
Rochdale Cornerstone Development – Block A

Daylight and Sunlight Analysis

Daylight and Sunlight Impact Statement

March 2022



Revision Schedule

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Rev	Date	Details	Prepared by	Reviewed by	Approved by
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1 Introduction

It is proposed to construct a new building comprising 8 flats on an area of open space along Whitworth Road and Derwent Street in Rochdale. This building forms part of a larger proposal of three residential buildings in the area and is referred to as Block A of the Cornerstone development. During the consultation process with the local planning authority it was recommended that a daylight and sunlight impact assessment on the buildings surrounding Block A was carried out. Planning for Sustainability was appointed to analyse the effect that the new Block A building on the residential properties around the development site.

Site and development

The proposed new building location is currently an open space along Derwent Street and Whitworth Road. Figure 1 provides an overview of the proposed development site and figure 2 provides an overview of the proposed site layout.

There are 4 blocks of buildings around the proposed development site that have windows facing the proposed development that may be affected in terms of daylight and sunlight:

- Whitworth Road 85,87 & 89
- Industry Road 81,83,85 & 87
- Grouse Street 2-14 even
- Derwent Road 1,3,5,& 7

The properties on Industry Road and Grouse Street have private outdoor spaces facing the development. The BRE guidance suggests that front gardens should not be considered when assessing sunlight on open space. Although these spaces are at the rear of these dwellings, the nature of their location and low boundary fences facing public space, makes them in terms of sunlight more like front gardens and they are being used for storage and access rather than for recreational use. For this reason, they were excluded from the scope of the assessment.



