Linford Gardens

Boundary Lane, Manchester

Daylight and Sunlight Assessment

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1.0 Introduction

1.1 This daylight and sunlight assessment has been prepared in relation to a planning application for the proposed extension of the site known as Linford Gardens, Boundary Lane, Manchester.

1.2 The report assesses the proposals in respect of daylight, sunlight and overshadowing matters, having regard to industry standard guidance.

1.3 The report concludes that the proposal is acceptable and in accordance with planning policy requirements in relation to daylight and sunlight.

1.4 There is no existing specific National Planning Policy relating to the prospective impacts of developments on daylight and sunlight on their surrounding environment.

1.5 However, the NPPF (Para 130(c)) does refer to daylight and sunlight in relation to density, encouraging Local Planning Authorities to take a flexible approach to applying policies and guidance relating to the impacts of proposals where they would otherwise inhibit making effective use of the site.

1.6 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 and the assessment of light within proposed new dwellings.

1.7 It refers in turn to the daylight and sunlight recommendations in BS EN 17037: 2018+A1:2021 (with UK Annexe): 'Daylight in Buildings'

1.8 These reference documents are accepted as the authoritative works in the field on daylight, sunlight and overshadowing and the BRE guidance specifically referred to in many Local Authorities' planning policy guidance for daylighting.

1.9 The methodology therein has been used in numerous lighting analyses and the standards of permissible reduction in light are accepted as the industry standards.

