



15-17 Tavistock Place London, WC1

London School of Hygiene and Tropical Medicine October 2017

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Prepared By: Gregory Francis October 2017

For and on behalf of GVA Grimley Limited

1. Introduction and Scope of Report

- 1.1 GVA Schatunowski Brooks has been appointed by the London School of Hygiene and Tropical Medicine, to assess the performance of the proposed development at 15-17 Tavistock Place, London WC1, in respect of daylight and sunlight.
- 1.2 We have been retained as part of the Design Team from the outset of the Feasibility Stage to provide advice on the impact and performance of various feasibility proposals and have worked closely with the Design Team in preparing massing studies to determine appropriate block spacing with existing neighbouring buildings to ensure that the form of the proposed development would not result in any material loss of light. A key part of that advice was to ensure that any new proposals for the Site satisfactorily addresses the policy objectives of Camden Council in respect of new development on the amenity enjoyed by existing neighbouring residents. That policy is measured using the targets and standards set in the Building Research Establishment (BRE) Guidelines "Site Layout Planning for Daylight and Sunlight A Guide to Good Practice", 2011.
- 1.3 The purpose of this Report is therefore to assess the impact of the proposed development on the daylight and sunlight enjoyed by existing neighbouring dwellings in accordance with the BRE Guidelines to ensure that the proposed development satisfies the Camden's policy objectives, and to ensure that the existing neighbouring residents will continue to enjoy a good level of amenity.

2. Sources of Information

- 2.1 A detailed 3D computer model of the existing neighbouring buildings and existing buildings on the Site has been built-up from a survey model reference 3746-3D_model_master.dwg.
- 2.2 For the proposed scheme, we relied upon a 3D massing model from BMJ Architects, reference "2924_AW10_171016_3D dwg TP2.dwg", which represents an update to the consented scheme.
- 2.3 The site has been inspected on a number of occasions, and the drawings above have been supplemented by additional measurements taken on site together with a review of any relevant archive drawings available through a separate desktop assessment.

3. Daylight and Sunlight Standards

3.1 The BRE Guidelines – "Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice" are well established and are adopted by most Local Authorities as the appropriate scientific and empirical methods of measuring daylight and sunlight in order to provide objective data upon which to apply their planning policies. The Guidelines are not fixed standards and should be applied flexibly to take account of the specific circumstances of each case.

3.2 The Introduction of the Guidelines states:

"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and this document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the developer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design."

3.3 The 'flexibility' recommended in the Guidelines should reflect the specific characteristics of each case being considered. For example, as the numerical standards within the Guidelines have been derived on the basis of a low density suburban housing model, it would be entirely appropriate to apply a more flexible approach when dealing with higher rise developments in a denser inner city urban environment. In addition, where existing and proposed buildings have specific design features such as projecting balconies, deep recesses, bay windows etc, it is also equally valid to apply a degree of flexibility to take account of the effect of these particular design features. This does not mean that the recommendations and targets within the Guidelines can be disregarded but, instead, the 'flexibility' that should be applied should be founded on sound scientific principles that can be supported and justified. This requires a certain level of professional value judgement and experience.

Daylighting

- In respect of daylighting, the BRE Guidelines adopt different methods of measurement depending on whether the assessment is for the impact on existing neighbouring premises or for measuring the adequacy of proposed new dwellings. For safeguarding the daylight received by existing neighbouring residential buildings around a proposed development, the relevant recommendations are set out in Section 2.2 of the Guidelines.
- 3.5 The adequacy of daylight received by existing neighbouring dwellings is measured using two methods of measurement. First, it is necessary to measure the Vertical Sky Component (VSC)

followed by the measurement of internal Daylight Distribution by plotting the position of the 'existing' and 'proposed' no sky line contour.

- 3.6 VSC is measured at the mid-point on the external face of the window serving a habitable room. For the purpose of the Guidelines, a "habitable" room is defined as a Kitchen, Living Room or Bedroom. Bathrooms, hallways and circulation space are excluded from this definition. In addition, there is often a further distinction in respect of small kitchens. Where the internal area of a small kitchen limits the use to food preparation and is not of sufficient size to accommodate some other form of "habitable" use such as dining, the kitchen need not be classed as a "habitable" room in its own right.
- 3.7 VSC is a 'spot' measurement taken on the face of the window and is a measure of the availability of light from the sky from over the "existing" and "proposed" obstruction caused by buildings or structures in front of the window. As it is measured on the outside face of the window, one of the inevitable shortcomings is that it does not take account of the size of the window or the size or use of the room served by the window. For this reason, the BRE Guidelines require internal Daylight Distribution to be measured in addition to VSC if the internal layouts and room depths are known.
- 3.8 The 'No Sky Line' contour plotted for the purpose of measuring internal Daylight Distribution identifies those areas within the room, usually measured on a horizontal working plane set at table top level, where there is direct sky visibility. This therefore represents those parts within the room where the sky can be seen through the window. This second measure therefore takes account of the size of the window and the size of the room. When interpreted in conjunction with the VSC value, the likely internal lighting conditions, and hence the quality of lighting within the room, can be assessed. It is however only reliable where the internal room layouts and depths are known.
- 3.9 For VSC, the Guidelines states that:
 - "If this Vertical Sky Component is greater than 27% then enough skylight should still be reaching the window of the existing building. Any reduction below this level should be kept to a minimum. If the Vertical Sky Component with the new development in place is both less than 27% and less than 0.8 times its former value, then the occupants of the existing building will notice the reduction in the amount of skylight."
- 3.10 To put this in context, the maximum VSC value that can be received for a totally unobstructed vertical window is 40%. It is therefore permissible to reduce the VSC value by 13 percentage points before the level of daylight received by the window could be below standard. There are however circumstances where the VSC value is already below 27%. In such circumstances, it is permissible to reduce the existing VSC value by a factor of 0.2 (ie 20%) so

that the value on the 'proposed' conditions remains more than 0.8 times its former value. The scientific reasoning for this permissible margin of reduction is that through the research undertaken at the Building Research Establishment, they have found that existing daylight (and sunlight) levels can be reduced by a factor of 20% before the loss becomes materially noticeable. This factor of reduction applies to VSC, daylight distribution, sunlight and overshadowing.

Sunlighting

- 3.11 The requirements for protecting sunlight to existing residential buildings are set out in section 3.2 of the BRE Guidelines.
- 3.12 The availability of sunlight varies throughout the year with the maximum amount of sunlight being available on the summer solstice and the minimum on the winter solstice. In view of this, the internationally accepted test date for measuring sunlight is the spring equinox (21 March), on which day the United Kingdom has equal periods of daylight and darkness and sunlight is available from approximately 0830hrs to 1730hrs. In addition, on that date, sunlight received perpendicular to the face of a window would only be received where that window faces within 90° of due south. The BRE Guidelines therefore limit the extent of testing for sunlight where a window faces within 90° of due south.
- 3.13 The sunlight standards are normally applied to the principal Living Room within each dwelling rather than to kitchens and bedrooms.
- 3.14 The recommendation for sunlight is:
 - "If this window reference point can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours during the winter months of 21 September and 21 March, then the room should still receive enough sunlight ..."
- 3.15 Any reduction in sunlight access below this level should be kept to a minimum. If the availability of sunlight hours are both less than the amounts given and less than 0.8 times their former value, either over the whole year or just during the winter months, then the occupants of the existing building will notice the loss of sunlight."
- 3.16 A good level of sunlight will therefore be achieved where a window achieves more than 25% APSH, of which 5% should be in the winter months. Where sunlight levels fall below this suggested recommendation, a comparison with the existing condition should be undertaken and if the reduction ratio is less than 0.2, i.e. the window continues to receive more than 0.8 times its existing sunlight levels, the impact on sunlight will be acceptable.

4. Scheme Assessment

- 4.1 For the purpose of planning, the tests within the BRE Guidelines are usually limited to existing neighbouring residential buildings. Non domestic and commercial buildings are usually excluded as it is generally accepted that these uses rely primarily on supplementary artificial lighting throughout the day and are therefore not dependent on natural lighting as their sole source of amenity.
- 4.2 For the purpose of the BRE Guidelines, a "habitable" room is defined as a "family kitchen", "living room" or "bedroom". Bathrooms, hallways and circulation space are excluded and therefore do not require testing.
- 4.3 We have not had access to the interior of any of the existing neighbouring buildings and have therefore relied upon an external inspection or review of archive records to establish the extent and location of existing neighbouring residential premises. From our review of the Site, the existing neighbouring premises where we have identified residential dwellings appears to be:
 - The upper parts of 85-89 Marchmont Street.
 - 13 Tavistock Place.
 - 2-30 Leonard Court.
 - 5-9 Woolf Mews.
- 4.4 All of the neighbouring properties along Cartwright Gardens (57, 58-60, 61-62 and 63 Cartwright Gardens) are hotels and therefore do not fall within the BRE daylight and sunlight criteria. It is also unnecessary to test any of the properties on the opposite (south) side of Tavistock Place as there will be no change to the height or "massing" along Tavistock Place itself.
- Annexed at Appendix I are drawing numbers TA24/10 BRE64-BRE65, which are images of the "existing" and "proposed" site plan and 3D computer models. Those plans identify the location of the Site and its relationship with the existing neighbouring properties referred to in the technical analysis. Those drawings are followed in Appendix II by drawing numbers TA24/10 BRE66, BRE67, BRE68, BRE69, BRE70, BRE71, BRE72 and BRE73 which are the no skyline contour drawings illustrating the internal Daylight Distribution for the neighbouring dwellings. The room and window references on those drawings should be crossed referenced with the equivalent room and window references in the Daylight Analysis table at Appendix III and Sunlight Analysis table at Appendix IV.

