

Amenity Impact Assessment

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

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

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INTRODUCTION

This report has been prepared and submitted in support of the application '*Erection of four detached two-storey dwellings, one detached garage and demolition of existing bungalow*' at land located at 47 Low Lane, Holbeach PE12 7PW. The Proposed Site and Location Plan are included within Appendix A and a full description of the proposed development can be found within the supporting Design & Access Statement submitted with the application.

The purpose of this report is to consider the effects of the proposed application on the residential amenity and living conditions of the occupants of the nearest adjoining property known as The Chestnuts, Low Lane, Holbeach PE12 7PW (The Chestnuts). Floor plans and elevations of The Chestnuts can be found within Appendix B.

Planning applications must be decided in line with the relevant Local Planning Authorities (LPA) development plan unless material circumstances dictate otherwise. The 'South East Lincolnshire Local Plan 2011 – 2036' (SELLP) was adopted by South Holland District Council (SHDC) in March 2019 and is the prevailing local plan against which applications must be decided.

'Amenity' is defined within the SELLP as a "*positive element or elements that contribute to the overall character or enjoyment of an area*". Residential amenity is not defined within the SELLP but is generally considered to include the elements that are particularly relevant to the persons living conditions. The benefit enjoyed depends on the quality of the space and is dependent on a number of factors, including location, size, orientations, sounds, noise, accessibility, and enclosure.

Impacts on residential amenity can relate to among other factors noise disturbance, loss of daylight and sunlight, overshadowing, loss of privacy and outlook, proximity of development, exceedances of air quality objectives or dust nuisance etc. For the purpose of this report, an assessment of The Chestnuts residential amenity has been split into 'Internal Amenity' and 'External Amenity' with the merits of each being assessed in turn.

The assessment on 'Internal Amenity' has been made to the habitable rooms and primary living accommodation of The Chestnuts with windows that face within 90° of due south. Those rooms being the ground floor Living Room, Kitchen & Study/Storeroom and the first floor Bedrooms & Family / Games Room. These rooms are likely to be used for considerable periods of relaxation throughout the day and are therefore most susceptible to any changes to existing established living conditions. Secondary rooms such as halls, landings, bathrooms, toilets, and utility etc. are not deemed to be habitable rooms or primary living accommodation.

During previous Committee Meetings the occupiers of The Chestnuts have advised that the first floor Family / Games Room is the most used room within the property and is enjoyed for watching television, home cinematics, listening to music, computing, gaming, reading, and relaxing etc.

The Family / Games Room is the room located closest to the proposed development and Plot One at the upper storey of The Chestnuts. At ground floor level, the nearest affected room is the one, according to information obtained through public records, is designated as a 'Study' in the original planning application, the current use is unknown but previous owners have used this as a storeroom since having a floor area of only 7.04m² this is less than the minimum recommended for a single bedroom (7.5m²) according to the *Department for Communities and Local Government Technical Housing Standards Nationally Described Space Standard March 2015*. However, for the objectives of this study the room has been considered a habitable room.

With the first floor Family / Games room and ground floor Study / Storeroom being the easternmost rooms within The Chestnuts, and therefore closest to the proposed development and Plot One, these rooms have been given particular focus throughout this document when assessing the impacts on the internal amenity.

The view out of, and the outlook from within the habitable rooms and primary living accommodation of The Chestnuts has been assessed against the recommendations of BS EN 17037:2018+A1:2021 (Daylight in buildings) which discusses the elements for achieving an adequate view out of dwellings.

The methodology and criteria used for assessing daylight and sunlight impacts to the habitable rooms and primary living accommodation of The Chestnuts is provided by the Building Research Establishments guidance 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' (BRE 209). SHDC currently has no adopted policy to advise on the acceptable impacts on daylight and sunlight to existing properties adjoining proposed developments with the guidance contained within the BRE 209 being the nationally accepted method for completing such assessments.

A full daylight, sunlight and overshadowing study in accordance with BRE 209 has been completed in support of this application and therefore the conclusions of that accompanying report are summarised within this amenity impact assessment under the relevant sections.

Furthermore, a secondary study has been undertaken to analyse the Spatial Daylight Autonomy and Annual Sunlight Exposure to assess the increase of available illuminance (lux) to the Chestnuts over and above the recommended values contained within the latest British Standard (BS EN 17037:2018+A1:2021).

For the purpose of this report, the external amenity is deemed to be the rear garden and patio of The Chestnuts. As per internal daylight and sunlight, the BRE 209 provides the methodology and criteria for assessing acceptable levels of sunlight and overshadowing to external amenity spaces of neighbouring dwellings. The relevant concluding sections of the daylight, sunlight and overshadowing study have therefore been summarised within this report.

To assess outlook from the rear garden of The Chestnuts and to determine if the proximity of the proposed dwelling to Plot One is acceptable, this report has adopted the use of the nationally recognised 12m spacing standard as a threshold and benchmark. SHDC have regularly cited the 12m spacing standard in decisions throughout the district, but with a lack of definitive guidance within the SELLP, the application of the 12m spacing standard provides an objective tool for assessing such matters whilst applying a degree of consistency.

INTERNAL AMENITY ASSESSMENT

OUTLOOK & VIEW

BS EN 17037 discusses the importance of view on occupants of assessed spaces. It introduces several criteria that combine to form a view and provides guidance on assessing whether the view is rated as minimum, medium, or high. A number of testing methodologies are discussed in the British Standard and all are used to determine the quality of the view and provide minimum window sizes driven by room size. This guidance can be applied to proposed units and neighbouring buildings.

To assess 'view', test points are determined within the 'utilised' area of the room. The test points are used to determine the Horizontal Sight Angles (HSA) and number of layers of view visible when tested 1.2m above the floor level. Additionally, the distance to external obstructions is determined. All of the factors are then assessed to determine the rating of the view.

Level of recommendation for view out	Parameter		
	Horizontal sight angle	Outside distance of the view	Number of layers to be seen from at least 75% of utilised area; i) sky, ii) landscape (urban and/or nature), iii) ground
Minimum	$\geq 14^\circ$	$\geq 6\text{m}$	At least landscape layer
Medium	$\geq 28^\circ$	$\geq 20\text{m}$	Landscape layer and one additional layer in same view opening
High	$\geq 54^\circ$	$\geq 50\text{m}$	All layers in the same view opening

Table 1: Table A.5 of BS EN 17037

NB. For a space with room depth of more than 4m it is recommended that the respective sum of the view opening dimensions is at least 1m x 1.25m (WxH)

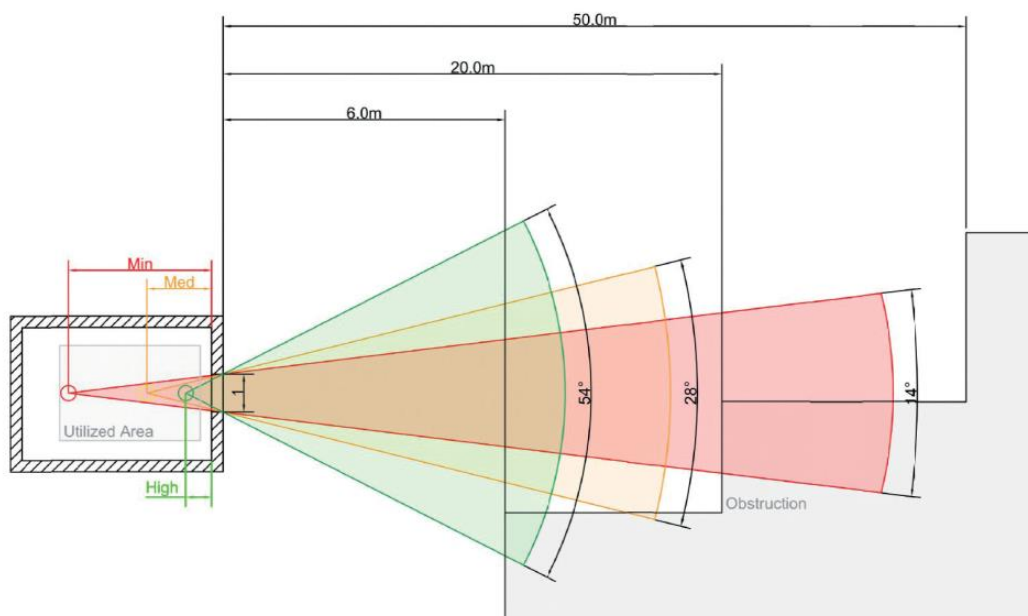


Figure 1: Visual representation of the horizontal sight angles and view distance thresholds

Assessment for view out

View to the outside i.e., the available outlook, provides visual connection with the surroundings to supply information about the local environment, weather changes and the time of day. This information can relieve the fatigue associated with long periods of being indoors. All occupants of a space should have the opportunity for the refreshment and relaxation afforded by a change of scene and focus. View to the outside should be assessed from selected reference points corresponding to where people are located within the utilised area.

A view is considered to comprise three distinct layers:

- A layer of the sky
- A layer of landscape
- A layer of ground

The ground layer can include information of activities. The landscape layer can be comprised of buildings, nature, and/or the horizon only.

From a specific reference point, the view quality depends on:

- The size of the daylight opening(s)
- The width of the view (horizontal sight angle)
- The outside distance of view
- The number of layers
- The quality of the environmental information of the view

Criteria for view out

The criteria for view out concern the utilised area. In order to ensure an adequate view out, the following criteria should be met:

- The glazing material of the view opening should provide a view that is perceived to be clear, undistorted and neutrally coloured
- In the utilised area, view opening(s) as seen from the reference point of the view should have a total horizontal sight angle higher than a minimum value
- The distance to the outside view should be larger than a minimum value
- In the utilised area a minimum number of layers should be seen.

For daylight opening(s) in a vertical façade or in an inclined surface, the rating parameters and threshold values are specified in Table 1 (Table A.5 of BS EN 17037).

Recommendations for view

View opening(s) should provide a sufficient view. If there are several openings with little distance between them, the sum of openings may be regarded as one opening. Table 1 gives recommendations for three levels of view out through vertical, inclined, and horizontal openings. These levels depend on the horizontal sight angle (HSA), the distance to outside view, and the number of layers (content of the view). These aspects are assessed from reference positions. The highest view levels are specifically important for building for people with limited mobility.

A view rated medium contains at least two layers, and a view rated high includes all three layers. The rating of the view out includes information about the distance to the outside view and the width of the view opening (i.e. horizontal sight angle). The overall achieved level for view out should be ranked according to the lowest rated criterion. Furthermore, a view opening should have glazing that ensures a view through the glazing is perceived to be clear, undistorted and neutrally coloured.

The HSA should be sufficiently large to ensure a wide and distant view. For very large spaces (>2000m²), a nearby view opening may be difficult to provide; however, a degree of relaxation of the eyes can be achieved with a distant interior view. In the case of a medium rated view out, it should be possible, from the reference points, to see through a view opening that covers a horizontal sight angle of at least 28° according to Table 1. The reference points can be at any potential location within the utilised space. If a space has daylight openings in more than one façade, at least one view opening should comprise a rated view according to Table 1.

The Chestnuts – Outlook Assessment

Computer modelling analysis has been undertaken to build up an accurate understanding of how windows serving the habitable rooms contribute to the outlook from within The Chestnuts. The computer modelling analysis has been completed using De Luminae DL-Light software in accordance with the standards set out in BS EN 17037 for assessing the Horizontal Sight Angle (HSA).

For a room to achieve the Minimum level of view out the HSA must be $\geq 14^\circ$. To achieve a view out rated as Medium the HSA must be $\geq 28^\circ$ and to achieve a view out rated as High the HSA must achieve $\geq 54^\circ$.

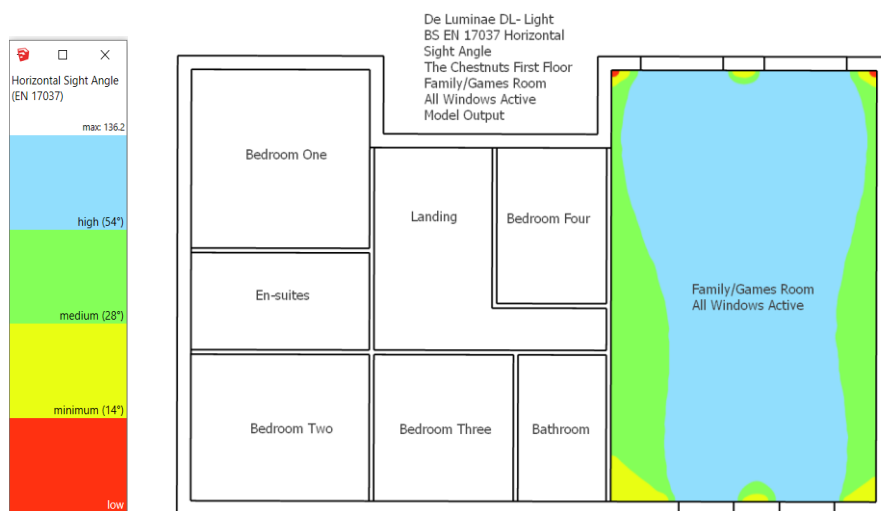
The first analysis was undertaken on the ‘most used’ room in The Chestnuts, the first floor Family/Games Room. This room benefits from a dual aspect outlook with two windows within the north elevation and two windows within the south elevation. Three assessment models were made of the first floor Family/Games Room:

Model 1: Family/Games Room assessment No. 01 the HSA availability through all four windows

Model 2: Family/Games Room assessment No. 02 the HSA availability through the two north windows only

Model 3: Family/Games Room assessment No. 03 the HSA availability through the two south windows only

The resulting HSA percentages of the virtual viewing plane threshold outputs can be seen below for Model 1 for all four windows.



Daylight Indicator ParametersHorizontal Sight Angle (EN 17037)
Project name: HSA The Chestnuts FFModel: HSA The Chestnuts Family Room All Windows.skp
Results: C:/Users/Ray/Desktop/Projects/HSA Chestnuts FF/Working/HSA FF
Level of details: HSA grid (approx 25 sensors per m²)
Results unit: degree**Calculated**

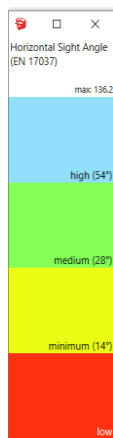
Apr 10 2022 15:19 with DL-Light 14.0.11

Horizontal Sight Angle (EN 17037) : percent of surface area (row) corresponding to indicator threshold values (column).

name	area [m2]	average [°]	media...	low	minimum (14°)	medium (28°)	high (54°)	grid	comments		
Family/Games Room	54.64	64.25	61.60	0.15	2.45	22.26	75.14	HSA grid (approx 25 sensors...			

Model 1: Family/Games Room assessment No. 01 the HSA availability through all four windows

The resulting HSA percentages of the virtual viewing plane threshold outputs can be seen below in Model 2 for the two north windows only.

**Daylight Indicator Parameters**Horizontal Sight Angle (EN 17037)
Project name: HSA The Chestnuts Family North WindowsModel: HSA The Chestnuts Family Room North Windows.skp
Results: C:/Users/Ray/Desktop/Projects/HSA Chestnuts Family Room/Working/HSA North Windows
Level of details: HSA grid (approx 25 sensors per m²)
Results unit: degree**Calculated**

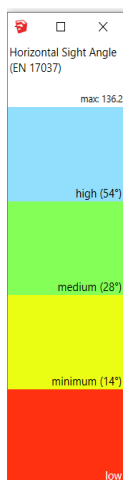
Apr 10 2022 16:04 with DL-Light 14.0.11

Horizontal Sight Angle (EN 17037) : percent of surface area (row) corresponding to indicator threshold values (column).

name	area [m2]	average [°]	media...	low	minimum (14°)	medium (28°)	high (54°)	grid	comments		
Family/Games Room	54.64	39.68	33.40	0.58	34.85	45.53	19.04	HSA grid (approx 25 sensors...	North windows active		

Model 2: Family/Games Room assessment No. 02 the HSA availability through north windows only

The resulting HSA percentages of the virtual viewing plane threshold outputs can be seen below in Model 3 for the two south windows only.



Report

Daylight Indicator Parameters	Horizontal Sight Angle (EN 17037) Project name: HSA The Chestnuts Family South Windows	Model: HSA The Chestnuts Family Room South Windows.skp Results: C:/Users/Ray/Desktop/Projects/HSA Chesnuts Family Room/Working/HSA South Windows Level of details: HSA grid (approx 25 sensors per m ²) Results unit: degree
Calculated	Apr 10 2022 15:29 with DL-Light 14.0.11	

Horizontal Sight Angle (EN 17037) : percent of surface area (row) corresponding to indicator threshold values (column).

name	area [m2]	average [°]	media...	low	minimum (14°	medium (28°)	high (54°)	grid	comments		
Family/Games Room	54.64	24.57	20.20	11.66	61.40	22.55	4.39	HSA grid (approx 25 sensors...	South windows active		

Model 3: Family/Games Room assessment No. 03 the HSA availability through south windows only

The results of these three models are summarised in Table 2 below:

Model No:	HSA Level (%)			
	Low	Minimum	Medium	High
1	0.15	2.45	22.26	75.14
2	0.58	34.85	45.53	19.04
3	11.66	61.40	22.55	4.39

Table 2: HSA percentages for Models 1, 2 & 3 of The Chestnuts Family/Games Room

What becomes readily apparent when interrogating the HSA model outputs from this room is that the windows located in the south elevation are subservient to the windows located in the north elevation in terms of contributing to the horizontal sight angle.

With the windows in the north elevation inactive, the area of viewing virtual plane of the Family/Games Room achieving a high threshold HSA through the windows located in the south elevation equates to only 4.39% of the virtual plane area, and the medium threshold equates 22.55% of the viewing virtual plane area.

The effects of the proposed dwelling on Plot One to the outlook availability of The Chestnuts can therefore be assessed by extending the horizontal sight angles out into the external area south of The Chestnuts. For a reduction in the outlook to occur the proposed structure would need to encroach into one of the HSA threshold zones as detailed within BS EN 17037.

The effects on the outlook from the Family/Games Room as a result of the proposed dwelling on Plot One can be seen below in Figure 2.

