



549 Uxbridge Road

Daylight and Sunlight Assessment Report
20 February 2020



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EXECUTIVE SUMMARY

MACH have carried out a daylight impact assessment at the proposed 549 Uxbridge Road. The assessment has been carried out as per the methodology provided within the BRE document *"BR209 – Site Layout Planning for Sunlight and Daylight: A Guide to Good Practice (2011)"*.

To carry out the assessment, two daylight models have been carried out, as follows;

1. Assessment of existing daylight levels at nearby properties
2. Impact of the proposed development against the existing adjacent buildings.

The assessment has been carried out as per drawings provided by Raminder Purewal. The geometry and window locations at the adjacent existing developments have been assumed based on google maps along with drawings obtained from Hillingdon Planning Applications.

Note that as the assessment is based on number of assumptions for the existing buildings, this report is to demonstrate the potential impact of the site, rather than provide a definitive assessment.

From the assessment, the following has been determined;

- The proposed development is predicted to have a minor impact on all windows at the adjacent 551, 553, 555, and 557 Uxbridge Road Developments.
- The proposed development is likely to reduce daylight levels at only 4 openings at the adjacent 547 Uxbridge Road. Where 2 of those openings open towards non-sensitive spaces. Hence only 2 openings are seen to be affected by the proposed development.
- From the proposed elevations, it is predicted that BRE guidelines will not be achieved in 2 out of the 83 assessed openings which is only 2%. Not to mention that, one of these openings is a door and the other is a high-level window. Hence the impact of the proposed development on the adjacent dwellings is seen to be minimal.



Figure 0.1: Plan of the Assessed Existing Development and the Adjacent Existing Developments

1.0 INTRODUCTION

This report provides a daylight impact assessment in relation to the proposed 549 Uxbridge Road.

This document details the methodology and results of the daylight impact assessments, which have been carried out using 3D daylight modelling software.

2.0 PROPOSED DEVELOPMENT

It is understood that the proposed design will include the demolition of the existing 549 Uxbridge Road property and to build a 3 floors development with the inclusion of 5 residential flats. The figures below and opposite represent the plans and elevations of the existing and proposed development.

