

BRE Client Report

Daylight and sunlight assessment for proposed development at Fitzalan Road, Arundel

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Introduction

It is proposed to develop an area of Fitzalan Road, Arundel. The development includes the demolition of the existing structures on sites currently used as industrial buildings (Blastreat - industrial cleaning and finishing) and an unoccupied house, and construction of a new building containing retirement apartments.

This report assesses loss of daylight and sunlight to the nearest domestic properties surrounding the site. The results are compared with the guidelines contained within the BRE Report "Site layout planning for daylight and sunlight: a guide to good practice".

The calculations are based on proposed site plan 1650 51 and proposed elevations 1650 57 - 59, all dated December 2017 by David James Architects. These were used in conjunction with an Ordnance Survey map of the site and surrounding area and a BRE site visit to inspect and measure existing buildings on 25th May 2017. Where details of surrounding buildings could be sourced or provided, they were also used in the calculations.



Methodology

Loss of daylight and sunlight to existing buildings

Guidance on the loss of light to existing buildings following construction of new development nearby is given in the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice'. This report is widely used by local authorities to help determine planning applications. The assessment has been carried out with reference to the second edition of the report, which was published in October 2011.

The BRE Report states that the guidelines are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

The BRE guidelines state that the advice given is advisory and although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design.

Loss of daylight – Obstruction angle and distance from development

In the first instance, the BRE Report recommends the calculation of the obstruction angle. This is the angle subtended by the new development to the centre of the lowest window in an existing building, in a plane perpendicular to the window wall. If this angle is less than 25° for the whole of the development, then it is unlikely to have a substantial effect on the diffuse skylight enjoyed by the existing building.

The BRE Report also states that loss of light to existing windows need not be analysed if the distance of each part of the new development from the existing windows is three or more times its height from the centre of the existing window. In these cases, the loss of light will be small.

Loss of daylight - Vertical sky component

In situations where the distance is closer than the above, or the obstruction angle would be more than 25°, the BRE Report recommends the calculation of the vertical sky component. This is the ratio of the direct sky illuminance falling on the outside of a window, to the simultaneous horizontal illuminance under an unobstructed sky. The standard CIE Overcast Sky is used and the ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall. The vertical sky component on a window is a good measure of the amount of daylight entering it.

A BRE computer program was used to calculate the vertical sky component, which has the same basis as the skylight indicators in the BRE Report.

The BRE Report sets out the following two guidelines for vertical sky component:

- a) Where the vertical sky component at the centre of the existing window exceeds 27% with the new development in place, then enough sky light should still be reaching the existing window.
- b) Where the vertical sky component with the new development is both less than 27% **and** less than 0.8 times its former value, then the area lit by the window is likely to appear more gloomy, and electric lighting will be needed for more of the time.

The BRE Report states that its own numerical guidelines 'should be interpreted flexibly since natural lighting is only one of many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings'.



The guidance is advisory in nature and is intended to assist with good design. There is no formal requirement to comply with the advice it contains.

Daylight distribution

The BRE report also gives guidance on the distribution of light in the existing buildings, based on the areas of the working plane (0.85m from the floor) which can and cannot receive direct skylight before and after. If 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 the diffuse daylighting of the existing building may be adversely affected.

These calculations require knowledge of room geometry. Plans were sourced of 2 Fitzalan Road and Otmers Quay from previous planning applications, which were used to inform room use and layout. However, since access was not available to the surrounding properties to confirm the layouts, these calculations carry uncertainty.

Daylight distribution calculations are not carried out at other surrounding properties since access or plans were not available.

Loss of sunlight to existing dwellings

The BRE Report recommends that loss of sunlight should be checked for main living rooms of dwellings, and conservatories, if they have a window facing within 90° of due south.

According to the BRE Report, if the centre of the window can receive more than one quarter of annual probable sunlight hours, including at least 5% of annual probable sunlight hours in the winter months between 21st September and 21st March, then the room should still receive enough sunlight. If the window already receives less than this, a reduction to less than 0.8 times its current value and a reduction of more than 4% of annual probable sunlight hours over the year may lead to the room it serves appearing colder and less cheerful and pleasant.

Loss of sunlight to existing gardens

For outdoor amenity areas, the 2011 edition of the BRE Report 'Site layout planning for daylight and sunlight: a guide to good practice' recommends that at least half of the space should receive at least two hours of sunlight on 21st March. If as a result of new development an amenity area does not meet the above, and the area which can receive two hours of sun on 21st March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable. Sunlight at an altitude of 10° or less does not count.

