

CIVIC CENTRE HARINGEY

Daylight and Sunlight Report Neighbouring Properties

9 March 2023

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1. Introduction

- 1.1. Delva Patman Redler LLP have been engaged by the Applicant to assess the potential effects of the proposed development at the Civic Centre, Haringey ("the Site") on daylight and sunlight to neighbouring properties and amenity spaces. This report has been prepared to accompany the Applicant's planning application.
- 1.2. The Site is shown outlined in red in the aerial photograph in Figure 1 below and on the location plan in Appendix 2.



Figure 1 - Aerial photo of the Site and neighbouring buildings (© Google)

- 1.3. The Site is located within the London Borough of Haringey planning jurisdiction.
- 1.4. The Site is currently vacant and used as a car park and located in a mixed-use area with residential properties to the north, offices to the east and south with a school located adjacent to the western boundary. The overall planning application includes the existing Civic Centre building, this assessment deals only with the new elements of the proposed annexe on the car park site.
- 1.5. The proposed development is illustrated in the plan and 3D view drawings in Appendix 2. The development comprises of the construction of a four-storey office building.
- 1.6. Our daylight and sunlight study has been carried out using the assessment methodology recommended in the Building Research Establishment (BRE) Report 209, '*Site Layout Planning for Daylight and Sunlight: A guide to good practice*' (second edition, 2022) ("the BRE guide") and the Professional Guidance Note, '*Daylighting and sunlighting*' (1st edition, 2012), published by the Royal Institution of Chartered Surveyors.
- 1.7. This report is accompanied by the Appendices listed on the Contents page, including an explanation of the BRE assessment methodology, a glossary of technical terms, drawings, and tabulated results.

2. Planning policy and guidance

National Planning Policy and Guidance

National Planning Policy Framework (July 2021)

- 2.1. The National Planning Policy Framework (NPPF) sets out the Government's planning policies and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. It places an emphasis on sustainable development and delivery of housing.

BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2022)

- 2.2. The leading publication providing national guidance on the provision of daylight and sunlight to new development, and the impacts of development on daylight and sunlight to neighbouring buildings and open spaces, is BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (third edition, 2022). It is referred to in the development plan documents or supplementary planning documents of most planning authorities.

- 2.3. The BRE guide states:

(Its) main aim is ... to help to ensure good conditions in the local environment, considered broadly, with enough sunlight and daylight on or between buildings for good interior and exterior conditions.

The guide is intended for building designers and their clients, consultants and planning officials. The advice given is not mandatory and the guide should not be seen as an instrument of planning policy; its aim is to help rather than constrain the designer.

Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of the many factors in site layout design.

In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre, or in an area with modern high rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings... The calculation methods ... are entirely flexible in this respect.

Local planning policy

London Borough of Haringey: Development Management DPD: Adopted July 2017

- 2.4. The Council's development plan contains the following policies that are relevant to the effects of development on daylight and sunlight.

- 2.5. Policy DM1: Delivering High Quality Design states:

(a) Provide appropriate sunlight, daylight and open aspects (including private amenity space where required) to all parts of the development and adjacent buildings and land;

- 2.6. The supporting text states, at paragraph 2.10:

The design and layout of buildings must enable sunlight and daylight to penetrate into and between buildings, and ensure that adjoining land or properties are protected from unacceptable overshadowing. The Building Research Establishment (BRE) provides guidance on site layout planning to achieve good sun-lighting and day-lighting (BRE Site Layout Planning for Daylight and Sunlight: a guide to good practice).

3. Acceptability of daylight/sunlight levels and effects

- 3.1. The assessment of the effects of development on daylight and sunlight amenity is a two-part process¹: 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.
- 3.2. 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.
- 3.3. Where a higher degree of obstruction may be unavoidable it is appropriate to consider the reasonableness of the retained levels of daylight and sunlight with the proposed development in place.

¹ Rainbird, R (on the application of) v The Council of the London Borough of Tower Hamlets [2018]

4. Assessment methodology and numerical guidelines

- 4.1. The technical assessments that underpin this daylight and sunlight study have been carried out in accordance with the assessment methodology recommended in the BRE guide.
- 4.2. The principal assessments and numerical criteria are summarised below. A fuller explanation of the assessment methodology is given at Appendix 1 of this report.

Daylight to neighbouring buildings

- 4.3. If the head of the new development subtends an angle of more than 25° measured from the centre of the lowest affected window in an existing neighbouring building in a plane perpendicular to the window wall, then a more detailed check is needed to find the loss of skylight.
- 4.4. The more detailed tests are:
 - i) vertical sky component (**VSC**) at the centre of each main window, which measures the total amount of skylight available; and
 - ii) no-sky line (**NSL**) on the working plane inside a room, where room layouts are known, which measures the area that can receive direct skylight and assesses the distribution of daylight around the room.
- 4.5. Loss of daylight resulting from development will be noticeable if either:
 - the VSC at the centre of the window will be reduced to both less than 27% and less than 0.8 times its former value, or
 - the area of the working plane in a room that is enclosed by the no-sky line (NSL) and can receive direct skylight will be reduced to less than 0.8 times its former value.

- 4.6. In respect of these numerical guidelines, the BRE guide states:

Note that numerical values given here are purely advisory. Different criteria may be used based on the requirements for daylighting in an area viewed against other site layout constraints.

- 4.7. In respect of the windows and rooms to be assessed, the BRE guide states:

The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms.

- 4.8. In housing, living rooms, dining rooms and kitchens have a greater requirement for daylight. Bedrooms should also be analysed but are less important. Bathrooms, stairwells and other areas without a requirement for daylight need not be assessed.
- 4.9. For a bay window, the centre window facing directly outwards can be taken as the main window for the VSC calculation. If there would be a significant loss of light to the main window but the room has one or more smaller windows, an overall VSC may be derived by weighting each VSC element in accordance with the proportion of the total glazing area represented by its windows.

Sunlight to neighbouring buildings

- 4.10. In designing new development, care should be taken to safeguard the access to sunlight for existing dwellings and any nearby non-domestic buildings where there is a particular requirement for sunlight.
- 4.11. Obstruction to sunlight may become an issue if part of the development is situated within 90° of due south of a main window wall of an existing building, and in the section drawn perpendicular to this existing window wall, the new development subtends an angle greater than 25° to the horizontal measured from the centre of the lowest window to a main living room.
- 4.12. The amount of sunlight reaching a room is measured by calculating the percentage of annual probable sunlight hours (**APSH**) at the centre its windows.

- 4.13. If, following development, the APSH will be greater than 25%, including at least 5% of APSH in the winter months between 21 September and 21 March, then the room should still receive enough sunlight.
- 4.14. Sunlight will be adversely affected if the centre of the window will:
- receive less than 25% APSH or less than 5% APSH during the winter months (21 September to 21 March); and
 - less than 0.8 times its former sunlight hours during either period; and
 - the reduction in sunlight over the whole year will be greater than 4% APSH.
- 4.15. All main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Normally loss of sunlight need not be analysed to kitchens and bedrooms, except for bedrooms that also comprise a living space.
- 4.16. Our assessment has therefore assessed the loss of sunlight to living rooms, conservatories and winter gardens.

5. Categorisation of magnitudes of impact and significance of effects

- 5.1. In our summary tables, we have counted the number of impacts inside and outside the BRE guidelines and categorised the latter according to their magnitude of impact. The BRE guide does not include a standard scale of impact, so this study adopts the widely used approach in Table 1 below.

Table 1 – Categorisation of magnitudes of impact on existing neighbouring properties

Impact inside BRE guidelines	Impact outside BRE guidelines		
	0.70-0.79 times former value (21% to 30% loss)	0.60-0.69 times former value (31% to 40% loss)	<0.60 times former value (>40% loss)
Negligible impact	Low impact	Medium impact	High impact

- 5.2. To understand the significance of effect on a building, it is necessary to consider both the number and magnitude of impacts and a range of other factors. Appendix H of the BRE guide, which is intended for use in Environmental Impact Assessments, provides the following advice on ascribing significance to effects:

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.*

- 5.3. The sensitivities of the various receptors are set out in Table 2 below.

Table 2 – Receptor Sensitivity Descriptors

Sensitivity	Receptors for daylight assessment	Receptors for sunlight assessment
High	Main living rooms and kitchens	Main living rooms, back gardens, and shared or public amenity spaces
Medium	Bedrooms	-
Low	-	Kitchens and bedrooms
Negligible	Circulation spaces, bathrooms and other non-habitable rooms	Circulation spaces, bathrooms and other non-habitable rooms

6. Flexible application of the guidelines and alternative target values

- 6.1. As noted in paragraph 2.2 above, the BRE guide states that its default numerical guidelines are not mandatory and must be interpreted flexibly because natural lighting is only one of many factors in site layout design. In certain circumstances, such as city centres or areas with modern high-rise buildings, a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings.
- 6.2. We set out below some examples of a flexible approach to applying the BRE guidelines that are of relevance.

Reasonableness of retained values in a site's context

- 6.3. One example of flexible application of the guidelines was demonstrated in the Inspector's appeal decision for a development of the Whitechapel Estate site between Varden Street and Ashfield Street, London E1 in the London Borough of Tower Hamlets in February 2018 (Appeal Ref: APP/E5900/W/17/3171437).
- 6.4. In the aforementioned case the Inspector found that materially adverse impacts on daylight were nonetheless acceptable. He noted that development that resulted in a proportion of residual VSC values in the mid-teens, with a smaller proportion in the bands below 15% VSC, have been found acceptable in major developments across London. More specifically, the Inspector 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.

- 6.5. Ultimately, it is for the planning authority to judge whether affected properties would be left with acceptable levels of daylight and sunlight in their neighbourhood context, having regard to all relevant planning policies and guidance and balanced against the merits of the proposed development.

7. Scope of the assessment of neighbouring properties

- 7.1. The principal recommendations in the BRE guide relate to residential buildings. Its guidelines on daylight are intended for use for rooms in neighbouring dwellings where daylight is required, including living rooms, kitchens and bedrooms (BRE paragraph 2.2.2). Its guidelines on sunlight apply to all main living rooms of neighbouring dwellings and conservatories that have a window facing within 90° of due south (BRE paragraph 3.2.3).
- 7.2. Consequently, our assessment has been scoped to include nearby residential accommodation, as is common practice for studies for planning applications, and relevant amenity spaces. The properties assessed are set out in Section **Error! Reference source not found.**, '**Error! Reference source not found.**'.
- 7.3. We identified properties with residential use from a site visit and online research, including the Valuation Office Agency council tax list, local authority planning records, and estate agency websites.
- 7.4. We have run the BRE daylight and sunlight tests in the existing baseline and proposed development scenarios. This establishes the levels that would be retained in the proposed development condition and the degree to which they could change from the existing baseline.

