

36, 38 and 40 Park View Road,
Welling, DA16 1RT

Daylight and Sunlight Report

18th October, 2023



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1.0 Executive Summary

1.1 CHP Surveyors Limited have been instructed by Mr Karanjit Kooner to consider the impact the proposed scheme will have on the neighbouring residential properties enjoyment of daylight and sunlight as well as establishing whether the proposed accommodation will enjoy good levels of daylight and sunlight.

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1.2 This report accompanies a planning application to be submitted by Mr Karanjit Kooner for the proposed scheme.

1.3 From our online research, we have identified the neighbouring properties that have windows overlooking the site and therefore need to be considered as part of this assessment, with these being:

- 34 Park View Road
- 42 Park View Road

1.4 To ensure that this assessment has correctly considered the daylight and sunlight enjoyed by the neighbouring residential properties and proposed scheme, it has been undertaken in accordance with the Building Research Establishment publication "*Site layout planning for daylight and sunlight. A guide to good practice*" (2022) (BRE guidelines).

1.5 The technical analysis has been undertaken using the standards and tests contained in the BRE guidelines. A summary of the recommendations within the BRE guidelines are set out in the Principles of Daylight and Sunlight attached Appendix A.

1.6 The daylight assessment has considered eight windows within the neighbouring properties that serve six rooms. The results of the analysis show that seven (88%) of the windows and five (83%) of the rooms will fully comply with the BRE guidelines. The one window and room that do not achieve the above is a bedroom which the BRE guidelines acknowledges is less important and will retain what is considered an appropriate level of daylight.



1.7 The sunlight assessment has considered one room within the neighbouring properties and shows that one (100%) will achieve the aims of the BRE guidelines.

1.6 The analysis therefore demonstrates that the scheme will have minimal impact on the daylight and sunlight enjoyed by the neighbouring property and will achieve the BRE guidelines.

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1.9 With regard to the level of daylight and sunlight that will be enjoyed by the proposed accommodation, an analysis has been undertaken in accordance with the BRE guidelines. The results demonstrate that with regards to daylight, all rooms will achieve the numerical target. With regards to sunlight, for those units with a room facing within 90° of due south, all will achieve the BRE guidelines. The proposed accommodation will therefore have good access to daylight and sunlight.

2.0 **Assessment**

2.1 When reviewing the results of the analysis, to ensure that the proposed scheme is appropriate from a daylight and sunlight perspective, the following documents have been considered:

- National Planning Policy Framework (NPPF) – September 2023
- London Borough of Bexley – City Plan (2019-2040)
- Building Research Establishment publication, “*Site Layout Planning for Daylight and Sunlight. A guide to good practice.*” (BRE guidelines) – 2022

Set out below are the key sections that relate to daylight and sunlight within these documents.

2.2 **National Planning Policy Framework – September 2023**

2.2.1 Set out within the National Planning Policy Framework (September 2023) under paragraph 125 (c), it states with regard to daylight and sunlight that consideration should be given as to whether efficient use of the land is being made: -



“..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 adequate living standards).”

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It also states under the National Planning Practice guidance under Design (March 2014):

“...with regard to scale and relates to both the overall size and mass of individual buildings and spaces in relation to their surroundings, and to the scale of their parts. As part of this account should be taken of local climatic conditions, including daylight and sunlight...”

2.3 London Borough of Bexley

2.3.1 Within the City Plan (2019-2040) produced by the London Borough of Bexley, it states under Paragraph 7.3:

“Negative effects on amenity should be minimised as they can impact on quality of life. Provision of good indoor daylight and sunlight levels is important for health and well-being and to decrease energy consumption through reduced need for artificial heating and lighting.”

2.4 Building Research Establishment (BRE guidelines)

2.4.1 The BRE guidelines are considered as a recognised methodology used by local authorities when assessing daylight and sunlight.

2.4.2 The analysis undertaken by this Practice makes reference to the criteria within the BRE guidelines. However, when considering the results of the analysis, the site-specific constraints have been taken into account.



2.4.3 The BRE guidelines recognise that their purpose is not to provide strict criteria in which a development must adhere to but provide guidance. Within the introduction of the BRE guidelines, it states:

“The guide is intended for building designers and their clients, consultants and planning officials. 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 developer. Although it gives numerical guidelines, this should be interpreted flexibly because natural lighting is only one of the many factors in site layout design.”

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2.4.4 Methodology is contained within the guidelines to calculate the impact the proposed development will have on the neighbouring residential properties and also when assessing the amenity within the proposed units.

2.4.5 It is suggested within the BRE guidelines that residential properties should have the greatest need for good daylight and sunlight and that key habitable rooms should be considered, these being bedrooms, living rooms and kitchens. For the purpose of our assessment, it is considered that commercial properties do not have a reasonable expectation of daylight and sunlight as they generally rely on artificial light.

2.4.6 An extended account of the BRE guidelines is attached at Appendix A, entitled “Principles of Daylight and Sunlight”.

3.0 Information

3.1 During the process of producing our report, we have made reference to the following information:

Kompas London

Drawing numbers KL-1359-1, 2, 3, 4, 5, 6



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Information on the internal configuration of the neighbouring properties has been sourced from a review of London Borough of Bexley's planning portal and other online sources such as Rightmove and Estate Agent websites.

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4.0 Site and Proposals

4.1 The site is located within the London Borough of Bexley. The existing structure on the site is over ground and first floor as indicated on drawing numbers 2774-100 and 102 attached at Appendix B of this report.

4.2 The proposals for the site are to extend the property to the rear and at second floor level to provide additional residential accommodation, as illustrated on drawing numbers 2774-101 and 103 attached at Appendix B.

5.0 Limitations

5.1 To undertake the detailed daylight and sunlight analysis, a three-dimensional computer model has been produced using the information provided and sourced by us, as set out in Clause 4.1.

5.2 Internal access was not available to the surrounding properties and research was undertaken using planning portals and other sources, such as Estate Agent websites, to try and establish the internal configuration within the surrounding properties and improve the accuracy of the analysis. Where information was unable to be sourced, reasonable assumptions have been made as to the probable internal room sizes, layouts and uses based on information obtained through our research.

5.3 A daylight and sunlight analysis has been undertaken using the MBS specialist software programme and from this the resultant data has been produced.



6.0 Methodology

6.1 Based on online research we have produced a 3D computer model of the neighbouring residential buildings to the site. This includes the window locations and internal configuration (either actual or assumed). We have not had access to the neighbouring properties and therefore the internal configuration and which windows serve habitable rooms has been based on other information we have been able to obtain. We have then produced a 3D computer model of the existing structures on the site and the proposals.

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6.2 Using a specialist computer programme, we have undertaken an analysis in accordance with the criteria contained in the BRE guidelines. We have run an analysis in the existing situation to provide a baseline figure and then a further analysis following the implementation of the proposals. There is no requirement to consider the implications during the development process as these will only be short term.

6.3 As clearly stated within the BRE guidelines:

"Its aims are to help designers not constrain them and that therefore the numerical values contained within the document should be interpreted flexibly since natural light is only one of many factors in site layout design."

6.4 Therefore, when reviewing the results of the analysis, a degree of flexibility has been used that considers the context of the site and its environment.

