

1 Pathfield Cottages

Cross Lane, Barns Green

Daylight/Sunlight Report

6 October 2025

Matthew Craske

For and on behalf of Daylight Sunlight Consulting Ltd

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1. Introduction

- 1.1 Daylight Sunlight Consulting Ltd has been instructed to provide daylight and sunlight advice with regard to the redevelopment of the land adjacent to 1 Pathfield Cottages, Cross Lane, Barns Green.
- 1.2 We have assessed the effects that the proposed development has on the adjacent sensitive receptors, in particular the existing residential uses at 1 Pathfield Cottages, being provided with the existing and proposed drawings from DMA Building Designs.
- 1.3 Where possible, we have reviewed the on-line planning portal or estate agents' websites in order to try and ascertain the internal configurations of the adjacent properties and room uses.

2. Executive Summary

- 2.1 The assessments have been undertaken in line with the Building Research Establishment (BRE) guidelines – Site Layout Planning for Daylight and Sunlight: A guide to good practice (2022).
- 2.2 The assessments to the neighbouring properties have demonstrated that acceptable levels of daylight and sunlight will be retained in the proposed condition.
- 2.3 We therefore conclude that the proposed redevelopment of the land adjacent to 1 Pathfield Cottages meets the expectations set out in the BRE guidelines, ensuring acceptable daylight and sunlight levels to the neighbouring residents.

3. Principles for assessing daylight and sunlight

3.1 The main document for testing and evaluating daylight and sunlight effects is the Building Research Establishment (BRE) guidelines – Site Layout Planning for Daylight and Sunlight: A guide to good practice (2022).

3.2 It is important to understand that the BRE document is only a guideline, and this is highlighted in the introduction: -

"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 developer. Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of the many factors in site layout design."

3.3 The guidelines go on to highlight that,

"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."

Daylight to existing buildings

3.4 The testing methodology and suggested target criteria for the assessment of daylight to existing buildings around a development site are set out in Part 2.2 of the BRE guidelines.

3.5 The evaluation of what constitutes a sensitive receptor is essentially where occupants have a reasonable expectation of light. We consider this to be residential uses, care homes, student accommodation, hostels, educational classrooms, worship areas and key rooms within a hospital. Uses such as hotels and most

commercial properties are not considered to be of importance for natural lighting. For residential properties, only habitable rooms need to be tested, with bathrooms, toilets, store rooms, circulation areas and garages not requiring assessment.

- 3.6 There are two types of simplistic tests that are identified in the BRE guidelines, these being a 25° angle test and a 45° angle test. The 25° angle test can be used where there is a continuous obstruction parallel to an affected window. The BRE guidelines state 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° to the horizontal, then the diffuse daylighting of the existing building may be adversely affected.”

- 3.7 The 45° angle test is only applicable to the assessment of small side extensions to domestic residential properties. If a proposed development projects out such that a 45° angle subtended back towards a neighbouring property covers the centre point of a habitable window, both in plan and elevation, then the light might be affected and further testing is required.

- 3.8 We have undertaken a preliminary review of the 25° test, as this allows us to focus our assessments on the properties most likely to be affected. We have then considered the more comprehensive daylight assessments identified in the BRE guidelines, these being the Vertical Sky Component (VSC) test and Daylight Distribution (DD) test. A more detailed summary of these tests is set out below.

VERTICAL SKY COMPONENT

3.9 The Vertical Sky Component (VSC) test assesses the amount of daylight obtained at the centre point of the external plane of a window. The guidelines state the following: -

"If this VSC is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the vertical sky component with the new development in place, is both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight."

3.10 We therefore work on the basis of seeking to achieve 27% VSC in the proposed condition, as it is considered adequate, but where this value is not achieved, reductions of 0.8 times the former value (the same as saying a 20% reduction when compared against the existing condition) is not considered noticeable and therefore not a material effect.

3.11 As the VSC test only assesses daylight reaching the external plane of the window, this shows only the potential for light, rather than actual. This is because much depends upon the size of the window, its relationship to the room, the size of the room, and whether there are other windows lighting the same room.

3.12 Therefore, where layouts are known, and as recommended by the BRE guidelines, the daylight distribution assessment (as discussed below) should be considered at the same time, reviewing both sets of results before forming an opinion on the overall effect to the occupants within the neighbouring property.

DAYLIGHT DISTRIBUTION

3.13 The BRE guidelines suggest that daylight distribution assessments can be undertaken where room layouts are known, but we believe it is better to run tests to

all of the neighbouring buildings being run for the VSC test, making assumptions on the room configurations if nothing can be found through research.

- 3.14 The daylight distribution test establishes the amount of the sky light entering a room at a working plane height of 850mm above floor level, plotting the 'no sky line' area in both the existing and the proposed. There is no test of adequacy in just the proposed condition, rather the reduction in light between the existing and proposed is assessed, and where light is reduced to less than 0.8 times its former value (the same as saying a 20% reduction), this will be noticeable to occupants. Ratio reductions of 0.8 or higher are considered not to be noticeable to the occupants within the rooms tested.