8. Information used in our technical study

- 8.1. We have undertaken our technical study using a 3D computer model built in AutoCAD and specialist analysis software, which runs the assessments recommended in the BRE guide.
- 8.2. We compiled our 3D computer model from the following information:
 - 8.2.1. 3D computer model of the existing buildings on the Site and the contextual massing produced from photogrammetry (aerial photography) supplied by AccuCities Ltd, subsequently enhanced by us with the more detailed information listed below.
 - 8.2.2. Measured survey model point cloud produced by our in-house measured survey team in March 2022.
 - 8.2.3. Floor plans for neighbouring buildings, where available
 - 8.2.4. Proposed development: 3D model supplied by Hawkins Brown Architects in January 2023 (file name: 230111-HCC-HBA-ZZ-ZZ-M3-A-000001)
- 8.3. Our 3D computer model is illustrated in our spot-height drawings at Appendix 2.
- 8.4. To aid accuracy of the assessment and interpretation of the results, we carried out online searches to obtain the floor plans for the neighbouring buildings referred to above, including from online planning application records and general estate agency websites. This is the approach recommended in the Professional Guidance Note, 'Daylighting and sunliting' (1st edition, 2012), published by the Royal Institution of Chartered Surveyors, which states:

As a minimum, and subject to any limitations relating to a client instruction, surveyors should undertake searches of the local authority's planning portal to establish existing or proposed room layouts of neighbouring properties if they are available. This will ensure a robust approach and enable the surveyor to produce reliable information for daylight distribution analysis, ... Surveyors should also use the internet to search for other relevant information, including estate agent details, which commonly include plans of properties that can also be useful in determining a room layout or use.

- 8.5. Our research yielded the information listed in Table 3 below. The plan ref. refers to the numbering on the location plan at Appendix 2.

Table 3 - Information on internal layouts of neighbouring properties

Plan ref.	Neighbouring building / property	Information used
1	Trinity School	Partial plans and elevations obtained from the planning portal
2	10 Trinity Road	Partial plans and elevations obtained from the planning portal
9	3 Trinity Road	Partial plans and elevations obtained from the planning portal
17	287 High Street	Partial plans and elevations obtained from the planning portal

- 8.6. Where we found plans for neighbouring properties, we used them to model their rooms. Where we were been unable to find plans, we modelled their rooms based on estimated dimensions, typically adopting a generic 4m-deep room for residential premises, unless the style of building suggested otherwise.

Limitations and assumptions

- 8.7. In compiling our 3D computer model for our technical study, we have sought to be as accurate as reasonably possible within the scope of our instruction. We have relied upon the information noted above.
- 8.8. Whilst we have used plans for neighbouring buildings where available, we have typically made reasonable assumptions as to their internal floor levels and wall thicknesses.

- 8.9. We have used proven and trusted specialist computer software (Waldram Tools for AutoCAD®) to run the calculations recommended in the BRE guide.
- 8.10. To the best of our knowledge, the information and advice contained in this report is accurate at the date of issue, based on the information provided to or procured by us prior to its production.

9. Effects of the proposed development on neighbouring properties

- 9.1. We assessed the daylight and sunlight levels to the neighbouring properties in the existing baseline condition shown in our spot-height drawing no. SPT-002 at Appendix 2. The relevant windows are shown on the window maps at Appendix 2.
- 9.2. Daylight and sunlight levels in the proposed development scenario are shown in the results tables at Appendix 3 in the columns headed "Prop." (an abbreviation of "Proposed"). The difference between the existing and proposed levels is shown in the columns headed "Loss". The relative impact is shown in the columns headed "Pro./Ex." (an abbreviation of "Proposed/Existing") and is expressed as a ratio or factor of former value (e.g. 0.80 times former value).

Daylight to neighbouring properties

VSC and NSL

- 9.3. The results of the VSC and NSL analyses of the neighbouring buildings/properties are tabulated in Appendix 3 and summarised in Table 4 and Table 5 below.

Table 4 – Summary of VSC impacts to neighbouring windows

Property address	No. of windows tested	Windows inside VSC guidelines		Windows outside VSC guidelines					
				Low reduction 0.79-0.70 x FV		Medium reduction 0.69-0.60 x FV		High reduction <0.60 x FV	
		No.	%	No.	%	No.	%	No.	%
Nightingale School	106	96	91%	-	-	-	-	10	9%
10 Trinity Road	6	6	100%	-	-	-	-	-	-
9 Trinity Road	7	7	100%	-	-	-	-	-	-
8 Trinity Road	7	7	100%	-	-	-	-	-	-
7 Trinity Road	7	7	100%	-	-	-	-	-	-
6 Trinity Road	7	7	100%	-	-	-	-	-	-
5 Trinity Road	7	7	100%	-	-	-	-	-	-
4 Trinity Road	7	7	100%	-	-	-	-	-	-
3 Trinity Road	7	6	86%	1	14%	-	-	-	-
2 Trinity Road	7	6	86%	1	14%	-	-	-	-
1 Trinity Road	7	6	86%	1	14%	-	-	-	-
5 Dogan Terrace	4	2	50%	1	25%	1	25%	-	-
4 Dogan Terrace	4	2	50%	2	50%	-	-	-	-
3 Dogan Terrace	4	3	75%	1	25%	-	-	-	-
2 Dogan Terrace	4	3	75%	1	25%	-	-	-	-
1 Dogan Terrace	4	3	75%	1	25%	-	-	-	-
287 High Road	25	25	100%	-	-	-	-	-	-
Wallman Place Caravan Site	41	26	63%	6	15%	-	-	9	22%
Totals:	261	226	87%	15	6%	1	0%	19	7%

Table 5 - Summary of NSL impacts to neighbouring rooms

Property address	No. of rooms tested	Rooms inside NSL guidelines		Rooms outside NSL guidelines					
				Low reduction 0.79-0.70 x FV		Medium reduction 0.69-0.60 x FV		High reduction <0.60 x FV	
		No.	%	No.	%	No.	%	No.	%
Nightingale School	43	42	98%	1	2%	-	-	-	-
10 Trinity Road	4	4	100%	-	-	-	-	-	-
9 Trinity Road	2	2	100%	-	-	-	-	-	-
8 Trinity Road	2	2	100%	-	-	-	-	-	-
7 Trinity Road	2	2	100%	-	-	-	-	-	-
6 Trinity Road	2	2	100%	-	-	-	-	-	-
5 Trinity Road	2	2	100%	-	-	-	-	-	-

4 Trinity Road	2	2	100%	-	-	-	-	-	-
3 Trinity Road	2	2	100%	-	-	-	-	-	-
2 Trinity Road	2	2	100%	-	-	-	-	-	-
1 Trinity Road	2	2	100%	-	-	-	-	-	-
5 Dogan Terrace	3	1	33%	2	67%	-	-	-	-
4 Dogan Terrace	3	3	100%	-	-	-	-	-	-
3 Dogan Terrace	3	3	100%	-	-	-	-	-	-
2 Dogan Terrace	3	3	100%	-	-	-	-	-	-
1 Dogan Terrace	3	3	100%	-	-	-	-	-	-
287 High Road	17	17	100%	-	-	-	-	-	-
Wallman Place Caravan Site	19	13	68%	2	11%	-	-	4	21%
Totals:	116	107	92%	5	4%	0	0%	4	3%

- 9.4. Of the 261 windows and 116 habitable rooms assessed in the 18 neighbouring buildings/properties, 226 (87%) windows would satisfy the VSC guidelines, and 107 (92%) rooms would satisfy with the NSL guidelines.
- 9.5. The impacts on both VSC and NSL would be within the BRE guidelines for the following buildings/properties:
- 10 Trinity Road
 - 9 Trinity Road
 - 8 Trinity Road
 - 7 Trinity Road
 - 6 Trinity Road
 - 5 Trinity Road
 - 4 Trinity Road
 - 3 Trinity Road
 - 2 Trinity Road
- 9.6. The impacts on VSC and/or NSL would be outside the BRE guidelines for the following buildings/properties, and are examined in further detail:

No 1: Nightingale School: This is the school located directly to the west of the development site.

The VSC results indicate that of the 106 windows considered, 96 (91%) will satisfy the BRE guidelines. All 10 windows that fall below the BRE guidelines are situated under a deep canopy which blocks the sky visible from these windows. As a result, the existing baseline condition is very low disproportionately increasing the percentage difference between the existing and proposed condition. However, the actual quantum of change is minimal, and the proposed scheme will not cause a noticeable difference in VSC to the school. For example, several of the windows currently have a VSC of between 0.1% - 1.2% which will reduce to 0.0% to 0.5% in the post development condition.

The NSL results show that of the 43 rooms considered, 42 (98%) satisfy the BRE guidelines. Only first floor, Room 12 falls below the suggested BRE guidelines by 1% and maintains NSL coverage to 76% of its area, this represents good NSL coverage.

When the VSC and NSL results are evaluated, it is clear that the proposed scheme will only have a negligible effect on the daylight levels enjoyed by the school.

No 11: 1 Trinity Road. These are the two storey residential properties located to the north of the site.

The VSC results indicate that of the 7 windows considered, 6 (86%) will satisfy the BRE guidelines, with one window marginally falling below the suggested BRE recommendations by 1%. This window is a smaller side window forming part of the ground floor bay window cluster. The mean retained VSC for the ground floor room is 25.4%. The NSL results show that all habitable rooms will

comfortably meet the BRE guidelines and therefore, this property will remain well-lit in the post development condition.

No's: 12 -16: 1-5 Dogan Terrace: These are the three-storey terraced properties located to the north of the development site. Our technical analysis has been based on notional room layouts.

The VSC results indicate that of the 20 windows considered across the 5 properties, 13 (65%) will satisfy the BRE guidelines and further 6 (30%) will only experience a low reduction beyond the BRE recommendations. The only window that has the potential to experience a moderate reduction beyond the BRE guidelines is W2 on the ground floor of 5 Dogan Terrace. This window is located in the front door and has a canopy hindering its potential to see sky over the development site. The main habitable windows all maintain a VSC of between 17% - 27% which is generally considered good for an urban location.

The NSL results indicate that of the 15 rooms considered, 13 (87%) satisfy the BRE guidelines. All room in 1-4 Dogan Terrace meet the BRE recommendations. The 2 rooms in 5 Dogan Terrace only experience a minor reduction beyond the BRE guidelines and remain with an NSL coverage of over 60%.

