External Daylight and Sunlight Study

Client: Ark Environmental Consultancy Ltd
42 Fernhurst Road
London
SW6 7JW

Site Details: 9 Upper Crown Street
Reading
RG1 2SS

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Report Details:

Prepared by	Checked by	Date	Job Number
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1. Introduction & Methodology

The daylight study is to ensure the comfort, health and safety of building occupants as well as visitors and others within the vicinity of the building is acceptable. It is also to enhance the quality of life in dwellings by recognising those that encourage a healthy and safe internal environment for occupants.

Using industry standard methodology as prescribed by BRE and British Standard guidance: we have made numerical analyses to ensure compliance with the recommended levels of change in daylight.

The main criteria used in this analysis to show compliance is the:

Vertical Sky Component (VSC)

VSC measures the general amount of light available on the outside plane of the window as a ratio (%) of the amount of total unobstructed sky viewable following introduction of visible barriers such as buildings. The maximum value is just under 40% for a completely unobstructed vertical wall.

The relevant BRE recommendations for daylight and sunlight are:

The Vertical Sky Component measured at the centre of a window should be no less than 80% of its former value, where the window(s) do not meet this criteria, BRE Guidelines states that if the VSC at the centre of a window is more than 27% of available light, then the diffuse daylighting will not be adversely affected.

Annual Probable Sunlight Hours (APSH)

APSH is a measure of the amount of potential direct sunlight that is available to a given surface. Only windows which face within 90 degrees of due south need to be assessed. BRE Guidance states that windows should continue to receive in excess of 80% of their pre-development value, **or** 25% of available hours over a year / 5% of hours in winter to be considered well lit.

The BRE Guidance is not an instrument of planning policy; therefore, whilst the methods given are technically robust, some level of flexibility should be applied where appropriate.

We must stress that despite the methodology used above and the results that are drawn from it provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole.

Referencing the national planning policy framework, paragraph 123(c) – '*local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards).*"

The methodology used in this report referenced as the 'Vertical Sky Component (VSC)' is only a 'spot' measure of the skylight reaching the mid-point of a window from an overcast sky. It represents the amount of visible sky that can be seen from that reference point, from over and around an obstruction in front of the window. That area of visible sky is expressed as a percentage of an unobstructed hemisphere of sky, and, therefore, represents the amount of daylight available for that particular window. As it is a 'spot' measurement taken on the outside face of the window, its shortcoming is that it takes no account of the size or number of the windows serving a room, or the size and layout of the room itself.

2. Proposed Development

There are proposals for the demolition of an existing car park to make way for the construction of 40 new residential dwellings at 9 Upper Crown Street, Reading, RG1 2SS.

Proposed Site Plan

3. Modelling the site & Window Schedule

An analysis model is created of the existing site, the proposed site and all relevant surrounding dwellings and obstructions allowing analysis. Calculations are then run and the outputs of those calculations can be exported numerically. Using the BRE guidance which gives absolute figures for the acceptable percentage of daylight and sunlight, we can then establish if the proposal will have the required daylighting levels stipulated by BRE guidelines.

It is important to note that not all nearby features have been modelled, only those that will affect the daylighting, in accordance with BRE recommendations.

The reference document for this analysis, BRE Digest 209, provides the methodology for undertaking the calculations as well as benchmark figures for the acceptable reduction in the daylight/sunlight.

In order to complete an accurate model of the existing and proposed site we have used a combination of the following plans and information. These consist of:

- Existing Plans
- Proposed Plans
- 3D model of the proposed scheme
- Google Earth for reference points
-

The purpose of this report is to assess the impact that the proposed scheme may have on the surrounding residential neighbouring dwellings habitable windows in terms of daylight and sunlight. Site analysis has identified a number of residential and commercial buildings that surrounding the site, as pre BRE Guidelines which is only focused on residential dwellings for planning purposes, the focus of this report will be to express the potential impact in terms of daylight and sunlight on the following surrounding buildings:

- 'Deep Blue Apartments' located on the corner of Southampton Road and Upper Crown Street
- No.45 – No.49 Indigo Apartments' located on Crown Street
- No.9 Newark Street
- No.4 – No.16 Newark Street
- No.11 Upper Crown Street

For a full location and window schedule please see below.

Target Study Area

Google Earth Image

Neighbouring Dwelling Window Receptor Schedule

The numerical VSC and APSH data can be found in the following appendices:

- Appendix C – shows the receptor referencing for Deep Blue Apartments
- Appendix D – shows the receptor referencing for No. 45 – No.49 Indigo Apartments
- Appendix E – shows the receptor referencing for No.9 Newark Street
- Appendix F – showss the receptor referencing for No.4 – No.16 Newark Street
- Appendix G – show the receptor referencing for No.11 Upper Crow Street

Below we have labelled the 'worst case' windows receptors located to each of the above buildings. They are considered 'worst case' due to their proximity in relation to the proposed development, therefore, the results that the 'worst case' window receptors within appendices c – g obtain, all remaining window receptors within close proximity that are located at a further distance or higher elevation than those that meet requirements will meet and experience daylighting values in excess of those tested as they will be less obstructed.

