

**DAYLIGHT &
SUNLIGHT
REPORT**

relating to the

**PROPOSED
GROUND FLOOR
EXTENSION**

at

**16 DOWNSIDE
CRESCENT,
LONDON
NW3 2AP**

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1.0 EXECUTIVE SUMMARY

The findings detailed in this daylight and sunlight report shows that the proposals will have overall, limited effects on the surrounding residential properties considered in respect of daylight and sunlight.

The results of our examination are based upon the standard assessment procedure of the BRE Guide 'Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice' Edition 2011 (The BRE Guide). The results show that for any applicable reductions to the neighbouring applicable habitable windows / rooms analysed, these all readily meet target criteria for both daylight Vertical Sky Component (VSC) and daylight distribution. Equally, for sunlight review, the proposal is considered to maintain reasonable sunlight availability / meets BRE Guide target criteria to the habitable rooms for the reviewed neighbouring properties in reference to both Annual Probable Sunlight Hours and proportion in winter ('Total suns per room' – existing and proposed). We conclude, in reference to daylight and sunlight review, that there are minimal reductions to daylight (and sunlight as applicable) to the habitable rooms of neighbouring properties from the proposal and for any such reductions applicable, these readily meet the BRE Guide target criteria.

In terms of the results for shadow review / sunlight availability to neighbouring amenity (BRE Guide 2 hour test) all amenity areas readily meet BRE Guide target criteria with the isolated exception of one amenity area to the immediate north-east of the proposal (amenity area A2). However, it is evident that amenity area A2 already has limited sunlight (in reference to the 2 hour BRE Guide 2 hour test at the 21st March equinox - in real terms, just 15% of the amenity area having this ability), and whilst the shift change in the proposed is very limited in terms of garden area affected, when dealing with such limited sunlight area as existing, presentation of analysis as a percentage reduction, can result in disproportional results. In summary, we do not consider the impact of the proposal has a material effect on amenity area A2, in consideration of the limited sunlight as existing at the equinox and also that mid-summer review, there is very limited change (in effect, whilst it is acknowledged this is due to the sun appearing higher and longer in the sky, it is evident that there is hardly any change in the sunlight availability between existing and proposed scenario when there is significant more sunlight for assessment; the impact of the proposal is very limited when dealing with existing higher levels of sunlight / no longer encountering disproportional effect).

Thus we also conclude that on balance, there is no adverse shadowing impact resulting from the proposed change in massing volume in consideration of the BRE Guide 2 hour test at the equinox (for those amenity areas with any meaningful sunlight availability) and also at mid-summer.

2.0 OVERVIEW

The proposed scheme in terms of massing / volume changes and thus the focus of this report, relates to the replacement of the existing rear projection with a single-storey rear extension with modest increase in terms of massing volume. Accordingly, given the limited proposed massing / volume change, it is only applicable to analyse the neighbouring windows / rooms at the lowest / ground storey plus applicable amenity areas.

These proposals are shown in detail on the planning drawings and we have, therefore, not reproduced these albeit within Appendix 2, we provide surrounding neighbouring building window references to enable the analysis tables and other descriptions in this report to be more readily understood along with existing and proposed 3D perspective views.

3.0 INSTRUCTIONS

Our instructions are to assess the effects of the planning proposals on the surrounding residential properties in terms of daylight and sunlight and to report on our findings for submission to the local planning authority.

4.0 DAYLIGHT & SUNLIGHT

4.1 BACKGROUND

Daylight and sunlight amenities are considerations that the local planning authority can take into account when determining planning applications. There is no national planning policy relating to daylight and sunlight and overshadowing impacts. General guidance is, however, given on the need to protect existing amenity as set out in the National Planning Policy Framework .

At a Regional level, the London Plan sets out at Policy 7.6 that buildings should “not cause unacceptable harm to the surrounding land and buildings, particularly residential buildings....”

The London Borough of Camden which is the local planning authority for this application site, has policies on daylight and sunlight (Camden Planning Guidance – Amenity – March 2018) which refer to The BRE’s (Building Research Establishment) ‘Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice’ (2011) (The ‘BRE Guide’) which enables an objective assessment to be made as to whether the proposals will adversely affect the daylight (and sunlight where applicable) reaching existing habitable rooms. Accordingly, we have utilised this as our reference for analysis and this report.

When considering the Guide’s requirements, it is important to remember that the Guide is not a set of planning rules, which are either passed or failed. Numerical values are given and used, not as proscriptive or prescriptive values but as a way of comparing situations and coming to a judgement. The Guide is conceived as an aid to planning officers and designers by giving objective means of making assessments. The values given as desirable in the Guide may not be obtainable in dense urban areas where the grain of development is tighter. The Guide target values are typically based on a ‘sub-urban’ context.

4.2 METHODOLOGY

We have undertaken analysis of the proposed situations following the methodology set out in the BRE Guide on Site Layout Planning for Daylight and Sunlight (2nd Ed / 2011). We have considered daylight, both in terms of vertical sky component (VSC) and daylight distribution analysis and have also considered sunlight (again, by the method set out in the Guide) to see as applicable the proportion of the annual probable sunlight hours (APSHs) and proportion of winter sun, that the surrounding windows will benefit from in the existing and proposed scenario. Thus given that the proposal does not satisfy the specific '45° degree test' within Camden's Planning Guidance – Amenity – March 2018, we have undertaken an appropriate detailed review in reference to the BRE Guide, as required by the London Borough of Camden.

We have utilised measured survey data, OS, details from site inspection and the design drawings to develop an existing and proposed 3D model for analysis and have utilised industry recognised specialist software for daylight/sunlight review.

As the scheme drawings form part of the formal submission, these are not reproduced here. We have, however, shown existing and proposed perspective views and the surrounding building window references (please see Appendix 2).

In terms of neighbouring residential properties applicable for detailed daylight and sunlight review, we have considered;

14 Downside Crescent : applicable window / rooms within adjoining residential apartment block

18 Downside Crescent : applicable window / rooms within adjoining residential apartment block

To highlight, given the proposals relate to a rear ground floor extension, it is only necessary to analysis the neighbouring windows / rooms at the lowest / ground storey plus applicable amenity areas.

Whilst we have not accessed any neighbouring properties, we have made reasonable assumptions and interpreted where necessary, likely room arrangements / uses to these particular properties based from our review of the exterior and utilising in part, information available on the plan layouts within the public realm and in particular the plans contained as applicable, on the planning portal in reference to;

14 Downside Crescent : Planning ref. 11441/11987

18 Downside Crescent : Planning ref. 21461

4.3 DAYLIGHT - VSC

The Guide considers that in terms of vertical sky component (VSC), as a target value, if the VSC with the new development in place is both, less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The maximum value obtainable at a flat window in a vertical wall is effectively 40%.

VSC represents a ratio of the part of illuminance at a point on a given vertical plane (usually the centre point of window on the window wall face), that would be received directly from an overcast sky (CIE standard overcast sky) to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The VSC does not include reflected light, either from the ground or from other buildings.

Table 1 (VSC and sunlight for surrounding buildings) within Appendix 1 sets out the results of our examination. This shows the proposed VSC (and the annual probable sunlight hours and the winter proportion), in the existing and proposed situations, based on the Architects' design proposals. The assessment calculates current daylight reaching the windows of surrounding buildings and what effects the alterations as proposed will have on the existing situation. We have set out in Table 1 results for the properties analysed. From **Table 1** the following results can be summarised;

No 14 Downside Crescent (ground floor applicable) : VSC reductions are ranging up to 20% for windows thus such reductions do not exceed 20% / readily meet the BRE Guide target criteria. Whilst it is not known whether the ground floor flat is still kept to the original build floor plan arrangement or whether the kitchen, larger room and rear living room is now potentially converted to 'open-plan', such consideration is not relevant to VSC review since assessment is at the centre of window (as opposed to within the room / room layout dependent). However, for completeness, we have included all windows within close proximity even though some may not be habitable e.g. the larger room window.

No 18 Downside Crescent (ground floor applicable) : VSC reductions are minimal, ranging up to 5% for windows serving habitable rooms thus such reductions do not exceed 20% / readily meet the BRE Guide target criteria.

Thus in summary, the VSC to windows to applicable neighbouring properties in the proposed scenario, readily meet the BRE Guide target criteria.

4.4 DAYLIGHT DISTRIBUTION

Using the information previously mentioned, we have derived internal room layouts and prepared a set of daylight distribution or no-sky line calculations both as existing and as proposed to show what effects the proposal may have on neighbouring properties in terms of the daylight penetration into any habitable rooms applicable (**Table 2 – Daylight Distribution for surrounding buildings – Appendix 1**).

From Table 2, it can be seen in terms of daylight distribution, reductions in daylight distribution range;

No 14 Downside Crescent (ground floor applicable) : Daylight distribution reductions are negligible, ranging up to 2% if assuming that the ground floor flat is in the original built floor plan arrangement of separate kitchen, larder room and rear living room. We have also analysed these rooms on an 'open-plan' basis (which would then have the benefit of representing a single rear room being dual-aspect) and as anticipated, for such an 'open-plan' arrangement in this context, the analysis confirms that there is effectively, no reduction in daylight distribution based upon this analysis arrangement. Thus the original built plan room layout arrangement (individual rooms) is the more onerous spatial arrangement in this respect but as can be seen from the analysis results, there is minimal effect to daylight distribution from the proposal, even on this assumed basis of anticipated 'worst-case'.

No 18 Downside Crescent (ground floor applicable) : Reductions in daylight distribution are effectively zero thus readily meeting the BRE Guide target criteria.

Thus in terms of daylight distribution, for the neighbouring residential rooms applicable for analysis, there is limited reduction in daylight distribution and for any such reductions, these readily meet BRE Guide target criteria in considering existing to proposed scenario.