Overall, the VSC and NSL results show that retained levels of daylight to these properties are reasonable for an urban location and the proposed scheme will have an acceptable effect on 1-5 Dogan Terrace.

No. 13: Wellman Place Caravan Site: This is the caravan site located directly to the south of the development site. There are a mixture of static caravans and brick buildings located on the site.

The VSC results indicate that of the 41 windows considered across the site, 26 (63%) satisfy the BRE guidelines and a further 6 (15%) only experience a low reduction beyond the BRE guidelines. Of the 9 remaining windows, 2 retain a VSC of at least 15% in the post development condition and the final 7 are in static caravans located very close to the boundary.

The NSL results indicate that of the 19 rooms considered, 13 (68%) will satisfy the BRE guidelines and a further 2 (11%) will only experience a low reduction beyond the BRE guidelines. The remaining 4 rooms that have the potential to experience a high reduction are all bedrooms, which generally have a lesser expectation for good levels of daylight as they are occupied at night time.

When developing a vacant site with neighbouring windows located unusually close to the boundary, it is inevitable that some windows will experience a reduction in light beyond the BRE guidelines. However, the NSL results show that all main living areas on the site are dual aspect and will remain with acceptable levels of daylight in the post development condition.

Sunlight to neighbouring properties

- 9.7. The results of the annual and winter sunlight analyses are tabulated in Appendix 3 and summarised in Table below.

Table 9 - Summary of APSH impacts to neighbouring rooms

Property address	No. of rooms tested	Rooms inside APSH annual guidelines		Rooms outside APSH annual guidelines					
				Low reduction 0.79-0.70 x FV		Medium reduction 0.69-0.60 x FV		High reduction <0.60 x FV	
		No.	%	No.	%	No.	%	No.	%
Nightingale School	17	17	100%	-	-	-	-	-	-
10 Trinity Road	4	4	100%	-	-	-	-	-	-
9 Trinity Road	2	2	100%	-	-	-	-	-	-
8 Trinity Road	2	2	100%	-	-	-	-	-	-
7 Trinity Road	2	2	100%	-	-	-	-	-	-
6 Trinity Road	2	2	100%	-	-	-	-	-	-
5 Trinity Road	2	2	100%	-	-	-	-	-	-
4 Trinity Road	2	2	100%	-	-	-	-	-	-
3 Trinity Road	2	2	100%	-	-	-	-	-	-
2 Trinity Road	2	2	100%	-	-	-	-	-	-
1 Trinity Road	2	2	100%	-	-	-	-	-	-

5 Dogan Terrace	3	3	100%	-	-	-	-	-	-
4 Dogan Terrace	3	3	100%	-	-	-	-	-	-
3 Dogan Terrace	3	3	100%	-	-	-	-	-	-
2 Dogan Terrace	3	3	100%	-	-	-	-	-	-
1 Dogan Terrace	3	3	100%	-	-	-	-	-	-
287 High Road	16	16	100%	-	-	-	-	-	-
Wallman Place Caravan Site	7	7	100%	-	-	-	-	-	-
Totals:	77	77	100%	0	0%	0	0%	0	0%

- 9.8. Table 9 shows that all of the 77 (100%) rooms assessed in 18 neighbouring properties, would satisfy the BRE guidelines for both annual and winter APSH.
- 9.9. Overall, the proposed scheme will only have a negligible effect on the neighbouring properties in sunlight terms.

10. Conclusion

- 10.1. The Site is currently used as a car park, there is a school located directly to the west and residential properties to the north, with a caravan park to the south.
- 10.2. We assessed the potential effects of the proposed development on daylight and sunlight to surrounding residential properties.
- 10.3. We ran our assessments using methodologies recommended in the BRE guide.
- 10.4. The advice contained in the BRE guide is not mandatory and its numerical guidelines should be interpreted flexibly.
- 10.5. The daylight results show that the neighbouring properties will remain well-lit in the post development condition.
- 10.6. The Sunlight results show that all neighbouring properties considered will satisfy the BRE guidelines.
- 10.7. The Overshadowing results show that the neighbouring playground will remain with good levels of direct sunlight.
- 10.8. Overall, the daylight, sunlight and overshadowing results show that the scheme will generally have a negligible effect on the neighbouring properties and should be considered to meet the intentions of the BRE guide.
- 10.9. In conclusion, it is submitted that the layout of the proposed development is consistent with the Council's local planning policy on daylight and sunlight.



Delva Patman Redler LLP
Chartered Surveyors

Appendix 1

Assessment methodology and glossary

1. This appendix explains the daylight and sunlight assessment methodology recommended in BRE Report 209, 'Site Layout Planning for Daylight and Sunlight: A guide to good practice' (2022) and provides a glossary of the terminology used.

Assessment methodology

Daylight and sunlight to neighbouring buildings and amenity spaces

Daylight to neighbouring buildings

2. The BRE guide states:

In designing a new development or extension to a building, it is important to safeguard the daylight to nearby buildings.

The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed. The guidelines may also be applied to any existing non-domestic building where the occupants have a reasonable expectation of daylight; this would normally include schools, hospitals, hotels and hostels, small workshops and some offices.

3. To quantify the impact of development on daylight to a building, the BRE guide recommends two tests:
 - a) calculating the vertical sky component (**VSC**) at the centre of each main window on the outside plane of the window wall, to measure the total amount of skylight available to the window; and
 - b) plotting the no-sky line (**NSL**) on the working plane inside a room, where layouts are known, and measuring the area that can receive direct skylight, to assess the distribution of daylight around the room.
4. The VSC measures the skylight available at the window. The guide states:

Any reduction in the total amount of skylight can be calculated by finding the VSC at the centre of each main window ... For a bay window, the centre window facing directly outwards can be taken as the main window. If a room has two or more windows of equal size, the mean of their VSCs may be taken. The reference point is in the external plane of the window wall. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed.

5. The NSL test is described thus:

Where room layouts are known, the impact on the daylighting distribution in the existing building can be found by plotting the 'no sky line' in each of the main rooms. For houses this would include living rooms, dining rooms and kitchens; bedrooms should also be analysed although they are less important. In non-domestic buildings each main room where daylight is expected should be investigated. The no sky line divides points on the working plane which can and cannot see the sky.

6. If, following development, the VSC to a neighbouring window will be greater than 27% then enough skylight should still be reaching the window. Any reduction below this level should be kept to a minimum. If the VSC will be both less than 27% and less than 0.8 times its former value, occupants of the existing building will notice the reduction in the amount of skylight. The area lit by the window is likely to appear more gloomy and electric lighting will be needed more of the time.
7. If, following development, the no-sky line moves so that the area of the existing room that can receive direct skylight will be reduced to less than 0.8 times its former value, this will be noticeable to the

occupants and more of the room will appear poorly lit. This is also true if the no-sky line encroaches on key areas like kitchen sinks and worktops.

Sunlight to neighbouring buildings

8. The BRE guide states:

To assess loss of sunlight to an existing building, it is suggested that all main living rooms of dwellings, and conservatories, should be checked if they have a window facing within 90° of due south. Kitchens and bedrooms are less important, although care should be taken not to block too much sun.

A point at the centre of the window on the outside face of the window wall may be taken [as the calculation point].

9. To quantify the available sunlight, the BRE guide advises measuring the percentage of annual probable sunlight hours (**APSH**), which is defined as follows:

'probable sunlight hours' means the total number of hours in the year that the sun is expected to shine on unobstructed ground, allowing for average levels of cloudiness for the location in question.

10. The assessment calculates the percentage of APSH over the whole year (annual sunlight) and between 21 September and 21 March (winter sunlight).
11. If, following development, the APSH to a neighbouring window will be greater than 25%, including at least 5% of APSH in the winter months between 21 September and 21 March, then the room should still receive enough sunlight. Any reduction in sunlight access below this level should be kept to a minimum.
12. If the available sunlight hours will be both less than the above amounts and less than 0.8 times their former value, either over the whole year or just in the winter months, then the occupants of the building will notice the loss of sunlight; if the overall annual loss is greater than 4% of APSH, the room may appear colder and less cheerful and pleasant.

Sunlight to neighbouring gardens and amenity spaces

13. Sunlight should be assessed on the equinox (21 March) to main back gardens of houses, allotments, parks and playing fields, children's playgrounds, outdoor swimming pools, sitting-out areas, such as in public squares and focal points for views, such as a group of monuments or fountains.
14. The assessment measures the percentage of each area that can receive at least two hours of sunlight on 21 March - the 'two-hours sun-on-ground' (**SOG**) test.
15. It is recommended that at least half of the area of a garden or amenity space should be able to receive at least two hours of sunlight on 21 March. If such a space is already heavily obstructed, then any further loss of sunlight should be kept to a minimum. In this poorly sunlit case, if, following development, the area which can receive two hours of direct sunlight on 21 March is reduced to less than 0.8 times its former size, this loss of sunlight is likely to be noticeable. In such cases the garden or amenity area will tend to look more heavily overshadowed.
16. Sunlight at an altitude of 10° or less is ignored, because it is likely to be blocked by planting, and fences or walls less than 1.5 metres high can also be ignored. Front gardens, driveways and hard standing for cars are usually omitted. Normally, trees and shrubs need not be included, partly because their shapes are almost impossible to predict, and partly because the dappled shade of a tree is more pleasant than a deep shadow of a building.
17. Where a large building is proposed which may affect a number of gardens or open spaces, the guide advises it can be illustrative to plot shadow plans showing the location of shadows at different times of day and year. The equinox (21 March) is the best assessment date as it shows the average level of shadowing. Mid-summer (21 June) is an optional addition date when there would be greater sunlight availability and reduced overshadowing.

