Daylight, Sunlight & Overshadowing Study
Neighbouring Property Assessment

Proposed Residential Development
at 47 Low Lane, Holbeach PE12 7PW

Erection of four detached two-storey dwellings,
a detached garage and demolition
of existing bungalow.

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EXECUTIVE SUMMARY

The proposed development will have no adverse material impact on the neighbouring property known as 'The Chestnuts' in terms of daylight and sunlight, with maintained values far exceeding those recommended in BRE 209. In terms of sun on the ground (overshadowing), there will be a nett gain in the area of the rear garden able to receive direct sunlight.

INTRODUCTION

This report has been prepared in support of a Planning Application for the erection of four detached two storey dwellings and a detached garage, including demolition of the existing bungalow, at the property known as 47 Low Lane, Holbeach PE12 7PW.

The assessment has been undertaken to determine the impact of the proposed dwelling to Plot One on the existing neighbouring property known as The Chestnuts, Low Lane Holbeach PE12 7PW, which is located immediately to the west of the proposed dwelling to Plot One, in terms of Daylight, Sunlight and Sun on the Ground (overshadowing).

The methodology and criteria used for these assessments is provided by the Building Research Establishments guidance ''Site layout Planning for Daylight and Sunlight, A Guide to Good Practice'' and the British Standard document BS8206 Pt 2.

GUIDANCE

Daylight and Sunlight for Planning

"Site layout planning for Daylight and Sunlight: a guide to good practice, BRE 209 2011"

This document follows on from previous guidance produced by Her Majesty's Stationary Office (HMSO) on daylight and sunlight in the built environment and is now the accepted methodology used by Local Authorities for assessing daylight and sunlight in relation to new developments. It provides methods for the calculation of daylight and sunlight impacts of development upon existing surrounding properties.

Sections 2.2 and 3.2 of BRE 209 are relevant for protecting the daylight and sunlight of existing properties. Sections 2.3 and 3.3 of BRE 209 are relevant protecting the sunlight in the gardens of adjoining properties.

The BRE 209 Report section 2.2.2 advises that daylight and sunlight levels should be assessed for the main habitable rooms of neighbouring residential properties. Habitable rooms in residential properties are defined as kitchens, living rooms and dining rooms. Bedrooms are less important as they are mainly occupied at night-time. Windows to bathrooms, toilets, storerooms, utility rooms, circulation areas and garages need not be analysed.

Daylight

The BRE Guidelines propose several methods for calculating daylight. The three main methods predominately used are those involving the measurement of the total amount of skylight available.

1 - Vertical Sky Component (VSC)

2- Average Daylight Factor (ADF)

3- Daylight Distribution (DD) or No Sky Line (NSL)

Vertical Skylight Component

BRE 209 sections 2.2.15 to 2.2.17 recommends the application of the 45^{O} rule as a quick assessment. If the centre of the existing properties windows serving habitable rooms lies on the proposed building side of both of the 45^{O} lines (on plan and elevation), then the more detailed BRE tests are required. Otherwise, daylight and sunlight levels are unlikely to be adversely affected because light will continue to be received either over the roof, or beyond the end of the proposed building.

The Vertical Skylight Component (VSC) method calculates the amount of visible sky available to each window. This is the primary assessment of daylight impacts. The guidelines suggest that, post development, existing properties should enjoy at least 27% VSC and that the VSC is reduced to no less than 0.8 times its former value. Typically, the maximum VSC value obtainable is about 40% for a completely unobstructed vertical window.

Average Daylight Factor

The second recognised method of assessment for daylight is the Average Daylight Factor (ADF) calculation. This calculation assesses the quality and distribution of light within a room served by a window and takes into account the VSC value, the size and number of windows, the size of the room and the use to which each room is put. The ADF is the effective proportion of sky visibility available as luminance within a room. Rather than simply assessing the external obstructions as seen from a window, as in the VSC analysis, the ADF calculation takes the external sky visibility and incorporates it within the calculation that takes account of window size, number of windows, internal room surface area, glass transmittance and internal surface reflectance. Even where the analysis shows that the VSC results meet the BRE standards, the ADF results are still analysed and this has been provided for completeness.

The ADF is a reliable daylight test. This is because the ADF test takes into account a range of variables, for example, the size of the window, and whether the room has more than one window. These are important factors which affect the level of illumination within a room.

The BRE Report advises that, where supplementary electric lighting is available, the minimum standards of ADF that should be attained are 2% for kitchens, 1.5% for living rooms and 1% for bedrooms.

Our calculations identify the key data used for the ADF analysis and the results for the rooms, in comparison to the room use.

The ADF assesses actual light distribution within defined room areas, whereas the VSC considers potential light. Where a neighbour analysis has been performed the software performs calculations for the existing and proposed scenarios.

Daylight Distribution No Skyline

The third method, Daylight (DD) or No Sky Line (NSL), describes the distribution of daylight within rooms by calculating the area of the 'working plane' which can receive a direct view of the sky and hence 'sky light'. The working plane is set at 850mm above floor level in residential properties. BRE 209 does not state a required minimum value for no sky line but for a neighbour analysis a room maybe adversely affected, if following the development, the area of the working plane that can receive direct skylight is less than 0.8 times its former value.

Sunlight

The BRE Guidelines propose two methods for calculating sunlight, these are:

1- Annual Probable Sunlight Hours (APSH)

2- Sun On The Ground (Overshadowing) Sunlight Amenity Assessment

Annual Probable Sunlight Hours

For sunlight, the Annual Probable Sunlight Hours (APSH) test calculates the percentage of statistically probable hours of sunlight received by each window, in both summer and winter months, which face 90 degrees of due south. March 21st through to September 21st is considered to be the summer period while September 21st to March 21st is considered the winter period. The BRE have produced sunlight templates for London, Manchester, and Edinburgh, indicating the APSH for these regions. The London template has been used for this analysis as the London indicator template is the closest of the three available from BRE in terms of latitude.

The maximum number of Annual Probable Sunlight hours for the London orientation is 1486 hours.

Calculations of both summer and winter availability are made. For residential accommodation, the main requirement for sunlight is in living rooms and is regarded as less important in bedrooms and kitchens. The BRE guidelines suggest that windows should receive at least 25% total APSH with 5% of this total being enjoyed in the winter months. The guidelines also allow for a 20% reduction in sun lighting when compared to former values with total reductions of less than 4% APSH not being considered noticeable.

Sunlight Amenity Assessment (Overshadowing)

In respect of the shading impacts to amenity space, such as neighbouring gardens, the BRE guidelines set out a sunlight amenity assessment to ensure the space remains adequately sunlit throughout the year. This is achieved by plotting a contour of the area which receives at least two hours of direct sunlight on the 21st March. An amenity space which receives at least two hours of direct sunlight across 50% of its area, or if the area retains 0.8 times or greater its former value, can be said to experience acceptable levels of sunlight.

Daylight and Sunlight

The BRE Guidance is summarised in the below table and this has been used as the basis for the criteria used in the assessment of daylight and sunlight impacts.

Test	Building Research Establishment (BRE 209) Criteria:
Daylight	A window may be adversely affected if the Vertical Sky Component (VSC) measured at the centre of the window is less than 27% and less than 0.8% of its former value. A room may be adversely affected if the Average Daylight Factor (ADF) is less than 1% for a Bedroom 1.5% for a living room or 2% for a kitchen. Daylight Distribution (DD) or No Sky Line (NSL). A room may be adversely affected if, following the proposed development, the area of the working plane that receive direct sunlight is less than 0.8 times its former value.
Sunlight	A window may be adversely affected if a point at the centre of the window receives in the year less than 25% of the Annual Probable Sunlight Hours (APSH) including at least 5% of the Annual Probable Sunlight Hours during the winter months (21st September to 21st March) and less than 0.8 times its former sunlight hours during either period. An amenity space to a residential property may be adversely affected if; following the proposed development the amenity area receives less than two hours of direct sunlight on the 21st March across 50% of its area, or if the area which can receive two hours of sunlight on the 21st March is less than 0.8 times its former value.

ASSUMPTIONS

Access has not been sought internally to the property known as 'The Chestnuts'. However, details of the internal layouts have been sought from available planning archives and other public records. Where such information is unavailable, floor levels have been assumed from the external appearance of the building, and the locations of windows.

BRE Appendix H Trees and hedges

Trees and hedges vary in their effect on skylight and sunlight. Most tree species will cast a partial shade; for deciduous trees this will vary with the time of the year. However, very little light can penetrate dense belts of evergreen trees, and the shade they cause will be more like that of a building or wall.

The existing group of 6.5m to 8.5m high evergreen coniferous trees on the rockery to the existing site, which are proposed to be removed as part of the development, have therefore been taken into account in the preparation of this report in accordance with Section H1.1 of BRE 209.

The existing 5m high deciduous fruit trees along the western boundary of the existing site have not been considered as part of this assessment. However, inevitably, some shadowing will be cast by these trees especially when in full leaf throughout the summer months. Their location has therefore been shown on the documents within Appendix H for reference only.

INITIAL ASSESSMENT

In accordance with Section 2, Light from The Sky, of BRE 209, the 45° approach was applied to the living rooms, kitchen, and bedroom windows of the property known as 'The Chestnuts', from the western elevation of the proposed dwelling on Plot One. All living room, kitchen and bedroom windows fell on The Chestnut's side of the 45° line in terms of both the plan and elevational plots, therefore it could be concluded the recommendations of BRE 209 are met in terms of the Vertical Sky Component (VSC) to these rooms, nevertheless full VSC computer software calculations have been undertaken.

DAYLIGHT SUNLIGHT RESULTS

Neighbour Property (The Chestnuts) Assessments

Daylight. Vertical Sky Component (VSC)

The results of the Vertical Sky Component (VSC) computer analysis pertaining to the relevant windows to the existing property known as 'The Chestnuts' which is west of the proposed development and the proposed dwelling to Plot One are presented in the Tables and Waldram Diagrams in Appendix A

It can be seen from the Vertical Sky Component table that all of the windows will meet the BRE guidelines by virtue of the fact that each of the windows far exceeds the BRE criteria of 27% with a marginal improvement to six of the windows and a negligible loss to one window with a proposed/existing ratio of 0.99.

Daylight. Average Daylight Factor (ADF)

The results of the Average Daylight Factor (ADF) computer analysis undertaken on the relevant rooms to the existing property known as 'The Chestnuts', which is west of the proposed development and the proposed dwelling to Plot One, are presented in the Tables and Waldram Diagrams in Appendix B

It can be seen from the Average Daylight Factor table that all rooms, apart from the kitchen will meet the BRE guidelines by virtue of the fact that each of the windows far exceeds the BRE criteria with a marginal improvement to six of the rooms. The kitchen, with an existing value of 1.687721, fails to meet the BRE criteria of 2.0. However, with the proposed development implemented, this value increases to 1.734001 with a proposed/existing ratio of 1.027422 and is therefore noted to be an improvement on the existing situation.

Daylight. Daylight Distribution (DD) or No Sky Line (NSL)

The results of the Daylight Distribution (DD) computer analysis undertaken on the relevant rooms to the existing property known as 'The Chestnuts', which is west of the proposed development and the proposed dwelling to Plot One, are presented in the tables in Appendix C.

It can be seen from the table that all rooms will meet the BRE guidelines by virtue of the fact that with the development implemented daylight distribution to all of the rooms remains unchanged.

Sunlight. Annual Probable Sunlight Hours (APSH)

The results of the Annual Probable Sunlight Hours (APSH and Winter) computer analysis undertaken on the relevant windows to the existing property known as 'The Chestnuts', which is west of the proposed development and proposed dwelling to Plot One, are presented in the tables and Waldram Diagrams in Appendix D.

The Average Probable Sunlight Hours Table demonstrates that all of the windows will exceed the BRE recommendations of either 25% APSH or within 0.8 of the existing APSH. Actual values range between 70% and 83% APSH with the existing proposed ratios ranging between 0.88 and 0.99.

Sunlight Winter

The results contained in the Sunlight table also show that all windows assessed to the property known as 'The Chestnuts' will exceed the BRE recommendations of 5% APSH Winter value and are within 0.8 of the existing APSH Winter value. Actual values range between 20% and 29% APSH Winter with the existing proposed ratios ranging between 0.87 and 0.97.

Sunlight. Sun On The Ground (Overshadowing)

The results of the Sun On The Ground computer analysis undertaken on the amenity area (garden) to the rear of existing property known as 'The Chestnuts', which is west of the proposed development and proposed dwelling to Plot One, are presented in the tables and images in Appendix E.

The outputs of the computer analysis contained in the table concludes that 91.23% of the amenity area will receive at least two hours of sunlight on the 21st March as existing, and 92.98% with the development implemented, resulting in a proposed existing ratio of 1.01. This far exceeds the BRE recommended values of two hours of sunlight on the 21st March to 50% of the amenity area and a proposed existing ratio of 0.8.

Further computer analysis was undertaken for sun on the ground to the amenity area to 'The Chestnuts' for time periods of three hours to seven hours on the 21 March/21 September, the results of these additional calculations are presented in Appendix E. These reveal that under the existing conditions 34.59% of the rear garden to 'The Chestnuts is capable of receiving seven hours of sunlight whilst with the development implemented, 60.9% of the rear garden to 'The Chestnuts' is capable of receiving seven hours of sunlight.

Visual Output VSC and APSH

For a visual output of the Vertical Sky Component (VSC) and Annual Probable Sunlight Hours, Summer and Winter, (APSH) computer analysis see Appendix F Neighbouring Property VSC APSH Indicator/Numerical Output South Elevation.

CONCLUSION

This report has been prepared to consider the potential daylight and sunlight effects of Plot One of the proposed development on the property located immediately west of Plot One, known as 'The Chestnuts'. The quality of daylight and sunlight within the neighbouring residential property has been assessed using the Vertical Sky Component (ASC), Average Daylight Factor (ADF), Daylight Distribution (DD) or No Sky Line (NSL), Average Probable Sunlight Hours (APSH and Winter) and Sunlight Amenity Assessment (Overshadowing) methods as recommended within the Building Research Establishments publication ''Site layout Planning for Daylight and Sunlight, A Guide to Good Practice'' and the British Standard document BS8206 Pt 2.

