

# Daylight and Sunlight Report

(Neighbouring Properties)

22 September 2022

Kneller Hall Kneller Road Twickenham TW2 7DN



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# 1 EXECUTIVE SUMMARY

#### 1.1 Overview

- 1.1.1 Right of Light Consulting has been commissioned by Radnor House School Limited to undertake a daylight and sunlight assessment of the proposed development at Kneller Hall, Kneller Road, Twickenham TW2 7DN.
- 1.1.2 The assessment is based on the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, 3<sup>rd</sup> Edition' by P J Littlefair 2022.
- 1.1.3 The aim of the assessment is to consider the impact of the development on the light receivable by the neighbouring properties at 112 and 229 to 255 Whitton Dene.
- 1.1.4 All other neighbouring properties are far enough away from the proposal that they are unlikely to be adversely impacted by the proposed development. To demonstrate this, Appendix 4 shows the application of the 25° rule of thumb test with respect to 105 Kneller Road, which sits within a row of terraced properties and has windows facing directly towards the development site. The proposed development sits clearly underneath the 25° line, so in our opinion these properties need not be tested.
- 1.1.5 The window key in Appendix 1 identifies the windows analysed in this assessment.

  Appendix 2 gives the numerical results of the various daylight and sunlight tests.
- 1.1.6 All neighbouring windows (that have a requirement for daylight or sunlight) pass the relevant BRE diffuse daylight and direct sunlight tests. The development also passes the BRE overshadowing to gardens and open spaces test.
- 1.1.7 In summary, the numerical results in this assessment demonstrate that the proposed development will have a low impact on the light receivable by its neighbouring properties. In our opinion, the proposed development sufficiently safeguards the daylight and sunlight amenity of the neighbouring properties.

#### 2 INFORMATION SOURCES

# 2.1 Drawings

2.1.1 This report is based on the following drawings:

# Warner Surveys

LT/220/0504/P/0001a	Topographical Survey	Rev 5
LT/220/0504/P/0001b	Topographical Survey	Rev 5
LT/220/0504/P/0001c	Topographical Survey	Rev 5
LT/220/0504/P/0001d	Topographical Survey	Rev 5
LT/220/0504/P/0001e	Topographical Survey	Rev 5
LT/220/0504/P/0001f	Topographical Survey	Rev 5

#### **ADP Architecture**

ADP-00-ZZ-M3-A-0000 ADP-00-ZZ-M3-A-0001 ADP-02-00-DR-A-0900 ADP-02-01-DR-A-0950 ADP-02-01-DR-A-0951 ADP-02-XX-DR-A-2000 ADP-02-XX-DR-A-2001 ADP-02-XX-DR-A-2001 ADP-02-XX-DR-A-2002 ADP-03-XX-DR-A-1200 ADP-03-XX-DR-A-1201 ADP-03-XX-DR-A-1202 ADP-03-XX-DR-A-1203	Architect 3D Model - Masterplan Architect 3D Model Ground Floor - Existing Ground Floor - Demolished First Floor - Existing First Floor - Demolished North Elevation - Existing East Elevation - Existing South Elevation - Existing West Elevation - Existing South Elevation - Existing East Elevation - Existing South Elevation - Existing South Elevation - Existing	Rev - Rev S2 P1
ADP-03-XX-DR-A-1202 ADP-03-XX-DR-A-1203 ADP-04-00-DR-A-1000	West Elevation - Existing  Ground Floor	Rev S2 P1 Rev S2 P1 Rev P1

# 2.2 Daylight Distribution Room Layout Information

2.2.1 The daylight distribution test has been applied based on the following room layout information:

# Online Local Authority planning records

233 Whitton Dene:

P401 Proposed Ground First Floor Plan Rev B

245 Whitton Dene:

132-0100 Proposed Ground Floor Plan Rev B

www.rightmove.co.uk

231 Whitton Dene:

Floor Plans Rev -

237 Whitton Dene:
Floor Plans
Rev 239 Whitton Dene:
Floor Plans
Rev 241 Whitton Dene:
Floor Plans
Rev 247 Whitton Dene:
Floor Plans
Rev 255 Whitton Dene:
Floor Plans
Rev -

#### 3 METHODOLOGY OF THE ASSESSMENT

# 3.1 Local Planning Policy

- 3.1.1 We understand that the Local Authority takes the conventional approach of considering daylight and sunlight amenity with reference to the various numerical tests laid down in the Building Research Establishment (BRE) guide 'Site Layout Planning for Daylight and Sunlight: a guide to good practice, by P J Littlefair. This report is based on the 3<sup>rd</sup> edition of the BRE guide which was published on 8 June 2022.
- 3.1.2 The standards set out in the BRE guide are intended to be used flexibly. The BRE guide states:
- 3.1.3 "The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly, since natural lighting is only one of many factors in site layout design."
- 3.1.4 In reference to applying different numerical target values in different locations, the BRE guide states:
- 3.1.5 "These values are purely advisory and different targets may be used based on the special requirements of the proposed development or its location."

#### 3.2 National Planning Policy Framework

- 3.2.1 The BRE numerical guidelines should be considered in the context of the National Planning Policy Framework (NPPF), which stipulates that local planning authorities should take a flexible approach to daylight and sunlight to ensure the efficient use of land. The NPPF states:
- 3.2.2 "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)."

### 3.3 National Planning Practice Guidance

3.3.1 The BRE numerical guidelines should also be considered in the context of the National Planning Practice Guidance (NPPG). The NPPG states that developments should maintain acceptable living standards. It goes on to explain that what this means in practice is that appropriate levels of sunlight and daylight, will depend to some extent on the context for the development. This is consistent with the BRE guide which as noted in paragraphs 3.1.4 to 3.1.5 above, states that site location is a relevant factor when setting sunlight and daylight targets.

#### 3.4 Daylight to Windows

- 3.4.1 Diffuse daylight is the light received from the sun which has been diffused through the sky. Even on a cloudy day, when the sun is not visible, a room will continue to be lit with light from the sky. This is diffuse daylight.
- 3.4.2 Diffuse daylight calculations should be undertaken to all rooms within domestic properties, where daylight is required, including living rooms, kitchens and bedrooms. The BRE guide states that windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. These room types are non-habitable and do not have a requirement for daylight.
- 3.4.3 Where windows are stated as non-habitable for units where the layouts are not known (due to public plans being unavailable), the conclusion has been drawn following a review of site photos and by comparing the windows in adjacent properties where layouts are known. The site photos are presented within the window key (appendix 1) of the report.
- 3.4.4 Windows at the rear of properties tested, which do not face the proposed development, would not be impacted by the development and therefore rear windows have only been modelled where rooms are lit from both aspects. In the case where room layouts are unknown, we have assumed the worst-case scenario that the front facing rooms are single aspect and therefore have not needed to test rear facing windows as these will be unaffected by the development.

- 3.4.5 The BRE guide states that the tests may also be applied to non-domestic buildings where there is a reasonable expectation of daylight. The BRE guide explains that this would normally include schools, hospitals, hotels and hostels, small workshops and some offices. The BRE guide is not explicit in terms of which types of offices it regards as having a requirement for daylight. However, it is widely accepted amongst consultants and local authorities, that for planning purposes, offices (which are commercial in nature) do not have a requirement for daylight. The point is touched on in the 'Daylighting and Sunlighting' guidance note published by the Royal Institution of Chartered Surveyors (RICS), which gives guidance to surveyors on how to produce their reports:
- 3.4.6 "The report should establish the limits of the assessment. For example, existing commercial premises are rarely assessed for loss of amenity."
- 3.4.7 The BRE guide contains two tests which measure diffuse daylight:

#### **Test 1 Vertical Sky Component**

- 3.4.8 The Vertical Sky Component is a measure of available skylight at a given point on a vertical plane. Diffuse daylight may be adversely affected if after a development the Vertical Sky Component is both less than 27% and less than 0.8 times its former value.
- 3.4.9 Whilst the BRE guide states that daylight may be adversely affected if the above targets are not met, when setting targets, both the BRE guide and National Planning Policy Guidance (NPPG) recognise that it is necessary to have regard to the development context and site location (see paragraph 3.3.1 above). Following a number of appeal decisions, it is generally accepted that for large schemes in cities or densely populated town centre locations, a retained Vertical Sky Component of 20% or more represents a reasonably good level of daylight, and a retained Vertical Sky Component in the mid-teens (15% and above) is acceptable.
- 3.4.10 The BRE guide states that the total amount of skylight can be calculated by finding the Vertical Sky Component at the centre of each main window. However, the guide states that if there would be a significant loss of light to the main window but the room also has one or more smaller windows, an overall Vertical Sky Component may be

derived by weighting each Vertical Sky Component element in accordance with the proportion of the total glazing area represented by its window.

#### **Test 2 Daylight Distribution**

- 3.4.11 The distribution of daylight within a room can be calculated by plotting the 'no sky line'. The no sky line is a line which separates areas of the working plane that do and do not have a direct view of the sky. Daylight may be adversely affected if, after the development, the area of the working plane in a room which can receive direct skylight is reduced to less than 0.8 times its former value.
- 3.4.12 The BRE guide states that both the total amount of skylight (Vertical Sky Component) and its distribution within the building (Daylight Distribution) are important. The BRE guide states that the daylight distribution calculation can only be carried out where room layouts are known. It states that using estimated room layouts is likely to give inaccurate results and is not recommended. Therefore, we don't endorse the practice of applying the test based on assumed room layouts. However, we can provide additional daylight distribution data upon request by the local authority, if neighbouring room layout information is confirmed.

#### 3.5 Sunlight availability to Windows

- 3.5.1 The BRE sunlight tests should be applied to all main living rooms and conservatories which have a window which faces within 90 degrees of due south. The BRE guide states that kitchens and bedrooms are less important, although care should be taken not to block too much sunlight. It also states that normally loss of sunlight need not be analysed to kitchens and bedrooms, except for bedrooms which also comprise a living space. The tests should also be applied to non-domestic buildings where there is a particular requirement for sunlight.
- 3.5.2 The test is intended to be applied to main windows which face within 90 degrees of due south. However, the BRE guide explains that if the main window faces within 90 degrees of due north, but a secondary window faces within 90 degrees of due south, sunlight to the secondary window should be checked. For completeness, we have tested all windows which face within 90 degrees of due south. The BRE guide states that sunlight availability may be adversely affected if the centre of the window:

- receives less than 25% of annual probable sunlight hours, or less than 5% of annual probable sunlight hours between 21 September and 21 March and
- receives less than 0.8 times its former sunlight hours during either period and
- has a reduction in sunlight received over the whole year greater than 4% of annual probable sunlight hours.