- 4.6 As part of the early design process, we were instructed to prepare a Building Envelope study to establish the maximum development envelope possible whilst remaining within the BRE Guidelines for daylight. The BRE Guidelines permit existing daylight levels to be reduced by no more than a factor of 0.2 (20%) before the loss is considered to be noticeable. The primary method of measuring daylight for the purpose of the Guidelines is the use of Vertical Sky Components, and the envelope generated ensured that none of the neighbouring buildings would experience a loss of daylight in excess of 20%.
- 4.7 The profile and "massing" of the consented scheme was within the building envelope and therefore fully complaint with the default BRE recommendations for VSC.

VSC Assessment

- 4.8 The proposed development is also fully complaint with the default BRE recommendations for VSC.
- 4.9 As we did not have access to any of the existing neighbouring dwellings, we were unable to establish the room uses, layouts or dimensions of each of the rooms in those dwellings. We have therefore erred on the side of caution and tested every room/window and for the purpose of the internal daylight distribution tests, have used assumed and estimated room layouts.

Daylight Distribution Assessment

- 4.10 As those room layouts and depths have been estimated, the results of the separate Daylight Distribution and Average Daylight Factor (ADF) tests are not as accurate or reliable as the VSC analysis. They have however been run in order to provide a more comprehensive set of results.
- 4.11 On the basis of the estimated room uses and layouts, four assumed rooms were identified to experience a loss of internal Daylight Distribution that may be noticeable. These are the first floor room that we have identified as R2/120 at 85-89 Marchmont Street and three ground floor rooms labelled R1/140, R2/140 and R3/140 in 2-30 Leonard Court.
- 4.12 Room R2/120 is at first floor level in the rear of and is served by two small windows. In view of the nature of those windows, they appear to serve a WC or bathroom rather than a habitable room. It is therefore possible, if not probable, that the BRE Guidelines do not apply in any event, but the room and windows have been tested as a precautionary measure as their use is uncertain.
- 4.13 Likewise, we were unable to see the three ground floor windows in 2-30 Leonard Court to determine the use of the rooms served by the windows but it is possible that they may not be

habitable rooms. However, as those windows were picked-up in the survey scan, they were modelled and tested using indicative room layouts and depths.

Annual Probable Sunlight Hours Assessment

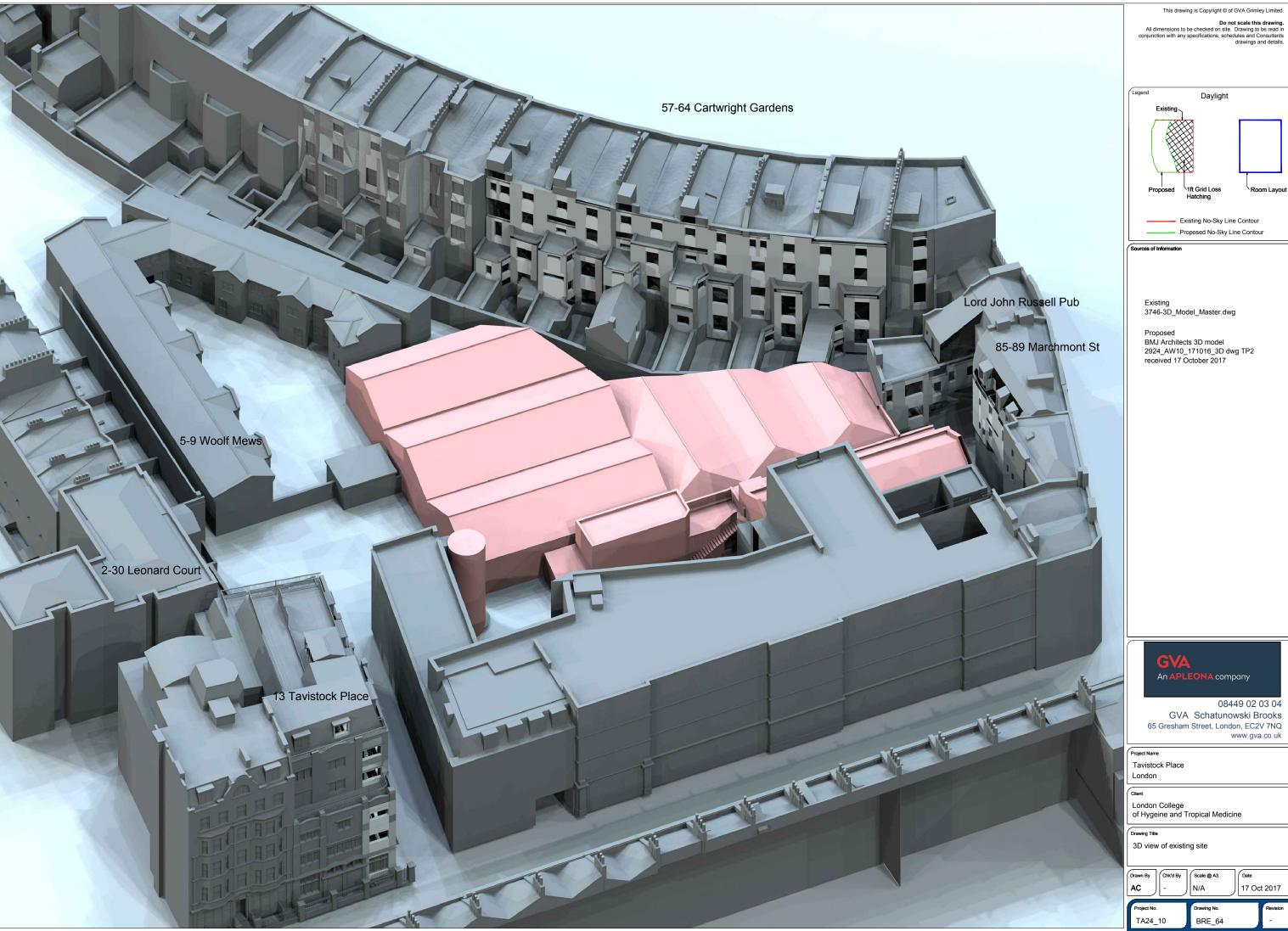
- 4.14 The BRE sunlight standards only apply to windows that fact within 90 degrees of due south, therefore these are not relevant to the vast majority of potentially affected properties, which have a northerly orientation.
- 4.15 Two properties: 85-89 Marchmont Street and 13 Tavistock Place feature southerly orientated windows, which were therefore analysed.
- 4.16 The windows at 13 Tavistock Place would experience no change.
- 4.17 At 85-89 Marchmont Street all but one window would be adherent with the BRE default recommendations for annual APSH. One window, W1/120 would experience a change of 21.43%; marginally in excess of the 20% point at which the BRE considers changes may be noticeable.
- 4.18 Given their congested location and orientation, the lowest set of windows would experience greater percentage losses of winter months APSH, however the retained values would be considered to reflect typical expectations in a dense urban environment.

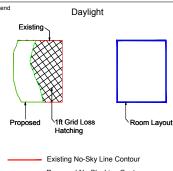
5. Summary and Conclusion

- 5.1 The impact of the proposed development is such that none of the existing neighbouring buildings will experience an unreasonable loss of natural daylight or sunlight.
- In overall conclusion, the proposed development is performs extremely well against the BRE recommendations, having regard to the dense city centre context. It therefore follows that the Council's policy objectives would be met.



