



157-159 Hornsey Park Road, London, N8

Daylight and Sunlight Assessment

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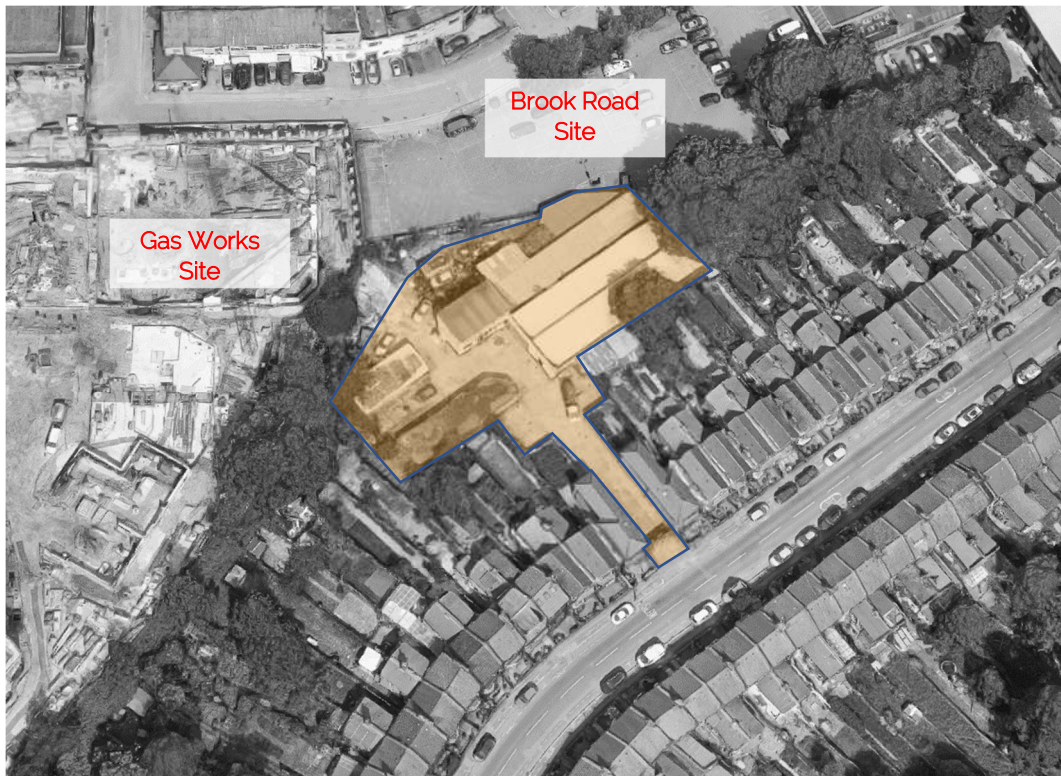
1.0 Introduction

- 1.1 This daylight and sunlight assessment has been prepared to support a planning application for the proposed redevelopment of the site to the rear of 157 – 159 Hornsey Park Road, London N8.
- 1.2 The report assesses the proposals in respect of daylight, sunlight and overshadowing matters, having regard to industry standard guidance.
- 1.3 There is no existing specific National Planning Policy relating to the prospective impacts of developments on daylight and sunlight on their surrounding environment.
- 1.4 However, the BRE Report 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' (3rd Edition, 2022) is the established National guidance to aid the developer to prevent and/or minimise the impact of a new development on the availability of daylight and sunlight in the environs of the site.
- 1.5 This reference document is accepted as the authoritative work in the field on daylight, sunlight and overshadowing and is specifically referred to in many Local Authorities' planning policy guidance for daylighting.
- 1.6 The methodology therein has been used in numerous lighting analyses and the standards of permissible reduction in light are accepted as the industry standards.

2.0 Project Summary

- 2.1 The proposal site lies to the rear of 157 and 159 Hornsey Road, N8 and is currently occupied by a series of single and two storey buildings used for commercial/light industrial purposes.
- 2.2 The proposal is for the demolition of the existing buildings and the construction of a mixed used development arranged over 2 blocks rising to a maximum of 6 storeys, with commercial uses occupying part of the ground floor and residential units above.
- 2.3 The impacts of the scheme have been assessed, in line with BRE guidance. Generally, it is the impacts on residential neighbours which are of primary concern.
- 2.4 The key assessed neighbours here are the existing residential dwellings fronting Hornsey Park Road and two large developments to the east and north-east ("The Gas Works Development") and to the north ("The Brook Road Development")
- 2.5 The location of these sites, which are either consented for planning , or under construction, is shown below.
- 2.6 Further details on the location of the assessed neighbours and their windows and rooms are given in Section 5.0
- 2.7 In addition to assessing the impacts of the scheme on neighbours, daylight within the proposed new dwellings has also been assessed.