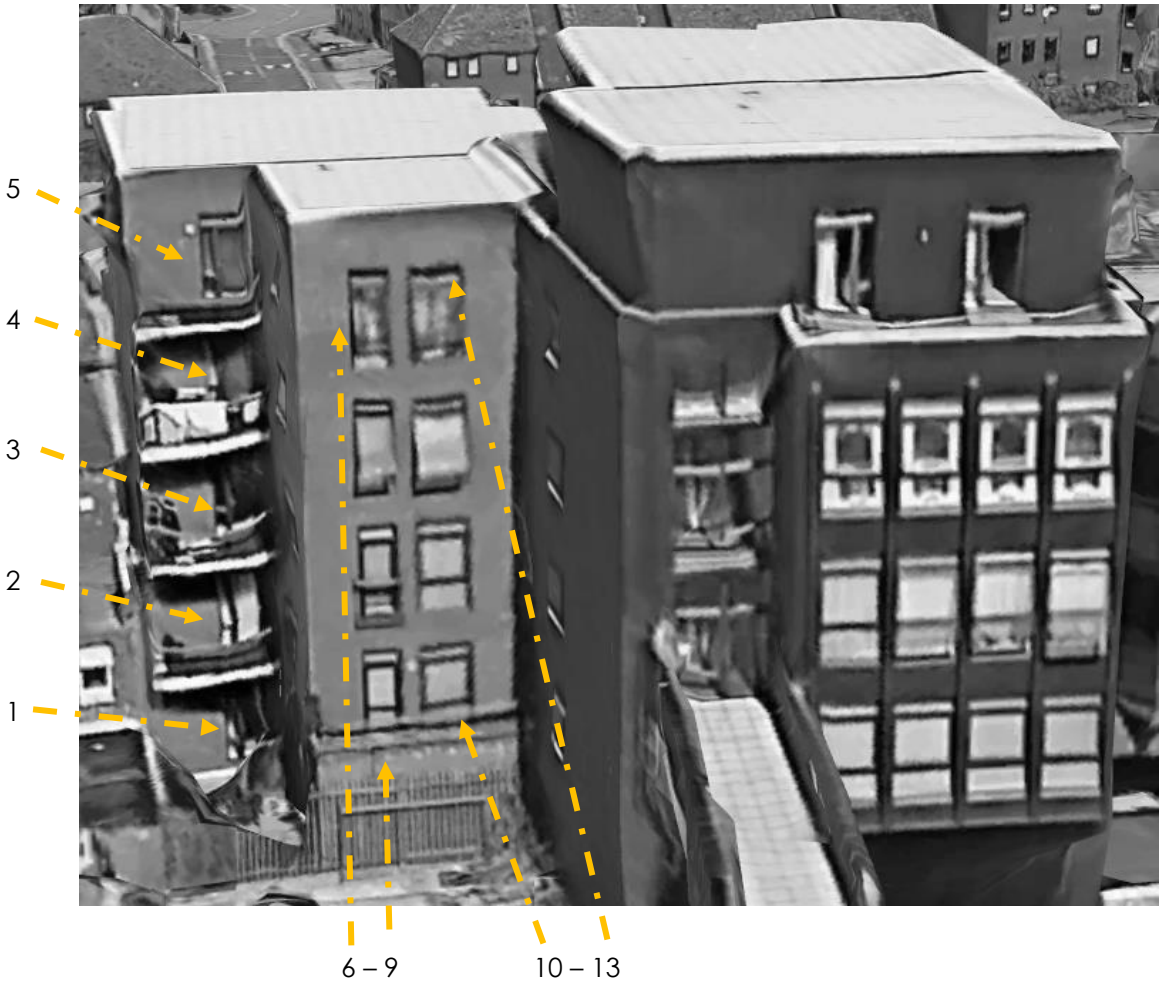
Limited information regarding the neighbouring dwellings is available, BRE Guidelines sole focus for planning is on habitable rooms only, therefore we should only label windows that serve 'habitable' spaces'. As we cannot determine this with the information provided, we have labelled all windows receptors and omitted 'non-habitable' receptors where possible. In the future event that any window receptor labelled within this report is identified as 'non-habitable, said receptor should be disregarded from the analysis and results.

‘Deep Blue’ Apartments – Rear Elevation

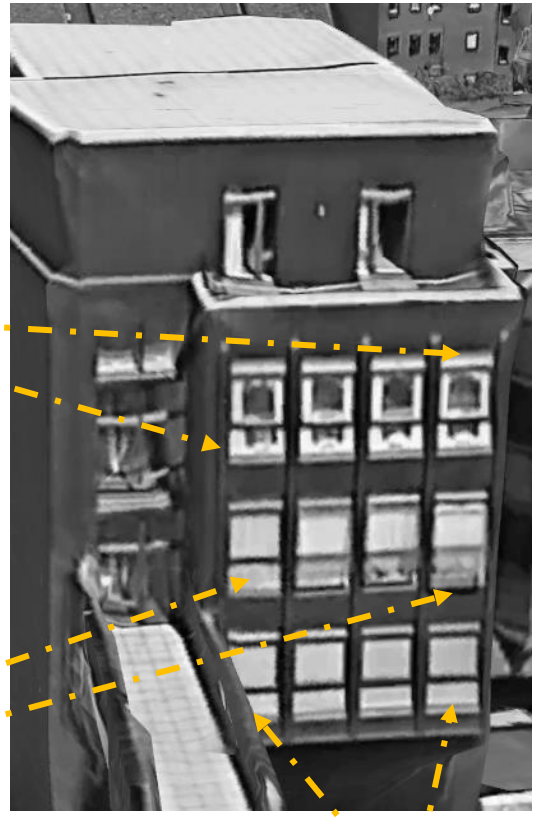
Receptor 1 2 3 4 5 6 7 8 9 10 11 12 13 14

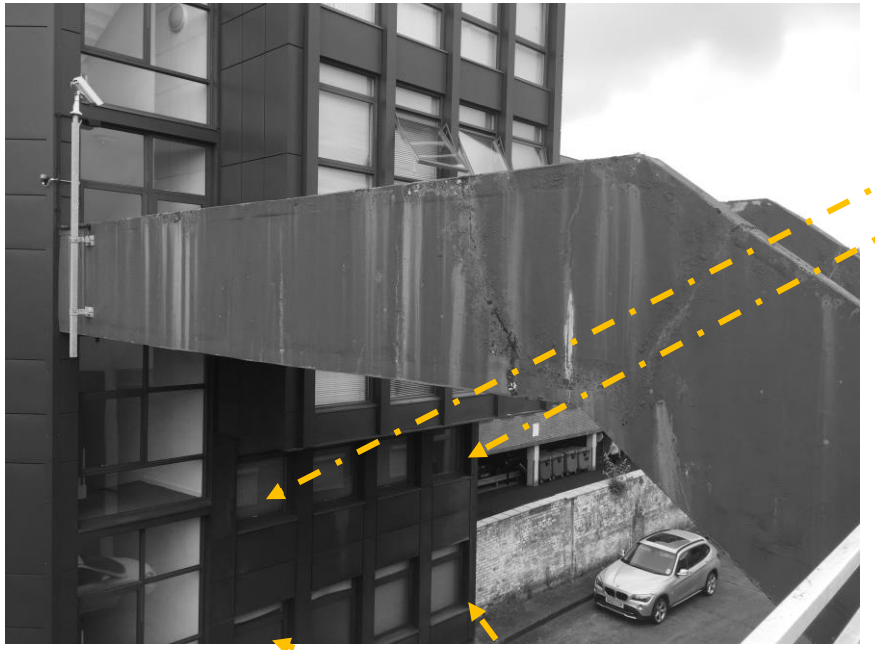
As can be seen, we have labelled the lowest level ‘worst case’ windows to the rear elevation of ‘Deep Blue’ Apartments. If the receptors labelled above meet or exceed minimum requirements in accordance with BRE Guidelines, then the remaining windows above will also meet requirements by default.

