

DAYLIGHT, SUNLIGHT & OVERSHADOWING

99 Camden Mews

Produced by XCO2 for Nicholas Taylor and Associates

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DAYLIGHT, SUNLIGHT & OVERSHADOWING

Remarks							
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EXECUTIVE SUMMARY

The daylight, sunlight and overshadowing analysis indicates that there will not be a significant impact on surrounding properties arising from the proposed development at 99 Camden Mews.

Daylight and Sunlight analysis was carried out for the proposed development at 99 Camden Mews, located within the London Borough of Camden. This report outlines the results of the analysis for the planning application, assessing the daylight and sunlight impacts on surrounding developments.

The methodology set out in this report is in accordance with BRE's "Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice" by PJ Littlefair (2011) which is accepted as good practice by Planning Authorities.

The following assessments were carried out:

- Daylight: 25 Degree Line
- Daylight: Vertical Sky Component
- Sunlight: Sunlight Overshadowing

Computer modelling software was used to carry out the assessments. The model used was based on drawings provided by the design team together with desktop research on neighbouring properties.

DAYLIGHT ASSESSMENT

A total of 58 windows from buildings surrounding the site were highlighted as being in close proximity to, and facing the proposed development.

Daylighting levels for potentially affected windows of surrounding developments by the proposed development at 99 Camden Mews were found to be acceptable.

In summary,

- 50 out of 58 windows passed the 25-degree line test;
- The remaining 8 windows all achieved relative VSCs over 0.8 of their former values

Overall, the development is not anticipated to have any notable impact on the daylight received by neighbouring properties.

SUNLIGHT ASSESSMENT

A total of 25 windows from a single neighbouring building were found to be north of the proposed development and therefore potentially vulnerable to an impact on sunlight availability. Despite this, all 25 windows were found to pass the 25 degree line test, therefore no additional testing was required.

Therefore, the proposed development at 99 Camden Mews is not considered to have any notable impact on sunlight access to windows of surrounding developments.

OVERSHADOWING ASSESSMENT

A solar access analysis was undertaken for a total of 2 amenity spaces for the full 24 hours on 21st of March both the amenity spaces are predicted to have a minimum of 2 hours of sunlight on 21 March over at least 50% of each assessed amenity space.

The proposed development is therefore not considered to have any significant impact on sunlight access to the amenity spaces surrounding the site.

DAYLIGHT, SUNLIGHT & OVERSHADOWING

Table 1: Daylight results summary

Number of windows tested	58
Number of windows passing the 25°/45° initial test	50
Number of windows with a VSC higher than 27%	0
Number of windows with a VSC of at least 0.8 of existing value	8

Table 2: Sunlight results summary

Total number of windows facing within 90° of south	25
Number of south facing windows passing the 25°/45° initial test	25

INTRODUCTION

The site is located in urban environment and the interpretation of the results requires careful consideration of the BRE guidance.

This report assesses the daylight, sunlight and overshadowing impacts the proposed new build residential roof level extension may have on the existing properties and open spaces surrounding the site.

The approach is based on the BRE's "*Site Layout Planning for daylight and sunlight, a Guide to good practice*" PJ Littlefair 2011, which is generally accepted as good practice by Town and Country Planning authorities.

It should be noted that although the numerical values stated by the BRE provide useful guidance to designers, consultants and planning officials, these are purely advisory and may vary depending on context. Dense urban areas, for example, may often experience greater site constraints when compared to low-rise suburban areas, and thus a high degree of obstruction is often unavoidable. Appendix F of the BRE document is dedicated to the use of alternative values and it also demonstrates the manner in which the criteria for skylight was determined for the summary given above, i.e. the need for 27% vertical sky component for adequate daylighting.

This figure of 27% was achieved using the following methodology: a theoretical road was created with two storey terraced houses upon either side, approximately twelve metres apart. The houses have windows at ground and first floor level, and a pitched roof with a central ridge. Thereafter, a reference point was taken at the centre of a ground floor window of one of the properties and a line was drawn from this point to the central ridge of the property on the other side of the road.

The angle of this line equated to 25 degrees (the 25 degrees referred to in the summaries given with reference to the criteria for skylight). This 25-degree line obstructs 13% of the totally unobstructed sky available, leaving a resultant figure of 27% which is deemed to give adequate daylighting. This figure of

27% is the recommended criteria referred to in this report. It will be readily appreciated that in an urban area, this kind of urban form and setting is unlikely and impractical.

