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Our Ref: AJC/21592 v2

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Dear Philip

HGY/2021/2304 – 29-33 The Hale, London N17 9JZ
Independent review of Applicant's daylight and sunlight assessments

Further to your instructions, I have reviewed the following information in relation to daylight and sunlight matters associated with the proposed development at 29-33 The Hale, London N17 9JZ under planning application reference HGY/2021/2304, including:

- Daylight and sunlight assessments prepared by the Applicant's consultant, Point 2 Surveyors ("the Assessments"):
    - Daylight and Sunlight Report – June 2021 (v2) – May 2021 scheme
    - Daylight and Sunlight Report – Addendum – November 2021 (v1) – Nov 2021 amended scheme
- Letter of objection dated 16 September 2021 from Argent Related
- Letter of objection dated 16 September 2021 from Sage Housing

Pursuant to my clarification requests I subsequently received the following further information:

- Information missing from the June 2021 report (May 2021 scheme):
    - internal daylight results for 1st to 3rd floor levels (referred to in paragraph 1.1);
    - average daylight factor (ADF) results for 11 to 21 Hale Road (referred to at paras. 8.8 to 8.9)
    - vertical sky component (VSC) and ADF results for 32 to 86 Hale Gardens (property 3), 129 to 163 High Cross Road (property 5) and 181 to 195 High Cross Road (property 7)
    - window and room parameters used in the ADF calculations
- Information to supplement the November 2021 report (November 2021 scheme):
    - VSC and ADF results for 32 to 86 Hale Gardens (property 3)
    - Daylight and Sunlight Report – Addendum 2 – November 2021 (v1) – assessment of sun-on-ground to Down Lane Park and VSC on façade of indicative future massing at 1 to 21 Hale Road

You have asked me to review the Applicant's Assessments and advise the Council on the suitability of their 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, and the levels of natural light provision to proposed new accommodation, so it may make an informed judgement as to their acceptability.

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

In order to better understand some of the points raised in the Assessments and objections, I have also briefly reviewed the relevant parts of the following documents prepared by Malcolm Hollis LLP for planning application reference HGY/2018/2223 for a development known as the Tottenham Hale Centre:

- (Internal) Daylight & Sunlight Report – July 2018
- (Internal) Daylight & Sunlight Report Addendum – October 2018

I have attended a virtual meeting with you and your colleagues and the Applicant's consultants on 11 November 2021.

As the Applicant intends to amend the proposed development as shown in the November 2021 Addendum Report, I will focus my comments on the impacts of the amended scheme (November 2021) where possible, rather than the original proposals (May 2021).

1. Guidelines for daylight, sunlight, overshadowing

The leading guidelines on daylight, sunlight, and overshadowing are published by the Building Research Establishment in BR209 *'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice'* (second edition, 2011).

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 how they should be applied by reference to a number of key appeal and judicial review decisions. Appendix 2 forms a key part of my advice and will cross refer to it in this letter.

Whilst the Applicant's Daylight and Sunlight Report dated June 2021 summarises the guidelines, it does not do so as clearly as it might. For example, the impact on daylight will be noticeable and outside the BRE guidelines if either the VSC or NSL criteria will not be met. Also, ADF is not part of the conventional BRE assessment methodology for neighbouring buildings, though I consider it a relevant supplementary assessment. Refer to Appendix 2, paragraphs 3, 39 and 40 for further information on use of ADF in this context.

The Report dated June 2021 contains a section on setting alternative target values, the contents of which are appropriate. Please also note what I say on the subject at Appendix 2, paragraphs 27 to 30 and 32 to 34.

2. Planning policy and guidance

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

The following local planning policy is relevant to the Development:

- LBH Strategic Policies 2013 (with alterations 2017)[1]
- LBH Development Management DPD[2]
- Tottenham Area Action Plan (AAP)[3]

[1] London Borough of Haringey, (2017). Haringey's Local Plan, Strategic Policies 2013 – 2026 (formerly the Core Strategy), Consolidated with alterations since 2017

[2] London Borough of Haringey, (2017). Development Management DPD

[3] London Borough of Haringey, (2017). Tottenham Area Action Plan

- Sustainable Design & Construction, Supplementary Planning Document (SPD)[4]

The Site forms part of the wider site allocation TH4 - Station Square West in the Tottenham AAP, which is earmarked for comprehensive development, as explained at section 4 of Point 2's Daylight and Sunlight Report Addendum (November 2021).

To the extent that the proposed development may be considered to provide 'housing', regard 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.

3. Scope of the Applicant's Assessments

The Applicant's Assessments has assessed the potential impacts on:

- daylight and sunlight to existing neighbouring residential properties and those under construction in the adjacent North Island Building No. 3; and
- sunlight to Down Land Park.

The locations of all receptors that have been assessed are shown in the Assessments.

Daylight levels within a sample selection of the proposed student accommodation have also been considered.

I am unaware of the location of the 'Ashley Road West and Ferry Island plots' and 'external amenity and play areas attached to North Island' referred to by the objector, Argent Related. Subject to that caveat, I consider the scope of the Assessments to be appropriate.

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 used in the assessment was built from various sources of information including detailed 3D laser scan measured survey (point cloud), a 3D massing model produced from photogrammetry, and site photos. I have no reason to doubt it is sufficiently accurate for the purposes of the assessments.

The RICS Professional Guidance Note, *'Daylighting and sunlighting'* (1st edition, 2012), recommends that surveyors should search the local authority's planning portal to obtain floor plans to ensure a robust approach and enable the surveyor to produce reliable information for NSL and ADF analyses and to help understand room uses. It is not clear from the assessment whether floor plans for neighbouring buildings were obtained. I deduce that they were obtained for North Island Building No. 3 only, in which case less weight should be applied to NSL results for all other buildings as they may be less accurate (see Appendix 2, footnote 9).

Assessment methodology – daylight within the proposed development

Following my clarification request, the Applicant confirmed to you on 9 November 2021 that the following parameters have been used in the ADF calculations for the proposed building (May 2021 scheme, before amendment):

- Glazing Transmittance: 0.68
- Maintenance factor: 8% (0.92)
- Glazing bar factor: 0.9
- Wall reflectance: 0.81
- Floor reflectance: 0.4
- Ceiling reflectance: 0.85

[4] London Borough of Haringey, (2013). Sustainable Design & Construction, Supplementary Planning Document

The glazing bar factor of 0.9 (90% glazing, 10% frame and glazing bars) that has been adopted is overly optimistic, in my opinion. The guidance recommends 0.8 (80% glazing, 20% frame and glazing bars) for windows with large panes of glass in metal frames, which would have been a more reasonable assumption. Consequently, the ADF values for the proposed accommodation have probably been overstated by about 12% (0.9 ÷ 0.8).

Assessment methodology – impacts on surrounding environment

Principal assessments

The BRE assessment methodology has been used for assessing the effects on existing neighbouring 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 and sun-on-ground to Down Lane Park.

The June 2021 Report assesses the impacts of the May 2021 scheme (i.e. before the November 2021 amendment) on daylight and sunlight to existing neighbouring properties. Detailed tabulated results have been provided showing the daylight and sunlight levels in the existing and proposed conditions, the absolute loss (existing value minus proposed) and percentage loss (absolute loss divided by existing value, expressed as a percentage). The impact assessment was updated for those properties affected by the November 2021 scheme amendment.

The BRE standard numerical guidelines have been applied to establish the number of impacts on each property (or group of properties) that are within the guidelines and the number that are outside the guidelines. The findings are explained in the commentary in section 8 of the June 2021 report. No commentary has been provided on the results for the November 2021 scheme amendment, other than in relation to North Island Building No. 3.

To assist your understanding of the magnitude of the impacts, in this review report I will use the terms 'negligible', 'low', medium' and 'high' magnitude impacts, based on the categorisation set out in Table 1 below.

Table 1 – Categorisation of magnitudes of effect used in this review

Impact satisfies the BRE guidelines	**Impact does not satisfy the BRE guidelines**		
	0.79 to 0.70 times former value i.e. **21% to 30%** reduction	0.69 to 0.60 times former value i.e. **31% to 40%** reduction	<0.60 times former value i.e. **more than 40%** reduction
Negligible impact	**Low** magnitude impact	**Medium** magnitude impact	**High** magnitude impact

Appendix I of the BRE guide provides guidance for use in EIAs to determine the significance of impact ('negligible', 'minor', 'moderate', and 'major' adverse). Whilst the Application is not EIA development, the guidelines are nonetheless helpful in understanding the significance of the effects of the development. Significance 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 (see Appendix 2, paragraph 31).

