



TVP Investments Limited

400 THAMES VALLEY PARK DRIVE – ROOF EXTENSION, EARLEY

Daylight & Sunlight Assessment

Revision A

400 THAMES VALLEY PARK DRIVE – ROOF EXTENSION, EARLEY Daylight & Sunlight Assessment

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Revision and Date	Amendment Details	Revision Prepared By	Revision Approved By
Rev A 18/09/2025	Updated as per comments received from the Planning Officer	MB	SS

EXECUTIVE SUMMARY

This report assesses the level of daylight and sunlight provision for the proposed new development located at 400 Thames Valley Park Drive – Roof Extension, Earley, in the Wokingham Borough Council and examines the proposed development's impact on the neighbouring properties and amenity areas.

The development is a permitted development which involves construction of two additional storeys above the existing commercial building for residential use.

This assessment has been undertaken following the guidance given in the Building Research Establishment's (BRE) Publication 'Site Layout Planning for Daylight and Sunlight', 2022 Edition. It calculates the Vertical Sky Component (VSC), Illuminance Levels (Lux) and Annual Probable Sunlight Hours (APSH) for the proposed units and reviews these values in line with BRE guidance. For the existing buildings in the vicinity of the site, the assessment determines the overall reduction in VSC for the relevant windows within the dwellings, which will be experienced following the construction of the proposed extension. It also assesses the APSH for existing living spaces.

It has been established that there are no specific daylight criteria for commercial buildings, therefore the neighbouring non-residential buildings have been excluded from this assessment.

Results for the proposed development

Daylight Assessment

The assessment confirms that all relevant habitable spaces within the proposed development achieve compliance with BRE guidance for recommended daylight levels in new developments.

- 100% of windows achieve a VSC of $\geq 27\%$, meeting the BRE requirements.
- An additional illuminance check was undertaken to assess daylight levels within habitable rooms. The results confirm that all assessed rooms achieve the target illuminance level (Et, in lux).

Sunlight Assessment

An assessment of sunlight access was carried out for all living rooms with windows facing within 90° of due south. The findings indicate:

- All living rooms with windows facing within 90° of due south receive at least 1.5 hours of direct sunlight on 21 March, meeting the BRE requirement for sunlight access.

Results for existing spaces

There are two buildings close to the proposed development: Oracle 540 and Sanofi UK. Both are commercial buildings. It has been established that there are no specific daylight criteria for commercial buildings; therefore, the neighbouring non-residential buildings can be excluded from this assessment.

Amenity areas

It is concluded that there are no external amenity areas that would be impacted on by the proposed development.

Conclusion

It is concluded that the proposed development will have a satisfactory level of daylight and sunlight in all new spaces and will have a no significant impact on the internal day and sun-light levels in the neighbouring buildings. There is no significant impact caused by the proposed development on the existing buildings.

1.0 INTRODUCTION

- 1.1 Create Consulting Engineers Ltd has been commissioned by TVP Investments Limited to conduct a Daylight & Sunlight Assessment in support of a permitted development. The application for development will be submitted under Class (AA) for "*Construction of additional floors on an existing commercial building.*" This application pertains to the proposed construction of two additional storeys above the existing commercial building at Thames Valley Park, 400 Thames Valley Park Dr, Earley, Reading RG6 1PT, within the Wokingham Borough. This report evaluates the impact of the development proposals on the availability of daylight and sunlight for the proposed dwellings and neighbouring residences surrounding the block. It also provides a comparison with the current existing site conditions.

Site Description and Location

- 1.2 The site is located in the Wokingham Borough, and the proposed development is intended to be carried out at 400 Thames Valley Park Drive – Roof Extension, Earley. Please refer to the Site Location and plans below for details (Figures 1.1 and 1.2).



Figure 1.1: Proposed site boundary and surrounding buildings (source: Google Earth)

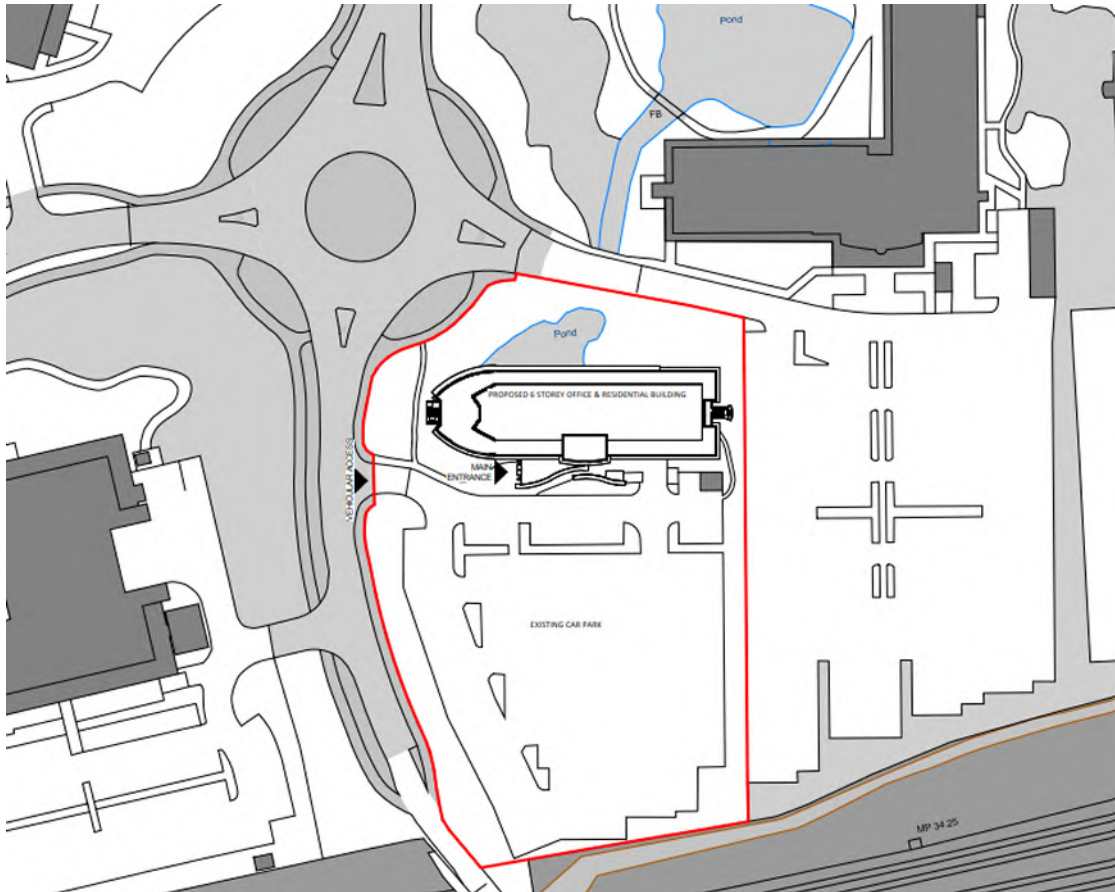


Figure 1.2: Proposed site plan (source: Rohacs Architects)

- 1.3 The site (400 Thames Valley Park Drive) is a commercial building located to the west of Oracle Parkway.

Assessed Spaces

- 1.4 Following the BRE guidance, the following spaces must be included in the assessment:
- For the daylight study – All living rooms, kitchens, bedrooms, and studies in the new proposal and in the neighbouring properties, on affected elevations;
 - For the sunlight study - all living rooms facing within 90 degrees of due south, located in the proposed development and in the surrounding dwellings (where floor layout is known);
 - For the over-shading study – all private gardens and communal sitting areas potentially overshadowed by the proposed development.

Policy Context

Wokingham Borough Core Strategy - Aspirations and Spatial Issues for the Borough

2.68 Overall, taking account of these issues, the aspirations and spatial issues that therefore need to be addressed by the Core Strategy are (in no order of priority):

- i) Delivers sustainable development by providing an acceptable balance of housing and employment including the provision of a full range of services accessible to people;*
- ii) Promotes sustainable use and disposal of resources while mitigating and adapting to climate change;*
- iii) Delivers housing in locations that meet the needs of the community;*
- iv) Supports a sequential approach to new mixed use development locations based primarily on larger scale (SDL) consisting of accessible, high quality, well designed development. The SDL will be supported by Development Briefs to ensure delivery of the essential community facilities and infrastructure required;*
- v) Delivers affordable housing that meets identified local needs;*
- vi) Promotes a transport system that enables access to services by a variety of modes;*
- vii) Protects the character of the borough by maintaining/improving the built/natural environment while mitigating the effect of new development on the environment;*
- viii) Maintains the distinct and separate identity of the borough's settlements;*
- ix) Maintains and enhances all the infrastructure, including roads, railways, schools, healthcare and open space provision through new development, taking account of the health and well being of residents;*
- x) Supports the renaissance of Wokingham and other town centres;*
- xi) Limits development in those areas at most risk of flooding and pollution;*
- xii) Protects the most important areas for biodiversity, landscape and heritage from development;*
- xiii) Maintains and enhances the borough's knowledge and skills base;*
- xiv) Ensures good design which is in keeping with the area*
- xv) Where national and regional policies allow, takes account of the public's views following consultation and engagement.*

- 1.5 This document confirms that the BRE guidance on assessing the level of daylight and sunlight in new and existing buildings should be followed.
- 1.6 The Validation Checklist issued for minor and major developments also states that where the proposed development may have a potentially adverse effect on the daylight and/or sunlight enjoyed by adjoining properties a Daylight/Sunlight Assessment is required to be submitted with the application for permitted development.

- 1.7 This application will be submitted under Class AA for ‘construction of additional floors on an existing commercial building’. As part of the submission, it is required that the following relevant conditions are met:

For the class AA application, the regulations require:

“Where any development under Class AA is proposed, development is permitted subject to the condition that before beginning the development, the developer must apply to the local planning authority for prior approval of the authority as to—

f) the provision of adequate natural light in all habitable rooms of the new dwellinghouses.

g) impact on the amenity of the existing building and neighbouring premises including overlooking, privacy and the loss of light;”

2.0 CALCULATION METHODOLOGY

Guidance and Software Used

- 2.1 The provision of daylight access has been assessed based upon the guidance and methodologies detailed in the Building Research Establishment's (BRE) Guide 'Site Layout and Planning for Daylight and Sunlight – a Good Practice Guide', 2022 Edition.
- 2.2 The assessment model was produced using IES VE version 2022.2.0.0, a full dynamic simulation modelling software capable of performing a variety of environment simulations for large and complex buildings. IES VE can produce accurate predictions of several lighting parameters through its SunCast and RadianceIES modules.

25 Degree Line Check

- 2.3 The 25-degree line check is an initial quick test to determine if a new development will impact upon the amount of daylight received by the surrounding buildings, as well as assessing whether the surrounding buildings will impact upon the amount of daylight received within the proposed development.
- 2.4 The 25-degree line check consists of drawing a line in a sectional view from the highest obstructing point to the centre of the assessed window. If the angle of this line exceeds 25° from the perpendicular, then the amount of daylight received by the window is likely to be affected.
- 2.5 For areas identified as failing the 25-degree line check, the BRE guide presents two additional methods for more in-depth daylight analysis. These are the Vertical Sky Component (VSC) and Average Daylight Factors (ADF).

45 Degree Line Check

- 2.6 The 45-degree line check is applicable to extensions or new parts of the development where part of the building is perpendicular to the potentially affected windows. It involves drawing a line on elevation at an angle of 45 degrees away from the near top corner of the perpendicular extension and drawing another line on the plan, also at 45 degrees angle, back towards the window wall from the end of the extension.
- 2.7 The 45-degree line check is not applicable for this site as the main parts of the proposed building are not perpendicular to any of the existing residential buildings.

Vertical Sky Component (VSC)

- 2.8 The Vertical Sky Component is a measure of the amount of skylight incident on a vertical plane. It is most commonly applied to the light incident at the centre of a window, and in this sense is a measure of the potential for good day light. The VSC is calculated by taking the ratio of the skylight incident at a point to the unobstructed skylight available at that same point on a horizontal plane. For a uniform sky, the maximum value is 50% (since the point is on a vertical plane, clearly only half the hemisphere can contribute). For a CIE sky, which for the purposes of the daylight & sunlight study is a standard overcast sky, the maximum value is 39.6%. VSC calculations have been undertaken using computer-based simulation.

Illuminance Check

- 2.9 The illuminance recommendations are based around the illuminances that would be met or exceeded over half of the room, over half of daylight hours over the year. BS EN 17037 gives a range of recommendations for high, medium and minimum daylight provision. The National Annex A also gives minimum values for housing in living rooms, kitchens and bedrooms. These are minimum recommended values for locations where a predominantly daylight appearance is not achievable, e.g., where external obstructions are present.

Sunlight Analysis

- 2.10 The measure of sunlight that a given window may expect over a year period is known as the Annual Probable Sunlight Hours (APSH) and expressed as a percentage. Due to the sun's path across our sky, north facing windows are able to receive direct sunlight on only a small number of occasions per year and windows facing east or west will typically only receive sunlight in the morning or evening. Therefore, BRE guidance states that only windows with an orientation 90° of south need be assessed.
- 2.11 Sunlight access and overshadowing impact have been determined using a 3D computer simulation of the proposed development and a sun path calculation tool to determine the difference in direct solar exposure between the existing and proposed developments.

Limitations and Assumptions

- 2.12 The following assumptions and limitations have been made within this assessment:
- Ground topography has been simplified based on the site topographical survey drawing prepared by Rohacs Architects, dated December 2023.
 - Reflectance and transmittance values for all glazing as well as for external walls, balconies, internal walls and ceilings are based on information acquired from the IES Construction Database and to align with the BRE recommendations.

3.0 DAYLIGHT (VSC)

- 3.1 The assessment of Daylight has been undertaken using Vertical Sky Component (VSC).
- 3.2 The VSC calculation has been assessed against the guidance given in the BRE publication 'Site Layout Planning for Daylight and Sunlight'. The VSC check is used to assess the daylight access to a vertical surface such as a window. VSC calculations produce a value between 0 and 40%.
- 3.3 If the calculated VSC for a window is greater than 27% then the window is considered to receive enough skylight. If the VSC for the buildings surrounding the proposed development, is both less than 27% and less than 0.8 times its former value ('existing' case), occupants of the existing building will notice the reduction in the amount of skylight.
- 3.4 Comments by the Greater London Authority (GLA), in the context of a planning appeal, are also noted:

"It should, nevertheless, be noted that the 27% VSC target value is derived from a low-density suburban housing model. The independent daylight and sunlight review states that in an inner-city urban environment, VSC values more than 20% should be considered as reasonably good, and that VSC in the mid-teens should be acceptable. However, where the VSC value falls below 10% (to be in single figures), the availability of direct light from the sky will be poor."

Source: Greater London Authority, representation hearing report D&P/3067/03 – Appendix 1, 18/11/2013

- 3.5 VSC check should be carried out for all 'main windows' which are defined as openings serving living rooms, dining rooms, studies, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms and circulation do not have to be analysed.
- 3.6 VSC checks have been undertaken for all of the openings to main rooms within the proposed development and relevant openings in existing neighbouring buildings.
- 3.7 It should be noted that the VSC check measures the illuminance of a surface, as opposed to the level of light that is transmitted through an opening. Subsequently, the precise geometric dimensions of any window or surface assessed are less important than its relative position to any obstructions.

BRE Requirement for Daylight for New Development

Obstructions can limit access to light from the sky. This can be checked at an early design stage

by measuring or calculating the angle of visible sky ϑ , angle of obstruction or vertical sky component (VSC) at the centre of the lowest window where daylight is required. If VSC is:

- at least 27% (ϑ is greater than 65°, obstruction angle less than 25°) conventional window design will usually give reasonable results.*
- between 15% and 27% (ϑ is between 45° and 65°, obstruction angle between 25° and 45°) special measures (larger windows, changes to room layout) are usually needed to provide adequate daylight.*
- between 5% and 15% (ϑ is between 25° and 45°, obstruction angle between 45° and 65°) it is very difficult to provide adequate daylight unless very large windows are used.*
- less than 5% (ϑ less than 25°, obstruction angle more than 65°) it is often impossible to achieve reasonable daylight, even if the whole window wall is glazed.*

Daylight- Results of the calculations for the proposed development

- 3.8 The numerical results of the VSC calculations for all the assessed windows calculated for the proposed development are detailed in Appendix A. The results confirm that all windows pass the VSC check. Please refer to figures below for visual representation of VSC check results.