Furthermore, the BRE guidance also focuses on 'relative change' which is likely to be exaggerated given the low rise nature of the existing structures on site. Where there is more than a 20% reduction in VSC, this does not mean that the level of daylight will be unacceptable but, rather, that there may be a noticeable change in daylight levels to the occupants.

Therefore, given the location of the proposed development, with the proximity of the immediate neighbouring buildings to the east and west and the currently low rise nature of the existing site, it is important to take into account that, although the 27% VSC target is the standard criterion available, it is not fully applicable to the development and that a lower VSC target is acceptable.

DAYLIGHT, SUNLIGHT & OVERSHADOWING

SITE

The proposed development is a residential building located at along Camden Mews, approximately 200m west of Caledonian Park, within the London Borough of Camden.

Site analysis was carried out to identify any potential daylight and sunlight impacts on the surrounding development. Relevant properties tested in this report

adjacent to the proposed development are annotated in the figure below.

The following neighbouring buildings were tested in detail:

- 248-250 Camden Road;
- 78-86 Camden Mews.



Figure 1. Location of proposed development and surrounding buildings

METHODOLOGY

The assessment is based on guidelines set out in the BRE “Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice” (2011).

DAYLIGHT

DAYLIGHT TO SURROUNDING WINDOWS

A plane is drawn at 25 degrees from the horizontal, at the centre of an existing window. If the new development intersects with this plane, the internal daylight levels of the surrounding windows may be reduced. When an obstruction of the 25-degree plane occurs, a more detailed assessment involving the Vertical Sky Component of the affected window would need to be carried out.

ABSOLUTE VERTICAL SKY COMPONENT (VSC)

The Vertical Sky Component is the ratio of the direct sky illuminance falling on the vertical wall at a reference point, to the simultaneous horizontal illuminance under an unobstructed sky. To maintain good levels of daylight, the Vertical Sky Component of a window needs to be 27% or greater. If the VSC is less than 27%, then a comparison of existing and proposed levels of VSC level would need to be calculated.

RELATIVE VERTICAL SKY COMPONENT

Good levels of daylighting can still be achieved if VSC levels are within 0.8 of their former value.

SUNLIGHT

ACCESS TO SUNLIGHT (APSH)

The BRE test relates mainly to existing living room windows, although care should be taken to ensure that kitchens and bedrooms receive reasonable amounts of sunlight. Annual Probable Sunlight Hour (APSH)

assessment is carried out when there is an obstruction within the 25-degree line and the window is facing within 90 degrees due south. The APSH assessment states that the existing living room window should receive at least:

- 25% of annual probable sunlight hours (APSH) throughout the year;
- 5% of annual probable sunlight hours during the winter months;
- not less than 80% of its former sunlight hours during either period;
- not more than a 4% reduction in sunlight received over the whole year (APSH).

The term ‘annual probable sunlight hours’ refers to the long-term average of the total of hours during a year in which direct sunlight reaches the unobstructed ground (when clouds are taken into account). The ‘winter probable sunlight hours’ is used to mean the same but only for the winter period (21 September – 21 March).

OVERSHADOWING

SUNLIGHT TO AMENITY SPACES

Open spaces should retain a reasonable amount of sunlight throughout the year. The BRE states that for an amenity space to “appear adequately sunlit throughout the year, at least half of the area should receive at least 2 hours of sunlight on 21 March”. Where this is not achieved, the difference between the area achieving 2 hours of sun on 21 March should be no less than 0.8 times its former value.

DAYLIGHT ASSESSMENT

The analysis indicates that the proposed development is unlikely to have an impact on neighbouring windows in terms of daylight. The following subsections detail the findings for each neighbouring building individually.

248-250 CAMDEN ROAD

This building is located to the north west of the proposed development. Figure 2 shows potentially affected windows.

The results of the analysis indicate that all 25 windows pass the 25 degree line test. For this reason no further testing was required.

For this reason it can be concluded that no daylight impact is anticipated as a result of the proposed development.