# 3.6 Overshadowing to Gardens and Open Spaces

- 3.6.1 The availability of sunlight should be checked for all open spaces where sunlight is required. This would normally include:
  - Gardens, usually the main back garden of a house
  - Parks and playing fields
  - Children's playgrounds
  - Outdoor swimming pools and paddling pools
  - Sitting out areas, such as those between non-domestic buildings and in public squares
  - Focal points for views such as a group of monuments or fountains.
- 3.6.2 One way to consider overshadowing is by preparing shadow plots. However, the BRE guide states that it must be borne in mind that nearly all structures will create areas of new shadow, and some degree of transient overshadowing is to be expected. Therefore, shadow plots are of limited use as interpretation of the plots is subjective. Shadow plots have not been undertaken as part of this assessment.
- 3.6.3 The BRE guide also contains an objective overshadowing test which has been adopted for the purpose of this assessment. The guide recommends that at least 50% of the area of each amenity space listed above should receive at least two hours of sunlight on 21 March. If as a result of new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sunlight on 21 March is less than 0.8 times its former value, then the loss of light is likely to be noticeable.

#### 4 RESULTS OF THE ASSESSMENT

# 4.1 Windows & Amenity Areas Considered

- 4.1.1 The aim of the assessment is to assess the impact of the development on the light receivable by the neighbouring properties at 112 and 229 to 255 Whitton Dene.
- 4.1.2 All other neighbouring properties are far enough away from the proposal that they are unlikely to be adversely impacted by the proposed development. To demonstrate this, Appendix 4 shows the application of the 25° rule of thumb test with respect to 105 Kneller Road, which sits within a row of terraced properties and has windows facing directly towards the development site. The proposed development sits clearly underneath the 25° line, so in our opinion these properties need not be tested.
- 4.1.3 Appendix 1 provides a plan and photographs to indicate the positions of the windows and outdoor amenity areas analysed in this assessment. Appendix 2 lists the detailed numerical daylight and sunlight test results.

# 4.2 Daylight to Windows

Vertical Sky Component

4.2.1 All windows with a requirement for daylight pass the Vertical Sky Component test.

**Daylight Distribution** 

4.2.2 We have undertaken the Daylight Distribution test where room layouts are known. All rooms with a requirement for daylight pass the daylight distribution test.

#### 4.3 Sunlight to Windows

4.3.1 All windows that face within 90 degrees of due south have been tested for direct sunlight. All windows pass both the total annual sunlight hours test and the winter sunlight hours test. The proposed development therefore satisfies the BRE direct sunlight to windows requirements.

#### 4.4 Overshadowing to Gardens and Open Spaces

4.4.1 All gardens and open spaces tested meet the BRE recommendations.

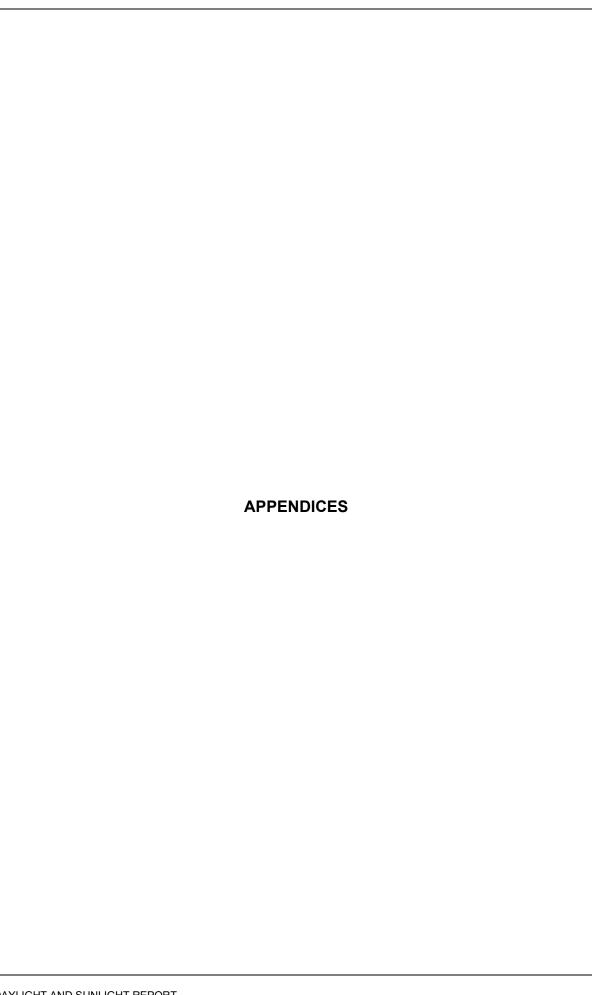
# 4.5 Conclusion

4.5.1 In summary, the numerical results in this assessment demonstrate that the proposed development will have a low impact on the light receivable by its neighbouring properties. In our opinion, the proposed development sufficiently safeguards the daylight and sunlight amenity of the neighbouring properties.

#### 5 CLARIFICATIONS

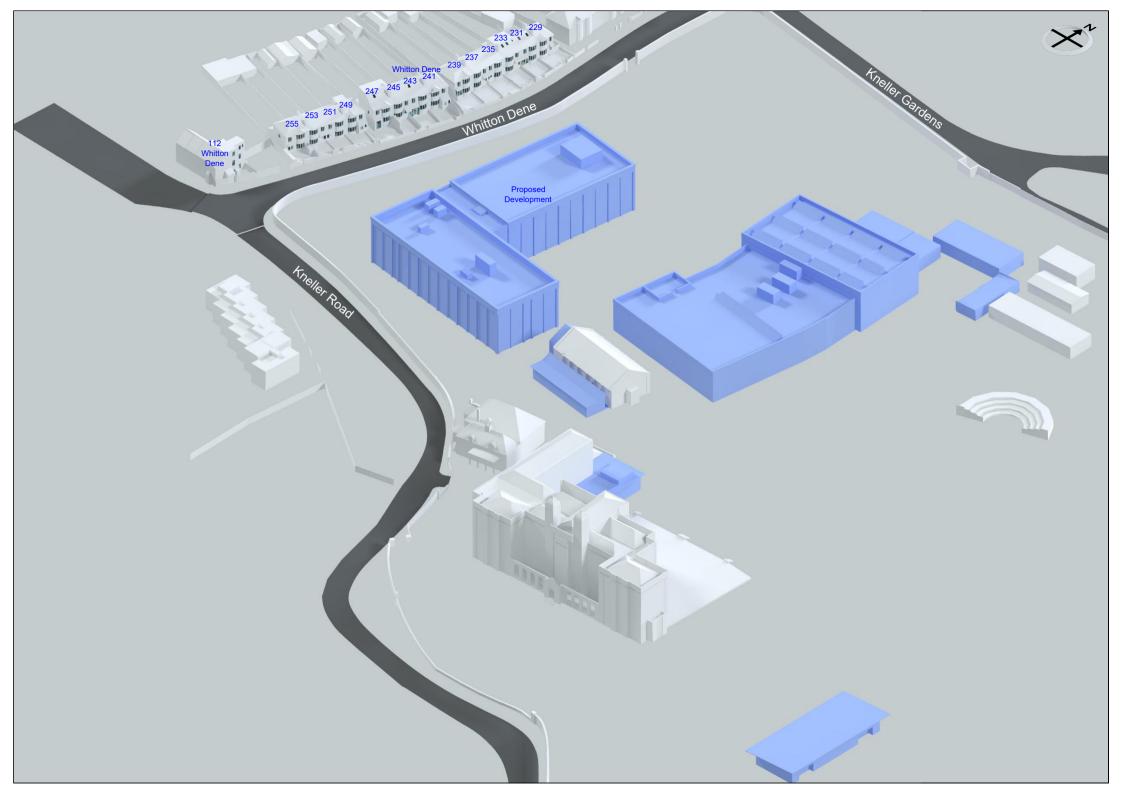
#### 5.1 General

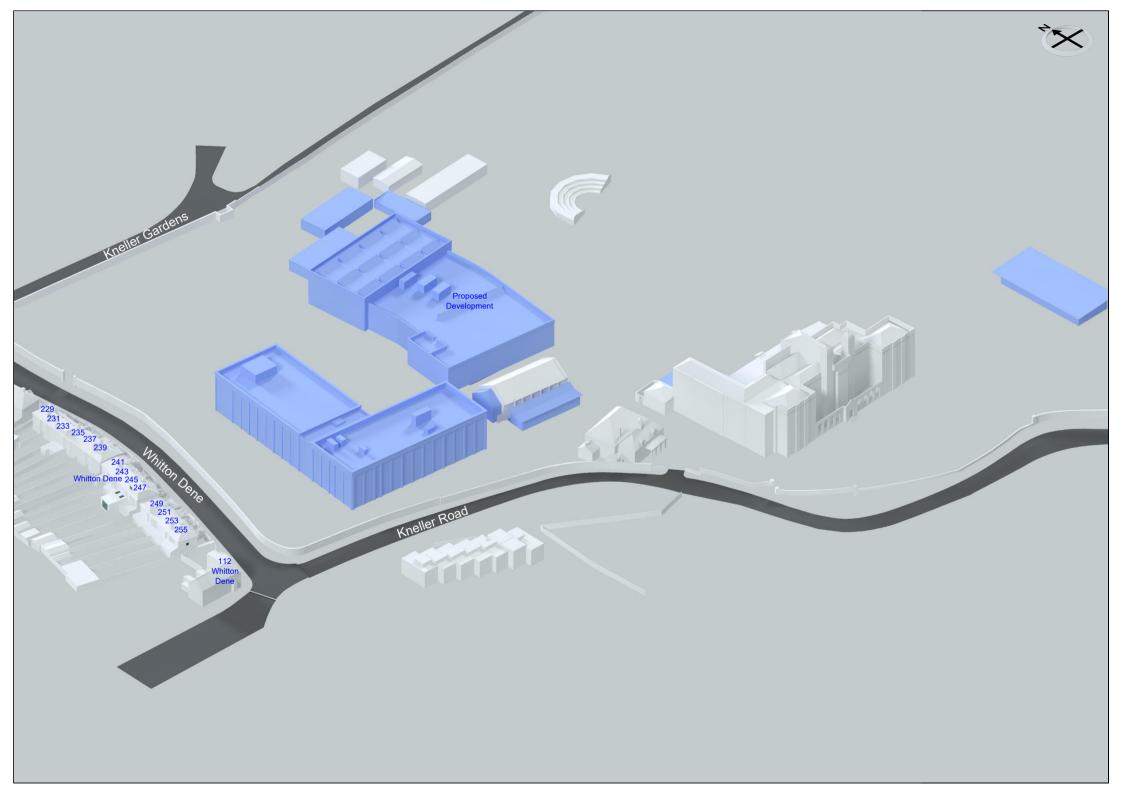
- 5.1.1 The report provided is solely for the use of the client and no liability to anyone else is accepted.
- 5.1.2 The assessment is limited to assessing daylight, sunlight and overshadowing to neighbouring windows, gardens and open spaces as set out in section 2.2, 3.2 and 3.3 of the BRE Guide.
- 5.1.3 The assessment is based on the information listed in section 2 of this report and a site visit undertaken on 13 June 2022. We have not had access to neighbouring properties.
- 5.1.4 This assessment does not calculate the effects of trees and hedges on daylight, sunlight and overshadowing to gardens. The BRE guide states that it is usual to ignore the effect of existing trees.
- 5.1.5 We have undertaken the assessment following the guidelines of the RICS publication "Surveying Safely". Where limited access or information is available, assumptions will have been made which may affect the conclusions reached in this report. For example, where neighbouring room uses are not known, we will either make an assumption regarding the use, or take the prudent approach of treating the use of the room as being used for domestic purposes. Therefore, the report may need to be updated if room uses are confirmed by the local authority or by the consultation responses.
- 5.1.6 This report is based upon and subject to the scope of work set out in Right of Light Consulting's quotation and standard terms and conditions.