2.0 Project Summary



Site Location

3.0 Methodology

- 3.1 For this analysis, we have undertaken the most common calculations for the change in daylight and sunlight to existing buildings, as recommended in BRE Digest 209. These are:
 - Vertical Sky Component (VSC) and No Sky Line (NSL) for daylight impacts
 - Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (WPSH) (APSH) for sunlight impacts
 - Target Daylight Factor (DF_T) for daylight within the proposal
- 3.2 The VSC method measures the general amount of light available on the outside plane of the window as a ratio (%) of the amount of total unobstructed sky viewable following introduction of visible barriers such as buildings. The maximum value is just under 40% for a completely unobstructed vertical wall.
- 3.3 The VSC is calculated using computer simulation under a CIE overcast sky. This works by simulating the amount of visible sky from the centre point of each window. It is not affected by orientation and so all potentially affected windows are assessed.
- 3.4 The NSL test calculates the distribution of daylight within rooms by determining the area of the room at desk/work surface height (the 'working plane') which can and cannot receive a direct view of the sky and hence 'sky light'. The working plane height is set at 850mm above floor level within residential properties.
- 3.5 The NSL test can be carried out where neighbouring room layouts are known.
- 3.6 Annual Probable Sunlight Hours (APSH) and Winter Probable Sun light Hours (WPSH) are a measure of the amount of potential direct sunlight that is available to a given surface. APSH covers sunlight over the whole year and WPSH from September 21st to March 21st.
- 3.7 The number of total available hours is calculated from a data file in the software, built up over a number of years of actual weather data records.
- 3.8 Only windows which face within 90° of due south need be assessed for sunlight. This is looked at in Section 9.
- 3.9 APSH can also be used to assess the impact on external spaces such as gardens and balconies. This is looked at in Section 10.

4.0 Modelling & Data Sources

- 4.1 The first stage of the analysis is to create the analysis model of the existing site condition and the proposal. This allows us to analyse the impact of the proposal when compared to the existing condition.
- 4.2 2D drawings and a 3D model have been provided by the design team. These drawings are used to construct a 3D analysis model which is exported into the specialist daylight software. Calculations are then run, for both existing (consented) and proposed scenarios.
- 4.3 Sufficient detail is added to the model for the analysis. In accordance with BRE recommendations, trees and foliage have been omitted from the calculations.
- 4.4 Information on the properties has been provided to us by the design team in the form of drawings giving the site as existing and proposed and photographs of the site and surroundings.
- 4.5 Web-based mapping sources and planning records for neighbouring buildings have also been used.