Figure 1. Site Location overview

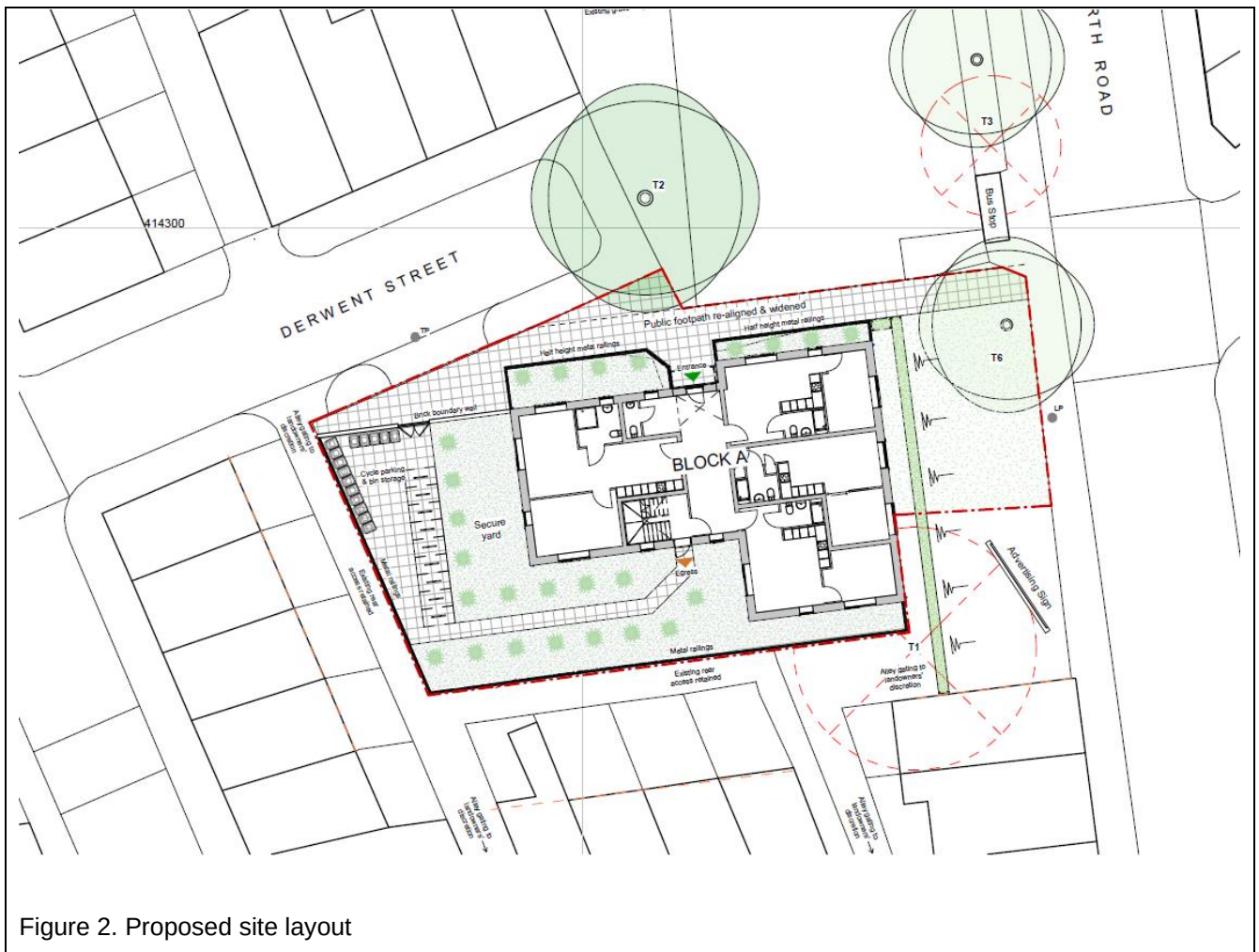


Figure 2. Proposed site layout

2 Methodology and assessment criteria

2.1 Planning and design

The effects of the proposed buildings on the availability of daylight on the existing buildings have been considered. The appraisal has been carried out using the methodology set out by Paul Littlefair in BR209 “*Site layout planning for daylight and sunlight: a guide to good practice*” (2012) (BRE Trust)

Light from the sky

It is important to safeguard the daylight that is available for nearby buildings in living rooms, kitchens and bedrooms. The Vertical Sky Component (VSC) is a measure of available daylight on a particular surface or window. The guidelines in the BRE209 document state that where a window has a VSC of 27 % or more daylighting is unlikely to be affected. In cases where the VSC is less than 27%, it is unlikely that a change in daylighting will be noticeable if a reduction in VSC is not less than 0.8 times the original value. Where information about internal layout is available a further test is the reduction in the area with a view of the sky is not more than 20%.

Where a room has more than 1 window the average weighted VSC should be used.

The VSC has been determined using the Virtual Environment building modelling software by IES (version 2021.4.0.0).

Sunlight Availability

If a living room of an existing dwelling has a window facing with 90 degrees of due south and any part of a new development subtends an angle of more than 25 degrees to the horizontal measured from the centre of the window in a vertical section perpendicular to the window then the sunlighting of the existing dwelling may be adversely affected. This will be the case if the centre of the window meets all of the following three criteria:

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

The APSH has been determined using the Virtual Environment building modelling software by IES (version 2021.4.0.0).