Glossary of terms

18. The daylight and sunlight terminology used in our report 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.
Daylight	Combined skylight and sunlight.
No-sky line (NSL)	The outline on the working plane of the area from which no sky can be seen. It divides points on the working plane which can and cannot see the sky.
Obstruction angle	The angular altitude of the top of an obstruction above the horizontal, measured from a reference point in a vertical plane in a section perpendicular to the vertical plane.
Sky factor	Ratio of the parts of illuminance at a point on a given plane that would be received directly through unglazed openings from a sky of uniform luminance, to illuminance on a horizontal plane due to an unobstructed hemisphere of this sky. The sky factor does not include reflected light, either from outdoor or indoor surfaces.
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

Location drawings

Site location plan
Spot-height drawings
Window maps



NEIGHBOURING
PROPERTIES CONSIDERED
FOR ANALYSIS

- 1: [Nightingale School:](#)
- 2: [10 Trinity Road:](#)
- 3: [9 Trinity Road:](#)
- 4: [8 Trinity Road:](#)
- 5: [7 Trinity Road:](#)
- 6: [6 Trinity Road:](#)
- 7: [5 Trinity Road:](#)
- 8: [4 Trinity Road:](#)
- 9: [3 Trinity Road:](#)
- 10: [2 Trinity Road:](#)
- 11: [1 Trinity Road:](#)
- 12: [5 Dogan Terrace:](#)
- 13: [4 Dogan Terrace:](#)
- 14: [3 Dogan Terrace:](#)
- 15: [2 Dogan Terrace:](#)
- 16: [1 Dogan Terrace:](#)
- 17: [287 High Road:](#)
- 18: [Wallman Place Caravan Site](#)

NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:
 Development Site
 Neighbouring Property

SOURCE DATA:
Context Model:
Accucities:
Dwg No:

Neighbouring Buildings:
Delva Patman Redler LLP:
Dwg No:

NOTES:



REV	Description	Drawn	Date

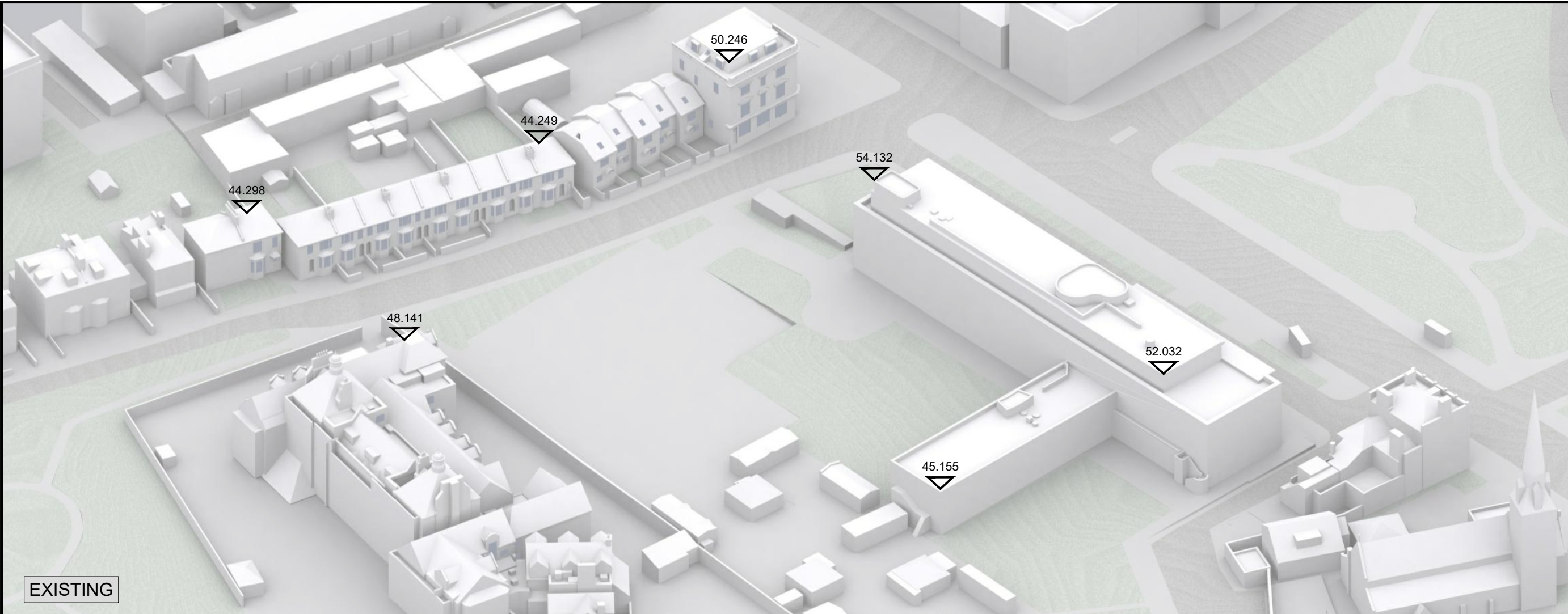
DELVA PATMAN REDLER
Chartered Surveyors

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Bristol 0117 450 9703
www.delvapatmanredler.co.uk
info@delvapatmanredler.co.uk

TITLE:
CIVIC CENTRE
LONDON
N22

DRAWING:
PROPERTY LOCATION PLAN

DRAWN: RM	JOB NBR:
SCALE: NTS	22071
DATE: 10.03.2022	
DWG NO:	REV:
LOC-001	-



EXISTING

NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

- Existing
- Surrounding
- Proposed

SOURCE DATA:

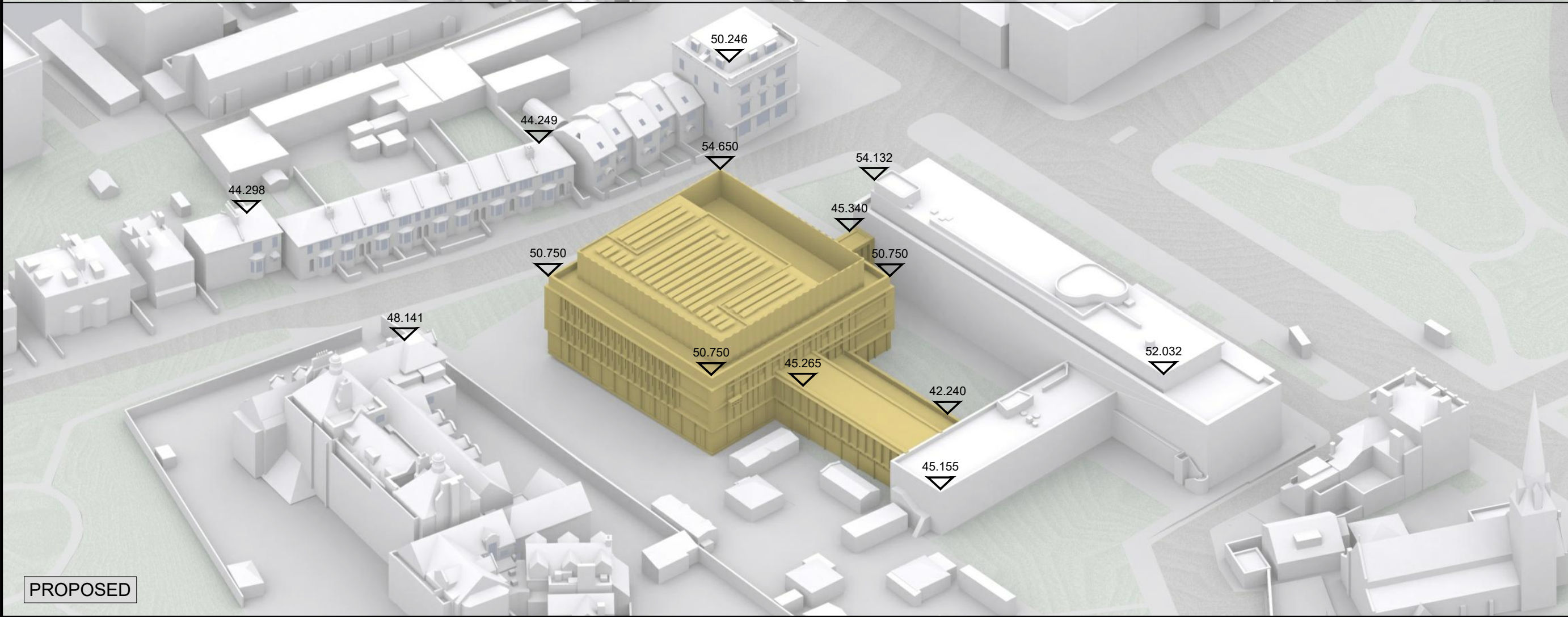
Context Model:
Accucities:
Dwg No:

Neighbouring Buildings:
Delva Patman Redler LLP:
Dwg No:

Proposed Scheme: (SR_2023.01.11)
Hawkins Brown Architects
Model File Dwg No:
230111_HCC-HBA-ZZ-ZZ-M3-A-000001.dwg

NOTES:

All heights given in m AOD



PROPOSED

3D View

REV	Description	Drawn	Date

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TITLE:

CIVIC CENTRE
LONDON
N22

DRAWING:

SPOT HEIGHT DRAWING
Plan and 3D Views

DRAWN: VK	JOB NBR:
SCALE: NTS	22071
DATE: 16.01.2023	
DWG NO:	REV:
SPT-002	-



NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

W1

Windows tested
Daylight only

W1

Windows tested
Daylight & Sunlight

SOURCE DATA:

Context Model:

Accucities:

Dwg No:

Neighbouring Buildings:

Delva Patman Redler LLP:

Dwg No:

NOTES:

3D View

REV	Description	Drawn	Date

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TITLE:

CIVIC CENTRE
LONDON
N22

DRAWING:

KEY WINDOW LOCATIONS
Trinity Road
3D View

DRAWN: GC	JOB NBR:
SCALE: NTS	22071
DATE: 19.01.2023	
DWG NO:	REV:
LOC-001	-



NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

W1

Windows tested
Daylight only

W1

Windows tested
Daylight & Sunlight

SOURCE DATA:

Context Model:

Accucities:

Dwg No:

Neighbouring Buildings:

Delva Patman Redler LLP:

Dwg No:

NOTES:

3D View

REV	Description	Drawn	Date

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TITLE:

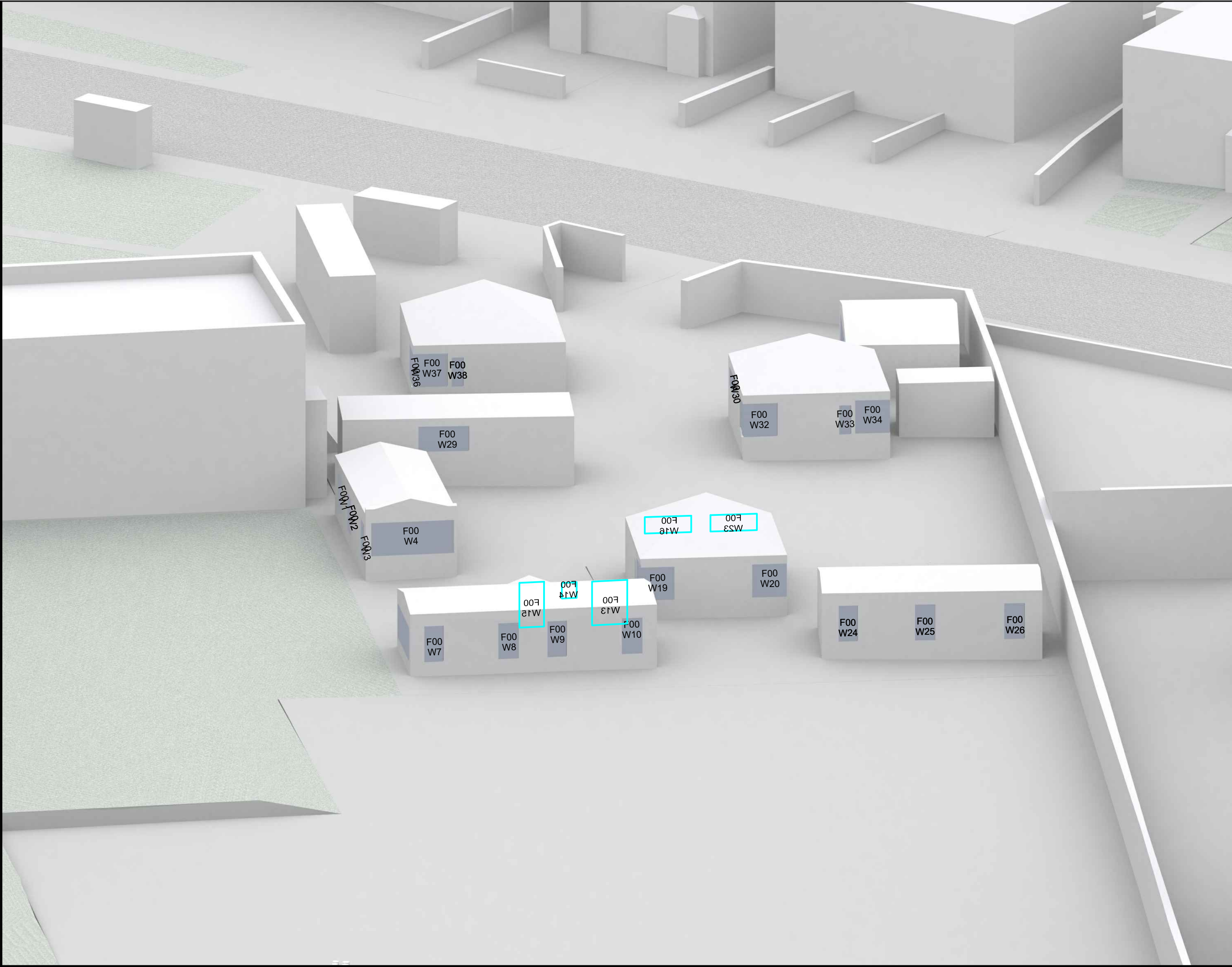
CIVIC CENTRE
LONDON
N22

DRAWING:

KEY WINDOW LOCATIONS
Dogan Terrace and High Road
3D View

DRAWN: GC	JOB NBR:
SCALE: NTS	22071
DATE: 19.01.2023	

DWG NO:	REV:
LOC-002	-



NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

W1Windows tested
Daylight only

W1Windows tested
Daylight & Sunlight

SOURCE DATA:

Context Model:

Accucities:

Dwg No:

Neighbouring Buildings:

Delva Patman Redler LLP:

Dwg No:

NOTES:

3D View

REV	Description	Drawn	Date

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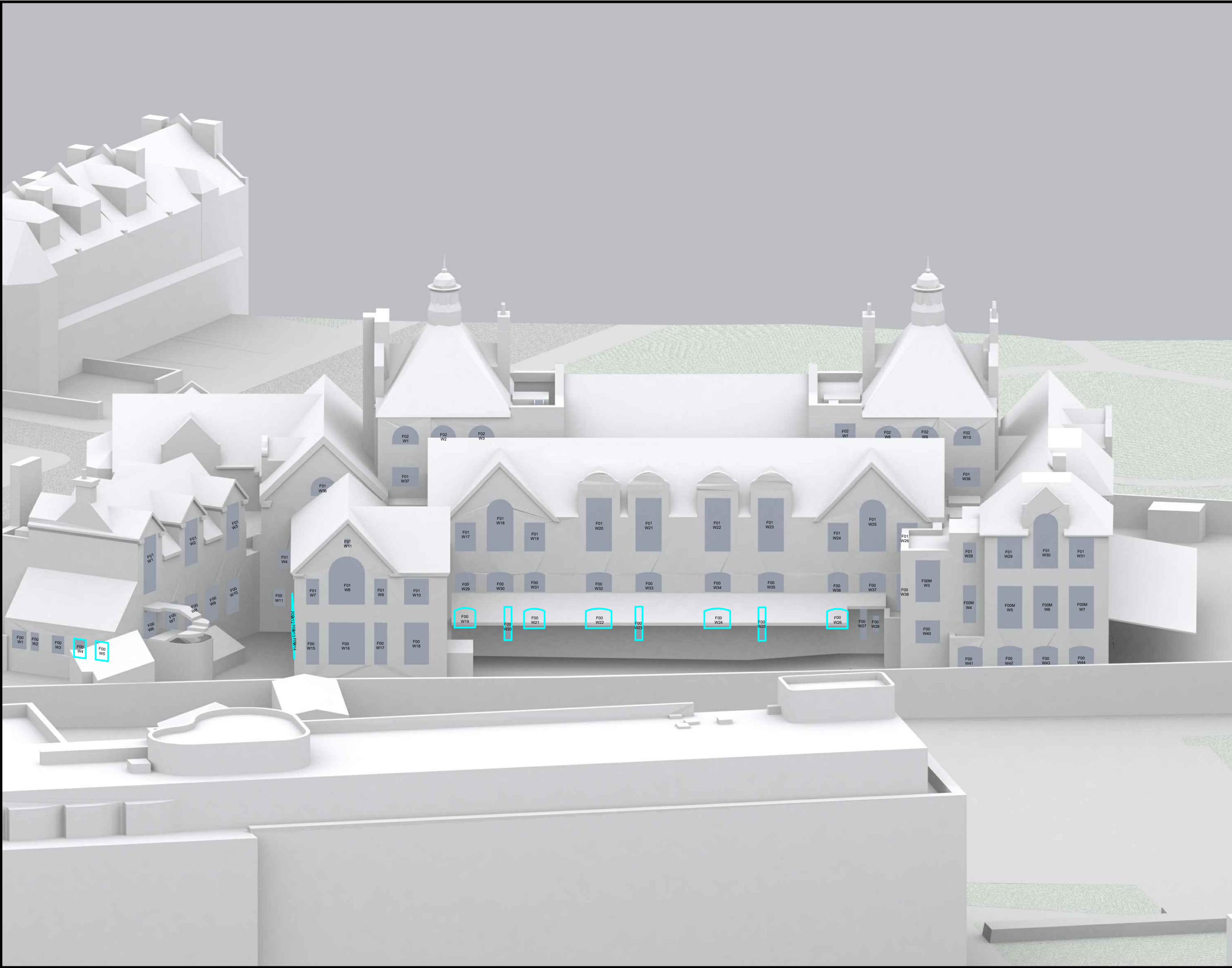
TITLE:

CIVIC CENTRE
LONDON
N22

DRAWING:

KEY WINDOW LOCATIONS
Wallam Place Caravan Site
3D View

DRAWN: GC	JOB NBR:
SCALE: NTS	22071
DATE: 19.01.2023	
DWG NO:	REV:
LOC-003	-



NO DIMENSIONS TO BE SCALED
FROM THIS DRAWING

KEY:

W1Windows tested
Daylight only

W1Windows tested
Daylight & Sunlight

SOURCE DATA:

Context Model:

Accucities:

Dwg No:

Neighbouring Buildings:

Delva Patman Redler LLP:

Dwg No:

NOTES:

3D View

REV	Description	Drawn	Date

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Bristol 0117 450 9703

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TITLE:

CIVIC CENTRE

LONDON

N22

DRAWING:

KEY WINDOW LOCATIONS

Nightingale School

3D View

DRAWN: GC

SCALE: NTS

DATE: 19.01.2023

JOB NBR:

22071

DWG NO:

LOC-004

REV:

-

Appendix 3

Daylight and sunlight results for neighbouring buildings

Property, room & window attributes				VSC				Mean VSC (room)				NSL				ADF				APSH (room)							
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex ratio	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex ratio	Exis. (% rm)	Prop. (% rm)	Loss (m²)	Pro./Ex ratio	Target (% ADF)	Exis. (% ADF)	Prop. (% ADF)	Loss (% ADF)	Annual (%APSH)				Winter (%APSH)			
																					Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Pro./Ex
Note: Red = outside BRE guidelines; Blue = gain in light																											
Nightingale School																											
F00	R1	Unknown	W1 ↘	36.0	35.6	N/A	N/A	36.0	35.6	N/A	N/A	96%	96%	0.00	1.00	1.50	4.21	4.17	0.04	42	42	N/A	N/A	13	13	N/A	
	R2	Unknown	W2 ↘	36.0	35.7	N/A	N/A																				
		Unknown	W3 ↘	35.8	35.5	N/A	N/A	35.9	35.6	N/A	N/A	95%	95%	0.00	1.00	1.50	4.05	4.02	0.03	39	39	N/A	N/A	11	11	N/A	
	R3	Unknown	W4 ↘	34.9	34.6	N/A	N/A	34.9	34.6	N/A	N/A	98%	98%	0.00	1.00	1.50	1.93	1.91	0.02	40	40	N/A	N/A	10	10	N/A	
	R4	Unknown	W5 ↘	33.3	32.7	N/A	N/A	33.3	32.7	N/A	N/A	96%	96%	0.00	1.00	1.50	3.71	3.65	0.06	35	35	N/A	N/A	11	11	N/A	
	R5	Unknown	W6 ↗	14.1	12.2	1.9	0.87	14.1	12.2	1.9	0.87	96%	96%	0.00	1.00	1.50	5.30	4.86	0.44	North	North	N/A	N/A	North	North	N/A	
	R6	Unknown	W7 ↗	22.6	20.9	1.7	0.92																				
		Unknown	W8 ↗	21.9	20.8	1.1	0.95																				
		Unknown	W9 ↗	18.9	18.6	0.3	0.98	21.1	20.1	1.0	0.95	95%	93%	0.57	0.99	1.50	2.92	2.83	0.09	North	North	N/A	N/A	North	North	N/A	
	R7	Unknown	W10 ↗	14.5	14.5	0.0	1.00	14.5	14.5	0.0	1.00	47%	47%	0.00	1.00	1.50	2.15	2.15	0.00	North	North	N/A	N/A	North	North	N/A	
	R8	Unknown	W11 →	13.1	13.1	0.0	1.00	13.1	13.1	0.0	1.00	51%	51%	0.00	1.00	1.50	0.39	0.39	0.00	North	North	N/A	N/A	North	North	N/A	
	R9	Unknown	W12 ↓	9.3	9.3	0.0	1.00	9.3	9.3	0.0	1.00	58%	58%	0.00	1.00	1.50	2.16	2.16	0.00	19	19	0	1.00	3	3	N/A*	
	R10	Unknown	W13 ↓	13.8	13.8	0.0	1.00	13.8	13.8	0.0	1.00	64%	64%	0.00	1.00	1.50	3.45	3.45	0.00	33	33	0	N/A	4	4	N/A*	
	R11	Unknown	W14 ↓	17.3	17.3	0.0	1.00	17.3	17.3	0.0	1.00	67%	67%	0.00	1.00	1.50	3.06	3.06	0.00	34	34	N/A	N/A	5	5	N/A	
	R12	Unknown	W15 →	35.6	32.1	N/A	N/A																				
		Unknown	W16 →	35.7	31.9	N/A	N/A																				
		Unknown	W17 →	35.8	31.5	N/A	N/A																				
		Unknown	W18 →	35.8	31.1	N/A	N/A	35.7	31.7	N/A	N/A	95%	95%	0.00	1.00	1.50	6.64	5.97	0.67	North	North	N/A	N/A	North	North	N/A	
	R13	Unknown	W19 →	0.1	0.0	0.1	0.00																				
		Unknown	W20 →	0.8	0.2	0.6	0.25																				
		Unknown	W21 →	0.1	0.0	0.1	0.00																				
		Unknown	W29 →	22.8	19.6	3.2	0.86																				
		Unknown	W30 →	29.3	26.0	3.3	0.89																				
		Unknown	W31 →	32.4	28.8	N/A	N/A	14.3	12.4	1.9	0.87	90%	89%	0.52	0.99	1.50	1.83	1.61	0.22	North	North	N/A	N/A	North	North	N/A	
	R14	Unknown	W22 →	0.1	0.0	0.1	0.00																				
		Unknown	W23 →	1.2	0.5	0.7	0.42																				
		Unknown	W32 →	34.9	31.1	N/A	N/A																				
		Unknown	W33 →	35.7	31.7	N/A	N/A	18.0	15.8	2.2	0.88	91%	90%	0.69	0.99	1.50	1.53	1.35	0.18	North	North	N/A	N/A	North	North	N/A	
	R15	Unknown	W24 →	0.2	0.0	0.2	0.00																				
		Unknown	W25 →	1.3	0.5	0.8	0.38																				
		Unknown	W34 →	35.8	31.6	N/A	N/A																				
		Unknown	W35 →	35.1	30.8	N/A	N/A	18.1	15.7	2.4	0.87	90%	89%	0.59	0.99	1.50	1.56	1.36	0.20	North	North	N/A	N/A	North	North	N/A	
	R16	Unknown	W26 →	1.8	0.7	1.1	0.39																				
		Unknown	W27 →	7.1	3.6	3.5	0.51																				
		Unknown	W28 →	7.9	4.7	3.2	0.59																				
		Unknown	W36 →	31.5	27.3	N/A	N/A																				
		Unknown	W37 →	26.3	22.9	3.4	0.87																				
		Unknown	W38 →	15.8	14.2	1.6	0.90	15.1	12.2	2.9	0.81	95%	95%	0.00	1.00	1.50	2.21	1.95	0.26	North	North	N/A	N/A	North	North	N/A	
	R17	Unknown	W39 ↓	23.3	22.1	1.2	0.95	23.3	22.1	1.2	0.95	54%	54%	0.01	0.99	1.50	1.54	1.50	0.04	22	22	0	1.00	12	12	N/A	
	R18	Unknown	W40 →	35.2	28.5	N/A	N/A	35.2	28.5	N/A	N/A	91%	91%	0.00	1.00	1.50	4.70	3.96	0.74	North	North	N/A	N/A	North	North	N/A	
	R19	Unknown	W41 →	35.4	28.7	N/A	N/A	35.4	28.7	N/A	N/A	97%	95%	0.12	0.98	1.50	5.51	4.63	0.88	North	North	N/A	N/A	North	North	N/A	
	R20	Unknown	W42 →	35.3	29.0	N/A	N/A																				
		Unknown	W43 →	35.3	29.5	N/A	N/A																				
		Unknown	W44 →	35.1	29.7	N/A	N/A																				
		Unknown	W45 ↑	22.6	22.6	0.0	1.00																				
		Unknown	W46 ↑	4.8	4.8	0.0	1.00	26.6	23.1	3.5	0.87	99%	98%	0.70	0.99	1.50	3.83	3.40	0.43	North	North	N/A	N/A	North	North	N/A	
F00M	R1	Unknown	W1 ↓	24.9	24.1	0.8	0.97	24.9	24.1	0.8	0.97	86%	86%	0.00	1.00	1.50	1.77	1.73	0.04	45	42	N/A	N/A	17	14	N/A	
	R2	Unknown	W2 ↓	27.9	26.8	1.1	0.96	27.9	26.8	1.1	0.96	93%	93%	0.00	1.00	1.50	3.64	3.54	0.10	45	45	N/A	N/A	16	16	N/A	
	R3	Unknown	W4 →	28.6	23.3	5.3	0.81	28.6	23.3	5.3	0.81	96%	96%	0.00	1.00	1.50	2.98	2.58	0.40	North	North	N/A	N/A	North	North	N/A	
	R4	Unknown	W5 →	36.9	31.5	N/A	N/A																				
		Unknown	W6 →	37.0	32.0	N/A	N/A																				
		Unknown	W7 →	36.9	32.1	N/A	N/A																				
		Unknown	W8 ↑	37.5	37.5	N/A	N/A	37.1	33.3	N/A	N/A	100%	99%	0.54	0.99	1.50	6.05	5.40	0.65	North	North	N/A	N/A	North	North	N/A	
	R10	Unknown	W3 →	36.5	31.2	N/A	N/A	36.5	31.2	N/A	N/A	99%	99%	0.00	1.00	1.50	8.76	7.64	1.12	North	North	N/A	N/A	North	North	N/A	
F01	R1	Unknown	W1 ↗	33.8	31.6	N/A	N/A																				
		Unknown	W2 ↗	31.1	30.0	N/A	N/A																				
		Unknown	W3 ↗	27.0	26.8	0.2	0.99	30.6	29.5	N/A	N/A	97%	97%	0.00	1.00	1.50	3.34	3.23	0.11	North	North	N/A	N/A	North	North	N/A	
	R2	Unknown	W4 →	14.3	14.3	0.0	1.00																				
		Unknown	W34 ↓	28.8	28.8	N/A	N/A																				
		Unknown	W35 ↓	23.8	23.8	0.0	1.00														</						