Alternative target values – acceptable level of retained daylight in proposed condition

Section 3 of the June 2021 report contends that the site context, which is undergoing significant regeneration involving increased height and density, justifies application of an alternative VSC target of 15%, rather than BRE default of 27%, as an acceptable retained level of daylight in the proposed condition. The principle is certainly valid. Use of the mid-teen VSC benchmark has been held to be appropriate in denser, more built-up areas, whilst a higher benchmark (c. 20% VSC) has been held to be more appropriate in more suburban areas (see Appendix 2, paragraphs 37 and 38). The Council may have its own view as to an appropriate benchmark in this location.

An additional daylight test, ADF, has been run for the adjacent North Island Building No. 3, which is under construction. Whilst ADF is primarily intended for assessing daylight within new development, it can be used for assessing neighbouring consented buildings that are not yet built or are under construction.[5] It can also be helpful as a supplementary test when considering whether acceptable living conditions would remain and whether any significant adverse effects to VSC and NSL are nonetheless acceptable (see Appendix 2, paragraphs 39 and 40.) I therefore agree with its use in this case.

[5] BRE Guide, Appendix F, paragraphs F7 and F8

The floor plans for North Island Building No. 3, which I obtained from planning application reference HGY/2018/2223, show 8 dwellings per floor on a typical floor. Point 2 have assessed the habitable rooms in three dwellings per floor that take light from over the site (labelled R1 to R7 in the plan extract at Figure 1 below), plus a vertical stack of west-facing bedrooms (labelled R8) serving a fourth flat per floor, which will be unaffected and can be ignored.

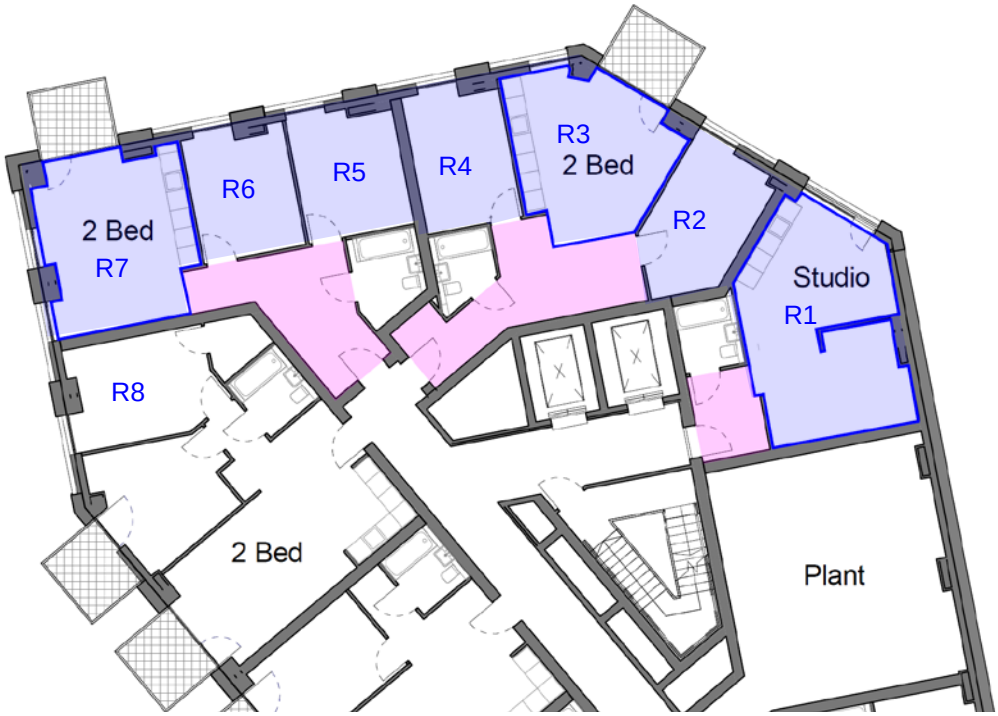

Figure 1 Annotated extract from first floor plan of North Island Building No. 3 (drawing no. TH-IS_ZZ_001_A_16092_(P00)_P101 rev. P00). Room references in blue font (R1, R2, etc.) are those used by Point 2 in its impact assessment. Rooms shaded blue are habitable rooms that take light from over the Site. Areas shaded pink are hallways/circulation spaces.

When presenting ADF results it is essential to confirm the window and room parameters used in the calculations, otherwise it is impossible to draw any meaningful conclusions from the results. The parameters were not included in the Assessments. Following my clarification request, the Applicant confirmed to you on 9 November 2021 that the following parameters have been used in the ADF calculations.

- Adjacent North Island Building No. 3:
  - Glazing Transmittance: 0.64
  - Maintenance factor: 8% (0.92)
  - Glazing bar factor: 0.9
  - Wall reflectance: 0.5
  - Floor reflectance: 0.5
  - Ceiling reflectance: 0.5

For the reasons I have given above, the glazing bar factor of 0.9 is overly optimistic, in my opinion, and a factor of 0.8 would have been more reasonable.

Unfortunately, neither of the Internal Daylight & Sunlight Reports (July 2018 and October 2018) prepared by Malcolm Hollis LLP for the Tottenham Hale Centre planning application stated the parameters used in its ADF calculations, so it is impossible to say whether the calculations by the two consultants have been run on a like-for-like basis. I suspect Malcolm Hollis LLP would have adopted lighter surface finishes (e.g. wall reflectance 0.81, floor reflectance 0.4, ceiling reflectance 0.85), in which case Point 2 have been more cautious in adopting the BRE default reflectance of 0.5, which is recommended where finishes are not known. So, to some extent, Point 2's very optimistic glazing bar factor of 0.9 (which would cause the ADF values to be overstated by about 12% (0.9 ÷ 0.8)) is counterbalanced by its cautiously correct room reflectance of 0.5.

Supplementary assessments

The following supplementary assessments have also been run:

- a 'without balconies' test for properties with balconies, the purpose of which is to investigate whether the balconies or other daylight-inhibiting projections are the main factor in the relative light loss (see Appendix 2, paragraphs 34 and 35);
- a 'mirror image' test for North Island Building No. 3 (updated in the November Addendum Report), which is used when windows stand close to a common boundary and whose purpose is to investigate whether the proposed development would have a greater effect than if it had been designed to match the height and proportions of the subject building an equal distance away from the boundary (see Appendix 2, paragraphs 29 and 35);
- a cutback to show how much massing would have to be removed if rigid adherence to the BRE VSC guideline was required (which of course is not the intention of the BRE guide); and
- a façade study of VSC levels that would exist in a future cumulative scenario if the land at 1 to 21 Hale Road was developed in the future with a five-storey linear block (ground floor commercial, residential above).

I am satisfied that the supplementary assessments are appropriate and appear to have been run correctly.

Point 2's criticisms of Malcolm Hollis LLP's assessments

At paragraphs 3.5 and 6.3 of their Daylight and Sunlight Report Addendum (November 2021), Point 2 assert that when Malcolm Hollis LLP produced its assessments it did not include the external projecting balconies and that it truncated the LKDs by approximately 3m to artificially improve the daylight levels in its report. I do not agree with those assertions and recommend they be disregarded. The balconies are shown in the rendered images of Malcolm Hollis LLP's 3D computer model in its reports, so it is reasonable to assume they were included in their ADF assessment. Furthermore, the only notional truncation evident in its assessment was to exclude the hallways/circulation spaces, which I have shaded pink in the plan extract at Figure 1 above, in order to calculate the ADF in the LKD and studio spaces, which I have outlined in blue. That is a reasonable approach, in my view.

At paragraph 6.3, Point 2 also assert that *"the Malcolm Hollis report again failed to follow BRE Guidance and sited windows very close to the boundary and thus deprived the adjoining Site of reasonable development potential (see BRE paragraph 2.3.1)"*. BRE paragraph 2.3.1 states, in relation to adjoining development land:

> *From a daylighting standpoint it is possible to reduce the quality of adjoining development land by building too close to the boundary. A well designed building will stand a reasonable distance back from the boundaries so as to enable future nearby developments to enjoy a similar access to daylight. By doing so it will also keep its own natural light when the adjoining land is developed.*

Malcolm Hollis LLP did not design North Island Building No. 3 – it would have been designed by the Architect – so the accusation of a defective daylight and sunlight report is arguably incorrect. To the extent that probable future development on 29-33 The Hale should have been envisaged by the Architect at the time it designed North Island Building No. 3, then the guidance in BRE paragraph 2.3.1 would have been applicable. Furthermore, paragraph 4.7 of the AAP requires masterplanning of *"larger sites on which there are multiple landowners in order to ensure that proposals are not prejudicing development of the remaining parcels"*.