6.5 The guidelines also advise of circumstances when alternative target levels may be used. The BRE guidelines are designed to be applied within suburban environment, not a dense urban location. Section 2.2.3 of the guidelines advises:

"...numerical values given here are purely advisory. Different criteria may be used, based on the requirements for daylighting in an area viewed against other site layout constraints."



6.6 Daylight

6.7 The numerical values contained in the BRE guidelines are used to establish whether the proposals will have a significant effect on the daylight enjoyed by the neighbouring properties and are based initially on a Vertical Sky Component (VSC) analysis. This analysis establishes the amount of available daylight received directly from the sky for each individual window. The reference point for this analysis is the centre point of the window.

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6.8 This analysis advises that each window should achieve a VSC of 27% or 0.8 times the existing value. These values are for a suburban location whereas for an urban location, a VSC of 20% is considered more appropriate.

6.9 The second method is the No Sky Line (NSL) or Daylight Distribution analysis. This assesses the change in position of the No Sky Line between the existing and proposed situations. It does not consider the number and size of windows to a room. The criteria specify that a significant portion of each habitable room (>80%), at least 0.8 times the existing area, should lie in front of the No Sky Line (NSL).

6.10 The final method is for calculating daylight for proposed is to calculate the minimum lux levels a room will enjoy over at least half its room area, for at least half of the daylight hours, in accordance with Appendix C of the BRE guidelines. The BRE guidelines set out the minimum level as being dependant on the room use. The criteria state the minimum levels are as follows: -

- Kitchen – 200 lux
- Living Room – 150 lux
- Bedroom – 100 lux

6.11 Sunlight

6.12 Concerning sunlight, the BRE guidelines advise that all windows within 90° of due south should achieve 25% of the Annual Probable Sunlight Hours (APSH) with at least 5% during the winter months. Where this is not achieved and the different between the existing and

proposed APSH is more than 4%, the BRE guidelines state that the proposals will not have a noticeable effect on the sunlight, provided the total APSH, as well as during the winter months, are within 0.8 times the existing.

6.13 For proposed accommodation the analysis is based on the 21st March with the target being that each habitable room facing within 90° of due south enjoys at least 2hrs of direct sunlight.

7.0 Surrounding Properties

7.1 From a review of the site, the following neighbouring properties appear to provide residential accommodation are:

- 34 Park View Road
- 42 Park View Road





7.2 The BRE guidelines advise that only residential properties that contain windows that serve habitable rooms and therefore have a reasonable expectation of daylight and sunlight need to be assessed.

8.0 Daylight Assessment

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8.1 Following our interrogation of the neighbouring properties and applying the criteria within the BRE guidelines, we have identified the following residential properties are required to be assessed within the daylight analysis.

- 34 Park View Road
- 42 Park View Road

8.2 34 Park View Road

8.2.1 This property is located to the east of the site and provides commercial accommodation at ground floor and residential accommodation over two upper floors.

8.2.2 The results of the VSC analysis are set out in the table attached at Appendix C of this report and demonstrate that six windows that serve habitable rooms will achieve the numerical values set out in the BRE guidelines.

8.2.3 With regards to daylight distribution, based on our assumptions as to the internal configuration, the results of the analysis are set out in the table attached at Appendix C and demonstrate that four rooms assessed will have a significant portion of their area in front of the NSL.

8.2.4 The analysis of the daylight enjoyed by this property demonstrates that aims of the BRE guidelines are achieved and will not have a significant effect on this property.



8.3 42 Park View Road

8.3.1 This property is located to the west of the site and provides commercial accommodation at ground floor and residential accommodation at one upper floor.

8.3.2 The results of the VSC analysis are set out in the table attached at Appendix C of this report and demonstrate that one of the two windows that serve habitable rooms will achieve the numerical values set out in the BRE guidelines. The other window, serves a bedroom which the BRE guidelines acknowledges and achieves a VCS of over 0.7 times the existing value, which is considered appropriate.

8.3.3 With regards to daylight distribution, based on our assumptions as to the internal configuration, the results of the analysis are set out in the table attached at Appendix C and demonstrate that one of the two rooms assessed will have a significant portion of their area in front of the NSL. The bedroom that does not, has more than 50% of its area in front of the NSL, which is considered appropriate for a bedroom.

8.3.4 The analysis of the daylight enjoyed by this property demonstrates that, taking into account the nature of the rooms in question, the aims of the BRE guidelines are achieved and will not have a significant effect on this property.

8.5 Daylight to Proposed Accommodation

8.5.1 The analysis of the proposed residential accommodation within the scheme has been undertaken in accordance with Appendix C of the BRE guidelines. The results of the analysis are set out in the table attached at Appendix C.

8.5.2 The results of the analysis are set out in the table attached at Appendix C and demonstrate that all 21 rooms analysed will achieve or exceed the numerical target. The proposals therefore provide accommodation whose future occupiers will enjoy good access to daylight.



9.0 Sunlight Assessment

9.1 From a review of the properties surrounding the site, it has been established that due to their orientation, a sunlight analysis of the following properties has been undertaken.

- 34 Park View Road

9.2 34 Park View Road

9.2.1 The analysis has considered the access to sunlight the one room that has windows facing within 90° of due south, with the results set out in the table attached at Appendix D. This demonstrates that the numerical targets set out in the guidelines are achieved and therefore the proposals will not have a significant effect on the sunlight it enjoys.

9.4 Sunlight to Proposed Accommodation

9.4.1 The results of the analysis of the proposed units with the scheme with windows facing within 90° of due south are set out in the table attached at Appendix D.

9.4.2 The results demonstrate that all six units analysed, all except eight will have at least one habitable room that enjoys a minimum of 1.5 hours of direct sunlight on 21st March. The other two units in the scheme, due to the orientation of the site only the windows face significantly more than 90° from due south and therefore as acknowledged in paragraph 3.1.11 of the BRE guidelines will not be able to achieve the numerical target.

9.7.3 Taking into account the orientation of the site, the proposals achieve the BRE guidelines and provide accommodation with good access to sunlight.



10.0 Conclusion

10.1 An analysis has been undertaken in accordance with the Building Research Establishment's publication "*Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice*". (BRE guidelines) to establish the effect the proposals will have on the daylight and sunlight enjoyed by the neighbouring properties: -

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- 34 Park View Road
- 42 Park View Road

10.2 The results of the analysis demonstrate that the aims of the BRE guidelines are achieved and the proposals will not have a significant effect on the daylight and sunlight enjoyed by the neighbouring residential properties.

10.3 An assessment of the new accommodation demonstrates that, with reference to paragraph C17 of the BRE guidelines and providing private amenity space directly off the principal living areas, will provide accommodation that will enjoy good access to daylight. Taking into account the site orientation, the analysis demonstrates that the proposed accommodation will also have good access to sunlight.

10.4 The results of the assessment undertaken demonstrates that through careful design the aims of the Building Research Establishments publication "*Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice*" (2022) are achieved and that the proposals will not have a significant effect on the neighbour's daylight and sunlight and will provide accommodation with good access to daylight and sunlight.



