



**DAYLIGHT AND SUNLIGHT  
REPORT**

**153 HEADLEY WAY  
OXFORD  
OX3 7SS**

Client  
Groupwork

Dated  
1 October 2019

Prepared by  
Paul Smith

Version  
Final

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**APPENDICES**

**Appendix A: Drawings**

**Appendix B: Vertical Sky Component and Annual Probable Sunlight Hours Spreadsheet**

## 1 INSTRUCTIONS AND BRIEF

- 1.1 In accordance with your instructions, we have prepared analysis on the effect the development at 153 Headley Way ('the site') will have on the daylight and sunlight amenity to the neighbouring properties.
- 1.2 The proposed scheme consists of the demolition of the existing buildings on the site and construction of two new two-storey structures.
- 1.3 We have received the following documents and used them in preparing this report:
- Groupwork proposed scheme received on 2 September 2019.
  - Solid Export Headley Way daylight testing model DWG file.
  - Digital ordnance survey extract.
- 1.4 Our study has been undertaken by preparing a three-dimensional computer model of the site and surrounding buildings and analysing the effect of the Development on the daylight and sunlight levels received by the neighbouring buildings using our bespoke software. Our assessment is based on a visual inspection, the information detailed above and estimates of relevant distances, dimensions and levels which are as accurate as the circumstances allow.

## 2 PLANNING POLICY

### 2.1 National Policy

- 2.1.1 The revised National Planning Policy Framework ('NPPF') 2019 addresses the need for the flexible application of guidance relating to daylight and sunlight under Section 11 'Making effective use of land'. Paragraph 123. c) under subsection "Achieving appropriate densities" states the following;

*c) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards).*

2.2 Local Policy – Oxford City Council

Oxford Core Strategy 2026:

7.4.3 Student accommodation should be purpose-built, and designed and managed in a way that attracts students to take it up. There should be no unacceptable impact on amenity for local residents.

Policy CS19

*Community safety*

New developments are expected to promote safe and attractive environments, which reduce the opportunity for crime and the fear of crime.

Planning permission will only be granted for development that meets the principles of ‘Secured by Design’, including:

- Providing for appropriate lighting of public spaces and access routes.

OCC Oxford 2036 Preferred Options:

3.71 On any scale of development, ensuring housing is built with adequate privacy, daylight and space (internal and external) helps to ensure the wellbeing of residents.

**Opt 25: Privacy and daylight**

Policy approach	Consequences of approach/discussion
<p><b>A) Preferred option:</b> Continue with current policy to ensure new residential development provides good privacy and daylight for the occupants of existing and new homes, setting out the factors that will be considered and including the 45 degree guidelines.</p>	<p>This would ensure new development provides adequate daylight and privacy, and does not reduce privacy and daylight in existing development to an unacceptable level. Including the 45 degree guidelines give developers a clear method of assessing this, and set out a transparent approach, but will also leave scope for developers to use other methods to demonstrate that dwellings will receive adequate daylight. The policy could address privacy issues that might emerge in the context of mixed use development.</p>

[www.oxford.gov.uk/localplan](http://www.oxford.gov.uk/localplan)

<p><b>B) Alternative Option:</b> Continue to require reasonable privacy and daylight, but do not include the 45 degree guidelines or list other details in the criteria.</p>	<p>This could ensure that new development provides adequate daylight and privacy, and does not reduce daylight and privacy in existing development to an unacceptable level. The 45 degree guidelines are well-established; removing them would reduce transparency, and would remove a tool that is useful in assessing daylight.</p>
<p><b>C) Rejected Option:</b> Do not include a policy on privacy and daylight.</p>	<p>Having no policy means there is more flexibility for design to reflect location and other factors, but this could lead to new development that does not have sufficient daylight or privacy for its occupants, or reduces daylight or privacy to surrounding houses to an unacceptable level.</p>

## **Sites and Housing Adopted Council Feb 2013:**

Housing policies (Part A) include new policies against which planning applications for residential development will be judged. Part A seeks to deliver mixed and balanced communities across Oxford. It will set a clear framework for delivering energy efficient, sustainable homes. It will ensure high quality design to provide the best quality of life for occupants of new houses and preserve the amenity and character of local neighbourhoods.

### *Privacy and daylight*

A3.26 All new homes should provide a good level of privacy for their occupants, whilst also ensuring that adjoining properties do not lose their sense of privacy. When planning new homes, or changes to existing homes, regard should always be paid to the impact of windows overlooking other homes' windows (including French windows and patio doors) and gardens. Potential for unacceptable overlooking will depend on the proximity of windows to neighbours' habitable rooms and gardens, and the angles of views between windows. There should be at least 20 metres' distance between directly facing windows to habitable rooms in separate dwellings (this guideline will be applied flexibly where only student accommodation rooms are affected).

A3.27 New homes' access to daylight will depend both on the way new and existing buildings relate to one another, and the orientation of windows in relation to the path of the sun. In particular, windows that are overshadowed by buildings, walls, trees or hedges, or that are north-facing, will receive less light. The City Council will use as general guidance the guidelines set out in Appendix 7, but will also take into account other factors. Compliance with the 45° guidelines illustrated in Appendix 7 does not necessarily mean that a development complies with Policy HP14.

### Policy HP14

#### *Privacy and Daylight*

Planning permission will only be granted for new residential development that provides reasonable privacy and daylight for the occupants of both existing and new homes. The following factors will be considered:

- a. whether the degree of overlooking to and from neighbouring properties or gardens resulting from the development significantly compromises the privacy of either existing or new homes, and
- b. the orientation of windows in both existing and new development, in respect of access to daylight, sunlight and solar gain (i.e. natural heating from direct sunlight), and

c. existing and proposed walls, hedges, trees and fences, in respect of protecting or creating privacy, and also in respect of their impact on overshadowing both existing and new development.

Planning permission will not be granted for any development that has an overbearing effect on existing homes.

In respect of access to sunlight and daylight, the 45° guidelines will be used, as illustrated in Appendix 7, alongside other material factors.

To provide a more detailed assessment of the effect of the proposed scheme on the neighbouring daylight and sunlight amenity we have undertaken a detailed study in accordance with the current BRE guidelines.