Property, room & window attributes				VSC				Mean VSC (room)				NSL				ADF				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex ratio	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex ratio	Exis. (% rm)	Prop. (% rm)	Loss (m²)	Pro./Ex ratio	Target (% ADF)	Exis. (% ADF)	Prop. (% ADF)	Loss (% ADF)	Annual (%APSH) Exis. Prop. Loss Pro./Ex				Winter (%APSH) Exis. Prop. Pro./Ex		
		Unknown	W25 →	35.5	32.6	N/A	N/A																			
		Unknown	W26 →	27.6	26.4	1.2	0.96	32.9	30.4	N/A	N/A	99%	99%	0.00	1.00	1.50	3.59	3.35	0.24	North	North	N/A	N/A	North	North	N/A
	R11	Unknown	W27 ↓	28.5	27.8	N/A	N/A	28.5	27.8	N/A	N/A	86%	86%	0.00	1.00	1.50	1.81	1.78	0.03	53	50	N/A	N/A	21	18	N/A
	R12	Unknown	W28 →	29.4	25.3	4.1	0.86	29.4	25.3	4.1	0.86	96%	76%	1.57	0.79	1.50	1.52	1.36	0.16	North	North	N/A	N/A	North	North	N/A
	R13	Unknown	W29 →	36.1	32.1	N/A	N/A																			
		Unknown	W30 →	38.0	34.5	N/A	N/A																			
		Unknown	W31 →	36.1	32.6	N/A	N/A																			
		Unknown	W32 ↑	30.8	30.8	N/A	N/A	35.3	32.5	N/A	N/A	100%	100%	0.00	1.00	1.50	5.75	5.29	0.46	North	North	N/A	N/A	North	North	N/A
	R14	Unknown	W33 ↓	21.2	21.2	0.0	1.00																			
		Unknown	W34 ↓	28.8	28.8	N/A	N/A																			
		Unknown	W35 ↓	23.8	23.8	0.0	1.00																			
		Unknown	W36 →	32.9	32.9	N/A	N/A	26.7	26.7	0.0	1.00	100%	100%	0.00	1.00	1.50	3.83	3.83	0.00	78	78	N/A	N/A	24	24	N/A
	R15	Unknown	W37 →	27.7	27.5	N/A	N/A	27.7	27.5	N/A	N/A	94%	94%	0.00	1.00	1.50	1.35	1.35	0.00	North	North	N/A	N/A	North	North	N/A
	R16	Unknown	W38 →	25.5	24.7	0.8	0.97	25.5	24.7	0.8	0.97	94%	94%	0.00	1.00	1.50	1.29	1.26	0.03	North	North	N/A	N/A	North	North	N/A
F02	R1	Unknown	W1 →	37.1	36.8	N/A	N/A																			
		Unknown	W2 →	34.8	34.8	N/A	N/A																			
		Unknown	W3 →	34.0	34.0	N/A	N/A																			
		Unknown	W4 ↑	31.8	31.7	N/A	N/A																			
		Unknown	W5 Hz	89.5	89.5	N/A	N/A	45.4	45.4	N/A	N/A	100%	100%	0.00	1.00	1.50	1.79	1.78	0.01	41	40	N/A	N/A	6	6	N/A
	R2	Unknown	W6 ↓	31.9	31.9	N/A	N/A																			
		Unknown	W7 →	35.3	35.3	N/A	N/A																			
		Unknown	W8 →	34.3	34.3	N/A	N/A																			
		Unknown	W9 →	34.8	34.8	N/A	N/A																			
		Unknown	W10 →	36.9	36.0	N/A	N/A	34.6	34.5	N/A	N/A	100%	100%	0.00	1.00	1.50	2.08	2.07	0.01	75	75	N/A	N/A	22	22	N/A
10 Trinity Road																										
F00	R1	Unknown	W1 ↙	30.8	30.7	N/A	N/A																			
		Unknown	W2 ↓	33.2	32.1	N/A	N/A																			
		Unknown	W3 ↘	22.3	21.1	1.2	0.95	28.8	28.0	N/A	N/A	98%	98%	0.00	1.00	1.50	3.59	3.51	0.08	70	69	N/A	N/A	26	25	N/A
F01	R1	Unknown	W1 ↓	34.8	34.1	N/A	N/A	34.8	34.1	N/A	N/A	96%	96%	0.01	1.00	1.50	2.94	2.88	0.06	66	66	N/A	N/A	26	26	N/A
	R2	Unknown	W2 ↓	32.5	32.4	N/A	N/A	32.5	32.4	N/A	N/A	98%	98%	0.00	1.00	1.50	3.88	3.88	0.00	55	55	N/A	N/A	22	22	N/A
	R3	Unknown	W3 →	28.7	28.7	N/A	N/A	28.7	28.7	N/A	N/A	81%	81%	0.00	1.00	1.50	2.35	2.35	0.00	24	24	0	1.00	0	0	N/A
9 Trinity Road																										
F00	R2	Unknown	W6 ↙	31.3	31.0	N/A	N/A																			
		Unknown	W7 ↓	34.6	32.7	N/A	N/A																			
		Unknown	W8 ↘	29.4	26.7	2.7	0.91	31.8	30.1	N/A	N/A	99%	99%	0.00	1.00	1.50	3.93	3.76	0.17	75	74	N/A	N/A	26	25	N/A
F01	R1	Unknown	W1 ↓	34.9	33.5	N/A	N/A																			
		Unknown	W2 ↓	34.9	33.4	N/A	N/A																			
		Unknown	W3 ↓	34.9	33.4	N/A	N/A																			
		Unknown	W4 ↓	35.0	33.3	N/A	N/A	34.9	33.4	N/A	N/A	97%	97%	0.00	1.00	1.50	3.44	3.31	0.13	56	56	N/A	N/A	24	24	N/A
8 Trinity Road																										
F00	R1	Unknown	W1 ↙	29.4	28.9	N/A	N/A																			
		Unknown	W2 ↓	34.8	32.5	N/A	N/A																			
		Unknown	W3 ↘	30.6	27.6	N/A	N/A	31.6	29.7	N/A	N/A	99%	99%	0.00	1.00	1.50	4.01	3.81	0.20	75	73	N/A	N/A	27	25	N/A
F01	R1	Unknown	W1 ↓	35.1	33.3	N/A	N/A																			
		Unknown	W2 ↓	35.1	33.2	N/A	N/A																			
		Unknown	W3 ↓	35.1	33.2	N/A	N/A																			
		Unknown	W4 ↓	35.2	33.1	N/A	N/A	35.1	33.2	N/A	N/A	98%	98%	0.00	1.00	1.50	4.29	4.08	0.21	56	55	N/A	N/A	24	23	N/A
7 Trinity Road																										
F00	R2	Unknown	W2 ↙	30.6	29.9	N/A	N/A																			
		Unknown	W3 ↓	35.2	32.2	N/A	N/A																			
		Unknown	W4 ↘	29.9	26.1	3.8	0.87	31.9	29.4	N/A	N/A	99%	99%	0.00	1.00	1.50	3.96	3.70	0.26	76	72	N/A	N/A	27	23	N/A
F01	R1	Unknown	W1 ↓	35.2	33.0	N/A	N/A																			
		Unknown	W2 ↓	35.3	32.9	N/A	N/A																			
		Unknown	W3 ↓	35.3	32.8	N/A	N/A																			
		Unknown	W4 ↓	35.3	32.7	N/A	N/A	35.3	32.9	N/A	N/A	99%	99%	0.00	1.00	1.50	4.44	4.17	0.27	56	53	N/A	N/A	24	21	N/A
6 Trinity Road																										
F00	R1	Unknown	W1 ↙	29.8	28.7	N/A	N/A																			
		Unknown	W2 ↓	35.4	31.6	N/A	N/A																			
		Unknown	W3 ↘	30.9	26.6	4.3	0.86	32.0	29.0	N/A	N/A	99%	99%	0.08	1.00	1.50	4.06	3.73	0.33	74	69	N/A	N/A	26	21	N/A
F01	R1	Unknown	W1 ↓	35.4	32.5	N/A	N/A																			
		Unknown	W2 ↓	35.4	32.4	N/A	N/A																			
		Unknown	W3 ↓	35.4	32.3	N/A	N/A																			

Property, room & window attributes				VSC				Mean VSC (room)				NSL				ADF				APSH (room)							
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex ratio	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex ratio	Exis. (% rm)	Prop. (% rm)	Loss (m²)	Pro./Ex ratio	Target (% ADF)	Exis. (% ADF)	Prop. (% ADF)	Loss (% ADF)	Annual (%APSH)				Winter (%APSH)			
																				Exis.	Prop.	Loss	Pro./Ex	Exis.	Prop.	Loss	Pro./Ex
		Unknown	W3 ↓	35.6	30.7	N/A	N/A																				
		Unknown	W4 ↓	35.6	30.5	N/A	N/A	35.6	30.8	N/A	N/A	99%	99%	0.00	1.00	1.50	4.49	3.96	0.53	56	51	N/A	N/A	24	19	N/A	
3 Trinity Road																											
F00	R2	Unknown	W6 ↙	31.3	27.6	N/A	N/A																				
		Unknown	W7 ↓	35.7	28.7	N/A	N/A																				
		Unknown	W8 ↘	30.6	24.3	6.3	0.79	32.5	26.9	5.6	0.83	99%	92%	0.95	0.93	1.50	4.02	3.44	0.58	76	67	N/A	N/A	27	18	N/A	
F01	R1	Unknown	W1 ↓	35.6	30.2	N/A	N/A																				
		Unknown	W2 ↓	35.6	30.0	N/A	N/A																				
		Unknown	W3 ↓	35.6	29.9	N/A	N/A																				
		Unknown	W4 ↓	35.6	29.8	N/A	N/A	35.6	30.0	N/A	N/A	99%	99%	0.00	1.00	1.50	4.49	3.89	0.60	56	50	N/A	N/A	24	18	N/A	
2 Trinity Road																											
F00	R2	Unknown	W3 ↙	31.1	26.5	4.6	0.85																				
		Unknown	W4 ↓	35.7	27.9	N/A	N/A																				
		Unknown	W5 ↘	29.8	23.3	6.5	0.78	32.2	25.9	6.3	0.80	99%	90%	1.20	0.91	1.50	3.97	3.33	0.64	77	67	N/A	N/A	28	18	N/A	
F01	R1	Unknown	W1 ↓	35.6	29.5	N/A	N/A																				
		Unknown	W2 ↓	35.6	29.4	N/A	N/A																				
		Unknown	W3 ↓	35.6	29.3	N/A	N/A																				
		Unknown	W4 ↓	35.6	29.2	N/A	N/A	35.6	29.3	N/A	N/A	99%	99%	0.00	1.00	1.50	4.49	3.83	0.66	56	49	N/A	N/A	24	17	N/A	
1 Trinity Road																											
F00	R1	Unknown	W1 ↙	30.4	25.2	5.2	0.83																				
		Unknown	W2 ↓	35.7	27.5	N/A	N/A																				
		Unknown	W3 ↘	29.9	23.5	6.4	0.79	32.0	25.4	6.6	0.79	99%	90%	1.23	0.91	1.50	3.96	3.28	0.68	77	66	N/A	N/A	29	18	N/A	
F01	R1	Unknown	W1 ↓	35.6	29.0	N/A	N/A																				
		Unknown	W2 ↓	35.6	28.9	N/A	N/A																				
		Unknown	W3 ↓	35.5	28.8	N/A	N/A																				
		Unknown	W4 ↓	35.5	28.7	N/A	N/A	35.5	28.8	N/A	N/A	97%	97%	0.00	1.00	1.50	3.72	3.13	0.59	56	49	N/A	N/A	24	17	N/A	
5 Dogan Terrace																											
F00	R1	Unknown	W1 ↓	33.9	26.3	7.6	0.78																				
		Unknown	W2 ↓	19.9	13.0	6.9	0.65	26.9	19.6	7.3	0.73	94%	70%	4.45	0.74	1.50	1.29	1.05	0.24	51	41	N/A	N/A	25	15	N/A	
F01	R1	Unknown	W1 ↓	34.5	28.2	N/A	N/A	34.5	28.2	N/A	N/A	98%	82%	2.86	0.84	1.50	2.22	1.89	0.33	66	58	N/A	N/A	27	19	N/A	
F02	R1	Unknown	W1 Inc	87.1	83.6	N/A	N/A	87.1	83.6	N/A	N/A	77%	61%	2.87	0.79	1.50	1.99	1.94	0.05	61	56	N/A	N/A	20	15	N/A	
4 Dogan Terrace																											
F00	R1	Unknown	W1 ↓	19.1	13.3	5.8	0.70																				
		Unknown	W2 ↓	28.2	22.3	5.9	0.79	23.6	17.8	5.8	0.75	89%	85%	0.62	0.96	1.50	1.17	0.99	0.18	40	34	N/A	N/A	20	14	N/A	
F01	R1	Unknown	W1 ↓	31.9	26.8	5.1	0.84	31.9	26.8	5.1	0.84	97%	90%	1.29	0.92	1.50	2.17	1.90	0.27	55	50	N/A	N/A	24	19	N/A	
F02	R1	Unknown	W1 Inc	85.4	82.5	N/A	N/A	85.4	82.5	N/A	N/A	77%	62%	2.53	0.80	1.50	2.10	2.06	0.04	61	57	N/A	N/A	20	16	N/A	
3 Dogan Terrace																											
F00	R1	Unknown	W1 ↓	19.7	14.5	5.2	0.74																				
		Unknown	W2 ↓	32.3	27.0	N/A	N/A	26.0	20.8	5.2	0.80	89%	89%	0.12	0.99	1.50	1.21	1.06	0.15	52	45	N/A	N/A	23	16	N/A	
F01	R1	Unknown	W1 ↓	33.8	29.2	N/A	N/A	33.8	29.2	N/A	N/A	97%	91%	1.20	0.93	1.50	2.13	1.90	0.23	66	60	N/A	N/A	28	22	N/A	
F02	R1	Unknown	W1 Inc	85.6	83.1	N/A	N/A	85.6	83.1	N/A	N/A	77%	65%	2.17	0.85	1.50	1.83	1.80	0.03	61	58	N/A	N/A	20	17	N/A	
2 Dogan Terrace																											
F00	R1	Unknown	W1 ↓	27.4	23.2	4.2	0.85																				
		Unknown	W2 ↓	18.7	14.6	4.1	0.78	23.0	18.9	4.1	0.82	89%	80%	1.66	0.90	1.50	1.08	0.96	0.12	41	37	N/A	N/A	19	15	N/A	
F01	R1	Unknown	W1 ↓	29.8	26.0	3.8	0.87	29.8	26.0	3.8	0.87	96%	94%	0.38	0.98	1.50	1.95	1.76	0.19	51	46	N/A	N/A	22	17	N/A	
F02	R1	Unknown	W1 Inc	80.3	78.2	N/A	N/A	80.3	78.2	N/A	N/A	70%	59%	1.98	0.84	1.50	1.85	1.82	0.03	57	55	N/A	N/A	20	18	N/A	
1 Dogan Terrace																											
F00	R1	Unknown	W1 ↓	16.8	13.1	3.7	0.78																				
		Unknown	W2 ↓	20.8	17.0	3.8	0.82	18.8	15.1	3.7	0.80	80%	79%	0.14	0.99	1.50	0.92	0.81	0.11	30	25	N/A	N/A	16	11	N/A	
F01	R1	Unknown	W1 ↓	25.4	22.1	3.3	0.87	25.4	22.1	3.3	0.87	92%	92%	0.00	1.00	1.50	1.74	1.58	0.16	44	40	N/A	N/A	20	16	N/A	
F02	R1	Unknown	W1 Inc	66.6	64.7	N/A	N/A	66.6	64.7	N/A	N/A	61%	51%	1.88	0.83	1.50	1.63	1.60	0.03	46	44	N/A	N/A	17	15	N/A	
287 High Road																											
F00	R1	Unknown	W1 ←	23.3	20.4	2.9	0.88																				
		Unknown	W2 ↓	23.2	20.0	3.2	0.86	23.3	20.2	3.1	0.87	86%	86%	0.00	1.00	1.50	2.53	2.31	0.22	40	36	N/A	N/A	21	17	N/A	
	R2	Unknown	W3 ↓	32.8	29.4	N/A	N/A	32.8	29.4	N/A	N/A	99%	99%	0.00	1.00	1.50	7.01	6.41	0.60	65	60	N/A	N/A	24	19	N/A	
	R3	Unknown	W4 ↓	32.4	29.5	N/A	N/A	32.4	29.5	N/A	N/A	98%	98%	0.00	1.00	1.50	4.50	4.18	0.32	70	65	N/A	N/A	27	22	N/A	
	R4	Unknown	W5 ↓	32.6	30.2	N/A	N/A																				
		Unknown	W6 ↘	30.8	30.7	N/A	N/A																				
		Unknown	W8 ↘	14.9	14.9	0.0	1.00	26.1	25.3	0.8	0.97	99%	99%	0.00	1.00	1.50	9.63	9.14	0.49	77	73	N/A	N/A	27	23	N/A	