Architect's 3D Model - Proposed

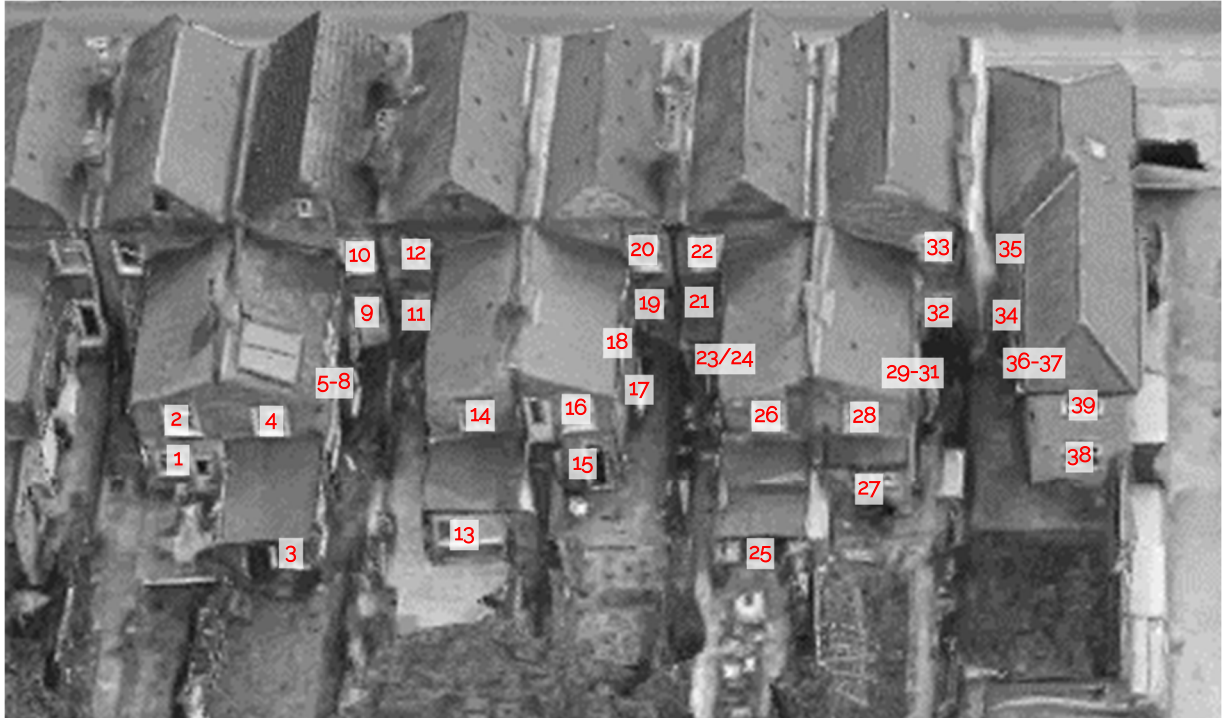
5.0 BRE Guidance Targets

- 5.1 The reference document for this analysis, BRE Digest 209, gives the methodology for undertaking the calculations. It also provides benchmark figures for the acceptable reduction in the daylight on existing properties which might be affected by development.
- 5.2 Specifically, the guidance gives figures for the VSC and APSH, as a percentage reduction that is "permissible" for the effect on existing windows.
- 5.3 It is worth noting the following statement in the Guidance introduction:
 - *"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."*
- 5.4 The relevant BRE recommendations for daylight and sunlight are:
 - The Vertical Sky Component measured at the centre of a window should be no less than 27%, or if reduced to below this, no less than 0.8 times the former value.
 - The area of the room beyond the No Sky Line should not be reduced to less than 80% of its former value.
 - The window should receive at least 25% of available annual sunlight hours and more than 5% during the winter months (September 21st to March 21st), or, where this is not the case, 80% of its former value.

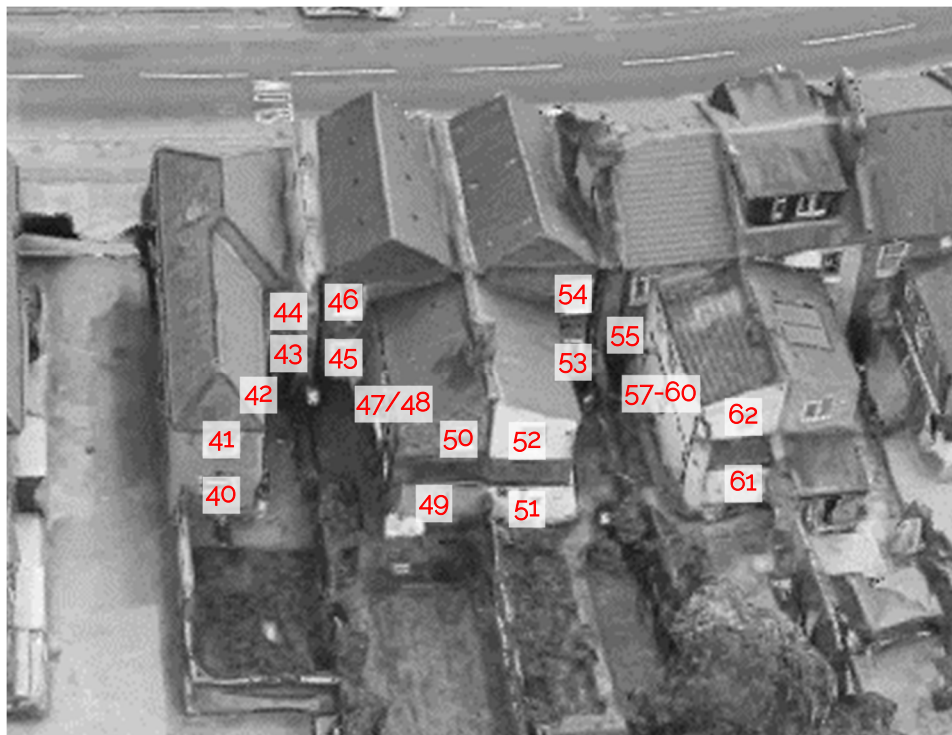
5.0 BRE Guidance Targets

- 5.5 It should be noted however that the daylight targets are intended to cover all situations and are acknowledged to be unrealistic in urban scenarios.
- 5.6 The GLA representation hearing D&P/3067/03 states the following: "In an inner-city urban environment, VSC values in excess of 20% should be considered as reasonably good, and that VSC in the mid-teens should be acceptable"
- 5.7 In addition, the report "Guiding Light – Unlocking London's Residential Density", produced by London First, in partnership with GLA, acknowledges the need for good urban density in London and that the BRE guidance has significant limitations, when applied strictly, in delivering development that makes best use of the available land.
- 5.8 The results within this report give a summary of "compliance" with both the BRE guidance and also the GLA representation report whereby windows which retain a VSC in the "mid-teens" (taken to mean 16%) should be considered acceptable.
- 5.9 Clearly where a window already has a VSC of less than 16%, then meeting that target would be impossible, and so windows with already low levels of daylight are excluded from those results.

