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Chartered Surveyors

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Dear Patrick,

2021/3580/P – Redevelopment of Tybalds Estate Independent review of daylight and sunlight assessment

As instructed, we have reviewed the daylight and sunlight report prepared by the Applicant's consultant, Rights of Light Consulting ("the assessment") submitted in support of the planning application for the proposed redevelopment of the land known as Tybalds Estate.

We were asked to advise on the suitability of its scope, method of assessment, criteria used, results produced, and conclusions reached therein to assist the Council in understanding the potential effects of the proposed development, so it may make an informed judgement as to their acceptability.

Our review does not extend to a detailed technical analysis of our own, nor have we checked the consultant's 3D computer model or calculations. We have assumed the assessment is accurate and simply report on the results and conclusions; although, if we feel there is reason to seek confirmation on matters affecting accuracy we have stated so below.

1. Guidelines for daylight, sunlight, overshadowing

I have included at Appendix 1 a glossary of key terminology and acronyms used in this letter, and at Appendix 2 a summary of the relevant guidelines for daylight, sunlight and overshadowing. The leading guidelines on daylight and sunlight are published by the Building Research Establishment in BR209 '*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice*' (second edition, 2011).

The applicant's assessment also summarises the relevant guidelines appropriately.

2. Planning policy and guidance

Local plans typically seek to avoid unacceptable deterioration in daylight and sunlight to surrounding buildings and unacceptable levels of overshadowing to surrounding amenity space, and to ensure provision of adequate daylight and sunlight for future occupiers of new residential development.

Regards should also be had for the National Planning Policy Framework (NPPF), the London Plan, and the Mayor of London's '*Housing Supplementary Planning Guidance*', which encourage a flexible approach in applying daylight/sunlight policies or guidance where they would otherwise inhibit making efficient use of land for housing, provided the resulting scheme would provide acceptable living standards. Account should be taken of local circumstances, the need to optimise housing capacity, and the scope for the character and form of an area to change over time.

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London Borough of Camden Requirements

The London Borough of Camden requires that the assessment of daylight and sunlight effects should be undertaken with reference to the Building Research Establishment BRE report “*Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice 2011*”.

The scope of the assessment should include those windows/rooms in the existing neighbouring properties to the development which are likely to be affected by that development (as defined in the BRE Guidance).

For daylight, the following parameters should be calculated:

1. Vertical Sky Component (VSC); and
2. No Sky Line (NSL) / Daylight Distribution (DD)

These should be used as the primary methods of measurement and should be presented on an absolute scale followed by comparative scale measuring the percentage reduction.

For sunlight, the applicant should calculate the Annual Probable Sunlight Hours (APSH) to windows of main living rooms of neighbouring properties that face within 90° of due south and are likely to have their sunlight reduced by the development massing. The results should detail the percentage of APSH both annually and in the winter months. When assessing sunlight to new units within the scheme, all main living rooms should be tested, regardless of orientation.

For the overshadowing analysis the applicant should calculate the area of any amenity space that will have at least two hours of sunlight on 21 March, the two-hour sun-on-ground assessment. The results can also be illustrated with drawings showing transient shadow as well as the assessed areas free from shadow for two hours on 21 March (spring equinox). An additional assessment can be carried out on 21 June to assess sunlight in the summer months.

3. Scope of the assessment

The assessment has considered the potential daylight, sunlight and overshadowing impacts to the surrounding properties listed below:

- | | |
|-------------------------------|---------------------------------|
| • 2-28 Orde Hall Street | • 1-56 Chancellors Court |
| • 29 Orde Hall Street | • 2-6 Boswell Court |
| • 31-35 Great Ormond Street | • 12 New North Street |
| • 37-39 Great Ormond Street | • 1-50 Blemundsbury |
| • 41 & 43 Great Ormond Street | • 1-42 Falcon |
| • 51-61 Great Ormond Street | • 1-28 Richbell |
| • 1 & 2 Barbon Close | • 1-14 Springwater |
| • 37 Queen Square | • 98 & 110 – 124 Theobalds Road |
| • 20-27 Boswell Street | • 1-42 Windmill |
| • 1-62 Boswell House | • 9-11 Dombey Street |
| • 1-56 Babington Court | |

The scope of assessment is considered appropriate. This includes locations plans incorporating 3D views but does not include spot height drawings showing the heights of the proposed blocks. Spot height drawings are useful to understand the difference between the existing and proposed condition.