Therefore, given the results for both daylight VSC and daylight distribution, it is evident that where reductions are applicable, these are limited and readily meet BRE Guide target criteria. On this basis, we conclude that there is no material / adverse effects to daylight to the habitable rooms of neighbouring properties resulting from the proposals as in the proposed scenario, daylight is suitably maintained / readily meets the BRE Guide target criteria.

4.5 SUNLIGHT

On sunlight, only the windows that face within 90° of South, that is to say, facing from 90° to 270°, are normally considered under the sunlight criteria. We therefore, pass comment on the windows with this orientation. Within **Table 1 (VSC and Sunlight for surrounding buildings)**, the windows that face within 90° of north, which is to say, from 270° to 360° and from 360° to 90°, are marked as “north” and these windows are not, therefore, considered / commented upon for sunlight.

The BRE recommendation is that windows facing within 90° of South should have 25% of annual probable hours with 5% in the winter months (from the autumn equinox to the spring equinox). Where reductions below the recommended levels are contemplated, these should be targeted so that the proposed value is 0.8 times former value or above (unless a reduction of sunlight received over the whole year is not greater than 4% of annual probable sunlight hours).

To highlight, analysis review of windows primarily relates to main living rooms and conservatories i.e. sun important rooms as per the BRE Guide. Notwithstanding this, we have analysed all habitable rooms as previously considered for daylight.

As can be seen from Table 1 (Appendix 1), in terms of sunlight, all the habitable rooms assessed (that face within 90° of South and notwithstanding whether they are living rooms / sun important rooms), where reductions are applicable, adhere to the BRE Guide target criteria in reference to both APSH and winter ('Total suns per room' – existing and proposed).

In summary, the proposal does not result in any material reductions to sunlight to neighbouring habitable rooms in reference to the BRE Guide.

4.6 SUNLIGHT TO AMENITY

The BRE Guide states that for the garden (amenity space) of an existing property, it is recommended that for it to appear adequately sunlit throughout the year;

- 1) *at least half of a garden or amenity area should receive at least two hours of sunlight on 21st March.*
- 2) *If as a result of a new development an existing garden or amenity area does **not** meet the above, and the area which can receive two hours of sun on 21st March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21st March.*

We have undertaken analysis for the neighbouring rear garden areas immediately either side of the proposal, namely No 14 Downside Crescent and No 18 Downside Crescent (the latter having two respective amenity areas), as being the closest amenity areas to the proposal / appropriate for analysis and the results of our analysis are summarised as follows:-

Ability to receive 2 hours of Sun on the Ground at the EQUINOX (21ST MARCH)

Amenity Area / Property	Existing 2 hour Area (ability to receive 2 hours sun at Equinox)		Proposed 2 hour Area (ability to receive 2 hours sun at Equinox)		Proposed / Existing for Sun
	Sun	Shaded	Sun	Shaded	
Amenity A1 / 14 Downside Crescent	73%	27%	73%	27%	1.00
Amenity A2 / 18 Downside Crescent	15%	85%	9%	91%	0.60
Amenity A3 / 18 Downside Crescent	70%	30%	70%	30%	1.00

The results of analysis above considers the area of amenity reviewed and what percentage of that area currently has the ability to receive 2 hours (or more) of sunlight at the equinox (21st March) and what area would have this ability in the proposed scenario; a column 'pr/ex' (proposed/existing) expresses the proposed value in reference to a multiple of the existing or former value. Also within **Appendix 3**, for visual reference, **Plot 300** depicts the amenity areas assessed and also the extent of amenity area that has the ability to receive 2 hours (or more of sun), at the equinox both in existing and proposed scenario.

The analysis results confirm that in respect of the BRE 2 hour sun on the ground review at the equinox (21st March), for both Amenity A1 (14 Downside Crescent) and Amenity A3 (18 Downside Crescent), there is effectively no reduction in the area that has the ability to receive 2 hours or more of sun at the equinox (21st March); the analysis readily meets the BRE Guide target criteria for these amenity areas. In respect of Amenity A2 (18 Downside Crescent), it can be seen that as existing, given that this garden has such a limited area of just 15% as

having the ability to receive 2 hours of sunlight at the equinox, such a small area is sensitive to disproportional theoretical 'percentage reduction' when values are so low to start with. In real terms, since the amenity area, as existing, has such a small area which has the ability to receive 2 hours or more of sunlight at the equinox (which in this instance, is just 15% of the amenity area), significant shadowing already exists with the proposal not really making a material impact when existing levels are already so minimal (at the equinox).

When such low levels of sunlight availability at the equinox already exists to amenity areas (as is the case of Amenity A2 - 18 Downside Crescent), it is perhaps more helpful to consider the availability of sunlight at the time of year when more sunlight availability as existing is applicable / more likely the amenity area is utilised, thus consideration has also been given to mid-summer (21st June) with analysis review presented below on this basis:-

Ability to receive 2 hours of Sun on the Ground at the MID-SUMMER (21ST JUNE)

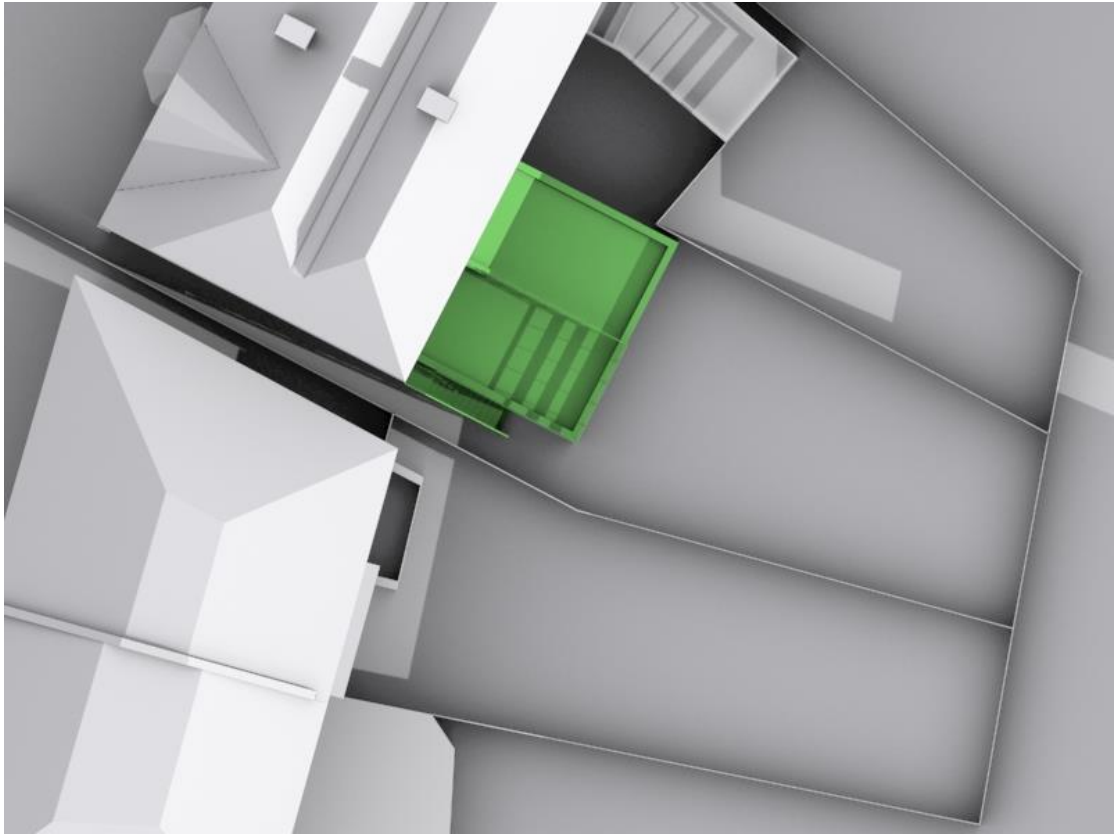
Amenity Area / Property	Existing 2 hour Area (ability to receive 2 hours sun at Equinox)		Proposed 2 hour Area (ability to receive 2 hours sun at Equinox)		Proposed / Existing for Sun
	Sun	Shaded	Sun	Shaded	
Amenity A1 / 14 Downside Crescent	98%	2%	98%	2%	1.00
Amenity A2 / 18 Downside Crescent	78%	22%	75%	25%	0.96
Amenity A3 / 18 Downside Crescent	97%	3%	97%	3%	1.00

Similar to the equinox review, also within **Appendix 3**, for visual reference, **Plot 301** depicts the amenity areas assessed and also the extent of amenity area that has the ability to receive 2 hours (or more of sun) but now at mid-summer (June 21st), again in existing and proposed scenario.

