7.0 Conclusion

3D Design Bureau (3DDB) were commissioned to carry out a daylight assessment, sunlight assessment and shadow study for the proposed development at Scholarstown House.

The impact assessment for this report has quantified the effect the proposed development would have on the level of daylight and sunlight received by neighbouring properties/environment that are in close proximity to the proposed development. Results have shown that the proposed development does not have a noticeable impact on any of the windows/rooms assessed. Moreover, none of the existing gardens assessed would experience any noticeable drop in the levels of sunlight received should the scheme be built as proposed.

The scheme performance assessment for this report has quantified the level of daylight and sunlight within the proposed development, which comprises of the new proposed apartment block and the existing Scholarstown House, for which an internal re-arrangement has been proposed.

The SDA of the proposed apartment block has yielded very positive results, with compliance rate ranging from ~92% to ~94%. The design team, in close collaboration with 3DDB, has implemented a series of design tweaks which made it possible to raise the level of compliance rate throughout the various iterations, as explained in section 1.3 on page.

The Sunlight Exposure (SE) assessment has also provided favourable results in both assessments with compliance rates ranging from ~78% to ~84%. This could be attributed to the small number of units facing north only in favour of a good amount of multiple aspect units in the proposed design.

The SDA of the existing Scholarstown House has shown that levels of daylight would not be sufficient to comply with BRE Guidelines. However, as it has been outlined in 1.4 on page 6, the building is a protected structure and therefore there will be no alterations to the external facades. Whilst the glazed areas could not be increased, the re-arrangement of the interior layout aimed to expose the rooms to the south, with the relocation of the staircore to the north. The Sunlight Exposure (SE) assessment carried out on the 2 no. units within the house has shown compliance in both cases.

The proposed interventions to the existing house should be considered positive as they improve its condition and respond better to current living requirements. The Sun On Ground (SOG) carried out on the proposed public amenity space has presented acceptable levels of sunlight, in compliance with the BRE Guidelines.

In conclusion, 3DDB are of the opinion that the scheme is performing very well from a daylight and sunlight point of view with regard to the the proposed new apartment block. It is recognised, that there are lower levels of compliance on the existing Scholarstown House but this is to be expected due to the fact it is a protected structure and design is limited, particularly with regard to the external envelope of the building.

Appendix - Results

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Appendix Contents

Assessment criteria and detailed analysis of results can be found in the accompanying report.

A.0 Impact Assessment Results

A.1 Effect on Vertical Sky Component (VSC)

Below is an example of the table used to describe the effect on VSC.

Table Example. A.1 - VSC Impact Assessment						
Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended Minimum VSC	Level of Compliance with BRE Guidelines	Effect of Proposed Development
House Number/Floor						
A	**B**	**C**	**D**	**E**	**F**	**G**

A: Window Number

The number in this column will identify the assessed window. All windows are represented visually in the corresponding figure.

B: Baseline VSC Value

The *Baseline VSC Value* represents the VSC value of the assessed window is calculated in the existing baseline model state (as explained in the "Glossary" on page 9).

C: Proposed VSC Value

The *Proposed VSC Value* represents the VSC value of the assessed window calculated in the proposed model state (as explained in the "Glossary" on page 9).

D: Ratio of Proposed VSC to Baseline VSC

This column expressed the ratio of change between the baseline VSC value and the proposed VSC value. The BRE Guidelines recommend that if the proposed value is less than 0.8 times the baseline value, then the reduction in daylight is more likely to be perceptible.

E: Recommended minimum VSC

The *BRE Target Value* for each window has been set according to the BRE Guidelines. The Guidelines state that a proposed development could possibly have a noticeable effect on the daylight received by an existing window, if the VSC value **both** drops below the guideline value of 27% **and** the VSC value is less than 0.8 times the baseline value.

Therefore, to determine the *recommended minimum Value*, 80% of the *Baseline VSC value* has been calculated. If this value is above the 27% threshold, a target value of 27% will be applied. If 80% of the baseline value is below 27%, then 80% of the baseline value is the appropriate target value.

F: Level of Compliance with the BRE Guidelines

This column states the compliance of the *Proposed VSC Value* with the *recommended minimum VSC* as per the BRE Guidelines. In essence, it shows whether or not the assessed window would experience a perceptible level of impact. If the window complies with the BRE Guidelines this cell will state "*BRE Compliant*". If the window does not meet the criteria as set out in the BRE Guidelines, a percentage of compliance with the *recommended minimum* will be stated.

G: Effect of Proposed Development

The levels of effect in this column describe the effect an assessed window will experience, based on its compliance with the *BRE Target Value*. A full list of definitions and a numerical rationale for each can be found in the section *"Definition of Effects"* on page 10 of the corresponding report.

It should be noted that the figures displayed in the table of results have been rounded off. A manual calculation on these figures may yield a negligible difference and should not be considered an error.