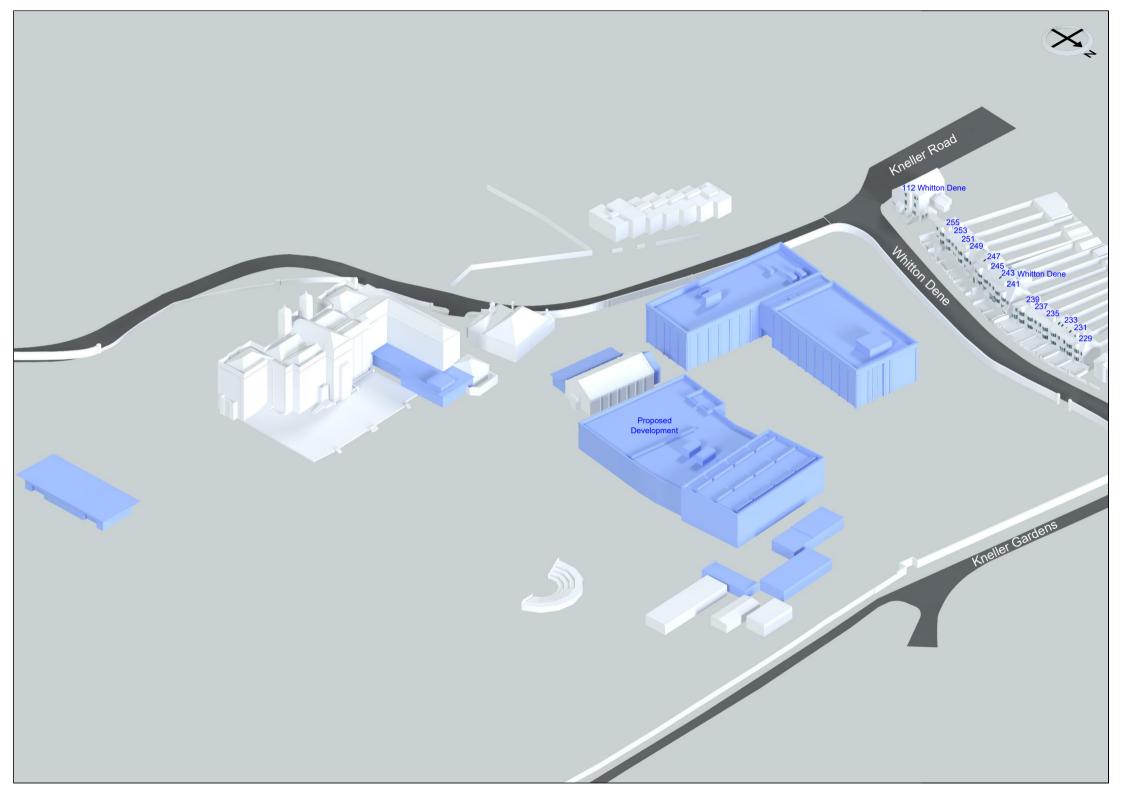


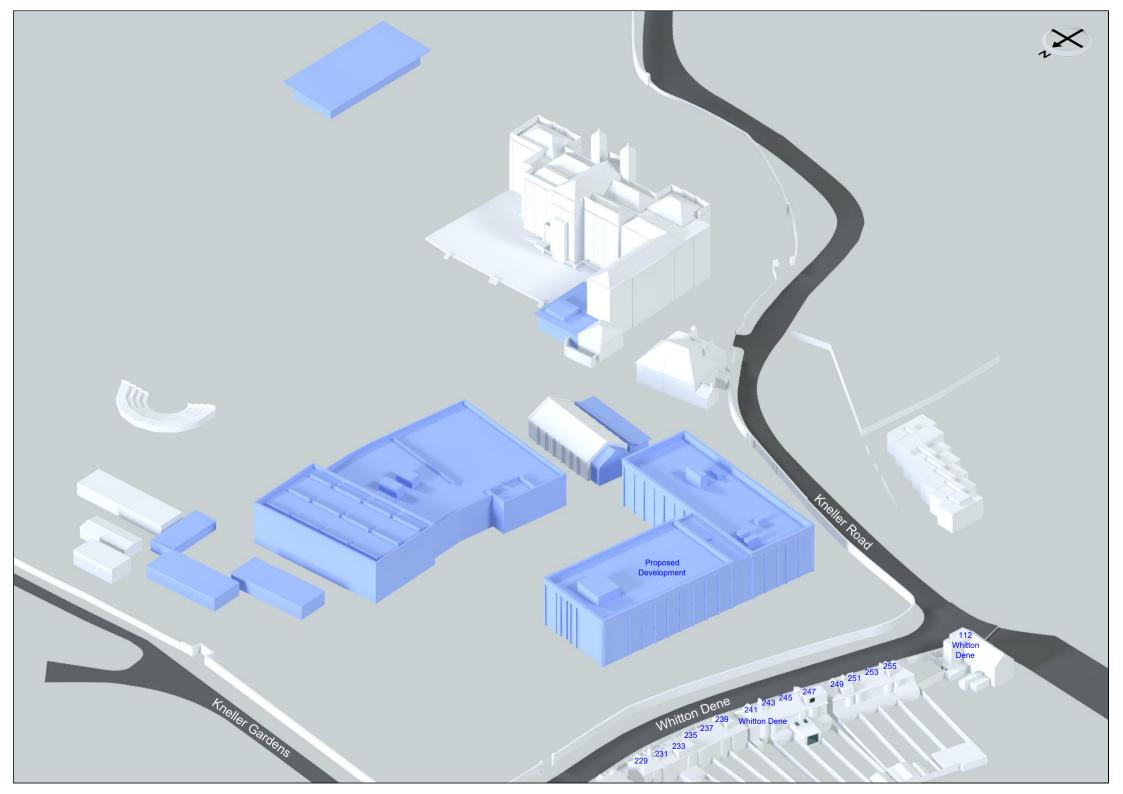
APPENDIX 1
APPENDIA I
WINDOW COADDEN VEV
WINDOW & GARDEN KEY



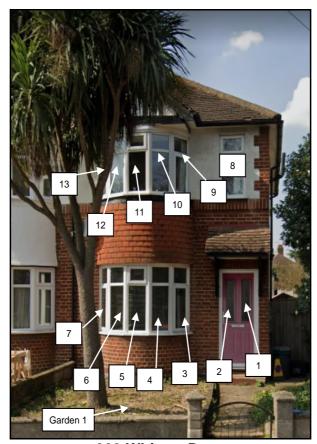




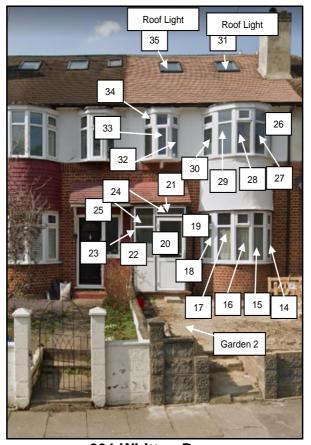




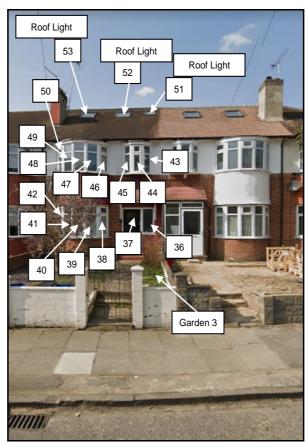
# **Neighbouring Windows**



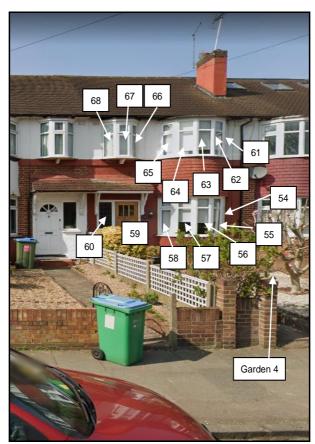
229 Whitton Dene



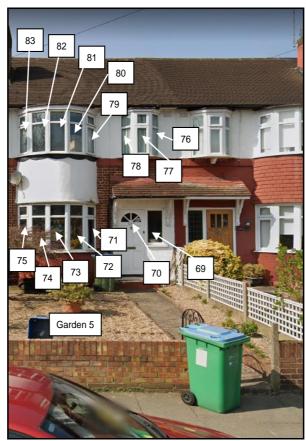
231 Whitton Dene



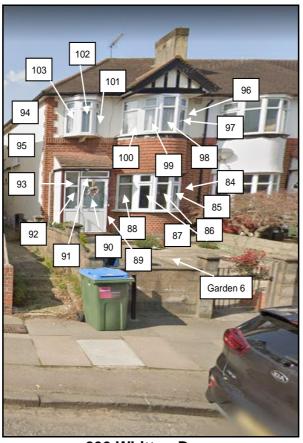
233 Whitton Dene



235 Whitton Dene



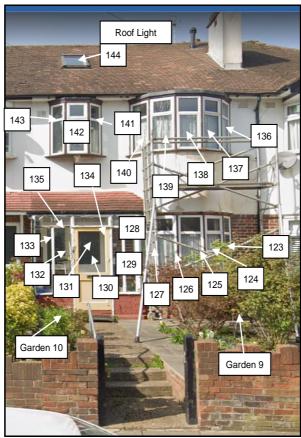
237 Whitton Dene



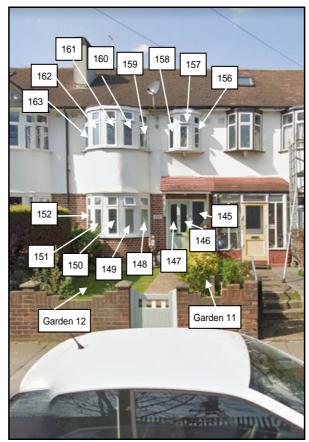
239 Whitton Dene



241 Whitton Dene



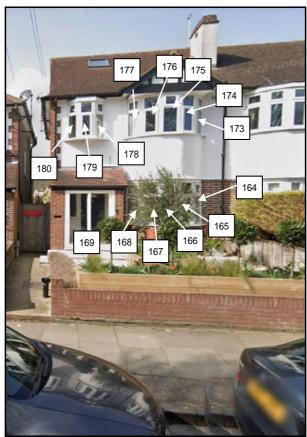
243 Whitton Dene



245 Whitton Dene



245 Whitton Dene



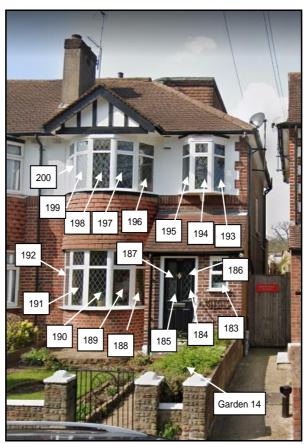
247 Whitton Dene



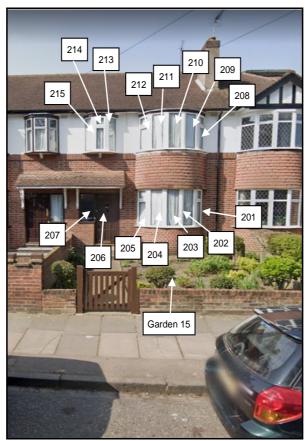
247 Whitton Dene



247 Whitton Dene



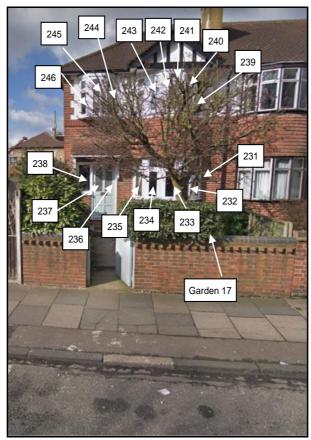
249 Whitton Dene



251 Whitton Dene



253 Whitton Dene



255 Whitton Dene



255 Whitton Dene



112 Whitton Dene



112 Whitton Dene



112 Whitton Dene



112 Whitton Dene

	APPENDIX 2	
	DAYLIGHT AND SUNLIGHT RES	SULTS
AYLIGHT AND SUNLIGHT REPO	RT	

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	nce Room Use Vertical Sky Component				
Releielice	Kooni ose	Before	After	Loss	Ratio
229 Whitton Dene					
Ground Floor					
Window 1	Domestic	30.0%	28.9%	1.1%	0.96
Window 2	Domestic	30.5%	29.4%	1.1%	0.96
Window 3	Domestic	29.9%	29.6%	0.3%	0.99
Window 4	Domestic	36.6%	35.8%	0.8%	0.98
Window 5	Domestic	37.8%	36.6%	1.2%	0.97
Window 6	Domestic	36.4%	35.0%	1.4%	0.96
Window 7	Domestic	29.2%	27.7%	1.5%	0.95
First Floor					
Window 8	Domestic	36.2%	35.2%	1.0%	0.97
Window 9	Domestic	32.5%	32.3%	0.2%	0.99
Window 10	Domestic	38.2%	37.5%	0.7%	0.98
Window 11	Domestic	38.9%	37.9%	1.0%	0.97
Window 12	Domestic	37.6%	36.4%	1.2%	0.97
Window 13	Domestic	29.4%	28.1%	1.3%	0.96
231 Whitton Dene					
Ground Floor					
Window 14	Dining	31.1%	30.7%	0.4%	0.99
Window 15	Dining	36.8%	35.9%	0.9%	0.98
Window 16	Dining	37.7%	36.4%	1.3%	0.97
Window 17	Dining	35.6%	34.0%	1.6%	0.96
Window 18	Dining	23.8%	22.3%	1.5%	0.94
Window 19	Domestic	16.6%	16.6%	0.0%	1.0
Window 20	Domestic	37.6%	36.2%	1.4%	0.96
Window 21	Domestic	35.4%	34.0%	1.4%	0.96
Window 22	Domestic	37.7%	36.2%	1.5%	0.96
Window 23	Domestic	11.8%	10.8%	1.0%	0.92
Window 25	Hallway Hallway	20.0% 17.1%	19.0%	1.0% 1.2%	0.95 0.93
Window 25	пашмау	17.1%	15.9%	1.2%	0.93
First Floor					
Window 26	Bedroom	31.6%	31.3%	0.3%	0.99
Window 27	Bedroom	38.2%	37.4%	0.8%	0.98
Window 28	Bedroom	38.8%	37.7%	1.1%	0.97
Window 29	Bedroom	38.2%	36.8%	1.4%	0.96
Window 30	Bedroom	30.6%	29.2%	1.4%	0.95
Window 31	Bedroom	82.3%	82.1%	0.2%	1.0
Window 32	Bedroom	30.7%	30.4%	0.3%	0.99
Window 33	Bedroom	38.8%	37.6%	1.2%	0.97
Window 34	Bedroom	31.7%	30.3%	1.4%	0.96
Window 35	Bedroom	89.3%	89.1%	0.2%	1.0

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Room Use	se Vertical Sky Component			
Kelefelice	Room ose	Before	After	Loss	Ratio
233 Whitton Dene					
Ground Floor					
Window 36	Domestic	24.0%	22.5%	1.5%	0.94