In any event, the proximity of North Island Building No. 3 to the boundary is such that it is appropriate for Point 2 to have run the supplementary 'mirror image' test and ADF test, as referred to above and explained further at Appendix 2, paragraphs 29, 34(i) and 39-40, and weight should be given to its findings.

5. Internal daylight to proposed dwellings and sunlight to proposed amenity spaces

Paragraph 1.1 of the June 2021 report refers to a daylight assessment of the proposed student accommodation having been run, but no results or commentary were included in that report. Following my clarification request, daylight results were provided for 67 student study-bedrooms at first to third floor levels. No commentary on the results has been provided and no results have been provided for the communal living-dining areas. If you consider the latter to be important, you way wish to request the results from the applicant.

The minimum ADF recommendation for living rooms is 1.5% and for bedrooms is 1%. It is a moot point whether the appropriate target for student study-bedrooms should be 1% or 1.5%, but I consider 1% to be appropriate,

which I believe has been accepted by an Inspector in at least one appeal case. Furthermore, the study desks are typically near the window where the point daylight factors would be better than the room average.

Of the 67 study-bedrooms assessed on the lowest three floors (first to third floor levels), 52 (78%) would exceed the bedroom target (1% ADF), of which 46 (69%) would also exceed the living room target (1.5% ADF). 15 rooms (22%) would be below the bedroom target, of which 11 (16%) would be slightly below the target with a value of 0.8% or 0.9%, and the remaining 4 rooms would have values ranging from 0.4 to 0.6% ADF. Those four study bedrooms are second floor R22/102 and R24/102 and third floor R22/103 and R24/103, which are at the internal corner of the floor plate and are slightly larger rooms, as they also contain a small kitchenette.

As I noted above under 'assessment methodology' the glazing bar factor (0.9) used in the ADF calculation is overly optimistic, in my opinion, such that the ADF values are probably overstated by about 12%. Consequently, an additional three rooms (R17/102, R17/103, and R20/103) are likely to be below the 1% target, meaning that the level of adherence would be 49 out of 67 (73%) on the lowest three floors. Daylight levels will improve further up the building. Also, given the Applicant has subsequently amended the scheme to set it further back from North Island Building No. 3, the daylight levels in the rooms on the south side of the building looking towards North Island Building No. 3 should improve.

When considering the acceptability of the results, it is pertinent to bear in mind that student occupiers typically change accommodation every year and, save for the pandemic, typically spend a significant proportion of their time away from their bedrooms. In that context, I consider that the scheme would afford acceptable levels of daylight to its student occupiers.

6. Effects of proposed development on neighbouring properties

Effects on daylight to neighbouring properties

I have manually counted the number of 'negligible', 'low', medium' and 'high' magnitude daylight (VSC and NSL) impacts caused by the May 2021 scheme (June 2021 Report) and set them out in Tables 2 and 3 below.

Table 2 – Summary of VSC impacts – May 2021 scheme

	Neighbouring properties	**VSC impacts inside BRE guidelines** Negligible impact	**VSC impacts outside the BRE guidelines**			
			Low magnitude impact 21% to 30% loss	Medium magnitude impact 31% to 40% loss	High magnitude impact >40% loss	Sub-total
1	1 to 21 Hale Road	2 *(3%)*	12	18	37	67 *(97%)*
2	Island Sites, Building 3	62 *(33%)*	10	6	109	125 *(67%)*
3	32 to 86 Hale Gardens	9 *(22%)*	9	16	7	32 *(78%)*
4	1 to 40 Warren Court, High Cross Road	14 *(100%)*	-	-	-	-
5	129 to 163 High Cross Road	4 *(100%)*	-	-	-	-
6	165 to 179 High Cross Road	49 *(83%)*	6	1	3	10 *(17%)*
7	181 to 195 High Cross Road	48 *(86%)*	6	1	1	8 *(14%)*
	420 windows tested **Totals:**	**178** ***(42%)***	43	42	157	**242** ***(58%)***

Table 3 – Summary of NSL impacts – May 2021 scheme

	Neighbouring properties	NSL impacts inside BRE guidelines Negligible impact	NSL impacts outside the BRE guidelines			
			Low magnitude impact 21% to 30% loss	Medium magnitude impact 31% to 40% loss	High magnitude impact >40% loss	Sub-total
1	1 to 21 Hale Road	7 *(32%)*	7	4	4	15 *(68%)*
2	Island Sites, Building 3	68 *(50%)*	-	2	66	68 *(50%)*
3	32 to 86 Hale Gardens	28 *(90%)*	3	-	-	3 *(10%)*
4	1 to 40 Warren Court, High Cross Road	7 *(100%)*	-	-	-	-
5	129 to 163 High Cross Road	2 *(100%)*	-	-	-	-
6	165 to 179 High Cross Road	16 *(100%)*	-	-	-	-
7	181 to 195 High Cross Road	16 *(100%)*	-	-	-	-
	230 rooms tested **Totals:**	**144** ***(62%)***	10	6	70	**86** ***(38%)***

For VSC, out of 420 windows tested the impacts on 178 (42%) would be within the BRE guidelines and 242 (58%) would be noticeable adverse impacts outside the BRE guidelines.

For NSL, out of 230 rooms tested the impacts on 144 (62%) would be within the BRE guidelines and 86 (38%) would be noticeable adverse impacts outside the BRE guidelines.

The daylight effects on 1 to 40 Warren Court and 129 to 163 High Cross Road are all within the BRE guidelines and of **negligible** significance.

The daylight impacts on 165 to 179 High Cross Road are also essentially within the guidelines. The exception is the VSC to a glazed balcony door on each level, which sits behind a recessed balcony. However, the main window (W15) to the corresponding rooms (R4) comfortably satisfies the guidelines, as do the NSL results for the rooms. The daylight effects on this property are therefore of **negligible to minor adverse** significance.

The vast majority of the VSC (48 out of 56 windows) and all of the NSL impacts on 181 to 195 High Cross Road are within the guidelines. The eight windows that are outside the VSC guidelines have very low existing values of 1.5% to 5% VSC and, although the impacts are outside the guidelines, the losses are small in absolute terms (0.5% to 2% VSC). I suspect the windows concerned are behind recessed balconies (no window map has been provided for this property). More importantly, they serve four rooms which are also lit by another window that will retain more than the recommended 27% VSC. Also, the NSL for the rooms will meet the guidelines. The daylight effects on this property are therefore of **negligible to minor adverse** significance.

The properties (or groups) whose daylight would be most greatly affected, and which I will consider in greater detail. Are:

1) 1 to 21 (odds) Hale Road
2) Island Sites, Building 3
3) 32 to 86 Hale Gardens

Daylight impacts to 1 to 21 (odds) Hale Road (property 1)

The impacts of the May 2021 scheme on these properties reduces as one moves from east (No. 21) to west (No. 1). For the bay windows, more weight should be given to the impact on the main centre window. Overall, I would describe the significance of daylight effects as **minor adverse** to Nos. 1 and 3, **moderate adverse** to Nos. 5 and 7, and **major adverse** to Nos. 9 to 21. I understand the properties are Council-owned, tenanted, and sit within Site Allocation TH5 of the Tottenham Area Action Plan (AAP).

The proposed retained VSC values for 1 to 9 Hale Road would generally be in the mid-teens or higher, which is not unreasonable for a dense urban area designated for taller development.

The level of obstruction to 11 to 21 Hale Road would be greater, with proposed retained VSC values lower than mid-teens (i.e. below the alternative target values contended for by Point 2) and in some instances in single digits

(i.e. less than 10% VSC). Two supplementary assessments have therefore been run for these properties to aid further understanding of the impacts.

The first supplementary assessment has calculated the proposed retained ADF values inside the rooms with the May 2021 scheme in place, based on assumed rooms that are half the depth of the properties. The first-floor rooms are probably bedrooms, and all would retain between 1.35% and 1.76%, which exceeds the minimum recommendation for bedrooms (1%). The ground floor rooms are probably living rooms, and all would retain between 1.15% and 1.48%, which is below the minimum recommendation for living rooms (1.5%). The assessment has not been re-run for the November 2021 scheme because the proposed massing change would not affect these properties.

The second supplementary assessment, which is included in the November 2021 Addendum 2 Report, assesses the impact of the amended November 2021 scheme on VSC to the façade of an indicative future massing that might replace 1 to 21 Hale Road in the future in line with the AAP. The indicative future massing assumes ground floor commercial use, with residential use at first to fourth floor levels. The supplementary assessment shows that retained VSC levels at first floor and above would be at least 15%, which Is not unreasonable for a dense inner urban area with higher levels of obstruction. With appropriate window design, it should be possible to achieve acceptable internal daylight for future occupiers.