Appendix I

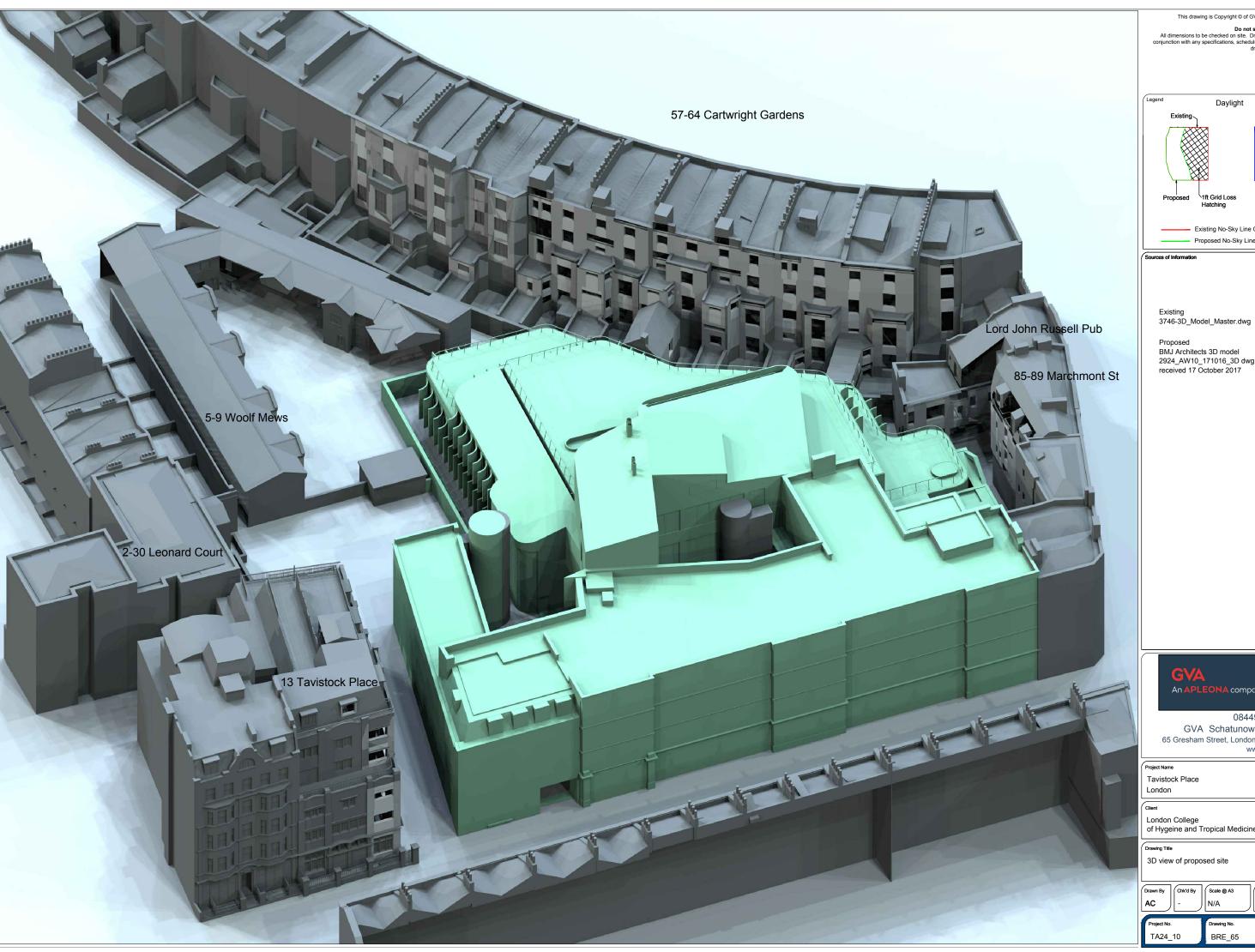




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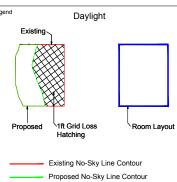
Daylight



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Do not scale this drawing.

All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.



