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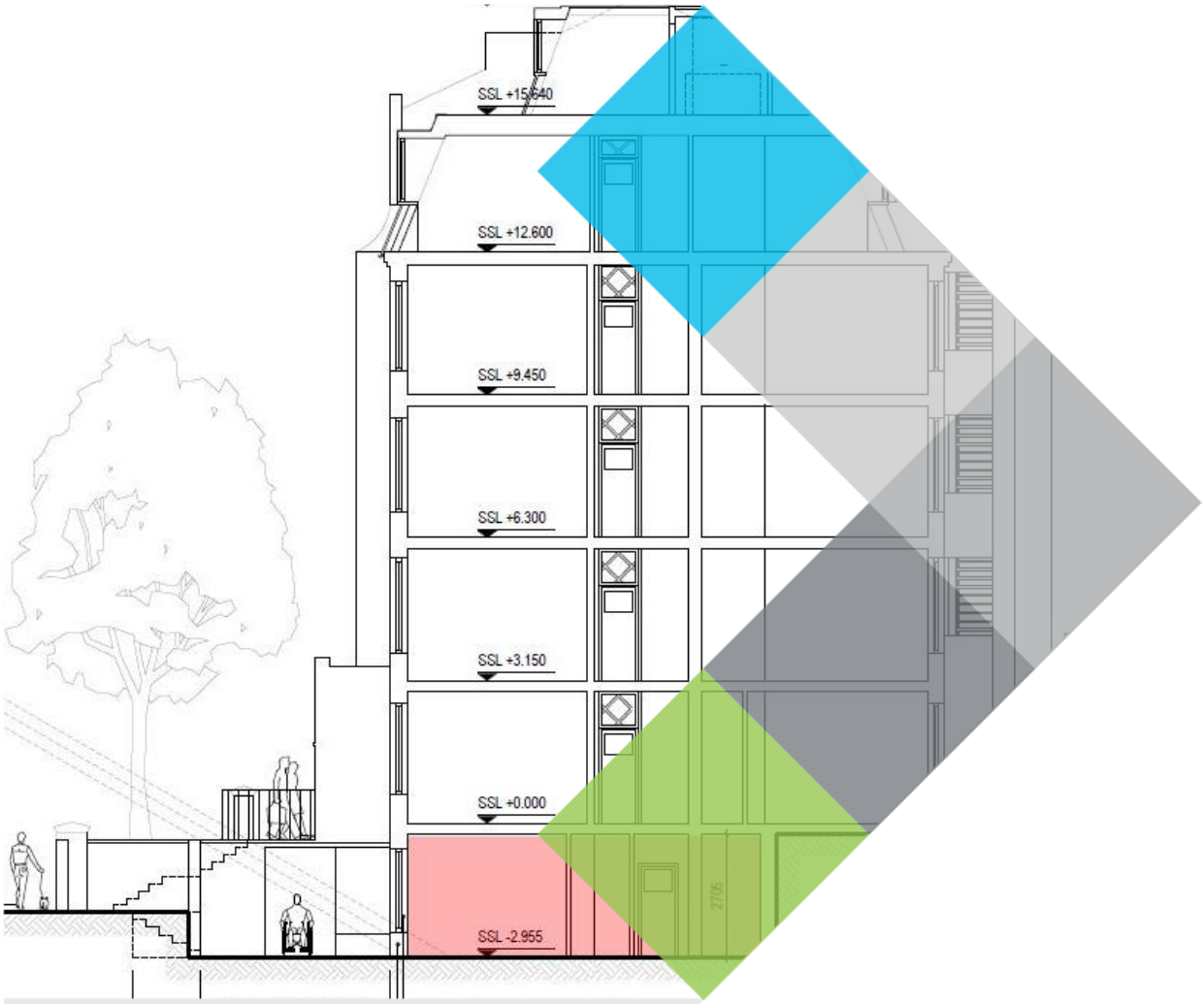

Internal Daylight Report

Ornan Court Limited

Ornan Court

Final with Updates

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ABOUT HODKINSON CONSULTANCY

Our team of technical specialists offer advanced levels of expertise and experience to our clients. We have a wide experience of the construction and development industry and tailor teams to suit each individual project.

We are able to advise at all stages of projects from planning applications to handover.

Our emphasis is to provide innovative and cost effective solutions that respond to increasing demands for quality and construction efficiency.

Executive Summary

This updated Internal Daylight Report has been produced by Hodkinson Consultancy to accompany the planning application for the proposed development at Ornan Court in the London Borough of Camden.