#### **4 BRE Report “Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice” Second Edition (2011) (‘The Report’)**

##### **4.1 Principles**

4.1.1 The Second Edition of the Report replaces the 1991 document of the same name with effect from October 2011.

4.1.2 It is important to note that the introduction to the report stresses that the document is provided for guidance purposes only and it is not intended to be interpreted as a strict set of rules. It also suggests that it may be appropriate to adopt a flexible approach and alternative target values in dealing with “special circumstances” 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.” This is amplified by the following extracts from the introduction (P1, para. 6) and Section 2.2:

*“The advice given here is not mandatory and this document 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 because natural lighting is only one of many factors in site layout design...” (P1, para. 1.6)*

*“In special circumstances the Developer or Planning Authority may wish to use different target values.” (P1, para. 1.6)*

*“Note that numerical values given here are purely advisory. Different criteria may be used, based upon the requirements for daylighting in an area viewed against other site layout constraints. Another important issue*

*is whether the existing building is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light". (P7 para. 2.2.3)*

4.1.3 The examples given in the Report can be applied to any part of the country: suburban, urban and rural areas. The inflexible application of the target values given in the Report may make reaching the BRE criteria difficult in a tight, urban environment where there is unlikely to be the same expectation of daylight and sunlight amenity as in a suburban or rural environment.

## 4.2 Daylight

4.2.1 In summary, the BRE Report states that:

*"If any part of a new building or extension, measured in a vertical section perpendicular to a main window wall of an existing building from the centre of the lowest window, subtends an angle of more than 25 degrees to the horizontal, then the diffuse daylighting of the existing building may be adversely affected. This will be the case if either:*

- *the vertical sky component ['VSC'] measured at the centre of an existing main window is less than 27%, and less than 0.8 times its former value;*
- *the area of the working plane (0.85m above floor level in residential properties) in a room which can receive direct skylight is reduced to less than 0.8 times its former value.*

*The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, store rooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include, schools, hospitals, hotels and hostels, small workshops and some offices."*

4.2.2 The Report also states that:

*"Where room layouts are known, the impact on the daylighting distribution in the existing building can be found by plotting the 'no-sky line' in each of the main rooms. For houses this would include living rooms, dining rooms and kitchens; bedrooms should also be analysed, although they are less important. In non-domestic buildings each main room where daylight is expected should be investigated."*

*...Windows to bathrooms, toilets, store rooms, circulation areas and garages need not be analysed."*

- 4.2.3 Guidance has been provided in the Second Edition of the report in relation to existing windows with balconies:

*“Existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction may result in a large relative impact on the VSC, and on the area receiving direct skylight. One way to demonstrate this would be to carry out an additional calculation of the VSC and area receiving direct skylight, for both the existing and proposed situations, without the balcony in place. For example, if the proposed VSC with the balcony was under 0.8 times the existing value with the balcony, but the same ratio for the values without the balcony was well over 0.8, this would show that the presence of the balcony, rather than the size of the new obstruction, was the main factor in the relative loss of light.” (2.2.11)*

*A larger relative reduction in VSC may also be unavoidable if the existing window has projecting wings on one or both sides of it, or is recessed into the building so that it is obstructed on both sides as well as above.” (2.2.12)*

- 4.2.4 Further guidance is provided in Appendix F on the types of tests to be applied when considering the loss of light to an existing building. F6 states the following:

*“In assessing the loss of light to an existing building, the VSC is generally recommended as the appropriate parameter to use. This is because the VSC depends only on obstruction, and is therefore a measure of the daylit environment as a whole. The average daylight factor (ADF) (Appendix C) also depends on the room and window dimensions, the reflectance of interior surfaces and the type of glass, as well as the obstruction outside. It is an appropriate measure to use in new buildings because most of these factors are within the developer’s control.”*

*“Use of the ADF for loss of light to existing buildings is not generally recommended. The use of the ADF as a criterion tends to penalise well-daylit existing buildings, because they can take a much bigger and closer obstruction and still remain above the minimum ADFs recommended in BS 8206-2. Because BS 8206-2 quotes a number of recommended ADF values for different qualities of daylight provision, such a reduction in light would still constitute a loss of amenity to the rooms. Conversely if the ADF in an existing building were only just over the recommended minimum, even a tiny reduction in light from a new development would cause it to go below the minimum, restricting what could be built nearby.” (F6 and F7)*



## 4.3 Sunlight

4.3.1 The BRE Report advises that new development should take care to safeguard access to sunlight for existing buildings and any non-domestic buildings where there is a particular requirement for sunlight. In summary, the report states:

*“If a living room of an existing dwelling has a main window facing within 90 degrees of due south, and any part of a new development subtends an angle of more than 25 degrees to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window:*

- *receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and*
- *receives less than 0.8 times its former sunlight hours during either period and*
- *has a reduction in sunlight over the whole year greater than 4% of annual probable sunlight hours”*

4.3.2 The report also states that:

*“...It is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within ninety-degrees of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun. In non-domestic buildings any spaces which are deemed to have a special requirement for sunlight should be checked; they will normally face within ninety-degrees of due south anyway.” (3.2.3)*

## 4.4 Gardens and Open Spaces

The BRE report recommends the following:

*“The availability of sunlight should be checked for all open spaces where it will be required. This would normally include:*

- *Gardens, usually the main back garden of a house.*
- *Parks and playing fields.*
- *Children’s playgrounds.*

- *Outdoor swimming pools and paddling pools.*
- *Sitting out areas such as those between non-domestic buildings and in public squares.*
- *Focal points for views such as a group of monuments or fountains” (3.3.3)*

*“Each of these spaces will have different sun lighting requirements and it is difficult to suggest a hard and fast rule. However, it is clear that the worst situation is to have significant areas on which the sun only shines for a limited period over a large part of the year (figure 28). The equinox (21 March) can be chosen as a date for assessment here.” (3.3.4)*

*“As a check, it is recommended that at least half of the amenity areas listed above should receive at least 2 hours of sunlight on 21 March. It is instructive to draw the “two hours sun contour” which marks this area on plan, because the use of specific parts of a site can be planned with sunlight in mind. This could include reserving the sunniest parts of the site for gardens and sitting out, whilst using the shadier parts for car parking (in summer, shade is often valued in car parks) (figure 30). If a detailed calculation cannot be carried out, and the area is a simple shape, it is suggested that the centre of the area should receive at least two hours of sunlight on 21 March (see Appendix G).” (3.3.7)*