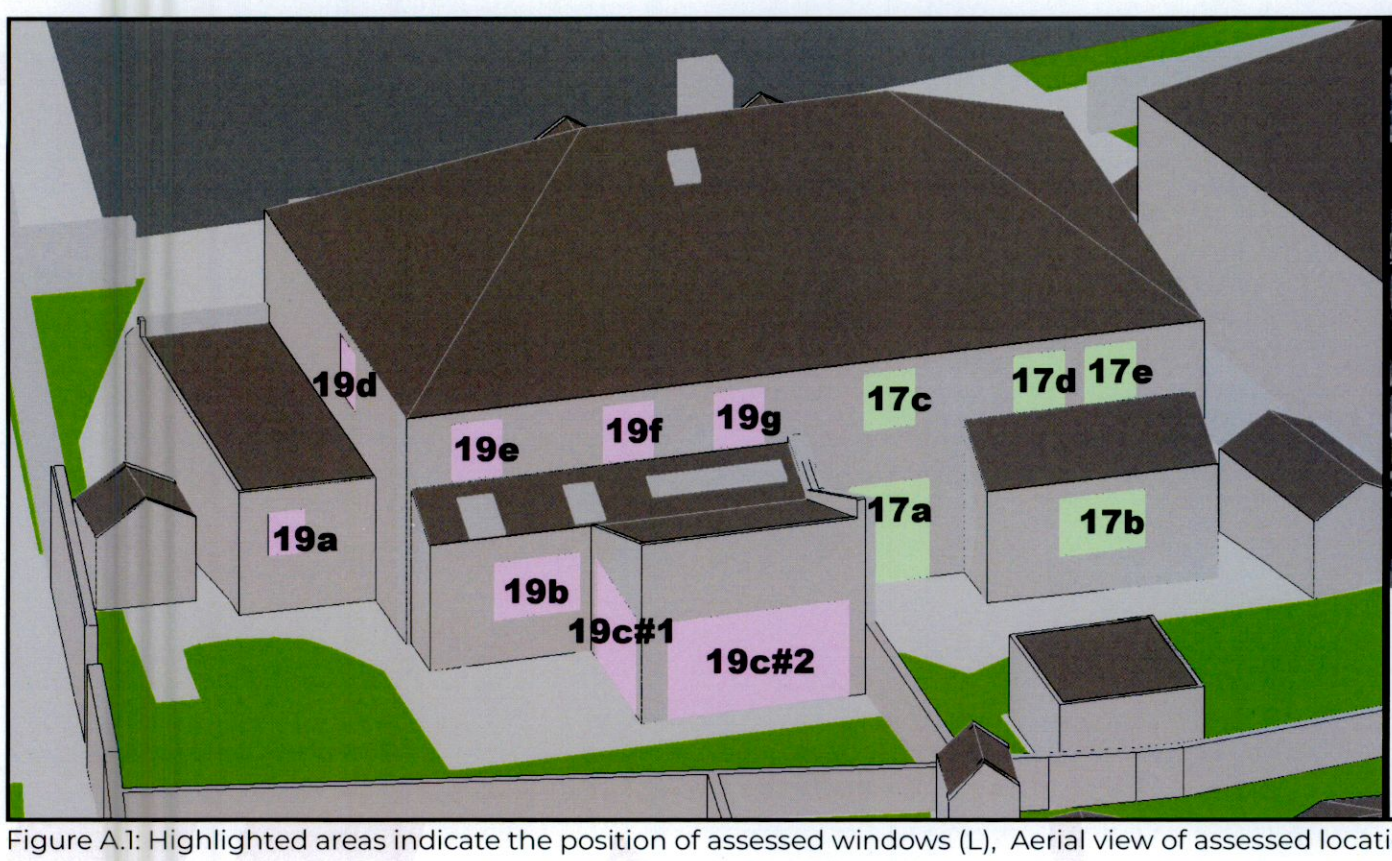
A.1.1 Orlagh Green, Scholarstown Road

Table No. A.1.1 - VSC Results: Orlagh Green, Scholarstown Road						
Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
No. 17						
17a	26.48%	26.48%	1.00	21.18%	BRE Compliant	Negligible
17b	33.59%	33.40%	0.99	26.87%	BRE Compliant	Negligible
17c	36.86%	36.19%	0.98	27.00%	BRE Compliant	Negligible
17d	36.84%	36.27%	0.98	27.00%	BRE Compliant	Negligible
17e	36.84%	36.31%	0.99	27.00%	BRE Compliant	Negligible
No. 19						
19a	29.54%	27.87%	0.94	23.63%	BRE Compliant	Negligible
19b	26.79%	25.61%	0.96	21.43%	BRE Compliant	Negligible
19c#1	31.41%	27.32%	0.87	25.13%	BRE Compliant	-
19c#2	33.74%	32.89%	0.97	26.99%	BRE Compliant	-
19c#	32.74%	30.50%	0.93	26.19%	BRE Compliant	Negligible
19d	37.29%	33.88%	0.91	27.00%	BRE Compliant	Negligible
19e	36.98%	35.90%	0.97	27.00%	BRE Compliant	Negligible
19f	36.93%	36.03%	0.98	27.00%	BRE Compliant	Negligible
19g	36.90%	36.10%	0.98	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.



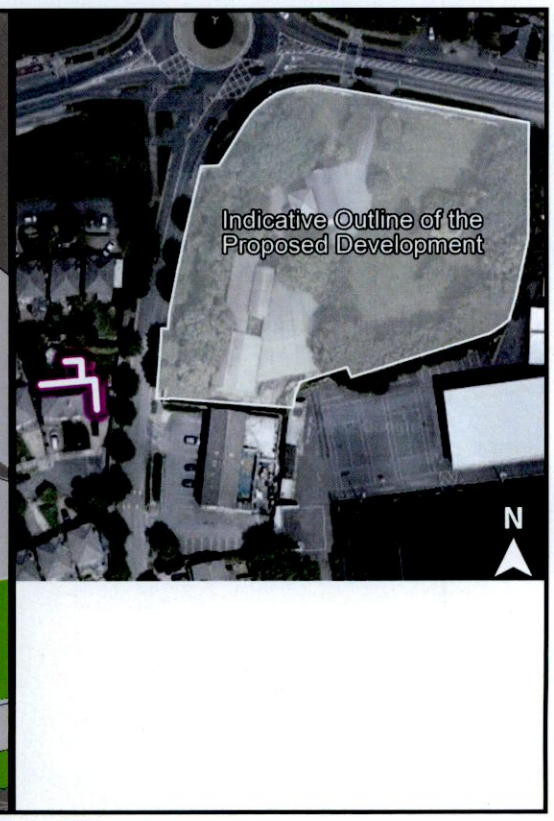


Figure A.1: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

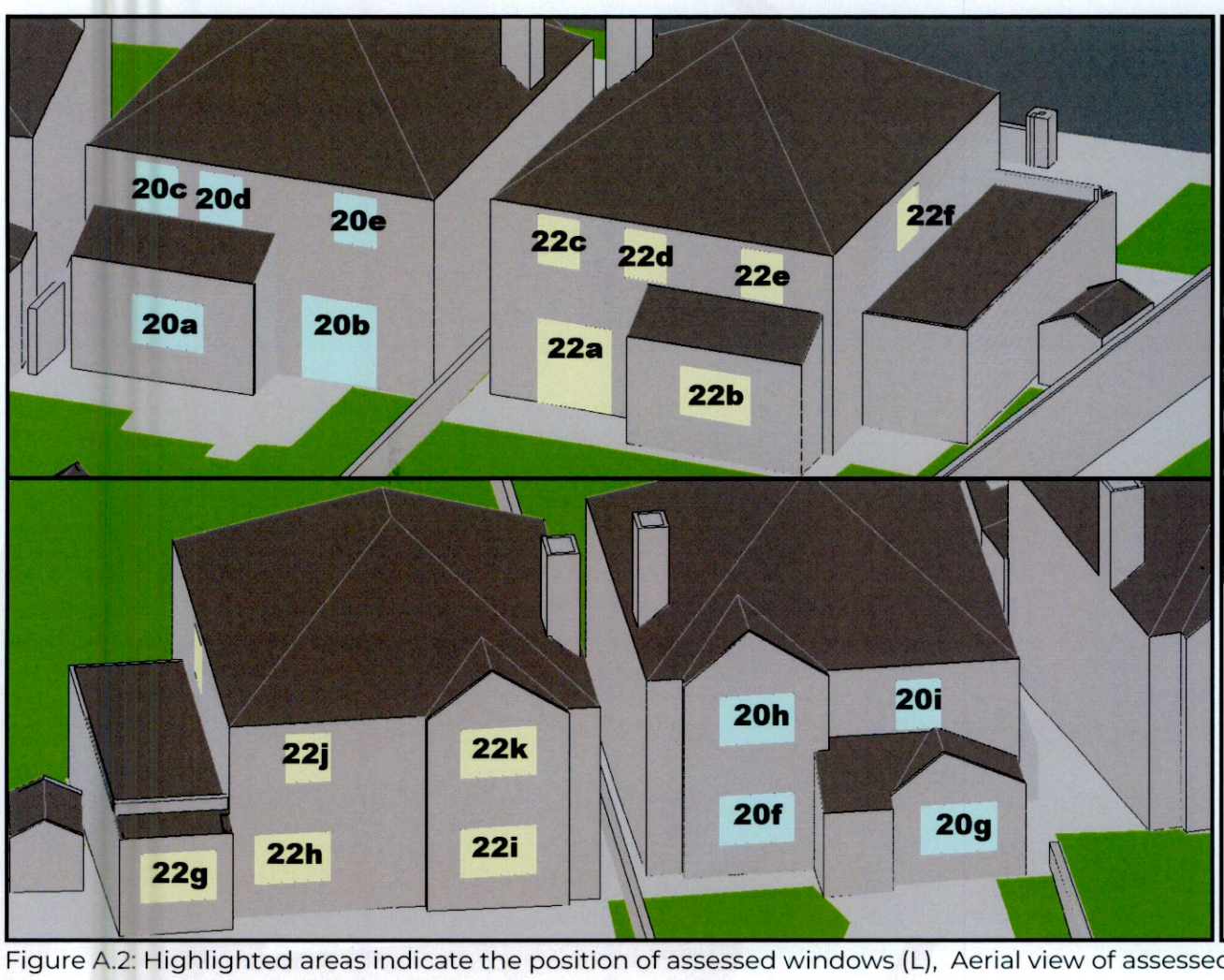
A.1.2 Orlagh Crescent, Scholarstown Road