BMJ Architects 3D model 2924_AW10_171016_3D dwg TP2 received 17 October 2017

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3D view of proposed site

Scale @ A3

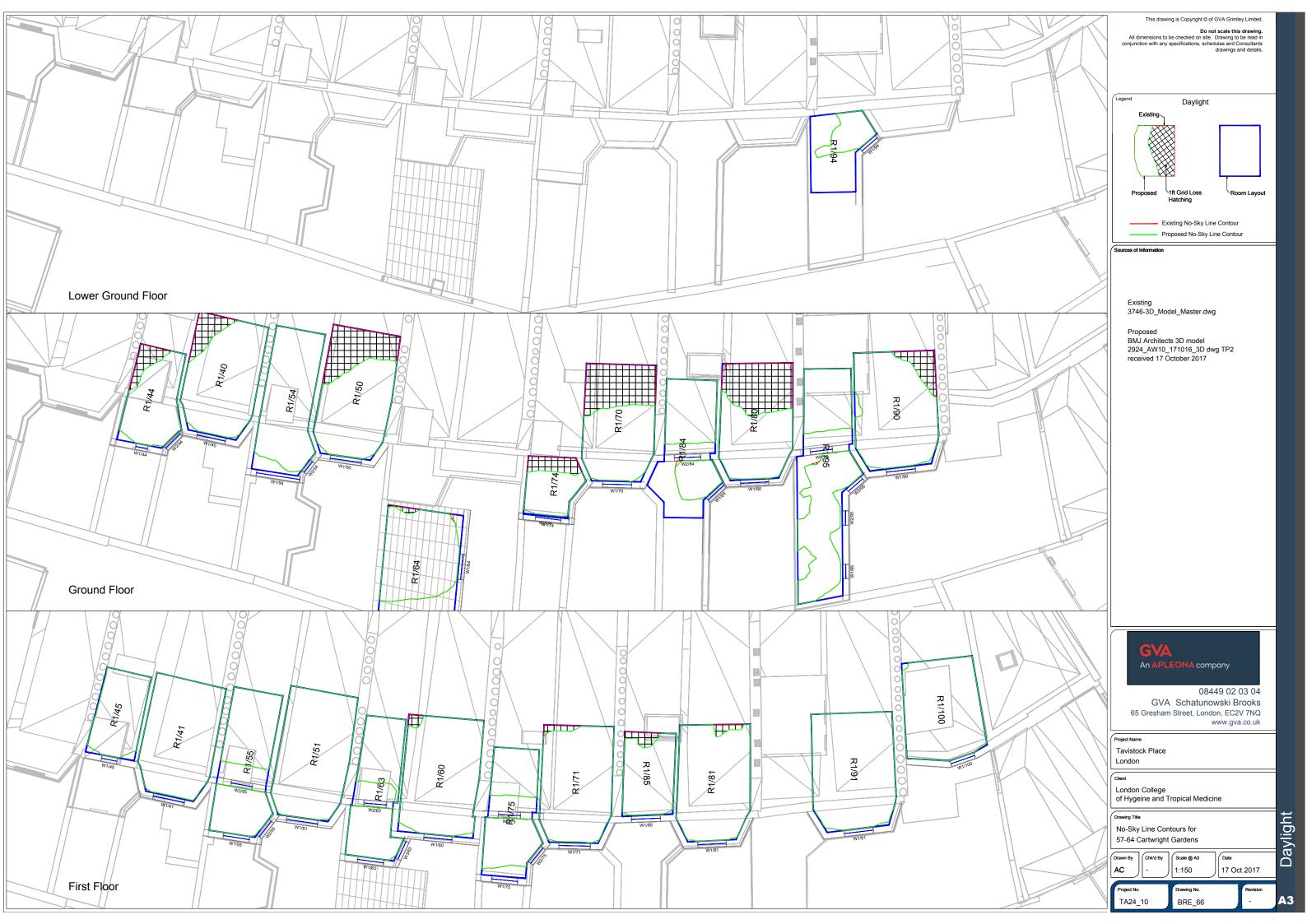
BRE_65

17 Oct 2017

Daylight

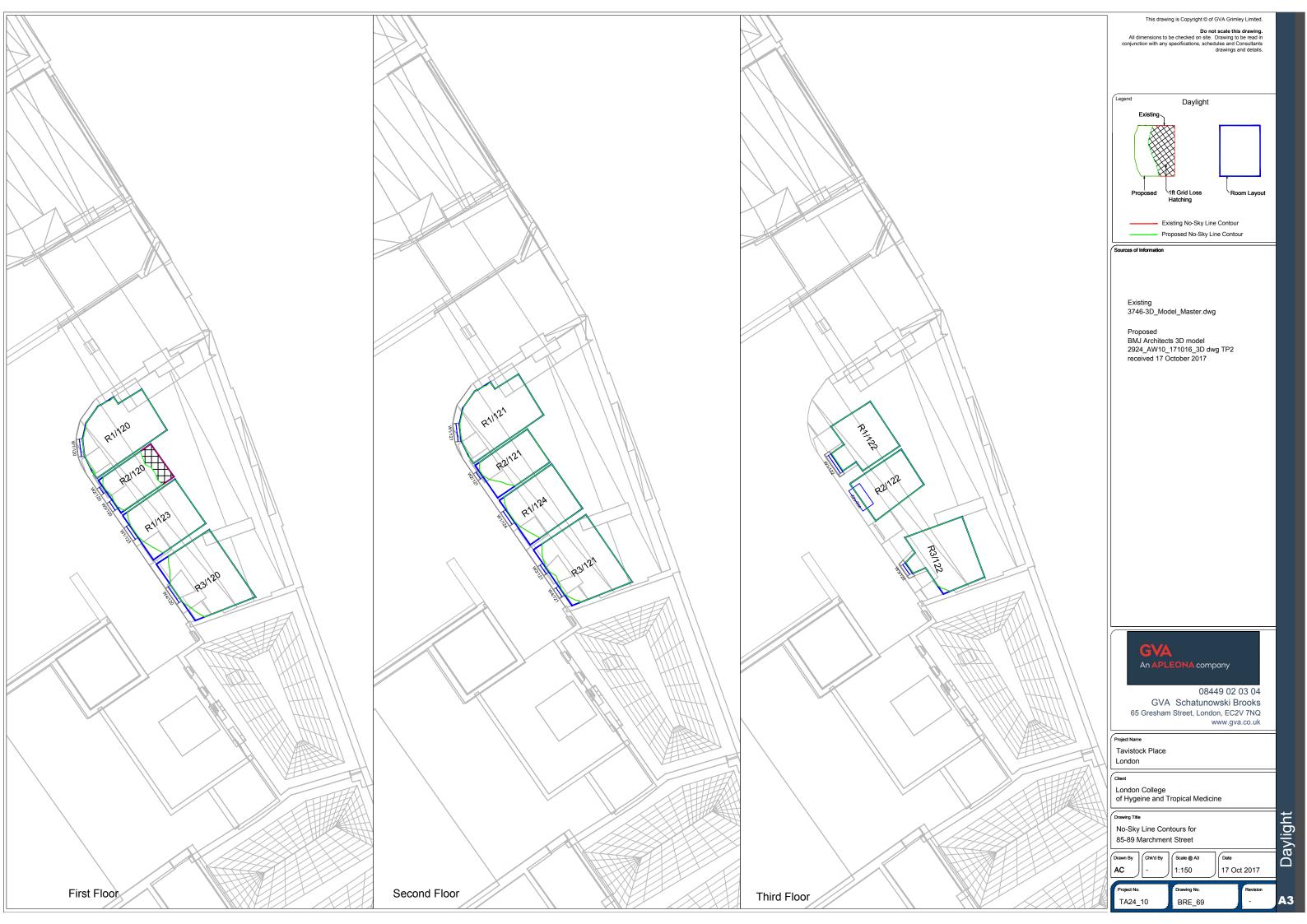


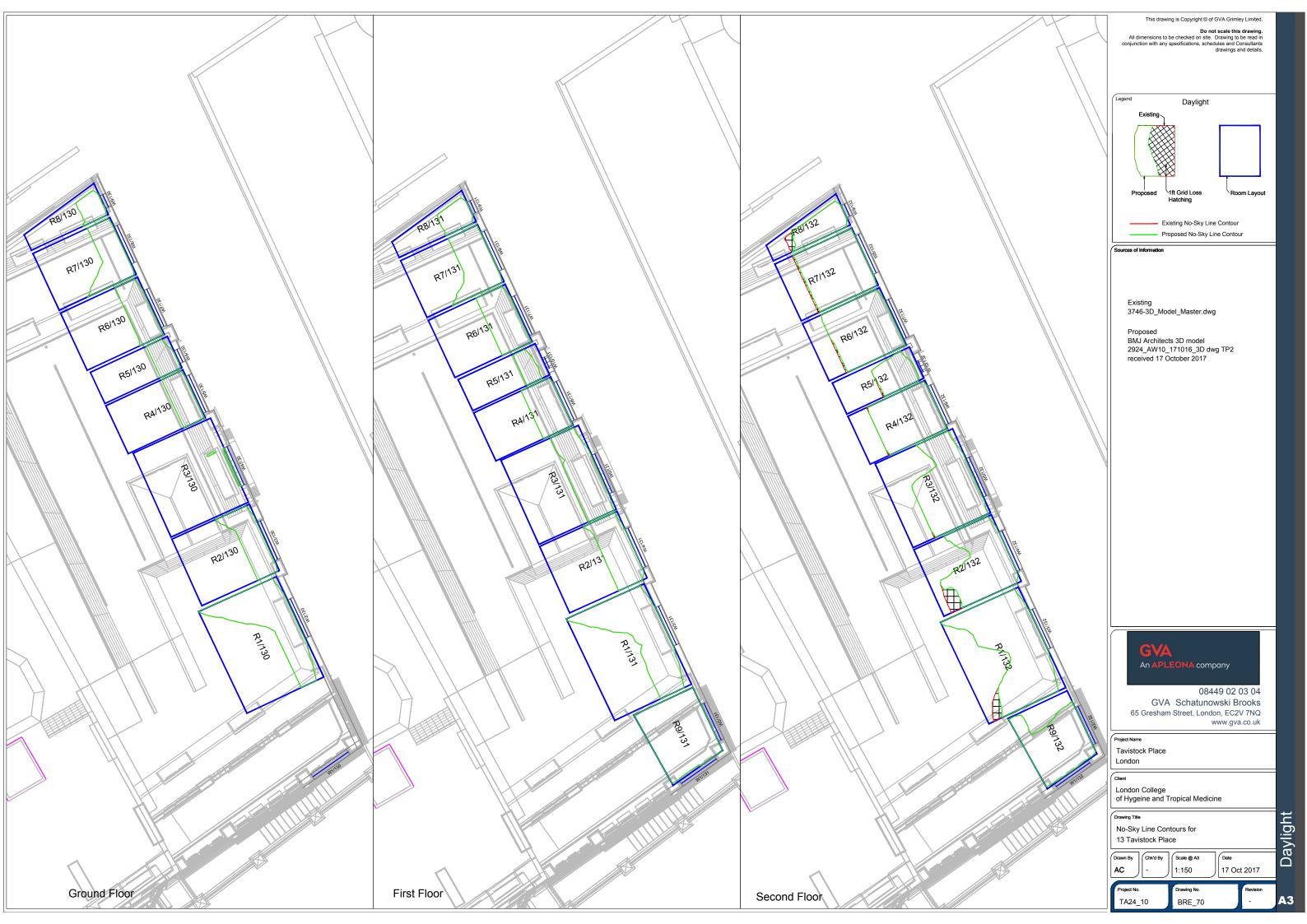
Appendix II

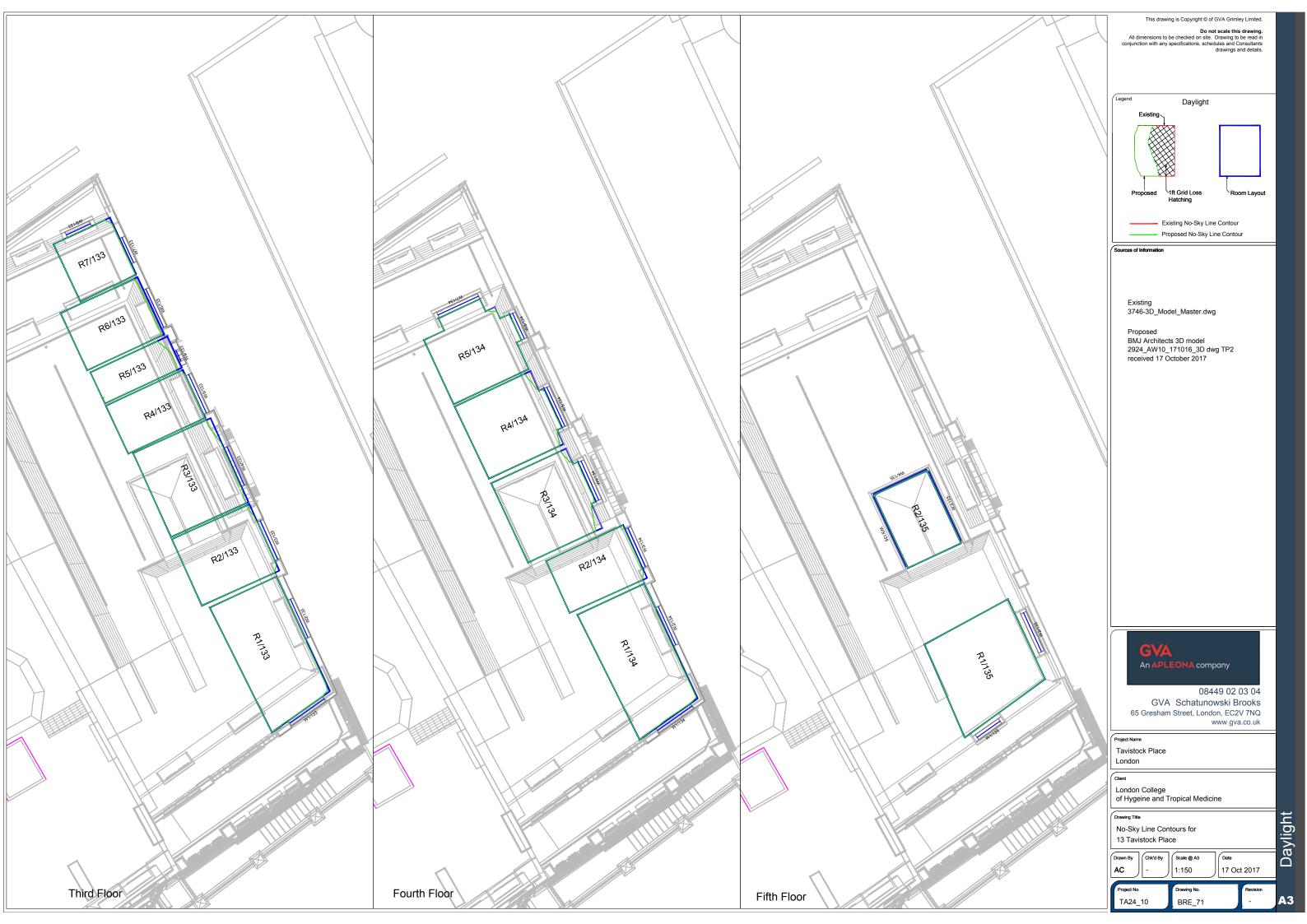


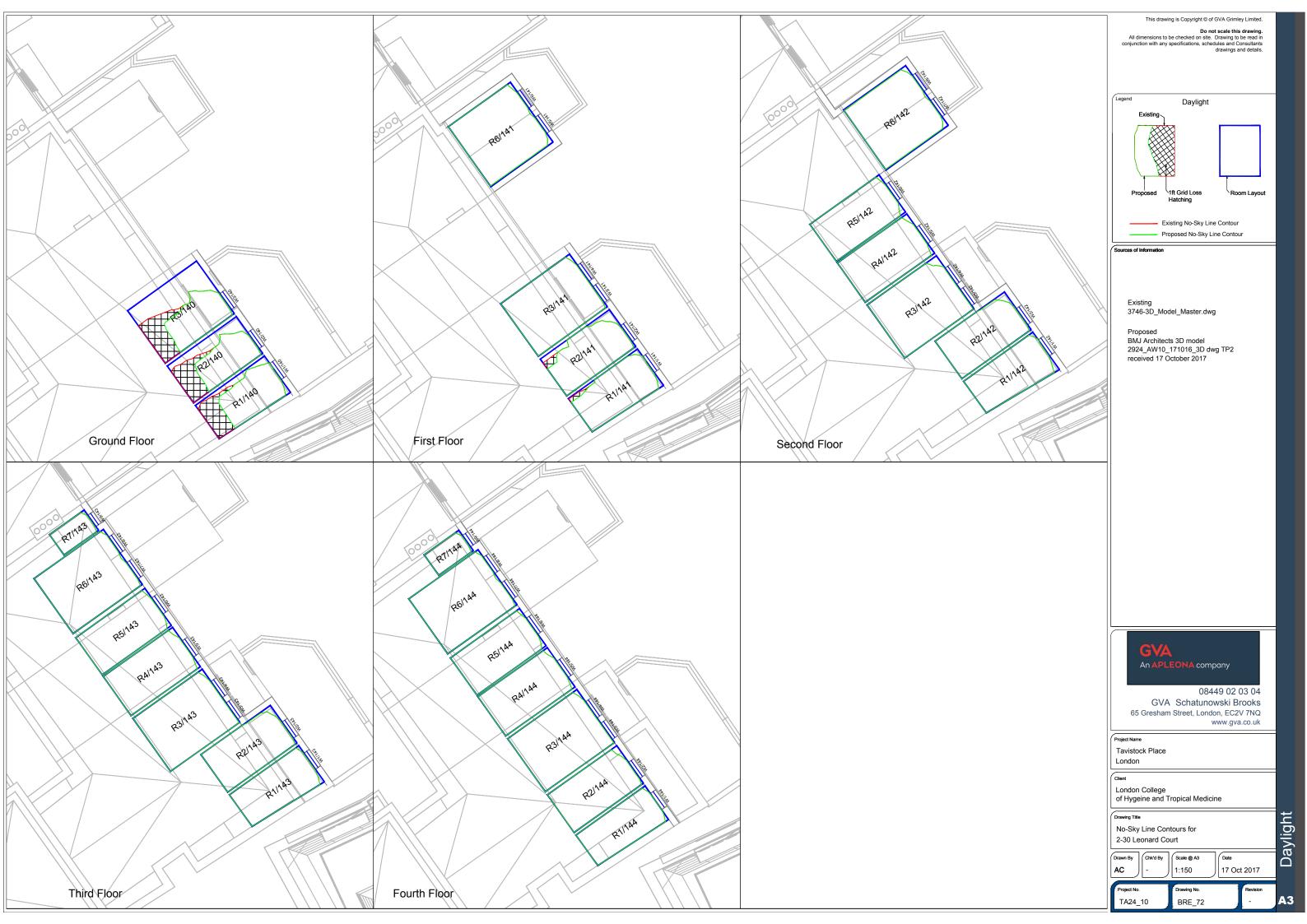
















Appendix III



Tavistock Place, London Daylight results 17 October 2017

				%VS	С	% Daylight Factor			Proposed No Sky	
							7 0		% of	,
									Room	% Loss of
Room/Floor	Room Use	Window	Exist	Prop	% Loss	Exist	Prop	% Loss	Area	Existing
57 Cartwrigh	t Gardens	BRE_66,6	57							
Gnd Floor										
R1/40		W1/40	0.00	0.00	0.00%	0.75	0.75	0.00%	86.95%	12.01%
1st Floor										
R1/41		W1/41	33.02	30.82	>27	1.32	1.25	5.37%	99.28%	0.00%
2nd Floor										
R1/42		W1/42	36.54	35.52	>27	1.48	1.45	2.43%	97.55%	0.00%
3rd Floor		•		•	•					
R1/43		W1/43	38.19	37.54	>27	1.02	1.01	1.57%	97.42%	0.00%
Gnd Floor			•							
D4 /44		W1/44	32.52	29.65	>27	0.00	0.00	0.770/	02.220/	4.4.270/
R1/44		W2/44	22.64	19.32	14.66%	0.99	0.90	9.77%	83.23%	14.37%
R1/45		W1/45	31.22	29.93	>27	1.34	1.30	3.06%	95.59%	0.00%
3rd Floor			•							
D4 /4C		W1/46	35.13	34.61	>27	1.00	4.70	4 270/	00.460/	0.000/
R1/46		W2/46	37.50	36.95	>27	1.80	1.78	1.27%	98.16%	0.00%
58 to 60 Cart	wright Gar	dens BRI	_66,6	7						
Gnd Floor										
R1/50		W1/50	20.38	16.61	18.50%	1.28	1.12	12.31%	69.85%	29.65%
1st Floor										
R1/51		W1/51	29.50	25.75	12.71%	1.60	1.45	9.33%	99.81%	0.00%
2nd Floor		•		•	•					
R1/52		W1/52	36.60	35.11	>27	1.42	1.36	3.60%	97.89%	0.00%
3rd Floor										
R1/53		W1/53	38.26	37.39	>27	0.98	0.96	2.13%	97.89%	0.00%
Gnd Floor										
D4 /F4		W1/54	34.09	29.81	>27	0.01	0.01	11 (10/	02.700/	0.000/
R1/54		W2/54	18.42	15.46	16.07%	0.91	0.81	11.61%	93.79%	0.00%