4. Applicant's assessment methodology and application of the guidelines

I have reviewed the assessment methodology and am generally satisfied that it is appropriate and in accordance with the guidelines, with some qualifications, as explained below.

3D modelling and sources information

The 3D computer model appears to use a context model for the surrounding properties, although this is not stated in the report. The report does not mention how the neighbouring windows have been modelled and positioned. The proposed scheme appears to have been based on the 2D drawing information provided by the architects. I have no reason to doubt the accuracy of the 3D model, although the applicant should provide further information as to how the surrounding buildings were modelled. The model will be less accurate if the windows were positioned using brick counts, however, they may not materially alter the results.

The assessment notes that research was undertaken to obtain floor plans of the neighbouring properties, so that room uses could be identified and room layouts adopted, which is relevant to NSL testing. The properties where plans have been used is explained in the Sources of Information section of the report. Although it is generally accepted that NSL assessments using assumed room layouts have less weight as they may be less accurate, it is common for these rooms to be included in the overall daylight assessment. The Rights of Light Consulting report appears to only include the NSL results to rooms where room layouts have been obtained, resulting in several neighbouring habitable rooms remaining untested.

Assessment methodology – impacts on surrounding environment

The BRE assessment methodology has been used for assessing the effects on existing surrounding properties, including daylight (the two-part assessment of VSC and NSL) and sunlight (the two-part assessment of APSH annually and in winter) to buildings.

The assessment of impact on daylight and sunlight amenity is a two-part process: first, as a matter of calculation, whether there would be a material deterioration in conditions by reference to the BRE guidelines; and second, as a matter of judgment, whether that deterioration would be acceptable in the circumstances. The first stage can be addressed by applying the BRE assessment methodology and numerical guidelines. The second stage brings into play much wider considerations, such as:

- i) Whether the neighbouring building stands unusually close to the site boundary, including the highway, taking more than its fair share of light, such that a greater reduction in light may be unavoidable if one site is not to be prejudiced by how another has been developed. (A 'mirror-image' study can be informative in such cases.)
- ii) Whether windows in neighbouring buildings are self-obstructed by overhanging or inset balconies or other projections such as to make relatively larger reductions unavoidable even if there is a modest new obstruction opposite - in effect themselves taking away more than their fair share of light. (A 'without balconies' study can be informative in such cases.)
- iii) In historic city centres or areas characterised by modern tall buildings, high density and close proximity, a higher degree of obstruction may be unavoidable if new buildings are to match the height and proportion of existing buildings.
- iv) In areas that are designated by planning authorities for substantial growth or providing opportunities for change and sustainable regeneration, the sort of change that would be brought about by the introduction of taller, denser development is to be expected, including reductions in daylight and sunlight levels, closer proximity, loss of outlook, etc.

Rights of Light Consulting have undertaken a without balconies VSC assessment for windows located under balconies, which is considered reasonable when considering the daylight implications of developing a vacant site.

5. Effects of proposed development on existing surroundingsDaylight and sunlight to neighbouring properties

The assessment includes detailed tables of results for the daylight and sunlight assessments, including levels enjoyed in the existing and proposed conditions and the magnitude of impact, expressed as a percentage loss. Rights of Light Consulting have included non-habitable windows and rooms in the appendices. The BRE states that only habitable windows/rooms need to be considered for assessment.

The assessment applies the BRE standard numerical guidelines for daylight and sunlight to existing surrounding buildings.