This report has been prepared to assess the internal daylight amenity of the basement dwellings in the proposed development in line with the second edition of the BRE Report (2011) 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', British Standards BS8206-02:2008 and Camden Planning Policy. The BRE guidance states that it is intended for building designers and their clients, consultants and planning officials. The guidance is not mandatory and stipulates within it that is should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer.

Although the BRE and British Standard guidance give numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design.

Therefore, failure to achieve the stated target numerical factors does not necessarily mean that the development is unsuitable or that planning permission should be refused.

The assessment of interior daylight levels has found the following:

> With the current proposed internal layouts, all habitable rooms achieve an ADF result which exceeds the guideline level set out in BRE and British Standard guidance.

> Therefore it is concluded that the proposed design for the Ornan Court basement apartments will experience adequate natural internal daylight conditions.

Contents

1. INTRODUCTION

1.1 This report has been prepared to support the planning application for the basement apartments within Ornan Court, Ornan Road in the London Borough of Camden.

1.2 The report uses an Average Daylight Factor (ADF) assessment to ascertain the internal daylight levels of the proposed new dwellings.

1.3 As an existing block, the anticipated ADF has been tested in the internal assessment only, as there will be no change to daylight experienced by surrounding development.

2. POLICY & GUIDANCE

London Borough of Camden

2.1 The London Borough of Camden Local Development Framework (LDF) Development Policies (2010 – 2025) **Policy DP26** states that the Council will consider sunlight, daylight and artificial light levels in the granting of planning permission.

2.2 **Camden Planning Guidance Note 6 (CPG6): Amenity**, section 6 provides greater detail on the assessment of daylight issues for planning. These are explained in the Methodology below.

Building Research Establishment (BRE)

2.3 The **Building Research Establishment** (BRE) has set out in their handbook **'Site Layout Planning for Daylight and Sunlight a Guide to Good Practice (2011)'** guidelines and methodology for the measurement and assessment of daylight and sunlight within buildings. This document states that it is also intended to be used in conjunction with the interior daylight recommendations found within the British Standard BS8206-2:2008.

2.4 The document is intended as a guide with a stated aim to 'help rather than constrain the design'. It is predominantly focussed on residential development but the guidance can be used to assess commercial development in order to establish worst case scenarios or where a non-domestic building has a reasonable expectation of daylight levels similar to that required by a residential use. Failure to achieve the stated target numerical factors does not necessarily mean that the development is unsuitable or that planning permission should be refused.

2.5 This document has therefore followed the guidance as described in the following reports:

> **P J Littlefair, (2011) Site Layout planning for daylight and sunlight: a guide to good practice, Second Edition, Building Research Establishment Report 209;**

> **British Standard, BS8206-02:2008 Lighting for Buildings – Part 2 Code of Practice for Daylighting, British Standards Institution.**

3. METHODOLOGY

3.1 This report has assessed the following in respect of the proposed development:

> **Daylight Availability: Proposed Development** – This assesses the level of daylight received by the new dwellings within the proposed development.

3.2 The assessment method and the calculations applied in accordance with the relevant guidance, is detailed below.

Daylight Availability: Proposed Development

3.3 An assessment of daylight into residential rooms within the proposed development has been carried out. This is to ensure that future residents will benefit from the well-being of adequately lit rooms.

3.4 The BRE guidance states that daylight provision in new rooms may be checked using the average daylight factor (ADF). The ADF is a measure of the overall amount of daylight in a space.

3.5 The BRE guidance sets out detailed tests that assess the interior daylight conditions of rooms; this includes the calculation of the ADF. The ADF is derived from British Standards BS 8206-2:2008. The ADF takes into account the angle of visible sky reaching the window, and takes the following factors into account:

> Window size;

> The number of windows available to the room;

> Room size;

> Use and layout;

3.6 BS 8206-2:2008 recommends a minimum ADF of 2% for kitchens, 1.5% for living and dining rooms and 1% for bedrooms.

3.7 The **BRE** define ADF as *'the average illuminance on the working plane in a room, divided by the illuminance on an unobstructed surface outdoors. The CIE standard overcast sky is used, and the ration usually expressed as a percentage'*.