*“The above guidance applies both to new gardens and amenity areas and to existing ones which are affected by new developments. If an existing garden or outdoor space is already heavily obstructed then any further loss of sunlight should be kept to a minimum. In this poorly sunlit case, if as a result of new development, the area which can receive two hours of direct sunlight on 21 March is reduced to less than 0.8 times its former size, this further loss of sunlight is significant. The garden or amenity area will tend to look more heavily overshadowed.” (3.3.11)*

*“As an optional addition plots for summertime (e.g. 21 June) may be helpful as they will show the reduced shadowing then, although it should be borne in mind that 21 June represents the best case of minimum shadow, and that shadows for the rest of the year will be longer. Conversely if winter shadows (e.g. 21 December) are plotted, even low buildings will cast long shadows. In a built up area, it is common for large areas of the ground to be in shadow in December.” (3.3.15)*

## 5 RESULTS

- 5.1 We have analysed the effect of the development on the daylight and sunlight amenity to the properties with a reasonable expectation of daylight and sunlight amenity situated around the Development site. Properties further afield would satisfy the preliminary 25-degree line test recommended by the BRE Report, and therefore do not require further assessment.
- 5.2 The full list of assessed properties is as follows:
- 149 Headley Road.
  - 151 Headley Road.
- 5.3 All properties have been assessed for daylight amenity using the Vertical Sky Component (VSC) test. The VSC test is undertaken per window, however the BRE advises that daylight amenity to a habitable room will not be adversely affected if the main window serving the room retains a VSC value within the recommended numerical criteria.
- 5.4 Whilst the BRE does not specify a set of characteristics to define the 'main window' within a habitable room, in our opinion the main window would be either;
- a) Significantly larger than all other windows serving the room, or;
  - b) Providing the main source of daylight into the room.
- 5.5 If no floorplans are available for a property or its immediate neighbours, it is usually possible to determine whether a window serves habitable space (and which is the 'main window' per room) through external observation and our professional experience. If still unclear whether a window serves habitable space, it is included for the avoidance of doubt.
- 5.6 For properties where floorplans are obtained and deemed to be of a reasonable degree of accuracy (such as scaled drawings obtained from a planning application), Daylight Distribution (DD) assessment has also been undertaken within the habitable rooms in-line with BRE guidance.
- 5.7 For sunlight amenity, the BRE considers that sunlight obstruction may only become an issue if any part of a new development lies within 90 degrees due south in relation to an existing main window, when viewed in

plan. Any property wholly south of the Development therefore does not require further testing, in-line with BRE advice.

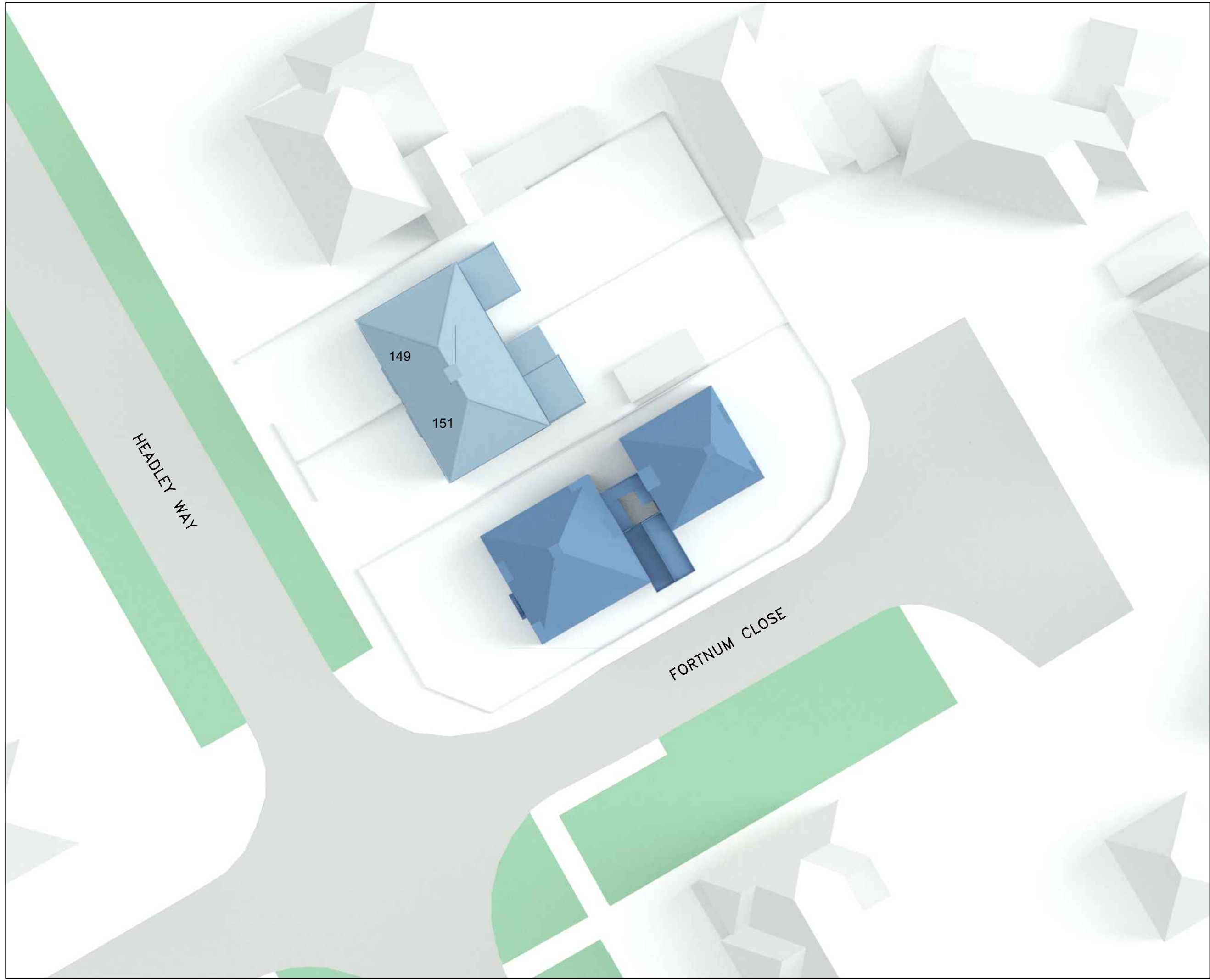
- 5.8 For those properties located wholly, or in-part to the north of the Development, any main living-room windows that face within 90 degrees of due south have been assessed for sunlight amenity using the Annual Probable Sunlight Hours (APSH) test. If the main living-room window does not face within 90 degrees due south, any secondary windows with southerly aspect also serving this room have been assessed instead, in-line with BRE guidance. The BRE considers bedrooms and kitchens to be less important but states that “*care should be taken not to block too much sun*”. The ‘main living-room’ windows have been determined or estimated as per the methodology detailed in paragraphs 5.5 and 5.6 above.
- 5.9 When assessing a room with multiple windows for sunlight amenity (where there is no distinguishable main window, or the main window does not face within 90 degrees of due south); the BRE advises that the highest value should be taken from windows on the same or adjacent walls. If a room has windows on opposite walls, the values to each can be combined.
- 5.10 By reference to the results in Appendix B the proposals will have very little effect on the daylight and sunlight amenity received to these properties. The daylight and sunlight received to four of the ground floor windows to 151 Headley Road will be substantially increased from the current position and all other rooms assessed would comfortably meet the BRE criteria.
- 5.11 The proposals will also comfortably meet the BRE criteria for sun-on-ground to gardens and amenity spaces with 149 being unaffected and 151 Headley Road benefitting from an increase in the area of the garden receiving two hours sunlight on 21 March from 162.9 square metres to 171.33 square metres.