So, in summary, there will be a mixture of **minor, moderate, and major adverse** impacts on daylight to this terrace of Council-tenanted properties. The level of daylight retained in the proposed condition will be below guideline levels for the ground floor living rooms. However, if and when the properties are redeveloped, it should be possible to achieve acceptable internal daylight for future occupiers.

Daylight impacts to 32 to 86 Hale Gardens (property 3)

The May 2021 scheme would cause high-magnitude impacts on VSC to a number of windows in this block of flats where they sit beneath overhanging balconies and roof eaves, which amplify the relative light loss (see Appendix 2, paragraphs 35(ii) and 36). The remainder are medium- and low-magnitude impacts or are negligible. The NSL impacts are all negligible, with the exception of three low-magnitude impacts.

The significance of effects would generally be moderate adverse at the northern end of the building, reducing to minor adverse, and then negligible as one moves southwards.

The daylight assessment has been re-run for the amended November 2021 scheme, because the proposed change in massing will reduce the level of obstruction to this block. The results show that the amended scheme would cause less impact on this building than the May 2021 scheme, both in terms of magnitude of impact and number of windows and rooms adversely affected. The significance of effects would still range from **negligible to moderate adverse**, but fewer flats would experience significant effects.

Daylight impacts to Island Sites, Building 3 (property 2) – under construction

This residential building is under construction. I am told that Sage Housing will provide shared-ownership homes from first to tenth floor levels.

The floor plan extract in Figure 1 above shows the internal layout of a typical floor. The key rooms, anti-clockwise from east to west, are:

- a studio or LKD (R1) of a studio or 1-bed flat
- a bedroom (R2), LKD (R3) and further bedroom (R4) of a 2-bed flat on the splayed corner
- two bedrooms (R5 and R6) and LKD (R7) of a two-bed corner flat

In Figure 2 below I have marked up a 3D view of Point 2's computer model to show how the room uses stack vertically. It should be remembered that bedrooms have a lower requirement for daylight.

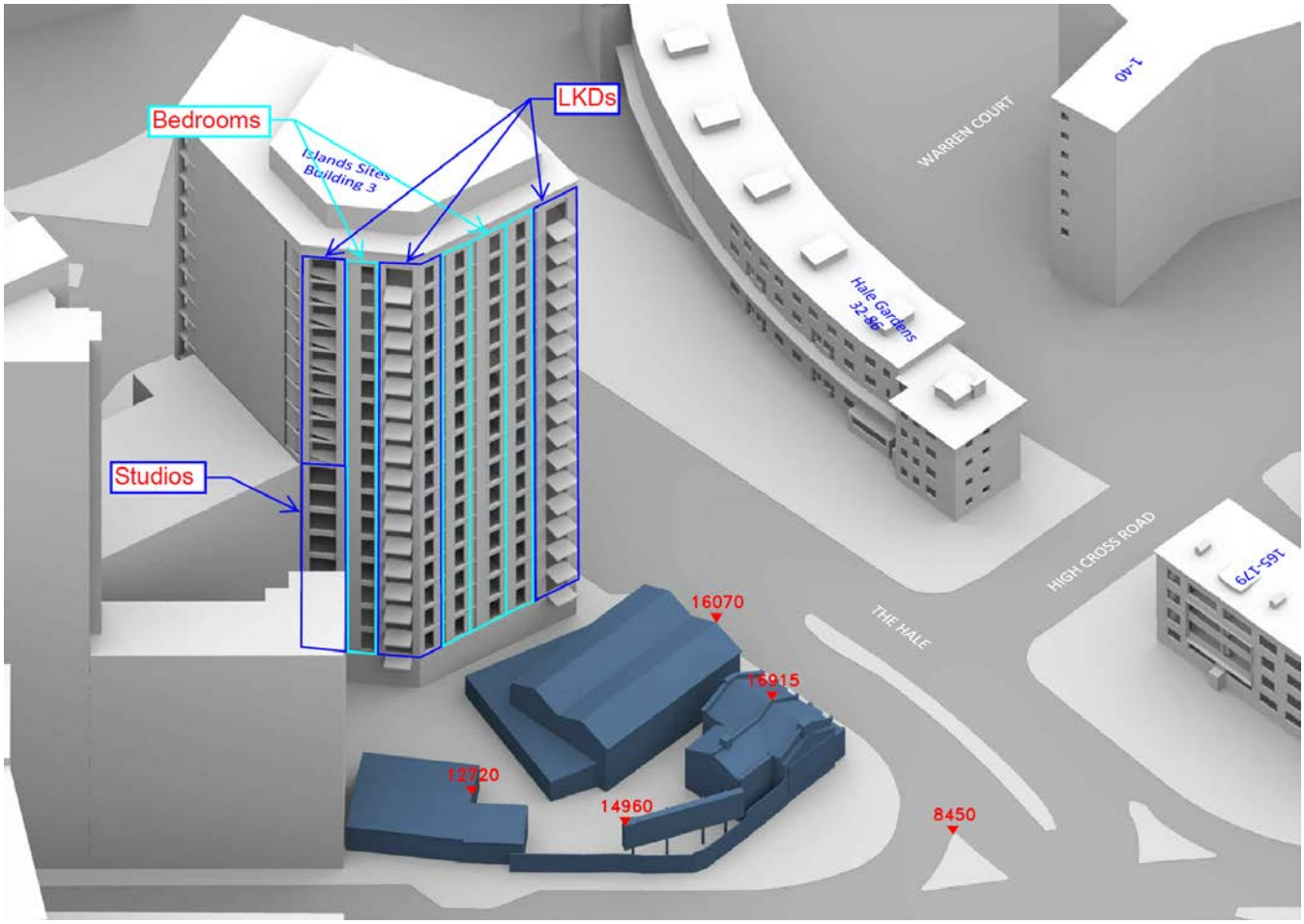

Figure 2 Annotated 3D view of Building 3 showing how the room uses stack vertically facing the Site

The May 2021 scheme would cause adverse daylight impacts to all but 11 of the 136 site-facing windows from first to 17th floor levels, with high-magnitude VSC impacts to 109 windows, medium-magnitude impacts to 6 windows, and low-magnitude impacts to 10 windows, as well as high-magnitude NSL impacts to 66 rooms, and medium-magnitude impacts to 2 rooms (see Tables 2 and 3 above). A further 34 windows serving the corner LKD (R7) on the west elevation are unaffected, as they face away from the Site.

The relative loss of VSC to the site-facing windows that are not directly overhung by balconies ranges from:

- 73% to 91% at first floor level;
- 40% to 79% at sixth floor level;
- 5% to 77% at eleventh floor level; and
- 5% to 70% at sixteenth floor level.

The affected rooms are LKDs, bedrooms, and studios. The significance of daylight effects to the site-facing apartments would be **major adverse**.

The Applicant has subsequently amended the scheme by setting back the tower element by three metres, so that it is now 13 metres from Building 3. The difference can be seen in Figure 3 below, which shows extracts from the rendered images of Point 2's 3D computer models. The May 2021 scheme is on the left and the November 2021 amended scheme is on the right.