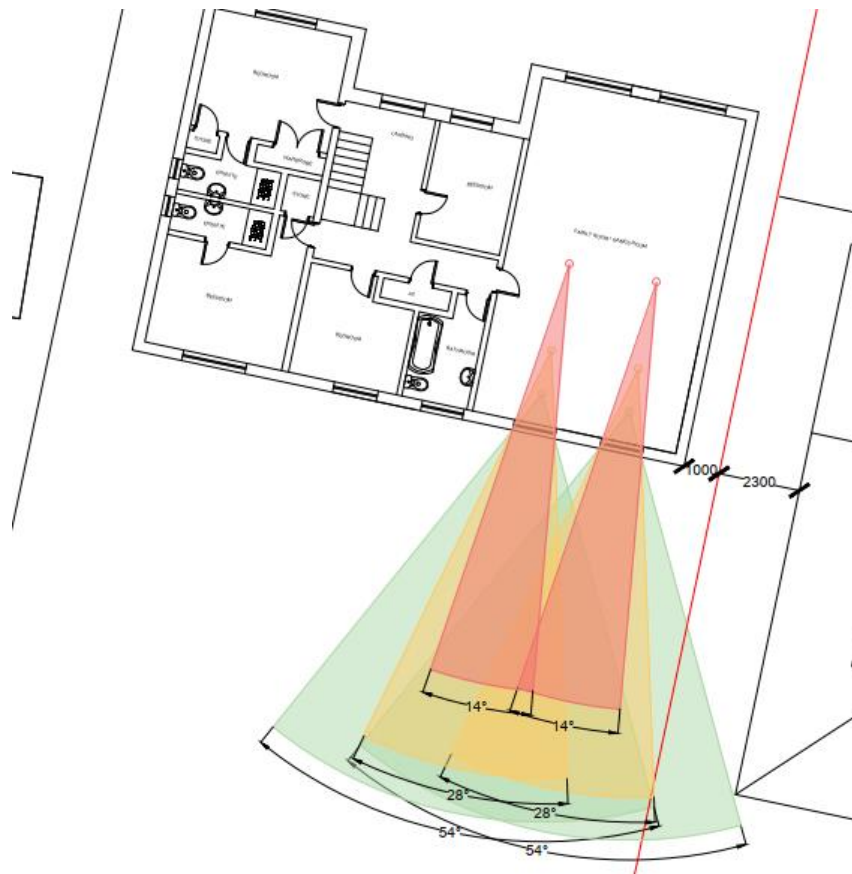
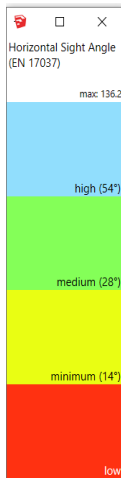


Figure 2: HSA threshold zones from Family/Games Room

As can be seen in the above Figure 2 the proposed dwelling to Plot One will not encroach into the High, Medium or Minimum threshold sight angles of BS EN 17037 and therefore clearly demonstrated from the assessment, using the guidance in the latest British Standard, that the proposed development will have no material impact, in terms of outlook, upon the occupants of the 'most used' room in The Chestnuts, namely, the first floor Family/Games Room.

It should be noted that the view out from the south facing windows of the Family/Games Room currently falls within the Medium level of view out with the determining criteria being a viewing distance of greater than 20m but less than 50m with a horizontal sight angle of greater than 28°. For the proposed dwelling to Plot One to reduce the view out to a minimum level, and therefore have a significant material impact upon the occupants of the Family / Games Room, the proposed Plot One would need to encroach on the horizontal sight angle of 14°.

The second computer model analysis, based on BS EN 17037 horizontal sight angle, has been undertaken for the remaining habitable rooms on the first floor. The resulting HSA percentages of the virtual viewing plane threshold outputs can be seen below in Model 4.



Report

Daylight Indicator Parameters

Horizontal Sight Angle (EN 17037)
Project name: HSA The Chestnuts FF

Model: HSA The Chestnuts FF.skp
Results: C:/Users/Ray/Desktop/Projects/HSA Chestnuts FF/Working/HSA FF
Level of details: HSA grid (approx 25 sensors per m²)
Results unit: degree

Calculated

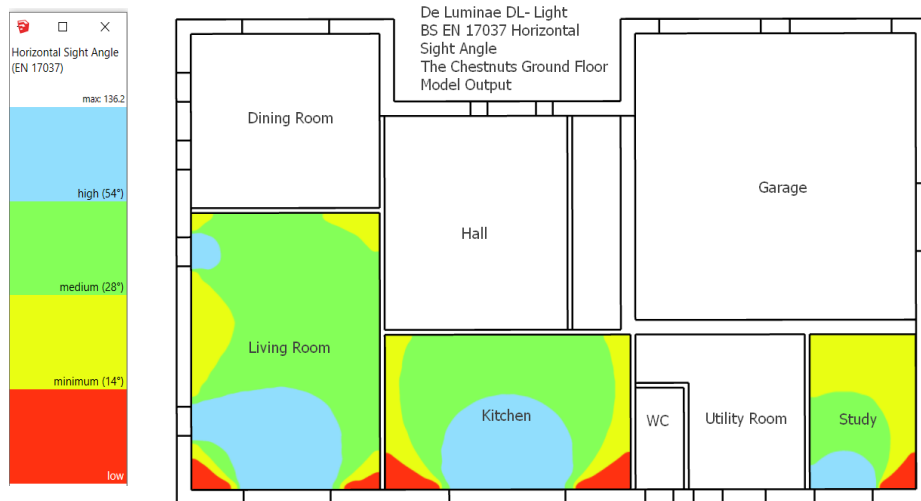
Apr 10 2022 15:19 with DL-Light 14.0.11

Horizontal Sight Angle (EN 17037) : percent of surface area (row) corresponding to indicator threshold values (column).

name	area [m2]	average [°]	media...	low	minimum (14°	medium (28°)	high (54°)	grid	comments		
Family/Games Room	54.64	64.25	61.60	0.15	2.45	22.26	75.14	HSA grid (approx 25 sensors...			
Bedroom Three	9.76	27.93	23.20	11.93	52.93	27.04	8.10	HSA grid (approx 25 sensors...			
Bedroom Two	12.48	39.76	33.00	5.64	24.76	50.25	19.35	HSA grid (approx 25 sensors...			

Model 4: HSA availability through the first floor habitable rooms.

The third computer model analysis, based on BS EN 17037 horizontal sight angle, has been undertaken for the ground floor habitable rooms. The resulting HSA percentages of the virtual viewing plane threshold outputs can be seen below in Model 5.



Report

Daylight Indicator Parameters

Horizontal Sight Angle (EN 17037)
Project name: The Chestnuts HSA GF

Model: HSA The Chestnuts GF.skp
Results: C:/Users/Ray/Desktop/Projects/HSA Chestnuts GF/HSA GF
Level of details: HSA grid (approx 25 sensors per m²)
Results unit: degree

Calculated

Apr 12 2022 10:45 with DL-Light 14.0.11

Horizontal Sight Angle (EN 17037) : percent of surface area (row) corresponding to indicator threshold values (column).

name	area [m2]	average [°]	media...	low	minimum (14°	medium (28°)	high (54°)	grid	comments
Study	7.04	32.29	26.00	5.40	51.33	29.30	13.97	HSA grid (approx 25 sensors...	
Kitchen	16.26	46.70	40.00	6.27	15.44	49.71	28.58	HSA grid (approx 25 sensors...	
Living Room	22.31	44.86	38.00	2.43	11.42	60.82	25.33	HSA grid (approx 25 sensors...	

Model 5: HSA availability through the ground floor habitable rooms

The Study/Storeroom being the eastern most room on the ground floor has the greatest susceptibility to a reduced outlook by way of the positioning of the proposed Plot One. The outlook impact to the Study/Storeroom can be assessed by extending the horizontal sight angles out into the external area south of The Chestnuts. For a reduction in the outlook to occur the proposed structure would need to encroach into one of the HSA threshold zones as detailed within BS EN 17037.

The effects on the outlook from the Study/Storeroom as a result of the proposed dwelling on Plot One can be seen in the below Figure 3.



Figure 3: HSA threshold zones from Study/Storeroom

As can be seen in the above Figure 3 the proposed dwelling to Plot One will not encroach into the High, Medium, or Minimum threshold sight angles of BS EN 17037 and therefore clearly demonstrated from these studies, using the guidance in the latest British Standard, that the proposed development will have no material impact, in terms of outlook, upon the occupants of the ground floor Study/Storeroom.

It should be noted that the view out from the south facing windows of the Study/Storeroom currently falls within the Medium level of view out with the determining criteria being a viewing distance of greater than 20m but less than 50m with a horizontal sight angle of greater than 28°. For the proposed dwelling to Plot One to reduce the view out a minimum level, and therefore have a significant material impact upon the occupants of the Study/Storeroom, the proposed Plot One would need to encroach on the horizontal sight angle of 14°.

In summary, there is no material reduction to the outlook availability from habitable rooms from within The Chestnuts derived from the proximity or positioning of the proposed dwelling on Plot One. None of the horizontal sight angle thresholds have been encroached upon and therefore the HSA levels remain the same post-development as the current pre-development HSA.

DAYLIGHT & SUNLIGHT (BRE 209)

People expect good natural lighting in their homes and development should not cause any significant loss of daylight or sunlight to habitable rooms or gardens of neighbouring properties. The Building Research Establishment guidance 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' (BRE 209) sets out the nationally accepted methodologies and criteria for assessing such matters.

A full Daylight, Sunlight & Overshadowing Study has been completed in support of the application. The accompanying 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 internal daylight and sunlight within the neighbouring residential property has been assessed using the Vertical Sky Component (VSC), Average Daylight Factor (ADF), Daylight Distribution (DD) or No Sky Line (NSL), Annual Probable Sunlight Hours (APSH and Winter) methods as recommended within the BRE 209.

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° of due south has been completed. Where rooms are served by more than one window, all of these windows were taken into account when calculating a room's Average Daylight Factor (ADF) and Daylight Distribution (DD) or No Sky Line (NSL).

The conclusions of that report in terms of the internal amenity effects concerning daylight and sunlight are summarised below.

Daylight. Vertical Sky Component (VSC)

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 times of its former value.

It can be seen from the Vertical Sky Component table (Table 3) 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 all seven assessed windows facing south. Proposed/Existing ratios range from between 1 to 1.03.

Project: Proposed Development at Land known as 47 Low Lane Holbeach Lincs 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	36.201537	1.02	Yes
First	W2	5	194°	36.055516	37.162477	1.03	Yes
First	W3	6	194°	37.232276	38.097571	1.02	Yes
First	W4	7	194°	37.749735	38.349993	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	33.194441	1.01	Yes
Ground	W2	2	194°	35.883958	36.925376	1.03	Yes
Ground	W3	3	194°	35.745984	36.509366	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

Table 3: Vertical Sky Component results

Daylight. Average Daylight Factor (ADF)

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.

It can be seen from the Average Daylight Factor table (Table 4) that all rooms, apart from the kitchen, will meet the BRE guidelines by virtue of the fact that each of the rooms far exceeds the BRE criteria with a marginal improvement to all six of the rooms assessed. The kitchen, with an existing value of 1.687721, fails to meet the BRE criteria of 2.0 pre-development. However, with the proposed development implemented, this value increases to 1.735806 with a proposed/existing ratio of 1.0284916 and is therefore noted to be an improvement on the existing situation. Proposed/Existing ratios range from between 1.0116076 to 1.0284916.

Project: Proposed Development at Land known as 47 Low Lane Holbeach Lincs
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 Ex	ADF Pro	ADF Req'd	PR/EX	SC Ex	SC Pro	Meets BRE
First	R1	Family/Games Room	W1	0.68	1.296	73.92	75.83	185.372	0.5	1	0.431137	0.44226			32.32	33.31	
First	R1	Family/Games Room	W2	0.68	1.296	75.06	77.62	185.372	0.5	1	0.437737	0.452682			32.91	34.20	
First	R1	Family/Games Room	W5	0.68	1.944	78.69	78.69	185.372	0.5	1	0.688423	0.688423			34.73	34.73	
First	R1	Family/Games Room	W6	0.68	1.944	78.69	78.69	185.372	0.5	1	0.688414	0.688414			34.73	34.73	
											2.245711	2.271779	1.5	1.0116076			Yes
First	R2	Bed	W3	0.68	1.152	76.77	78.78	50.77	0.5	1	1.453095	1.49116			33.78	34.77	
											1.453095	1.49116	1	1.0261958			Yes
First	R3	Bed	W4	0.68	1.728	79.13	80.47	60.46	0.5	1	1.886573	1.918658			34.94	35.58	
											1.886573	1.918658	1	1.0170072			Yes
Ground	R1	Study	W1	0.68	1.152	68.65	69.88	41.080	0.5	1	1.605841	1.63479			29.43	30.13	
											1.605841	1.63479	1.5	1.0180269			Yes
Ground	R2	Kitchen	W2	0.68	2.016	74.18	76.29	73.912	0.5	1	1.687721	1.735806			32.45	33.54	
											1.687721	1.735806	2	1.0284916			No
Ground	R3	Living	W3-L	0.68	0.8352	74.89	76.65	92.716	0.5	0.15	0.084416	0.086403			32.82	33.72	
Ground	R3	Living	W3-U	0.68	2.3328	78.48	80.20	92.716	0.5	1	1.647273	1.683342			34.63	35.45	
Ground	R3	Living	W4	0.68	0.648	75.70	75.70	92.716	0.5	1	0.441376	0.441376			33.24	33.24	
Ground	R3	Living	W5	0.68	0.648	78.69	78.69	92.716	0.5	1	0.45877	0.45877			34.73	34.73	
											2.631834	2.669891	1.5	1.0144602			Yes

Table 4: Average Daylight Factor results

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

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.

It can be seen from the DD table (Table 5) 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. Proposed/Existing ratios are all maintained at 1.

Project: Proposed Development at Land known as 47 Low Lane Holbeach Lincs 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	Family/Games Room	54.636	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	22.237	22.237	99.68	99.68	1	Yes

Table 5: Daylight Distribution or No Sky Line results

Sunlight. Annual Probable Sunlight Hours (APSH)

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) and less than 0.8 times its former sunlight hours.

The Annual Probable Sunlight Hours Table (Table 6) demonstrates that all of the windows will exceed the BRE recommendations of either 25% APSH and within 0.8 of the existing APSH. Actual values range between 73% and 82% APSH with the existing proposed ratios ranging between 0.91 and 0.99.

Sunlight Winter

A window may be adversely affected if a point at the centre of the window receives in the winter less than 5% of the Annual Probable Sunlight Hours (APSH) and less than 0.8 times its former sunlight hours.

The results contained within Table 6 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 22% and 28% APSH Winter with the existing proposed ratios ranging between 0.89 and 0.96.

Project: Proposed Development at Land known as 47 Low Lane Holbeach Lincs Drawing Ref MBS BRE 209 Daylight Sunlight Assessment The Chestnuts Daylight and Sunlight Neighbouring Property Assessment Computer Analysis: Annual 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	81	0.98	Yes	29	27	0.93	Yes
First	W3	6	194°	84	82	0.98	Yes	30	28	0.93	Yes
First	W4	7	194°	84	82	0.98	Yes	30	28	0.93	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	73	0.91	Yes	23	22	0.96	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

Table 6: Annual Probable Sunlight Hours results

In summary, the proposed development will have no adverse material impact on the neighbouring property known as 'The Chestnuts' in terms of internal daylight and sunlight with maintained values far exceeding those recommended in BRE 209. The full daylight and sunlight computer model confirms there will be a negligible increase to the Vertical Sky Component (VSC) and Average Daylight Factor (ADF) values post-development, and a negligible decrease to the Annual Probable Sunlight Hours (APSH). Daylight Distribution (DD) or No Sky Line (NSL) values remain neutral with the development having no impact on the established existing site values.

Changes to the established existing site conditions post development are therefore negligible in the aggregate with no material harm occurring as a result of the development and acceptable living standards clearly maintained.

DAYLIGHT & SUNLIGHT (BS EN 1703)

In addition to the full Daylight, Sunlight and Overshadowing Study undertaken in accordance with the BRE 209, a further analysis of the Spatial Daylight Autonomy and Annual Sunlight Exposure has been undertaken to assess the increase of available illuminance (lux) to the Chestnuts over and above the recommended values within the latest British Standard (BS EN 17037:2018+A1:2021).

As mentioned above, people expect good natural lighting in their homes and development should not cause any significant loss of daylight or sunlight to habitable rooms. Exposure to appropriate amount of natural light reinforces the alignment of our circadian rhythms and reduces dependency on electricity for artificial lighting; however, excessive sunlight can cause glare and unwanted visual contrast. This is not only important to consider throughout the course of the day, but also throughout the course of the year, such that occupants are able to enjoy the benefits of daylight exposure in all seasons. Therefore, it is necessary to find a balance between Spatial Daylight Autonomy (sDA), which measures the percentage of floor area that receives adequate sunlight, and Annual Sunlight Exposure (ASE), which measures the percentage of floor area receiving too much direct sunlight.

Table NA.1 of BS EN 17037:2018+A1:2021 gives recommended values of target illuminance for various rooms within dwellings. For living rooms, 150 lux over 50% of the points on a reference plane 0.85m above the floor for at least half of the daylight hours should be attained.

Computer daylight sunlight modelling of the Study/Storeroom and the Family/Games Room has been completed using the software De Luminae DL-Light Spatial Daylight Autonomy (sDA/ASE) extension which utilises threshold levels above those recommended by the BS Committee in BS EN 17037:2018+A1:2021.

Spatial Daylight Autonomy (sDA) assesses whether a space receives sufficient daylight on a reference plane during standard operating hours on an annual basis. The target is 300 lux over 55% of the reference plane for 50% of the occupied period. (01 Jan to 31 Dec 08.00-17.59hrs)

The software also calculates the associated indicator ASE (Annual Sunlight Exposure). ASE identifies surfaces receiving too much direct sunlight that may cause visual discomfort (glare) or over heating resulting in additional cooling costs. ASE measures the percentage of the work plane exceeding the threshold of 1000 lux over a period of more than 250 occupied hours per year.

The sDA and ASE indicators are part of the Leadership In Energy & Environmental Design (LEED) rating system. They are defined in the IES LM-83-12 standard: *Illuminating Engineering Society, Lighting Measurement 83: Approved Method: IES Spatial Daylight Autonomy (sDA) and Annual Sunlight Exposure (ASE)*.

- lighting thresholds defined by the standard (sDA: 300 lux for 50% of the period, ASE: 1000 lux for more than 250 occupied hours per year)
- ASE measures the percentage of the work plane exceeding the threshold of 1000 lux for more than 250 occupied hours per year
- 08:00 / 17:59hrs range taking into account the Daylight Saving Time

Healthy Sunlight Exposure

Computer lighting simulations demonstrate that the following conditions are expected:

Spatial Daylight Autonomy (sDA300,50%) is achieved for at least 55% of regularly occupied space. In other words, at least 55% of the space receives at least 300 lux [28 fc] of daylight for at least 50% of operating hours each year.

Annual Sunlight Exposure (ASE1000,250) is achieved for no more than 10% of regularly occupied space. In other words, no more than 10% of the area should receive more than 1000 lux [93 fc] for 250 hours each year otherwise excessive glare and/or overheating could occur.