Main rear gardens to the north of the development (Otmers Quay and 2 Fitzalan Road) are to the north of their respective buildings (on the bank of the river Arun). The proposed development is therefore unlikely to significantly affect sunlight provision.

Rear gardens to Queens Lane are to the south of the site and would therefore not be impacted.

Gardens to the rear of Fitzalan Mews properties are to the west of the site. Loss of sunlight to these gardens is included in the assessment.

A BRE computer program was used to calculate the area of the gardens which would receive at least two hours of sunlight on 21st March both before (with current obstructions) and after (with proposed development in place).



Loss of daylight and sunlight

Figure 1 shows the proposal site and surrounding area, with areas analysed for loss of daylight and sunlight highlighted.

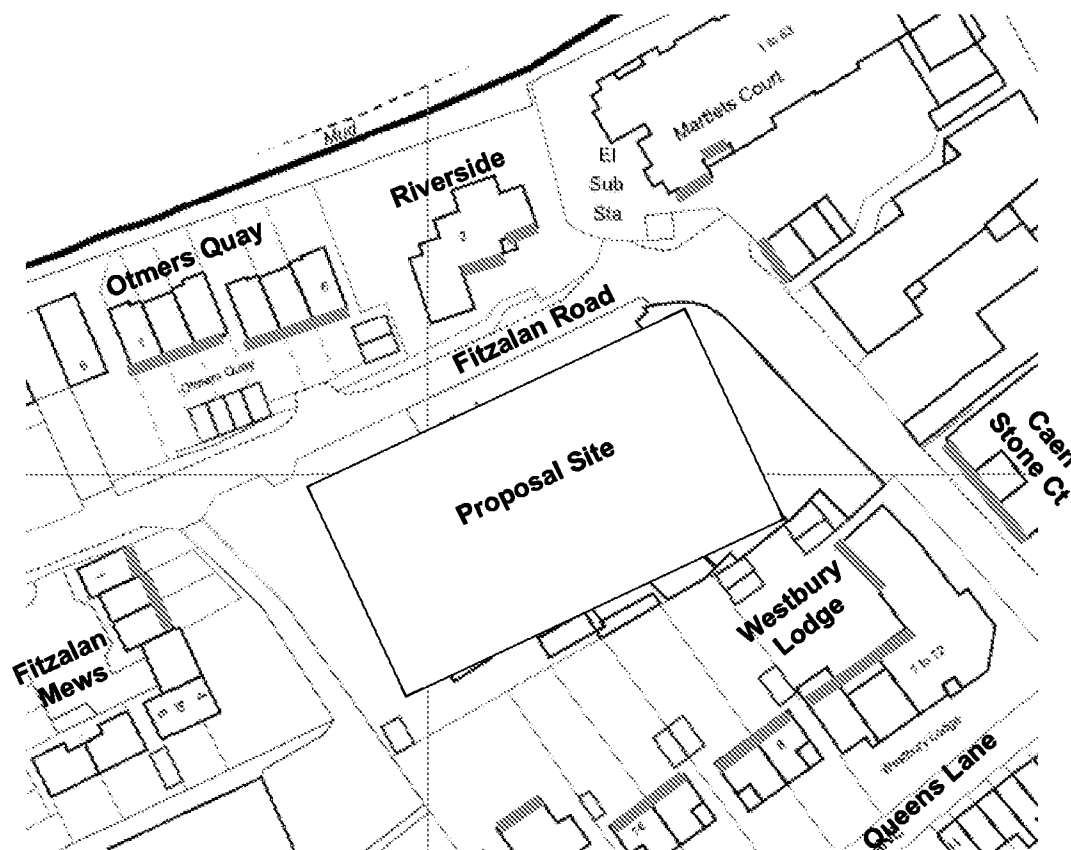


Figure 1: Site and surroundings. Areas where windows analysed are highlighted in blue. © Crown Copyright 2017.

1 – 6 Otters Quay

Otters Quay is to the north west of the site. There are six properties, which each have three windows in a similar layout (one window on the ground floor and two windows on the first floor) facing the proposed development site. Loss of daylight has been assessed via the calculation of vertical sky component before and after development. The overhangs created by porches around the front doors have been included in the calculations. The layout of windows is shown in Figure 2. The results are shown in Table 1.



