



DAYLIGHT & SUNLIGHT

IMPACT ON NEIGHBOURING
PROPERTIES REPORT

Anglia Square

Weston Homes

28 March 2022

GIA No: **17841**

PROJECT DATA:

Client **Weston Homes**
Architect **Broadway Malyan**
Project Title **Anglia Square**
Project Number **17841**

REPORT DATA:

Report Title **Impact on Neighbouring Properties**
GIA Department **Daylight & Sunlight**
Dated **28 March 2022**
Fee Quote **FQ0003219**
Prepared by **BST**
Checked by **DM**
Type **Final**

Revisions	No:	Date:	Notes:	Signed:

SOURCES OF INFORMATION:

Information Received **IR-19-17841**
Release Number **Rel_06_717841_**
Issue Number **01**
Site Photos **GIA / Flickr / Google**
3D models **VU.CITY**
OS Data **FIND Maps**

DISCLAIMER:

N.B This report has been prepared for Weston Homes by GIA as their appointed Daylight & Sunlight consultants. This report is intended solely for Weston Homes and may contain confidential information. No part or whole of its contents may be disclosed to or relied upon by any Third Parties without the express written consent of GIA. It is accurate as at the time of publication and based upon the information we have been provided with as set out in the report. It does not take into account changes that have taken place since the report was written nor does it take into account private information on internal layouts and room uses of adjoining properties unless this information is publicly available.



© Crown copyright and database rights 2018.
OS 100047514

CONTENTS

USER TIP:
Click any heading to go directly to that content.

1	EXECUTIVE SUMMARY	2
2	THE SITE	4
3	POLICY & THE WIDER CONTEXT	6
4	BRE GUIDELINES & CONTEXT METHODOLOGY	8
5	DAYLIGHT & SUNLIGHT IMPACTS TO NEIGHBOURING PROPERTIES	10
6	CONCLUSIONS	29

APPENDICES (BOUND SEPARATELY)

APPENDIX 01
ASSUMPTIONS

APPENDIX 02
PRINCIPLES OF DAYLIGHT, SUNLIGHT & OVERSHADOWING

APPENDIX 03
DRAWINGS

APPENDIX 04
RESULTS
A: VSC, NSL & APSH
B: NSL CONTOURS

APPENDIX 05
WINDOW MAPS

USER TIP:
Return to the contents list from any page by clicking on the GIA logo.

1 EXECUTIVE SUMMARY

GIA have assessed the proposed Broadway Malyan scheme “proposed development” for the Anglia Square site to understand the potential changes in light to the relevant surrounding properties.

- 1.1 GIA have been instructed by Weston Homes to provide daylight and sunlight advice in relation to the Anglia Square development in Norwich.
- 1.2 GIA have undertaken a technical daylight and sunlight assessment of the Broadway Malyan scheme at Anglia Square, Norwich “the Site” to understand the potential effect of the development on the daylight and sunlight amenity of the relevant neighbouring properties.
- 1.3 The requirement in Norwich for significantly more living and working spaces necessitates higher density development. The Site is located within Norwich City Council.
- 1.4 The National Planning Policy Framework (July 2021) (“NPPF”) outlines that when considering applications for housing, authorities should take a “flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making an efficient use of a site”.
- 1.5 Policy GNLP0506, in the emerging Greater Norwich Local Plan, states that “Land at and adjoining Anglia Square, Norwich (approx. 4.79 hectares) is allocated for residential-led, mixed-use development as the focus for an enhanced and improved large district centre and to act as a catalyst for wider investment and redevelopment within the Northern City Centre strategic regeneration area as defined in policy 7.1 of this plan.”
- 1.6 Norwich Local Plan states that “Development will be permitted where it would not result in an unacceptable impact on the amenity of the area or the living or working conditions or operations of neighbouring occupants”.
- 1.7 The daylight and sunlight analysis has been considered by reference to the criteria and methodology within the Building Research Establishment Guidelines (2011), which when published, recognised that it should not form a mandatory set of criteria, rather it should be used to help and inform design.
- 1.8 Upon successful completion of the proposed scheme 24 of the 39 (61%) assessed properties will meet the national numerical values identified in paragraphs 2.2.21 and 3.2.11 of the BRE handbook for daylight and sunlight.
- 1.9 GIA conducted an alternative assessment where there are existing windows with balconies above them. This test determines whether it is the presence of the existing balcony that is the reason for the large relative impact on Daylight (VSC). The results for the “No Balcony” assessment show that the transgressions caused by the proposed development would be significantly reduced.
- 1.10 In summary, this report has shown that, a majority of the assessed properties remain BRE compliant for daylight and sunlight. Where BRE transgressions occur, generally the proposed development will exhibit only a minor effect on the daylight and sunlight to nearby properties. Where nearby properties do experience meaningful alterations in daylight and sunlight, this is to be expected given the underdeveloped nature of the site and/or often feature overhanging balconies exacerbating these alterations. It is our opinion that the proposed development is appropriate in its context. Any deterioration to daylight and sunlight, upon implementation of the Proposed Development, would not result in unacceptable impact on the neighbouring occupants’ amenity.

2 THE SITE

GIA have been instructed to review and advise on the daylight and sunlight impacts associated with the implementation of the proposed development at Anglia Square, Norwich.

THE SITE

- 2.1 The Site is located in Norfolk County, within Norwich City Council ("NCC"). The Site, which comprises Anglia Square brutalist shopping centre, is located on an area of land bordered by Leonards and Edward Street to the north, Magdalen Street to the east, and Pitt Street/St Augustines Street to the west. The dual carriageway of St Crispins Road (A147) lies directly to the south of the Site.
- 2.2 This Site is a major regeneration priority. The capacity of Anglia Square to deliver a significant element of the plan's housing need on a highly accessible brownfield site means that it has strategic significance for Greater Norwich.
- 2.3 The Figure 02 below illustrates the Site. Further drawings are enclosed at Appendix 03 of this report.



Figure 02: 3D model of the existing site and surrounding properties

PROPOSED DEVELOPMENT

- 2.4 The proposed development comprises the hybrid (part full/part outline) application on site of 4.6ha for demolition and clearance of all buildings and structures and the phased, comprehensive redevelopment of the site with 14 buildings ranging in height from 1 to 8 storeys, for a maximum of 1,100 residential dwellings, (houses and flats) (Use Class C3); a maximum of 8,000 sqm flexible commercial and other non-residential floorspace plant rooms and other ancillary space (“the Proposed Development”).
- 2.5 GIA’s understanding of the Proposed Development is illustrated in Figure 03 and further drawings are enclosed at Appendix 03.

PLANNING HISTORY

We are aware that this application follows an earlier scheme which was called in by the Secretary of State (“SoS”) for determination. The reasons for refusal do not relate to daylight and sunlight amenity within neighbouring properties or within the proposed development itself.

However, the amendments to the scheme include a reduction in commercial floorspace, omission of all, or most, public car park spaces and a reduction in residents’ car park spaces. The revised scheme deliver in the region of 1,100 dwellings but without the originally proposed 20-storey tower and with smaller footprint lower blocks.



Figure 03: 3D Perspective View of the Proposed Development

3 POLICY & THE WIDER CONTEXT

- 3.1 Below we have detailed sections from the following documents as they are, in our opinion, the most pertinent in relation to daylight and sunlight matters and how we have approached the effects of the Proposed Development on the relevant neighbouring properties:
- National Planning Policy Framework (NPPF) (July 2021) (Ministry of Housing Communities and Local Government (MHCLG));
 - National Planning Practice Guidance (NPPG) (updated October 2019) (MHCLG);
 - Emerging Greater Norwich Local Plan (GNLP): and
 - Norwich Local Plan (Development Management Policies Plan).

NATIONAL PLANNING POLICY FRAMEWORK (JUNE 2021)

- 3.2 The NPPF (Feb 2021) states that local planning authorities should refuse applications which they consider fail to make efficient use of land. The discussion in relation to daylight and sunlight highlights the Government's recognition that increased flexibility is required in response to the requirement for higher density development.

"When considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards)"

NATIONAL PLANNING PRACTICE GUIDANCE (UPDATED JULY 2019)

- 3.3 In light of the update to the Government's Planning Practice Guidance, we have considered the relevant paragraphs on daylight and sunlight.
- 3.4 Paragraph 6 of the NPPG (Ref ID: 66-006-20190722) acknowledges that new development may cause an impact on daylight and sunlight levels enjoyed by neighbouring occupiers. It requires local authorities to assess whether the impact to neighbouring occupiers would be "unreasonable".

EMERGING GREATER NORWICH LOCAL PLAN

- 3.5 Policy GNLP0506 states that "Land at and adjoining Anglia Square, Norwich (approx. 4.79 hectares) is allocated for residential-led, mixed-use development as the focus for an enhanced and improved large district centre and to act as a catalyst for wider investment and redevelopment within the Northern City Centre strategic regeneration area as defined in policy 7.1 of this plan."

NORWICH LOCAL PLAN (DECEMBER 2014)

- 3.6 Policy DM2 states that "Development will be permitted where it would not result in an unacceptable impact on the amenity of the area or the living or working conditions or operations of neighbouring occupants. Particular regard will be given to:
- A the prevention of overlooking and the loss of privacy;
 - B the prevention of overshadowing and loss of light and outlook; and
 - C the prevention of disturbance from noise, odour, vibration, air or artificial light pollution."

4 BRE GUIDELINES & CONTEXT METHODOLOGY

The Building Research Establishment (BRE) have set out in their handbook '*Site Layout Planning for Daylight and Sunlight – A Guide to Good Practice (2011)*', guidelines and methodology for the measurement and assessment of daylight and sunlight.

BUILDING RESEARCH ESTABLISHMENT GUIDELINES 2011

- 4.1 The BRE Guidelines note that the document is intended to be used in conjunction with the interior daylight recommendations found within the British Standard BS8206-2:2008 and The Applications Manual on Window Design of the Chartered Institution of Building Services Engineers (CIBSE).
- 4.2 The BRE Guidelines provides three methodologies for daylight assessment of neighbouring properties, namely;
 - 1 The Vertical Sky Component (VSC);
 - 2 The No Sky Line (NSL); and
 - 3 The Average Daylight Factor (ADF).
- 4.3 For daylight to be compliant (in accordance with figure 20 of the Guide), both the VSC and NSL tests have to be met.
- 4.4 The BRE Guidelines suggest that the ADF assessment should only be used to "*check that adequate daylight is provided in new rooms*", rather than existing buildings.
- 4.5 There is one methodology provided by the BRE Guidelines for sunlight assessment, denoted as Annual Probable Sunlight Hours (APSH).
- 4.6 It is an inevitable consequence of the built-up urban environment that daylight and sunlight will be more limited in dense urban areas. It is well acknowledged that in such situations there may be many planning and urban design matters to consider other than daylight and sunlight.
- 4.7 The BRE Guidelines provide alternative assessments to better understand the impact on a neighbouring property in such situations. The relevant assessment for the purpose of this report is detailed within the BRE Guidelines and summarised below.
- 4.8 The BRE Guidelines provide an alternative assessment where there are existing windows with balconies above them. This test determines whether it is the presence of the existing balcony that is the reason for the large relative impact on daylight (VSC).
- 4.9 GIA have undertaken the supplementary "No Balcony" assessment in line with the BRE Guidelines. This has been undertaken for 8-22 Edward Street and 1-16 Dalymond Court.
- 4.10 Although not strictly in accordance with the BRE methodology, where a room is served by two or more windows of the same or different sizes, the VSC value to the room has been calculated by applying an average weighting calculation to understand the VSC value to the room. It is GIA's opinion that this is a reasonable method to follow in that it follows the principles of the Guidelines.
- 4.11 The BRE also provide a methodology to calculate APSH in relation to the room and window.
- 4.12 "If a room has multiple windows on the same walls or adjacent walls, the highest value of APSH should be taken. If a room has two windows on opposite walls, the APSH due to each can be added together."
- 4.13 The above extract from the BRE Guidelines is in relation to proposed units rather than existing buildings. It does, however, make sense to apply this methodology to existing rooms. A room served by multiple windows could receive the benefit of sunlight entering from all of them and not just one.
- 4.14 Evaluating per-room Probable Sunlight Hours is meant to be carried out with diagrams and acetate overlays, which makes accounting for individual spots challenging if not impossible. APSH assessments are now typically done using specialised computer software which allows the assessment of rooms with multiple windows to be completed more accurately than what is suggested in the BRE Guidelines.
- 4.15 Appendix 02 of this report elaborates on the mechanics of each of the above assessment criteria, explains the appropriateness of their use and the parameters of each specific recommendation.

CONTEXT METHODOLOGY

- 4.16 It is an inevitable consequence of the built-up urban environment that daylight and sunlight will be more limited in dense urban areas. It is well acknowledged that in such situations there may be many other conflicting and potentially more important planning and urban design matters to consider other than just the provision of ideal levels of daylight and sunlight.
- 4.17 The BRE notes that while Guidance offers numerical target values in assessing how much light from the sky is blocked by obstructing buildings, “these values are purely advisory and different targets may be used based on the special requirements of the proposed development or its location”. It is well-established and accepted that the BRE Guidelines are predicated on a relatively low-rise suburban environment. In essence, the BRE Guidelines offers the opportunity to consider alternative target values in certain circumstances. GIA would suggest that such circumstances extend to urban environments.

5 DAYLIGHT & SUNLIGHT IMPACTS TO NEIGHBOURING PROPERTIES

This section details the daylight and sunlight impacts in relation to the relevant properties neighbouring the Site.

5.1 A three-dimensional computer model of the Site and surrounding properties was produced to carry out the relevant technical studies. All relevant assumptions made in producing this model can be found in Appendix 01.

- Grace Jarrold Court;
- 59 Magdalen Street;
- 61-63 Magdalen Street;
- 89-95 Magdalen Street; and
- 58 Magdalen Street.

SURROUNDING PROPERTIES

5.2 GIA have identified the following properties as relevant for daylight and sunlight assessment:

- 1 St Augustines Street;
- 1-3 Damian Elton Court;
- 1-6 Rose Yard;
- 13 St Augustines Street;
- 16 -46 Leonards Street (Even Numbers Only);
- 3 St Augustines Street;
- 9 Rose Yard;
- 7-11 St Augustines Street;
- 2 Gildencroft;
- Grace Jarrold Court;
- 59 Magdalen Street;
- 61-63 Magdalen Street;
- 67-69 Magdalen Street;
- 71-75 Magdalen Street (Odd Numbers Only);
- 89-95 Magdalen Street (Odd Numbers Only)
- 8-22 Edward Street;
- 1-16 Dalymond Court;
- 58 Magdalen Street; and
- 4-6 Beckham Place;

5.3 The following properties adhere to the numerical values set out within the BRE Guidelines and are not discussed further:

- 1 St Augustines Street;
- 1-3 Damian Elton Court;
- 1-6 Rose Yard;
- 13 St Augustines Street;
- 16 -18 Leonards Street;
- 26 Leonards Street;
- 32 Leonards Street;
- 38 Leonards Street;
- 42-46 Leonards Street;
- 3 St Augustines Street;
- 9 Rose Yard;
- 7-11 St Augustines Street;
- 2 Gildencroft;

5.4 In completing our report, we have undertaken an assessment comparing an existing v proposed scenario of 39 neighbouring residential receptors.

5.5 Where changes in daylight and sunlight occur to the remaining properties, the impacts are fully discussed in the following sections. All results can be found in Appendix 04.

5.6 To assist the readers understanding of the surrounding properties and window locations, we have produced window maps which are enclosed at Appendix 05 of this report.

5.7 No Sky Line (NSL) contour plots for the assessed surrounding neighbouring properties have provided in Appendix 07.

INTENTIONALLY BLANK PAGE

DISCUSSION OF RESULTS.

16-46 Leonards Street



Figure 04: Site Plan

5.12 The properties along Leonards Street comprise two-storey terraced houses, located directly north of the proposed Block B and are solely residential in use. Internal layouts for Nos. 30, 32 and 40 Leonards Street have been obtained from Council records and implemented within the daylight and sunlight analysis model.

5.13 Out of 16 assessed properties, eight properties, namely 16, 18, 26, 32, 38, 42, 44 and 46 Leonards Street, remain BRE compliant for daylight and sunlight and are not discussed further.

5.14 Property No. 20 Leonards Street remains fully compliant for the daylight to the window (VSC) assessment.

5.15 Below, GIA have summarised the daylight and sunlight results in table format for the remaining eight properties located along Leonards Street:

Vertical Sky Component – VSC

5.16 Of the 72 windows assessed for VSC, 64 (89%) remain BRE compliant for daylight following implementation of the Proposed Development.

5.17 Leonard Street properties that experience BRE transgressions for daylight to the window (VSC) have been summarised in the table below:

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
22 Leonards Street	5	4 (80.0%)	1 (20.0%)	0 (0.00%)	0 (0.00%)
24 Leonards Street	6	4 (66.7%)	2 (28.5%)	0 (0.00%)	0 (0.00%)
Total	29	21 (72.4%)	8 (27.6%)	0 (0.00%)	0 (0.00%)

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
28 Leonards Street	3	1 (33.3%)	2 (66.6%)	0 (0.00%)	0 (0.00%)
30 Leonards Street	5	4 (80.0%)	1 (20.0%)	0 (0.00%)	0 (0.00%)
34 Leonards Street	5	4 (80.0%)	1 (20.0%)	0 (0.00%)	0 (0.00%)
40 Leonards Street	5	4 (80.0%)	1 (20.0%)	0 (0.00%)	0 (0.00%)
Total	29	21 (72.4%)	8 (27.6%)	0 (0.00%)	0 (0.00%)

5.18 A total of 29 windows were considered relevant for the VSC assessment, of which 21 (72.4%) meet the BRE recommendations. The remaining eight windows would experience daylight alterations of between 20.6% and 24.5%, which GIA consider to be a minor change.

5.19 Of the remaining eight windows, three (W2 and W3/F00 22 Leonard Street and W3/F00 34 Leonard Street) benefit from other windows serving the room which mitigates the changes in daylight and as a result the properties remains BRE compliant for the supplementary VSC to the room test.

No Sky Line – NSL

5.20 Of the 62 rooms assessed for NSL, 60 (96.7%) experience no noticeable alteration in daylight distribution following implementation of the Proposed Development.

5.21 Leonard Street properties that experience BRE transgressions for daylight to the room (NSL) have been summarised in the table below:

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
30 Leonards Street	4	3 (75.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)
36 Leonards Street	4	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)
Total	29	21 (72.4%)	8 (27.6%)	0 (0.00%)	0 (0.00%)

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
20 Leonards Street	3	2 (33.3.0%)	1 (0%)	0 (0%)	0 (0%)
24 Leonards Street	4	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)
28 Leonards Street	3	2 (33.3.0%)	1 (25.0%)	0 (0%)	0 (0%)
Total	29	21 (72.4%)	8 (27.6%)	0 (0.00%)	0 (0.00%)

5.22 A total of eight rooms within the properties that experience daylight to room alterations were considered for the NSL assessment, of which six (75.0%) meet the BRE recommendations. Of the remaining two rooms, one room (R2/F00 at No. 36 Leonards Street) retains value of 50% and above which GIA would consider to be good given the urban/town centre context within which the property is located. The remaining room (R3/F00 at No. 30 Leonards Street) experiences moderate alteration of 37.4%. However, this anomaly is predominantly caused due to the design and location of the windows within this room. These windows are obstructed in the existing situation, with self-inhibiting design, in this case extension, as shown in Figure 06 below.

5.23 Furthermore, windows in this property at the lower floors especially, are heavily reliant on light received over the currently underdeveloped Site where the Block B is situated. This means that even a modest new massing on the Site will result in large percentage changes of light to these windows.

5.24 Notwithstanding this, properties for which the internal layout has not been obtained are not required to be assessed for NSL, as set out in the BRE Guidelines. However, GIA has assessed all neighbouring residential properties for completeness.

Annual Probable Sunlight Hours – APSH

5.25 A total of 53 windows at Leonards Street were considered relevant for sunlight assessment as they are oriented within 90 degrees of due south, of which 50 (94.3%) meet the BRE criteria.

5.26 Two Leonard Street properties that experience BRE transgressions for sunlight have been summarised in the table below:

5.27 A total of 10 windows within the properties that experience sunlight alterations were considered for APSH assessment, of which seven (70%) meet the BRE recommendations. Of the remaining three windows, two windows (W2/F00 at 24 Leonards Street and W1/F00 at 28 Leonards Street) remain BRE compliant achieving excellent 30% APSH, exceeding 25% recommendation set out in the BRE Guidelines. The remaining window, W3/F00 at 20 Leonard Street, will retain 22% APSH, marginally below the BRE target value of 25% APSH. All three windows retain 3% winter sunlight which is considered good given the urban/town centre context within which the property is located.

5.28 Furthermore, all three remaining windows benefit from other windows serving the room which mitigates the changes in sunlight and as a result the properties remains BRE compliant for the supplementary APSH to the room test.

Conclusion

5.29 In consideration of the above, there is a high level of compliance to all three relevant BRE assessments. Although there are breaches of the BRE Guidelines, where alterations do occur it is self-inhibiting design features and the unobstructed access to daylight and sunlight over the currently underdeveloped nature of the existing Site, on which Block B is located, which contributes to the changes.

5.30 It is GIA's opinion that unacceptable impact to 16-46 Leonards Street properties will not be caused.

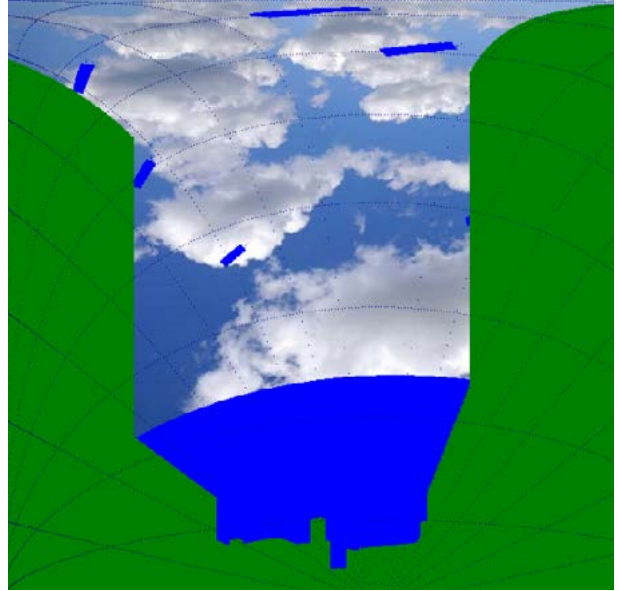
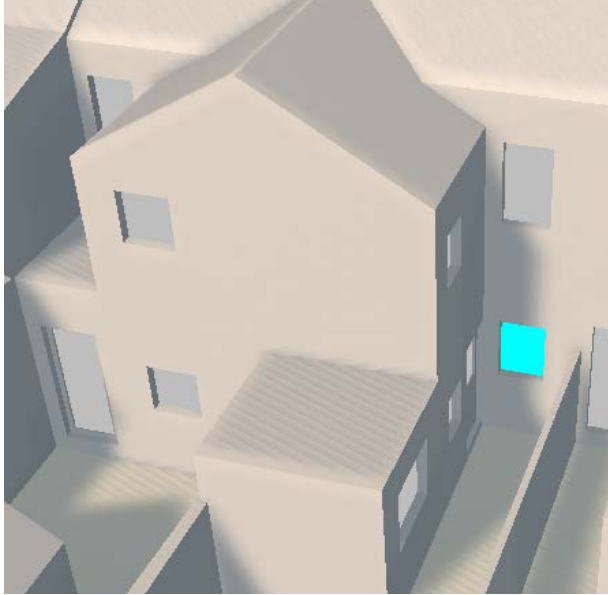


Figure 05: No. 30 Leonards Street, R3/FOO self-inhibiting design feature (extension)

67-69 Magdalen Street

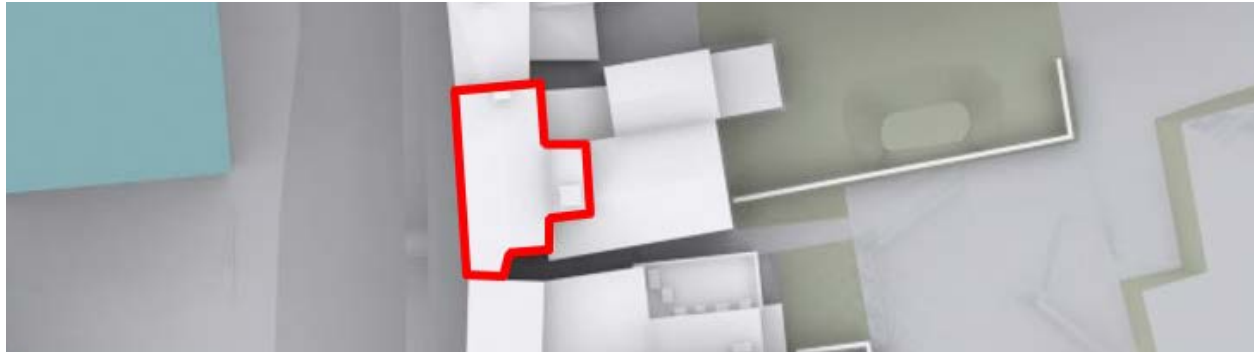


Figure 06: Site Plan.

- 5.31 Nos. 67-69 Magdalen Street is a three-storey property located immediately east of the Site and is mixed use. The residential units are located from first floor upwards. Internal layouts have been assumed in line with the assumptions set out in Appendix 01 of this report.
- 5.32 This property remains BRE compliant for the daylight to the room (NSL) and sunlight (APSH) assessments.
- 5.33 Below, GIA have summarised the daylight results in table format:

Vertical Sky Component – VSC

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
67-69 Magdalen Street	10	9 (90.0%)	1 (10.0%)	0 (0.0%)	0 (0.0%)

- 5.34 A total of ten windows were considered relevant for the VSC assessment, of which 9 (90%) meet the BRE recommendations. One window (W7/F01) would experience an alteration of 20.8%, marginally above 20% recommended by BRE. Furthermore, this window benefits from other windows serving the room which mitigates the changes in daylight and as a result the properties remains BRE compliant for the supplementary VSC to the room test.

Conclusion

- 5.35 In consideration of the above, there is excellent level of compliance to all three relevant BRE assessments. Although there is a minor breach of the BRE Guidelines in relation to daylight to one window, it is GIA’s opinion that unacceptable impact to 67 - 69 Magdalen Street will not be caused.

75 Magdalen Street



Figure 07: Site Plan.

- 5.36 No. 75 Magdalen Street is a three-storey property located immediately east of the Site and is mixed use. The residential units are located on the first and second floor. Internal layouts have been assumed in line with the assumptions set out in Appendix O1 of this report.
- 5.37 This property remains BRE compliant for the sunlight (APSH) assessment.
- 5.38 Below, GIA have summarised the daylight results in table format:

Vertical Sky Component – VSC

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
75 Magdalen Street	2	0 (0.0%)	2 (100%)	0 (0.0%)	0 (0.0%)

- 5.39 Two windows were tested for the VSC assessment and none of these remain BRE compliant. Although it should be noted that alterations in daylight of between 23.8% (W1/F01) and 28.6% (W1/F02) are considered by GIA to be a minor.

No Sky Line – NSL

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
75 Magdalen Street	2	0 (0.0%)	0 (0.0%)	1 (50.0%)	1 (50.0%)

- 5.41 Two rooms assessed for NSL experience transgressions outside of the BRE's recommendations. Notwithstanding this, one room (R21/F02) retains a value of 50% and above which GIA considers to be good given the urban/town centre context within which the property is located. The remaining room (R1/F00) experiences a moderate alteration of 38.1% NSL.
- 5.42 Notwithstanding this, properties for which the internal layout has not been obtained are not required to be assessed for NSL, as set out in the BRE Guidelines. However, GIA has assessed all neighbouring residential properties for completeness.

Conclusion

- 5.43 In consideration of the above, although there is a breach of the BRE Guidelines in relation to daylight, it is GIA's opinion that unacceptable impact to 75 Magdalen Street will not be caused.

73 Magdalen Street

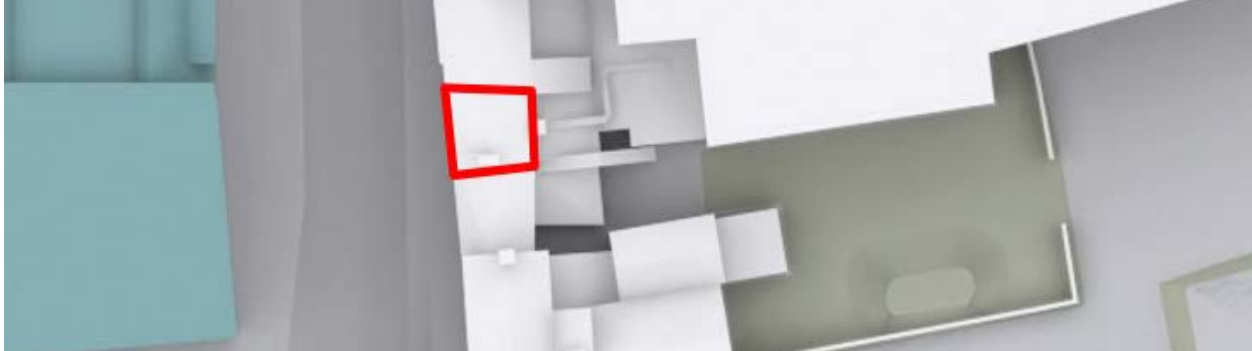


Figure 08: Site Plan.

- 5.44 No. 73 Magdalen Street is a two-storey property located immediately east of the Site and is mixed use. The residential units are located on the first floor. Internal layouts have been assumed in line with the assumptions set out in Appendix 01 of this report.
- 5.45 This property remains BRE compliant for the sunlight (APSH) assessment.
- 5.46 Below, GIA have summarised the daylight results in table format:

Vertical Sky Component – VSC

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
73 Magdalen Street	2	0 (0.0%)	2 (100%)	0 (0.0%)	0 (0.0%)

- 5.47 Two windows were tested for VSC assessment and none of these remain BRE compliant. Although it should be noted that alterations in daylight of 23.5% (W1 and W2/F01) are considered to be minor. The retaining values of 23.7% (W1/F01) and 23.5% (W2/F01) are considered to be good given the urban/town centre context within which the property is located.

No Sky Line – NSL

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
73 Magdalen Street	2	0 (0.0%)	0 (0.0%)	2 (100%)	0 (0.0%)

- 5.48 Two rooms assessed for NLS experience

transgressions outside of the BRE’s recommendations. Notwithstanding this, these rooms (R1 and R2/F01) retain values of 50% and above which GIA would consider to be good given the urban/town centre context within which the property is located.

- 5.49 As discussed above, properties for which the internal layout has not been obtained are not required to be assessed for NSL, as set out in the BRE Guidelines. However, GIA has assessed all neighbouring residential properties for completeness.

Conclusion

- 5.50 In consideration of the above, although there is a breach of the BRE Guidelines in relation to daylight, it is GIA’s opinion that unacceptable impact to 73 Magdalen Street will not be caused.

71 Magdalen Street

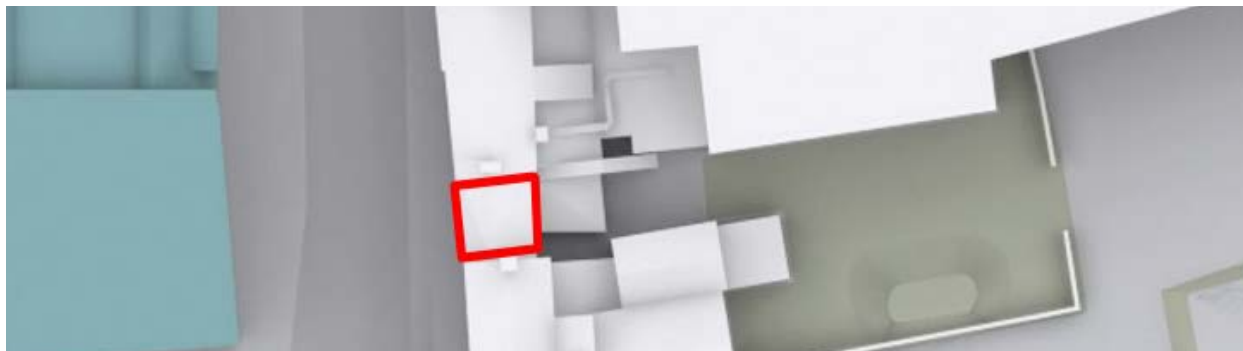


Figure 09: Site Plan.

- 5.51 No. 71 Magdalen Street is a two-storey property located immediately east of the Site and is mixed use. The residential units are located on the first floor. Internal layouts have been assumed in line with the assumptions set out in Appendix 01 of this report.
- 5.52 This property remains BRE compliant for the sunlight (APSH) assessment.
- 5.53 Below, GIA have summarised the daylight results in table format:

Vertical Sky Component – VSC

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
71 Magdalen Street	2	0 (0.0%)	2 (100%)	0 (0.0%)	0 (0.0%)

- 5.54 Two windows were tested for VSC assessment and none of these remain BRE compliant. Although it should be noted that alterations in daylight of between 21.5% (W1/F01) and 23.5% (W2/F01) are considered to be a minor. Additionally, those windows retain VSC values of 24.9% and 24.1% respectively, which GIA considered to be good given the urban/town centre context within which the property is located.

No Sky Line – NSL

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
71 Magdalen Street	1 (50.0%)	1 (50.0%)	0 (0.0%)	0 (0.0%)	1 (50.0%)

- 5.55 Of the two rooms assessed, one will remain BRE compliant for the NSL assessment. The remaining room (R2/F01) retains a value of 73.4%, only marginally below 80% BRE target, which is considered good given the urban/town centre context within which the property is located.
- 5.56 As discussed above, properties for which the internal layout has not been obtained are not required to be assessed for NSL, as set out in the BRE Guidelines. However, GIA has assessed all neighbouring residential properties for completeness.

Conclusion

- 5.57 In consideration of the above, although there is a breach of the BRE Guidelines in relation to daylight, it is GIA's opinion that unacceptable impact to 71 Magdalen Street will not be caused. Magdalen Street will not be caused.

4-6 Beckham Place



Figure 10: Site Plan.

5.58 Properties at Beckham Place comprise three-storey terraced houses, located directly north of the proposed Block C and are solely residential in use. Internal layouts have been obtained from Council records and implemented within the daylight and sunlight analysis model.

5.59 This property remains BRE compliant for daylight to the room (NSL) assessment.

5.60 Below, GIA have summarised the daylight and sunlight results in table format:

Vertical Sky Component – VSC

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
4-6 Beckham Place	37	23 (62.2%)	12 (32.4%)	2 (5.4%)	0 (0.0%)

5.61 A total of 37 windows were considered relevant for the VSC assessment, of which 23 (62.2%) meet the BRE recommendations. Of the remaining 14 windows, 12 would experience daylight alterations of between 21.1% and 28.9% VSC which GIA considers to be minor. The remaining two windows, (W13 and W16/F00) would experience moderate alterations of between 30.2% and 31.5% respectively.

5.62 Notwithstanding this, all remaining 14 windows, with the exception of W12/F00, will retain values of 20% and above, which GIA considers to be good given the urban/town centre context within which the property is located.

5.63 Furthermore, windows in this property, at the lower floors especially, are heavily reliant on light received over the currently underdeveloped Site where the proposed Block C is situated. This means that even

a modest new massing on the Site will result in large percentage changes of light to these windows.

Annual Probable Sunlight Hours – APSH

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
4-6 Beckham Place	35	34 (97.1%)	0 (0.0%)	0 (0.0%)	1 (2.9%)

5.64 A total of 35 windows at Beckham Place were considered relevant for sunlight assessment as they are oriented within 90 degrees of due south, of which 34 (97.1%) meet the BRE criteria. The remaining window (W14/F00) would experience BRE transgressions in respect to winter sunlight, however this window remains compliant for APSH achieving excellent 55%, far exceeding 25% recommendation set out in the BRE Guidelines.

5.65 Furthermore, the remaining window benefits from other windows serving the room (R6/F00) which mitigates the changes in winter sunlight and as a result this property remains BRE compliant for the supplementary APSH to the room test.

Conclusion

5.66 In consideration of the above, there is a high level of compliance to all three relevant BRE assessments. Although there are breaches of the BRE Guidelines, where alterations do occur it is the unobstructed access to daylight and sunlight over the currently underdeveloped nature of the existing Site, on which Block C is located, which contributes to the changes.

5.67 It is GIA’s opinion that unacceptable impact to Beckham Place properties will not be caused.

INTENTIONALLY BLANK PAGE

8-22 Edward Street

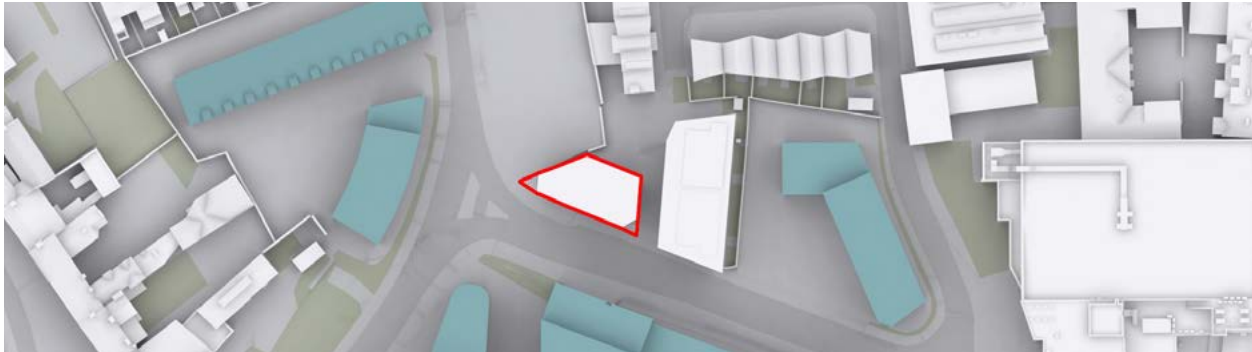


Figure 11: Site Plan.

5.68 Nos. 8-22 Edward Street is a four-storey property, located west of the proposed Block B and north of the proposed blocks A and D, is solely residential in use. Room layouts have been obtained from RightMove.co.uk for this property and incorporated in our analysis model.

5.69 Below, GIA have summarised the daylight and sunlight results in table format:

Vertical Sky Component – VSC

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
8-22 Edward Street	24	7 (29.2%)	6 (25.0%)	8 (33.5%)	3 (12.5%)

5.70 A total of 24 windows were considered relevant for the VSC assessment, of which seven meet the BRE recommendations.

5.71 Of the 17 windows that experience BRE transgressions for VSC, one window on the second floor (W5/F02) benefits from other windows serving the room (R3/F02) which mitigates the changes in daylight and as a result the room remains BRE compliant for the supplementary VSC to the room test.

5.72 Of the remaining 16 windows, four (W4-W5/F00, and W4-W5/F01) retain VSC values of 22.1% and above, which GIA considers to be good given the context within which this property is located. Additionally, these windows appear to serve bedrooms (R3/F00 and R3/F01), according to the information obtained from estate agent and property websites. Given that the prime use of bedrooms is for sleeping, they are

considered to have a lower expectation for daylight when compared with main habitable spaces such as living rooms.

5.73 Of the remaining 12 windows that experience BRE transgressions for VSC, five (W2, W8/F00, W2, W8/F01, W2/F02 and W8/F03) serve living rooms which are heavily restricted by overhanging balconies. Given that they are positioned beneath the overhanging balconies, daylight will naturally be restricted. This is acknowledged by the BRE Guidelines

“existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC, and on the area receiving direct skylight.”

5.74 Figure 12 illustrates how the overhanging balcony restricts visibility of the sky. All five windows beneath overhanging balconies experience similar restrictions.

5.75 In line with the BRE Guidelines, GIA has run a hypothetical analysis with the balconies removed as shown in the table below:

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
8-22 Edward Street	24	10 (29.2%)	5 (25.0%)	7 (33.5%)	2 (12.5%)

5.76 The results from this assessment indicate that were the balconies removed from the property, additional three windows (W2/F00, W2/F01 and W8/F03) would meet the BRE criteria for VSC. This demonstrates that an existing architectural feature of 8-22 Edward Street is restricting the level

of daylight that can be achieved. A conflict therefore exists between the desire to have access to outdoor space against daylight amenity.

No Sky Line – NSL

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
8-22 Edward Street	12	11 (91.7%)	1 (8.3%)	0 (0.0%)	0(0.0%)

5.77 Of the 12 rooms assessed, 11 (91.7%) will remain BRE complaint for the NSL assessment. The remaining room (R5/F00) will retain a value of 66.7% which GIA would consider to be good given the urban/town centre context within which the property is located.

Annual Probable Sunlight Hours – APSH

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
8-22 Edward Street	20	18 (90.0%)	0 (0.0%)	0 (0.0%)	2 (10.0%)

A total of 20 windows at 8-22 Edward Street were considered relevant for sunlight assessment as they are oriented within 90 degrees of due south, of which 18 (90%) meet the BRE criteria. Of the remaining two windows, one (W8/F01) will retain 25%, meeting the

BRE criteria for APSH while also retaining 4% winter sunlight, which is considered to be good given the urban/town centre context within this property is located.

5.78 Additionally, the two remaining windows (W8/F00 and W8/F01) benefit from other windows serving rooms (R5/F00 and R5/F01) which mitigates the changes in winter sunlight and as a result this property remains BRE compliant for the supplementary APSH to the room test.

Conclusion

5.79 In consideration of the above, there is a high level of compliance to daylight to the room (NSL) and sunlight (APSH) assessments. Although there are breaches of the BRE Guidelines, it is GIA’s opinion that unacceptable impact to 8-22 Edward Street property will not be caused.

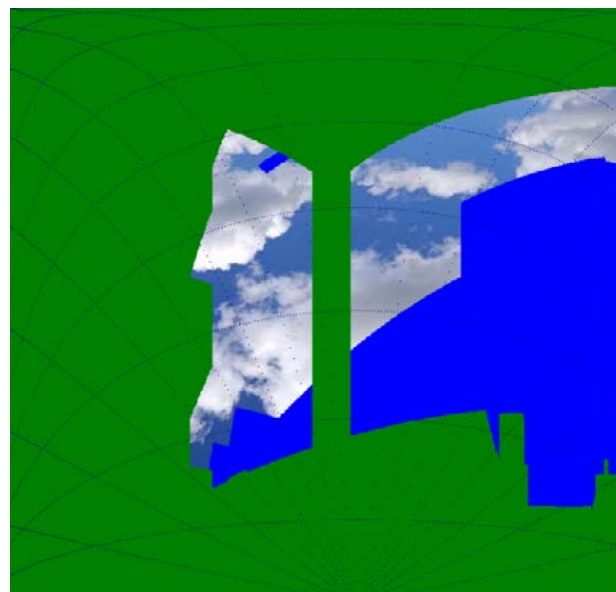


Figure 12: Window Map for W8/F00 and Waldram diagram highlighting how the existing overhanging balcony feature restricts the receipt of daylight.

1-16 Dalymond Court

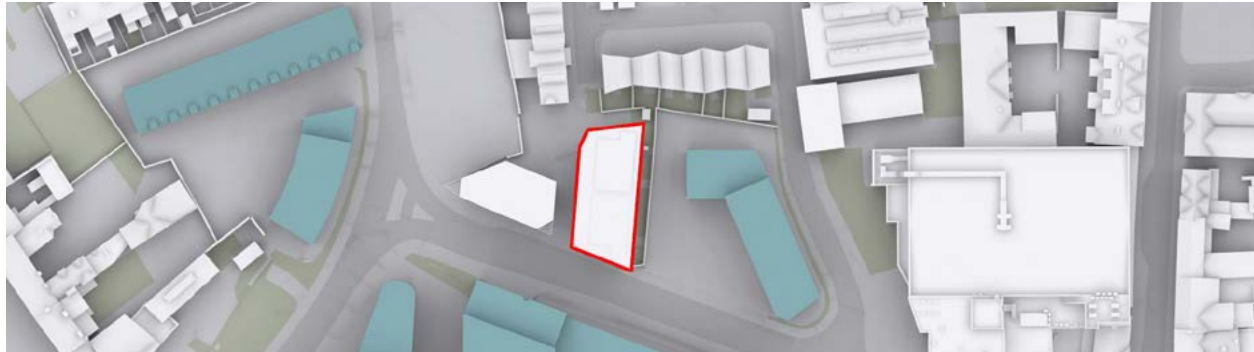


Figure 13: Site Plan

5.80 Nos. 1-16 Dalymond Court is a four-storey property, located west of the proposed Block C and north of the proposed blocks A and D, is solely residential in use. Room layouts have been obtained from RightMove.co.uk for this property and incorporated in our analysis model.

5.81 Below, GIA have summarised the daylight and sunlight results in table format:

Vertical Sky Component – VSC

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
1-6 Dalymond Court	108	66 (61.1%)	15 (13.8%)	9 (8.3%)	18 (16.7%)

5.82 A total of 108 windows were considered relevant for the VSC assessment, of which 66 (61.1%) meet the BRE recommendations.

5.83 Of the 42 windows that experience BRE transgressions for VSC, ten windows (W2-W3/F00, W2-W3, W29/F01, W5-W6/F02, and W8, W13-W14/F03) benefit from other windows serving the rooms (R1/F00, R1, R14/F01, R3/F02, and R3, R5/F03) which mitigates the changes in daylight and as a result these rooms remain BRE compliant for the supplementary VSC to the room test.

5.84 Of the remaining 32, 13 windows (W13, W16, W18, W20/F00, W14, W16, W19, W21, W23-W25, and W27-W28/F01) experience minor daylight alterations or retain VSC values of 18.3% and above, which GIA considers good given the context within which this property is located. Additionally, these windows appear to serve bedrooms, according to the

information obtained from estate agent and property websites. Given that the prime use of bedrooms is for sleeping, they are considered to have a lower expectation for daylight when compared with main habitable spaces such as living rooms.

5.85 Of the remaining 19 windows that experience BRE transgressions for VSC, all 19 windows (W5-W6, W8-W9, W11-W12/F00, W5-W6, W8-W9, W11-W12/F01, W8-W9/F02 and W11-W12, W18-W20/F03) serve living rooms which are heavily restricted by overhanging balconies. Given that they are positioned beneath the overhanging balconies, daylight will naturally be restricted. This is acknowledged by the BRE Guidelines:

“existing windows with balconies above them typically receive less daylight. Because the balcony cuts out light from the top part of the sky, even a modest obstruction opposite may result in a large relative impact on the VSC, and on the area receiving direct skylight.”

5.86 Figure 14 below illustrates how the overhanging balcony restricts visibility of the sky. The remaining 19 windows beneath overhanging balconies experience similar restrictions.

5.87 In line with the BRE Guidelines, GIA has run a hypothetical analysis with the balconies removed as shown in the table below:

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
1-6 Dalymond Court	108	78 (72.2%)	16 (14.8%)	9 (8.3%)	5 (4.6%)

- 5.88 The results from this assessment indicate that, were the balconies removed from the property, additional 12 windows would meet the BRE criteria for VSC. This demonstrates that the existing architectural features of 1-16 Dalymond Court are restricting the level of daylight that can be achieved. A conflict therefore exists between the desire to have access to outdoor space against daylight amenity.
- 5.89 Furthermore, windows in this property at the lower floors especially, are heavily reliant on light received over the currently underdeveloped Site. This means that even a modest new massing on the Site will result in large percentage changes of light to these windows.

No Sky Line – NSL

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
1-6 Dalymond Court	44	30 (68.2%)	5 (11.4%)	5 (11.4%)	4(9.0%)

- 5.90 Of the 44 rooms assessed, 30 (68.2%) will remain BRE complaint for the NSL assessment. Of the remaining 14, eight rooms will retain a value of 53.6% which GIA would consider to be good given the urban/town centre context within which the property is located. The remaining room (R15/F00) which is a bedroom will experience a meaningful change of 53.2%, however given that the prime use of bedrooms is for sleeping, they are considered to have a lower expectation for daylight when compared with main habitable spaces such as living rooms.
- 5.91 The supplementary “No Balcony” assessment demonstrates that two more rooms (R3/F00 and R7/F01) would meet the BRE requirements, which again indicates that the existing architectural features of 1-16 Dalymond Court are restricting the level of daylight that can be achieved. A conflict therefore exists between the desire to have access to outdoor space against daylight amenity.

Annual Probable Sunlight Hours – APSH

Property	No. of windows	BRE Compliant	20% to 30% Reduction	30% to 40% Reduction	40%+ Reduction
1-6 Dalymond Court	48	36 (75.0%)	1 (2.0%)	1 (2.0%)	10 (20.8%)

- 5.92 A total of 48 windows at 1-16 Dalymond Court were considered relevant for sunlight assessment as they are oriented within 90 degrees of due south, of which 36 (75%) meet the BRE criteria.
- 5.93 Of the remaining 12 windows, two (W14/F003 and W18/F01) will benefit from other windows serving rooms (R5 and R7/F03) which mitigates the changes in winter sunlight and as a result these rooms remain BRE compliant for the supplementary APSH to the room test.
- 5.94 Of the remaining 10 windows, two (W13/F00 and W15/F01) will remain BRE compliant for APSH while retaining 4% winter sunlight, which GIA considers to be good given the urban/town centre requirement within which this property is located.
- 5.95 Of the remaining eight windows, two (W18 and W20/F00) will retain 23% and 22% APSH respectively, marginally below 25% target set out in the BRE Guidelines, which is considered good given the urban/town centre requirement within which this property is located. Additionally, these windows remain BRE compliant for winter sunlight.
- 5.96 The remaining six windows (W8, W11/F00, W8, W11/F01 and W8, W11/F02) serve living rooms which are heavily impacted by overhanging balconies. Given that they are positioned beneath the overhanging balconies, sunlight will naturally be restricted.
- 5.97 Furthermore, the supplementary “No Balcony” assessment demonstrates that, were the balconies removed from the property, additional two windows (W11/F01 and W11/F02) would meet the BRE criteria for APSH, which again illustrates that the overhanging balconies contribute to the daylight and sunlight alterations.

Conclusion

- 5.98 In consideration of the above, although there is a breach of the BRE Guidelines, it is the widespread presence of overhanging balconies and unobstructed access to daylight and sunlight over the currently underdeveloped nature of the existing Site, on which Block C is located, which results in unavoidable movement in daylight and sunlight levels.
- 5.99 Notwithstanding this, it is GIA’s opinion that unacceptable impact to 1-16 Dalymond Court will not be caused.

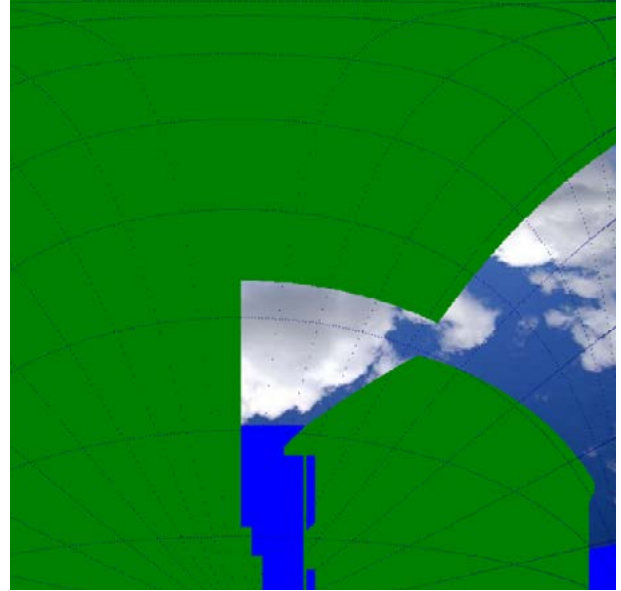


Figure 14: Window Map for W2/F02 and Waldram diagram highlighting how the existing overhanging balcony feature restricts the receipt of daylight.

INTENTIONALLY BLANK PAGE

6 CONCLUSIONS

GIA have undertaken a daylight and sunlight assessment in relation to the Proposed Development at Anglia Square. The technical analysis has been undertaken in accordance with the BRE Guidelines.

- 6.1 Throughout the design process, the scheme has been subjected to extensive testing to minimise the daylight and sunlight impacts to the surrounding residential properties.
- 6.2 When constructing buildings in an town centre environment, alterations in daylight and sunlight to adjoining properties are often unavoidable. The numerical guidance given in the BRE document should be treated flexibly, and particularly where neighbouring properties have existing architectural features which restrict the availability of daylight and sunlight.
- 6.3 Our technical analysis shows a good level of compliance for daylight and sunlight following the implementation of the Proposed Development. Where breaches of guidance occur, contextual constraints influence the results, such as, the existing architectural design of 8-22 Edward Street and 1-16 Dalymond Court which restricts the daylight to the window (VSC) and sunlight (APSH) in the existing condition.
- 6.4 In an attempt to illustrate the unfair burden of the design, GIA has conducted a supplementary "No Balcony" assessment which indicates that were the balconies removed from the properties, the transgressions caused by the Proposed Development would be significantly reduced. This demonstrates that the existing architectural features of 8-22 Edward Street and 1-16 Dalymond Court which restricts the daylight to the window (VSC) and sunlight (APSH) in the existing condition.
- 6.5 Based on the overall good compliance levels in the adjoining properties and context of the Site, although there is a breach of the BRE Guidelines, it is our opinion that the Proposed Development is appropriate in its context. Any deterioration to daylight and sunlight, upon implementation of the Proposed Development, would not amount to "unacceptable" impact on the neighbouring daylight and sunlight amenity.
- 6.6 Policy GNLP0506, in the emerging Greater Norwich Local Plan, states that "Land at and adjoining Anglia Square, Norwich (approx. 4.79 hectares) is allocated for residential-led, mixed-use development as the focus for an enhanced and improved large district centre and to act as a catalyst for wider investment and redevelopment within the Northern City Centre strategic regeneration area as defined in policy 7.1 of this plan."
- 6.7 In consideration of the above, it is our conclusion, that the Proposed Development complies with the relevant Norwich Local Plan (2014) and local policies on daylight and sunlight.

INTENTIONALLY BLANK PAGE



For further details please contact us on:

LONDON

T 020 7202 1400

E mail@gia.uk.com

The Whitehouse
Belvedere Road
London SE1 8GA

MANCHESTER

T 0161 672 5100

E manchester@gia.uk.com

2 Commercial Street
Manchester
M15 4RQ

BELFAST

T 02892 449 674

E belfast@gia.uk.com

River House
48-60 High Street
Belfast BT1 2BE

BRISTOL

T 0117 374 1504

E bristol@gia.uk.com

33 Bristol
Colston Avenue
Bristol BS1 4UA

DUBLIN

T 020 7202 1400

E hello@giasurveyors.ie

77 Lower Camden Street
Dublin Ireland
D02 XE80