1 Introduction

This sustainability and energy addendum statement has been prepared to outline the sustainability and energy measures that have been incorporated in the proposals for Centre Heights taking account of the requirements set out in London Borough of Camden planning policy, and the additional specifications stipulated by the Local Authorities and the London Plan. The proposals will deliver a highly sustainable development incorporating principles of sustainable design and construction. The addendum has been prepared to respond to comments made following the statutory consultation period, which were set out in an email dated 17th August 2015 from Josleen Chug, the Camden planning case officer. The comments are repeated below:

> *Policy: Follow the hierarchy of energy efficiency, decentralised energy and renewable energy technologies set out in the London Plan (2011) Chapter 5 (particularly Policy 5.2) to secure a minimum 35% reduction in regulated CO2 emissions below the maximum threshold allowed under Part L 2013. GLA guidance on preparing energy assessments and CPG3 should be followed.*
> *Comment: The energy statement presents CO2 reduction calculations for a typical end penthouse apartment. This shows that the target will be met (a 36.1% reduction is proposed), however it is not clear whether an end penthouse apartment will be representative of the whole site.*
> *Action: The applicant should provide clarification on this point to confirm whether the policy target can be met in all housetypes proposed.*
>
> *Policy: CS13 requires all developments to achieve a 20% reduction in CO2 emissions through renewable technologies (the 3rd stage of the energy hierarchy) wherever feasible, and this should be demonstrated through the energy statement.*
> *This target will be exceeded in a typical end penthouse. A 34.7% reduction will be achieved through renewable energy.*
> *Action: As above, the applicant should provide clarification on this point to confirm whether the policy target can be met in all housetypes proposed.*
>
> *Policy: Implement the sustainable design principles as noted in policy DP22 including (but not limited to) measures outlined in the table below.*
> *Comment: It's not clear from the energy and sustainability statement whether the requirements of DP22 will be met.*
> *Action: An addendum to the sustainability statement should be submitted to demonstrate proposed measures in accordance with DP22*
>
> *Policy: Demonstrate that the development is capable of achieving a maximum internal water use of 105 litres per day (plus an additional 5 litres for external water use).*
> *Comment: This will be secured by condition detailed below:*
> *Water efficiency condition: The development hereby approved shall achieve a maximum internal water use of 105litres/person/day, allowing 5 litres/person/day for*

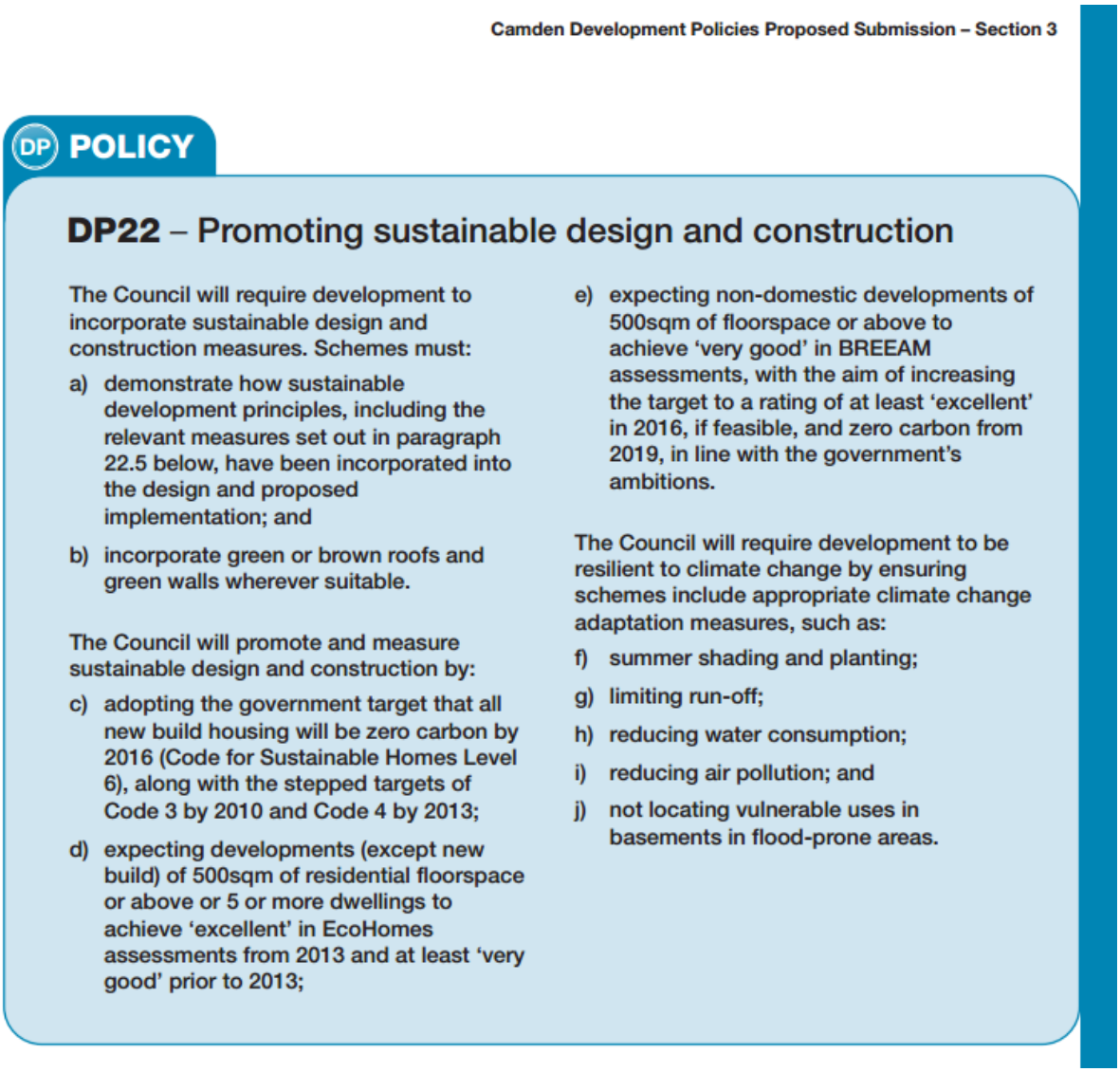
external water use. Prior to occupation, evidence demonstrating that this has been achieved shall be submitted and approved by the Local Planning Authority.

Reason: To ensure the development contributes to minimising the need for further water infrastructure in an area of water stress in accordance with policies CS13 (Tackling climate change through promoting higher environmental standards), DP22 (Promoting sustainable design and construction) and DP23 (Water)

This statement responds to these comments and also should be read alongside the Sustainability and Energy Statement dated May 2015.

2 Planning Policy

The Local Authority states that the scheme must comply with Camden's DP22. "Promoting sustainable design and construction".



Camden Development Policies Proposed Submission – Section 3

DP POLICY

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 set out in paragraph 22.5 below, have been incorporated into the design and proposed implementation; and

b) incorporate green or brown roofs and green walls wherever suitable.

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

c) 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;

d) 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;

e) 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:

f) summer shading and planting;

g) limiting run-off;

h) reducing water consumption;

i) reducing air pollution; and

j) not locating vulnerable uses in basements in flood-prone areas.

Fig 1 | Extract from DP22

The following points have been extracted from the guidance on the aforementioned policy and will be dealt with in turn to show compliance with DP22.

1. Provide clarification that London Plan policy 5.2 target of a minimum 35% reduction in regulated CO2 emissions below the maximum threshold allowed under Part L 2013 can be met in all house types.

2. Provide clarification that CS13 policy target of a 20% reduction in CO2 emissions through renewable technologies (the 3rd stage of the energy hierarchy) wherever feasible can be met in all house types.

3. Demonstrate proposed sustainability measures in accordance with policy DP22 being:
   - Incorporate green or brown roofs
   - Climate change adaption – summer shading and planting
   - Limiting run-off
   - Reducing water consumption
   - Reducing air pollution
   - Design – layout of uses
   - Floorplates size/depth
   - Floor to ceiling heights
   - Location, size and depth of windows
   - Limiting excessive solar gain
   - Reducing the need for artificial light
   - Shading methods on and around the building
   - Optimising natural ventilation
   - Design for and inclusion of renewable energy technology
   - Impact on existing renewable and low carbon technologies in the area
   - SuDs and green / brown roof
   - Adequate storage for recyclable material
   - Bicycle storage
   - Impact on microclimate
   - Fabric / services – level of insulation
   - Choice of materials – responsible sourcing, re-use, recycled content
   - Air tightness
   - Efficient heating, cooling and lighting systems
   - Effective building management system
   - Source of energy used
   - Counteracting the heat expelled from plant equipment
   - Enhancement / provision for biodiversity
   - Efficient water use / re-use of water
   - On-going management and review

The applicants response is provided in red in the following sections.

3 Statements - Energy

1. *Provide clarification that London Plan policy 5.2 target of a minimum 35% reduction in regulated CO2 emissions below the maximum threshold allowed under Part L 2013 can be met in all house types.*

   Officers also commented that: 'The energy statement presents CO2 reduction calculations for a typical end penthouse apartment. This shows that the target will be met (a 36.1% reduction is proposed), however it is not clear whether an end penthouse apartment will be representative of the whole site.' Camden Planning

   For the penthouses the north, and south facing dwellings have been modelled due to the variation in solar gains they receive. A mid block penthouse has also been modelled, which then coverers the full range of penthouse dwelling types.

   For the mews, the worst performing apartment has been modelled and used as an area average across the whole block. The result will be representative of the range of apartment types with a small margin of error over, which will likely be used as the project develops.

   Given that worst case examples have been modelled the 36.1% target is representative of the whole site.

2. Provide clarification that CS13 policy target of a 20% reduction in CO2 emissions through renewable technologies (the 3rd stage of the energy hierarchy) wherever feasible can be met in all house types.

   The development will achieve a 20% reduction in CO2 through renewable with this reduction spread equally across the dwelling types. Due to the layout of some of the mews houses there may be a slight rebalancing of renewable due to the layout of the flats but on aggregate the 20% target will be achieved for the development which is what the aim of CS13 is. Note that the new London Plan calls from a 35% reduction of DER/TER and has removed the renewable requirement. The reduction will be achieved but as described there will be a shifting of panels through the site (due to technical and shading reasons) to make the installation feasible.

4 Statements - Sustainability

3. Demonstrate proposed sustainability measures in accordance with policy DP22 being:

    - Incorporate green or brown roofs

Brown and green roofs have been incorporated into the scheme to reduce surface run off. For details on sedum / biodiverse roofs please refer to the Design and Access Statement Addendum and drawing 3073_L_010. Note that the proposed PV installation is compatible and beneficial to the use of green roofs.

    - Climate change adaption – summer shading and planting

Penthouses:

The new units at levels 11, 12, 13 have a dual aspect orientation east / west. The east elevation comprises floor-ceiling glazed panels and glazed spandrel panels, set back at the lower level. The west elevation comprises a glazed corridor at the lower level, in keeping with the existing glazed corridors beneath and a combination of glazed panels within solid walls at the upper level; the glazed elements are set back from the façade line so the spaces behind benefit from some horizontal shading created by the roof overhang. The glazed panels on the west elevation will comprise double glazed units with solar control glass. The lanterns at the upper level will be glazed, comprising double glazed units with solar control glass and will incorporate some glazed spandrel panels.

Mews:

The courtyard design of the mews will generate an inherent element of shading within the massing that has been created.

Glazing in the 2 storey block is predominantly located on the east elevation, with small openings on the west elevation to assist in bringing daylight into the centre of the units. Glazing in the 3 storey block is located on the north and south elevations; glazing at the ground floor is likely to benefit from some shading generated by the 2 storey block; at the 1st floor a balcony has been provided on the south facing elevation to the living space, pushing the glazing line inside the building, which therefore benefits from shading generated by the overhanging 2nd floor. Small openings have been provided on the south elevation, limiting the extent of south facing glazing at this level. Equally, the lower levels of the 4 storey block will benefit from some shading generated by the 2 storey block, with smaller openings provided on the west elevation; the overhanging balconies will provide shading to the glazed elements in living spaces beneath. The glazing to the mews will comprise double glazed units with solar control glass as required.

Details of planting are set out in the Design and Access Statement, and a detailed landscaping scheme will be developed at the detailed design stage.

- Limiting run-off

  Green and brown roofs have been included in the scheme to limit surface runoff. The SuDS design proposed will have silt interception. Fuel and oil interception is not proposed due to the removal of the car park and the inclusion of other SuDS measures on site.

  An attenuation tank is proposed – the volume is to be agreed with Thames Water at the detailed design stage.

- Reducing water consumption

  A Water calculation was provided with the Sustainability and Energy Statement (May 2015). The scheme shall comply with the requirements of DP22 with respect to water consumption.

  The Council have commented that a planning conditions should be attached requiring: The development hereby approved shall achieve a maximum internal water use of 105litres/person/day, allowing 5 litres/person/day for external water use. Prior to occupation, evidence demonstrating that this has been achieved shall be submitted and approved by the Local Planning Authority.

  Concern is raised over the reasonableness of planning condition, in that it requires evidence that the water efficiency level has been achieved. This could unnecessarily delay occupation. It would be more reasonable to secure the water efficiency level by planning condition as a compliance condition. The developer would therefore have to comply with this.

- Reducing air pollution

  An Air Quality Assessment has been undertaken by Phlorum and this was submitted with the Planning Application in May 2015. The Assessment considered current air quality at the site and the potential exposure of new sensitive receptors to existing sources of air pollution. Site-specific background UK-AIR and monitoring results from the wider area suggest that air quality in the vicinity, and particularly close to busy roads, can be very poor. However background concentrations at the Application Site are likely to be below the relevant UK Air Quality Standards.

  The Proposed Development is car free and is not expected to result in significant changes to the pattern of vehicle movements on local roads and it is therefore not expected to have a significant impact on any existing receptors. Air quality at the façades of proposed new dwellings is also expected to be acceptable.

  During construction, and with the adoption of appropriate mitigation measures, dust emissions are unlikely to cause any significant off- or on-site effects. A detailed Construction Management Plan will be prepared and agreed with the Council prior to the

commencement of works on each phase of the development and this will give full consideration to dust impact and mitigation.

Considering the above, the Air Quality Assessment concludes that the proposed development has been determined to be acceptable in terms of its impact on, and sensitivity to, local air quality. The Proposed Development is expected to comply with all relevant air quality policy.

- Design – layout of uses

  The upward extension will create 5 additional residential units on top of the existing 10 storey building.

  The mews development will replace an existing car-park, thus making sustainable use of a brownfield site and limiting opportunities for car travel from the existing and new residential units on the site. A south facing aspect has been proposed to maximise daylight and sunlight and reduce the need for artificial lighting.

  A retail extension will be cantilevered over the existing shared courtyard to provide additional retail accommodation, again making efficient use of this highly accessible site.

- Floorplates size/depth provided by the Architect
  The depth of floor plates of the upward extension replicate the depth of floor plates of the existing residential units beneath.

  The depth of floor plates for the mews units have been kept slim in order to maximise the width of the mews courtyard and therefore maximise opportunities for privacy and minimise concerns with overlooking, and maximise opportunities for natural light penetration.

