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Daylight & Sunlight Report Lams Close, Cuffley EN6 4HD

14th August 2018

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DAYLIGHT & SUNLIGHT REPORT

Client: Ludgate Developments

Project: Land adjacent to:
37-48 Lambs Close
Cuffley
EN6 4HQ

Report date: 14th August 2018

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About *MES Building Solutions*

***MES Building Solutions (MES)* is an established consultancy practice specialising in providing building solutions throughout the UK.**

We offer a full range of services for both residential and commercial buildings from small individual properties through to highly complex mixed use developments.

We are an industry leader in delivering a professional, accredited and certified service to a wide range of clients including architects, developers, builders, housing associations, the public sector and private householders.

Employing highly qualified staff, our team comes from a variety of backgrounds within the construction industry with combined knowledge of building design, engineering, assessment, construction, development, research and surveying.

MES Building Solutions maintains its position at the forefront of changes in building regulations as well as technological advances. Our clients, large or small are therefore assured of a cost effective, cohesive and fully integrated professional service.

About the Authors

Chris Jones is the Technical Director at *MES Building Solutions*. Chris has a Masters Degree in Energy Efficient & Sustainable Building, as well as an Honours degree in Mechanical Engineering. Chris has over 15 years' experience in providing sustainable building solutions and leads the Neighbourly Matters team at MES. He undertakes daylighting, sunlight and shadow cast analysis for planning applications. Chris is also a qualified BREEAM and Code for Sustainable Homes assessor and has worked with some of the UK's top developers, as well as housing associations and local authorities.

Andrew Pickersgill is an Associate member of the Royal Institution of Chartered Surveyors and is a member of our neighbourly matters team. He has a BSc (Hons) degree in Building Surveying. Andrew undertakes daylighting, sunlight and shadow analysis for planning applications. He is also involved in party wall issues and carries out other building surveying services for our clients.

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1. Executive Summary

- 1.1 We have carried out calculations following guidance in Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 to ascertain the impact of the proposed extension of the approved development on land adjacent to 37-48 Lambs Close, Cuffley EN6 4HQ, on the daylight and sunlight of flats within 37-48 Lambs Close.
- 1.2 In this case all of the neighbouring windows and rooms comfortably assessed fulfil all the planning guidance. This would be regarded as a very high level of compliance in an urban environment such as this.
- 1.3 In our opinion the proposals accord with the intent and context of the planning guidance in this case.

2. Introduction

2.1 The purpose of this report is to assess the impact of the proposed extension of the approved development on land adjacent to 37-48 Lambs Close, on the daylight and sunlight of flats within 37-48 Lambs Close, Cuffley EN6 4HQ.

2.2 This report considers the daylight and sunlight issues against the criteria set out for national guidance in the following publications:

- Site Layout Planning for Daylight & Sunlight (SLPDS), PJ Littlefair 2011 published by the BRE (Building Research Establishment).

The SLPDS is the culmination of research undertaken by the BRE to determine whether or not a new development will adversely affect the light to nearby properties. The BRE tests are approved by the Department of the Environment and are widely used by local authorities when deciding on development applications.

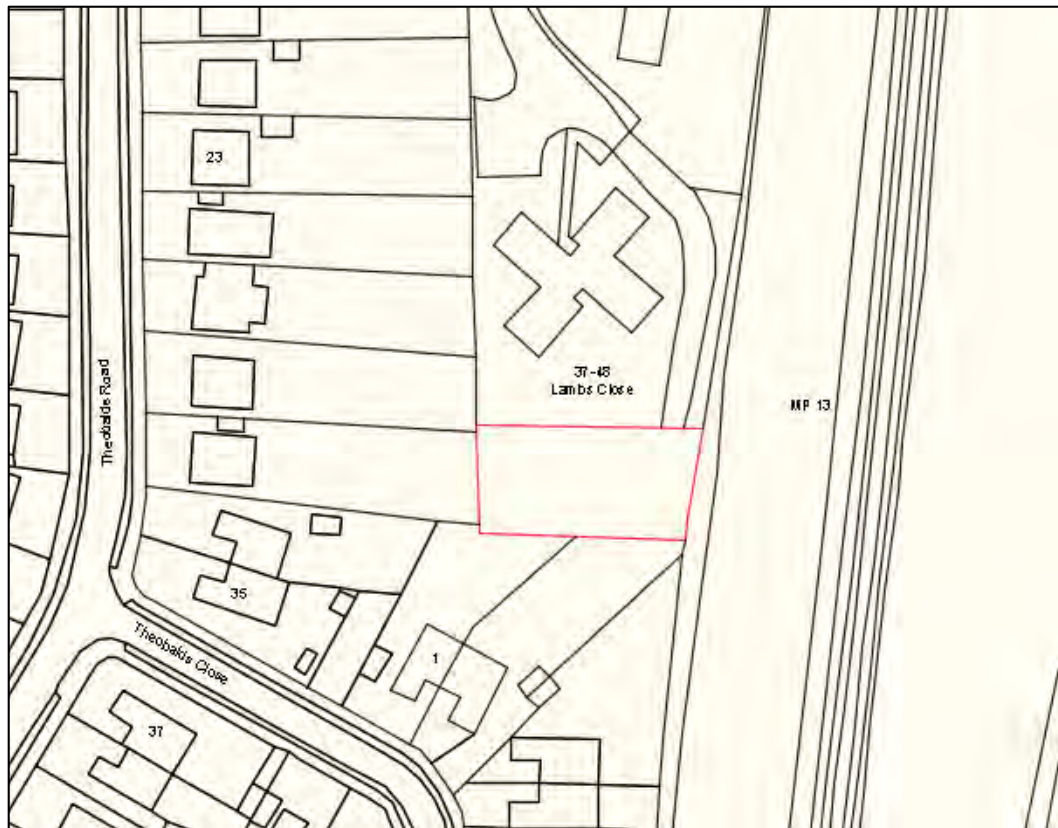
- BS 8206-2- Code of practice for skylighting.

2.3 There are no minimum mandatory requirements for sunlight & skylight in Building Regulations for England & Wales but the guidance set out in SLPDS is widely accepted as the approved methodology when calculating sunlight & skylight.

2.4 It is worthy of note that SLPDS was first published in 1991 and BS 8206-2 in 1992. However SLPDS was updated in Oct 2011 and we have therefore undertaken this study on the basis of this guidance document.

3. Description of Development

- 3.1 The scheme comprises of an extension to the approved development on land adjacent to 37-48 Lambs Close, Cuffley EN6 4HQ to provide an additional floor of accomodation.
- 3.2 The property is located at the end of Lambs Close adjacent to 37-48, an existing block of flats, and is situated amongst a number of other similarly sized residential buildings.



Site Plan



4. Assessment Process

The effect on neighbouring properties:

4.1 The SLPDS describes three parameters to be assessed in order to measure the impact of the proposed new building on Daylight/Sunlight availability to the key adjacent properties. The three parameters to be assessed are as follows:

1) Daylight:

Vertical Sky Component (VSC)
Daylight Distribution (DD)

2) Sunlight:

Annual Probable Sunlight Hours (APSH)

3) Overshadowing (Amenity Space)

On relevant open spaces

4.2 The guidance states that rooms to be assessed should be living rooms, kitchens and bedrooms in residential properties. In non-domestic buildings rooms where occupants 'have a reasonable expectation of daylight' should be assessed. Although these spaces are not defined, examples are given of the type of non-domestic buildings that would normally fall into this category. These include schools, hospitals, hotels and hostels, small workshops and *some* offices.

4.3 As it is difficult to be sure of the specific use of neighbouring spaces we have taken a view on the relevance of the spaces adjacent to the proposed development. If we have been in any doubt we have carried out the assessment. However it should be noted some of the spaces we have assessed could fall outside the test requirement criteria.

4.4 It is important to note that the numerical values in the guidance are advisory and different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

4.5 The neighbouring properties we have assessed are as follows:

- 37-48 Lambs Close

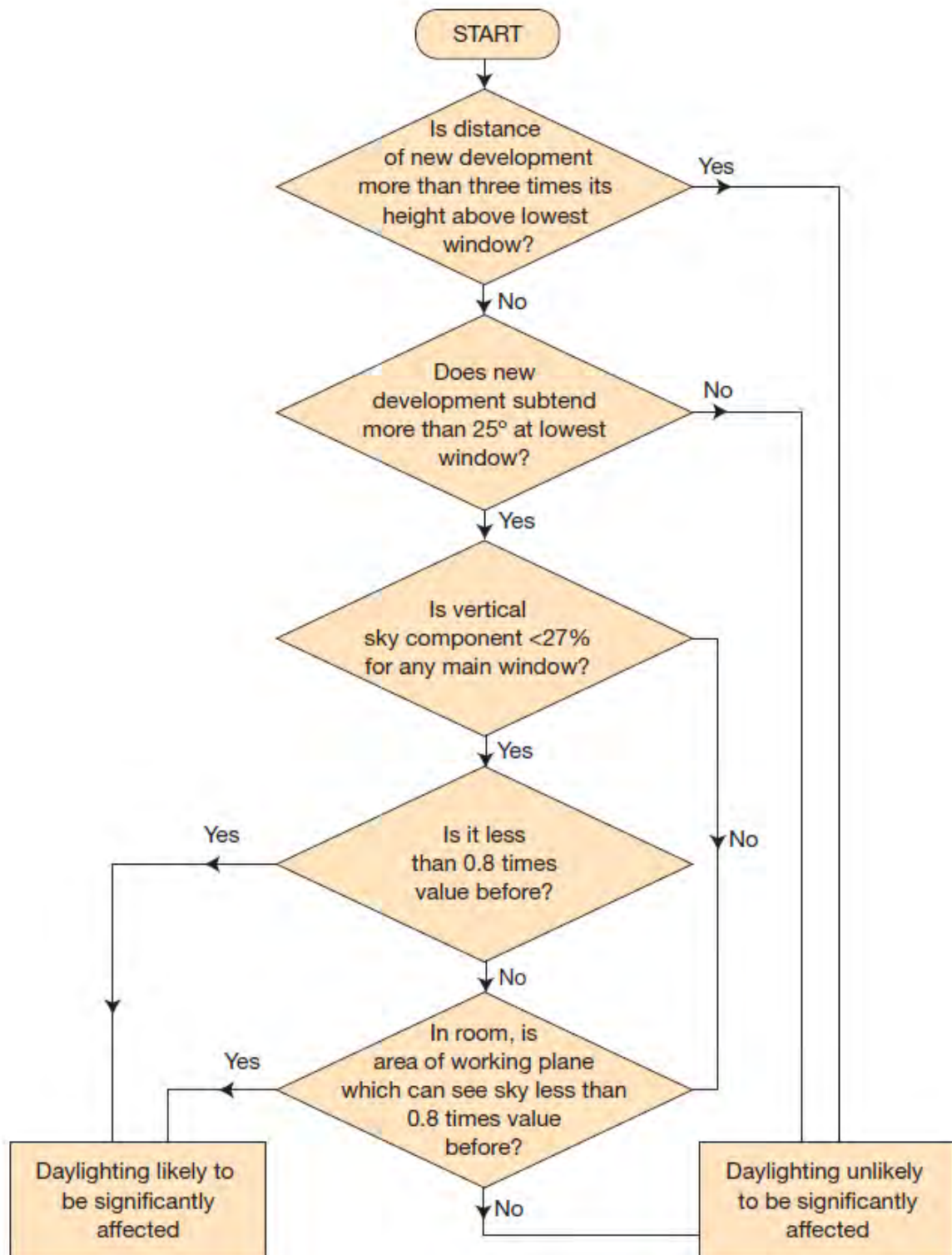
4.6 The assessment is based on the following drawings, provided by DPA Architects:

- | | |
|-------------|-------------|
| - 1139-300B | - 1139-305B |
| - 1139-301B | - 1139-306 |
| - 1139-302B | - 1139-307 |
| - 1139-303B | - 1139-308B |
| - 1139-304B | - 1139-600 |



5. Daylight

5.1 Site Layout Planning for Daylight & Sunlight contains the following flow chart showing the steps which should be taken in order to establish whether a building will receive adequate daylight:



Distance Check:

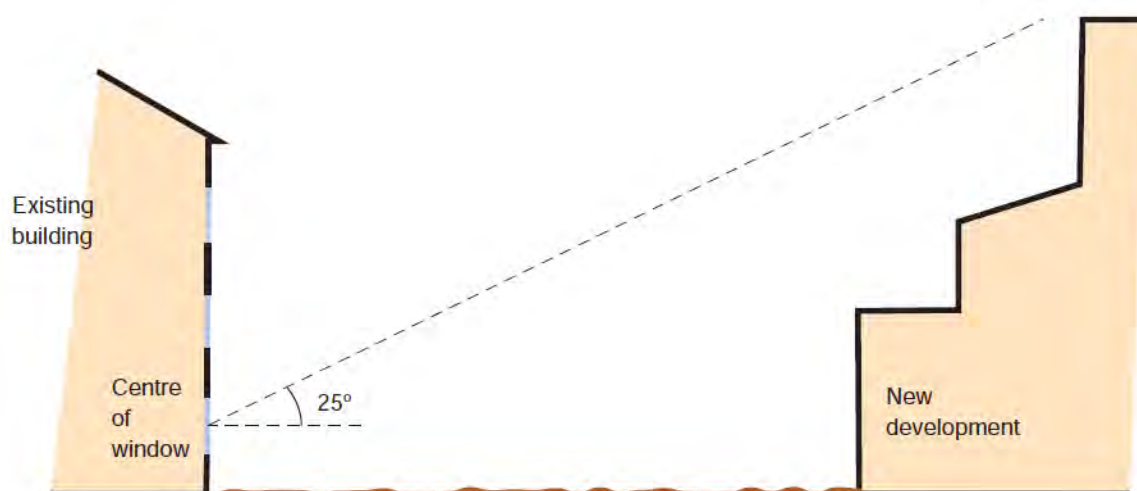
- 5.2 Site Layout Planning for Daylight & Sunlight (2011) states: "Loss of light to existing windows need not be analysed if the distance of each part of the new development from the existing window is three or more times its height above the centre of the existing window."

Distance Check Results

- 5.3 On this occasion the ratio of the height of the proposed building to its distance from the centre of the lowest existing window is less than 1:3 and the 25° rule must be applied.

25° Rule:

- 5.4 The angle to the horizontal subtended by the new development at the level of the centre of the lowest affected window should be no greater than 25°. If this is the case then it is unlikely to have a noticeable effect on diffuse skylight enjoyed by the existing building.



- 5.5 If, for any part of the development, the angle is more than 25°, a more detailed check is needed to find the loss of skylight to the existing building:

25° Rule Results

- 5.6 On this occasion the angle to the horizontal subtended by the new development at the level of the centre of the lowest affected window will be greater than 25° and more detailed checks are necessary:

Vertical Sky Component:

- 5.7 Daylight is the light received from the sun which is diffused through the sky's clouds. Even on a cloudy day when the sun is not visible a room will continue to be lit with light from the sky. This is also known as 'diffuse light'. Any reduction in the total amount of daylight can be calculated by finding the 'Vertical Sky Component'.
- 5.8 The Vertical Sky Component (VSC) is the ratio of the direct skylight illuminance falling on a vertical face at a reference point (usually the centre of a window), to the simultaneous horizontal illuminance under an unobstructed sky.
- 5.9 The guidance states that the VSC will be adversely affected if after a development it is both less than 27% of the overall available diffuse light and less than 0.8 times its former value.
- 5.10 Therefore if the VSC is more than 27% then enough light would still be reaching the window of the neighbouring building. However if the VSC is less than 27% as well as less than 0.8 times its former value the occupants will notice the reduction in the amount of skylight.

VSC Results

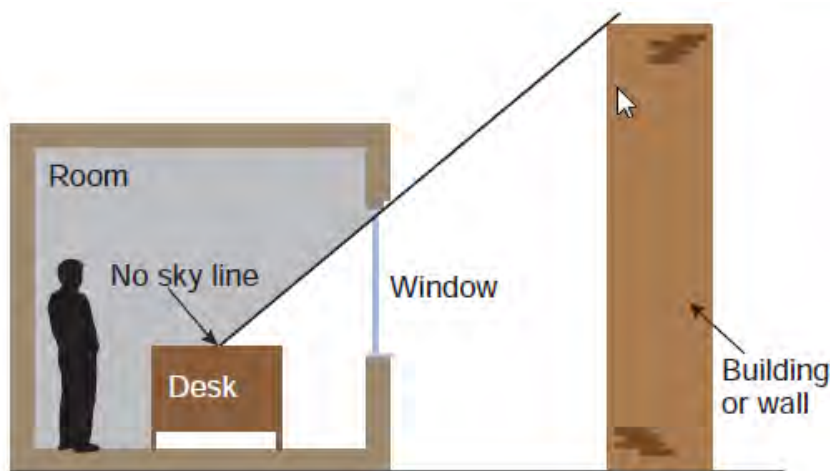
- 5.11 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

Detailed results are in Section 8.

- 5.12 All of the windows assessed comfortably meet the BRE planning guidance for VSC. As can be seen the proposed development has very little impact on the neighbouring property at 37-48 Lambs Close, with all of the flats either experiencing no effect or a minimal reduction in daylight.

Daylight Distribution:

- 5.15 Where room layouts are known (or estimated) the impact on daylighting distribution can be found by plotting what is known as the 'no sky line' in each of the main rooms. These are the same rooms as used for the VSC test.
- 5.16 The no sky line effectively divides the points on the working plane (0.85m high for residential properties and 0.7m high for offices) that cannot see the sky. Therefore areas beyond the no sky line will receive no direct daylight but will instead be lit from reflected light.



BRE 209

- 5.17 If, following the construction of a new development, the no sky line moves so that the area of the existing room, which does not receive direct skylight, is reduced to less than 0.8 times its former value, this will be noticeable to the occupants.
- 5.18 We have estimated internal layouts to assess the Daylight Distribution in rooms adjacent to the development.

Daylight Distribution Results

- 5.19 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

Detailed results are in Section 8:

- 5.20 All of the rooms assessed within 37-48 Lambs Close comfortably meet the BRE planning guidance for daylight distribution with the all flats either experiencing no effect or a minimal reduction in daylight.

6. Sunlight

Available Sunlight Hours

- 6.1 Guidance for minimum sunlight values can be found in Section 3 of Site Layout Planning for Daylight and Sunlight (SLPDS).
- 6.2 Habitable rooms in domestic buildings that face within 90° of due south are tested, as are rooms in non-domestic buildings that have a particular requirement for sunlight.
- 6.3 The recommendations are that applicable windows should receive a minimum of 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months between 21st September to the 21st March (the approximate dates of the spring and autumn equinoxes).
- 6.4 However if this is not possible (or the amount of sunlight is already reduced because of the effect of existing obstructions) then a further reduction in sunlight availability will be noticeable to an occupier if the total number of sunlight hours is below the target 25% of the total annual probable sunshine hours, to include a minimum of 5% of that which is available during the winter months, *and* is less than 0.8 times its former value prior to the development.
- 6.5 There is no requirement for windows that face within 90° of due north so windows that fall into this category have not been considered for sunlight calculations.

Available Sunlight Hours Results

- 6.6 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

Detailed results are in Section 8:

- 6.7 All of the windows assessed comfortably meet the BRE planning guidance for VSC. As can be seen; the proposed development has very little impact on the neighbouring property at 37-48 Lambs Close, with all of the flats either experiencing no effect or a minimal reduction in sunlight.

7. Amenity Space

- 7.1 Recent guidance through the BRE suggests that at least 50% of any garden or open spaces should receive no less than 2 hours of direct sun on the spring equinox (March 21st).
- 7.2 Open spaces 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

Amenity Space Results

- 7.3 Calculations were undertaken in accordance with the planning guidance contained in BRE document 209 'Site Layout Planning for Daylight & Sunlight' - PJ Littlefair 2011.

Detailed results are in Section 8:

- 7.4 The amenity space between 37-48 Lambs Close and the development site has been assessed and the results show that the BRE guidance is met comfortably with there being little effect on sunlight provision to this space following development.
- 7.5 Suncast images for the 21st March are included in the Section 8 as a visual aid, however the detailed analysis described above should be used to establish whether the BRE planning guidance had been met.

8. Appendices

Results:

*Vertical Sky Component
Available Sunlight Hours*

Daylight Distribution

Amenity Space

Shadow Cast Analysis

Project Name: 37-48 Lambs Close
 Report Title: Daylight & Sunlight - Neighbour Analysis Test
 Date of Analysis: 09/08/2018

Floor Ref.	Room Ref.	Room Use.	Window Ref.	VSC	Pr/Ex	Meets BRE Guidance	Window Orientation	Annual	Pr/Ex	Meets BRE Guidance	Winter	Pr/Ex	Meets BRE Guidance
37-48 Lambs Close													
Gnd	R1	Living Room	W1	Existing 33.45 Proposed 32.04	0.95	YES	144°	68 66	0.97	YES	24 22	0.91	YES
	R2	Bedroom	W2	Existing 30.72 Proposed 29.54	0.96	YES	144°	67 63	0.94	YES	27 23	0.85	YES
	R3	Bedroom	W3	Existing 26.43 Proposed 25.45	0.96	YES	144°	58 55	0.94	YES	25 22	0.88	YES
	R4	Kitchen-Resi	W4	Existing 19.18 Proposed 18.44	0.96	YES	234°	48 46	0.95	YES	22 20	0.90	YES
	R5	Living Room	W5	Existing 29.27 Proposed 28.05	0.95	YES	234°	57 54	0.94	YES	23 20	0.86	YES
1st	R1	Living Room	W1	Existing 35.95 Proposed 34.27	0.95	YES	144°	71 70	0.98	YES	26 25	0.96	YES
	R2	Bedroom	W2	Existing 32.99 Proposed 31.73	0.96	YES	144°	66 66	1.00	YES	27 27	1.00	YES
	R3	Bedroom	W3	Existing 28.37 Proposed 27.35	0.96	YES	144°	58 58	1.00	YES	25 25	1.00	YES
	R4	Kitchen-Resi	W4	Existing 20.25 Proposed 19.49	0.96	YES	234°	48 48	1.00	YES	22 22	1.00	YES
	R5	Living Room	W5	Existing 32.78 Proposed 31.49	0.96	YES	234°	60 59	0.98	YES	24 23	0.95	YES
2nd	R1	Living Room	W1	Existing 30.33 Proposed 29.33	0.96	YES	144°	58 58	1.00	YES	25 25	1.00	YES
	R2	Bedroom	W2	Existing 27.38 Proposed 26.68	0.97	YES	144°	52 52	1.00	YES	25 25	1.00	YES
	R3	Bedroom	W3	Existing 23.77 Proposed 23.22	0.97	YES	144°	46 46	1.00	YES	23 23	1.00	YES
	R4	Kitchen-Resi	W4	Existing 15.41 Proposed 15.03	0.97	YES	234°	31 31	1.00	YES	18 18	1.00	YES
	R5	Living Room	W5	Existing 29.42 Proposed 28.70	0.97	YES	234°	52 52	1.00	YES	22 22	1.00	YES

Project Name: 37-48 Lambs Close
 Report Title: Daylight Distribution Analysis - Neighbour Test
 Date of Analysis: 09/08/2018

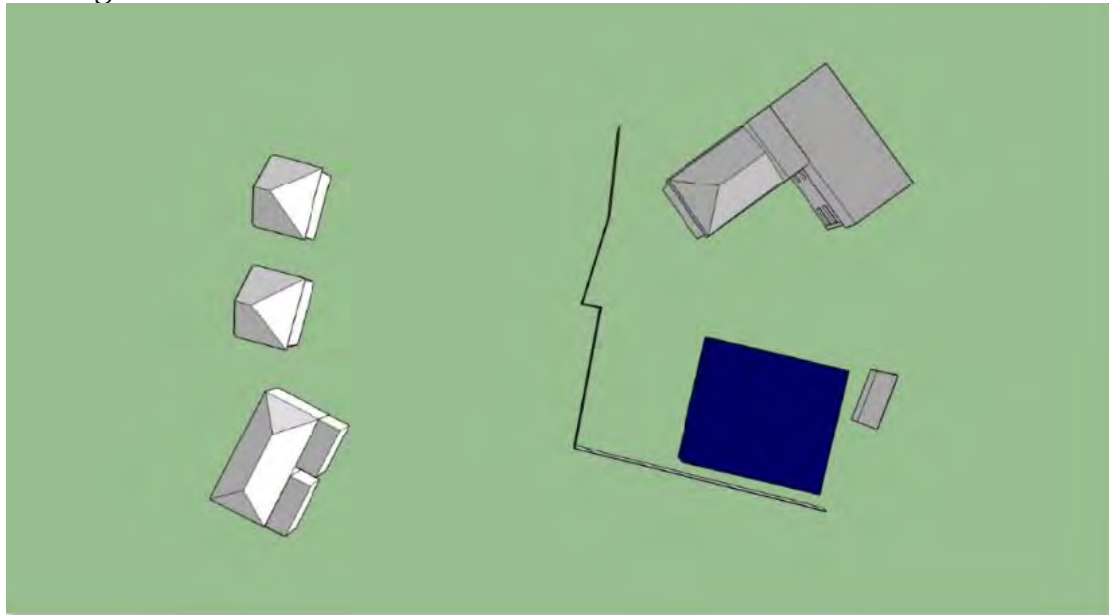
Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Guidance
37-48 Lambs Close								
Gnd	R1	Living Room	Area m2	12.83	12.63	12.62	0.99	YES
			% of room		98%	98%		
	R2	Bedroom	Area m2	10.84	9.90	9.90	0.99	YES
			% of room		91%	91%		
	R3	Bedroom	Area m2	8.84	8.77	8.77	0.99	YES
		% of room		99%	99%			
R4	Kitchen-Resi	Area m2	6.76	5.96	5.96	1.00	YES	
		% of room		88%	88%			
	R5	Living Room	Area m2	13.34	13.17	13.01	0.98	YES
			% of room		99%	98%		
1st	R1	Living Room	Area m2	12.83	12.63	12.63	0.99	YES
			% of room		98%	98%		
	R2	Bedroom	Area m2	10.84	10.06	10.06	0.99	YES
			% of room		93%	93%		
	R3	Bedroom	Area m2	8.84	8.79	8.79	0.99	YES
		% of room		99%	99%			
R4	Kitchen-Resi	Area m2	6.76	6.08	6.08	1.00	YES	
		% of room		90%	90%			
	R5	Living Room	Area m2	13.34	13.17	13.17	0.99	YES
			% of room		99%	99%		
2nd	R1	Living Room	Area m2	12.83	12.62	12.62	0.99	YES
			% of room		98%	98%		
	R2	Bedroom	Area m2	10.84	10.20	10.20	0.99	YES
			% of room		94%	94%		
	R3	Bedroom	Area m2	8.84	8.77	8.77	1.00	YES
		% of room		99%	99%			
R4	Kitchen-Resi	Area m2	6.76	6.12	6.12	1.00	YES	
		% of room		91%	91%			
	R5	Living Room	Area m2	13.34	13.16	13.16	0.99	YES
			% of room		99%	99%		

Project Name: 37-48 Lambs Close
 Report Title: Two hours Sunlight to Amenity Analysis - Neighbour Test
 Date of Analysis: 09/08/2018

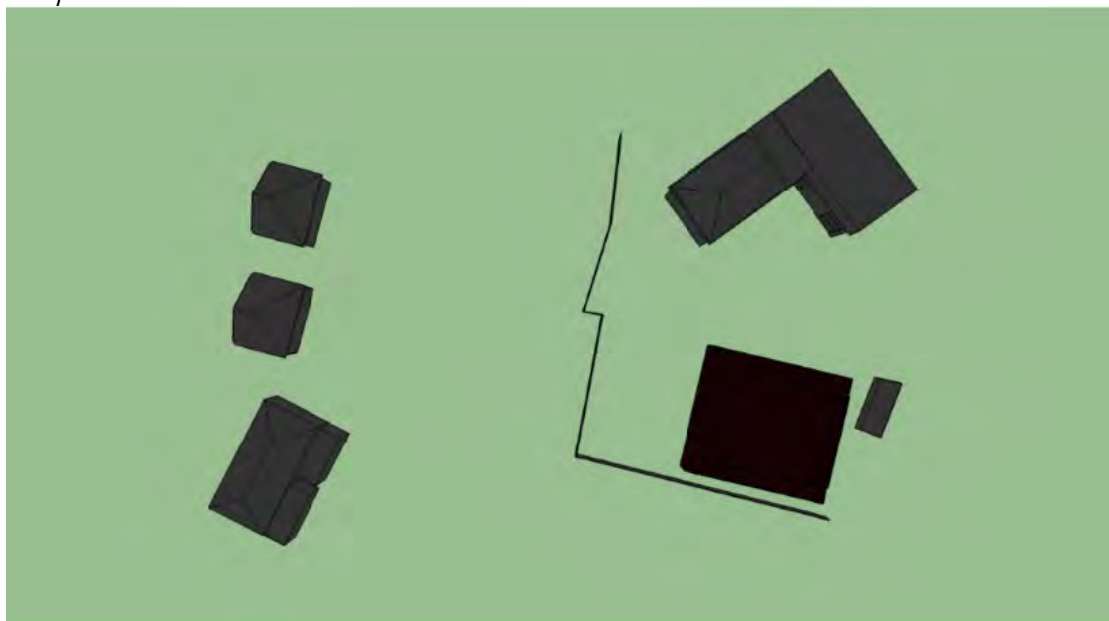
Floor Ref.	Amenity Ref.	Amenity Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Guidance
37-48 Lambs Close						
Gnd	A1	Area m2 Percentage	689.26	661.11 96%	659.94 96%	1.00 YES

Suncast images for 21st March (For visual reference only)

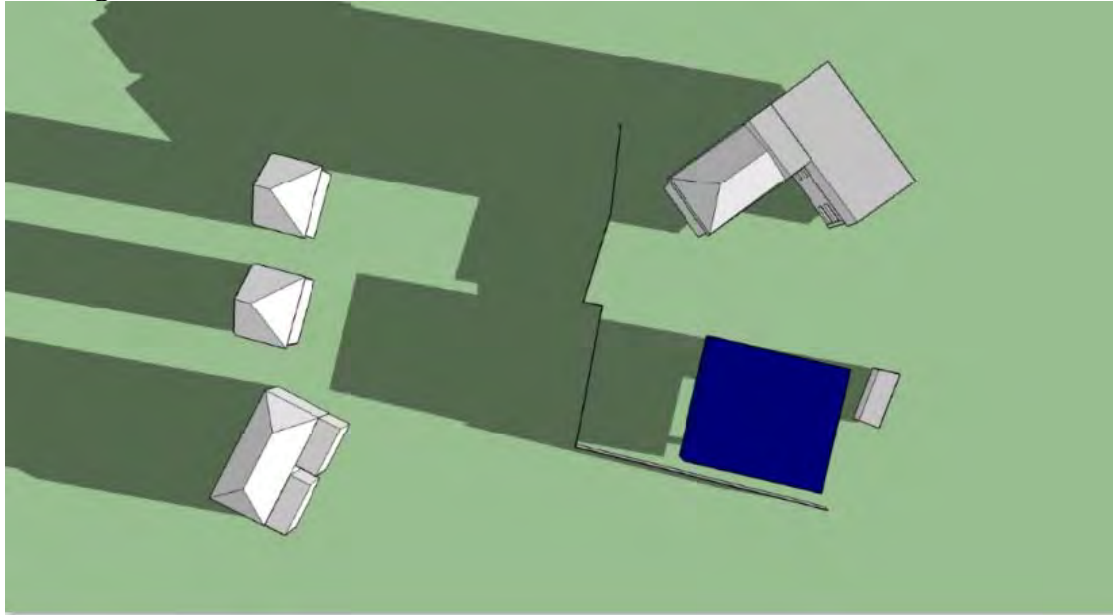
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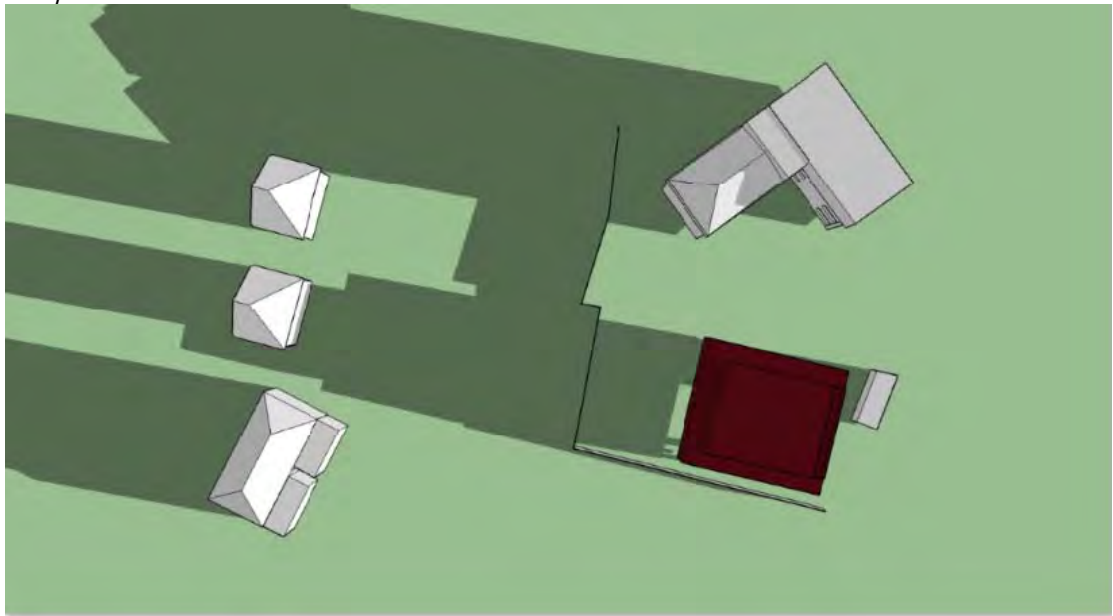
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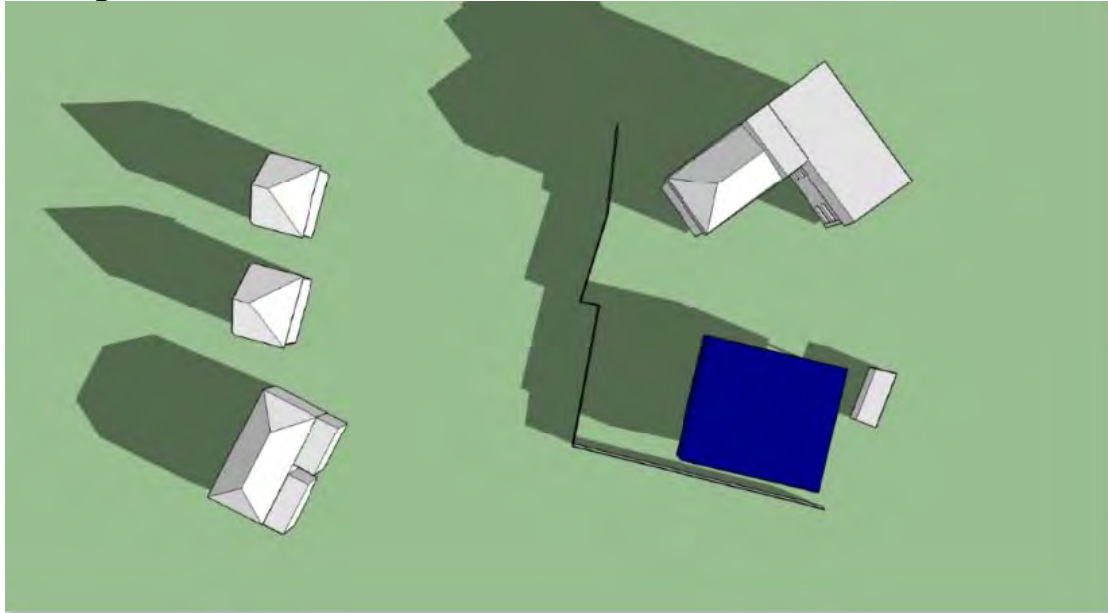
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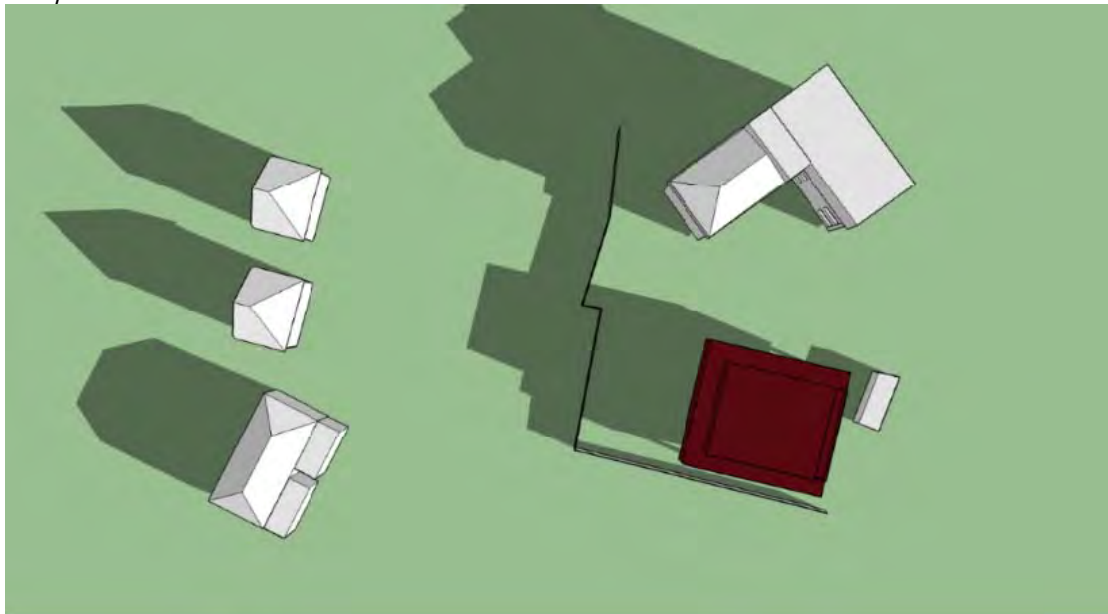
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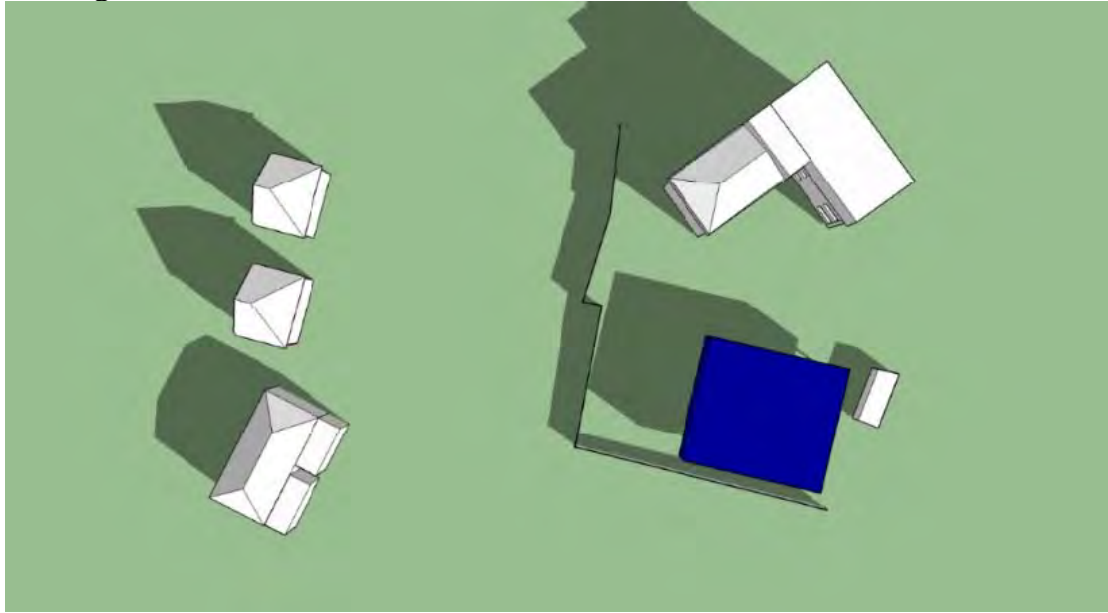
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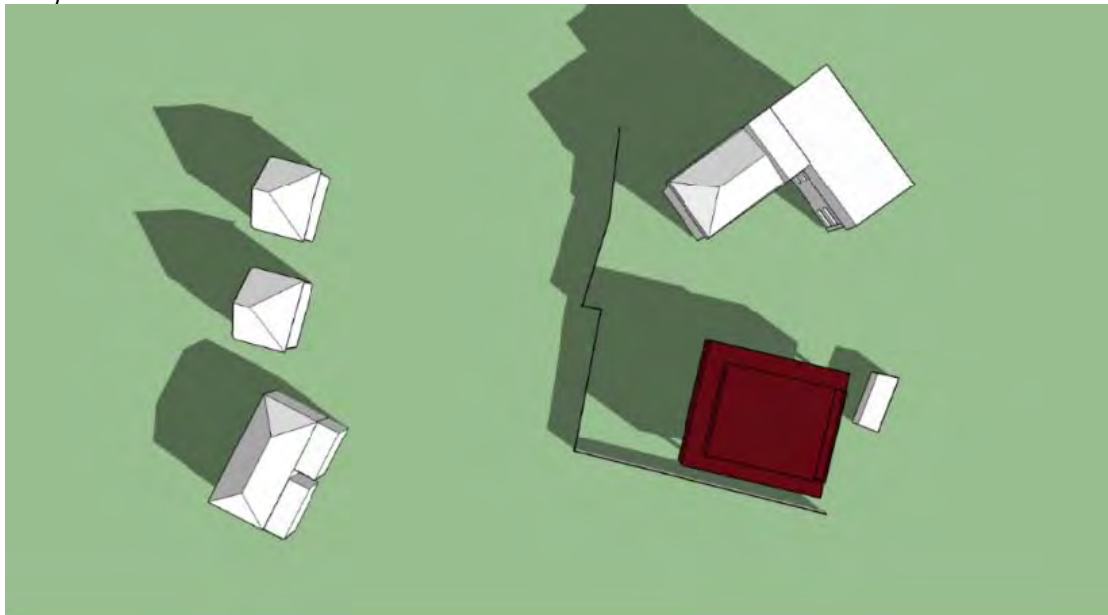
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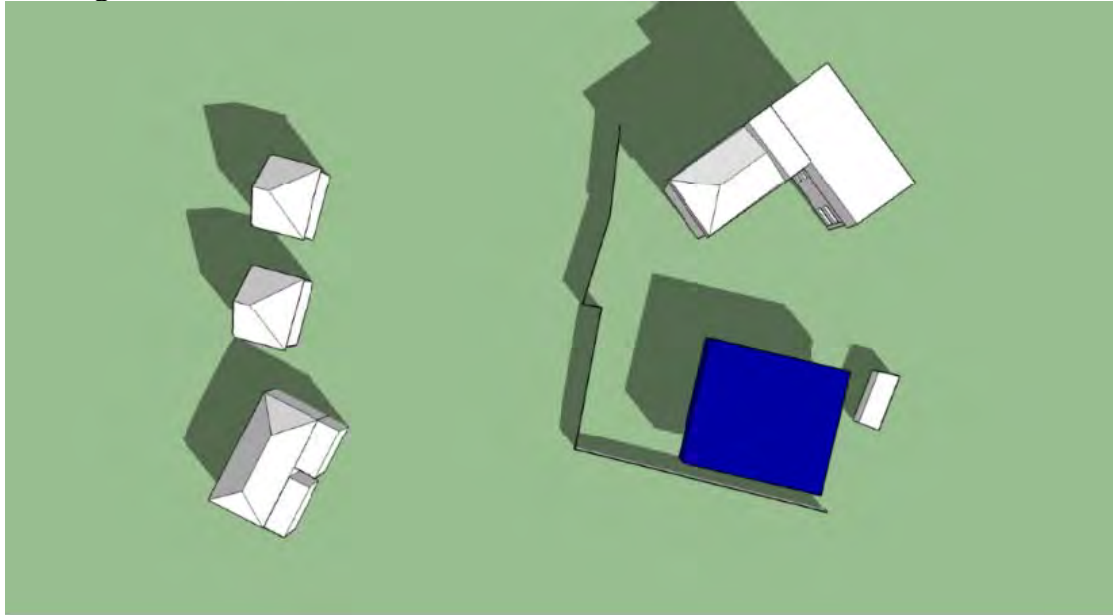
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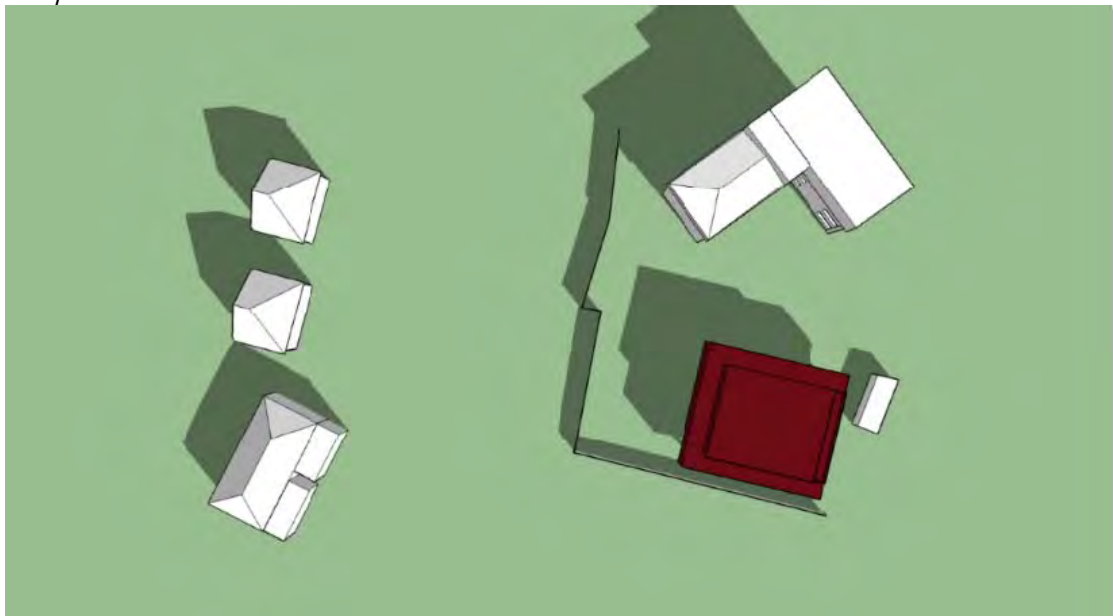
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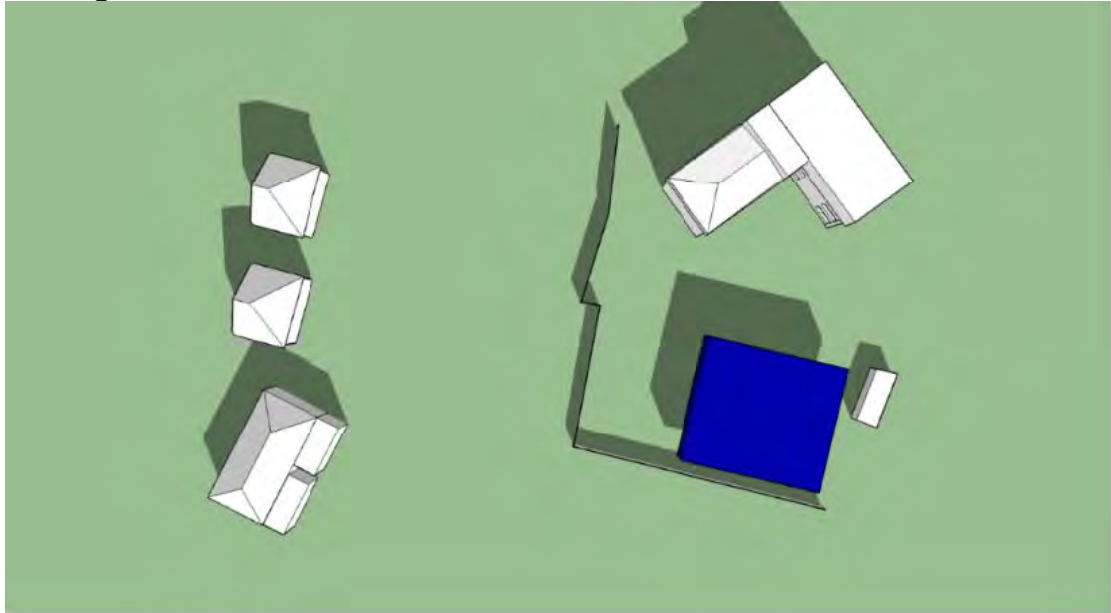
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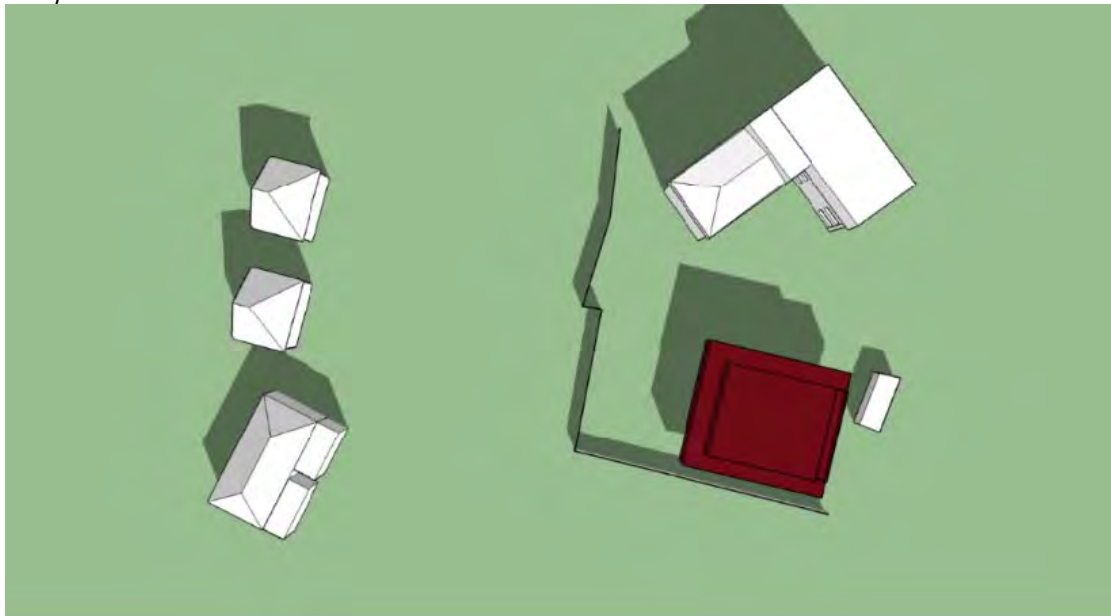
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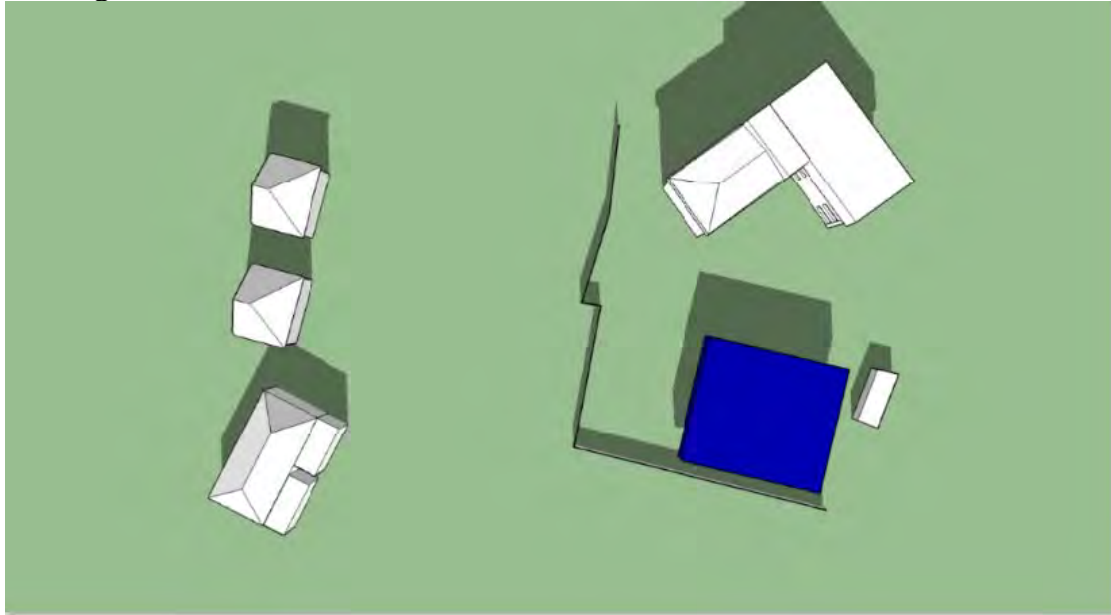
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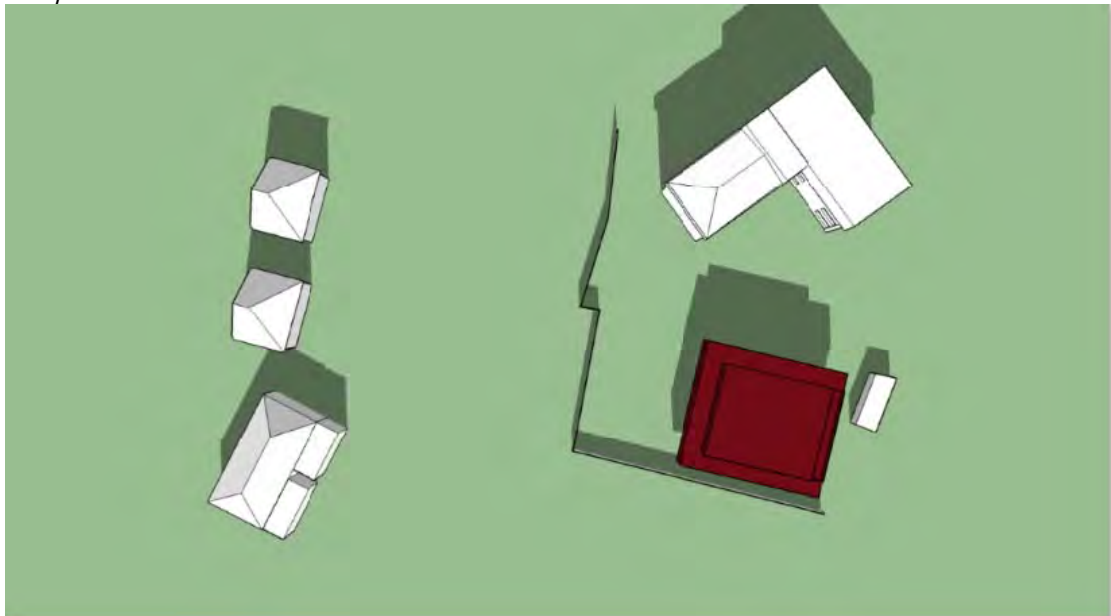
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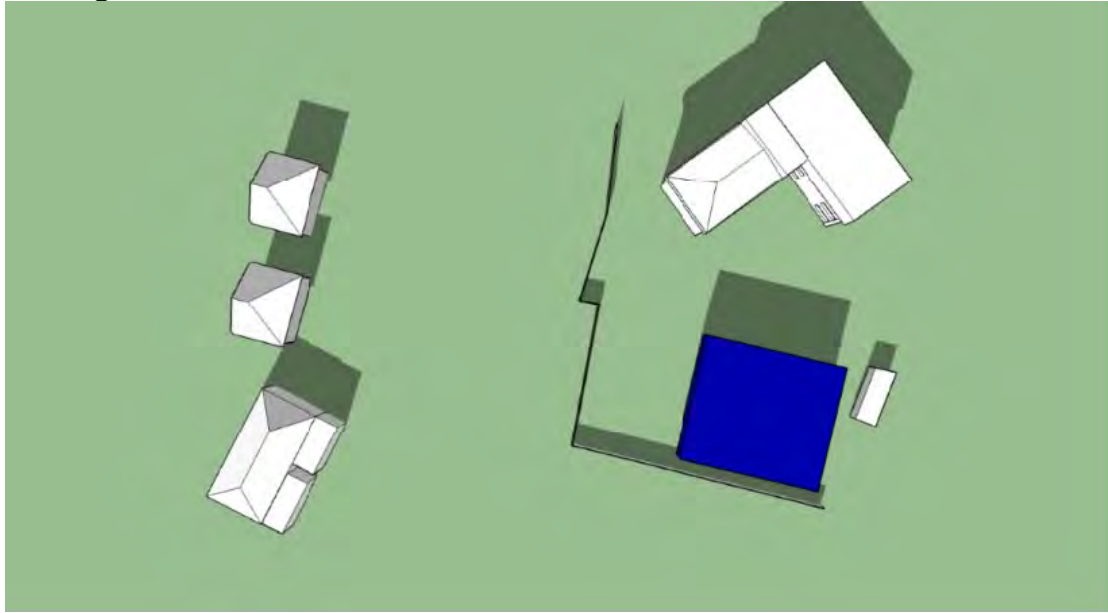
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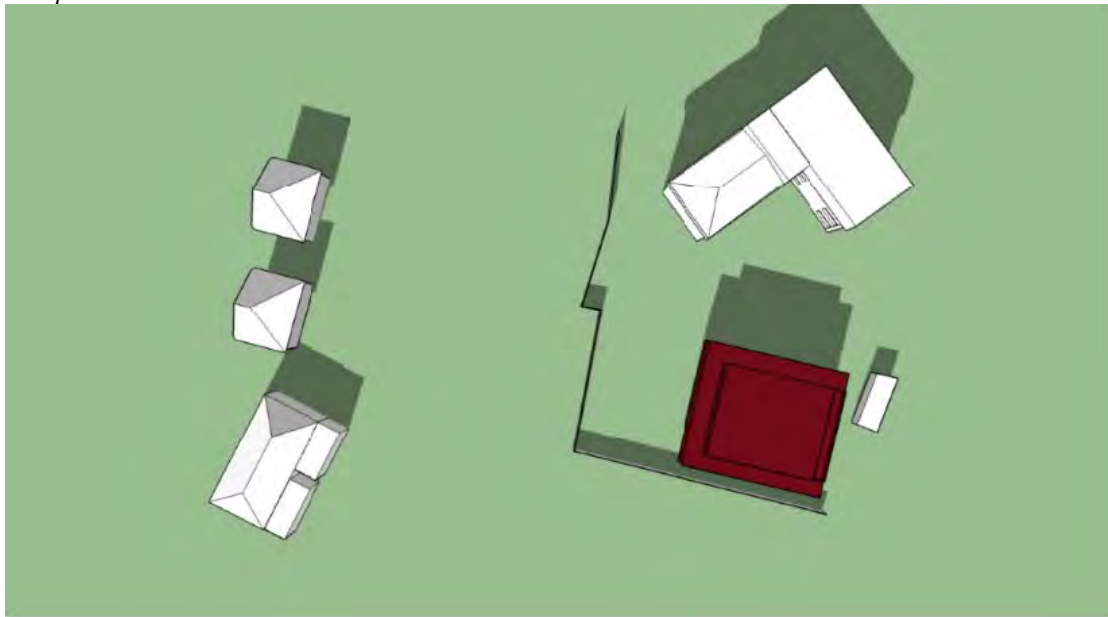
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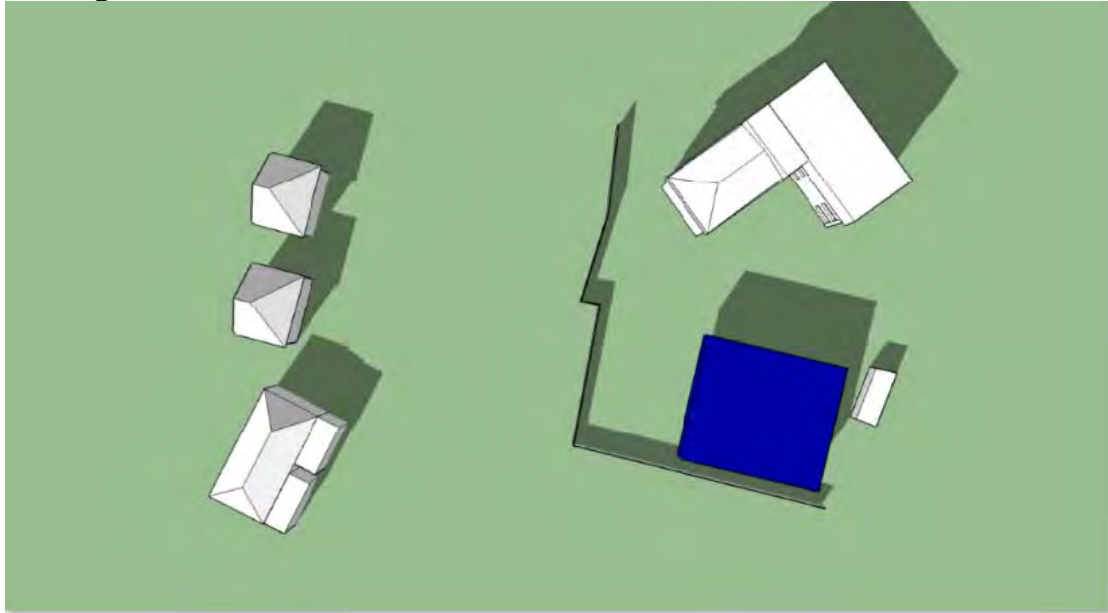
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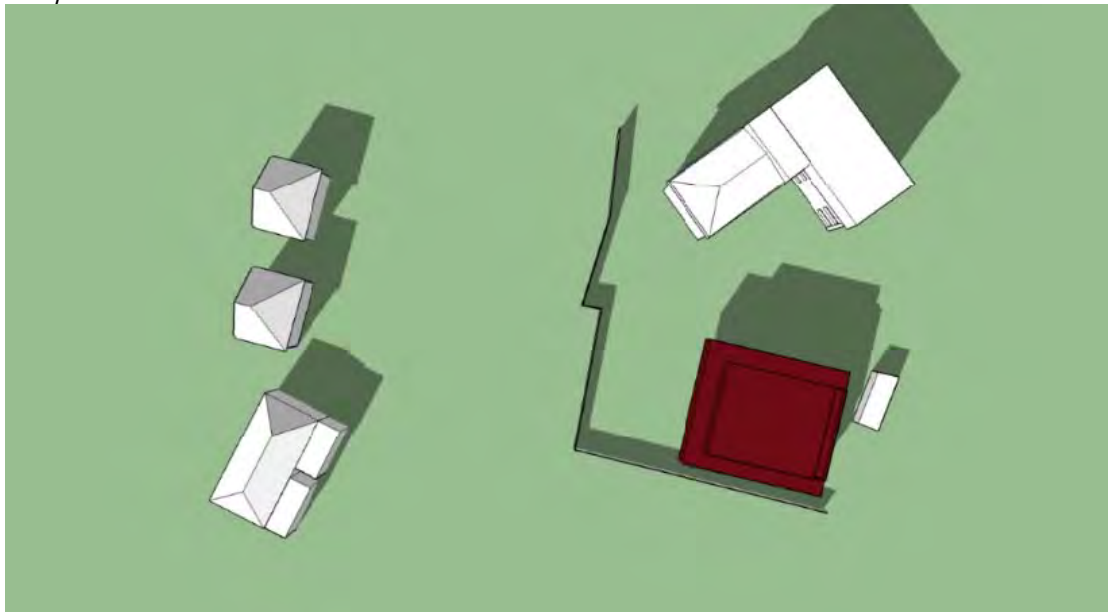
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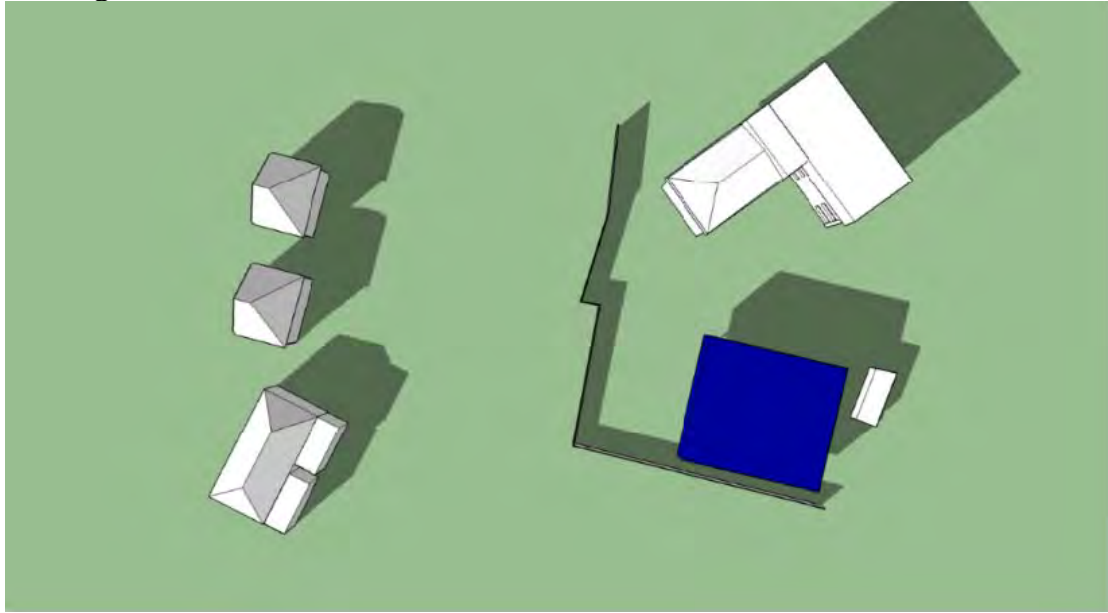
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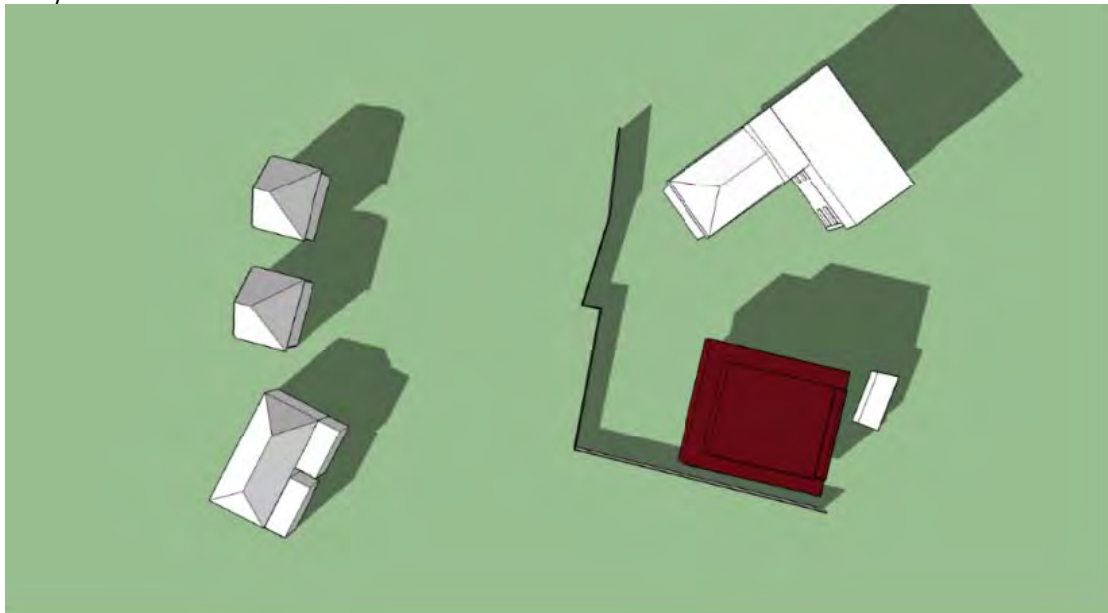
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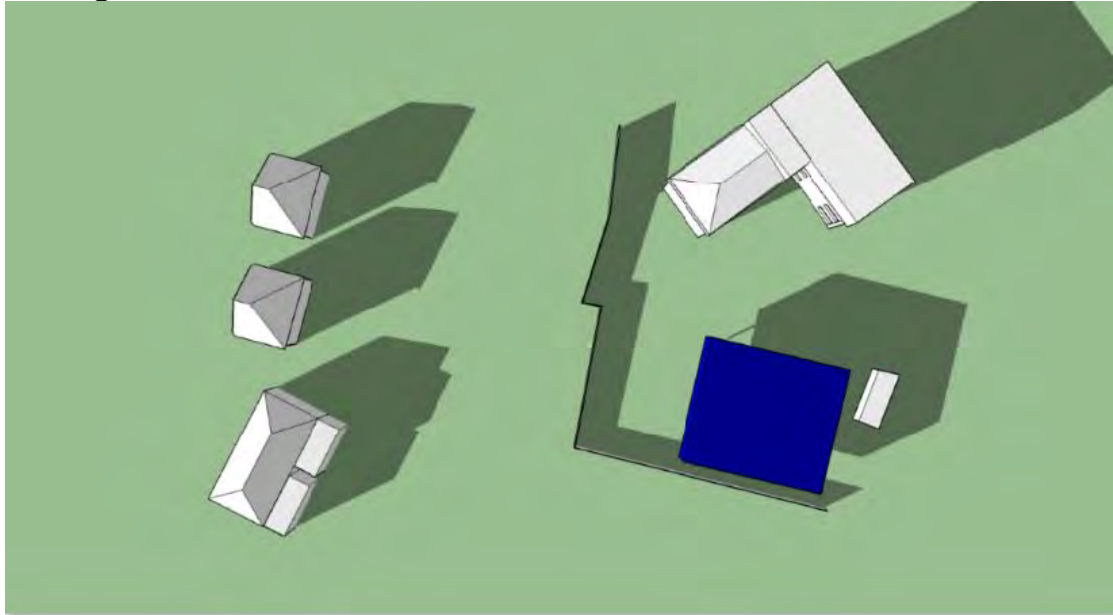
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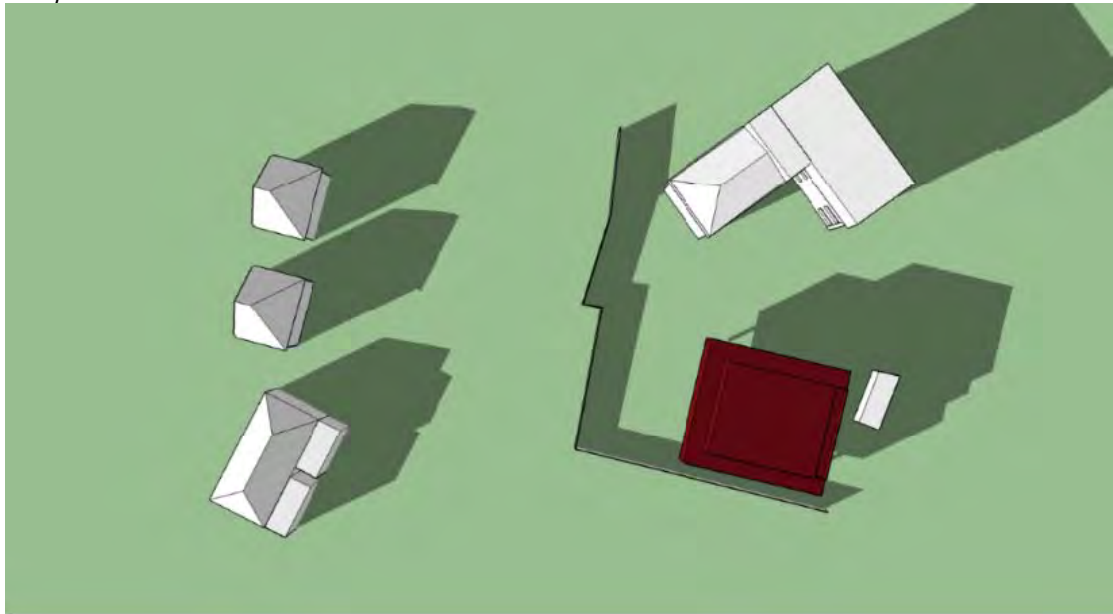
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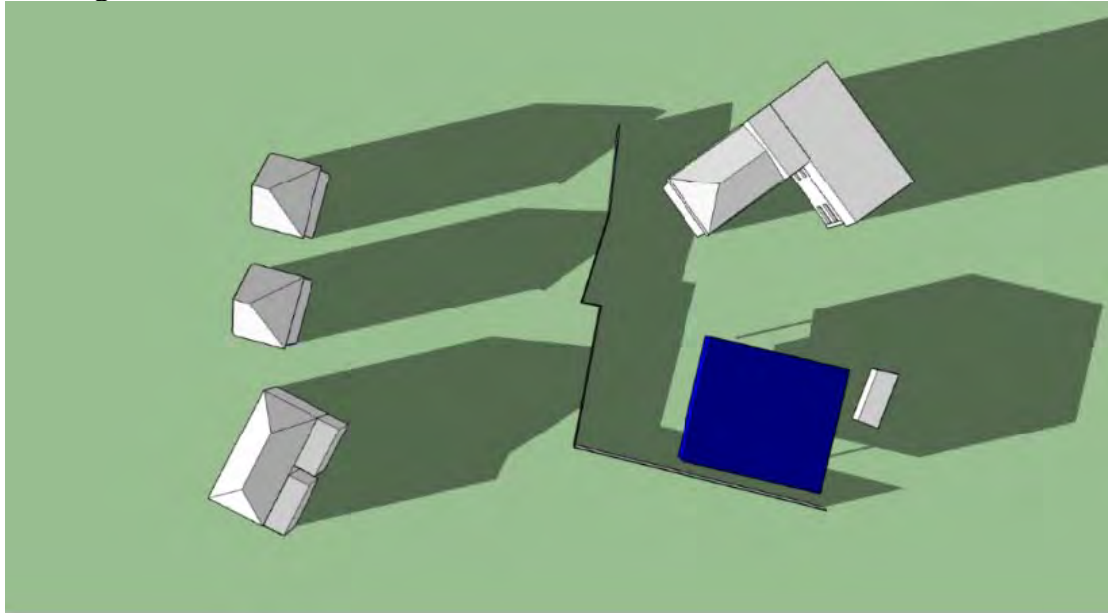
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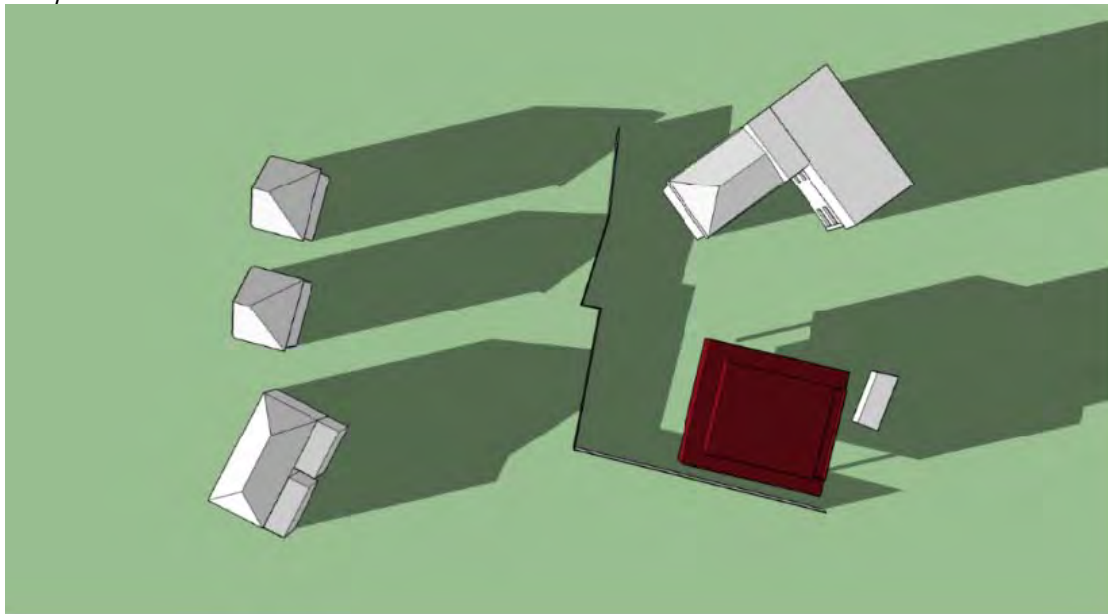
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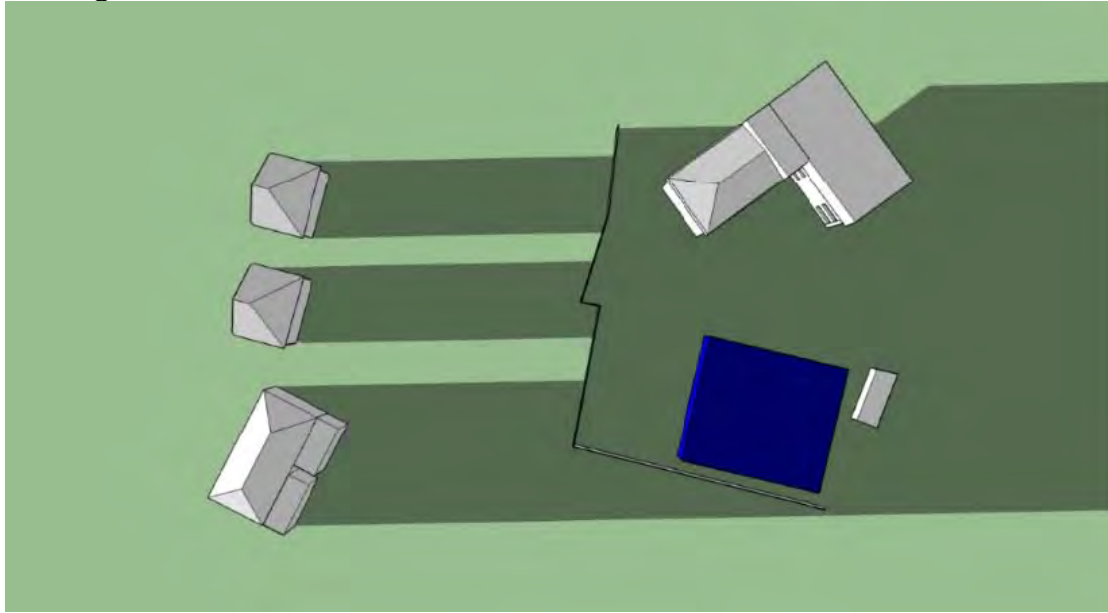
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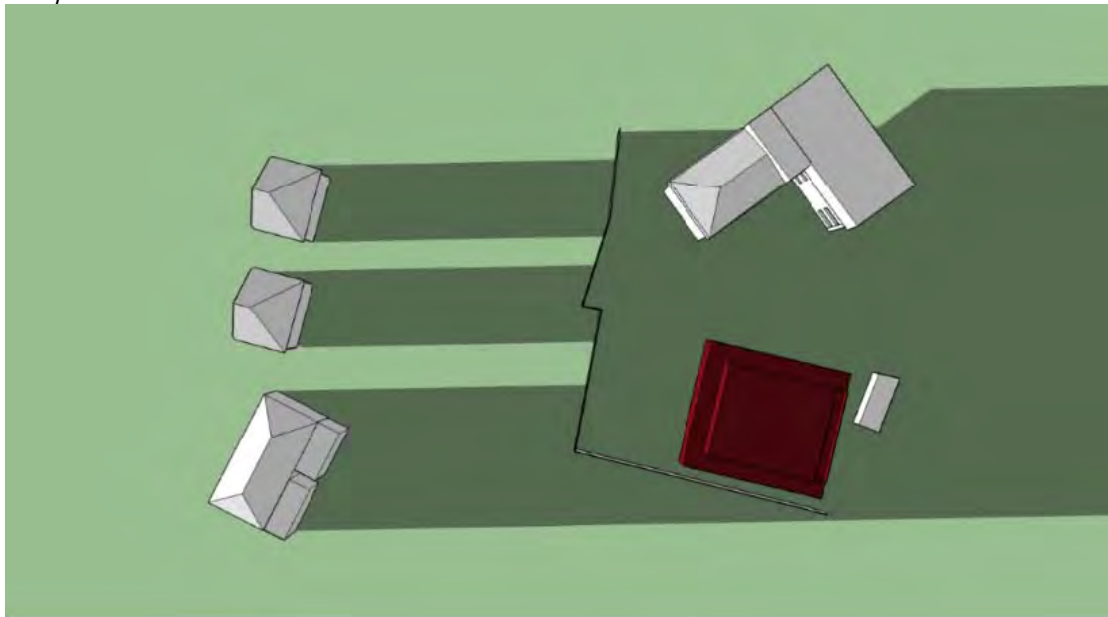
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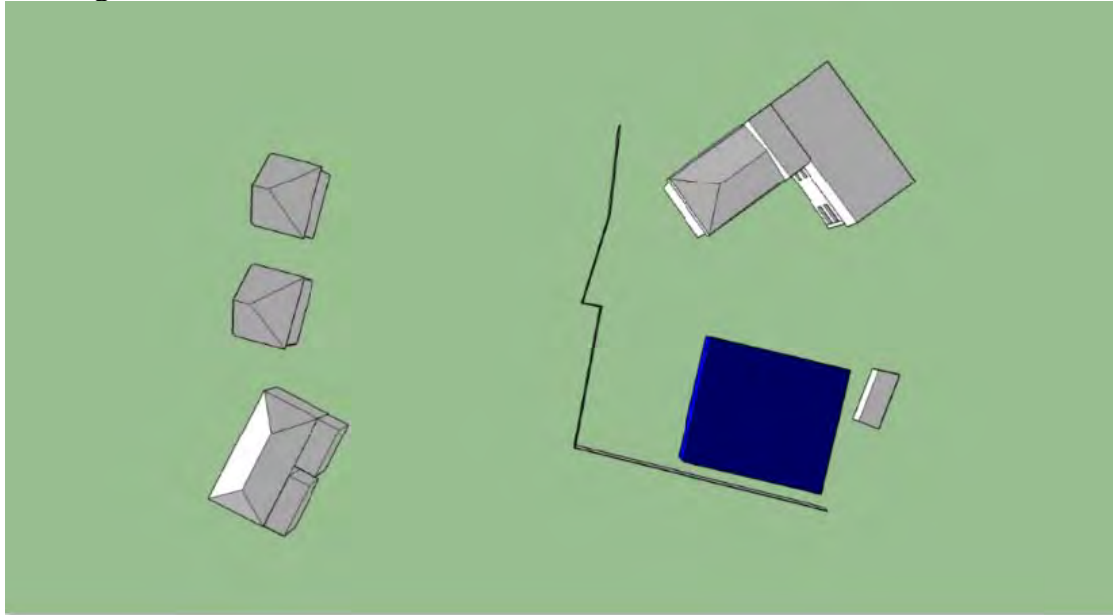
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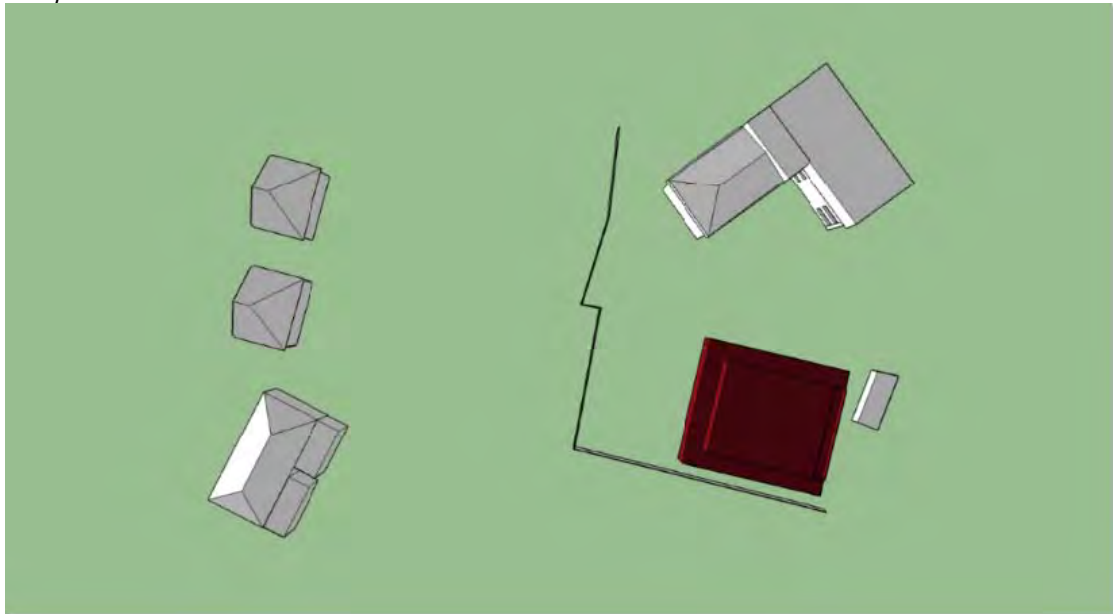
Proposed 18:00