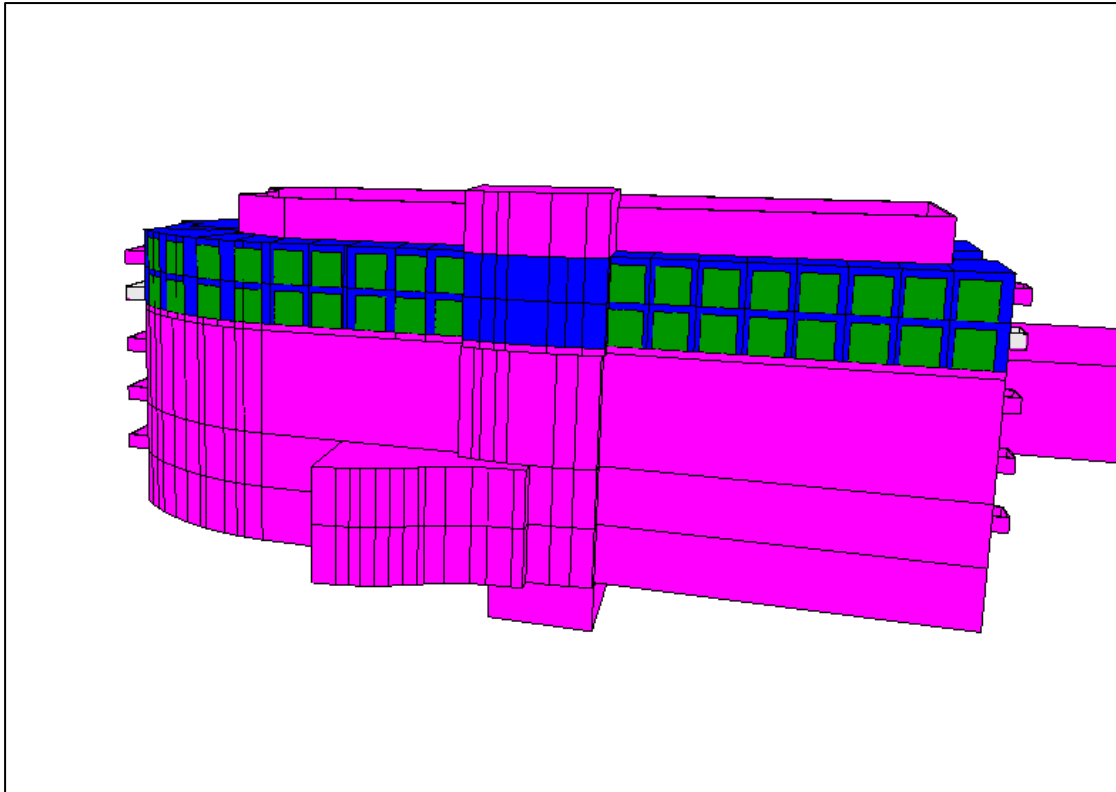


Figure 3.1: Visual representation of VSC results for the proposed building – south elevation; green areas indicate a passing window (extracted from IES Radiance)

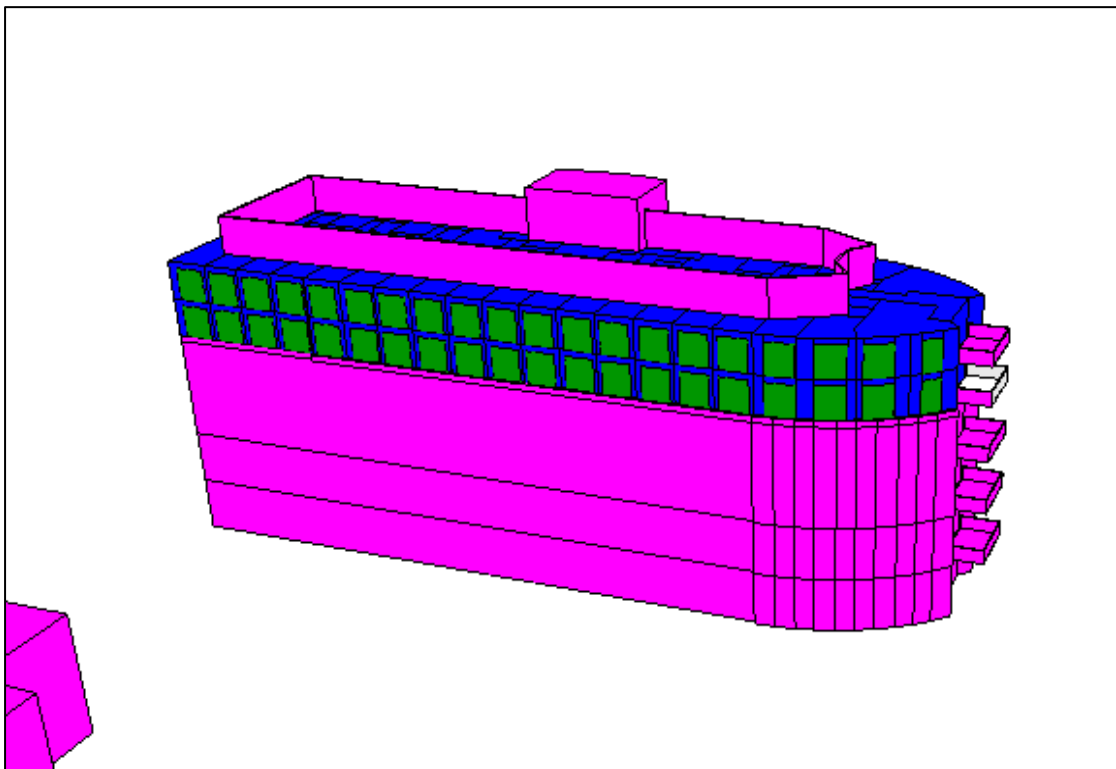


Figure 3.2: Visual representation of VSC results for the proposed building – north elevation; green areas indicate a passing window (extracted from IES Radiance)

Category	Number	Pass/Fail (%)	Cumulative Pass Rate
Total Assessed Windows	80	—	—
VSC Pass	80	100%	100%
VSC Marginal Pass (Pass2: VSC > 15)	00	00%	—
VSC Fail	00	00%	—

Table 3.1: VSC Results for Proposed Development

- 3.9 All assessed windows (100%) achieve a VSC of $\geq 27\%$, thereby meeting the BRE guidelines for new developments. It should be noted that the VSC assessment only measures the illuminance of the external window surface, rather than the actual level of light transmitted into the interior space. To confirm that adequate daylight is available within the proposed rooms, further assessments such as Daylight Factor or interior illuminance studies are required. Please refer to Section 4 of this report, where an illuminance check has been carried out for all habitable rooms within the proposed development.

Results for Neighbouring Buildings

- 3.10 Two buildings, Oracle 540 and Sanofi UK, are situated near the proposed development. Both are commercial buildings. Since there are no specific daylight criteria established for commercial buildings, the neighbouring non-residential buildings can be excluded from this assessment.

4.0 ILLUMINANCE METHOD

- 4.1 Illuminance is a measure of the amount of light falling on a surface, usually measured in lux.
- 4.2 Illuminance method involves using climatic data for the location of the site to calculate the illuminance from daylight at each point on an assessment grid on the reference plane at an at least hourly interval for a typical year.
- 4.3 For compliance with the BRE standard (and BS EN 17037) a daylight space should achieve the minimum level of recommendation. This is shown in the table 4.1 below.

Level of recommendation	Target illuminance Et (lx) for 50% of assessment grid	Target illuminance Et (lx) for 95% of assessment grid
Minimum	300	100
Medium	500	300
High	750	500

Table 4.1: Illuminance targets

- 4.4 Additionally, according to the UK National Annex, the illuminance recommendations for daylight provision in UK dwellings is as below:

Room type	Target illuminance Et (lx) for 50% of assessment grid
Bedroom	100
Living room	150
Kitchen	200

Table 4.2: Illuminance targets for UK dwellings according to UK National Annex

- 4.5 Where the room is designed to serve as kitchen, dining and living area, the higher kitchen target might be difficult to achieve due to the room's depth. In such circumstances the recommended illuminance value for living rooms would be more appropriate, as it usually is the predominant space use.
- 4.6 The illuminance assessment indicates that all assessed habitable rooms in the proposed development achieve the recommended daylight levels (measured in lux), as summarised in the table below. Detailed calculation results are provided in Appendix B.

Space ID	Room Type	Target Illuminance Et (lx) for 50% of Assessment Grid (%)	Percentage of Room Area Receiving Average Illuminance Above Target Lux
3F000041	4F 401- 1B2P BED	150	100%
3F00003D	4F 401- 1B2P KLD	200	91%
3F00003C	4F 402- 1B1P BED	150	100%

Space ID	Room Type	Target Illuminance Et (lx) for 50% of Assessment Grid (%)	Percentage of Room Area Receiving Average Illuminance Above Target Lux
3F000039	4F 402- 1B1P KLD	200	100%
3F000034	4F 403- 1B1P KLD	200	100%
3F000037	4F 403- 1B1P SBED	150	100%
3F00002F	4F 404- 1B1P KLD	200	100%
3F000030	4F 404- 1B1P SBED	150	100%
3F00002D	4F 405- 1B1P KLD	200	100%
3F00002B	4F 405- 1B1P SBED	150	100%
3F000028	4F 406- 1B2P BED	150	100%
3F000024	4F 406- 1B2P KLD	200	69%
3F000045	4F 407- 1B2P BED	150	100%
3F000044	4F 407- 1B2P KLD	200	100%
3F000043	4F 408- 1B2P BED	150	100%
3F000042	4F 408- 1B2P KLD	200	72%
3F000012	4F 409- 1B2P BED	150	100%
3F000009	4F 409- 1B2P KLD	200	69%
3F000006	4F 410- 1B2P BED	150	100%
3F000005	4F 410- 1B2P KLD	200	69%
3F000004	4F 411- 1B2P BED	150	100%
3F000003	4F 411- 1B2P KLD	200	69%
3F000002	4F 412- 1B2P BED	150	100%
3F000001	4F 412- 1B2P KLD	200	69%
ST00000D	4F 413- 2B4P BED	150	100%
ST00000E	4F 413- 2B4P BED	150	100%
ST00000B	4F 413- 2B4P KLD	200	100%
3F00000C	4F 414- 2B3P BED	150	100%
ST00000A	4F 414- 2B3P BED	150	100%
3F000055	4F 414- 2B3P KLD	200	100%
3F000011	4F 415- 1B1P KLD	200	100%
3F00000D	4F 415- 1B1P SBED	150	100%
3F000052	4F 416- 2B3P BED	150	100%
3F00004F	4F 416- 2B3P KLD	200	99%
3F000050	4F 416- 2B3P SBED	150	100%
4F000036	5F 501- 1B2P BED	150	100%
4F000032	5F 501- 1B2P KLD	200	95%
4F000031	5F 502- 1B1P BED	150	100%
4F00002E	5F 502- 1B1P KLD	200	100%
4F000029	5F 503- 1B1P KLD	200	100%
4F00002C	5F 503- 1B1P SBED	150	100%
4F000024	5F 504- 1B1P KLD	200	100%
4F000025	5F 504- 1B1P SBED	150	100%
4F000022	5F 505- 1B1P KLD	200	100%
4F000021	5F 505- 1B1P SBED	150	100%

Space ID	Room Type	Target Illuminance Et (lx) for 50% of Assessment Grid (%)	Percentage of Room Area Receiving Average Illuminance Above Target Lux
4F00001E	5F 506- 1B2P BED	150	100%
4F00001A	5F 506- 1B2P KLD	200	72%
4F000052	5F 507- 1B2P BED	150	100%
4F000051	5F 507- 1B2P KLD	200	73%
4F000050	5F 508- 1B2P BED	150	100%
4F00004F	5F 508- 1B2P KLD	200	74%
4F00004E	5F 509- 1B2P BED	150	100%
4F00004D	5F 509- 1B2P KLD	200	72%
4F00004C	5F 510- 1B2P BED	150	100%
4F00004B	5F 510- 1B2P KLD	200	73%
4F00004A	5F 511- 1B2P BED	150	100%
4F000049	5F 511- 1B2P KLD	200	73%
4F000048	5F 512- 1B2P BED	150	100%
4F000044	5F 512- 1B2P KLD	200	74%
4F000042	5F 513- 2B4P BED	150	100%
4F000043	5F 513- 2B4P BED	150	100%
4F00003F	5F 513- 2B4P KLD	200	100%
4F000003	5F 514- 2B3P BED	150	100%
4F00003E	5F 514- 2B3P BED	150	100%
4F00003D	5F 514- 2B3P KLD	200	100%
4F000008	5F 515- 1B1P KLD	200	100%
4F000004	5F 515- 1B1P SBED	150	100%
4F00003B	5F 516- 2B3P BED	150	100%
4F000038	5F 516- 2B3P KLD	200	99%
4F000039	5F 516- 2B3P SBED	150	100%

Table 4.3: Illuminance Check for all the habitable rooms in the proposed development

Conclusion

- 4.7 Therefore, it can be concluded that all proposed habitable spaces within the Roof Extension at 400 Thames Valley Park Drive will receive an adequate level of daylight, as all assessed areas meet the target average daylight illuminance (lux)

5.0 SUNLIGHT ANALYSIS (APSH)

- 5.1 The sunlight assessment of the proposed development has been conducted in accordance with the guidance provided in the BRE publication 'Site Layout Planning for Daylight and Sunlight, 2022'.

BRE Requirement for Sunlight for New Development

In general, a dwelling, or non-domestic building that has a particular requirement for sunlight, will appear reasonably sunlit provided:

- *at least one main window wall faces within 90° of due south and*
- *a habitable room, preferably a main living room, can receive a total of at least 1.5 hours of sunlight on 21 March. This is assessed at the inside centre of the window(s); sunlight received by different windows can be added provided they occur at different times and sunlight hours are not double counted.*

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.

- 5.2 The guidelines confirm the difficulty imposed by this requirement and acknowledge that it will not always be possible to achieve for all living spaces. For larger developments of flats, especially those with site constraints, it may not be feasible for every living room to face within 90° of south.
- 5.3 The guidelines then provide an example of a carefully designed layout for a relatively small block, where four out of five flats have south-facing living rooms, while one faces north and receives no sunlight at all. Based on this layout and its results, we can conclude that an 80% pass rate is considered indicative of careful layout design.

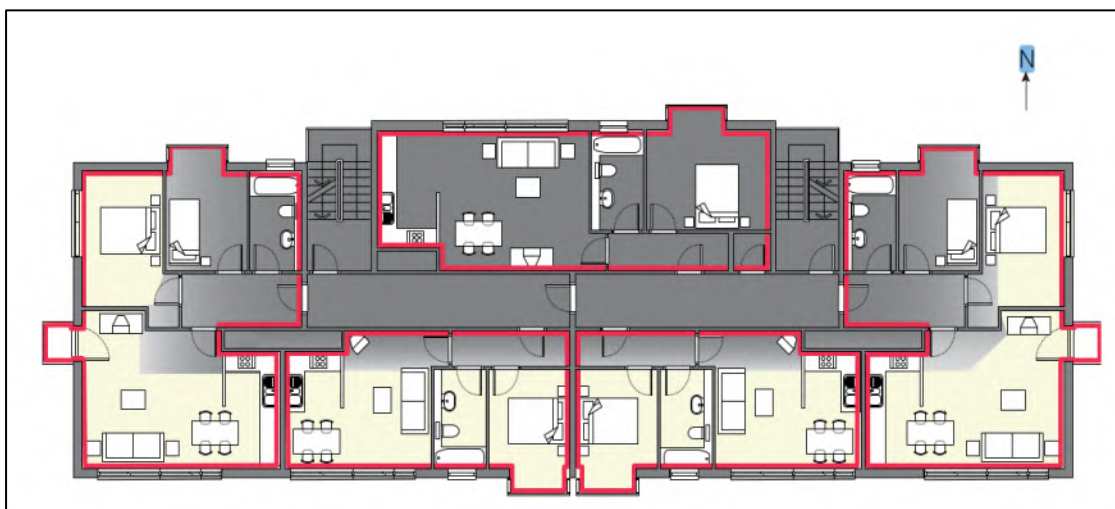


Figure 6.1: Careful layout design means that four out of the five flats shown have a south-facing living room (Source – BRE 'Site Layout Planning for Daylight and Sunlight', 2022)

Sunlight- Results of the calculations for the proposed development

- 5.4 The BRE guidance requires that access to sunlight be considered and that sunlight availability be maximized without overheating the space. The guidance recommends that at least one main window wall faces within 90° of due south, and a habitable room, preferably the main living room, should receive a total of at least 1.5 hours of sunlight on 21 March, where possible.
- 5.5 The sunlight assessment confirms that all the windows of habitable rooms, which are within 90° of due south, receive at least 1.5 hours of direct sunlight on 21 March.
- 5.6 North-facing windows, which are not oriented within 90° of due south, are not expected to comply with BRE guidelines.

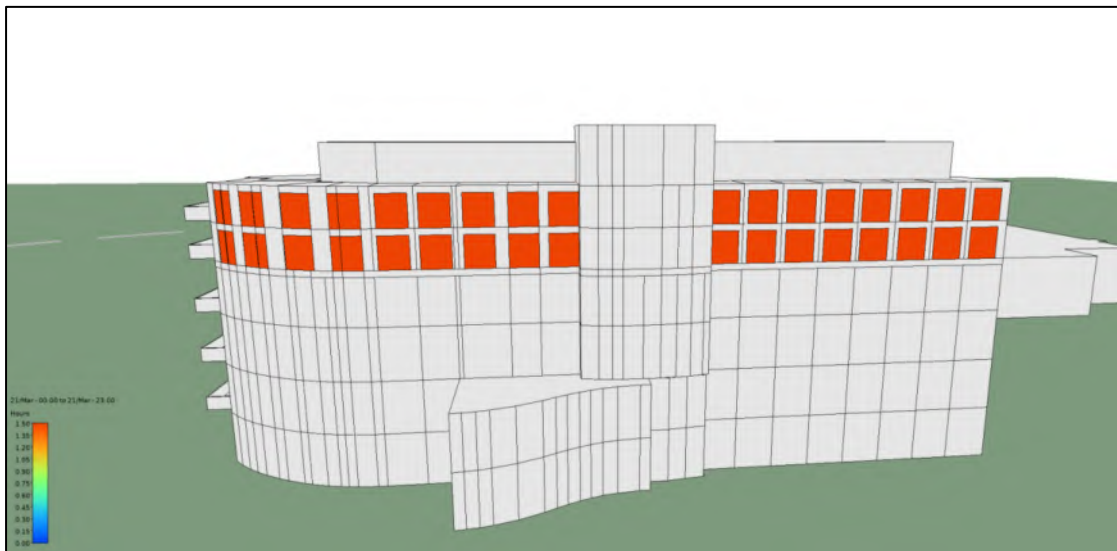


Figure 6.2: South Elevation

- 5.7 The image above (taken from the south) shows the living spaces of the proposed development. As indicated, openings that receive at least 1.5 hours of sunlight on March 21 are highlighted in red. These openings will be adequately sunlit, in line with the BRE 209 2022 guidance.