No. 45 – No.49 Indigo Apartments

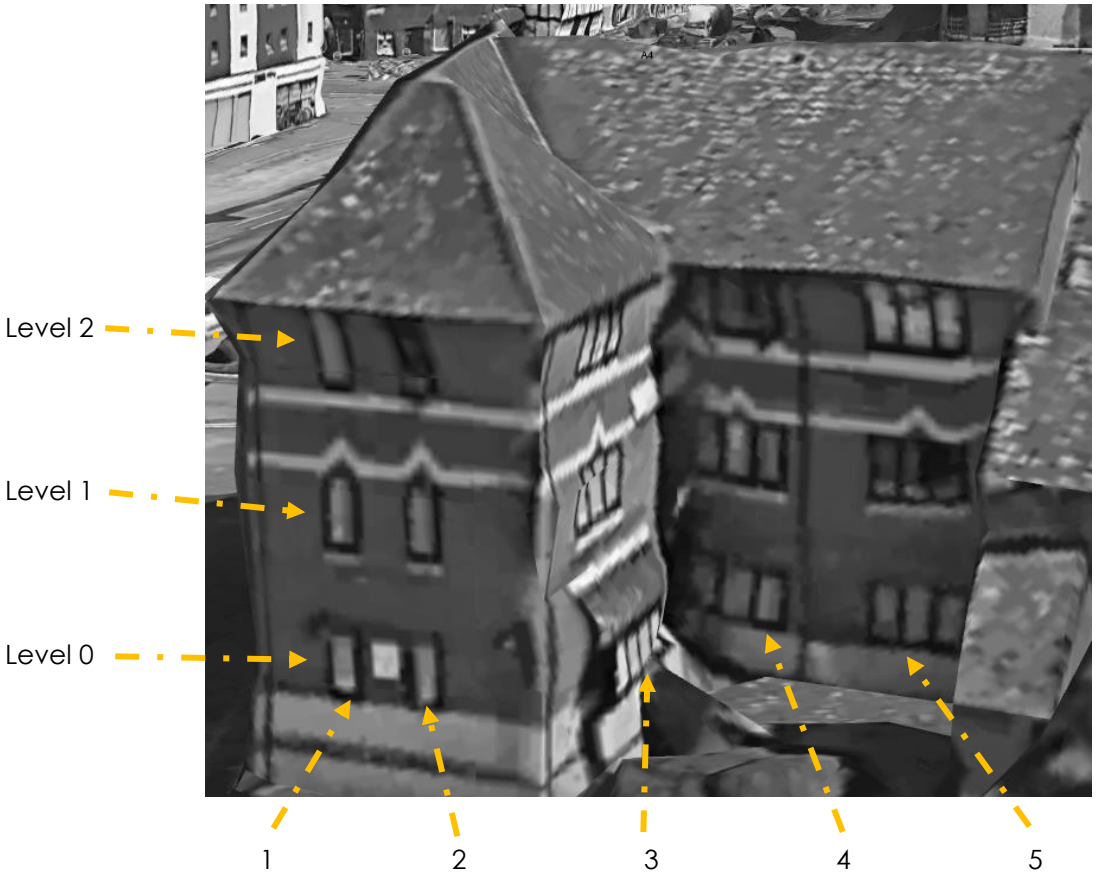


No. 45 – No.49 Indigo Apartments

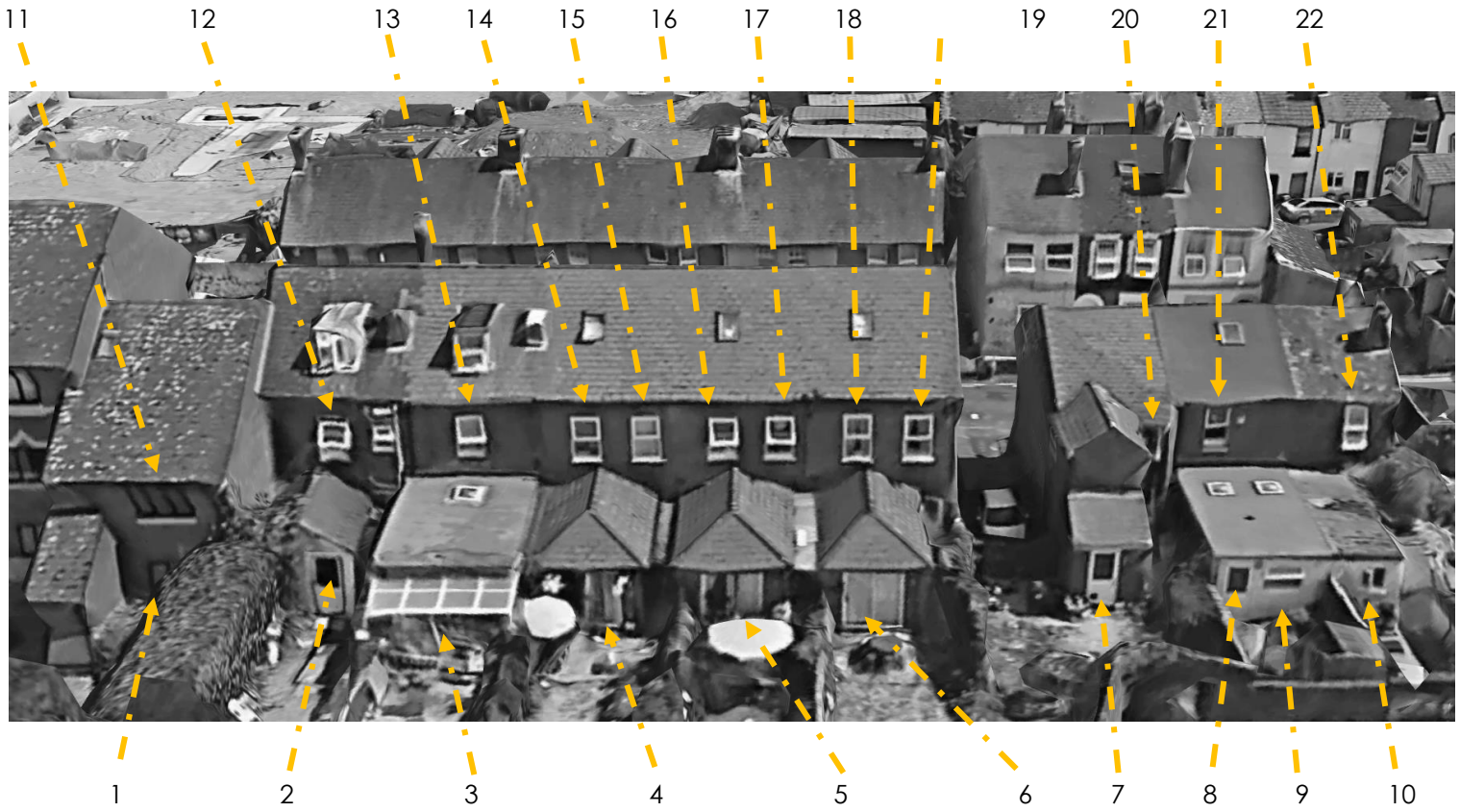




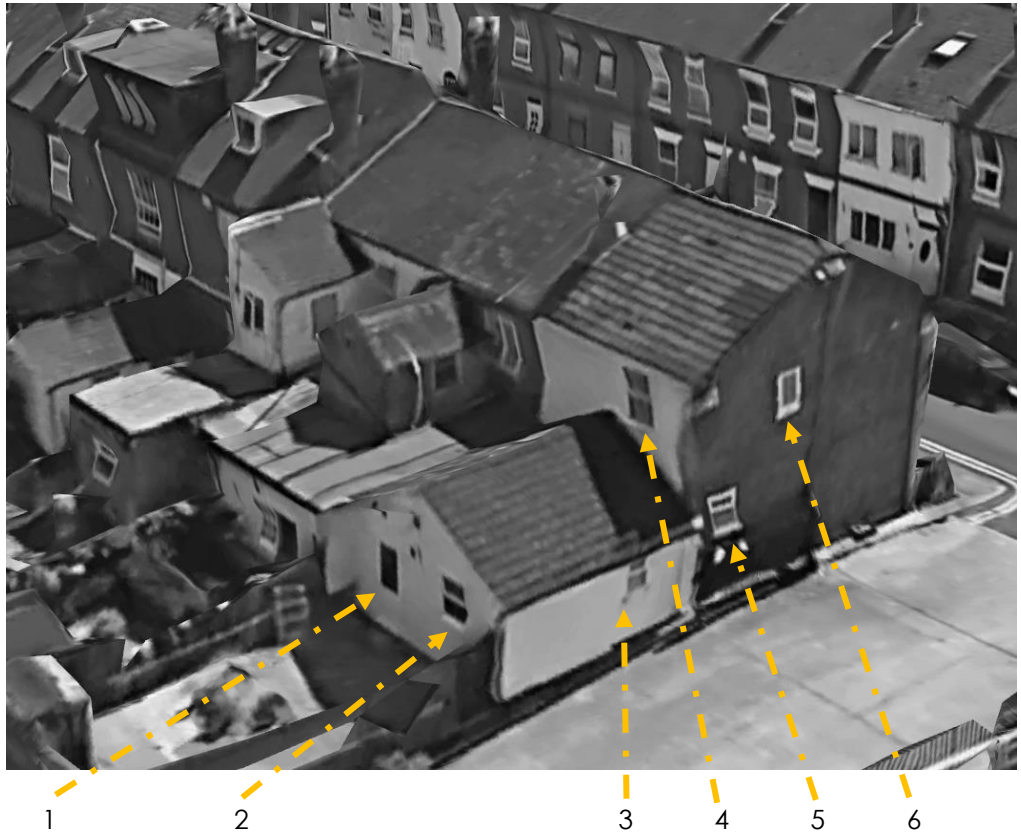
No.9 Newark Street



No.4 – No.16 Newark Street



No.11 Upper Crown Street



Remaining Windows within the target study area

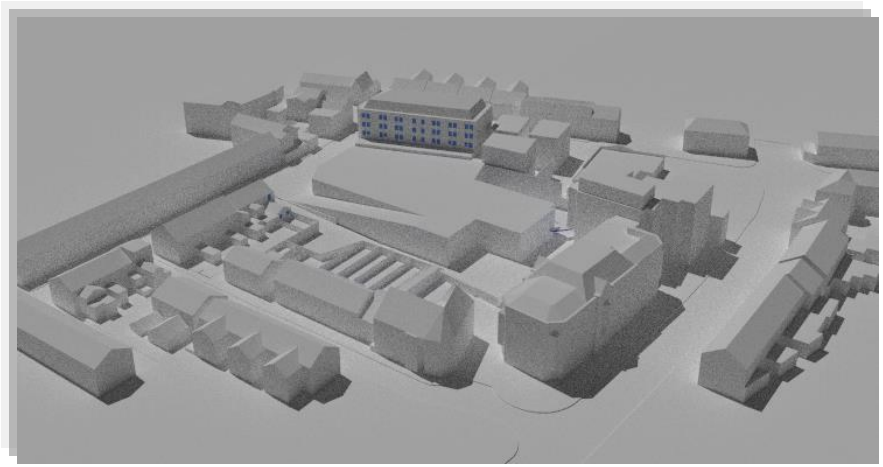
As stated, for simplicity and consistency, all window receptors labelled above and within each appendix are considered 'worst case' due to their proximity in relation to the proposed development, therefore, the results that the 'worst case' window receptors within appendices c – g obtain, all remaining window receptors within close proximity that are located at a further distance or higher elevation will experience daylighting values in excess of those tested as they will be less obstructed.

4. Vertical Sky Component Analysis

Stage 1 of the analysis is to model the existing site condition and then the proposed site in 3 dimensions, thus allowing us to analyse the current situation and compare with relative ease the proposed situation.

The 3D model that has been created is then imported into specialist daylight analysis software from which calculations are then run for both the scenarios.

'Existing' Scenario



'Proposed' Scenario

5. Vertical Sky Component Benchmark

As previously stated, even though the benchmark figures provided by BRE may provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole. Locations that may be considered dense urban areas or City Centre developments are often exposed to larger constraints in comparison to low-rise suburban areas, with that said, there is a higher scope for potential obstructions and loss of daylight in these areas. Higher density developments, such the one in question, generally experience lower daylight and sunlight levels.

Interpretation of the scale of impact

As discussed, the windows of the neighboring dwelling may or may not achieve the targets set by BRE, however, what BRE does not provide is an idea of the significance that these results will have on the assessed neighboring dwellings. Therefore, using professional experience, if we apply a scale to judge the implication these results may have on the dwelling, we can better understand the impact that may be experienced. The scale below is based on the BRE baseline target of 80% daylight retention.

Scale of Impact

Where the loss of daylight and sunlight fully meets the BRE Guidance Values, the impact is assessed as ***Negligible***

Where the loss of daylight and sunlight is reduced within 20 – 35% of the BRE Guidance Values, the impact is can be classed as ***Minor***

Where the loss of daylight and sunlight is reduced within 35 – 50% of the BRE Guidance Values, the impact is can be classed as ***Moderate***