Appendix A



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PRINCIPLES OF DAYLIGHT AND SUNLIGHT

In 2022 the Building Research Establishment (BRE) published a handbook titled “*Site Layout Planning for Daylight and Sunlight. A Guide to Good Practice.*” Its aim was to provide advice to building designers on site layout planning in order to achieve good daylight and sunlight amenity to the proposed development, the open spaces between the proposed blocks and the existing surrounding properties.

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The content of this guide is well established and is used by most Local Authorities as the methodology for measuring daylight and sunlight, the guidelines should be applied flexibly to take account of the specific circumstances of each site. The BRE guidelines are suited more to low density suburban development sites where there is greater flexibility for site layout planning. In dense urban development sites, these are usually constrained often by adjacent buildings and the guidelines state that these should be applied more flexibly in these instances. Within the Introduction of the guidelines, it states that: -

“The guide is intended for building designers and their clients, consultants and planning officials. 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 developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural light is only one of many factors in site layout design.”

The Introduction of this document, continues to advise that its purpose is also to; *“To help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.”*

It must therefore be appreciated and as can be seen from the above extracts; the handbook is for guidance only.



Daylight

The guidelines state that daylight assessments should be undertaken to habitable rooms where the occupants can expect to receive a reasonable amount of daylight.

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The first assessment that should be undertaken is to establish whether the proposals will subtend an angle of 25° from the centre of the window. If it does not, then it is considered there will be good daylight. The BRE guidelines advise: -

“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 a lowest window, subtends an angle of more than 25° to the horizontal may be affected.”

This assessment is most appropriate for well-spaced, low density or low rise, uniform proposed developments. It is not an appropriate assessment for dense urban environments where the existing building on the development site already subtends at an angle greater than 25° to the horizontal from the subject window. It is for this reason that this 25° assessment is generally dispensed with and the more detailed analysis outlined below is undertaken.

The BRE guidelines set out two methods for calculating daylight, these being an analysis of the Vertical Sky Component (VSC) and No Sky Line (NSL).

Vertical Sky Component (VSC)

The Vertical Sky Component (VSC) analysis establishes the amount of available daylight received directly from the sky for each individual window. The reference point for the analysis being the centre of the window, on the plan of the outer window wall.

The VSC is the amount of direct sky a window enjoys, expressed as a percentage of the amount of direct sky a horizontal, unobstructed rooflight would receive.



The maximum percentage of direct skylight a vertical window can receive is 40%. The BRE have determined that where a VSC of 27% is achieved, then daylight should reach the window of an existing building.

Where a VSC of less than 27% is achieved either enjoyed before the implementation of the proposals or it is enjoyed following the implementation, then the BRE guidelines state that provided the new value is greater than 0.8 times the existing value, daylight will not be significantly affected.

No Sky Line (NSL)

The daylight distribution analysis is undertaken at working plane level, with this set at 0.85m above the floor level of a dwelling.

The BRE guidelines state that provided a significant area of the room, which is considered to be 80%, is in front of the No Sky Line (the point behind which at desk top level no sky is visible) or at least 0.8 times the existing area, then the room will enjoy good distribution.

If, in the existing situation this is not the case, the BRE guidelines state that provided the area following the implementation of the proposals is at least 0.8 times the existing area, there will not be a significant affect.

Sunlight

This analysis is undertaken in a similar method to calculating VSC. Within residential accommodation the analysis undertaken to establish the levels of sunlight relate to the main windows that are within 90° of due south. It is considered that sunlight to kitchens and bedrooms is less important, although care should be taken not to block out too much.

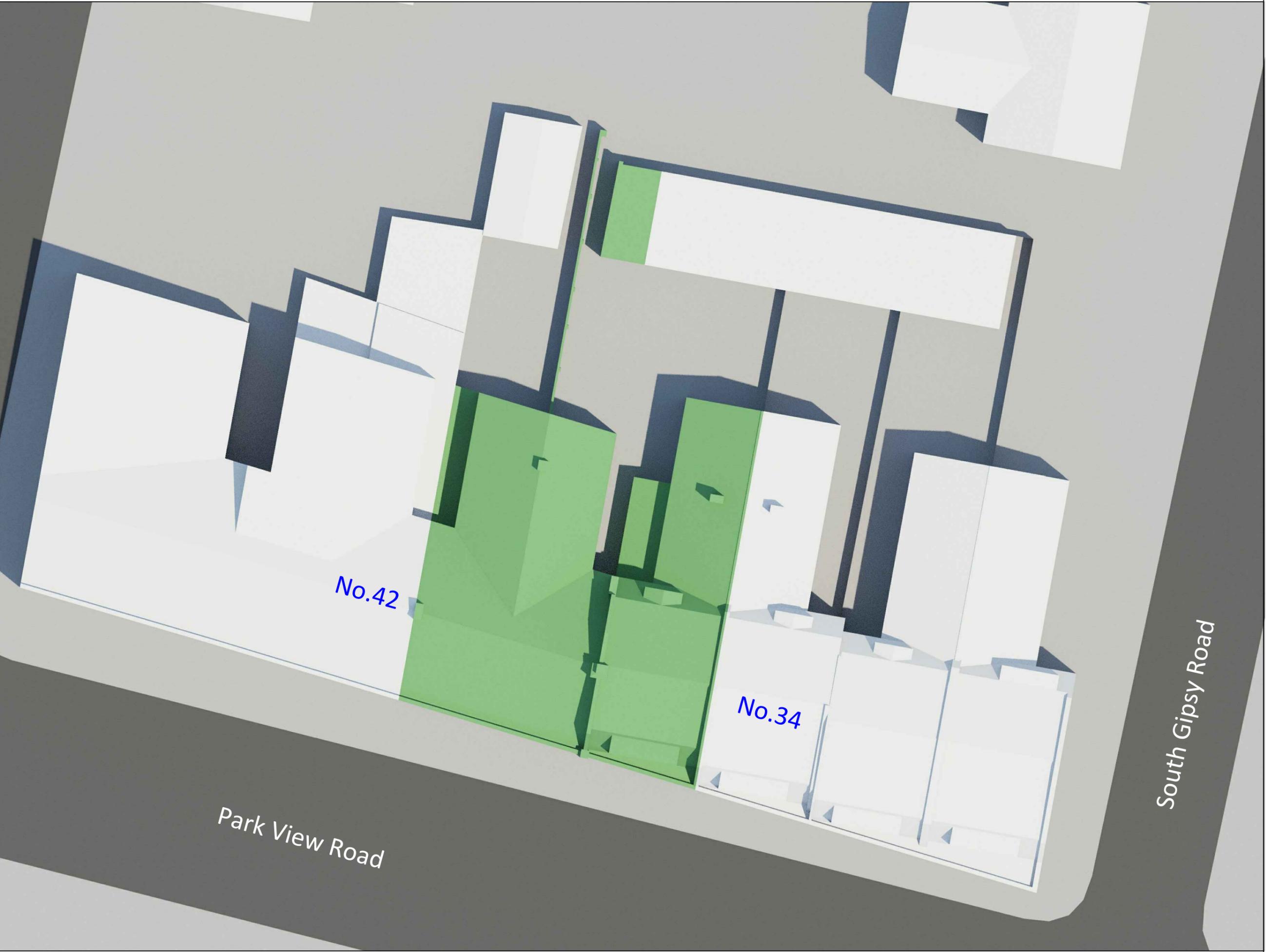
Within commercial or non-domestic buildings, the use of the building will determine whether a sunlight assessment is required.



