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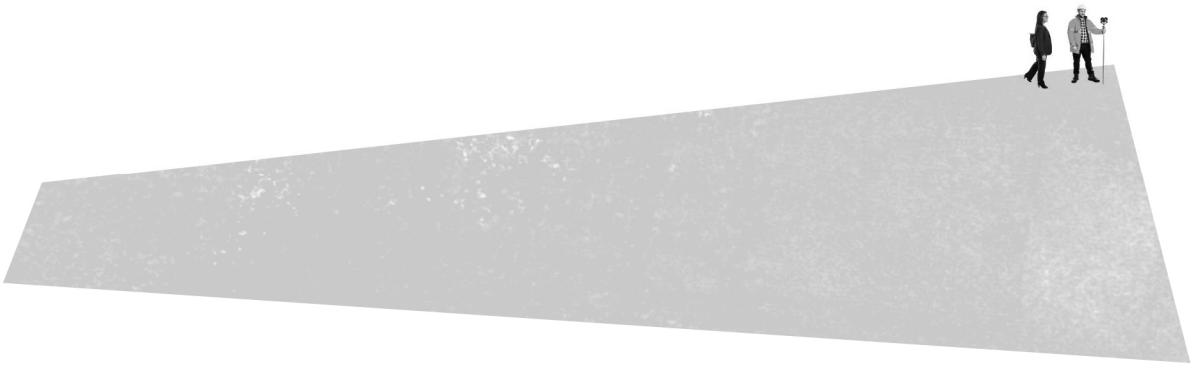
Daylight and sunlight report for the proposed development at

# NCP Heathrow Flightpath, Bath Road, Heathrow UB7 0DU



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# Contents

# 1. Executive summary

## 1.1. Scope

1.1.1. We have been instructed by Heathrow NCP Property Limited to determine the effect upon the daylight and sunlight amenity of the existing surrounding buildings which may arise from the proposed development at NCP Heathrow Flightpath, Bath Road, Heathrow UB7 0DU.

## 1.2. Assessment criteria

1.2.1. To ensure that this assessment can be appropriately evaluated against Hillingdon Council's planning policy, daylight and sunlight calculations have been undertaken in accordance with the Building Research Establishment Report 'Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice' 3rd Edition, 2022 (the "BRE guide"). The assessments applied within this report are briefly described in Appendix A.

## 1.3. Summary of effect of proposed development on existing, surrounding buildings

Daylight

1.3.1. We have assessed the habitable rooms and associated windows within the nearby surrounding properties listed below:

- 31 Sipson Way
- 33 Sipson Way
- 35 Sipson Way
- 37 Sipson Way
- 39 Sipson Way
- 41 Sipson Way
- 43 Sipson Way
- 45 Sipson Way
- 47 Sipson Way
- 49 Sipson Way
- 51 Sipson Way
- 53 Sipson Way
- 57-59 Sipson Way
- 61-63 Sipson Way
- 65-67 Sipson Way
- 69-71 Sipson Way
- 73-75 Sipson Way
- 77-79 Sipson Way
- 81-83 Sipson Way
- 85-87 Sipson Way
- 89-91 Sipson Way
- 93-95 Sipson Way
- 97 Sipson Way
- 6 Dorton Villas

1.3.2. In terms of Vertical Sky Component (VSC), 80 out of 120 windows assessed (67%) will meet the target values recommended in the BRE guide.

1.3.3. The 40 windows that fall short of the BRE's numerical targets retain between 0.65 and 0.78 times their former value against the guideline target of 0.8 times. This range is marginally below the BRE's numerical targets and therefore, it is considered that the change will not be material.

1.3.4. In relation to Daylight Distribution (DD), 93 out of 112 rooms assessed (83%) will achieve the target values recommended in the BRE guide.

1.3.5. The remaining rooms are spread across 15 properties, these being 33, 35 and 49 to 95 Sipson Way. Of the 19 rooms that fall short of the numerical targets, 17 retain between 0.61 and 0.78 times their former values and direct sky visibility between 59.72% and 76.38% of their floor areas. The retained levels of daylight in these rooms are reasonable.

1.3.6. It is worth noting that existing values attained for the daylight metrics are very high considering the location of the property and the type and density of the development that is expected to take place in this area. This is mainly because the existing site comprises a surface car park. With high existing values for the metrics, larger changes in the values will be inevitable if land is to be developed to maximum efficiency. Therefore, a greater degree of change will need to be accepted.

Sunlight

1.3.7. With regard to sunlight amenity, the BRE guide only recommends the assessment of windows which have a reasonable expectation of enjoying direct sunlight, i.e., those which face within 90 degrees of due south. We have therefore assessed 113 windows with southerly or predominately south easterly/south westerly orientation.

1.3.8. In terms of Annual Probable Sunlight Hours (APSH), 110 out of 113 windows assessed (97%) will meet the BRE recommendations for both annual and winter sunlight.

1.3.9. Upon more detailed review of the full APSH results (Appendix E), it can be seen that an additional two windows will achieve the BRE target value of 25% for annual sunlight. Overall, the sunlight amenity to the existing surrounding properties is not materially affected by the proposed development.

Overshadowing

1.3.10. We have assessed 20 outdoor amenity spaces, 5 to the northwest and 15 to the west of the proposed development for overshadowing. The gardens mostly take the shape of an elongated rectangle.

1.3.11. Our results show that all of the garden areas assessed will meet the BRE's numerical criteria for sunlight as at least 50% of their areas will continue to receive at least two hours of direct sunlight on 21 March, or the reduction in area receiving at least 2 hours of direct sunlight on that date is no less than 0.8 times its former value and therefore, as stated in the BRE guide unlikely to be noticed.

**1.4. Overall**

1.4.1. The results of the technical assessments show that the proposed development will not have a detrimental impact light to the neighbouring properties. The surrounding properties retain levels of daylight & sunlight amenity commensurate with the BRE guide, and where there are shortfalls from the targets, they are minor in nature.

1.4.2. Overall, the proposed development will not materially harm the existing surrounding residential properties in terms of light amenity.

# 2. Introduction

## 2.1. Scope

2.1.1. We have been instructed by Heathrow NCP Property Limited to determine the effect upon the daylight and sunlight amenity of the existing surrounding buildings which may arise from the proposed development at NCP Heathrow Flightpath, Bath Road, Heathrow UB7 0DU.

## 2.2. Planning policy

Hillingdon Council's planning policy (Local Plan Part 2 – Development Management Policies) contains the following policy guidance on daylight and sunlight amenity and in relation to overshadowing:

*"The Council will aim to minimise the impact of the loss of daylight and sunlight and unacceptable overshadowing caused by new development on habitable rooms, amenity space and public open space. The Council will also seek to ensure that the design of new development optimises the levels of daylight and sunlight. The Council will expect the impact of the development to be assessed following the methodology set out in the most recent version of the Building Research Establishments (BRE) "Site layout planning for daylight and sunlight: A guide to good practice".*

2.2.1. This Report is therefore based on the guidance in the following publication:

- Building Research Establishment (BRE) Report "Site Layout Planning for Daylight and Sunlight – a guide to good practice, 3rd Edition, 2022" ("the BRE guide").

## 2.3. Assessment criteria

2.3.1. To ensure that this assessment can be appropriately evaluated against best practice standards and Hillingdon Council's planning policy, daylight and sunlight calculations have been undertaken in accordance with the 'BRE guide'. The standards and tests applied are briefly described in Appendix A.