Study/Storeroom

The sDA outputs from the software analysis of the Study/Storeroom are as follows:

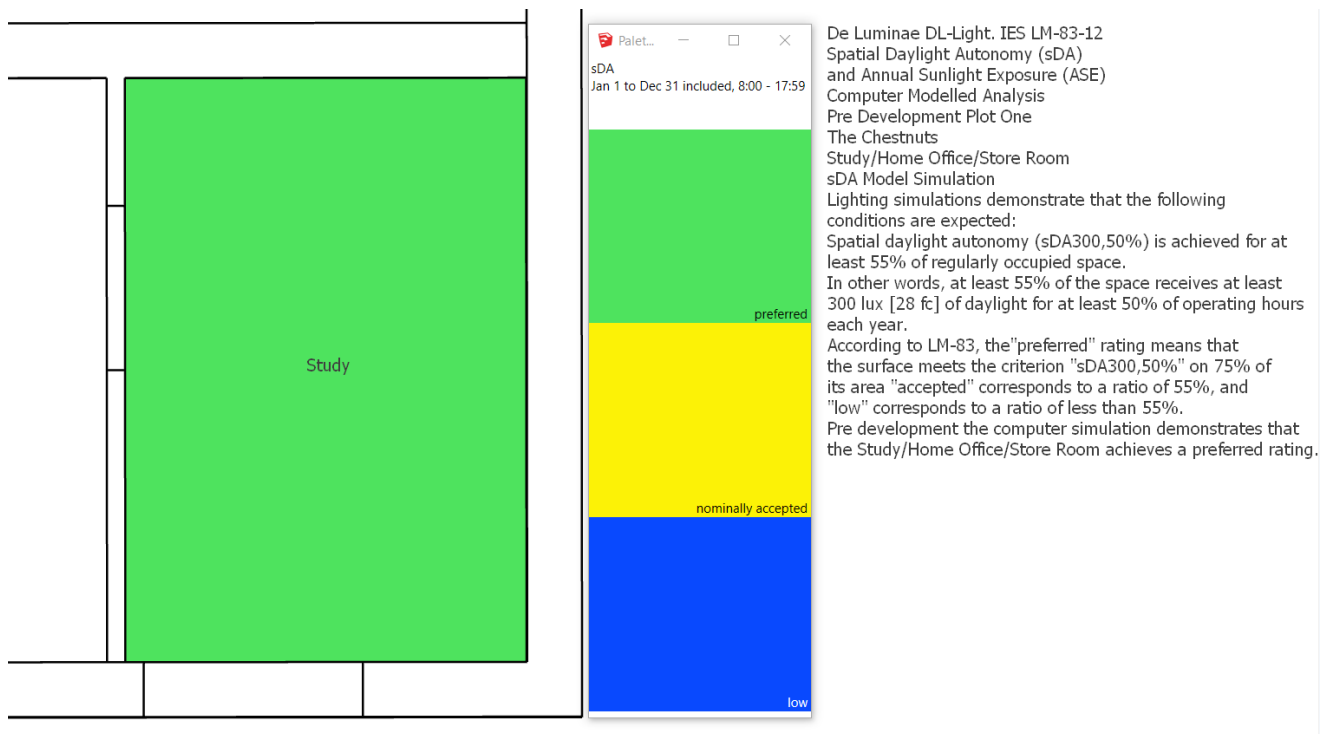
Comparison report

Parameters	Calculation A	Calculation B
Calculation	Spatial DA	Spatial DA
Calculation date	2022-05-17 15:23:07 +0100	2022-05-18 14:40:54 +0100
Project name	sDA ASE Chestnuts Plot One Pre Dev Study	sDA Chestnuts Plot One Post Dev Study
Archive name	light-sDA-20220517-152307-r134	light-sDA-20220518-144054-r139
Archive description	Pre Dev Study sDA	Post Dev Study sDA
Model Sketchup	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Pre Development\Chestnuts Plot One...	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Post Development\Chestnuts Plot One...
Location	51.15N, -0.18E	51.15N, -0.18E
Location name	LONDON/GATWICK	LONDON/GATWICK
Time zone	UTC+0:00	UTC+0:00
DST	Europe/London	Europe/London
Weather data	GBR_London.Gatwick.037760_IWEC.epw	GBR_London.Gatwick.037760_IWEC.epw
Period	Jan 1 to Dec 31 included, 8:00 - 17:59	Jan 1 to Dec 31 included, 8:00 - 17:59
Sensors type	sDA 24" grid (spacing: 0.6096, edges: 0.3048)	sDA 24" grid (spacing: 0.6096, edges: 0.3048)
sDA thresholds	300 lux, 50.0%	300 lux, 50.0%
ASE thresholds	1000 lux, 250h	1000 lux, 250h
Performance thresholds	preferred 75.0%, nominally accepted 55.0%	preferred 75.0%, nominally accepted 55.0%
Drop sensors < 1 lux (LM83 2.2.5)	Yes	Yes
Indicator	sDA	sDA
Number of computed surfaces	1	1
Total number of sensors	15	15
Option "north angle"	Yes	Yes
Option "coverage area of sensors"	No	No
Version of DL-Light	14.0.11	14.0.11

Display columns: ☒ value A ☒ value B ☒ delta b-a

name	area[m2]	area lit [%]			sDA			ASE [%]			LEED sDA pts			comments		
		A	B	Δ	A	B	Δ	A	B	Δ	A	B	Δ			
Study sDA	7.04	100.00	100.00	0.00	preferred	preferred		0	26.67	26.67	0.00	3	3	0	Meets recommendations	✖

Table 7: sDA Preferred - Computer Simulation Comparison



Model 6: sDA Preferred – Pre-Development



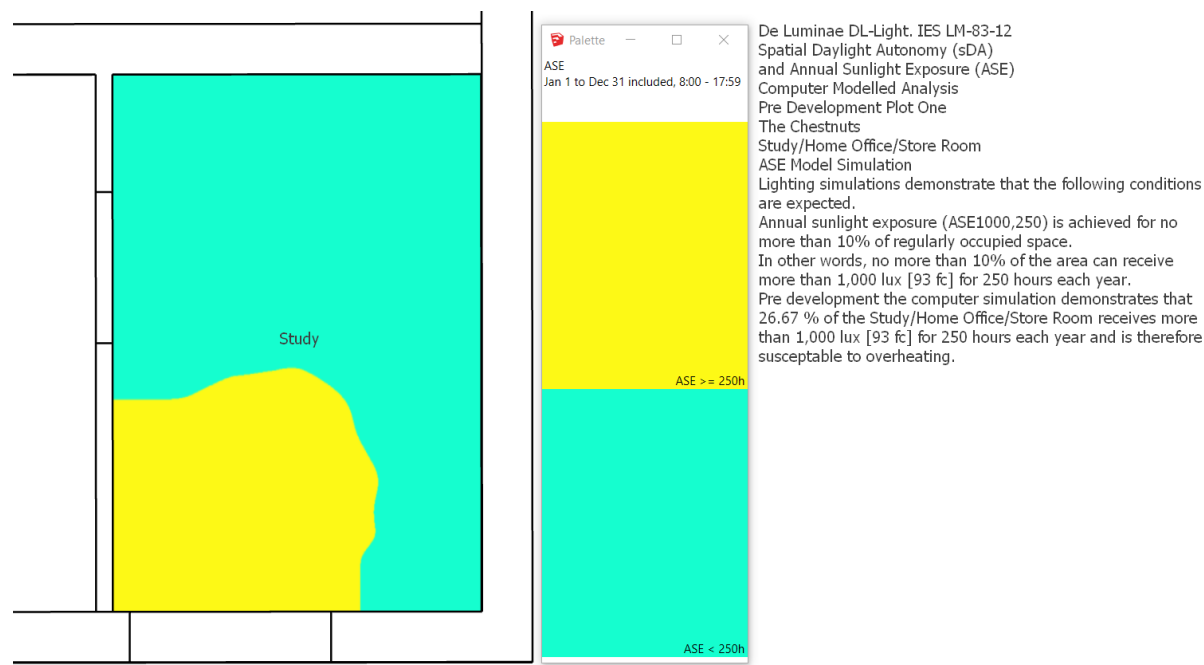
Model 7: sDA Preferred – Post-Development

Comparison report		
Parameters	Calculation A	Calculation B
Calculation	Spatial DA	Spatial DA
Calculation date	2022-05-17 16:24:52 +0100	2022-05-18 14:34:56 +0100
Project name	sDA ASE Chestnuts Plot One Pre Dev Study	sDA Chestnuts Plot One Post Dev Study
Archive name	light-sDA-20220517-162452-r135	light-sDA-20220518-143456-r138
Archive description	Pre Dev Study ASE	Post Dev Study ASE
Model Sketchup	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Pre Development\Chestnuts Plot One...	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Post Development\Chestnuts Plot One...
Location	51.15N, -0.18E	51.15N, -0.18E
Location name	LONDON/GATWICK	LONDON/GATWICK
Time zone	UTC+0:00	UTC+0:00
DST	Europe/London	Europe/London
Weather data	GBR_London.Gatwick.037760_JWEC.epw	GBR_London.Gatwick.037760_JWEC.epw
Period	Jan 1 to Dec 31 included, 8:00 - 17:59	Jan 1 to Dec 31 included, 8:00 - 17:59
Sensors type	sDA 24" grid (spacing: 0.6096, edges: 0.3048)	sDA 24" grid (spacing: 0.6096, edges: 0.3048)
sDA thresholds	300 lux, 50.0%	300 lux, 50.0%
ASE thresholds	1000 lux, 250h	1000 lux, 250h
Indicator	ASE	ASE
Number of computed surfaces	1	1
Total number of sensors	15	15
Option "north angle"	Yes	Yes
Option "coverage area of sensors"	No	No
Version of DL-Light	14.0.11	14.0.11

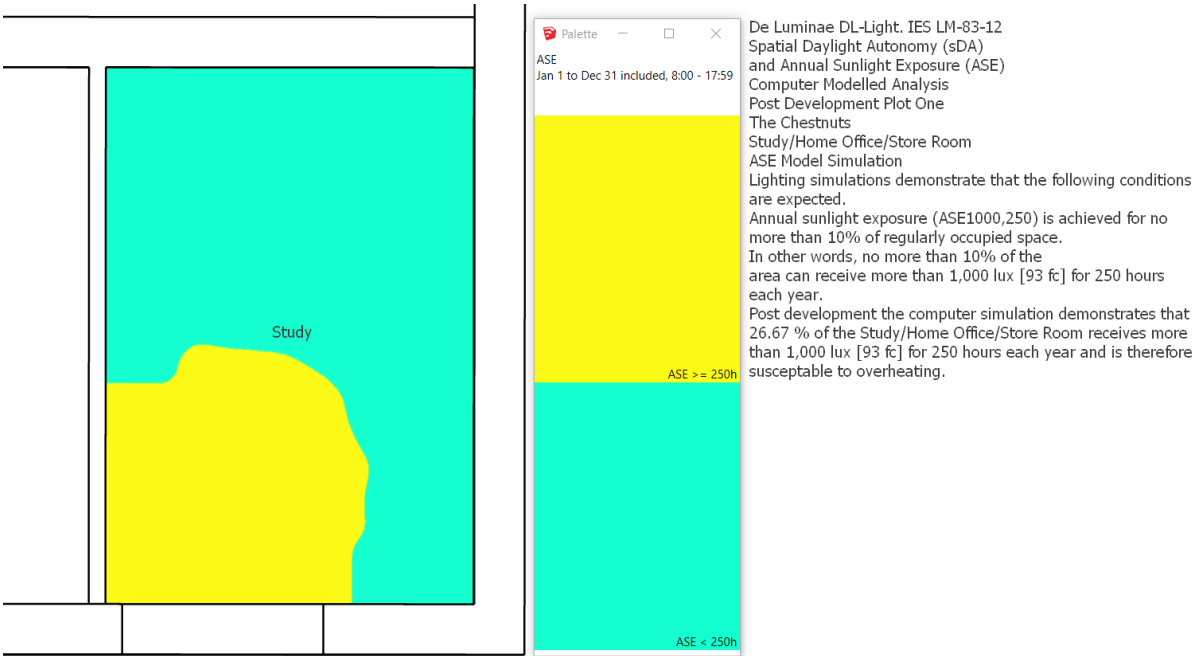
Display columns:	☒ value A	☒ value B	☒ delta b-a
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name	area[m2]	area lit [%]				sDA				ASE [%]				LEED sDA pts				comments	
		A	B	Δ		A	B	Δ		A	B	Δ		A	B	Δ			
Study ASE	7.04	100.00	100.00	0.00		preferred	preferred			0	26.67	26.67		0.00	3	3	0	16% floor area exceed ASE recommendations	✗

Table 8: ASE – Computer Simulation Comparison



Model 8: ASE – Pre-Development



Model 9: ASE – Post-Development

Comparison report

Parameters	Calculation A	Calculation B
Calculation	Spatial DA	Spatial DA
Calculation date	2022-05-17 16:32:12 +0100	2022-05-18 14:46:14 +0100
Project name	sDA ASE Chestnuts Plot One Pre Dev Study	sDA Chestnuts Plot One Post Dev Study
Archive name	light-sDA-20220517-163212-r136	light-sDA-20220518-144614-r140
Archive description	Pre Dev Study sDA area	Post Dev Study sDA area
Model Sketchup	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Pre Development\Chestnuts Plot One...	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Post Development\Chestnuts Plot One...
Location	51.15N, -0.18E	51.15N, -0.18E
Location name	LONDON/GATWICK	LONDON/GATWICK
Time zone	UTC+000	UTC+000
DST	Europe/London	Europe/London
Weather data	GBR_London.Gatwick.037760_WEC.epw	GBR_London.Gatwick.037760_WEC.epw
Period	Jan 1 to Dec 31 included, 8:00 - 17:59	Jan 1 to Dec 31 included, 8:00 - 17:59
Sensors type	sDA 24" grid (spacing: 0.6096, edges: 0.3048)	sDA 24" grid (spacing: 0.6096, edges: 0.3048)
sDA thresholds	300 lux, 50.0%	300 lux, 50.0%
ASE thresholds	1000 lux, 250h	1000 lux, 250h
Indicator	sDA area	sDA area
Number of computed surfaces	1	1
Total number of sensors	15	15
Option "north angle"	Yes	Yes
Option "coverage area of sensors"	No	No
Version of DL-Light	14.0.11	14.0.11

Display columns:

☒ value A

☒ value B

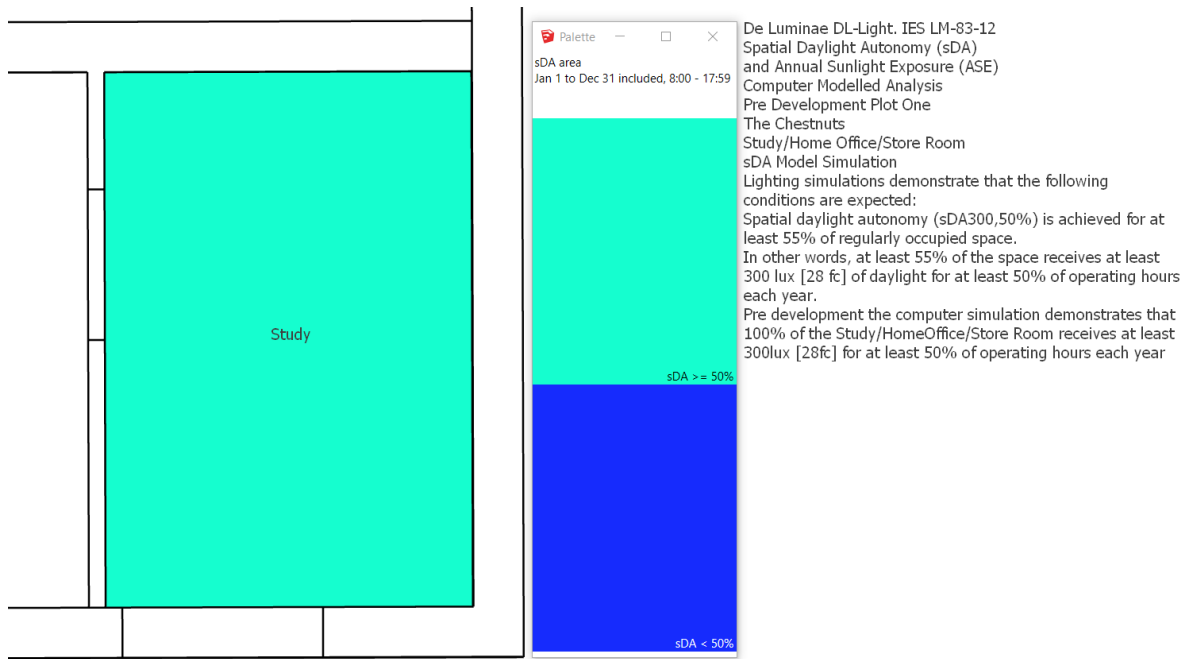
☐ delta b-a

☒ [b-a]/a (as %)

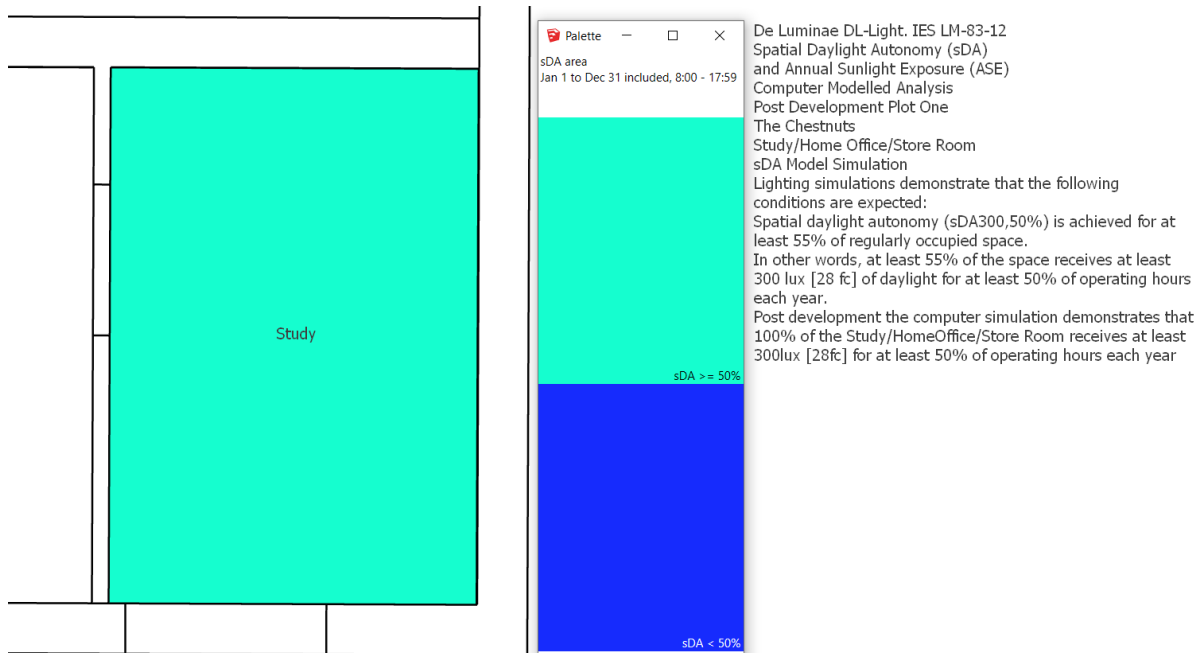
☐ ratio b/a

name	area[m2]	sDA < 50%			sDA >= 50%			comments	
		A	B	Δ%	A	B	Δ%		
Study sDA area	7.04	0.00	0.00		100.00	100.00	+0.0%	Meets recommendations	✖

Table 9: sDA Area - Computer Simulation Comparison



Model 10: sDA Area - Pre-Development



Model 11: sDA Area - Post-Development

Comparison report

Parameters

Calculation A

Calculation B

Calculation

Calculation date

Project name

Archive name

Archive description

Model Sketchup

Location

Location name

Time zone

DST

Weather data

Period

Sensors type

sDA thresholds

ASE thresholds

Indicator

Number of computed surfaces

Total number of sensors

Option "north angle"

Option "coverage area of sensors"

Version of DL-Light

Spatial DA [%]

2022-05-17 16:44:41 +0100

sDA ASE Chestnuts Plot One Pre Dev Study

light-sDA-20220517-164441-r137

Pre Dev Study sDA duration

C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Pre Development\Chestnuts Plot One...