Where the loss of daylight and sunlight is reduced within 50 – 100% of the BRE Guidance Values, the impact is can be classed as ***Major***

*******The guidance above has been taken from BRE daylight and sunlight book for the nature and scale section 5. Ref: Site Layout Planning for Daylight and Sunlight, Appendix 1 Environmental Impact Assessment, page 73.*

6. Vertical Sky Component & Annual/Winter Probable Sunlight Hours Analysis - Results Summary

As previously stated, window receptor reference numbers and locations can be found in section 3 of this report with and the numerical VSC/APSH result for each receptor can be found in Appendicies C – G.

Appendix C: Deep Blue Apartments

All 14 window receptors analysed that are located to the rear elevation achieve and exceed over 80% of their former daylighting value or achieve a minimum of 27% available daylight, therefore satisfying BRE Guidelines. When we apply the scale of impact as detailed in section 5 page 16 of this report, we can see the impact on these receptors may be considered negligible. As previously discussed, the lowest level (worst case) window receptors pass, therefore by default, the remaining windows located to the levels above will pass as they are less obstructed than those tested.

Appendix D: No.45 – No.49 Indigo Apartments

The majority of window receptors located to these dwellings retain over 80% or more of their former daylighting value and meet the minimum requirements for annual probabale sunlight hours, when we apply the scale of impact as detailed in section 5 page 16 of this report, we can see the impact on the majority of these receptors may be considered negligible. However, there are 4 receptors (receptors 18, 19, 20, 21) that do not meet minimum requirements for daylight in accordance with BRE Guidelines and may experience a minor impact in terms of daylight.

Appendix E: No.9 Newark Street

All window receptors located to the rear elevation of this building retain over 80% or more of their former daylighting value and meet the minimum requirements for annual probabale sunlight hours and therefore satiisfy BRE Guidelines, when we apply the scale of impact as detailed in section 5 page 16 of this report, we can see the impact on these receptors may be considered negligible. Please note that there is a newly proposed 'Thomas Homes' residential development to the rear of No.9 Newark Street as identified on page 7 of this report. We have been able to exclude this development from the analysis based on the results of No.9 Newark Street, as No.9 Newark Street is closer in proximity to the proposed development, any window receptors located to the Thomas Homes development will be located at a further distance or higher elevation than the receptors located to No.9 Newark Street, therefore by default they will meet BRE requirements.