2.3.2. The existing buildings adjacent to the proposed development site are shown on the site plan (see below) and comprise:

| Name/address of building | Assumed use | Position in relation to the development |
|---|---|---|
| 31 Sipson Way | Residential | Northwest |
| 33 Sipson Way | Residential | Northwest |
| 35 Sipson Way | Residential | Northwest |
| 37 Sipson Way | Residential | Northwest |
| 39 Sipson Way | Residential | Northwest |
| 41 Sipson Way | Residential | West |
| 43 Sipson Way | Residential | West |

| Name/address of building | Assumed use | Position in relation to the development |
|---|---|---|
| 45 Sipson Way | Residential | West |
| 47 Sipson Way | Residential | West |
| 49 Sipson Way | Residential | West |
| 51 Sipson Way | Residential | West |
| 53 Sipson Way | Residential | West |
| 57-59 Sipson Way | Residential | West |
| 61-63 Sipson Way | Residential | West |
| 65-67 Sipson Way | Residential | West |
| 69-71 Sipson Way | Residential | West |
| 73-75 Sipson Way | Residential | West |
| 77-79 Sipson Way | Residential | West |
| 81-83 Sipson Way | Residential | West |
| 85-87 Sipson Way | Residential | West |
| 89-91 Sipson Way | Residential | West |
| 93-95 Sipson Way | Residential | West |
| 97 Sipson Way | Residential | West |
| 6 Dorton Villas | Residential | Southwest |

## 2.4. Limitations

2.4.1. Our assessment is based on the scheme drawings provided by Chetwood Architects as listed below. Any other source information used in the assessment (topographical surveys, 3D models etc) is also shown below:

| Title | Date |
|---|---|
| Chetwood Architects | |
| *5110-CA-00-00-DR-A-00050-SITE LOCATION PLAN-P1.dwg* | 21 June 2022 |
| *5110-CA-00-00-DR-A-00060-PROPOSED SITE PLAN-P2.dwg* | 21 June 2022 |
| *5110-CA-00-00-DR-A-00101-UNIT 120 - WAREHOUSE GA PLAN-P1.dwg* | 21 June 2022 |
| *5110-CA-00-00-DR-A-00102-UNIT 130 - WAREHOUSE GA PLAN-P1.dwg* | 21 June 2022 |
| *5110-CA-00-00-DR-A-00103-UNIT 140 - WAREHOUSE GA PLAN-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00150-SITE SECTIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00151-UNIT 110 - GA SECTIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00152-UNIT 120 - GA SECTIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00153-UNIT 130 - GA SECTIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00154-UNIT 140 - GA SECTIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00201-UNIT 110 - PROPOSED ELEVATIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00202-UNIT 120 - PROPOSED ELEVATIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00203-UNIT 130 - PROPOSED ELEVATIONS-P1.dwg* | 21 June 2022 |
| *5110-CA-00-XX-DR-A-00204-UNIT 140 - PROPOSED ELEVATIONS-P1.dwg* | 21 June 2022 |
| Promap | |
| *Promap-1989841-2090317-720-0.DWG* | 28 June 2022 |
| INTERLOCKS SURVEY LTD | |
| *210833 3D.dwg* | 04 January 2022 |
| ACCUCITIES 3D MAPPING | |
| *002343_112936-Heathrow NCP Car Park_HD_MASTER.dwg* | 02 December 2021 |

2.4.2. A site inspection was also undertaken to record the location of windows within the surrounding buildings. Where no elevation survey data has been provided to us, we have estimated approximate window heights and positions in the surrounding existing properties from data gathered at our site inspection.

2.4.3. We have included the consented scheme at Douglas Webb House, planning ref. *11068/AA/2020/1586* in the baseline model. We understand this project is under construction and will be completed by the time the subject site is to be developed.

2.4.4. We have not included this adjacent development with the technical analysis, as it is Class C1 building (hotel) and is therefore not as sensitive to changes in light amenity. Furthermore, the orientation of the windows at Douglas Webb house face away from the subject site and are unlikely to be affected.

# 3. Assessment & results – effects of new development on existing, surrounding buildings

## 3.1. Daylight

3.1.1. In accordance with the BRE guide (see also Appendix A) and our site inspection the following buildings required assessment:

- 31 Sipson Way
- 33 Sipson Way
- 35 Sipson Way
- 37 Sipson Way
- 39 Sipson Way
- 41 Sipson Way
- 43 Sipson Way
- 45 Sipson Way
- 47 Sipson Way
- 49 Sipson Way
- 51 Sipson Way
- 53 Sipson Way
- 57-59 Sipson Way
- 61-63 Sipson Way
- 65-67 Sipson Way
- 69-71 Sipson Way
- 73-75 Sipson Way
- 77-79 Sipson Way
- 81-83 Sipson Way
- 85-87 Sipson Way
- 89-91 Sipson Way
- 93-95 Sipson Way
- 97 Sipson Way
- 6 Dorton Villas

3.1.2. The results of our Vertical Sky Component analysis are shown in full in Appendix D. The following table is a summary of our findings:

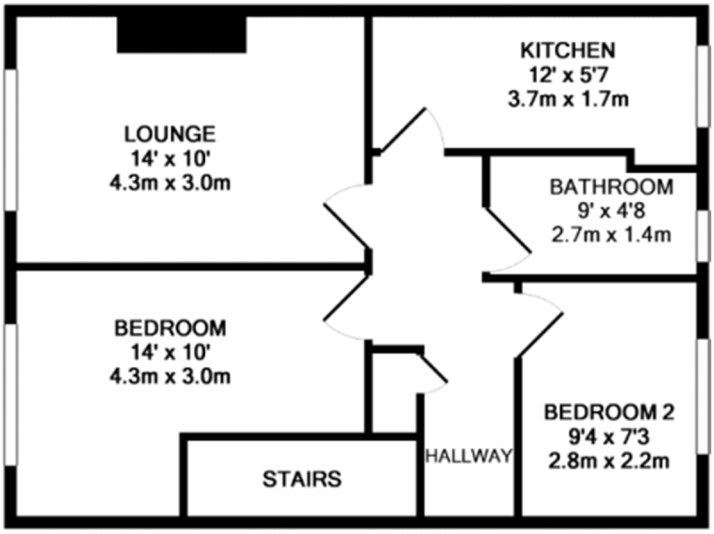
| Building Address | No. of Windows Analysed | Meet BRE | | Total Percentage |
|---|---|---|---|---|
| | | Yes | No | |
| 31 Sipson Way | 4 | 4 | 0 | 100 |
| 33 Sipson Way | 6 | 6 | 0 | 100 |
| 35 Sipson Way | 7 | 4 | 3 | 57 |
| 37 Sipson Way | 6 | 6 | 0 | 100 |
| 39 Sipson Way | 4 | 4 | 0 | 100 |
| 41 Sipson Way | 3 | 3 | 0 | 100 |
| 43 Sipson Way | 2 | 2 | 0 | 100 |
| 45 Sipson Way | 1 | 1 | 0 | 100 |
| 47 Sipson Way | 3 | 3 | 0 | 100 |
| 49 Sipson Way | 5 | 2 | 3 | 40 |
| 51 Sipson Way | 5 | 3 | 2 | 60 |
| 53 Sipson Way | 4 | 3 | 1 | 75 |
| 57-59 Sipson Way | 6 | 0 | 6 | 0 |
| 61-63 Sipson Way | 6 | 0 | 6 | 0 |
| 65-67 Sipson Way | 6 | 1 | 5 | 17 |
| 69-71 Sipson Way | 6 | 2 | 4 | 33 |
| 73-75 Sipson Way | 6 | 2 | 4 | 33 |
| 77-79 Sipson Way | 6 | 2 | 4 | 33 |
| 81-83 Sipson Way | 6 | 4 | 2 | 67 |
| 85-87 Sipson Way | 6 | 6 | 0 | 100 |
| 89-91 Sipson Way | 6 | 6 | 0 | 100 |

| Building Address | No. of Windows Analysed | Meet BRE Yes | No | Total Percentage |
|---|---|---|---|---|
| 93-95 Sipson Way | 6 | 6 | 0 | 100 |
| 97 Sipson Way | 5 | 5 | 0 | 100 |
| 6 Dorton Villas | 5 | 5 | 0 | 100 |
| **Totals** | **120** | **80** | **40** | **67** |

3.1.3. Of the 120 windows assessed, 80 (67%) will meet the target values as set out in the BRE guidelines.

3.1.4. The remaining windows that do not satisfy the relevant VSC threshold retain between 0.65 and 0.78 times their former value against the guideline target of 0.8 times. This is only marginally below the BRE's numerical values and therefore, it is considered that the change will not be material.

3.1.5. In addition, although we are not certain of every surrounding room use, our research suggests that the windows to the rear elevation of 63 Sipson Way serve a mixture of bedrooms, bathrooms, and kitchens. Information from estate agents' websites suggest the floor layouts as shown below:



Floor plan of 63 Sipson Way taken from Rightmove.

3.1.6. The BRE guide (section 2.2.8) states that Daylight Distribution should be checked for main rooms in dwellings such as living rooms and kitchens. It goes on to state that bedrooms should be checked too but that they are less important.