51.15N, -0.18E

LONDON/GATWICK

UTC+000

Europe/London

GBR_London.Gatwick.037760_IWEC.epw

Jan 1 to Dec 31 included, 8:00 - 17:59

sDA 24" grid (spacing: 0.6096, edges: 0.3048)

300 lux, 50.0%

1000 lux, 250h

sDA duration

1

15

Yes

No

14.0.11

Spatial DA [%]

2022-05-18 14:49:52 +0100

sDA Chestnuts Plot One Post Dev Study

light-sDA-20220518-144952-r141

Post Dev Study sDA duration

C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Study Analysis\Post Development\Chestnuts Plot One...

51.15N, -0.18E

LONDON/GATWICK

UTC+000

Europe/London

GBR_London.Gatwick.037760_IWEC.epw

Jan 1 to Dec 31 included, 8:00 - 17:59

sDA 24" grid (spacing: 0.6096, edges: 0.3048)

300 lux, 50.0%

1000 lux, 250h

sDA duration

1

15

Yes

No

14.0.11

Display columns:

☒ value A

☒ value B

☐ delta b-a

☒ (b-a)/a (in %)

☐ ratio b/a

name

...

0.0%

10.0%

20.0%

30.0%

40.0%

50.0%

60.0%

70.0%

80.0%

90.0%

comments

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

A

B

Δ%

Study sDA du...

7.04

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

13.33

6.67

-50.0%

26.67

33.33

+25.0%

33.33

33.33

+0.0%

26.67

26.67

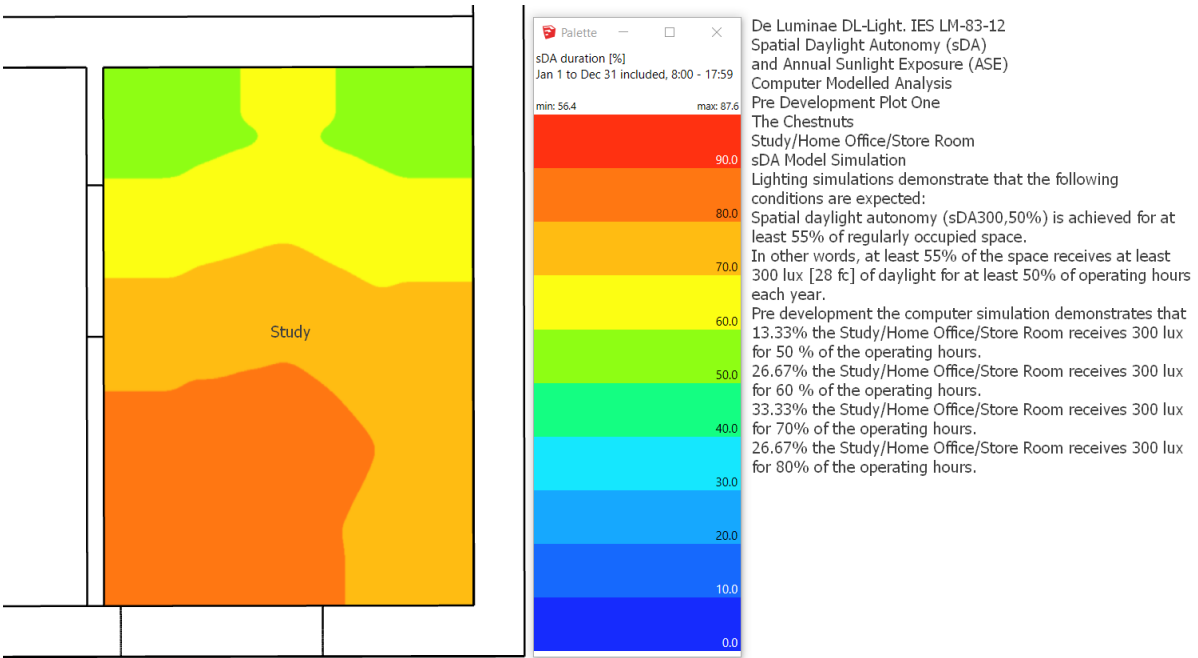
+0.0%

0.00

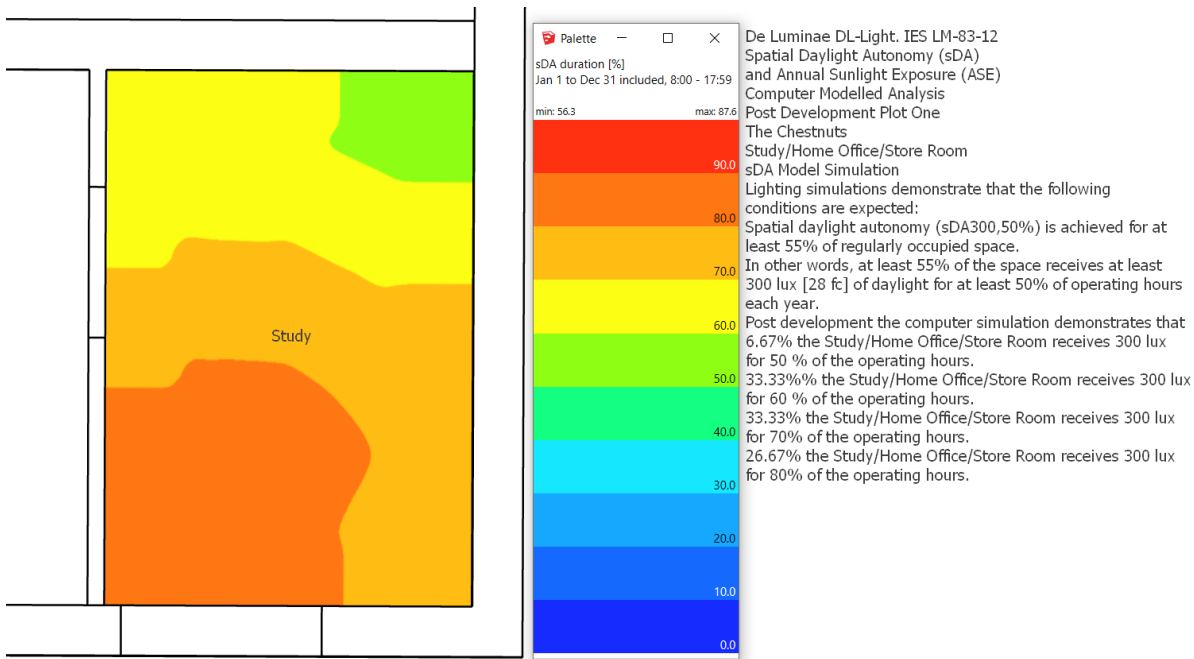
0.00

Meets recommendations

Table 10: sDA Duration – Computer Simulation Comparison



Model 12: sDA Duration – Pre-Development



Model 13: sDA Duration – Post-Development

As can be seen in the above tables, pre-development, 100% of the working plane area to the Study/Storeroom receives more than 300 lux for more than 50% of the occupied hours.

Post-development 100% of the working plane area to the Study/Storeroom receives more than 300 lux for at least 50% of the occupied hours. There is an increase, post development of 25% in the area of the working plane which is able to receive 300 lux for 60% of the occupied hours.

Annual Sunlight Exposure remains unaltered with 26.67% of the working plane to the Study/Storeroom receiving in excess of 1000 lux for more than 250 occupied hours per year. This is 16.67% more than the 10% which is recommended for a comfortable working environment. Careful consideration must therefore be given to the positioning of a desk and computer workstation within the Study/Storeroom if the user is not to suffer from glare and overheating during periods of the occupied hours. Additional control measures such as mechanical comfort cooling or blinds would need to be considered to introduce control over glare and/or overheating.

The computer sDA/ ASE analysis reveals that the development to Plot One can be seen as beneficial to the users of the Study/Storeroom to The Chestnuts since there is an increase to the area of the working plane able to receive more than 300 lux for more than 50% of the occupied hours whilst not increasing the ASE i.e. glare/overheating.

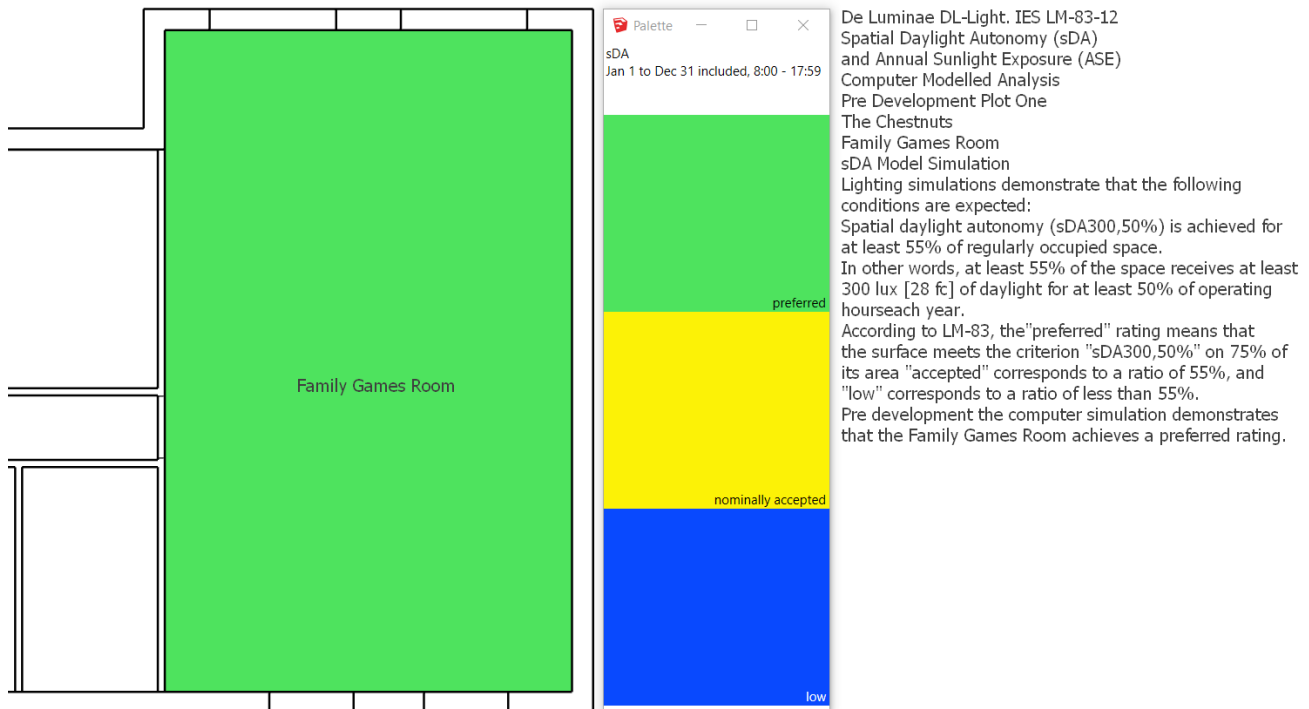
Family/Games Room

The sDA outputs from the software analysis of the Family/GamesRoom are as follows.

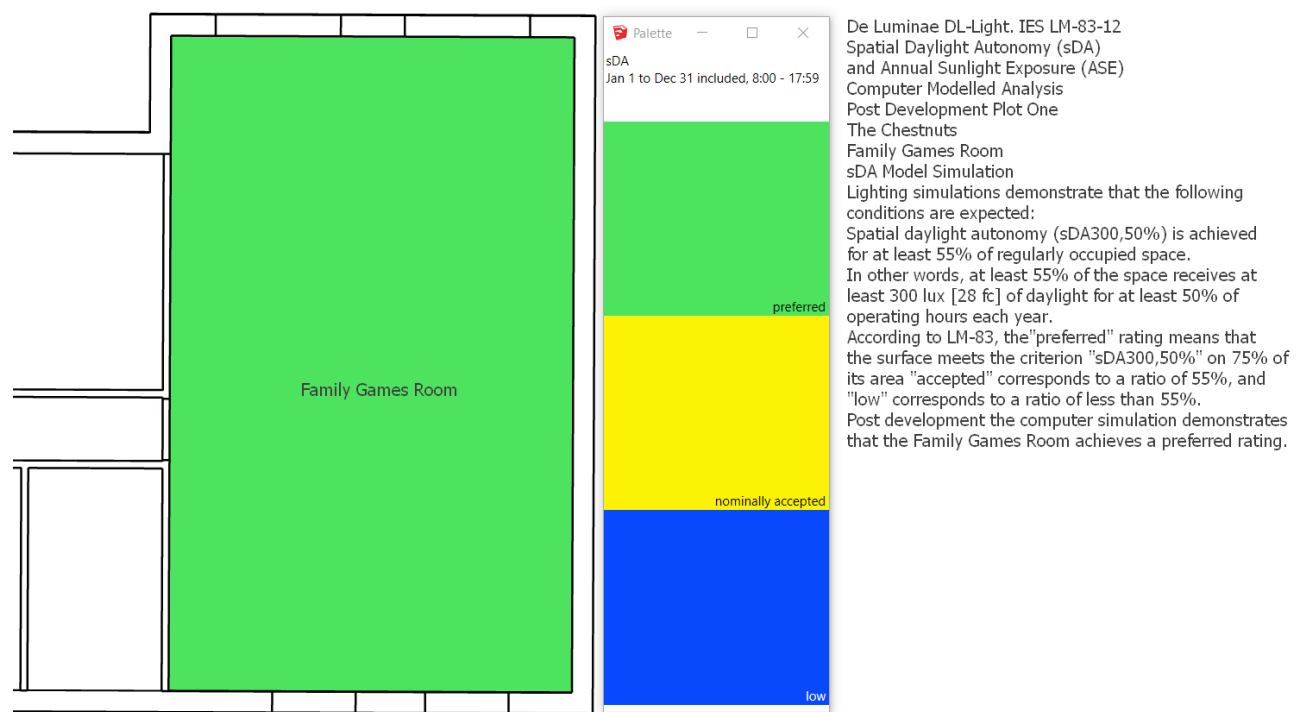
Comparison report																
Parameters					Calculation A					Calculation B						
Calculation					Spatial DA					Spatial DA						
Calculation date					2022-05-18 16:23:09 +0100					2022-05-19 15:24:55 +0100						
Project name					sDA Chestnuts Plot One Pre Dev Family Games room					sDA Chestnuts Plot One Post Dev Family Games Room						
Archive name					light-sDA-20220518-162309-r148					light-sDA-20220519-152455-r152						
Archive description					Pre Dev Family Games Room sDA					Post Dev Family Games Room sDA						
Model Sketchup					C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Pre Development\Chest...					C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Post Development\Chest...						
Location					51.15N, -0.18E					51.15N, -0.18E						
Location name					LONDON/GATWICK					LONDON/GATWICK						
Time zone					UTC+0:00					UTC+0:00						
DST					Europe/London					Europe/London						
Weather data					GBR_London.Gatwick.037760_IWEC.epw					GBR_London.Gatwick.037760_IWEC.epw						
Period					Jan 1 to Dec 31 included, 8:00 - 17:59					Jan 1 to Dec 31 included, 8:00 - 17:59						
Sensors type					sDA 24" grid (spacing: 0.6096, edges: 0.3048)					sDA 24" grid (spacing: 0.6096, edges: 0.3048)						
sDA thresholds					300 lux, 50.0%					300 lux, 50.0%						
ASE thresholds					1000 lux, 250h					1000 lux, 250h						
Performance thresholds					preferred 75.0%, nominally accepted 55.0%					preferred 75.0%, nominally accepted 55.0%						
Drop sensors < 1 lux (LM83 2.2.5)					Yes					Yes						
Indicator					sDA					sDA						
Number of computed surfaces					1					1						
Total number of sensors					135					135						
Option "north angle"					Yes					Yes						
Option "coverage area of sensors"					No					No						
Version of DL-Light					14.0.11					14.0.11						

Display columns: ☒ value A ☒ value B ☒ delta b-a																
name	area[m2]	area lit [%]			sDA			ASE [%]			LEED sDA pts			comments		
		A	B	Δ	A	B	Δ	A	B	Δ	A	B	Δ			
Family Games Room sDA	54.64	100.00	100.00	0.00	preferred	preferred		0	11.85	12.59	0.74	3	3	0	Meets recommendations	✖