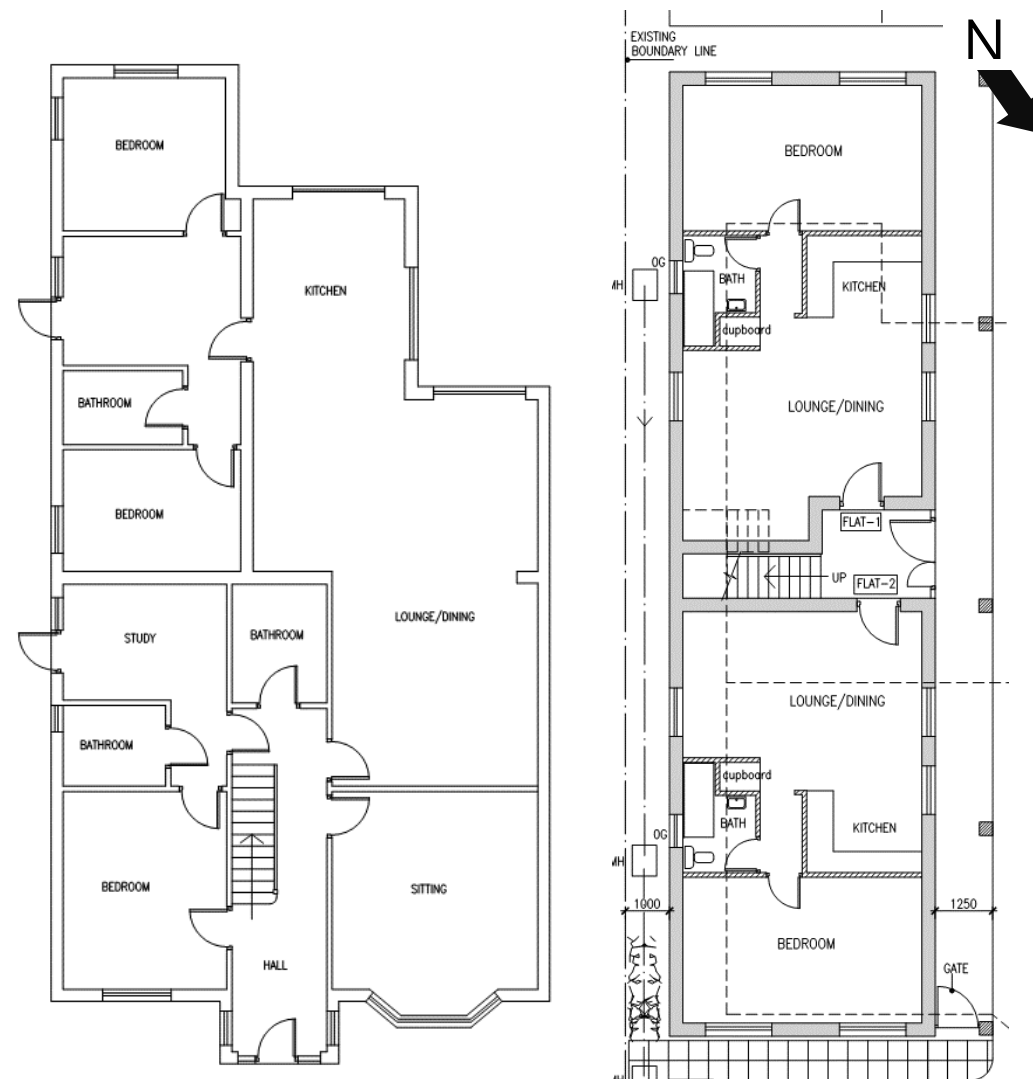


Figure 2.1: The Existing and Proposed Ground Floor Plan

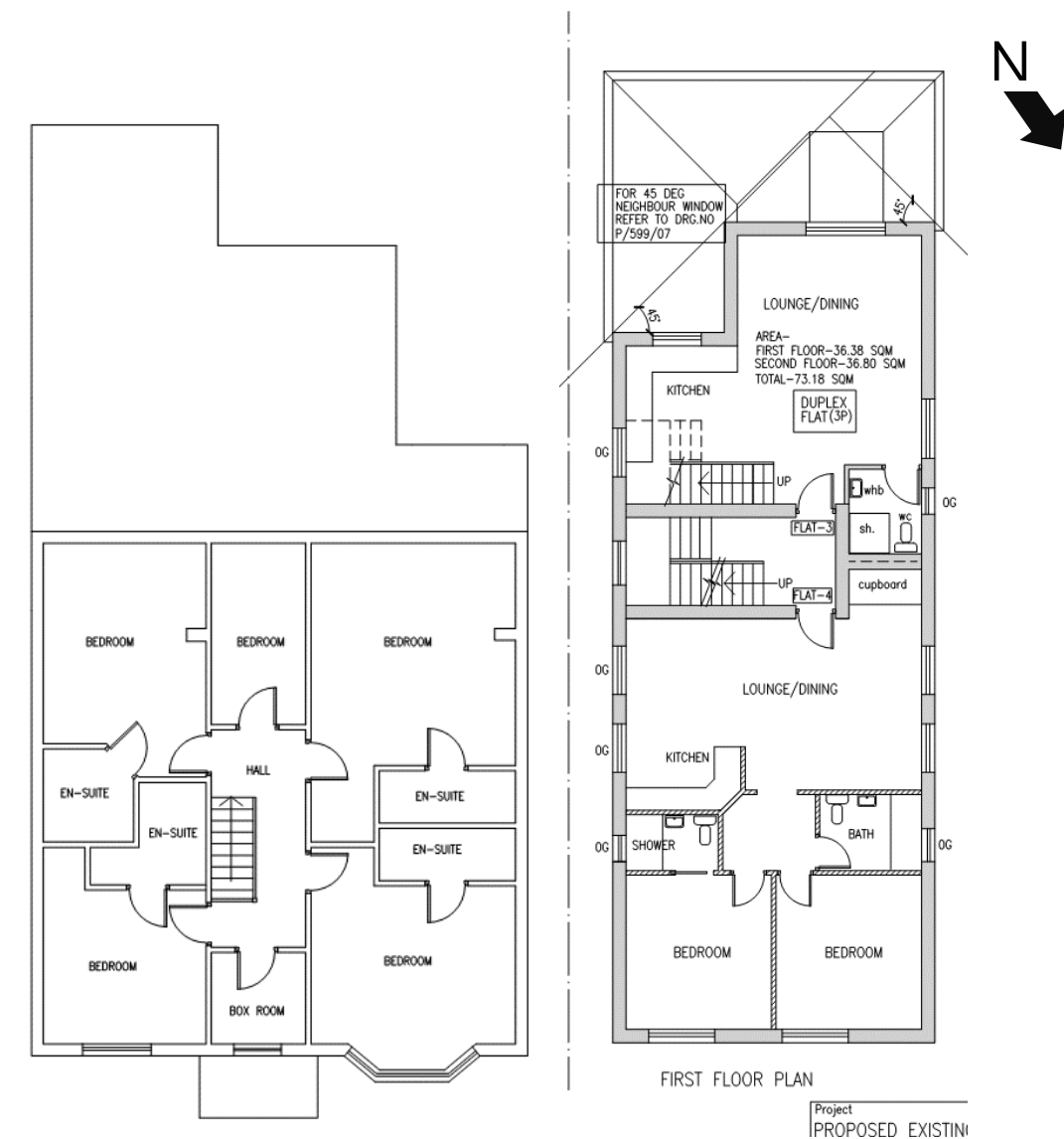


Figure 2.2: The Existing and Proposed First Floor Plan

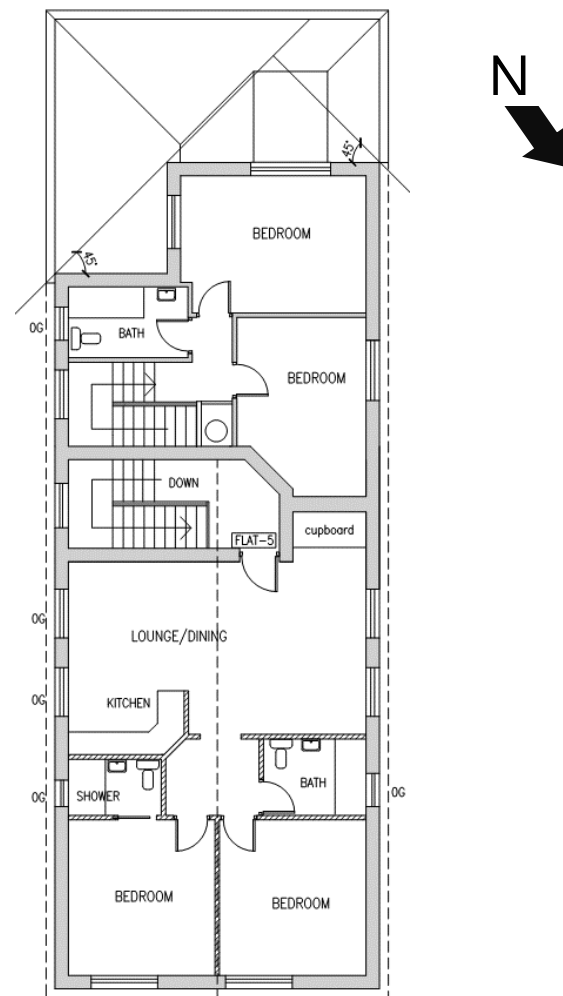


Figure 2.3: The Proposed Second Floor Plan

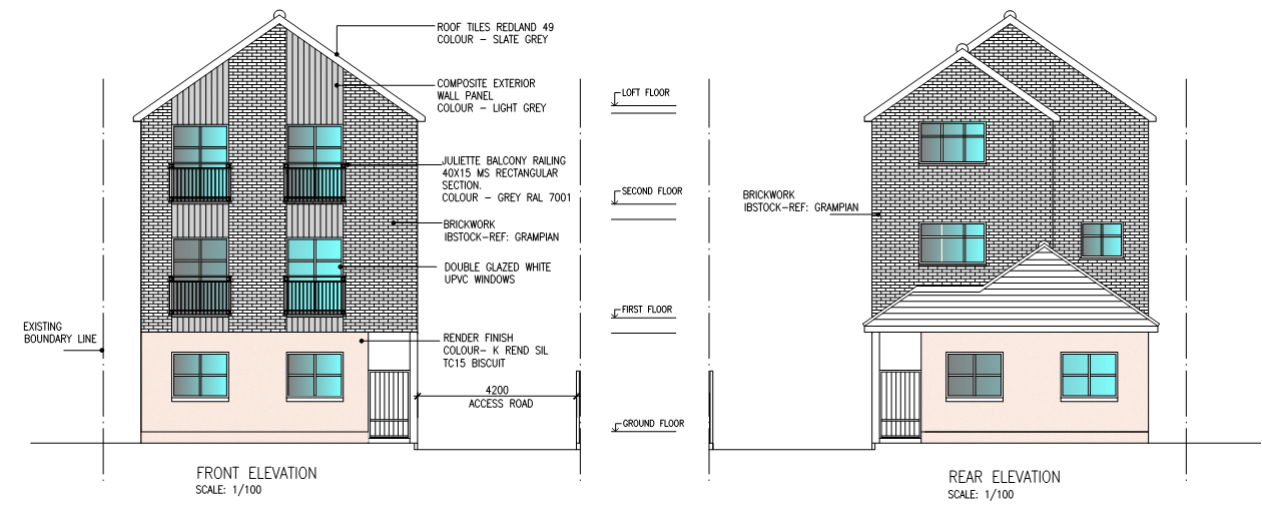


Figure 2.4: The Front and Back Elevations of the Proposed Development

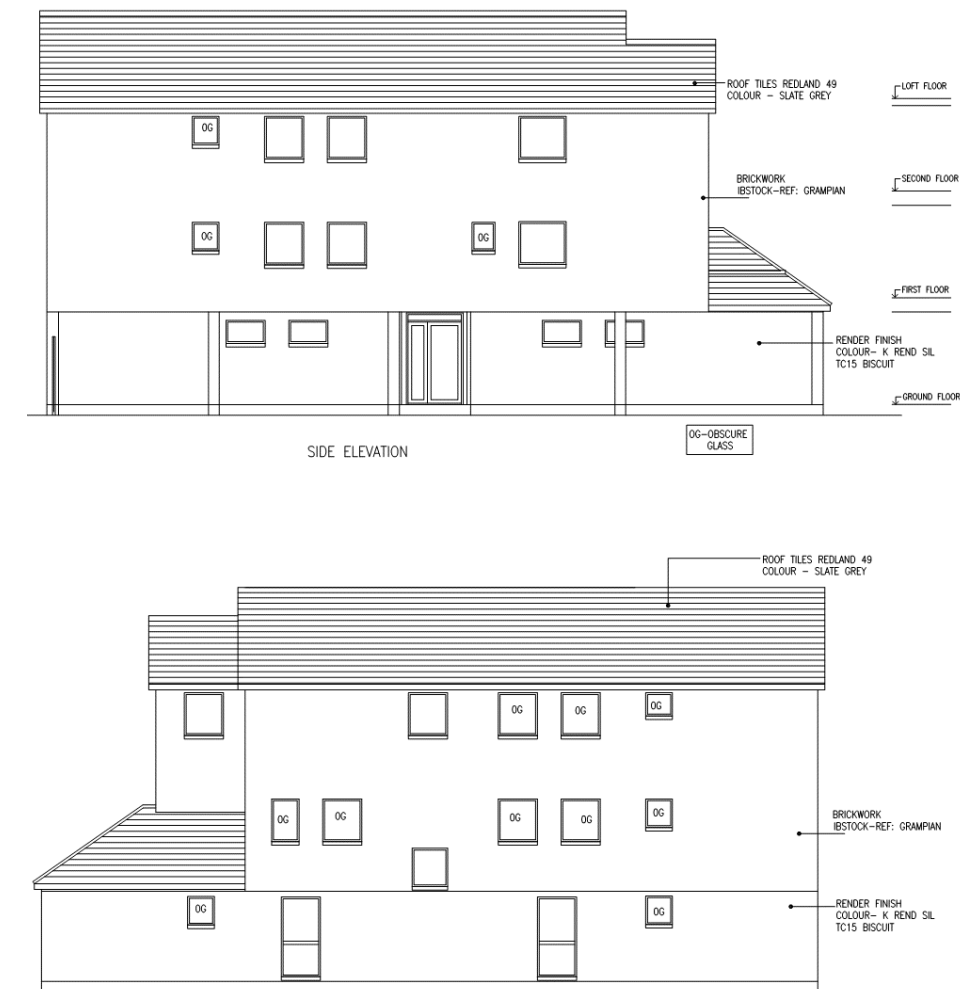


Figure 2.5: The Side Elevations of the Proposed Development

3.0 ASSESSMENT METHODOLOGY

3.1 BRE BR209 – Site Layout Planning for Sunlight and Daylight: A Guide to Good Practice (2011)

3.1.1 Impact of Proposed Development on Existing Buildings

Two methods are seen to be the most robust method of determining whether daylight levels will be significantly impacted by a proposed development. The methods are based around the Vertical Sky Component (VSC) assessment methodology.

Vertical Sky Component Method

The VSC is a unit of measurement that represents the amount of available daylight from the sky, received at a particular window. It is measured on the outside face of the window. This unit is expressed as a percentage as it is the ratio between the amount of sky visible at the given reference point compared to the amount of light that would be available from a totally unobstructed hemisphere of sky. The maximum percentage value for a window with a completely unobstructed view through 90° in every direction is 40%.

In order to maintain good levels of daylight the BRE guidance recommend that the VSC of a window should be 27% or greater.

Where this level is not achieved, an additional assessment called the Comparison Method should be carried out.

Comparison Method

The comparison test considers the VSC results of the baseline condition and the VSC results of the Development in place.