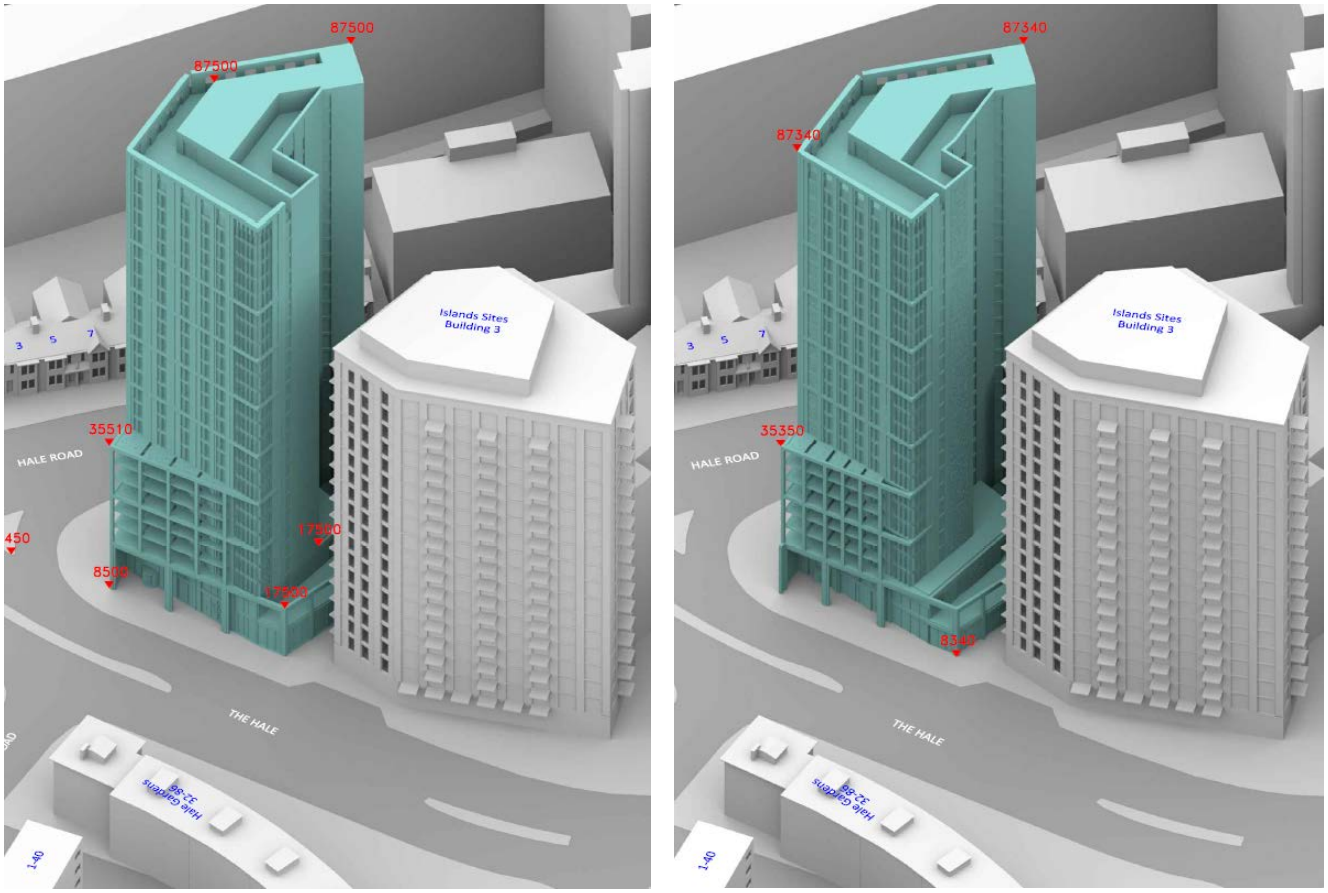

Figure 3 May 2021 scheme (left) and November 2021 amended scheme (right) in which the tower has been set back by 3m, away from Building 3

Point 2 re-ran the VSC impact assessment for the revised scheme, but not the NSL assessment. The VSC results show that the revised scheme would result in high-magnitude VSC impacts to 107 windows, medium-magnitude impacts to 8 windows, and low-magnitude impacts to 10 windows. So, two windows have downgraded from high impact to medium impact. Furthermore, the magnitude of some of the impacts have reduced slightly. The relative loss of VSC to windows that are not directly overhung by balconies now ranges from:

- 72% to 87% at first floor level (lessened slightly from 73% to 91%);
- 37% to 72% at sixth floor level (lessened slightly from 40% to 79%);
- 5% to 69% at eleventh floor level (lessened slightly from 5% to 77%); and
- 5% to 61% at sixteenth floor level (lessened slightly from 5% to 70%).

The amendment will therefore lessen the daylight impacts to a small degree, because it would slightly increase the view of sky around the south side and over the top of the development, though the latter will only be of very marginal benefit to the highest floor levels in Building 3. The significance of daylight effects of the November 2021 amended scheme to the site-facing apartments would still be **major adverse**.

ADF assessment

As I have noted above, it is appropriate to also consider the results of the supplementary ADF assessment, as it calculates the daylight levels inside the affected habitable rooms in Building 3 with both developments in place. The results are at Appendix 5 of Point 2's Daylight and Sunlight Report Addendum (November 2021). The relevant column is the seventh one (from the left) headed 'Proposed Total'. The relevant target values are 2% in kitchens, 1.5% in living rooms and 1% in bedrooms. In open-plan living/kitchen/dining rooms (LKDs) or studio flats, I consider the living room target (1.5% ADF) to be appropriate, for the reasons explained in my Appendix 2, paragraph 7.

According to Point 2's results, in the future baseline condition (after Building 3 is built and before the Site is developed), 105 out of 119 site-facing habitable rooms (88%) will satisfy the above-mentioned ADF targets. The 14 rooms that would be below these targets comprise studio R1 from 1st to 5th floor levels (with ADF values ranging from 1.14% to 1.45%) and LKD R1 from 9th to 17th floor levels (with ADF values ranging from 1.10% to 1.28%).

In the proposed condition, with the revised scheme in place, only 30 out of 119 site-facing habitable rooms (25%) would satisfy the above-mentioned ADF targets. The 30 rooms comprise the corner LKD R7 on all floors, bedroom R2 from 6th to 17th floor level, and bedroom R3 on 17th floor level. The 89 rooms that would be below the ADF targets comprise:

- 33 LKDs/studios:
    - R1 on all floors, with proposed ADF values ranging from 0.52% to 1.28% (compared with 1.14% to 1.28% in the future baseline)
    - R3 from 1st to 16th floor levels, with proposed ADF values ranging from 0.14% to 1.40% (compared with 1.54% to 2.18% in the future baseline)
- 56 bedrooms
    - R2 from 1st to 5th floor levels, with proposed ADF values ranging from 0.47% to 0.95% (compared with 1.06% to 1.34% in the future baseline)
    - R4 on all floors, with proposed ADF values ranging from 0.33% to 0.87% (compared with 1.60% to 1.86% in the future baseline)
    - R5 on all floors, with proposed ADF values ranging from 0.47% to 0.98% (compared with 1.71% to 2.02% in the future baseline)
    - R6 on all floors, with proposed ADF values ranging from 0.49% to 0.84% (compared with 1.57% to 1.85% in the future baseline)

Evidently, the proposed development would result in very significant reductions in daylight to below ADF guideline levels for many of the site-facing habitable rooms.

Mirror-image assessment

It is necessary to consider whether Building 3 *"is itself a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light"* (BRE paragraph 2.2.3, and Appendix F). As one Inspector noted [6], *"this is an acknowledgement that the first built scheme of a local cluster could otherwise prevent the full potential of adjacent sites from being realised"*. In which case, a greater reduction in daylight and sunlight may be unavoidable if one site is not to be unfairly prejudiced by how another has been developed. A similar sentiment is contained in paragraph 4.7 of the AAP, which requires masterplanning of *"larger sites on which there are multiple landowners in order to ensure that proposals are not prejudicing development of the remaining parcels"*.

In such a situation, the BRE Guide advises that "*To ensure that new development matches the height and proportion of existing buildings, the VSC and APSH targets for these 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."* [7] The aforementioned Inspector referred to the mirror-image exercise as a more equitable arrangement.

Point 2's Daylight and Sunlight Report Addendum (November 2021) includes an assessment of a mirror-image building in accordance with the BRE guide. The massing of Building 3 has been mirrored across the boundary onto the Site and the VSC and ADF values have been calculated for this theoretical baseline, which act as alterative target values. (The guide recommends using VSC, not ADF.) The assessment then compares the proposed values against these target values to ascertain whether the proposed scheme would cause a greater or lesser impact than the mirror-image building. The results are tabulated in Appendix 6 of the November 2021 report and discussed at section 5 of that report.

The values for the mirror-image scenario are those in the fourth column, confusingly headed "Existing". Where the VSC value in the proposed condition will be lower (worse) than the mirror-image baseline, the 'loss' (sixth column) is a positive figure. Conversely, where it will be greater (better), the loss is a negative figure.

Out of the 136 site-facing windows, 62 would enjoy greater levels of VSC in the proposed condition than with a mirror-image building. Conversely, 74 windows would receive lower levels of VSC in the proposed condition than with a mirror-image building. I have calculated the average difference at each floor level and shown this in Table 4

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6 Appeal Reference APP/E5900/W/17/3191757, **Enterprise House, 21 Buckle Street**, London E1 8NN, London Borough of Tower Hamlets, Inspector's decision dated 17 December 2018, https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=30276955

7 BRE Guide, Appendix F, paragraph F5

below. On all but the lowest floor and top three floors, the VSC values are better, on average, with the proposed development than a mirror image building. Overall, the average difference is just 0.08% VSC.