To assess the development's potential impact on daylight and sunlight on the neighbouring property a computer baseline assessment of all the windows and glazed doors of rooms which face within 90 degrees of due south. Where rooms are served by more than one window, all of these windows were taken into account when calculating a rooms Average Daylight Factor (ADF) and Daylight Distribution (DD) or No Sky Line (NSL). The resulting data from the computer analysis is contained in the appendices to this report.

Vertical Sky Component (VSC)

It can be seen from the Vertical Sky Component table that all of the windows will meet the BRE guidelines by virtue of the fact that each of the windows far exceeds the BRE criteria of 27% with a marginal improvement to six of the windows and a negligible loss to one window with a proposed/existing ratio of 0.99.

Daylight. Average Daylight Factor (ADF)
It can be seen from the Average Daylight Factor table that all rooms, apart from the kitchen will meet the BRE guidelines by virtue of the fact that each of the windows far exceeds the BRE criteria with a marginal improvement to six of the rooms. The kitchen, with an existing value of 1.687721, fails to meet the BRE criteria of 2.0, however, with the proposed development implemented, this value increases to 1.734001 with a proposed/existing ratio of 1.027422.

Daylight. Daylight Distribution (DD) or No Sky Line (NSL)
It can be seen from the table that all rooms will meet the BRE guidelines by virtue of the fact that with the development implemented daylight distribution to all of the rooms remains unchanged.

Sunlight. Annual Probable Sunlight Hours (APSH)
The Average Probable Sunlight Hours table demonstrates that all of the windows will exceed the BRE recommendations of either 25% APSH or within 0.8 of the existing APSH. Actual values range between 70% and 83% APSH with the existing proposed ratios ranging between 0.88 and 0.99.

Sunlight Winter
The results contained in the Sunlight Winter table show that all windows will exceed the BRE recommendations of 5% APSH Winter value and are within 0.8 of the existing APSH Winter value. Actual values range between 20% and 29% APSH Winter with the existing proposed ratios ranging between 0.87 and 0.97.

Sunlight. Sun On The Ground (Overshadowing)
The outputs of the computer analysis contained in the table concludes that 91.23% of the existing amenity area will receive at least two hours of sunlight on the 21st March and 92.98% with the development implemented, resulting in a proposed existing ratio of 1.01. This far exceeds the BRE recommended values of two hours of sunlight on the 21st March to 50% of the amenity area and a proposed existing ratio of 0.8.

The development will result in a 26% gain in the amount of rear garden area to 'The Chestnuts' which is able to receive a possible seven hours of direct sunlight on the 21 March/21 September.

To conclude, the proposed development should therefore be considered to the meet the requirements of the National Planning Policy Framework (NPPF) and South East Lincolnshire Local Plan (SELLP) in terms of having no adverse material impact on existing neighbouring property in relation to Daylight, Sunlight and Sun On The Ground (Overshadowing).

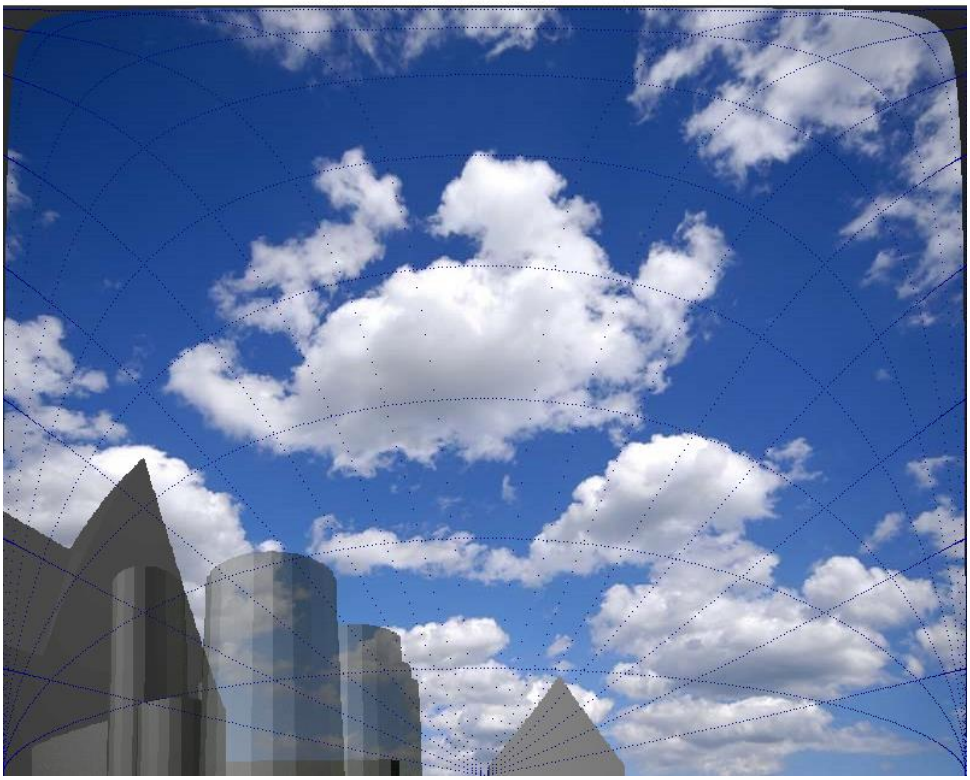
APPENDIX A

Project: Proposed Development at Land known as 47 Low Lane Holbeach
Drawing Ref MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Daylight and Sunlight Neighbouring Property Assessment
Computer Analysis: Vertical Sky Component (VSC)

Floor Name	Window Name	Window ID	Window Orientation	VSC Existing	VSC Proposed	Proposed/ Existing	Meets BRE Criteria
First	W1	4	194°	35.449531	35.771521	1.01	Yes
First	W2	5	194°	36.055516	36.98202	1.03	Yes
First	W3	6	194°	37.232276	38.074743	1.02	Yes
First	W4	7	194°	37.749735	38.346588	1.02	Yes
First	W5	8	14°N	37.393232	37.393232	1	Yes
First	W6	9	14°N	37.408244	37.408244	1	Yes
Ground	W1	1	194°	32.925922	32.634654	0.99	Yes
Ground	W2	2	194°	35.883958	36.888155	1.03	Yes
Ground	W3	3	194°	35.745984	36.504258	1.02	Yes
Ground	W10	10	284°N	37.651149	37.651149	1	Yes
Ground	W11	11	284°N	39.295534	39.295534	1	Yes

Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W1

VSC Existing: 35.45
Proposed: 35.77



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W2

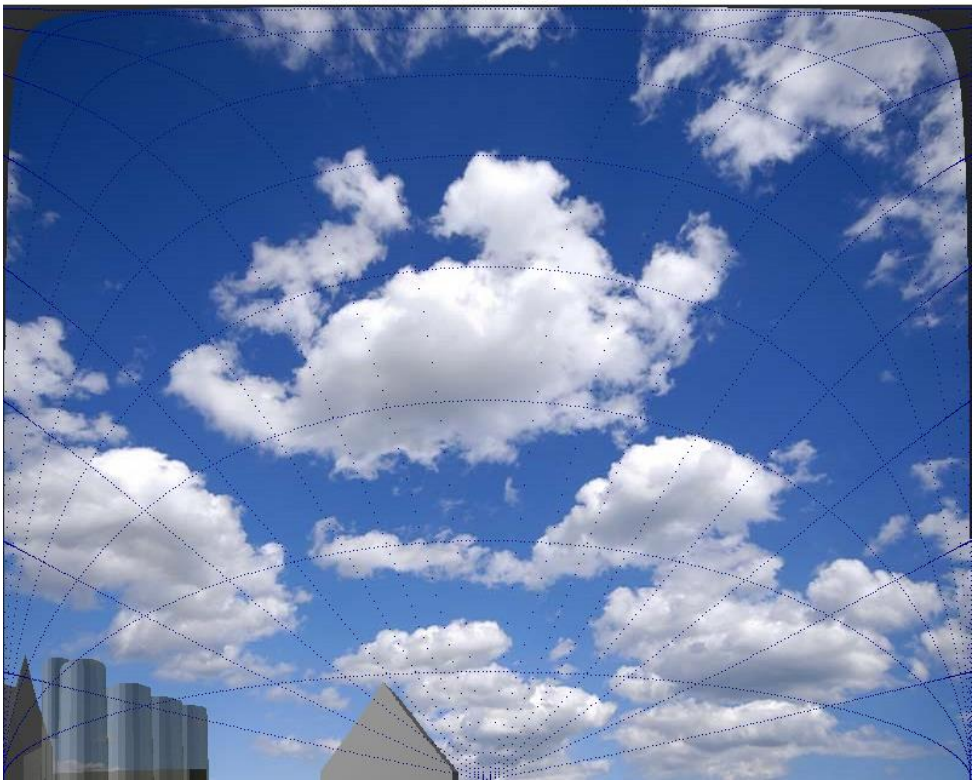
VSC Existing: 36.06
Proposed: 36.98



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts Window Ref: The Chestnuts_First_W3	VSC	Existing: 37.23 Proposed: 38.07



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts Window Ref: The Chestnuts_First_W4	VSC	Existing: 37.75 Proposed: 38.35



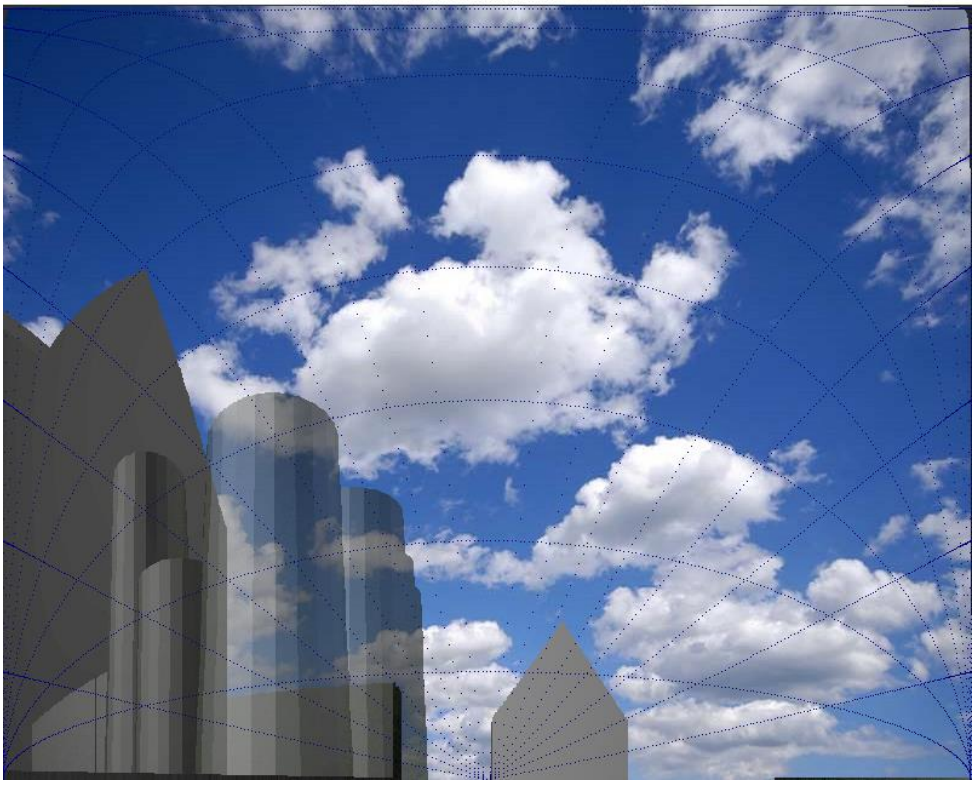
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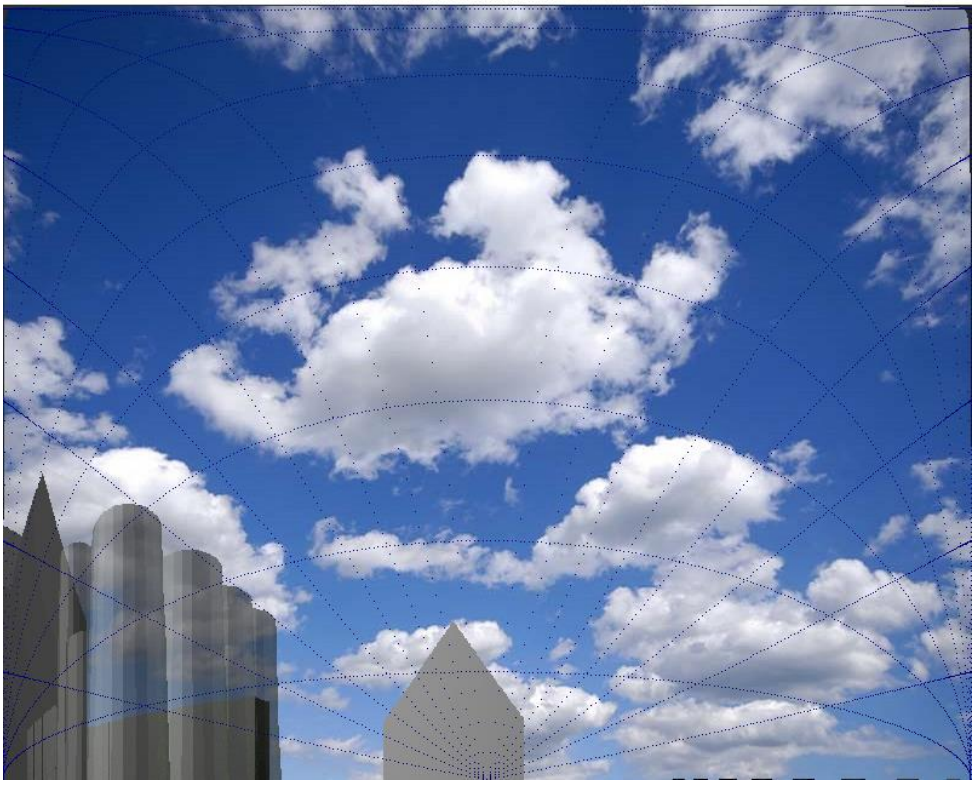
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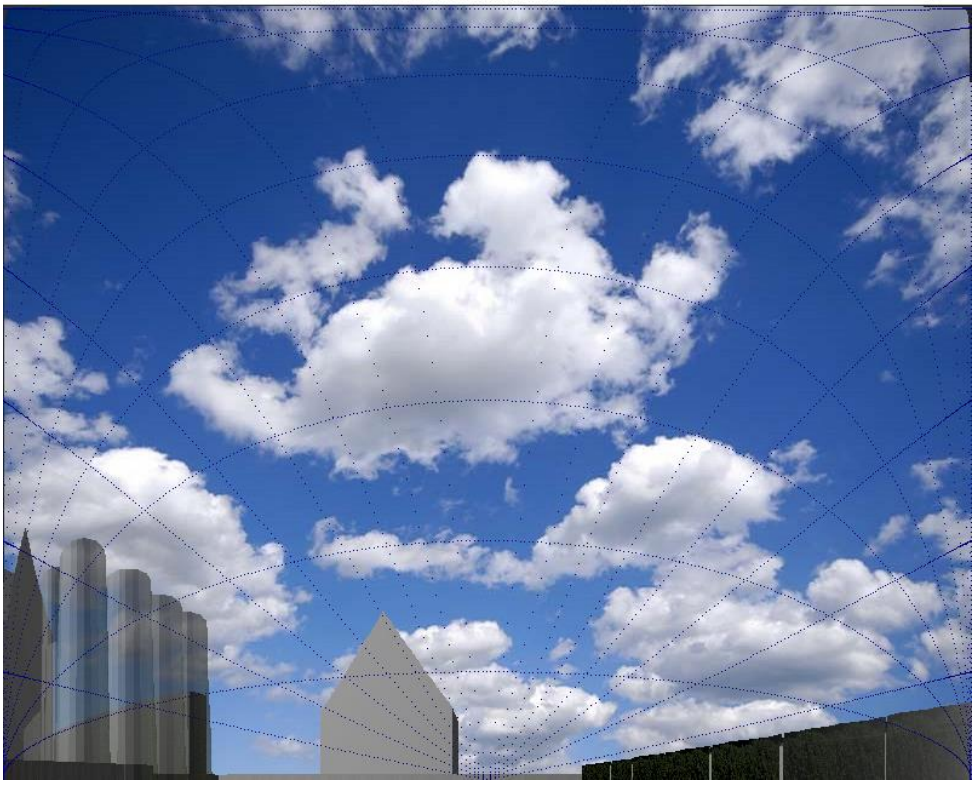
Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts Window Ref: The Chestnuts_Ground_W1	VSC	Existing: 32.93 Proposed: 32.63