3.8 **London Borough of Camden - CPG6, Amenity** defines ADF as:

'Average Daylight Factor is a measure of the level daylight in a room. It can be used to establish whether a room will have a predominantly daylight appearance. It provides light levels below which a room should not fall even if electric lighting is provided'

Section 6.12 states if a predominantly daylit appearance is required, then the daylight factor should be 5% or more if there is no supplementary electric lighting, or 2% or more if supplementary electric lighting is provided. […] as a minimum for dwellings the figures should be 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

The Council recognises that not all of the guidance contained within the BRE document, particularly orientation, can be adhered to in all developments due to the dense and constrained urban nature of Camden.'

3.9 Design Builder software was utilised to assess the ADF within each room. A model of the development proposals was constructed, which allows the ADF contours to be mapped and then visualised, as well as a room average to be presented.

Software: Design Builder

3.10 Design Builder is a detailed 3D modelling simulation tool which can be used to predict daylight and electric light levels. Using the software, Average Daylight Factors can be calculated for the proposed development.

3.11 Details provided by the architect have been used to inform the model inputted into the software from which calculations relating to daylight can be produced.

Site Information and Sources of Data

3.12 The site is located on Ornan Road, adjacent to Haverstock Hill. The development layout is shown in Figure 1, with the development cross-section shown in Figure 2.