Window 37	Domestic	18.1%	16.6%	1.5%	0.92
Window 38	Domestic	26.3%	25.8%	0.5%	0.98
Window 39	Domestic	36.1%	34.9%	1.2%	0.97
Window 40	Domestic	37.7%	36.0%	1.7%	0.95
Window 41	Domestic	36.1%	34.1%	2.0%	0.94
Window 42	Domestic	28.9%	26.9%	2.0%	0.93
First Floor					
Window 43	Domestic	32.4%	31.9%	0.5%	0.98
Window 44	Domestic	38.7%	37.4%	1.3%	0.97
Window 45	Domestic	29.6%	28.0%	1.6%	0.95
Window 46	Domestic	32.3%	31.9%	0.4%	0.99
Window 47	Domestic	38.4%	37.5%	0.9%	0.98
Window 48	Domestic	38.7%	37.3%	1.4%	0.96
Window 49	Domestic	38.0%	36.3%	1.7%	0.96
Window 50	Domestic	30.8%	29.1%	1.7%	0.94
Second Floor					
Window 51	Domestic	89.6%	89.4%	0.2%	1.0
Window 52	Domestic	89.2%	88.9%	0.3%	1.0
Window 53	Domestic	86.9%	86.6%	0.3%	1.0
235 Whitton Dene					
Ground Floor					
Window 54	Domestic	29.6%	29.1%	0.5%	0.98
Window 55	Domestic	36.3%	35.0%	1.3%	0.96
Window 56	Domestic	37.7%	35.9%	1.8%	0.95
Window 57	Domestic	36.1%	34.0%	2.1%	0.94
Window 58	Domestic	27.1%	24.9%	2.2%	0.92
Window 59	Domestic	28.1%	26.2%	1.9%	0.93
Window 60	Domestic	27.9%	26.0%	1.9%	0.93
First Floor					
Window 61	Domestic	31.5%	31.0%	0.5%	0.98
Window 62	Domestic	38.2%	37.2%	1.0%	0.97
Window 63	Domestic	38.7%	37.2%	1.5%	0.96
Window 64	Domestic	38.2%	36.4%	1.8%	0.95
Window 65	Domestic	31.8%	30.0%	1.8%	0.94
Window 66	Domestic	30.3%	29.7%	0.6%	0.98
Window 67	Domestic	38.7%	37.1%	1.6%	0.96
Window 68	Domestic	31.6%	29.7%	1.9%	0.94

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	rence Room Use Vertical Sky Component				
Relefelice	Room ose	Before	After	Loss	Ratio
237 Whitton Dene					
Ground Floor					
Window 69	Entrance Hall	27.9%	25.9%	2.0%	0.93
Window 70	Entrance Hall	25.5%	23.4%	2.1%	0.92
Window 71	Reception	27.5%	26.7%	0.8%	0.97
Window 72	Reception	36.0%	34.3%	1.7%	0.95
Window 73	Reception	37.7%	35.5%	2.2%	0.94
Window 74	Reception	36.3%	33.9%	2.4%	0.93
Window 75	Reception	29.3%	26.9%	2.4%	0.92
Second Floor					
Window 76	Bedroom	32.1%	31.4%	0.7%	0.98
Window 77	Bedroom	38.7%	37.0%	1.7%	0.96
Window 78	Bedroom	30.2%	28.3%	1.9%	0.94
Window 79	Bedroom	32.3%	31.6%	0.7%	0.98
Window 80	Bedroom	38.4%	37.0%	1.4%	0.96
Window 81	Bedroom	38.7%	36.9%	1.8%	0.95
Window 82	Bedroom	37.7%	35.6%	2.1%	0.94
Window 83	Bedroom	29.6%	27.6%	2.0%	0.93
239 Whitton Dene					
Ground Floor					
Window 84	Reception	31.1%	30.1%	1.0%	0.97
Window 85	Reception	36.7%	34.7%	2.0%	0.95
Window 86	Reception	37.6%	35.1%	2.5%	0.93
Window 87	Reception	35.5%	32.8%	2.7%	0.92
Window 88	Reception	25.0%	22.6%	2.4%	0.9
Window 89	Domestic	16.7%	16.7%	0.0%	1.0
Window 90	Domestic	37.8%	35.1%	2.7%	0.93
Window 91	Domestic	35.5%	32.9%	2.6%	0.93
Window 92	Domestic	37.8%	35.2%	2.6%	0.93
Window 93	Domestic	22.2%	21.2%	1.0%	0.95
Window 94	Hallway	22.5%	20.2%	2.3%	0.9
Window 95	Hallway	20.5%	18.2%	2.3%	0.89
First Floor					
Window 96	Bedroom	30.9%	30.0%	0.9%	0.97
Window 97	Bedroom	37.3%	35.6%	1.7%	0.95
Window 98	Bedroom	38.7%	36.6%	2.1%	0.95
Window 99	Bedroom	37.8%	35.5%	2.3%	0.94
Window 100	Bedroom	30.1%	27.9%	2.2%	0.93
Window 101	Bedroom	29.6%	28.6%	1.0%	0.97
Window 102	Bedroom	38.6%	36.4%	2.2%	0.94
Window 103	Bedroom	33.1%	30.9%	2.2%	0.93