Sunlight to existing buildings

- 3.15 The assessment of sunlight for properties adjacent to a development site are set out in Part 3.2 of the BRE guidelines. As with the daylight assessment, the evaluation of what constitutes a sensitive receptor is essentially where occupants have a reasonable expectation of sunlight. We consider this to be residential accommodation, care homes, student accommodation, hostels, educational classrooms and hospital properties.
- 3.16 Paragraph 3.2.3 states, *"To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun. Normally loss of sunlight need not be analysed to kitchens and bedrooms, except for bedrooms that also comprise a living space, for example a bed sitting room in an old people's home..."*

3.17 The BRE guidelines further reiterates in Figure 27 that no checks on sunlight are required if the proposed works lie within 90° of due north of the window under consideration.

3.18 The calculation of sunlight is taken on the outside face of a window, at its centre point, unless it is a floor to ceiling window such as a patio door, where instead a point at the centre of the window is taken 1.6m above the ground. Each window is assessed in terms of the percentage of Annual Probable Sunlight Hours (APSH), with the BRE guidelines suggesting at paragraph 3.2.6: -

"If a room can receive more than one quarter of annual probable sunlight hours (APSH), including at least 5% of APSH in the winter months between 21st September and 21st March, then the room should still receive enough sunlight. Also, if the overall annual loss of APSH is 4% or less, the loss of sunlight is small..."

3.19 Paragraph 3.2.7 goes on to say, *"Any reduction in sunlight access below these levels should be kept to a minimum. If the available sunlight hours are both less than the amount above and less than 0.80 times their former value, either over the whole year or just in the winter months (21 September to 21 March), and the overall annual loss is greater than 4% of APSH, then the occupants of the existing building will notice the loss of sunlight; the room may appear colder and less cheerful and pleasant..."*

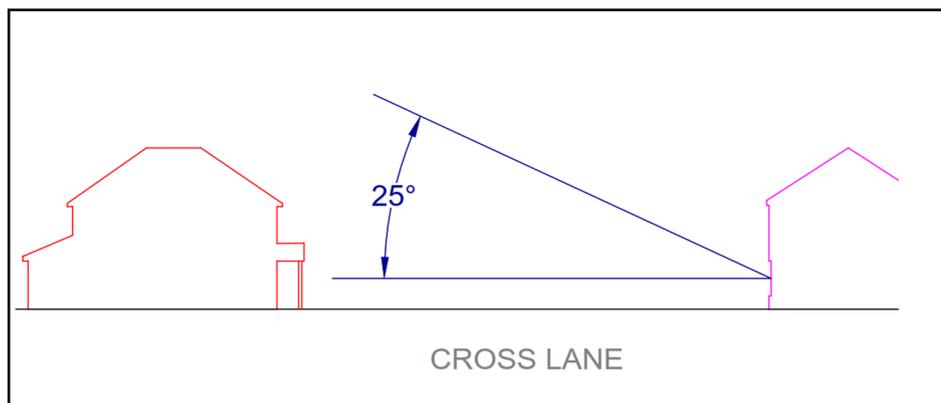
3.20 To summarize the above, a good level of sunlight to a window is 25% APSH, of which 5% should be in winter months in the proposed condition. Where sunlight levels fall below the suggested level, a comparison with the existing and proposed is undertaken. A noticeable amount of sunlight will occur if:

- the reduction is less than 0.8 times its former value (the same as a 20% reduction), for both or one of the annual and winter APSH levels; and
- has a reduction in sunlight received over the whole year greater than 4% APSH

3.21 Paragraph 3.2.8 of the BRE guidelines highlight that where rooms have two or more windows, the aggregate sunlight level can be obtained and utilised to establish whether the occupants will achieve the above target levels. The bespoke computer software utilised for this report ensures that none of the APSH levels are double counted within the totalled sunlight levels for the room.

4. Assessment Results

- 4.1 Having considered the site and reviewed the sensitive receptors we have undertaken technical assessments, the results of which are set out in more detail, together with a short explanation of the property in question.
- 4.2 Cross Lane Cottage and Ashcroft are two storey residential properties located to the south of the proposed works, on the other side of Cross Lane. Having considered the initial 25-degree angle test, it is evident there will be no material effect from the proposed works, and therefore no further testing required. Sunlight is not a consideration as the windows to Cross Lane Cottage and Ashcroft are facing due north. The section below shows the initial 25-degree angle test being applied.