## **6 CONCLUSION**

- 6.1 Our analysis demonstrates that the daylight and sunlight to the surrounding buildings would not be materially affected by the proposed works to 153 Headley Way when assessed in accordance with current BRE guidance. The proposals would result in an improvement to the daylight and sunlight received to 151 Headley Way and would meet Oxford City Council’s planning guidance and policies.

**APPENDIX A**

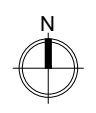
**DRAWINGS**



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**SOURCES OF INFORMATION:**  
 Groupwork proposed scheme  
 received on 02/09/2019  
 Solid export Headley Way daylight  
 testing model.dwg  
 Digital OS Extract



- KEY**
- Proposed buildings
  - Analysed properties
  - Surrounding buildings

Ordnance Datum Heights

REV	DETAILS	DATE	BY
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**CLIENT**  
 Groupwork

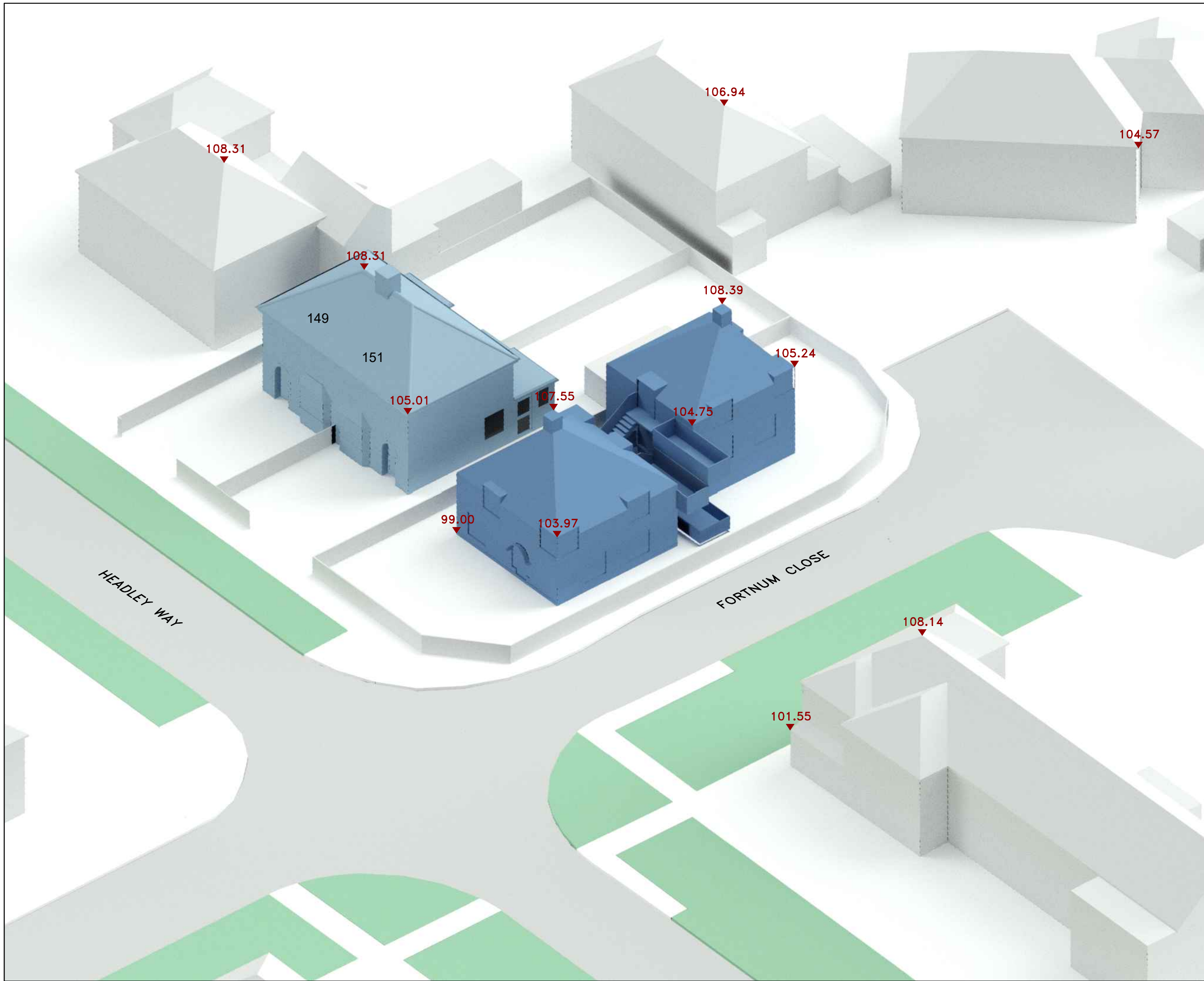
**PROJECT**  
 153 Headley Way, Oxford, OX3 7SS