Whilst significance criteria are more appropriate for an Environmental Impact Assessments (EIAs), it can be helpful to adopt it to summarise the impacts of the development on the neighbouring residential properties for the assistance of the Council and committee members. We have therefore applied the following significance criteria when discussing the results of the assessment:

Table 1 – Categorisation of magnitudes of effect

Effect satisfies the BRE guidelines	Effect does not satisfy the BRE guidelines		
	20.01% to 29.99% reduction from existing	30% to 39.99% reduction from existing	≥40% reduction from existing
Negligible change	Low magnitude of change	Medium magnitude of change	High magnitude of change

Appendix I of the BRE guide provides guidance for use in EIAs to determine the significance of impact. This takes into account the number of impacts that are outside the BRE guidelines, the magnitude of the impacts and the margin by which they are outside, the sensitivity of the receptors (in terms of the strength of their requirement for daylight and sunlight), whether the receptors have other sources of light and whether there are particular reasons why an alternative, less stringent, guideline should be applied (as advised in Appendix F of the BRE guide). See Appendix 2 to this letter for further information.

The VSC results indicate that of the 1081 domestic windows considered for assessment, 941 (87%) satisfy the BRE guidelines. The report states that of the 140 windows that fall below the BRE guidelines, 63 windows have a reduction of between 20.01% - 29.99%, 9 of which serve small kitchens. 77 windows are hampered by balconies or overhangs and a remaining 3 windows are within 35% of the existing baseline condition. The report does not state which floors or windows exceed the BRE guidelines.

The NSL results indicate that of the 425 rooms tested, 383 (90%) satisfy the BRE guidelines. The report states that 4-8 Orde Hall Street, 1-50 Blemundsbury, 1-42 Windmill, 1-42 Falcon, 1-28 Richbell and 1-56 Babington Court fall short of the BRE guidelines. The report does not state the extent of the infringements or describe which rooms are impacted beyond the BRE recommendations per property.

The report does not provide summary tables or a description of the results per property and only provides an overall summary of how the scheme performs in VSC and NSL terms and not an individual breakdown and pass rate per neighbouring property.

The properties that satisfy the BRE guidelines in VSC and NSL terms and therefore experience a negligible change are:

- 18-26 Orde Hall Street
- 10 Orde Hall Street
- 110-124 Theobalds Road
- 1-62 Boswell Street
- 12 New North Street
- 2-6 Boswell Court
- 20-25 Boswell Street
- 37 Queen Square
- 1-56 Babington Court
- 51-61 Great Ormond Street
- 1 & 2 Barbon Close
- 41-43 Great Ormond Street
- 29 Great Ormond Street
- 29 Orde Hall Street

The following properties are generally only expected to experience a low reduction beyond the BRE guidelines, with all windows/rooms remaining within 30% of the existing baseline condition.

- 8 Orde Hall Street
- 2 Orde Hall Street
- 11 Dombey Street
- 9 & 10 Dombey Street
- Bowell House
- 31-35 Great Ormond Street

The following properties are expected to experience a medium reduction beyond the BRE recommendations to isolated areas. 1-14 Springwater does have some isolated areas which will experience a high reduction in VSC terms, but these are located under balconies.

- 1-42 Windmill
- 20-25 Boswell Street
- 27-39 Great Ormond Street
- 1-14 Springwater

The following properties have the potential to experience a high reduction beyond the BRE recommendations and are discussed in more detail.

4 and 6/6a Orde Hall Street

The assessment appears to have been based on room layouts obtained from the planning portal or estate agent plans and demonstrate that of the 25 windows tested for VSC, 14 (56%) would meet the BRE guidelines. Although all windows maintain a VSC of within 35% of the existing baseline condition and all but 2 windows will remain with VSC levels of at least 15%.

The NSL results indicate that of the 16 rooms considered, 9 (56%) would meet the BRE guidelines. Generally, the NSL results indicate that there will be a significant reduction to the rooms considered.

Overall, I consider 4 Orde Hall Street to experience a low adverse effect in daylight terms and 6/6a Orde Hall Street to experience a medium/high reduction in daylight levels as a result of the development proposals.

1-50 Blemundsbury

The VSC results indicate that a significant number of windows will experience a high reduction in VSC beyond the BRE guidelines particularly on the lower floors. The report states that this is as a result of the balconies and the BRE guide does state that in this situation it is appropriate to consider the VSC impact without the balconies in place. If the VSC results are acceptable without the balconies in place, often the extent of the massing is considered appropriate as the balconies blocking high level light are deemed to be the main cause rather than the height, bulk and massing of the proposal. Rights of Light Consulting has undertaken a without balconies assessment; however, this indicates that several windows will still experience medium to high reduction in VSC levels with the balconies removed.

The NSL results indicate that 8 rooms will experience a high reduction in light beyond the BRE guidelines. Appendix 2 of the report has highlighted small kitchens and bedrooms as green, suggesting a minor reduction because of room use, which could be considered misleading as some rooms will experience a reduction of between 50% - 73%.

It is noted that the balconies do have an impact on this properties ability to receive good levels of daylight, although I consider the reduction levels to be high and some rooms will notice a significant reduction in daylight as a result of the development proposals.

1-42 Falcon

The VSC results indicate that 9 windows have the potential to experience a medium to high reduction in VSC levels. 4 of these windows appear to be situated under balconies, 3 of which appear to still experience a medium reduction beyond the BRE guidelines with the balconies removed.

The NSL results indicate that 5 rooms will experience a high reduction in light beyond the BRE guidelines.

The majority of windows/rooms within this property satisfy the BRE guidelines, although, there are a few isolated windows/rooms which have the potential to experience a noticeable reduction in daylight levels.

1-28 Richbell

The proposed development will be situated close to the south facing flank windows currently facing a vacant site. There are 8 windows which will experience a high reduction in VSC levels as a result of the proposed development. The report states that these are small kitchen and therefore should be deemed acceptable. It is not uncommon for small kitchens to be considered less important in daylight terms as the inhabitants are not expected to spend a significant amount of time in these areas.

The NSL results also show a reduction in light beyond the BRE guidelines for these rooms, with 4 rooms experiencing a high reduction.

With the exception of the kitchen areas which will experience a noticeable reduction in daylight, the majority of rooms generally satisfy the BRE guidelines.

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Sunlight

The report states that all windows satisfy the BRE guidelines, with the exception of 26 windows, 9 of which serve living rooms. The BRE states that only living rooms with a window facing within 90° of due south needs to be considered for assessment. The report does not explain which properties contain living rooms that fail to satisfy the BRE guidelines simply stating that 9 are fairly marginal and remain within 30% of the existing baseline condition, however, Window 60 within 6 and 6a Orde Hall Street appears to reduce by 39% and is listed as a living/dining area.

Based on the information provided, with the exception of a few isolated areas the proposed scheme appears to satisfy the BRE guidelines in sunlight terms.

Overshadowing

Appendix 4 of the report includes images showing the parts of the neighbouring amenity areas that will experience 2 hours of direct sunlight on 21 March and Appendix 2 contains a detailed table showing the difference between the existing and proposed condition.

The report concludes that the amenity areas located at 1-42 Windmill, 11-14, 16 and 17, 37-39, 51-57 Great Ormond Street and 18-29 Orde Hall Street will fail to satisfy the BRE guidelines but does not contain a detailed commentary on the extent of the infringement to these areas. Several of the private amenity areas are already poorly lit and therefore the percentage differences are enhanced, although with the exception of 37-39 Great Ormond Street and 29 Orde Hall Street, the actual difference in direct sunlight levels is modest.

6. Conclusions and recommendations

The assessment has been undertaken in accordance with the published guidelines and the scope of assessment is considered appropriate. The scheme generally results in a good level of compliance for an urban development site, however, there are neighbouring properties that have the potential to experience a notice able reduction in daylight.

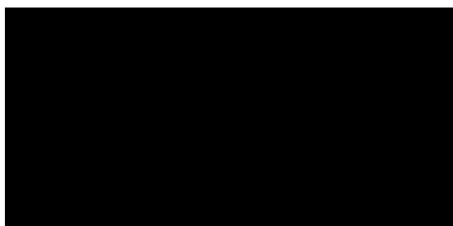
Of the properties considered for assessment, 1-42 Falcon and 1-28 Richbell have the potential to experience a high reduction beyond the BRE guidelines to a small number of windows/rooms. 1-50 Blemundsbury has the potential to experience a high reduction in daylight levels to several windows/rooms and this is due to the proximity of the proposed massing, which is positioned close to the property. I do not agree with the conclusions stated in paragraphs 4.2.5 and 4.2.7 of the Rights of Light Consulting report, which oversimplifies the results and suggests that windows in 1-50 Blemundsbury located under balconies only marginally exceed the BRE guidelines. The results indicate that several windows will experience a medium to high reduction with the balconies removed.

The scheme proposal is generally considered acceptable in relation to sunlight impacts on neighbouring properties and amenity areas.

Whilst there would be adverse daylight effects resulting from the development, these are generally limited to isolated windows/rooms within 3 properties. 1-50 Blemundsbury however, will experience a noticeable reduction in daylight as a result of the proposed development. Given that compliance with the BRE guide is not mandatory a degree of flexibility is often considered when considered the daylight and sunlight implications to scheme in urban locations and therefore, the proposed scheme should be evaluated based on the overall planning merits of the scheme.

I trust this provides you with what you need. If you have any queries, please let me know.

Yours sincerely



4 January 2022

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Encs: Appendix 1 – Glossary of terms
Appendix 2 – Guidelines for daylight, sunlight and overshadowing

Appendix 1 – Glossary of terms

The daylight and sunlight terminology used in our review is explained below.

Term	Meaning
Annual probable sunlight hours (APSH)	The long-term average of the total number of hours during a year in which direct sunlight is expected to shine on the unobstructed ground, allowing for average levels of cloudiness for the location in question.
KD, LD, LKD	Acronyms for kitchen-diner, living/dining room, living/kitchen/dining room.
No-sky line (NSL)	The outline on the working plane inside a room of the area from which no sky can be seen. It divides points on the working plane which can and cannot see the sky.
Vertical sky component (VSC)	<p>The amount of daylight falling on a vertical wall or window. It is the ratio of that part of illuminance, at a point on a given vertical plane (e.g. window), that is received directly from a CIE standard overcast sky, to simultaneous illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The VSC does not include reflected light, either from the ground or from other buildings.</p> <p>The ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall.</p>
Working plane	Horizontal, vertical or inclined plane in which a visual task lies. Normally the working plane may be taken to be horizontal, 0.85 m above the floor in housing.

Appendix 2 – Summary of guidelines for daylight, sunlight and overshadowing

The key guidelines relating to daylight, sunlight and overshadowing, solar glare and light pollution, are contained in 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice' (Building Research Establishment (BRE), BR209, second edition, 2011).

Guidelines on impact of development on daylight, sunlight and overshadowing to surrounding properties

The BRE guide provides methodologies and numerical guidelines for assessing the effects of development on daylight and sunlight to surrounding properties and sunlight to amenity spaces.

Effects on daylight and sunlight to buildings

Where some part of the proposed development will subtend an angle greater than 25° to the horizontal measured from the level of the centre of the lowest neighbouring windows, the effect on daylight and sunlight to the habitable rooms should be assessed using the following tests:

- Daylight:
 - vertical sky component (**VSC**) at the window, which assesses the total available skylight
 - no-sky line contour (**NSL**) on the working plane inside rooms (where layouts are known), which assesses the distribution of daylight around the room
- Sunlight:
 - percentage of annual probable sunlight hours (**APSH**) for windows of main habitable rooms that face within 90° due south, both annually and in the winter months

The assessments are run in the existing and proposed scenarios on an absolute scale, followed by a comparative scale measuring the factor of former value (or percentage reduction), so that the magnitude of impact is quantified.

The BRE numerical guidelines work on the principle that, unless recommended minimum values (27% VSC, 25% APSH annually, 5% APSH in winter) will be retained with the proposed development in place, or in the case of sunlight the annual loss will be no greater than 4% APSH, a reduction to less than **0.8 times former value** (i.e. loss of more than 20% of an existing light level) will be noticeable to occupiers.