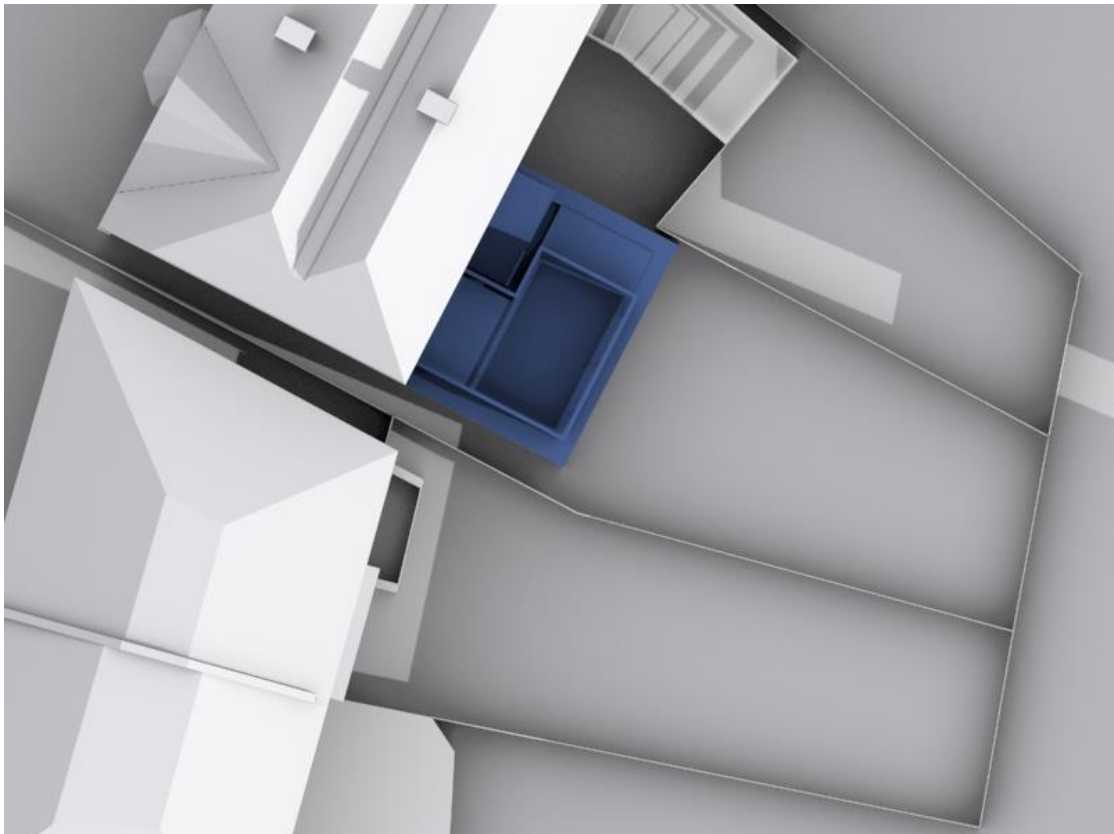
Thus in consideration of review at mid-summer, it can be seen that the proposal has minimal effect in the case of Amenity A2 - 18 Downside Crescent, with reduction of 4% area only, of the ability to receive 2 hours of sunlight at mid-summer. For Amenity A2 (18 Downside Crescent) and Amenity 1 (14 Downside Crescent), there is still no reduction for the 2 hour amenity review (albeit at mid-summer now as opposed to the 21st March equinox).

Thus, we conclude that on balance, there is no adverse shadowing impact resulting from the proposed change in massing volume in consideration of the BRE Guide 2 hour test at the equinox (for those amenity areas with any meaningful sunlight availability) and also at mid-summer.

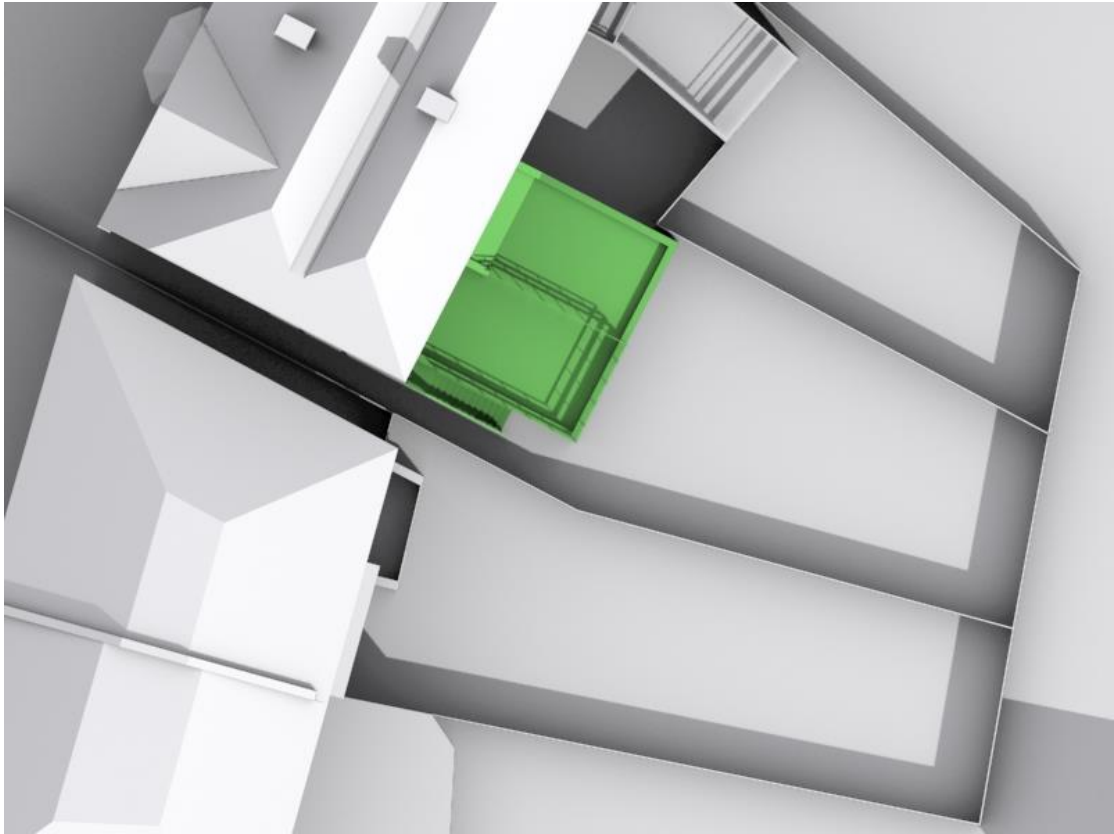
In terms of transient shadow studies, these are visual presentation in the following images as existing and as proposed and are taken at two-hourly intervals through the day on the Equinox (21st March) to show the cast of the shadows pictorially. As can be seen from the sequence, there is very limited change in the shadowing (given the limited massing change proposed on site); it is important to highlight this is obviously transient shadowing and any increase in shadowing is for limited parts of the day (please see earlier comments on review of the analysis for the standard BRE Guide 2 hour amenity test).



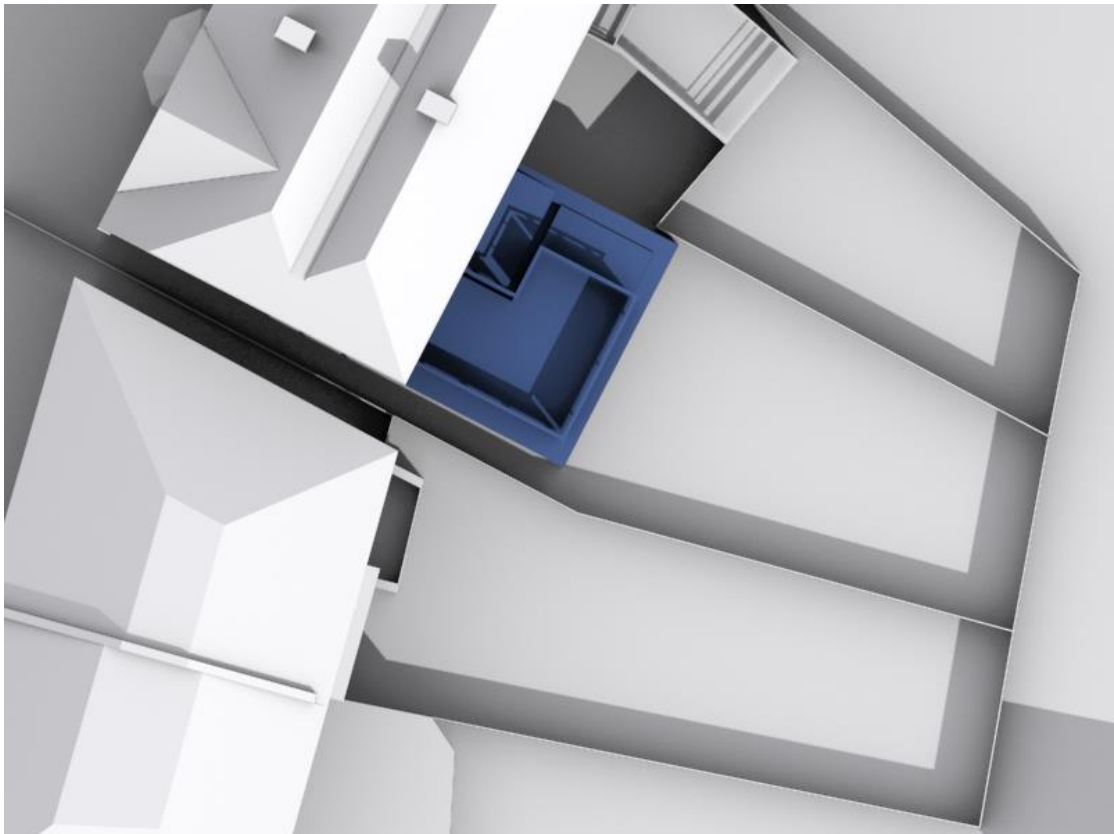
Shadow Diagram - 08.00 hours as existing on the Equinox