3.1.7. Therefore, given the VSC transgressions are minor and in part occur in bedrooms and bathrooms, the effects at 57 to 83 Sipson Way are considered to be negligible overall. The windows retain absolute VSC values that range between 23.54% and 26.99%; the latter being marginally below the BRE target of 27% and the former being commensurate with those typically achieved in urban areas such as this.

3.1.8. The Daylight Distribution (DD) assessment results are shown in full in Appendix D. Below is a summary of our findings:

| Building Address | No. of Rooms Analysed | Meet BRE Yes | Meet BRE No | Total Percentage |
|---|---|---|---|---|
| 31 Sipson Way | 4 | 4 | 0 | 100 |
| 33 Sipson Way | 6 | 4 | 2 | 67 |
| 35 Sipson Way | 5 | 4 | 1 | 80 |
| 37 Sipson Way | 6 | 6 | 0 | 100 |
| 39 Sipson Way | 3 | 3 | 0 | 100 |
| 41 Sipson Way | 2 | 2 | 0 | 100 |
| 43 Sipson Way | 2 | 2 | 0 | 100 |
| 45 Sipson Way | 1 | 1 | 0 | 100 |
| 47 Sipson Way | 2 | 2 | 0 | 100 |
| 49 Sipson Way | 4 | 2 | 2 | 50 |
| 51 Sipson Way | 4 | 2 | 2 | 50 |
| 53 Sipson Way | 4 | 2 | 2 | 50 |
| 57-59 Sipson Way | 6 | 5 | 1 | 83 |
| 61-63 Sipson Way | 6 | 5 | 1 | 83 |
| 65-67 Sipson Way | 6 | 5 | 1 | 83 |
| 69-71 Sipson Way | 6 | 5 | 1 | 83 |
| 73-75 Sipson Way | 6 | 5 | 1 | 83 |
| 77-79 Sipson Way | 6 | 5 | 1 | 83 |
| 81-83 Sipson Way | 6 | 5 | 1 | 83 |
| 85-87 Sipson Way | 6 | 5 | 1 | 83 |
| 89-91 Sipson Way | 6 | 5 | 1 | 83 |
| 93-95 Sipson Way | 6 | 5 | 1 | 83 |
| 97 Sipson Way | 5 | 5 | 0 | 100 |
| 6 Dorton Villas | 4 | 4 | 0 | 100 |
| **Totals** | **112** | **93** | **19** | **83** |

3.1.9. Of the 112 rooms assessed, 93 (83%) will meet the target values as set out in the BRE guidelines.

3.1.10. The remaining rooms are spread across 15 properties, these being 33, 35 and 49 to 95 Sipson Way. Of the 19 rooms that fall short of the targets, 17 retain between 0.61 and 0.78 times their former values and direct sky visibility between 59.72% and 76.38% of their floor areas.

3.1.11. As noted above in the VSC analysis, some of these minor shortfalls will occur in bedrooms and bathrooms, and as such the effects are considered to be negligible overall.

## 3.2. Sunlight

3.2.1. In accordance with the BRE Guide, our research and our observations on site, a number of the surrounding buildings required Annual Probable Sunlight Hours (APSH) analysis – (see Appendix A):

- 31 Sipson Way
- 33 Sipson Way
- 35 Sipson Way
- 37 Sipson Way
- 39 Sipson Way
- 41 Sipson Way
- 43 Sipson Way
- 45 Sipson Way
- 47 Sipson Way
- 49 Sipson Way
- 51 Sipson Way
- 53 Sipson Way
- 57-59 Sipson Way
- 61-63 Sipson Way
- 65-67 Sipson Way
- 69-71 Sipson Way
- 73-75 Sipson Way
- 77-79 Sipson Way
- 81-83 Sipson Way
- 85-87 Sipson Way
- 89-91 Sipson Way
- 93-95 Sipson Way
- 97 Sipson Way

3.2.2. The table below shows a summary of the results of the APSH analysis. Full results are contained in Appendix E.

| Building Address | No. of Windows Analysed | Meet BRE | | Total Percentage |
|---|---|---|---|---|
| | | Yes | No | |
| 31 Sipson Way | 4 | 4 | 0 | 100 |
| 33 Sipson Way | 6 | 5 | 1 | 83 |
| 35 Sipson Way | 7 | 6 | 1 | 86 |
| 37 Sipson Way | 6 | 6 | 0 | 100 |
| 39 Sipson Way | 4 | 4 | 0 | 100 |
| 41 Sipson Way | 2 | 2 | 0 | 100 |
| 43 Sipson Way | 2 | 2 | 0 | 100 |
| 45 Sipson Way | 1 | 1 | 0 | 100 |
| 47 Sipson Way | 3 | 2 | 1 | 67 |
| 49 Sipson Way | 5 | 5 | 0 | 100 |
| 51 Sipson Way | 4 | 4 | 0 | 100 |
| 53 Sipson Way | 4 | 4 | 0 | 100 |
| 57-59 Sipson Way | 6 | 6 | 0 | 100 |
| 61-63 Sipson Way | 6 | 6 | 0 | 100 |
| 65-67 Sipson Way | 6 | 6 | 0 | 100 |
| 69-71 Sipson Way | 6 | 6 | 0 | 100 |
| 73-75 Sipson Way | 6 | 6 | 0 | 100 |
| 77-79 Sipson Way | 6 | 6 | 0 | 100 |
| 81-83 Sipson Way | 6 | 6 | 0 | 100 |
| 85-87 Sipson Way | 6 | 6 | 0 | 100 |
| 89-91 Sipson Way | 6 | 6 | 0 | 100 |

| Building Address | No. of Windows Analysed | Meet BRE Yes | No | Total Percentage |
|---|---|---|---|---|
| 93-95 Sipson Way | 6 | 6 | 0 | 100 |
| 97 Sipson Way | 5 | 5 | 0 | 100 |
| **Totals** | **113** | **110** | **3** | **97** |

3.2.3. Of the 113 windows assessed, 110 (97%) will continue to meet the target values as set out in the BRE guidelines for both annual and winter sunlight.

3.2.4. However, upon more detailed review of the full APSH results in Appendix E, it can be seen that additional two windows located within 33 and 35 Sipson Way will achieve the BRE target value of 25% for annual sunlight but fall short of the recommended 5% for winter sunlight.

3.2.5. The remaining window is located within 47 Sipson Way and our research suggests that it serves a commercial food store. This property has been assessed for completeness as we cannot be 100% certain of room uses, however, it is likely that the window does not serve a main habitable living room. Therefore, the sunlight result for this property is unlikely to be material.

## 3.3. Overshadowing

3.3.1. In accordance with the BRE guide we have undertaken overshadowing assessments to 20 outdoor amenity spaces, 5 to the northwest and 15 to the west of the proposed development. The gardens mostly take the shape of an elongated rectangle.

3.3.2. Our results show that all of the garden areas assessed will meet the BRE's numerical criteria for sunlight as at least 50% of their areas will continue to receive at least two hours of direct sunlight on 21 March, or the reduction in area receiving at least 2 hours of direct sunlight on that date is no less than 0.8 times its former value and therefore, as stated in the BRE guide unlikely to be noticed.

3.3.3. A reference plan and the results of the overshadowing analysis are shown in full in Appendix F. The table below summarises the results:

| Building Address | No. of Amenity Areas Analysed | Meet BRE Yes | No | Total Percentage |
|---|---|---|---|---|
| 31 Sipson Way | 1 | 1 | 0 | 100 |
| 33 Sipson Way | 1 | 1 | 0 | 100 |
| 35 Sipson Way | 1 | 1 | 0 | 100 |
| 37 Sipson Way | 1 | 1 | 0 | 100 |
| 39 Sipson Way | 1 | 1 | 0 | 100 |
| 49 Sipson Way | 1 | 1 | 0 | 100 |
| 51 Sipson Way | 1 | 1 | 0 | 100 |
| 53 Sipson Way | 1 | 1 | 0 | 100 |
| 57-59 Sipson Way | 1 | 1 | 0 | 100 |
| 61-63 Sipson Way | 1 | 1 | 0 | 100 |

| Building Address | No. of Amenity Areas Analysed | Meet BRE Yes | No | Total Percentage |
|---|---|---|---|---|
| 65-67 Sipson Way | 1 | 1 | 0 | 100 |
| 69-71 Sipson Way | 1 | 1 | 0 | 100 |
| 73-75 Sipson Way | 1 | 1 | 0 | 100 |
| 77-79 Sipson Way | 1 | 1 | 0 | 100 |
| 81-83 Sipson Way | 1 | 1 | 0 | 100 |
| 85-87 Sipson Way | 1 | 1 | 0 | 100 |
| 89-91 Sipson Way | 1 | 1 | 0 | 100 |
| 93-95 Sipson Way | 1 | 1 | 0 | 100 |
| 97 Sipson Way | 1 | 1 | 0 | 100 |
| 6 Dorton Villas | 1 | 1 | 0 | 100 |
| **Totals** | **20** | **20** | **0** | **100** |

3.3.4. The results of the analysis therefore demonstrate that the proposed development will not have a material effect on the adjacent amenity areas in terms of sunlight.

