



JUSTIN BOLTON • BARRY HOOD
• ANDREW CARTMELL • CHRIS SKELT •
NICK LANE • LIAM DUNFORD

POINT 2 SURVEYORS LTD
17 SLINGSBY PLACE, LONDON WC2E 9AB

TEL: 0207 836 5828

ROYAL HEIGHTS,

READING

Scheme Internal Daylight Report

Overshadowing

• *Daylight & Sunlight* • *Light Pollution* •

Solar Glare • *Daylight Design*

DIRECTOR:	LIAM DUNFORD
CLIENT:	ALLIES
DATE:	MAY 2018
VERSION:	DRAFT
PROJECT:	P1624

Contents

1	Introduction	3
2	Methodology	3
3	Sources of Information	4
4	The Proposed Scheme	5
5	Internal Daylight and Sunlight Study	5
6	Conclusion	6

Appendices

Appendix A – Proposed Scheme 3D Model

Appendix B – Internal Daylight Studies

1 Introduction

- 1.1 This report considers the internal daylight amenity of the proposed development of Royal Heights, Reading. The site is located in the borough of Reading.
- 1.2 The Local Authority will be informed in this by the BRE document entitled *Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice 2011* (the BRE guidelines). This document is the principal guidance in this area and sets out the methodology for measuring light and recommends what it considers to be permitted or unobtrusive levels of change.
- 1.3 The BRE guidelines are not mandatory, though local planning authorities and planning inspectors will consider the suitability of a proposed scheme for a site within the context of BRE guidance. Consideration will be given to the urban context within which a scheme is located and the internal daylight amenity will be one of a number of planning considerations which the local authority will weigh.

2 Methodology

Internal Daylight Amenity

- 2.1 **Average Daylight Factor** - In assessing the daylight to the main habitable spaces within the proposed accommodation, as recommended by the guidelines, we have calculated the ADF. With reference to BS8206 Part 2:2008 and Appendix C of the BRE Report, in calculating the values, we have assumed light internal finishes giving the following reflectances: floors 0.4 (light wood or cream carpet), ceilings 0.85 (white paint), internal walls 0.81 (pale cream paint). We have assumed double glazing with a transmittance of 0.68, and have allowed for a maintenance factor of 8% (appropriate for urban residential properties).
- 2.2 This daylight assessment method considers the transmittance of the glazing to the room in question (i.e. how much light gets through the window glass); the net glazed area of the window in question; the total area of the room surfaces (ceiling, walls, floor and windows) and their reflectances; and the angle of visible sky reaching the window/windows in question.
- 2.3 The BRE guidelines / British Standard sets the following recommended ADF levels for habitable room uses:
 - 1% Bedroom
 - 1.5% Living Room
 - 2.0% Kitchens
- 2.4 With regard to the combined Living/Kitchen/Dining Rooms (LKDs), strictly the presence of a kitchen means that the target ADF value is 2%. However, as is common in modern residential developments, the kitchen areas are located to the rear of these spaces, furthest from the windows. As such they will receive lower levels of daylight and the ADF target of 1.5% for a living room, which is the principal use, is considered appropriate for these combined spaces.

Internal Sunlight Amenity

- 2.5 **Annual Probable Sunlight Hours (APSH)** - In relation to sunlight, the BRE recommends that the APSH received at a given window in the proposed case should be at least 25% of the total available, including at least 5% in winter.

- 2.6 The BRE guidelines state that *'...all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90 degrees of due south. Kitchens and bedrooms are less important, although care should be taken not to block out too much sun'*.

