91 Regent's Park Road – Daylight and Sunlight Report

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Report prepared for Mr Zamain Keshwani by Ian Preston, Principal Consultant at Abitar, 20th September 2017.
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Executive Summary

Abitar were appointed to produce an assessment of the impact of the proposed new residential development at 91 Regent's Park Road on the availability of daylight and sunlight in nearby existing buildings.

The report is based on the methods and guidelines recommended in the Building Research Establishment publication BR 209, *Site layout and planning for daylight and sunlight – a guide to good practice* (2011).

The analysis indicates that the proposed development is likely to have no significant impact on the availability of daylight at the second- and third-floor rear windows of the adjoining mid-terrace building, 93 Regent's Park Road. In addition, no significant impact on either daylight or sunlight levels was calculated for two worst-case lower windows considered at 89a Regent's Park Road and 1a Erskine Road on the opposite side of Erskine Road from the proposal. However, the ground-floor rear shop window at 93 Regent's Park Road fails the daylight impact test and the first-floor rear window also narrowly fails the same test.

It should be noted that the availability of daylight at the ground- and first-floor windows at the rear of 93 Regent's Park Road is already heavily obstructed by nearby existing and consented structures. These windows are therefore highly sensitive to additional obstruction. The ground-floor window is so sensitive in this regard that even lowering the height of the proposed extension to a single additional storey would still result in a failure of the daylight test. The consented development at 6 Erskine Road immediately to the rear, which is adding new structures and increasing the height of several existing buildings, is already reducing daylight levels at 93 Regent's Park Road and making obstructed windows more-sensitive to additional obstruction.

The ground floor at 93 Regent's Park Road is occupied by a shop comprising a single room extending from the front to rear elevation. The shop floor also receives daylight through larger openings in the south-east-facing front elevation that will not be affected by the proposed development. Electric lighting is already in use during daylight hours. These factors will reduce the actual impact of the proposed extension in terms of daylight, total light and energy usage.

The guidelines for existing buildings in BR 209 are primarily intended for habitable rooms in dwellings. BR 209 does not specify whether they should also be applied to retail premises. Arguably daylight is not essential in the shop at 93 Regent's Park Road. The use of electric lighting supports this argument.

BR 209 states that its own guidance “is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location.” It is not uncommon for low-level windows in built-up urban locations such as inner London to be adversely affected by extensions, particularly where the affected windows and/or the extension lie close to the boundary between properties.

Introduction

This report relates to the proposed new residential development at 91 Regent's Park Road, London NW1. Abitar were appointed to produce an assessment of the impact of the proposed extension on the availability of daylight and sunlight in existing nearby buildings.

BR 209

BR 209, *Site layout and planning for daylight and sunlight – a guide to good practice* (2011), describes procedures for assessing the impact of new developments on the availability of daylight and sunlight in existing buildings. These procedures are discussed in greater detail below.

It should be noted that BR 209 states its own guidance "is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location" (p. v). Page 1 says: "The advice given here is not mandatory… Although it gives numerical guidelines, these should be interpreted flexibly since natural lighting is only one of many factors in site layout design."

Project and Site Description

91 Regent's Park Road is a four-storey end-of-terrace building on the north corner of the junction with Erskine Road, with a single-storey attached building with a flat roof (Primrose Valet) to the rear on Erskine Road. The building comprises retail premises on the ground floor, with basements, and flats above on the first to third floors.

The proposed new development will add a residential loft conversion with rear dormer window on the fourth floor of the main building and three additional floors of flats above the existing single-storey retail premises.

93 Regent's Park Road is the adjoining four-storey mid-terrace property to the north-east. There is a retail premises on the ground floor and the first to third floors are believed to comprise flats. There is a small two-storey outrigger at the rear, and a larger single-storey building also to the rear and separated from the main building by a small lightwell.

This analysis assesses the potential impact of the proposal on the ground- to third-floor windows closest to the boundary with number 91 in the rear elevation at 93 Regent's Park Road.

The first- to third-floor windows (shaded yellow on the drawing – right) are believed to be those of habitable rooms in the flats. The ground-floor window (shaded orange) is at the back of the shop floor. BR 209 only requires the lowest window in each window wall to be assessed but because the lower windows failed the daylight test, upper windows were also assessed in order to establish the extent of the proposal's impact.

Mr Keshwani, the owner of the development site, believes the first- to third-floor rear windows are bedrooms. On this basis, and owing to their relative size, orientation and outlook, it is assumed that living rooms are at the front of the building facing south-east. For this reason, and owing to their north-western orientation, the rear windows require daylight analysis but not sunlight analysis.

The rear windows immediately to the north-east (shaded in green) – as well as the adjoining windows at 95 Regent's Park Road – are landing or WC windows, not habitable rooms, and therefore do not require daylight or sunlight analysis.

There are no windows in the side elevation of 89 Regent's Park Road (Lemonia), immediately opposite the proposed extension across Erskine Road.

89a Regent's Park Road (Erskine House) and 1a Erskine Road (Bay Tree Cottage) are the closest potentially affected buildings to the proposed development on the south-west side of Erskine Road. Both are five-storey terraced houses and are believed to comprise flats.

There are no ground-floor front windows at 89a Regent's Park Road, therefore the first-floor window is considered, as well as the ground-floor front window at 1a Erskine Road. Details of room functions were not available. Although it is likely that living rooms are located at the rear of both buildings to take advantage of the south-west orientation, it is also possible that living rooms are located at the front; therefore both daylight and sunlight assessments were carried out.

Method

Assessment of daylight and sunlight in the buildings was carried out according to the methods described in the BRE publication BR 209 – *Site layout and planning for daylight and sunlight: A guide to good practice* (2011).

Assessment of Obstructions

Each potential obstruction to daylight and sunlight on or near the development site was considered in relation to a reference point on the window of each habitable room assessed. The reference point is at the centre point of each window, with the exception of full-height windows and glazed doors, where a reference point 1.6 m above floor level is used in accordance with BR 209.

The horizontal distance of each obstruction, its height above the reference point and its position in the horizontal plane in relation to the reference point were then established using the following drawings, which were either provided by Alexander Martin Architects or downloaded from the London Borough of Camden planning applications database:-

91 Regent's Park Road, Planning issue drawings (plans, elevations and sections as proposed), Alexander Martin Architects, dwg no.s 168-AP-100–105, 200–204, 300–303, 11 Aug. 2017.

91 Regent's Park Road drawings (plans, elevations and sections as existing), Alexander Martin Architects, dwg no.s 168-EX-100–105, 200–202, May 2017.

91 Regent's Park Road, Measured Building Survey (plans, elevations and sections), Mobile CAD Surveying Solutions Ltd, dwg no.s 1940-01–09, March 2017.

95 Regent's Park Road, Planning issue drawings (plans, elevation and section), unknown architect, dwg no. WE02607-20, Aug. 2015.

89c Regent's Park Road drawings (plans, elevations and sections), Willingale Assocs, dwg no.s 84C RPR_EX_E00–E08, March 2007.

2 Erskine Road, Existing Front Elevation, truekiffin & Co. chartered architects, dwg no. 742-E'x'01, rev. A, Jan. 2013.

3 Erskine Road, Existing and Proposed Elevations, BBD Architecture & Surveying Ltd, dwg no. 17014-03, rev. S2, March 2017.

6 Erskine Road, Planning issue drawings (plans, elevations and sections), PKS Architects LLP, dwg no.s 835-010-00–03, 05 & B1, 835-02-01–05, 835-050-01–06, Feb. 2013.

Ordnance Survey 1:1250 scale location plan mapping.

Site photographs were also used to estimate by means of brick-counting the height of a small number of obstructions for which drawings were not available.

Railings and trees were not considered as potential obstructions, in accordance with paragraphs 3.3.10 and H1.2 of BR 209.

The ratio of distance:height was calculated for each potential obstruction and its angle from the window wall was measured.

All significant obstructions after development were plotted on a CAD direction finder diagram for each window (replicating Figure A8 on p. 40 of BR 209).

Vertical Sky Component

Each direction finder was superimposed on the skylight indicator (Figure A1 on p. 33 of BR 209) to establish the vertical sky component (VSC).

Sunlight Availability

The completed direction finder was superimposed on the sunlight availability indicator for London (Figure A2 on p. 34 of BR 209) and rotated as appropriate to the orientation of the window, in order to establish the percentage of annual probable sunlight hours (APSH) that rooms will receive, and the percentage of APSH in the winter months.

Impact on Daylight Levels in Existing Buildings

The procedures described in section 2.2 of BR 209 were followed in the sequence shown in the decision chart (Fig. 20, p. 10 of BR 209).

The first procedure, described in section 2.2.4 of BR 209 (p. 7), is to establish whether the distance of the new development is more than three times its height above the window reference points (i.e. a distance:height ratio of more than three).

The decision chart indicates that, in cases where the new development has a distance:height ratio of less than 3, the second procedure should be used.

The second procedure, described in section 2.2.5 of BR 209 (p. 7), is to establish whether the new development subtends an angle of more than 25°at the centre of the assessed window in a vertical plane perpendicular to the window wall.

The third procedure, described in sections 2.2.6 and 2.2.7 of BR 209 (p. 7), is to establish whether the vertical sky component (VSC) at each assessed window reference point with the proposed development in place will be less than 27% (corresponding to an angle of visible sky of less than 65°).

The fourth procedure, also described in section 2.2.7, is to establish (in cases where the VSC will be less than 27%), whether the VSC will be less than 0.8 times its former value.

A fifth procedure, described in sections 2.2.8 and 2.2.9 of BR 209 (pp. 7 & 8), is to establish the change in the area of the working plane in each room lying behind the ‘no sky line’. This procedure could not be followed owing to a lack of detailed information about the internal layouts of the assessed buildings, in particular floor and window head heights, which greatly affect the position of the no sky line. The assessment of the likelihood of a significant impact on daylighting was based on the first four procedures.

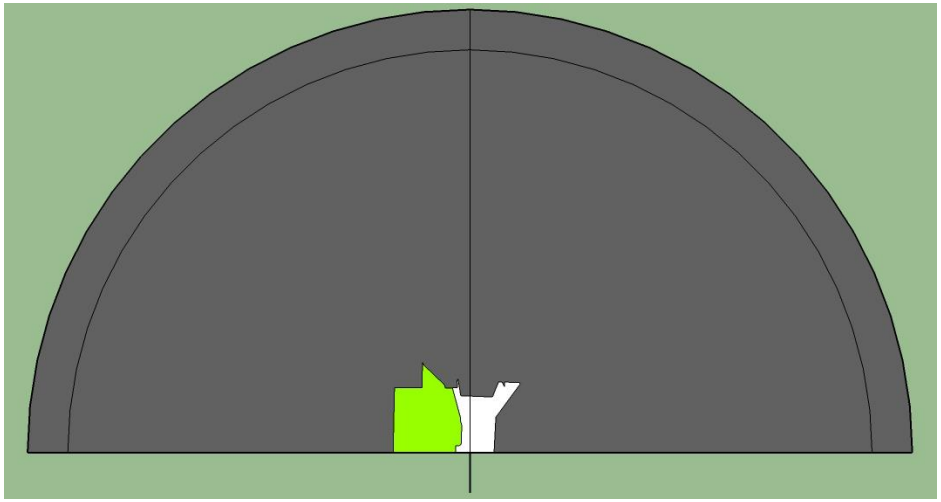
Impact on Sunlight Levels in Existing Buildings

The procedures described in section 3.2 of BR 209 were followed in sequence as required to demonstrate compliance. Further details of these procedures can be found in the Results section.

Results

Impact on Daylight Levels at 93 Regent's Park Road

Rear ground-floor window



The direction finder above shows existing and consented obstructions at the window in grey and the proposed extension in green.

Is distance of new development more than 3 x its height above window?	**No**
Does new development subtend more than 25% at window?	**Yes**
Is vertical sky component (VSC) < 27%	**Yes (10.5%)**
Is VSC less than 0.8 times its previous value?	**Yes (0.58)**

This window is currently heavily obstructed by the surrounding structures: the parapet of the existing single-storey building at 91 Regent's Park Road (Primrose Valet), the rear outrigger at 93 Regent's Park Road, and Leeder House, Core 1 and Building 2 within the consented development at 6 Erskine Road.

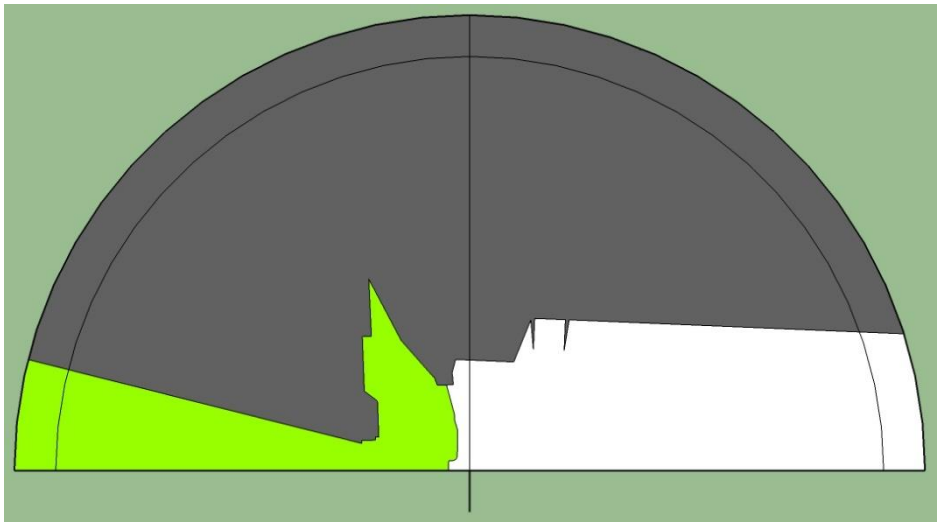
The window will be additionally obstructed by the proposed three-storey extension to the rear of 91 Regent's Park Road. The VSC will be 10.5%, below the threshold level of 27%, corresponding to an angle of visible sky of approximately 36°, and 0.58 times the current VSC.

Section 2.2.7 of BR 209 (p. 7) states that, where the VSC will be "both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear more gloomy, and electric lighting will be needed more of the time."

The analysis shows this window will be the opening most affected by the proposed development.

This is discussed below in the Conclusions section.

Rear first-floor window



The direction finder above shows existing and consented obstructions at the window in grey and the proposed extension in green.

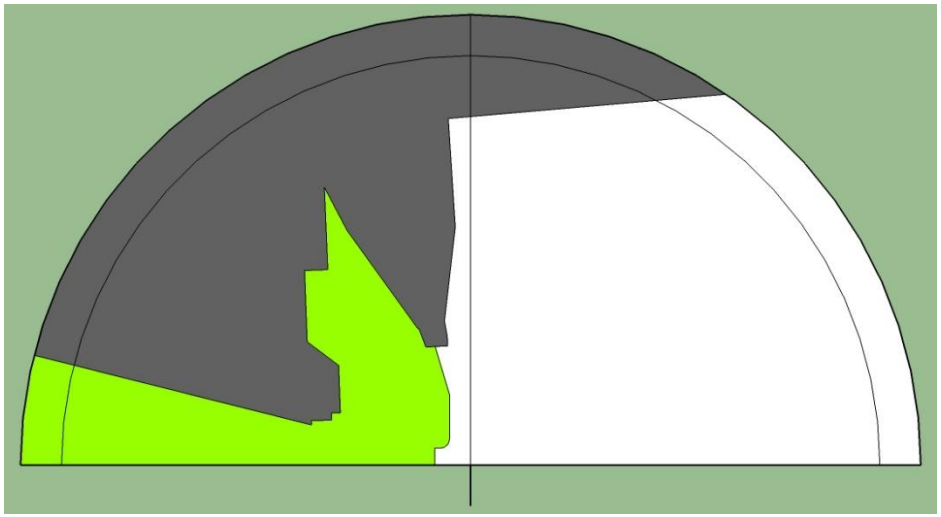
Is distance of new development more than 3 x its height above window?	**No**
Does new development subtend more than 25% at window?	**Yes**
Is vertical sky component (VSC) < 27%	**Yes (21.5%)**
Is VSC less than 0.8 times its previous value	**Yes (0.73)**

This window is currently quite heavily obstructed by the surrounding structures: the buildings on the south-west side of Erskine Road, and Leeder House, Core 1 and Building 2 within the consented development at 6 Erskine Road. It will be additionally obstructed by the proposed three-storey extension to the rear of 91 Regent's Park Road.

The VSC is below the threshold level of 27% both before and after development, and will be approximately 0.74 times its current value (< 0.8 times). Section 2.2.7 of BR 209 (p. 7) states that, where the VSC will be "both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear more gloomy, and electric lighting will be needed more of the time."

This is discussed below in the Conclusions section.

Rear second-floor window



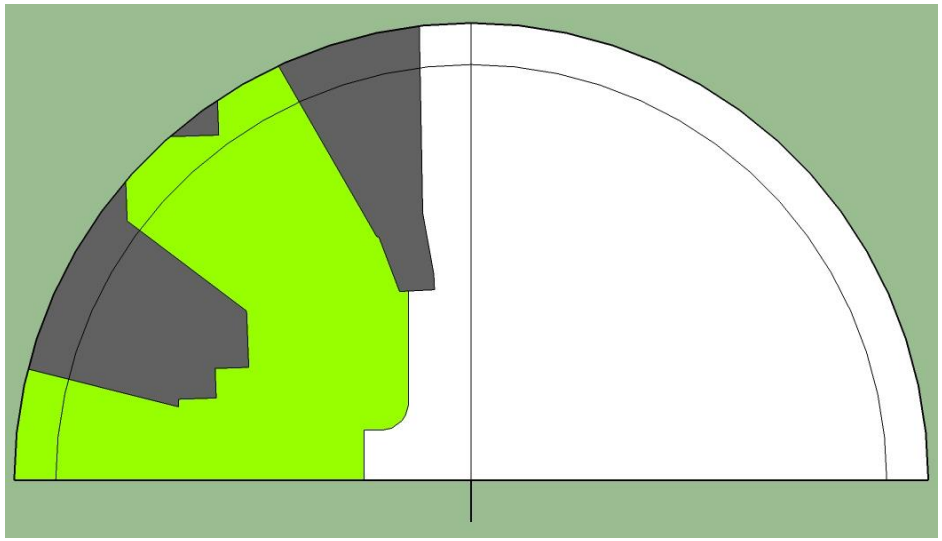
The direction finder above shows existing and consented obstructions at the window in grey and the proposed extension in green.

Is distance of new development more than 3 x its height above window?	**No**
Does new development subtend more than 25% at window?	**Yes**
Is vertical sky component (VSC) < 27%	**No (27.25%)**

This window is currently obstructed by the surrounding structures: buildings on the south-west side of Erskine Road, Leeder House within the consented development at 6 Erskine Road, and buildings on the south-east side of King Henry's Road. It will be additionally obstructed by the proposed three-storey extension to the rear of 91 Regent's Park Road.

However, the VSC will be above the 27% threshold after development. Daylighting is therefore not likely to be significantly affected.

Rear third-floor window



The direction finder above shows existing and consented obstructions at the window in grey and the proposed extension in green.

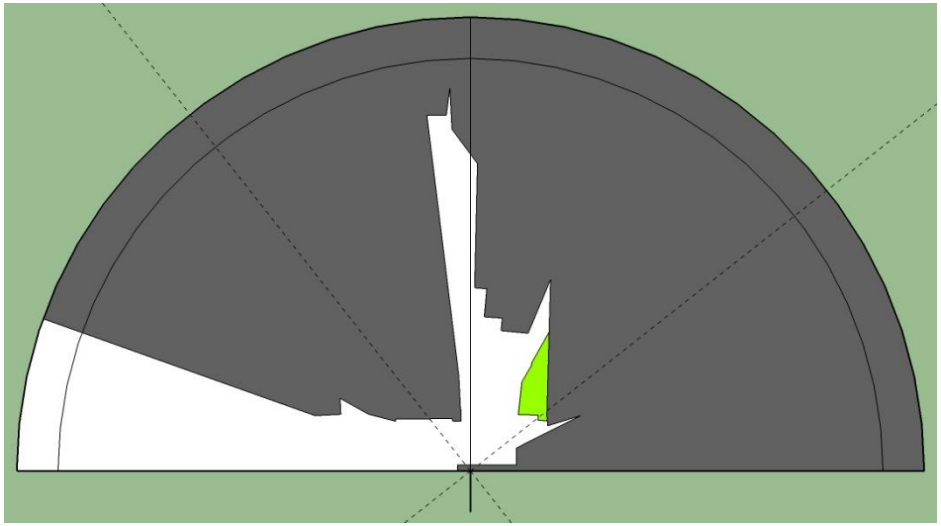
Is distance of new development more than 3 x its height above window?	**No**
Does new development subtend more than 25% at window?	**Yes**
Is vertical sky component (VSC) < 27%	**No (34.75%)**

This window is currently obstructed by the surrounding structures: buildings on the south-west side of Erskine Road, and Leeder House within the consented development at 6 Erskine Road. It will be additionally obstructed by the proposed three-storey extension to the rear of 91 Regent's Park Road.

However, the VSC will be above the 27% threshold after development. Daylighting is therefore not likely to be significantly affected.

Impact on Daylight Levels in Erskine Road

Ground-floor front window, 1a Erskine Road (Bay Tree Cottage)



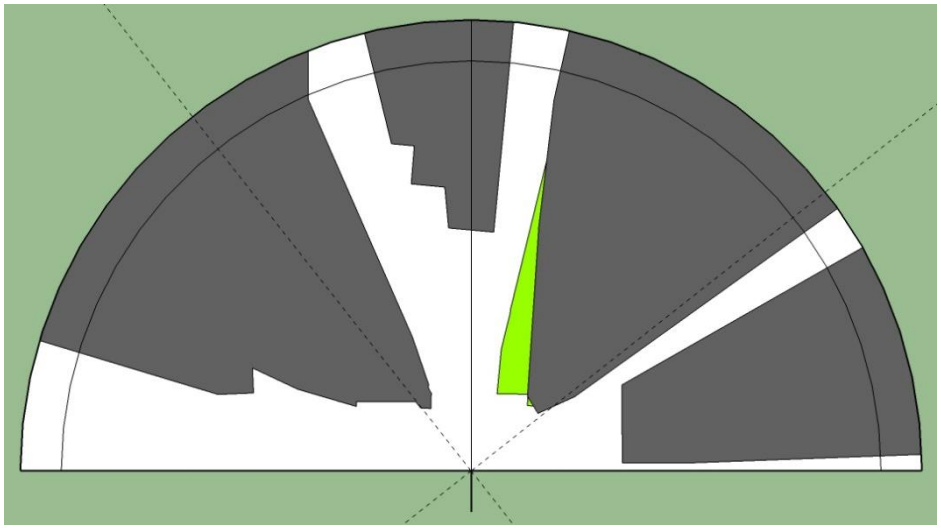
The direction finder above shows existing and consented obstructions at the window in grey and the proposed extensions in green.

Is distance of new development more than 3 x its height above window?	**No**
Does new development subtend more than 25% at window?	**Yes**
Is vertical sky component (VSC) < 27%	**Yes (24.75%)**
Is VSC less than 0.8 times its previous value	**No (0.96)**

This window is currently quite heavily obstructed by the surrounding structures: the first-floor balcony above the window, 27 King Henry's Road, Leeder House, Cores 1 and 4 and Building 2 within the consented development at 6 Erskine Road, the existing four-storey building at 91 Regent's Park Road and the projecting ground floor at 89a Regent's Park Road. It will be additionally obstructed to a small extent by the proposed rear dormer window and three-storey extension at 91 Regent's Park Road.

However, the VSC is less than 27% both before and after development and will be approximately 0.96 times its current value, well above the 0.8 threshold. Daylighting is therefore not likely to be significantly affected.

First-floor front window, 89a Regent's Park Road (Erskine House)



The direction finder above shows existing and consented obstructions at the window in grey and the proposed extensions in green.

Is distance of new development more than 3 x its height above window?	**No**
Does new development subtend more than 25% at window?	**Yes**
Is vertical sky component (VSC) < 27%	**No (30%)**

This window is currently obstructed by the surrounding structures: 27 King Henry's Road, Leeder House, Core 1 and Buildings 2 and 5 within the consented development at 6 Erskine Road, the existing four-storey building at 91 Regent's Park Road and the chimney of the single-storey building to the rear of 89 Regent's Park Road. It will be additionally obstructed to a small extent by the proposed rear dormer window and three-storey extension at 91 Regent's Park Road.

However, the VSC will be more than 27% after development. Daylighting is therefore not likely to be significantly affected.

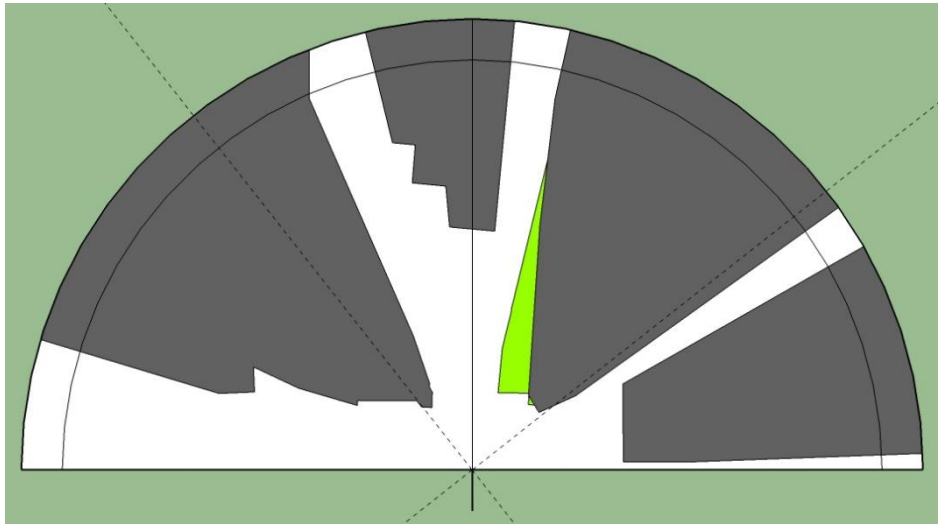
Impact on Sunlight Levels

Section 3.2.2 of BR 209 (p. 16) states that "Obstruction to sunlight may become an issue if:

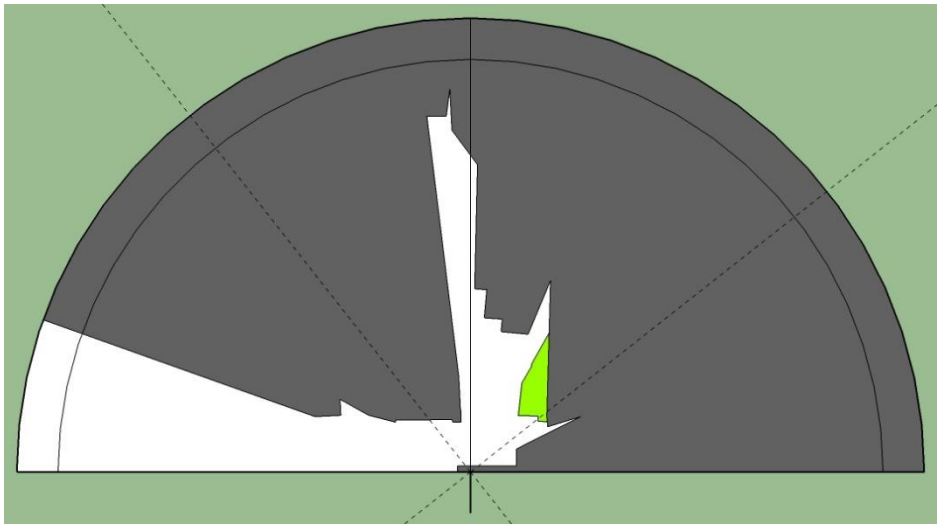
- some part of a new development is situated within 90° of due south of a main window wall of an existing building…
- in the section drawn perpendicular to this window wall, the new development subtends an angle greater than 25° to the horizontal measured from the centre of the lowest window of a main living room…"

Section 3.2.3 of BR 209 (p. 16) states that "To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings… … should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important…".

As previously stated, the rear windows at 93 Regent's Park Road face north-west and there are not believed to be any living rooms at the back of the building. For these reasons, no sunlight analysis is required.



The direction finder above shows that no part of the proposed development is situated within 90° of due south of the first-floor front window at 89a Regent's Park Road.



The direction finder above shows that a small part of the proposed development is situated within 90° of due south of the ground-floor front window at 1a Erskine Road. However, the window wall faces north-east (> 90° of due south); therefore no further sunlight assessment is required.

Sunlight levels are not likely to be affected by the proposed development.

Conclusions

All the assessed windows in Regent's Park Road and Erskine Road pass the BR 209 daylight and sunlight tests, with two exceptions.

The rear window of the ground-floor shop at 93 Regent's Park Road will have a vertical sky component (VSC) 0.58 times its pre-development value. The rear window of the first-floor flat also narrowly fails the same daylight test.

It should be noted that the pre-development VSC for the ground-floor window is 18.25%, already well below the threshold level of 27%.

Both windows are already obstructed by existing and consented buildings. Heavily obstructed windows are particularly sensitive to additional obstructions. The ground-floor window is so sensitive in this regard that even lowering the height of the proposed extension to a single additional storey would still result in a reduction in VSC of more than 20%.

The consented development at 6 Erskine Road – particularly the new Core 1 building, the increase in the height of Building 2 and the addition of a condenser enclose to the roof of Leeder House - has added to previously existing obstructions of both windows, reducing the previous VSC values and making the windows more sensitive to further obstruction.

The ground-floor window serves a shop at 93 Regent's Park Road that also receives daylight through a large window and glazed door in the south-east-facing front elevation. At the time of the daylight assessor's site visit (early afternoon on a bright day in July 2017), electric lighting was turned on in the shop. Electric lighting can also be seen on Google Streetview images of the area.

For these reasons, the actual impact of the proposed extension on levels of daylight, total light (natural and artificial) and energy usage within the shop will be less than is suggested by the result of the VSC test.

Furthermore, the guidelines for existing buildings in BR 209 are primarily intended for habitable rooms in dwellings (section 2.2.2, p. 7). It may also be applied to non-domestic buildings where there is a reasonable expectation of daylight. BR 209 lists a number of building types where this applies, but does not mention retail premises. Section 5.6.3 (p. 26) states, with reference to the design of new developments, that "In some circumstances the need for daylight at ground floor level may not be so great, eg where shops occupy the ground floor."

Arguably daylight is not essential in the shop at 93 Regent's Park Road. The existing use of electric lighting during daylight hours supports this argument.

BR 209 states that its own guidance "is purely advisory and the numerical target values within it may be varied to meet the needs of the development and its location." It is not uncommon for low-level windows in built-up urban locations such as inner London to be impacted by extensions, particularly where the affected windows and/or the extension lie close to the boundary between properties. This is the case for both the ground- and first-floor rear window at 93 Regent's Park Road, which are less than 1.5 m from the site boundary.

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