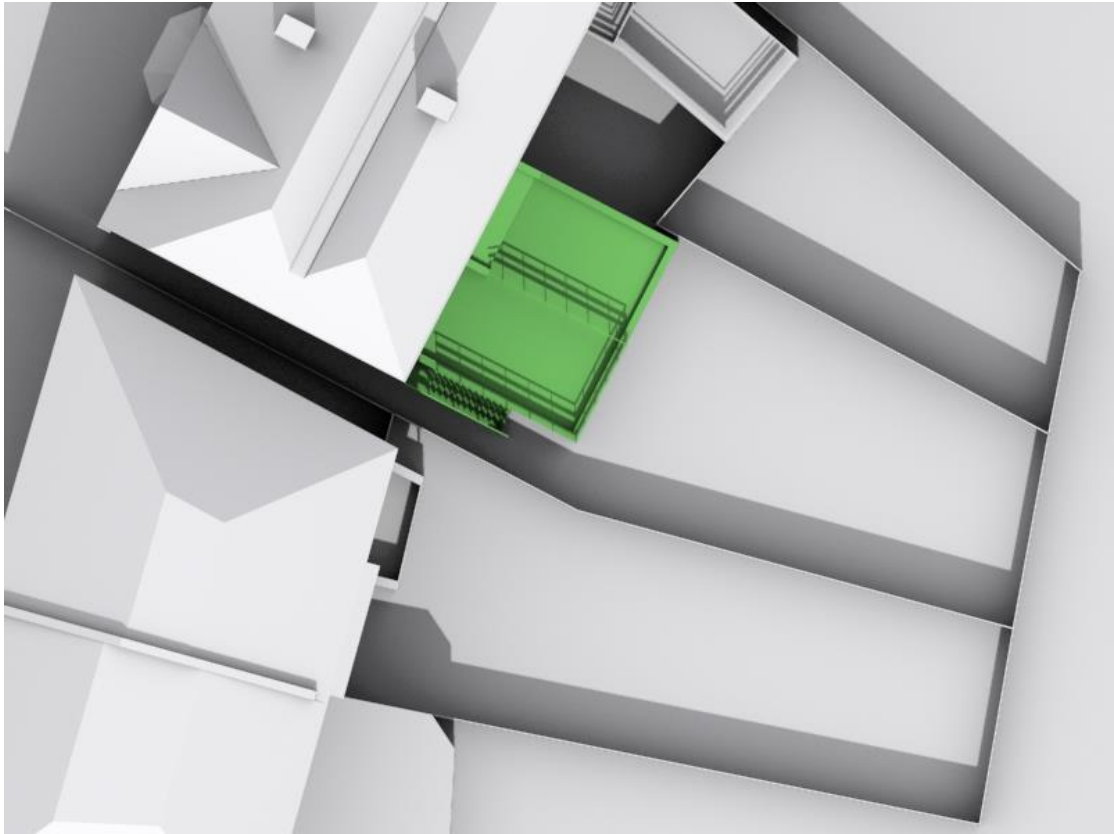
Shadow Diagram - 08.00 hours as proposed on the Equinox



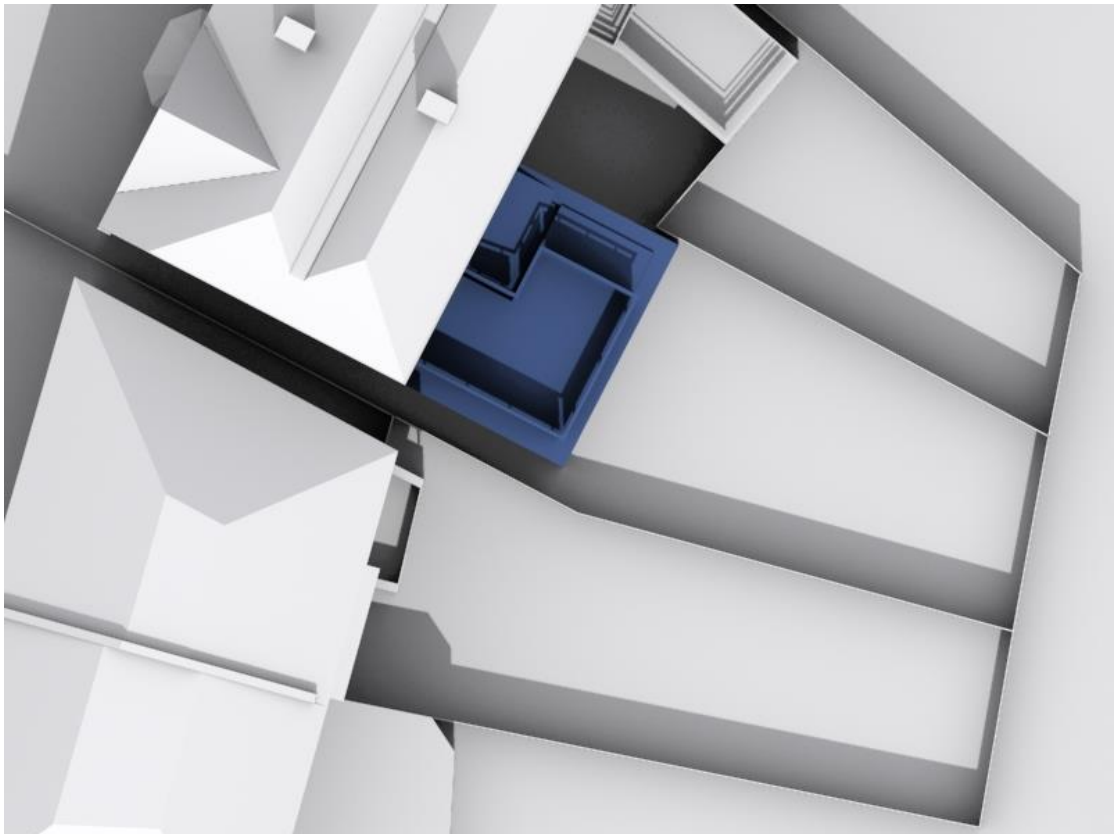
Shadow Diagram - 10.00 hours as existing on the Equinox



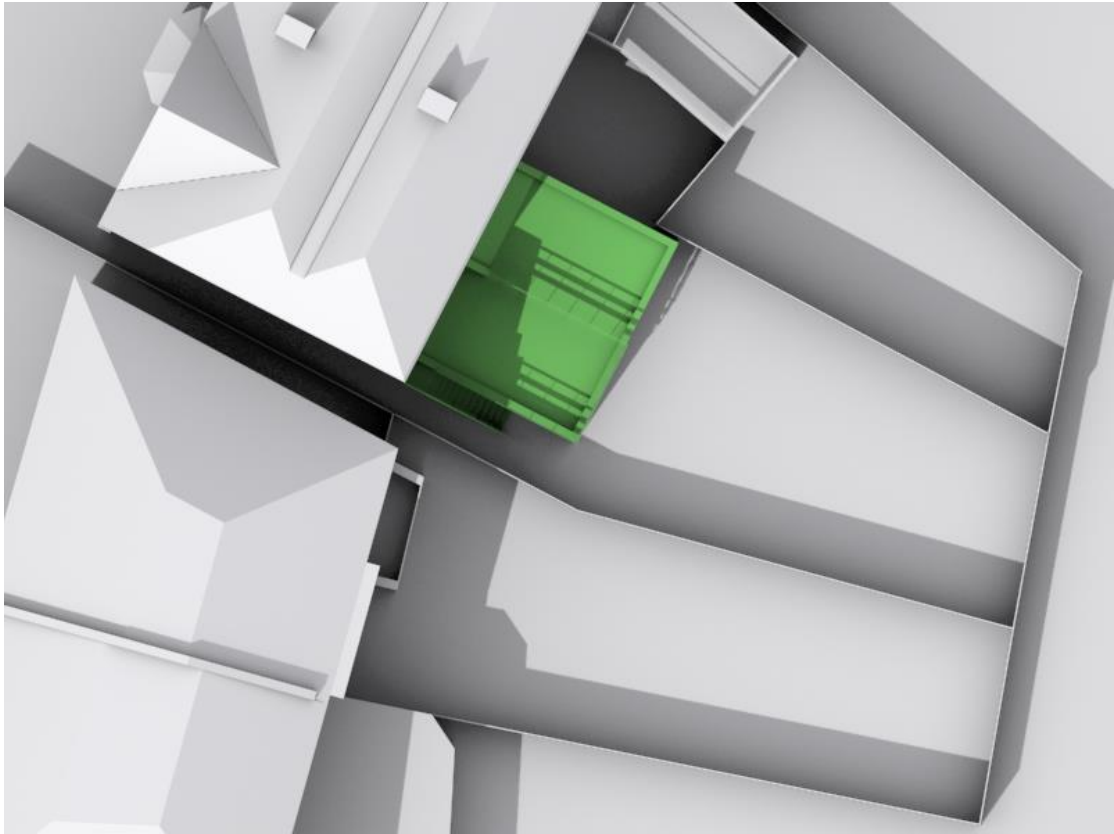
Shadow Diagram - 10.00 hours as proposed on the Equinox