Table 4 Summary of differences in VSC between a mirror-image building and the November 2021 scheme

Floor level	Average loss (%VSC)	Floor level	Average loss (%VSC)
1st floor	0.31	10th floor	-1.24
2nd floor	-0.13	11th floor	-1.14
3rd floor	-0.24	12th floor	-0.94
4th floor	-0.36	13th floor	-0.56
5th floor	-0.65	14th floor	-0.12
6th floor	-1.06	15th floor	1.31
7th floor	-1.33	16th floor	3.06
8th floor	-1.36	17th floor	6.80
9th floor	-1.29	**Average**	**0.08**

It is evident from the mirror-image assessment that on most floors the site-facing windows in Building 3 would experience, on average, either negligible difference or a small improvement in VSC compared with a mirror-image building, though the difference at each window varies. The exception to that is at 15th to 17th floors, which, on average, will be worse off with the amended proposed development than a mirror-image building, because the proposed development is taller.

Cutback study

Point 2's cutback study shows what massing could be achieved if strict compliance with the BRE VSC guidelines was necessary. If it was not already obvious, this illustrates that strict application of the BRE default numerical guidelines would unfairly prejudice development of the site.

Effects on sunlight to existing neighbouring properties

I have manually counted the number of 'negligible', 'low', medium' and 'high' magnitude sunlight (annual and winter) impacts caused by the May 2021 scheme (June 2021 Report) and set them out in Table 5 below.

Table 5 – Summary of sunlight impacts (rooms) – May 2021 scheme

	Neighbour properties	No. rms	APSH impacts inside BRE guidelines Negligible impact	APSH impacts outside the BRE guidelines (rooms)							
				Annual sunlight				Winter sunlight			
				Low magnitude impact 21% to 30% loss	Medium magnitude impact 31% to 40% loss	High magnitude impact >40% loss	Sub-total	Low magnitude impact 21% to 30% loss	Medium magnitude impact 31% to 40% loss	High magnitude impact >40% loss	Sub-total
1	1 to 21 Hale Rd	22	10 *(45%)*	-	-	2	2 *(9%)*	-	-	12	12 *(55%)*
2	Island Sites, Building 3	17	17 *(100%)*	-	-	-	-	-	-	-	-
3	32 to 86 Hale Gdns	1	1 *(100%)*	-	-	-	-	-	-	-	-
4	1 to 40 Warren Ct	7	7 *(100%)*	-	-	-	-	-	-	-	-
6	165 to 179 High Cross Rd	8	4 *(50%)*	1	3	-	4 *(50%)*	-	-	-	-
7	181 to 195 High Cross Rd	4	0 *(0%)*	4	-	-	4 *(100%)*	-	-	-	-
	Totals	**59**	**39** ***(66%)***	5	3	2	***10 (17%)***	-	-	12	***12 (20%)***

Out of 59 rooms assessed for sunlight impacts, 39 (66%) would be within the BRE guidelines for both annual and winter sunlight. Ten rooms (17%) would experience noticeable adverse impacts to annual sunlight and 12 rooms (20%) would experience noticeable adverse impacts to winter sunlight.

The properties (or groups) whose sunlight would be most greatly affected are:

1) 11 to 21 (odds) Hale Road
6) 165 to 179 High Cross Road

Sunlight impacts to 11 to 21 (odds) Hale Road

Each of the six houses has two rooms (one each at ground and first floor levels), so 12 rooms were tested in all.

Nine of the 12 rooms will retain high levels of annual sunlight, in excess of the BRE recommendations. The other three rooms (two at ground floor and one at first floor) will reduce to slightly less than the guideline (25% APSH) to between 19% and 24% APSH, with high magnitude losses of between 43% and 50% of the existing values.

All 12 rooms will reduce below the 5% APSH winter sunlight guideline to between 1% and 4% APSH n winter, with high magnitude losses of between 57% and 90% of the existing values.

Given the good levels of annual sunlight that would be retained, I consider the significance of effect to be **moderate adverse**.

Sunlight impacts to 165 to 179 High Cross Road

Eight rooms were tested: two per floor. Four fully satisfy the sunlight guidelines. The other four satisfy he winter sunlight guideline, but will experience one low-magnitude and three medium-magnitude impacts on winter sunlight.

I consider the significance of effect to be **minor to moderate adverse**.

Sunlight to Down Lane Park

The November 2021 amended scheme will not cause any reduction in the two-hours sunlit area of Down Lane Park on 21 March. The BRE guideline will be fully satisfied, and the effect will be of negligible significance.

7. Conclusions

The Applicant's assessments have been undertaken in accordance with the BRE guidelines.

Internal daylight within the proposed development

If one accepts 1% ADF to be the appropriate daylight target for student study-bedrooms, which I do, 78% of the study-bedrooms on the lowest three floors (first to third floor levels) will satisfy the target, according to the Applicant's assessment. However, I consider their adopted glass-to-frame ratio has caused the ADF values to be overstated by around 12% and that the level of adherence on those floors is more likely to be 73%. Results have not been provided for the communal living-dining areas.

The Applicant has subsequently amended the scheme to set it further back from North Island Building No. 3, meaning the daylight results for the rooms on south side of the building looking towards North Island Building No. 3 should improve. Also, daylight levels will improve further up the building.

Overall, I consider that the scheme would afford **acceptable** levels of daylight to its future student occupiers.

Effects on daylight to neighbouring properties

The significance of the daylight effects on neighbouring properties will be as follows:

1. 1 to 21 Hale Road
    a. 1 and 3 Hale Road – minor adverse
    b. 5 and 7 Hale Road – moderate adverse

    c. 9 to 21 Hale Road – major adverse
2. Island Sites, Building 3 – major adverse
3. 32 to 86 Hale Gardens – negligible to moderate adverse
4. 1 to 40 Warren Court – negligible
5. 129 to 163 High Cross Road – negligible
6. 165 to 179 High Cross Road – negligible to minor adverse
7. 181 to 195 High Cross Road – negligible to minor adverse

The terrace of Council-tenanted houses at 1 to 21 Hale Road is within Site Allocation TH5 of the Tottenham Area Action Plan (AAP). I understand this is likely to be redeveloped. A supplementary assessment shows that a future development of the site should, with appropriate window design, still be able to provide acceptable daylight amenity for future occupiers.

The worst daylight effects will be caused to the site-facing flats (three per floor, 51 in total) in Building 3 of the North Island Site, which is under construction. The effects will be of major adverse significance and retained ADF values will be below minimum recommended levels in 33 out of 51 LKDs/studios and in 56 out of 68 bedrooms.

However, Building 3 appears not to be a good neighbour, standing a reasonable distance from the boundary and taking no more than its fair share of light, within the meaning of the BRE guide, as it places a 17-storey window wall lighting 51 flats 4m from the boundary without any obvious consideration of what development might come forward on the Site. It is not clear how the designers of that development applied the BRE guidance relating to adjoining development land or the requirements of paragraph 4.7 of the AAP. If consideration was given, then there can be little surprise that a development of the Site to a similar height and massing as Building 3 would result in major adverse daylight impacts and arguably Building 3 should have been designed accordingly.

The results of the mirror-image assessment in the November 2021 report demonstrate that compared with a more equitable arrangement (than the existing low-rise baseline) of a mirror-image building on the Site, the amended scheme (November 2021) would largely have a similar effect. On most floors the site-facing windows would experience, on average, either negligible difference or a small improvement in VSC compared with a mirror-image building (though the results vary from window to window), except at 15th to 17th floors, which, on average, would be worse off because the proposed development would be taller than a mirror-image building. Furthermore, the cutback study shows that if the BRE standard numerical guidelines were strictly applied, development of the site would be unfairly prejudiced.

Effects on sunlight to neighbouring properties

The significance of the sunlight effects on neighbouring properties will be as follows:

1. 1 to 21 Hale Road – moderate adverse
    a. 1 to 9 Hale Road – negligible
    b. 11 to 21 Hale Road – moderate adverse
2. Island Sites, Building 3 – negligible
3. 32 to 86 Hale Gardens – negligible
4. 1 to 40 Warren Court – negligible
5. 129 to 163 High Cross Road – not applicable
6. 165 to 179 High Cross Road – minor to moderate adverse
7. 181 to 195 High Cross Road – negligible to minor adverse

Effects on sunlight to Down Lane Park

The November 2021 amended scheme will not reduce the cause any reduction in the two-hours sunlit area of Down Lane Park on 21 March. The BRE guideline will be fully satisfied, and the effect will be of negligible significance.