**DRAWING TITLE**  
 Proposed plan view

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<b>DRAWN BY</b> MG	<b>CHECKED BY</b> DR

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**KEY**

- Proposed buildings
- Analysed properties
- Surrounding buildings

Ordnance Datum Heights

REV	DETAILS	DATE	BY
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**CLIENT**  
 Groupwork

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 153 Headley Way, Oxford, OX3 7SS

**DRAWING TITLE**  
 Proposed 3D view

<b>SCALE</b> Not to Scale	<b>DATE</b> 25/09/2019
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Ordnance Datum Heights

REV	DETAILS	DATE	BY
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 Groupwork

**PROJECT**  
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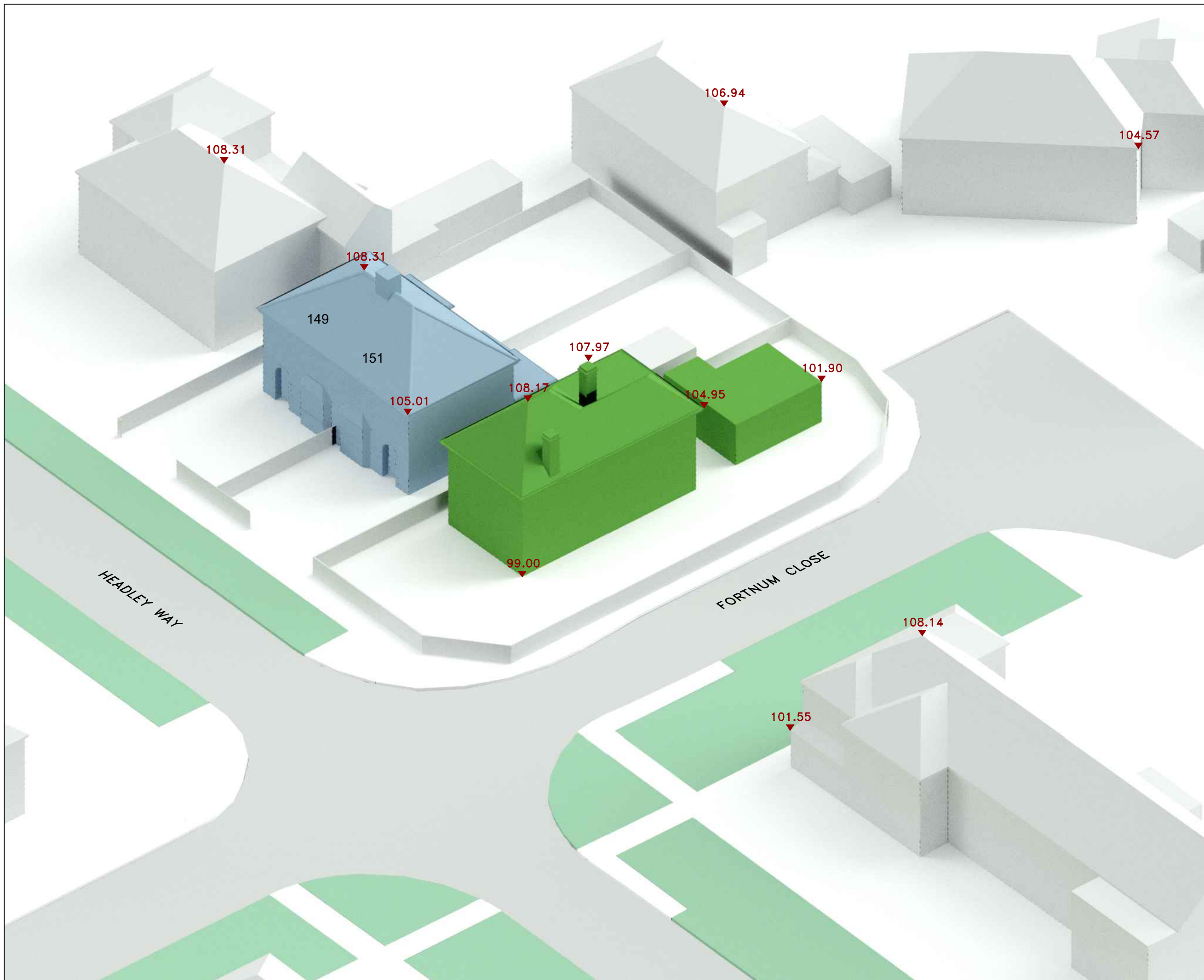
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Ordinance Datum Heights

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 Groupwork

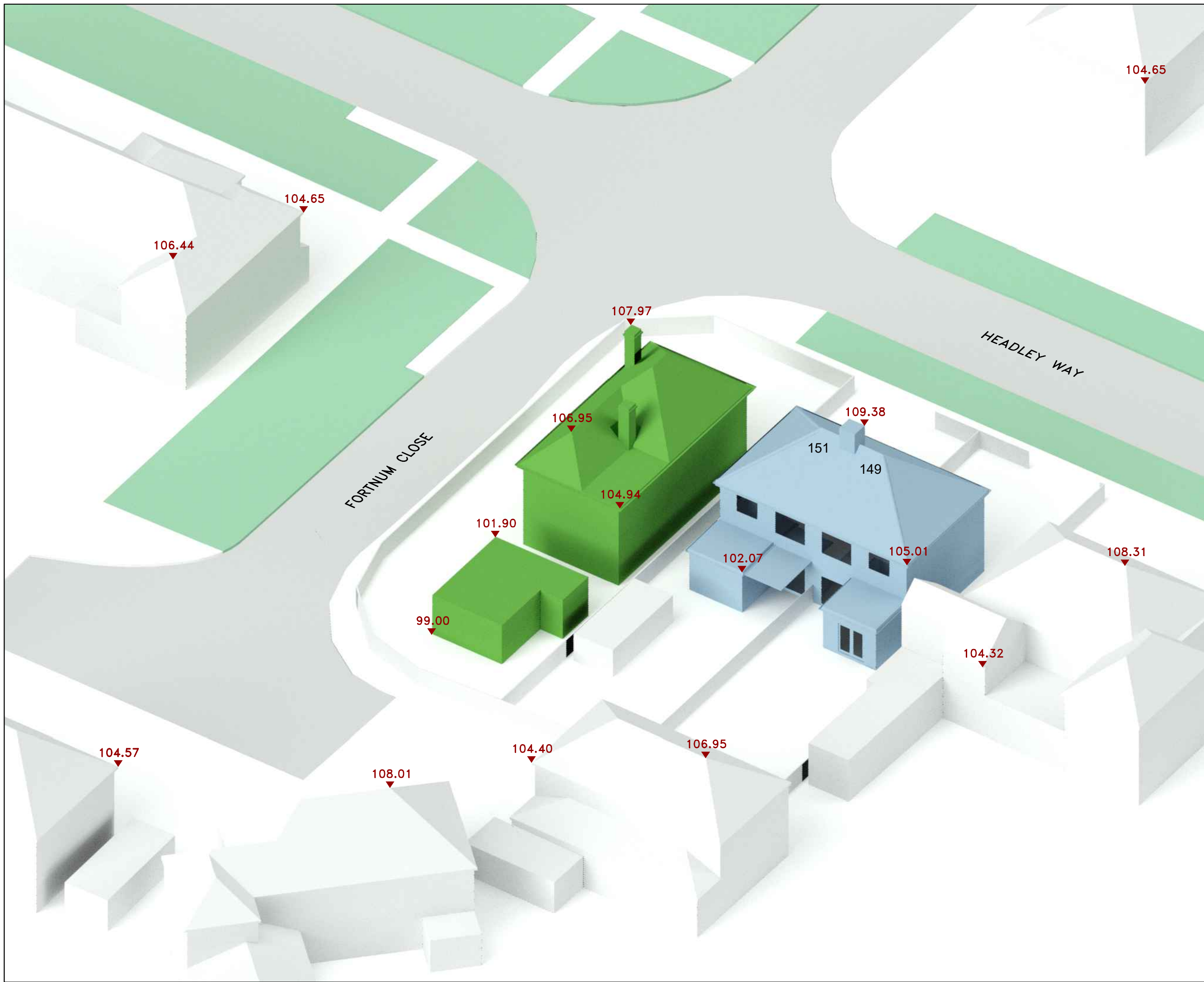
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Digital OS Extract

**KEY**

- Existing buildings
- Analysed properties
- Surrounding buildings

Ordinance Datum Heights

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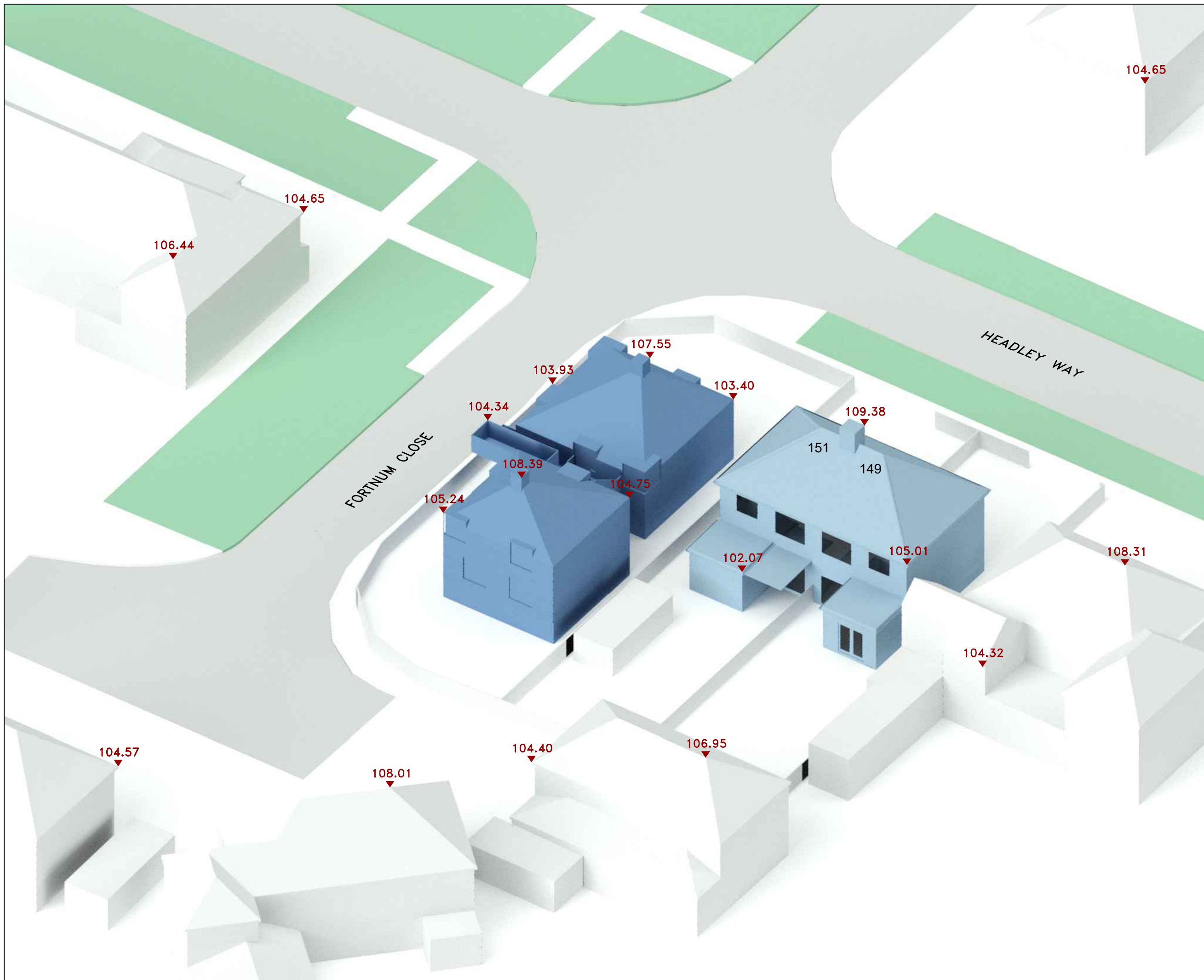
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**KEY**

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- Analysed properties
- Surrounding buildings

