sustainable development as defined within the policies of Camden Council; the same polices that have informed this report and the recommendations within.

Although the policies did not require the Developer to commit to the principles of the energy hierarchy or any technical housing standards, the Developer has identified opportunities when they are able to do so, and will deliver these principles as part of the development, thereby meeting the minimum sustainability requirements of Camden Council and advancing the development beyond those requirements.