Figure 2: Layout of windows analysed at 4 - 6 Otters Quay, as seen from the development site. The window arrangement is the same at 1 - 3 Otters Quay.

Table 1: Vertical sky component results for windows to 1 – 6 Otters Quay, including porch overhangs.

Property	Floor	Window	Vertical sky component BEFORE, %	Vertical sky component AFTER, %	Ratio AFTER/BEFORE
1 Otters Quay	Ground	OQ1	35.9	34.8	0.97
	First	OQ2	38.5	36.8	0.96
		OQ3	38.5	37.1	0.96
2 Otters Quay	Ground	OQ1	32.3	30.9	0.96
	First	OQ2	37.8	35.9	0.95
		OQ3	37.6	35.8	0.95
3 Otters Quay	Ground	OQ1	30.0	27.2	0.91
	First	OQ2	36.7	34.1	0.93
		OQ3	37.5	35.1	0.94
4 Otters Quay	Ground	OQ1	34.8	28.6	0.82
	First	OQ2	38.7	33.8	0.87
		OQ3	38.6	34.1	0.88
5 Otters Quay	Ground	OQ1	34.8	27.6	0.79
	First	OQ2	38.4	33.0	0.86
		OQ3	38.0	32.8	0.86
6 Otters Quay	Ground	OQ1	32.6	26.2	0.81
	First	OQ2	38.5	32.5	0.84
		OQ3	38.6	32.7	0.85

All windows analysed at Otters Quay would meet the BRE guidelines for vertical sky component, since the values would either be 27% or greater with the proposed development in place, or more than 0.8 times that before. Loss of daylight would be small and not significant.

A drawing obtained from planning application AB/153/08 suggests that window OQ1 lights a kitchen area. Daylight distribution calculations were performed for this room at 1 – 6 Otters Quay using layout



estimates based on the plans. The percentage of each kitchen with a view of the sky from the working plane was calculated before and after development. The results are shown in Table 2. There is uncertainty in these results as the layout of rooms could not be confirmed.

Table 2: Vertical sky component results for windows to 1 – 6 Otters Quay, including porch overhangs.

Property	Floor	Window / room	Percentage of room with a view of the sky BEFORE, %	Percentage of room with a view of the sky AFTER, %	Ratio AFTER/BEFORE
1 Otters Quay	Ground	OQ1 / Kitchen	98%	98%	1.00
2 Otters Quay	Ground	OQ1 / Kitchen	97%	97%	0.99
3 Otters Quay	Ground	OQ1 / Kitchen	97%	96%	0.99
4 Otters Quay	Ground	OQ1 / Kitchen	98%	90%	0.92
5 Otters Quay	Ground	OQ1 / Kitchen	97%	85%	0.87
6 Otters Quay	Ground	OQ1 / Kitchen	98%	80%	0.82

All kitchens would meet the daylight distribution guidelines in the BRE Report since the area of the room which would have a view of the sky with the proposed development in place is not reduced to less than 0.8 times that before. Rooms on the first floor would also be expected to meet the BRE guidelines, unless they were significantly deeper than the assumed kitchens.

Since the windows analysed at Otters Quay face southerly towards the site, loss of sunlight has also been assessed. Probable sunlight hours have been calculated before and after development. Plans suggest that the windows light kitchens and bedrooms, in which case loss of sunlight would be less of an issue. However, all windows are included in the analysis for completeness. The results are shown in Table 3.

**Table 3:** Probable sunlight hours results for windows to 1 – 6 Otters Quay, including porch overhangs.

Property	Floor	Window	Probable sunlight hours, ANNUAL BEFORE, %	Probable sunlight hours, WINTER BEFORE, %	Probable sunlight hours, ANNUAL AFTER, %	Probable sunlight hours, WINTER AFTER, %	ANNUAL Ratio AFTER/ BEFORE	WINTER Ratio AFTER/ BEFORE
1 Otters Quay	Ground	OQ1	76	28	75	27	0.98	0.95
	First	OQ2	84	29	82	28	0.98	0.95
		OQ3	84	30	82	28	0.98	0.95
2 Otters Quay	Ground	OQ1	66	23	64	21	0.97	0.91
	First	OQ2	80	29	78	27	0.97	0.92
		OQ3	76	28	74	26	0.97	0.93
3 Otters Quay	Ground	OQ1	57	23	53	19	0.93	0.83
	First	OQ2	77	29	74	27	0.96	0.91
		OQ3	80	30	77	27	0.96	0.91
4 Otters Quay	Ground	OQ1	74	27	68	19	0.89	0.71
	First	OQ2	84	30	79	25	0.94	0.83
		OQ3	84	30	80	25	0.95	0.84
5 Otters Quay	Ground	OQ1	69	25	60	16	0.87	0.63
	First	OQ2	81	29	76	24	0.94	0.83
		OQ3	77	28	72	23	0.94	0.83
6 Otters Quay	Ground	OQ1	66	22	58	14	0.89	0.66
	First	OQ2	84	29	79	24	0.94	0.82
		OQ3	84	30	79	24	0.94	0.82