Ordnance Datum Heights

REV	DETAILS	DATE	BY
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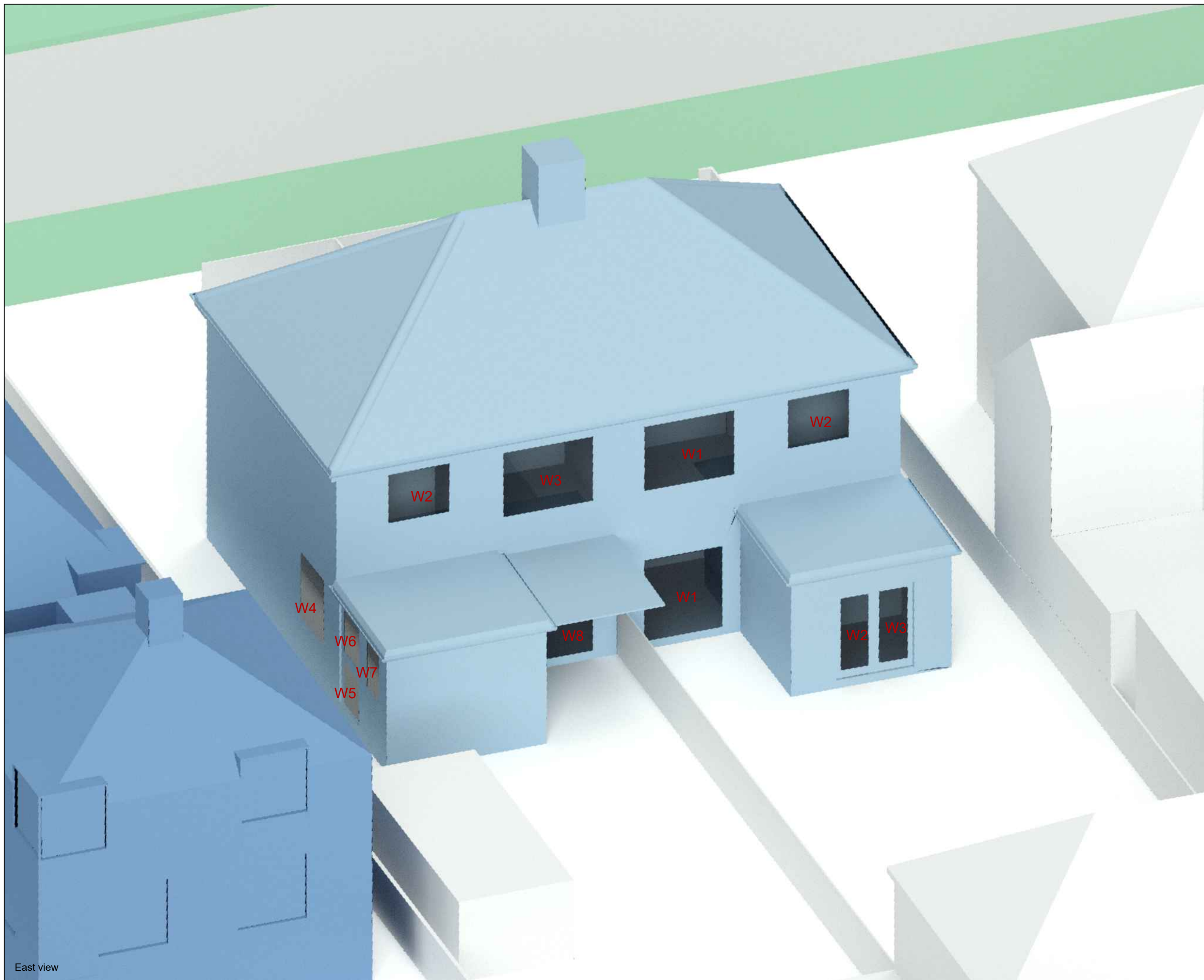
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 Proposed 3D view

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East view

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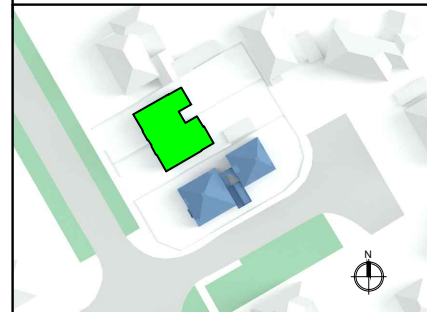
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Solid export Headley Way daylight  
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Digital OS Extract

**KEY**

- Analysed properties
- Surrounding buildings
- Window Location



REV	DETAILS	DATE	BY
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**CLIENT**  
 Groupwork

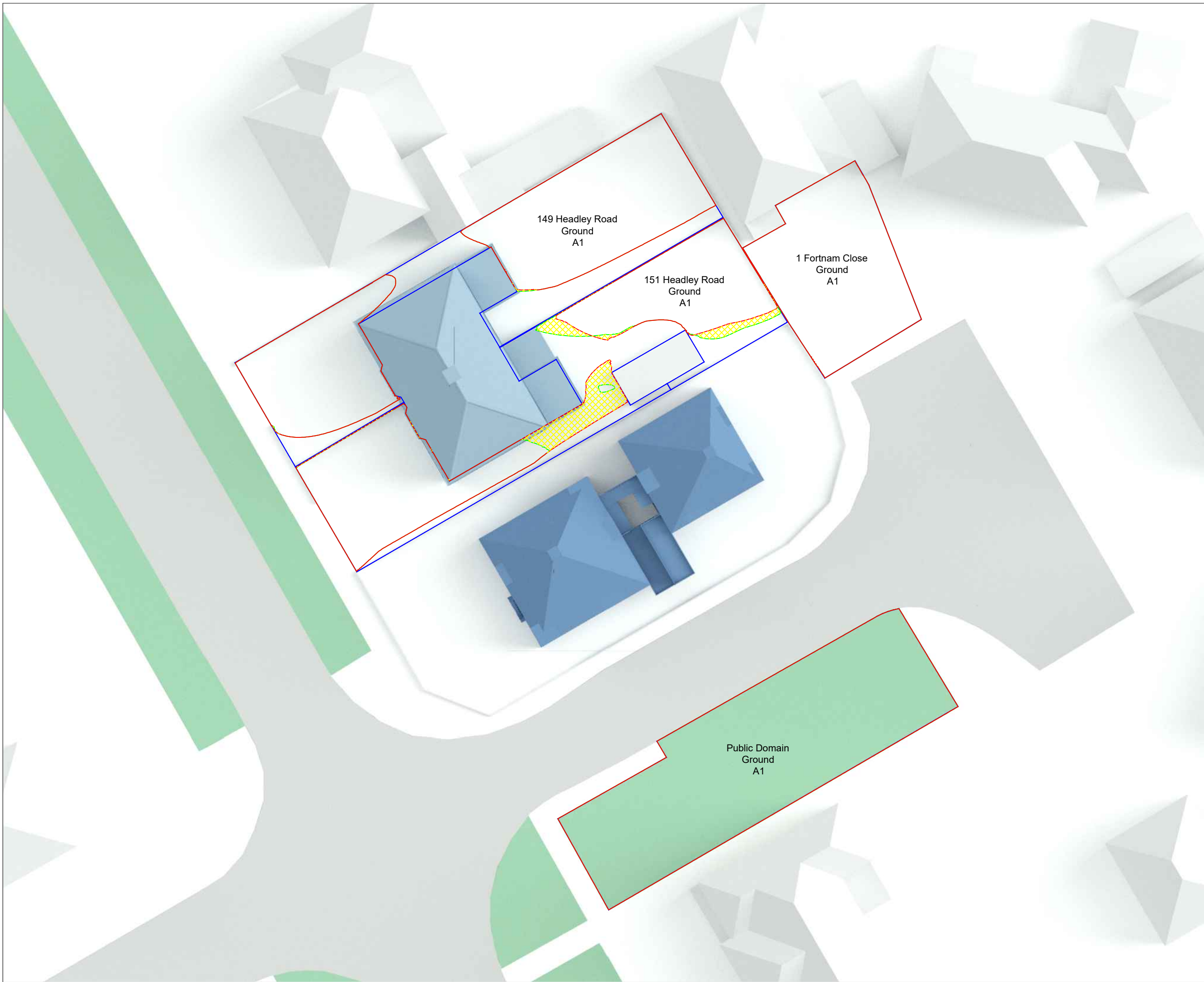
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**DRAWING TITLE**  
 Window Maps  
 149 & 151 Headley Way