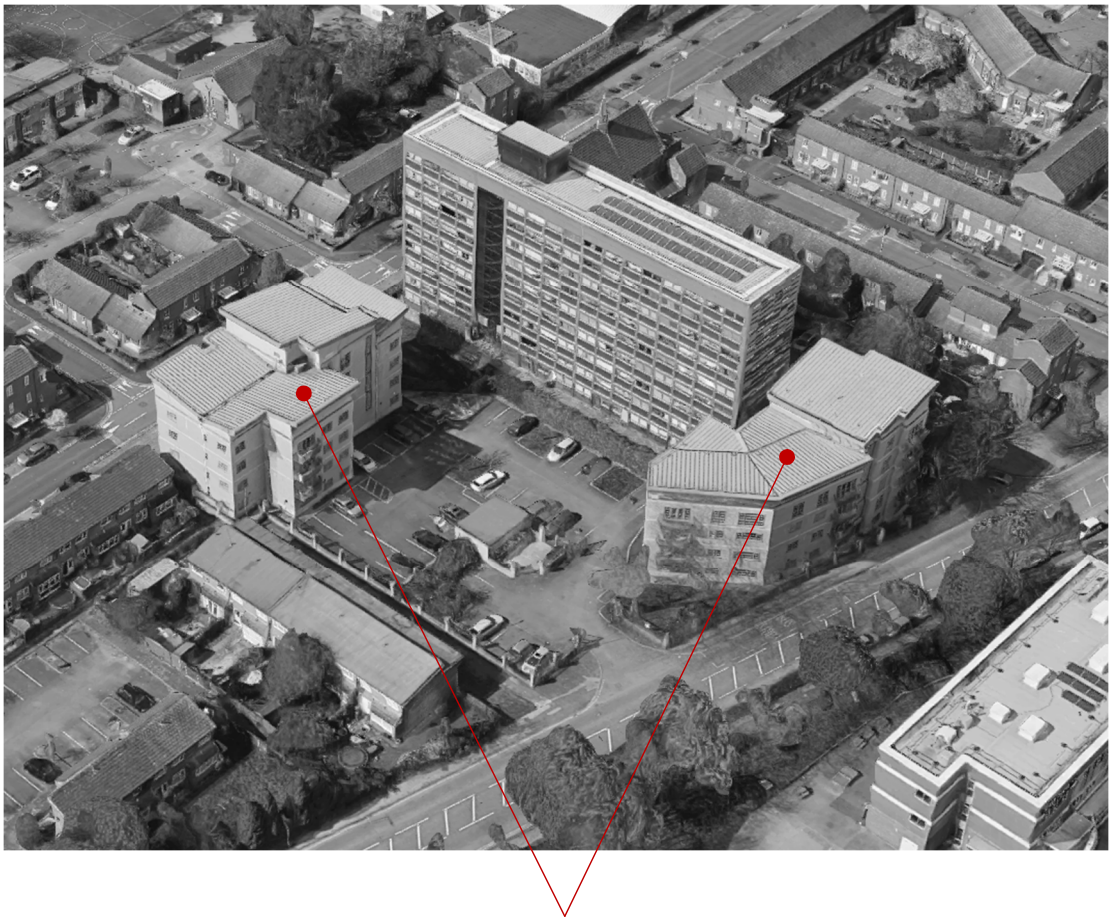
2.0 Project Summary

2.1 The proposal site is known as Linford Gardens and comprises 2 residential blocks, both 4-storeys in height.

2.2 The proposal is for single-storey extensions to both blocks, along with the use of the existing roof space, to create additional residential units.

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 Further details on the location of the assessed neighbours and windows are given in Section 6.0.



Site Locations

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) for daylight impacts
- Annual Probable Sunlight Hours and Winter Probable Sunlight Hours (WPSH) (APSH) for sunlight impacts

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 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.

3.5 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.

3.6 Only windows which face within 90° of due south need be assessed for sunlight. This is looked at in Section 8.

3.7 APSH can also be used to assess the impact on external spaces such as gardens. This is looked at in Section 9.

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 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 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.



Block A - West Elevation – As 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.

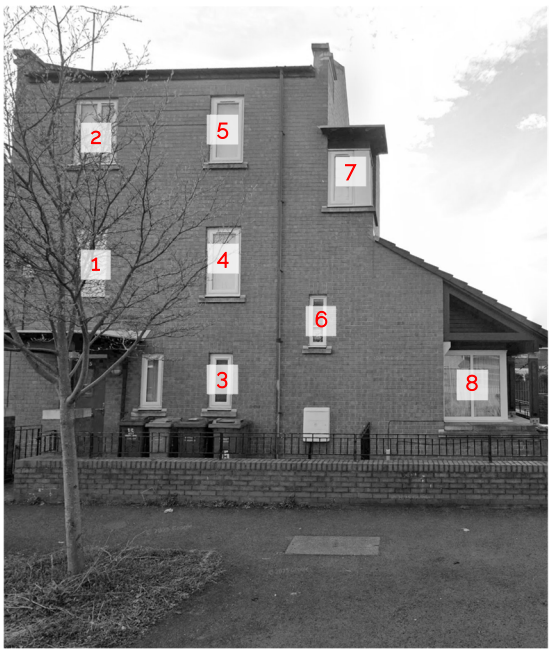
5.3 It is worth noting the following statement in the Guidance introduction:

- "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 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.