Table No. A.1.2 - VSC Results: Orlagh Crescent, Scholarstown						
Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
No. 20						
20a	34.54%	34.01%	0.98	27.00%	BRE Compliant	Negligible
20b	33.26%	32.53%	0.98	26.61%	BRE Compliant	Negligible
20c	37.98%	37.55%	0.99	27.00%	BRE Compliant	Negligible
20d	38.03%	37.55%	0.99	27.00%	BRE Compliant	Negligible
20e	38.08%	37.48%	0.98	27.00%	BRE Compliant	Negligible
20f	34.47%	34.33%	1.00	27.00%	BRE Compliant	Negligible
20g	38.01%	37.93%	1.00	27.00%	BRE Compliant	Negligible
20h	38.51%	38.40%	1.00	27.00%	BRE Compliant	Negligible
20i	38.50%	38.40%	1.00	27.00%	BRE Compliant	Negligible
No. 22						
22a	34.42%	34.18%	0.99	27.00%	BRE Compliant	Negligible
22b	36.71%	35.23%	0.96	27.00%	BRE Compliant	Negligible
22c	37.96%	37.08%	0.98	27.00%	BRE Compliant	Negligible
22d	38.15%	37.11%	0.97	27.00%	BRE Compliant	Negligible
22e	38.21%	36.89%	0.97	27.00%	BRE Compliant	Negligible
22f	37.68%	31.54%	0.84	27.00%	BRE Compliant	Negligible
22g	38.12%	37.45%	0.98	27.00%	BRE Compliant	Negligible
22h	37.16%	37.02%	1.00	27.00%	BRE Compliant	Negligible
22i	38.15%	37.80%	0.99	27.00%	BRE Compliant	Negligible
22j	38.53%	38.11%	0.99	27.00%	BRE Compliant	Negligible
22k	38.58%	38.30%	0.99	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.



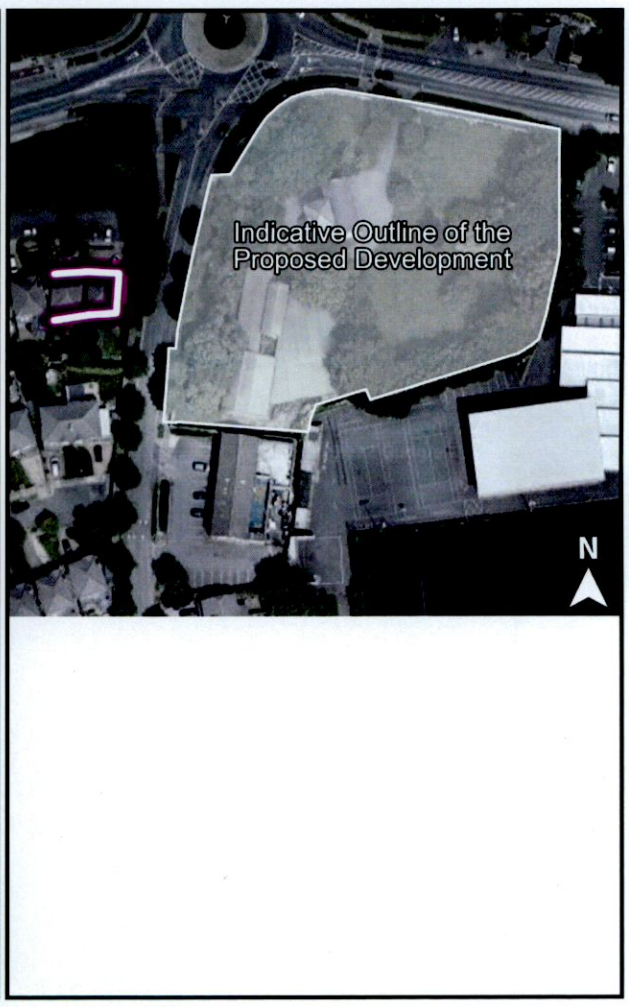


Figure A.2: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

A.1.3 Orlagh Local Services, Orlagh Grove

Table No. A.1.3 - VSC Results: Orlagh Local Services, Orlagh Grove						
Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
Orlagh Local Services						
Sa	35.05%	35.24%	1.01	27.00%	BRE Compliant	Negligible
Sb	36.77%	37.03%	1.01	27.00%	BRE Compliant	Negligible
Sc	36.49%	36.78%	1.01	27.00%	BRE Compliant	Negligible
Sd	36.73%	37.05%	1.01	27.00%	BRE Compliant	Negligible
Se	36.39%	36.74%	1.01	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