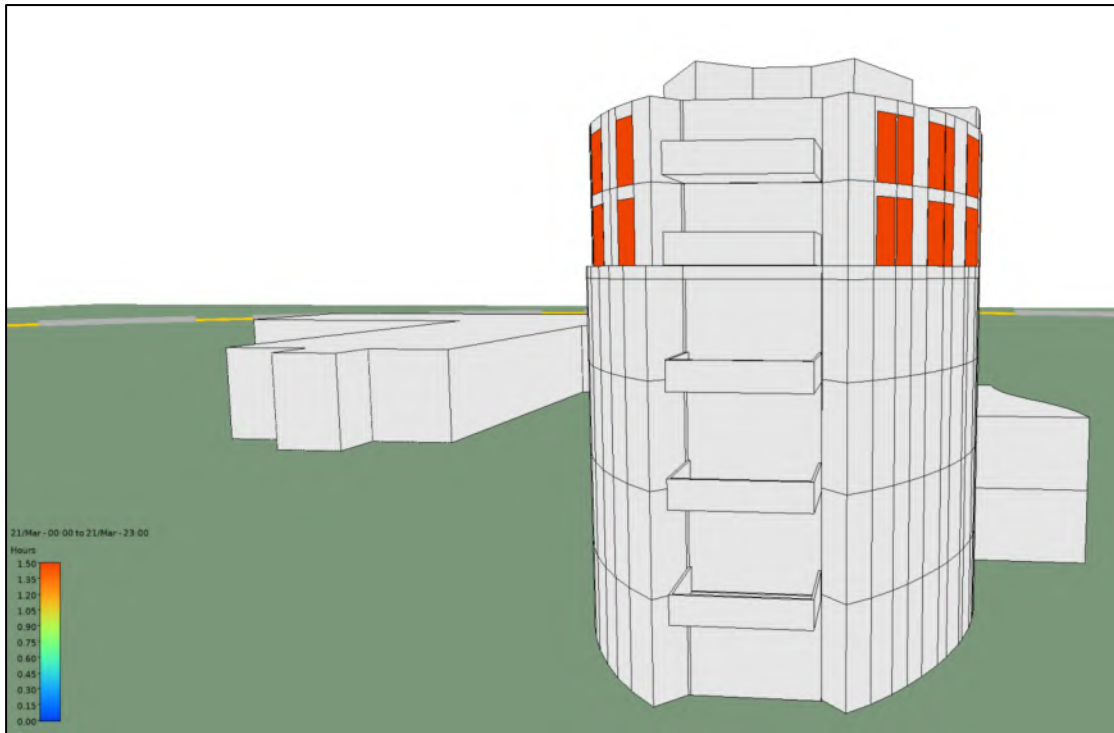


Figure 6.3: West Elevation

- 5.8 The image above (taken from the west) shows the living spaces of the proposed development. As indicated, openings that receive at least 1.5 hours of sunlight on March 21 are highlighted in red. These openings will be adequately sunlit, in line with the BRE 209 2022 guidance.

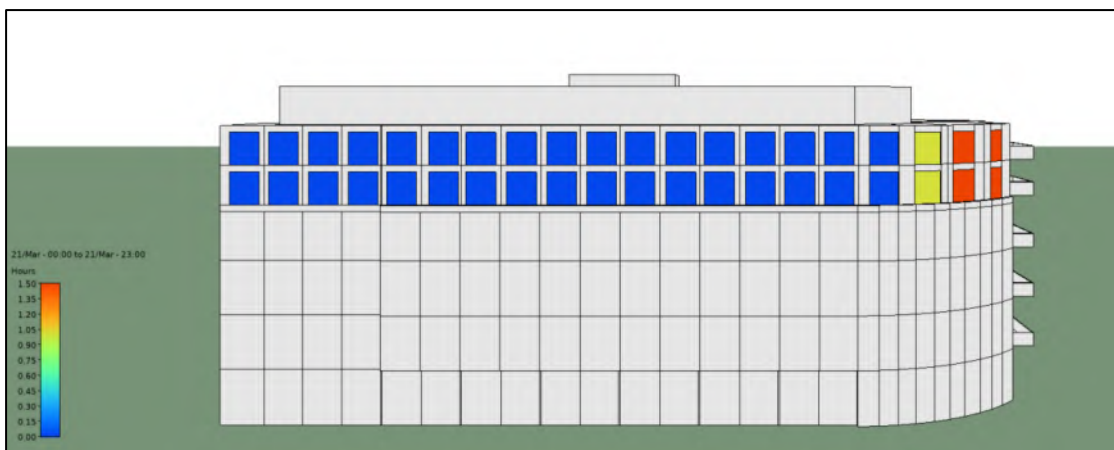


Figure 6.4: North Elevation

- 5.9 The image above (taken from the north) shows the living spaces of the proposed development. As indicated, openings that receive at least 1.5 hours of sunlight on March 21 are highlighted in red. These openings will be adequately sunlit, in line with the BRE 209 2022 guidance. Other openings, shown in yellow and blue, which face north, are not expected to meet the BRE's recommended minimum threshold of at least 1.5 hours of sunlight on March 21.

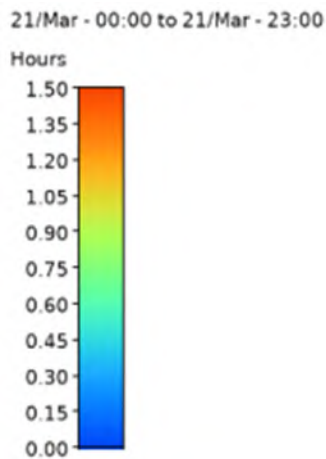


Figure 6.5: Gradient Scale

Results for Neighbouring Buildings

- 5.10 Two buildings, Oracle 540 and Sanofi UK, are situated near the proposed development. Both are commercial buildings. Since there are no specific daylight criteria established for commercial buildings, the neighbouring non-residential buildings can be excluded from this assessment.

Over-shading of Gardens and Open Spaces

- 5.11 According to the BRE guide, the availability of sunlight should also be checked for all open spaces "where it will be required". It suggests that assessments should include:
- Main, back gardens of a house;
 - Parks and playing fields;
 - Sitting out areas, such as those in public squares;
 - Other areas e.g., children's playgrounds, paddling pools, fountains etc.
- 5.12 Following the above recommendations and the review of the outdoor spaces surrounding the proposed development and the adjacent plots, it has been concluded that the only relevant outdoor space in close vicinity to the proposed development is the sitting out areas of the Oracle 540, located to the east, and Sanofi UK, located to the south of the proposal.
- 5.13 The BRE guide further recommends that "*as a check (...) at least half of the amenity areas listed above should receive at least two hours of sunlight on 21 March.*"
- 5.14 Based on the hourly images for the spring equinox, it is clear that the shade created by the proposed development does not affect the assessed area. Please refer to Appendix C for the shading images.

6.0 CONCLUSION

- 6.1 This assessment has been undertaken following the guidance given in the Building Research Establishment's (BRE) Publication 'Site Layout Planning for Daylight and Sunlight'.
- 6.2 The proposed development fully complies with BRE guidance on daylight and sunlight. All habitable rooms achieve the recommended daylight levels, and all relevant living rooms receive adequate sunlight access, confirming that the scheme provides a high standard of natural light for future occupants.
- 6.3 The neighbouring amenity areas have been assessed to determine the level of sunlight received by the external spaces. It has been found that areas of relevance will not be affected by the proposed development.
- 6.4 It is concluded that the proposed development will have no significant impact on the neighbouring buildings.

7.0 DISCLAIMER

- 7.1 Create Consulting Engineers Ltd disclaims any responsibility to the Client, TVP Investment Ltd and others in respect of any matters outside the scope of this report.
- 7.2 The copyright of this report is vested in Create Consulting Engineers Ltd. The Client, TVP Investment Ltd or their appointed representatives, may copy the report for purposes in connection with the development described herein. It shall not be copied by any other party or used for any other purposes without the written consent of Create Consulting Engineers Ltd.
- 7.3 Create Consulting Engineers Ltd accepts no responsibility whatsoever to other parties to whom this report, or any part thereof, is made known. Any such other parties rely upon the report at their own risk.

APPENDICES

APPENDIX A

VS

C data

Num	Zone	Surface	Opening	VSC	Status	Location Description
1	3F00000C	6	0	40.04	Pass	
2	3F00000C	7	0	39.8	Pass	
3	3F00000D	5	0	39.94	Pass	
4	3F000011	4	0	39.94	Pass	
5	3F000024	3	0	39.66	Pass	
6	3F000028	2	0	39.88	Pass	
7	3F00002B	2	0	39.86	Pass	
8	3F00002D	4	0	39.69	Pass	
9	3F00002F	4	0	39.99	Pass	
10	3F000030	5	0	39.99	Pass	
11	3F000034	4	0	39.91	Pass	
12	3F000037	3	0	39.91	Pass	
13	3F000039	4	0	40.02	Pass	
14	3F00003C	3	0	40.02	Pass	
15	3F00003D	6	0	39.58	Pass	
16	3F000041	4	0	35.22	Pass	
17	3F000050	2	0	39.46	Pass	
18	3F000052	2	0	34.83	Pass	
19	3F000055	4	0	39.82	Pass	
20	3F000055	5	0	39.99	Pass	
21	3F000055	7	0	40.08	Pass	
22	3F000055	8	0	40.19	Pass	
23	ST00000A	2	0	39.92	Pass	
24	ST00000B	5	0	39.9	Pass	
25	ST00000B	8	0	39.94	Pass	
26	ST00000D	3	0	39.93	Pass	
27	ST00000E	2	0	39.89	Pass	
28	3F000001	5	0	39.84	Pass	
29	3F000002	4	0	39.95	Pass	
30	3F000003	3	0	40.02	Pass	
31	3F000004	4	0	40	Pass	
32	3F000005	3	0	39.79	Pass	
33	3F000006	4	0	39.86	Pass	
34	3F000009	5	0	39.84	Pass	
35	3F000012	4	0	39.75	Pass	
36	3F000042	5	0	39.99	Pass	
37	3F000043	4	0	39.79	Pass	
38	3F000044	7	0	39.79	Pass	
39	3F000045	4	0	39.87	Pass	
40	4F000003	6	0	39.8	Pass	
41	4F000003	7	0	39.97	Pass	
42	4F000004	5	0	40.02	Pass	
43	4F000008	4	0	40.01	Pass	
44	4F00001A	3	0	39.76	Pass	
45	4F00001E	2	0	39.87	Pass	
46	4F000021	2	0	39.86	Pass	
47	4F000022	4	0	39.66	Pass	
48	4F000024	4	0	40.06	Pass	
49	4F000025	5	0	40.01	Pass	

Num	Zone	Surface	Opening	VSC	Status	Location Description
50	4F000029	4	0	39.97	Pass	
51	4F00002C	3	0	39.97	Pass	
52	4F00002E	4	0	40.08	Pass	
53	4F000031	3	0	40.08	Pass	
54	4F000032	6	0	39.48	Pass	
55	4F000036	4	0	35.4	Pass	
56	4F000039	2	0	39.59	Pass	
57	4F00003B	2	0	34.81	Pass	
58	4F00003D	4	0	39.94	Pass	
59	4F00003D	5	0	39.57	Pass	
60	4F00003D	7	0	39.92	Pass	
61	4F00003D	8	0	39.39	Pass	
62	4F00003E	2	0	40.01	Pass	
63	4F00003F	5	0	39.98	Pass	
64	4F00003F	8	0	39.91	Pass	
65	4F000042	3	0	40.04	Pass	
66	4F000043	2	0	39.86	Pass	
67	4F000044	5	0	39.91	Pass	
68	4F000048	4	0	39.98	Pass	
69	4F000049	3	0	39.98	Pass	
70	4F00004A	4	0	39.93	Pass	
71	4F00004B	3	0	39.92	Pass	
72	4F00004C	4	0	39.85	Pass	
73	4F00004D	5	0	39.85	Pass	
74	4F00004E	4	0	39.83	Pass	
75	4F00004F	5	0	39.82	Pass	
76	4F000050	4	0	39.85	Pass	
77	4F000051	7	0	39.84	Pass	
78	4F000052	4	0	39.68	Pass	
79	4F000054	4	0	39.74	Pass	
80	4F000055	4	0	39.9	Pass	

Total Assessed Windows:	80		
VSC Pass	80	100%	100.0%
VSC Marginal Fail (Pass2: VSC>15)	0	0%	
VSC Fail	0		0.0%