6.0 Window Schedules

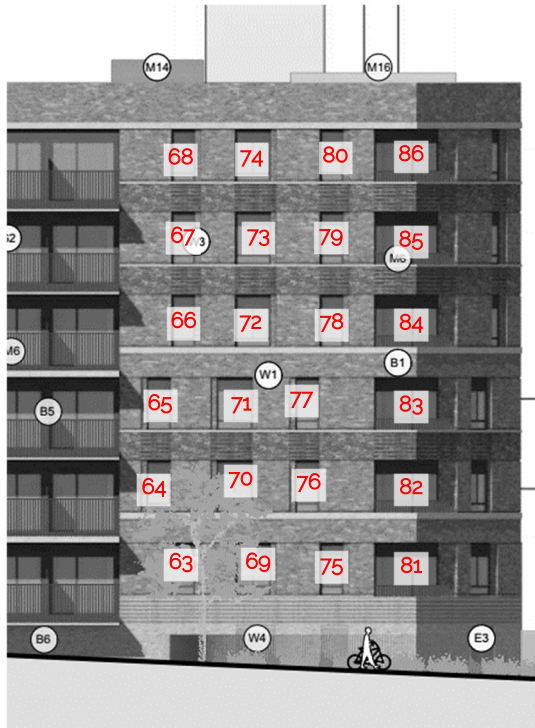


159A-171 Hornsey Park Road

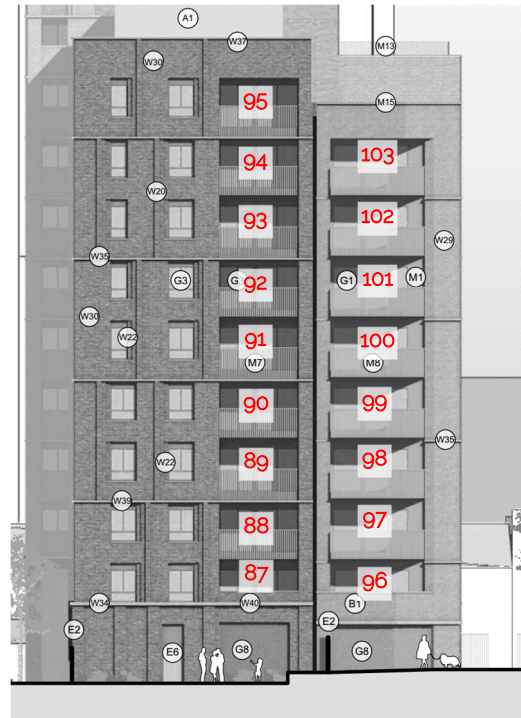


151-157 Hornsey Park Road

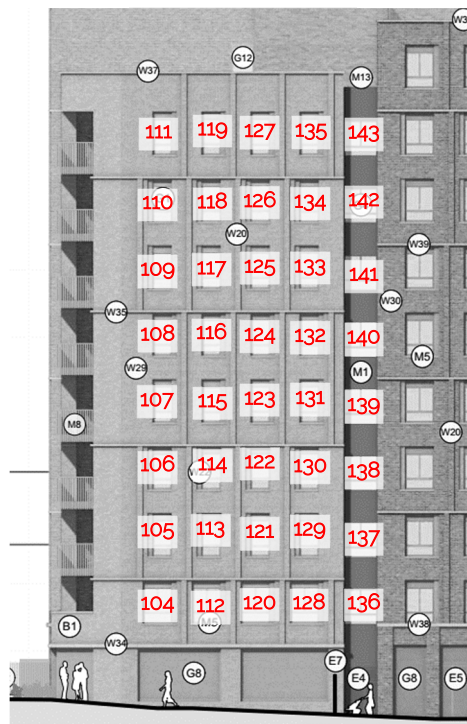
6.0 Window Schedules



Gasworks Site – Building D3 –
West Elevation as Consented



Gasworks Site – Building D4 –
South Elevation as Consented



Gasworks Site – Building D4 –
West Elevation as Consented

6.0 Window Schedules



Brook Road Site - South Elevation
as Consented

7.0 Daylight Impact Results – VSC Test

- 7.1 The Vertical Sky Component has been calculated for each of the 201 assessed windows for both the existing and proposed conditions in various scenarios.
- 7.2 A summary of the results can be seen in the tables directly below and the full results for each window follow that.
- 7.3 Two sets of results are provided – against the BRE guidance and against the GLA guidance report, where a residual figure in the “mid-teens” (taken to be above 16%) is given.
- 7.4 For the second set of results, the number of windows *assessed* is lower, since where a window is already below 16%, it could not reasonably be expected to retain in excess of that figure. It only includes windows on the consented schemes as those on the existing houses meet the BRE guidance fully.
- 7.5 A third set of results excludes the consented but as yet unbuilt schemes and shows only the results for the existing houses on Hornsey Park Road
- 7.6 As the summary tables show, over 80% of windows meet the stringent BRE guidance by virtue of retaining a VSC in excess of 27% or 80% of their existing values.
- 7.7 It should be reiterated that all *existing* windows (i.e., those that are already constructed) meet the BRE Guidance. Those that do not, are all within the as-yet unbuilt sites to the east and north of the site.
- 7.8 It is also notable that in many cases where windows fall short of the BRE guidance, they are designed within deep recessed balconies which means the window has a narrow “view” of the sky.
- 7.9 Where this is the case, the results for adjacent non-recessed windows should be noted to demonstrate that it is the design of the neighbouring window which exacerbates the impact of this proposal.
- 7.10 An example of this is window 197, which falls slightly short of the guidance but is in a recessed balcony.