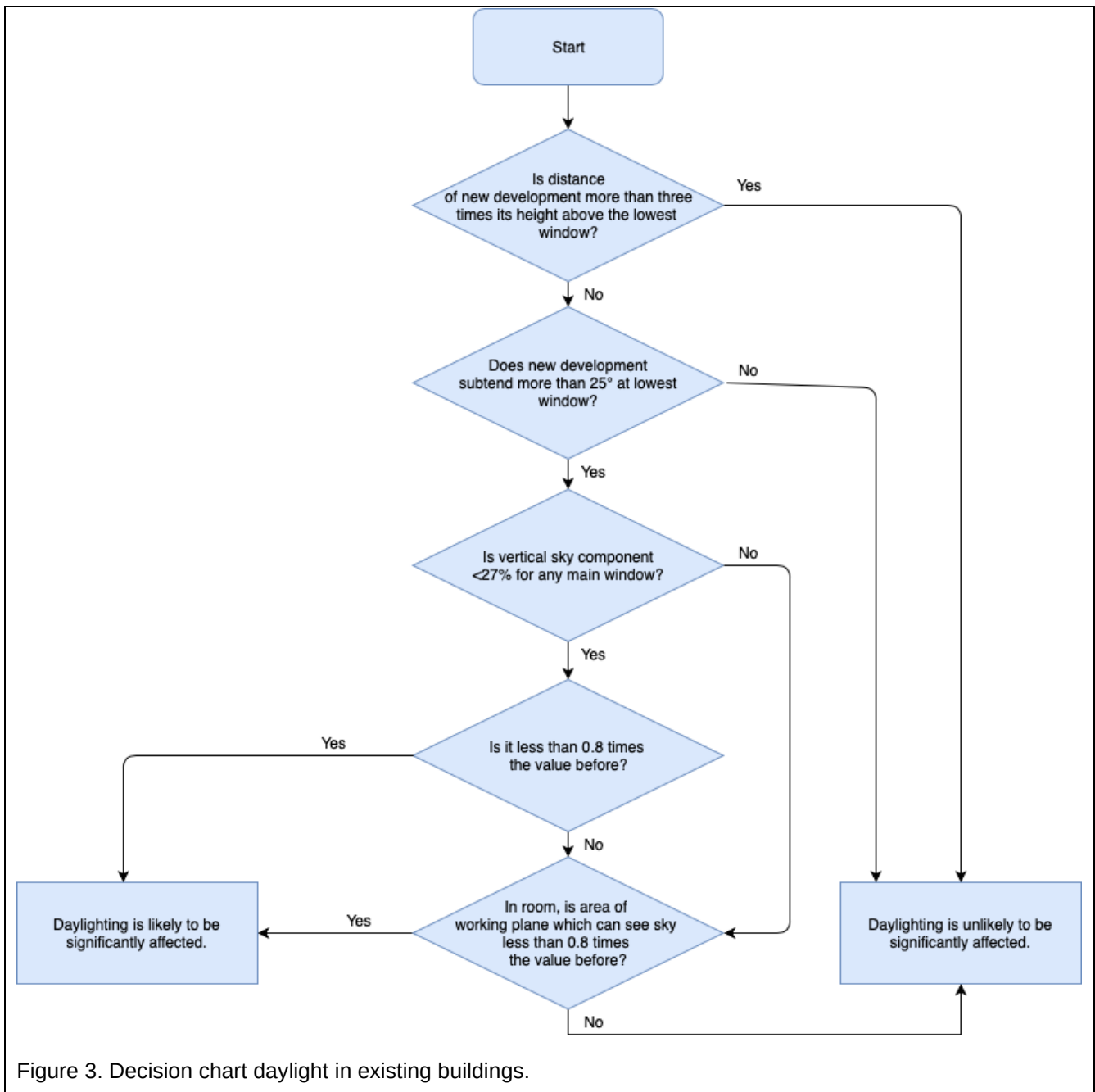


Figure 4 provides an overview of the model used for the assessment of daylight effects.



Figure 4 Birds-eye view of the proposed development and surrounding buildings

3 Results

3.1 Vertical Sky Component

There are 4 blocks of buildings around the proposed development site that have windows facing the proposed development that may be affected in terms of daylight:

- Whitworth Road 85,87 & 89
- Industry Road 81,83,85 & 87
- Grouse Street 2-14 even
- Derwent Road 1,3,5,& 7

Of these four blocks only the properties of Derwent Street had front facing windows towards the proposed development site. The internal layout of the surrounding properties was unknown and the use of the rooms behind each of the windows was therefore assumed based on a visual inspection from the public road.

Bathrooms are not normally considered in a daylight and sunlight assessment. Because the room use is based on unverified assumptions bathroom windows have been included in this assessment for completeness. The results for each of the dwellings has been listed in the table in Appendix A.

All relevant windows have a VSC that is greater than 27 both in the baseline scenario as after construction of the proposed development would be completed, with the exception of the windows that serve the kitchen/dining room at Grouse Street 2 and 4. The available daylight to these windows is mainly blocked by the existing building at Industry Road. There is no significant change as a result of the proposed building.

3.2 Sunlight Availability

Only windows of main rooms that face within 90 degrees of due south must be considered when analysing sunlight availability. Only the houses along Derwent Street fall in this category and have been considered. The results are shown in table 1 below. It is clear that all of the relevant windows receive adequate sunlight both in the baseline scenario as when construction of the proposed development would be completed.