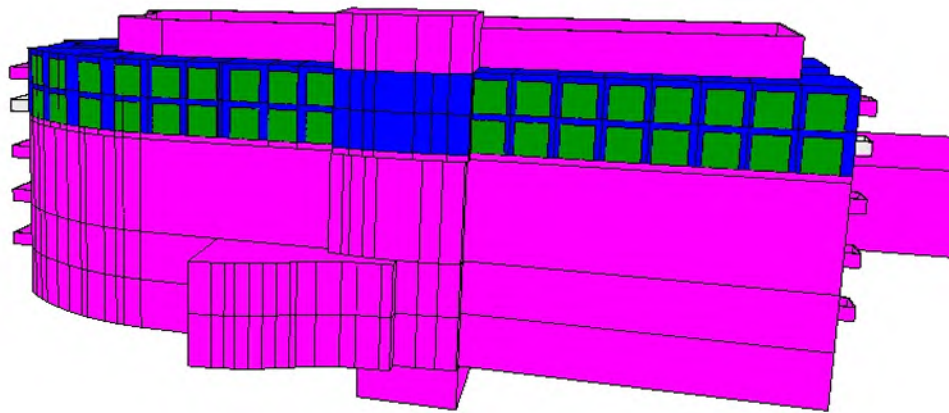


Fig 01: South Elevation

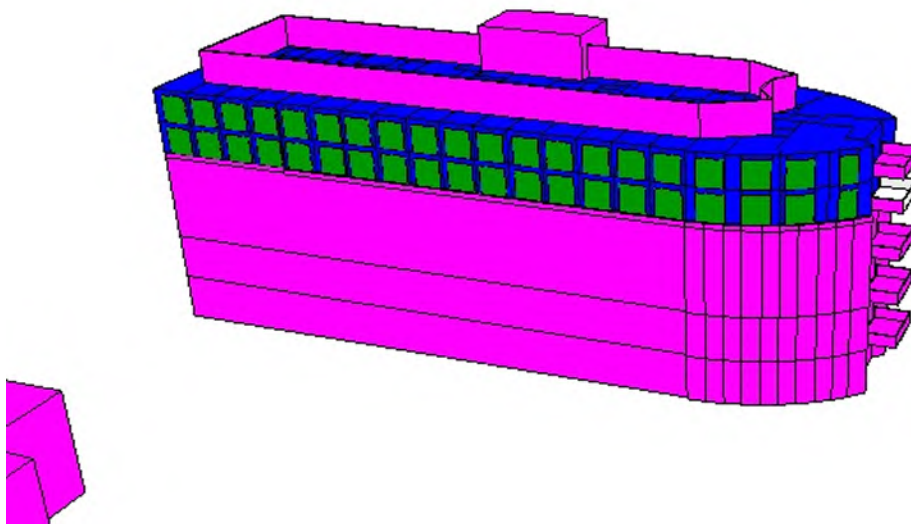


Fig 01: North Elevation

APPENDIX B

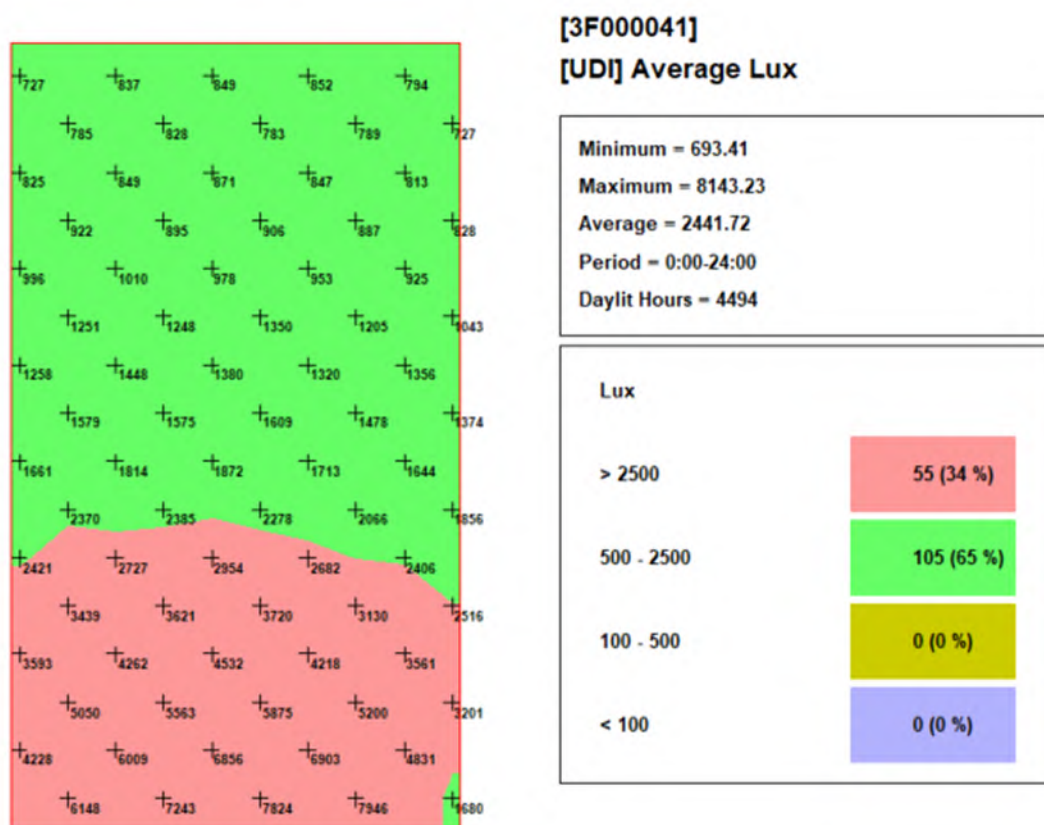


Figure B1: 4F 401: 1B2P BED

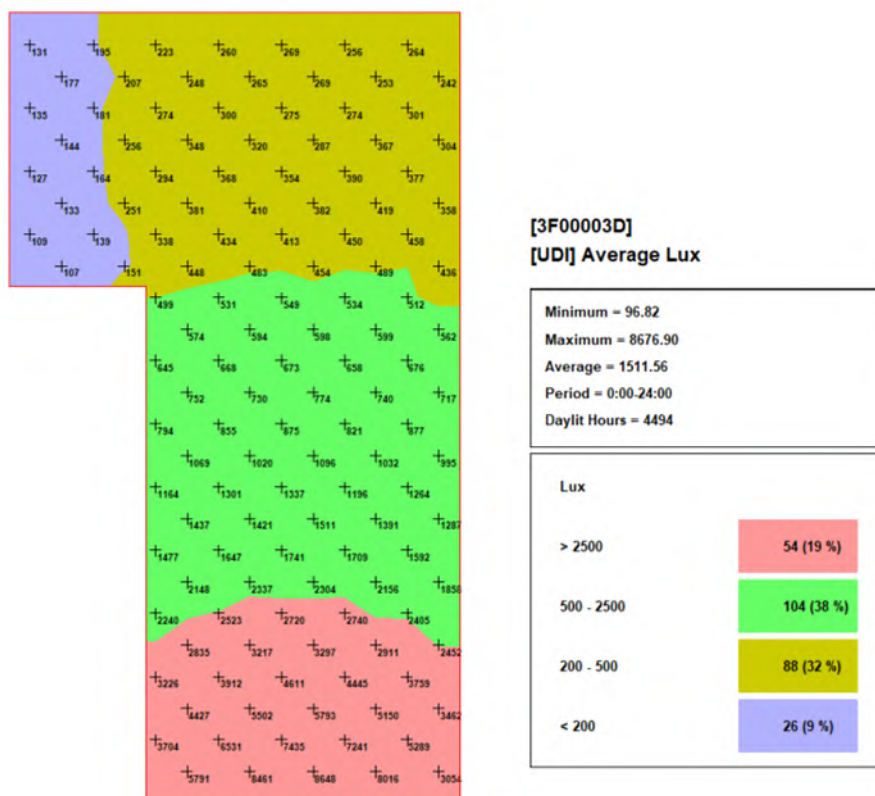
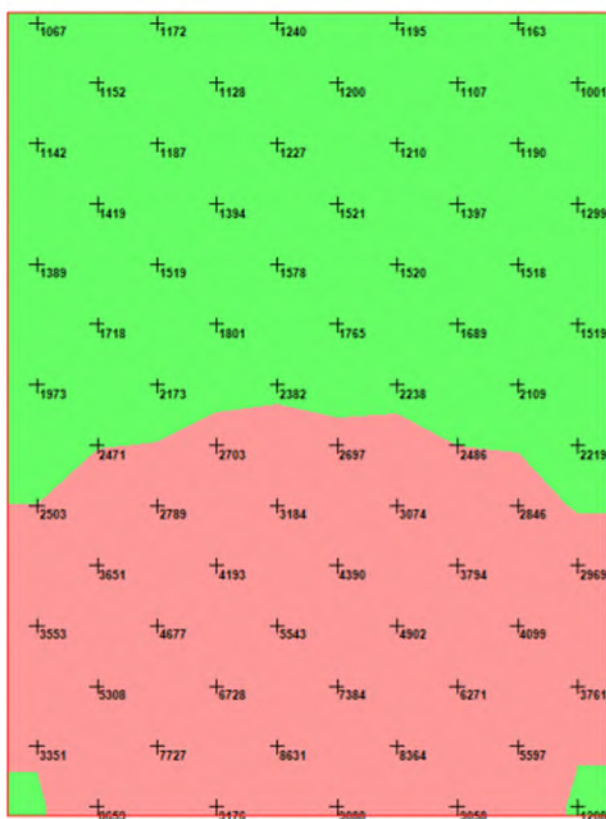


Figure B2: 4F 401: 1B2P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test



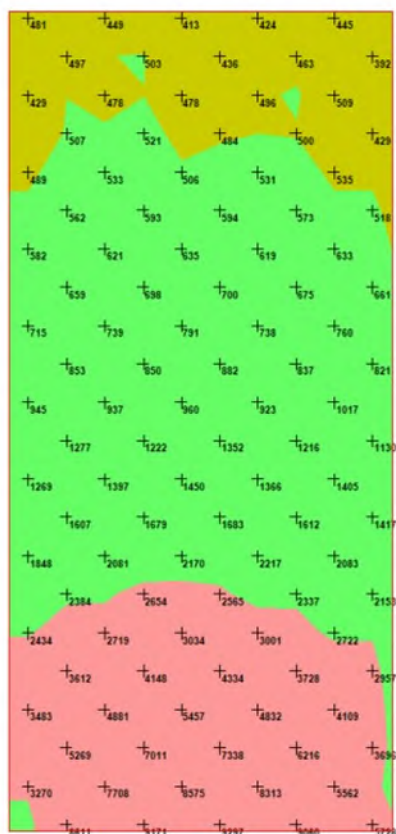
[3F00003C]
[UDI] Average Lux

Minimum = 1000.77
 Maximum = 9175.64
 Average = 3148.42
 Period = 0:00-24:00
 Daylit Hours = 4494

Lux

> 2500	62 (44 %)
500 - 2500	78 (55 %)
100 - 500	0 (0 %)
< 100	0 (0 %)

Figure B3: 4F 402: 1B1P BED



[3F000039]
[UDI] Average Lux

Minimum = 392.17
 Maximum = 9297.13
 Average = 2144.06
 Period = 0:00-24:00
 Daylit Hours = 4494

Lux

> 2500	61 (27 %)
500 - 2500	124 (56 %)
200 - 500	35 (15 %)
< 200	0 (0 %)

Figure B4: 4F 402: 1B1P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

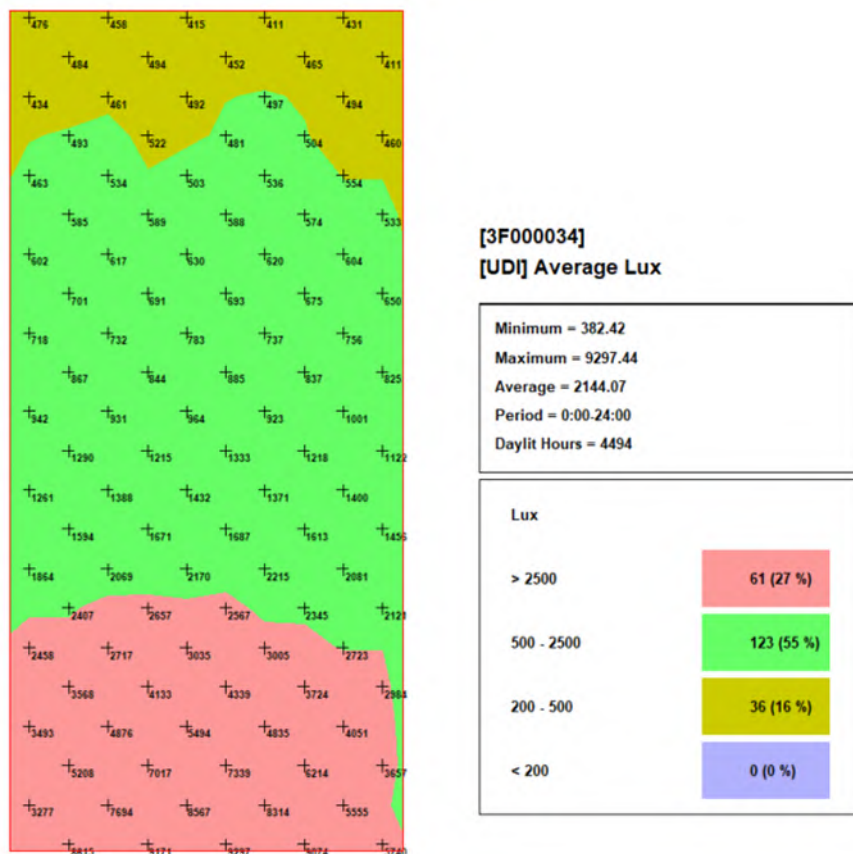


Figure B5: 4F 403: 1B1P KLD

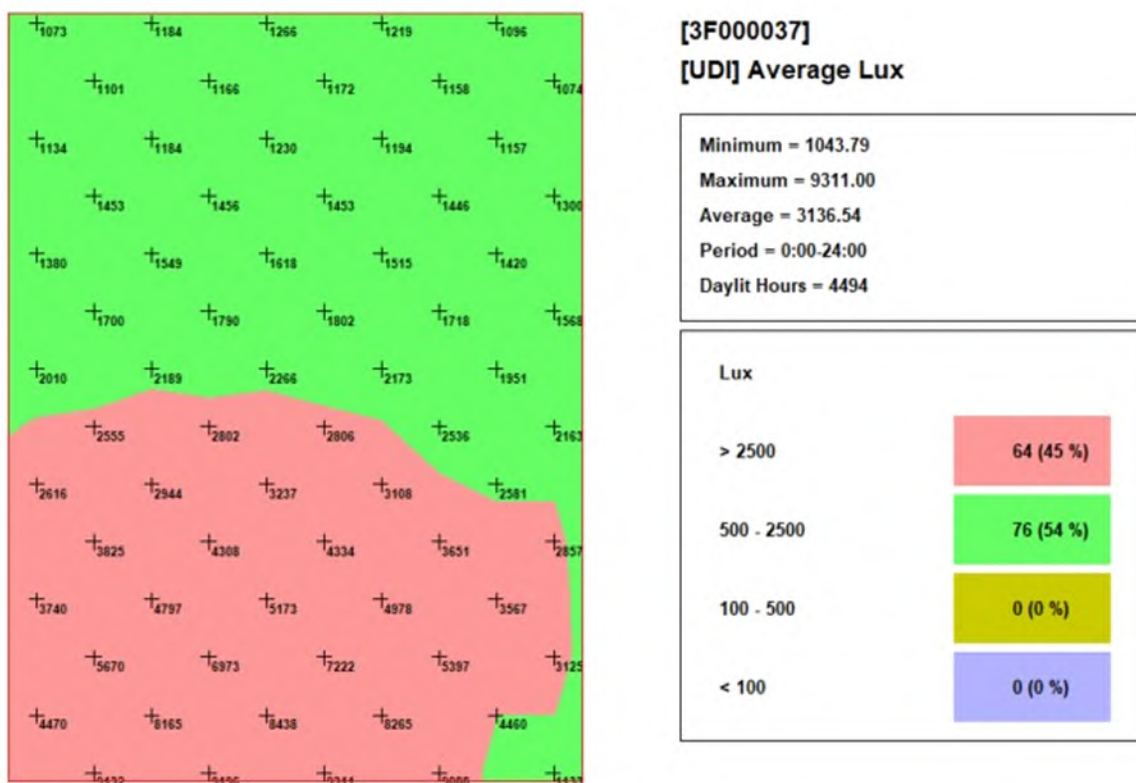


Figure B6: 4F 403: 1B1P SBED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

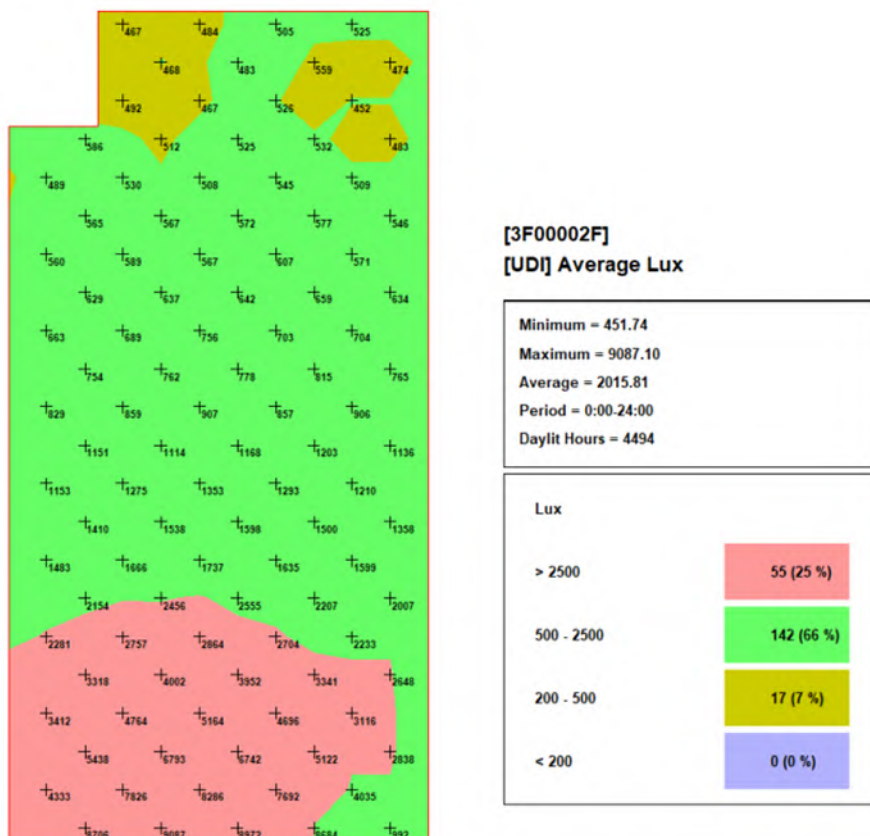


Figure B7: 4F 404: 1B1P KLD

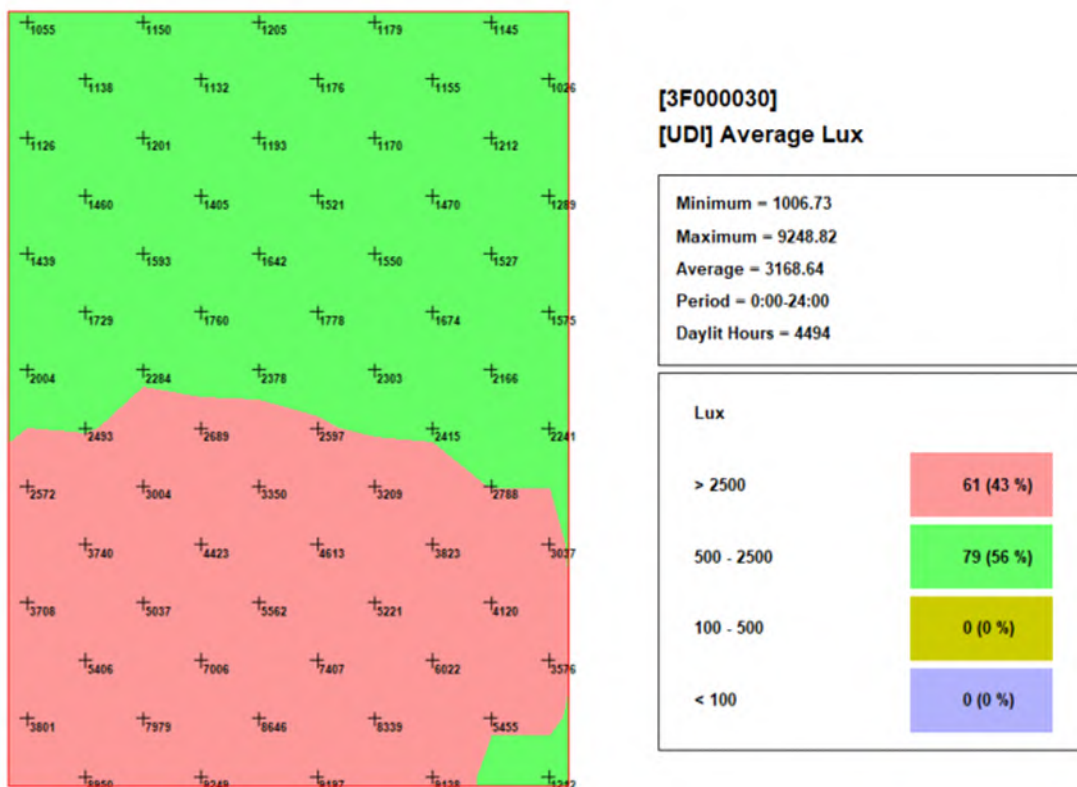
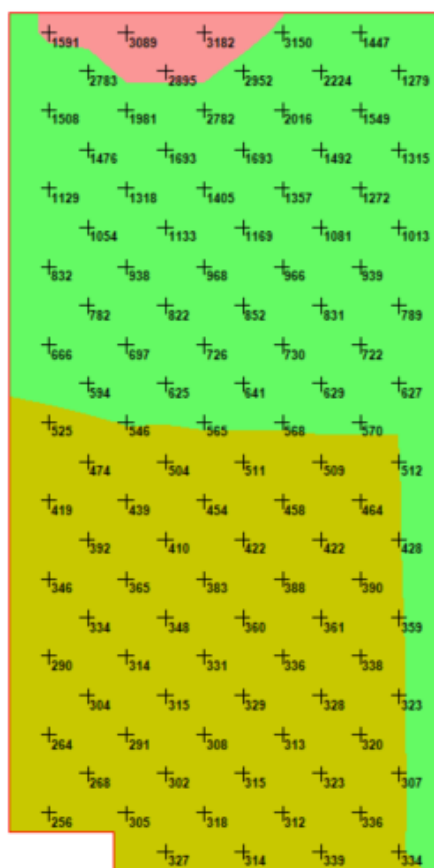


Figure B8: 4F 404: 1B1P SBED

Appendix B- Illuminance test

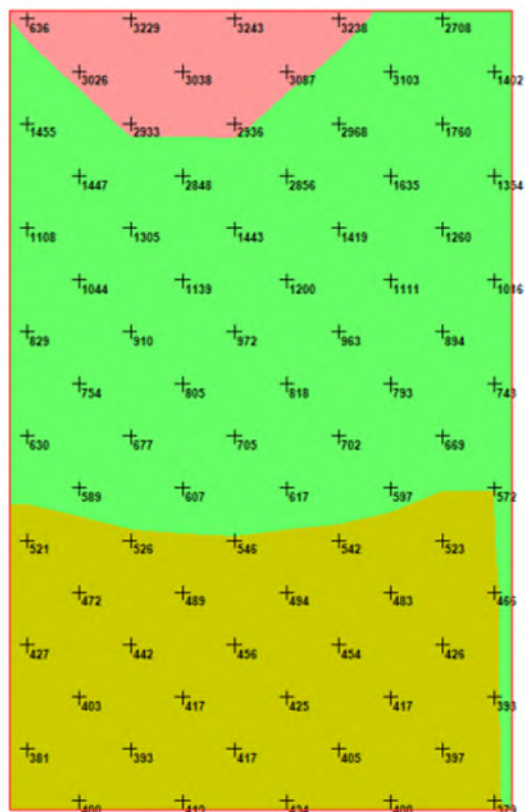


[3F00002D] [UDI] Average Lux

Minimum = 244.79
Maximum = 3189.42
Average = 845.72
Period = 0:00-24:00
Daylit Hours = 4494