BR209 states that where the predicted VSC at nearby dwellings is less than 27%, then a comparison with the existing situation should be analysed. If the VSC is less than 80% of its former value, occupants of the existing building will notice a reduction in the amount of daylight.

3.1.2 Sunlight Impact of Proposed Development on Existing Buildings

BR209 states that sunlight impact on nearby properties should be assessed if there is a living room with a window that faces 90° of due south. Where this is the case, a sunlight impact may occur if the centre of the window;

- Receives less than 25% of annual probable sunlight hours (APSH), or less than 5% of annual probable sunlight hours between 21 September and 21 March; and
- Receives less than 0.8 times its former sunlight hours during either period; and
- Has a reduction in sunlight over the whole year greater than 4% of annual probable sunlight hours.

3.1.3 Impact of Proposed Development on Adjoining Sites

BR209 provides advice on new developments next to adjoining development sites, so to ensure that any new building does not restrict the level of good quality available to the adjacent site.

Assessment methodology is provided for the 43° rule, which can be defined as the following;

- (a) *No new building, measured in a vertical section perpendicular to the boundary, from a point 1.6m above ground level, subtends an angle of more than 43° to the horizontal.*

BR209 states that the 43° rule should not be applied rigidly, as the level of impact is also determined by the width of the adjacent building, which the 43° rule does not take into account. Therefore, an additional assessment methodology is provided in BR209, which can also be applied to determine the level of daylight impact;

- (b) *If (a) is not satisfied, then all points 1.6m above the boundary line are within 4m (measured along the boundary) of a point which has a VSC (looking towards the new building) of 17% or more.*

3.1.4 Environmental Impact Assessment Methodology

Within Appendix H of the BRE Guide, advice is provided in how the guidelines can be applied as part of an Environmental Impact Assessment methodology, which is summarised in the table below.

Impact Category	Description
Negligible	• Loss of light is well within the guidelines, or • Only a small number of windows or limited area of open space are affected
Minor Adverse Impact	• The loss of light is only marginally outside the guidelines • An affected room has other sources of skylight or sunlight • The affected building or open space only has a low level requirement for skylight or sunlight • There are particular reasons why an alternative, less stringent, guideline should be applied
Major Adverse Impact	• A large number of windows or large area of open space are affected • The loss of light is substantially outside the guidelines • All the windows in a particular property are affected • The affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, e.g. a living room in a dwelling or a children's playground

Table 3.1: Impact categories for daylight sunlight impacts

4.0 NEAREST SENSITIVE PROPERTIES

The sensitive dwellings adjacent to the proposed development have been identified as the following;

1. 547 Uxbridge Road
2. 551 Uxbridge Road
3. 553 Uxbridge Road
4. 555 & 557 Uxbridge Road

The buildings identified above are seen to be the closest and thereby can be seen as a worst-case assessment in regard to daylight impact.

The site map below outlines the location of the existing development (in red) and the adjacent developments (in yellow).



Figure 4.1: Shows the Existing development and adjacent Dwellings

It is understood that planning application has been approved for some modifications to the adjacent 551 and 553 Uxbridge Road. To ensure that any daylight impact does not occur within these properties, the approved modifications for the two dwellings have been included within the assessment. The figure below shows the latest drawings obtained from the planning portal.



Figure 4.2: Shows Elevations of the Adjacent 551 Uxbridge Road (to the left) and 553 Uxbridge Road (to the right)

It is also important to note that windows in the adjacent 547 Uxbridge Road which are directly facing the proposed development have been based on the latest planning drawings. The figure below shows the latest drawings obtained from the planning portal.

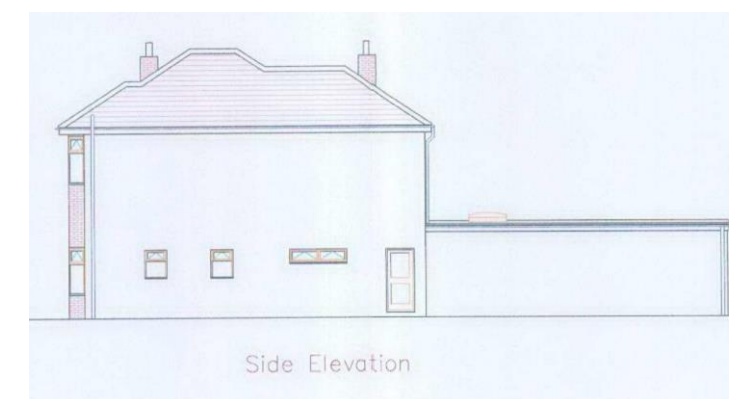


Figure 4.3: Shows Side Elevation of the Adjacent 547 Uxbridge Road

Note that clear photos could not be achieved for all the assessed dwellings as they are private residential dwellings, however windows have been assessed to a similar arrangement as shown in next pages.