- 7.11 When this is compared to Window 192, adjacent, but not within a balcony and which meets the BRE guidance, it can be deduced that the balcony is the primary factor causing the larger impact.

7.0 Daylight Impact Results – VSC Test

- 7.12 Over 91% of relevant windows meet the GLA Representation recommendation for windows in urban locations to have a VSC in the “mid-teens”.
- 7.13 As floor plans are available for the consented schemes, further testing can be carried out using the more detailed No Sky Line test. This is provided in the following section.

7.0 Daylight Impact Results – VSC Test

Vertical Sky Component – Against BRE Guidance			
	Windows Assessed	Windows Fully Meeting BRE Guidance	% Meeting BRE Guidance
	201	165	82.1%

Vertical Sky Component – Against GLA Guidance			
	Windows Assessed	Windows Retaining a VSC above 16%	% Meeting GLA Guidance
	160	146	91.3%

Vertical Sky Component – Existing Houses Only			
	Windows Assessed	Windows Fully Meeting BRE Guidance	% Meeting BRE Guidance
	62	62	100.0%

7.0 Daylight Impact Results – VSC Test

Vertical Sky Component					
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?	Meets GLA Guidance?
1	26.018	23.020	88.48%	Yes	Yes
2	28.581	25.678	89.84%	Yes	Yes
3	26.919	21.925	81.45%	Yes	Yes
4	28.129	24.770	88.06%	Yes	Yes
5	27.898	25.780	92.41%	Yes	Yes
6	20.439	19.022	93.07%	Yes	Yes
7	14.829	14.192	95.70%	Yes	N/A
8	29.375	28.401	96.68%	Yes	Yes
9	13.798	11.768	85.29%	Yes	No
10	26.487	24.500	92.50%	Yes	Yes
11	13.529	12.051	89.07%	Yes	N/A
12	27.728	25.959	93.62%	Yes	Yes
13	27.027	21.639	80.06%	Yes	Yes
14	29.337	25.393	86.56%	Yes	Yes
15	26.514	21.741	82.00%	Yes	Yes
16	29.575	25.503	86.23%	Yes	Yes
17	13.776	13.056	94.77%	Yes	N/A
18	27.788	26.993	97.14%	Yes	Yes
19	13.156	11.988	91.12%	Yes	N/A
20	26.190	24.099	92.02%	Yes	Yes
21	13.544	11.779	86.97%	Yes	N/A
22	28.931	27.054	93.51%	Yes	Yes
23	27.461	26.900	97.96%	Yes	Yes
24	17.663	16.794	95.08%	Yes	Yes
25	26.663	21.338	80.03%	Yes	Yes
26	29.447	25.396	86.24%	Yes	Yes
27	25.100	20.617	82.14%	Yes	Yes
28	28.798	24.989	86.77%	Yes	Yes
29	17.832	16.580	92.98%	Yes	Yes
30	10.145	9.797	96.57%	Yes	N/A
31	24.046	23.425	97.42%	Yes	Yes
32	12.847	12.413	96.62%	Yes	N/A
33	26.822	25.215	94.01%	Yes	Yes
34	12.551	11.484	91.50%	Yes	N/A
35	20.576	19.460	94.57%	Yes	Yes
36	14.664	14.014	95.57%	Yes	N/A
37	31.742	31.097	97.97%	Yes	Yes
38	29.109	24.882	85.48%	Yes	Yes
39	30.615	27.219	88.91%	Yes	Yes
40	28.855	24.548	85.07%	Yes	Yes