Lux	
> 2500	16 (7 %)
500 - 2500	101 (46 %)
200 - 500	101 (46 %)
< 200	0 (0 %)

Figure B9: 4F 405: 1B1P KLD



[3F00002B] [UDI] Average Lux

Minimum = 372.51
Maximum = 3245.95
Average = 1097.40
Period = 0:00-24:00
Daylit Hours = 4494

Lux	
> 2500	23 (14 %)
500 - 2500	87 (54 %)
100 - 500	50 (31 %)
< 100	0 (0 %)

Figure B10: 4F 405: 1B1P SBED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

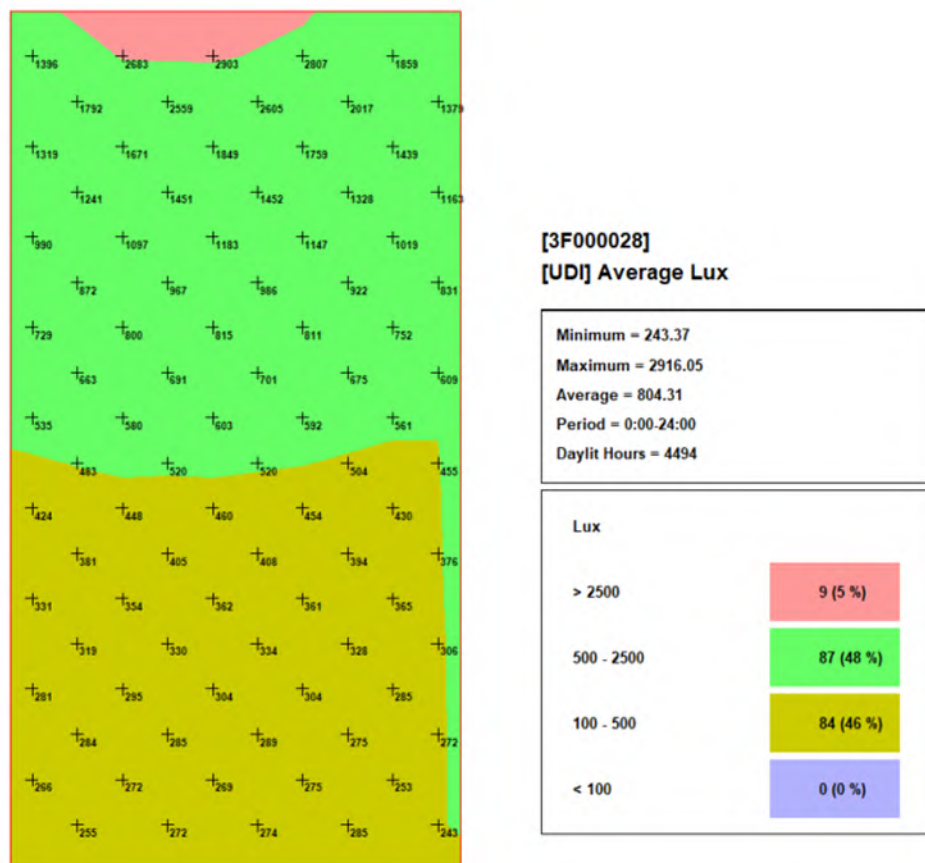


Figure B11: 4F 406: 1B2P BED

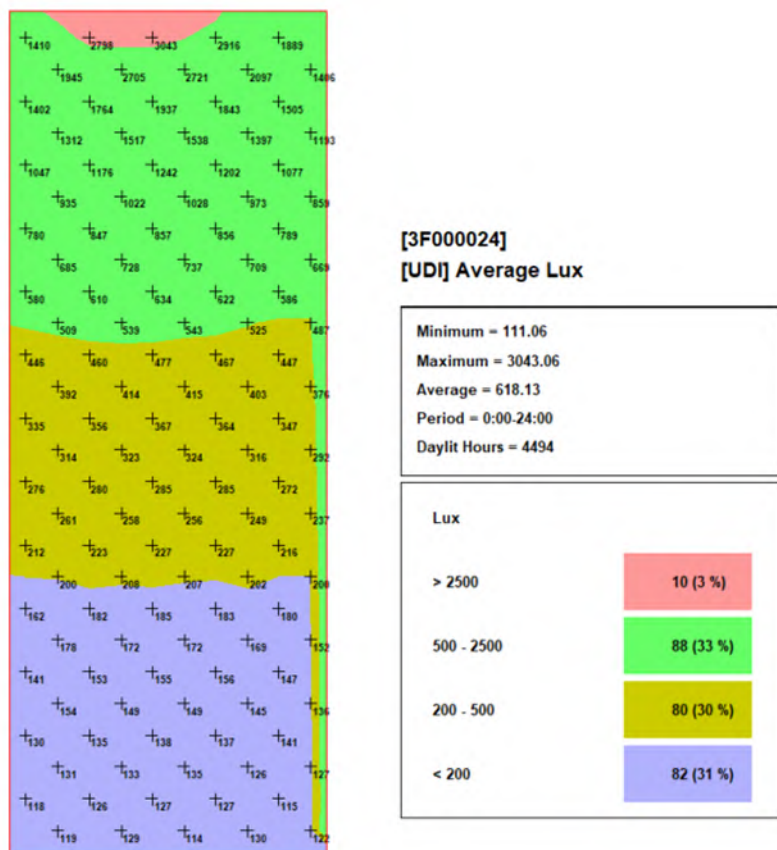
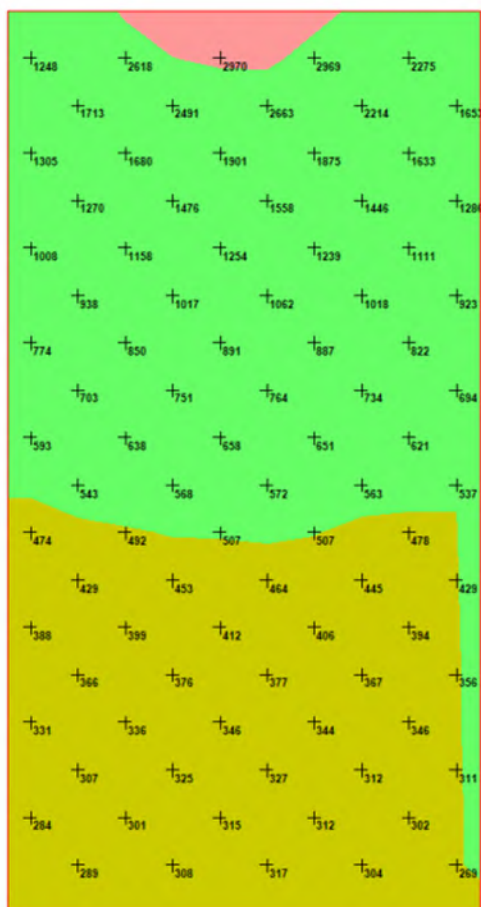


Figure B12: 4F 406: 1B2P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

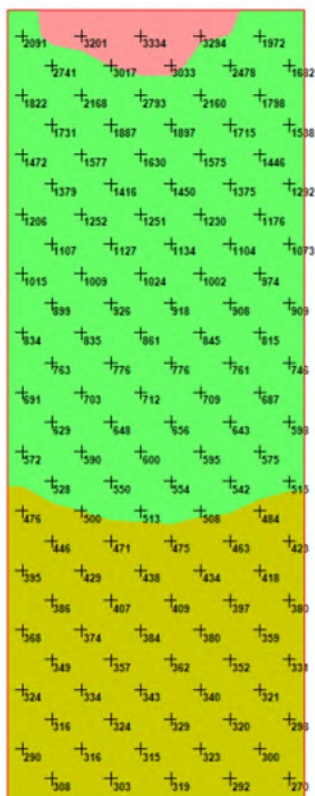


[3F000045]
[UDI] Average Lux

Minimum = 269.17
 Maximum = 2971.80
 Average = 861.76
 Period = 0:00-24:00
 Daylit Hours = 4494

Lux	
> 2500	9 (5 %)
500 - 2500	96 (53 %)
100 - 500	75 (41 %)
< 100	0 (0 %)

Figure B13: 4F 407: 1B2P BED



[3F000044]
[UDI] Average Lux

Minimum = 269.55
 Maximum = 3334.28
 Average = 932.03
 Period = 0:00-24:00
 Daylit Hours = 4494

Lux	
> 2500	16 (6 %)
500 - 2500	150 (57 %)
200 - 500	94 (36 %)
< 200	0 (0 %)

Figure B14: 4F 407: 1B2P KLD



Figure B15: 4F 408: 1B2P BED

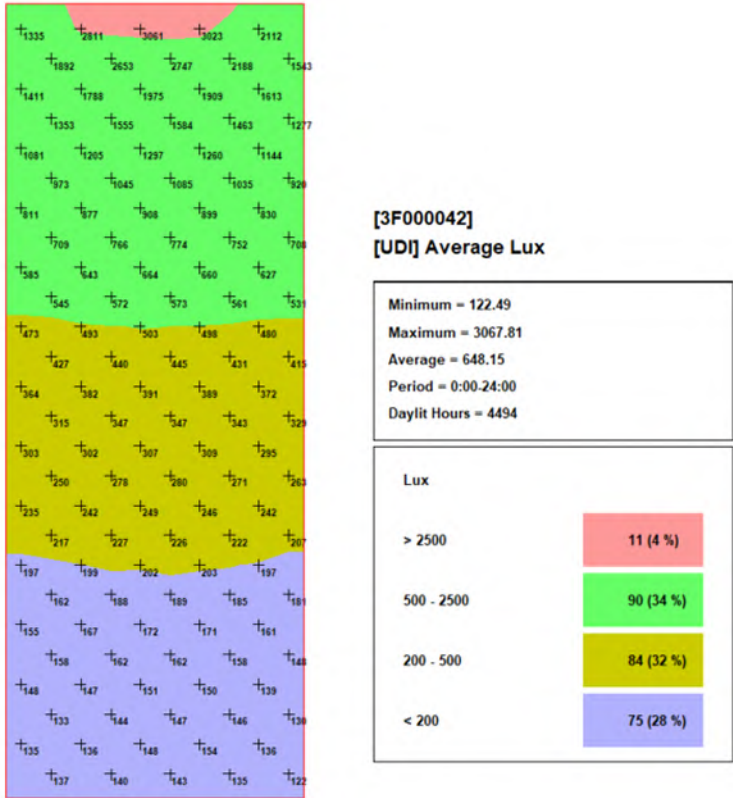


Figure B16: 4F 408: 1B2P KLD

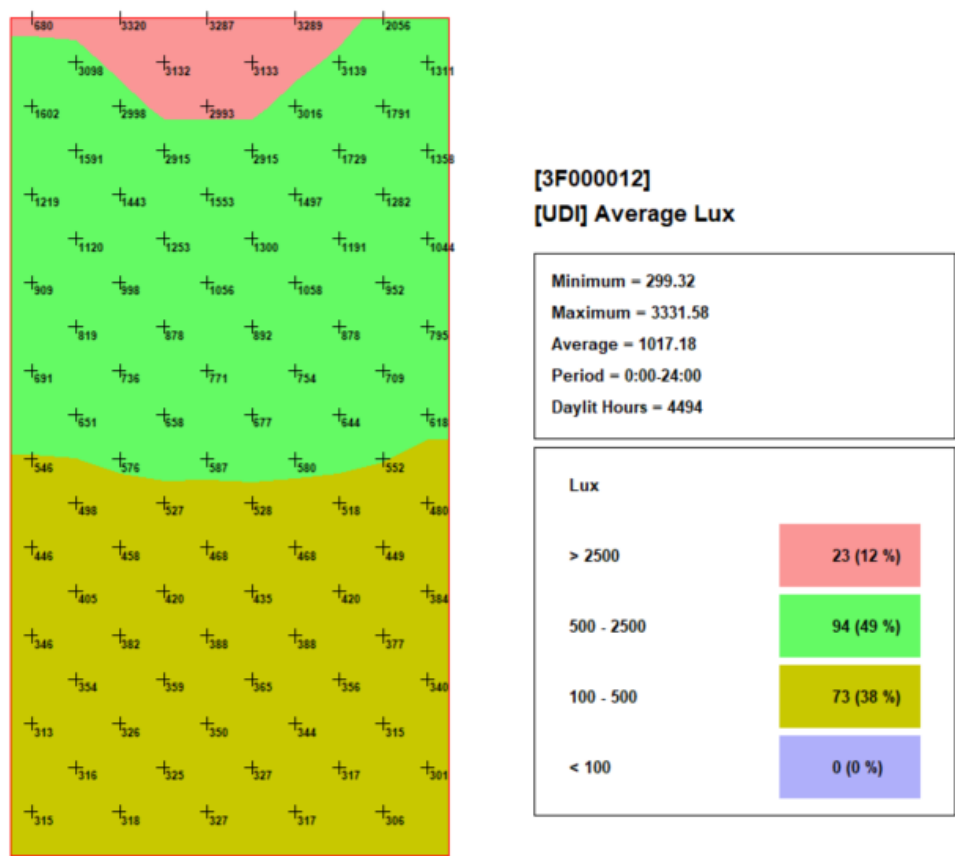


Figure B17: 4F 409: 1B2P BED

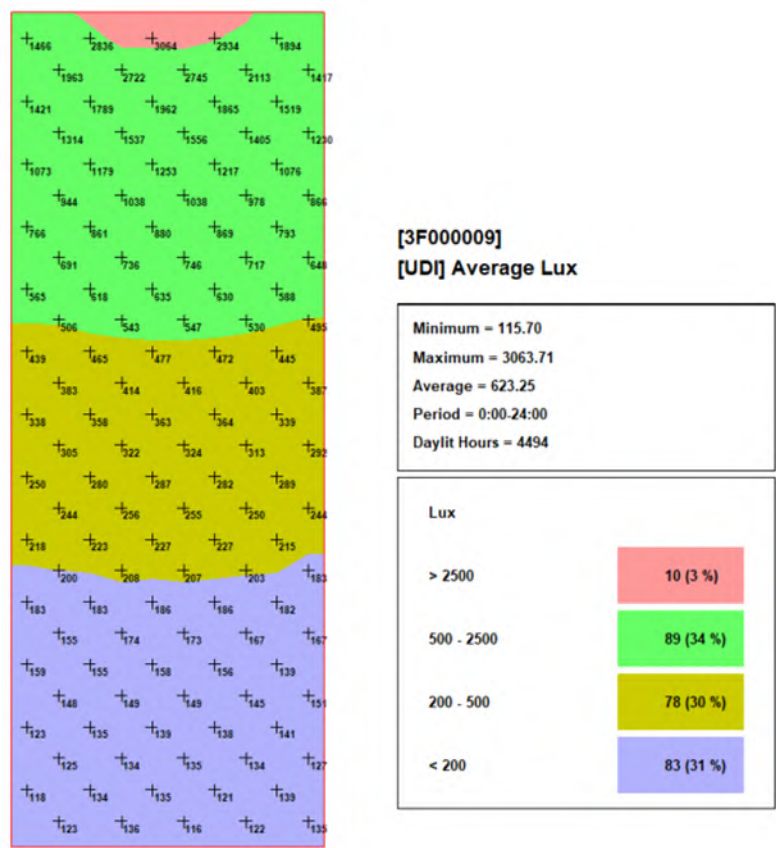


Figure B18: 4F 409: 1B2P KLD

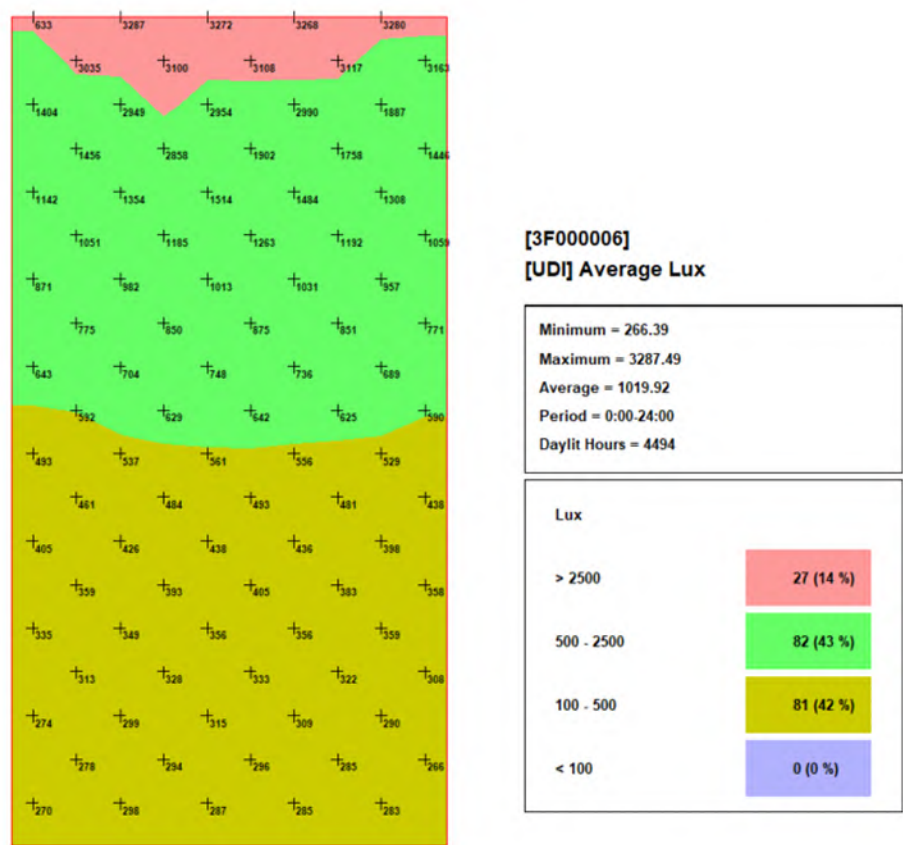


Figure B19: 4F 410: 1B2P BED

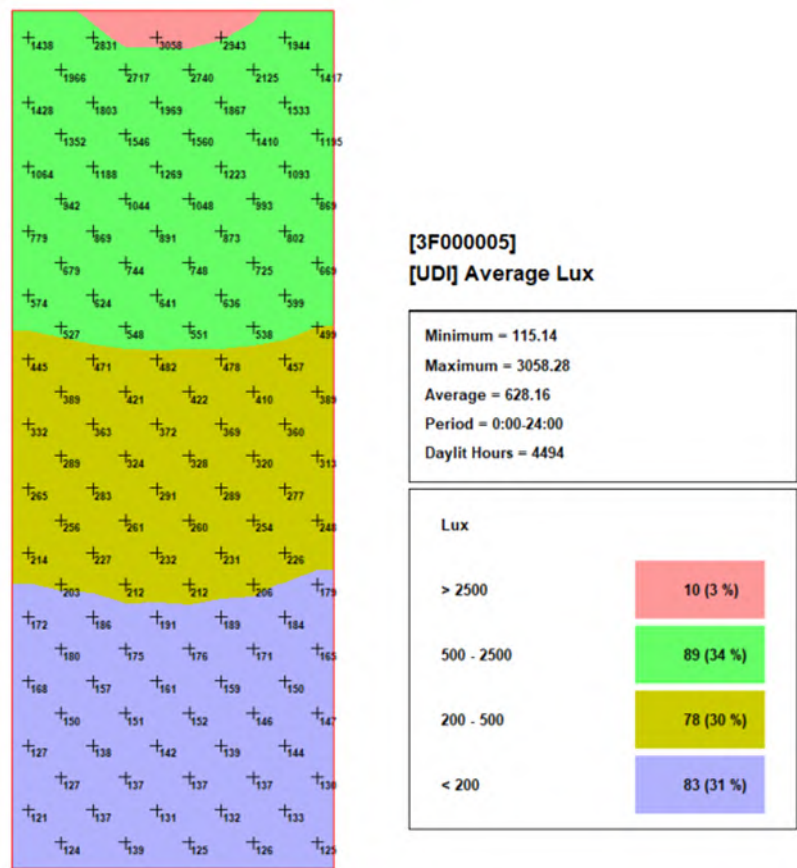


Figure B20: 4F 410: 1B2P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

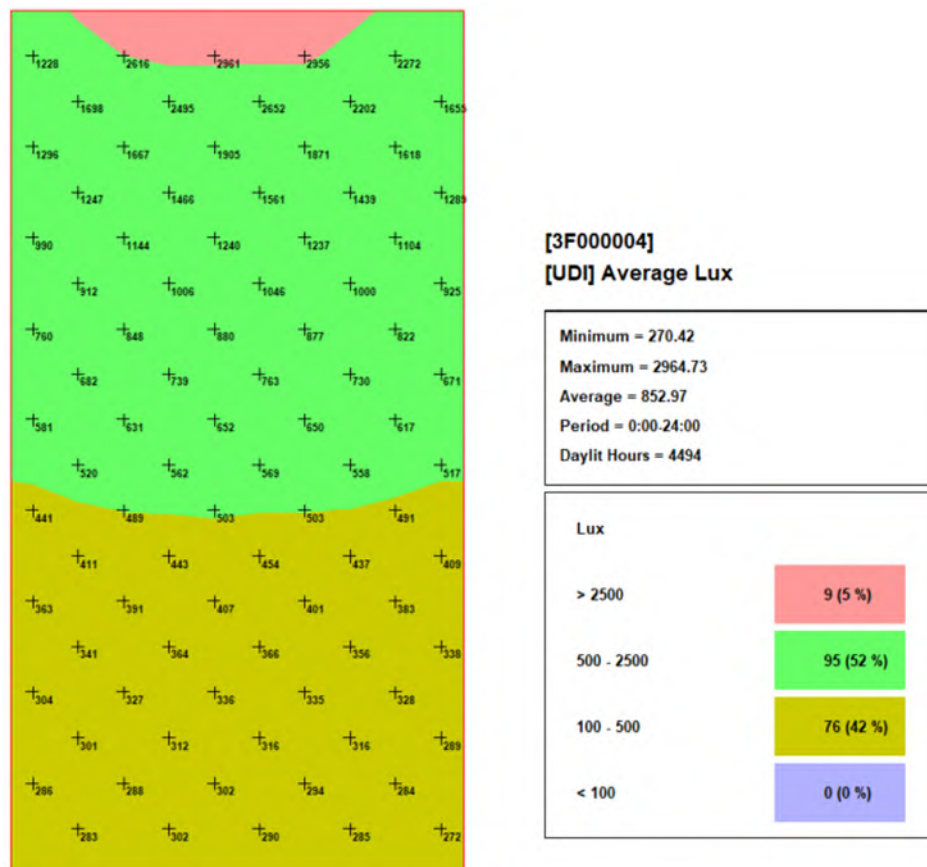


Figure B21: 4F 411: 1B2P BED

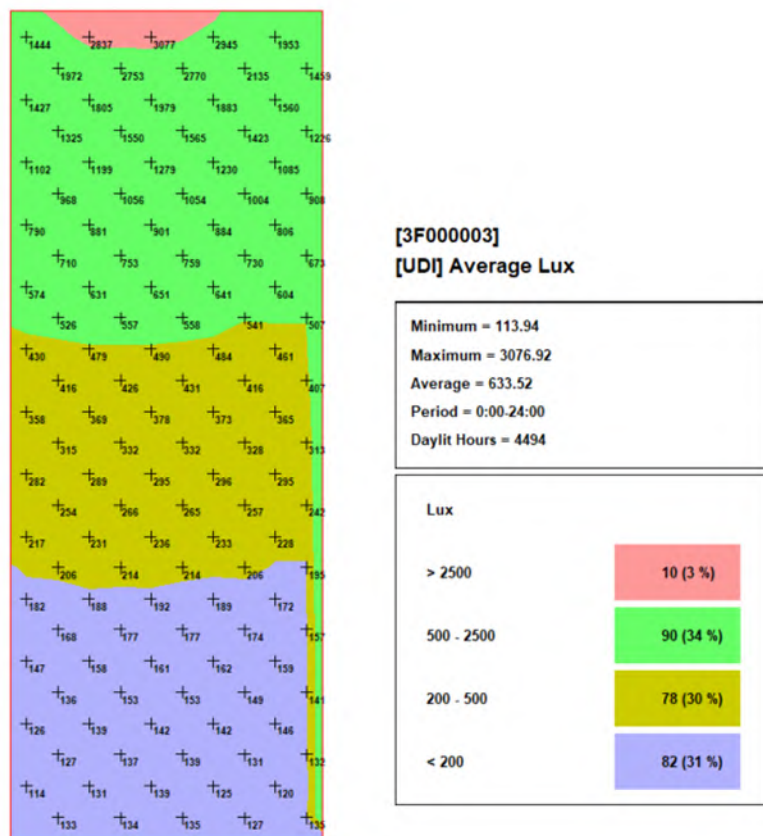


Figure B22: 4F 411: 1B2P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

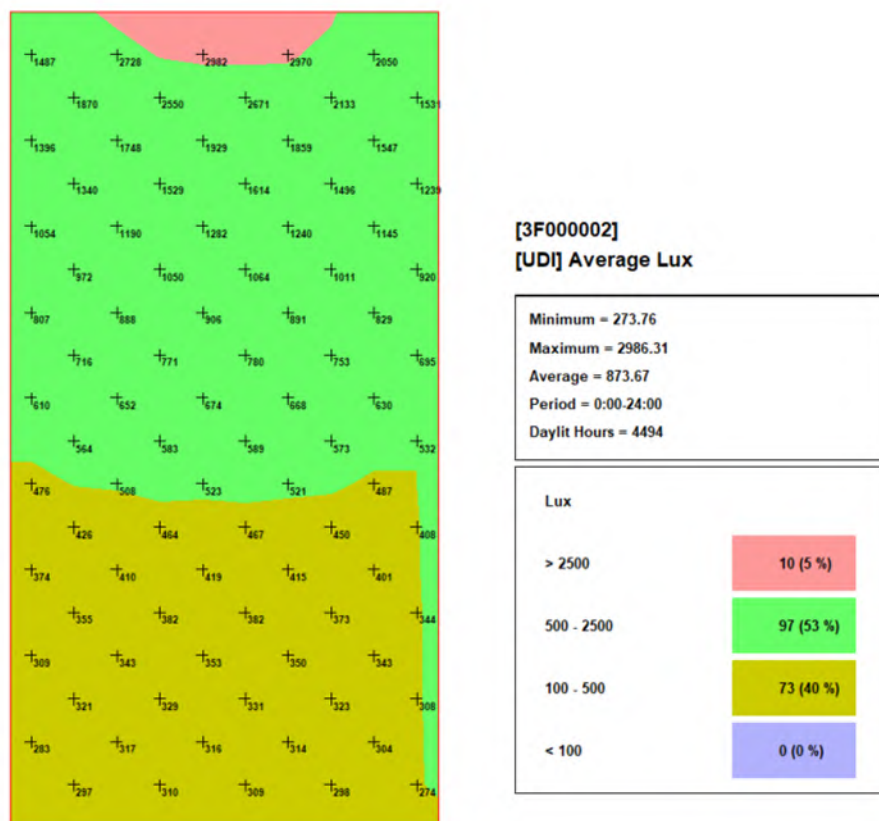


Figure B23: 4F 412: 1B2P BED

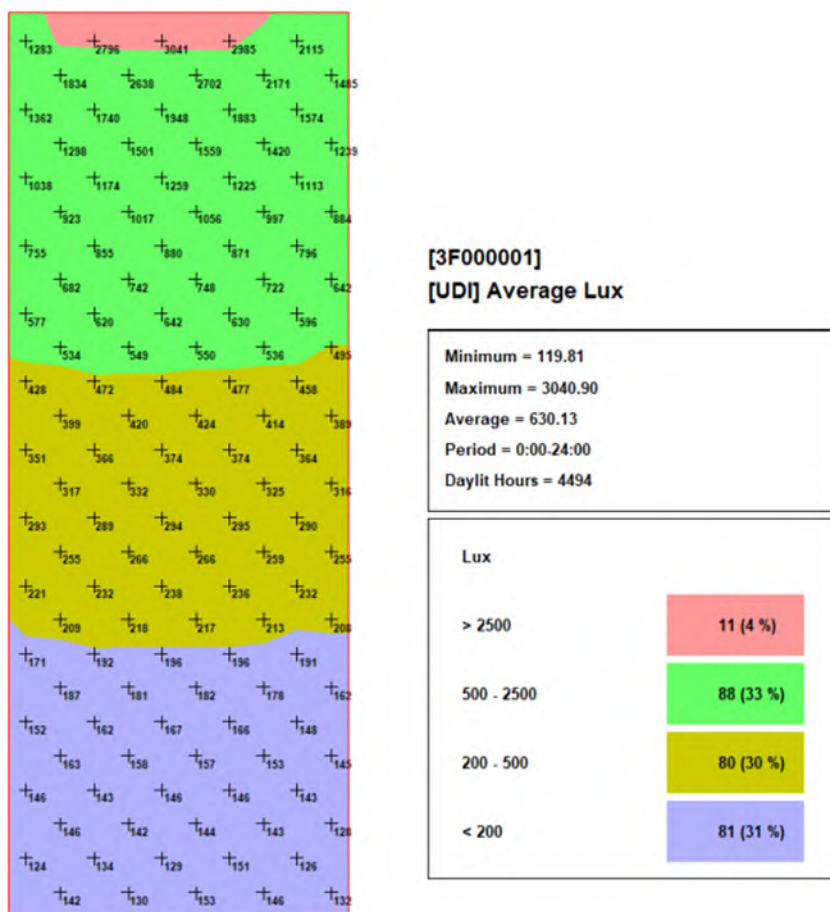


Figure B24: 4F 412: 1B2P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

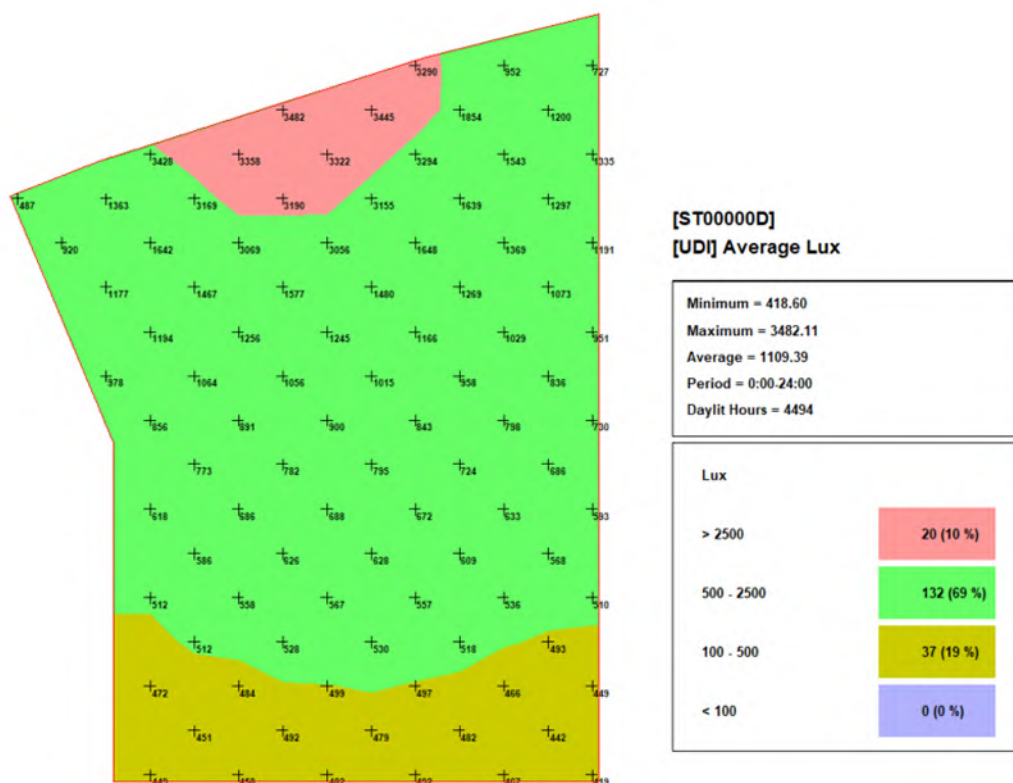


Figure B25: 4F 413: 2B4P BED

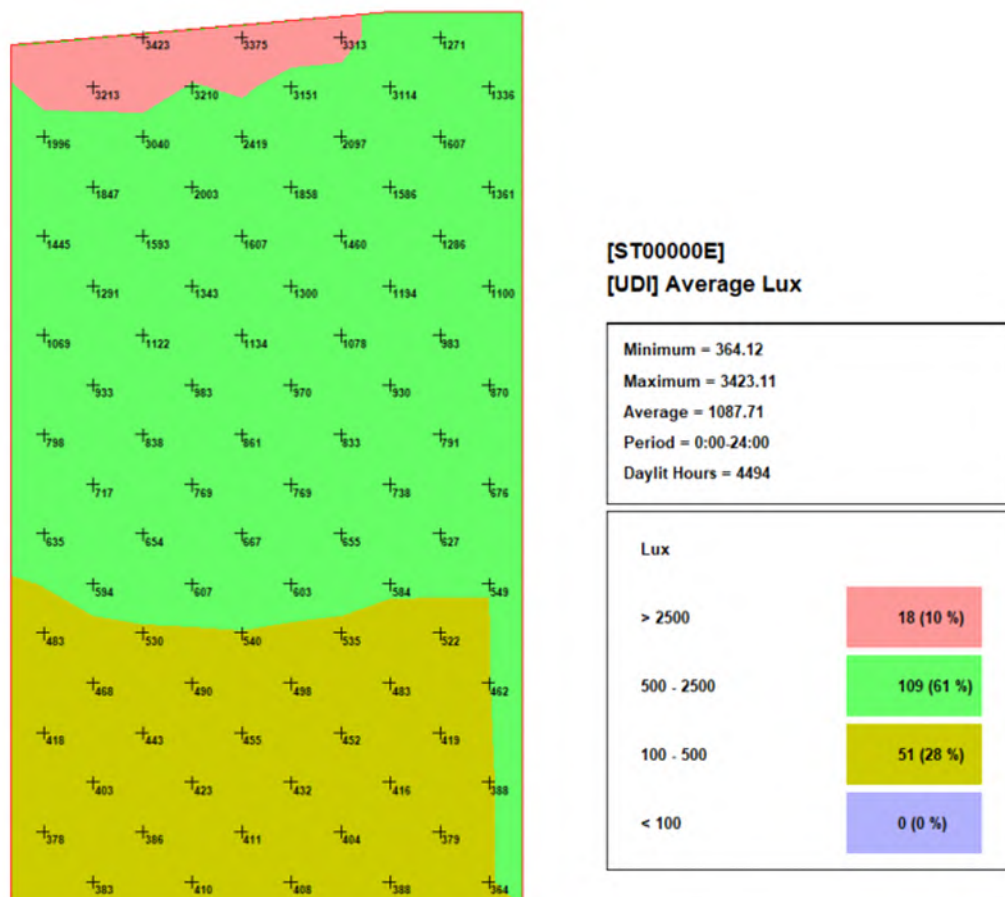


Figure B26: 4F 413: 2B4P BED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

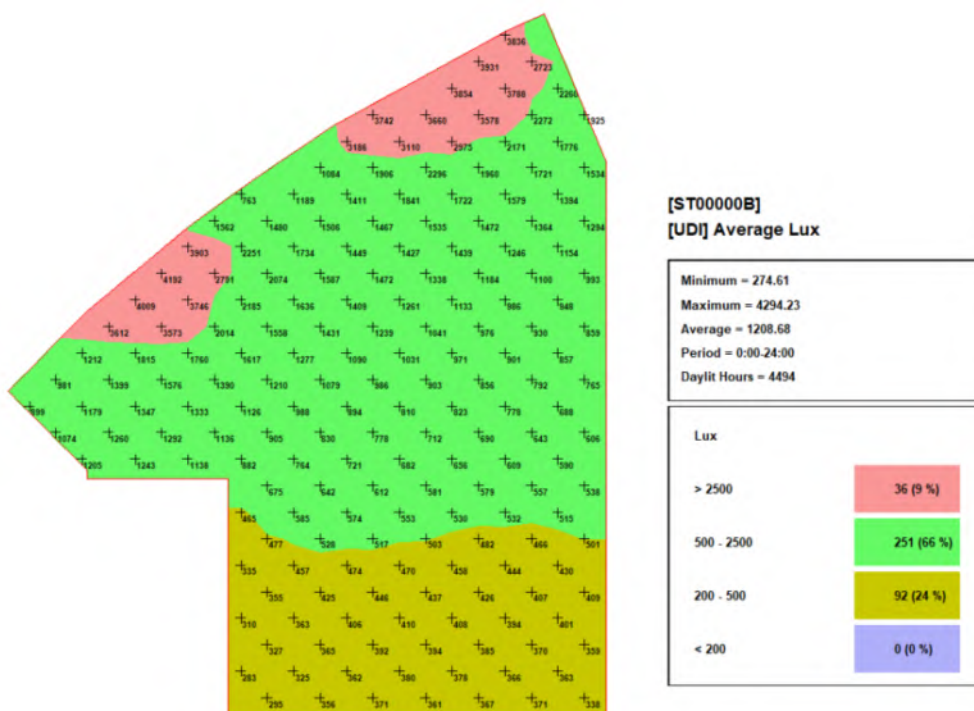


Figure B27: 4F 413: 2B4P KLD

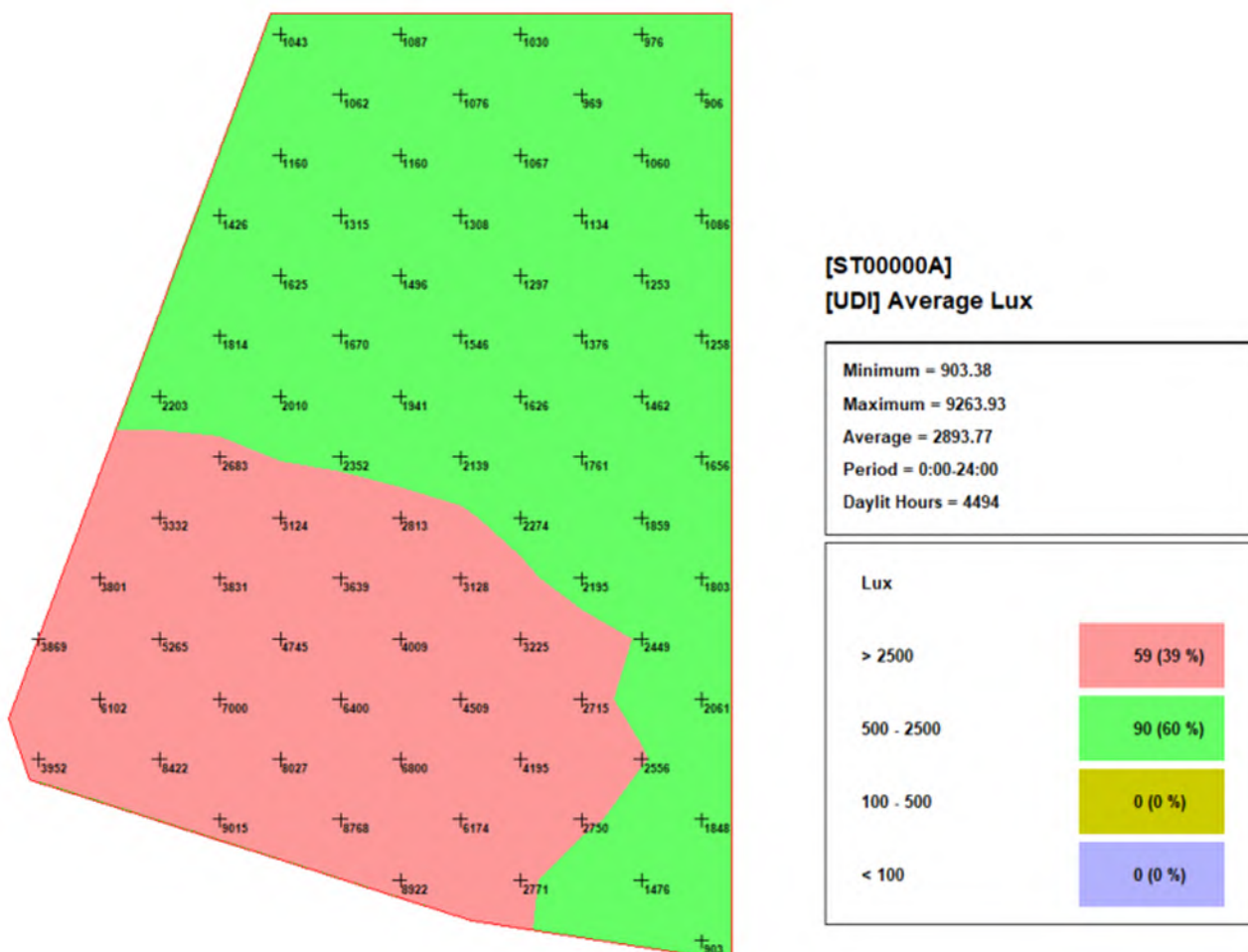


Figure B28: 4F 414: 2B3P BED

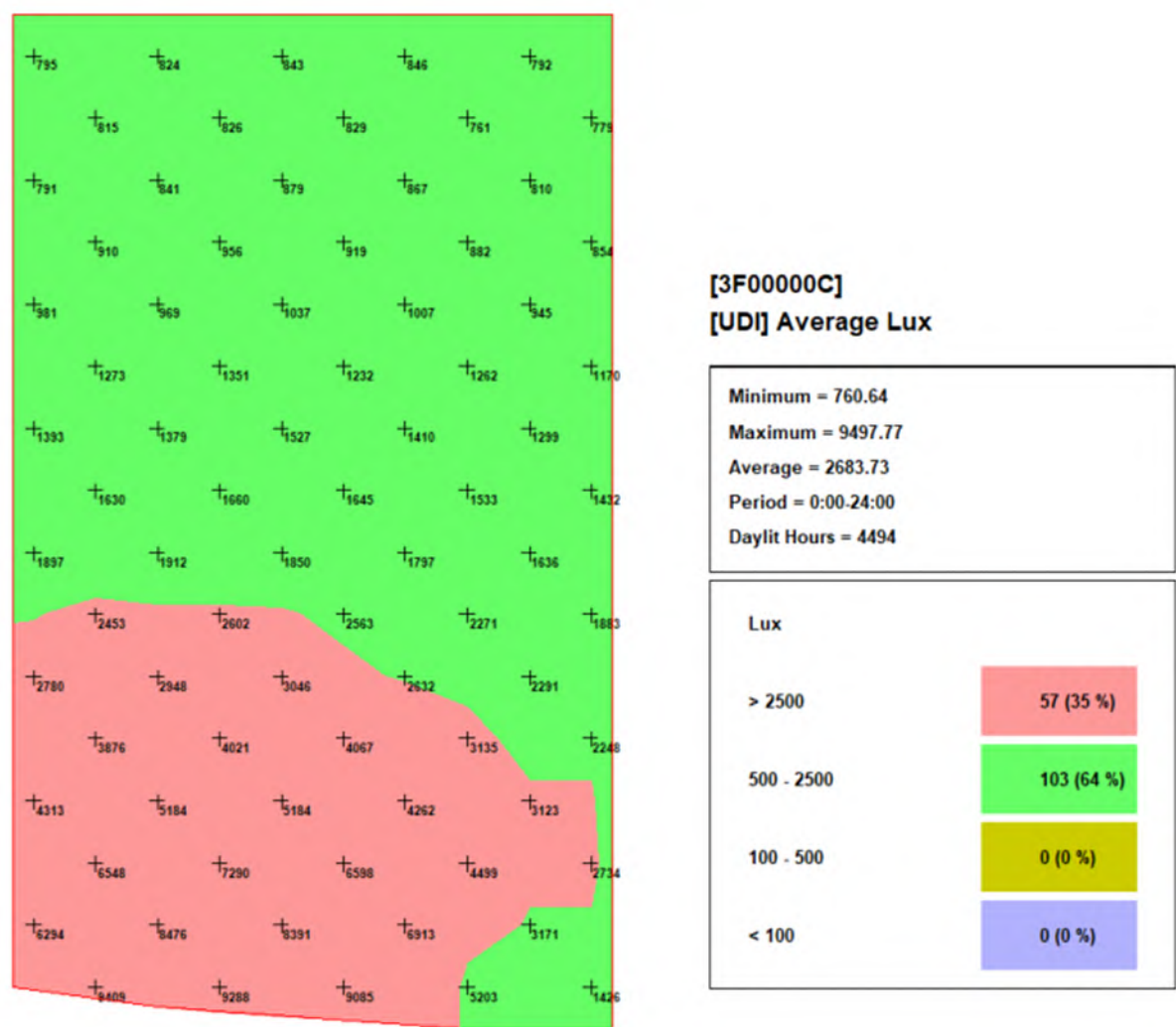


Figure B29: 4F 414: 2B3P BED

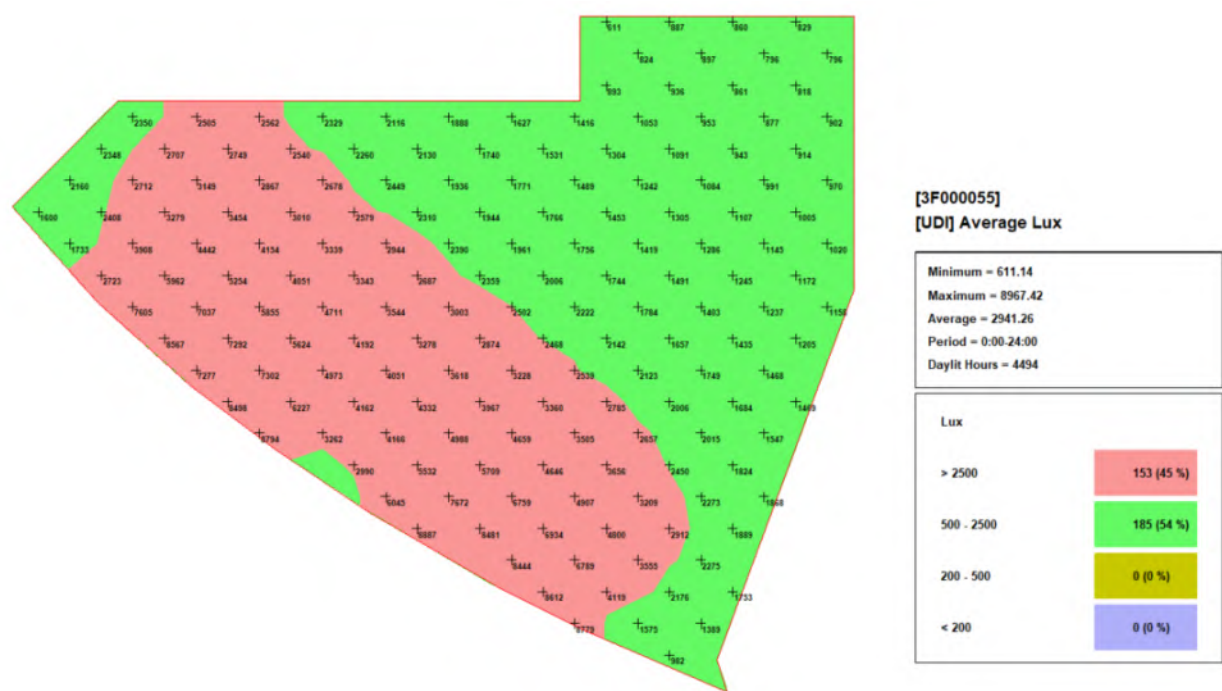


Figure B30: 4F 414: 2B3P KLD

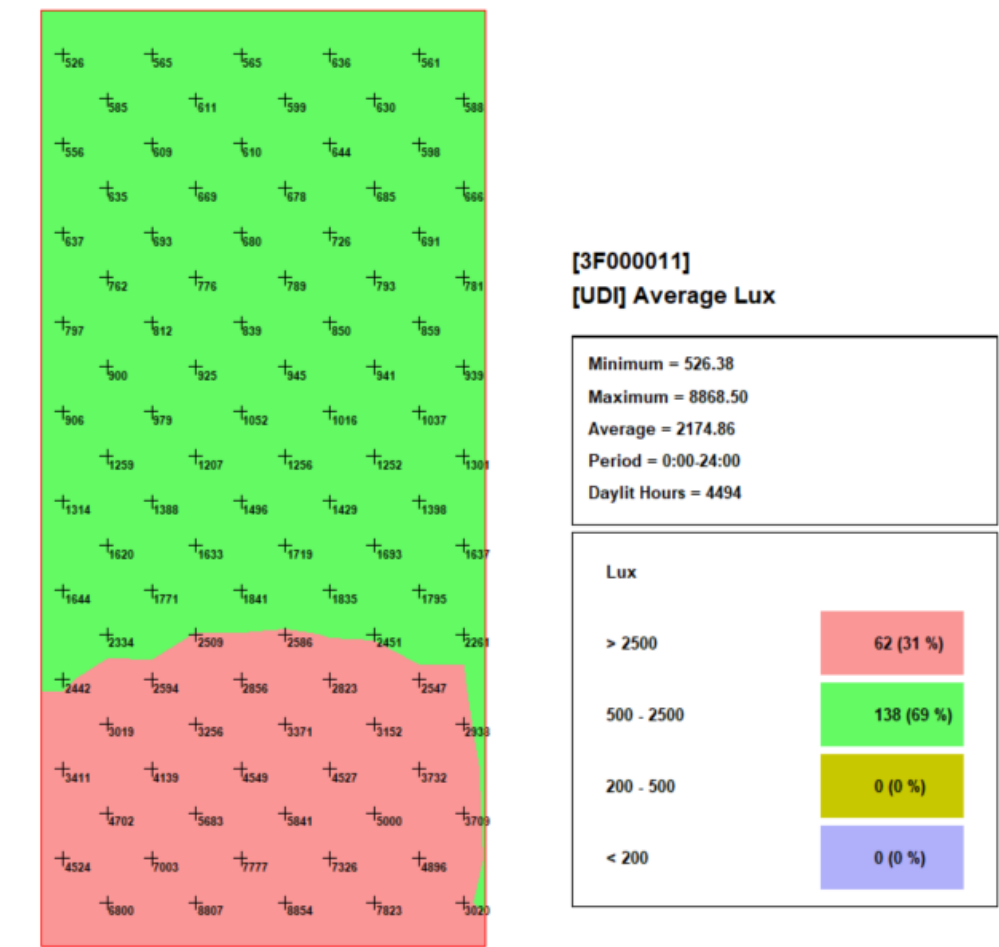


Figure B31: 4F 415: 1B1P KLD



Figure B32: 4F 415: 1B1P SBED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