Table 1. Effect of the proposed development on sunlight availability at the main rooms in Derwent Street

<i>Dwelling</i>	<i>Baseline</i>		<i>Post construction</i>	
	APSH	WPSH	APSH	WPSH
<i>Derwent Street 1</i>	74	32	70	28
<i>Derwent Street 3</i>	71	31	66	26
<i>Derwent Street 5</i>	71	31	65	25
<i>Derwent Street 7</i>	72	32	65	26

4 Discussion and conclusion

The effects of the proposed development of the new Block A on both daylight availability and sunlight availability on neighbouring properties was examined.

It is concluded that the proposed new development will not have a significant effect on any of the surrounding buildings with regards to daylight or sunlight.

Appendix 1 Daylight Availability on Neighbouring Properties

Table 1. Effect of the proposed development on sunlight availability at the windows of neighbouring properties

Street	House	Window	Likely use	VSC existing	VSC new	Fraction
<i>Industry Road</i>	87	1	Bedroom	37.63	33.03	0.88
		2	Kitchen/Dining room	36.28	27.99	0.77
	85	1	Bathroom	37.90	34.51	0.91
		2	Bedroom	37.59	33.93	0.90
		3	Kitchen/dining room	35.86	30.44	0.85
	83	1	Bathroom	37.34	34.63	0.93
		2	Bedroom	37.18	34.56	0.93
		3	Kitchen/ Dining room	33.89	29.67	0.88
	81	1	Bathroom	36.6	35.12	0.96
		2	Kitchen/dining room	33.26	31.49	0.95
<i>Whitworth Road</i>	89	1	Unknown	33.27	29.46	0.89
	87	1	Unknown	28.96	27.66	0.96
		2	Unknown	27.61	27.40	0.99
	85	1	Unknown	31.08	30.9	0.99
		2	Unknown	29.71	29.19	0.98

Street	House	Window	Likely use	VSC existing	VSC new	Fraction
<i>Grouse Street</i>	2	1	Bedroom	31.23	30.06	0.96
		2	Bathroom	33.25	32.84	0.99
		3	Kitchen/dining room	24.15	23.80	0.99
	4	1	Bedroom	31.14	30.57	0.98
		2	Bathroom	35.00	34.29	0.98
		3	Kitchen/dining room	15.47	15.47	1.00
	6	1	Bedroom	37.19	36.04	0.97
		2	Bathroom	38.08	37.29	0.98
		3	Kitchen/dining room	32.93	30.95	0.94
	8	1	Bedroom	38.06	36.76	0.97
		2	Bathroom	38.55	37.56	0.97
		3	Kitchen/dining room	35.90	33.72	0.94
	10	1	Bedroom	38.09	36.84	0.97
		2	Bathroom	38.60	37.67	0.98
		3	Kitchen/dining room	36.54	33.93	0.93
	12	1	Bedroom	37.95	36.95	0.97
		2	Bathroom	38.53	37.84	0.98
		3	Kitchen/dining room	36.40	34.11	0.94
	14	1	Bedroom	37.80	36.93	0.98
		2	Bathroom	38.35	37.92	0.99
		3	Kitchen/dining room	36.17	34.46	0.95

<i>Street</i>	<i>House</i>	<i>Window</i>	<i>Likely use</i>	<i>VSC existing</i>	<i>VSC new</i>	<i>Fraction</i>
<i>Derwent Street</i>	1	1	Bathroom	39.01	38.45	0.99
		2	Bedroom	38.95	38.41	0.99
		3	Living room	36.93	35.55	0.96
	3	1	Bathroom	38.94	38.25	0.98
		2	Bedroom	38.93	38.20	0.98
		3	Living room	37.42	35.39	0.95
	5	1	Bathroom	38.96	38.19	0.98
		2	Bedroom	39.11	38.16	0.98
		3	Living room	37.53	34.90	0.93
	7	1	Bathroom	39.30	38.10	0.97
		2	Bedroom	39.32	37.97	0.97
		3	Living room	37.78	34.73	0.92