7.0 Daylight Impact Results – VSC Test

Vertical Sky Component					
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?	Meets GLA Guidance?
41	30.610	27.097	88.52%	Yes	Yes
42	19.842	19.644	99.00%	Yes	Yes
43	13.867	12.458	89.84%	Yes	N/A
44	20.663	19.379	93.78%	Yes	Yes
45	15.570	13.620	87.48%	Yes	N/A
46	28.522	26.578	93.18%	Yes	Yes
47	17.126	16.104	94.04%	Yes	Yes
48	28.460	27.605	97.00%	Yes	Yes
49	28.590	23.960	83.81%	Yes	Yes
50	30.127	26.395	87.61%	Yes	Yes
51	26.906	22.326	82.98%	Yes	Yes
52	27.823	24.236	87.11%	Yes	Yes
53	15.324	15.037	98.13%	Yes	N/A
54	27.766	26.042	93.79%	Yes	Yes
55	14.905	13.148	88.21%	Yes	N/A
56	28.705	26.676	92.93%	Yes	Yes
57	13.888	12.617	90.85%	Yes	N/A
58	22.387	21.020	93.89%	Yes	Yes
59	23.128	21.117	91.30%	Yes	Yes
60	32.064	30.235	94.30%	Yes	Yes
61	25.189	21.786	86.49%	Yes	Yes
62	27.671	24.680	89.19%	Yes	Yes
63	33.833	27.947	82.60%	Yes	Yes
64	34.941	30.036	85.96%	Yes	Yes
65	35.365	31.602	89.36%	Yes	Yes
66	35.586	32.944	92.58%	Yes	Yes
67	36.193	34.721	95.93%	Yes	Yes
68	36.835	36.361	98.71%	Yes	Yes
69	33.109	26.894	81.23%	Yes	Yes
70	34.115	28.824	84.49%	Yes	Yes
71	34.502	30.395	88.10%	Yes	Yes
72	34.852	32.056	91.98%	Yes	Yes
73	35.470	33.892	95.55%	Yes	Yes
74	36.212	35.713	98.62%	Yes	Yes
75	31.846	26.308	82.61%	Yes	Yes
76	33.013	27.376	82.93%	Yes	Yes
77	33.386	29.044	86.99%	Yes	Yes
78	33.391	30.323	90.81%	Yes	Yes
79	34.013	32.271	94.88%	Yes	Yes
80	34.866	34.318	98.43%	Yes	Yes

7.0 Daylight Impact Results – VSC Test

Vertical Sky Component					
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?	Meets GLA Guidance?
81	6.181	2.028	32.81%	No	N/A
82	6.588	3.499	53.11%	No	N/A
83	9.980	5.163	51.73%	Yes	N/A
84	11.710	9.796	83.65%	Yes	N/A
85	6.603	5.327	80.68%	Yes	N/A
86	7.822	7.168	91.64%	Yes	N/A
87	8.323	8.067	96.92%	Yes	N/A
88	8.464	8.197	96.84%	Yes	N/A
89	8.679	8.412	96.92%	Yes	N/A
90	9.197	8.940	97.21%	Yes	N/A
91	10.752	10.590	98.49%	Yes	N/A
92	12.099	12.071	99.77%	Yes	N/A
93	12.263	12.263	100.00%	Yes	N/A
94	12.263	12.263	100.00%	Yes	N/A
95	14.160	14.160	100.00%	Yes	N/A
96	11.969	7.904	66.04%	No	N/A
97	12.238	8.031	65.62%	No	N/A
98	12.528	8.320	66.41%	No	N/A
99	13.113	8.905	67.91%	No	N/A
100	14.058	11.706	83.26%	Yes	N/A
101	14.734	14.340	97.33%	Yes	N/A
102	14.823	14.823	100.00%	Yes	N/A
103	14.823	14.823	100.00%	Yes	N/A
104	33.397	14.614	43.76%	No	No
105	34.713	17.435	50.22%	No	Yes
106	35.737	21.257	59.48%	No	Yes
107	36.801	27.296	74.17%	Yes	Yes
108	37.825	32.358	85.55%	Yes	Yes
109	38.548	37.864	98.23%	Yes	Yes
110	38.674	38.674	100.00%	Yes	Yes
111	38.724	38.724	100.00%	Yes	Yes
112	32.722	16.212	49.55%	No	Yes
113	34.097	21.108	61.91%	No	Yes
114	35.256	27.196	77.14%	Yes	Yes
115	36.485	28.120	77.07%	Yes	Yes
116	37.694	33.385	88.57%	Yes	Yes
117	38.537	38.033	98.69%	Yes	Yes
118	38.673	38.673	100.00%	Yes	Yes
119	38.724	38.724	100.00%	Yes	Yes
120	31.795	17.461	54.92%	No	Yes