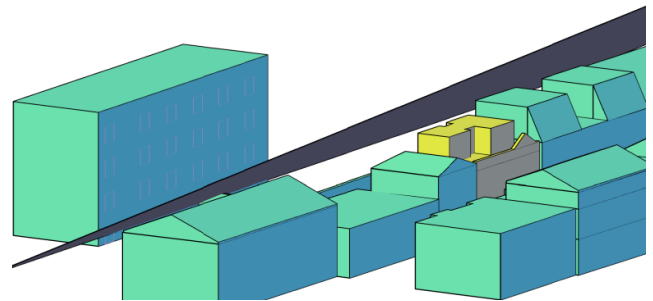


Figure 3. 25 degree line emanating from ground floor windows of 248-250 Camden Road



Figure 2: Assessed windows at 248-250 Camden Road

Table 3: Daylight results summary for 248-250 Camden Road

Number of windows tested	25
Number of windows passing the 25° initial test	25

78-86 CAMDEN MEWS

This row of terraced houses is located immediately to the southeast of the development site. Figure 4 shows potentially affected windows.

The results of the analysis indicate that of the 33 windows assessed, 25 pass the 25 degree line test. These windows are located at first and second floor level. The remaining 8 windows located at ground floor level all achieve a relative VSC of at least 80% their former value.

For this reason it can be concluded that the proposed development is unlikely to have an influence of the daylight received by the neighbouring windows at 78-86 Camden mews.

Detailed results are presented in Appendix B - Detailed Daylight Results.



Figure 4. Assessed windows at 78-86 Camden Mews

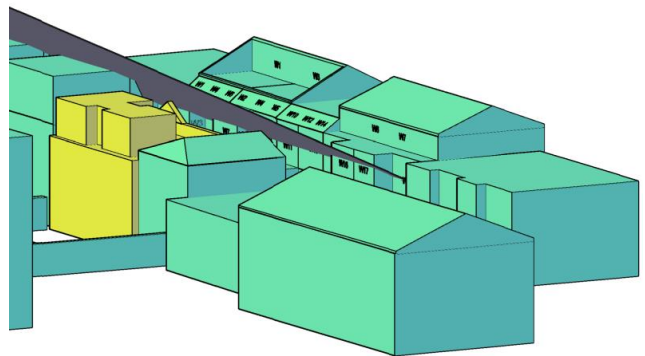


Figure 5. 25 degree line from the first floor windows of 78-86 Camden Mews

Table 4: Daylight results summary for 78-86 Camden Mews

Number of windows tested	33
Number of windows passing the 25° initial test	25
Number of windows with a VSC higher than 27%	0
Number of windows with a VSC of at least 0.8 of existing value	8

SUNLIGHT ASSESSMENT

The analysis indicates that the proposed development is unlikely to have an impact on neighbouring south facing windows in terms of sunlight.

The BRE guide states that:

“if a living room of an existing dwelling has a main window facing within 90° of due south, and any part of a new development subtends an angle of more than 25° to the horizontal measured from the centre of the window in a vertical section perpendicular to the window, then the sunlighting of the existing dwelling may be adversely affected”

A total of 25 windows located at 248-250 Camden Road were highlighted as facing the development and within 90° of due south.

The analysis indicated that all windows within 90° due south pass the 25 degree line test and therefore satisfy the BRE criteria for sunlight.

Overall, the proposed development is not considered to have any notable impact on sunlight access to windows of surrounding developments.

Table 5: Sunlight results summary

Total number of windows facing within 90° of south	25
Number of south facing windows passing the 25°/45° initial test	25

OVERSHADOWING ASSESSMENT

The analysis indicates that the proposed development is unlikely to have a significant impact on the sunlight received by neighbouring amenity spaces.

A review of the site plan showed that there are 2 amenity or open spaces in close proximity to the proposed development, as shown in the figure below. A Solar Access Analysis was undertaken on these amenity areas for the full 24 hours on 21 March as set out by the BRE.

The images show that at least 50% of the analysed space will receive more than 2 hours of sunlight on 21

March under proposed conditions, meeting the BRE requirements for overshadowing.

The proposed development is not considered to have any significant impact on sunlight access to neighbouring amenity and open spaces.