# Appendix A

# Assessments to be applied

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**Introduction**

The main purpose of the guidelines in the Building Research Establishment Report "Site Layout Planning for Daylight and Sunlight – a guide to good practice 2022, 3rd Edition" ("the BRE guide") is to assist in the consideration of the relationship of new and existing buildings to ensure that each retains a potential to achieve good daylighting and sunlighting levels. That is, by following and satisfying the tests contained in the guidelines, new and existing buildings should be sufficiently spaced apart in relation to their relative heights so that both have the potential to achieve good levels of daylight and sunlight. The guidelines have been drafted primarily for use with low density suburban developments and should therefore be used flexibly when dealing with dense urban sites and extensions to existing buildings, a fact recognised by the BRE Report's author in the Introduction where Dr Paul Littlefair says:

'The Guide is intended for building designers and their clients, consultants, and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design..... In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings....'

In many cases in low-rise housing, meeting the criteria for daylight and sunlight may mean that the BRE criteria for other amenity considerations such as *privacy* and *sense of enclosure* are also satisfied.

The BRE guide states that recommended minimum privacy distances (in cases where windows of habitable rooms face each other in low-rise residential property), as defined by each individual Local Authority's policies, vary widely, from 18-35m[1]. For two-storey properties a spacing within this range would almost certainly also satisfy the BRE guide's daylighting requirements as it complies with the $25^0$ rule and will almost certainly satisfy the 'Three times height' test too (as discussed more fully below). However, the specific context of each development will be taken into account and Local Authorities may relax the stated minimum, for instance, in built-up areas where this would lead to an inefficient use of land. Conversely, greater distances may be required between higher buildings, in order to satisfy daylighting and sunlighting requirements. It is important to recognize also that privacy can also be achieved by other means: design, orientation and screening can all play a key role and may also contribute towards reducing the theoretical 'minimum' distance.

A sense of enclosure is also important as the perceived quality of an outdoor space may be reduced if it is too large in the context of the surrounding buildings. In urban settings the BRE guide suggests a spacing-to-height ratio of 2.5:1 would provide a comfortable environment, whilst not obstructing too much natural light: this ratio also approximates the $25^0$ rule.

[1] The commonest minimum privacy distance is 21m (Householder Development Consents Review: Implementation of Recommendations – Department for Communities and Local Government – May 2007)

**Daylight**

The criteria for protecting daylight to existing buildings are contained in Section 2.2 of the BRE guide. There are various methods of measuring and assessing daylight and the choice of test depends on the circumstances of each particular window. For example, greater protection should be afforded to windows which serve habitable dwellings and, in particular, those serving living rooms and family kitchens, with a lower requirement required for bedrooms. The BRE guide states that circulation spaces and bathrooms need not be tested as they are not considered to require good levels of daylight. In addition, for rooms with more than one window, secondary windows do not require assessment if it is established that the room is already sufficiently lit through the principal window.

The tests should also be applied to non-domestic uses such as offices and workplaces where such uses will ordinarily have a reasonable expectation of daylight and where the areas may be considered a principal workplace.

The BRE has developed a series of tests to determine whether daylighting levels within new developments and rooms within existing buildings surrounding new developments will satisfy or continue to satisfy a range of daylighting criteria

*Note: Not every single window is assessed separately, only a representative sample, from which conclusions may be drawn regarding other nearby dwellings.*

**Daylighting Tests**

'Three times height' test - If the distance of each part of the new development from the existing windows is three or more times its height above the centre of the existing window, then loss of light to the existing windows need not be analysed. If the proposed development is taller or closer than this, then the $25^0$ test will need to be carried out.

$25^0$ test – a very simple test that should only be used where the proposed development is of a reasonably uniform profile and is directly opposite the existing building. Its use is most appropriate for low density well-spaced developments such as new sub-urban housing schemes and often it is not a particularly useful tool for assessing urban and in-fill sites. In brief, where the new development subtends to an angle of less than $25^0$ to the centre of the lowest window of an existing neighbouring building, it is unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing building. Equally, the new development itself is also likely to have the potential for good daylighting. If the angle is more than $25^0$ then more detailed tests are required, as outlined below.

VSC Test - the VSC is a unit of measurement that represents the amount of available daylight from the sky, received at a particular window. It is measured on the outside face of the window. The 'unit' is expressed as a percentage as it is the ratio between the amount of sky visible at the given reference point compared to the amount of light that would be available from a totally unobstructed hemisphere of sky. To put this unit of measurement into perspective, the maximum percentage value for a window with a completely unobstructed outlook (i.e., with a totally unobstructed view through $90^o$ in every direction) is 40%.

The target figure for VSC recommended by the BRE is 27%. A VSC of 27% is a relatively good level of daylight and the level we would expect to find for habitable rooms with windows on principal elevations. However, this level is often difficult to achieve on secondary elevations and in built-up urban environments. For comparison, a window receiving 27% VSC is approximately equivalent to a window that would have a continuous obstruction opposite it which subtends an angle of 25° (i.e., the same results as would be found utilising the $25^0$ Test). Where tests show that the new development itself meets the 27% VSC target this is a good indication that the development will enjoy good daylighting and further tests can then be carried out to corroborate this (see under).

Through research the BRE have determined that in existing buildings daylight (and sunlight levels) can be reduced by approximately 20% of their original value before the loss is materially noticeable. It is for this reason that they consider that a 20% reduction is permissible in circumstances where the existing VSC value is below the 27% threshold. For existing buildings once this has been established it is then necessary to determine whether the distribution of daylight inside each room meets the required standards (see under).

Daylight Distribution (DD) Test – This test looks at the position of the "No-Sky Line" (NSL) – that is, the line that divides the points on the working plane (0.7m from floor level in offices and 0.85m in dwellings and industrial spaces) which can and cannot see the sky. The BRE guide suggests that areas beyond the NSL may look dark and gloomy compared with the rest of the room and BS8206 states that electric lighting is likely to be needed if a significant part of the working plane (normally no more than 20%) lies beyond it.

In new developments no more than 20% of a room's area should be beyond the NSL. For existing buildings, the BRE guide states that if, following the construction of a new development, the NSL moves so that the area beyond the NSL increases by more than 20%, then daylighting is likely to be seriously affected.

The guide suggests that in houses, living rooms, dining rooms and kitchens should be tested: bedrooms are deemed less important, although should nevertheless be analysed. In other buildings each main room where daylight is expected should be investigated.

Daylight Factor (D) Test –The D test takes account of the interior dimensions and surface reflectance within the room being tested as well as the amount of sky visible from the window. For this reason, it is considered a more detailed and representative measure of the adequacy of light. The minimum D values recommended in BS EN 17037 are as follows:

| Table C3 – Target daylight factors ($D_T$) to achieve over at least 50% of the assessment grid in UK domestic habitable rooms with vertical and/or inclined daylight apertures | | | |
|---|---|---|---|
| **Location** | **$D_T$ for 100 lx (Bedroom)** | **$D_T$ for 150 lx (Living room)** | **$D_T$ for 200 lx (Kitchen)** |
| **St Peter (Jersey)** | 0.6% | 0.9% | 1.2% |
| **London (Gatwick Airport)** | 0.7% | 1.1% | 1.4% |
| **Birmingham** | 0.6% | 0.9% | 1.2% |
| **Hemsby (Norfolk)** | 0.6% | 0.9% | 1.3% |
| **Finningley (Yorkshire)** | 0.7% | 1.0% | 1.3% |
| **Aughton (Lancashire)** | 0.7% | 1.1% | 1.4% |
| **Belfast** | 0.7% | 1.0% | 1.4% |
| **Leuchars (Fife)** | 0.7% | 1.1% | 1.4% |
| **Oban** | 0.8% | 1.1% | 1.5% |
| **Aberdeen** | 0.7% | 1.1% | 1.4% |

This is a test used in assessing new developments, although, in certain circumstances, it may be used as a supplementary test in the assessment of daylighting in existing buildings, particularly where more than one window serves a room.