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 testing model.dwg

Digital OS Extract



**KEY**

- Amenity area
- Existing area of direct sunlight
- Proposed area of direct sunlight
- Area of loss / gain

REV	DETAILS	DATE	BY
A	*	*	*

**CLIENT**  
 Groupwork

**PROJECT**  
 153 Headley Way, Oxford, OX3 7SS

**DRAWING TITLE**  
 Permanent Overshadowing  
 2hr Sun-on-Ground Analysis

<b>SCALE</b> 1:250 @ A3	<b>DATE</b> 25/09/2019
<b>DRAWN BY</b> MG	<b>CHECKED BY</b> -

<b>DWG No.</b> D+S/1/ 401	<b>REV.</b>
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**APPENDIX B**  
**RESULTS SPREADSHEETS**

Project Name: 153 Headley Way, Oxford, OX3 7SS  
 Project No.:  
 Report Title: Daylight & Sunlight - Neighbour Analysis Existing V Proposed  
 Date of Analysis: 24/09/2019

Floor Ref.	Room Ref.	Room Attribute	Property Type	Room Use.	Window Ref.	Window Attribute	VSC	Pr/Ex	Meets BRE Criteria	Window Orientation	Annual	Pr/Ex	Meets BRE Criteria	Winter	Pr/Ex	Meets BRE Criteria	Total Suns per Room Annual	Meets BRE Criteria	Total Suns per Room Winter	Meets BRE Criteria
<b>151 Headley Road</b>																				
Ground	R3		Residential	Kitchen*	W4		Existing 12.70 Proposed 22.46	1.77	YES	150°	30 55	1.83	YES	4 10	2.50	YES	30 55	YES	4 10	YES
	R4		Residential	Unknown-Resi	W5		Existing 10.04 Proposed 17.63	1.76	YES	150°	26 43	1.65	YES	3 7	2.33	YES				
		W6				Existing 12.59 Proposed 21.57	1.71	YES	150°	32 52	1.63	YES	4 12	3.00	YES					
		W7				Existing 14.49 Proposed 21.32	1.47	YES	150°	37 48	1.30	YES	4 10	2.50	YES					
	R5		Residential	Dining Room*	W8		Existing 9.79 Proposed 9.79	1.00	YES	60°N		*North*		*North*						
First	R2		Residential	Bedroom*	W2		Existing 35.00 Proposed 34.43	0.98	YES	60°N		*North*		*North*			*North*	*North*	*North*	*North*
	R3		Residential	Bedroom*	W3		Existing 35.83 Proposed 35.28	0.98	YES	60°N		*North*		*North*			*North*	*North*	*North*	*North*
<b>149 Headley Road</b>																				
Ground	R1		Residential	Dining Room*	W1		Existing 22.37 Proposed 22.02	0.98	YES	60°N		*North*		*North*			*North*	*North*	*North*	*North*
	R2		Residential	Unknown-Resi	W2		Existing 31.32 Proposed 30.75	0.98	YES	60°N		*North*		*North*			*North*	*North*	*North*	*North*
		W3				Existing 30.61 Proposed 30.11	0.98	YES	60°N		*North*		*North*			*North*	*North*	*North*	*North*	
First	R1		Residential	Bedroom*	W1		Existing 35.74 Proposed 35.39	0.99	YES	60°N		*North*		*North*			*North*	*North*	*North*	*North*
	R2		Residential	Bedroom*	W2		Existing 34.24 Proposed 34.04	0.99	YES	60°N		*North*		*North*			*North*	*North*	*North*	*North*

Project Name: 153 Headley Way, Oxford, OX3 7SS

Project No.:

Report Title: Two hours Sunlight to Amenity Analysis - Neighbour Existing V Proposed

Date of Analysis: 24/09/2019

Floor Ref.	Amenity Ref.	Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
<b>151 Headley Road</b>						
Ground	A1	Area m2 Percentage	232.87 162.19 70%	171.33 74%	1.06	YES
<b>149 Headley Road</b>						
Ground	A1	Area m2 Percentage	242.63 188.29 78%	188.19 78%	1.00	YES
<b>1 Fortnam Close</b>						
Ground	A1	Area m2 Percentage	110.11 110.05 100%	110.05 100%	1.00	YES
<b>Public Domain</b>						
Ground	A1	Area m2 Percentage	238.37 238.37 100%	238.37 100%	1.00	YES