In relation to neighbouring residential buildings, if a window is facing within 90° of due south and overlooking any part of the proposals subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlight of the existing dwelling may be affected.



Appendix B



KEY

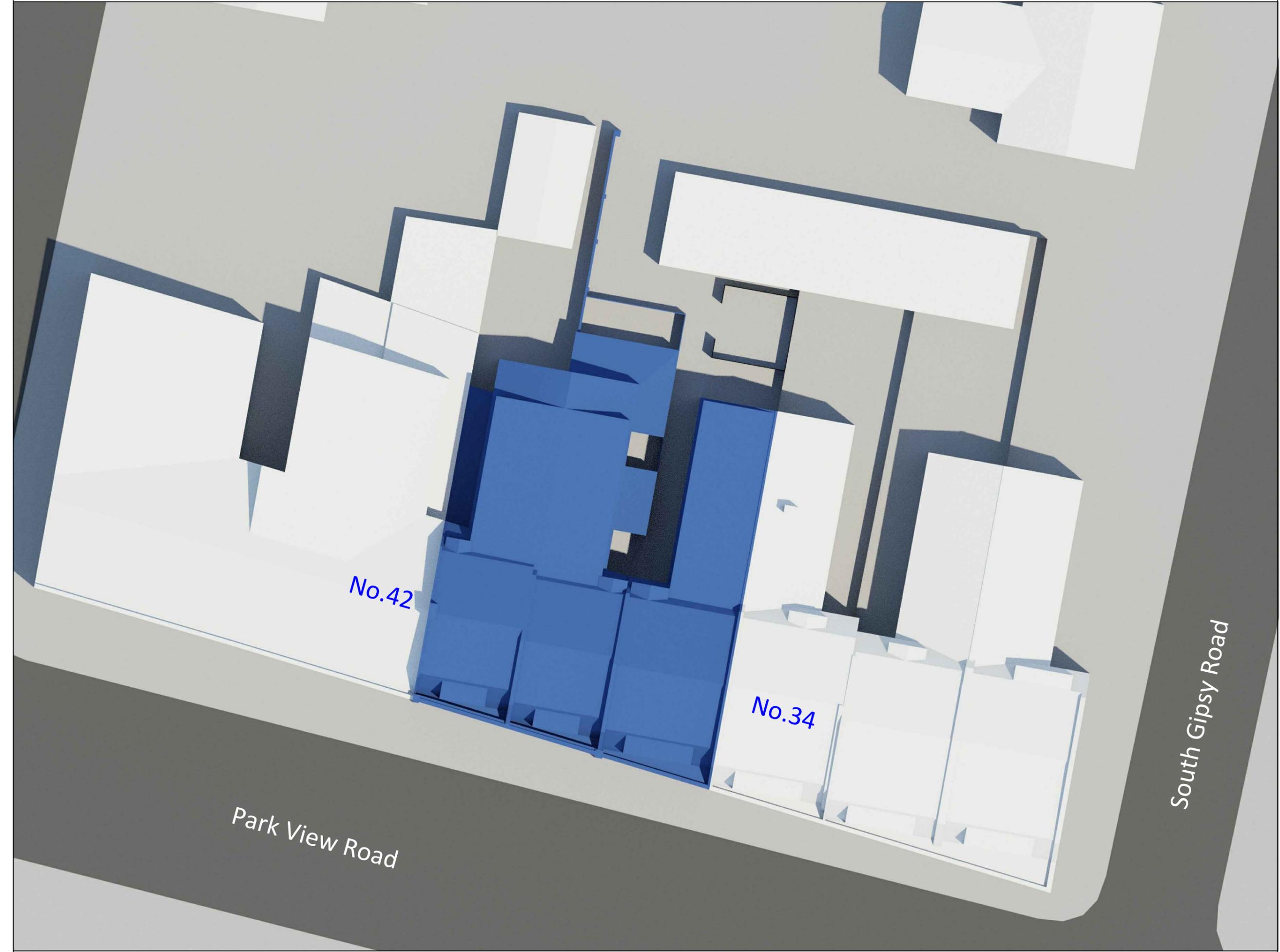


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36-40 Park View Road

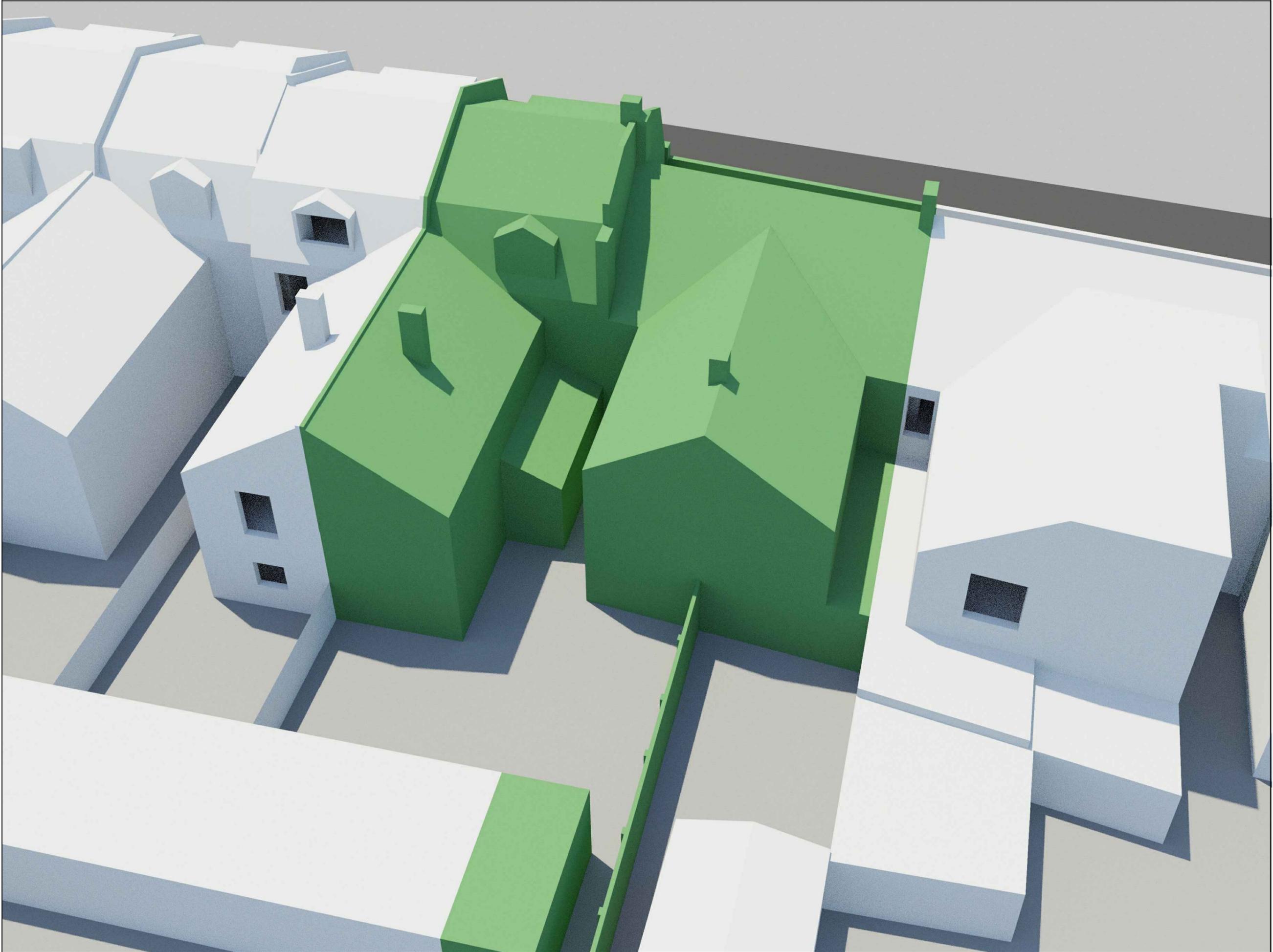
DRAWING TITLE
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SCALE NTS DATE 14-07-2023 ISSUE -