4.1 Window Locations

For the purpose of assessment, windows on residential dwellings have been marked and would be referred later by the names given to windows. Some elevations of the residential dwellings have been omitted from the analysis as it is determined in terms of VSC the new development will have no effect on the windows located on these facades.

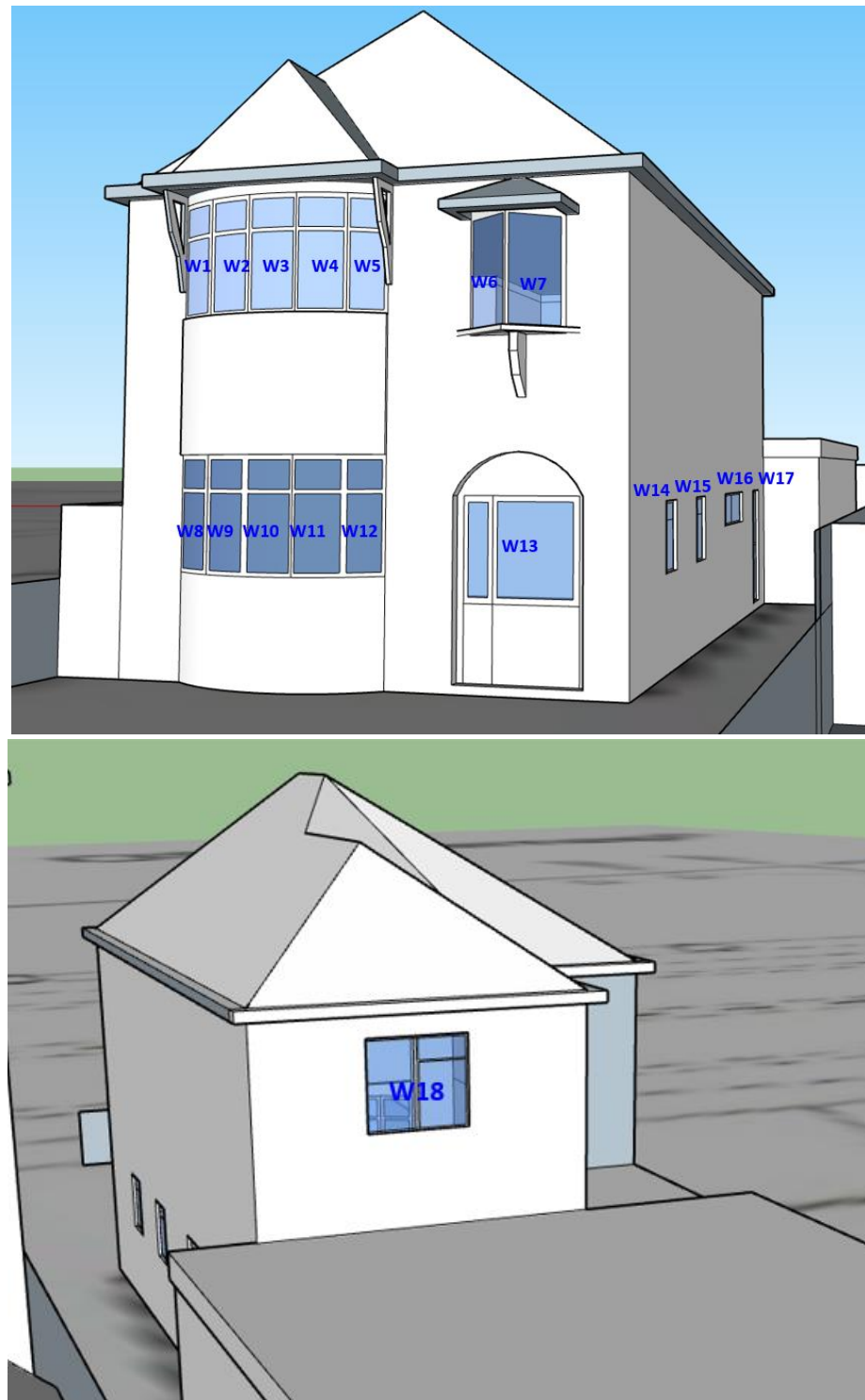


Figure 4.4: Assessed Windows at the Adjacent 547 Uxbridge Road



Figure 4.5: Assessed Windows at the Adjacent 551 and 553 Uxbridge Road



Figure 4.6: Assessed Windows at the Adjacent 555 and 557 Uxbridge Road

5.0 DAYLIGHT MODEL

Geometry for the existing and proposed development have been modelled as per drawings received from Raminder Purewal. The geometry and window locations at the adjacent existing developments have been assumed based on google maps along with drawings obtained from Hillingdon Planning Applications.