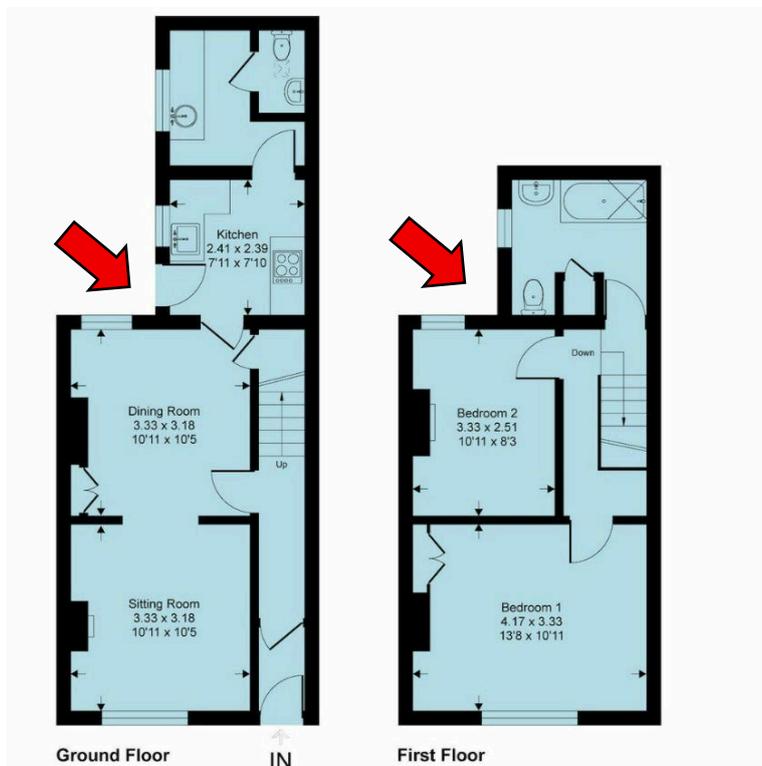


- 4.3 The existing residential use to 1 Pathfield Cottages was identified as requiring further detailed technical assessments. Habitable rooms to the ground and first floor level were tested, and as highlighted by the BRE guidelines, non-habitable spaces were ignored. The technical assessment has used the following information to build the 3D CAD model: -

- Existing and proposed drawings from DMA Building Designs
- Estate agent floor plan information

1 Pathfield Cottages

4.4 This property is located to the east of the proposed works and is part of the development site ownership. Therefore, the occupants will be accepting of the effects, with the emphasis of the assessment being whether there will be sufficient levels of daylight and sunlight retained in the proposed condition, rather than the reduction in light.



4.5 The floor plans above show the rear south/west facing windows to the rear, with the arrows locating a kitchen and dining room on the ground floor requiring assessment, as well as Bedroom 2 on the first floor level.

4.6 The Vertical Sky Component (VSC) results show that of the 5 windows tested, 1 adheres to the BRE guidelines by obtaining a ratio reduction over 0.8. Of the remaining 4 windows, the ratio reductions range between 0.38 and 0.76. As there is

little obstruction adjacent to these windows at present, it is inevitable that reductions in light will occur outside of the suggested 0.8 target level. However, as there are multiple windows serving rooms, the daylight distribution assessment needs to be considered before drawing a conclusion on the overall effects.

4.7 The daylight distribution results show that of the 3 rooms tested, all 3 adhere to the BRE guidelines by obtaining ratio reductions of 0.8 or higher. This demonstrates that whilst there are windows with reductions in VSC, the occupants will maintain acceptable levels of daylight within the rooms. Retained daylight levels range between 84% and 96% of the room's area, which is a high level of daylight for occupants.

4.8 The Annual Probable Sunlight Hours (APSH) results show that the one room requiring assessment falls below the suggested target of the 25% APSH, of which 5% should be in winter months. However, the room is a kitchen, which the BRE guidelines highlight is of less importance and need not be analysed. The BRE guidelines focus on main living spaces as being of most importance to occupants and the floor plans clearly show that the sitting room is located to the south and unaffected by the proposed works. The occupants will maintain high levels of sunlight to the main living spaces, well in excess of the BRE guidelines recommendations. Therefore, it is considered that the proposed works are acceptable with the occupants of 1 Pathfield Cottages maintaining high levels of sunlight to their main living area.