All windows would comfortably meet the loss of sunlight guidelines in the BRE Report since the windows would receive more than 25% of annual probable sunlight hours, including more than 5% in the winter months between 21st September and 21st March, with the proposed development in place.



Riverside – 2 Fitzalan Road

The front of the property at Riverside (2 Fitzalan Road) has windows facing the proposed development site. The layout of analysed windows is shown in Figure 3. Windows are located on the main front of the property and on a setback section (as seen in Figure 1 and 3). One of the windows to the main section is located under a porch overhang. Plans provided suggest that main window 1 lights a dining room, main window 2 lights a family room and main window 3 lights a bedroom. Other windows light non habitable areas. However, since access to the property was unavailable this could not be confirmed, and all windows have been included in the vertical sky component analysis for completeness. Results of the loss of daylight calculations are shown in Table 4.

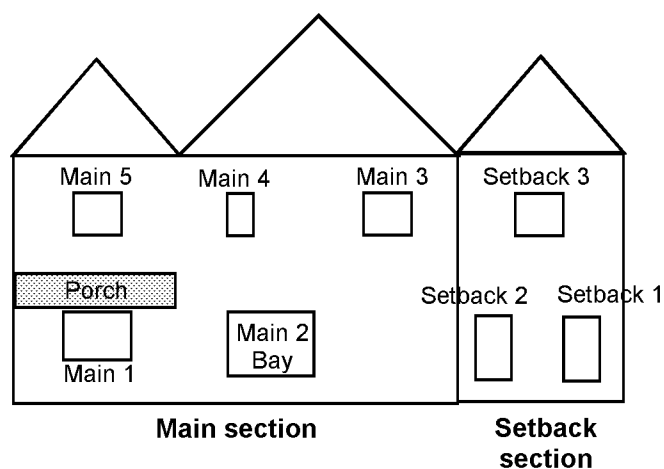


Figure 3: Layout of windows analysed at 2 Fitzalan Road, illustrative only, not to scale.

Table 4: Vertical sky component results for windows to 2 Fitzalan Road.

Floor	Window	Vertical sky component BEFORE, %	Vertical sky component AFTER, %	Ratio AFTER/BEFORE
Ground	Main section 1 – under porch	8.7	3.9	0.45
	Main section 2 bay	35.1	28.2	0.80
	Setback section 1	34.3	27.7	0.81
	Setback section 2	26.7	21.9	0.82
First	Main section 3	38.2	32.7	0.86
	Main section 4	37.8	32.9	0.87
	Main section 5	35.1	28.2	0.80
	Setback section 3	35.8	34.1	0.87

All windows, except one, would meet the BRE guidelines by being able to receive more than 27% vertical sky component with the proposed development in place, or by having a value greater than 0.8 times that before.

The window under the porch overhang (main section 1) would be below the guidelines. Overhangs restrict daylight and sunlight provision by cutting off access to light from higher angles. This may cause an overreliance on provision from an area opposite. The BRE Report gives advice in these situations stating that the calculations could be repeated without the overhang in place to assess its impact. If a window is



below the guidelines with the overhang in place, but meets them when it is removed, it is the overhang, and not the proposed development which is the primary restriction to daylight and sunlight.

The calculations for the window under the porch (main section 1) were therefore repeated without the porch in place to assess its impact. The result is shown in Table 5.

Table 5: Vertical sky component results for window in main section under porch at 2 Fitzalan Road, with the overhang removed

Floor	Window	Vertical sky component BEFORE, %	Vertical sky component AFTER, %	Ratio AFTER/BEFORE
Ground	Main section 1 – under porch (removed)	29.3	24.6	0.84

The window would meet the BRE guidelines without the overhang. It is therefore the overhang which is the primary restriction to daylight provision.