1st Floor			•							
		W1/55	35.68	33.42	>27					
R1/55		W2/55	27.79	25.32	8.89%	1.03	0.97	6.09%	84.40%	0.00%
		W3/55	36.57	35.21	>27					
	•	•			•					•



			%VSC			% D	aylight	Factor	Proposed No Sky	
									% of	
									Room	% Loss of
Room/Floor	Room Use	Window	Exist	Prop	% Loss	Exist	Prop	% Loss	Area	Existing
3rd Floor										
R1/56		W1/56	38.31	37.56	>27	1.34	1.31	1.94%	98.01%	0.00%
1st Floor										
R1/60		W1/60	26.86	22.12	17.65%	1.29	1.13	12.45%	96.36%	1.88%
2nd Floor										
R1/61		W1/61	36.49	34.27	>27	1.20	1.14	5.40%	98.53%	0.00%
3rd Floor										
R1/62		W1/62	38.13	37.08	>27	1.19	1.16	2.61%	96.92%	0.00%
R2/62		W2/62	38.18	37.19	>27	1.38	1.34	2.54%	98.56%	0.00%
1st Floor		•		•	•	•				
		W1/63	35.43	31.72	>27					
R1/63		W2/63	28.90	27.23	>27	0.99	0.92	7.38%	83.50%	0.00%
		W3/63	24.95	22.76	8.78%					
Gnd Floor										
R1/64		W1/64	23.65	19.95	15.64%	0.91	0.83	8.87%	71.17%	2.03%
R1/70		W1/70	25.80	17.13	33.60%	1.51	1.15	23.98%	61.04%	38.38%
1st Floor										
R1/71		W1/71	29.73	24.13	18.84%	1.79	1.54	13.83%	96.61%	2.63%
2nd Floor							-			
R1/72		W1/72	35.92	33.77	>27	1.64	1.55	5.26%	97.46%	0.00%
R1/73		W1/73	38.00	36.87	>27	1.01	0.98	2.78%	96.37%	0.00%
R2/73		W2/73	38.10	36.99	>27	1.10	1.07	2.82%	96.91%	0.00%
Gnd Floor										
R1/74		W1/74	29.48	20.39	30.83%	2.29	1.59	30.58%	71.87%	26.79%
N1/74		W2/74	29.54	22.00	25.52%	2.29	1.59	30.36%	/1.0//0	20.79/0
1st Floor										
		W1/75	34.97	30.24	>27					
R1/75		W2/75	29.12	26.57	8.76%	1.14	1.04	9.09%	76.10%	0.00%
		W3/75	31.62	29.27	>27					
61 to 62 Cart	wright Gard	dens BRI	_66,6	7						
Gnd Floor										
R1/80		W1/80	24.49	17.59	28.17%	1.34	1.07	20.21%	58.96%	40.45%
1st Floor										
R1/81		W1/81	32.31	27.15	>27	2.02	1.77	12.24%	96.83%	2.71%
2nd Floor										
R1/82		W1/82	35.56	33.62	>27	1.68	1.60	4.75%	97.78%	0.00%
3rd Floor										
R1/83		W1/83	37.59	36.65	>27	1.08	1.05	2.41%	97.42%	0.00%