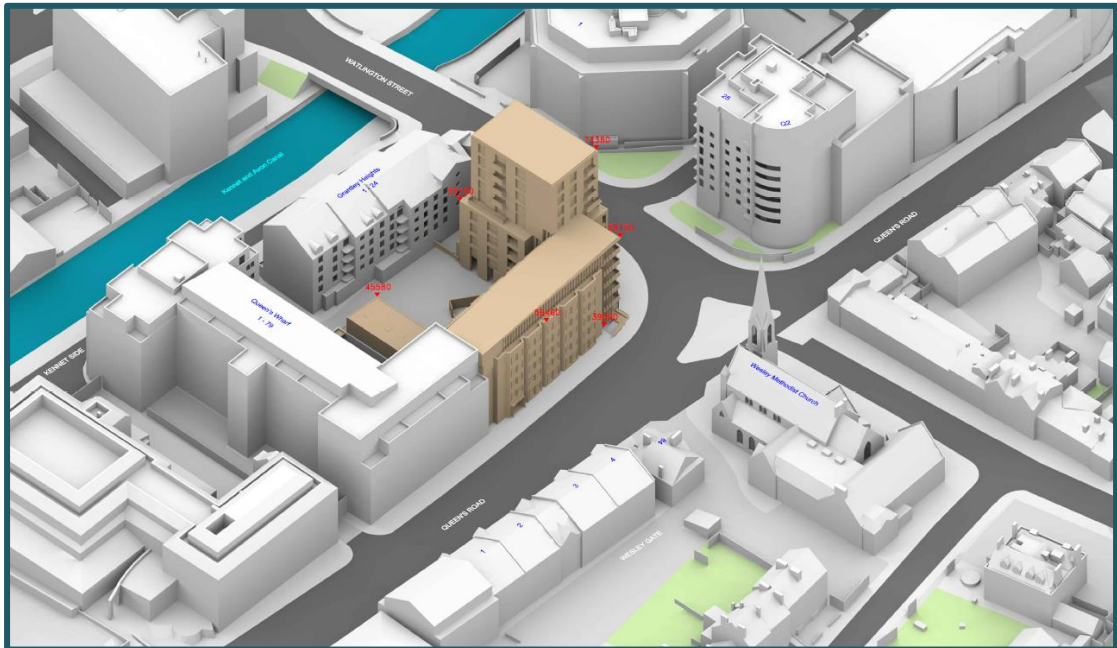
The APSH figures are calculated for each window, and where a room is served by more than one window the contribution of each is accounted for in the overall figures for the room. The acceptability criteria are applied to overall room based figures.

- 2.7 It is important to remember that the BRE Guide states that 'the advice given here is not mandatory and should not be seen as an instrument of planning policy'. Furthermore, daylight criteria should be *'interpreted flexibly because natural lighting is only one of many factors'*. Based upon these statements it is important to apply the guidance and target levels sensibly and flexibly taking into account the context of the site and that there is a conversion of an existing building.

3 Sources of Information

Point 2 Surveyors	-	Site Photography
Zmapping Ltd	-	3D Context Model Royal heights_281217_Solids.dwg
Emre Arolat Architecture	-	Proposed 3D Model (received 04/05/18) Massing model_39.skp Proposed 2D Plans (received 14/05/18) 220-2-22-01_Proposed Ground Floor Plan.dwg 220-2-22-02_Proposed 1st Floor Plan.dwg

4 The Proposed Scheme



Drawing Reference: P1624/27 – 3D View – Proposed Scheme

- 4.1 Our understanding of the proposed scheme is illustrated in drawings P1624/26-28 and can be located within Appendix A.

5 Internal Daylight Study

- 5.1 Full and detailed analysis annotated upon floor layout plans (P1624/INT/05-06) are provided within Appendix B to show both the locations and configuration of the rooms which have been analysed.
- 5.2 70 rooms have been analysed to establish the ADF levels within. This represents all of the habitable ground and first floor rooms within the Proposed Development. Since these are the lowest residential floors, the analysis results represent a worst case scenario. Daylight amenity will generally improve the higher within the building a residential room is located since the windows serving the rooms will, generally, have a greater view of the sky.
- 5.3 67 of the 70 rooms (96%) assessed meet the required ADF value considered appropriate for the rooms' usage with many of the rooms achieving above the required minimums. Of the 3 rooms which do not reach the recommended ADF, there are 2 bedrooms (Room References R4/2020 and R12/2011) and one living/kitchen/diner (Room reference: R2/2000).
- 5.4 The LKD unit is located in the north-west corner of the converted existing building. The unit achieves a 1.4% ADF which marginally departs from the 1.5% target value. We consider this minor derogation to be acceptable having regard to natural constraints posed by a conversion of the existing building. In reality, this level of internal daylight is commensurate with typical urban, city centre residential properties.