Illuminance (Et) Test – The illuminance method uses site climate data to measure the illuminance from daylight at each point on an assessment grid in the room at hourly intervals over a typical year. The UK National Annex of BS EN 17037 provides illuminance recommendations for UK dwellings, as follows:

| | |
|---|---|
| Bedroom | 100 lux |
| Living rooms | 150 lux |
| Kitchens | 200 lux |

These are median illuminances and should be exceeded over at least 50% of the assessment points in the room for at least half of the daylight hours.

**Sunlight**

Sunlight is an important 'amenity' in both domestic and non-domestic settings. The way in which a building's windows are orientated and the overall position of a building on a site will have an impact on the sunlight it receives but, importantly, will also have an effect on the sunlight neighbouring buildings receive. Unlike daylight, which is non-directional and assumes that light from the sky is uniform, the availability of sunlight is dependent on direction. That is, as the United Kingdom is in the northern hemisphere, we receive virtually all of our sunlight from the south. The availability of sunlight is therefore dependent on the orientation of the window or area of ground being assessed relative to the position of due south.

In new developments the BRE guide suggests that dwellings should aim to have at least one main living room which faces the southern or western parts of the sky so as to ensure that it receives a reasonable amount of sunlight. Where groups of dwellings are planned the Guide states that site layout design should aim to maximise the number of dwellings with a main living room that meet sunlight criteria. Where a window wall faces within $90^0$ of due south and no obstruction subtends to angle of more than $25^0$ to the horizontal or where the window wall faces within $20^0$ of due south and the reference point has a VSC of at least 27% then sunlighting will meet the required standards: failing that sunlight hours should be measured and it is recommended that the window should receive at least 1.5 hours of sunlight on 21 March. It should be noted that if a room has two windows or more on opposite / adjacent walls, the sunlight hours due to each can be added together provided that any overlap is excluded.

The availability of sunlight is also an important factor when looking at the impact of a proposed development on the existing surrounding buildings. Annual Probable Sunlight Hours (APSH) tests will be required where one or more of the following are true:

- The 'Three times height' test is failed (see 'Daylight' above);
- The proposed development is situated within $90^0$ of due south of an existing building's main window wall and the new building subtends to angle of more tha$^n$ $25^0$ to the horizontal;
- The window wall faces within $20^0$ of due south and a point at the centre of the window on the outside face of the window wall (the reference point) has a VSC of less than 27%.

Where APSH testing is required, it is similar to the test for the proposed development. That is to say that compliance will be demonstrated where a room receives:

- At least 25% of the APSH (including at least 5% in the winter months), or
- At least 0.8 times its former sunlight hours during either period, or
- A reduction of no more than 4% APSH over the year.

The Guide stresses that the target values it gives are purely advisory, especially in circumstances such as: the presence of balconies (which can overhang windows, obstructing light); when an existing building stands unusually close to the common boundary with the new development and where the new development needs to match the height and proportion of existing nearby buildings. In circumstances like these a larger reduction in sunlight may be necessary.

The sunlight criteria in the BRE guide primarily apply to windows serving living rooms of an existing dwelling. This is in contrast to the daylight criteria which apply to kitchens and bedrooms as well as living rooms. Having said that, the guide goes on to say that care should be taken not to block too much sun from kitchens and bedrooms. Non-domestic buildings which are deemed to have a requirement for sunlight should also be checked.

**Sunlight – Gardens and Open Spaces**

As well as ensuring buildings receive a good level of sunlight to their interior spaces, it is also important to ensure that the open spaces between buildings are suitably lit. The recommendations as set out in the BRE guide are meant to ensure that spaces between buildings are not permanently in shade for a large part of the year. Trees and fences over 1.5m tall are also factored into the calculations.

The BRE guidelines state that:

- For a garden or amenity area to appear adequately sunlit throughout the year, at least 50% of the area should receive at least two hours of sunlight on 21 March;
- In addition, if, as result of new development, an existing garden or amenity area does not reach the area target above and the area which can receive two hours of direct sunlight on 21 March is reduced by more than 20% this loss is likely to be noticeable.

Section 3.3 of the BRE guidelines describes a methodology for calculating sunlight availability for amenity spaces.

# Appendix B

# Context drawings


Existing Site Plan

SOURCES OF INFORMATION:

CHETWOODS ARCHITECTS

5110-CA-00-00-DR-A-00050-SITE LOCATION PLAN-P1.dwg
5110-CA-00-00-DR-A-00060-PROPOSED SITE PLAN-P2.dwg
5110-CA-00-00-DR-A-00101-UNIT 120 - WAREHOUSE GA PLAN-P1.dwg
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5110-CA-00-00-DR-A-00103-UNIT 140 - WAREHOUSE GA PLAN-P1.dwg
5110-CA-00-XX-DR-A-00150-SITE SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00151-UNIT 110 - GA SECTIONS-P1.dwg
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5110-CA-00-XX-DR-A-00153-UNIT 130 - GA SECTIONS-P1.dwg
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5110-CA-00-XX-DR-A-00204-UNIT 140 - PROPOSED ELEVATIONS-P1.dwg
Received 21 June 2022

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Received 04 January 2022

ACCUCITIES 3D MAPPING

002343_112936-Heathrow NCP Car Park_HD_MASTER.dwg
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Existing Building

Surrounding Buildings (Analysed)

Surrounding Buildings (Context)

Consented/Under Construction Buildings (Context)

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TITLE
Existing Site Plan

CLIENT
Iceni Projects Ltd

PROJECT
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West Drayton,
UB7 0DU

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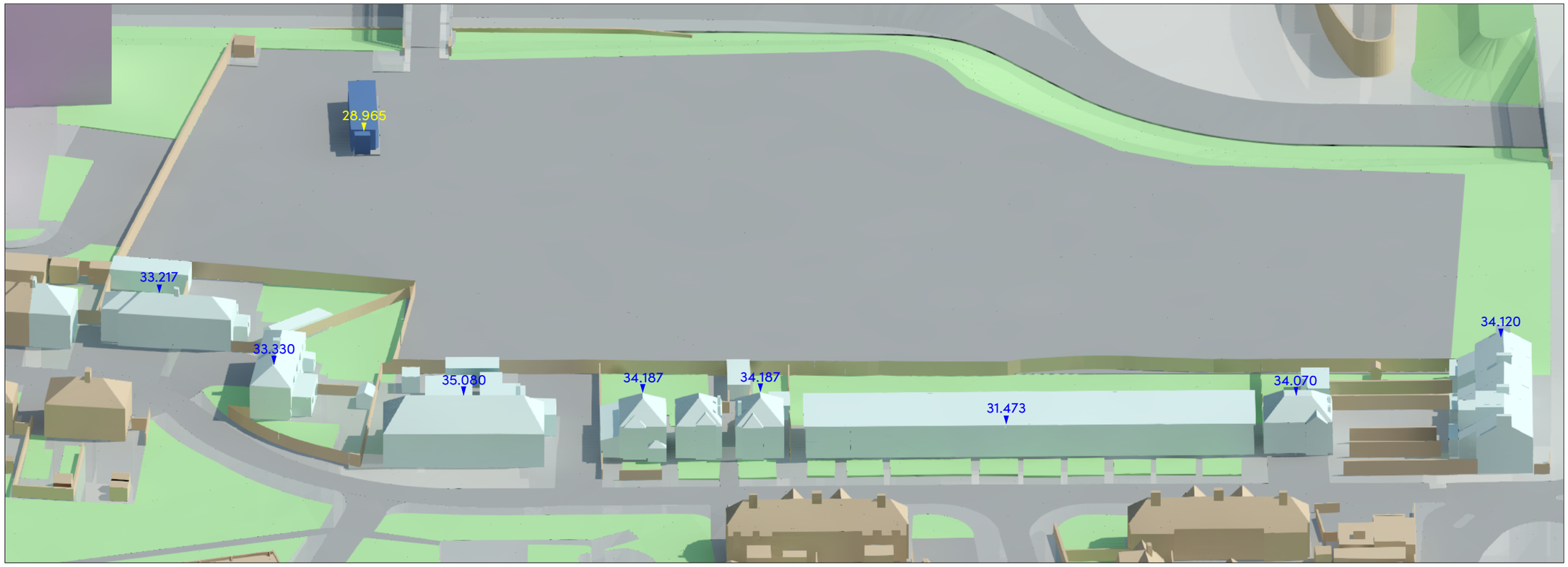
3D Context View - View from East (Existing)