Property, room & window attributes				VSC				Mean VSC (room)				NSL				ADF				APSH (room)						
Floor	Room	Room use	Window Ref./Orientation	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% VSC)	Prop. (% VSC)	Loss (% VSC)	Pro./Ex. ratio	Exis. (% m)	Prop. (% m)	Loss (m²)	Pro./Ex. ratio	Target (% ADF)	Exis. (% ADF)	Prop. (% ADF)	Loss (% ADF)	Annual (%APSH) Exis. Prop. Loss Pro./Ex.				Winter (%APSH) Exis. Prop. Pro./Ex.		
	R4	Unknown	W5 ↓	34.7	34.7	N/A	N/A																			
		Unknown	W6 →	33.6	33.6	N/A	N/A	34.1	34.1	N/A	N/A	99%	99%	0.00	1.00	1.50	4.14	4.13	0.01	77	76	N/A	N/A	28	27	N/A
Wallman Place Caravan Site																										
F00	R1	Bedroom	W1 →	19.9	4.4	15.5	0.22	19.9	4.4	15.5	0.22	66%	12%	5.68	0.18	1.00	1.09	0.44	0.65	North	North	N/A	N/A	North	North	N/A
	R2	Bedroom	W2 →	24.7	5.2	19.5	0.21	24.7	5.2	19.5	0.21	96%	25%	5.16	0.26	1.00	1.63	0.64	0.99	North	North	N/A	N/A	North	North	N/A
	R3	Living Room	W3 →	27.7	5.3	22.4	0.19																			
		Living Room	W4 ↑	35.3	19.9	15.4	0.56																			
		Living Room	W5 ←	35.7	35.1	N/A	N/A	32.9	20.1	12.8	0.61	100%	95%	0.61	0.95	1.50	8.20	5.27	2.93	82	65	N/A	N/A	20	20	N/A
	R4	Bedroom	W6 →	30.0	3.5	26.5	0.12																			
		Bedroom	W7 ↑	35.3	3.6	31.7	0.10	32.7	3.5	29.2	0.11	100%	22%	8.72	0.22	1.00	6.90	1.73	5.17	North	North	N/A	N/A	North	North	N/A
	R5	Bedroom	W8 ↑	35.3	5.2	30.1	0.15	35.3	5.2	30.1	0.15	99%	22%	4.29	0.22	1.00	2.48	0.69	1.79	North	North	N/A	N/A	North	North	N/A
	R6	Living Room	W9 ↑	35.3	7.2	28.1	0.20																			
		Living Room	W10 ↑	35.1	15.6	19.5	0.44																			
		Living Room	W11 ←	32.3	32.2	N/A	N/A																			
		Living Room	W12 ←	31.1	31.1	N/A	N/A																			
		Living Room	W13 ↓	31.0	29.6	N/A	N/A																			
		Living Room	W14 ↓	33.5	31.7	N/A	N/A																			
		Living Room	W15 ↓	32.6	30.1	N/A	N/A	33.0	25.4	7.6	0.77	100%	100%	0.00	1.00	1.50	7.45	6.21	1.24	90	82	N/A	N/A	25	24	N/A
	R7	Bedroom	W16 ↓	35.3	35.1	N/A	N/A	35.3	35.1	N/A	N/A	97%	97%	0.00	1.00	1.00	2.51	2.50	0.01	83	81	N/A	N/A	26	26	N/A
	R8	Living Room	W17 →	31.1	23.0	8.1	0.74																			
		Living Room	W18 →	31.0	22.8	8.2	0.74																			
		Living Room	W19 ↑	32.4	23.5	8.9	0.73	31.5	23.1	8.4	0.73	100%	73%	3.14	0.73	1.50	4.72	3.74	0.98	North	North	N/A	N/A	North	North	N/A
	R9	Living Room	W20 ↑	33.4	24.9	8.5	0.75																			
		Living Room	W21 ←	32.4	32.4	N/A	N/A																			
		Living Room	W22 ←	32.9	32.9	N/A	N/A	32.9	30.1	N/A	N/A	100%	100%	0.00	1.00	1.50	4.87	4.43	0.44	49	47	N/A	N/A	15	15	N/A
	R10	Bedroom	W23 ↓	35.7	35.6	N/A	N/A	35.7	35.6	N/A	N/A	97%	97%	0.00	1.00	1.00	2.54	2.53	0.01	83	82	N/A	N/A	26	26	N/A
	R11	Bedroom	W24 ↑	34.6	25.3	9.3	0.73	34.6	25.3	9.3	0.73	98%	72%	2.87	0.74	1.00	1.51	1.19	0.32	North	North	N/A	N/A	North	North	N/A
	R12	Bedroom	W25 ↑	34.2	26.9	7.3	0.79	34.2	26.9	7.3	0.79	99%	99%	0.00	1.00	1.00	2.21	1.83	0.38	North	North	N/A	N/A	North	North	N/A
	R13	Living Room	W26 ↑	33.5	27.8	N/A	N/A																			
		Living Room	W27 ←	15.3	15.3	0.0	1.00																			
		Living Room	W28 ←	13.7	13.7	0.0	1.00	20.8	18.9	1.9	0.91	99%	99%	0.00	1.00	1.50	2.76	2.59	0.17	25	25	N/A	N/A	6	6	N/A
	R14	Living Room	W29 ↑	33.7	27.6	N/A	N/A	33.7	27.6	N/A	N/A	98%	98%	0.00	1.00	1.50	2.54	2.17	0.37	North	North	N/A	N/A	North	North	N/A
	R15	Bedroom	W30 →	33.9	32.6	N/A	N/A	33.9	32.6	N/A	N/A	97%	97%	0.00	1.00	1.00	2.06	1.99	0.07	North	North	N/A	N/A	North	North	N/A
	R16	Living Room	W31 →	33.3	31.7	N/A	N/A																			
		Living Room	W32 ↑	35.0	31.9	N/A	N/A	34.2	31.8	N/A	N/A	100%	100%	0.01	1.00	1.50	5.09	4.79	0.30	North	North	N/A	N/A	North	North	N/A
	R17	Living Room	W33 ↑	34.9	32.1	N/A	N/A																			
		Living Room	W34 ↑	34.9	32.3	N/A	N/A																			
		Living Room	W35 ←	34.5	34.5	N/A	N/A	34.7	33.0	N/A	N/A	100%	100%	0.00	1.00	1.50	5.84	5.62	0.22	53	53	N/A	N/A	16	16	N/A
	R18	Living Room	W36 →	29.3	29.1	N/A	N/A																			
		Living Room	W37 ↑	30.2	28.7	N/A	N/A																			
		Living Room	W38 ↑	30.7	29.2	N/A	N/A	30.0	29.0	N/A	N/A	100%	97%	0.27	0.97	1.50	4.78	4.66	0.12	North	North	N/A	N/A	North	North	N/A
	R19	Living Room	W39 →	33.5	33.4	N/A	N/A																			
		Living Room	W40 →	32.5	32.5	N/A	N/A																			
		Living Room	W41 ↑	26.0	26.0	0.0	1.00	30.7	30.6	N/A	N/A	100%	100%	0.00	1.00	1.50	5.08	5.07	0.01	North	North	N/A	N/A	North	North	N/A