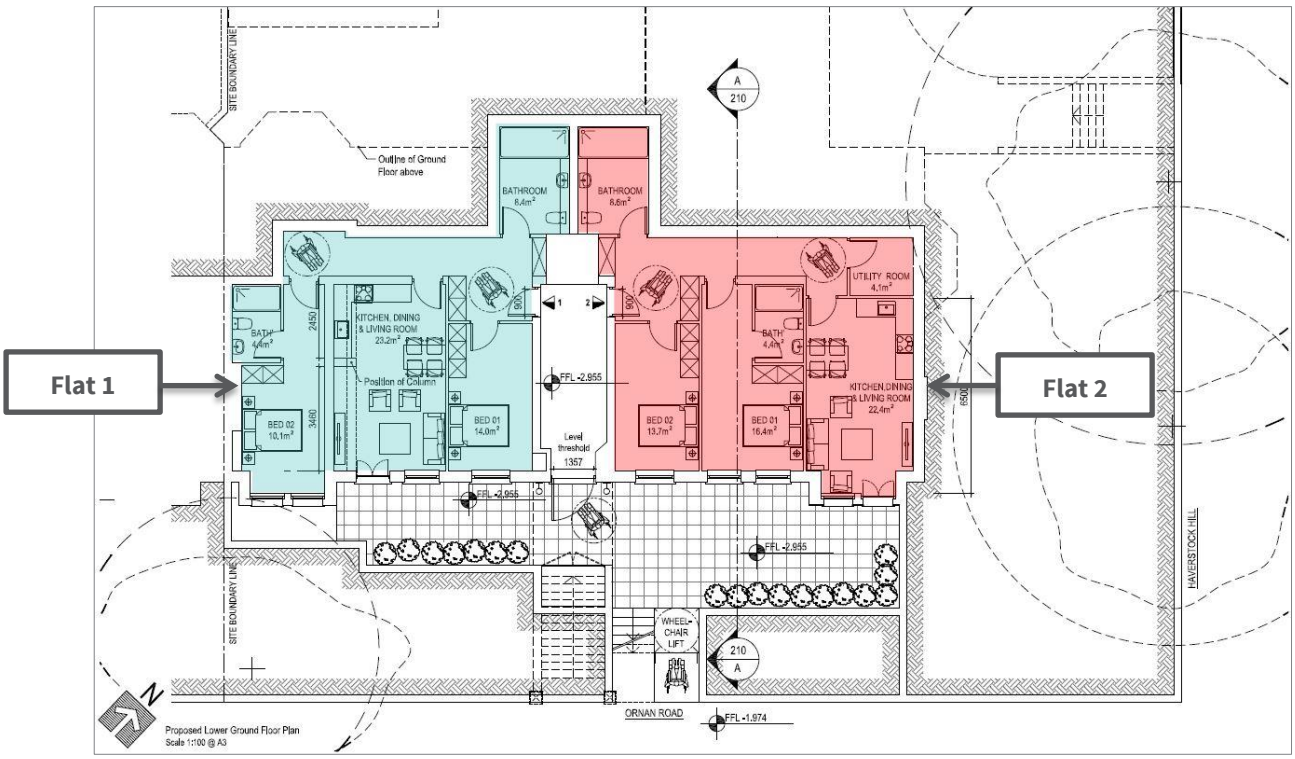

Figure 1: Plan drawing of the basement apartments

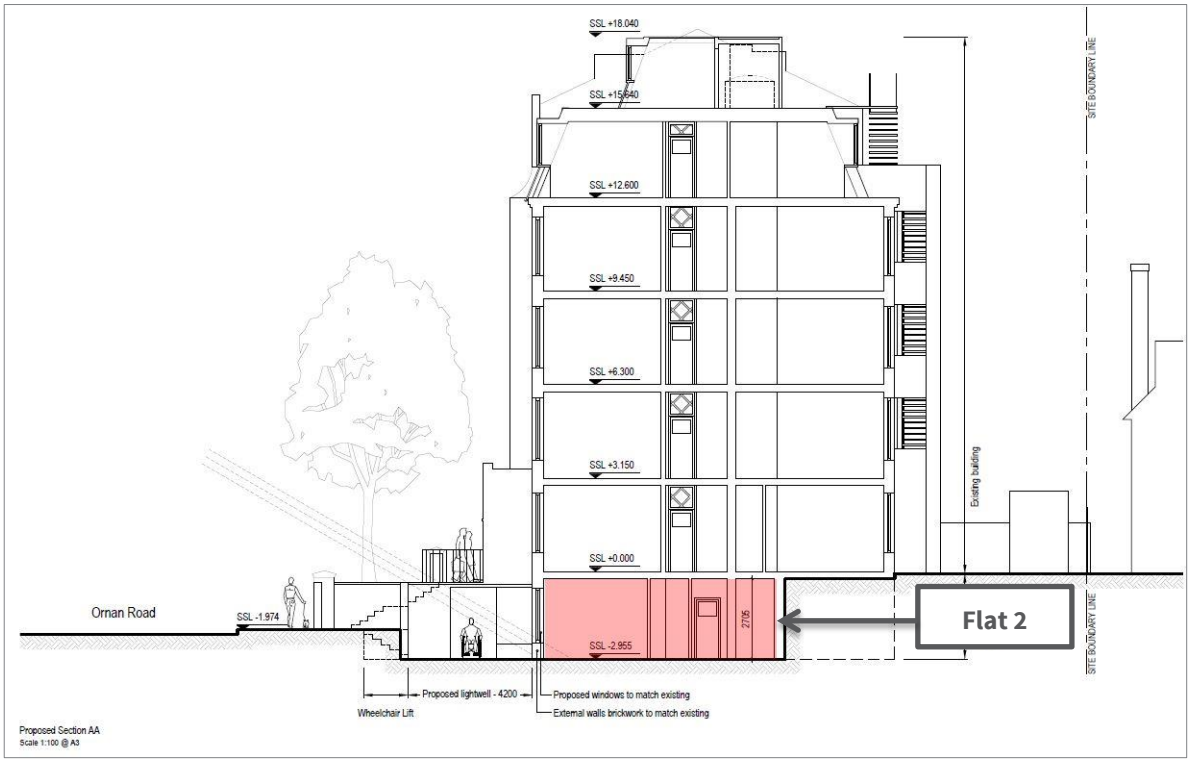

Figure 2: Section drawing of the proposed development

3.13 The analysis of the ADF has been assessed using the following data sources:

> Location plan

> Proposed site plan

> Elevations

> Floor plans

4. INTERNAL DAYLIGHT: PROPOSED DEVELOPMENT

Average Daylight Factor

4.1 An assessment of the daylight received by rooms within the proposed development has been carried out using the Average Daylight Factor (ADF). This is to ensure that future residents will benefit from the well-being of adequately lit rooms where possible.

4.2 The internal layout of the apartments was modelled, along with the overshadowing walls surrounding the light-wells (Figure 3). The values for the reflectance of the internal walls, floor and ceiling, along with the glazing light transmittance have been specified according to information received from the architect.