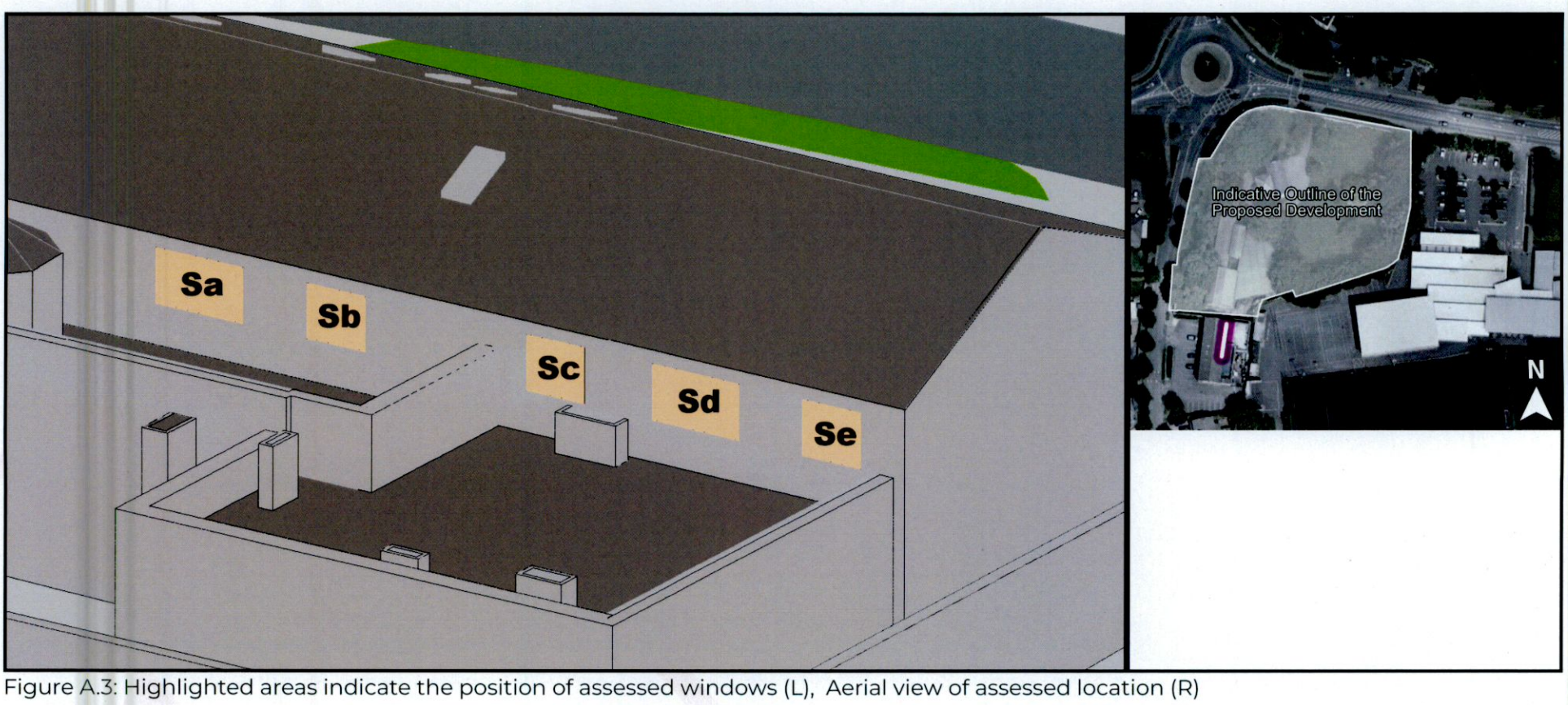


Figure A.3: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

A.1.4 Rossmore Lodge, Scholarstown Road

Table No. A.1.3 - VSC Results: Rossmore Lodge, Scholarstown Road						
Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
Rossmore Lodge						
Ra#1	34.89%	34.69%	0.99	27.00%	BRE Compliant	-
Ra#2	34.25%	34.30%	1.00	27.00%	BRE Compliant	-
Ra#	34.65%	34.55%	1.00	27.00%	BRE Compliant	Negligible
Rb	34.44%	34.40%	1.00	27.00%	BRE Compliant	Negligible
Rc#1	31.98%	31.91%	1.00	25.58%	BRE Compliant	-
Rc#2	34.62%	34.52%	1.00	27.00%	BRE Compliant	-
Rc#3	38.49%	38.49%	1.00	27.00%	BRE Compliant	-
Rc#4	38.51%	38.51%	1.00	27.00%	BRE Compliant	-
Rc#5	38.50%	38.51%	1.00	27.00%	BRE Compliant	-
Rc#	37.56%	37.55%	1.00	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