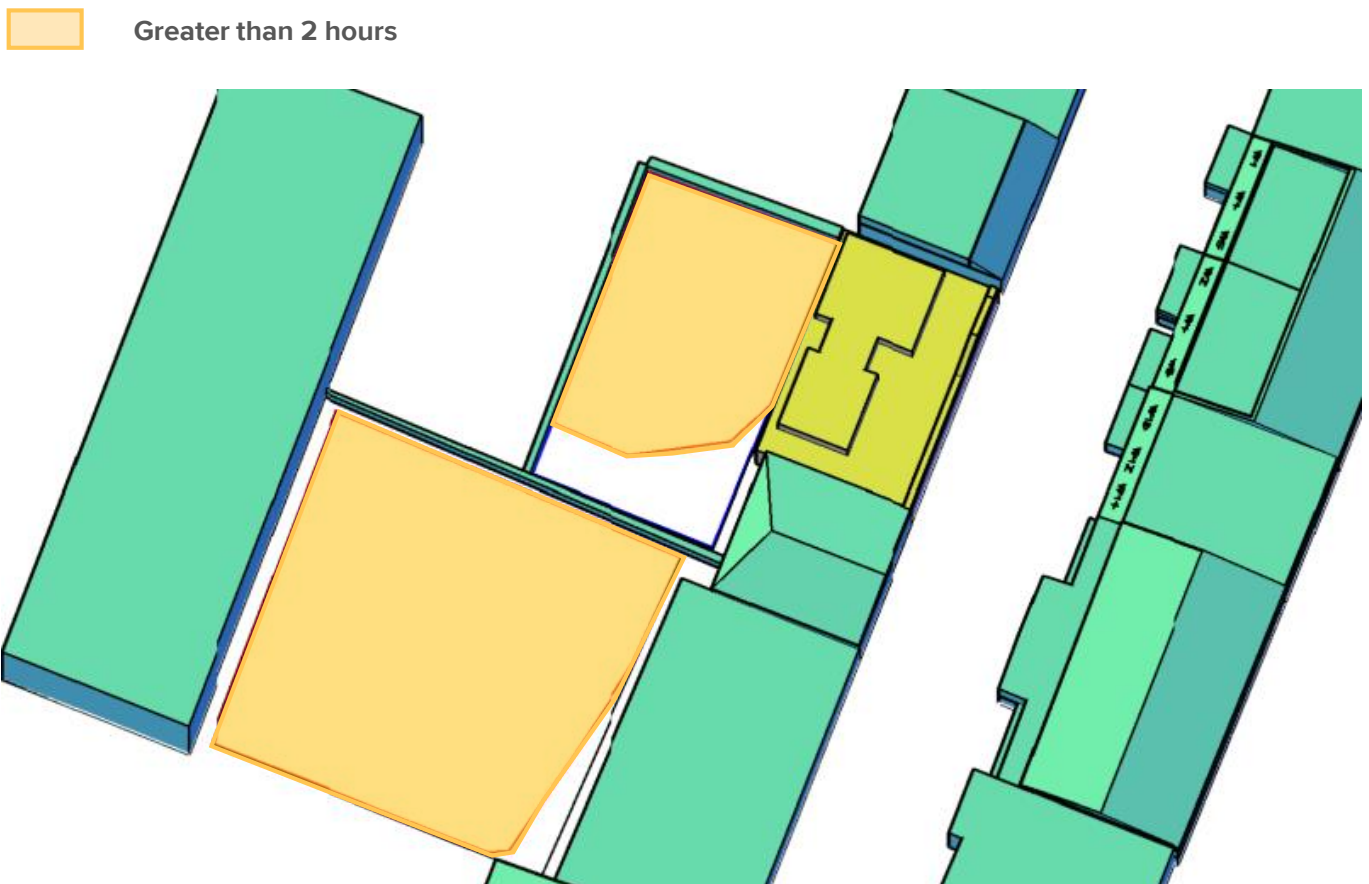


Figure 6: Amenity and open spaces in close proximity to development site, area in yellow denoting area with >2 hours of sunlight of 21 March

CONCLUSION

The daylight, sunlight and overshadowing analysis indicates that there will not be a significant impact on surrounding properties arising from the proposed development at 99 Camden Mews.

DAYLIGHT ASSESSMENT

A total of 58 windows from buildings surrounding the site were highlighted as being in close proximity to, and facing the proposed development.

Daylighting levels for potentially affected windows of surrounding developments by the proposed development at 99 Camden Mews were found to be acceptable.

In summary,

- 50 out of 58 windows passed the 25-degree line test;
- The remaining 8 windows all achieved relative VSCs over 0.8 of their former values

Overall, the development is not anticipated to have any notable impact on the daylight received by neighbouring properties.