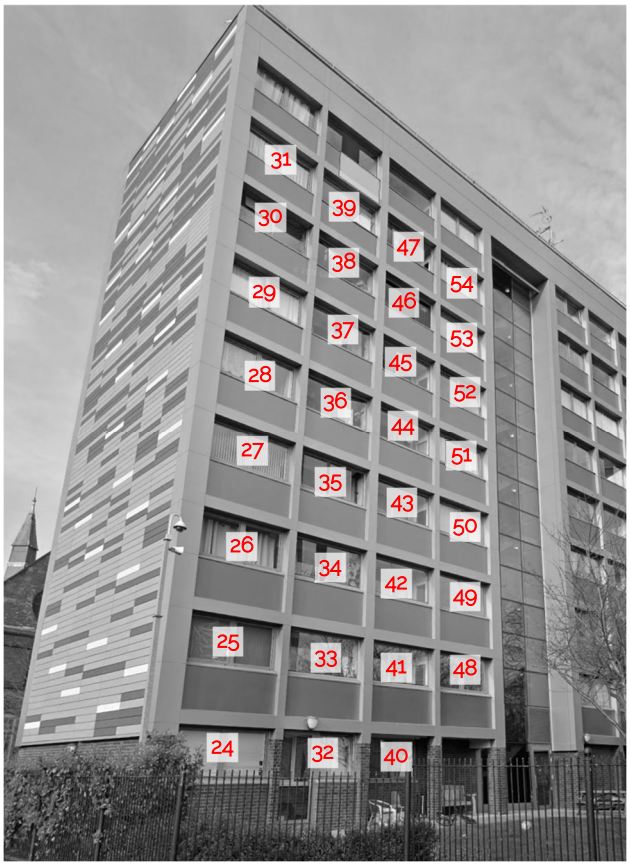
6.0 Window Schedules
7.0

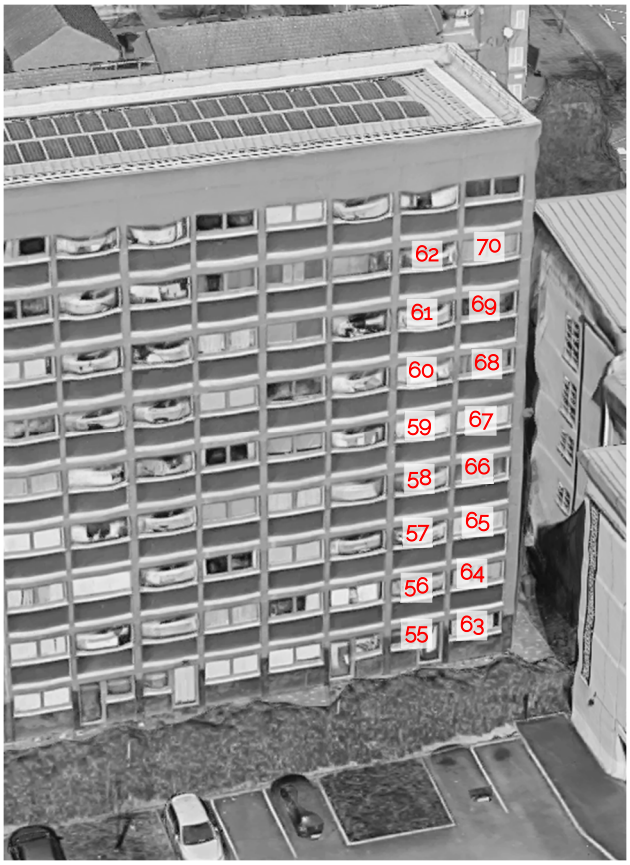


15 Epping Street & 1 Rail Place



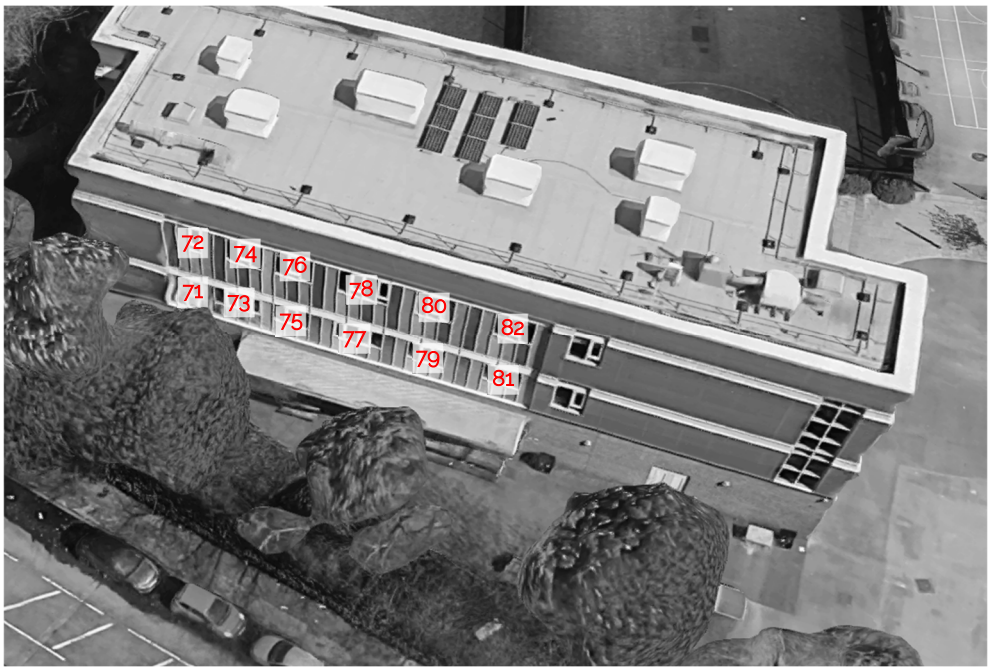
17 - 19 Epping Street & 2 Rail Place





Meredith Court

6.0 Window Schedules



Trinity CofE High School



5-9 Flatley Close



16 Epping Street

7.0 Daylight Impact Results

7.1 The Vertical Sky Component has been calculated for each of the 95 assessed windows for both the existing and proposed conditions.