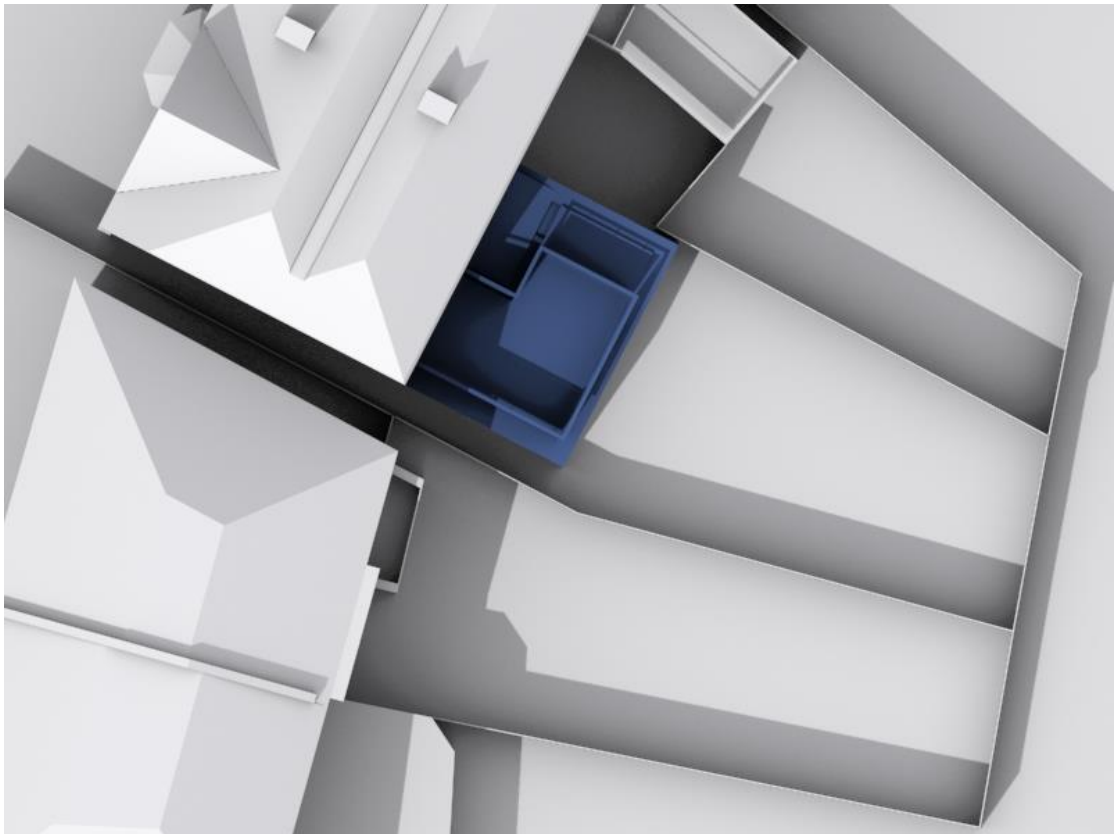
Shadow Diagram - 12.00 hours as existing on the Equinox



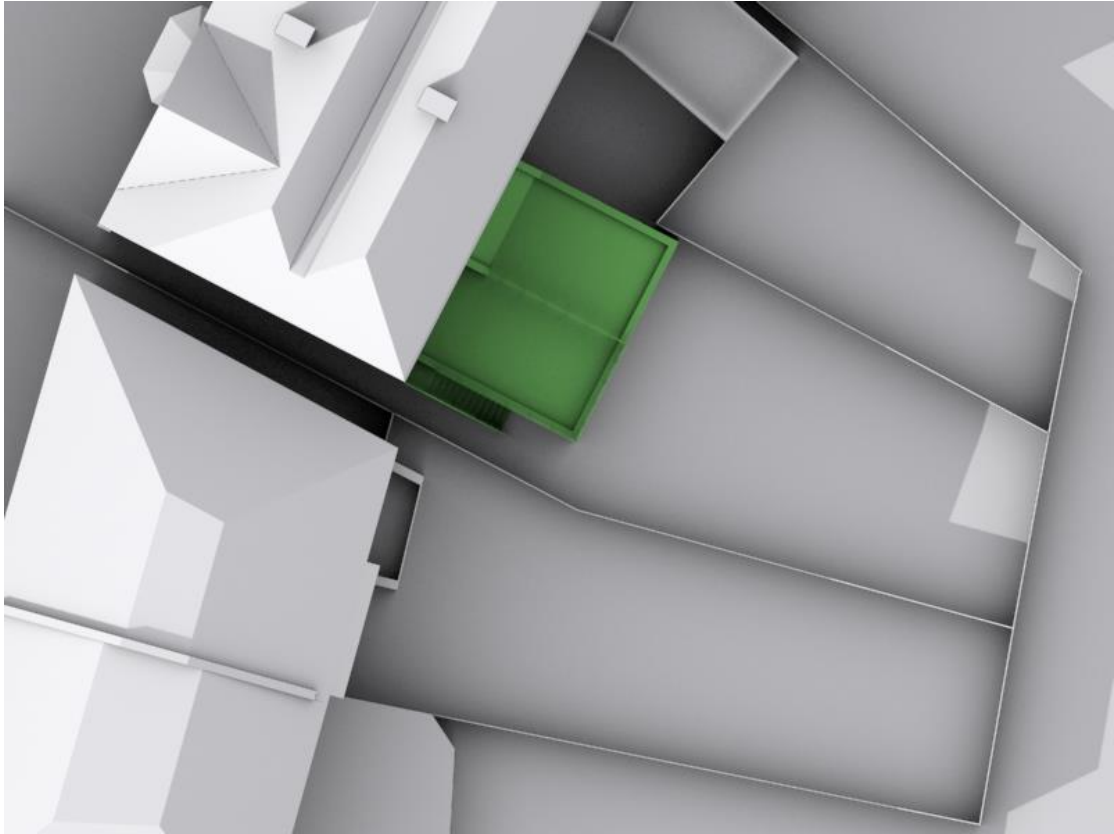
Shadow Diagram - 12.00 hours as proposed on the Equinox



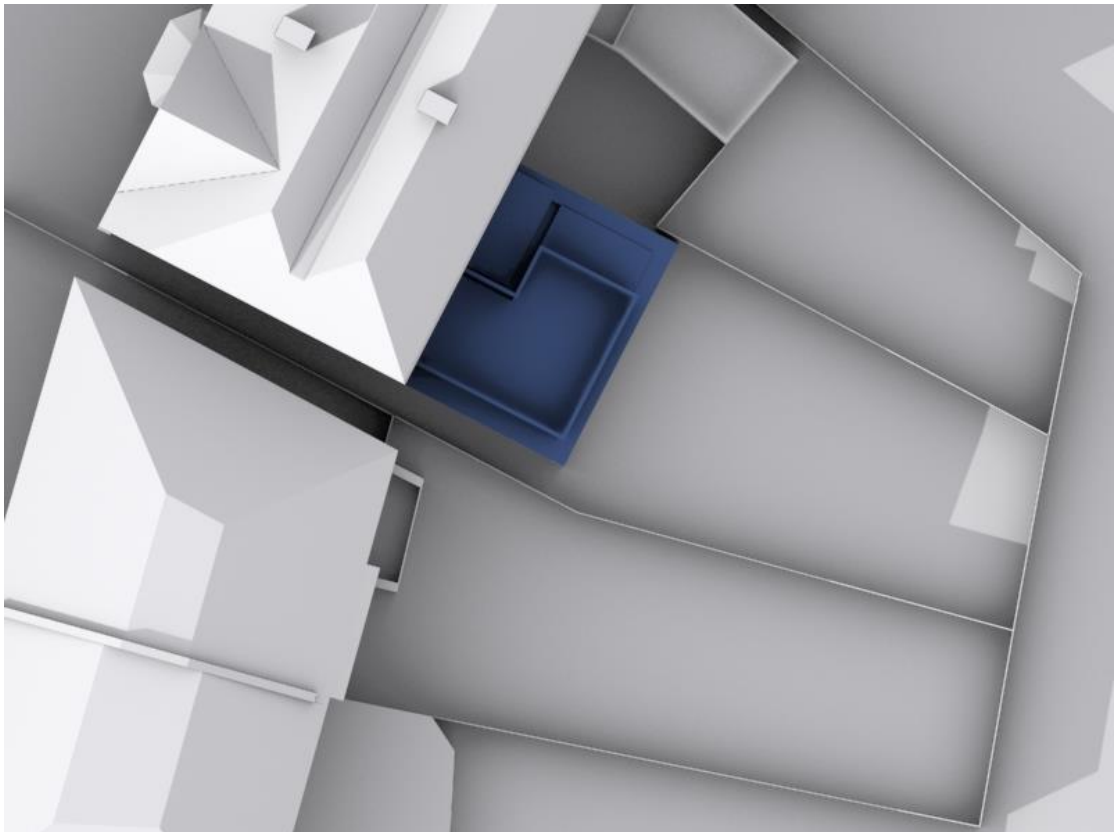
Shadow Diagram - 14.00 hours as existing on the Equinox



Shadow Diagram - 14.00 hours as proposed on the Equinox



Shadow Diagram - 16.00 hours as existing on the Equinox



Shadow Diagram - 16.00 hours as proposed on the Equinox

5.0 CONCLUSION

We conclude, in reference to daylight and sunlight review, that there are minimal reductions to daylight (and sunlight as applicable) to the habitable rooms of neighbouring properties from the proposal and for any such reductions applicable, these readily meet the BRE Guide target criteria.

We also conclude that on balance, there is no adverse shadowing impact resulting from the proposed change in massing volume in consideration of the BRE Guide 2 hour test at the equinox (for those amenity areas with any meaningful sunlight availability) and also at mid-summer.