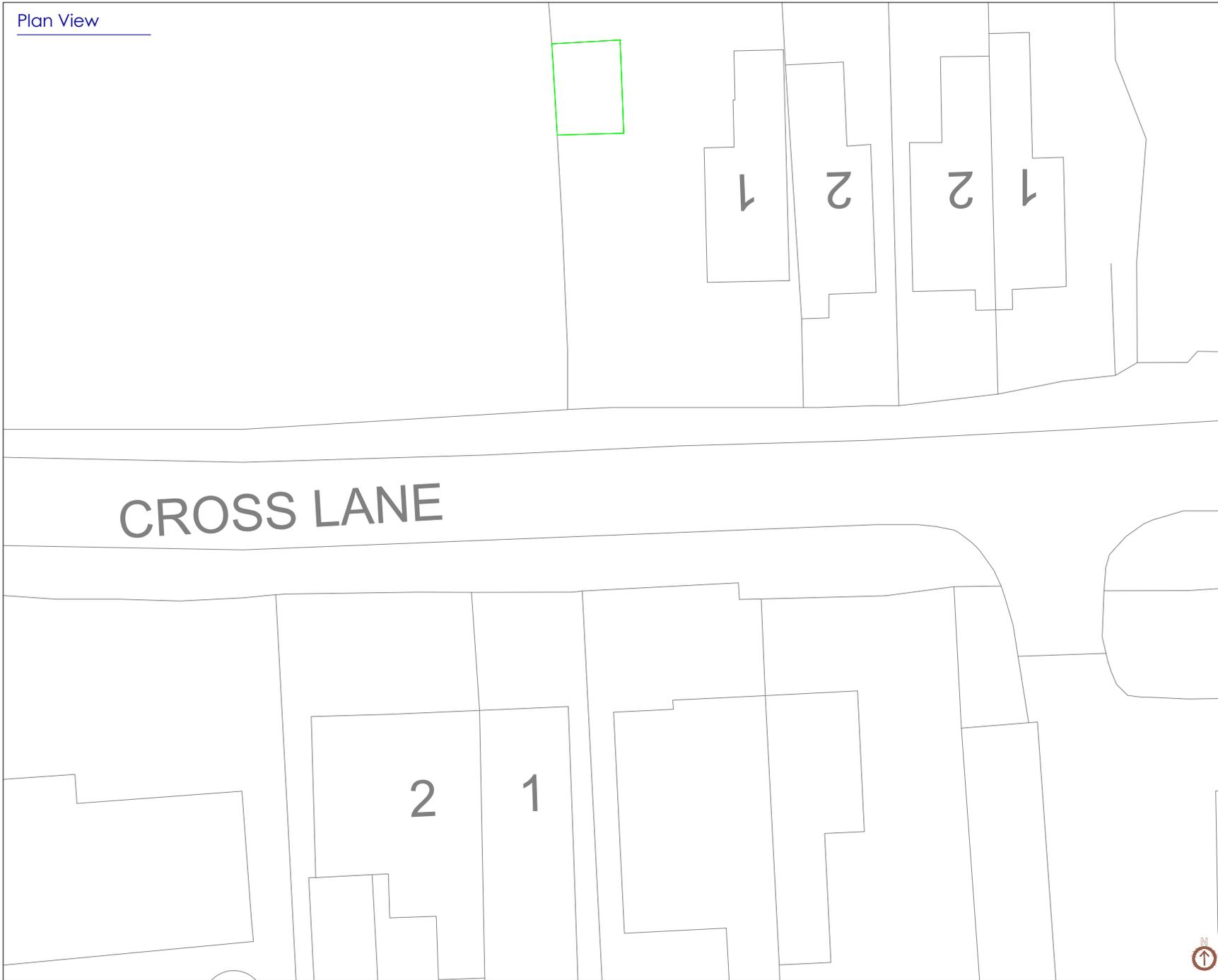
5. Summary and conclusions

- 5.1 The assessments have been undertaken in line with the Building Research Establishment (BRE) guidelines – Site Layout Planning for Daylight and Sunlight: A guide to good practice (2022).
- 5.2 The assessments to the neighbouring properties have demonstrated that acceptable levels of daylight and sunlight will be retained in the proposed condition. Cross Lane Cottage and Ashcroft are located on the other side of Cross Lane and will maintain high levels of daylight with the proposed works in place. The detailed assessments to 1 Pathfield Cottages show the occupants will retain acceptable levels of daylight and sunlight with the proposed works in place.
- 5.3 We therefore conclude that the proposed redevelopment of the land adjacent to 1 Pathfield Cottages meets the expectations set out in the BRE guidelines, ensuring acceptable daylight and sunlight levels to the neighbouring residents.

Appendix 1

Plan and 3D views of the development site

Plan View



NOTES:
No dimensions are to be scaled from this drawing.
All dimensions are to be checked on site, where
discrepancy occurs between specification and
drawings the supervising officer must be notified.

— EXISTING
— PROPOSED

REV	NOTES	DRWN	DATE



4th Floor Radius House
51 Clarendon Road
Walford
Hertfordshire WD17 1HP
Tel: 07943 182 548 www.dsconsult.co.uk

CLIENT:
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PROJECT:
1 Pathfield Cottages
Cross Lane
Barns Green