Table 11: sDA Preferred - Computer Simulation Comparison



Model 14: sDA Preferred – Pre-Development



Model 15: sDA Preferred – Post-Development Model

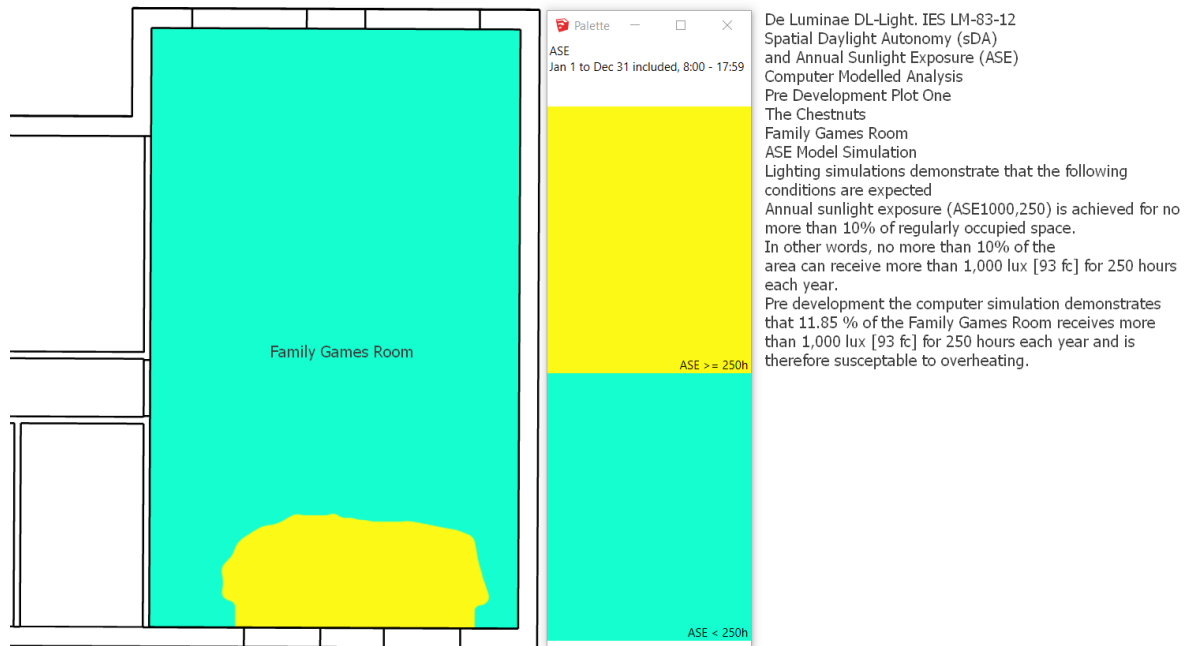
Comparison report

Parameters	Calculation A	Calculation B
Calculation	Spatial DA	Spatial DA
Calculation date	2022-05-18 16:29:57 +0100	2022-05-19 15:30:31 +0100
Project name	sDA Chestnuts Plot One Pre Dev Family Games Room	sDA Chestnuts Plot One Post Dev Family Games Room
Archive name	light-sDA-20220518-162957-r149	light-sDA-20220519-153031-r153
Archive description	Pre Dev Family Games room ASE	Post Dev Family Games Room ASE
Model Sketchup	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Pre Development\Chest...	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Post Development\Chest...
Location	51.15N, -0.18E	51.15N, -0.18E
Location name	LONDON/GATWICK	LONDON/GATWICK
Time zone	UTC+0:00	UTC+0:00
DST	Europe/London	Europe/London
Weather data	GBR_London.Gatwick.037760_JWEC.epw	GBR_London.Gatwick.037760_JWEC.epw
Period	Jan 1 to Dec 31 included, 8:00 - 17:59	Jan 1 to Dec 31 included, 8:00 - 17:59
Sensors type	sDA 24" grid (spacing: 0.6096, edges: 0.3048)	sDA 24" grid (spacing: 0.6096, edges: 0.3048)
sDA thresholds	300 lux, 50.0%	300 lux, 50.0%
ASE thresholds	1000 lux, 250h	1000 lux, 250h
Indicator	ASE	ASE
Number of computed surfaces	1	1
Total number of sensors	135	135
Option "north angle"	Yes	Yes
Option "coverage area of sensors"	No	No
Version of DL-Light	14.0.11	14.0.11

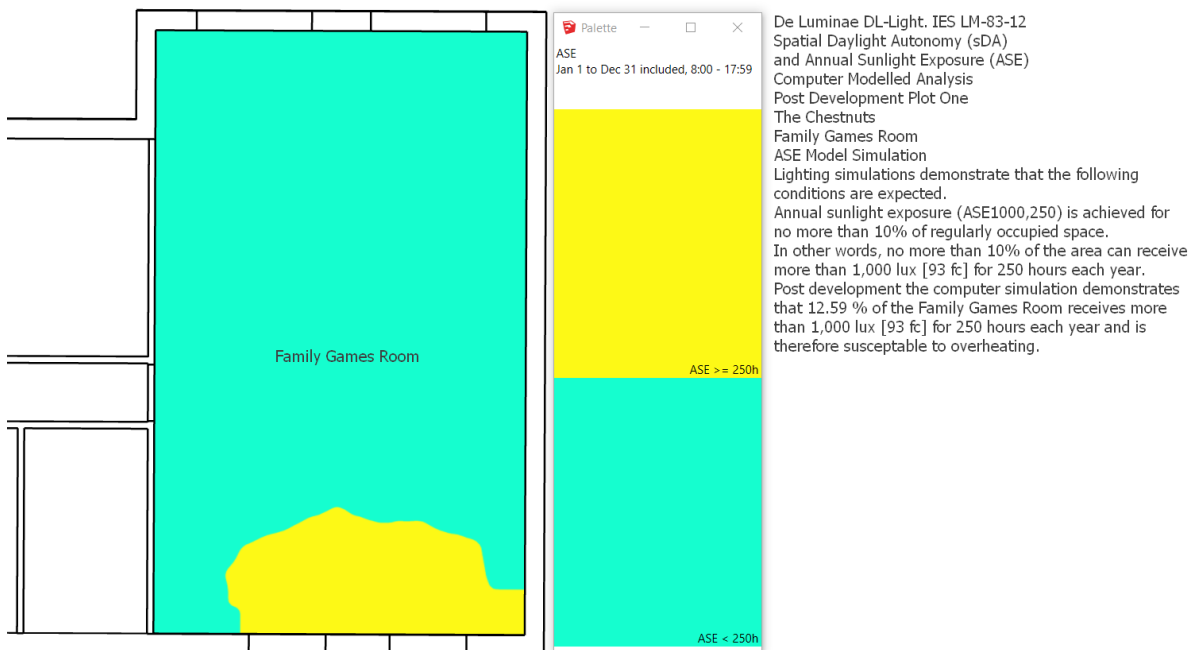
Display columns: ☒ value A ☒ value B ☒ delta b-a

name	area[m2]	area lit [%]			sDA				ASE [%]				LEED sDA pts				comments	
		A	B	Δ	A	B	Δ	A	B	Δ	A	B	Δ					
Family Games Room ASE	54.64	100.00	100.00	0.00	preferred	preferred		0	11.85	12.59		0.74	3	3	0	Meets recommendations	✖	

Table 12: ASE – Computer Simulation Comparison



Model 16: ASE – Pre-Development



Model 17: ASE – Post-Development Model

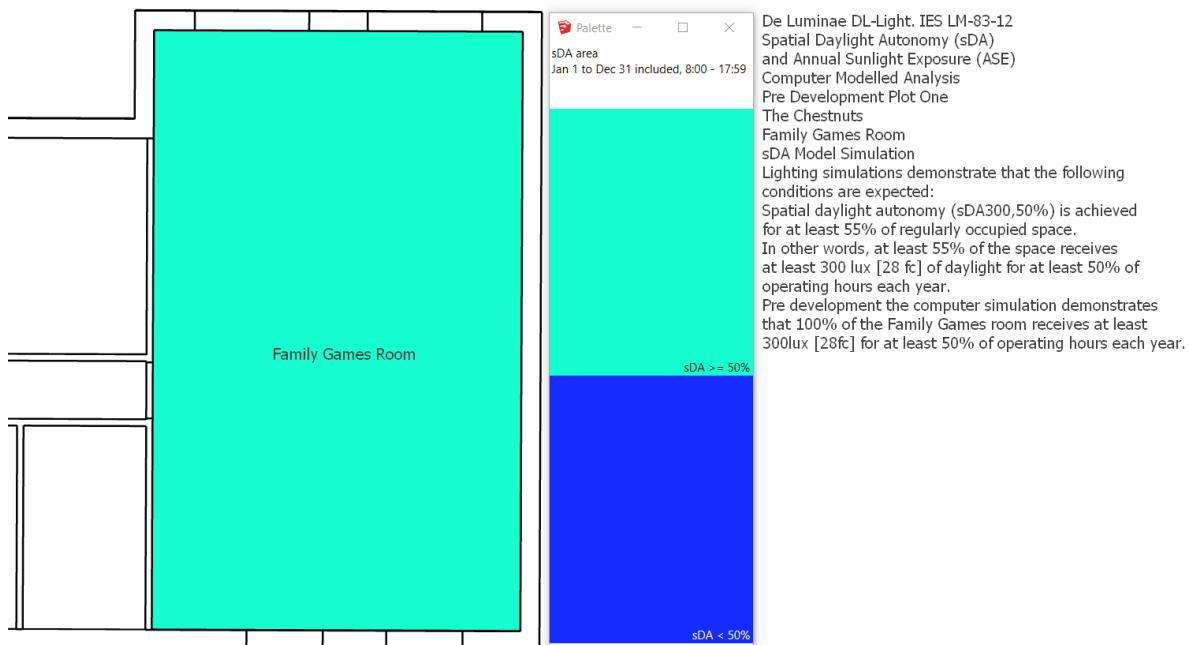
Comparison report

Parameters	Calculation A	Calculation B
Calculation	Spatial DA	Spatial DA
Calculation date	2022-05-18 16:38:39 +0100	2022-05-19 15:35:22 +0100
Project name	sDA Chestnuts Plot One Pre Dev Family Games Room	sDA Chestnuts Plot One Post Dev Family Games Room
Archive name	light-sDA-20220518-163839-r150	light-sDA-20220519-153522-r154
Archive description	Pre Dev Family Games room sDA area	Post Dev Family Games Room sDA area
Model Sketchup	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Pre Development\Ches...	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Post Development\Ches...
Location	51.15N, -0.18E	51.15N, -0.18E
Location name	LONDON/GATWICK	LONDON/GATWICK
Time zone	UTC +0:00	UTC +0:00
DST	Europe/London	Europe/London
Weather data	GBR_London.Gatwick.037760_JWEC.epw	GBR_London.Gatwick.037760_JWEC.epw
Period	Jan 1 to Dec 31 included, 8:00 - 17:59	Jan 1 to Dec 31 included, 8:00 - 17:59
Sensors type	sDA 24" grid (spacing: 0.6096, edges: 0.3048)	sDA 24" grid (spacing: 0.6096, edges: 0.3048)
sDA thresholds	300 lux, 50.0%	300 lux, 50.0%
ASE thresholds	1000 lux, 250h	1000 lux, 250h
Indicator	sDA area	sDA area
Number of computed surfaces	1	1
Total number of sensors	135	135
Option "north angle"	Yes	Yes
Option "coverage area of sensors"	No	No
Version of DL-Light	14.0.11	14.0.11

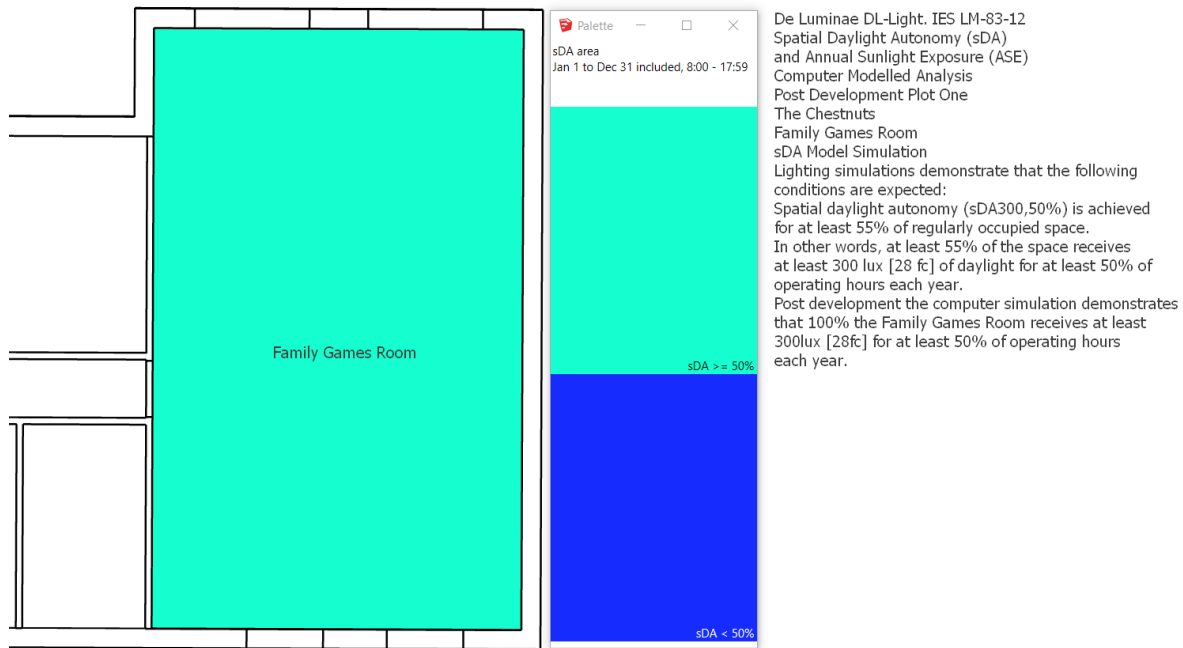
Display columns: ☒ value A ☒ value B ☐ delta b-a ☒ (b-a)/a (as %) ☐ ratio b/a

name	area[m2]	sDA < 50%			sDA >= 50%			comments	
		A	B	Δ%	A	B	Δ%		
Family Games Room sDA area	54.64	0.00	0.00		100.00	100.00	+0.0%	Meets recommendations	✖

Table 13: sDA Area - Computer Simulation Comparison



Model 18: sDA Area - Pre-Development



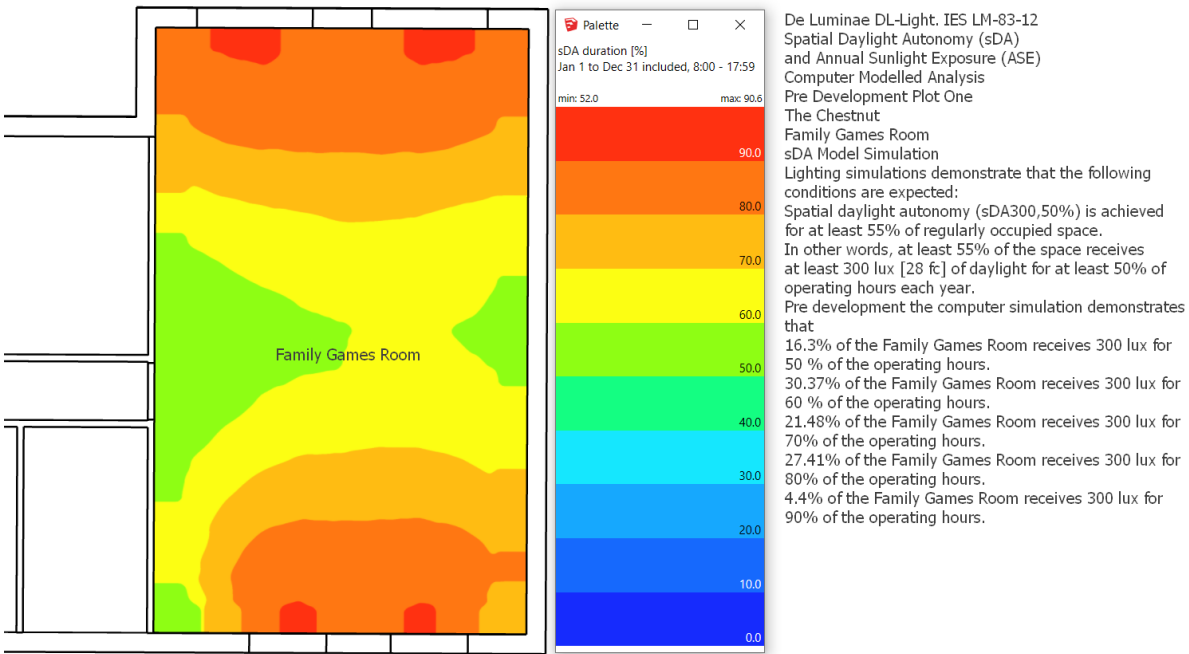
Model 19: sDA Area - Post-Development

Parameters		Calculation A	Calculation B
Calculation		Spatial DA [%]	Spatial DA [%]
Calculation date		2022-05-18 16:42:35 +0100	2022-05-19 15:41:10 +0100
Project name		sDA Chestnuts Plot One Pre Dev Family Games Room	sDA Chestnuts Plot One Post Dev Family Games Room
Archive name		light-sDA-20220518-164235-r151	light-sDA-20220519-154110-r156
Archive description		Pre Dev Family Games Room sDA duration	Post Dev Family Games Room sDA duration
Model Sketchup		C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Pre Development\Ches...	C:\Users\Ray\Desktop\De Luminae\sDA Chestnuts Family Games Room Analysis\Post Development\Ches...
Location		S1.15N, -0.18E	S1.15N, -0.18E
Location name		LONDON/GATWICK	LONDON/GATWICK
Time zone		UTC+000	UTC+000
DST		Europe/London	Europe/London
Weather data		GBR_London.Gatwick.037760_JWEC.epw	GBR_London.Gatwick.037760_JWEC.epw
Period		Jan 1 to Dec 31 included, 8:00 - 17:59	Jan 1 to Dec 31 included, 8:00 - 17:59
Sensors type		sDA 24" grid (spacing: 0.6096, edges: 0.3048)	sDA 24" grid (spacing: 0.6096, edges: 0.3048)
sDA thresholds		300 lux, 50.0%	300 lux, 50.0%
ASE thresholds		1000 lux, 250h	1000 lux, 250h
Indicator		sDA duration	sDA duration
Number of computed surfaces		1	1
Total number of sensors		135	135
Option "north angle"		Yes	Yes
Option "coverage area of sensors"		No	No
Version of DL-Light		14.0.11	14.0.11

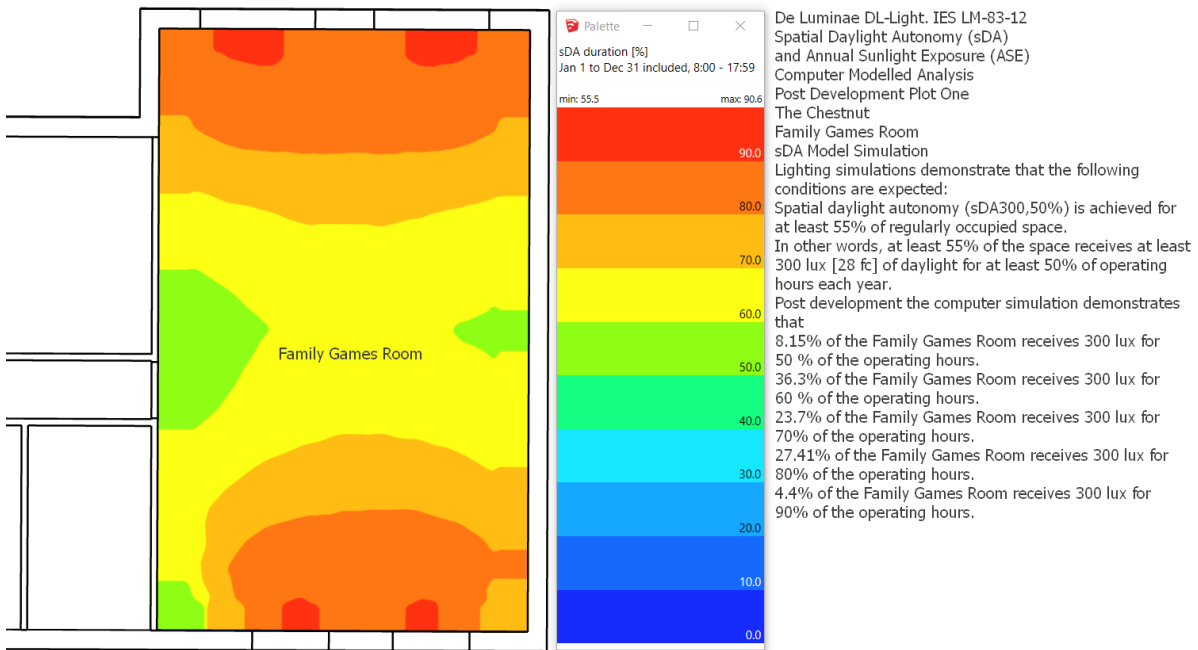
Display columns: ☒ value A ☒ value B ☐ delta b-a ☒ (b-a)/a (as %) ☐ ratio b/a

name	0.0%			10.0%			20.0%			30.0%			40.0%			50.0%			60.0%			70.0%			80.0%			90.0%			comments
	A	B	Δ%	A	B	Δ%	A	B	Δ%	A	B	Δ%	A	B	Δ%	A	B	Δ%	A	B	Δ%	A	B	Δ%	A	B	Δ%	A	B	Δ%	
Family Room...	54.64	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		16.30	8.15	-50.0%	30.37	36.30	+19.5%	21.48	23.70	+10.3%	27.41	27.41	+0.0%	4.44	4.44	+0.0%	Meets recommendations

Table 14: sDA Duration – Computer Simulation Comparison



Model 20: sDA Duration – Pre-Development



Model 21: sDA Duration – Post-Development

Pre development 100% of the working plane to the Family/Games Room is able to receive 300 lux for more than 50% of the occupied hours.