SUNLIGHT ASSESSMENT

A total of 25 windows from a single neighbouring building were found to be north of the proposed development and therefore potentially vulnerable to an impact on sunlight availability. Despite this, all 25 windows were found to pass the 25 degree line test, therefore no additional testing was required.

Therefore, the proposed development at 99 Camden Mews is not considered to have any notable impact on sunlight access to windows of surrounding developments.

OVERSHADOWING ASSESSMENT

A solar access analysis was undertaken for a total of 2 amenity spaces for the full 24 hours on 21st of March. Both the amenity spaces are predicted to have a minimum of 2 hours of sunlight on 21 March over at least 50% of each assessed amenity space.

The proposed development is therefore not considered to have any significant impact on sunlight access to the amenity spaces surrounding the site.

In conclusion, all receptors on neighbouring properties meet the BRE recommended targets. The proposed development will have no notable impact on daylight and sunlight access to surrounding buildings.

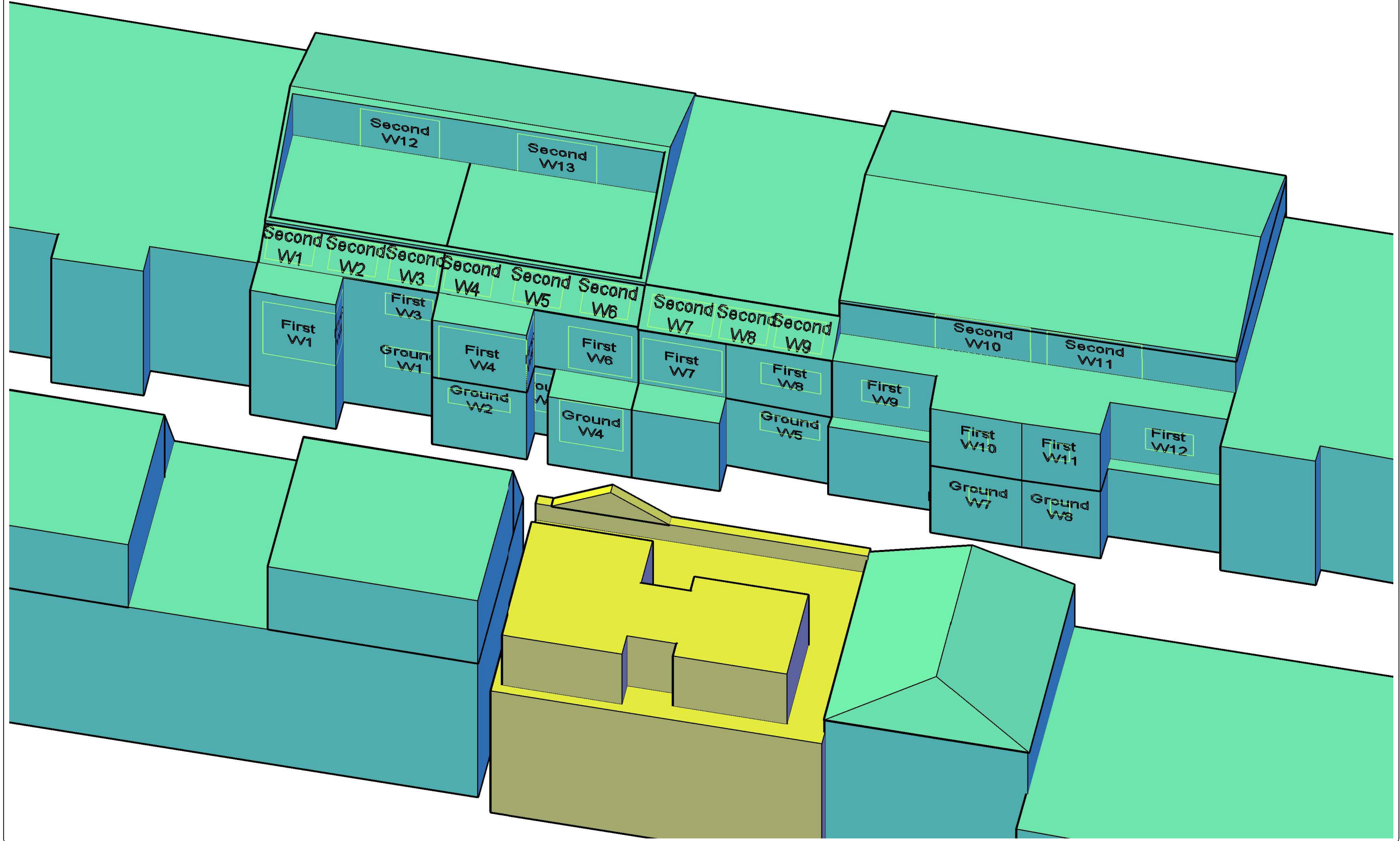
APPENDIX A - WINDOW REFERENCE

DO NOT SCALE

BACKGROUND DRAWING INFORMATION

FILE NAME	ORIGINATOR NAME	DESCRIPTION NAME	REV	DATE RECD

Notes



Rev	Date	Description	Chk'd	Appr

ISSUE TYPE

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Client
Nicholas and Taylor and Associates

Architect
AR Architects

Project
99 Camden Mews

Title
Analysed Windows

Scale/A3	Drawn	Checked	Date
N.T.S	JC	SP	14/09/2017

Drawing Number	Revision
9.010_01	01

APPENDIX B - DETAILED DAYLIGHT RESULTS

Building	Floor	Window no.	25/45 degree plane test	VSC tests		
				Proposed VSC 27% ?	Existing VSC (%)	Relative VSC >0.8?
78-86 Camden Mews	Ground	W1	Further testing required	14.8%	14.9%	1