Plans provided suggest that main window 1 lights a dining room, main window 2 lights a family room and main window 3 lights a bedroom. Other windows light non-habitable areas. These plans have been used to calculate the daylight distribution to the habitable rooms before and after development. Loss of light to non-habitable areas would not be an issue. The drawings suggest that the dining room lit by the main window 1, is also lit by two windows at the rear of the property, these have been included in the calculations. The results are shown in Table 6 and carry uncertainty as the property has not been surveyed to confirm the layout.

Table 6: Daylight distribution results for windows to 2 Fitzalan Road.

Floor	Window / room	Percentage of room with a view of the sky BEFORE, %	Percentage of room with a view of the sky AFTER, %	Ratio AFTER/BEFORE
Ground	Main section 1 – under porch (dining room)	97%	94%	0.97
	Main section 2 bay (family room)	96%	83%	0.86
First	Main section 3 (bedroom)	97%	97%	1.00

The three habitable rooms analysed facing the proposed development at 2 Fitzalan Road would meet the BRE guidelines for daylight distribution since the area of each room able to see the sky with the proposed development in place would be more than 0.8 times the value before.

Since the windows face southerly towards the proposal site, loss of sunlight has also been assessed. All windows are included in the analysis, however the bay window (to a possible family room) is likely to be the most crucial for sunlight. The results are shown in Table 7.

**Table 7:** Probable sunlight hours results for windows to 2 Fitzalan Road.

Floor	Window	Probable sunlight hours, ANNUAL BEFORE, %	Probable sunlight hours, WINTER BEFORE, %	Probable sunlight hours, ANNUAL AFTER, %	Probable sunlight hours, WINTER AFTER, %	ANNUAL Ratio AFTER/ BEFORE	WINTER Ratio AFTER/ BEFORE
Ground	Main section – under overhang	13	12	7	6	0.50	0.46
	Main section – bay	77	24	68	15	0.88	0.61
	Set back section 1	70	24	61	15	0.88	0.64
	Set back section 2	52	16	45	10	0.88	0.61
First	Main section 1	84	29	78	23	0.93	0.80
	Main section 2	83	28	78	23	0.94	0.84
	Main section 3	73	24	61	15	0.88	0.64
	Set back section 1	75	24	71	20	0.95	0.83

All windows, except the ground floor window under the porch, would meet both BRE guidelines for loss of sunlight by receiving more than 25% annual probable sunlight hours, including more than 5% in the winter months.

The window under the overhanging porch would be below the guidelines. The calculations are repeated without the overhang in place, as suggested in the BRE Report. The result is shown in Table 8.

Table 8: Probable sunlight hours results for window to Riverside without overhang in place.

Floor	Window	Probable sunlight hours, ANNUAL BEFORE, %	Probable sunlight hours, WINTER BEFORE, %	Probable sunlight hours, ANNUAL AFTER, %	Probable sunlight hours, WINTER AFTER, %	ANNUAL Ratio AFTER/ BEFORE	WINTER Ratio AFTER/ BEFORE
Ground	Main section – under porch (removed)	67	24	59	16	0.88	0.66

Without the overhang in place the window would comfortably meet the guidelines, with a value of annual probable sunlight hours of 59%, and 16% in the winter months, with the proposed development in place.

Martlets Court

The nearest windows to the development at Martlets Court were assessed. These include southerly facing windows on the main building and a south west facing window on a separate building. Figure 4 shows the windows analysed on the main building. Figure 5 shows the separate building.

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Figure 4: Windows analysed at main building of Martlets Court.



Figure 5: Window analysed to separate building at Martlets Court

The results of the vertical sky component analysis are shown in Table 9.



Table 9: Vertical sky component results for closest windows to the proposed development at Martlets Court. Including balconies.

Area / Floor	Window	Vertical sky component BEFORE, %	Vertical sky component AFTER, %	Ratio AFTER/BEFORE
Main building / Ground	MC1	35.0	31.6	0.90
	MC2	34.3	31.3	0.91
	MC3	6.2	5.4	0.88
	MC4	5.6	4.3	0.76
	MC5	5.4	3.9	0.74
Main building / First	MC1	37.5	34.6	0.92
	MC2	37.2	34.7	0.93
	MC3	10.3	9.6	0.93
	MC4	9.7	8.5	0.87
	MC5	6.6	5.4	0.81
Main building / Second	MC1	39.1	37.4	0.96
	MC2	39.1	37.5	0.96
	MC3	12.6	12.1	0.96
	MC4	11.6	10.8	0.93
	MC5	7.6	6.9	0.90
Separate building / First	MC6	36.7	31.4	0.86

Of the 16 windows analysed, 14 would meet the guidelines in the BRE Report since they would have a vertical sky component with the proposed development in place of greater than 27%, or more than 0.8 times the value before.