- 5.5 In relation to the bedrooms, room R4/2020 is situated at ground floor level in the southern-most part of the proposed Mews block. The bedroom achieves an ADF of 0.8% which is marginally below the 1% target. Notably the bedroom floor plate has a large, c.15sqm floor plate. The ADF could be achieved by reducing the floor plate, but in reality a larger bedroom achieving this level of ADF is likely more desirable than a smaller unit. Under the circumstances we consider the daylight received by this room to be acceptable.
- 5.6 The remaining bedroom R12/2011 is positioned at first floor level in the south-west corner of the new block. The room achieves a 0.6% ADF against the 1% target value. When designing the layouts for this building, it was inevitable that a room would need to be positioned within a more constrained location. As daylight to bedrooms is considered less important, it was more appropriate to position this type of room in this location to ensure that all primary living areas receive good levels of internal daylight. Under the circumstance we consider this anomalous result to be acceptable on the overall planning balance.

6 Conclusion

- 6.1 Section 5 above, and the appended drawings to this report (P1624/INT/05 & 06) show that the scheme demonstrates a good level of compliance with BRE Guidance in terms of internal daylight amenity with over 96% of the rooms meeting the desired ADF target value.
- 6.2 The small percentage of rooms not meeting their target value do so because they are situated in more constrained elements of the site, which is common with developments offering this number of residential units. It should also be borne that this 96% compliance is based upon the lowest two floors and, if we assessed all habitable rooms within the scheme an even greater proportion of rooms would be seen to show BRE compliance.
- 6.3 The scheme has been designed well to allow good levels of daylight to penetrate into the proposed units and distribute throughout the rooms efficiently – especially in consideration of the it being located in an urban area.
- 6.4 We fully support this scheme in terms of internal daylight amenity.

Appendix A – Proposed Scheme 3D Model

DRAFT



Sources: 3D Context
 Zmapping (received 03/01/18)
 Royal heights_281217_Solids.dwg
 Emre Arolat Architecture
 Proposed 3D Model (received 30/04/18)
 Massing model.skp
 Proposed 2D Plans (received 30/04/18)
 220-BC-2-22-10-20 Level 0-9 Roo Plan.dwg
 220-BC-2-23-01-05 AA to EE sections.dwg

Key: — Existing Buildings
 — Proposed Scheme

Project: Royal Heights,
 Reading

Title: Plan View
 Proposed Scheme Dated 30/04/18

Point 2 Surveyors Ltd,
 3rd Floor,
 17 Slingsby Place,
 London WC2E 9AB
 0207 836 5828
 www.point2surveyors.com