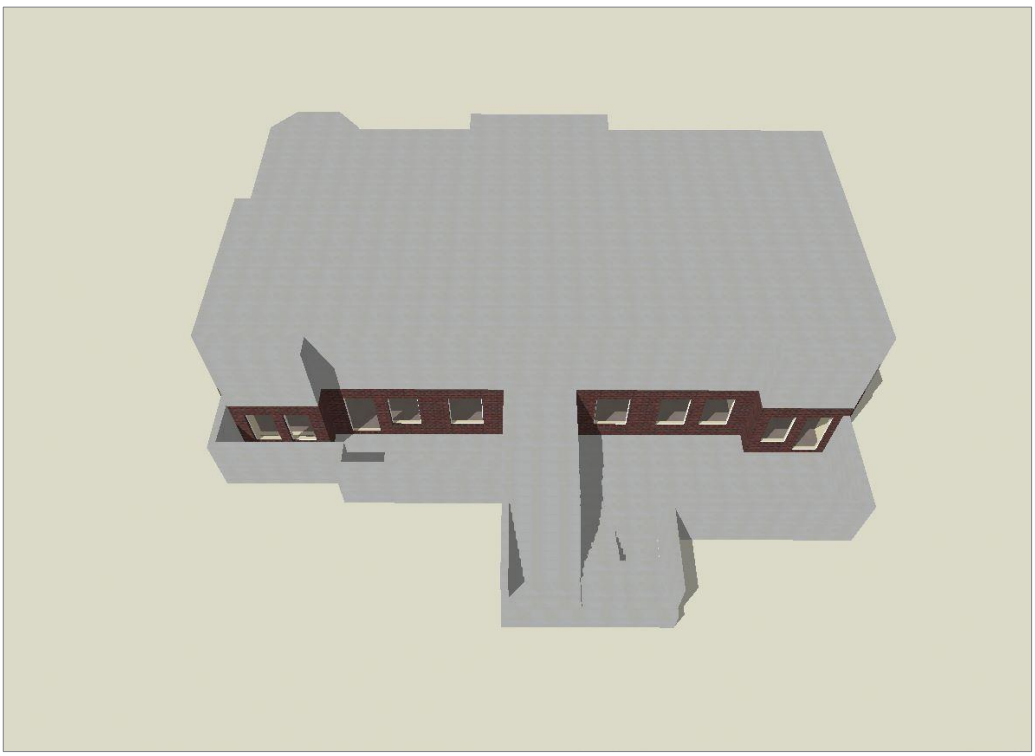

Figure 3: The model constructed in Design Builder software

4.3 Internal surface reflectance values of 0.7, 0.85 and 0.22 have been specified in the Design Builder model for the internal walls, ceiling and floor respectively, meaning that walls and ceilings should be painted white and a generally light colour floor finishing should be used to achieve the stated ADF results. Typical double glazed windows with a light transmittance of 0.75 have been used for the openings.

4.4 The results of the ADF tests for the two flats tested are displayed within Table 1.

Average Daylight Factor Results

4.5 All habitable rooms were assessed, including bedrooms and open plan living and kitchen areas.

4.6 Table 1 below shows the ADF results generated by the Design Builder software in respect of the proposed development.

Table 1: Average Daylight Factor - Proposed Development			
Assessed Dwellings			
Flat 1	**Actual ADF %**	**Target ADF %**	**Pass or Fail**
Living Room - Kitchen	2.47	2.00	PASS
Bedroom 1	2.50	1.00	PASS
Bedroom 2	1.54	1.00	PASS
Flat 2	**Actual ADF %**	**Target ADF %**	**Pass or Fail**
Living Room - Kitchen	2.22	2.00	PASS
Bedroom 1	4.34	1.00	PASS
Bedroom 2	2.90	1.00	PASS