DWG NO 2774_100 REV -



KEY



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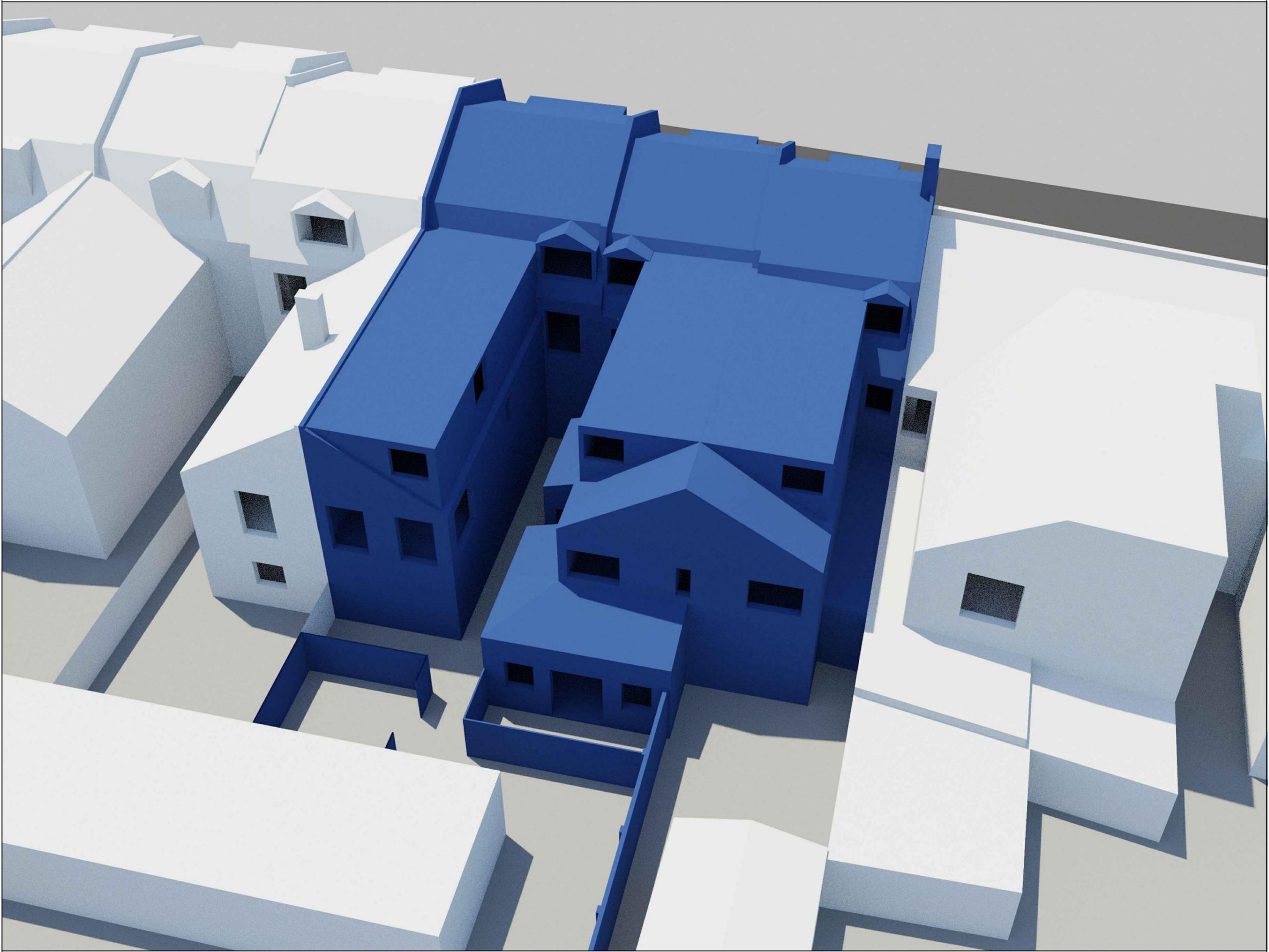


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36-40 Park View Road

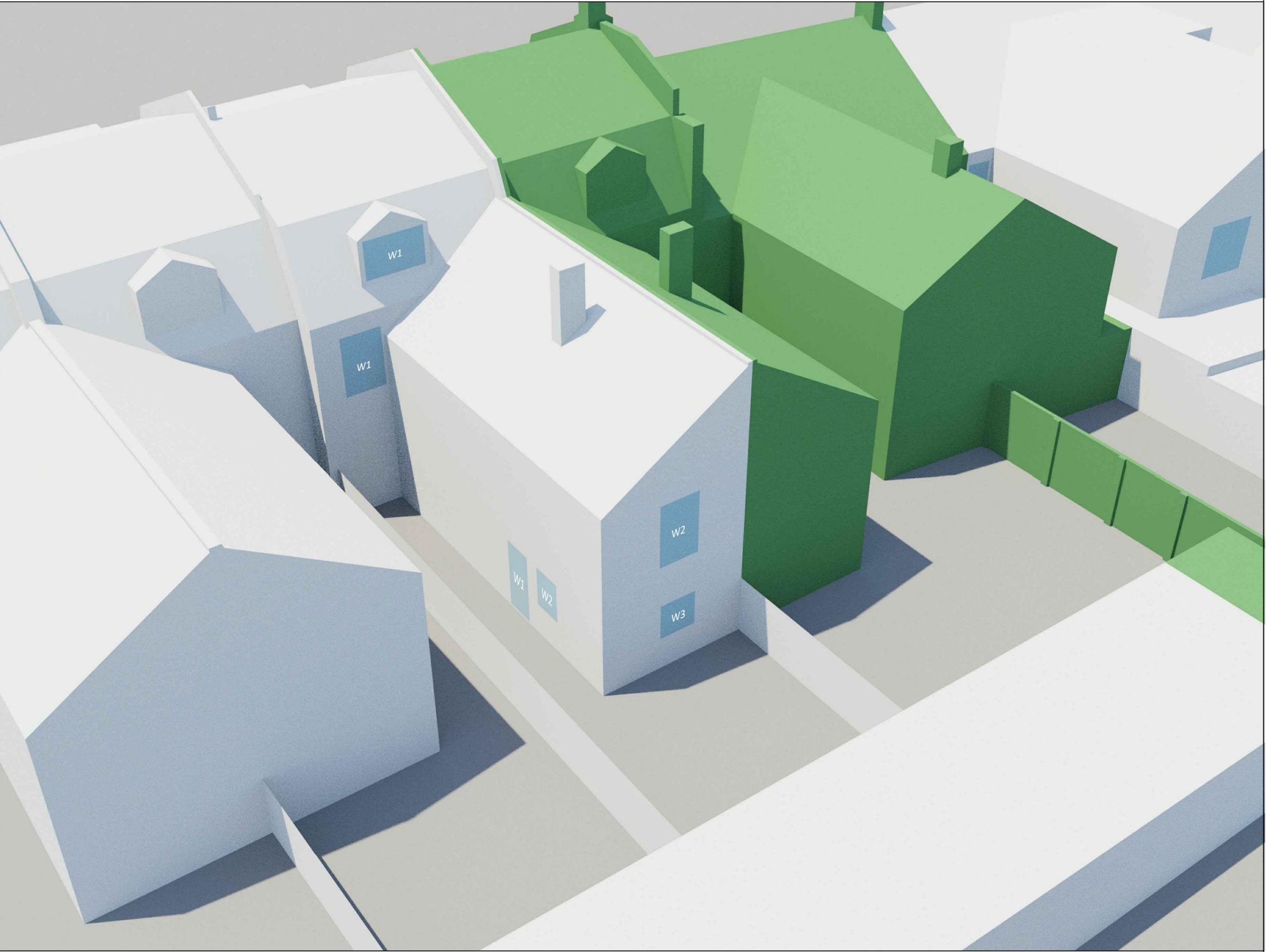
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Existing 3D View