The images below and opposite provide screenshots of the daylight model built within the daylight modelling software.



Figure 5.1: Daylight Model Screenshot of The Existing Development and Adjacent Dwellings



Figure 5.2: Daylight Model Screenshot of The Proposed Development and Adjacent Dwellings

6.0 DAYLIGHT AND SUNLIGHT IMPACT ASSESSMENT

Vertical Sky Component (VSC) and Annual Probable Sunlight Hour (APSH) predictions have been carried out for all adjacent dwellings before and after the proposed development, so to determine the level of impact.

6.1 VSC and APSH Results

As shown in the results table, all windows in 551, 553, 555, and 557 Uxbridge have passed the required BRE criteria in terms of their VSC and APSH levels.

A few windows directly opposite to the development in 547 Uxbridge are predicted to experience a change in VSC level below that recommended within BRE guidance. It is predicted that only 4 windows are shown to see a reduction in VSC level. 2 of these windows open towards non-sensitive spaces (toilet and communal space) hence only 2 openings are seen to be affected by the proposed development. Not to mention that, one of these openings is a door and the other is a high-level window. Hence the impact of the proposed development on the adjacent dwellings is seen to be minimal.

Block No.	Window Ref.	Orientation	Predicted VSC				Predicted APSH			
			Before	After	Change	Pass/Fail	Before	After	Change	Pass/Fail
547 Uxbridge Road	W1	North East	34.73	34.73	100%	Pass	NA	NA	NA	NA
	W2	North East	37.32	37.32	100%	Pass	NA	NA	NA	NA
	W3	North East	38.37	38.32	100%	Pass	NA	NA	NA	NA
	W4	North East	36.78	36.56	99%	Pass	NA	NA	NA	NA
	W5	North East	32.57	32.43	100%	Pass	NA	NA	NA	NA
	W6	North East	27.45	27.45	100%	Pass	NA	NA	NA	NA
	W7	North East	29.98	27.17	91%	Pass	NA	NA	NA	NA
	W8	North East	38.30	38.30	100%	Pass	NA	NA	NA	NA
	W9	North East	39.30	39.30	100%	Pass	NA	NA	NA	NA
	W10	North East	39.25	39.18	100%	Pass	NA	NA	NA	NA
	W11	North East	38.35	37.98	99%	Pass	NA	NA	NA	NA
	W12	North East	36.17	35.39	98%	Pass	NA	NA	NA	NA
	W13	North East	37.54	37.47	100%	Pass	NA	NA	NA	NA
	W14	North West	19.43	8.09	42%	**	NA	NA	NA	NA
	W15	North West	17.98	5.97	33%	**	NA	NA	NA	NA
	W16	North West	20.44	4.82	24%	Fail	NA	NA	NA	NA
	W17	North West	19.52	3.85	20%	Fail	NA	NA	NA	NA
	W18	South West	36.72	34.24	93%	Pass	78	69	88%	Pass
551 Uxbridge Road	W1	North East	33.95	33.95	100%	Pass	NA	NA	NA	NA
	W2	North East	31.62	31.61	100%	Pass	NA	NA	NA	NA
	W3	North East	36.30	36.28	100%	Pass	NA	NA	NA	NA
	W4	North East	38.25	38.25	100%	Pass	NA	NA	NA	NA
	W5	North East	35.88	35.88	100%	Pass	NA	NA	NA	NA
	W6	North East	30.54	30.54	100%	Pass	NA	NA	NA	NA