Appendix F: No.4 – No.16 Newark Street

All window receptors analysed that are located to the rear elevation of these dwellings achieve and exceed over 80% of their former daylighting value and meet the minimum requirements for annual probabale sunlight hours, therefore satisfying BRE Guidelines. When we apply the scale of impact as detailed in section 5 page 16 of this report, we can see the impact on these receptors may be considered negligible.

Appendix G: No.11 Upper Crow Street

From the 6 receptors tested, all windows located to the rear elevation achieve and exceed over 80% of their former daylighting value, therefore satisfying BRE Guidelins. As this is considered the closest and 'worst case' dwelling on Upper Crown Street', we can safely conclude that the remainin windows lcated to the rear elevations of No.13 – No.21 Upper Crown Street' will in turn, by default, meet and exceed minimum standards in accordance with BRE Guidelines as they will be positioned at a further distance or higher elevation making them less obstructed and open to higher levels of daylight.

Receptors 3 and 5 located to the side elevation show different results, receptors 6 located to the 1st floor also meets minimum requirements for BRE Guidelines and retains over 80% of it's former daylighting value, however, receptors 3 and 5 at ground floor level do not. Receptors 3 and 5 may experience between a moderate to major impact due to the proximity of the proposed terrace houses to the entrance of the development. It must be noted that it is common for windows located to a side elevation to serve 'non-habitable' spaces such as bathrooms, stairways', hallways etc. Therefore, it is likely that these window receptors can be excluded from the analysis if this is the case.

As previoulsy stated, limited information regarding the neighbouring dwellings is available, BRE Guidelines sole focus for planning is on habitable rooms only, therefore, we should only label windows that serve 'habitable' spaces. As we cannot determine which window serves a habitable room or not with the information provided, we have labelled all windows receptors and omitted 'non-habitable' receptors where possible. In the future event that any window receptor labelled within this report is identified as 'non-habitable', said receptor should be disregarded from the analysis and results for planning purposes.

7. Conclusion

As previously stated, proposals for the demolition of an existing car park to make way for the construction of 40 new residential dwellings at 9 Upper Crown Street, Reading, RG1 2SS.

Using industry standard methodology, we have made numerical analysis to calculate the recommended levels of change in daylight for the window receptors located to Deep Blue Apartments, Indigo Apartments, Newark Street and Upper Crown Street. Full receptor referencing can be found in section 3 and the numerical result for each receptor can be found detailed in Appendix C – G.

The main criteria used in this analysis is to show compliance is the Vertical Sky Component and Annual Probable Sunlight Hours for the effect on a neighbouring dwelling's habitable windows.

We can conclude that the majority of window receptors located to the closest 'worst case' dwellings surrounding the site meet and exceed minimum targets for daylight and sunlight in accordance with BRE Guidelines. As to be expected, when considering the scale of the proposed development and its location within a dense urban area, there will of course be some window receptors that fail to meet minimum requirements. It must be noted that in general, urban areas such as the one in question usually experience a higher degree of obstruction and we therefore find it is more accepted that dwellings within these areas receive less daylight and sunlight.

Referencing the national planning policy framework, paragraph 123(c) – '*local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards)."*

With this in mind, we must stress that despite the methodology used above and the results that are drawn from it provide helpful guidance to consultants and planning officials, these are purely advisory, how the results are interpreted may depend on the complexity and context of the development as a whole.

Appendices

Appendix A: Existing Plans

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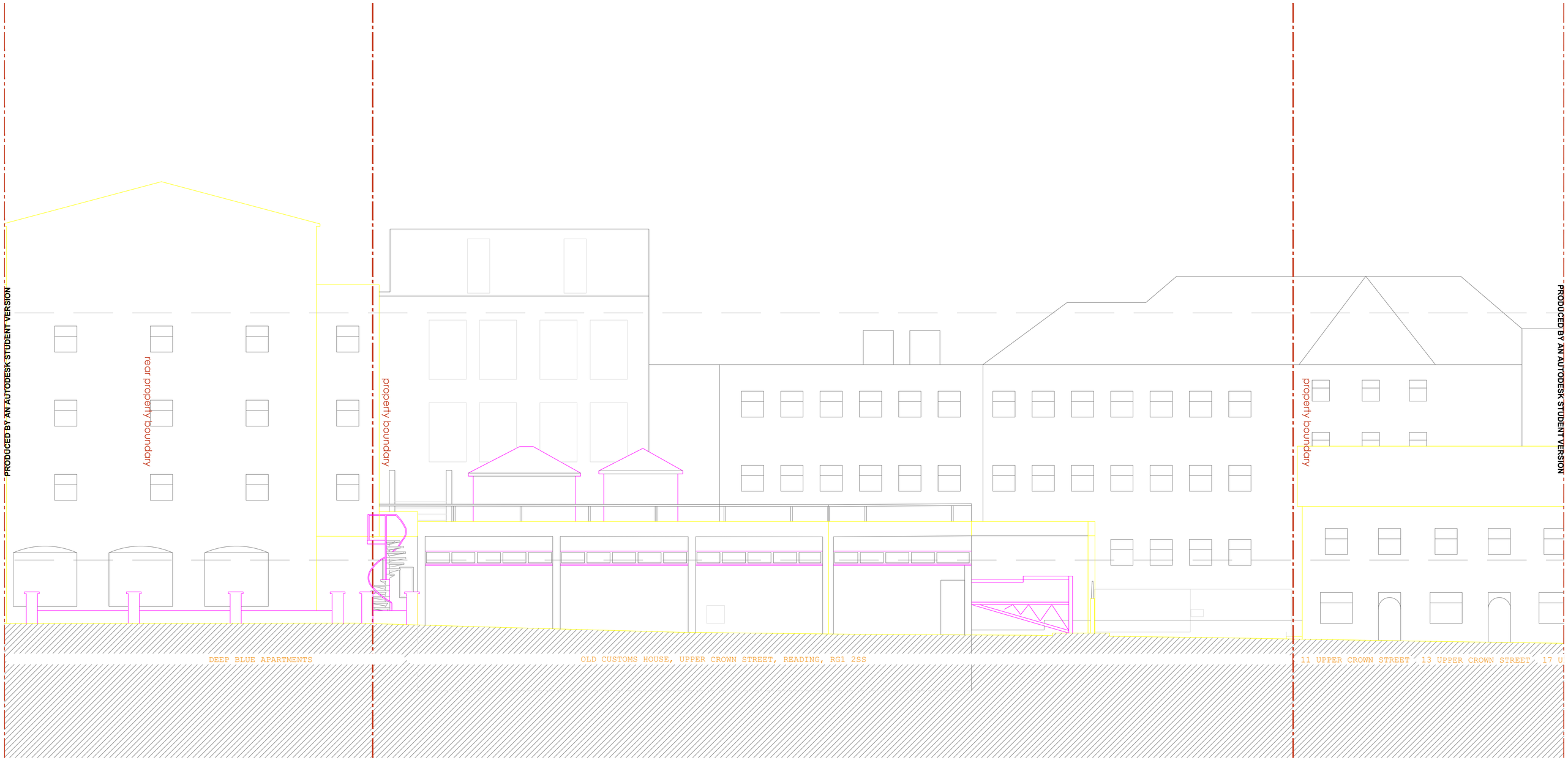