Scheme Confirmed: --

Date : --

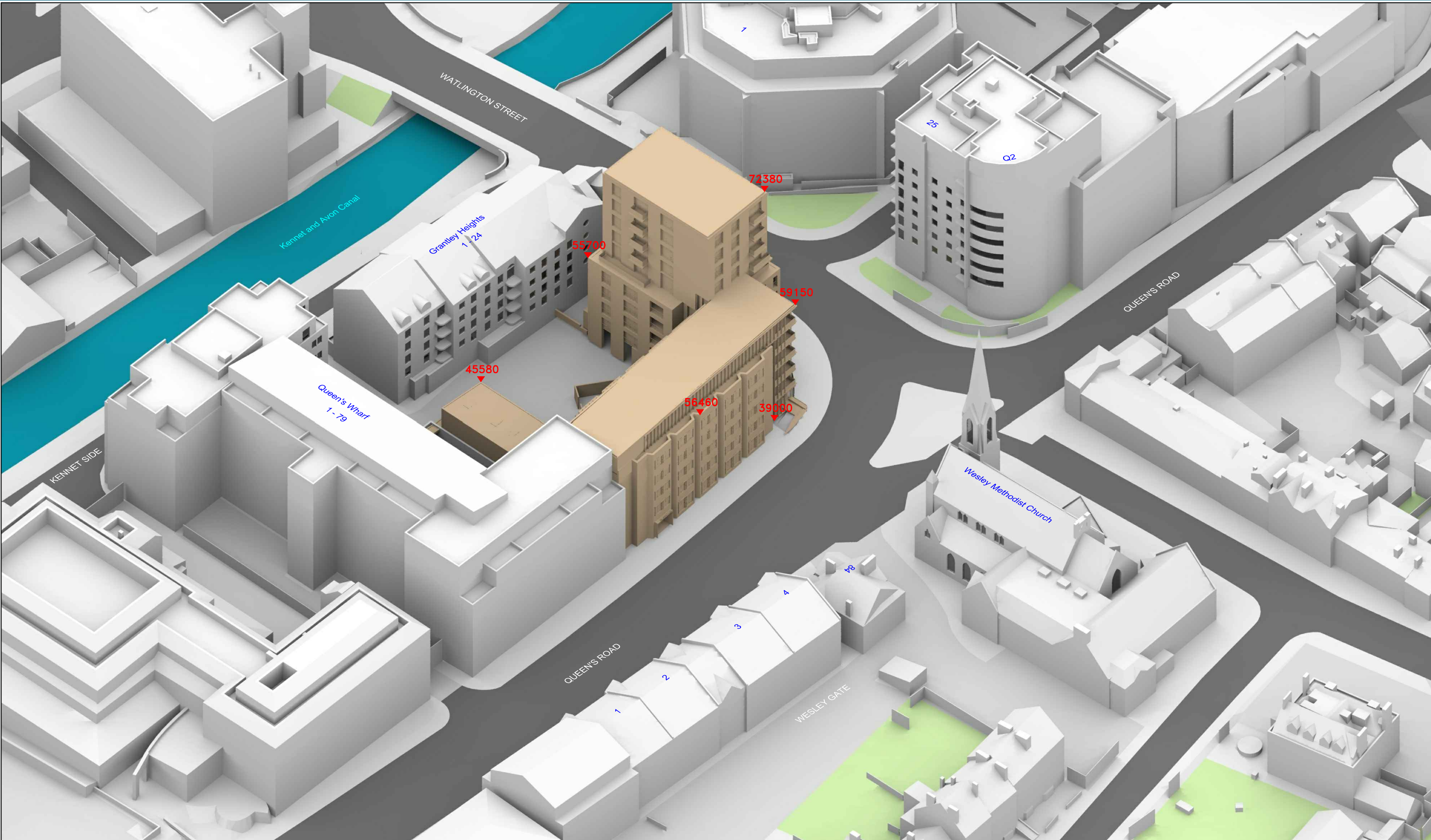
Drawn By: SD

Scale: 1:500 @ A3

Date: Apr 18

Dwg No: **P1624/26**

Rel: 08



Sources: 3D Context
Zmapping (received 03/01/18)
Royal heights_281217_Solids.dwg
Emre Arolat Architecture
Proposed 3D Model (received 30/04/18)
Massing model.skp
Proposed 2D Plans (received 30/04/18)
220-BC-2-22-10-20 Level 0-9 Roo Plan.dwg
220-BC-2-23-01-05 AA to EE sections.dwg

Key: Existing Buildings
Proposed Scheme
All Heights in mm AOD

Project: Royal Heights,
Reading

Title: 3D View
Proposed Scheme Dated 30/04/18

Point 2 Surveyors Ltd,
3rd Floor,
17 Slingsby Place,
London WC2E 9AB
0207 836 5828
www.point2surveyors.com