The two windows below the guidelines would be MC4 and MC5 on the ground floor. These windows are overhung by balconies above, restricting daylight provision (as seen by the lower values). The calculations are therefore repeated without the balconies in place to assess their impact. The results are shown in Table 10.

Table 10: Vertical sky component windows at Martlets Court without balconies in place.

Area / Floor	Window	Vertical sky component BEFORE, %	Vertical sky component AFTER, %	Ratio AFTER/BEFORE
Main building / Ground	MC4	22.1	20.7	0.94
	MC5	11.7	10.3	0.88

Without the balconies in place the two windows would meet the BRE guidelines. It is therefore the balconies, and not the proposed development, primarily limiting daylight provision to the windows.

The windows analysed at Martlets Court face within 90° of due south and are therefore analysed for sunlight provision. The results are shown in Table 11.

**Table 11:** Probable sunlight hours results for windows analysed at Martlets Court. Including balconies.

Area / Floor	Window	Probable sunlight hours, ANNUAL BEFORE, %	Probable sunlight hours, WINTER BEFORE, %	Probable sunlight hours, ANNUAL AFTER, %	Probable sunlight hours, WINTER AFTER, %	ANNUAL Ratio AFTER/ BEFORE	WINTER Ratio AFTER/ BEFORE
Main building / Ground	MC1	77	27	70	20	0.91	0.75
	MC2	76	26	71	20	0.93	0.79
	MC3	10	8	9	8	0.98	0.99
	MC4	9	9	8	8	0.90	0.90
	MC5	16	15	15	13	0.91	0.90
Main building / First	MC1	79	28	78	27	0.98	0.96
	MC2	79	28	78	27	0.99	0.97
	MC3	14	12	14	12	1.00	1.00
	MC4	14	13	14	13	1.00	1.00
	MC5	19	16	19	16	1.00	1.00
Main building / Second	MC1	81	29	81	29	1.00	1.00
	MC2	81	29	80	29	1.00	1.00
	MC3	17	14	17	14	1.00	1.00
	MC4	15	15	15	15	1.00	1.00
	MC5	20	17	20	17	1.00	1.00
Separate building / First	MC6	53	17	39	11	0.73	0.66

All windows would meet the annual and winter probable sunlight hours guidelines, since they would be able to receive more than 25% annual probable sunlight hours, including more than 5% probable sunlight hours in the winter months between 21st September and 21st March with the proposed development in place, or have values greater than 0.8 times that before.

Caen Stone Court

There are windows to the first floor of Caen Stone Court facing south west across Fitzalan Road. Other windows at Caen Stone Court would have a less direct view of the development. The layout of windows is shown in Figure 6. Loss of daylight has been analysed with the results shown in Table 12.



Figure 6: Windows analysed at Caen Stone Court, as viewed from Fitzalan Road.

Table 12: Vertical sky components to windows at Caen Stone Court.

Area / Floor	Window	Vertical sky component BEFORE, %	Vertical sky component AFTER, %	Ratio AFTER/BEFORE
Caen Stone Court, south west facing, first floor	CSC 1	30.5	30.4	1.00
	CSC 2	32.4	32.1	0.99
	CSC 3	28.0	27.7	0.99
	CSC 4	28.2	28.2	1.00
	CSC 5	32.8	32.5	0.99
	CSC 6	28.9	28.7	0.99
	CSC 7	28.7	29.1	1.01
	CSC 8	33.5	33.5	1.00
	CSC 9	31.6	31.7	1.00

All windows would comfortably meet the BRE guidelines, with values only slightly different to the existing. One window would see a slight increase due to the removal of the existing buildings.

Loss of sunlight to the windows has also been assessed. The results are shown in Table 13.