Post development 100% of the working plane area to the Family/Games Room is able to receive 300 lux for more than 50% of the occupied hours. There is an increase, post development of 19.5% in the area of the working plane which is able to receive 300 lux for 60% of the occupied hours and there is an increase, post development of 10.3% in the area of the working plane able to receive 300 lux for 70% of the occupied hours.

Annual Sunlight Exposure is marginally increased with an additional 0.74% of the working plane to the Family/Games Room receiving in excess of 1000 lux for more than 250 occupied hours per year.

The findings of applying these daylight and sunlight metrics to the Study/Storeroom and Family/Games Room concludes that there is an increase in daylight harvesting post development to both of these rooms, thereby reducing the dependency on artificial lighting and the associated benefit in a reduction in energy consumption for the occupants.

The daylight and sunlight metrics undertaken as part of the computer modelled analysis conclude that post development both the Study/Storeroom and Family/Games Room to the Chestnuts receive 300 lux over 100% of the working plane for a period in excess of 50% of the set working period. (01 Jan to 31 Dec 08.00 -17.59hrs). The value of 300 lux exceeds the minimum daylight provisions of 150 lux laid out in Table NA.1 of BS EN 17037 2018 +A1:2021 Daylight in buildings by 100%. It can therefore be concluded the design, scale, and positioning of the proposed house to Plot 1 will have no impact on the amenity of the occupants to the Chestnuts in terms of daylight and sunlight when assessed against the guidance contained in *National Annex NA, Further recommendations and data for daylight provisions in the UK and Channel Islands, of BS EN 17037 2018+A1:2021 Daylight in buildings*.

EXTERNAL AMENITY ASSESSMENT

Outlook & Proximity

External residential amenity space of existing residential properties should not be overlooked to an unreasonable degree from windows serving proposed new development. The proximity of new development to the boundary of the surrounding land uses should not present unreasonable encroachment upon external residential amenity space of neighbouring properties.

Such criteria are usually set out by Local Authorities within their adopted supplementary planning documents which provide useful guidance on the generally accepted spacing standards between new and existing developments. SHDC currently has no such adopted guidance and therefore to assess outlook from the rear garden of The Chestnuts, and to determine if the proximity of the proposed dwelling to Plot One is acceptable, this report has adopted the use of the nationally recognised 12m spacing standard as a threshold and benchmark.

For an acceptable outlook to be maintained from within an existing property, a minimum distance of 12m between habitable rooms of the existing property and the blank wall or gable (containing only secondary accommodation windows) of the proposed development is generally accepted. The same principle can be applied to maintaining acceptable outlook from rear gardens; the external amenity space, such as a patio, is usually located immediately adjacent to the habitable rooms such as a living room or kitchen diner to the rear of a property.

SHDC have regularly cited the 12m spacing standard in decisions throughout the district, but with a lack of definitive guidance within the SELLP, the application of the 12m spacing guidance standard provides an objective tool for assessing such matters whilst applying a degree of consistency.

A benchmark has therefore been taken from across the district derived from the following approved applications.

H09-0602-20: The application included 103 one, two, three and four bed 2 storey traditional residential homes with associated infrastructure at land north of Northons Lane and Oakwood Glade Holbeach.

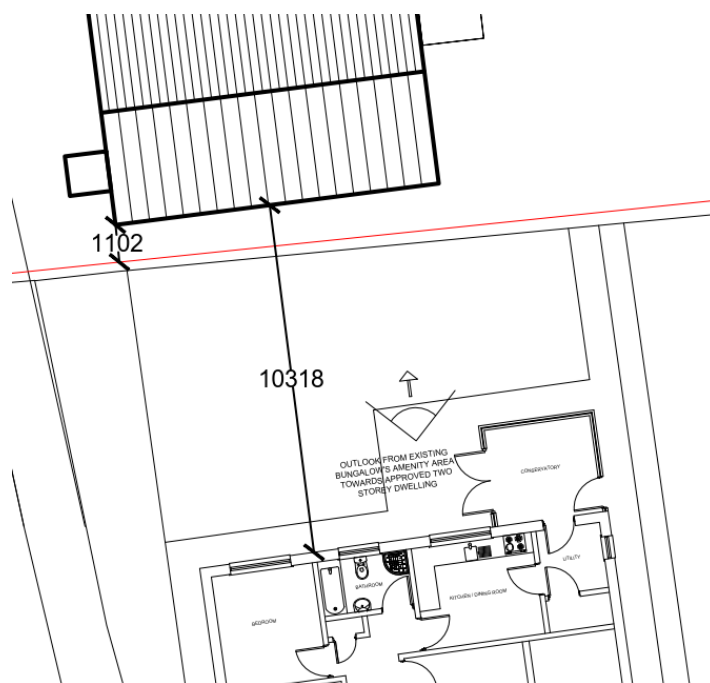


Figure 4: H09-0602-20 approved application including the siting of a two storey dwelling adjacent the external amenity space of existing single storey bungalow.

22 Oakwood Glade is an existing single storey bungalow with a rear garden depth of circa 9m. The external amenity space to the rear of 22 Oakwood Glade includes a patio area immediately adjacent to a conservatory and soft landscaping consisting of lawn and planted flower beds. The proposed two storey dwelling is sited circa 1.1m from the rear boundary and circa 10.3m from windows serving the kitchen diner and bedroom. The glazed wall of the conservatory is circa 7m from the proposed two storey dwelling.

Within the 'Impact of neighbouring residents/land users' section of the Officers Report, the Case Officer makes the following statements:

7.41. The sections through the development demonstrate that although there would be impacts as a result of the land levels on the site that would be needed, and the placing of development, on adjoining occupiers, who currently enjoy an open aspect, there is insufficient evidence to suggest that permission could be withheld for reasons of overlooking, loss of light or loss of sunlight.

7.42 The separation distances within the development and the relationship to existing neighbouring dwellings is considered to be adequate.

7.44 It is considered that the application accords with Policies 2 and 3 of the SELLP in this regard.

H05-0668-20: The application was for the erection of a single house at 37 Fleet Road, Fleet.

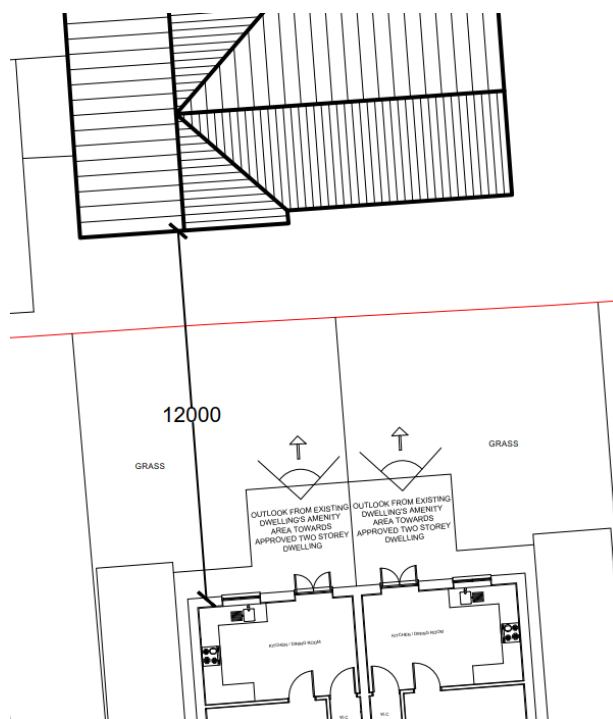


Figure 5: H05-0668-20 approved application including the siting of a new two storey dwelling adjacent to two existing two storey dwellings.

No. 7 & 9 Grimwood Close are a pair of relatively new semi-detached two storey properties with rear gardens extending to a depth of circa 8.7m. The external amenity space to the rear of the two properties includes a patio area immediately adjacent to the kitchen diner and soft landscaping consisting of lawn. The proposed two storey dwelling is sited circa 3m from the rear boundary and circa 12m from windows serving the kitchen diner of No. 7 & 9 Grimwood Close.

Within the 'Residential amenity' section of the Officers Report, the Case Officer makes the following statements:

The proposed development might be acceptable in terms of overbearing effect provided that the separation distance is 12 metres. Should the distance be shorter, the harm upon the amenity of residents nearby might turn out excessively detrimental to the extent which this application should be refused in this regard.

On balance, the development is considered to be acceptable with regards to residential amenity which is one of the key principles of design development management as set out in Policies 2 and 3 of SELLP.

H07-1252-21: The application was for the erection of a single dwelling at land adjacent 22 Station Road Gedney Hill.

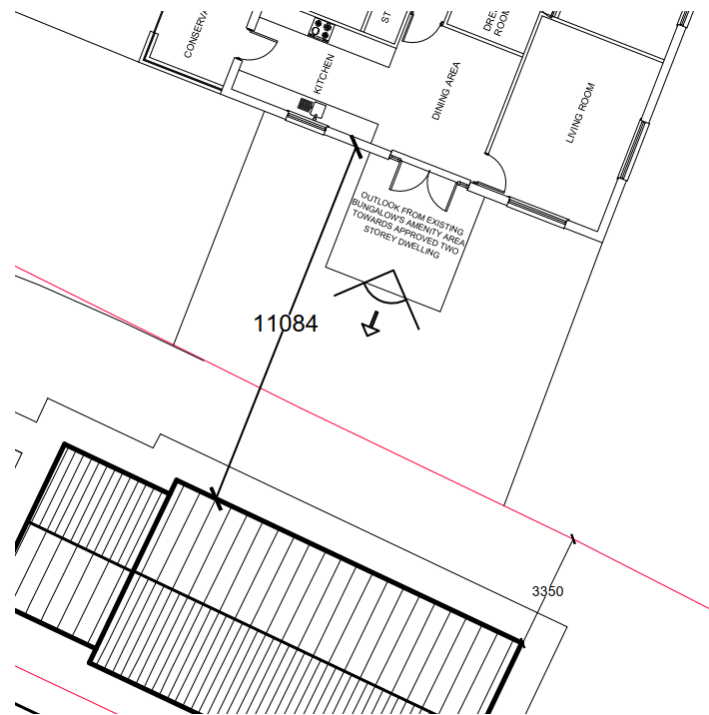


Figure 6: H07-1252-21 approved application including the siting of a two storey dwelling adjacent the external amenity space of existing single storey bungalow.

20 Station Road is an existing single storey bungalow with a south facing amenity area consisting of a patio outside the south facing kitchen, diner and dual aspect living room. The external amenity space faces the application site with a depth of circa 8m. The proposed two storey dwelling is sited south of the single storey bungalow circa 3.3m from the boundary and circa 11m from the windows serving the kitchen, diner and living room.

Within the 'Impact upon Residential Amenity' section of the Officers Report, the Case Officer makes the following statements:

The separation distance between the proposed dwelling and the existing property to the north of the application site (approx. 11m), it is considered that it would not have an adverse overbearing effect on this property. The separation distance between the proposed dwelling and the existing property to the south would be considerably less (2m) but the two side facing windows to the bungalow appear to be obscure glazed and a secondary window, so proximity should not be an issue.

Given the above, it is considered that it has been demonstrated that the proposal would comply with Policies 2 and 3 of the SELLP and paragraph 130 of the NPPF in respect of its provision for residential amenity.

It can be reasoned from these applications, and the decisions made by SHDC, that the occupiers of the existing dwellings greater than 10m to 12m from any proposed two storey building positioned directly opposite the windows of the habitable rooms will not find the new two storey development overbearing. This demonstrates that SHDC consider the 12m spacing standard in determination of applications in which there is a rear elevation exposure.

Two notional models have therefore been built with required garden depths of 10m and 7m using the 12m spacing standards.

Applying a minimum garden depth of 10m, using the 12m spacing standards, this would equate to 100% of the garden being greater than 2m away from the proposed dwelling. Therefore, by reason, users of this 10m section of garden would not find the proposed dwelling overbearing (see Figure 7).

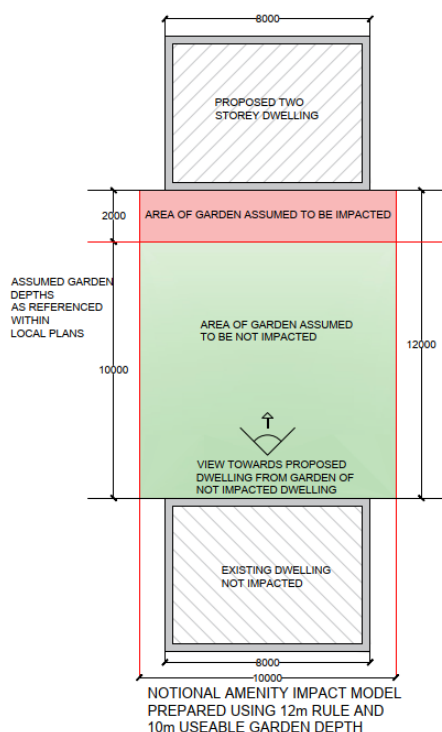


Figure 7: Notional model assuming 10mq garden depth

Applying a minimum garden depth of 7m, using the 12m spacing standards, this would equate to 100% of the garden being greater than 5m away from the proposed dwelling. Therefore, by reason, users of this 7m section of garden would not find the proposed dwelling overbearing (see Figure 8).

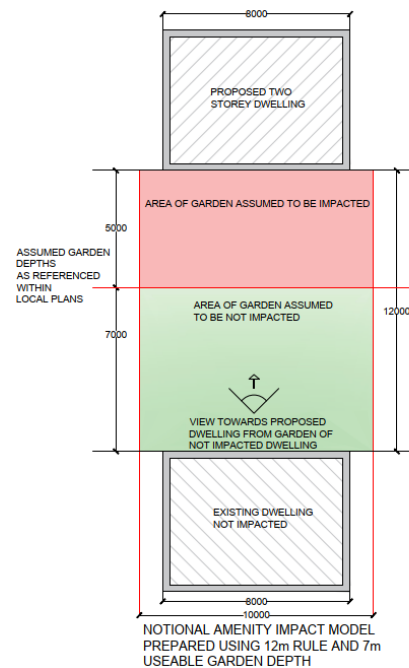


Figure 8: Notional model assuming 7m garden depth

This criteria for 12m separation has therefore been applied to the current application referencing the notional models as a tangible and quantifiable baseline.

For a person standing in the garden to The Chestnuts and facing east, that is directly towards the western elevation of the proposed dwelling to Plot One, the garden depth of The Chestnuts would be approximately 19m. The distance from the western elevation of the proposed dwelling to Plot 1 to the farthest boundary directly behind the observer would therefore be 21.3m

Applying the 12m spacing standard using the notional model with a required garden depth of 10m and 100% of the garden being a minimum of 2m from the proposed dwelling, interpolating this to The Chestnuts the proposed layout equates to an improvement of 190% in relation to amenity impact when compared to the notional model. See Figure 9 below.

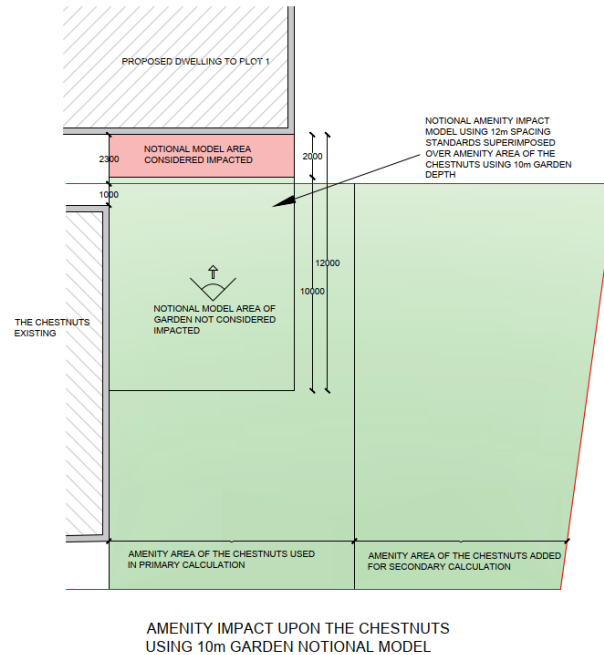


Figure 9: Application of 12m spacing standards to The Chestnuts external amenity space adopting 10m garden depth

Applying the 12m spacing standards using the notional model with a required garden depth of 7m and 100% of the garden being a minimum of 5m from the proposed dwelling, interpolating this to The Chestnuts the proposed layout equates to an improvement of 232% in relation to amenity impact when compared to the notional model. See Figure 10.