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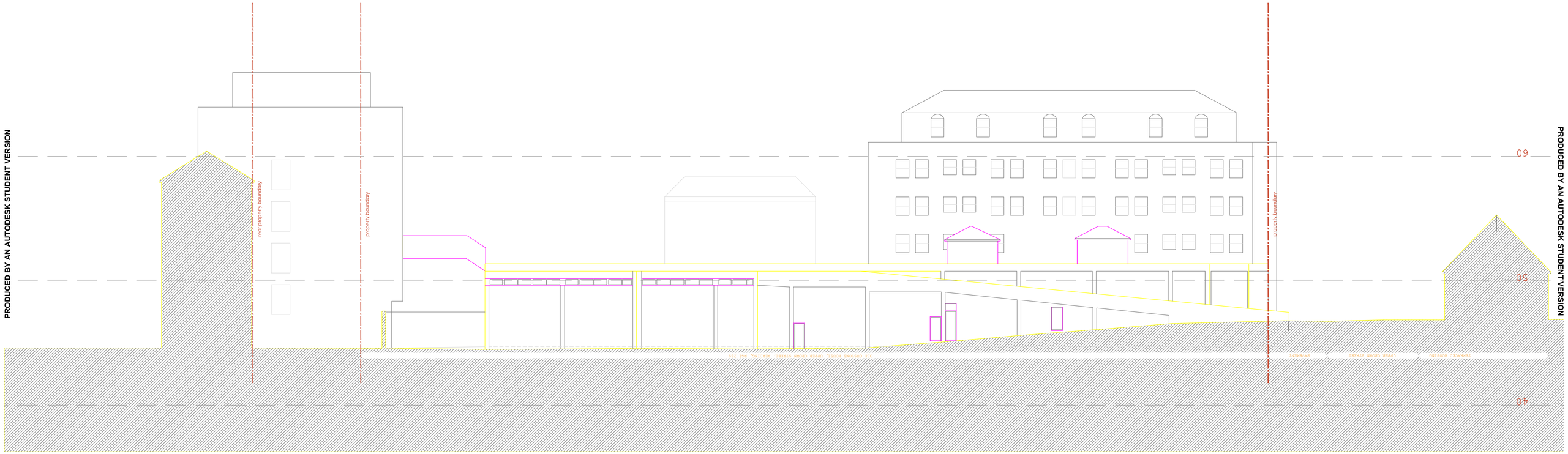

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Appendix B: Proposed Plans

CROWN STREET
Regents Gate
Indigo Apt.
1 to 17
Priors Court
1 to 14
Sub
Proposed Scheme
75 to 81
NEWARK STREET
Building 3
Building 2
Building 1
Bikes
Sub
A327 - SOUTHAMPTON STREET
Sherman Place
Thompsons Yard
1 to 10
95 to 107
UPPER CROWN STREET
PH
N
1 : 500
10m
20m
30m
40m
50m
colony
Collaborating with:
Edward Richardson
Job: 222
Drawing: P008
Revision: A
Project:
9 Upper Crown Street
Reading, RG1 2SS
Drawing:
SitePlan
Date: Sep '21
Status: Planning
Drawn By: MC
Checked By: EM
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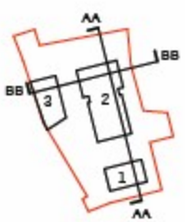
Site Section AA

Site Section BB



1 : 250 5m 10m 15m 20m 25m

colony

Collaborating with:
Edward Richardson

Job: 222
Drawing: P031
Revision: A

Project:
9 Upper Crown Street
Reading, RG1 2SS

Drawing:
Site Sections Sheet 1

Date: Sep '21
Status: Planning

Drawn By: MC
Checked By: EM

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East/West Elevation 02

Block D South Elevation

Block D West Elevation

1 : 250 5m 10m 15m 20m 25m

colony

Collaborating with:
Edward Richardson

Job: 222 Drawing: P029 Revision: A

Project:
9 Upper Crown Street
Reading, RG1 2SS

Drawing:
Site Elevations Sheet 4

Date: Sep '21 Status: Planning

Drawn By: MC Checked By: EM

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Internal Street Elevation: Looking West

East/West Elevation 01

1 : 250 | 5m | 10m | 15m | 20m | 25m

colony

Collaborating with:
Edward Richardson

Job:	Drawing:	Revision:
222	P028	A

Project:
9 Upper Crown Street
Reading, RG1 2SS

Drawing:
Site Elevations Sheet 3

Date:	Status:
Sep '21	Planning
Drawn By:	Checked By:
MC	EM

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East Elevation: Access Road

Internal Street Elevation: Looking East

1 : 250 5m 10m 15m 20m 25m

colony

Collaborating with:
Edward Richardson

Job: 222
Drawing: P027
Revision: A

Project:
9 Upper Crown Street
Reading, RG1 2SS

Drawing:
Site Elevations Sheet 2

Date: Sep '21
Status: Planning
Drawn By: MC
Checked By: EM

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South Elevation: Upper Crown Street