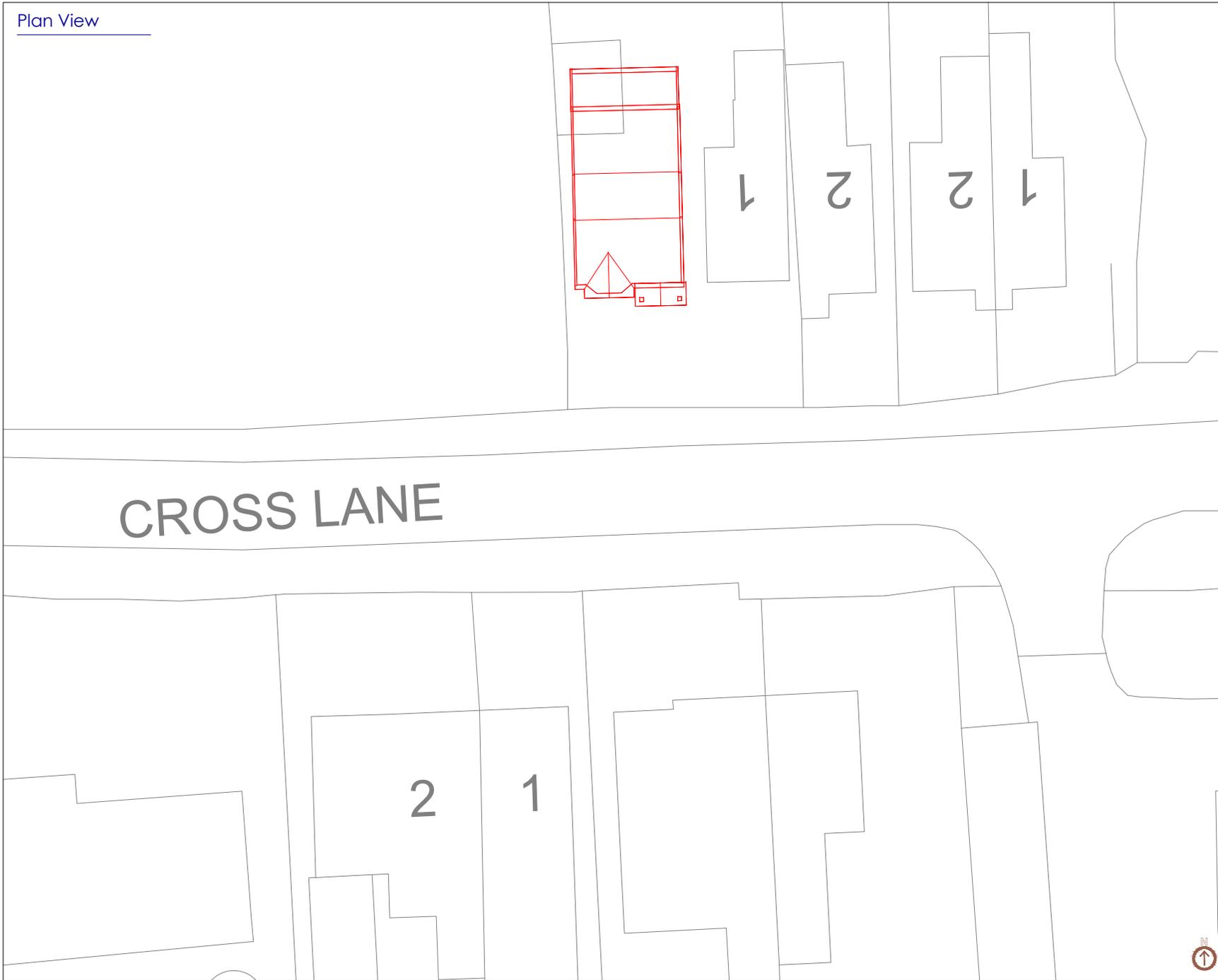
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Existing Plan View

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NTS	Oct 25		

DRAWING NUMBER:	REV:
PC -01-01	•



Plan View



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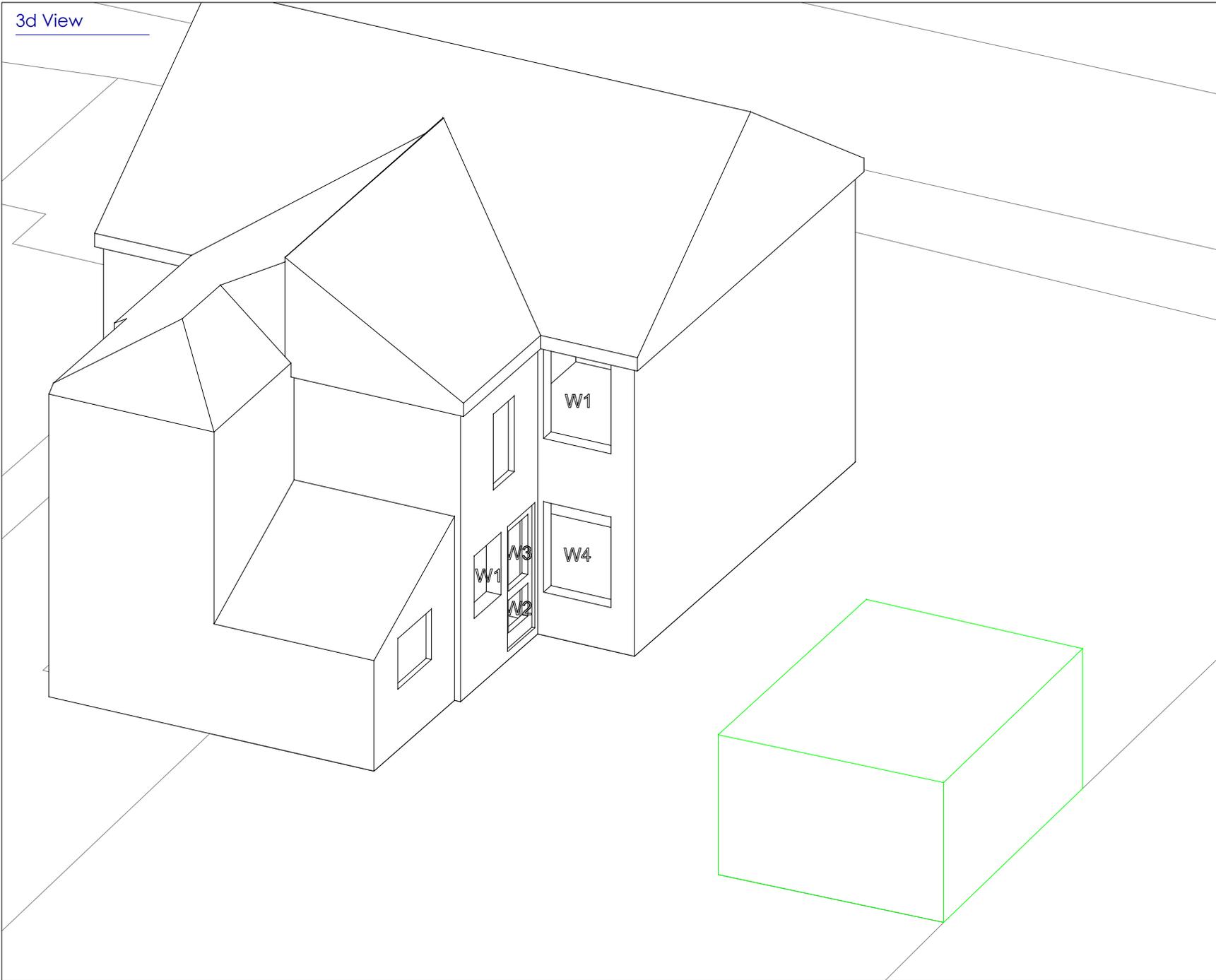
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Proposed Plan View