3D Context View - View from West (Existing)

SOURCES OF INFORMATION:

CHETWOODS ARCHITECTS

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ACCUCITIES 3D MAPPING

002343_112936-Heathrow NCP Car Park_HD_MASTER.dwg
Received 02 December 2021

**ALL HEIGHTS IN METRES AOD**

- Existing Building
- Surrounding Buildings (Analysed)
- Surrounding Buildings (Context)
- Consented/Under Construction Buildings (Context)

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| Rev. | Date | Amendments | Initial |
|---|---|---|---|

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TITLE

**3D Views**
**Existing Site**

CLIENT

**Iceni Projects Ltd**

PROJECT

**2-3 Heathrow Flightpath,**
**West Drayton,**
**UB7 0DU**

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Proposed Site Plan

SOURCES OF INFORMATION:

CHETWOODS ARCHITECTS

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Received 21 June 2022

PROMAP

Promap-1989841-2090317-720-0.DWG
Received 28 June 2022

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ACCUCITIES 3D MAPPING

002343_112936-Heathrow NCP Car Park_HD_MASTER.dwg
Received 02 December 2021

- Proposed Development
- Surrounding Buildings (Analysed)
- Surrounding Buildings (Context)
- Consented/Under Construction Buildings (Context)

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|---|---|---|---|

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TITLE
**Proposed Site Plan**

CLIENT
**Iceni Projects Ltd**

PROJECT
**2-3 Heathrow Flightpath, West Drayton, UB7 0DU**

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|---|---|
| SM/SL | BSC |
| SCALE | DATE |
| NTS@A3 | July 2022 |

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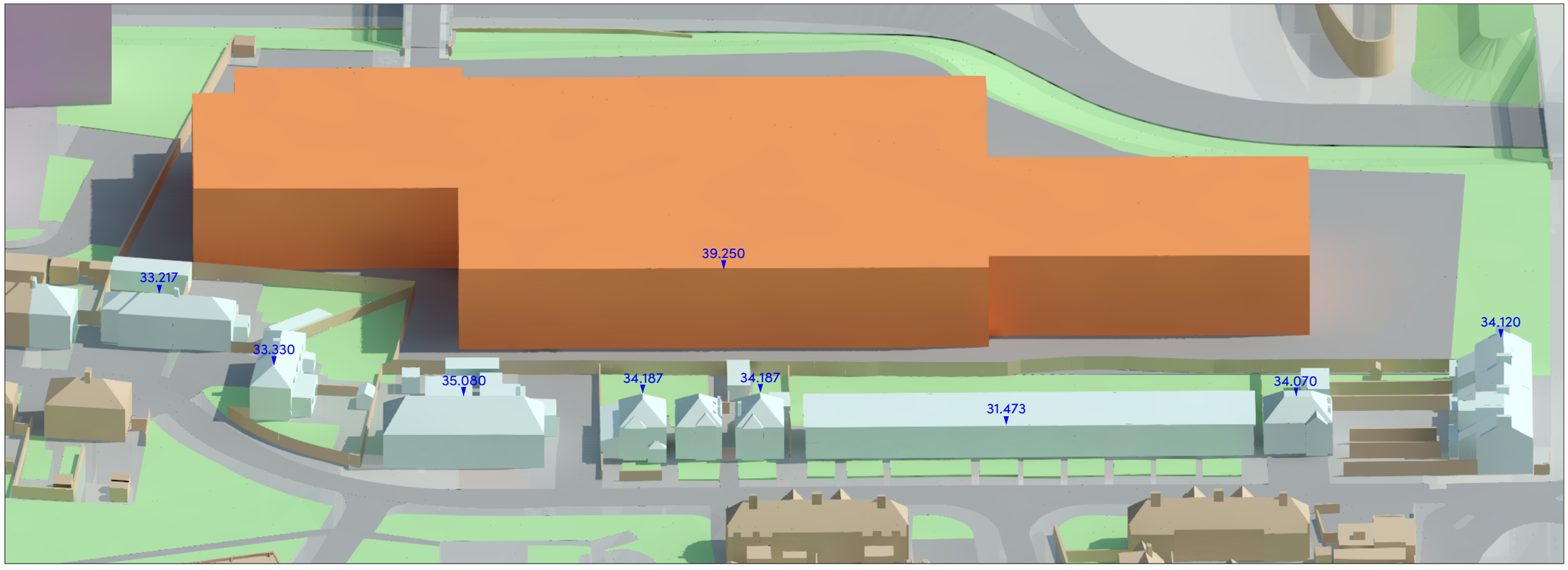
3D Context View - View from East (Proposed)




3D Context View - View from West (Proposed)

SOURCES OF INFORMATION:

CHETWOODS ARCHITECTS

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ACCUCITIES 3D MAPPING

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**ALL HEIGHTS IN METRES AOD**

- Proposed Development
- Surrounding Buildings (Analysed)
- Surrounding Buildings (Context)
- Consented/Under Construction Buildings (Context)