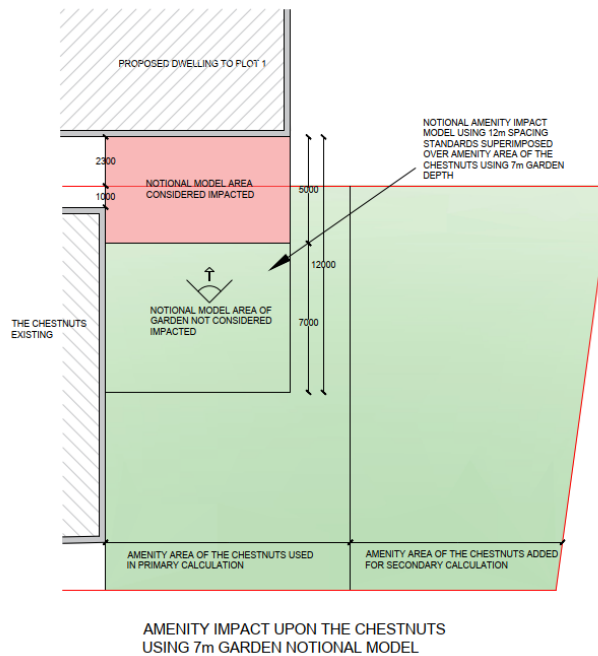


Figure 10 Application of 12m spacing standards to The Chestnuts external amenity space adopting 7m garden depth

It should be noted that in the preparation of these calculations the distance to the boundary running parallel to the southern elevation of The Chestnuts is assumed to extend out from the southern elevation by approximately 11.5m which reflects the amenity area most in use. If one factors in the remaining approximately 200m² of amenity area available to The Chestnuts, then the improvements in amenity impact when related to the notional models increase to 390% and 432% respectively. This is indicated as on Figures 9 & 10 as secondary calculations. This applies a degree of quantitative objectivity to that which is subjective by demonstrating in mathematical terms using a notional model how the magnitude of perceived overbearing by an observer of a two storey building is relative not only to the observer's distance from that building but also to the confines and dimensional constraints of the space from which the observation occurs.

Using nationally recognised recommended building separation distances it can clearly be seen that the impact of the proposed dwelling to Plot One upon users of the amenity area to The Chestnuts will be significantly less than that experienced by users of the residential amenity area when applying the nationally recognised 12m separation rule, and the three aforementioned approved applications. Noting that these are rear elevation to side elevation relationships which is far more impactful than a side to side relationship.

Reduced separation distances are generally accepted across the district when proposed developments have a side to side relationship with existing properties as can be seen in the following example.

H01-0576-20: The application was for the erection of a single dwelling at Backgate Cowbit.

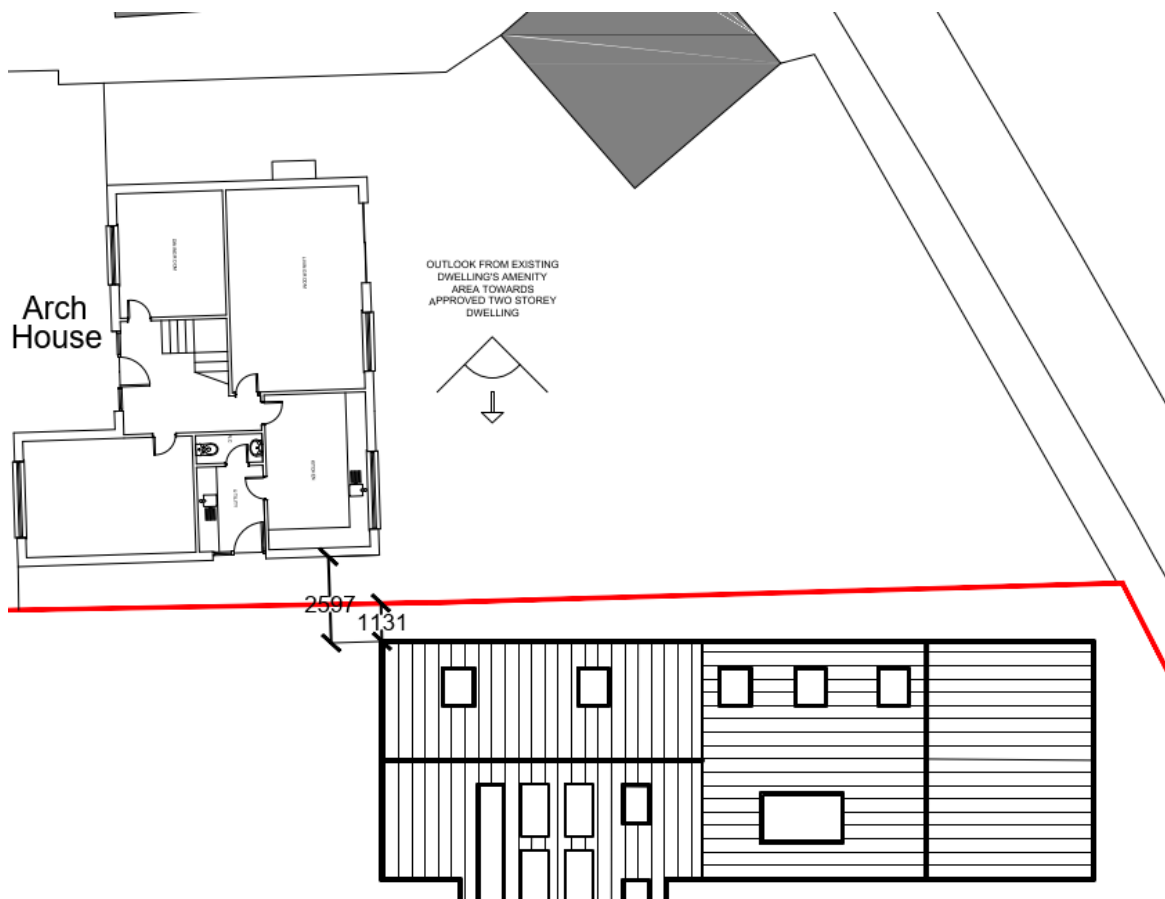


Figure 11: H01-0576-20 approved application including the siting of a two storey dwelling adjacent the external amenity space of existing two storey house.

Arch House is an existing two storey house with external amenity space consisting of a patio area outside of the east facing kitchen and lounge with the remainder of the garden being set to landscaping. The external amenity currently enjoys an open aspect outlook to the east, and to the south towards the approved application site. The garden depth running parallel to the application site is approximately 21m with a width of approximately 16m.

The approved two storey dwelling is positioned due south of Arch House's garden with the footprint of the proposed dwelling extending the full depth of the garden. The approved dwelling reduces from two storey to single storey approximately half way down the garden. The approved dwelling is positioned approximately 1m from the boundary and approximately 2.5m from the neighbouring Arch House.

Within the 'Residential Amenity' section of the Officers Report, the Case Officer makes the following statements:

This dwelling would have the greatest impact on the host dwelling of No.6 and to the dwelling to the north, Arch House.

With regard to the impact on Arch House to the north, the design has been amended since the previous decision, to provide a mix of two and single storey elements, to break up the bulk of the dwelling. In addition the roof slope mitigates against a continuous bulk along the boundary

Looking at the visual impact of the development on Arch House, which is a detached dwelling, the development would have some visual effect, presenting a blank wall to the neighbouring dwelling, however given the width and positioning of Arch House, it is not considered that the impact would be so great that a refusal of consent should be recommended.

The two storey element would be adjacent to the rear garden of Arch House, but on balance, given the solar studies that have been submitted and the location of the development and that of the adjacent neighbouring dwelling, it is not considered that a refusal of this development on the grounds of loss of daylight and sunlight could be sustained.

It is considered on balance that the proposal accords with Policies 2 and 3 of the SELLP. For all these reasons it is also considered that the development would provide and ensure an acceptable level of amenity for current and future occupiers.

Therefore, applying a degree of consistency it can be reasoned that the proposed Plot One for the development under consideration will not be overbearing to the users of the rear garden to The Chestnuts. Applying accepted criteria defined as a material consideration it can be concluded using professional integrity, honesty, and consistency that the proposed development to Plot One will not have an adverse material impact upon the external amenity to The Chestnuts and therefore accords with Policies 2 & 3 of the SELLP.

Sunlight & Overshadowing

As per the internal amenity assessment section of this report discussing daylight and sunlight, the BRE 209 also provides the methodology and criteria for assessing acceptable levels of sunlight and overshadowing to external amenity spaces to neighbouring dwellings. The Building Research Establishment guidance 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' (BRE 209) sets out the nationally accepted methodologies and criteria for assessing such matters.

A full Daylight, Sunlight & Overshadowing Study has been completed in support of the application. The accompanying 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.

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 21 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.

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. These reveal that under the existing conditions 43.11% of the rear garden to The Chestnuts is able to receive seven hours of sunlight, whilst with the development implemented 65.16% of the rear garden to The Chestnuts is able to receive seven hours of sunlight.

The results of the Sun On The Ground computer analysis undertaken on the amenity area (garden) to the rear of the existing neighbouring property (The Chestnuts) which is west of the proposed development and proposed dwelling to Plot One, are presented in Table 9 below.

Project: Proposed Development at Land known as 47 Low Lane Holbeach Lincs 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	379.200	91.23	92.73	1.01	Yes
21/03	408.93	3	371.022	376.133	90.73	91.98	1.01	Yes
21/03	408.93	4	365.869	372.044	89.47	90.98	1.01	Yes
21/03	408.93	5	324.894	362.802	79.45	88.72	1.11	Yes
21/03	408.93	6	255.213	318.720	62.41	77.94	1.24	Yes
21/03	408.93	7	176.289	266.458	43.11	65.16	1.51	Yes

Table 15: Sun On The Ground results

To summarise, the outputs of the computer analysis contained in the Table 9 above conclude that 91.23% of the amenity area will receive at least two hours of sunlight on the 21 March as existing, and 92.73% with the development implemented, resulting in a proposed existing ratio of 1.01. This far exceeds the BRE 209 recommended values of two hours of sunlight on the 21 March to 50% of the amenity area and a proposed existing ratio of 0.8.

Furthermore, there will be a material nett gain in the area of the rear garden of The Chestnuts able to receive **2** **hours** direct sunlight (on the 21 March) with the value increasing from 43.11% pre-development to 65.16% post-development. External amenity to The Chestnuts is therefore not only protected, but in terms of available sunlight, there will be an increase to the area of rear garden able to receive direct sunlight.

SUMMARY & CONCLUSION

This report has considered the effects of the proposed application on the residential amenity and living conditions of the occupants to the nearest adjoining property known as The Chestnuts, Low Lane, Holbeach PE12 7PW. The report is an objective assessment of the development using supporting material, British Standards, nationally and locally accepted guidance and measurable evidence to reach a conclusion. Where there is a lack of local supplementary planning guidance from SHDC, nationally accepted criteria have been applied for consistency.

‘Amenity’ is defined within the SELLP as a *“positive element or elements that contribute to the overall character or enjoyment of an area”*. Residential amenity is not defined within the SELLP but is generally considered to include the elements that are particularly relevant to the persons living conditions. This report has assessed the internal and external residential amenity of The Chestnuts both pre-development and post-development to reach a clear, well-reasoned, objective conclusion as to whether acceptable living standards are maintained to the neighbour’s property.

The internal amenity was assessed against outlook, daylight & sunlight availability. The findings of the report conclude there is no change to the established and existing outlook of the property when assessed against BS EN 17037 due to the horizontal sight angles remaining unaffected. Any visibility of the proposed development from habitable rooms will be oblique and is further mitigated by the fact that the ‘most used room’, being the first floor Family/Games Room benefits from a dual aspect outlook.

In terms of daylight and sunlight availability to the habitable rooms within The Chestnuts, the proposed development will have no adverse material impact with maintained values far exceeding those recommended in BRE 209. There will be a negligible increase to the Vertical Sky Component (VSC) and Average Daylight Factor (ADF) values post-development, and a negligible decrease to the Annual Probable Sunlight Hours (APSH). Daylight Distribution (DD) or No Sky Line (NSL) values remain neutral with the development having no impact on the established existing site values.

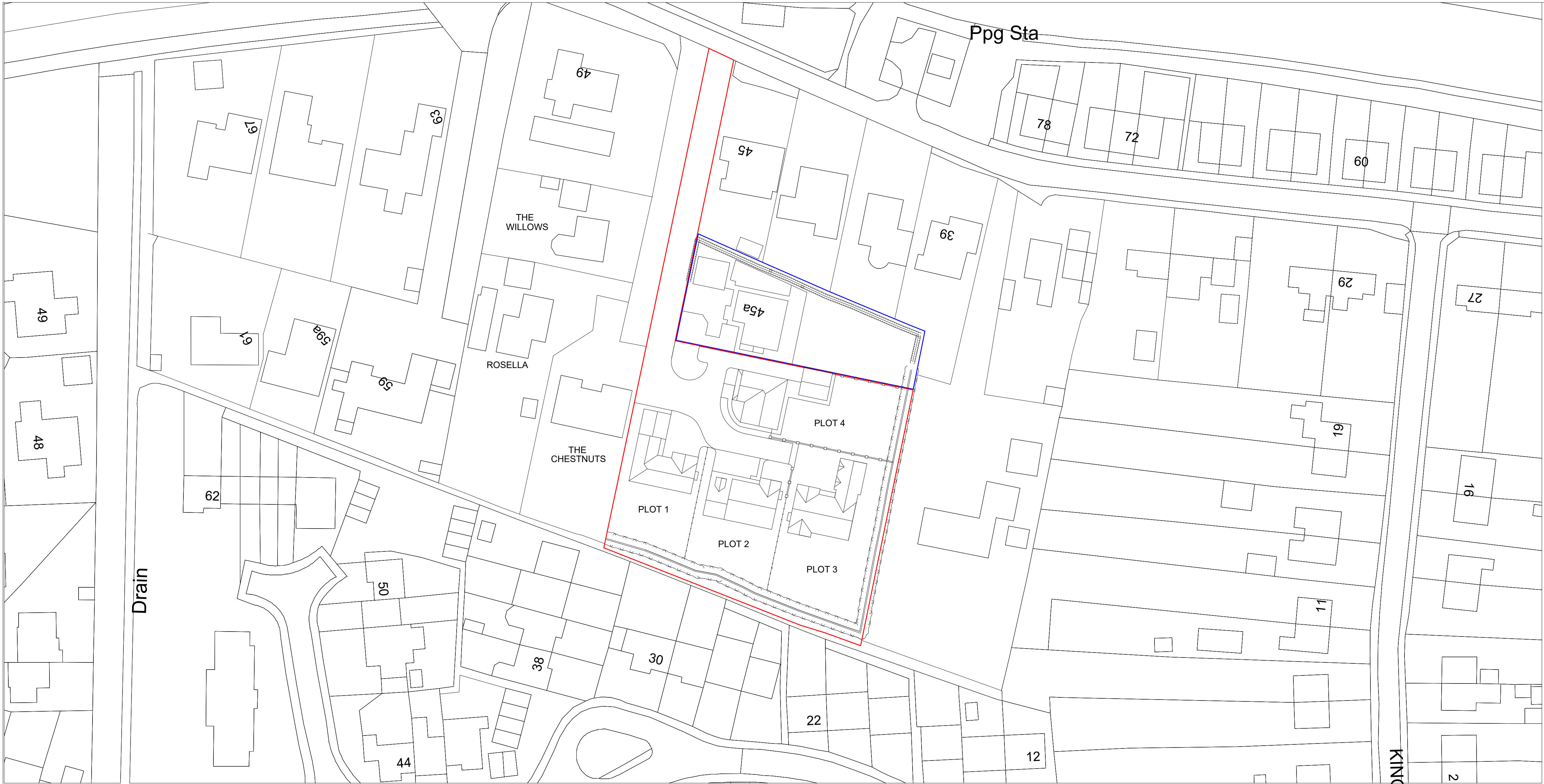
With regards to the Spatial Daylight Autonomy the computer simulations confirm that there is an increase, post development of 25% in the area of the working plane which is able to receive 300 lux for 60% of the occupied hours to the Study/Storeroom and an increase of 19.5% to the Family/Games Room. The value of 300 lux exceeds the minimum daylight provisions of 150 lux laid out in Table NA.1 of BS EN 17037 2018 +A1:2021 Daylight in buildings by 100%.

Externally, there will be some change to the view from the rear garden of The Chestnuts but given that the proposed development is positioned in a way that affords greater separation distances than the nationally applied 12m spacing standards, it is not considered to have such an impact on the external amenity of The Chestnuts that it affects the external living conditions or enjoyment of the garden.

The external amenity space of The Chestnuts will receive a nett gain in the area of the rear garden of able to receive direct sunlight and therefore no unacceptable overshadowing can occur. External amenity is therefore not only protected, but in terms of available sunlight, there will be an increase to the external amenity able to receive direct sunlight.

It is therefore concluded that the proposed development to Plot One cannot be considered to have a significant adverse material impact upon the occupants of The Chestnuts in terms of outlook, sunlight, daylight, overshadowing and overbearing with no significant visual intrusion occurring or reduction in levels of existing amenity. Acceptable standards of amenity are evidently maintained, and thus internal and external living conditions are unaffected.