7.2 As can be seen in the results below, all windows retain in excess of 80% of their current values.

7.3 The scheme is therefore compliant with BRE recommendations in relation to daylight impacts.

7.0 Daylight Impact Results

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
1	30.57	29.43	96.27%	Yes
2	32.53	31.32	96.28%	Yes
3	28.71	27.56	95.99%	Yes
4	30.23	29.01	95.96%	Yes
5	31.65	30.36	95.92%	Yes
6	28.79	27.59	95.83%	Yes
7	30.97	29.67	95.80%	Yes
8	14.02	12.78	91.16%	Yes
9	8.45	6.79	80.36%	Yes
10	22.25	20.61	92.63%	Yes
11	22.11	20.49	92.67%	Yes
12	24.55	22.69	92.42%	Yes
13	21.91	20.34	92.83%	Yes
14	24.29	22.55	92.84%	Yes
15	21.68	20.26	93.45%	Yes
16	24.71	23.00	93.08%	Yes
17	22.34	20.92	93.64%	Yes
18	25.26	23.58	93.35%	Yes
19	25.79	24.16	93.68%	Yes
20	24.05	22.59	93.93%	Yes
21	24.35	22.88	93.96%	Yes
22	24.47	23.01	94.03%	Yes
23	26.38	24.77	93.90%	Yes
24	28.22	26.46	93.76%	Yes
25	32.17	29.92	93.01%	Yes

7.0 Daylight Impact Results

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
26	34.63	31.99	92.38%	Yes
27	36.66	34.00	92.74%	Yes
28	38.04	36.18	95.11%	Yes
29	38.78	38.15	98.38%	Yes
30	38.91	38.91	100.00%	Yes
31	38.91	38.91	100.00%	Yes
32	27.64	25.80	93.34%	Yes
33	31.67	29.30	92.52%	Yes
34	34.27	31.42	91.68%	Yes
35	36.49	33.58	92.03%	Yes
36	37.98	35.95	94.66%	Yes
37	38.78	38.06	98.14%	Yes
38	38.91	38.91	100.00%	Yes
39	38.91	38.91	100.00%	Yes
40	27.28	25.36	92.96%	Yes
41	31.39	28.91	92.10%	Yes
42	34.03	31.03	91.18%	Yes
43	36.37	33.25	91.42%	Yes
44	37.94	35.72	94.15%	Yes
45	38.78	38.00	97.99%	Yes
46	38.91	38.91	100.00%	Yes
47	38.91	38.91	100.00%	Yes
48	31.31	28.78	91.92%	Yes
49	33.97	30.89	90.93%	Yes

7.0 Daylight Impact Results

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
50	36.35	33.14	91.17%	Yes
51	37.93	35.63	93.94%	Yes
52	38.78	37.98	97.94%	Yes
53	38.91	38.91	100.00%	Yes
54	38.91	38.91	100.00%	Yes
55	24.82	23.42	94.36%	Yes
56	27.38	25.28	92.33%	Yes
57	30.39	27.19	89.47%	Yes
58	34.40	29.95	87.06%	Yes
59	38.45	33.78	87.85%	Yes
60	38.89	37.93	97.53%	Yes
61	38.91	38.91	100.00%	Yes
62	38.91	38.91	100.00%	Yes
63	21.96	20.77	94.58%	Yes
64	24.35	22.41	92.03%	Yes
65	27.53	24.16	87.76%	Yes
66	32.58	26.99	82.84%	Yes
67	38.36	31.66	82.53%	Yes
68	38.89	37.53	96.50%	Yes
69	38.91	38.91	100.00%	Yes
70	38.91	38.91	100.00%	Yes
71	34.00	32.72	96.24%	Yes
72	36.59	35.52	97.08%	Yes
73	34.09	32.80	96.22%	Yes