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TITLE

**3D Views**
**Proposed Site**

CLIENT

**Iceni Projects Ltd**

PROJECT

**2-3 Heathrow Flightpath,**
**West Drayton,**
**UB7 0DU**

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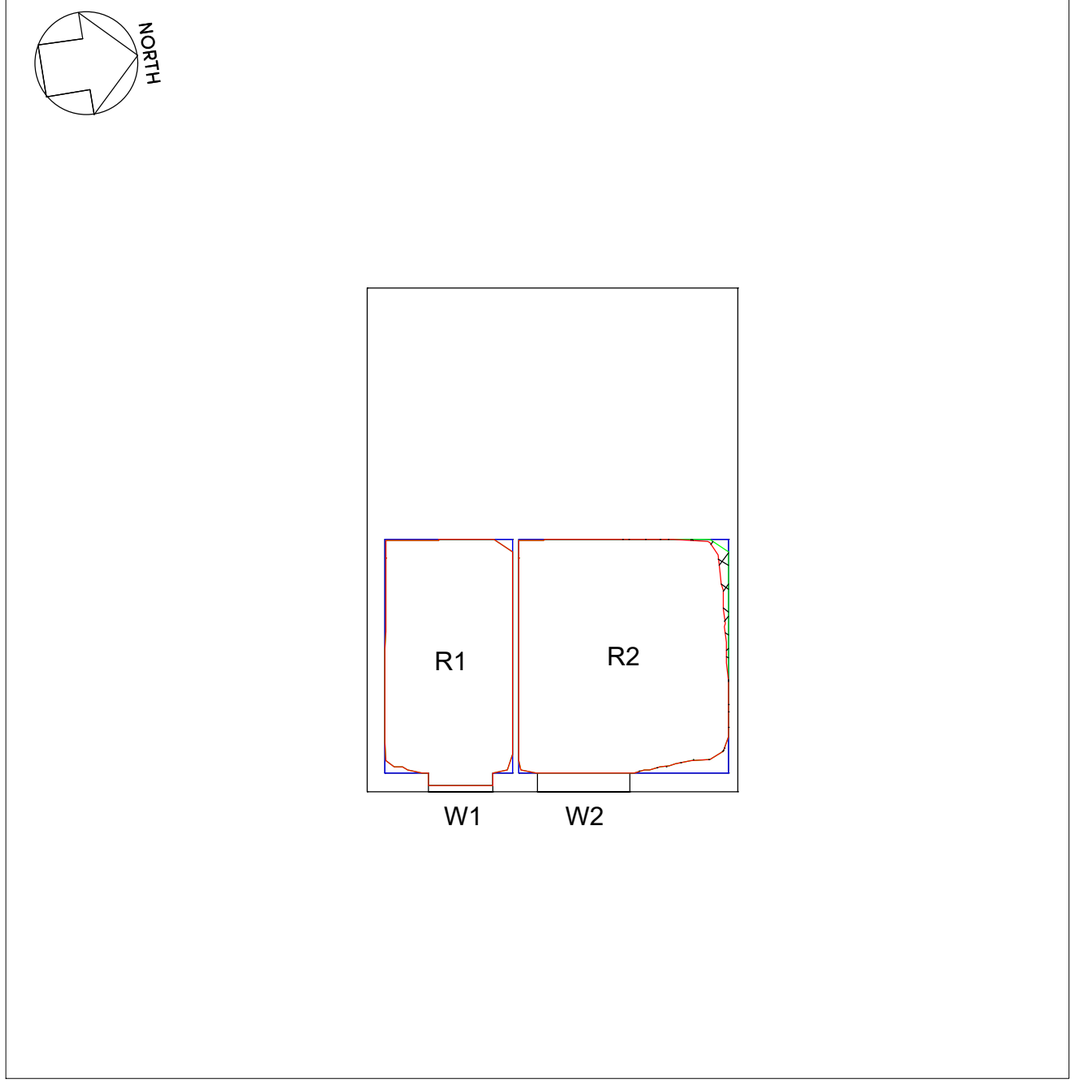
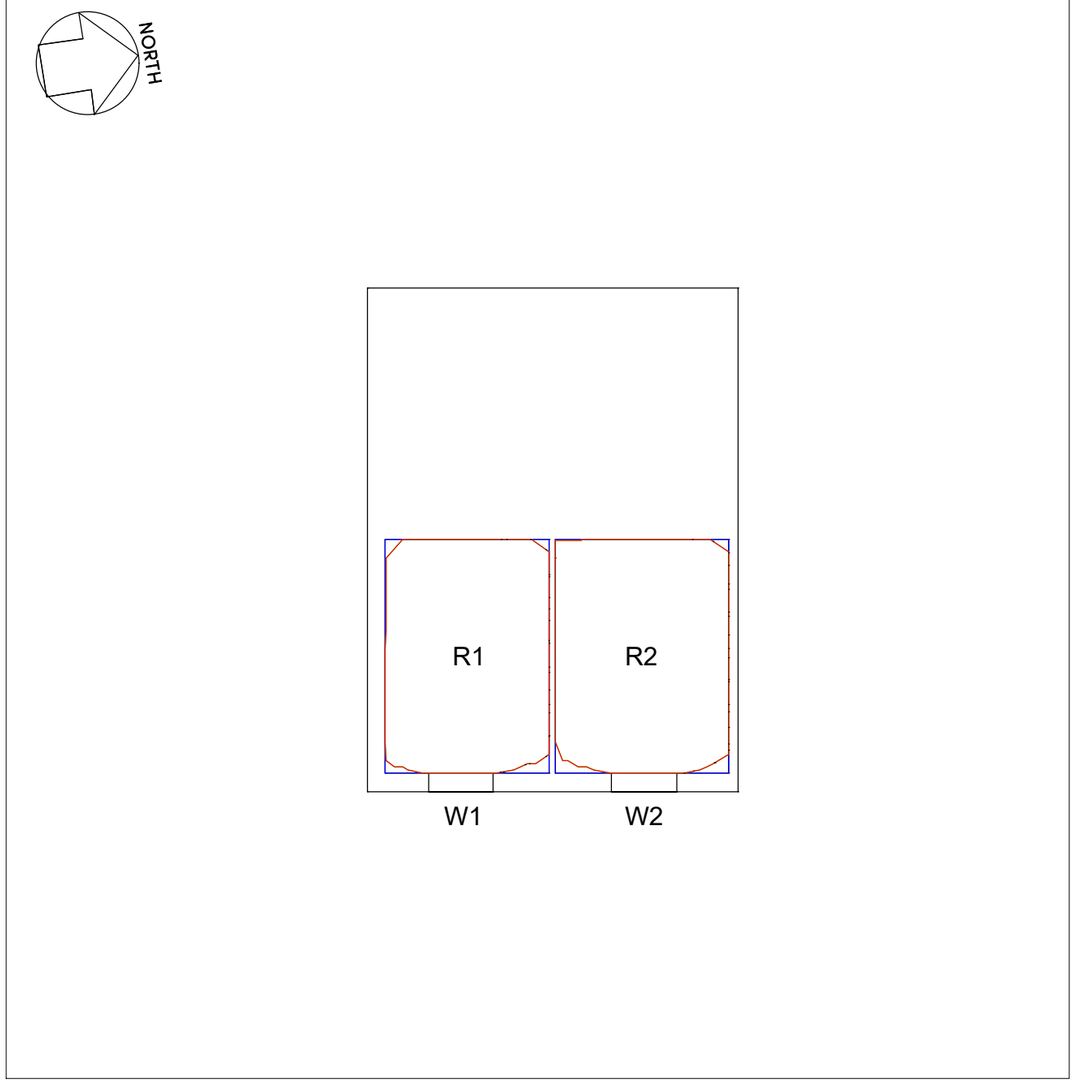
# Appendix C

# Window/room reference drawings




31 Sipson Way - Ground Floor




31 Sipson Way - First Floor

SOURCES OF INFORMATION:

CHETWOODS ARCHITECTS

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5110-CA-00-00-DR-A-00060-PROPOSED SITE PLAN-P2.dwg
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ACCUCITIES 3D MAPPING

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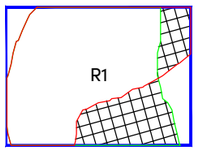
3D Context View - East

## KEY




- Existing contour
- Proposed contour
- Area of loss/gain
- Subject room

3D Context View - South East

| Rev. | Date | Amendments | Initial |
|---|---|---|---|

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TITLE

**Daylight Distribution Contours/Referencing Plans 31 Sipson Way**

CLIENT

**Iceni Projects Ltd**

PROJECT

**2-3 Heathrow Flightpath, West Drayton, UB7 0DU**

| DRAWN BY | CHECKED |
|---|---|
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| SCALE | DATE |
|---|---|
| 1:100@A3 | July 2022 |

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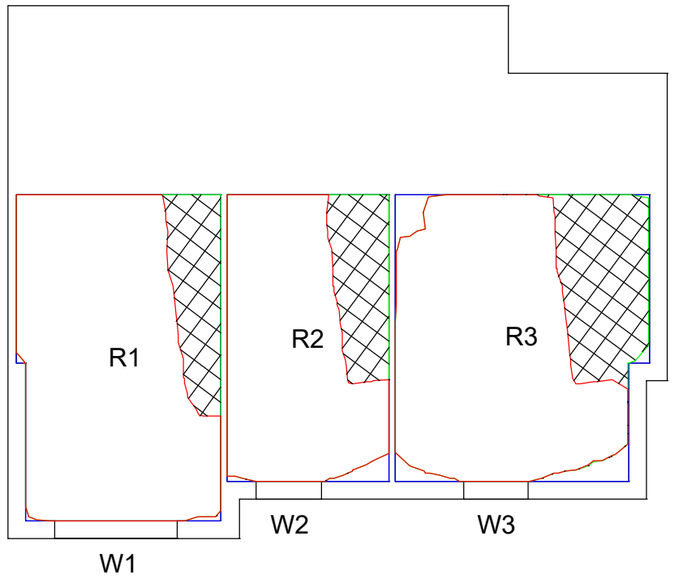
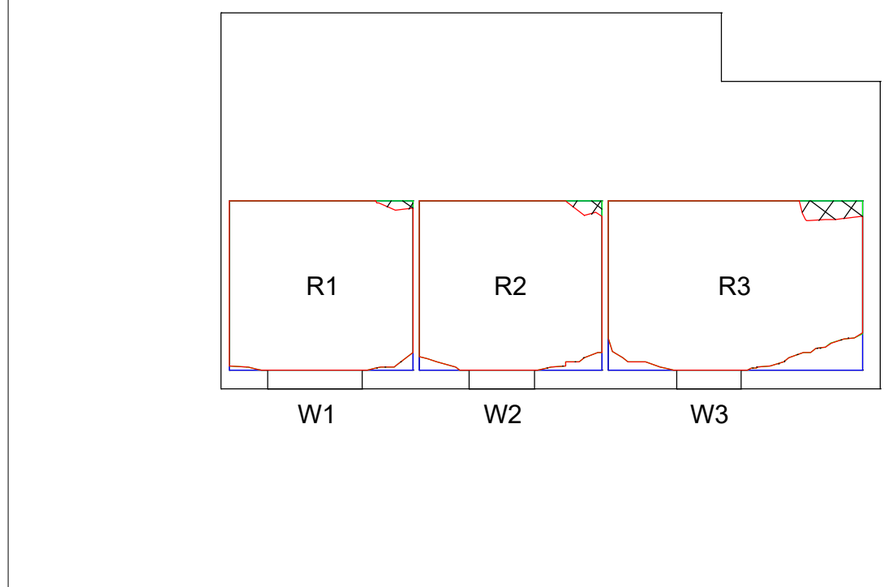