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Room Use		Vertical Sky	Component	
1101010100	rtoom 666	Before	After	Loss	Ratio
241 Whitton Dene					
Ground Floor	<b>5</b>	22.22/	00.40/	0.007	0.04
Window 104	Domestic	36.3%	33.1%	3.2%	0.91
Window 105	Domestic	35.7%	32.6%	3.1%	0.91
Window 106	Domestic	36.0%	32.9%	3.1%	0.91
Window 107	Domestic	35.9%	32.8%	3.1%	0.91
Window 108	Hallway	1.5%	0.4%	1.1%	0.27
Window 109	Hallway	1.3%	0.7%	0.6%	0.54
Window 110	Lounge	9.7%	8.5%	1.2%	0.88
Window 111	Lounge	27.7%	24.9%	2.8%	0.9
Window 112	Lounge	36.1%	33.0%	3.1%	0.91
Window 113	Lounge	36.1%	33.1%	3.0%	0.92
Window 114	Lounge	29.2%	26.9%	2.3%	0.92
First Floor	Delleren	00.40/	04.40/	4.70/	0.05
Window 115	Bedroom	33.1%	31.4%	1.7%	0.95
Window 116	Bedroom	38.2%	35.6%	2.6%	0.93
Window 117	Bedroom	27.0%	24.9%	2.1%	0.92
Window 118	Bedroom	28.2%	26.5%	1.7%	0.94
Window 119	Bedroom	35.6%	33.2%	2.4%	0.93
Window 120	Bedroom	37.9%	35.3%	2.6%	0.93
Window 121	Bedroom	35.4%	32.8%	2.6%	0.93
Window 122	Bedroom	27.2%	25.2%	2.0%	0.93
243 Whitton Dene					
Ground Floor					
Window 123	Domestic	30.1%	27.9%	2.2%	0.93
Window 124	Domestic	36.0%	33.1%	2.9%	0.92
Window 125	Domestic	37.2%	34.1%	3.1%	0.92
Window 126	Domestic	34.0%	31.0%	3.0%	0.91
Window 127	Domestic	17.4%	15.3%	2.1%	0.88
Window 128	Domestic	15.0%	14.6%	0.4%	0.97
Window 129	Domestic	37.0%	33.8%	3.2%	0.91
Window 130	Domestic	35.9%	32.6%	3.3%	0.91
Window 131	Domestic	37.2%	34.0%	3.2%	0.91
Window 132	Domestic	33.0%	29.8%	3.2%	0.9
Window 133	Domestic	6.9%	6.4%	0.5%	0.93
Window 134	Domestic	16.6%	14.3%	2.3%	0.86
Window 135	Domestic	16.4%	13.7%	2.7%	0.84
First Floor					
Window 136	Domestic	30.4%	28.5%	1.9%	0.94
Window 137	Domestic	37.6%	35.1%	2.5%	0.93
Window 138	Domestic	38.5%	35.1%	2.7%	0.93
Window 139	Domestic	38.0%	35.4%	2.6%	0.93

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Room Use		Vertical Sky		
	_	Before	After	Loss	Ratio
Window 140	Domestic	30.8%	28.8%	2.0%	0.94
Window 141	Domestic	30.7%	28.8%	1.9%	0.94
Window 142	Domestic	38.6%	35.9%	2.7%	0.93
Window 143	Domestic	31.7%	29.6%	2.1%	0.93
Second Floor					
Window 144	Domestic	85.8%	85.3%	0.5%	0.99
245 Whitton Dene					
Ground Floor					
Window 145	Hallway	10.8%	7.9%	2.9%	0.73
Window 146	Hallway	14.0%	10.9%	3.1%	0.78
Window 147	Hallway	17.3%	14.2%	3.1%	0.82
Window 148	Living/Dining/Kitchen	20.8%	18.6%	2.2%	0.89
Window 149	Living/Dining/Kitchen	33.0%	30.1%	2.9%	0.91
Window 150	Living/Dining/Kitchen	35.3%	32.3%	3.0%	0.92
Window 151	Living/Dining/Kitchen	28.7%	26.6%	2.1%	0.93
Window 152	Living/Dining/Kitchen	16.2%	15.2%	1.0%	0.94
Window 153	Living/Dining/Kitchen	39.2%	39.2%	0.0%	1.0
Window 154	Living/Dining/Kitchen	72.6%	72.6%	0.0%	1.0
Window 155	Living/Dining/Kitchen	71.1%	71.1%	0.0%	1.0
First Floor					
Window 156	Domestic	31.8%	29.8%	2.0%	0.94
Window 157	Domestic	38.5%	35.8%	2.7%	0.93
Window 158	Domestic	30.2%	28.2%	2.0%	0.93
Window 159	Domestic	30.7%	28.8%	1.9%	0.94
Window 160	Domestic	38.1%	35.5%	2.6%	0.93
Window 161	Domestic	38.5%	35.8%	2.7%	0.93
Window 162	Domestic	37.5%	34.9%	2.6%	0.93
Window 163	Domestic	29.8%	27.9%	1.9%	0.94
247 Whitton Dene					
Ground Floor					
Window 164	Living Room	25.4%	23.8%	1.6%	0.94
Window 165	Living Room	33.7%	31.0%	2.7%	0.92
Window 166	Living Room	36.5%	33.4%	3.1%	0.92
Window 167	Living Room	33.0%	30.2%	2.8%	0.92
Window 168	Living Room	9.7%	8.4%	1.3%	0.87
Window 169	Porch	37.1%	33.9%	3.2%	0.91
Window 170	Entrance Hall	14.6%	12.6%	2.0%	0.86
Window 171	Entrance Hall	15.9%	12.9%	3.0%	0.81
Window 172	Staircase	16.3%	16.0%	0.3%	0.98
First Floor					
Window 173	Bedroom	27.7%	25.6%	2.1%	0.92

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Room Use		Vertical Sky Component				
		Before	After	Loss	Ratio		
Window 174	Bedroom	35.4%	32.7%	2.7%	0.92		
Window 175	Bedroom	37.9%	35.2%	2.7%	0.93		
Window 176	Bedroom	35.6%	33.1%	2.5%	0.93		
Window 177	Bedroom	27.7%	26.0%	1.7%	0.94		
Window 178	Bedroom	27.4%	25.2%	2.2%	0.92		
Window 179	Bedroom	38.2%	35.6%	2.6%	0.93		
Window 180	Bedroom	33.6%	31.9%	1.7%	0.95		
Second Floor							
Window 181	Bedroom	39.6%	39.6%	0.0%	1.0		
Window 182	Bedroom	86.1%	85.6%	0.5%	0.99		
249 Whitton Dene							
Ground Floor							
Window 183	Domestic	37.5%	34.5%	3.0%	0.92		
Window 184	Hallway	37.3%	34.3%	3.0%	0.92		
Window 185	Hallway	37.3%	34.3%	3.0%	0.92		
Window 186	Hallway	1.6%	0.7%	0.9%	0.44		
Window 187	Hallway	2.4%	1.3%	1.1%	0.54		
Window 188	Domestic	8.6%	7.7%	0.9%	0.9		
Window 189	Domestic	27.0%	24.3%	2.7%	0.9		
Window 190	Domestic	35.9%	33.0%	2.9%	0.92		
Window 191	Domestic	36.2%	33.7%	2.5%	0.93		
Window 192	Domestic	30.7%	29.0%	1.7%	0.94		
First Floor							
Window 193	Domestic	32.2%	30.0%	2.2%	0.93		
Window 194	Domestic	38.4%	35.9%	2.5%	0.93		
Window 195	Domestic	30.4%	28.9%	1.5%	0.95		
Window 196	Domestic	29.9%	27.8%	2.1%	0.93		
Window 197	Domestic	37.4%	34.9%	2.5%	0.93		
Window 198	Domestic	38.6%	36.1%	2.5%	0.94		
Window 199	Domestic	37.4%	35.3%	2.1%	0.94		
Window 200	Domestic	31.0%	29.5%	1.5%	0.95		
251 Whitton Dene							
Ground Floor							
Window 201	Domestic	29.1%	26.7%	2.4%	0.92		
Window 202	Domestic	35.9%	33.0%	2.9%	0.92		
Window 203	Domestic	37.2%	34.5%	2.7%	0.93		
Window 204	Domestic	36.4%	34.0%	2.4%	0.93		
Window 205	Domestic	30.5%	29.0%	1.5%	0.95		
Window 206	Domestic	31.4%	28.8%	2.6%	0.92		
Window 207	Domestic	30.6%	28.0%	2.6%	0.92		

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

		V : 101 0					
Reference	Room Use	Defens	Vertical Sky		Detic		
		Before	After	Loss	Ratio		
First Floor							
Window 208	Domestic	30.3%	28.2%	2.1%	0.93		
Window 209	Domestic	37.8%	35.3%	2.5%	0.93		
Window 210	Domestic	38.5%	36.1%	2.4%	0.94		
Window 211	Domestic	38.1%	36.1%	2.0%	0.95		
Window 217	Domestic	32.3%	31.0%	1.3%	0.96		
Window 213	Domestic	31.6%	29.4%	2.2%	0.93		
Window 214	Domestic	38.6%	36.3%	2.3%	0.94		
Window 215	Domestic	32.4%	31.2%	1.2%	0.96		
	Domodio	02.170	01.270	1.270	0.00		
253 Whitton Dene							
Ground Floor	Domostio	20 E0/	20 00/	2.50/	0.02		
Window 216	Domestic	30.5%	28.0%	2.5%	0.92		
Window 217	Domestic	29.0%	26.5%	2.5%	0.91		
Window 218	Domestic	29.0%	26.6%	2.4%	0.92		
Window 219	Domestic	35.5%	32.9%	2.6%	0.93		
Window 220	Domestic	34.8%	32.4%	2.4%	0.93		
Window 221	Domestic	32.1%	30.8%	1.3%	0.96		
Window 222	Domestic	26.7%	26.4%	0.3%	0.99		
First Floor							
Window 223	Domestic	32.5%	30.3%	2.2%	0.93		
Window 224	Domestic	38.6%	36.4%	2.2%	0.94		
Window 225	Domestic	31.6%	30.4%	1.2%	0.96		
Window 226	Domestic	31.0%	28.9%	2.1%	0.93		
Window 227	Domestic	38.1%	35.8%	2.3%	0.94		
Window 228	Domestic	38.6%	36.4%	2.2%	0.94		
Window 229	Domestic	37.9%	36.1%	1.8%	0.95		
Window 230	Domestic	31.7%	30.6%	1.1%	0.97		
255 Whitton Dene							
Ground Floor							
Window 231	Living Room	26.1%	26.1%	0.0%	1.0		
Window 232	Living Room	32.7%	32.3%	0.4%	0.99		
Window 233	Living Room	35.2%	34.1%	1.1%	0.97		
Window 234	Living Room	35.4%	34.1%	1.3%	0.96		
Window 235	Living Room	30.2%	29.2%	1.0%	0.97		
Window 236	Hallway	27.2%	25.0%	2.2%	0.92		
Window 237	Hallway	26.0%	23.8%	2.2%	0.92		
Window 238	Hallway	29.7%	27.5%	2.2%	0.93		
First Floor							
Window 239	Bedroom	30.1%	28.0%	2.1%	0.93		
	Bedroom						
Window 240		37.6% 38.7%	35.3% 36.6%	2.3%	0.94		
Window 241	Bedroom	38.7%	36.6%	2.1%	0.95		