APPENDICES

Appendix 1 - Table 1 - VSC and Sunlight for surrounding buildings
Table 2 - Daylight Distribution for surrounding buildings

Appendix 2 - Existing & Proposed 3D Perspective Views and
Neighbouring Building Context and associated Window / Room
References

Appendix 3 - Neighbouring Amenity – 2 hour BRE Shadow Study

Appendix 1

Table 1 - VSC and Sunlight for surrounding buildings

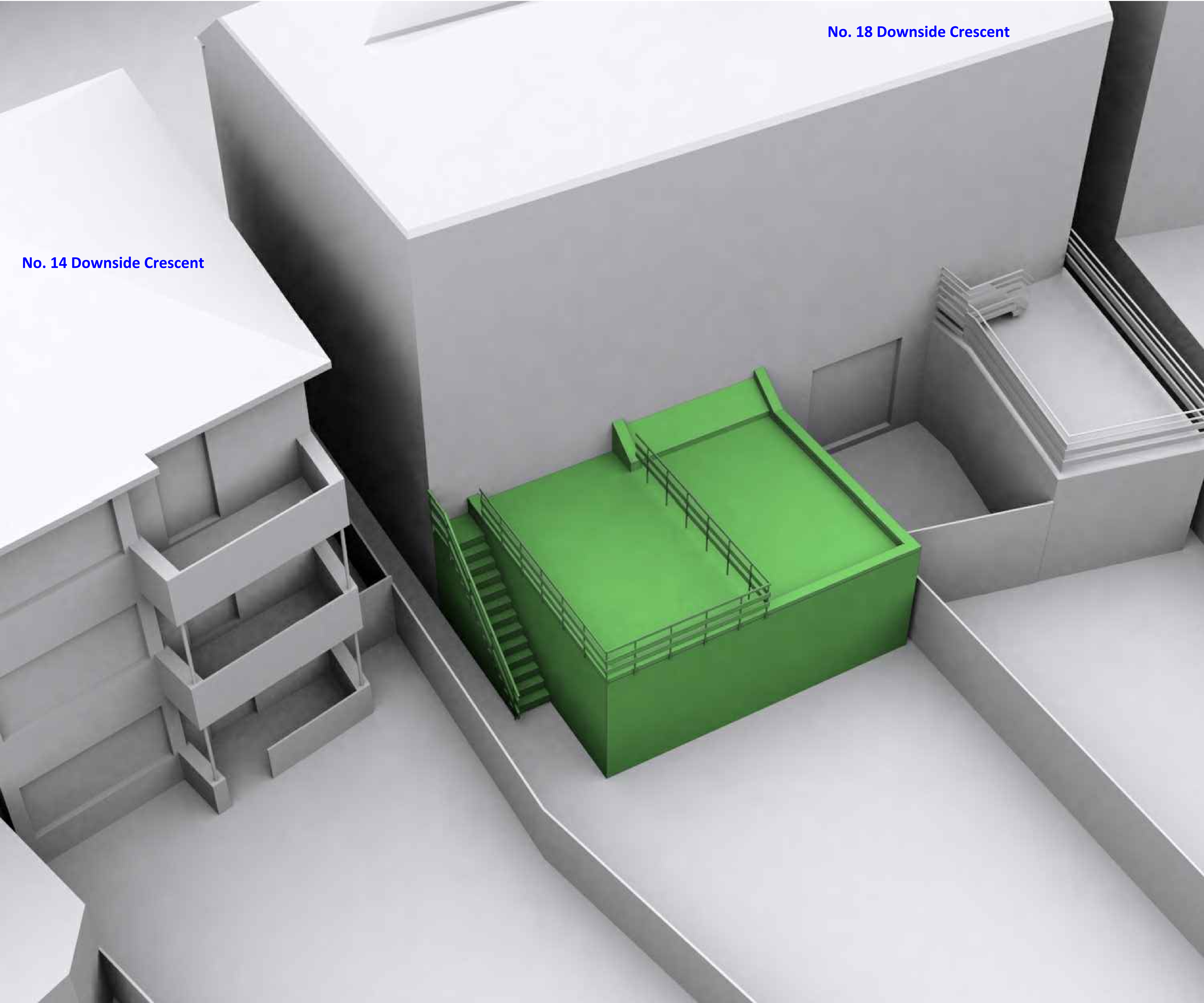
Table 2 - Daylight Distribution for surrounding buildings

Table 2 - Daylight Distribution for surrounding buildings

Floor Ref.	Room Ref.	Room Use.		Room Area	Lit Area Existing	Lit Area Proposed	Pr/Ex	Meets BRE Criteria
No. 18 Downside Crescent								
Ground	R1	Living Room	Area m2 % of room	22.65	22.49 99%	22.49 99%	1.00	YES
No. 14 Downside Crescent								
Ground	R1	Living Room	Area m2 % of room	23.91	23.74 99%	23.66 99%	1.00	YES
	R2	Unknown	Area m2 % of room	1.66	0.27 16%	0.26 16%	0.99	YES
	R3	Kitchen	Area m2 % of room	9.84	1.75 18%	1.71 17%	0.98	YES
	R4	Bathroom	Area m2 % of room	n/a - non-habitable				
	No. 14 Downside Crescent (open-plan alternative layout review)							
Ground	R1	LKD	Area m2 % of room	36.61	36.61 100%	36.61 100%	1.00	YES
	R4	Bathroom	Area m2 % of room	n/a - non-habitable				

Appendix 2

Existing & Proposed 3D Perspective Views and Neighbouring Building Context and associated Window References



No. 14 Downside Crescent

No. 18 Downside Crescent

REV.	NOTES	DWN	DATE

Notes:



CHARTERED BUILDING SURVEYORS

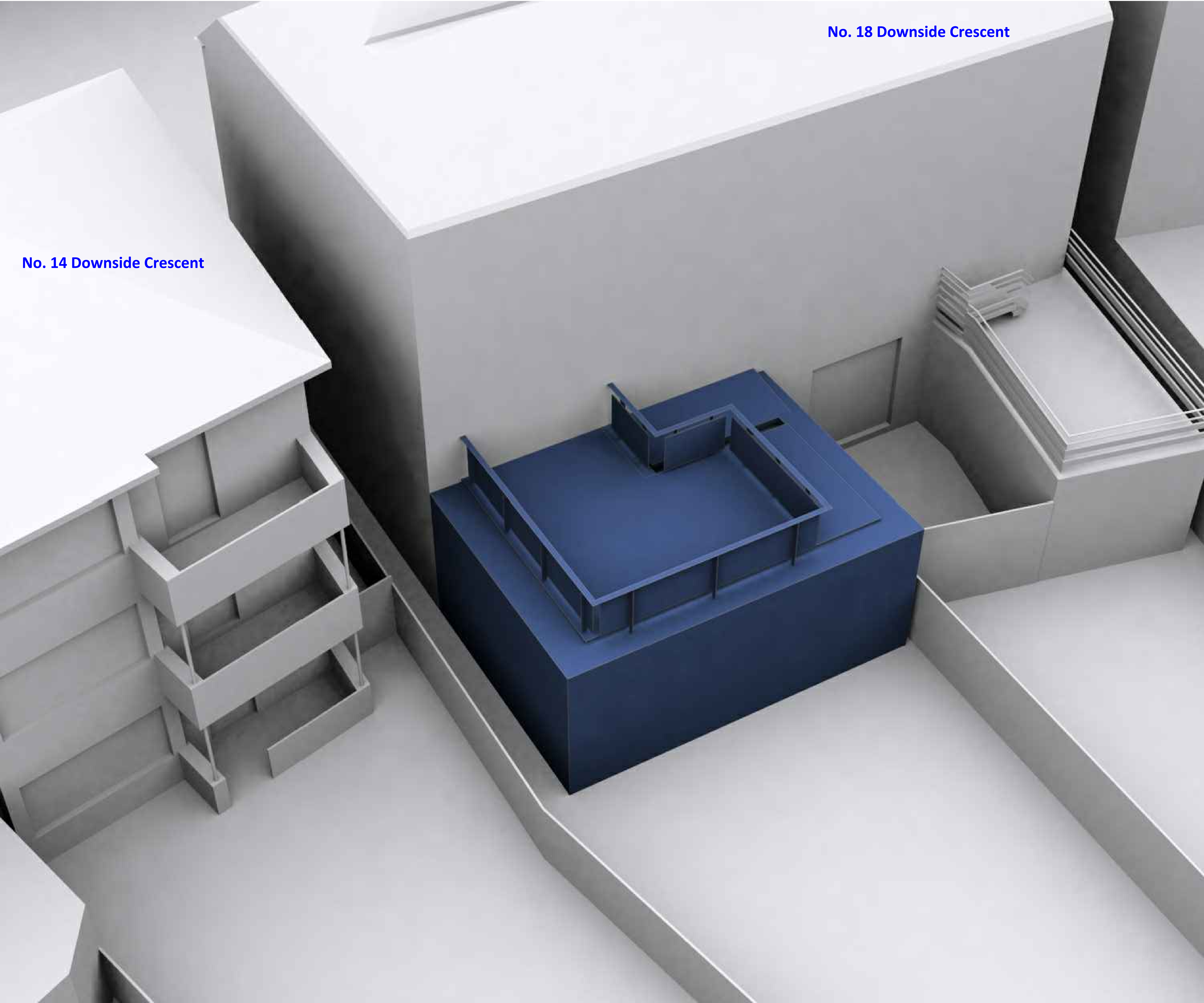
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DRAWN	-	
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		SCALE
		NTS (A3 Sheet)

No. 16 Downside Crescent

Existing 3d View

Job No	Rev	Drawing Number
200/CT	-	100
Date : 05.07.2019		



No. 14 Downside Crescent

No. 18 Downside Crescent

REV.	NOTES	DWN	DATE

Notes:



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No. 16 Downside Crescent

Proposed 3d View		
Job No	Rev	Drawing Number
200/CT	-	101
Date : 05.07.2019		

A 3D architectural rendering of a building facade, labeled "No. 14 Downside Crescent" in blue text at the top center. The building features a light gray facade with a central section containing two balconies. The balconies are labeled "W2" in yellow text. The facade is divided into sections labeled "W1" (left), "W2" (center), "W3" (right), "W4" (far right), "W5" (top right), and "W6" (bottom right). The building has a white roof and a green ramp or staircase on the right side.