Planning balance

The question for you and, ultimately, the Council's decision makers is whether, in the context of the application and the development of Building 3, the effects, in particular the major adverse daylight effects to Building 3, are nonetheless acceptable. The comments of Inspectors, such as in Appeal Reference APP/E5900/W/17/3191757, Enterprise House, 21 Buckle Street, London E1 8NN, offer some guidance, but ultimately it comes down to a matter of judgment and overall planning balance.

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

Yours sincerely

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Encs: Appendix 1 – Glossary of terms
Appendix 2 – Summary of guidelines for assessing 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.
Average daylight factor (**ADF**)	Ratio of total daylight flux incident on the working plane to the area of the working plane, expressed as a percentage of the outdoor illuminance on a horizontal plane due to an unobstructed CIE standard overcast sky. Thus a 1% ADF would mean that the average indoor illuminance would be one hundredth the outdoor unobstructed illuminance.
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.
Room depth criterion (**RDC**)	The limiting depth of a room for good daylighting, where it is lit from one side only. The limiting depth is a factor of the window head height above floor level, the room width, and the average reflectance of surfaces in the rear half of the room (away from the window). Sunlight below an angle of
Sun on ground (**SOG**)	The measure of sunlight potential to gardens and amenity spaces. It is measured in hours on the spring equinox (21 March) at a point on the ground accounting for the latitude of the site location. Sunlight below an altitude of 10° is usually discounted as it is likely to be prevented from reaching the ground by fences, plants or other low-level obstructions.
Vertical sky component (**VSC**)	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. The ratio is usually expressed as a percentage. The maximum value is almost 40% for a completely unobstructed vertical wall.
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 assessing daylight, sunlight and overshadowing

1. 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 daylight and sunlight within new buildings

Outline design

2. At early stages in design, before room layouts and window sizes/locations are undecided, the BRE guide recommends calculating the vertical sky component (**VSC**) and percentage of annual probable sunlight hours (**APSH**) at a series of points on each main face of the proposed building 1.6 m above ground and no more than 5 m apart.

3. The BRE gives the following rules of thumb in relation to daylight:
    - ≥27% VSC – conventional window design usually gives reasonable results
    - 15% to 27% VSC – special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight
    - 5% to 15% VSC – it is very difficult to provide adequate daylight unless very large windows are used
    - <5% VSC – it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed

4. Living rooms and kitchens need more daylight than bedrooms, so where there is a choice it is best to site them away from obstructions.

5. For good sunlight, the BRE guide recommends at least 25% APSH, including at least 5% APSH in the winter months between 21 September and 21 March. Living rooms and conservatories have the main requirement for sunlight. Sensitive layout design of flats will attempt to ensure that each individual dwelling has at least one main living room with a southerly aspect that can receive a reasonable amount of sunlight.

Detailed design

6. Where room layouts and window sizes/locations are known, the BRE guide recommends the following tests and criteria:

Daylight test	What it measures	Recommended criteria
Average daylight factor (**ADF**)	Amount of daylight inside the room averaged across the space	At least 2% in kitchens, 1.5% in living rooms and 1% in bedrooms
No-sky line contour (**NSL**)	Distribution of daylight around the room, by plotting the no-sky line	At least 80% of room should be enclosed by NSL contour and therefore enjoy a view of sky
Room-depth criterion (**RDC**)	Whether the limiting depth of a single-aspect room that can be satisfactorily daylit will be exceeded	$\frac{L}{W} + \frac{L}{H} < \frac{2}{1 - R_b}$ Where: *L* is depth of room *W* is width of room *H* is head-height of window above floor level R_b is average reflectance of surfaces in rear half of room

7. In multi-purpose rooms containing a kitchen, such as open-plan living/kitchen/dining rooms (LKDs), the target for kitchens should apply. However, planning authorities frequently accept the living room target (1.5% ADF) as a suitable alternative target for LKDs in modern dense housing developments, as noted by the author of the BRE guide, Dr Paul Littlefair, who explains it thus:[8]

> *Where a room has a shared use, the British Standard states that the higher minimum value should apply. However, local authorities frequently accept the living room standard for a shared*

[8] BRE Client Report (paragraph 2.3.5) dated 5 March 2019 for Reardon and Lowder Houses, Wapping on behalf of London Borough of Tower Hamlets (LBTH planning application reference PA/18/03541/A1)

kitchen/living room, as a small kitchen would not be considered as a habitable room. This is a practical approach, as it is seldom in the final resident's interest to have a closed off, small kitchen which is completely artificially lit in order to force compliance with the Standard for the living room. In this case an average daylight factor of 1.5% or more might be acceptable.

8. Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings that meet the minimum ADF recommendations.

9. Even if there is sufficient ADF, the overall daylit appearance will be impaired if daylight distribution is poor. The NSL and RDC criteria should also be satisfied for the whole room to look adequately daylit. It is nevertheless very common for designers, consultants and planning officials to form a view based on ADF results alone.

10. The ADF calculation considers the amount of sky visible at the window, diffuse visible light transmittance of the glazing, effects of dirt on glass, net glazed area of the windows after frame and glazing bars are deducted, the area of the room surfaces and their surface reflectance. Reasonable parameters must adopted and clearly stated. The view of sky should be measured accurately taking account of external obstructions, including balconies.

11. In early stages of design, the default parameters may be assumed, such as: a diffuse visible light transmittance of 0.68 for clean, clear double glazing; a frame/glazing bar factor of 0.8 for large panes in metal frames; and an average surface reflectance of 0.5 for fairly light-coloured rooms. Where glazing details and surface finishes are known, more accurate parameters may be used instead.

12. For sunlight, the overall sunlighting potential of a large residential development may be initially assessed by counting how many dwellings have a window to a main living room facing south, east or west. The aim should be to minimise the number of dwellings whose living rooms face solely north, north east or north west, unless there is some compensating factor such as an appealing view to the north. It is recommended that interiors where the occupants expect sunlight, such as living rooms and conservatories, should receive at least 25% APSH, including at least 5% APSH in the winter months between 21 September and 21 March.

British Standards on daylighting in new buildings – BS 8206-2:2008 and BS EN 17037:2019

13. The daylight and sunlight recommendations for new buildings given in the BRE guide are taken from BS 8206-2:2008 *'Lighting for Buildings - Code of practice for daylighting'.* The latter has now been withdrawn and replaced by the new European standard, BS EN 17037:2019 *'Daylight in buildings'*, which provides new assessment methodologies for new buildings.

14. Whilst the new standard sets target levels for 'minimum', 'medium' and 'high' levels of daylight, it recognises they may not but not be achievable in UK dwellings in dense urban areas or with basement rooms. In dwellings it therefore recommends target illuminances of at least 200 lux in kitchens, 150 lux in living rooms and 100 lux in bedrooms over at least 50 % of the reference plane for at least half of the annual daylight hours. For sunlight, the new standard recommends that at least one habitable space/room in dwellings can receive at least 1.5 hours of daily sunlight exposure at its window(s).

15. The BRE is proposing to review and update its guidelines having regard to the new British Standard, but the timescale to publication is unconfirmed. As most local plans reference the current BRE guide, it is the stated view of the guide's author that applicants may choose whether to assess daylight/sunlight within new buildings in accordance with the BRE guide or the new British Standard. In short, either approach is acceptable.

Amenity spaces

16. Proposed amenity spaces should be assessed on the equinox (21 March). The sunlighting requirements of each space may differ depending on use, but in general it will be considered adequately sunlit if at least half its area can receive at least two hours of sunlight on 21 March (the two-hours sun-on-ground test). Normally trees and shrubs, fences or walls less than 1.5 metres high and sunlight at an altitude of 10° or less are all ignored.

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

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

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

Effects on daylight and sunlight to buildings

19. 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; and
        - no-sky line contour (**NSL**) on the working plane inside rooms (where layouts are known[9]), which assesses the distribution of daylight around the room.
    - Sunlight:
        - percentage of annual probable sunlight hours (**APSH**) at the window, where it faces within 90° due south, both annually and in the winter months.

20. 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.

21. For daylight, all habitable rooms should be assessed. For sunlight, all main living rooms and conservatories should be assessed.

22. The BRE numerical guidelines work on the principle that, unless certain minimum values will be retained with the proposed development in place (27% VSC and 25% APSH with 5% APSH in winter), 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. relative losses exceeding 20% of the existing value) will be noticeable to occupiers.

23. 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. [10] It may also be helpful as a supplementary test when considering whether acceptable living conditions would remain and whether any significant adverse effects to VSC and NSL are nonetheless acceptable. (See paragraphs 39 and 40 below.) Parameters used in the ADF calculation need to be stated and reasonable.