North Elevation: Rear Access Road

1 : 250 | 5m | 10m | 15m | 20m | 25m

colony

Collaborating with:
Edward Richardson

Job:	Drawing:	Revision:
222	P026	A

Project:
9 Upper Crown Street
Reading, RG1 2SS

Drawing:
Site Elevations Sheet 1

Date:	Status:
Sep '21	Planning
Drawn By:	Checked By:
MC	EM

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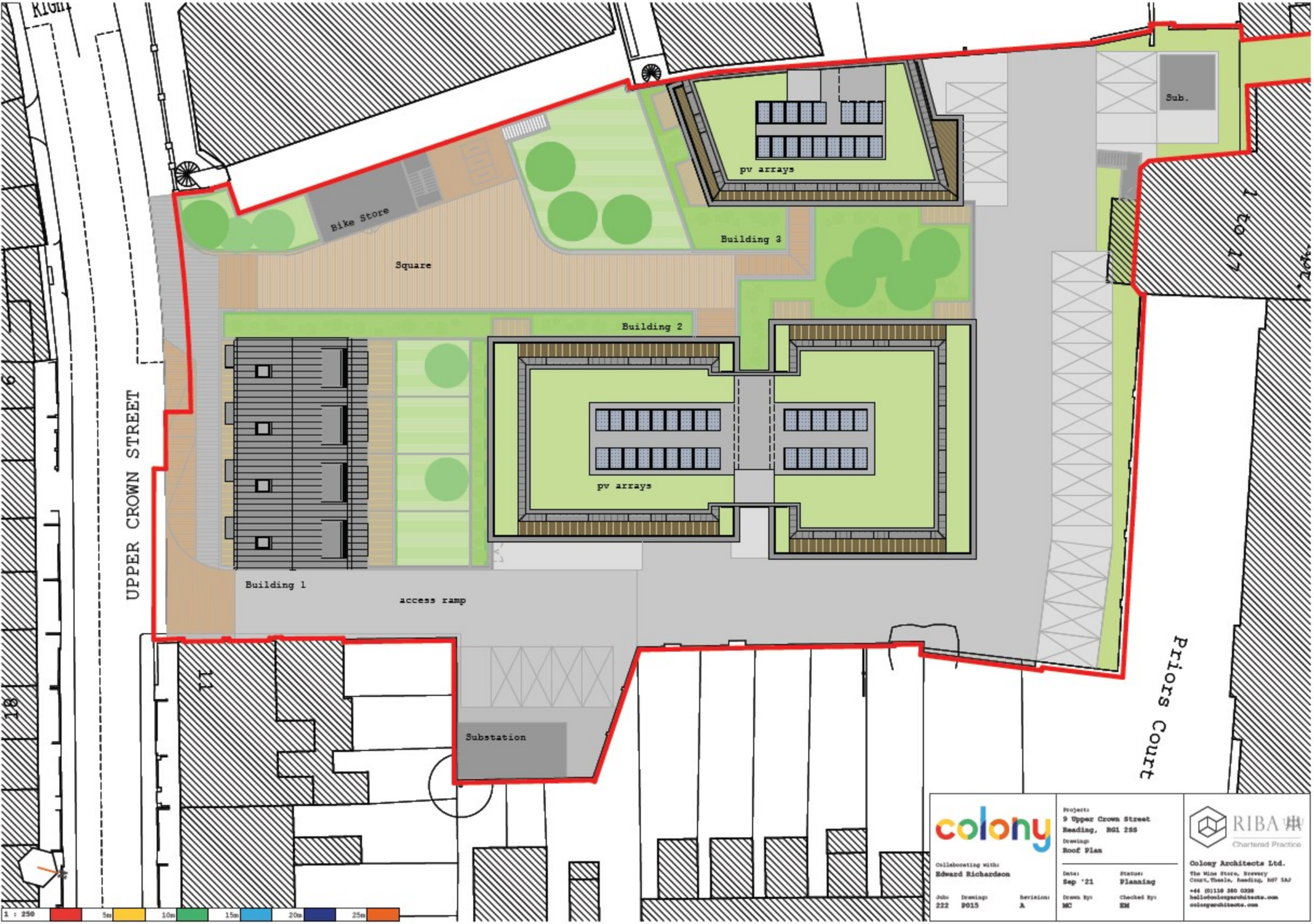

Bike Store
Square
Building 3
pv arrays
Sub.
Building 2
pv arrays
Building 1
access ramp
Substation
UPPER CROWN STREET
Priors Court
1 to 17
1 : 250
5m
10m
15m
20m
25m
colony
Collaborating with:
Edward Richardson
Job: 222
Drawing: P015
Revision: A
Project:
9 Upper Crown Street
Reading, RG1 2SS
Drawing:
Roof Plan
Date: Sep '21
Status: Planning
Drawn By: MC
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Appendix C: Deep Blue Apartments VSC / APSH Numerical Results

Deep Blue' Apartments - Vertical Sky Component Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	38.88	37.25	96.00%
2	38.94	37.38	96.00%
3	38.84	37.01	95.00%
4	38.89	37.06	95.00%
5	38.78	36.58	94.00%
6	38.76	36.41	94.00%
7	38.68	35.86	93.00%
8	38.62	35.40	92.00%
9	38.51	34.66	90.00%
10	38.45	34.26	89.00%
11	38.31	33.13	86.00%
12	38.09	32.26	85.00%
13	37.49	30.12	80.00%
14	36.54	28.57	78.00%

All windows to the rear elevation of Deep Blue Apartments face in a northern direction and are therefore exempt form the Annual Probable Sunlight Hours analysis.

Appendix D: No.45 – No.49 Indigo Apartments VSC / APSH Numerical Results

No.45 - No.49 Indigo Apartments - Vertical Sky Component Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	10.60	9.02	85.00%
2	14.75	13.38	91.00%
3	17.73	16.69	94.00%
4	17.99	17.29	96.00%
5	28.45	28.13	99.00%
6	32.97	32.36	98.00%
7	30.39	28.76	95.00%
8	28.32	25.78	91.00%
9	26.27	23.22	88.00%
10	21.54	18.84	87.00%
11	23.07	20.98	91.00%
12	24.70	23.40	95.00%
13	27.03	26.53	98.00%
14	13.04	12.94	99.00%
15	17.00	16.33	96.00%
16	17.96	18.27	102.00%
17	18.55	19.40	105.00%
18	12.82	9.40	73.00%
19	8.90	5.82	65.00%
20	8.71	5.63	65.00%
21	12.63	9.08	72.00%
22	36.67	29.15	79.00%
23	36.70	29.27	80.00%
24	36.74	29.32	80.00%
25	36.77	29.18	79.00%
26	38.23	33.58	88.00%
27	38.24	33.76	88.00%
28	38.25	33.80	88.00%
29	38.26	33.80	88.00%
30	38.85	37.49	96.00%
31	38.85	37.59	97.00%
32	38.85	37.66	97.00%
33	38.86	37.73	97.00%

No.45 - No.49 Indigo Apartments - Annual Probable Sunlight Hours Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	21.00	19.00	90.00%
2	34.00	32.00	94.00%
3	41.00	39.00	95.00%
4	37.00	37.00	100.00%
5	61.00	61.00	100.00%
6	70.00	70.00	100.00%
7	64.00	64.00	100.00%
8	61.00	58.00	95.00%
9	60.00	56.00	93.00%
10	54.00	50.00	93.00%
11	54.00	52.00	96.00%
12	55.00	55.00	100.00%
13	60.00	60.00	100.00%
14	34.00	36.00	106.00%
15	50.00	49.00	98.00%
16	55.00	56.00	102.00%
17	55.00	56.00	102.00%
18	35.00	28.00	80.00%
19	18.00	12.00	67.00%
20	20.00	13.00	65.00%
21	34.00	29.00	85.00%
22	87.00	76.00	87.00%
23	87.00	75.00	86.00%
24	87.00	75.00	86.00%
25	87.00	76.00	87.00%
26	87.00	80.00	92.00%
27	87.00	82.00	94.00%
28	87.00	81.00	93.00%
29	87.00	80.00	92.00%
30	87.00	87.00	100.00%
31	87.00	87.00	100.00%
32	87.00	87.00	100.00%
33	87.00	87.00	100.00%