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NTS	Oct 25		

DRAWING NUMBER:	REV:
PC -01-02	•



3d View



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— PROPOSED

REV	NOTES	DRWN	DATE



4th Floor Radius House
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CLIENT:
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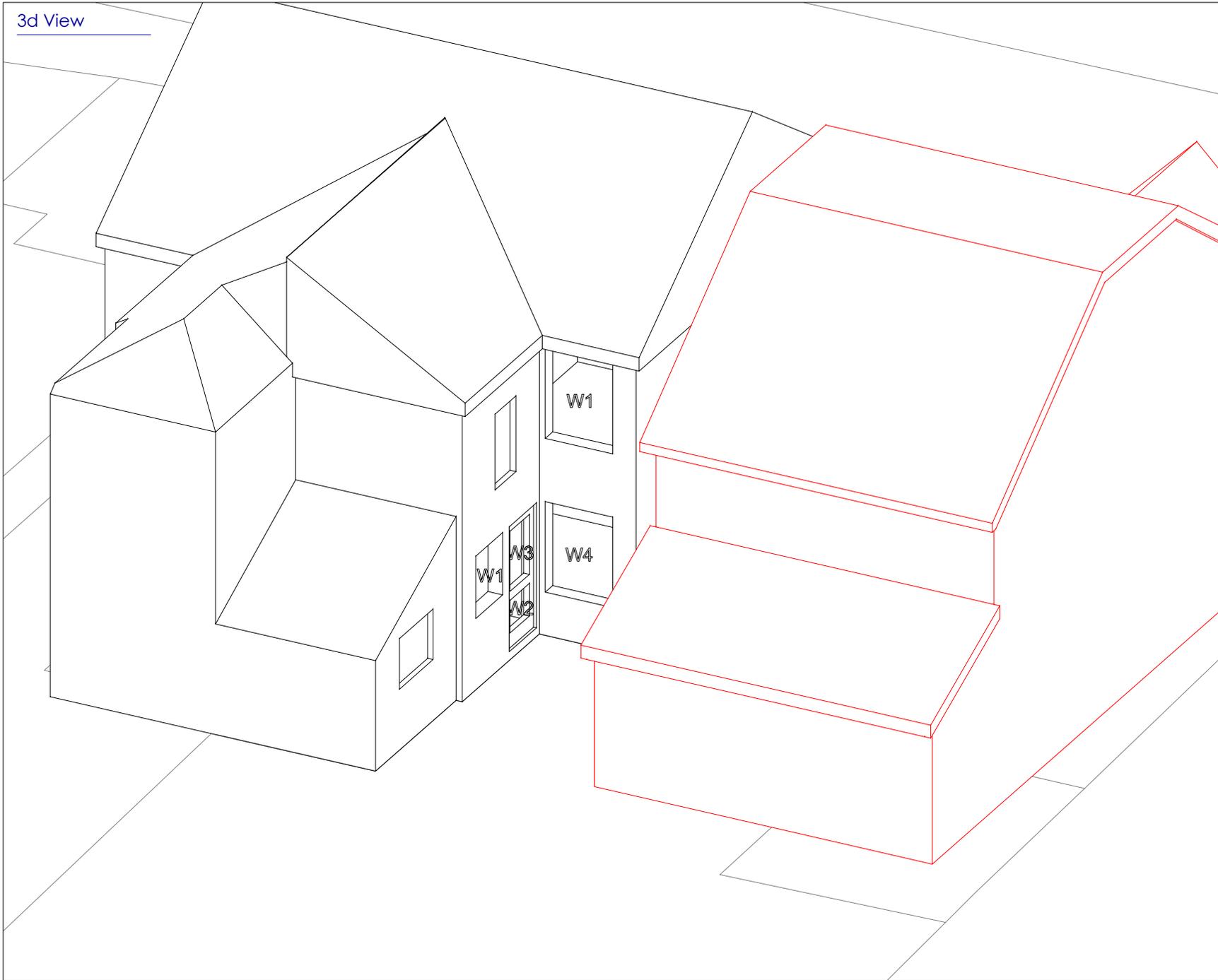
PROJECT:
1 Pathfield Cottages
Cross Lane
Barns Green