APPENDIX A



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)

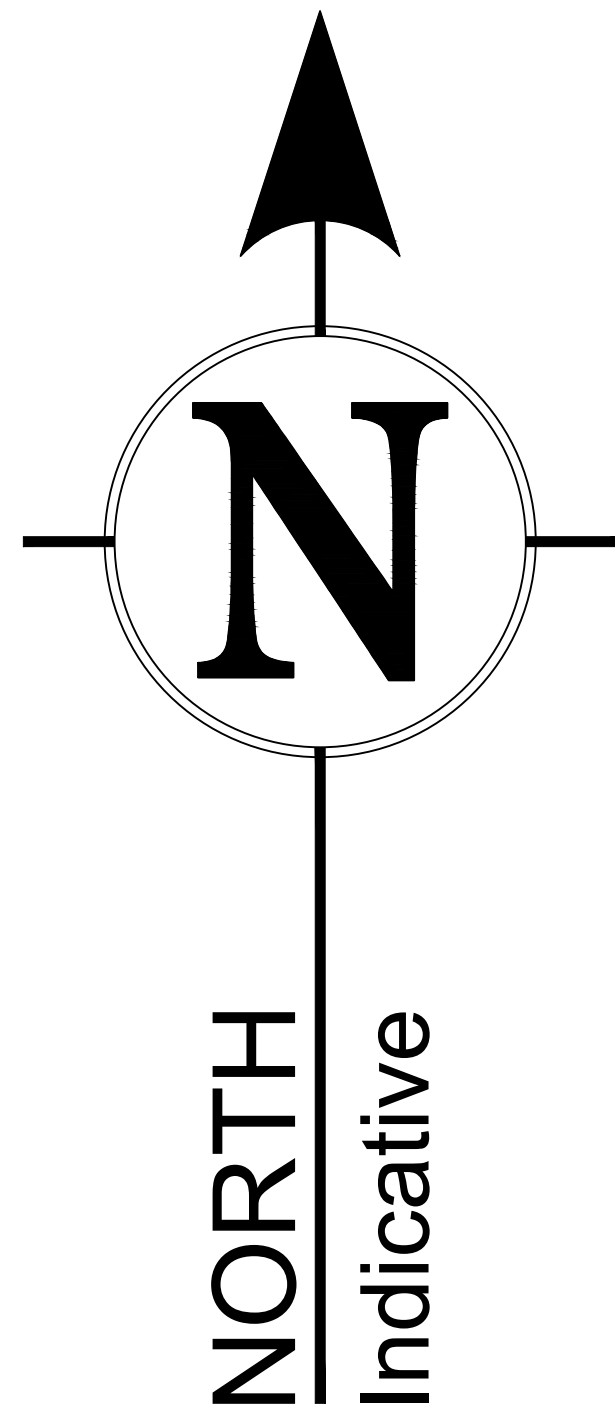


PROPOSED SITE PLAN (1:200)



LEGEND

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



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.

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A	Revised Plot 1	26/05/2022	DR
REV	AMENDMENTS	DATE	BY

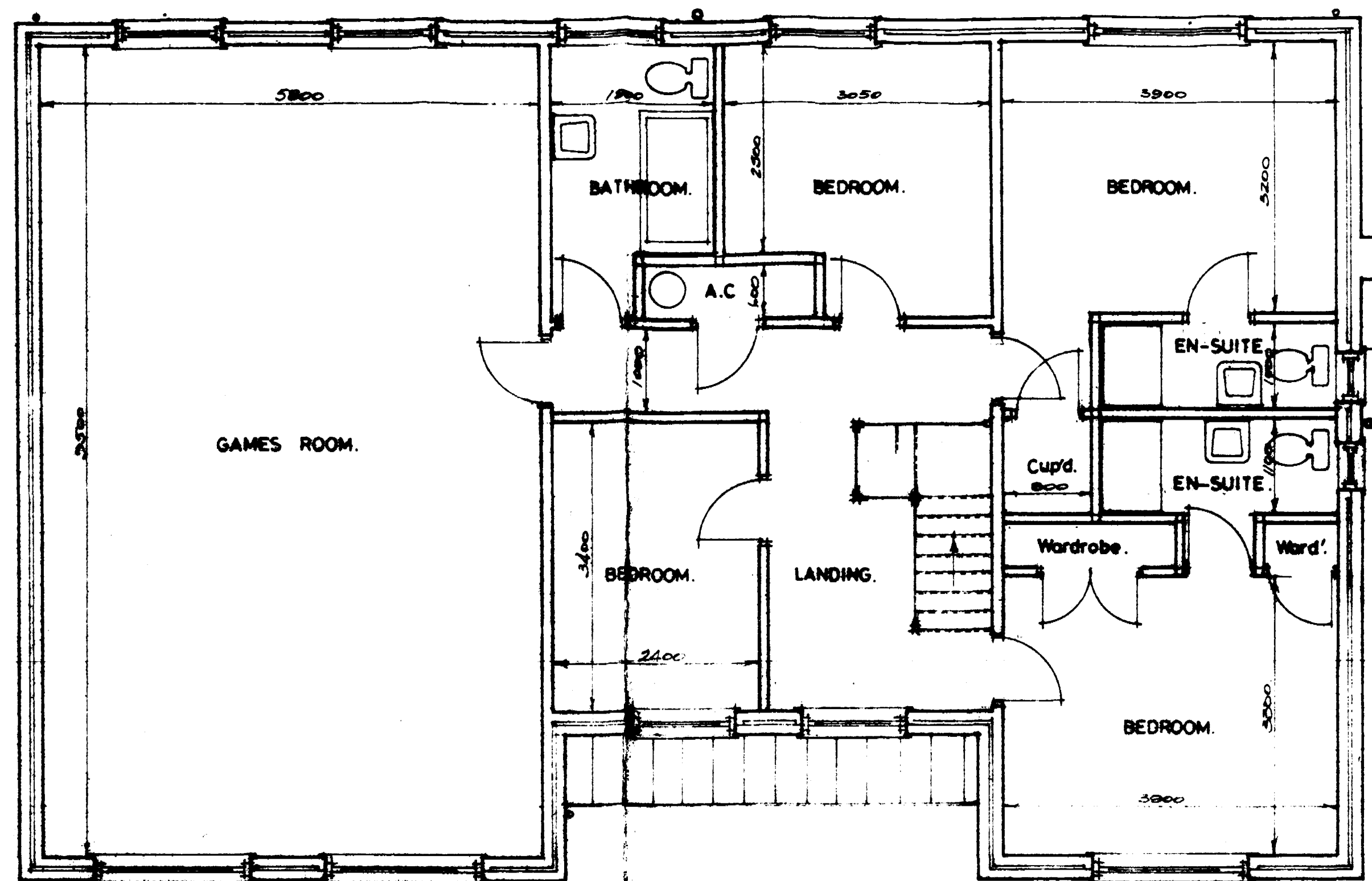
Project:
DEMOLITION OF EXISTING BUNGALOW AND ERECTION OF 4NO. DETACHED DWELLINGS AND 1NO. DETACHED GARAGE.
LAND KNOWN AS 47 LOW LANE
HOLBEACH
LINCOLNSHIRE
PE12 7PW

Applicant:
MR D J RULEWSKI & MR A T RULEWSKI

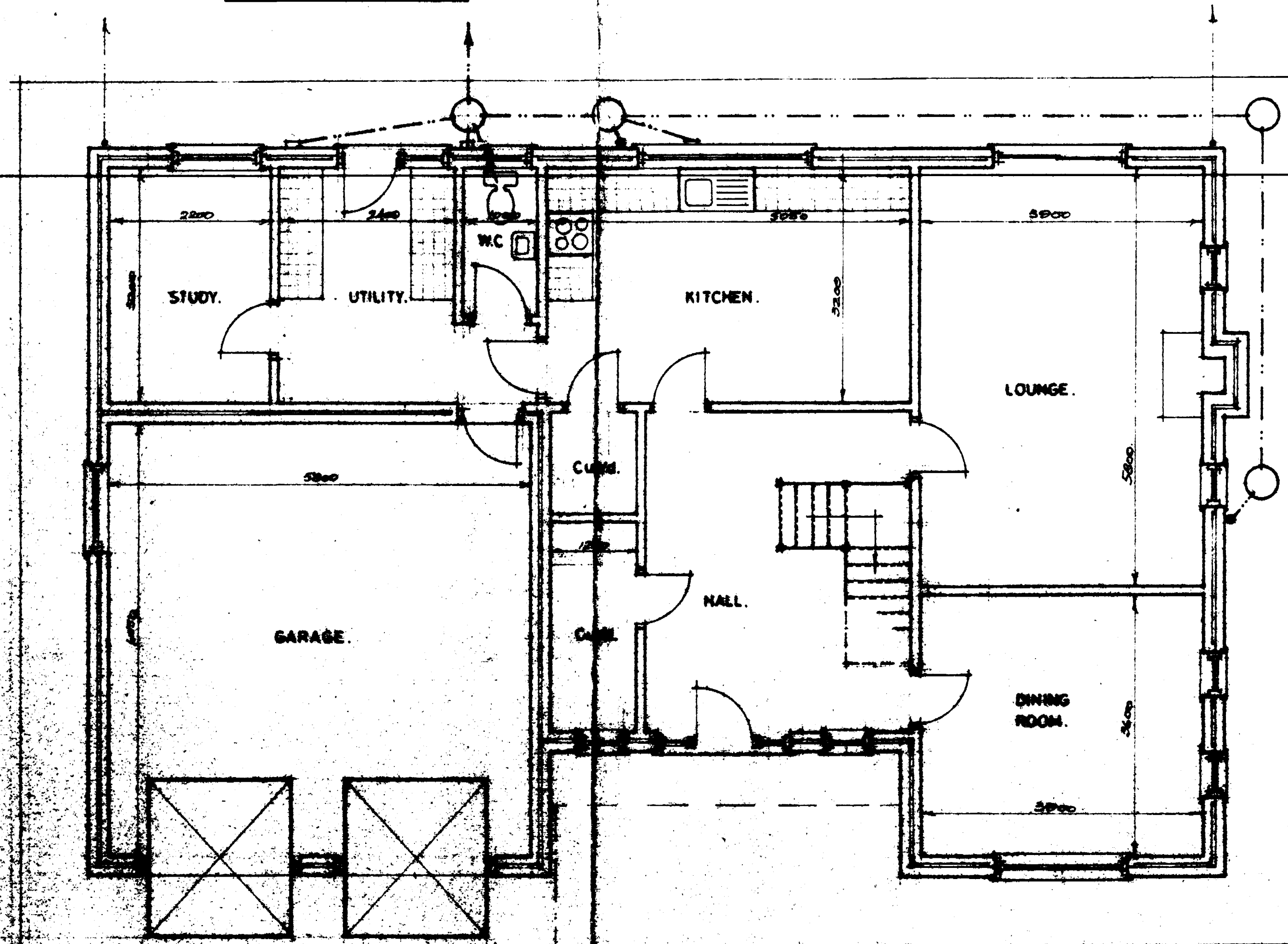
Drawing:
BLOCK & SITE PLANS

Sheet Size: A0	Project No: -
Drawing No: 001	Revision: A
Date: 26 May 2022	Drawn: DR
Scale: 1:100, 1:200 & 1:500	Checked: RR Approved: DR

APPENDIX B



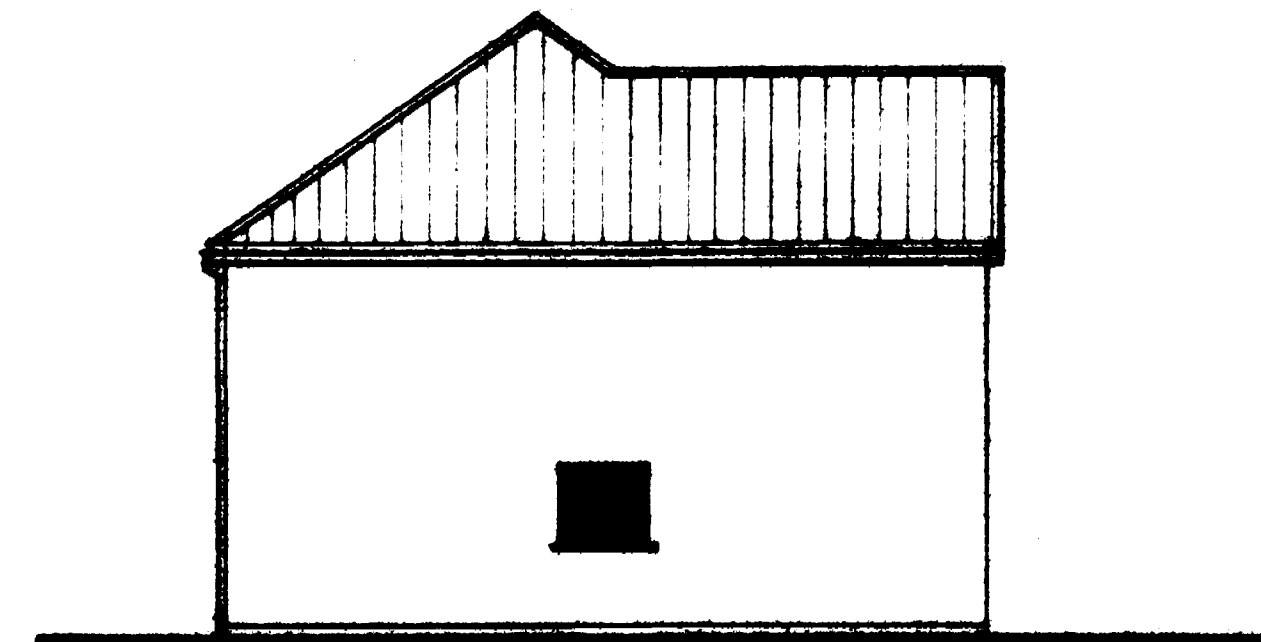
FIRST FLOOR PLAN



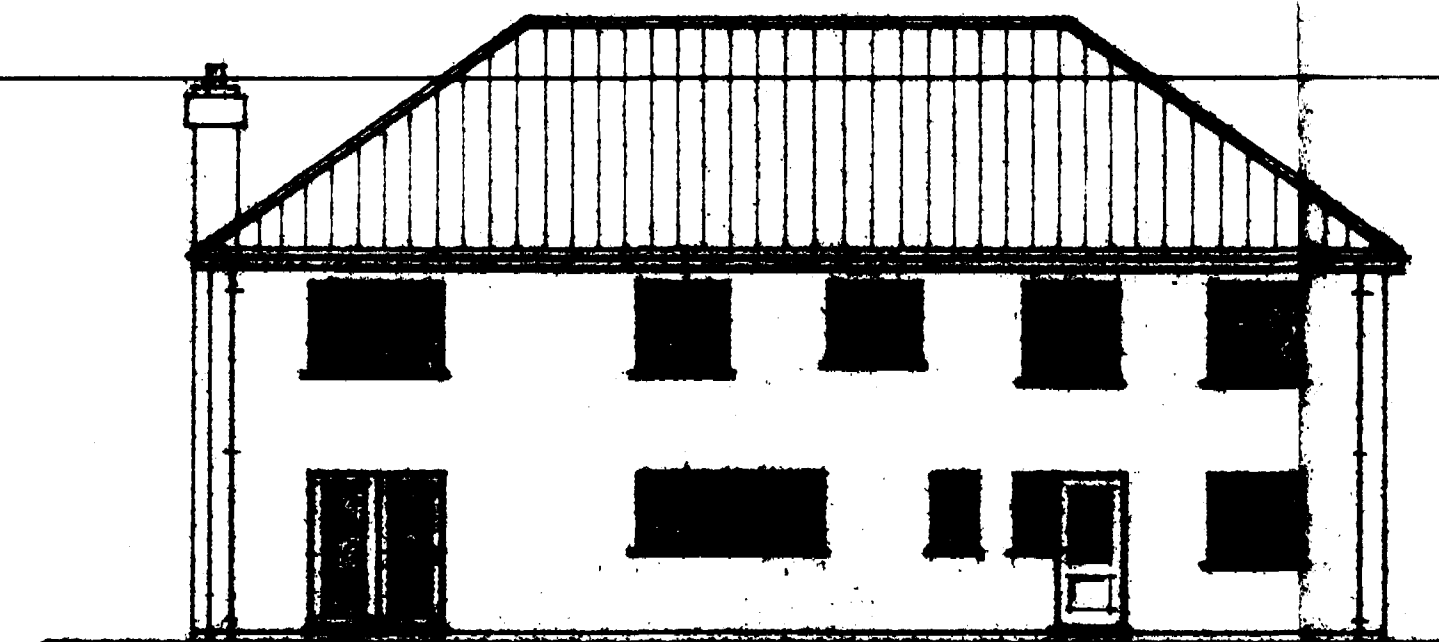
GROUND FLOOR PLAN



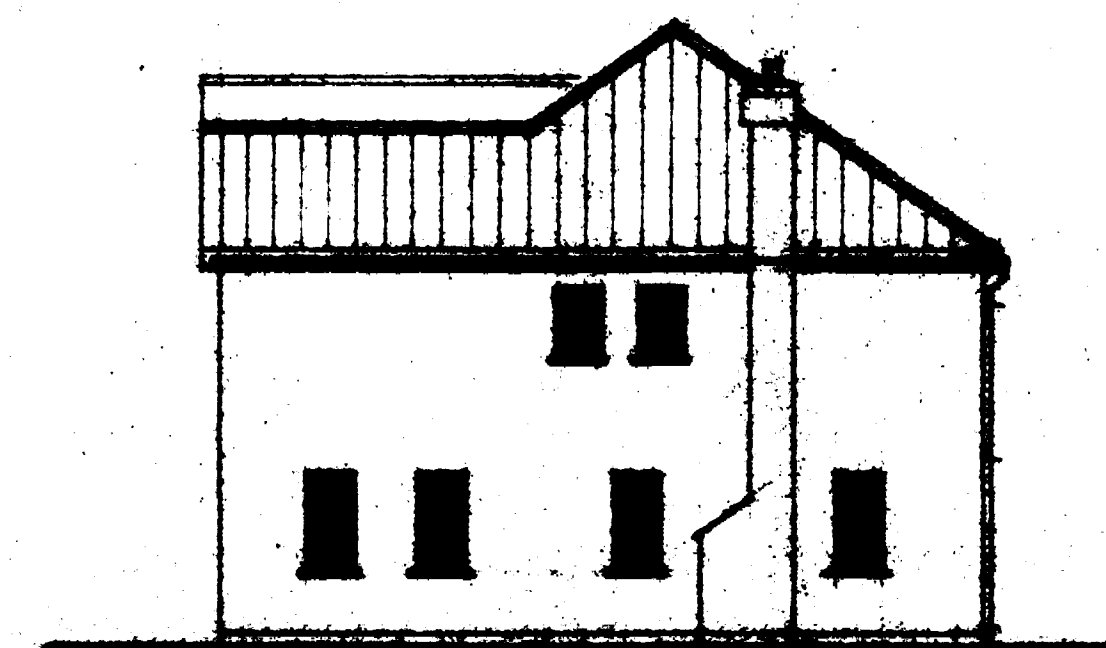
FRONT



SIDE



REAR



SIDE

3, MAY 1991
REF...490191

G. R. MERCHANT
I. ENG. ARCHT. P. A. W. O.
ARCHITECTURAL, STRUCTURAL
& LAND DRAINAGE CONSULTANT
TEL: HOLBEACH (0408) 378883.

PROJECT:
4 BEDROOM HOUSE & GARAGE
OFF LOW LANE.
HOLBEACH.

CLIENT:
M. BRADLEY.
25 OLD MAIN ROAD.
FEDDYKE.
BOSTON. Lincs.

SCALE: 1/50 & 1/100. DATE: MAY 1991.

DRAWING No.: MB. 1.
REVISIONS: