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**DAYLIGHT &
SUNLIGHT
REPORT**

relating to the

**PROPOSED
DEVELOPMENT
(REVISED SCHEME)**

at

**HAVEN BANKS
HAVEN ROAD
EXETER
EX2**

STATUS: Issued

**FEBRUARY 2023
Ref: 2053/J rev-**

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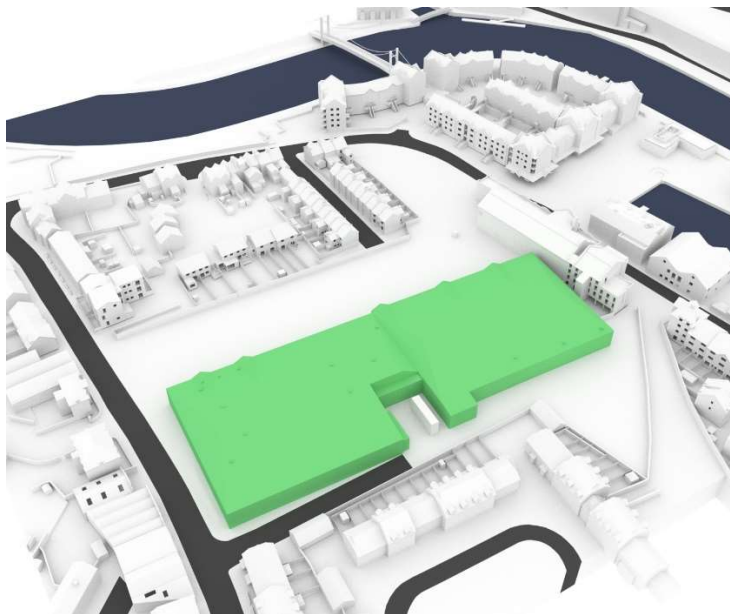
1.0 EXECUTIVE SUMMARY

- 1.1 This Daylight and Sunlight Report considers the impact of the proposal upon daylight and sunlight to neighbouring residential properties and also the provision of daylight and sunlight within the scheme proposal.
- 1.2 This report supersedes the Schroeders Begg Daylight & Sunlight report dated July 2022 (ref. 2053/J rev02) since this report now considers both review of the revised scheme and also in reference to the recently revised BRE Guide 'Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice' 3rd Edition, 2022 (The BRE Guide); the original Daylight & Sunlight report dated July 2022 analysis methodology was based upon the former BRE Guide which is now withdrawn. To highlight, as background, the methodology for assessment of the impact upon daylight and sunlight to neighbouring properties has effectively not changed within the third edition; it is rather the provision of daylight and sunlight within the scheme that now has a differing methodology in the recently revised third edition.
- 1.3 All applicable neighbouring properties have been considered for daylight and sunlight review. Based upon the analysis results, for any applicable reductions to the neighbouring windows / habitable rooms, these are typically meeting / suitably close to BRE target criteria for both daylight vertical sky component (VSC) for main windows (or where a weighted approach is appropriate) and daylight distribution (with due consideration of BRE Guide clause 2.2.6, 2.2.8 and 2.2.13). For those isolated windows and rooms not meeting default BRE Guide target criteria, retained levels could still be considered typically reasonable / commensurate for an urban locality and / or relate to bedrooms which the BRE Guide recognises as being less daylight important.
- 1.4 For sunlight review to applicable neighbouring windows / sun important rooms, where reductions are applicable, these all meet BRE Guide default target criteria with the isolated exception of a secondary window serving one neighbouring living room. Equally, in terms of the effect upon neighbouring amenity, the majority of neighbouring rear gardens / amenity spaces applicable readily meet the BRE target criteria (2-hour BRE test). Thus, there is limited impact to sunlight from the proposal.
- 1.5 Therefore, we conclude that the impact of the proposal upon daylight and sunlight to neighbouring residential properties could be considered reasonable and acceptable within this urban context.

- 1.6 For the provision of daylight and sunlight within the scheme i.e. self-test review, 98.5% (815 No. out of 827 No.) of habitable rooms (including communal lounges and kitchens), would satisfy the minimum target daylight target criteria for the given room use. For the few isolated rooms not meeting target, whilst these primarily relate to living rooms, the analysis for these living rooms still indicates that they are very close to daylighting targeting. Thus, in consideration of both a quantitative and qualitative viewpoint, the revised scheme is considered to be performing well within an urban context. For provision of sunlight, review has been undertaken within the residential units and also the external amenity areas in reference to the BRE guide default target criteria and again, suitable provision within a multi-unit scheme is considered to be provided.
- 1.7 Therefore, we conclude that the provision of daylight and sunlight within the scheme should be considered reasonable and suitable for this revised scheme proposal within an urban context.

2.0 OVERVIEW

2.1 This revised proposal is for the comprehensive redevelopment to deliver a new, mixed use neighbourhood, comprising demolition of existing buildings and construction of four residential-led mixed-use buildings of 2 to 6 storeys, including retail, café/restaurant and flexible commercial units (Class E), residential (Class C3) and co-living (Sui Generis) accommodation, pedestrian square and public realm, amenity areas, landscaping, access, parking, servicing and associated works. The revised scheme has been prepared by Piper Whitlock Architects. The proposals are shown in detail on the planning drawings but for general visual reference, we present 3D perspective massing views of existing (**Image No.1**) and proposed (**Image No.2**) as follows;



**Image 1 – Existing
(colour green)**



**Image 2 – Proposed
(colour blue)**

- 2.3 In terms of neighbouring properties applicable for review, these relate to those properties with windows serving habitable rooms within existing neighbouring properties; 1-7 & 78 Haven Road; 1-6, 7-9, 10-13, 17-19, & 31 Water Lane; 16-33, 42-44, & 94-101 Waterside; 7-18 & 19-24 Chandlers Walk; 1-4, 5-9, 14 & 15 Maritime Court; 1-9 & 16-18 Diamond Road; and 7-14 Stream Court.
- 2.4 3D perspective views (existing and proposed) with neighbouring context (along with associated window references relating to the analysis tables) are provided within **Appendix A**, to enable the analysis tables and other descriptions within this report to be interpreted.

3.0 NEIGHBOURING REVIEW – DAYLIGHT & SUNLIGHT

3.1 BACKGROUND

3.1.1 Daylight and sunlight amenity are considerations that the local planning authority will ordinarily take into account when determining planning applications. There is no national planning policy relating to daylight and sunlight and overshadowing impacts although general guidance is, however, given on the need to protect existing amenity as set out in the National Planning Policy Framework. The National Planning Practice Guidance (NPPG) requires consideration on whether the impact to neighbouring daylight and sunlight would be unreasonable.

3.1.2 Thus, this review has been undertaken in reference to the Building Research Establishment's (BRE) 'Site Layout Planning for Daylight and Sunlight - A Guide to Good Practice' (The BRE Guide) which enables an objective assessment to be made as to whether the proposals will adversely affect the daylight and sunlight reaching neighbouring habitable rooms. The BRE Guide is the industry source reference for daylight and sunlight review although it is important to highlight that the Guide is not a set of planning rules, which are either passed or failed; the numerical values are given and used, not as proscriptive or prescriptive values but as a way of comparing situations and coming to a judgement.

3.2 METHODOLOGY

- 3.2.1 We have undertaken analysis of the existing and proposed situations following the methodology set out in the recently revised BRE Guide on Site Layout Planning for Daylight and Sunlight, 3rd Ed / 2022 (The BRE Guide); the former BRE Guide 2nd Ed / 2011 is now withdrawn. However, to highlight, as background, the methodology for assessment of the impact upon daylight and sunlight to neighbouring properties has effectively not changed within the third edition; it is rather the provision of daylight and sunlight within the scheme that now has a differing methodology in the recently revised third edition.
- 3.2.2 We have considered daylight, both in terms of Vertical Sky Component (VSC) and daylight distribution analysis and have also considered sunlight (again, by the method set out in the Guide) to review as applicable, the proportion of the annual probable sunlight hours (APSHs) and winter hours, that the surrounding windows will benefit from in the existing and proposed scenario. We have not considered the BRE Guides initial 'rules of thumb / preliminary guidance' in respect of the '25° test' or '45° approach' but focused on the detailed analysis in respect of VSC, daylight distribution and APSHs and winter hours which forms the basis of this review report.
- 3.2.3 In reference to small kitchens with a room area less than 13sqm, ordinarily, such rooms are not considered 'habitable' in consideration of various appeal cases, given the anticipation of such a room size, not being purposed for dining within / limited occupation. Thus, our analysis is based upon the exclusion of the review of such rooms / windows.
- 3.2.4 We have utilised OS data, 3D terrestrial laser scan / site measured survey, info and data and the architect's design drawings to enable a 3D model of the existing and proposed arrangement, with neighbouring context, ready for analysis with industry recognised specialist software for daylight/sunlight review. As the scheme drawings form part of the formal submission, these are not reproduced here.
- 3.2.5 In terms of neighbouring properties applicable for detailed daylight and sunlight review, we have assessed the effects of the proposals on applicable windows and rooms within the following residential properties;
- **1-7 Haven Road** (located broadly west of Block B)
 - **78 Haven Road** (located broadly west of Block A)
 - **1-6 & 7-9 Water Lane** (located broadly south-west of Block C & D)
 - **10 & 13 Water Lane** (located broadly west / south-west of Block D)
 - **17-19 Water Lane** (located broadly west of Block D)

- **31 Water Lane** (located broadly south of Block C)
- **16-33, 42-44 & 94-101 Waterside** (located broadly north of Block A)
- **7-18 & 19-24 Chandlers Walk** (located broadly south / south-west of Block C)
- **1-4, 5-9, 14 & 15 Maritime Court** (located broadly west of Block C)
- **1 to 18 Diamond Road** (located broadly south-west of Block A)
- **7 to 14 Stream Court** (located broadly south-west of Block A)

3.2.6 Whilst we have not accessed the neighbouring properties, we have made reasonable assumptions and interpreted where necessary, likely room arrangements / uses to these properties based on our review of the exterior and utilising in part, information available on the plan layouts from within the public realm (planning portal, estate agent details etc).

3.3 DAYLIGHT VSC

3.3.1 The BRE Guide considers that in terms of Vertical Sky Component (VSC), as a target value, if the VSC with the new development in place is both, less than 27% and less than 0.8 times its former value (i.e. the latter, if exceeding a 20% reduction), occupants of the existing building will notice the reduction in the amount of skylight. The maximum value obtainable at a flat window in a vertical wall is effectively 40%.

3.3.2 VSC represents a ratio of the part of illuminance at a point on a given vertical plane (usually the centre point of window on the window wall face), that would be received directly from an overcast sky (CIE standard overcast sky) to 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.

3.3.3 There are number of properties either with a bay window arrangements or rooms having dual-aspect. For VSC review, we highlight that we have undertaken review upon the following basis;

- a) Bay windows – We have followed the rationale within the BRE Guide that ‘for a bay window, the centre window facing directly outwards can be taken as the main window’ (part extract of BRE Guide para. 2.2.6).
- b) Multi-window rooms – for rooms where the main window has a significant loss of light but the room is also served by one or more smaller windows, then an overall VSC has been considered for the room (‘room VSC’), as applicable, by weighting each VSC element in reference to the proportion of the total glazing area represented by that window to arrive an overall room VSC (this is referenced within the revised BRE Guide, para. 2.2.8).

3.3.4 **Table 1** – VSC and sunlight for surrounding buildings within **Appendix B** sets-out the results of our analysis review with the existing and proposed VSC values presented along with the proportion of the former value stated from which we summarise the results as follows;

3.3.5 Haven Road:

1-7 Haven Road EX2 8AX: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole, with the exception of windows W1, W2 & W7 at 1st floor, W1, W2, W5, room VSC R7 at 2nd floor, and windows W1 & W2 at 3rd floor, which are relating to bedrooms, and in reference to the actual retained VSC values, all are greater

than 15.39 which could still be considered reasonable / commensurate for an urban context.

78 Haven Road EX2 8DP: VSC reductions are readily meeting BRE Guide default target criteria.

3.3.6 **Water Lane:**

1-6 Greenford Villas Water Lane EX2 8EU VSC reductions range; 26%-36% thus greater than a 20% reduction, considered minor-moderate adverse, and in reference to the actual retained VSC values, all are greater than 20.39 which could still be considered reasonable / commensurate for an urban context.

7-9 Greenford Villas Water Lane EX2 8EU: VSC reductions range; 26%-39%, thus greater than 20% reductions which are relating bedrooms, and in reference to the actual retained VSC values, all are greater than 20.23 which could still be considered reasonable / commensurate for an urban context.

10-13 Water Lane EX2 8PP: VSC reductions are readily meeting BRE Guide default target criteria.

17-19 Water Lane EX2 8BY: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole with the exception of windows W6 & W7 at ground floor, and W8 & W9 at 2nd floor, with reductions ranging 22%-30% considered typically 'minor adverse' / still suitably close to target.

31 Water Lane EX2 8BY: VSC reductions are readily meeting BRE Guide default target criteria.

3.3.7 **Waterside:**

16-33 Waterside EX2 8GU: VSC reductions are readily meeting BRE Guide default target criteria with the exception of windows W8 to W10 at ground floor, which are relating to bedrooms, with reductions ranging 27-28% 'minor adverse' / still suitably close to target and retain VSC values are exceedingly close to a value where percentage reduction of former value is not applicable.

We clarify that whilst the reduction for ground floor windows W5, W6 & W12, 1st floor W6 to W12 and 2nd floor W7 and W8 are over 20% reduction, since the residual VSC value in the proposed is still above a VSC of 27, then for these particular windows, target criteria as a percentage reduction of former value is not applicable – thus the BRE Guide target criteria still met.

34-42 Waterside EX2 8GU: VSC reductions are readily meeting BRE Guide default target criteria.

94-101 Waterside EX2 8GU: VSC reductions are readily meeting BRE Guide default target criteria.

3.3.8 **Chandlers Walk:**

7-18 Chandlers Walk EX2 8BA: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole, with the exception of windows W1 to W4, and W16 & W17 at 1st floor, relating to bedrooms, with reductions ranging 21-22% 'minor adverse' / exceedingly close to target.

19-24 Chandlers Walk EX2 8BA: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole, with the exception of windows W7 to W11 at ground floor, with reductions ranging 24%-31% considered typically 'minor adverse' / still suitably close to target.

As background, analysis consideration of 1st floor windows W6 to W8 were undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

3.3.9 **Maritime Court:**

1-4 Maritime Court Haven Road EX2 8GP: VSC reductions are readily meeting BRE Guide target default criteria with the isolated exception of window W2 at ground floor, with a reduction of 25% considered 'minor adverse' / still suitably close to target.

We clarify that whilst the reduction for 1st floor window W1 is over 20% reduction, since the residual VSC value in the proposed is still above a VSC of 27, then for this particular window, target criteria as a percentage reduction of former value is not applicable – thus the BRE Guide target criteria still met.

5-9 Maritime Court Haven Road EX2 8GP: VSC reductions are readily meeting BRE Guide default target criteria.

14-15 Maritime Court Haven Road EX2 8GP: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole with the exception of room VSC to room R3 at ground floor and window W2 at 1st floor with reductions ranging 24%-25% considered 'minor adverse' / still suitably close to target.

3.3.10 **Diamond Road:**

1 Diamond Road EX2 8DN: VSC reductions are readily meeting BRE Guide default target criteria with the isolated exception of window W1 at ground floor, with a reduction of 32% considered 'moderate adverse' / still reasonably close to target.

2 Diamond Road EX2 8DN: VSC reductions are readily meeting BRE Guide default target criteria.

3 Diamond Road EX2 8DN: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole with the isolated exception of window W2 at ground floor, with a reduction of 29% considered 'minor adverse' / still suitably close to target.

4 Diamond Road EX2 8DN: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole with the isolated exception of window W1 at ground floor, with a reduction of 29% considered 'minor adverse' / still suitably close to target.

5 Diamond Road EX2 8DN: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole.

6 Diamond Road EX2 8DN: VSC reductions are readily meeting BRE Guide default target criteria with the isolated exception of window W4 at ground floor, with a reduction of 29% considered 'minor adverse' / still suitably close to target.

We clarify that whilst the reduction for 1st floor window W1 is over 20% reduction, since the residual VSC value in the proposed is still above a VSC of 27, then for this particular window, target criteria as a percentage reduction of former value is not applicable – thus the BRE Guide target criteria still met.

7 Diamond Road EX2 8DN: VSC reductions are readily meeting BRE Guide default target criteria.

8 Diamond Road EX2 8DN: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole.

9 Diamond Road EX2 8DN: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole.

16 Diamond Road EX2 8DN: VSC reductions are readily meeting BRE Guide default target criteria.

17 Diamond Road EX2 8DN: VSC reductions are readily meeting BRE Guide default target criteria.

18 Diamond Road EX2 8DN: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole.

3.3.11 **Stream Court:**

7 Stream Court EX2 8DL: VSC reductions are readily meeting BRE Guide default target criteria with the isolated exception of window W1 at ground floor, with a reduction of 29% considered 'minor adverse' / still suitably close to target.

As background, analysis consideration of 1st floor windows W1 and W2 were undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

8 Stream Court EX2 8DL: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole with the isolated exception of room VSC R1 with a reduction of 21% considered 'minor adverse' / exceedingly close to target.

As background, analysis consideration of 1st floor windows W1 and W2 were undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

9 Stream Court EX2 8DL: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole with the isolated exception of room VSC R1 with a reduction of 21% considered 'minor adverse' / exceedingly close to target.

As background, analysis consideration of 1st floor window W1 and W2 was undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

10 Stream Court EX2 8DL: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole.

As background, analysis consideration of 1st floor window W1 and W2 was undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

11 Stream Court EX2 8DL: VSC reductions are readily meeting BRE Guide default target criteria.

As background, analysis consideration of 1st floor window W1 was undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

12 Stream Court EX2 8DL: VSC reductions are readily meeting BRE Guide default target criteria.

As background, analysis consideration of 1st floor window W1 was undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

13 Stream Court EX2 8DL: VSC reductions are readily meeting BRE Guide default target criteria.

As background, analysis consideration of 1st floor window W1 was undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

14 Stream Court EX2 8DL: VSC reductions meet BRE Guide target criteria for all main windows, or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole.

As background, analysis consideration of 1st floor window W1 was undertaken on the basis of 'without soffit' (i.e. omission of the projecting eaves soffit above the window head) in respect of BRE Guide (clause 2.2.13)

- 3.3.12 **Summary:** Daylight VSC analysis for all applicable neighbouring windows reviewed that serve habitable rooms, confirms that for all main windows or rooms where a weighted approach is appropriate to consider the loss of VSC to the room as a whole, these typically meet / are suitably close to BRE Guide default target criteria (with due consideration of BRE Guide para. 2.2.6, 2.2.8 and 2.2.13), and for instances where reductions are considered greater; the windows typically maintain in the proposed scenario daylighting levels that could be considered reasonable / commensurate for an urban context.

3.4 DAYLIGHT DISTRIBUTION

3.4.1 The Guide considers that in terms of daylight distribution, as a target value, if the daylight distribution with the new development in place is less than 0.8 times its former value (i.e. if exceeding a 20% reduction), occupants of the existing building will notice the reduction in the amount of daylight distribution within the room.

3.4.2 Daylight distribution relates to the area of the room (expressed as a percentage of the whole room area) that can see direct sky, at the working plane (working plane for residential is taken at 85 cm above floor level).

3.4.3 **Table 2** – Daylight Distribution for surrounding buildings within **Appendix B** sets out the results of our analysis review with the existing and proposed daylight distribution values presented along with the proportion of the former value stated, from which we summarise the results as follows;

3.4.4 Haven Road:

1-7 Haven Road EX2 8AX: Daylight distribution reductions are meeting BRE Guide default target criteria with the exception of 6 No rooms. For 4 No of these rooms (R1 at 1st floor, R7 and 2nd floor, and R1 & R2 at 3rd floor), reductions are considered ‘minor’ adverse / still suitably close to the BRE Guide target criteria. Whilst we acknowledge 2 No rooms would have much greater reductions (42% and 46% respectively) we highlight that such impacts are anticipated to be bedrooms where the BRE Guide recognises daylight is less important to bedrooms.

78 Haven Road EX2 8DP: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

3.4.5 Water Lane:

1-6 Greenford Villas Water Lane EX2 8EU: Daylight distribution reductions are readily meeting BRE Guide target criteria, with the exception of 6 No rooms (R1 & R2 at ground, 1st and 2nd floor), with a reductions ranging 24%-38% considered minor / moderate adverse, and in terms of the residual value of daylight distribution in the proposed scenario, all rooms would maintain daylight distribution greater than 60% of the room area, which could be considered reasonable / commensurate for an urban context.

7-9 Greenford Villas Water Lane EX2 8EU: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

10-13 Water Lane EX2 8PP: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

17-19 Water Lane EX2 8BY: Daylight distribution reductions are readily meeting BRE Guide default target criteria with the exception of 4 No rooms. For 2 No of these rooms (R4 & R5 at 1st floor), reductions are considered 'minor' adverse / still suitably close to the BRE Guide target criteria. Whilst we acknowledge 2 No rooms would have much greater reductions (45% and 47% respectively) we highlight that such impacts are anticipated to be bedrooms where the BRE Guide recognises daylight is less important to bedrooms.

31 Water Lane EX2 8BY: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

3.4.6 **Waterside:**

16-33 Waterside EX2 8GU: Daylight distribution reductions are readily meeting BRE Guide default target criteria, with the isolated exception of room R10 at ground floor with a reduction of 26% considered 'minor' adverse / still suitably close to the BRE Guide target criteria.

34-42 Waterside EX2 8GU: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

94-101 Waterside EX2 8GU: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

3.4.7 **Chandlers Walk:**

7-18 Chandlers Walk EX2 8BA: Daylight distribution reductions are readily meeting BRE Guide target criteria, with the exception of 6 No rooms (R3, R8, R9, R14 & R15 at ground floor and R16 at 1st floor), with reductions ranging 22%-35%, considered minor / moderate adverse, and in terms of the residual value of daylight distribution in the proposed scenario, all rooms would maintain daylight distribution greater than 61% of the room area, which could be considered reasonable / commensurate for an urban context.

19-24 Chandlers Walk EX2 8BA: Daylight distribution reductions are readily meeting BRE Guide target criteria, with the exception of 3 No rooms (R5 & R6 at ground floor and R8 at 1st floor), with reductions ranging 21%-29%, considered minor adverse / still suitably close to target.

3.4.8 **Maritime Court:**

1-4 Maritime Court Haven Road EX2 8GP: Daylight distribution reductions are readily meeting BRE Guide default target criteria with the isolated exception of room R1 at ground floor with a reduction of 21% considered minor adverse / exceedingly close to target.

5-9 Maritime Court Haven Road EX2 8GP: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

14-15 Maritime Court Haven Road EX2 8GP: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

3.4.9 **Diamond Road:**

1 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

2 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

3 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria with the exception of 2 No rooms (R3 at ground floor, and R1 at 1st floor), with reductions ranging 25%-28% considered 'minor' adverse / still suitably close to target criteria.

4 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria with the exception of 2 No rooms (R1 at ground floor, and R2 at 1st floor), with reductions ranging 21%-23% considered 'minor' adverse / still suitably close to target criteria.

5 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

6 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria with the isolated exception of room R3 at ground floor with a reduction of 25% considered 'minor' adverse / still suitably close to target criteria.

7 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

8 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

9 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

16 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

17 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

18 Diamond Road EX2 8DN: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

3.4.10 **Stream Court:**

7 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide target criteria, with the isolated exception of ground floor room R2 with a reduction of 23%, considered minor adverse / still suitably close to target.

8 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

9 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide target criteria, with the isolated exception of ground floor room R2 with a reduction of 30%, considered moderate adverse / still reasonably close to target, and in terms of the residual value of daylight distribution in the proposed scenario, room R2 would maintain daylight distribution greater than 70% of the room area, which could be considered good for an urban context.

10 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide target criteria, with the isolated exception of ground floor room R2 with a reduction of 32%, considered moderate adverse / still reasonably close to target.

11 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

12 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

13 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

14 Stream Court EX2 8DL: Daylight distribution reductions are readily meeting BRE Guide default target criteria.

3.4.11 **Summary:** Daylight distribution analysis confirms that for all applicable neighbouring habitable rooms, where reductions are applicable, these typically meet / suitably close to BRE Guide default target criteria, and for instances where reductions are considered greater; the rooms typically maintain in the proposed scenario daylighting levels that could be considered reasonable / commensurate for an urban context, and / or relate to bedrooms which the BRE recognises are less daylight important.

3.5 SUNLIGHT

- 3.5.1 For sunlight, only windows that face within 90° of South, that is to say, facing from 90° to 270°, are ordinarily considered in reference to sunlight BRE Guide review.
- 3.5.2 The BRE Guide recommendation is that windows facing within 90° of South, should have 25% of Annual Probable Sunlight Hours (APSHs) with 5% in the winter months (from the autumn equinox to the spring equinox). Where reductions below the recommended levels are contemplated, these should be targeted so that the proposed value is 0.8 times former value or above (unless a reduction of sunlight received over the whole year is not greater than 4% of annual probable sunlight hours).
- 3.5.3 To highlight, focus of analysis review of windows primarily relates to main living rooms and conservatories i.e. sun important rooms as per the BRE Guide (kitchens and bedrooms are less important, although care should be taken not to block too much sun). Notwithstanding this, we have analysed all habitable windows for sunlight review as considered previously for daylight.
- 3.5.4 **Table 1** – VSC and sunlight for surrounding buildings within **Appendix B** sets out the results of our analysis review with the existing and proposed APSHs values (plus winter hours) presented along with the proportion of the former value stated. The analysis results for all neighbouring habitable sun important rooms assessed (that face within 90° of South), where reductions are applicable to living rooms, these adhere to the BRE Guide default target criteria in reference to both APSH and winter ('Total suns per room' – existing and proposed) with only one isolated exception. In respect of the isolated room not meeting target it only has one secondary window calling for assessment, the main window wall does not face within 90° of South, thus the room has inherent sensitivity to any change to the small secondary window, due interpretation of the flexibility of the BRE Guide must be borne in such instances.
- 3.5.5 **Summary** : Sunlight analysis to applicable neighbouring living rooms / sun important rooms, confirms that for where reductions are applicable, these all meet BRE Guide default target criteria with isolated exception of a secondary window serving a living room, thus such reductions should be considered readily acceptable for those windows / rooms applicable for analysis.

3.6 SUN ON THE GROUND

3.6.1 The BRE Guide states that the garden (amenity space) of an existing property, it is recommended that for it to appear adequately sunlit throughout the year;

- 1) *at least half of a garden or amenity area should receive at least two hours of sunlight on 21st March.*
- 2) *If as a result of a new development an existing garden or amenity area does not meet the above, and the area which can receive two hours of sun on 21st March is less than 0.8 times its former value, then the loss of sunlight is likely to be noticeable. If a detailed calculation cannot be carried out, it is recommended that the centre of the area should receive at least two hours of sunlight on 21st March.*

3.6.2 We have undertaken analysis of the nearest applicable surrounding neighbouring amenity areas and the results of our analysis are summarised as follows:

TABLE A: Ability to receive 2hr sun on the ground at the equinox (21st March)

Amenity Area / Property	Existing 2-hour Area (ability to receive 2 hours sun at Equinox)		Proposed 2-hour Area (ability to receive 2 hours sun at Equinox)		Proposed / Existing for Sun
	Sun	Shaded	Sun	Shaded	
7 Chandlers Walk	34%	66%	34%	66%	1.00
8 Chandlers Walk	29%	71%	29%	71%	1.00
9 Chandlers Walk	39%	61%	39%	61%	1.00
10 Chandlers Walk	24%	76%	24%	76%	1.00
11 Chandlers Walk	25%	75%	25%	75%	1.00
12 Chandlers Walk	32%	68%	32%	68%	1.00
13 Chandlers Walk	77%	23%	77%	23%	1.00
14 Chandlers Walk	16%	84%	16%	84%	1.00
15 Chandlers Walk	5%	95%	5%	95%	1.00
16 Chandlers Walk	4%	96%	4%	96%	1.00
17 Chandlers Walk	34%	66%	34%	66%	1.00
18 Chandlers Walk	57%	43%	57%	43%	1.00
19 Chandlers Walk	44%	56%	44%	56%	1.00
20 Chandlers Walk	14%	86%	14%	86%	1.00
21 Chandlers Walk	34%	66%	34%	66%	1.00
22 Chandlers Walk	27%	73%	27%	73%	1.00
23 Chandlers Walk	35%	65%	35%	65%	1.00
24 Chandlers Walk	26%	74%	26%	74%	1.00
1-4 Maritime Court	63%	37%	59%	41%	0.94

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Amenity Area / Property	Existing 2-hour Area (ability to receive 2 hours sun at Equinox)		Proposed 2-hour Area (ability to receive 2 hours sun at Equinox)		Proposed / Existing for Sun
	Sun	Shaded	Sun	Shaded	
5 Maritime Court	58%	42%	49%	51%	0.84
6 Maritime Court	63%	37%	54%	46%	0.86
7 Maritime Court	54%	46%	50%	50%	0.92
8 Maritime Court	38%	62%	31%	69%	0.81
14 Maritime Court	31%	69%	16%	84%	0.50
15 Maritime Court	0%	100%	0%	100%	1.00
1 Diamond Road	31%	69%	31%	69%	1.00
2 Diamond Road	39%	61%	39%	61%	1.00
3 Diamond Road	60%	40%	60%	40%	1.00
4 Diamond Road	29%	71%	29%	71%	1.00
5 Diamond Road	48%	52%	48%	52%	1.00
6 Diamond Road	59%	41%	58%	42%	0.98
7 Diamond Road	36%	64%	36%	64%	1.00
8 Diamond Road	34%	66%	28%	72%	0.83
9 Diamond Road	50%	50%	48%	52%	0.95
17 Diamond Road	49%	51%	43%	57%	0.88
7 Stream Court	80%	20%	64%	36%	0.80
8 Stream Court	88%	12%	69%	31%	0.78
9 Stream Court	90%	10%	79%	21%	0.88
10 Stream Court	90%	10%	85%	15%	0.94
11 Stream Court	67%	33%	52%	48%	0.77
12 Stream Court	85%	15%	57%	43%	0.67
13 Stream Court	84%	16%	52%	48%	0.62
14 Stream Court	88%	12%	67%	33%	0.76

The above is also presented as **plots 2053J-501 & 502**, areas that are hatched orange have the ability to receive 2 hours of sunlight at the equinox (please see **Appendix B**).

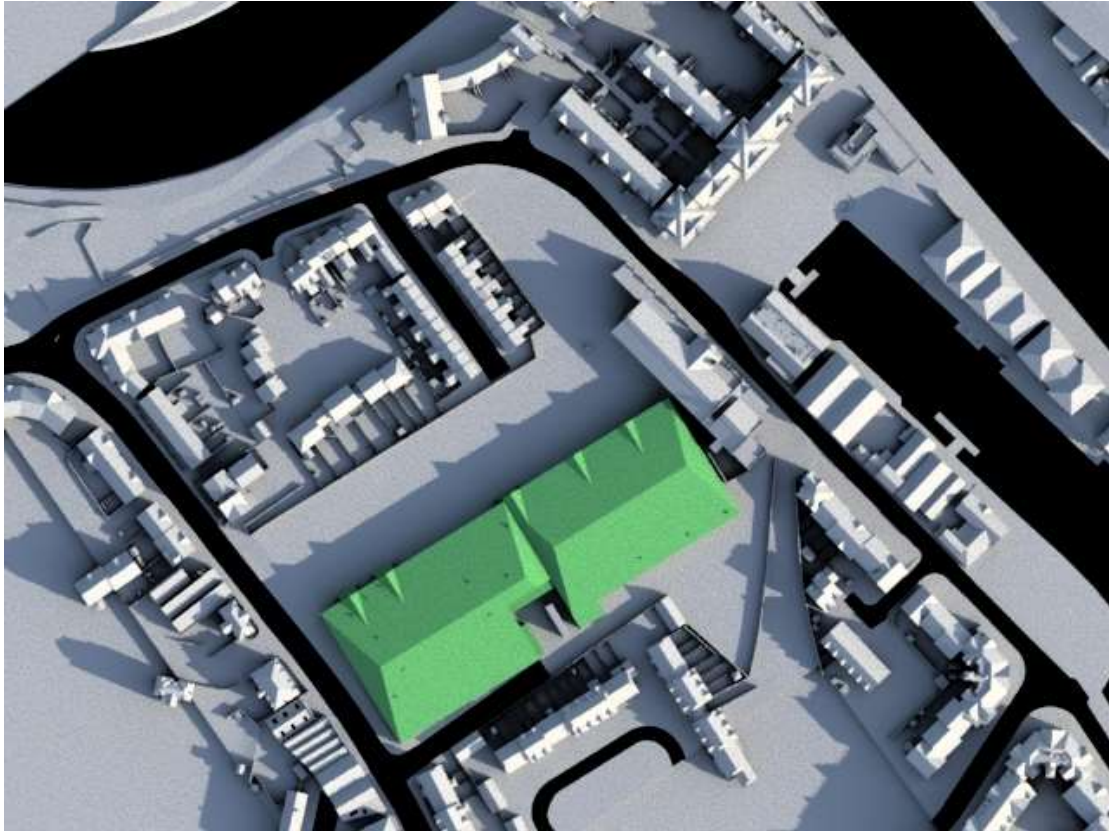
3.6.3 Thus, for the nearest applicable amenity areas, the area that has the actual ability to receive 2 hours of sun on the ground at the 21st March Equinox meets BRE Guide default target criteria with only one isolated exception.

3.6.4 This isolated instance of the amenity area not meeting target relates to one of the Maritime Court properties (No. 14). As background, these properties typically have southerly aspect rear gardens and for any applicable reductions, these are limited

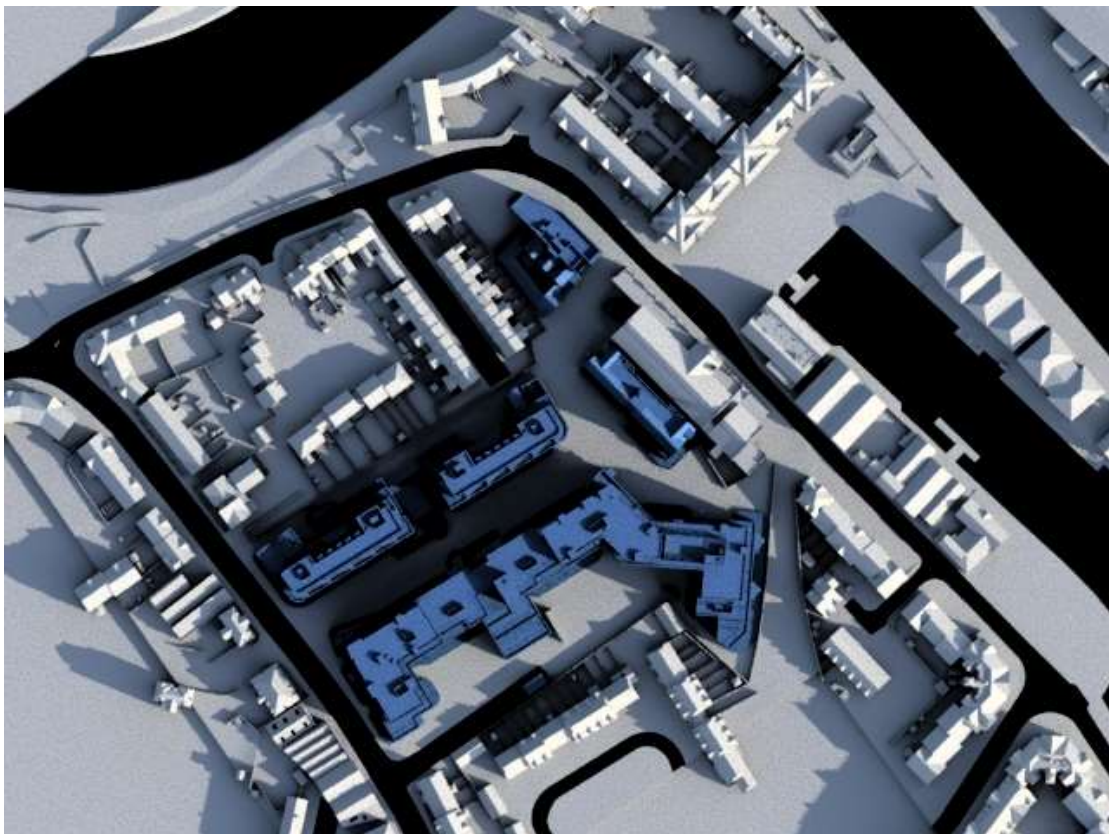
and readily meet the BRE Guide target criteria in such instances. For the isolated property not meeting target, the garden has a northerly facing aspect, thus there is already some degree of self-shadowing to the garden and therefore, inherent sensitivity for any further change. (As background, indeed we highlight, the immediate neighbouring property No.15 Maritime Court which also has a northerly facing aspect which as existing has 0% ability to receive 2 hours of sunlight at the equinox, albeit we do acknowledge this has a smaller garden area).

3.6.5 Therefore, we conclude, 98% (42 No. out of 43 No.) of all the amenity areas assessed readily meet BRE Guide target. As highlighted the isolated exception relates to a garden with a northerly facing aspect which has inherent sensitivity to any change within the surrounding massing.

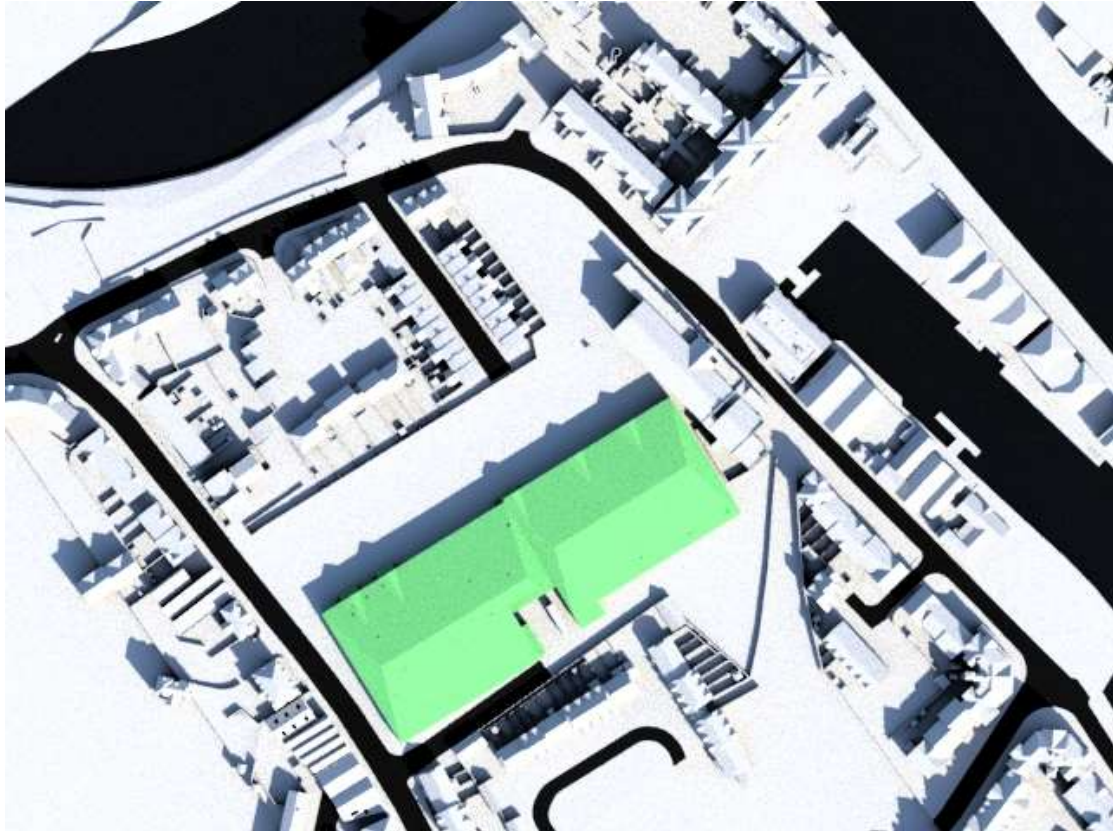
3.6.6 For visual representation, we set out in the following pages, a series of images as existing and as proposed, taken at two-hourly intervals through the day on the 21st March Equinox to show the cast of the shadows pictorially. It is important to state that whilst the sequence highlights some shadowing change, this is obviously transient shadowing and any increase in shadowing is for limited parts of the day.



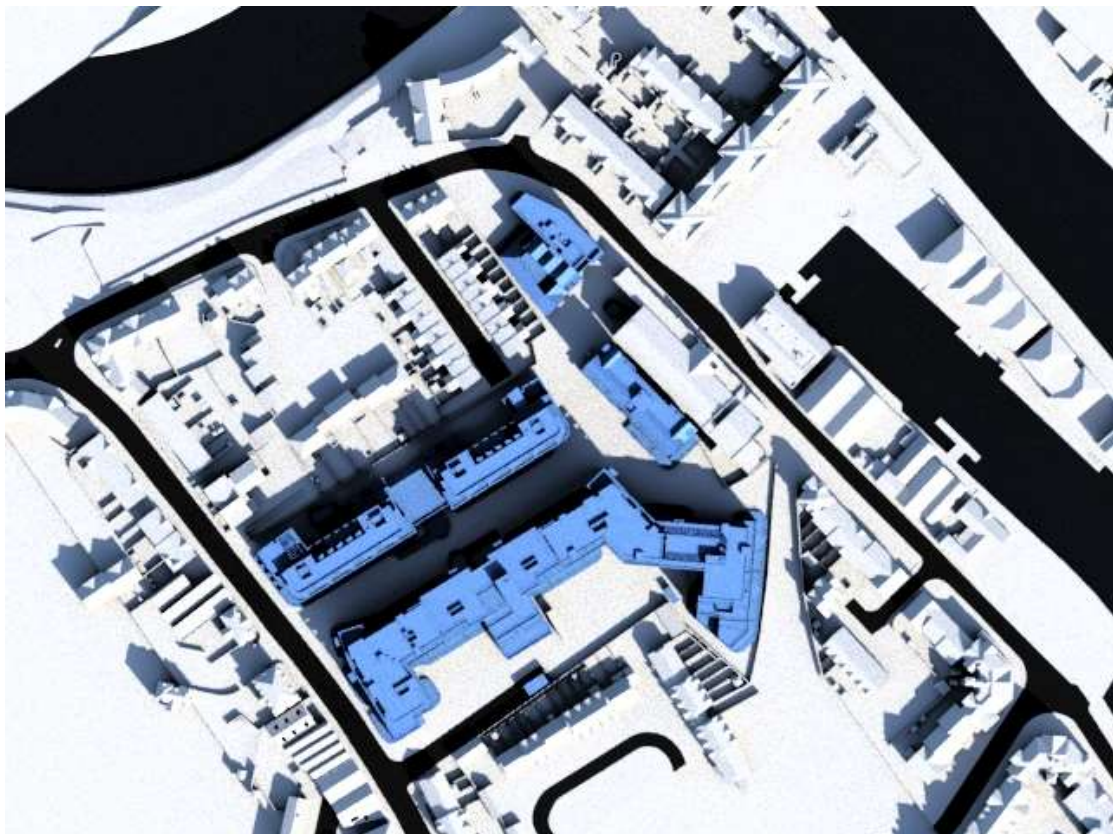
Shadow Diagram - 08.00 hours as existing on the 21st March Equinox



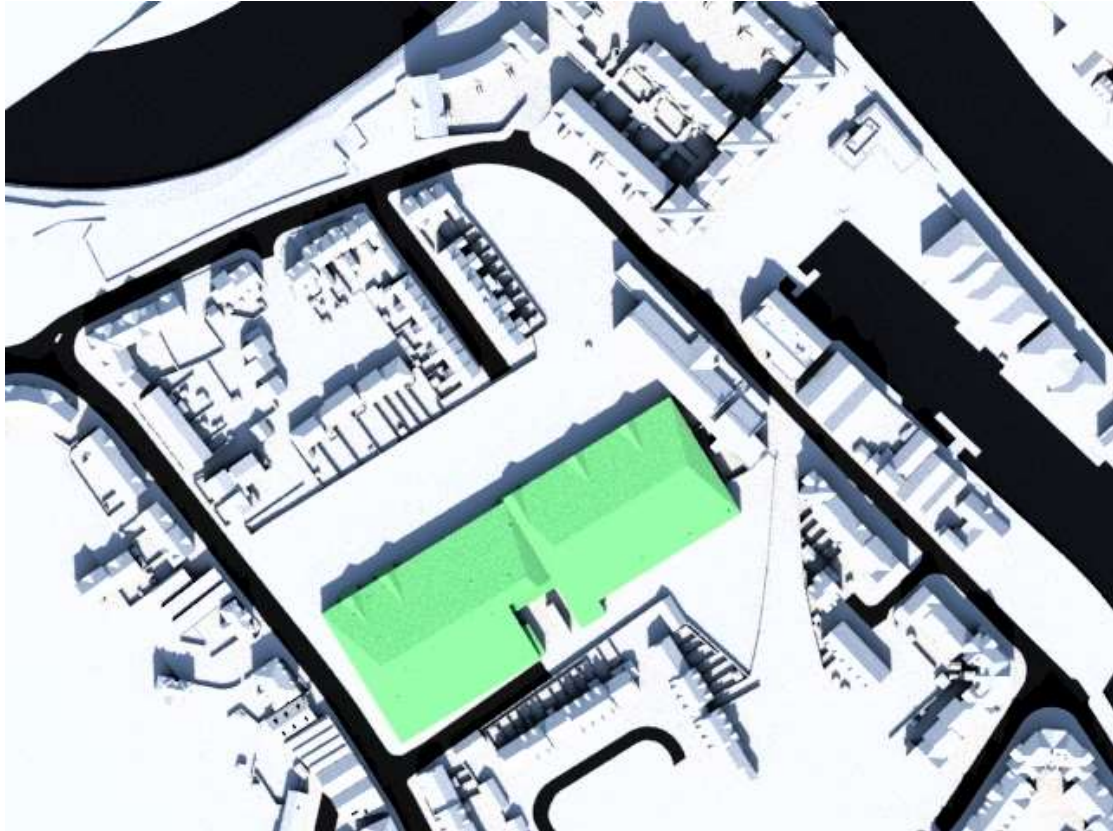
Shadow Diagram - 08.00 hours as proposed on the 21st March Equinox



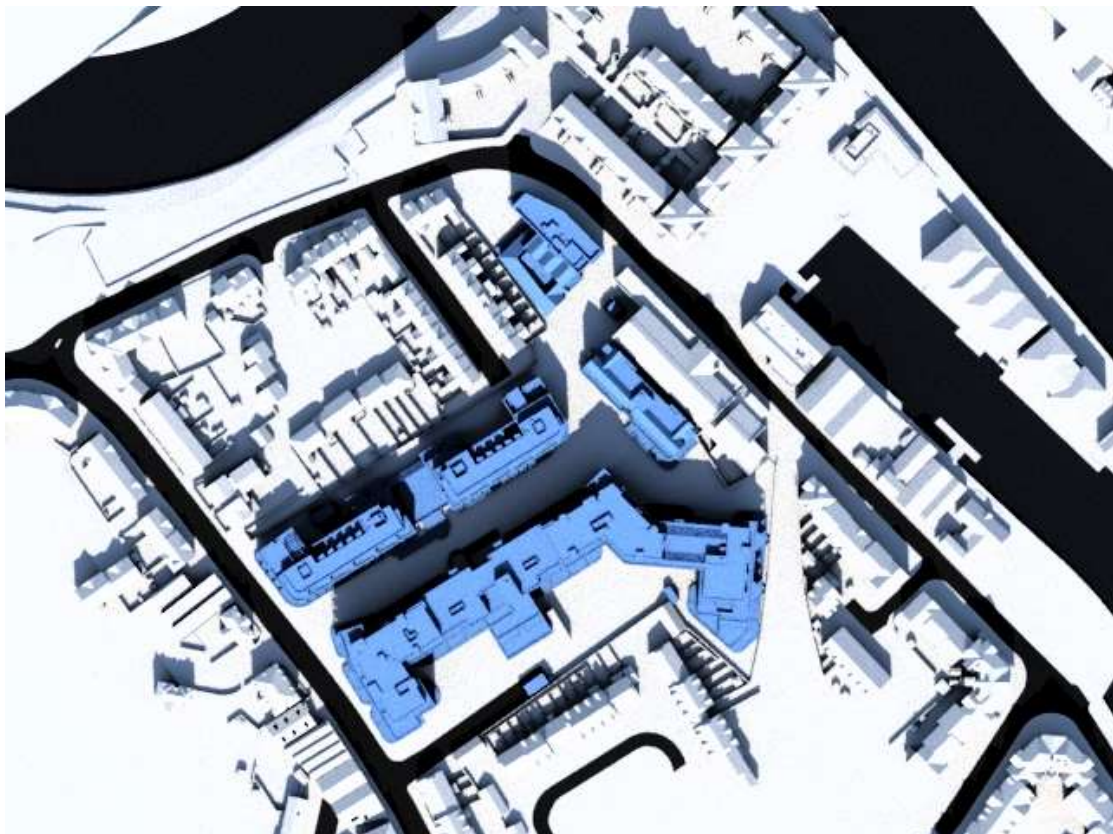
Shadow Diagram - 10.00 hours as existing on the 21st March Equinox



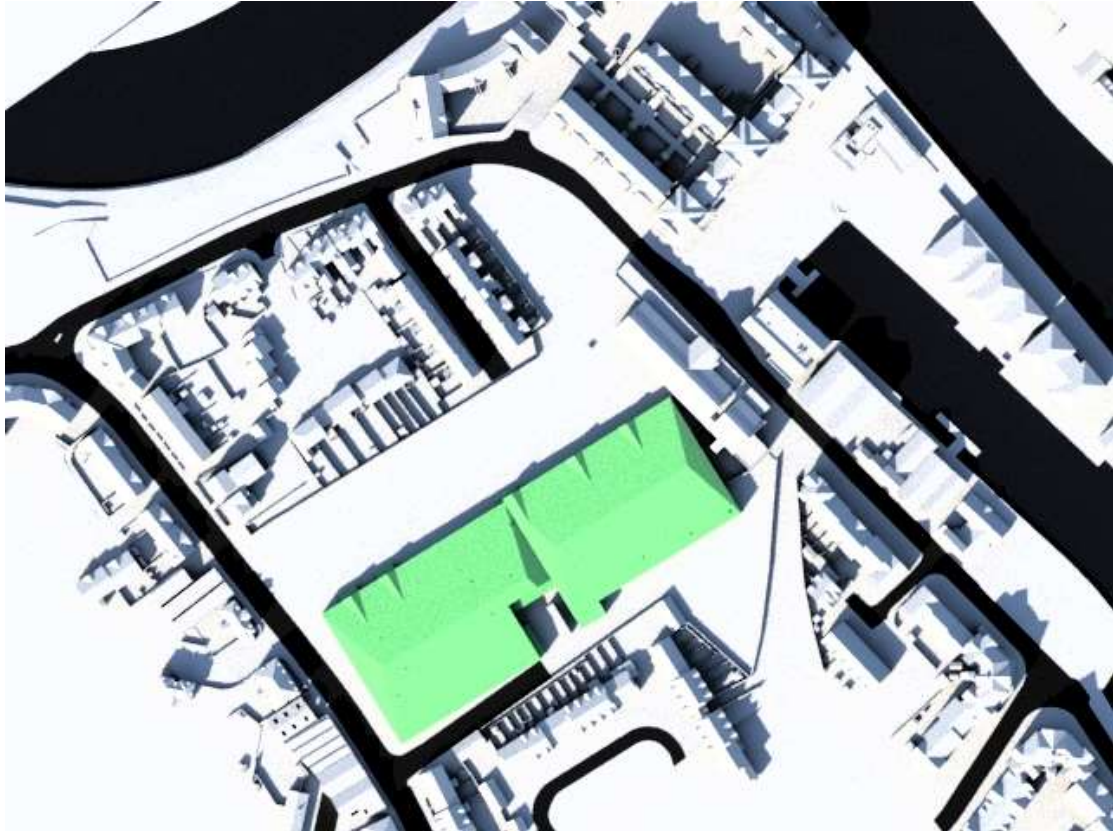
Shadow Diagram - 10.00 hours as proposed on the 21st March Equinox



Shadow Diagram - 12.00 hours as existing on the 21st March Equinox



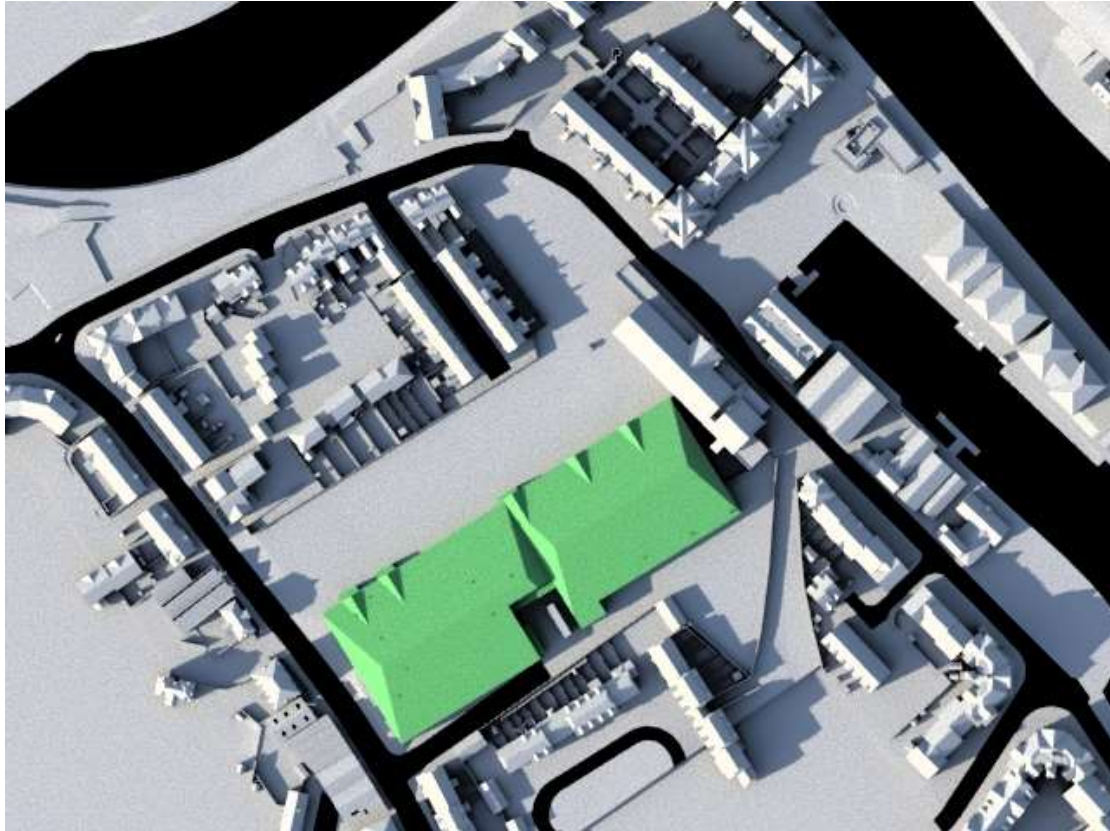
Shadow Diagram - 12.00 hours as proposed on the 21st March Equinox



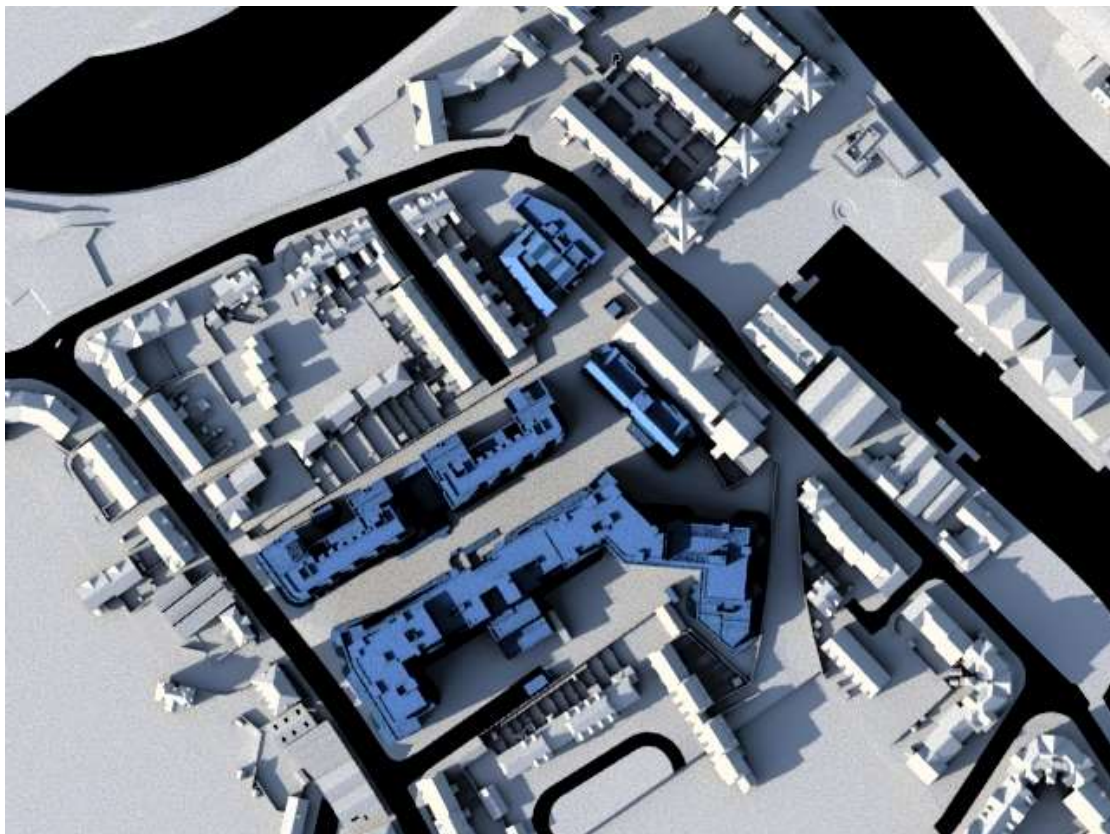
Shadow Diagram - 14.00 hours as existing on the 21st March Equinox



Shadow Diagram - 14.00 hours as proposed on the 21st March Equinox



Shadow Diagram - 16.00 hours as existing on the 21st March Equinox



Shadow Diagram - 16.00 hours as proposed on the 21st March Equinox

4.0 PROPOSAL SELF-TEST – DAYLIGHT & SUNLIGHT PROVISION

- 4.1 The revised proposed new accommodation has been analysed to determine whether or not the new proposed habitable rooms (including communal living, lounges and kitchens within Block D) will be provided with suitable daylighting (and sunlight as applicable).