DRAWING TITLE:
Existing 3d View

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3d View



NOTES:
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— EXISTING
— PROPOSED

REV	NOTES	DRWN	DATE



4th Floor Radius House
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CLIENT:
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PROJECT:
1 Pathfield Cottages
Cross Lane
Barns Green

DRAWING TITLE:
Proposed 3d View

SCALE @ A1: NTS	DATE: Oct 25	DRAWN: MC	CHECKED:
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DRAWING NUMBER: PC -01-04	REV: •
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Appendix 2

Vertical Sky Component + Annual Probable Sunlight Hours Results

Project Name: 1 Pathfield Cottages
 Project No.: 1
 Report Title: Daylight & Sunlight Analysis - Neighbour
 Date of Analysis: 03/10/2025

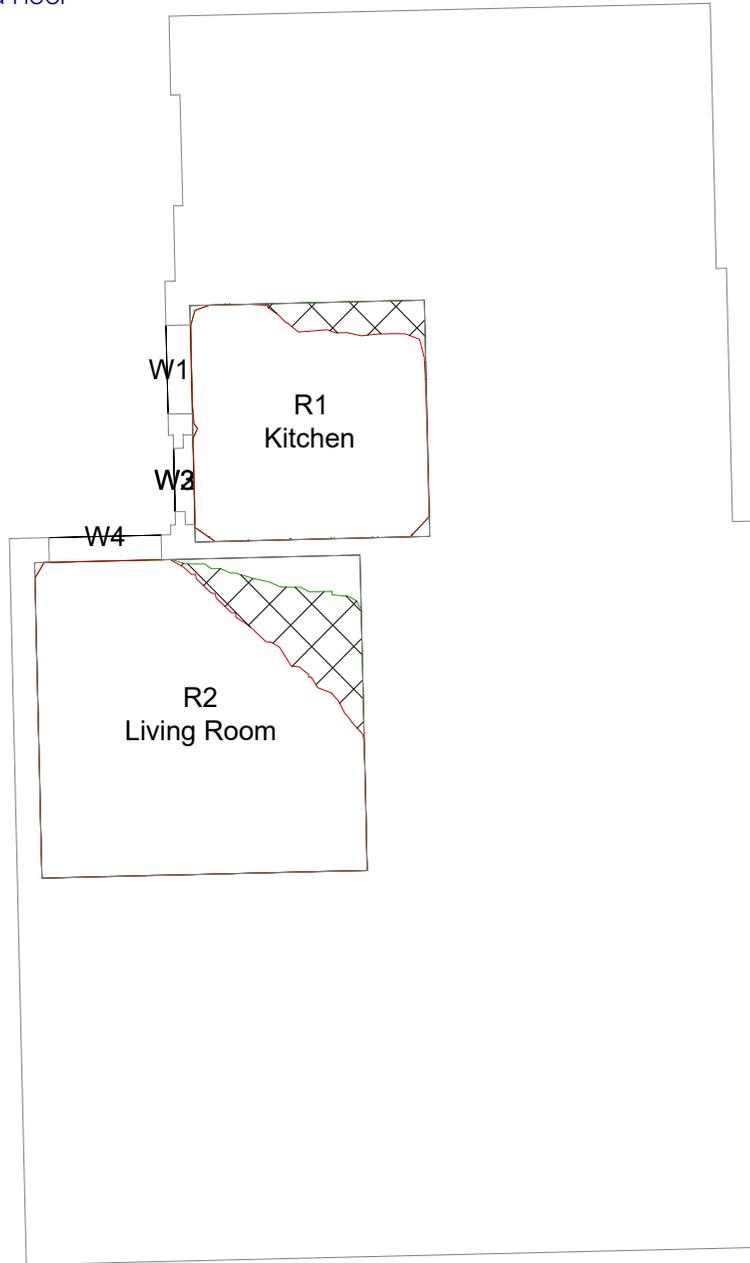
Floor Ref.	Room Ref.	Room Use	Window Ref.	VSC	Pr/Ex	Annual	Pr/Ex	Winter	Pr/Ex	Total Suns per Room Annual	Pr/Ex	Total Suns per Room Winter	Pr/Ex
1 Pathfield Cottages													
Ground	R1	Kitchen	W1	Existing	33.26	0.48	27.00	0.00	5.00	0.00			
				Proposed	16.08		0.00		0.00				
Ground	R1	Kitchen	W2	Existing	23.26	0.38	8.00	0.00	0.00	1.00			
				Proposed	8.73		0.00		0.00				
Ground	R1	Kitchen	W3	Existing	24.71	0.43	12.00	0.00	0.00	1.00			
				Proposed	10.52		0.00		0.00				
										27.00		5.00	
Ground	R2	Living Room	W4	Existing	23.92	0.76		*North		*North	0.00	0.00	0.00
				Proposed	18.10								
											*North		*North
First	R1	Bedroom	W1	Existing	28.22	0.90		*North		*North			
				Proposed	25.40								
											*North		*North