SCALE	DATE	ISSUE
NTS	14-07-2023	-

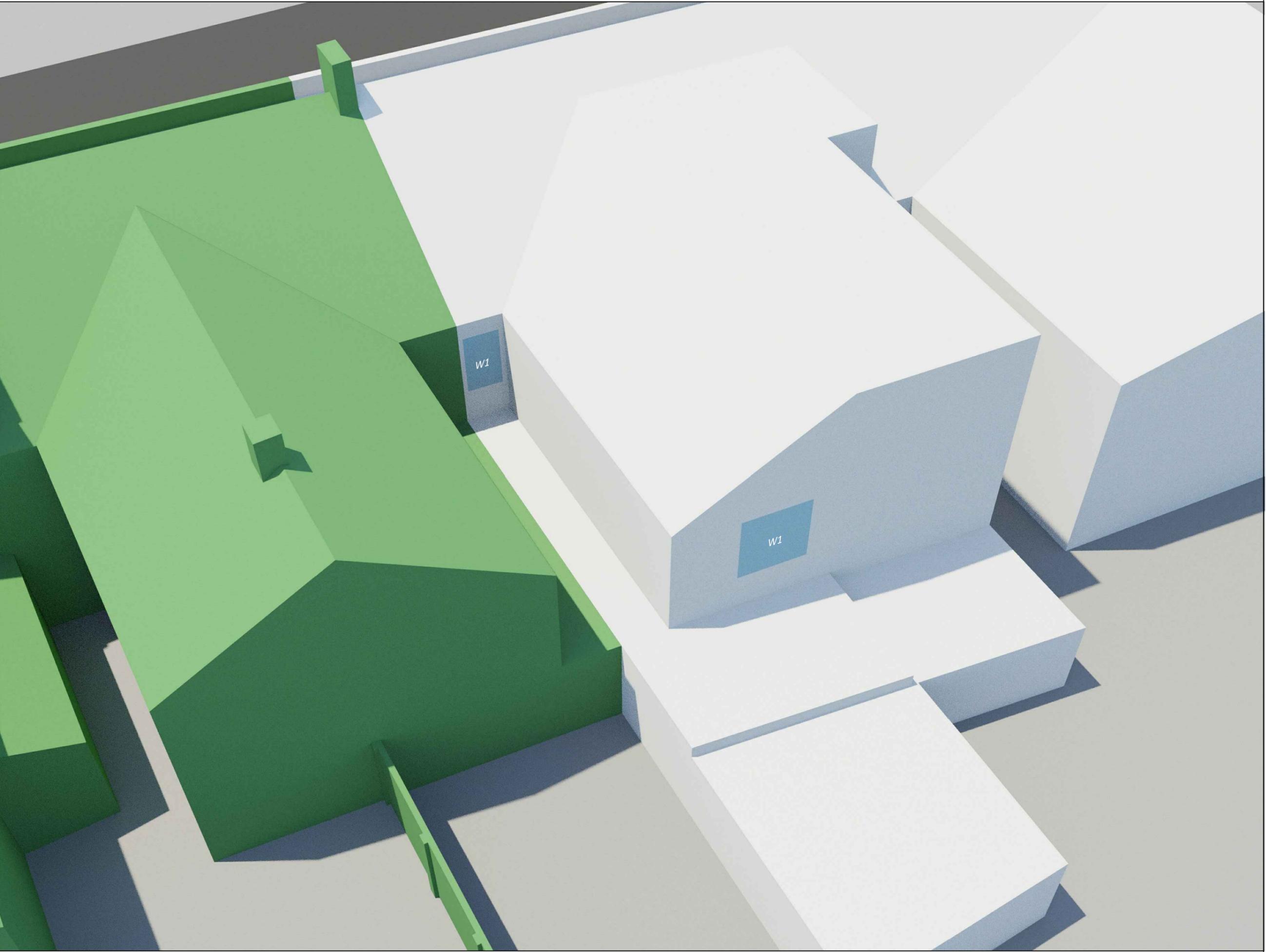
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2774_102	-