33 Sipson Way - Ground Floor




33 Sipson Way - First Floor

SOURCES OF INFORMATION:

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5110-CA-00-XX-DR-A-00150-SITE SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00151-UNIT 110 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00152-UNIT 120 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00153-UNIT 130 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00154-UNIT 140 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00201-UNIT 110 - PROPOSED ELEVATIONS-P1.dwg
5110-CA-00-XX-DR-A-00202-UNIT 120 - PROPOSED ELEVATIONS-P1.dwg
5110-CA-00-XX-DR-A-00203-UNIT 130 - PROPOSED ELEVATIONS-P1.dwg
5110-CA-00-XX-DR-A-00204-UNIT 140 - PROPOSED ELEVATIONS-P1.dwg
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PROMAP

Promap-1989841-2090317-720-0.DWG
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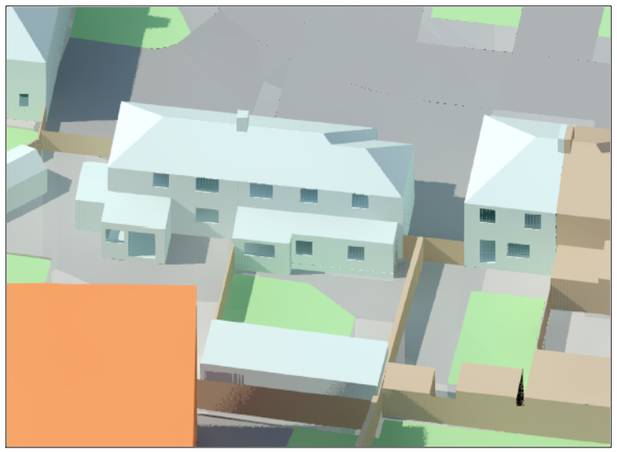
INTERLOCKS SURVEY LTD

210833 3D.dwg
Received 04 January 2022

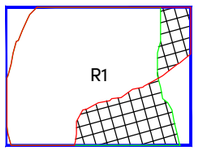
ACCUCITIES 3D MAPPING

002343_112936-Heathrow NCP Car Park_HD_MASTER.dwg
Received 02 December 2021



3D Context View - East

## KEY




- Existing contour
- Proposed contour
- Area of loss/gain
- Subject room

3D Context View - South East

| Rev. | Date | Amendments | Initial |
|---|---|---|---|

HOLLIS SHALL BE INFORMED IN WRITING OF ANY DISCREPANCIES.
ALL DIMENSIONS ARE IN METRES ONLY

TITLE

**Daylight Distribution Contours/Referencing Plans 33 Sipson Way**

CLIENT

**Iceni Projects Ltd**

PROJECT

**2-3 Heathrow Flightpath, West Drayton, UB7 0DU**

| DRAWN BY | CHECKED |
|---|---|
| SM/SL | BSC |

| SCALE | DATE |
|---|---|
| 1:100@A3 | July 2022 |

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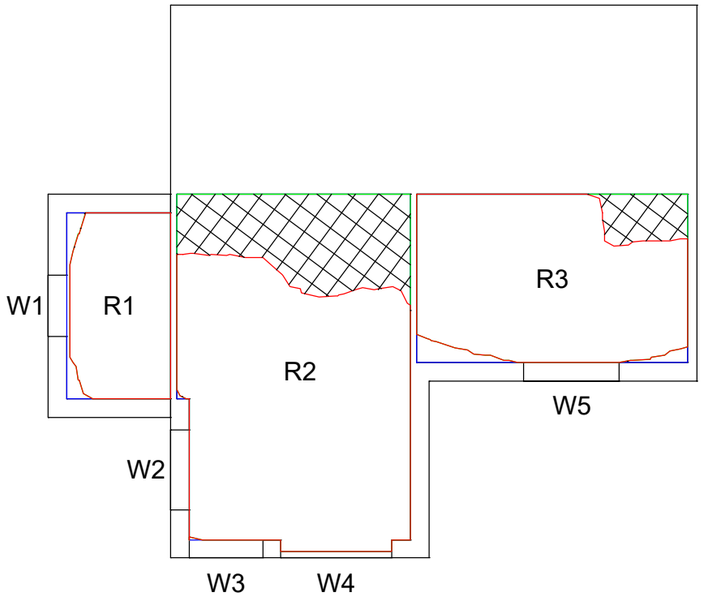
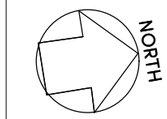
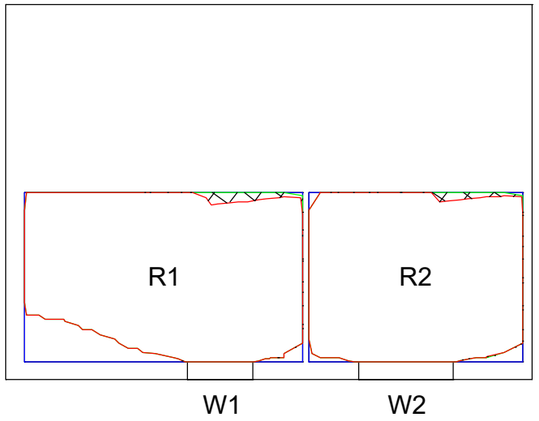
| 115771_DD_02 | 1 |




35 Sipson Way - Ground Floor




35 Sipson Way - First Floor

SOURCES OF INFORMATION:

CHETWOODS ARCHITECTS

5110-CA-00-00-DR-A-00050-SITE LOCATION PLAN-P1.dwg
5110-CA-00-00-DR-A-00060-PROPOSED SITE PLAN-P2.dwg
5110-CA-00-00-DR-A-00101-UNIT 120 - WAREHOUSE GA PLAN-P1.dwg
5110-CA-00-00-DR-A-00102-UNIT 130 - WAREHOUSE GA PLAN-P1.dwg
5110-CA-00-00-DR-A-00103-UNIT 140 - WAREHOUSE GA PLAN-P1.dwg
5110-CA-00-XX-DR-A-00150-SITE SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00151-UNIT 110 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00152-UNIT 120 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00153-UNIT 130 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00154-UNIT 140 - GA SECTIONS-P1.dwg
5110-CA-00-XX-DR-A-00201-UNIT 110 - PROPOSED ELEVATIONS-P1.dwg
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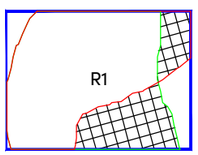
## KEY

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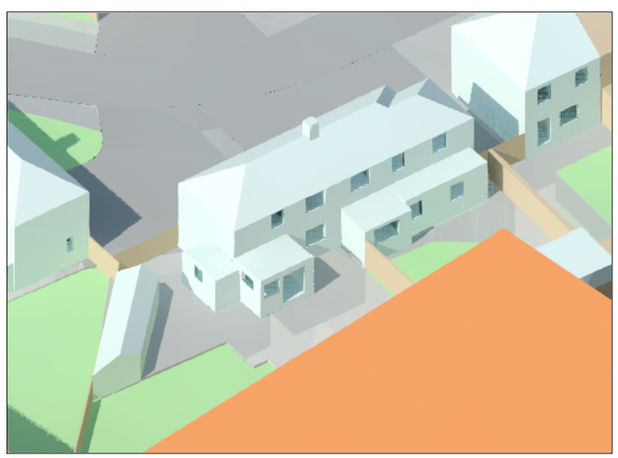

3D Context View - South East

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TITLE

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**2-3 Heathrow Flightpath, West Drayton, UB7 0DU**

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