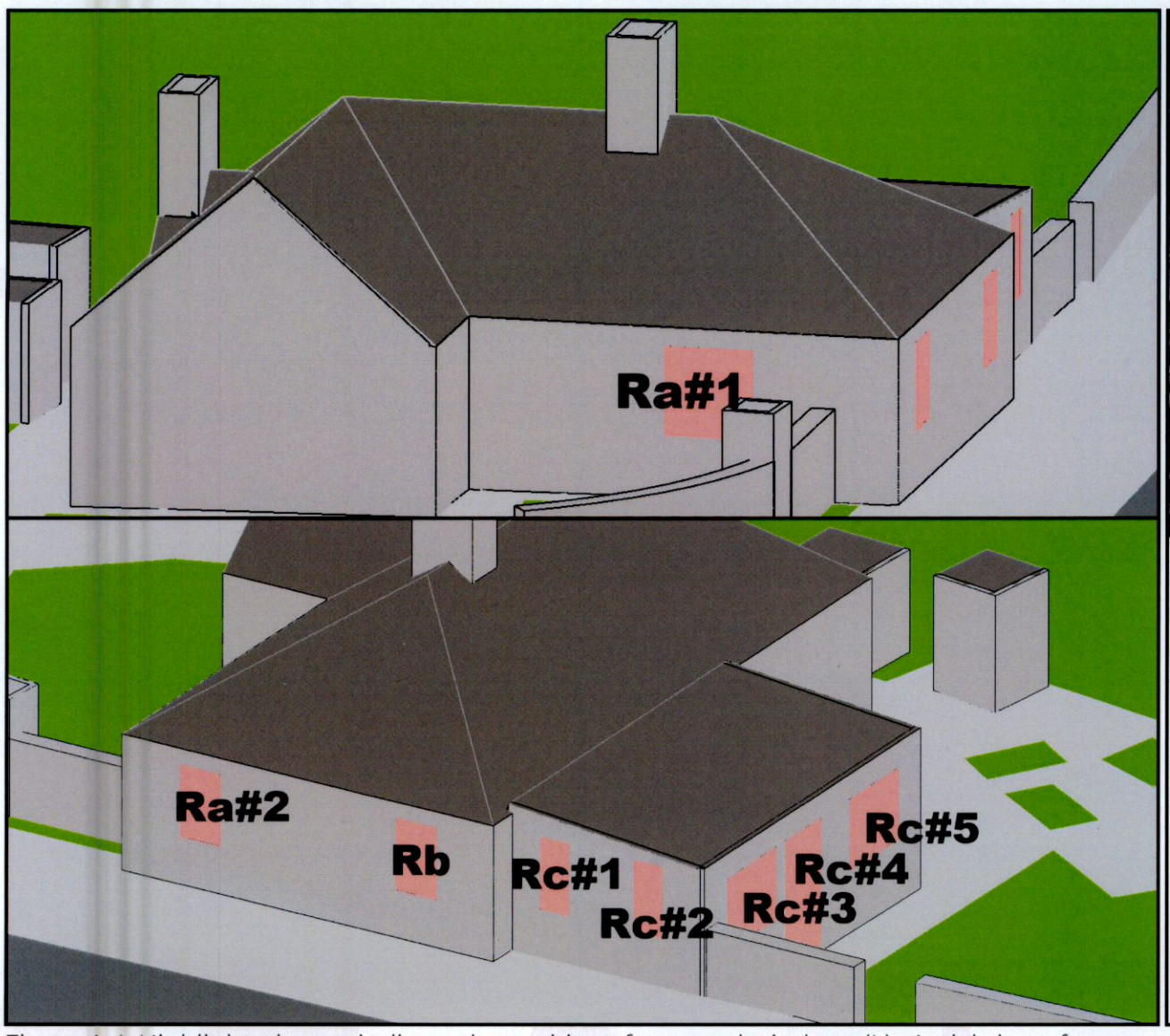


Figure A.4: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

A.1.5 Ros Mor View, Scholarstown Road

Table No. A.1.4 - VSC Results: Ros Mor View, Scholarstown Road						
Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
Ground Floor						
0a	31.29%	31.18%	1.00	25.03%	BRE Compliant	Negligible
0b	32.94%	32.80%	1.00	26.35%	BRE Compliant	Negligible
0c	18.24%	17.93%	0.98	14.59%	BRE Compliant	Negligible
0d	34.03%	33.91%	1.00	27.00%	BRE Compliant	Negligible
0e	21.42%	21.17%	0.99	17.14%	BRE Compliant	Negligible
0f	18.29%	18.00%	0.98	14.63%	BRE Compliant	Negligible
0g	35.07%	34.82%	0.99	27.00%	BRE Compliant	Negligible
0h	35.96%	35.69%	0.99	27.00%	BRE Compliant	Negligible
0i	33.67%	33.81%	1.00	26.94%	BRE Compliant	Negligible
First Floor						
1a	34.12%	33.85%	0.99	27.00%	BRE Compliant	Negligible
1b	35.62%	35.34%	0.99	27.00%	BRE Compliant	Negligible
1c	19.65%	19.29%	0.98	15.72%	BRE Compliant	Negligible
1d	36.29%	35.95%	0.99	27.00%	BRE Compliant	Negligible
1e	22.74%	22.39%	0.98	18.19%	BRE Compliant	Negligible
1f	19.41%	19.06%	0.98	15.53%	BRE Compliant	Negligible
1g	36.93%	36.58%	0.99	27.00%	BRE Compliant	Negligible
1h	37.92%	37.57%	0.99	27.00%	BRE Compliant	Negligible
1i	34.20%	34.32%	1.00	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