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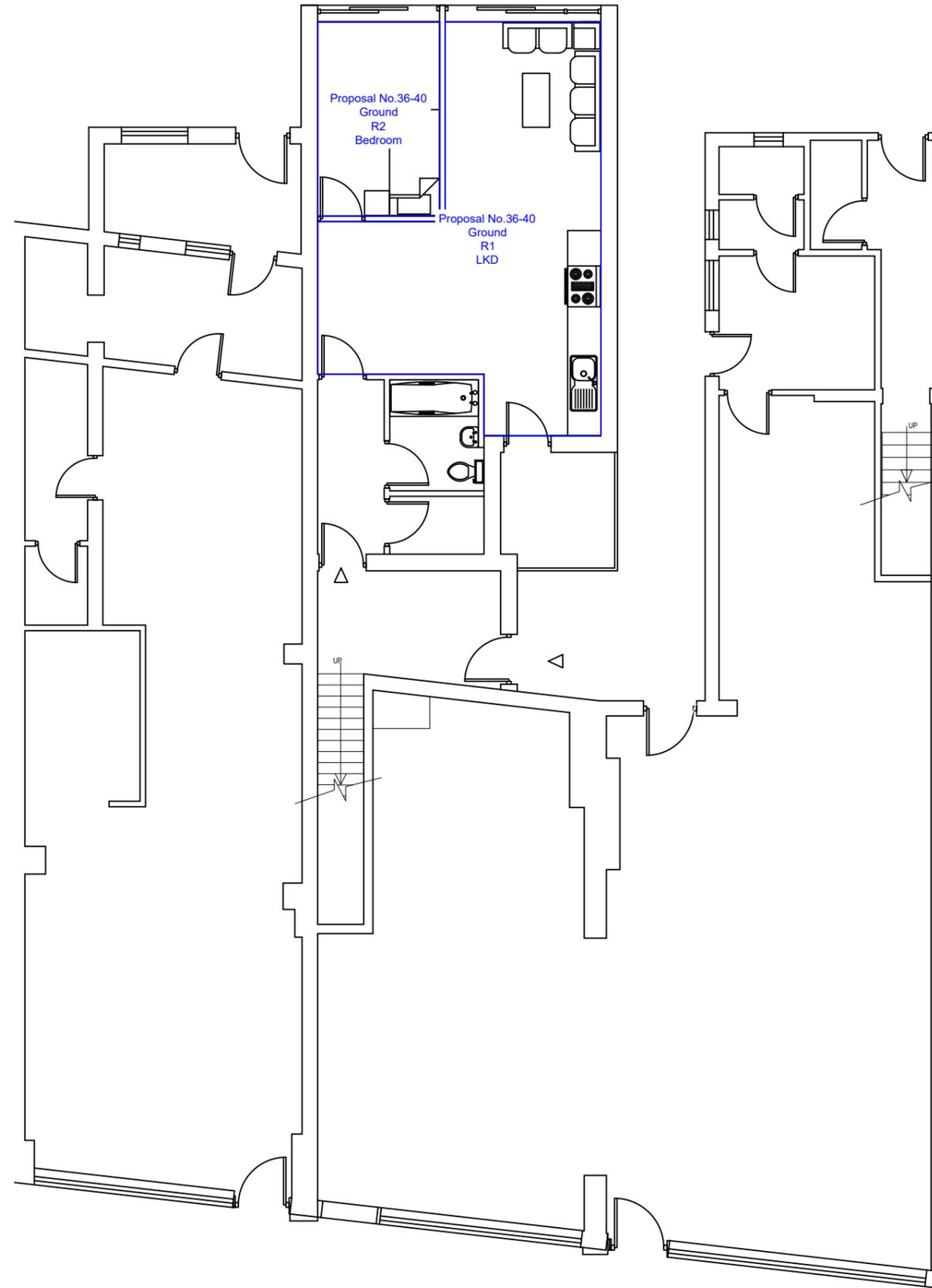
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PROJECT TITLE
36-40 Park View Road