Block No.	Window Ref.	Orientation	Predicted VSC				Predicted APSH			
			Before	After	Change	Pass/Fail	Before	After	Change	Pass/Fail
	W7	North East	39.23	39.22	100%	Pass	NA	NA	NA	NA
	W8	North East	31.56	31.56	100%	Pass	NA	NA	NA	NA
	W9	North East	36.48	36.48	100%	Pass	NA	NA	NA	NA
	W10	North East	37.88	37.88	100%	Pass	NA	NA	NA	NA
	W11	North East	37.19	37.19	100%	Pass	NA	NA	NA	NA
	W12	North East	34.88	34.88	100%	Pass	NA	NA	NA	NA
	W13	South East	24.14	19.07	80%	Pass	37	26	70%	Pass
	W14	South East	18.24	18.39	101%	Pass	23	22	96%	Pass
	W15	South East	16.73	16.79	100%	Pass	23	22	96%	Pass
	W16	South East	4.62	7.66	166%	Pass	9	7	80%	Pass
	W17	South East	4.72	12.63	267%	Pass	8	13	163%	Pass
	W18	South West	31.10	31.10	100%	Pass	70	70	100%	Pass
	W19	South West	36.10	33.27	92%	Pass	75	68	91%	Pass
	W20	South West	30.24	30.22	100%	Pass	66	66	100%	Pass
	W21	South West	31.23	28.78	92%	Pass	71	63	89%	Pass
	W22	South East	23.20	22.94	99%	Pass	14	15	107%	Pass
553 Uxbridge Road	W1	North East	27.73	27.73	100%	Pass	NA	NA	NA	NA
	W2	North East	35.84	35.84	100%	Pass	NA	NA	NA	NA
	W3	North East	38.23	38.23	100%	Pass	NA	NA	NA	NA
	W4	North East	37.58	37.58	100%	Pass	NA	NA	NA	NA
	W5	North East	31.55	31.55	100%	Pass	NA	NA	NA	NA
	W6	North East	34.99	34.99	100%	Pass	NA	NA	NA	NA
	W7	North East	37.20	37.20	100%	Pass	NA	NA	NA	NA
	W8	North East	37.87	37.87	100%	Pass	NA	NA	NA	NA
	W9	North East	36.21	36.21	100%	Pass	NA	NA	NA	NA
	W10	North East	31.30	31.30	100%	Pass	NA	NA	NA	NA
	W11	North East	33.95	33.95	100%	Pass	NA	NA	NA	NA
	W12	North East	35.96	35.96	100%	Pass	NA	NA	NA	NA
	W13	South West	34.85	34.68	100%	Pass	74	74	100%	Pass
	W14	South West	32.87	31.99	97%	Pass	70	69	99%	Pass
	W15	South West	34.13	33.82	99%	Pass	71	71	100%	Pass
	W16	South West	23.66	23.66	100%	Pass	45	45	100%	Pass
	W17	South East	17.73	17.73	100%	Pass	7	7	100%	Pass
555 & 557 Uxbridge Road	W1	North East	28.85	28.43	99%	Pass	NA	NA	NA	NA
	W2	North East	36.60	36.17	99%	Pass	NA	NA	NA	NA
	W3	North East	28.76	28.35	99%	Pass	NA	NA	NA	NA
	W4	North East	35.20	34.82	99%	Pass	NA	NA	NA	NA
	W5	North East	36.60	36.23	99%	Pass	NA	NA	NA	NA
	W6	North East	35.39	35.06	99%	Pass	NA	NA	NA	NA

Block No.	Window Ref.	Orientation	Predicted VSC				Predicted APSH			
			Before	After	Change	Pass/Fail	Before	After	Change	Pass/Fail
	W7	North East	28.83	28.50	99%	Pass	NA	NA	NA	NA
	W8	North East	36.25	35.93	99%	Pass	NA	NA	NA	NA
	W9	North East	28.49	28.20	99%	Pass	NA	NA	NA	NA
	W10	North East	33.81	33.35	99%	Pass	NA	NA	NA	NA
	W11	North East	35.86	35.42	99%	Pass	NA	NA	NA	NA
	W12	North East	33.66	33.23	99%	Pass	NA	NA	NA	NA
	W13	North East	30.81	30.41	99%	Pass	NA	NA	NA	NA
	W14	North East	31.11	30.74	99%	Pass	NA	NA	NA	NA
	W15	North East	33.91	33.54	99%	Pass	NA	NA	NA	NA
	W16	North East	35.55	35.17	99%	Pass	NA	NA	NA	NA
	W17	North East	33.64	33.30	99%	Pass	NA	NA	NA	NA
	W18	North East	31.55	31.00	98%	Pass	NA	NA	NA	NA
	W19	North East	33.44	32.86	98%	Pass	NA	NA	NA	NA
	W20	North East	31.74	31.23	98%	Pass	NA	NA	NA	NA
	W21	North East	23.31	22.86	98%	Pass	NA	NA	NA	NA
	W22	North East	34.28	33.78	99%	Pass	NA	NA	NA	NA
	W23	North East	23.01	22.97	100%	Pass	NA	NA	NA	NA
	W24	North East	32.22	31.79	99%	Pass	NA	NA	NA	NA
	W25	North East	33.90	33.47	99%	Pass	NA	NA	NA	NA
	W26	North East	31.96	31.56	99%	Pass	NA	NA	NA	NA
**: these windows open to non-sensitive spaces, and hence the BRE criteria is not required										
NA: These windows are facing North, hence, the APSH levels are not required										

Table 6.1: VSC and APSH predictions at the Adjacent Properties