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts Window Ref: The Chestnuts_Ground_W2	VSC	Existing: 35.88 Proposed: 36.89



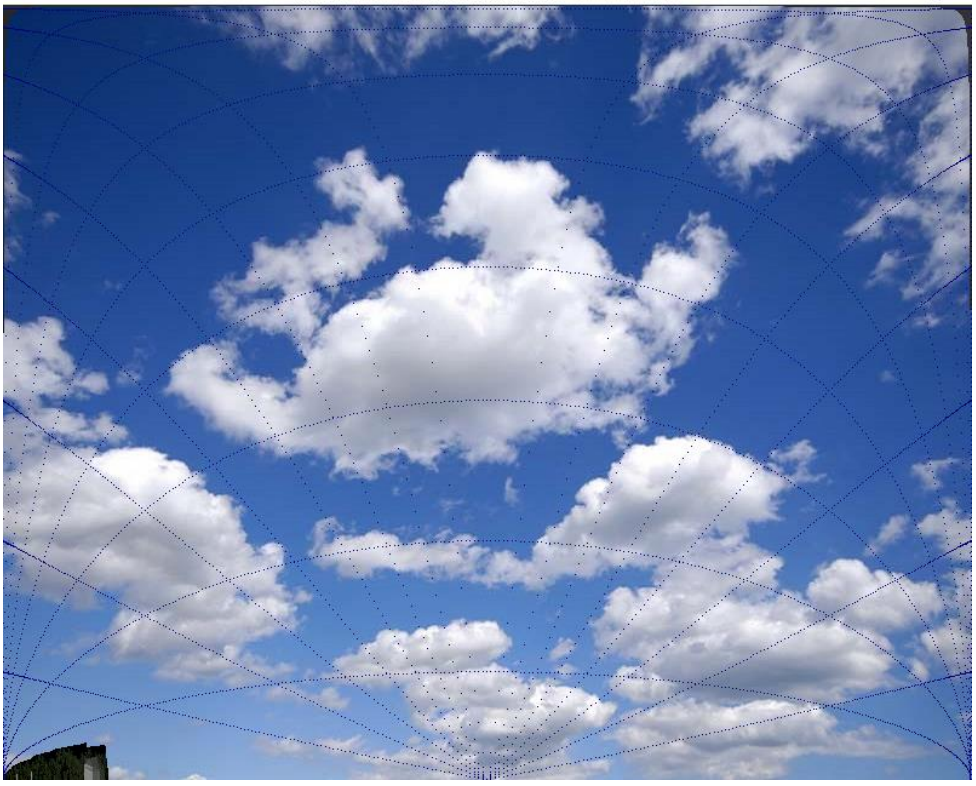
Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts Window Ref: The Chestnuts_Ground_W3	VSC	Existing: 35.75 Proposed: 36.5



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts Window Ref: The Chestnuts_Ground_W10	VSC	Existing: 37.65 Proposed: 37.65



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts **Window Ref: The Chestnuts_Ground_W11**	**VSC** Existing: 39.3 Proposed: 39.3



APPENDIX B

Project: Proposed Development at Land known as 47 Low Lane Holbeach
Drawing Ref MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Daylight and Sunlight Neighbouring Property Assessment
Computer Analysis: Average Daylight Factor (ADF)

Floor Name	Room Name	Room Use	Window Ref	Glass Tran	Glazed Area	Clear Sky Ex	Clear Sky Pro	Room Surface Area	ASR	BWPF	ADF Existing	ADF Proposed	ADF Reqd	PR/EX	Meets BRE
First	R1	Games	W1	0.68	1.296	73.929656	74.989884	185.372	0.5	1	0.431137	0.43732			
First	R1	Games	W2	0.68	1.296	75.061483	77.232511	185.372	0.5	1	0.437737	0.450398			
First	R1	Games	W5	0.68	1.944	78.698791	78.698791	185.372	0.5	1	0.688423	0.688423			
First	R1	Games	W6	0.68	1.944	78.697678	78.697678	185.372	0.5	1	0.688414	0.688414			
											2.245711	2.264555	1.5	1.0083910	Yes
First	R2	Bed	W3	0.68	1.152	76.773831	78.727417	50.77	0.5	1	1.453095	1.49007			
											1.453095	1.49007	1	1.0254459	Yes
First	R3	Bed	W4	0.68	1.728	79.133897	80.469038	60.46	0.5	1	1.886573	1.918403			
											1.886573	1.918403	1	1.0168719	Yes
Ground	R1	Study	W1	0.68	1.152	68.65115	68.903341	41.080	0.5	1	1.605841	1.61174			
											1.605841	1.61174	1.5	1.0036735	Yes
Ground	R2	Kitchen	W2	0.68	2.016	74.180452	76.214637	73.912	0.5	1	1.687721	1.734001			
											1.687721	1.734001	2	1.0274222	No
Ground	R3	Living	W3-L	0.68	0.8352	74.896311	76.643143	92.716	0.5	0.15	0.084416	0.086385			
Ground	R3	Living	W3-U	0.68	2.3328	78.488709	80.192194	92.716	0.5	1	1.647273	1.683024			
Ground	R3	Living	W10	0.68	0.648	75.709916	75.709916	92.716	0.5	1	0.441376	0.441376			
Ground	R3	Living	W11	0.68	0.648	78.693543	78.693543	92.716	0.5	1	0.45877	0.45877			
											2.631834	2.669555	1.5	1.0143324	Yes

Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W1

ADF VSC Existing: 32.32
Proposed: 32.87



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W2

ADF VSC Existing: 32.91
Proposed: 34.01



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W3

ADF VSC Existing: 33.78
Proposed: 34.74



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W4

ADF VSC Existing: 34.94
Proposed: 35.57



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W5

ADF VSC Existing: 34.73
Proposed: 34.73



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W6

ADF VSC Existing: 34.73
Proposed: 34.73



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W1

ADF VSC Existing: 29.43
Proposed: 29.58



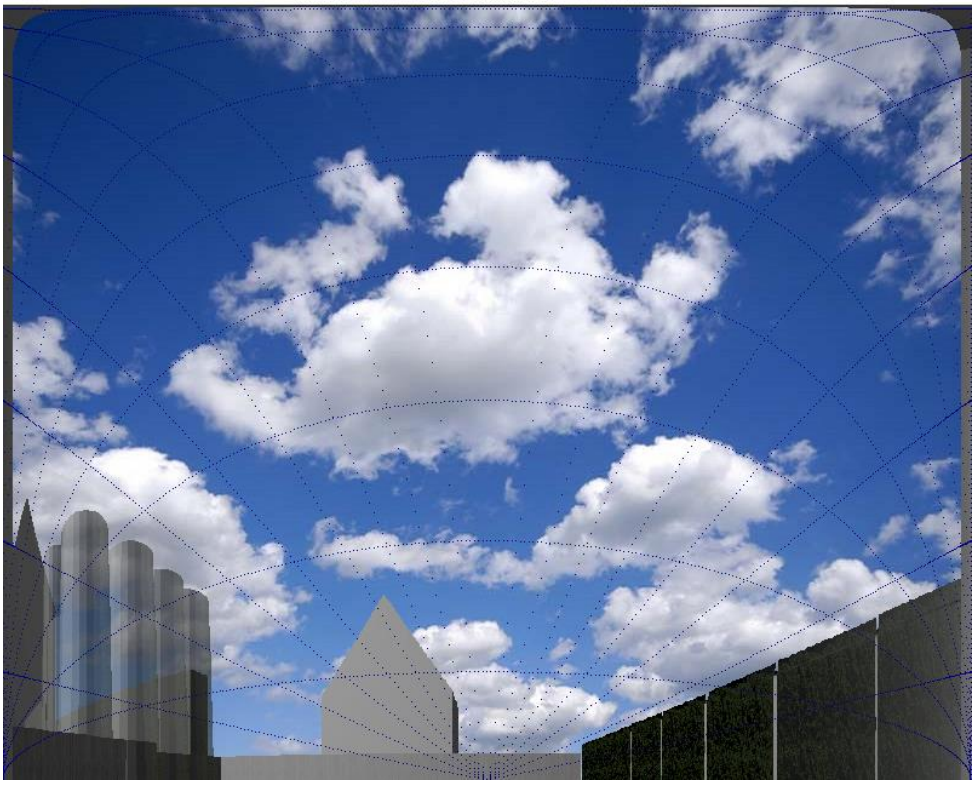
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Window Ref: The Chestnuts_Ground_W2

ADF VSC Existing: 32.45
Proposed: 33.5



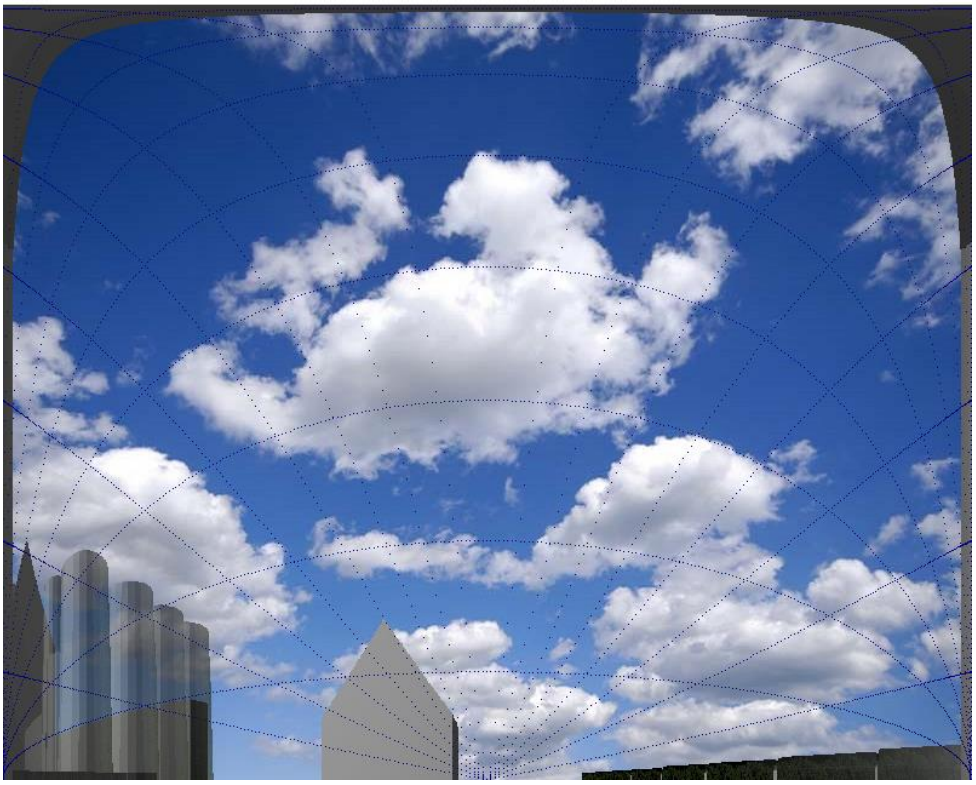
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Window Ref: The Chestnuts_Ground_W3