**Table 13:** Probable sunlight hours to windows at Caen Stone Court.

Area / Floor	Window	Probable sunlight hours, ANNUAL BEFORE, %	Probable sunlight hours, WINTER BEFORE, %	Probable sunlight hours, ANNUAL AFTER, %	Probable sunlight hours, WINTER AFTER, %	ANNUAL Ratio AFTER/BEFORE	WINTER Ratio AFTER/BEFORE
Caen Stone Court, south west facing, first floor	CSC 1	60	20	60	20	1.00	1.00
	CSC 2	62	19	61	19	0.98	1.00
	CSC 3	46	7	45	7	0.97	1.00
	CSC 4	54	16	54	16	1.00	1.00
	CSC 5	62	20	61	20	0.97	1.00
	CSC 6	48	9	46	9	0.97	1.00
	CSC 7	55	18	56	18	1.01	1.02
	CSC 8	64	21	62	22	0.98	1.02
	CSC 9	54	12	53	13	0.98	1.07

All windows would meet the BRE guidelines since they would receive more than 25% annual probable sunlight hours, including more than 5% in the winter months between 21st September and 21st March. In some cases sunlight provision is slightly improved due to the removal of the existing buildings.

Westbury Lodge

Windows at the rear of Westbury Lodge have a view to the proposal site.

The north west facing façade does not have windows on the ground floor. The obstruction angle from the centre of the first floor windows would be 14.4°, comfortably below the 25° in the BRE guidelines. Loss of daylight would be small and not significant.

South west facing windows would have an indirect view of the development site. The closest two windows to the proposal site on the ground floor have been analysed to check daylight provision. Balconies have been included in the calculations. The results are shown in Table 14.

Table 14: Vertical sky component to worst case windows at Westbury Lodge.

Area / Floor	Window	Vertical sky component BEFORE, %	Vertical sky component AFTER, %	Ratio AFTER/BEFORE
Westbury Lodge, south west facing, ground floor, closest windows to development	1	14.9	14.6	0.98
	2	30.5	29.9	0.98

The windows would comfortably meet the BRE guidelines. Loss of daylight to Westbury Lodge would be small and not significant.

Loss of sunlight would not be an issue since the development is to the north.

Queens Lane

Properties along Queens Lane have rear windows facing northerly towards the development. The highest obstruction angle to the proposed development from the ground floor windows at 8 – 14 Queens Lane would be 20.4°, meeting the BRE guidelines.

The obstruction angle from 14A Queens Lane to the part of the development to the north would be a maximum of 19.2°. The distance between closest points to the western part of the proposed development



would be nearly 50m. The difference in height between the lowest window and the maximum height of this part would be around 11m. The distance away is therefore comfortably more than three times the height difference, and loss of daylight to all windows at the rear of Queens Lane properties would be small and not significant.

Loss of sunlight would not be an issue since the development is to the north.

Rear of Fitzalan Mews

Fitzalan Mews is to the west of the site. Windows at the rear of numbers 1 – 6 would have a view of the proposed development. Worst case windows at Numbers 1 – 3 have been assessed. Windows analysed are shown in Figure 7. The vertical sky components before and after development have been calculated. The results are shown in Table 15.

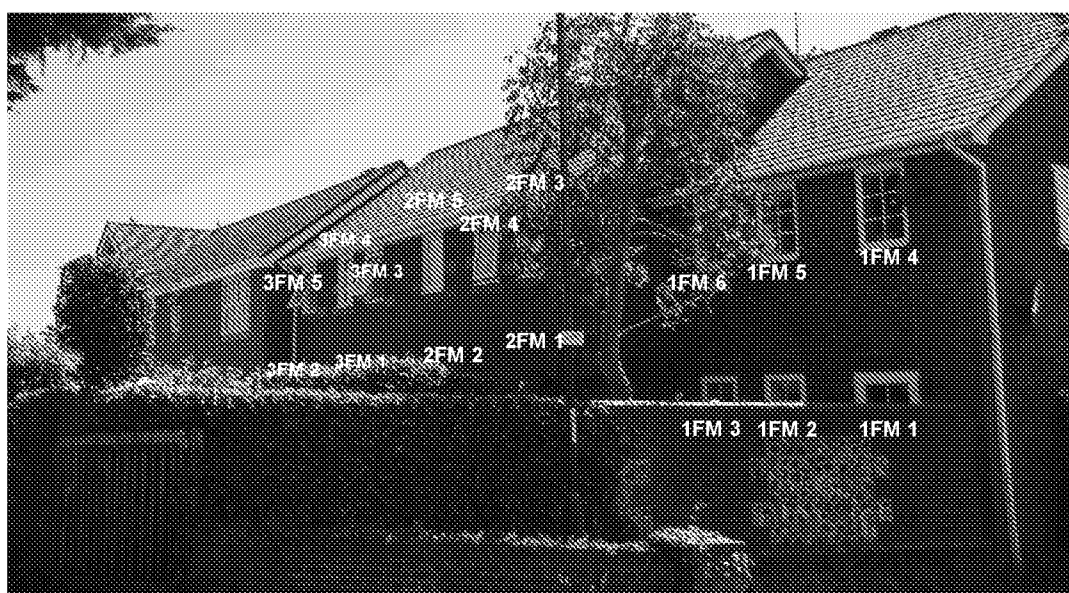


Figure 7: Rear windows facing the site analysed, as seen from Fitzalan Road.