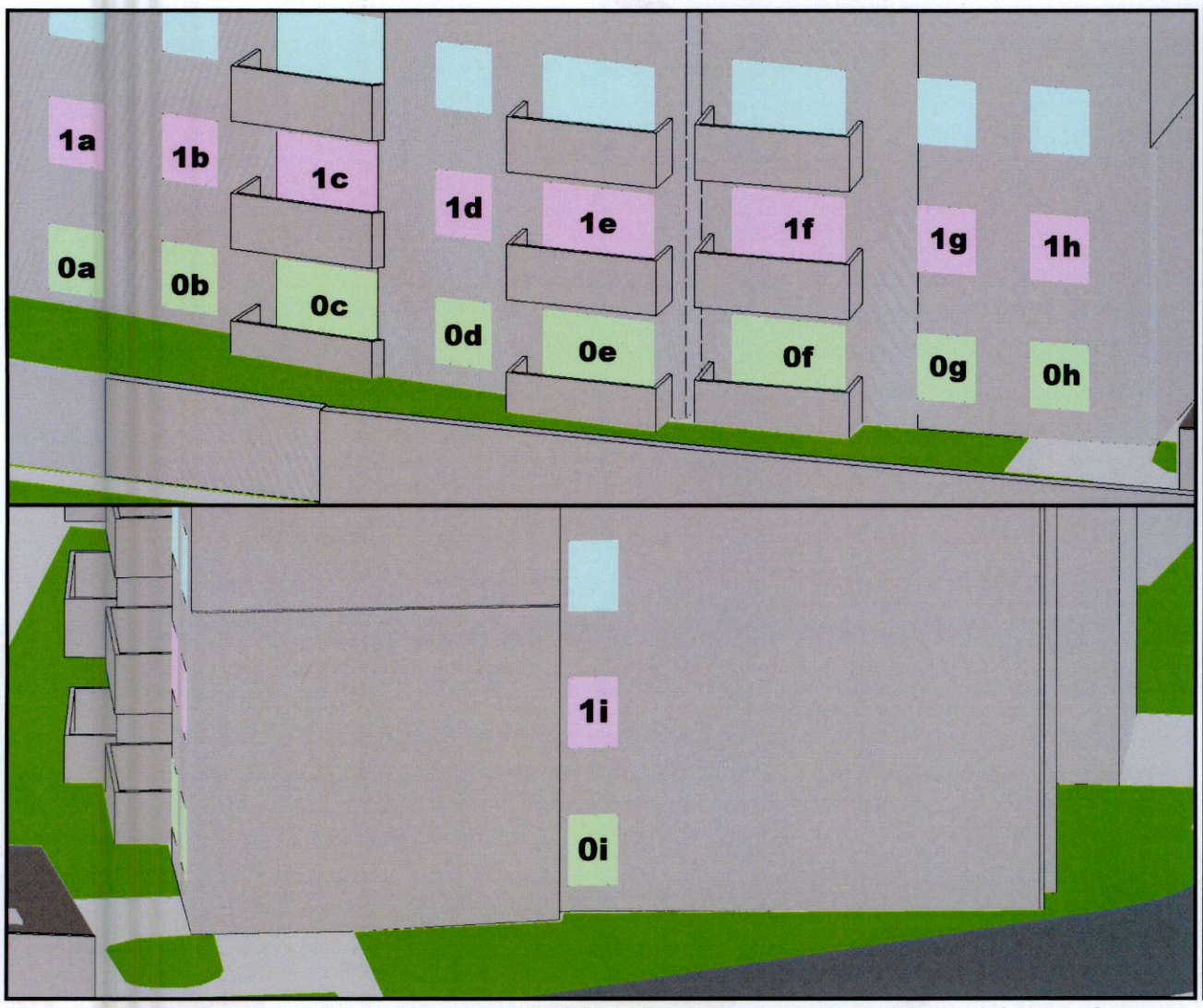


Figure A.5: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

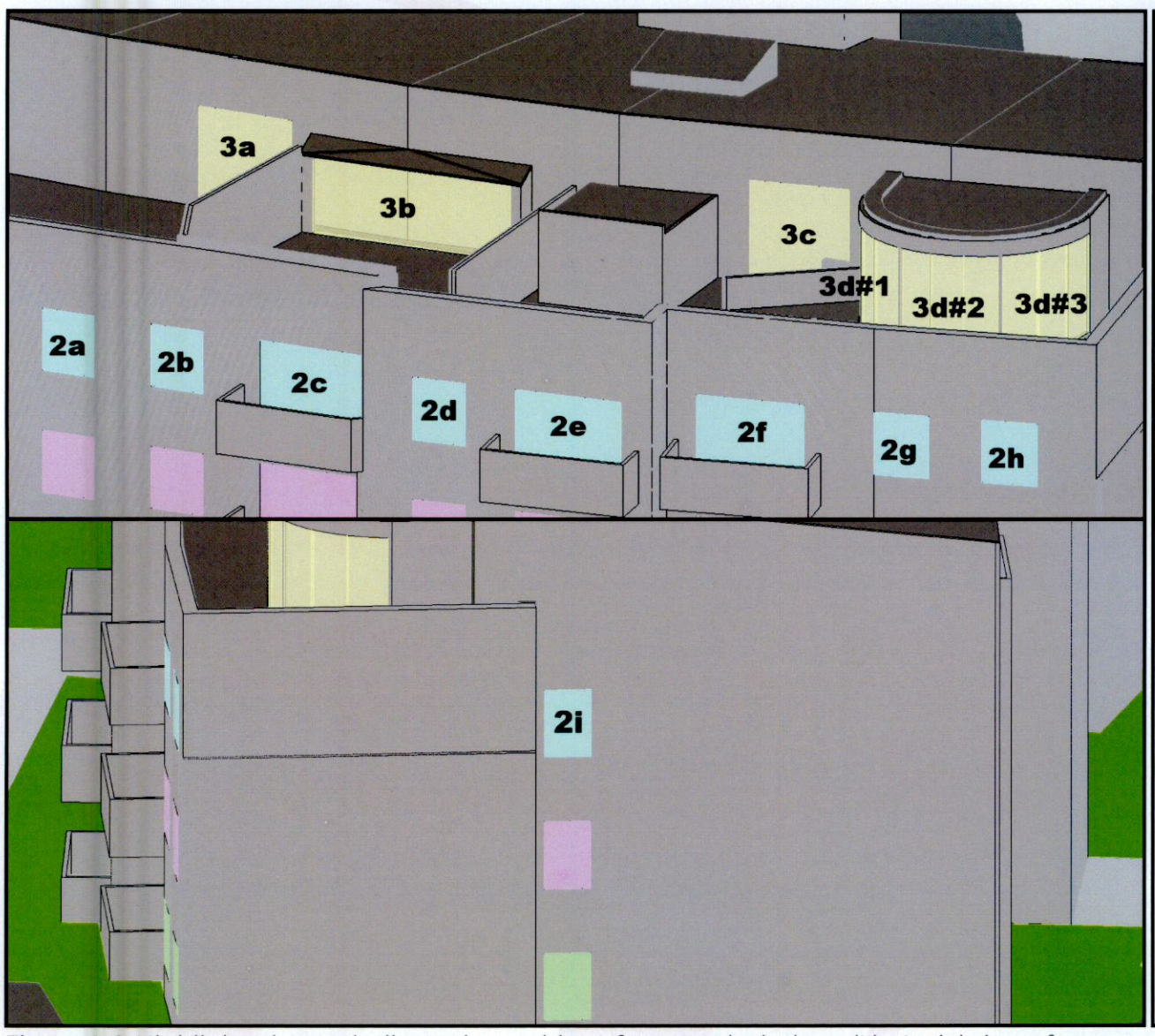
A.1.6 Ros Mor View, Scholarstown Road

Table No. A.1.5 - VSC Results: Ros Mor view, Scholarstown Road						
Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
Second Floor						
2a	37.27%	37.08%	0.99	27.00%	BRE Compliant	Negligible
2b	38.72%	38.52%	0.99	27.00%	BRE Compliant	Negligible
2c	36.99%	36.73%	0.99	27.00%	BRE Compliant	Negligible
2d	38.99%	38.76%	0.99	27.00%	BRE Compliant	Negligible
2e	38.99%	38.76%	0.99	27.00%	BRE Compliant	Negligible
2f	36.90%	36.67%	0.99	27.00%	BRE Compliant	Negligible
2g	38.73%	38.48%	0.99	27.00%	BRE Compliant	Negligible
2h	38.73%	38.49%	0.99	27.00%	BRE Compliant	Negligible
2i	35.85%	35.95%	1.00	27.00%	BRE Compliant	Negligible
Third Floor						
3a	37.40%	37.40%	1.00	27.00%	BRE Compliant	Negligible
3b	38.26%	38.16%	1.00	27.00%	BRE Compliant	Negligible
3c	35.36%	35.22%	1.00	27.00%	BRE Compliant	Negligible
3d#1	38.10%	38.02%	1.00	27.00%	BRE Compliant	-
3d#2	39.15%	39.07%	1.00	27.00%	BRE Compliant	-
3d#3	39.02%	39.05%	1.00	27.00%	BRE Compliant	-
3d#	38.74%	38.70%	1.00	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.