Appendix 3

Daylight Distribution Results

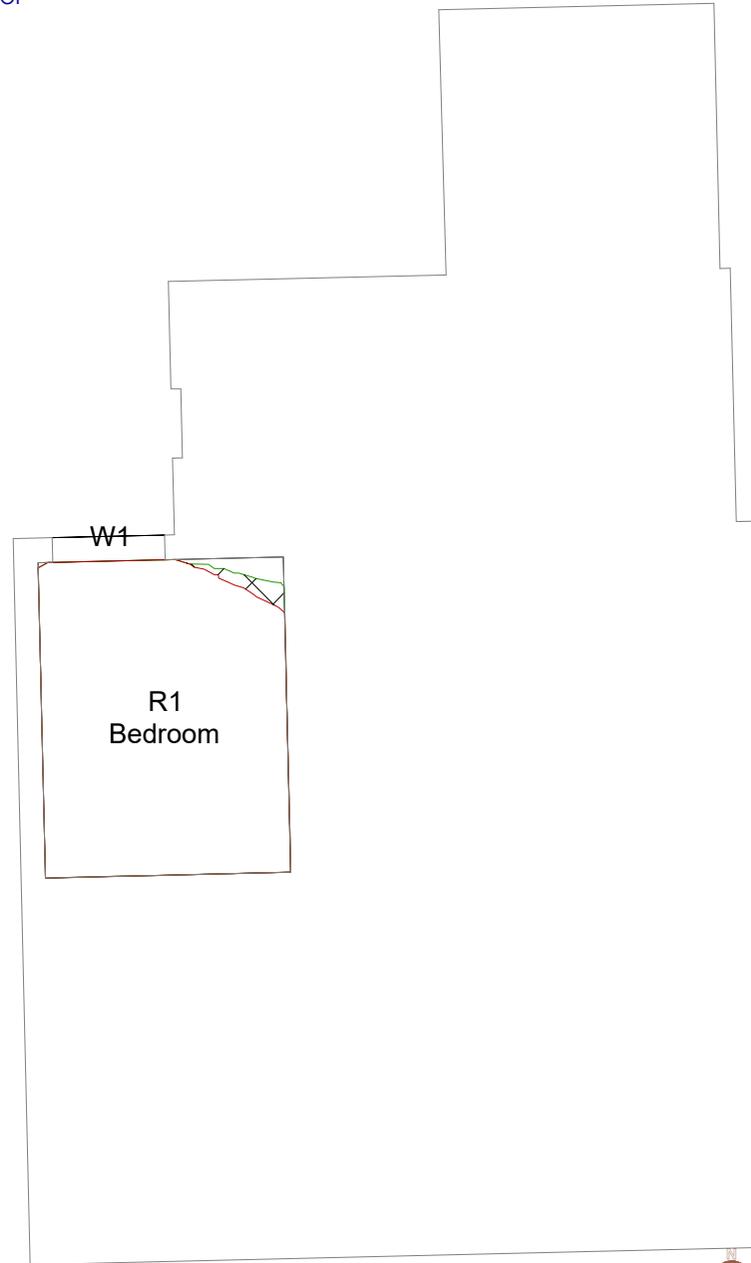
1 Pathfield Cottage

Ground Floor



1 Pathfield Cottage

First Floor



NOTES:
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- EXISTING LIGHT CONTOUR
- PROPOSED LIGHT CONTOUR
- ⊠⊠⊠⊠ LIGHT REDUCTION

REV	NOTES	DRWN	DATE



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Watford
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CLIENT:
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PROJECT:
1 Pathfield Cottages
Cross Lane
Barns Green

DRAWING TITLE:
Daylight Distribution Contours

SCALE @ A1: NTS	DATE: Oct 25	DRAWN: MC
		CHECKED:

DRAWING NUMBER: PC -01-05	REV: •
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Project Name: 1 Pathfield Cottages
 Project No.: 1
 Report Title: Daylight Distribution Analysis - Neighbour
 Date of Analysis: 03/10/2025

Floor Ref.	Room Ref	Room Use	Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
1 Pathfield Cottages							
Ground	R1	Kitchen	5.76	5.70 99.03%	5.22 90.56%	0.91	YES
	R2	Living Room	10.66	10.19 95.66%	8.99 84.32%	0.88	YES
First	R1	Bedroom	8.03	7.88 98.09%	7.75 96.47%	0.98	YES



Contact Daylight Sunlight Consulting Ltd

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