7.0 Daylight Impact Results – VSC Test

Vertical Sky Component					
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?	Meets GLA Guidance?
121	33.283	21.205	63.71%	No	Yes
122	34.587	28.028	81.04%	Yes	Yes
123	36.015	29.207	81.10%	Yes	Yes
124	37.448	33.953	90.67%	Yes	Yes
125	38.504	38.010	98.72%	Yes	Yes
126	38.667	38.667	100.00%	Yes	Yes
127	38.724	38.724	100.00%	Yes	Yes
128	30.805	18.285	59.36%	No	Yes
129	32.366	21.506	66.45%	No	Yes
130	33.867	27.295	80.59%	Yes	Yes
131	35.543	29.925	84.20%	Yes	Yes
132	37.250	34.561	92.78%	Yes	Yes
133	38.509	38.190	99.17%	Yes	Yes
134	38.670	38.670	100.00%	Yes	Yes
135	38.724	38.724	100.00%	Yes	Yes
136	27.945	18.640	66.70%	No	Yes
137	29.784	21.889	73.49%	No	Yes
138	31.712	25.785	81.31%	Yes	Yes
139	33.973	30.136	88.71%	Yes	Yes
140	36.379	34.571	95.03%	Yes	Yes
141	38.279	38.024	99.33%	Yes	Yes
142	38.513	38.513	100.00%	Yes	Yes
143	38.591	38.591	100.00%	Yes	Yes
144	18.730	9.736	51.98%	No	No
145	18.730	12.217	65.23%	No	No
146	18.730	15.024	80.21%	Yes	No
147	19.141	17.517	91.51%	Yes	Yes
148	20.574	8.223	39.97%	No	No
149	20.574	10.754	52.27%	No	No
150	20.574	13.923	67.68%	No	No
151	20.574	17.109	83.16%	Yes	Yes
152	20.574	19.433	94.46%	Yes	Yes
153	38.181	21.816	57.14%	No	Yes
154	38.285	25.709	67.15%	No	Yes
155	38.386	30.116	78.46%	Yes	Yes
156	36.968	32.918	89.04%	Yes	Yes
157	37.018	35.838	96.81%	Yes	Yes
158	36.976	33.006	89.26%	Yes	Yes
159	37.022	35.957	97.12%	Yes	Yes
160	38.265	20.757	54.24%	No	Yes