7.0 Daylight Impact Results

Vertical Sky Component				
Window	Existing VSC	Proposed VSC	% Retained	Meets BRE Guidance?
74	36.64	35.60	97.16%	Yes
75	34.27	33.01	96.32%	Yes
76	36.71	35.75	97.38%	Yes
77	34.49	33.29	96.52%	Yes
78	36.80	35.91	97.58%	Yes
79	34.83	33.71	96.78%	Yes
80	36.96	36.16	97.84%	Yes
81	35.18	34.14	97.04%	Yes
82	37.02	36.34	98.16%	Yes
83	26.32	25.33	96.24%	Yes
84	28.94	27.90	96.41%	Yes
85	27.86	26.76	96.05%	Yes
86	24.53	23.44	95.56%	Yes
87	26.63	25.45	95.57%	Yes
88	25.16	23.85	94.79%	Yes
89	21.22	20.08	94.63%	Yes
90	23.37	21.93	93.84%	Yes
91	20.51	18.93	92.30%	Yes
92	26.78	26.46	98.81%	Yes
93	31.86	31.21	97.96%	Yes
94	26.86	26.62	99.11%	Yes
95	28.59	28.20	98.64%	Yes

8.0 Sunlight Impact Results

8.1 BRE guidance states that only windows which face within 90° of due south need be assessed for sunlight provision. In this instance, 59 windows fall into this category.

8.2 The remaining windows face within 90° of north and do not need to be assessed.

8.3 The Annual Probable Sunlight Hours has been calculated for these windows for both the existing and proposed conditions using the methodology described previously, both over the whole year, and through the "winter months" (September 21st until March 21st)

8.4 The BRE guidance states that the sun lighting may be adversely affected if the centre of the window:

- Receives less than 25% of annual hours or less than 5% of winter hours and
- Receives less than 80% of its current sunlight hours during either period and
- Has a reduction in sunlight over the whole year greater than 4%of annual probable sunlight hours

8.5 It is clear from the wording of the above that all three clauses need to be met to qualify as an adverse impact. Thus, if the window does not meet any one of these criteria, the impact is acceptable.

8.6 The results below show that all of the assessed windows retain 80% of existing values both annually and over the winter months.

8.7 The scheme is therefore compliant with BRE guidance in relation to sunlight impacts.

8.0 Sunlight Impact Results

	Annual Sunlight Hours			Winter Sunlight Hours			
Window	Ex. Hrs Received (%)	Prop. Hrs Received	% Retained	Ex. Hrs Received	Prop. Hrs Received	% Retained	Meets BRE Guidance?
24	66.32	63.76	96.13%	19.06	19.06	100.00%	Yes
25	71.73	68.19	95.07%	20.37	20.03	98.30%	Yes
26	75.26	70.82	94.11%	23.22	20.10	86.57%	Yes
27	80.25	74.29	92.57%	27.86	22.52	80.85%	Yes
28	82.95	78.79	94.99%	30.56	26.40	86.39%	Yes
29	83.09	83.02	99.92%	30.70	30.63	99.77%	Yes
30	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
31	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
32	65.70	63.13	96.10%	17.60	17.60	100.00%	Yes
33	70.62	67.57	95.68%	19.33	18.57	96.06%	Yes
34	74.57	70.20	94.14%	22.73	19.27	84.76%	Yes
35	80.87	72.90	90.15%	28.48	22.91	80.45%	Yes
36	83.09	78.72	94.75%	30.70	26.33	85.78%	Yes
37	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
38	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
39	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
40	65.77	63.20	96.10%	17.60	17.60	100.00%	Yes
41	70.62	67.57	95.68%	19.47	18.43	94.66%	Yes
42	74.64	70.20	94.06%	22.87	19.13	83.64%	Yes
43	80.94	73.46	90.75%	28.55	22.93	80.31%	Yes

8.0 Sunlight Impact Results

	Annual Sunlight Hours			Winter Sunlight Hours			
Window	Ex. Hrs Received (%)	Prop. Hrs Received	% Retained	Ex. Hrs Received	Prop. Hrs Received	% Retained	Meets BRE Guidance?
44	83.09	79.28	95.41%	30.70	26.89	87.58%	Yes
45	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
46	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
47	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
48	66.39	63.13	95.09%	18.16	17.95	98.85%	Yes
49	75.81	71.10	93.78%	24.12	20.03	83.05%	Yes
50	82.40	74.01	89.82%	30.01	24.25	80.81%	Yes
51	83.09	81.01	97.50%	30.70	28.69	93.45%	Yes
52	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
53	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
54	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
55	48.79	47.82	98.01%	19.27	18.30	94.96%	Yes
56	57.31	49.00	85.49%	20.44	19.47	95.25%	Yes
57	63.48	57.38	90.39%	22.25	21.07	94.70%	Yes
58	73.11	61.75	84.45%	24.53	21.97	89.55%	Yes
59	82.95	71.31	85.96%	30.56	24.82	81.21%	Yes
60	83.09	82.05	98.75%	30.70	29.73	96.84%	Yes
61	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
62	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
63	45.88	45.32	98.79%	16.35	15.80	96.61%	Yes