Scheme Confirmed: --

Date : --

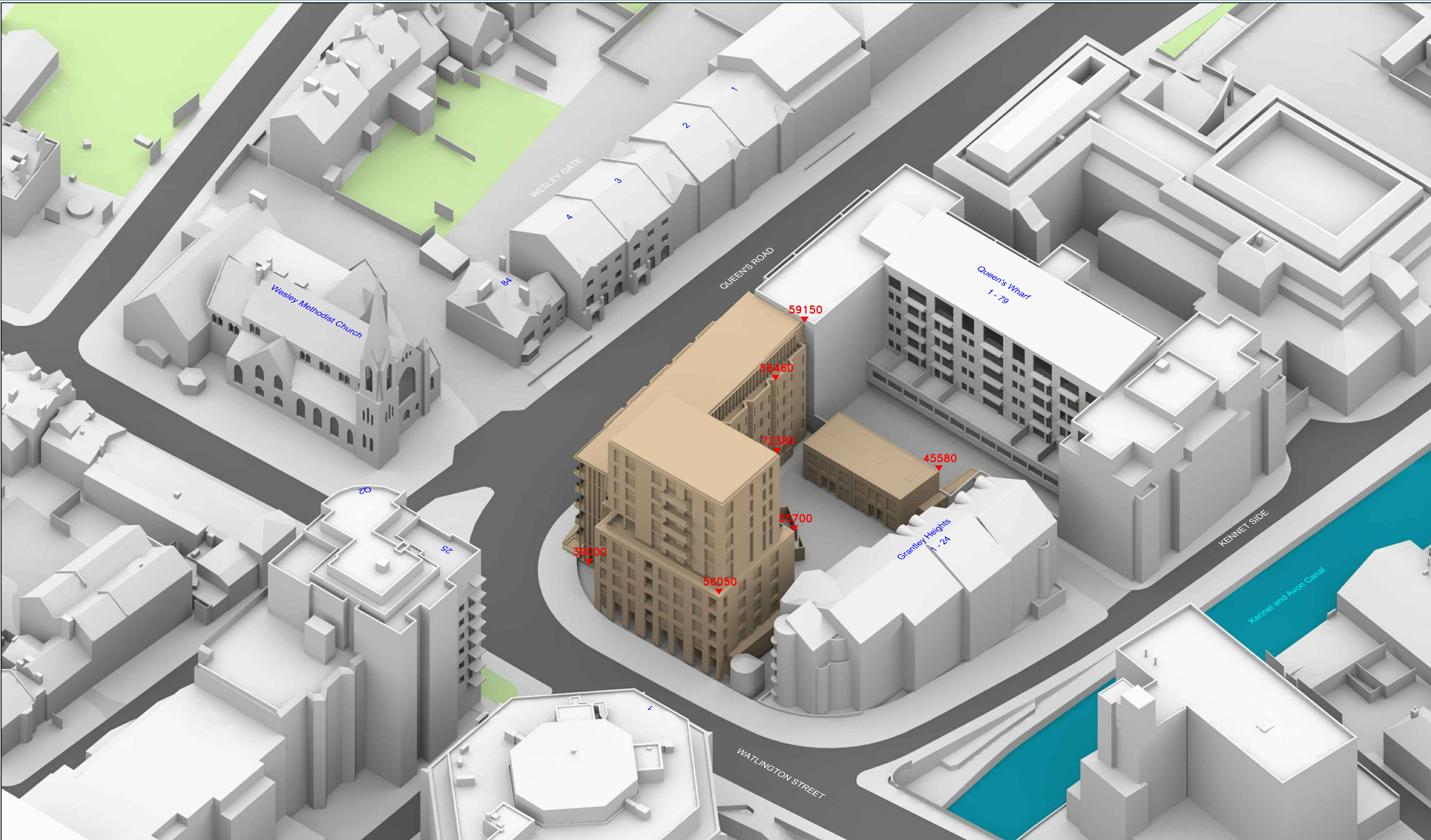
Drawn By: SD

Scale: nts @ A3

Date: Apr 18

Dwg No: P1624/27

Rel: 08



Sources: 3D Context
Zmapping (received 03/01/18)
Royal heights_281217_Solids.dwg
Emre Arolat Architecture
Proposed 3D Model (received 30/04/18)
Massing model.skp
Proposed 2D Plans (received 30/04/18)
220-BC-2-22-10-20 Level 0-9 Roo Plan.dwg
220-BC-2-23-01-05 AA to EE sections.dwg

Key: Existing Buildings
Proposed Scheme
All Heights in mm AOD

Project: Royal Heights,
Reading

Title: 3D View
Proposed Scheme Dated 30/04/18

Point 2 Surveyors Ltd,
3rd Floor,
17 Slingsby Place,
London WC2E 9AB
0207 836 5828
www.point2surveyors.com