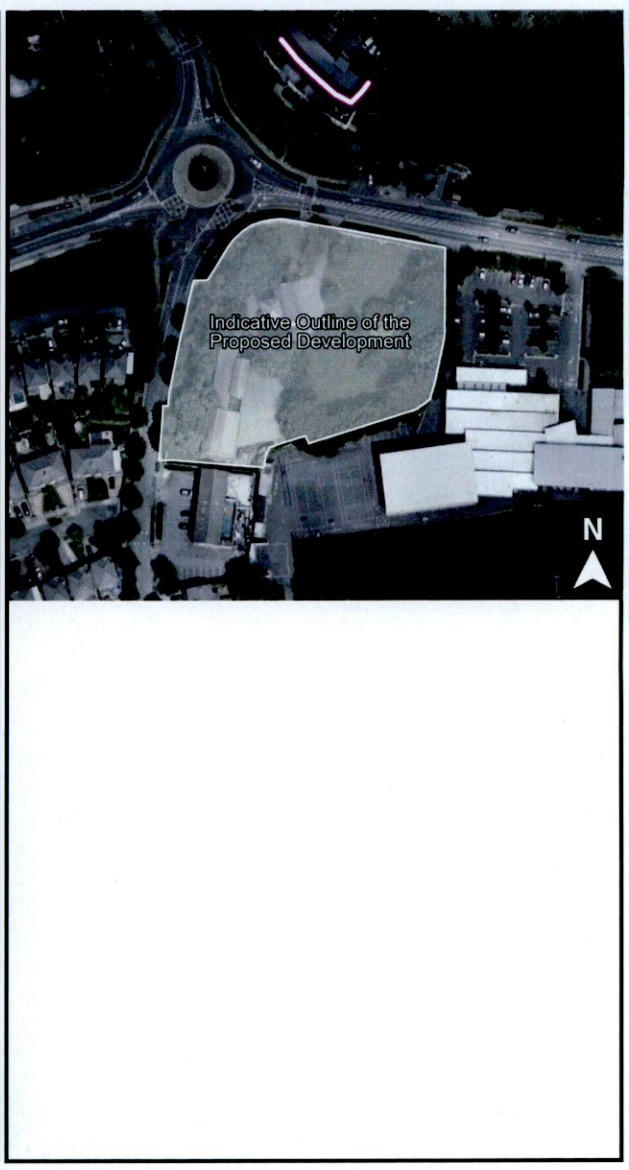


Figure A.6: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

A.1.7 Saint Colmcilles Community School, Scholarstown Road

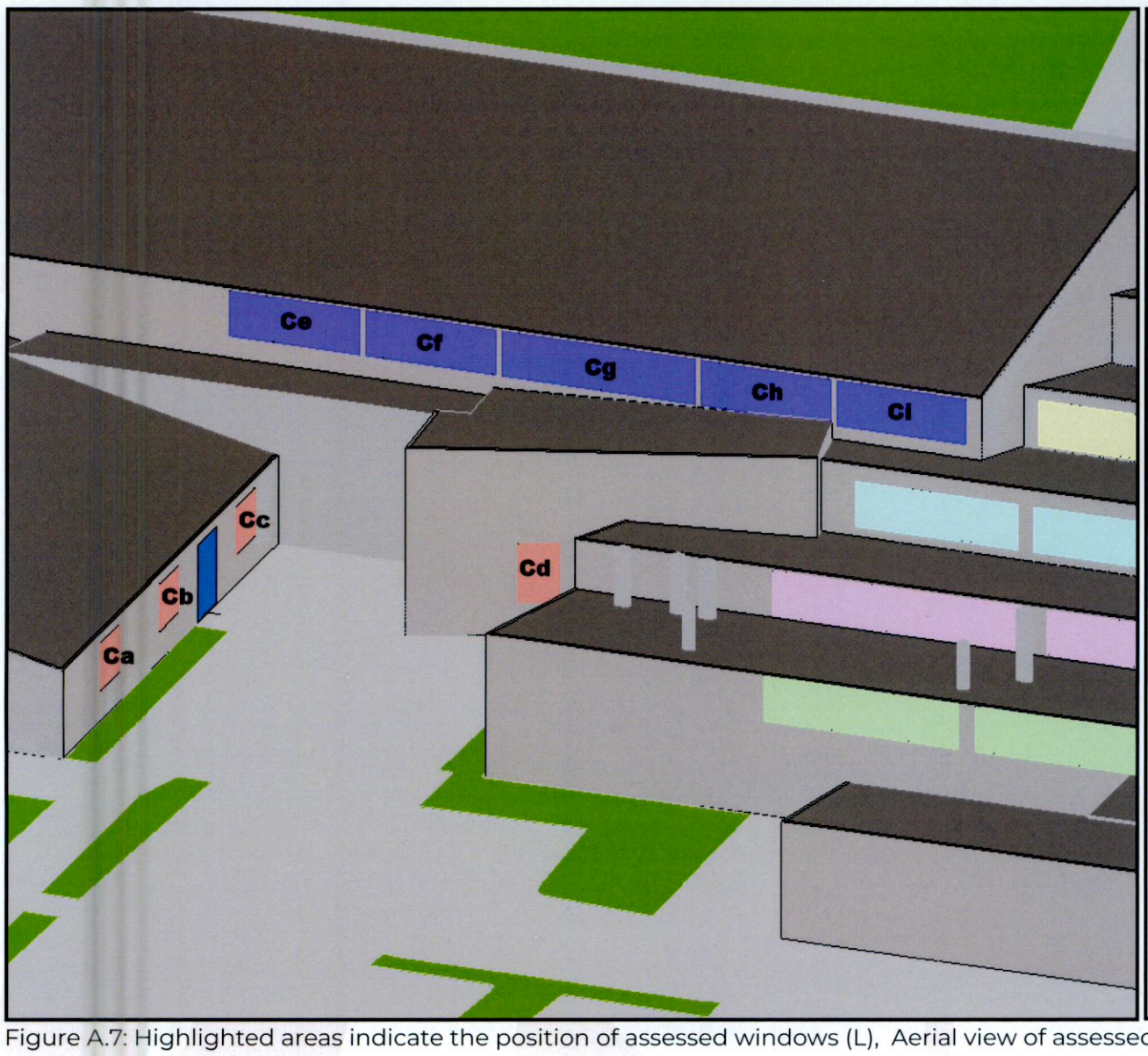
Table No. A.1.6 - VSC Results: Saint Colmcilles Community School, Scholarstown Road

Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
Ground Floor						
Ca	33.60%	33.88%	1.01	26.88%	BRE Compliant	Negligible
Cb	31.40%	31.63%	1.01	25.12%	BRE Compliant	Negligible
Cc	22.07%	22.17%	1.00	17.66%	BRE Compliant	Negligible
Cd	28.52%	28.52%	1.00	22.82%	BRE Compliant	Negligible
First Floor						
Ce	38.30%	38.42%	1.00	27.00%	BRE Compliant	Negligible
Cf	38.08%	38.22%	1.00	27.00%	BRE Compliant	Negligible
Cg	37.58%	37.74%	1.00	27.00%	BRE Compliant	Negligible
Ch	37.17%	37.38%	1.01	27.00%	BRE Compliant	Negligible
Ci	37.42%	37.67%	1.01	27.00%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.