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Notes:	
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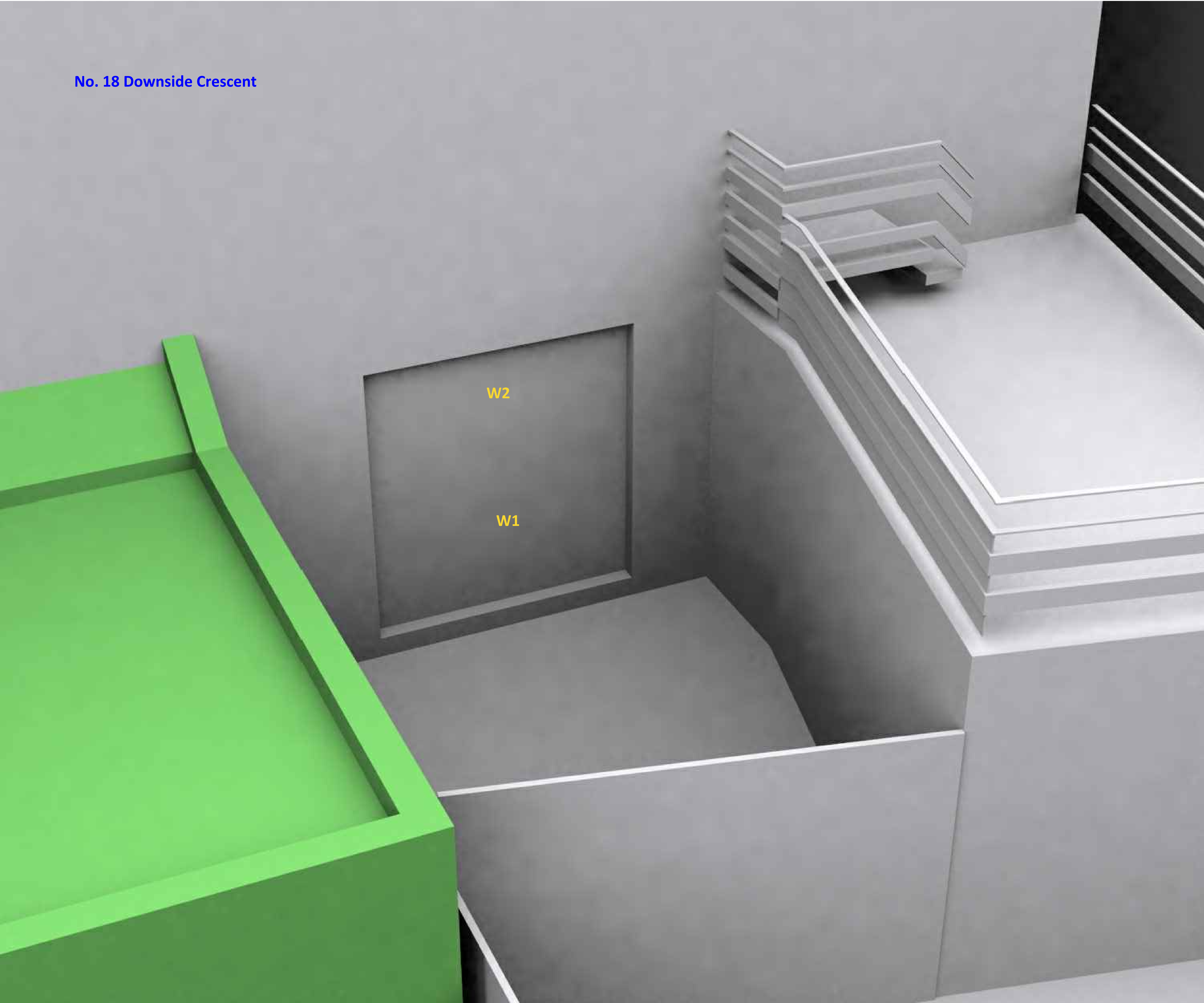


No. 16 Downside Crescent

1. *Journal of the American Medical Association*, 2000; 283: 2689-2696.

[illegible]

No. 18 Downside Crescent



REV.	NOTES	DWN	DATE

Notes:



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No. 16 Downside Crescent

Window Maps
No. 18 Downside Crescent

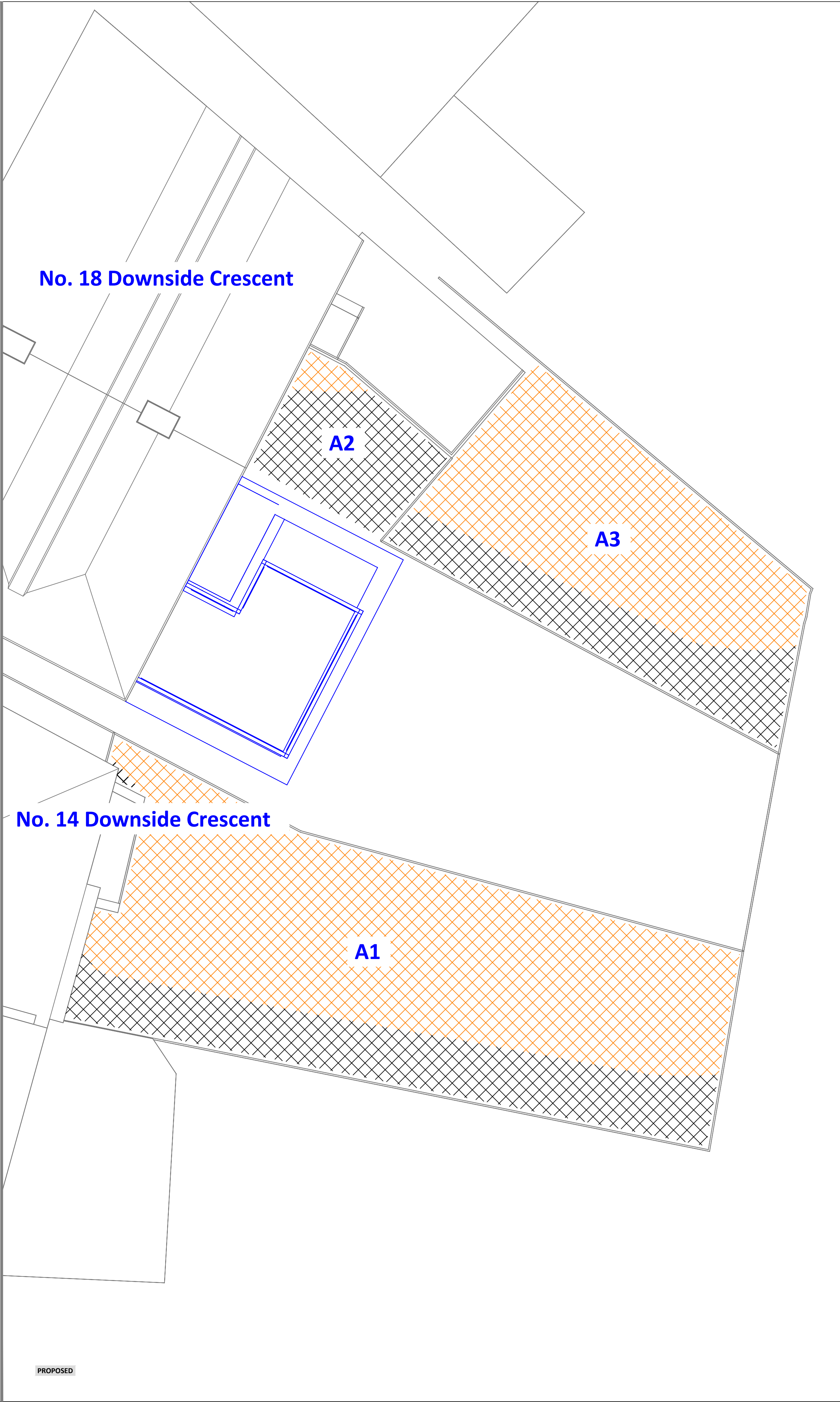
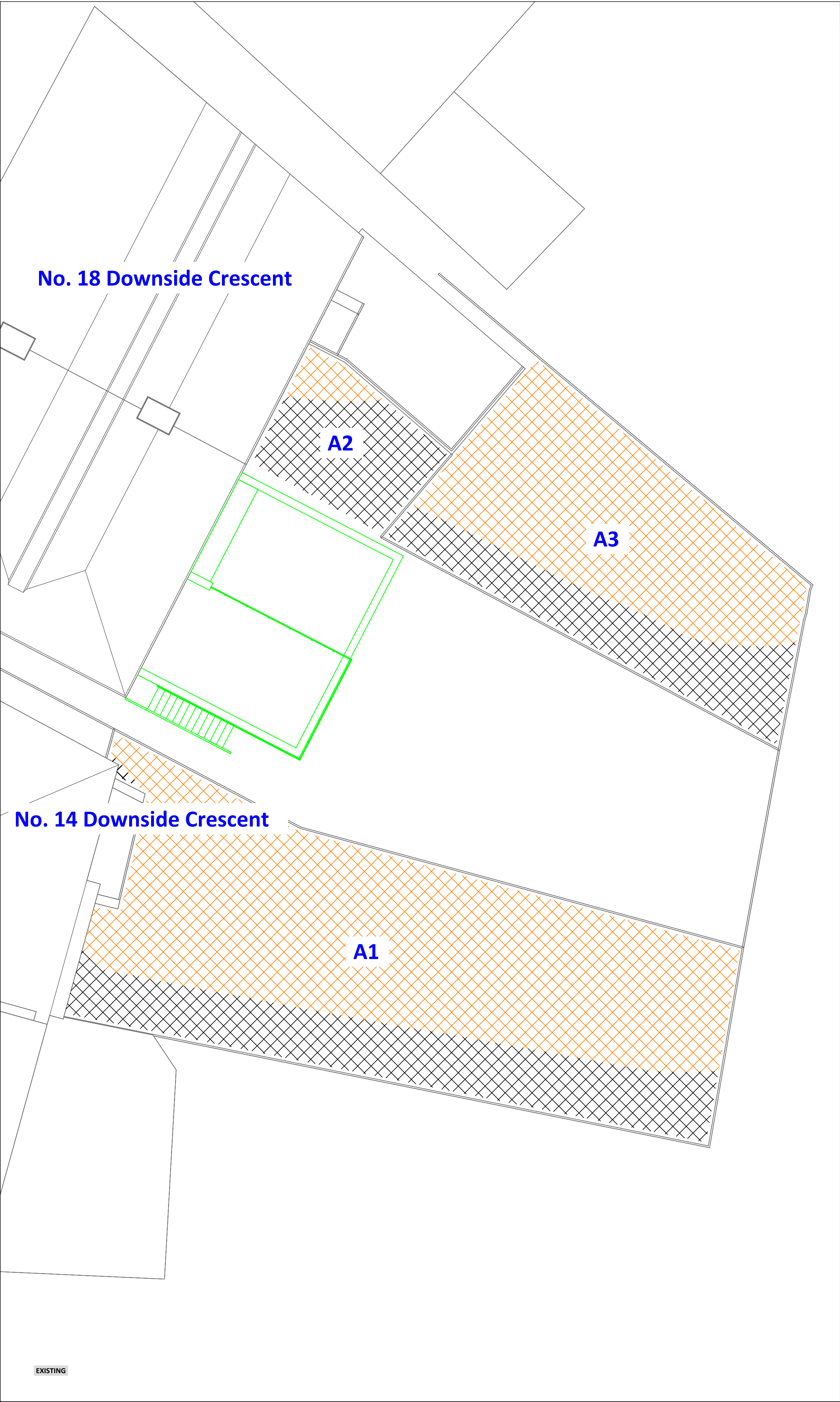
Job No	Rev	Drawing Number
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Date : 05.07.2019		