DRAWING TITLE
No.42 Park View Road
Window Map

SCALE	DATE	ISSUE
NTS	14-07-2023	-

DWG NO	REV
2774_105	-



KEY

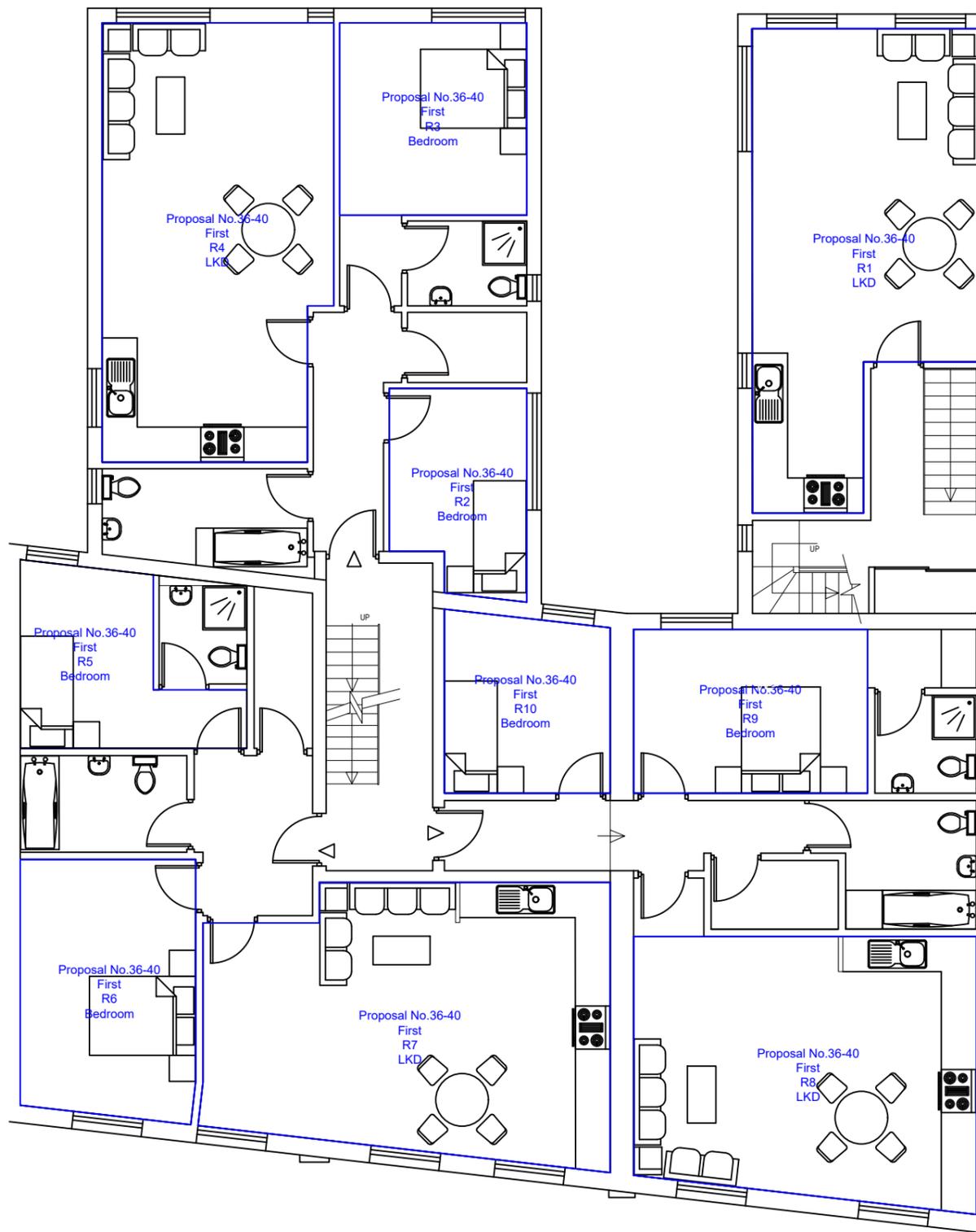


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36-40 Park View Road

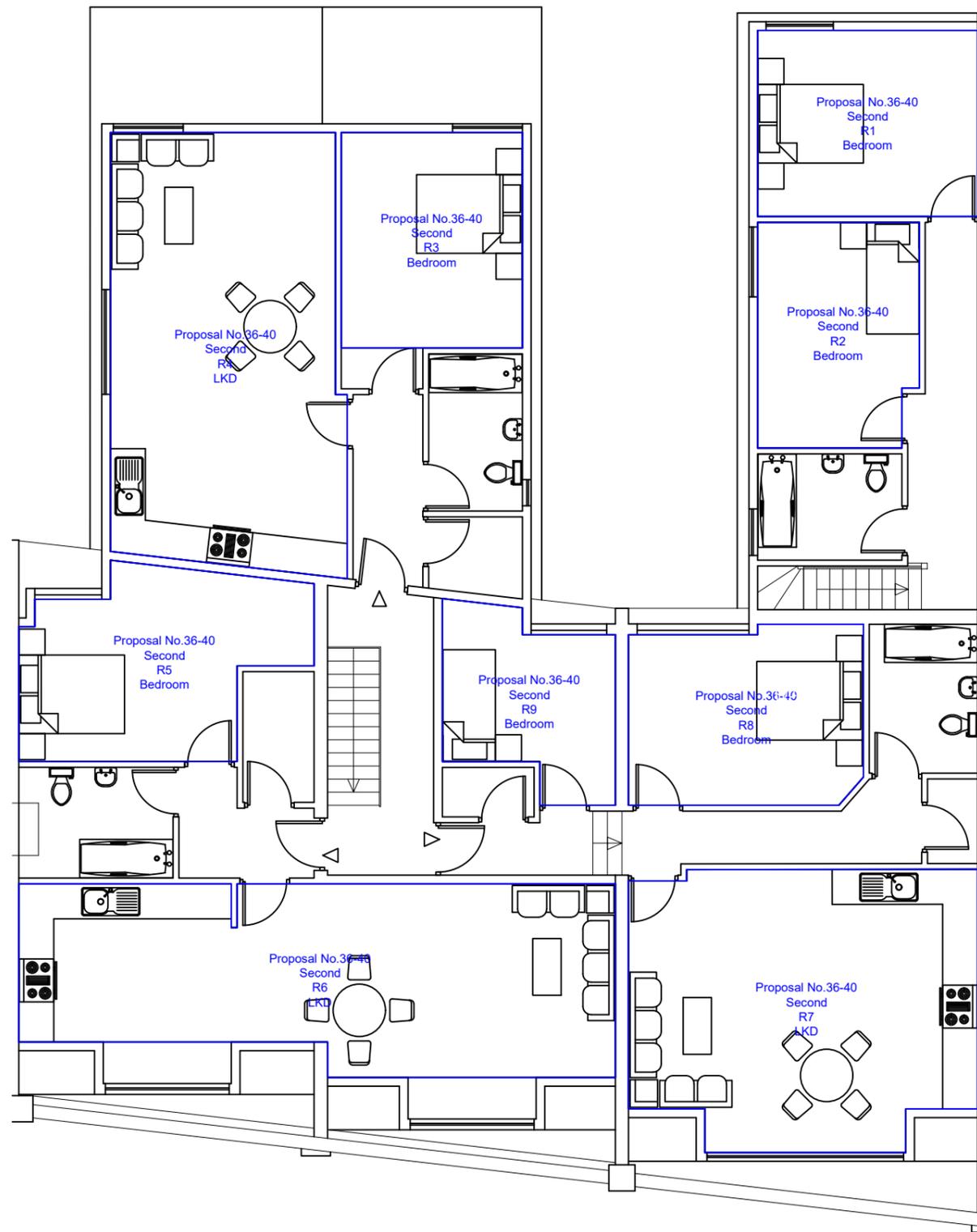
DRAWING TITLE
Proposed Ground Floor
Room Map

SCALE	DATE	ISSUE
NTS	12-10-2023	-

DWG NO	REV
2774_106	-



KEY



KEY



Appendix C

Daylight Results

LEVEL	WINDOW	ROOM	VSC		LOSS	% LOSS	NOSKY	
			EXISTING	PROPOSED			EXISTING	PROPOSED
<u>34 Park View Road</u>								
Ground	W1	R1	16.1	16.1	0.0	0.0	>80%	>80%
	W2		20.9	20.9	0.0	0.0		
	W3		33.9	33.8	0.1	0.2		
First	W1	R1	28.6	28.6	0.0	0.0	>80%	>80%
	W2	R2	38.4	38.4	0.0	0.0	>80%	>80%
Second	W1	R1	37.7	37.8	-0.1	-0.3	>80%	>80%
<u>42 Park View Road</u>								
First	W1	R1	21.7	15.4	6.3	29.2	>80%	54%
	W2	R2	38.8	38.4	0.4	1.1	>80%	>80%

Proposed Accommodation - Daylight Results

BS_EN17037

LEVEL	ROOM	ROOM USE	REQUIRED LUX	AREA OF ROOM ACHIEVING TARGET LUX
Ground	R1	Living/Kitchen/Dining	150	51%
	R2	Bedroom	100	100%
First	R1	Living/Kitchen/Dining	150	89%
	R2	Bedroom	100	44%
	R3	Bedroom	100	100%
	R4	Living/Kitchen/Dining	150	54%
	R5	Bedroom	100	57%
	R6	Bedroom	100	100%
	R7	Living/Kitchen/Dining	150	100%
	R8	Living/Kitchen/Dining	150	100%
	R9	Bedroom	100	58%
	R10	Bedroom	100	50%
Second	R1	Bedroom	100	89%
	R2	Bedroom	100	99%
	R3	Bedroom	100	99%
	R4	Living/Kitchen/Dining	150	82%
	R5	Bedroom	100	57%
	R6	Living/Kitchen/Dining	150	99%
	R7	Living/Kitchen/Dining	150	100%
	R8	Bedroom	100	82%
	R9	Bedroom	100	92%



Appendix D

Sunlight Results

LEVEL	WINDOW	EXISTING			PROPOSED			% LOSS	
		SUMMER	WINTER	TOTAL	SUMMER	WINTER	TOTAL	WINTER	TOTAL
<u>34 Park View Road</u>									
Ground	R1	34%	1%	35%	32%	1%	33%	0.00	5.71

Proposed Accommodation - Sunlight Results

BS_EN17037

LEVEL	ROOM	ROOM USE	RECOMMENDED HOURS OF SUNLIGHT ON 21 MARCH	HOURS OF SUNLIGHT ACHIEVED ON 21 MARCH
Ground	R1	Living/Kitchen/Dining	1.5	0.0
	R2	Bedroom	1.5	0.0
First	R1	Living/Kitchen/Dining	1.5	1.2
	R2	Bedroom	1.5	0.0
	R3	Bedroom	1.5	0.0
	R4	Living/Kitchen/Dining	1.5	0.8
	R5	Bedroom	1.5	0.0
	R6	Bedroom	1.5	7.4
	R7	Living/Kitchen/Dining	1.5	7.4
	R8	Living/Kitchen/Dining	1.5	7.4
	R9	Bedroom	1.5	0.0
	R10	Bedroom	1.5	0.0
Second	R1	Bedroom	1.5	0.0
	R2	Bedroom	1.5	3.2
	R3	Bedroom	1.5	0.0
	R4	Living/Kitchen/Dining	1.5	3.8
	R5	Bedroom	1.5	0.0
	R6	Living/Kitchen/Dining	1.5	9.0
	R7	Living/Kitchen/Dining	1.5	9.3
	R8	Bedroom	1.5	0.0
	R9	Bedroom	1.5	0.0