Appendix 2 - Vertical Sky Component Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Room Use		Vertical Sky	Component	
		Before	After	Loss	Ratio
Window 242	Bedroom	37.6%	35.9%	1.7%	0.95
Window 243	Bedroom	31.6%	30.6%	1.0%	0.97
Window 244	Bedroom	31.7%	29.5%	2.2%	0.93
Window 245	Bedroom	38.7%	36.7%	2.0%	0.95
Window 246	Bedroom	34.3%	33.4%	0.9%	0.97
Window 247	Landing	36.3%	36.3%	0.0%	1.0
112 Whitton Dene					
Ground Floor					
Window 248	Domestic	25.9%	25.4%	0.5%	0.98
Window 249	Domestic	30.1%	29.5%	0.6%	0.98
Window 250	Domestic	30.4%	29.1%	1.3%	0.96
Window 251	Domestic	23.3%	21.8%	1.5%	0.94
Window 252	Domestic	22.6%	21.8%	0.8%	0.96
First Floor					
Window 253	Domestic	33.8%	32.2%	1.6%	0.95
Window 254	Domestic	38.6%	37.0%	1.6%	0.96
Second Floor					
Window 255	Domestic	38.3%	37.0%	1.3%	0.97
Window 256	Domestic	35.4%	34.1%	1.3%	0.96
Window 257	Domestic	39.1%	37.8%	1.3%	0.97
VVIIIGOVV ZJI	Domestic	JJ. 1 /0	37.070	1.570	0.31

Appendix 2 - Daylight Distribution
Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Room Use	Before		Distribution	Dotio
		Before	After	Loss	Ratio
231 Whitton Dene					
Ground Floor					
Windows 14 to 18	Dining	99%	99%	0.0%	1.0
Windows 19 to 23	Domestic	100%	100%	0.0%	1.0
Windows 24 & 25	Hallway	95%	95%	0.0%	1.0
Window 24 & 25	Staircase	81%	81%	0.0%	1.0
First Floor					
Windows 26 to 31	Bedroom	99%	99%	0.0%	1.0
Windows 32 to 35	Bedroom	97%	97%	0.0%	1.0
233 Whitton Dene					-
Ground Floor Windows 36 & 37	Domestic	89%	89%	0.0%	1.0
Windows 38 to 42	Domestic	99%	99%	0.0%	1.0
Willdows 50 to 42	Domestic	3370	3370	0.070	1.0
First Floor					
Windows 43 to 45	Domestic	97%	97%	0.0%	1.0
Windows 46 to 50	Domestic	99%	99%	0.0%	1.0
237 Whitton Dene					
Ground Floor					
Windows 69 & 70	Entrance Hall	87%	87%	0.0%	1.0
Windows 71 to 75	Reception	99%	99%	0.0%	1.0
Second Floor					
Windows 76 to 78	Bedroom	100%	100%	0.0%	1.0
Windows 79 to 83	Bedroom	91%	91%	0.0%	1.0
239 Whitton Dene					-
Ground Floor Windows 84 to 88	Reception	95%	95%	0.0%	1.0
Windows 89 to 93	Domestic	100%	100%	0.0%	1.0
Windows 94 & 95	Hallway	92%	92%	0.0%	1.0
WITHOUS 34 & 33	i iaiiway	<b>3∠</b> /0	<i>3∠</i> /0	0.0 /0	1.0
First Floor					
Windows 96 to 100	Bedroom	100%	100%	0.0%	1.0
Windows 101 to 103	Bedroom	98%	98%	0.0%	1.0
241 Whitton Dene					
Ground Floor					
Windows 104 to 107	Domestic	92%	92%	0.0%	1.0

Appendix 2 - Daylight Distribution
Kneller Hall, Kneller Road, Twickenham TW2 7DN

Deferred	Day Ha		Dov <del>diebt I</del>	Diotribution	
Reference	Room Use	Before	Daylight L After	Distribution Loss	Ratio
Windows 108 & 109	Hallway	88%	51%	37.0%	0.58
Windows 110 to 114	Lounge	99%	99%	0.0%	1.0
First Floor Windows 115 to 117	Bedroom	97%	97%	0.0%	1.0
Windows 118 to 122	Bedroom	100%	100%	0.0%	1.0
245 Whitton Dene					
Ground Floor					
Windows 145 to 147	Hallway	88%	88%	0.0%	1.0
Windows 148 to 155	Living/Dining/Kitchen	99%	91%	8.0%	0.92
247 Whitton Dene					
Ground Floor					
Windows 164 to 168	Living Room	96%	96%	0.0%	1.0
Window 169	Porch	99%	99%	0.0%	1.0
Windows 170 & 171	Entrance Hall	89%	89%	0.0%	1.0
First Floor					
Windows 173 to 177	Bedroom	100%	100%	0.0%	1.0
Windows 178 to 180	Bedroom	98%	98%	0.0%	1.0
Window 172	Landing	0.0%	0.0%	0.0%	1.0
Second Floor					
Windows 181 & 182	Bedroom	97%	97%	0.0%	1.0
255 Whitton Dene					
Ground Floor					
Windows 231 to 235	Living Room	98%	98%	0.0%	1.0
Windows 236 to 238	Hallway	99%	94%	5.0%	0.95
First Floor					
Windows 239 to 243	Bedroom	99%	99%	0.0%	1.0
Windows 244 to 246	Bedroom	98%	98%	0.0%	1.0
Window 247	Landing	89%	89%	0.0%	1.0

Appendix 2 - Sunlight to Windows Kneller Hall, Kneller Road, Twickenham TW2 7DN

Sunlight to Windows									
Reference	Room Use	T	otal Sur	nlight Hou	urs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
229 Whitton Dene									
Ground Floor									
Window 1	Domestic	43%	42%	1%	0.98	14%	13%	1%	0.93
Window 2	Domestic	47%	46%	1%	0.98	13%	12%	1%	0.92
Window 5	Domestic	51%	50%	1%	0.98	15%	14%	1%	0.93
Window 6	Domestic	50%	49%	1%	0.98	15%	14%	1%	0.93
Window 7	Domestic	49%	48%	1%	0.98	14%	13%	1%	0.93
First Floor									
Window 8	Domestic	45%	44%	1%	0.98	12%	11%	1%	0.92
Window 11	Domestic	52%	51%	1%	0.98	15%	14%	1%	0.93
Window 12	Domestic	56%	55%	1%	0.98	17%	16%	1%	0.94
Window 13	Domestic	48%	47%	1%	0.98	14%	13%	1%	0.93
231 Whitton Dene									
Ground Floor									
Window 16	Dining	52%	50%	2%	0.96	15%	13%	2%	0.87
Window 17	Dining	51%	49%	2%	0.96	14%	12%	2%	0.86
Window 18	Dining	37%	35%	2%	0.95	10%	8%	2%	8.0
Window 20	Domestic	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 21	Domestic	47%	45%	2%	0.96	15%	13%	2%	0.87
Window 22	Domestic	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 23	Domestic	32%	30%	2%	0.94	12%	10%	2%	0.83
Window 24	Hallway	26%	25%	1%	0.96	7%	6%	1%	0.86
Window 25	Hallway	24%	22%	2%	0.92	8%	6%	2%	0.75
First Floor									
Window 28	Bedroom	52%	51%	1%	0.98	15%	14%	1%	0.93
Window 29	Bedroom	59%	58%	1%	0.98	18%	17%	1%	0.94
Window 30	Bedroom	50%	49%	1%	0.98	15%	14%	1%	0.93
Window 31	Bedroom	83%	82%	1%	0.99	24%	23%	1%	0.96
Window 33	Bedroom	52%	50%	2%	0.96	15%	13%	2%	0.87
Window 34	Bedroom	49%	47%	2%	0.96	15%	13%	2%	0.87
Window 35	Bedroom	83%	82%	1%	0.99	24%	23%	1%	0.96
233 Whitton Dene									
Ground Floor									
Window 36	Domestic	35%	33%	2%	0.94	12%	10%	2%	0.83
Window 37	Domestic	26%	24%	2%	0.92	10%	8%	2%	8.0
Window 40	Domestic	51%	48%	3%	0.94	15%	12%	3%	8.0
Window 41	Domestic	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 42	Domestic	49%	47%	2%	0.96	14%	12%	2%	0.86

Appendix 2 - Sunlight to Windows Kneller Hall, Kneller Road, Twickenham TW2 7DN

					Sunlight t	o Window	/S		
Reference	Room Use	1	otal Sur	nlight Hou	ırs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
First Floor									
Window 44	Domestic	51%	49%	2%	0.96	14%	12%	2%	0.86
Window 45	Domestic	46%	44%	2%	0.96	12%	10%	2%	0.83
Window 48	Domestic	53%	51%	2%	0.96	16%	14%	2%	0.88
Window 49	Domestic	59%	57%	2%	0.97	17%	15%	2%	0.88
Window 50	Domestic	49%	47%	2%	0.96	14%	12%	2%	0.86
Second Floor									
Window 51	Domestic	83%	82%	1%	0.99	24%	23%	1%	0.96
Window 52	Domestic	81%	80%	1%	0.99	22%	21%	1%	0.95
Window 53	Domestic	73%	72%	1%	0.99	15%	14%	1%	0.93
235 Whitton Dene									
Ground Floor									
Window 56	Domestic	52%	49%	3%	0.94	15%	12%	3%	0.8
Window 57	Domestic	51%	49%	2%	0.96	15%	13%	2%	0.87
Window 58	Domestic	41%	39%	2%	0.95	12%	10%	2%	0.83
Window 59	Domestic	35%	33%	2%	0.94	11%	9%	2%	0.82
Window 60	Domestic	36%	34%	2%	0.94	12%	10%	2%	0.83
First Floor									
Window 63	Domestic	52%	50%	2%	0.96	15%	13%	2%	0.87
Window 64	Domestic	59%	57%	2%	0.97	18%	16%	2%	0.89
Window 65	Domestic	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 67	Domestic	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 68	Domestic	49%	47%	2%	0.96	15%	13%	2%	0.87
237 Whitton Dene									
Ground Floor									
Window 69	Entrance Hall	37%	35%	2%	0.95	13%	11%	2%	0.85
Window 70	Entrance Hall	37%	35%	2%	0.95	11%	9%	2%	0.82
Window 73	Reception	50%	47%	3%	0.94	15%	12%	3%	0.8
Window 74	Reception	50%	47%	3%	0.94	15%	12%	3%	0.8
Window 75	Reception	48%	45%	3%	0.94	14%	11%	3%	0.79
0									
Second Floor	Padraam	400/	470/	20/	0.06	1.40/	120/	20/	0.00
Window 77	Bedroom	49%	47%	2%	0.96	14%	12%	2%	0.86
Window 78	Bedroom	46%	44%	2%	0.96	12%	10%	2%	0.83
Window 81	Bedroom	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 82	Bedroom	56%	54%	2%	0.96	16%	14%	2%	0.88
Window 83	Bedroom	46%	44%	2%	0.96	12%	10%	2%	0.83

Appendix 2 - Sunlight to Windows Kneller Hall, Kneller Road, Twickenham TW2 7DN

		Sunlight to Windows							
Reference	Room Use	Ţ	otal Sur	nlight Hou	ırs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
239 Whitton Dene									
Ground Floor									
Window 86	Reception	50%	47%	3%	0.94	15%	12%	3%	0.8
Window 87	Reception	48%	45%	3%	0.94	13%	10%	3%	0.77
Window 88	Reception	39%	36%	3%	0.92	11%	8%	3%	0.73
Window 90	Domestic	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 91	Domestic	42%	40%	2%	0.95	12%	10%	2%	0.83
Window 92	Domestic	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 93	Domestic	52%	50%	2%	0.96	18%	16%	2%	0.89
Window 94	Hallway	33%	31%	2%	0.94	13%	11%	2%	0.85
Window 95	Hallway	33%	32%	1%	0.97	13%	12%	1%	0.92
First Floor									
Window 98	Bedroom	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 99	Bedroom	54%	52%	2%	0.96	16%	14%	2%	0.88
Window 100	Bedroom	48%	46%	2%	0.96	14%	12%	2%	0.86
Window 102	Bedroom	50%	48%	2%	0.96	15%	13%	2%	0.87
Window 102 Window 103	Bedroom	51%	49%	2%	0.96	17%	15%	2%	0.88
241 Whitton Dene	Bedroom	0170	4370	270	0.00	17 70	1070	270	0.00
Ground Floor									
Window 104	Domestic	54%	52%	2%	0.96	18%	16%	2%	0.89
Window 104 Window 105	Domestic	56%	53%	3%	0.95	19%	17%	2%	0.89
Window 106	Domestic	57%	54%	3%	0.95	19%	17%	2%	0.89
Window 107	Domestic	50%	48%	2%	0.96	16%	14%	2%	0.88
Window 107 Window 108	Hallway	1%	1%	0%	1.0	0%	0%	0%	1.0
Window 109	Hallway	2%	0%	2%	0.0	2%	0%	2%	0.0
Window 109 Window 112	Lounge	59%	56%	3%	0.95	19%	17%	2%	0.89
Window 112 Window 113	Lounge	57%	54%	3%	0.95	17%	15%	2%	0.88
Window 113	Lounge	50%	48%	2%	0.96	14%	13%	1%	0.93
Willidow 114	Lounge	0070	4070	270	0.50	1 4 70	1070	1 70	0.50
First Floor									
Window 116	Bedroom	54%	52%	2%	0.96	15%	13%	2%	0.87
Window 117	Bedroom	45%	43%	2%	0.96	13%	11%	2%	0.85
Window 120	Bedroom	55%	54%	1%	0.98	19%	18%	1%	0.95
Window 121	Bedroom	53%	52%	1%	0.98	18%	17%	1%	0.94
Window 122	Bedroom	51%	50%	1%	0.98	16%	15%	1%	0.94
243 Whitton Dene									
Ground Floor									
Window 125	Domestic	57%	55%	2%	0.96	17%	16%	1%	0.94
Window 126	Domestic	50%	48%	2%	0.96	13%	12%	1%	0.92
			-	-	-		-	-	

Appendix 2 - Sunlight to Windows Kneller Hall, Kneller Road, Twickenham TW2 7DN

					Sunlight t	o Windov	/S		
Reference	Room Use	1	otal Sur	nlight Hou	urs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
Window 127	Domestic	30%	28%	2%	0.93	9%	8%	1%	0.89
Window 129	Domestic	55%	52%	3%	0.95	15%	13%	2%	0.87
Window 130	Domestic	52%	49%	3%	0.94	16%	14%	2%	0.88
Window 131	Domestic	55%	53%	2%	0.96	15%	14%	1%	0.93
Window 132	Domestic	38%	35%	3%	0.92	14%	12%	2%	0.86
Window 133	Domestic	14%	13%	1%	0.93	11%	10%	1%	0.91
Window 134	Domestic	19%	16%	3%	0.84	10%	8%	2%	8.0
Window 135	Domestic	27%	24%	3%	0.89	10%	8%	2%	8.0
First Floor									
Window 138	Domestic	60%	58%	2%	0.97	20%	18%	2%	0.9
Window 139	Domestic	63%	61%	2%	0.97	20%	18%	2%	0.9
Window 140	Domestic	52%	50%	2%	0.96	16%	14%	2%	0.88
Window 142	Domestic	58%	57%	1%	0.98	18%	17%	1%	0.94
Window 143	Domestic	52%	51%	1%	0.98	16%	15%	1%	0.94
Second Floor									
Window 144	Domestic	83%	82%	1%	0.99	25%	24%	1%	0.96
245 Whitton Dene									
Ground Floor									
Window 145	Hallway	11%	9%	2%	0.82	6%	5%	1%	0.83
Window 146	Hallway	21%	19%	2%	0.9	13%	12%	1%	0.92
Window 147	Hallway	35%	33%	2%	0.94	14%	13%	1%	0.93
Window 150	Living/Dining/Kitchen	56%	54%	2%	0.96	16%	15%	1%	0.94
Window 151	Living/Dining/Kitchen	46%	44%	2%	0.96	7%	6%	1%	0.86
Window 152	Living/Dining/Kitchen	27%	26%	1%	0.96	3%	3%	0%	1.0
First Floor									
Window 157	Domestic	57%	56%	1%	0.98	17%	16%	1%	0.94
Window 158	Domestic	50%	49%	1%	0.98	14%	13%	1%	0.93
Window 161	Domestic	58%	56%	2%	0.97	18%	16%	2%	0.89
Window 162	Domestic	60%	58%	2%	0.97	17%	15%	2%	0.88
Window 163	Domestic	50%	48%	2%	0.96	13%	11%	2%	0.85
247 Whitton Dene									
Ground Floor									
Window 166	Living Room	56%	54%	2%	0.96	17%	16%	1%	0.94
Window 167	Living Room	48%	46%	2%	0.96	12%	11%	1%	0.92
Window 168	Living Room	21%	19%	2%	0.9	2%	1%	1%	0.5
Window 169	Porch	60%	57%	3%	0.95	20%	18%	2%	0.9
Window 170	Entrance Hall	29%	27%	2%	0.93	10%	8%	2%	0.8

Appendix 2 - Sunlight to Windows Kneller Hall, Kneller Road, Twickenham TW2 7DN

					Sunlight t	o Windov	/S		
Reference	Room Use	1	Total Sur	nlight Hou				nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
Window 171	Entrance Hall	24%	21%	3%	0.88	4%	2%	2%	0.5
Window 172	Staircase	48%	46%	2%	0.96	6%	4%	2%	0.67
First Floor									
Window 175	Bedroom	56%	54%	2%	0.96	20%	18%	2%	0.9
Window 176	Bedroom	55%	53%	2%	0.96	20%	18%	2%	0.9
Window 177	Bedroom	51%	49%	2%	0.96	16%	14%	2%	0.88
Window 179	Bedroom	60%	58%	2%	0.97	20%	18%	2%	0.9
Window 180	Bedroom	57%	55%	2%	0.96	21%	19%	2%	0.9
Second Floor									
Window 182	Bedroom	83%	82%	1%	0.99	25%	24%	1%	0.96
249 Whitton Dene									
Ground Floor									
Window 183	Domestic	60%	57%	3%	0.95	20%	18%	2%	0.9
Window 184	Hallway	60%	57%	3%	0.95	20%	18%	2%	0.9
Window 185	Hallway	60%	56%	4%	0.93	20%	18%	2%	0.9
Window 186	Hallway	3%	2%	1%	0.67	2%	1%	1%	0.5
Window 187	Hallway	4%	3%	1%	0.75	2%	1%	1%	0.5
Window 190	Domestic	60%	56%	4%	0.93	20%	18%	2%	0.9
Window 191	Domestic	59%	55%	4%	0.93	19%	17%	2%	0.89
Window 192	Domestic	53%	49%	4%	0.92	16%	14%	2%	0.88
First Floor									
Window 194	Domestic	56%	54%	2%	0.96	16%	14%	2%	0.88
Window 195	Domestic	52%	50%	2%	0.96	15%	13%	2%	0.87
Window 198	Domestic	60%	57%	3%	0.95	20%	18%	2%	0.9
Window 199	Domestic	59%	56%	3%	0.95	19%	17%	2%	0.89
Window 200	Domestic	56%	53%	3%	0.95	17%	15%	2%	0.88
251 Whitton Dene									
Ground Floor									
Window 203	Domestic	60%	56%	4%	0.93	20%	18%	2%	0.9
Window 204	Domestic	60%	56%	4%	0.93	20%	18%	2%	0.9
Window 205	Domestic	52%	48%	4%	0.92	16%	14%	2%	0.88
Window 206	Domestic	46%	43%	3%	0.93	16%	15%	1%	0.94
Window 207	Domestic	45%	42%	3%	0.93	16%	15%	1%	0.94
First Floor									
Window 210	Domestic	60%	57%	3%	0.95	20%	18%	2%	0.9
Window 211	Domestic	63%	60%	3%	0.95	20%	18%	2%	0.9

Appendix 2 - Sunlight to Windows Kneller Hall, Kneller Road, Twickenham TW2 7DN

		Sunlight to Windows							
Reference	Room Use	T	otal Sur	nlight Hou	ırs	W	inter Su	nlight Ho	urs
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
Window 212	Domestic	56%	53%	3%	0.95	17%	15%	2%	0.88
Window 214	Domestic	60%	58%	2%	0.97	20%	19%	1%	0.95
Window 215	Domestic	57%	55%	2%	0.96	18%	17%	1%	0.94
253 Whitton Dene									
Ground Floor									
Window 216	Domestic	44%	41%	3%	0.93	15%	14%	1%	0.93
Window 217	Domestic	44%	41%	3%	0.93	15%	14%	1%	0.93
Window 220	Domestic	58%	55%	3%	0.95	18%	17%	1%	0.94
Window 221	Domestic	54%	52%	2%	0.96	15%	15%	0%	1.0
Window 222	Domestic	50%	48%	2%	0.96	13%	13%	0%	1.0
First Floor									
Window 224	Domestic	58%	56%	2%	0.97	18%	17%	1%	0.94
Window 225	Domestic	54%	52%	2%	0.96	15%	14%	1%	0.93
Window 228	Domestic	60%	58%	2%	0.97	20%	19%	1%	0.95
Window 229	Domestic	62%	60%	2%	0.97	19%	18%	1%	0.95
Window 230	Domestic	55%	53%	2%	0.96	16%	15%	1%	0.94
255 Whitton Dene									
Ground Floor									
Window 233	Living Room	56%	55%	1%	0.98	19%	18%	1%	0.95
Window 234	Living Room	58%	56%	2%	0.97	19%	18%	1%	0.95
Window 235	Living Room	54%	53%	1%	0.98	16%	16%	0%	1.0
Window 236	Hallway	39%	37%	2%	0.95	14%	14%	0%	1.0
Window 237	Hallway	40%	38%	2%	0.95	15%	15%	0%	1.0
Window 238	Hallway	52%	50%	2%	0.96	15%	15%	0%	1.0
Window 247	Staircase	82%	82%	0%	1.0	27%	27%	0%	1.0
First Floor									
Window 241	Bedroom	60%	58%	2%	0.97	20%	19%	1%	0.95
Window 242	Bedroom	60%	58%	2%	0.97	20%	19%	1%	0.95
Window 243	Bedroom	57%	56%	1%	0.98	18%	18%	0%	1.0
Window 245	Bedroom	60%	59%	1%	0.98	20%	20%	0%	1.0
Window 246	Bedroom	62%	61%	1%	0.98	23%	23%	0%	1.0
112 Whitton Dene									
Ground Floor									
Window 250	Domestic	28%	27%	1%	0.96	3%	3%	0%	1.0
Window 251	Domestic	16%	14%	2%	0.88	0%	0%	0%	1.0
Window 252	Domestic	21%	20%	1%	0.95	1%	1%	0%	1.0

Appendix 2 - Sunlight to Windows Kneller Hall, Kneller Road, Twickenham TW2 7DN

			Sunlight to Windows						
Reference	Room Use	Т	otal Sur	nlight Hou	urs	Winter Sunlight Hours			
		Before	After	Loss	Ratio	Before	After	Loss	Ratio
First Floor									
Window 253	Domestic	31%	30%	1%	0.97	5%	5%	0%	1.0
Window 254	Domestic	50%	49%	1%	0.98	15%	15%	0%	1.0
Second Floor									
Window 255	Domestic	46%	45%	1%	0.98	11%	11%	0%	1.0
Window 256	Domestic	37%	36%	1%	0.97	5%	5%	0%	1.0
Window 257	Domestic	50%	49%	1%	0.98	15%	15%	0%	1.0

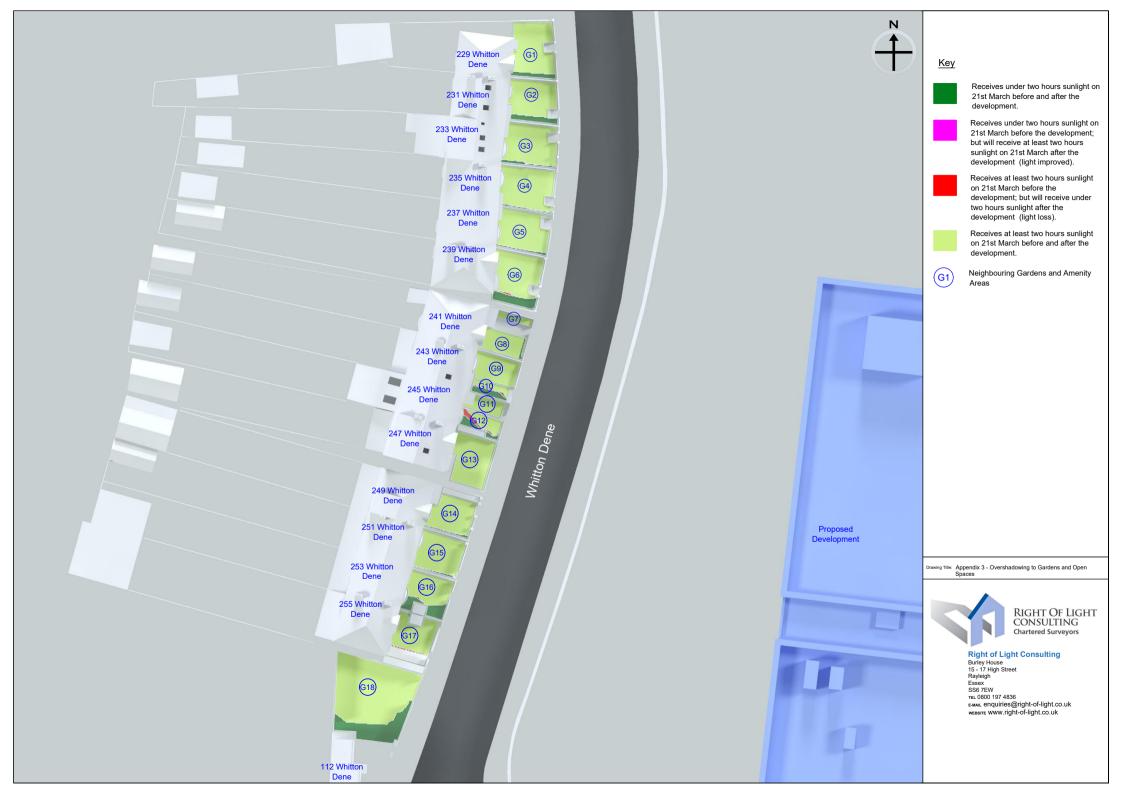
Appendix 2 - Overshadowing to Gardens and Open Spaces Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Total	Area	5	Are Before	ea receivi		st two h After	nours of s	unlight o	n 21st l Loss	March	Ratio
OOO Militara Para				belule			Aitei			LUSS		Rallo
229 Whitton Dene												
Ground Floor Garden 1	29.52	m2	26.83	m2	91%	26.83	m2	91%	0.0	m2	0%	1.0
231 Whitton Dene												
Ground Floor Garden 2	25.13	m2	21.61	m2	86%	21.61	m2	86%	0.0	m2	0%	1.0
233 Whitton Dene												
Ground Floor Garden 3	28.57	m2	27.11	m2	95%	27.03	m2	95%	0.08	m2	0%	1.0
235 Whitton Dene												
Ground Floor Garden 4	29.25	m2	28.45	m2	97%	28.29	m2	97%	0.16	m2	0%	0.99
237 Whitton Dene												
Ground Floor Garden 5	26.61	m2	25.51	m2	96%	25.35	m2	95%	0.17	m2	1%	0.99
239 Whitton Dene												
Ground Floor Garden 6	30.07	m2	24.44	m2	81%	23.99	m2	80%	0.44	m2	1%	0.98
241 Whitton Dene												
Ground Floor Garden 7 Garden 8	2.98 12.81	m2 m2	2.98 0.28	m2 m2	100% 2%	2.98 0.28	m2 m2	100% 2%	0.0	m2 m2	0% 0%	1.0 1.0
243 Whitton Dene												
Ground Floor Garden 9 Garden 10	15.49 6.94	m2 m2	15.49 4.04	m2 m2	100% 58%	15.49 3.4	m2 m2	100% 49%	0.0 0.64	m2 m2	0% 9%	1.0 0.84
245 Whitton Dene												
Ground Floor Garden 11 Garden 12	8.54 9.61	m2 m2	8.54 6.98	m2 m2	100% 73%	8.54 5.47	m2 m2	100% 57%	0.0 1.51	m2 m2	0% 16%	1.0 0.78
247 Whitton Dene												
Ground Floor Garden 13	25.3	m2	25.3	m2	100%	25.3	m2	100%	0.0	m2	0%	1.0

Appendix 2 - Overshadowing to Gardens and Open Spaces Kneller Hall, Kneller Road, Twickenham TW2 7DN

Reference	Total	Area		Are	a receivi	ng at leas	st two h	ours of s	unlight o	n 21st N	1arch	
Reference	Total	Alea	E	Before			After			Loss		Ratio
249 Whitton Dene												
Ground Floor Garden 14	20.81	m2	19.93	m2	96%	19.73	m2	95%	0.2	m2	1%	0.99
251 Whitton Dene												
Ground Floor Garden 15	23.61	m2	22.87	m2	97%	22.72	m2	96%	0.15	m2	1%	0.99
253 Whitton Dene												
Ground Floor Garden 16	21.75	m2	16.33	m2	75%	16.16	m2	74%	0.17	m2	1%	0.99
255 Whitton Dene												
Ground Floor Garden 17	23.53	m2	17.97	m2	76%	17.31	m2	74%	0.66	m2	2%	0.96
112 Whitton Dene												
Ground Floor Garden 18	81.88	m2	64.53	m2	79%	64.53	m2	79%	0.0	m2	0%	1.0

	,	A DDENDIV 2		
	•	APPENDIX 3		
	OVERSHADOWING T	O GARDENS AND	OPEN SPACES	
	VEROIN BOWING 1	0 0/11/02/11/0	OI LIVOI MOLO	
AYLIGHT AND SUNLIG	HT REPORT			



APPENDIX 4	
25° TEST – 105 KNELLER ROAD	