Scheme Confirmed: --

Date : --

Drawn By: SD

Scale: nts @ A3

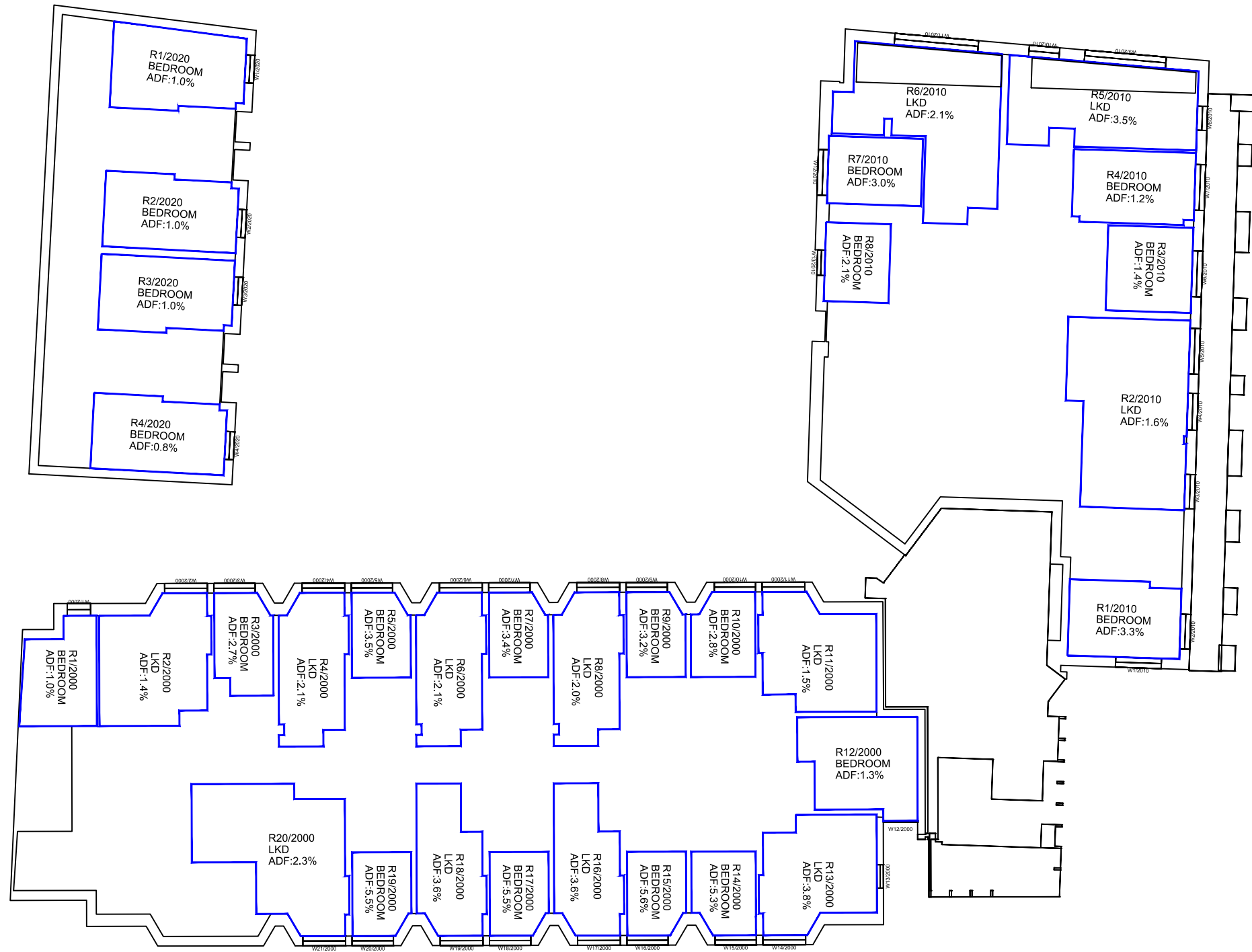
Date: Apr 18

Dwg No: P1624/28

Rel: 08

Appendix B – Internal Daylight Studies

DRAFT



Ground Floor

Sources: 3D Context
Zmapping (received 03/01/18)
Royal heights_281217_Solids.dwg
Emre Arolat Architecture
Proposed 3D Model (received 04/05/18)
Massing model_39.skp
Proposed 2D Plans (received 14/05/18)
220-2-22-01_Proposed Ground Floor Plan.dwg
220-2-22-02_Proposed 1st Floor Plan.dwg

Key:

Scheme Confirmed: --

Date : --

Project: Royal Heights,
Reading

Drawn By: BW

Scale: 1:200 @ A3

Date: May 18

Title: ADF Results
Royal Heights
Ground Floor

Dwg No: **P1624/INT/05**

Rel: 09

Point 2 Surveyors Ltd,
3rd Floor,
17 Slingsby Place,
London WC2E 9AB
0207 836 5828
www.point2surveyors.com

POINT
surveyors



First Floor

Sources: 3D Context
Zmapping (received 03/01/18)
Royal heights_281217_Solids.dwg
Emre Arolat Architecture
Proposed 3D Model (received 04/05/18)
Massing model_39.skp
Proposed 2D Plans (received 14/05/18)
220-2-22-01_Proposed Ground Floor Plan.dwg
220-2-22-02_Proposed 1st Floor Plan.dwg

Key:

Project: Royal Heights,
Reading

Title: ADF Results
Royal Heights
First Floor

Point 2 Surveyors Ltd,
3rd Floor,
17 Slingsby Place,
London WC2E 9AB
0207 836 5828
www.point2surveyors.com



Scheme Confirmed: --

Date : --

Drawn By: BW

Scale: 1:200 @ A3

Date: May 18

Dwg No: **P1624/INT/06**

Rel: 09