ADF is primarily intended for assessing daylight within new development but can be used for assessing neighbouring consented buildings that are not yet built or are under construction. It can also be helpful as a supplementary test to VSC and NSL when considering whether retained daylight levels would be adequate by reference to the recommendations for new buildings, notwithstanding loss of light resulting from the proposed development. Parameters used in the ADF calculation need to be stated and reasonable.

Effects on sunlight to gardens and amenity spaces

The effects on sunlight to gardens/amenity spaces can be checked by calculating the percentage of each area that can receive at least two hours of sunlight on 21 March. If, after development, it will reduce to less than 50% and less than 0.8 times its former value, the loss of sunlight will be noticeable to users of the space.

Where a large building is proposed, shadow plots can be produced at different times of day and year. The equinox (21 March) is the best assessment date. Summer and winter solstices (21 June and 21 December) are optional additional dates.

Cumulative effects

If planning consent has been granted for other nearby developments that have not yet been built, it is customary to assess the cumulative effects of the proposed development and nearby consented developments on the surrounding receptors so that the combined effects can be understood.

Setting alternative target values

Appendix F of the BRE guide provides advice on setting alternative target values for daylight and sunlight. This notes that the numerical target values are purely advisory and different targets may be used based on the special requirements of the proposed development or its location.

Alternative targets may be generated from the layout dimensions of existing development or be based on an extant planning permission. Table F1 of the BRE guide gives various building-to-building angles of long, uniform obstructions and their corresponding VSC values. An example is given of a narrow mews in an historic city centre where the VSC values derived from the obstruction angle could be used as a target value for development in that street if new development is to match the existing layout.

The guide notes that a similar approach may be adopted in cases where an existing building has windows that are unusually close to the site boundary and taking more than their fair share of light. In that case, to ensure that new development matches the height and proportions of existing buildings, the VSC and APSH targets for the relevant windows could be set to those for a **'mirror-image'** building of the same height and size, an equal distance away on the other side of the boundary.

Where there is an **extant planning consent** for the application site and the developer wishes to change the design, the BRE guide states:

"In assessing the loss of light to existing windows nearby, a local authority may allow the vertical sky component (VSC) and annual probable sunlight hours (APSH) for the permitted scheme to be used as alternative benchmarks. However, since the permitted scheme only exists on paper, it would be inappropriate for it to be treated in the same way as an existing building, and for the developer to set 0.8 times the values for the permitted scheme as benchmarks."

Environmental Impact Assessments (EIAs)

Appendix I of the BRE guide provides advice on ascribing a significance to effects in **EIAs**. The guide states:

Adverse impacts occur when there is a significant decrease in the amount of skylight and sunlight reaching an existing building where it is required, or in the amount of sunlight reaching an open space.

The assessment of impact will depend on a combination of factors, and there is no simple rule of thumb that can be applied.

*Where the loss of skylight or sunlight fully meets the guidelines, the impact is assessed as negligible or minor adverse. Where the loss of light is well within the guidelines, or only a small number of windows or limited area of open space lose light (within the guidelines), a classification of **negligible** impact is more appropriate. Where the loss of light is only just within the guidelines, and a larger number of windows or open space area are affected, a **minor adverse** impact would be more appropriate, especially if there is a particularly strong requirement for daylight and sunlight in the affected building or open space.*

*Where the loss of skylight or sunlight does not meet the guidelines, the impact is assessed as minor, moderate or major adverse. Factors tending towards a **minor adverse** impact include:*

- *only a small number of windows or limited area of open space are affected;*
- *the loss of light is only marginally outside the guidelines;*
- *an affected room has other sources of skylight or sunlight;*
- *the affected building or open space only has a low level requirement for skylight or sunlight; and*
- *there are particular reasons why an alternative, less stringent, guideline should be applied.*

*Factors tending towards a **major adverse** impact include:*

- *a large number of windows or large area of open space are affected;*
- *the loss of light is substantially outside the guidelines;*
- *all the windows in a particular property are affected; and*
- *the affected indoor or outdoor spaces have a particularly strong requirement for skylight or sunlight, e.g. a living room in a dwelling or a children's playground.*