Existing 19:00

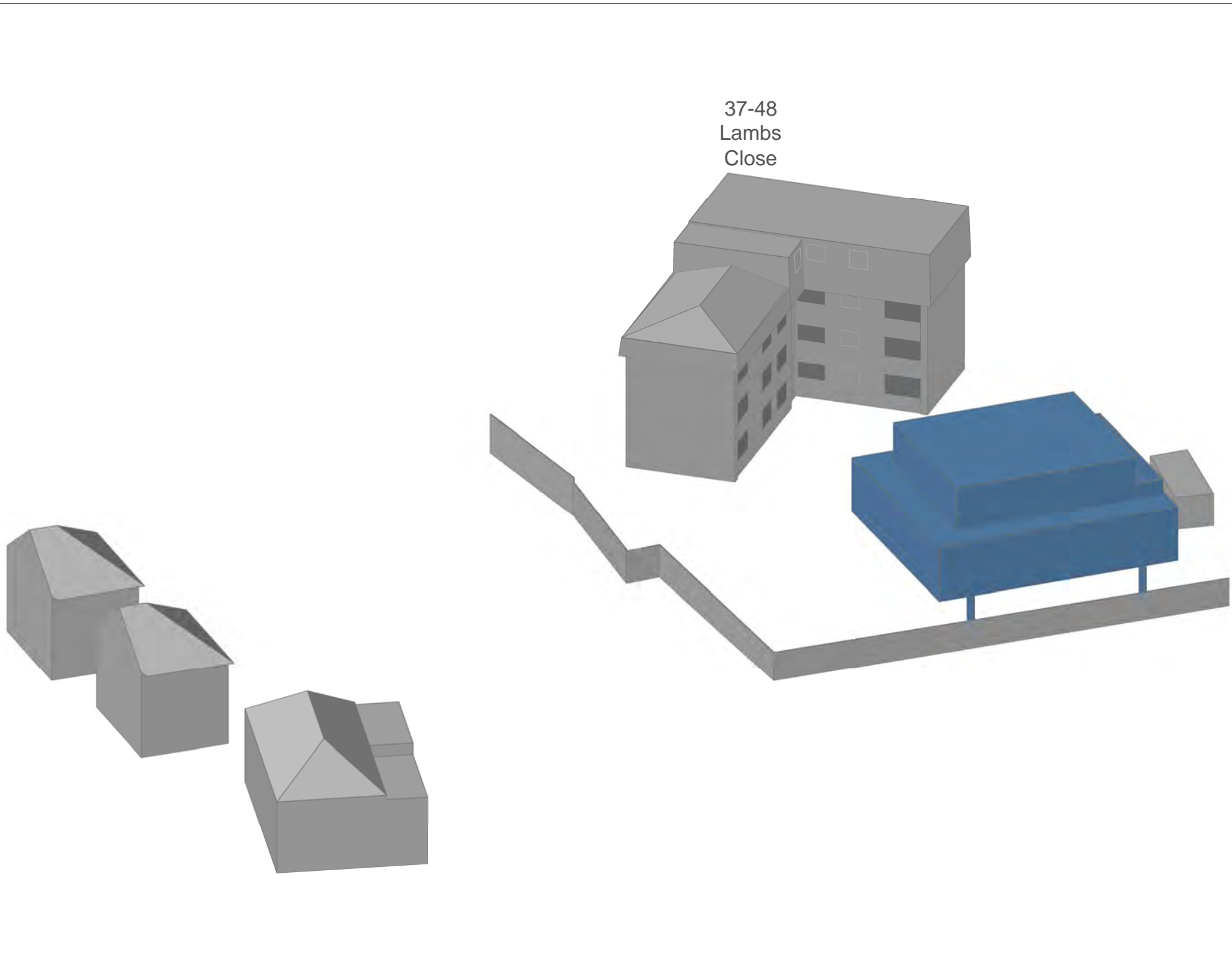


Proposed 19:00



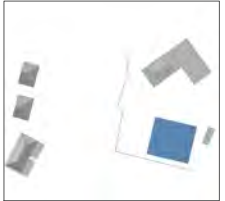
Window & Room References:





37-48
Lambs
Close

NOTES



NO.	REVISION	DATE
A	-	-
B	-	-
C	-	-
D	-	-



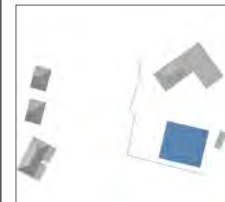
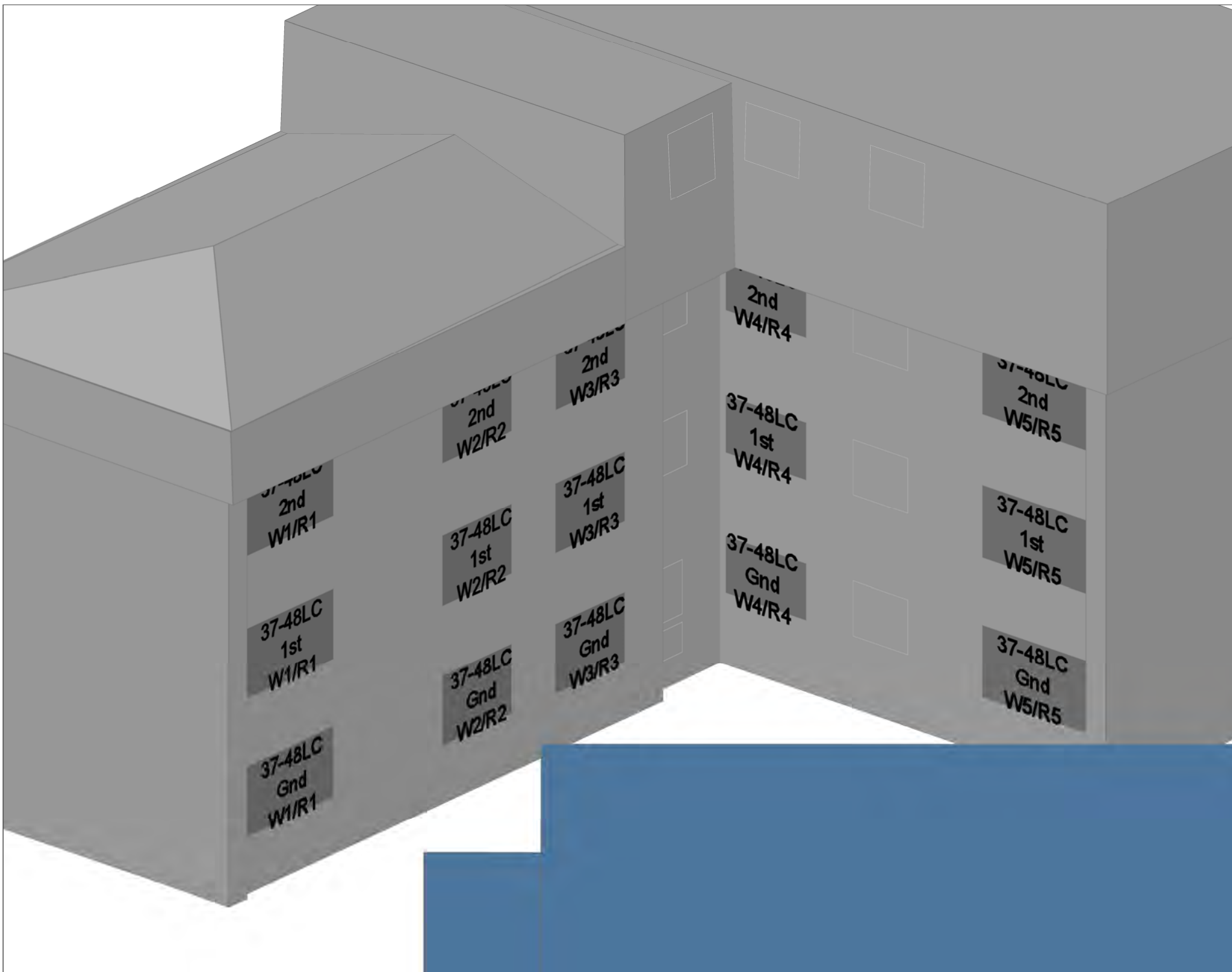
MES Building Solutions
Newark Beacon
Beacon Hill Office Park
Newark
Notts. NG24 2TN
01636 653 055
www.mesbuildingsolutions.co.uk

CLIENT
Ludgate Development

PROJECT
37-48 Lambs Close
Cuffley
EN6 4HD

DRAWING TITLE
3D Overview

DRAWN BY JB	CHECKED BY DP
DATE 09/08/2018	DRAWING NO. -
SCALE NTS	



NO.	REVISION	DATE
A		-
B		-
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 Ludgate Development

PROJECT
 37-48 Lambs Close
 Cuffley
 EN6 4HD

DRAWING TITLE
 Window Labels

DRAWN BY JB	CHECKED BY DP
DATE 09/08/2018	DRAWING NO. -
SCALE NTS	

9. Notes

- 9.1 This report has been prepared for the sole use of the Client. No representation or warranty (expressed or implied) is given to any other parties. Therefore this report should not be relied upon by any third party and we accept no liability from the use of this report by any other party.
- 9.2 Where full access was not available we have made reasonable estimations of internal layouts, floor areas, window sizes and positions etc.
- 9.3 Our calculations model has been built from a combination of architect's plans, partial site survey, site and aerial photographs.
- 9.4 We are not aware of any conflicts of interest between ourselves and any other party concerning this project.
- 9.5 Appendix F of Site Layout Planning for Daylight & Sunlight (PJ Littlefair 2011) contains guidance for setting alternative target values for skylight and sunlight access.
- 9.6 On occasions where an existing building has windows that are unusually close to the site boundary, an alternative approach can be taken to obtain target values for any new neighbouring development. To ensure that new development matches the height and proportions of existing buildings, targets for these windows can be set to those for a 'mirror image' building of the same height and size, an equal distance away on the other side of the boundary.