Appendix 3

Neighbouring Amenity – 2 hour BRE Shadow Study:-

Plot 300 - 21st March (equinox)

Plot 301 – 21st June (mid-summer)



REV.	NOTES	DWN	DATE

Notes:
[Orange cross-hatch pattern] >2H Sunlight (21st March)
[Black cross-hatch pattern] <2H Sunlight (21st March)



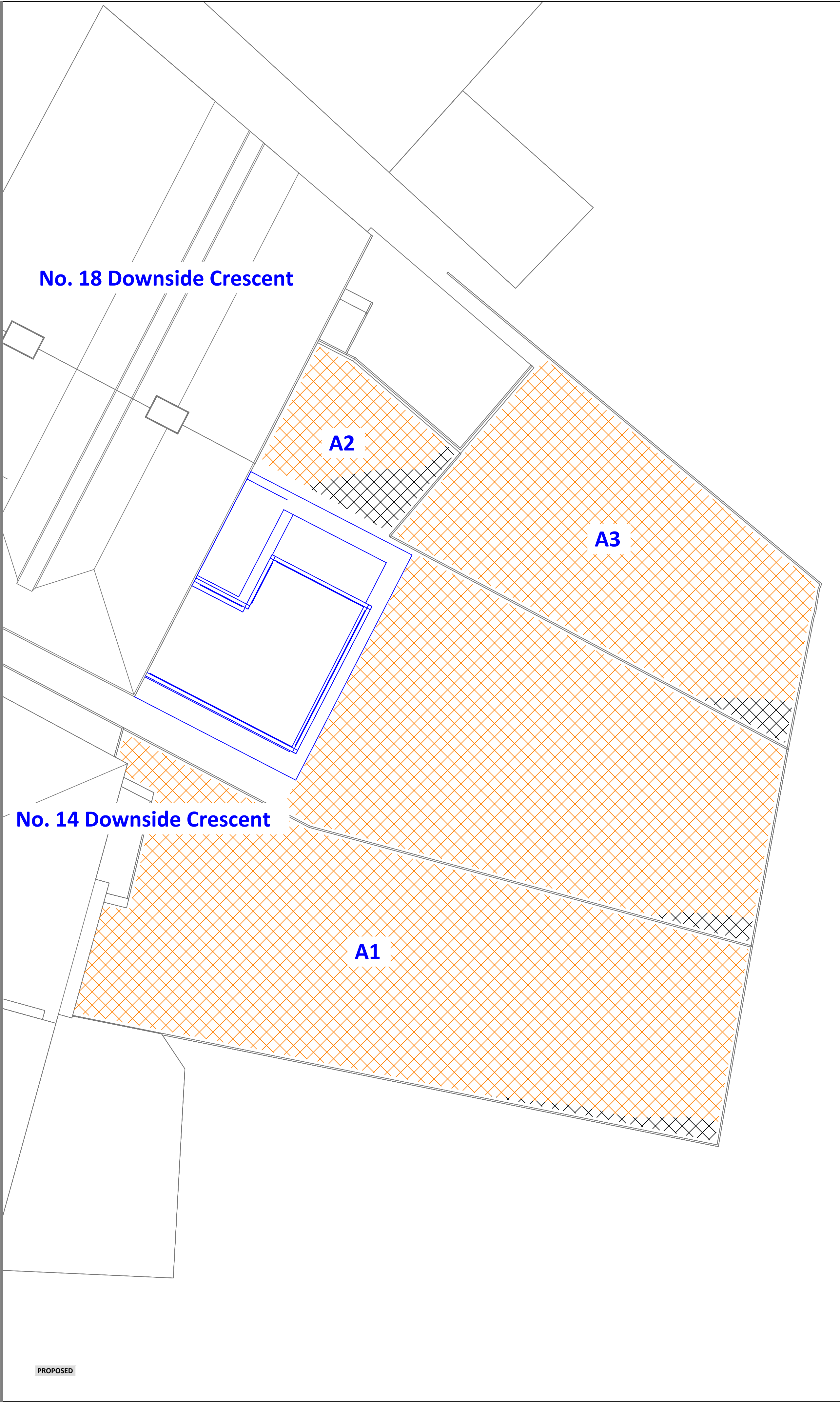
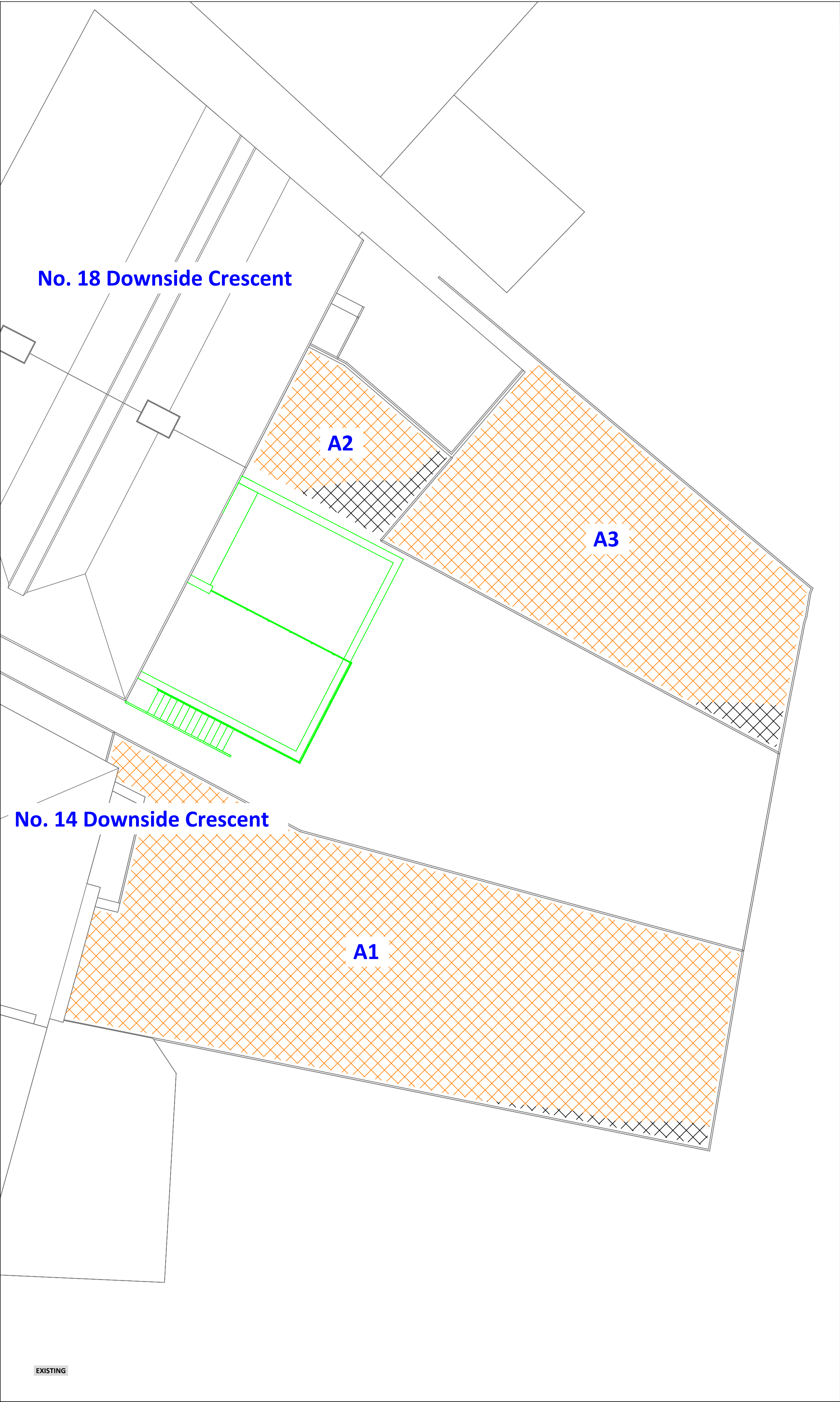
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No. 16 Downside Crescent

2hr BRE Shadow Study 21st March		
Job No	Rev	Drawing Number
200/CT	-	300
Date : 05.07.2019		



REV.	NOTES	DWN	DATE

Notes:

 >2H Sunlight (21st June)

 <2H Sunlight (21st June)



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DRAWN	-	
CHECKED	-	
		SCALE
		NTS (A3 Sheet)

No. 16 Downside Crescent

2hr BRE Shadow Study
21st June

Job No	Rev	Drawing Number
200/CT	-	301
Date : 05.07.2019		