Daylighting

- 4.2 The new BRE Guide 3rd edition (2022) sets completely new methodology for the self-test review of daylight within the proposal, the main section applicable within the BRE Guide being '*Appendix C: Interior daylight recommendations*'. We examine the criteria and analysis output as follows;
- 4.3 The new methodology can follow either the 'Illuminance method' which involves using climatic data for the location of the site to calculate the illuminance from daylight (within the room on the assessment grid / working plane at hourly intervals for a typical year) OR the 'Daylight Factor method' which utilises a CIE standard overcast sky and expresses the ratio as a percentage of a point on the assessment grid / working plane within the room, divided by the illuminance on an unobstructed horizontal surface outdoors.
- 4.4 The BRE Guide highlights the specific recommendations for daylight provision in UK dwellings derived from a UK National Annex which gives specific minimum illuminance recommendations for habitable rooms in dwellings in the United Kingdom. The minimum recommendations are stated in para. C16 of the BRE Guide as;
- 'C16: The UK National Annex gives illuminance recommendations of 100 lux in bedrooms, 150 lux in living rooms and 200 lux in kitchens. These are median illuminances, to be exceeded over at least 50% of the assessment points in the room for at least half of the daylight hours. The recommended levels over 95% of a reference plane need not apply to dwellings in the UK.'*
- 4.5 We have followed the aforementioned target criteria although in instances of any applicable fully open-plan arrangements for 'kitchen/living/dining rooms', we have taken the target lux for the predominant room use which being primarily 'living / dining room', we have allowed a target of 150 lux (which differs to the default methodology within the BRE Guide but is recognised within the BRE Guide that this is a reasonable approach if the kitchens are not treated as habitable spaces / an area within their own right, as it may avoid small separate kitchens in a design).

- 4.6 In terms of daylight analysis, we confirm below the inputting data utilised as;
Glass transmission: 0.68 for clear double-glazing with a low emissivity coating
Net area of glazing: we have utilised the surround opening less framework – framework allowance of 20% (70% where louvres are positioned).
Room surface reflectance: 0.8 ceilings (white), 0.7 walls (white), 0.4 floor (light floor)
External surface reflectance: 0.2 surrounding buildings / massing, 0.2 ground
- 4.7 For the assessment grid, this has been taken over the whole of the room, subject as per the methodology to the omission of any corridor or annexed entrance to a room or similar and also as per the BRE Guide, less 300mm to the perimeter of the room.
- 4.8 We have utilised the 'Illuminance method' for review and the output of analysis is presented within **Table 3 – Self-test – Daylight SDA** (Spatial Daylight Autonomy) and visually presented within plot Nos. **301, 302, 303 & 304 (for Blocks A, B, C & D respectively)**, all within **Appendix C**.
- 4.9 Our analysis review presents full analysis on the two lowest floors within each respective Block A, B, C & D. For the very few isolated rooms that do not meet the target daylighting, we have separately reviewed rooms above such isolated instances and confirm that in all such instances, such rooms above would meet the daylighting target. Therefore, we are satisfied that it is not necessary to review, in their entirety, beyond the two lowest floors given layouts and arrangements are either the same or similar and inevitably, with the benefit of increasing storey height, there will be less obstruction to windows serving the habitable rooms so results would ordinarily be even more beneficial. The BRE Guide recognises that analysis is not needed for upper floors which would be expected to meet recommendations too.
- 4.10 We can summarise that for the self-test daylight review within the scheme, 98.5% (815 No. out of 827 No.) of habitable rooms (including communal lounges and kitchens within Block D), would satisfy the minimum target daylight target criteria for the given room use. For the few isolated rooms not meeting target, whilst these primarily relate to living rooms, the analysis for these living rooms still indicates that they are very close to daylighting targeting. Thus, in consideration of both a quantitative and qualitative viewpoint, the revised scheme is considered to be performing well within an urban context.

Sunlight

4.11 We have followed the methodology within the new BRE Guide 3rd edition (2022) for sunlight review with the main section applicable within the BRE Guide being section ‘3. Sunlighting – 3.1 New Development.’

4.12 The former review of Annual Probable Sunlight Hours (APSH) and winter hours is no longer applicable for self-test review and the new methodology recommendations are primarily stated in para. 3.1.10 of the BRE Guide as;

‘3.1.10: For interiors, access to sunlight can be quantified. BS EN 17037 recommends that a space should receive a minimum of 1.5 hours of direct sunlight on a selected date between 1 February and 21 March with cloudless conditions. It is suggested that 21 March (equinox) be used. The medium level of recommendation is three hours and the high level of recommendation four hours. For dwellings, at least one habitable room, preferably a main living room, should meet at least the minimum criterion...’

4.13 However, for multi-unit developments, the following reference within the BRE Guide is also relevant;

‘3.1.16: Where groups of dwellings are planned, site layout design should aim to maximise the number of dwellings with a main living room that meets the above recommendations’

(Background note on 3.1.16 – the ‘above recommendation’ being in reference to ...‘For dwellings, at least one habitable room, preferably a main living room, should meet at least the minimum criterion’. The target is to ‘maximise’ the number of dwellings achieving the target within a multi-unit development but for such a development, it is recognised that not every dwelling is ordinarily able to achieve the sunlight target).

4.14 In terms of inputting data, we have selected the 21st March (equinox) review date as suggested by the BRE Guide.

4.15 The output of analysis is presented within **Table 4 – Self-test – Sunlight Exposure** within **Appendix C**.

4.16 From **Table 4**, as for daylight we have analysed all applicable rooms on the lowest two floors and for dwellings, typically these would have at least one habitable room with the ability to receive 1.5 hours or more of sunlight on 21st March excepting mainly those rooms on the north side of Blocks C & D, although in such instances where communal living are provided, these have been positioned to enable to meet the sunlight target.

It is inevitable in a multi-unit development that not every dwelling is able to meet sunlighting target. It can be readily seen that the design has already sought to minimise the number of dwellings whose living rooms (or for an alternative habitable room within the dwelling) faces solely north, northeast or northwest.

- 4.17 Thus, the results can be considered suitable with the majority of dwellings achieving sunlight exposure target. For a multi-unit development, it is acceptable that not every dwelling could achieve such targeting especially, given the linear nature of the site / blocks that inevitably result in some windows within a broadly a north facing elevation / inherent design restriction for the site.
- 4.18 We conclude that suitable sunlight is provided for within this multi-unit development scheme, for this site and context orientation.
- 4.19 In terms of sunlight to the development amenity, the main designated communal amenity areas demarked on **plot 500 - Appendix C** readily meet the BRE Guide target criteria for 50% or more of amenity area having the ability to receive 2 hours or more of sunlight at the 21st March, thus it can be considered that reasonable sunlight provision is provided / could be considered acceptable.

Summary for provision of Daylight & Sunlight within the proposal

- 4.20 For the proposed new-build habitable rooms (self-test), 98.5% (815 No. out of 827 No.) of habitable rooms (including communal lounges and kitchens within Block D), would satisfy the minimum target daylight target criteria for the given room use. For the few isolated rooms not meeting target, whilst these primarily relate to living rooms, the analysis for these living rooms still indicates that they are very close to daylighting targeting. Equally, for sunlight to the new dwellings (and communal livings where co-living), reasonable provision is available in consideration of a multi-unit scheme including also to the communal amenity areas.

APPENDICES

- A. 3D Perspective Views with Neighbouring Context**
(existing and proposed) and associated Window / Room
Reference Plans

- B. Neighbouring Analysis:**
Table 1 - VSC and Sunlight for surrounding buildings
Table 2 - Daylight Distribution for surrounding buildings
2h Sun on the ground amenity test.

- C. Proposal Self-test Analysis:**
Table 3 – Self-test Daylight
Table 4 – Self-test Sunlight
Room / Window Reference Plans
2h Sun on the ground amenity self-test