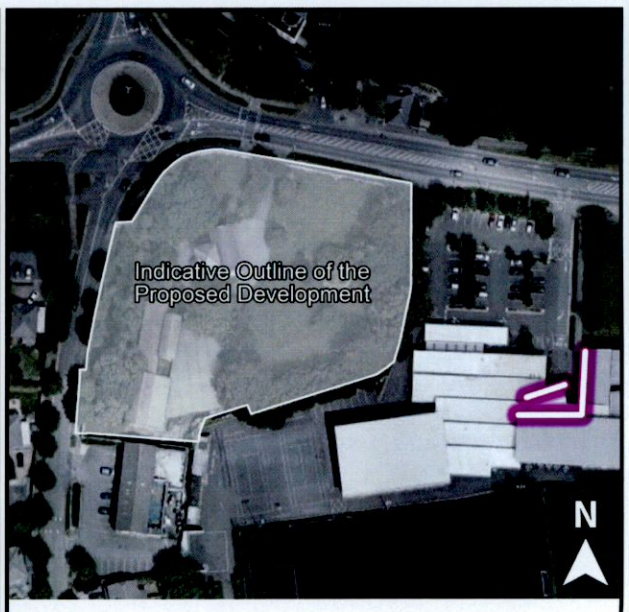


Figure A.7: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)

A.1.8 Saint Colmcilles Community School, Scholarstown Road

Table No. A.1.7 - VSC Results: Saint Colmcilles Community School, Scholarstown Road

Window Number	Baseline VSC Value	Proposed VSC Value	Ratio of Proposed VSC to Baseline VSC	Recommended minimum VSC*	Level of Compliance with BRE Guidelines	Effect of Proposed Development**
First Floor						
Ga	37.52%	37.90%	1.01	27.00%	BRE Compliant	Negligible
Gb	37.17%	37.66%	1.01	27.00%	BRE Compliant	Negligible
Gc	36.76%	37.37%	1.02	27.00%	BRE Compliant	Negligible
Gd	36.06%	36.84%	1.02	27.00%	BRE Compliant	Negligible
Ge	34.63%	35.59%	1.03	27.00%	BRE Compliant	Negligible
Gf	32.56%	33.37%	1.02	26.05%	BRE Compliant	Negligible
Second Floor						
Gg	36.21%	36.47%	1.01	27.00%	BRE Compliant	Negligible
Gh	34.94%	35.39%	1.01	27.00%	BRE Compliant	Negligible
Gi	34.96%	35.62%	1.02	27.00%	BRE Compliant	Negligible
Gj	32.69%	33.59%	1.03	26.15%	BRE Compliant	Negligible
Third Floor						
Gk	35.41%	35.64%	1.01	27.00%	BRE Compliant	Negligible
Gl	35.58%	35.88%	1.01	27.00%	BRE Compliant	Negligible
Gm	35.30%	35.66%	1.01	27.00%	BRE Compliant	Negligible
Gn	34.91%	35.35%	1.01	27.00%	BRE Compliant	Negligible
Go	34.38%	34.87%	1.01	27.00%	BRE Compliant	Negligible
Gp	33.36%	33.96%	1.02	26.69%	BRE Compliant	Negligible
Fourth Floor						
Gq	28.94%	29.14%	1.01	23.15%	BRE Compliant	Negligible
Gr	34.04%	34.27%	1.01	27.00%	BRE Compliant	Negligible
Gs	34.28%	34.54%	1.01	27.00%	BRE Compliant	Negligible
Gt	33.53%	33.83%	1.01	26.82%	BRE Compliant	Negligible
Gu	30.21%	30.62%	1.01	24.17%	BRE Compliant	Negligible
Fifth Floor						
Gv	33.03%	33.23%	1.01	26.42%	BRE Compliant	Negligible
Gw	31.90%	32.08%	1.01	25.52%	BRE Compliant	Negligible
Gx	27.11%	27.16%	1.00	21.69%	BRE Compliant	Negligible

* The BRE Guidelines state that in order for a proposed development to have a noticeable effect on the APSH/WPSH of an existing window, the value needs to drop below the stated target value of 25% (annual) / 5% (winter) **and** be less than 0.8 times the baseline value **and** it has to have a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

** For the interpretation of level of effects please refer to "3.2 Definition of Effects" on page 10 of the corresponding report.

If it can be determined or reasonably assumed that multiple windows are servicing the same room, APSH/WPSH has been calculated for the room rather than the individual windows.

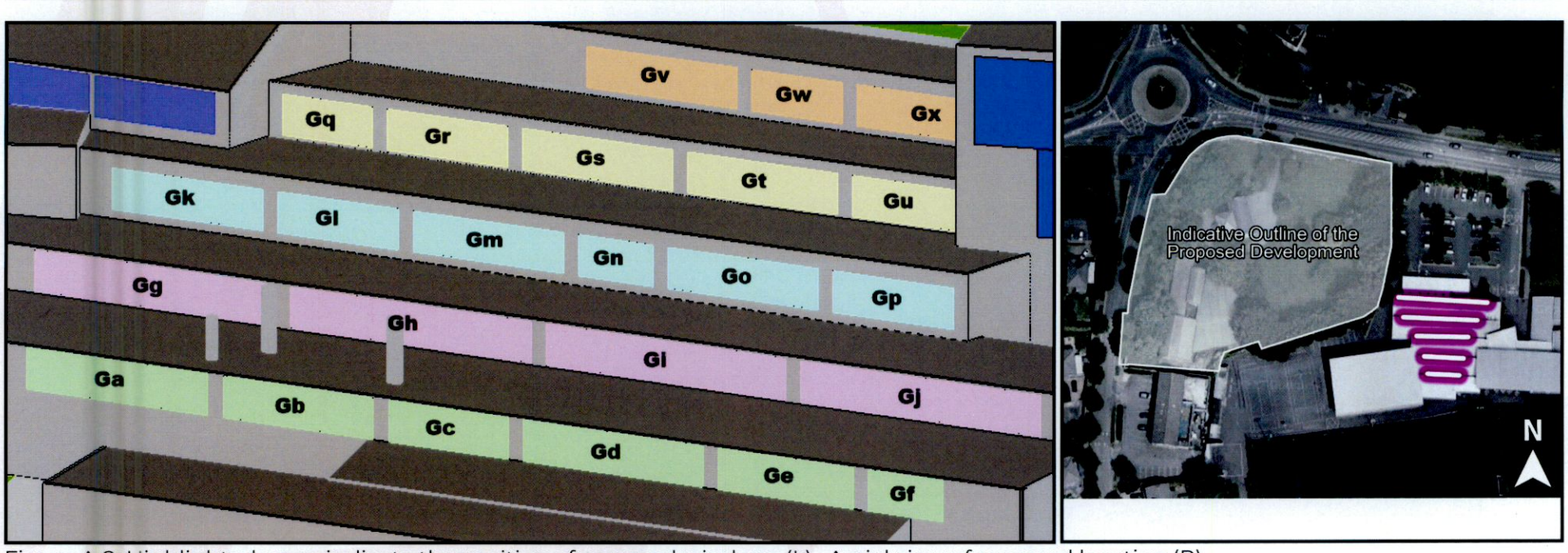


Figure A.8: Highlighted areas indicate the position of assessed windows (L), Aerial view of assessed location (R)