			%VSC			% Da	avlight	Factor	Proposed No Sky	
				,,,,,		,,,,			% of	,
									Room	% Loss of
Room/Floor	Room Use	Window	Exist	Prop	% Loss	Exist	Pron	% Loss	Area	Existing
Gnd Floor	Nooiii Ose	Williaow	LXISC	ПОР	70 LO33	LXISC	ПОР	70 E033		
Gila Flooi		W1/84	16.49	13.12	20.44%					
R1/84		W2/84	25.94	18.95	26.95%	0.89	0.72	19.26%	64.92%	0.36%
1st Floor		VV 2/ 04	23.34	10.55	20.93/6					
R1/85		W1/85	28.75	24.07	16.28%	1.50	1.32	12.57%	90.24%	8.48%
2nd Floor		W 1/03	20.73	24.07	10.2070	1.50	1.52	12.5770	30.2470	0.4070
R1/86		W1/86	35.72	33.57	>27	1.69	1.60	5.28%	98.61%	0.00%
3rd Floor		W 1/ 00	33.72	33.37	- 21	1.03	1.00	3.2070	30.0170	0.0070
		W1/87	37.79	36.73	>27					
R1/87		W2/87	37.77	36.74		1.15	1.12	2.87%	98.51%	0.00%
Gnd Floor		1, 0,	37.77	33.74	· = /					l
R1/90		W1/90	18.38	16.11	12.35%	1.09	1.00	8.07%	87.59%	9.97%
1st Floor		** 1,50	10.50	10.11	12.3370	1.03	1.00	0.0770	07.5570	3.3770
R1/91		W1/91	29.87	26.75	10.45%	1.75	1.61	7.67%	98.92%	0.00%
2nd Floor		** 1, 31	23.07	20.73	10.1570	1.75	1.01	7.0770	30.3270	0.0070
R1/92		W1/92	34.58	33.32	>27	1.44	1.40	3.12%	96.98%	0.00%
3rd Floor		VV 1/ JZ	34.30	33.32	- 21	1.44	1.40	3.12/0	30.3070	0.0070
R1/93		W1/93	37.30	36.72	>27	0.84	0.83	1.43%	95.86%	0.00%
Base Floor		***1,55	37.30	30172	<u> </u>	0.01	0.00	11.1070	33.0070	0.0070
R1/94		W1/94	12.02	11.85	1.41%	0.62	0.62	1.12%	36.34%	0.00%
Gnd Floor										0.007
		W1/95	18.31	18.16	0.82%					
1		W2/95	16.67	16.58	0.54%					
R1/95		W3/95	20.24	19.12	5.53%	0.59	0.56	4.96%	73.79%	0.15%
		, W4/95	26.57	22.65	14.75%					
2nd Floor		· ·								
R1/96		W1/96	33.92	31.72	>27	1.75	1.66	5.31%	97.79%	0.00%
3rd Floor		<u> </u>	•							
R1/97		W1/97	37.42	36.71	>27	1.29	1.27	1.78%	96.68%	0.00%
63 Cartwrigh	t Gardens	BRE_66,6								
1st Floor										
R1/100		W1/100	19.46	18.29	6.01%	1.45	1.40	3.65%	99.21%	0.00%
2nd Floor										•
R1/101		W1/101	31.36	30.77	>27	1.36	1.34	1.54%	99.66%	0.00%
3rd Floor										•
R1/102		W1/102	36.18	35.85	>27	0.93	0.92	0.75%	99.55%	0.00%
Lord John Ru	ssell BRE		•							
R1/110	-	W1/110	13.86	10.33	25.47%	0.71	0.59	17.18%	52.88%	0.28%
R1/111		W1/111	20.67	18.42	10.89%		1.26		96.11%	0.00%
R2/111		W2/111	20.20		7.33%					0.00%



		1	%VSC % Daylight Factor					Propose	Proposed No Sky		
				/0 V 3	l	/0 D	ayngni	ractor	% of	u NO SKY	
									Room	% Loss of	
Room/Floor	Room Use	Window	Exist	Prop	% Loss	Fvict	Dron	% Loss	Area	Existing	
R3/111	ROOM OSE	W3/111	14.67	14.03			•			•	
R4/111		W4/111	9.95	9.44					47.97%	0.00%	
R4/111 R1/112		W1/112	16.16	14.96			1.84		97.98%	0.00%	
R1/112 R1/113		W1/112 W1/113	23.24	20.42			1.38		87.50%	0.00%	
R1/113 R1/114		W1/113 W1/114	29.57	27.73		1.29	1.23		90.15%	0.00%	
85 to 89 Mar	chmont Str	•		27.73	/2/	1.23	1.23	4.74/0	30.1370	0.0070	
1st Floor	cilliont 3ti	eet bitt_	_03								
R1/120		W1/120	30.66	26.43	13.80%	1.22	1.09	10.75%	99.41%	0.00%	
		W2/120	29.05						33.4170		
R2/120		W2/120 W3/120		24.05		0.64	0.56	12.15%	74.67%	23.18%	
R3/120		W4/120	23.99				1.01	6.57%	93.99%	0.00%	
2nd Floor		W+/ 120	23.33	21.05	0.7370	1.00	1.01	0.5770	33.3370	0.0070	
R1/121		W1/121	34.81	32.54	>27	1.18	1.12	5.59%	99.31%	0.00%	
R2/121		W2/121		31.07		0.32	0.29		88.56%	0.00%	
		W3/121	31.53								
R3/121		W4/121	29.35	26.75		1.04	0.97	7.18%	95.47%	0.00%	
3rd Floor		1 .,			0.0075		<u> </u>	l			
R1/122		W1/122	37.25	35.98	>27	1.93	1.87	3.16%	99.40%	0.00%	
R2/122		W2/122	61.79	60.61	>27	3.04	2.97	2.24%	100.00%	0.00%	
R3/122		W3/122	34.66	33.21	>27	0.40	0.38	4.26%	98.86%	0.00%	
4th Floor		•	•			•		•	•		
R1/123		W1/123	29.64	26.84	9.45%	0.85	0.77	8.76%	94.04%	0.00%	
5th Floor		•			•		•	•	•		
R1/124		W1/124	34.38	32.13	>27	0.93	0.88	5.91%	94.04%	0.00%	
13 Tavistock	Place BRE	_70,71			•			•			
Gnd Floor											
R1/130		W2/130	10.44	10.44	0.00%	0.83	0.83	0.00%	41.89%	0.00%	
R2/130		W3/130	8.95	8.95	0.00%	1.00	1.00	0.00%	28.67%	0.00%	
R3/130		W4/130	7.27	7.27	0.00%	0.82	0.82	0.00%	1.29%	0.00%	
R4/130		W5/130	8.99	8.99	0.00%	1.21	1.21	0.00%	26.70%	0.00%	
R5/130		W6/130	9.29	9.29	0.00%	0.43	0.43	0.00%	24.86%	0.00%	
R6/130		W7/130	10.03	10.01	0.20%	1.13	1.13	0.18%	28.30%	0.00%	
R7/130		W8/130	11.73	11.58	1.28%	1.30	1.28	1.24%	35.33%	0.00%	
R8/130		W9/130	13.83	13.32	3.69%	0.65	0.63	3.52%	29.04%	0.00%	
1st Floor											
R1/131		W3/131	15.76	15.76	0.00%	0.93	0.93	0.00%	48.59%	0.00%	
R2/131		W4/131	14.49	14.49	0.00%	1.19	1.19	0.00%	36.31%	0.00%	
R3/131		W5/131	15.24	15.24	0.00%	0.85	0.85	0.00%	34.17%	0.00%	
R4/131		W6/131	15.57	15.56	0.06%	1.54	1.54	0.07%	38.19%	0.00%	
R5/131		W10/131	16.68	16.68	0.00%	0.02	0.02	4.76%	18.82%	0.00%	



				%VS	C	% D	avlight	Factor	Propose	ed No Sky
							, <u>, , , , , , , , , , , , , , , , , , </u>		% of	,
									Room	% Loss of
Room/Floor	Room Use	Window	Exist	Prop	% Loss	Exist	Prop	% Loss	Area	Existing
R6/131		W7/131		17.28	0.00%		_		37.14%	0.00%
R7/131		W8/131	18.19		0.22%		1.56		42.98%	0.00%
R8/131		W9/131	20.00	19.81	0.95%	0.68	0.67	0.74%	37.88%	0.00%
R9/131		W1/131	29.05	29.05	>27	2.91	2.91	0.00%	98.66%	0.00%
K9/131		W2/131	22.38	22.38	0.00%	2.91	2.91	0.00%	96.00%	0.00%
2nd Floor										
R1/132		W3/132	23.86						67.18%	3.24%
R2/132		W4/132	23.44	23.43	0.04%			0.00%	64.37%	7.12%
R3/132		W5/132		25.29	0.00%	0.72			59.35%	0.09%
R4/132		W6/132		26.18	0.00%				75.54%	0.25%
R5/132		W10/132		26.97	0.04%		0.12	0.83%	42.67%	1.66%
R6/132		W7/132		28.52		1.04			75.37%	1.33%
R7/132		W8/132	28.78	28.78	>27	1.48	1.48	0.14%	75.63%	2.24%
R8/132		W9/132	29.65			0.65	0.65	0.15%	60.96%	7.85%
R9/132		W1/132		32.89		2.47	2.47	0.00%	77.61%	0.00%
		W2/132	28.66	28.66	>27	2 ,		0.0070	77.0170	0.0070
3rd Floor		T	I	1	•	1	ı			
R1/133		W1/133	35.91			2.29	2.29	0.17%	99.47%	0.00%
		W2/133		33.37						
R2/133		W3/133		32.38		1.54			99.19%	0.00%
R3/133		W4/133		33.04		0.94			97.96%	0.00%
R4/133		W5/133		33.18		1.94			99.91%	0.00%
R5/133		W9/133		33.60		0.17	0.15		93.25%	0.00%
R6/133		W6/133		34.49		1.28	1.22	4.38%	97.26%	0.00%
R7/133		W7/133	36.77			2.79	2.74	1.69%	98.29%	0.00%
		W8/133	36.44	36.32	>27					
4th Floor			ı	1	ı		I			
R1/134		W1/134	38.60			2.82	2.80	0.67%	98.90%	0.00%
·		W2/134	39.02	38.47						
R2/134		W3/134	39.14			2.31			98.80%	0.00%
R3/134		W4/134	37.04			1.66			97.29%	0.00%
R4/134		W5/134	37.99			1.80	1.75	2.62%	97.86%	0.00%
R5/134		W6/134	38.12			3.52	3.48	1.05%	99.62%	0.00%
Tth Floor		W7/134	38.02	37.92	>27					
5th Floor		N/4 /4 25	27.05	27.05	. 27					
R1/135		W1/135	37.85			2.09	2.08	0.33%	100.00%	0.00%
		W2/135	38.38							
D2/12F		W3/135	30.17	29.96		0.25	0 22	0.220/	100 000/	0.000/
R2/135		W4/135	36.77	36.70		8.35	8.33	8.33 0.32%	2% 100.00%	% 0.00%
2 to 20 L = = : :	ud Carrit	W5/135	14.96	14.96	0.00%					
2 to 30 Leona	ira Court	BRE_72								