7.0 Daylight Impact Results – VSC Test

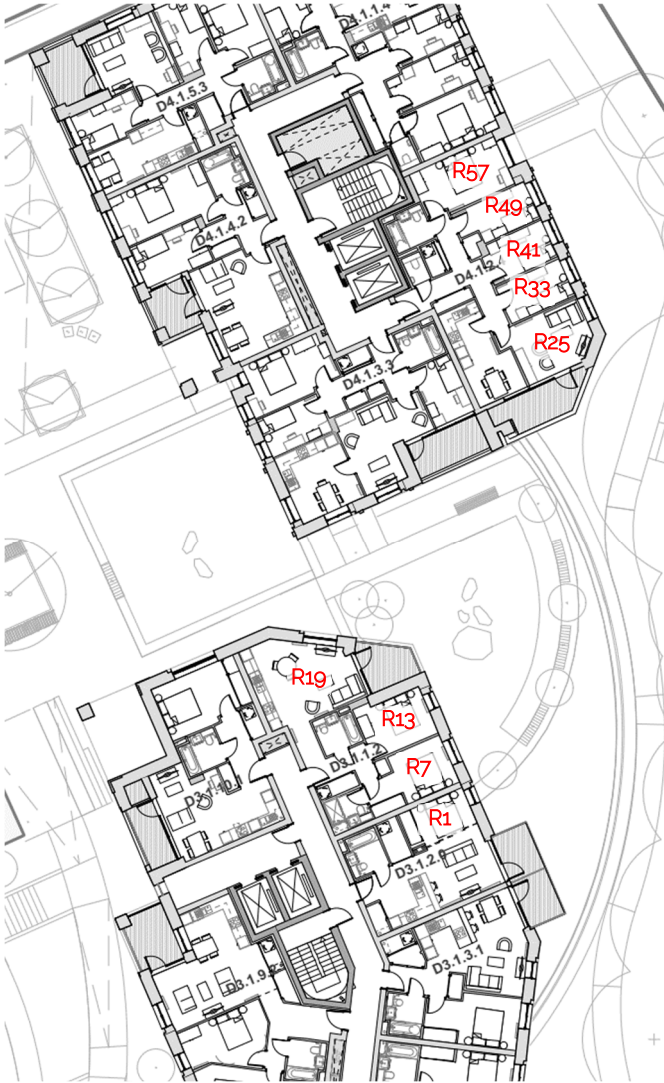
Vertical Sky Component					
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?	Meets GLA Guidance?
161	38.355	25.069	65.36%	No	Yes
162	38.441	29.847	77.64%	Yes	Yes
163	36.984	33.030	89.31%	Yes	Yes
164	37.024	36.057	97.39%	Yes	Yes
165	38.358	19.223	50.12%	No	Yes
166	38.430	23.740	61.77%	No	Yes
167	38.499	29.101	75.59%	Yes	Yes
168	36.999	32.922	88.98%	Yes	Yes
169	37.030	36.224	97.82%	Yes	Yes
170	37.003	32.883	88.87%	Yes	Yes
171	37.032	36.269	97.94%	Yes	Yes
172	38.392	18.982	49.44%	No	Yes
173	38.456	23.475	61.04%	No	Yes
174	38.518	28.895	75.02%	Yes	Yes
175	37.007	32.864	88.80%	Yes	Yes
176	37.033	36.298	98.02%	Yes	Yes
177	20.574	4.386	21.32%	No	No
178	20.574	8.254	40.12%	No	No
179	20.574	12.788	62.16%	No	No
180	20.574	17.263	83.91%	Yes	Yes
181	20.574	20.092	97.66%	Yes	Yes
182	13.751	6.184	44.97%	No	N/A
183	13.751	8.984	65.33%	No	N/A
184	13.751	11.667	84.84%	Yes	N/A
185	14.263	13.958	97.86%	Yes	N/A
186	38.503	27.179	70.59%	Yes	Yes
187	38.521	30.150	78.27%	Yes	Yes
188	38.566	33.299	86.34%	Yes	Yes
189	38.648	36.287	93.89%	Yes	Yes
190	38.225	37.802	98.89%	Yes	Yes
191	38.182	37.782	98.95%	Yes	Yes
192	37.431	27.969	74.72%	Yes	Yes
193	37.453	30.501	81.44%	Yes	Yes
194	37.485	33.119	88.35%	Yes	Yes
195	37.526	35.533	94.69%	Yes	Yes
196	36.693	36.324	98.99%	Yes	Yes
197	18.052	12.466	69.05%	No	No
198	18.052	15.038	83.30%	Yes	No
199	18.052	15.512	85.93%	Yes	No
200	18.052	16.895	93.59%	Yes	Yes
201	18.052	17.812	98.67%	Yes	Yes

8.0 Daylight Impact Results – NSL Test

- 8.1 BRE guidance states that the No Sky Line can additionally be calculated "where neighbouring room layouts are known".
- 8.2 In this instance floor plans have been sourced for the consented sites to the west and north of the site (Gas Works and Brook Road schemes). These are provided below.
- 8.3 This test is more detailed and represents better the actual impact on a room, as it considers both the size of the room and the window(s) which serve it, as well as accounting for multiple windows serving the same space, which VSC does not.
- 8.4 As such, it better represents the impacts of a proposal on neighbours, when compared to the comparatively limited VSC test.
- 8.5 As can be seen in the results, which are summarised below, and given in full on the following pages, over 95% of the assessed rooms retain in excess of 80% of their respective areas within the No Sky Line in full compliance with the BRE guidance.
- 8.6 This is considered a very high level of compliance with the BRE guidance for an urban area.
- 8.7 The rooms which fall short of this recommendation are all set behind relatively deep recessed balconies and therefore very "self-limiting" in their design.
- 8.8 This means that, as with the VSC test, the rooms have a narrow "view" of the sky as designed, which exacerbates the impact of any buildings constructed nearby. Again, this is demonstrated when looking at rooms which do not have such a design, which meet the BRE guidance.
- 8.9 These rooms will also have good levels of sunlight, as demonstrated by the results in Section 9.
- 8.10 A further point to note on the Brook Street site, in particular, is that works have not yet commenced and so there is no guarantee that the occupants of these units will actually experience this level of change in their light levels.

No Sky Line - Results Summary			
	Rooms Assessed	Rooms Fully Meeting BRE Guidance	% Meeting BRE Guidance
	115	110	95.6%

8.0 Daylight Impact Results – NSL Test



Gasworks Site – Level 1 as
Consented (Extract)



Gasworks Site – Level 2 as
Consented (Extract)