78-86 Camden Mews	Ground	W2	Further testing required	19.4%	19.7%	0.98
78-86 Camden Mews	Ground	W3	Further testing required	4.5%	4.6%	0.98
78-86 Camden Mews	Ground	W4	Further testing required	17.5%	18.2%	0.96
78-86 Camden Mews	Ground	W5	Further testing required	21.4%	23.0%	0.93
78-86 Camden Mews	Ground	W6	Further testing required	15.8%	16.4%	0.96
78-86 Camden Mews	Ground	W7	Further testing required	20.8%	21.9%	0.95
78-86 Camden Mews	Ground	W8	Further testing required	22.4%	22.9%	0.98
78-86 Camden Mews	First	W1	Pass	-	-	-
78-86 Camden Mews	First	W2	Pass	-	-	-
78-86 Camden Mews	First	W3	Pass	-	-	-
78-86 Camden Mews	First	W4	Pass	-	-	-

DAYLIGHT, SUNLIGHT & OVERSHADOWING

Building	Floor	Window no.	25/45 degree plane test	VSC tests		
				Proposed VSC 27% ?	Existing VSC (%)	Relative VSC >0.8?
78-86 Camden Mews	First	W5	Pass	-	-	-
78-86 Camden Mews	First	W6	Pass	-	-	-
78-86 Camden Mews	First	W7	Pass	-	-	-
78-86 Camden Mews	First	W8	Pass	-	-	-
78-86 Camden Mews	First	W9	Pass	-	-	-
78-86 Camden Mews	First	W10	Pass	-	-	-
78-86 Camden Mews	First	W11	Pass	-	-	-
78-86 Camden Mews	First	W12	Pass	-	-	-
78-86 Camden Mews	Second	W1	Pass	-	-	-
78-86 Camden Mews	Second	W2	Pass	-	-	-
78-86 Camden Mews	Second	W3	Pass	-	-	-
78-86 Camden Mews	Second	W4	Pass	-	-	-
78-86 Camden Mews	Second	W5	Pass	-	-	-

DAYLIGHT, SUNLIGHT & OVERSHADOWING

Building	Floor	Window no.	25/45 degree plane test	VSC tests		
				Proposed VSC 27% ?	Existing VSC (%)	Relative VSC >0.8?
78-86 Camden Mews	Second	W6	Pass	-	-	-
78-86 Camden Mews	Second	W7	Pass	-	-	-
78-86 Camden Mews	Second	W8	Pass	-	-	-
78-86 Camden Mews	Second	W9	Pass	-	-	-
78-86 Camden Mews	Second	W10	Pass	-	-	-
78-86 Camden Mews	Second	W11	Pass	-	-	-
78-86 Camden Mews	Second	W12	Pass	-	-	-
78-86 Camden Mews	Second	W13	Pass	-	-	-

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