- Floor to ceiling heights provided by the Architect
  Proposed floor to ceiling heights for the upward extension are 2.6m and for the mews are 2.4m.

- Location, size and depth of windows provided by the Architect
  Please refer to points raised under Climate change adaption – summer shading and planting above.

- Limiting excessive solar gain

  The scheme has been designed to limit solar gains in line with the guidance in DP22 where feasible. Please refer to Architectural comments below.

- Reducing the need for artificial light provided by the Architect
  The architect has worked closely with the daylight / sunlight engineers to ensure the daylight / sunlight levels are compliant with requirements. All units are dual aspect. Extents of glazing have been optimised on east facing elevations to maximise daylight opportunities in the upward extension and the 2 storey element of the mews. Dwellings at the upper levels incorporate roof lights / lanterns to bring daylight into the centre of these units.

- Shading methods on and around the building provided by the Architect
  Please refer to points raised under Climate change adaption – summer shading and planting, above.

- Optimising natural ventilation.

  The scheme has been designed to utilise natural ventilation. Background ventilation for building regulations purposes is provided by a continuous mechanical extract system. The scheme relies upon natural ventilation for the rest of the developments ventilation requirements. Purge ventilation is to be supplies by opening windows. Mechanical ventilation with heat recovery is not proposed for this scheme due to the increased risk of overheating it would cause the development.

- Design for and inclusion of renewable energy technology

  The scheme has been designed in line with the requirements of DP22. Please refer to Sustainability and Energy Statement (May 2015).

- Impact on existing renewable and low carbon technologies in the area

  The scheme has been designed to comply with the requirements of DP22 and will not adversely affect existing renewable and LZC technologies in the local area. Please refer to Sustainability and Energy Statement (May 2015).

- SuDs and green / brown roof

  SuDS and green/brown roofs are included within the scheme. The final details of the SuDS design are to be finalised after discussion with Thames Water during the detailed design stage.

- Adequate storage for recyclable material
  Adequate storage has been provided for recyclable material within the proposals. Please refer to Design and Access Statement.

- Bicycle storage
  Adaquate bicycle storage has been provided. Please refer to Design and Access Statement, Drawing 3073_L_400 and the Transport Statement.
- Impact on microclimate

  The developments plant will not cause any excessive dumping of heat to the local environment. The provision of brown/green roofs and the landscaping in the mews development will provide a cooling effect on the mircoclimate when compared with the site as it currently stands. There is unlikely to be significant impact on wind microclimate arising from the proposals, as they do not seek to significantly increase the height of the existing building, and the mews development is of a lower scale.

- Fabric / services – level of insulation

  The scheme complies with the requirements of DP22. Please refer to Sustainability and Energy Statement (May 2015).

- Choice of materials – responsible sourcing, re-use, recycled content

Wherever possible the final specification of materials will made with responsible sourcing, re-use and recycled content in mind.

- Air tightness

  Please refer to Sustainability and Energy Statement (May 2015). The scheme complies with the requirements of DP22.

- Efficient heating, cooling and lighting systems

  The scheme complies with the requirements of DP22 as detailed in the previously submitted energy strategy.

- Effective building management system
  Not applicable to a scheme of this nature.

- Source of energy used

  The scheme complies with the requirements of DP22. Please refer to Sustainability and Energy Statement (May 2015).

- Counteracting the heat expelled from plant equipment

  The building plant equipment has been designed not to expel heat to the surrounding area. The nature of air source heat pumps means that they will exert a slight cooling effect on the surrounding area.

- Enhancement / provision for biodiversity
- For details on planting and biodiversity, please refer to Design and Access Statement, the Design and Access Statement Addendum and drawing 3073_L_010.

- Efficient water use / re-use of water

  The scheme complies with the requirements of DP22. Refer to the water consumption calculator submitted in the Sustainability and Energy Statement (May 2015).

- On-going management and review

  The sustainability features installed as part of the development will be managed and reviewed.1