ADF VSC Existing: 32.82
Proposed: 33.71



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W3

ADF VSC Existing: 34.63
Proposed: 35.44



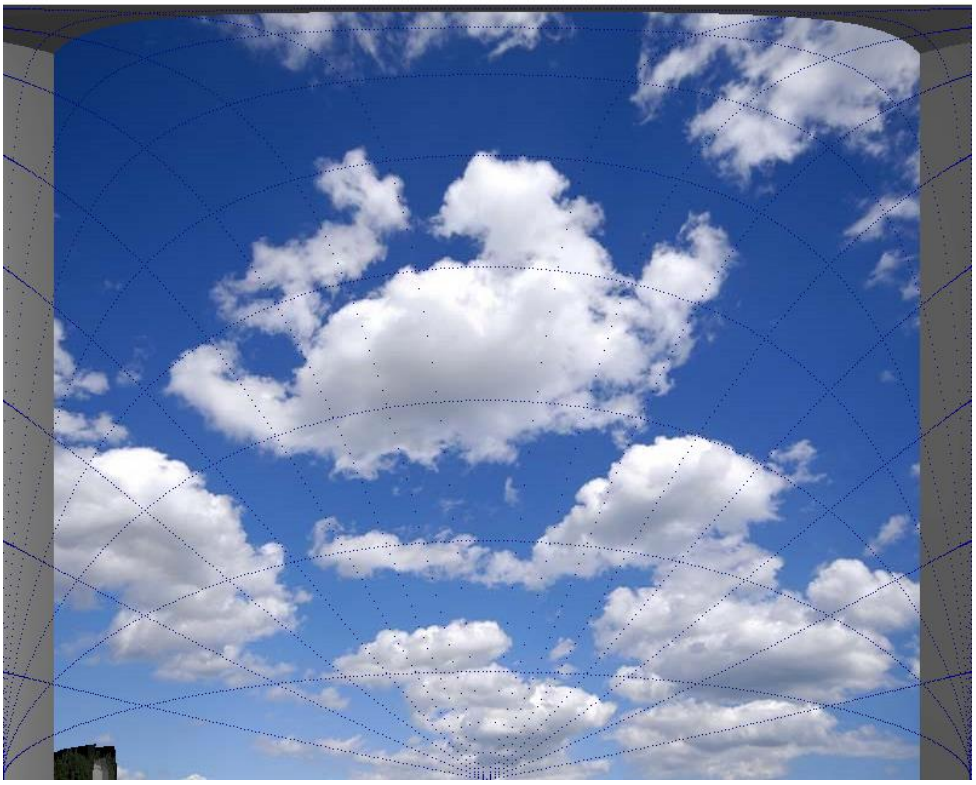
Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W10

ADF VSC Existing: 33.24
Proposed: 33.24



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W11

ADF VSC Existing: 34.73
Proposed: 34.73



APPENDIX C

Project: Proposed Development at Land known as 47 Low Lane Holbeach
Drawing Ref MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Daylight and Sunlight Neighbouring Property Assessment
Computer Analysis: Daylight Distribution (DD) or No Sky Line (NSL)

Floor Name	Room Name	Room Use	Room Area	Lit Area Existing	Lit Area Proposed	Existing %	Proposed %	Pr/EX	Meets BRE
First	R1	Games	54.64	54.636	54.636	100	100	1	Yes
First	R2	Bedroom	9.76	9.304	9.304	95.34	95.34	1	Yes
First	R3	Bedroom	12.48	12.012	12.012	96.25	96.25	1	Yes
Ground	R1	Study	7.040	6.750	6.750	95.89	95.89	1	Yes
Ground	R2	Kitchen	16.256	15.187	15.187	93.43	93.43	1	Yes
Ground	R3	Living	22.308	22.308	22.308	99.68	99.66	1	Yes

APPENDIX D

APPENDIX D

Project: Proposed Development at Land known as 47 Low Lane Holbeach
Drawing Ref MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Daylight and Sunlight Neighbouring Property Assessment
Computer Analysis: Average Probable Sunlight Hours (APSH and Winter)

Floor Name	Window Name	Window ID	Windows Orientation	Annual Existing %	Annual Proposed %	Annual Pr/Ex	Meets BRE	Winter Existing %	Winter Proposed %	Winter Pr/Ex	Meets BRE
First	W1	4	194°	83	79	0.95	Yes	28	25	0.89	Yes
First	W2	5	194°	83	80	0.96	Yes	29	26	0.9	Yes
First	W3	6	194°	84	82	0.98	Yes	30	28	0.93	Yes
First	W4	7	194°	84	83	0.99	Yes	30	29	0.97	Yes
First	W5	8	14°N	North	North	North	North	North	North	North	North
First	W6	9	14°N	North	North	North	North	North	North	North	North
Ground	W1	1	194°	80	70	0.88	Yes	23	20	0.87	Yes
Ground	W2	2	194°	83	82	0.99	Yes	27	27	1	Yes
Ground	W3	3	194°	84	81	0.96	Yes	28	26	0.93	Yes
Ground	W10	10	284°N	North	North	North	North	North	North	North	North
Ground	W11	11	284°N	North	North	North	North	North	North	North	North

Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W1

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	83	28
Proposed	79	25



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W2

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	83	29
Proposed	80	26



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W3

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	84	30
Proposed	82	28



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W4

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	84	30
Proposed	83	29



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W5

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	7	0
Proposed	7	0



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_First_W6

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	9	0
Proposed	9	0



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W1

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	80	23
Proposed	70	20



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W2

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	83	27
Proposed	82	27



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W3

LOCATION
London
51.5 N, 0.00 E

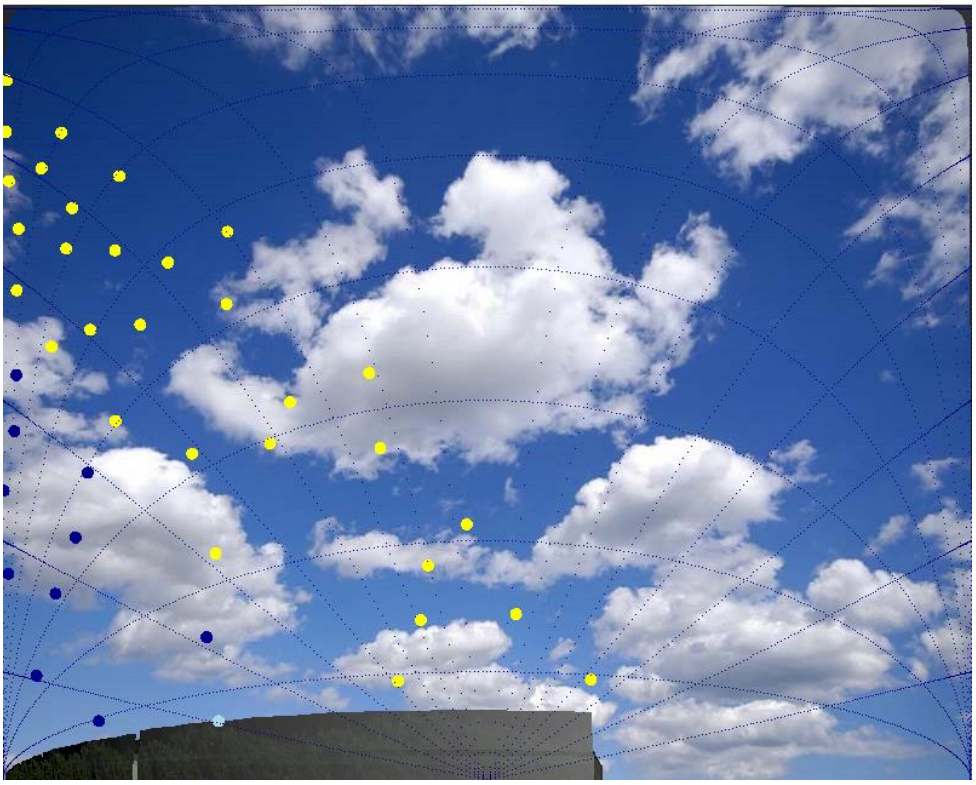
APSH	Annual	Winter
Existing	84	28
Proposed	81	26



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W10

LOCATION
London
51.5 N, 0.00 E

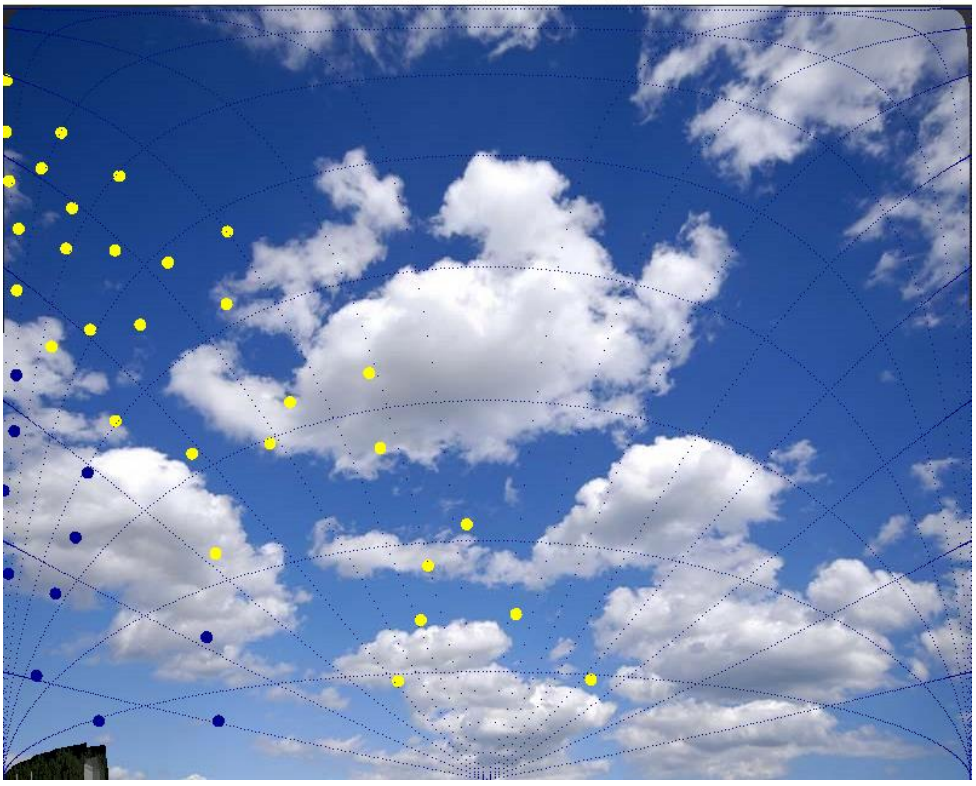
APSH	Annual	Winter
Existing	40	10
Proposed	40	10



Drawing Ref: MBS BRE 209 Daylight Sunlight Assessment The Chestnuts
Window Ref: The Chestnuts_Ground_W11

LOCATION
London
51.5 N, 0.00 E

APSH	Annual	Winter
Existing	41	11
Proposed	41	11



APPENDIX E

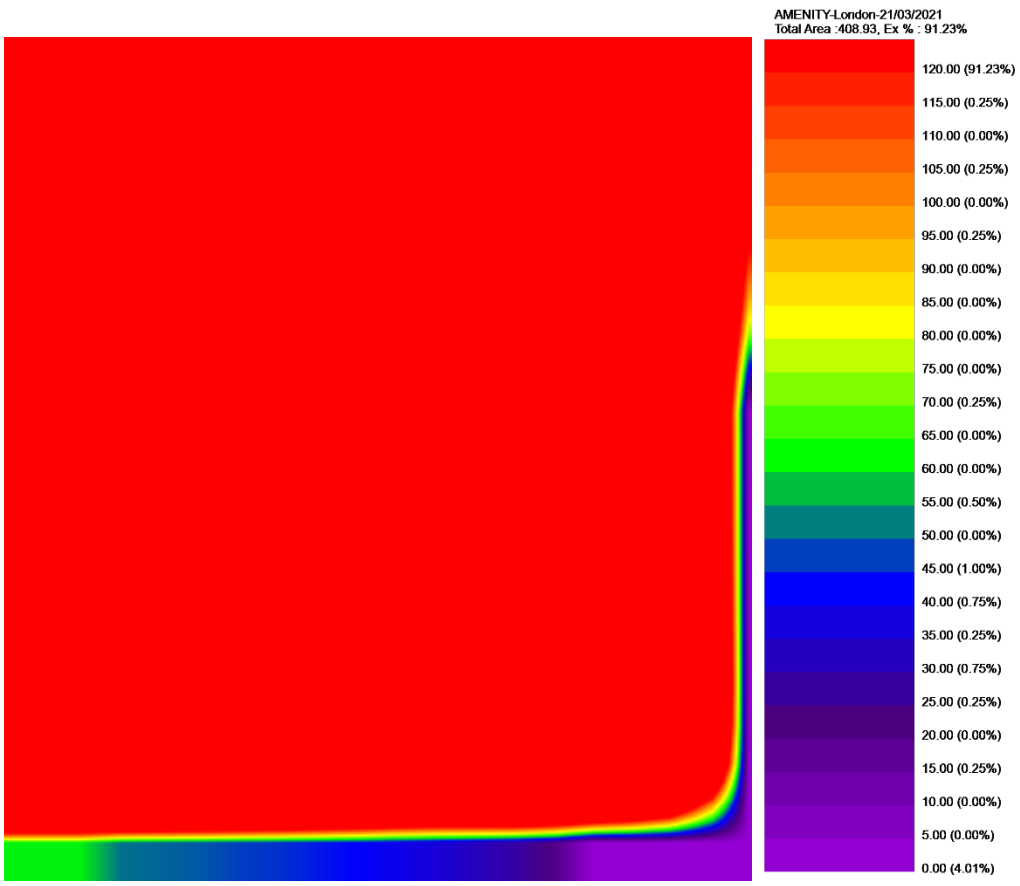
Project: Proposed Development at Land known as 47 Low Lane Holbeach

Drawing Ref MBS BRE 209 Daylight Sunlight Assessment The Chestnuts

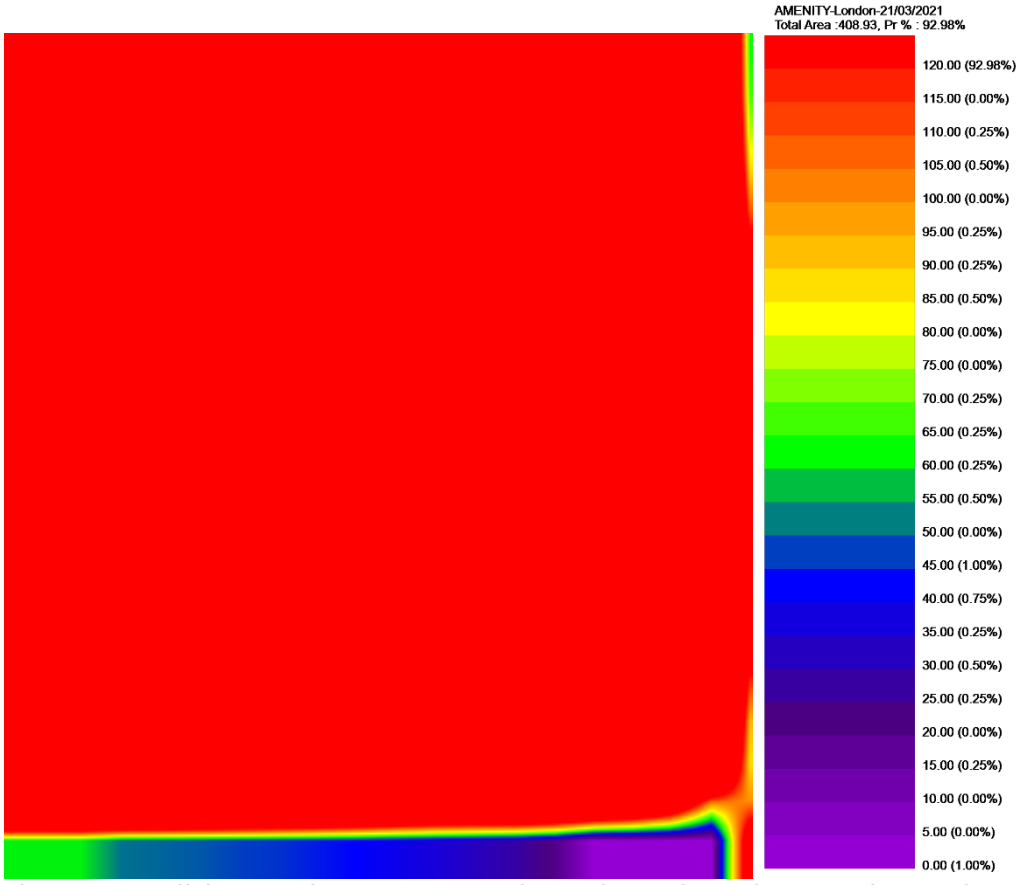
Daylight and Sunlight Neighbouring Property Assessment

Computer Analysis: Sunlight Amenity Assessment (Overshadowing)

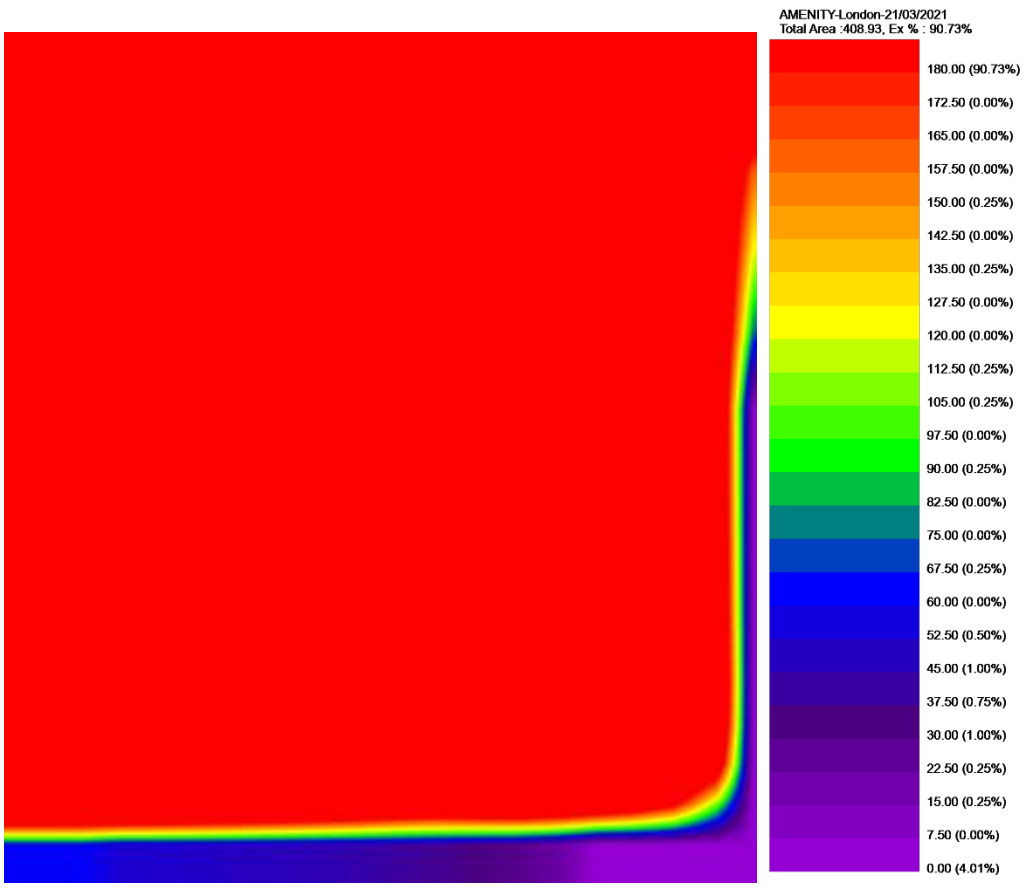
Analysis Criteria	Amenity Area m2	Sun Hours	Lit Area Existing	Lit Area Proposed	Existing %	Proposed %	Proposed/Existing	Meets BRE 209
21/03	408.93	2	373.066	380.223	91.23	92.98	1.02	Yes
21/03	408.93	3	371.022	376.133	90.73	91.98	1.01	Yes
21/03	408.93	4	366.973	373.066	89.74	91.23	1.01	Yes
21/03	408.93	5	324.706	362.802	79.54	88.72	1.11	Yes
21/03	408.93	6	255.213	316.675	62.41	77.44	1.24	Yes
21/03	408.93	7	176.289	265.436	43.11	64.91	1.50	Yes



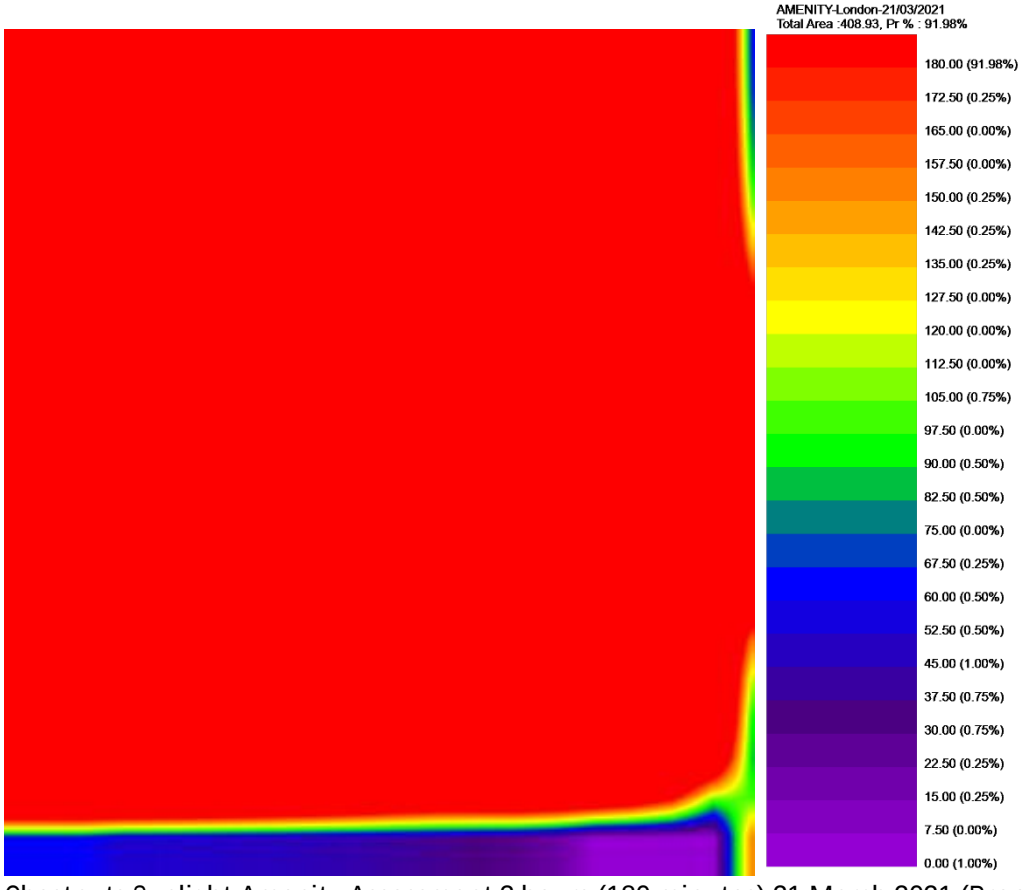
The Chestnuts Sunlight Amenity Assessment 2 hours (120 minutes) 21 March 2021 (Existing)



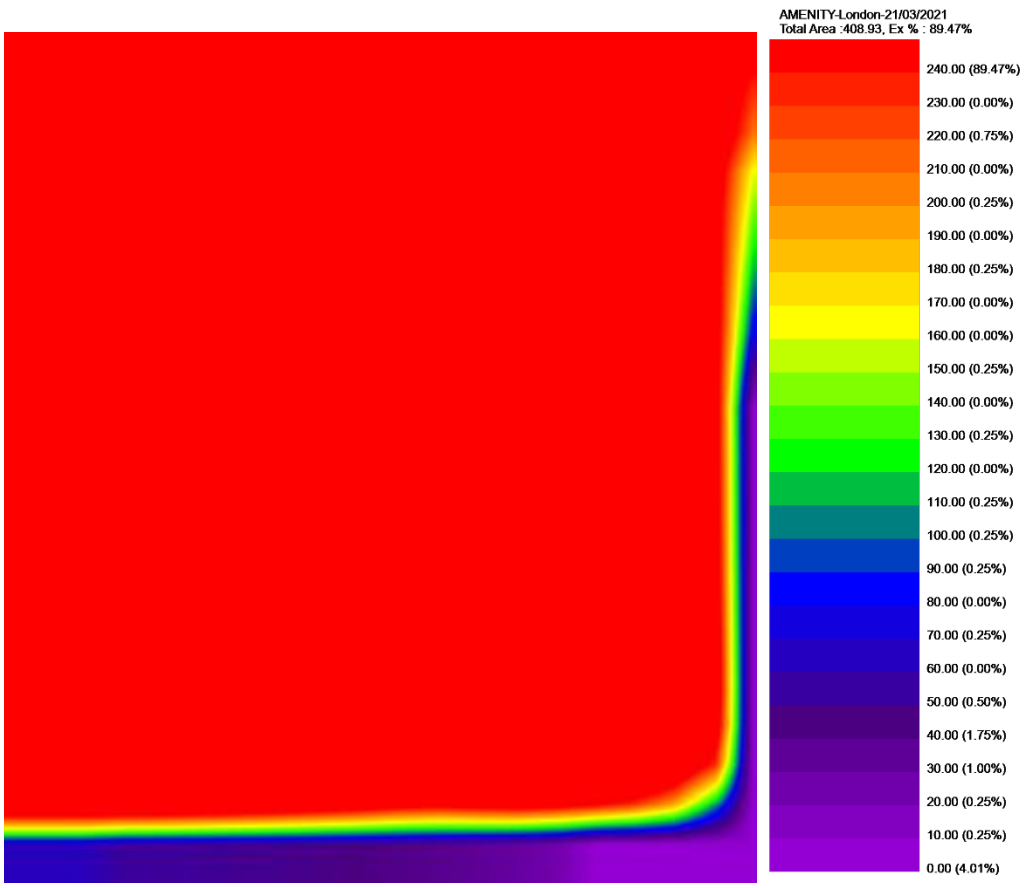
The Chestnuts Sunlight Amenity Assessment 2 hours (120 minutes) 21 March 2021 (Proposed)



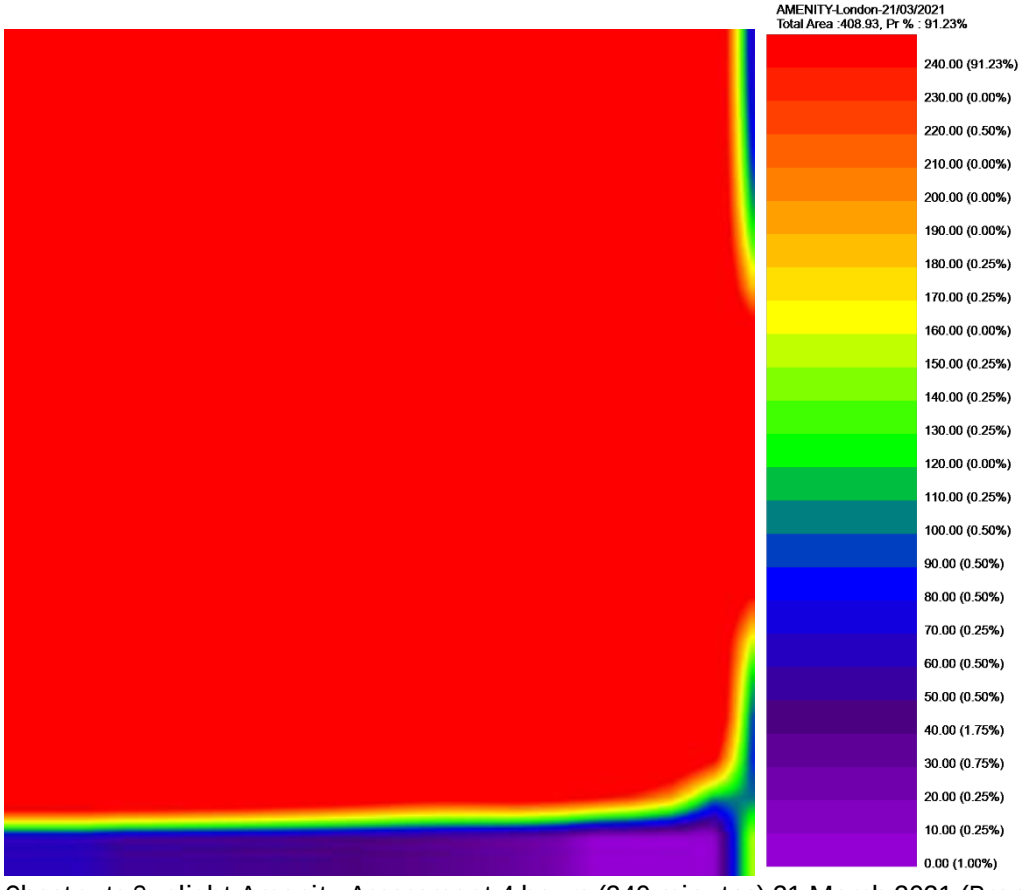
The Chestnuts Sunlight Amenity Assessment 3 hours (180 minutes) 21 March 2021 (Existing)



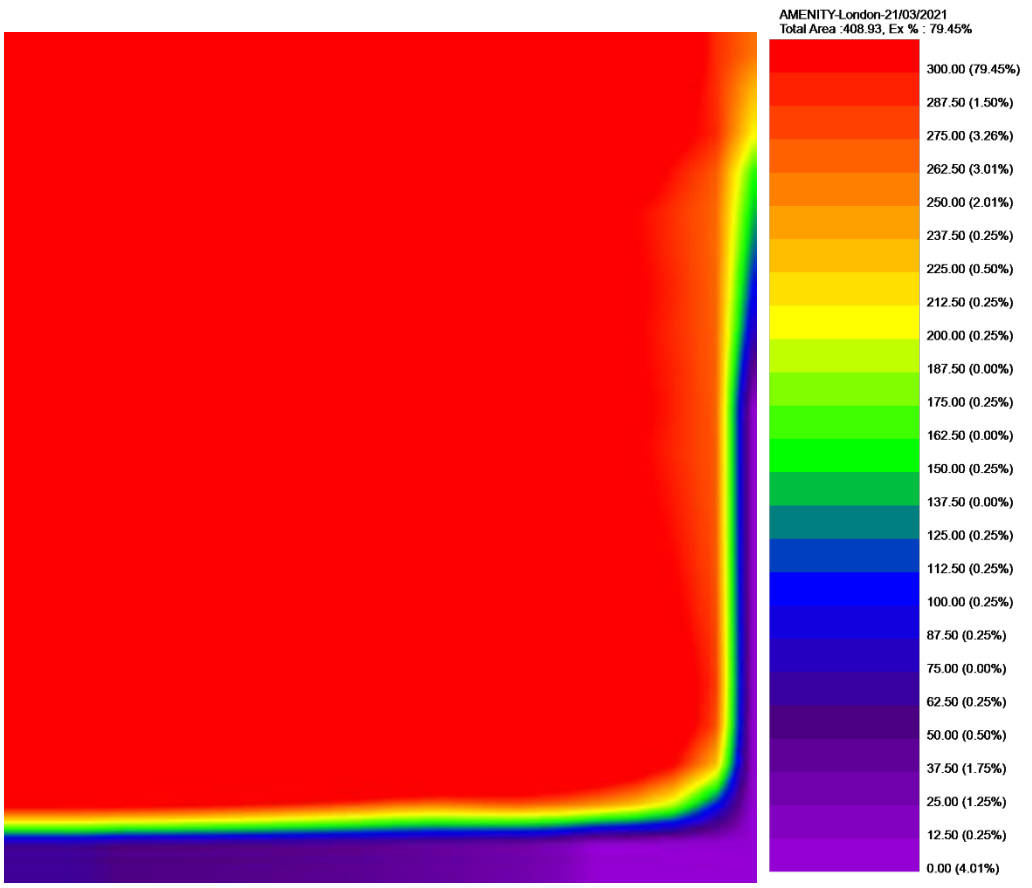
The Chestnuts Sunlight Amenity Assessment 3 hours (180 minutes) 21 March 2021 (Proposed)



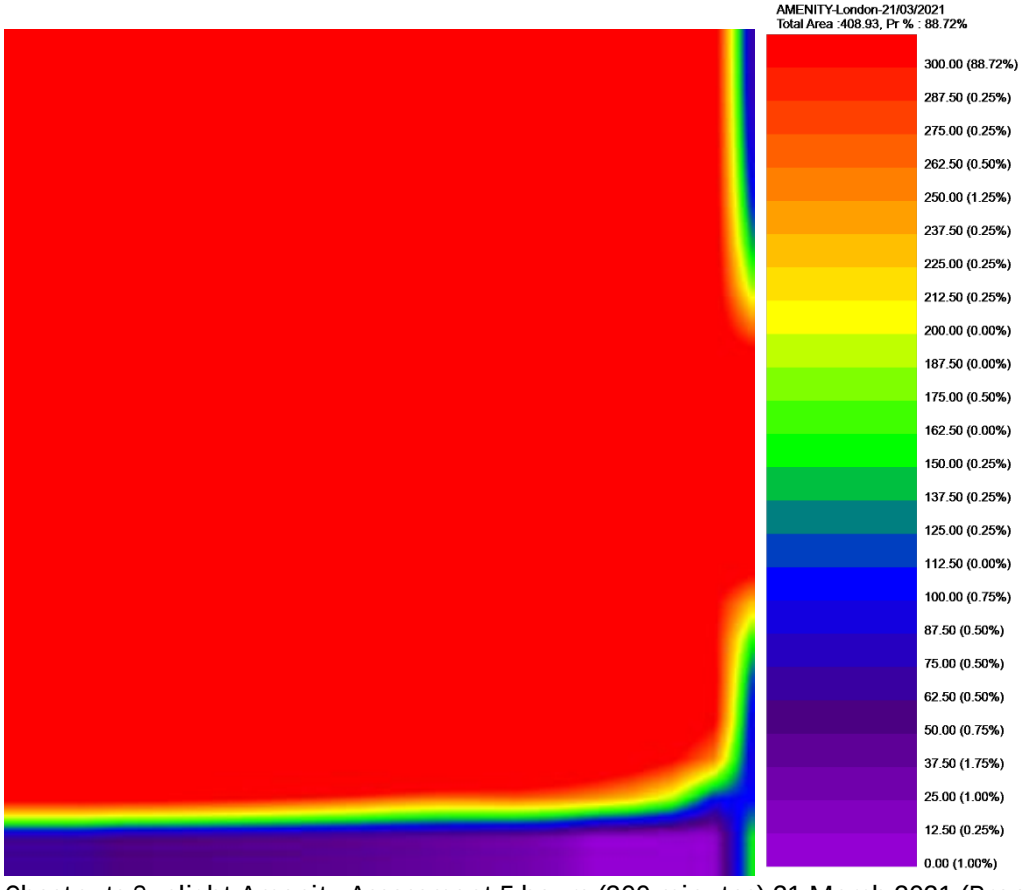
The Chestnuts Sunlight Amenity Assessment 4 hours (240 minutes) 21 March 2021 (Existing)



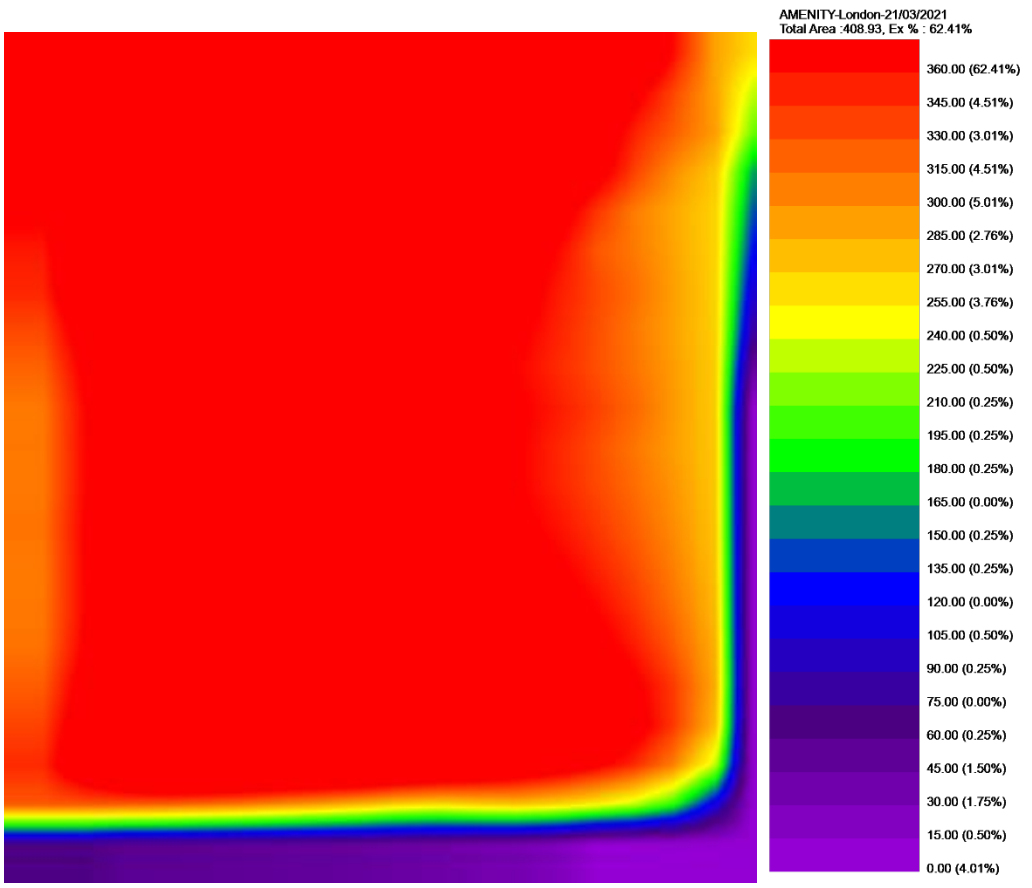
The Chestnuts Sunlight Amenity Assessment 4 hours (240 minutes) 21 March 2021 (Proposed)



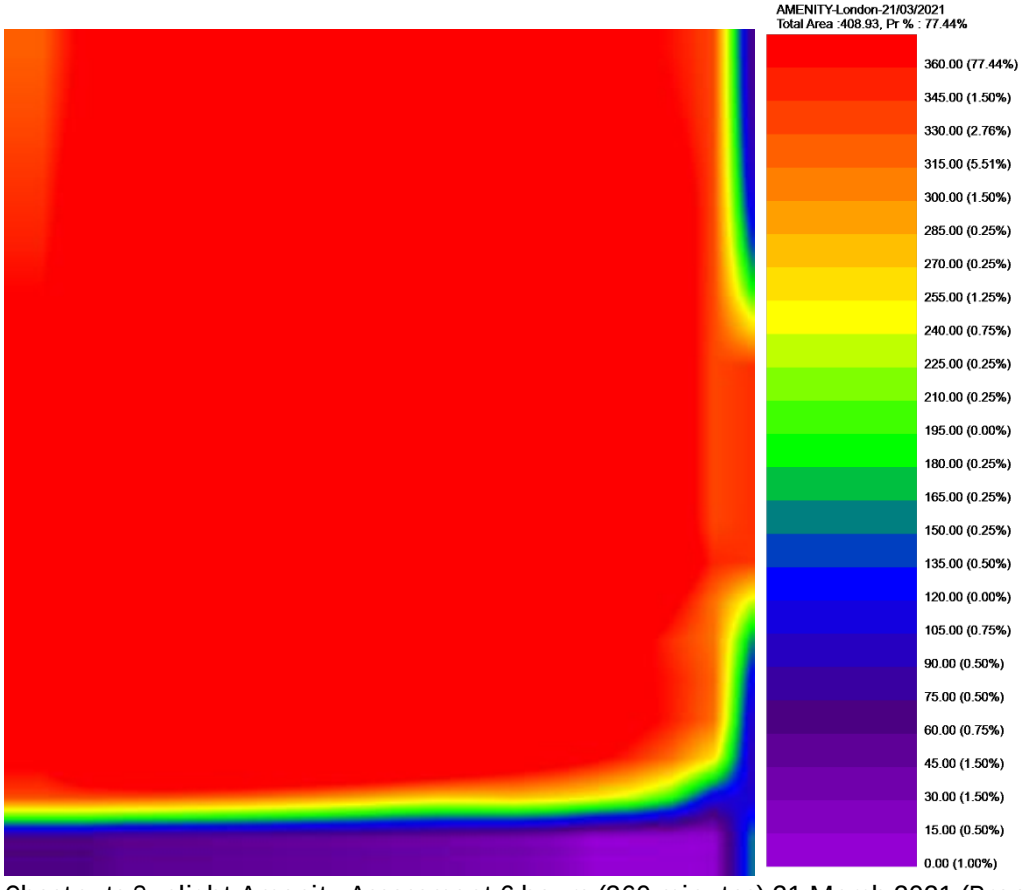
The Chestnuts Sunlight Amenity Assessment 5 hours (300 minutes) 21 March 2021 (Existing)



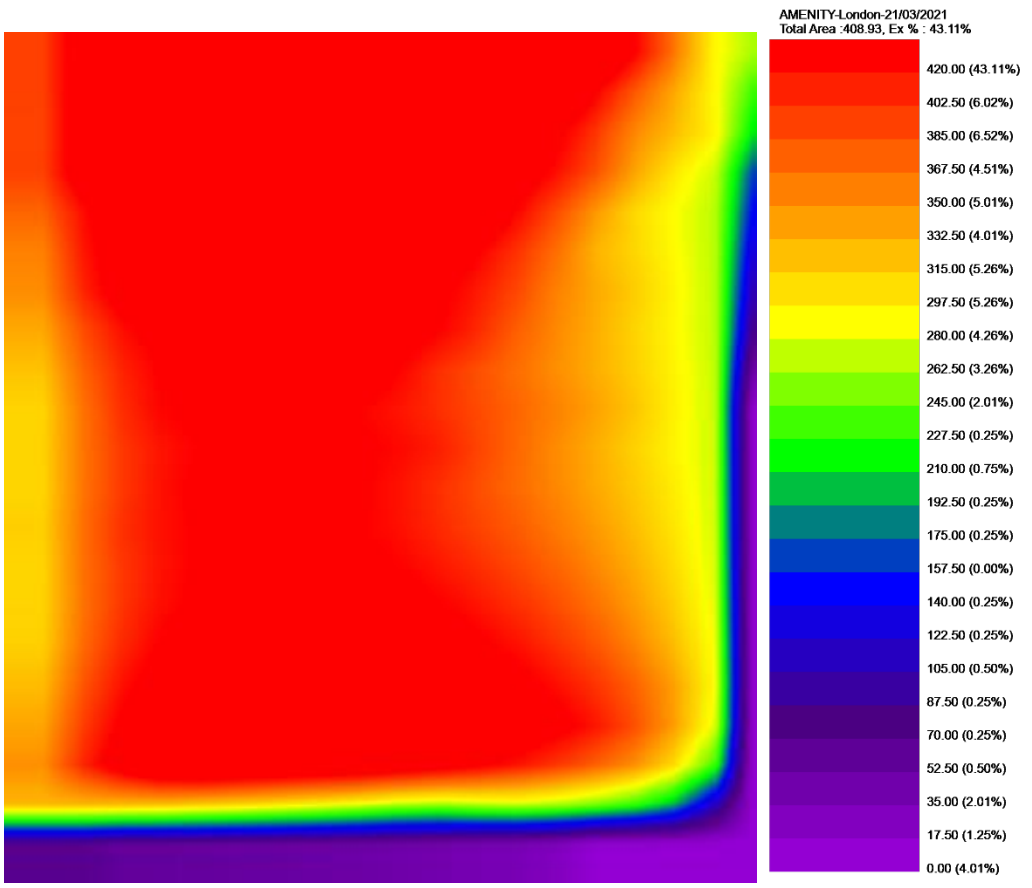
The Chestnuts Sunlight Amenity Assessment 5 hours (300 minutes) 21 March 2021 (Proposed)



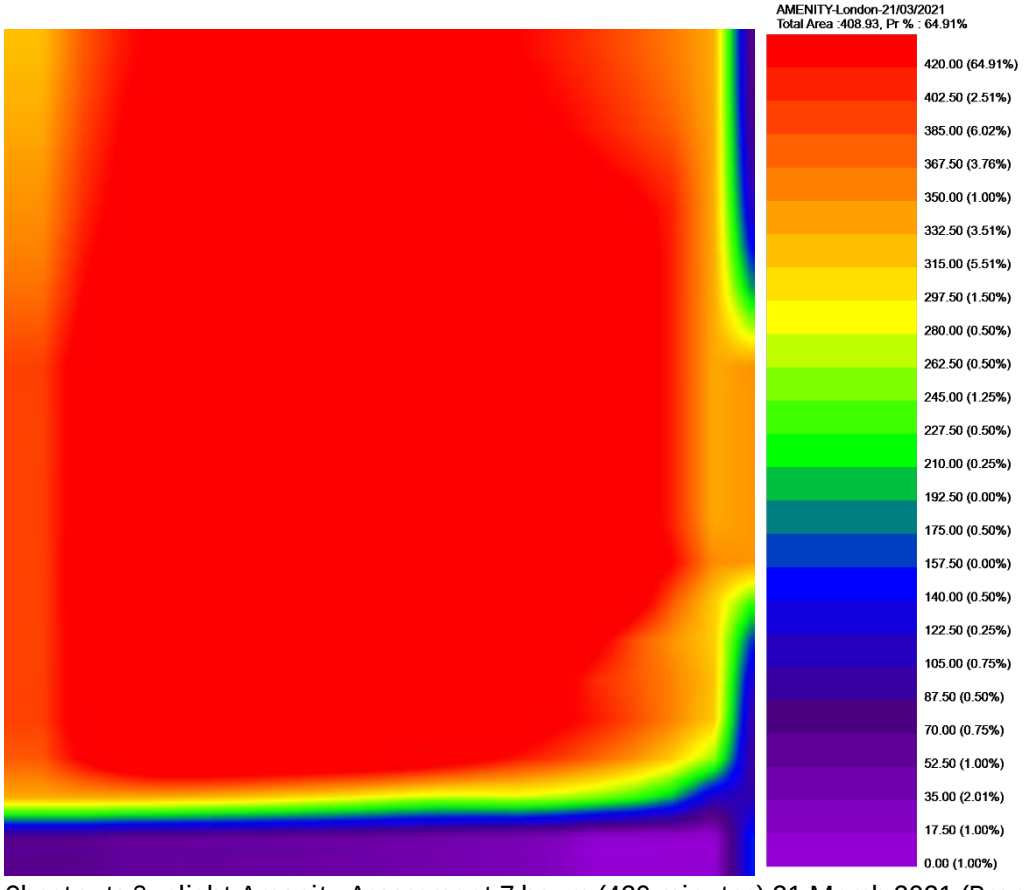
The Chestnuts Sunlight Amenity Assessment 6 hours (360 minutes) 21 March 2021 (Existing)



The Chestnuts Sunlight Amenity Assessment 6 hours (360 minutes) 21 March 2021 (Proposed)

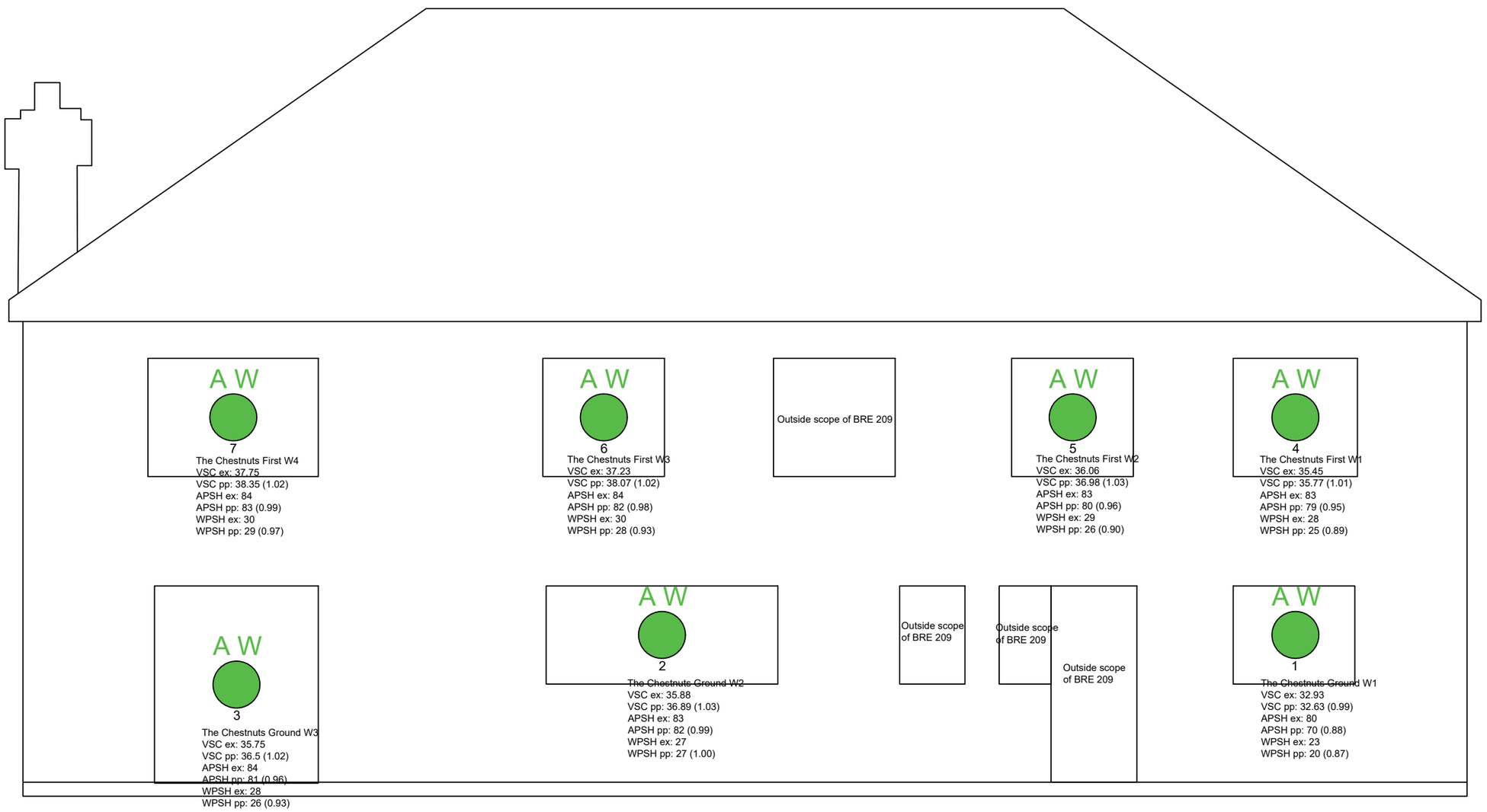


The Chestnuts Sunlight Amenity Assessment 7 hours (420 minutes) 21 March 2021 (Existing)



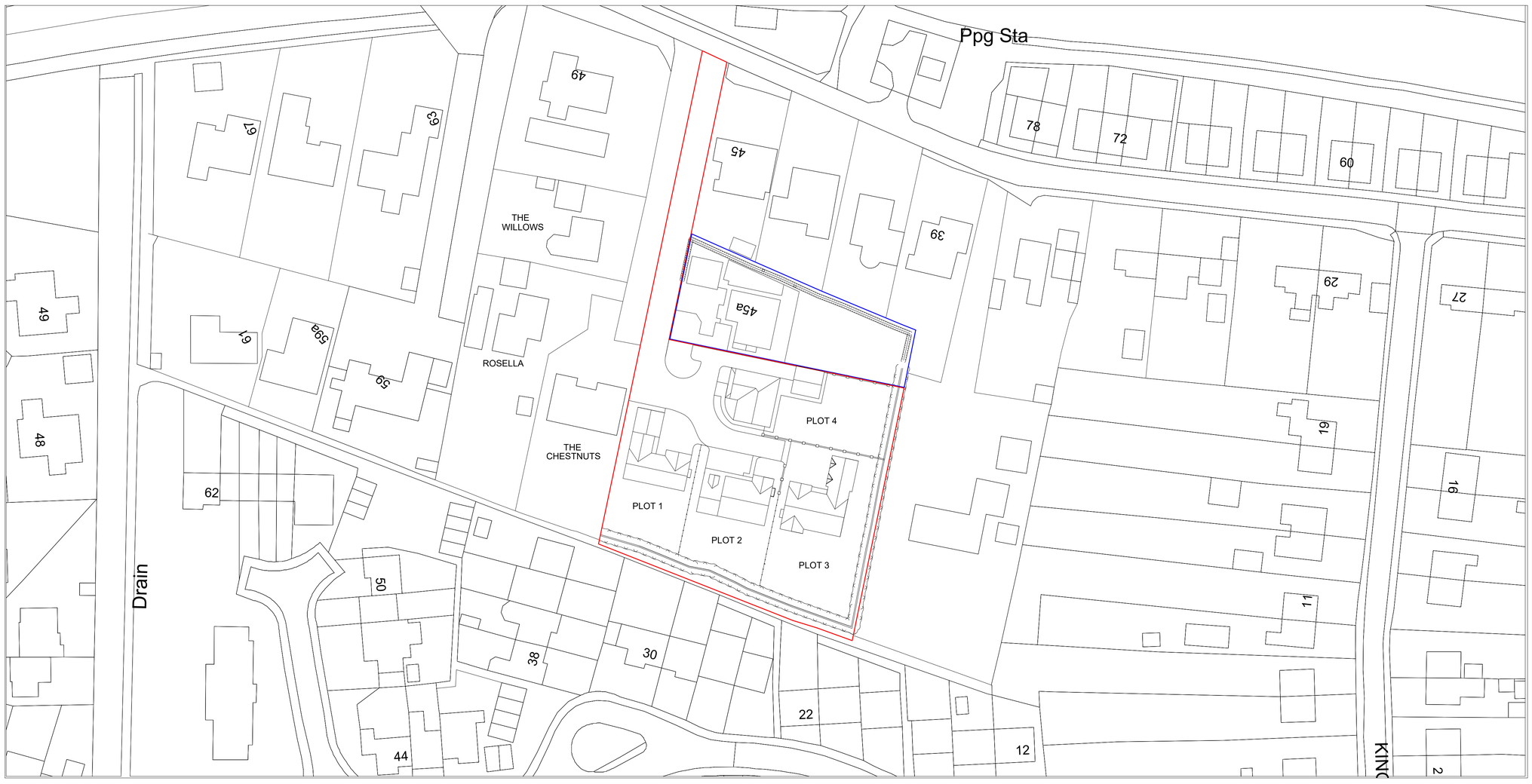
The Chestnuts Sunlight Amenity Assessment 7 hours (420 minutes) 21 March 2021 (Proposed)

APPENDIX F



Neighbouring Property VSC APSH Indicator/Numerical Output South Elevation

APPENDIX G



PROPOSED BLOCK PLAN (1:500)

NOTES:

- FINISHED GROUND FLOOR LEVEL OF ALL PLOTS TO BE SET AT 3.5m AOD NEWLYN
- SURFACE WATER RUN-OFF FROM THE ROOFS OF THE PROPOSED DWELLINGS AND DETACHED GARAGE SHOULD BE DISCHARGED INTO SOAKAWAY CRATES. 120L CAPACITY WATER BUTTS PROVIDED TO THE REAR OF ALL PLOTS TO INTERCEPT AND STORE RAINWATER. THE INFILTRATION SYSTEM TOGETHER WITH ASSOCIATED DRAINAGE SHOULD BE DESIGNED TO BRE DIGEST 365 AND MEET THE REQUIREMENTS OF PART H OF BUILDING REGULATIONS
- FLOOD RESILIENT & RESISTANT CONSTRUCTION UP TO 300mm ABOVE FINISHED GROUND FLOOR LEVEL
- EXISTING ACCESS DRIVE TO BE UPGRADED FROM EXISTING LOOSE LIMESTONE FORMATION TO A PERMEABLE BLOCK PAVING SPECIFICATION. PRIVATE DRIVEWAYS TO BE EITHER GRAVEL OR PERMEABLE BLOCK PAVING TO ENSURE SUDS ARE INCORPORATED TO ALL VEHICLE SURFACES
- ALL PLOTS TO HAVE PRIVATE PARKING PROVISIONS WITH A MINIMUM OF THREE SPACES PER DWELLING
- ALL REFUSE TO BE STORED AT EACH PROPERTY UNTIL COLLECTION DAY WHEN IT WILL BE TAKEN TO THE DESIGNATED COLLECTION POINT AT THE HEAD OF THE ACCESS DRIVE OFF LOW LANE
- ALL FOUL WATER VIA EXISTING 150MM DIAMETER FOUL WATER SEWER DISCHARGING INTO PUBLIC FW SEWER IN LOW LANE
- 2 No MIN ELECTRIC VEHICLE CHARGING POINTS TO BE PROVIDED TO EACH DWELLING
- SOUTH FACING GABLE ROOFS TO INCORPORATE SOLAR PV PANELS.
- EXTERNAL FACING BRICKWORK TO CONSIST RED MULTISTOCK BLEND. ROOF TILES TO BE DOUBLE PANTILES COLOUR TBC. WINDOWS AND DOORS TO BE PVCu AND ALUMINUM (COLOUR TBC)
- BOUNDARY TREATMENT TO CONSISTS OF TIMBER FENCING, BRICKWORK WALLS, METAL RAILINGS AND HEDGED SEPARATION
- BOUNDARY TREATMENT TO INCORPORATE DISCREET GROUND LEVEL APERTURES TO ALLOW UNRESTRICTED MOVEMENT OF FORAGING WILDLIFE
- INTEGRATED HABITAT BAT BOXES, SWIFT BRICKS AND SPARROW TERRACES TO BE INCORPORATED INTO ALL SUITABLE ELEVATIONS
- NATIVE WILDFLOWER PLANTING TO BE INCORPORATED INTO THE LANDSCAPING SCHEME TO IMPROVE BIO-DIVERSITY
- LOG PILES TO BE INCORPORATED WITHIN THE EXISTING RETAINED HEDGE
- ACCESS TO BUILDING FOR FIRE FIGHTING APPLIANCES AND FIRE FIGHTERS TO SATISFY BUILDING REGULATIONS 2010 PART B5
- MINIMUM WIDTH OF 3.7m BETWEEN KERBS FOR VEHICLE ACCESS ROADS
- MINIMUM TURNING CIRCLE BETWEEN KERBS FOR PUMPS TO BE 16.8m. ACTUAL TURNING CIRCLE BETWEEN KERBS 17.52m
- MINIMUM TURNING CIRCLE BETWEEN WALLS FOR PUMPS TO BE 19.2m
- TURNING FACILITY TO BE PROVIDED WHERE DEAD-END ACCESS ROUTE EXCEEDS 20m
- ACCESS ROAD SURFACE TO BE CONSTRUCTED WITH MINIMUM CARRYING CAPACITY OF 18 TONNES FOR PUMPING APPLIANCES
- EXISTING ACCESS WITHIN THE EXTENTS OF THE PUBLIC HIGHWAY TO BE UPGRADED TO A BOUND MATERIAL CONSTRUCTED IN ACCORDANCE WITH LINCOLNSHIRE COUNTY COUNCIL SPECIFICATION



FIRE FIGHTING APPLIANCE TURNING FACILITY (1:100)



PROPOSED SITE PLAN (1:200)

SCALE BAR 1:200
0 1 2 3 4 5 10

LEGEND

- PERMEABLE BLOCK PAVING
- GRAVEL
- PAVING
- GRASS
- EXISTING MATURE HEDGE RETAINED
- BRICKWALL WITH TIMBER INFILL PANELS
- TIMBER DOUBLE SIDED TONGUE AND GROVE FENCE

NORTH
Indicative

Notes as Applicable

GENERAL

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ANY/ALL OTHER DOCUMENTS ISSUED FOR THIS PROJECT, THESE INCLUDE CONTRACT DRAWINGS, SPECIFICATIONS & SCHEDULE OF WORKS.
2. ALL BUILDING MATERIALS SPECIFIED SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT BUILDING REGULATIONS, BRITISH STANDARDS, BRITISH STANDARD CODES OF PRACTICE AND SHALL BE TO THE SATISFACTION OF THE LOCAL AUTHORITY & CONTRACT ADMINISTRATOR.
3. ALL STRUCTURAL WORKS ARE TO BE CARRIED OUT IN FULL ACCORDANCE WITH STRUCTURAL ENGINEER'S APPROVED CALCULATIONS AND DETAILS AND TO THE SATISFACTION OF THE LOCAL AUTHORITY BUILDING CONTROL SURVEYOR.
4. ALL WORKS ON SITE TO BE CARRIED OUT IN FULL ACCORDANCE WITH THE CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 AND CURRENT HEALTH & SAFETY LEGISLATION.
5. THE CONTRACTOR MUST SITE CHECK ALL DIMENSIONS PRIOR TO ORDERING MATERIALS. FIGURED DIMENSIONS ARE TO BE USED FOR TENDER PURPOSES ONLY. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING.

REV	AMENDMENTS	DATE	BY
-	--		--
-	--		--
-	--		--
-	--		--
-	--		--
-	--		--

Project:

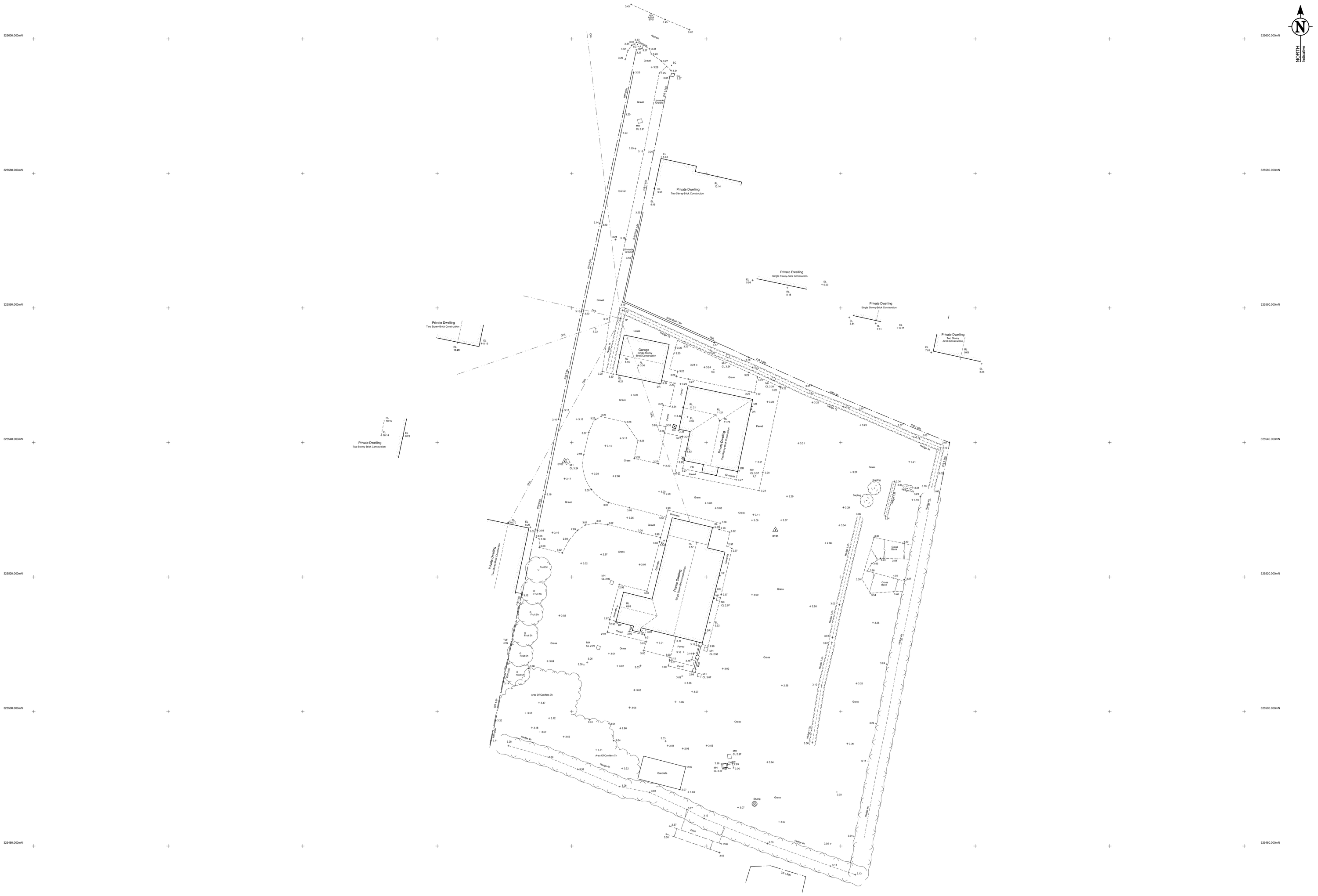
DEMOLITION OF EXISTING BUNGALOW AND ERECTION OF 4NO. DETACHED DWELLINGS AND 1NO. DETACHED GARAGE
LAND KNOWN AS 47 LOW LANE
HOLBEACH
LINCOLNSHIRE
PE12 7PW

Applicant:
MR D J RULEWSKI & MR A T RULEWSKI
.

Drawing:
BLOCK & SITE PLANS
.

Sheet Size:	A0	Project No:	-
Drawing No:	001	Revision:	
Date:	28 September 2021	Drawn:	DR
Scale:	1:100, 1:200 & 1:500	Checked: RR	Approved: DR

APPENDIX H



TOPOGRAPHICAL & MEASURED BUILDING SURVEYS

ABBREVIATIONS & SYMBOLS

AH	Arch Head Height	FH	Fire Hydrant	RSJ	Rolled Steel Joist
AR	Assumed Route	FBD	Floor Board Direction	SI	Sign Post
AV	Air Valve	FH	Fire Hydrant	SP	Arch Spring Point Height
BB	Belisha Beacon	FL	Floor Level	SV	Stop Valve
BH	Bore Hole	FP	Flag Pole	SW	Surface Water
BL	Bed Level	FW	Foul Water	SY	Stay
BO	Bollard	GG	Gully Grate	Tac	Tactile Paving
BrP	Brace Post	GV	Gas Valve	TC	Telecom Cover
BS	Bus Stop	HH	Head Height	TH	Trial Pit
BU	Bush	IC	Inspection Cover	THL	Threshold Level
B/W	Barbed Wire Fence	IL	Invert Level	TL	Traffic Light
BX	Box (Utilities)	IrR	Iron Railings	ToW	Top of Wall
C/B	Close Board Fence	KO	Kerb Outlet	TP	Telegraph Pole
CH	Cill Height	LP	Lamp Post	TV	Cable TV Cover
CL	Cover Level	MH	Manhole	UB	Universal Beam
CL	Chain Link Fence	MP	Marker Post	UC	Unknown Cover
C-Lev	Ceiling Level	NB	Name Board	UK	Unknown Use
Col	Column	OHL	Overhead Line (approx)	USB	Under Side Beam
CP	Chestnut Paling Fence	Pan	Panel Fence	UTL	Unable To Lift
CR	Cable Riser	PB	Post Box	VP	Vent Pipe
DC	Drainage Channel	PM	Parking Meter	WB	Waste Bin
DH	Door Head Height	PO	Post	WH	Weep Hole
DP	Down Pipe	PR	Post & Rail Fence	WL	Water Level
DR	Drain	P/W	Post & Wire Fence	WM	Water Meter
EL	Eaves Level	P/Wall	Partition Wall	WO	Wash Out
EP	Electric Pole	RE	Rodding Eye		Floor to Ceiling Height
ER	Earth Rod	RL	Ridge Level		F/C Floor to Fallse Ceiling Ht
ET	EPH Transformer	RP	Reflector Post		
FB	Flower Bed	RS	Road Sign		
FBD	Floor Board Direction	RSD	Roller Shutter Door		Survey Control Station

DRAWING NOTE

Topographical Surveys

Trees are drawn to scale showing the average canopy spread. Descriptions and heights should be used as a guide only.

All building names, descriptions, number of storeys, construction type including roof line details are indicative only and taken externally from ground level.

All below ground details including drainage, voids and services have been identified from above ground and therefore all details relating to these features including; sizes, depth, description etc will be approximate only. All critical dimensions and connections should be checked and verified prior to starting work.

Detail, services and features may not have been surveyed if obstructed or not reasonably visible at the time of the survey.

Measured Building Surveys

Measurements to internal walls are taken to the wall finishes at approx 1m above the floor level and the wall assumed to be vertical.

Cill heights are measured as floor to the cill and head heights are measured from cill to the top of window.

General

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work. Any errors or discrepancies must be notified to Survey Solutions immediately.

The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The survey control listed is only to be used for topographical surveys at the stated scale. All control must be checked and verified prior to use.

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Do not scale from this drawing.

CONTROL CO-ORDINATES

STATIONS	EASTINGS	NORTHINGS	LEVEL	DESCRIPTION
ST01	536531.786	325603.411	3.468	PK Nail
ST02	536518.964	325537.213	3.253	PK Nail
ST03	536550.291	325526.982	3.147	Peg & Nail

SURVEY GRID AND LEVEL DATUM

The coordinate system established for this survey is related to Ordnance Survey (OS) national grid at a single point using Smartnet, then orientated to grid north with a scale factor of 1.000.

The level datum established for this survey is related to Ordnance Survey (OS) using GPS Smartnet.

To avoid discrepancies any coordinated data used in conjunction with this survey must be derived directly from this control data.

REV	DESCRIPTION	DRAWN	APPR	DATE

SURVEY SOLUTIONS

Ipswich Coventry Yeovil Norwich Perth Nottingham Brentwood

Tel No: 0845 0405 969 Fax No: 0845 0405 970
www.survey-solutions.co.uk enquiries@survey-solutions.co.uk

LAND SURVEYING BUILDING SURVEYING UNDERGROUND SURVEYING

PROJECT TITLE: LOW LANE, HOLBEACH, SPALDING, PE12 7PW.				
DRAWING DETAIL: TOPOGRAPHICAL SURVEY Sheet 1 of 1				
CLIENT: DANIEL RULEWSKI				SCALE: 1:200
SURVEYOR: SCW	SURVEY DATE: 23/09/2021	CHECKED BY: KJS	APPROVED BY: JIA	DWG STATUS: FINAL
DRAWING NUMBER: 3612TNOLS-01			REVISION:	ISSUE DATE: 23/09/2021