4.7 Figure 4 presents the ADF results graphically and shows the daylight contours.

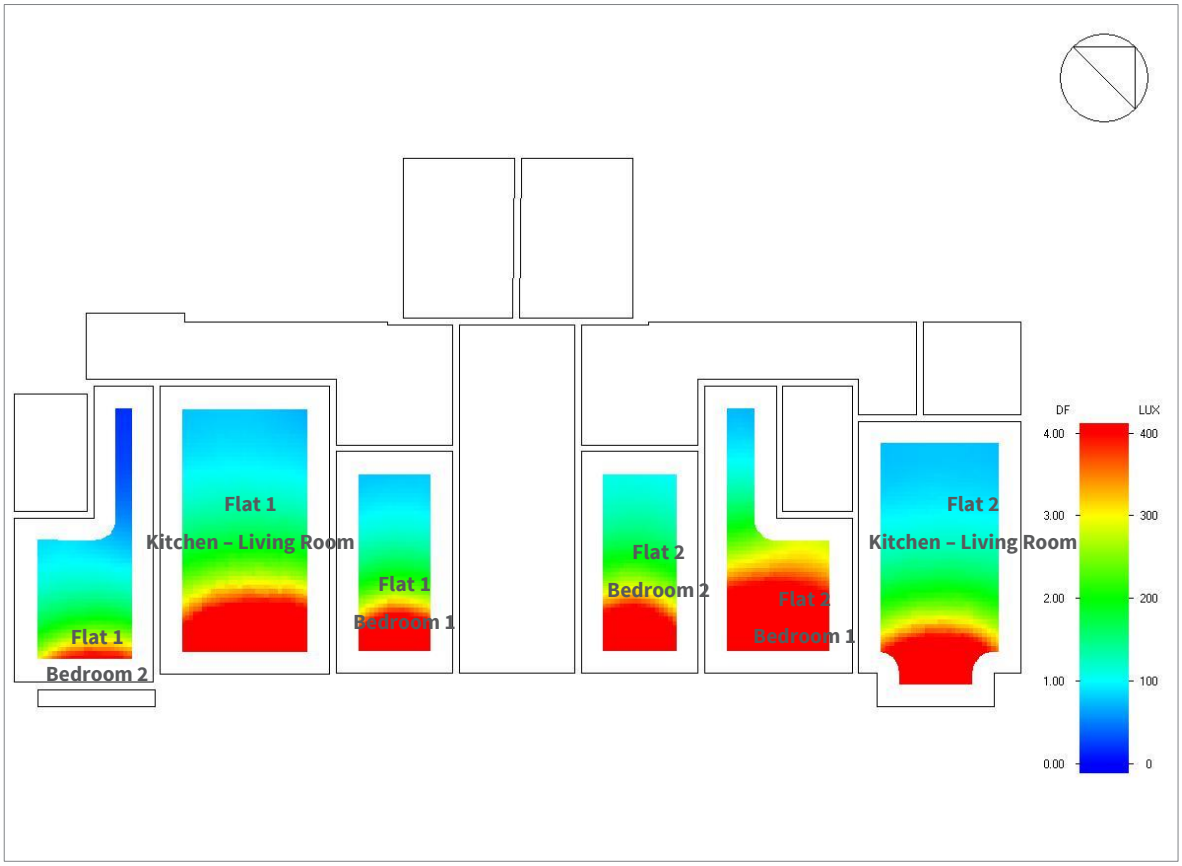

Figure 4: Daylight Contours in the proposed development

Summary and Discussion of ADF Results

4.8 The ADFs were calculated for the two basement apartments. All habitable rooms were assessed, including bedrooms and open plan living and kitchen areas.

4.9 The BRE guidance and British Standards (BS 8206-2) recommends a minimum ADF of 2% for kitchens, 1.5% for living rooms and 1% for bedrooms. As the tested units have open plan kitchen/living rooms, for the purpose of this report a target ADF of 2% has been set for these rooms.

4.10 The site, as with the majority of common basement developments in London, is constrained by its very nature. For this reason, all habitable rooms of the proposed flats were positioned at the front of the building in order for them to achieve the maximum possible amount of daylight.

4.11 This analysis shows that all habitable rooms in both apartments receive sufficient levels of daylight as the ADFs exceed the recommended 1% as suggested in the BRE and British Standard guidance for bedrooms and the suggested target of 2% for the open plan Living Room – Kitchen spaces.

5. CONCLUSION

5.1 This updated Internal Daylight Report has been produced by Hodkinson Consultancy to accompany the planning application for the proposed development at Ornan Court in the London Borough of Camden.

5.2 This report has been prepared to assess the internal daylight amenity of the basement dwellings in the proposed development in line with the second edition of the BRE Report (2011) 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice', British Standards BS8206-02:2008 and Camden Planning Policy. The BRE guidance states that it is intended for building designers and their clients, consultants and planning officials. The guidance is not mandatory and stipulates within it that is should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer.

5.3 Although the BRE and British Standard guidance give numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design.

5.4 Therefore, failure to achieve the stated target numerical factors does not necessarily mean that the development is unsuitable or that planning permission should be refused.

5.5 The assessment of interior daylight levels has found the following:

> With the current proposed internal layouts, all habitable rooms achieve an ADF result which exceeds the guideline level set out in BRE and British Standard guidance.

> Therefore it is concluded that the proposed design for the Ornan Court basement apartments will experience adequate natural internal daylight conditions.

6. GLOSSARY

6.1 The following terms are referenced throughout the report. They are described below as stated in the BRE guidance:

> **Average Daylight Factor (ADF)**: Ratio of total daylight flux incident on the working plane to the area of the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky. Thus a 1%ADF would mean that the average indoor illuminance would be one hundredth the outdoor unobstructed illuminance.

> **Daylight**: Combined skylight and sunlight.

> **Working Plane**: Horizontal, vertical or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 0.85m above the floor in houses and factories, 0.7m above the floor in offices.