8.0 Sunlight Impact Results

	Annual Sunlight Hours			Winter Sunlight Hours			
Window	Ex. Hrs Received (%)	Prop. Hrs Received	% Retained	Ex. Hrs Received	Prop. Hrs Received	% Retained	Meets BRE Guidance?
64	49.83	46.22	92.77%	18.02	16.70	92.69%	Yes
65	56.41	49.62	87.96%	18.85	18.16	96.32%	Yes
66	67.91	55.72	82.04%	21.97	19.13	87.07%	Yes
67	82.95	67.26	81.08%	30.56	24.69	80.79%	Yes
68	83.09	81.08	97.58%	30.70	29.18	95.03%	Yes
69	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
70	83.09	83.09	100.00%	30.70	30.70	100.00%	Yes
71	51.84	49.90	96.26%	17.33	17.19	99.20%	Yes
72	54.19	53.85	99.36%	17.88	17.53	98.06%	Yes
73	50.87	49.34	97.00%	17.53	17.26	98.42%	Yes
74	54.26	54.12	99.74%	17.88	17.81	99.61%	Yes
75	51.21	50.03	97.70%	17.74	17.60	99.22%	Yes
76	54.68	54.47	99.62%	17.88	17.88	100.00%	Yes
77	52.60	50.80	96.57%	17.88	17.60	98.45%	Yes
78	54.68	54.61	99.87%	17.88	17.88	100.00%	Yes
79	53.22	51.28	96.35%	17.88	17.88	100.00%	Yes
80	54.68	54.68	100.00%	17.88	17.88	100.00%	Yes
81	53.01	51.77	97.65%	17.88	17.88	100.00%	Yes
82	54.68	54.68	100.00%	17.88	17.88	100.00%	Yes

9.0 Sunlight To Neighbouring Open Spaces

9.1 Residential gardens and amenity spaces are generally assessed using the probable sunlight hours test, but only on March 21st. The guidance describes a well-lit space as being one which receives at least 2 hours of direct sunlight on this date over 50% of its area.

9.2 BRE guidance also uses the "80%" rule for this test, whereby the effects are considered acceptable if the remaining sunlight is in excess of 80% of the existing level. This clause applies if the space is reduced to less than 50% of the area well sunlit.

9.3 This assessment has been run for the open space of the neighbouring property to the north of the site as identified below. Although it is unclear if either space is actually used for amenity, there is the potential for it to be so, and so it has been assessed for completeness.

9.4 As can be seen, the space retains almost 100% of existing sunlight hours.

9.5 The scheme is therefore compliant with the BRE guidance in relation to sunlight impacts to gardens and overshadowing.



Amenity Sunlight Hours				
Garden	Existing Area Receiving 2 Hours	Proposed Area Receiving 2 Hours	% Retained	Meets BRE Guidance?
G1	94.6%	94.4%	99.79%	Yes

10.0 Conclusions

10.1 Using industry standard methodology, we have made numerical analyses to ascertain the effects of the proposed extension of Linford Gardens, Boundary Lane, Manchester, and the levels of change in daylight and sunlight for the windows and gardens of the neighbouring properties.

10.2 The main criteria used in this analysis to show compliance are the Vertical Sky Component for daylight impacts and Annual and Winter Probable Sunlight Hours for sunlight impacts

10.3 As has been shown, the effect on VSC is within the 80% guidance value in all cases.

10.4 There will therefore be no adverse impact on neighbouring residents in terms of daylight.

10.5 In terms of sunlight, all of the assessed windows retain 80% of existing sunlight levels both annually and over the winter months.

10.6 The nearest neighbouring open space retains 2 hours of sunlight on March 21st over almost 100% of its existing areas.

10.7 The scheme is therefore fully compliant with BRE guidance in relation to sunlight impacts.

10.8 From a planning perspective therefore, it is the conclusion of this report that the proposed development is entirely acceptable for planning, in daylight and sunlight terms.

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