Effects on sunlight to gardens and amenity spaces

24. 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.

25. 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

26. 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.

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9 The author of the BRE Guide, Dr Littlefair, recommends not running the NSL test using estimated layouts because it can give inaccurate findings. (BRE Client Report dated 5 March 2019 for a review at Reardon and Lowder Houses, Wapping on behalf of London Borough of Tower Hamlets - planning application reference PA/18/03541/A1)

10 BRE Guide, Appendix F, paragraphs F7 and F8

Setting alternative target values

27. 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.

28. 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 vale for development in that street if new development is to match the existing layout.

29. 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. This is an acknowledgement that the first built scheme of a local cluster could otherwise prevent the full potential of adjacent sites from being realised. In such cases, a greater reduction in daylight and sunlight may be unavoidable if one site is not to be unfairly prejudiced by how another has been developed.[11] In such circumstances where it is appropriate to enable new development to match the height and proportions of existing buildings, alternative target values for VSC and APSH for the relevant windows may 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.[12]

30. 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)

31. 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*

[11] Appeal Reference APP/E5900/W/17/3191757, **Enterprise House, 21 Buckle Street**, London E1 8NN, London Borough of Tower Hamlets, Inspector's decision dated 17 December 2018, https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=30276955

[12] BRE Guide, Appendix F, paragraph F5

- *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.*

Acceptability of impacts on daylight and sunlight

32. The assessment of impact on daylight and sunlight amenity is a two-part process[13]: 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.

33. The first stage can be addressed by applying the BRE assessment methodology and numerical guidelines, as explained above.

34. 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 – see paragraph 29 above.)

    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 – see paragraph 35 below.)

    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.

35. Balconies and projecting wings on an existing neighbouring building may mean larger relative reductions in daylight and sunlight are unavoidable. That is because they limit the available daylight and sunlight and may amplify relative reductions in light caused by development. Whether they are the main factor in the relative light loss can be checked by carrying out a supplementary assessment in the existing and proposed situations without the balcony or other projection in place. If, with the balcony, wing, or other projection in place, the proposed VSC/NSL/APSH value would be less than 0.8 times the existing value, yet with it removed the ratio would be well over 0.8, then the balcony, wing or other projection is the main factor in the relative loss of light, rather than purely the size of the new obstruction. [14]

36. When judging whether an adverse impact is acceptable, it may be appropriate to consider the levels of daylight and sunlight that would be retained with the proposed development in place and whether the resulting living conditions would nonetheless be acceptable, in context.

37. One benchmark that is commonly used in denser, inner-urban areas is to check whether retained VSC values would be in the mid-teens or greater. An example of this approach is the Whitechapel Estate Appeal [15]. There the Inspector noted that development that resulted in a proportion of residual VSC values in the mid-teens, with

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13 ***Rainbird**, R (on the application of) v The Council of the London Borough of Tower Hamlets* [2018], https://www.bailii.org/ew/cases/EWHC/Admin/2018/657.html

14 BRE Guide, paragraphs 2.2.11 to 2.2.12 and paragraph 3.2.9

15 Appeal reference APP/E5900/W/17/3171437, **Varden Street and Ashfield Street**, London E1, London Borough of Tower Hamlets, Inspector's decision dated 21 February 2018, https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=25711269

a smaller proportion in the bands below 15% VSC, have been found acceptable in major developments across London. He stated:

> *108. The BRE document offers guidance on generally acceptable standards of daylight and sunlight, but advises that numerical values are not to be rigidly applied and recognises the importance of the specific circumstances of each case. Inner city development is one of the examples where a different approach might be justified. This is specifically endorsed by the [Mayor of London's] Housing SPG, which calls for guidelines to be applied sensitively to higher density developments, especially in (among others) opportunity areas and accessible locations, taking into account local circumstances, the need to optimise housing capacity, and the scope for the character and form of an area to change over time. … I agree with the appellants that blanket application of the BRE guide optimum standards, which are best achieved in relatively low-rise well spaced layouts, is not appropriate in this instance.*
>
> *109. The SPG advises that the daylight impact on adjacent properties should be assessed drawing on "broadly comparable residential typologies within the area and of a similar nature across London"...*
>
> *112. The figures [from comparable typologies from a range of example sites across Central London analysed by the appellants, comprising both traditional urban streets and recently permitted areas of significant development] show that a proportion of residual Vertical Sky Component ('VSC') values in the mid-teens have been found acceptable in major developments across London. This echoes the Mayor's endorsement in the preSPG decision at Monmouth House, Islington that VSC values in the mid-teens are acceptable in an inner urban environment. They also show a smaller proportion in the bands below 15%...*
>
> *113. I acknowledge that a focus on overall residual levels could risk losing sight of individual problem areas. It is accepted that light is only one factor in assessing overall levels of amenity, but I consider that the trade-off with other factors, such as access to public transport or green space, is likely to be of more relevance to an occupier of new development than to an existing neighbour whose long-enjoyed living conditions would be adversely affected by new buildings. However, I also consider that Inner London is an area where there should generally be a high expectation of development taking place. This is particularly so in the case of the appeal site, where the Whitechapel Vision Masterplan and the City Fringe Opportunity Area Planning Framework have flagged the desirability of high density development. Existing residents would in my view be prepared for change and would not necessarily expect existing standards of daylight and sunlight to persist after development.*

38. Whilst use of the mid-teen VSC benchmark may be appropriate in denser and more built-up areas, a higher benchmark may be more appropriate in more suburban areas. [16]

39. Another approach to judging acceptability is to consider the retained ADF values in the proposed condition against those recommended in the BRE guide for new dwellings (see paragraphs 6 and 7 above). Such an approach is advocated by the author of the BRE guide, Dr Paul Littlefair, because it relates to the level of daylight actually experienced by an occupant inside their property, rather than the amount of light falling on the outside face of the window. Arguably, it gives a better indication of residual daylight levels as it takes account of window design and room layout. [17]

40. Residual ADF values appear to have been a key factor in the dismissal of the Appeal at 8 Albert Embankment. In that case, the impact on a social housing block, which houses families and people with vulnerabilities, would have satisfied the mid-teen VSC benchmark; however, 23 out of 25 living rooms would have been left with

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16 Appeal reference APP/A5840/W/19/3225548, **Burgess Business Park**, Parkhouse Street, London SE5, London Borough of Southwark, Secretary of State's decision dated 29 April 2020, paragraphs IR247 and IR248, https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=37313536

17 Appeal reference APP/E5900/W/17/3190685, land at **1 Cambridge Heath Road**, London E1, London Borough of Tower Hamlets, Secretary of State's decision dated 10 June 2019, https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=32778055

daylight levels below minimum recommended ADF values. The Inspector and Secretary of State considered the daylight impacts to be unacceptable. [18]

41. In the Appeal at Graphite Square, the Inspector considered several important factors when judging very significant losses of light to be acceptable: [19]

    a) In relation to a neighbouring social housing block, the relevant factors were:

        i) the flats were dual aspect, with the affected rooms being predominantly small kitchens, kitchen/diners, bathrooms, and second bedrooms, whilst the main living areas and main bedrooms, which faced in the opposite direction and received much more significant amounts of daylight and sunlight, would be completely unaffected;

        ii) many of the affected kitchens were too small to qualify as habitable rooms for the purpose of the calculations; and

        iii) the kitchens and second bedrooms received little daylight due to the overhanging deck-access or roof and relied on electric lighting most of the time to facilitate use, such that the loss of daylight would not make a great difference to their pattern of use or enjoyment.

    b) In relation to a neighbouring modern private housing block, the relevant factors were:

        i) the impacts must be seen in the context that the building had a rather privileged position facing minimal massing on the relevant part of the appeal site, as a result of which it received much higher levels of daylight and sunlight than one might reasonably expect in such an urban location;

        ii) the design of the building contributed to the impacts, because the worst affected rooms were those awkwardly located at an internal corner of the building or below overhanging balconies; and

        iii) whoever designed that building ought to have considered the strong likelihood that the appeal site, given its central London location and obvious potential, would not remain underused.

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[18] Appeal reference APP/N5660/V/20/32542038, **8 Albert Embankment**, London SE1, London Borough of Lambeth, Secretary of State's decision dated 23 June 2021, https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=43043066

[19] Appeal references APP/N5660/W/18/3211223 and APP/N5660/W/19/3225761, **Graphite Square**, London SE11, London Borough of Lambeth, Inspector's decision dated 25 September 2019, https://acp.planninginspectorate.gov.uk/ViewDocument.aspx?fileid=34348840