Table 15: Vertical sky component results for closest windows to the proposed development at the rear of Fitzalan Mews.

Property	Floor	Window	Vertical sky component BEFORE %	Vertical sky component AFTER %	Ratio AFTER/BEFORE
1 Fitzalan Mews	Ground	1FM 1	32.4	29.6	0.91
		1FM 2	33.5	30.6	0.91
		1FM 3	28.9	26.7	0.92
	First	1FM 4	37.7	35.7	0.95
		1FM 5	37.3	35.1	0.94
		1FM 6	34.4	32.1	0.93
2 Fitzalan Mews	Ground	2FM 1	33.3	29.6	0.89
		2FM 2	34.8	31.2	0.90
		2FM 3	38.0	35.4	0.93
	First	2FM 4	38.0	35.4	0.93
		2FM 5	38.0	35.4	0.93
3 Fitzalan Mews	Ground	3FM 1	33.7	29.9	0.89
		3FM 2	34.8	30.8	0.88
	First	3FM 3	38.1	35.3	0.93
		3FM 4	37.8	35.1	0.93
		3FM 5	36.4	33.7	0.93



All of the windows would meet the BRE guidelines for loss of daylight since they would receive more than 27% vertical sky component with the proposed development in place, and have a value greater than 0.8 times that before.

Loss of sunlight guidelines are designed to be applied to windows facing within 90° of due south. Since the windows do not face within these bounds, loss of sunlight need not be analysed.

The properties at Fitzalan Mews are to the west of the proposal site and have the closest main gardens that have the potential to be impacted. The areas of each garden that would be able to receive two, or more, hours of sunlight on 21st March has been calculated. The results are shown in Table 16.

Table 16: Loss of sunlight to gardens at Fitzalan Mews.

Garden	Percentage of garden able to receive two or more hours of sunlight on 21 st March, BEFORE, %	Percentage of garden able to receive two or more hours of sunlight on 21 st March, AFTER, %	Ratio AFTER/BEFORE
1 Fitzalan Mews	26.5%	26.5%	1.00
2 Fitzalan Mews	31.8%	31.8%	1.00
3 Fitzalan Mews	40.6%	40.6%	1.00

The gardens at the rear of Fitzalan Mews comfortably meet the BRE guidelines since the proposed development would make no difference to the areas which would receive two, or more, hours of sunlight on 21st March.



Conclusions

The potential for loss of daylight and sunlight due to a proposed development at Fitzalan Road, Arundel, has been analysed.

The results have been compared to the recommendations the BRE Report "Site layout planning for daylight and sunlight: a guide to good practice".

All windows to Otters Court, Caen Stone Court, Westbury Lodge, Queens Lane and Fitzalan Mews would meet the BRE guidelines for loss of daylight and sunlight. Suggested kitchens at Otters Court would also meet the daylight distribution guidelines. Gardens at Fitzalan Mews would meet the loss of sunlight guidelines in the BRE Report. Other gardens would not be impacted by the development.

At 2 Fitzalan Road, all windows, except one, meet the BRE guidelines for loss of daylight and sunlight. Suggested habitable rooms also meet the guidelines on daylight distribution. The window below the guidelines is under an overhanging porch and is thought to light a dining room with other, unaffected windows. Balconies and overhangs restrict daylight and sunlight provision and may cause an overreliance from the area directly opposite. The BRE Report recommends that where balconies and overhangs are present on existing buildings the calculations could be repeated without them to assess their impact. If loss of light to a window does not meet the guidelines with the balcony in place, but does when it is removed, it is the overhang which is the primary restriction to daylight and sunlight. When the calculations are repeated without the porch, the window would meet the BRE guidelines for daylight and sunlight.

Two windows would be below the loss of daylight guidelines at Martlets Court when the impact of existing balconies are included in the calculations. All windows would meet guidelines with the balconies removed, as suggested in the BRE Report.

All windows at Martlets Court would meet the loss of sunlight guidelines.