No.45 - No.49 Indigo Apartments - Winter Probable Sunlight Hours Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	12.00	10.00	83.00%
2	16.00	14.00	88.00%
3	22.00	20.00	91.00%
4	22.00	22.00	100.00%
5	24.00	24.00	100.00%
6	26.00	26.00	100.00%
7	25.00	25.00	100.00%
8	25.00	22.00	88.00%
9	25.00	21.00	84.00%
10	22.00	18.00	82.00%
11	22.00	20.00	91.00%
12	22.00	22.00	100.00%
13	24.00	24.00	100.00%
14	1.00	5.00	500.00%
15	5.00	7.00	140.00%
16	5.00	8.00	160.00%
17	5.00	8.00	160.00%
18	19.00	12.00	63.00%
19	17.00	11.00	65.00%
20	17.00	10.00	59.00%
21	15.00	10.00	67.00%
22	30.00	19.00	63.00%
23	30.00	18.00	60.00%
24	30.00	18.00	60.00%
25	30.00	19.00	63.00%
26	30.00	23.00	77.00%
27	30.00	25.00	83.00%
28	30.00	24.00	80.00%
29	30.00	23.00	77.00%
30	30.00	30.00	100.00%
31	30.00	30.00	100.00%
32	30.00	30.00	100.00%
33	30.00	30.00	100.00%

Appendix E: No.9 Newark Street VSC / APSH Numerical Results

No.9 Newark Street - Vertical Sky Component Numerical Data

Level 0 - Receptor Reference	Existing %	Proposed %	% Retained
1	27.16	25.04	92.00%
2	28.27	25.96	92.00%
3	21.84	20.39	93.00%
4	21.76	19.87	91.00%
5	20.80	19.72	95.00%

Level 1 - Receptor Reference	Existing %	Proposed %	% Retained
1	29.81	28.05	94.00%
2	30.80	28.89	94.00%
3	28.40	27.20	96.00%
4	25.73	24.03	93.00%
5	27.82	26.33	95.00%

Level 2 - Receptor Reference	Existing %	Proposed %	% Retained
1	32.37	31.15	96.00%
2	33.15	31.81	96.00%
3	34.18	33.42	98.00%
4	30.83	29.63	96.00%
5	34.48	33.13	96.00%

No.9 Newark Street - Annual Probable Sunlight Hours Numerical Data

Level 0 - Receptor Reference	Existing %	Proposed %	% Retained
1	45.00	43.00	96.00%
2	45.00	44.00	98.00%
3	50.00	49.00	98.00%
4	36.00	34.00	94.00%
5	17.00	15.00	88.00%

Level 1 - Receptor Reference	Existing %	Proposed %	% Retained
1	47.00	46.00	98.00%
2	47.00	46.00	98.00%
3	62.00	61.00	98.00%
4	45.00	44.00	98.00%
5	35.00	33.00	94.00%

Level 2 - Receptor Reference	Existing %	Proposed %	% Retained
1	49.00	47.00	96.00%
2	50.00	48.00	96.00%
3	78.00	76.00	97.00%
4	49.00	48.00	98.00%
5	50.00	49.00	98.00%

No.9 Newark Street - Winter Probable Sunlight Hours Numerical Data

Level 0 - Receptor Reference	Existing %	Proposed %	% Retained
1	15.00	13.00	87.00%
2	14.00	13.00	93.00%
3	15.00	14.00	93.00%
4	6.00	4.00	67.00%
5	1.00	0.00	0.00%

Level 1 - Receptor Reference	Existing %	Proposed %	% Retained
1	15.00	14.00	93.00%
2	15.00	14.00	93.00%
3	22.00	21.00	95.00%
4	15.00	14.00	93.00%
5	4.00	2.00	50.00%

Level 2 - Receptor Reference	Existing %	Proposed %	% Retained
1	17.00	15.00	88.00%
2	17.00	15.00	88.00%
3	27.00	25.00	93.00%
4	16.00	15.00	94.00%
5	16.00	15.00	94.00%

Appendix F: No.4 – No.16 Newark Street VSC/APSH Numerical Results

No.4 - No.16 Newark Street - Vertical Sky Component Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	24.39	22.27	91.00%
2	25.41	21.53	85.00%
3	30.59	26.14	85.00%
4	31.31	26.40	84.00%
5	31.19	26.39	85.00%
6	31.98	27.21	85.00%
7	33.91	29.81	88.00%
8	31.39	28.22	90.00%
9	32.59	28.95	89.00%
10	33.22	29.48	89.00%
11	33.81	30.66	91.00%
12	33.35	30.58	92.00%
13	35.20	32.08	91.00%
14	35.41	32.25	91.00%
15	35.48	32.34	91.00%
16	35.56	32.45	91.00%
17	35.60	32.52	91.00%
18	35.63	32.61	92.00%
19	35.60	32.62	92.00%
20	29.48	27.80	94.00%
21	32.33	29.97	93.00%
22	35.37	33.23	94.00%

No.4 - No.16 Newark Street - Annual Probable Sunlight Hours Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	30.00	28.00	93.00%
2	44.00	40.00	91.00%
3	45.00	38.00	84.00%
4	45.00	38.00	84.00%
5	44.00	36.00	82.00%
6	47.00	42.00	89.00%
7	50.00	43.00	86.00%
8	48.00	42.00	88.00%
9	46.00	39.00	85.00%
10	48.00	41.00	85.00%
11	47.00	44.00	94.00%
12	51.00	48.00	94.00%
13	51.00	48.00	94.00%
14	51.00	47.00	92.00%
15	51.00	47.00	92.00%
16	51.00	47.00	92.00%
17	50.00	46.00	92.00%
18	50.00	46.00	92.00%
19	50.00	46.00	92.00%
20	49.00	45.00	92.00%
21	52.00	48.00	92.00%
22	52.00	48.00	92.00%

No.4 - No.16 Newark Street - Winter Probable Sunlight Hours Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	1.00	0.00	0.00%
2	14.00	11.00	79.00%
3	11.00	8.00	73.00%
4	12.00	9.00	75.00%
5	10.00	7.00	70.00%
6	13.00	13.00	100.00%
7	14.00	13.00	93.00%
8	14.00	13.00	93.00%
9	10.00	9.00	90.00%
10	12.00	11.00	92.00%
11	15.00	13.00	87.00%
12	16.00	13.00	81.00%
13	16.00	14.00	88.00%
14	16.00	14.00	88.00%
15	16.00	14.00	88.00%
16	16.00	14.00	88.00%
17	15.00	14.00	93.00%
18	15.00	14.00	93.00%
19	15.00	14.00	93.00%
20	16.00	14.00	88.00%
21	16.00	15.00	94.00%
22	16.00	15.00	94.00%

Appendix G: No.11 Upper Crow Street VSC/APSH Numerical Results

No.11 Upper Crown Street - Vertical Sky Component Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
1	33.36	30.52	91.00%
2	34.17	30.98	91.00%
3	31.74	15.63	49.00%
4	36.60	33.63	92.00%
5	31.06	18.82	61.00%
6	34.86	30.18	87.00%

No.11 Upper Crown Street - Annual Probable Sunlight Hours Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
3	43.00	23.00	53.00%
5	48.00	36.00	75.00%
6	48.00	44.00	92.00%

No.11 Upper Crown Street - Winter Probable Sunlight Hours Numerical Data

Receptor Reference	Existing %	Proposed %	% Retained
3	11.00	8.00	73.00%
5	15.00	13.00	87.00%
6	15.00	15.00	100.00%