				%VS	C	% Daylight Factor			Proposed No Sky		
							7 0		% of		
									Room	% Loss of	
Room/Floor	Room Use	Window	Exist	Prop	% Loss	Fxist	Prop	% Loss	Area	Existing	
Gnd Floor	Room Osc	window	271104		70 2000			70 2000			
R1/140		W1/140	16.86	16.51	2.08%	0.63	0.62	1.60%	65.90%	26.29%	
R2/140		W2/140	18.63	18.54	0.48%					1	
R3/140		W3/140	17.84	-	0.73%				41.07%		
1st Floor		,			l				ı	1	
R1/141		W1/141	22.28	21.12	5.21%	1.02	0.98	3.94%	94.01%	2.16%	
R2/141		W2/141	25.02	23.62					87.57%		
		W3/141	27.08	-	5.95%						
R3/141		W4/141	27.84		6.36%	1.84	1.75	4.73%	98.55%	0.00%	
DC /4.44		W5/141	28.74	26.57	7.55%	1.01	4.70	C 070/	06.040/	0.000/	
R6/141		W6/141	26.52	24.41	7.96%	1.81	1.70	6.07%	96.94%	0.00%	
2nd Floor		•		•	•						
R1/142		W1/142	25.51	24.77	2.90%	1.21	1.18	2.23%	97.67%	0.00%	
R2/142		W2/142	28.50	27.56	>27	1.25	1.22	2.64%	96.57%	0.00%	
R3/142		W3/142	23.07	22.02	4.55%	1.91	1.85	3.25%	97.65%	0.00%	
N3/ 142		W4/142	29.14	28.00	>27	1.91	1.65	3.23/0	37.03/6	0.00%	
R4/142		W5/142	31.16	29.94	>27	1.15	1.11	3.23%	97.74%	0.00%	
R5/142		W6/142	23.84	22.61	5.16%	0.99	0.95	3.83%	97.84%	0.00%	
R6/142		W7/142	33.81	32.19	>27	2.22	2.13	4.24%	95.82%	0.00%	
		W8/142	33.97	32.35	>27	2.22	2.13	1.2 170	33.0270	0.0070	
3rd Floor	I	1	T	T	1	T	1	1	1	1	
R1/143		W1/143	30.37	29.48		1.16					
R2/143		W2/143	32.84	-		1.15	1.12	3.03%	97.00%	0.00%	
R3/143		W3/143		24.48		1.71	1.66	2.58%	98.71%	0.00%	
•		W4/143		32.06							
R4/143		W5/143		34.31		0.95					
R5/143		W6/143	35.81			0.98	0.96	2.75%	98.16%	0.00%	
R6/143		W7/143				1.54	1.50	2.66%	98.68%	0.00%	
D7/4.42		W8/143		35.14		4.26	4 22	4.000/	06.440/	0.000/	
R7/143		W9/143	33.71	32.77	>27	1.36	1.33	1.99%	96.44%	0.00%	
4th Floor		144 /4 4 4	24.65	22.65	. 27	4 22	4.20	2.500/	00.000/	0.000/	
R1/144		W1/144		33.65		1.32					
R2/144		W2/144		34.81		1.23	1.20	2.52%	97.64%	0.00%	
R3/144		W3/144		35.70		2.02	1.97	2.42%	98.71%	0.00%	
R4/144		W4/144 W5/144		36.02 36.46		0.99	0.96	2.23%	97.85%	0.00%	
R4/144 R5/144		W6/144		36.72		1.02	1.00		98.16%		
		W7/144	37.57								
R6/144		W8/144	37.63			1.99	1.95	1.96%	98.68%	0.00%	
R7/144						1 39	1 37	1.29%	96 44%	0.00%	
R7/144		W9/144	35.05			1.39	1.37	1.29%	96.44%	0.00%	



				%VS	С	% D	aylight	Factor	Proposed No Sky		
							, , , , , , , , , , , , , , , , , , , 		% of	,	
									Room	% Loss of	
Room/Floor	Room Use	Window	Exist	Prop	% Loss	Exist	Prop	% Loss	Area	Existing	
5 to 9 Woolf	•	E 73									
Gnd Floor	THE WOOD IN	<u>,,,</u>									
		W1/150	26.35	22.67	13.97%						
R1/150		W2/150	22.22	18.50		1 Uh	0.93	11.90%	94.74%	2.20%	
R2/150		w3/150	28.26	24.70			0.83	10.72%	92.94%	3.50%	
R3/150		W4/150	22.79	20.95	8.07%	1.66	1.57	5.35%	98.31%	0.00%	
R4/150		W5/150	22.98	20.82	9.40%	1.73	1.61	7.16%	98.71%	0.00%	
R5/150		W6/150	27.56	25.99	5.70%	0.88	0.84	3.88%	96.28%	0.00%	
R6/150		W7/150	20.77	20.45	1.54%	1.01	0.99	1.89%	96.77%	0.00%	
NO/ 130		W8/150	25.44	24.25	4.68%	1.01	0.99	1.05/0	90.77/0	0.00%	
R7/150		W9/150	25.41	24.17	4.88%	1.02	0.99	2.65%	96.65%	0.00%	
177130		W10/150	21.80	20.62	5.41%	1.02	0.55	2.0370	30.0370	0.0076	
R8/150		W11/150	26.81		3.80%	0.88	0.87	1.81%	91.72%	0.00%	
R9/150		W12/150	20.22		0.74%				97.93%	0.00%	
R10/150		W13/150	20.69		3.00%		1.57	2.06%	96.19%	0.00%	
R11/150		W14/150	20.85			0.72	0.72	0.56%	62.68%	0.00%	
R12/150		W15/150		13.48	•	0.77	0.77	0.13%	84.49%	0.00%	
		W16/150	15.93	15.73	1.26%	0.7.7	0.7.7	0.2076	0 11 10 / 0	0.0070	
1st Floor	T			ı	ı	ı	ı	1	1		
R1/151		W1/151	28.67	25.21	12.07%	1.76	1.14	9.77%	97.37%	0.00%	
•		W2/151	23.05								
R2/151		W3/151	31.83			1.56	1.43	8.50%	97.72%	0.00%	
R3/151		W4/151	21.06		5.89%	-1.05	1.00	4.84%	96.92%	0.00%	
		W5/151	26.99	-	•						
R4/151		W6/151	26.95		8.24%	1 119	1.04	4.95%	97.27%	0.00%	
55/454		W7/151		19.59			4.40	4.070/	07.500/	0.000/	
R5/151		W8/151		29.25		1.56	1.48	4.87%	97.53%	0.00%	
R6/151		W9/151		21.35		1.17	1.15	1.97%	97.01%	0.00%	
		W10/151	27.62								
R7/151		W11/151	27.53			1.18	1.15	2.37%	97.13%	0.00%	
D0 /1 F1		W12/151		21.44 29.12			1 16	2 /10/	06.700/	0.009/	
R8/151		W13/151 W14/151	30.04			1.49	1.46	2.41%	96.78%	0.00%	
R9/151		W14/151 W15/151	24.71	18.39 24.36		1 ().98	0.98	0.41%	97.61%	0.00%	
		W15/151 W16/151	25.01	24.38							
R10/151		W10/151 W17/151	20.00			-1.00	0.99	0.30%	97.14%	0.00%	
R11/151		W17/131 W18/151	28.50			1.44	1.42	1.32%	96.29%	0.00%	
-		W19/151		18.78							
R12/151		W20/151		23.78		1 1 () /	1.07	0.09%	96.40%	0.00%	
			25.55	23.70	0.0070						



Appendix IV



Tavistock Place, London Sunlight results 17 October 2017

Available sunlight as a percentage of annual unobstructed total (1486.0 Hrs)

annual unot		· `	isting %		Pro	posed %				
	Window							% Loss of	% Loss of	% Loss of
Room use	Ref	Summer	Winter	Total	Summer	Winter	Total	Summer	Winter	Total
57 Cartwrig	ht Garde								•	•
Gnd Floor	<u>,</u>									
W1/40		27.00	2.00	29.00	27.00	2.00	29.00	0.00%	0.00%	0.00%
1st Floor			I.		I.	I.				•
W1/41		36.00	23.00	59.00	36.00	19.00	55.00	0.00%	17.39%	6.78%
2nd Floor	•	•	•		•	•			•	•
W1/42		39.00	27.00	66.00	39.00	27.00	66.00	0.00%	0.00%	0.00%
3rd Floor	•	•	•	•	•	•	•		•	
W1/43		37.00	27.00	64.00	37.00	27.00	64.00	0.00%	0.00%	0.00%
Gnd Floor										
W1/44		23.00	20.00	43.00	23.00	16.00	39.00	0.00%	20.00%	9.30%
W2/44		22.00	15.00	37.00	22.00	9.00	31.00	0.00%	40.00%	16.22%
W1/45		29.00	21.00	50.00	29.00	20.00	49.00	0.00%	4.76%	2.00%
3rd Floor										
W1/46		26.00	22.00	48.00	26.00	22.00	48.00	0.00%	0.00%	0.00%
W2/46		33.00	25.00	58.00	33.00	25.00	58.00	0.00%	0.00%	0.00%
58 to 60 Ca	rtwright (Gardens								
Gnd Floor										
W1/50		26.00	11.00	37.00	26.00	6.00	32.00	0.00%	45.45%	13.51%
1st Floor										
W1/51		30.00	23.00	53.00	30.00	16.00	46.00	0.00%	30.43%	13.21%
2nd Floor										
W1/52		38.00	27.00	65.00	38.00	25.00	63.00	0.00%	7.41%	3.08%
3rd Floor	_	_						_	_	
W1/53		37.00	27.00	64.00	37.00	27.00	64.00	0.00%	0.00%	0.00%
Gnd Floor							1		_	
W1/54		12.00		37.00	12.00		29.00			
W2/54		18.00	9.00	27.00	18.00	5.00	23.00	0.00%	44.44%	14.81%
1st Floor	1	1	T		ī	T	ı	1	1	_
W1/55		2.00		26.00	2.00		23.00			
W2/55		27.00	14.00	41.00	27.00		38.00		21.43%	
W3/55		13.00	26.00	39.00	13.00	25.00	38.00	0.00%	3.85%	2.56%
3rd Floor	T	T	1	1	1	1	ı	T	T	
W1/56		35.00	26.00	61.00	35.00	26.00	61.00	0.00%	0.00%	0.00%



		Existing %			Pro	posed %					
	Window							% Loss of	% Loss of	% Loss of	
Room use	Ref	Summer	Winter	Total	Summer	Winter	Total	Summer	Winter	Total	
1st Floor											
W1/60		27.00	21.00	48.00	27.00	13.00	40.00	0.00%	38.10%	16.67%	
2nd Floor	•					•					
W1/61		39.00	27.00	66.00	39.00	26.00	65.00	0.00%	3.70%	1.52%	
3rd Floor	•								•		
W1/62		36.00	26.00	62.00	36.00	26.00	62.00	0.00%	0.00%	0.00%	
W2/62		35.00	26.00	61.00	35.00	26.00	61.00	0.00%	0.00%	0.00%	
1st Floor						-					
W1/63		1.00	26.00	27.00	1.00	22.00	23.00	0.00%	15.38%	14.81%	
W2/63		7.00	19.00	26.00	7.00	17.00	24.00	0.00%	10.53%	7.69%	
W3/63		25.00	12.00	37.00	25.00	8.00	33.00	0.00%	33.33%	10.81%	
Gnd Floor						-					
W1/64		29.00	5.00	34.00	29.00	0.00	29.00	0.00%	100.00%	14.71%	
W1/70		33.00	18.00	51.00	33.00	3.00	36.00	0.00%	83.33%	29.41%	
1st Floor						-					
W1/71		34.00	21.00	55.00	34.00	11.00	45.00	0.00%	47.62%	18.18%	
2nd Floor	•								•		
W1/72		39.00	25.00	64.00	39.00	23.00	62.00	0.00%	8.00%	3.13%	
W1/73		35.00	25.00	60.00	35.00	25.00	60.00	0.00%	0.00%	0.00%	
W2/73		34.00	26.00	60.00	34.00	26.00	60.00	0.00%	0.00%	0.00%	
Gnd Floor	•								•		
W1/74		34.00	19.00	53.00	34.00	2.00	36.00	0.00%	89.47%	32.08%	
W2/74		0.00	22.00	22.00	0.00	9.00	9.00	0.00%	59.09%	59.09%	
1st Floor						-					
W1/75		0.00	24.00	24.00	0.00	16.00	16.00	0.00%	33.33%	33.33%	
W2/75		29.00	13.00	42.00	29.00	8.00	37.00	0.00%	38.46%	11.90%	
W3/75		14.00	22.00	36.00	14.00	21.00	35.00	0.00%	4.55%	2.78%	
61 to 62 Ca	artwright (Gardens									
Gnd Floor											
W1/80		34.00	14.00	48.00	34.00	3.00	37.00	0.00%	78.57%	22.92%	
1st Floor											
W1/81		41.00	22.00	63.00	41.00	14.00	55.00	0.00%	36.36%	12.70%	
2nd Floor											
W1/82		39.00	25.00	64.00	39.00	24.00	63.00	0.00%	4.00%	1.56%	
3rd Floor											
W1/83		37.00	26.00	63.00	37.00	26.00	63.00	0.00%	0.00%	0.00%	
Gnd Floor											
W1/84		19.00	6.00	25.00	18.00	1.00	19.00	5.26%	83.33%	24.00%	
W2/84		23.00	20.00	43.00	23.00	8.00	31.00	0.00%	60.00%	27.91%	
1st Floor											
W1/85		30.00	23.00	53.00	30.00	14.00	44.00	0.00%	39.13%	16.98%	
2nd Floor	-	-	-		-	-		-	-	-	
W1/86		39.00	25.00	64.00	39.00	22.00	61.00	0.00%	12.00%	4.69%	
						•		•			



	Existing %				Pro	posed %				
	Window							% Loss of	% Loss of	% Loss of
Room use	Ref	Summer	Winter	Total	Summer	Winter	Total	Summer	Winter	Total
3rd Floor	•	•								•
W1/87		24.00	21.00	45.00	24.00	21.00	45.00	0.00%	0.00%	0.00%
W2/87		24.00	21.00	45.00	24.00	21.00	45.00	0.00%	0.00%	0.00%
Gnd Floor						ı		•	<u>.</u>	•
W1/90		30.00	8.00	38.00	30.00	3.00	33.00	0.00%	62.50%	13.16%
1st Floor	•					•		•	•	•
W1/91		42.00	22.00	64.00	42.00	16.00	58.00	0.00%	27.27%	9.38%
2nd Floor										•
W1/92		40.00	26.00	66.00	40.00	25.00	65.00	0.00%	3.85%	1.52%
3rd Floor						•			•	
W1/93		36.00	26.00	62.00	36.00	26.00	62.00	0.00%	0.00%	0.00%
Base Floor										
W1/94		15.00	3.00	18.00	15.00	2.00	17.00	0.00%	33.33%	5.56%
Gnd Floor										
W3/95		23.00	5.00	28.00	23.00	5.00	28.00	0.00%	0.00%	0.00%
W4/95		5.00	19.00	24.00	5.00	13.00	18.00	0.00%	31.58%	25.00%
2nd Floor										
W1/96		35.00	25.00	60.00	35.00	20.00	55.00	0.00%	20.00%	8.33%
3rd Floor										
W1/97		36.00	27.00	63.00	36.00	27.00	63.00	0.00%	0.00%	0.00%
63 Cartwri	ght Garde	ns								
1st Floor										
W1/100		25.00	13.00	38.00	25.00	9.00	34.00	0.00%	30.77%	10.53%
2nd Floor										
W1/101		42.00	21.00	63.00	42.00	20.00	62.00	0.00%	4.76%	1.59%
3rd Floor										
W1/102		38.00	23.00	61.00	38.00	23.00	61.00	0.00%	0.00%	0.00%
Lord John I	Russell									
W1/110		22.00		26.00	19.00		20.00	13.64%	75.00%	23.08%
W1/111		26.00		34.00		6.00	32.00	0.00%	25.00%	5.88%
W2/111		26.00	9.00	35.00	26.00		33.00		22.22%	5.71%
W3/111		13.00	9.00	22.00	13.00	8.00	21.00	0.00%	11.11%	4.55%
W4/111		7.00		14.00	7.00		13.00		14.29%	7.14%
W1/112		19.00		27.00	19.00		25.00			
W1/113		24.00		32.00	24.00		29.00			
W1/114		28.00	14.00	42.00	28.00	11.00	39.00	0.00%	21.43%	7.14%
85 to 89 M	archmont	Street								
1st Floor	,	,				T	1	T	T	
W1/120		23.00	5.00		21.00		22.00			
W2/120		19.00	6.00		18.00		20.00			
W3/120		23.00	1.00		21.00		22.00			
W4/120		29.00	4.00	33.00	28.00	2.00	30.00	3.45%	50.00%	9.09%



		Ex	isting %		Pro	posed %				
	Window							% Loss of	% Loss of	% Loss of
Room use	Ref	Summer	Winter	Total	Summer	Winter	Total	Summer	Winter	Total
2nd Floor	•	•			•	•	•	•	•	•
W1/121		25.00	5.00	30.00	25.00	3.00	28.00	0.00%	40.00%	6.67%
W2/121		19.00	6.00	25.00	19.00	4.00	23.00	0.00%	33.33%	8.00%
W3/121		25.00	7.00	32.00	24.00	4.00	28.00	4.00%	42.86%	12.50%
W4/121		25.00	7.00	32.00	24.00	4.00	28.00	4.00%	42.86%	12.50%
3rd Floor										
W1/122		34.00	16.00	50.00	34.00	14.00	48.00	0.00%	12.50%	4.00%
W2/122		47.00	20.00	67.00	47.00	18.00	65.00	0.00%	10.00%	2.99%
W3/122		25.00	11.00	36.00	25.00	10.00	35.00	0.00%	9.09%	2.78%
4th Floor										
W1/123		30.00	7.00	37.00	28.00	5.00	33.00	6.67%	28.57%	10.81%
5th Floor										
W1/124		30.00	13.00	43.00	30.00	10.00	40.00	0.00%	23.08%	6.98%
13 Tavisto	ck Place									
1st Floor										
W1/131		36.00	15.00	51.00	36.00	15.00	51.00	0.00%	0.00%	0.00%
2nd Floor										
W1/132		33.00	19.00	52.00	33.00	19.00	52.00	0.00%	0.00%	0.00%
3rd Floor										
W1/133		39.00	23.00	62.00	39.00	23.00	62.00	0.00%	0.00%	0.00%
4th Floor										
W1/134		39.00	24.00	63.00	39.00	24.00	63.00	0.00%	0.00%	0.00%
5th Floor										
W1/135		33.00	23.00	56.00	33.00	23.00	56.00	0.00%	0.00%	0.00%
W5/135		14.00	3.00	17.00	14.00	3.00	17.00	0.00%	0.00%	0.00%