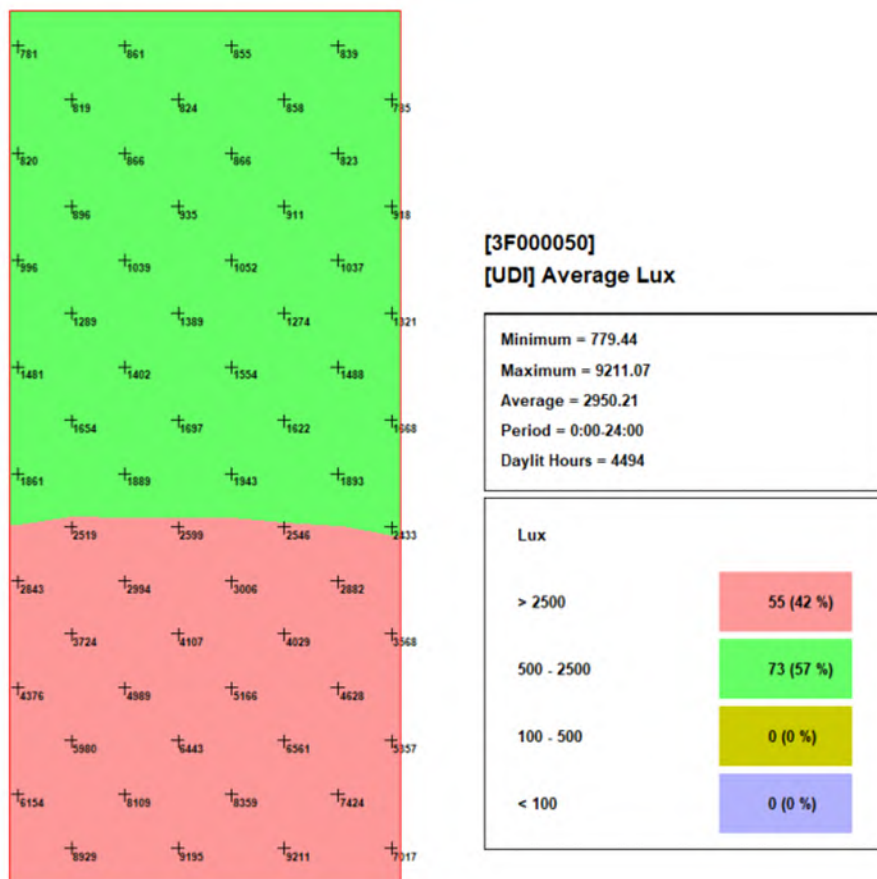


Figure B33: 4F 416: 2B3P BED

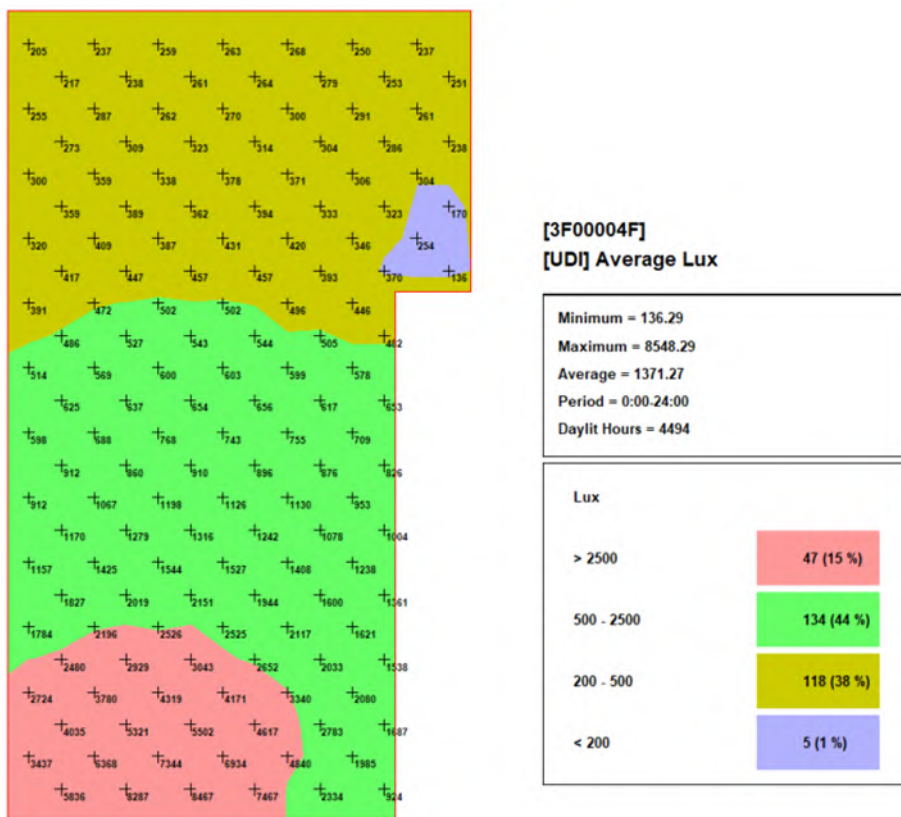


Figure B34: 4F 416: 2B3P KLD

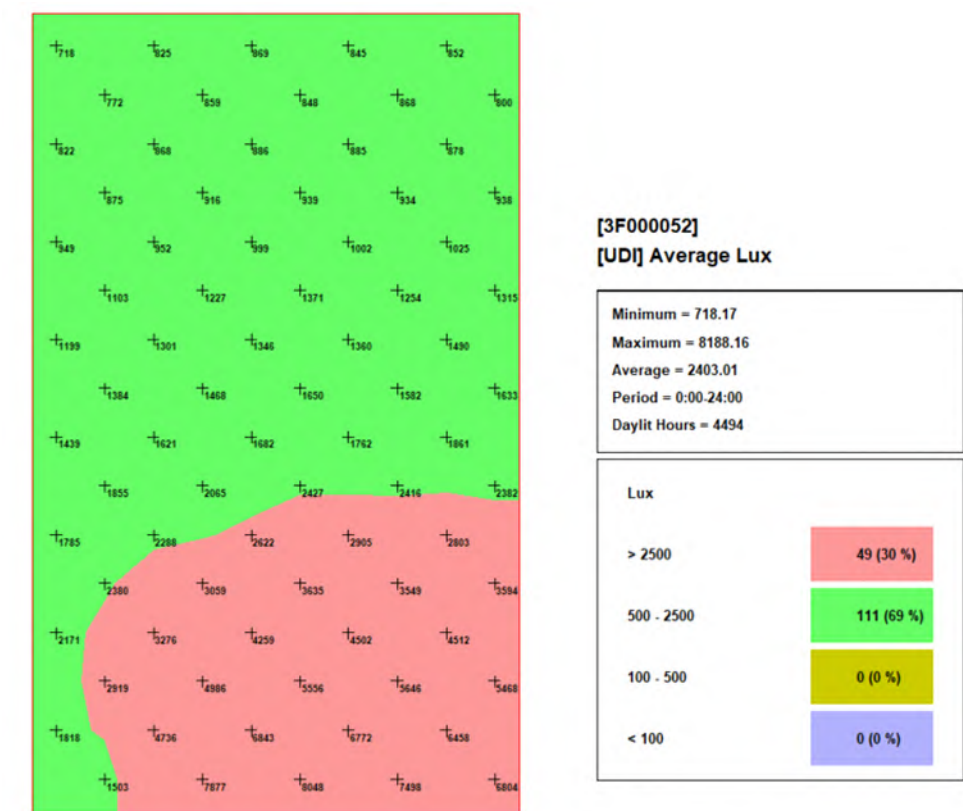


Figure B35: 4F 416: 2B3P SBED

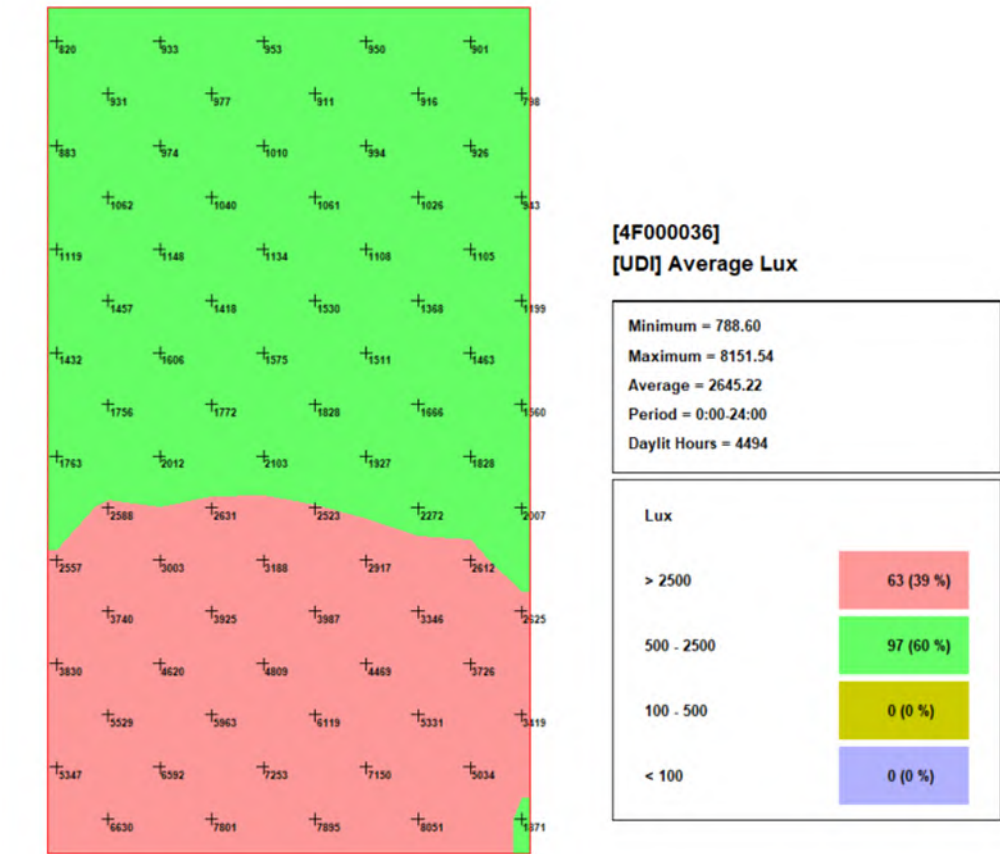


Figure B36: 5F 501: 1B2P BED

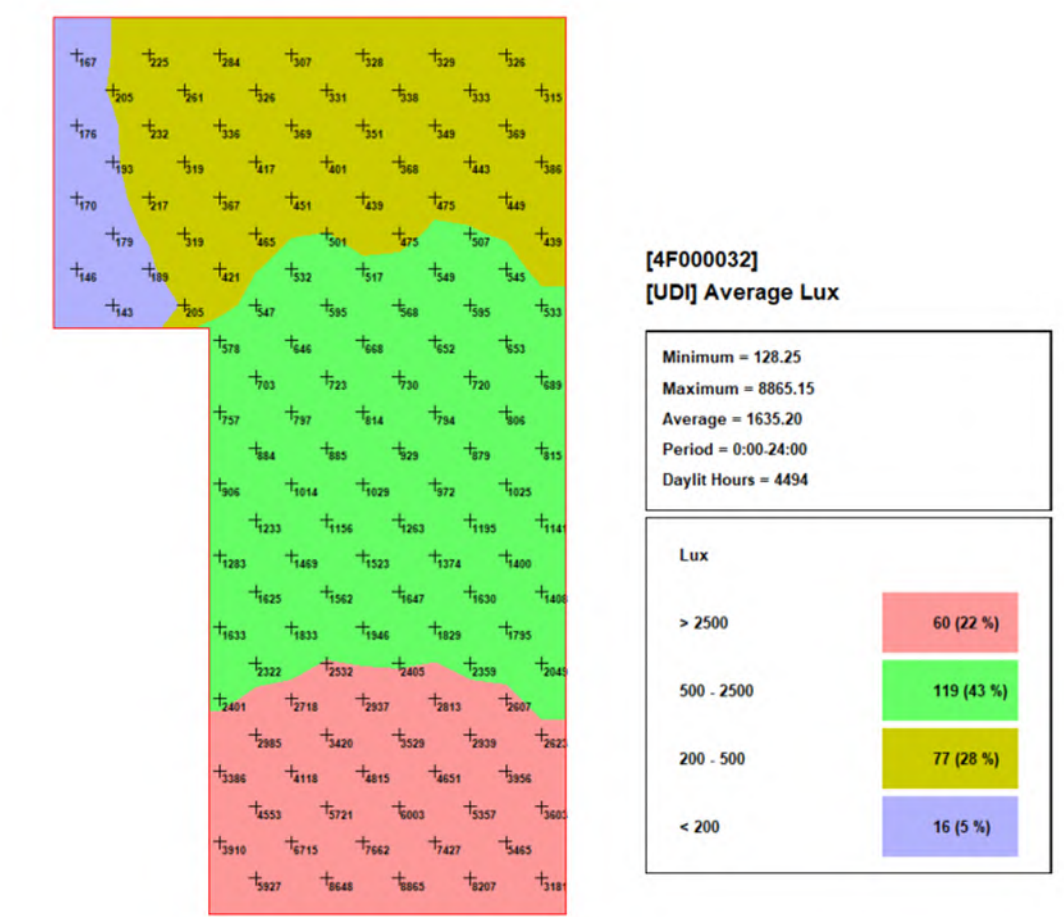


Figure B37: 5F 501: 1B2P KLD

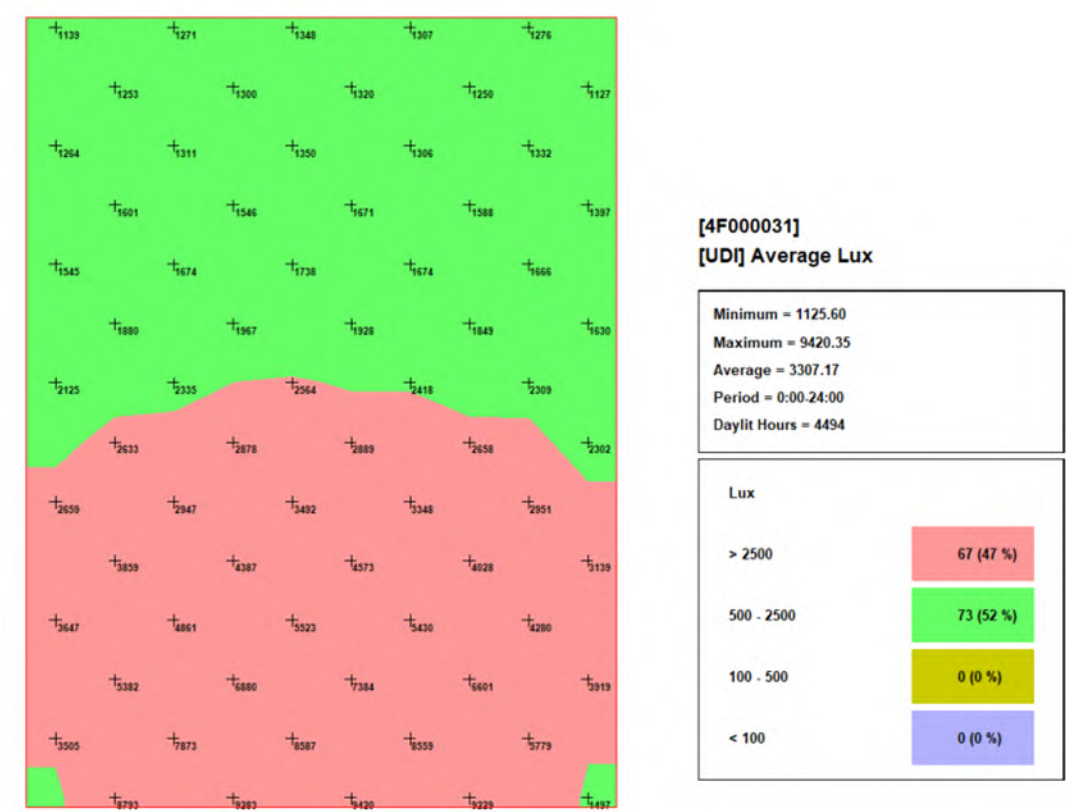


Figure B38: 5F 502: 1B1P BED

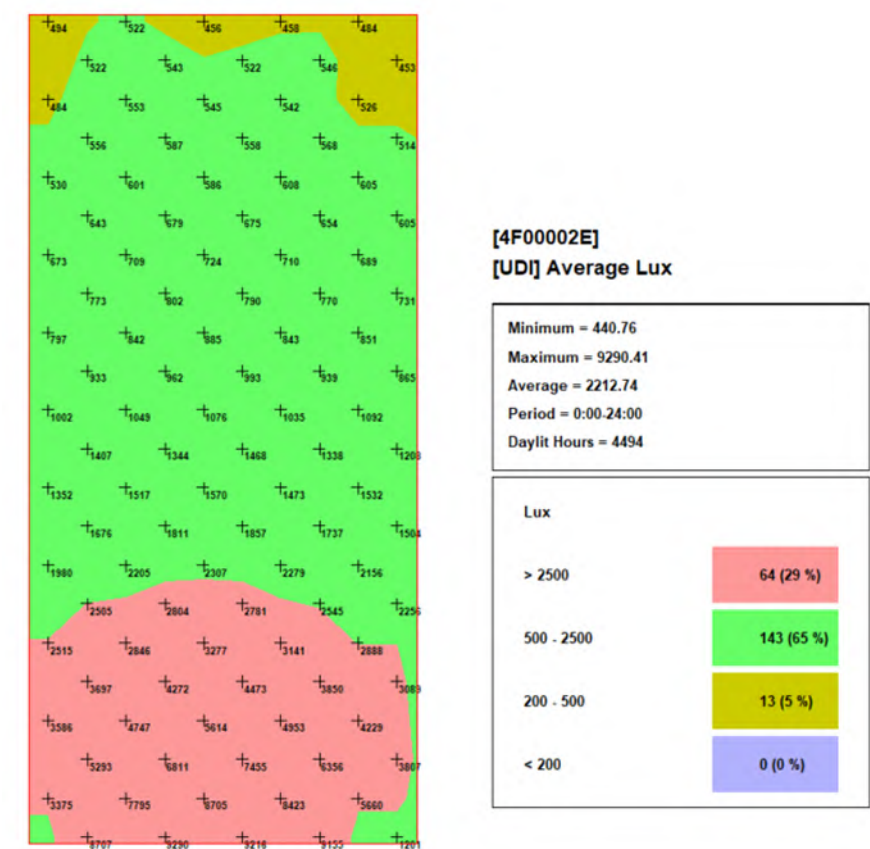


Figure B39: 5F 502: 1B1P KLD

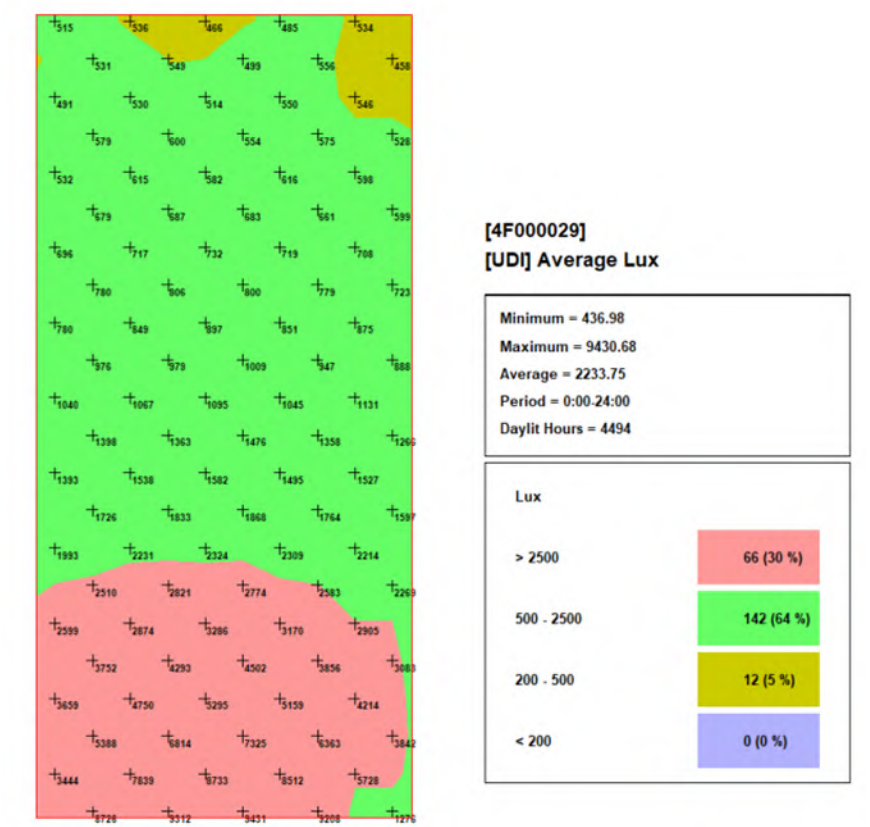


Figure B40: 5F 503: 1B1P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

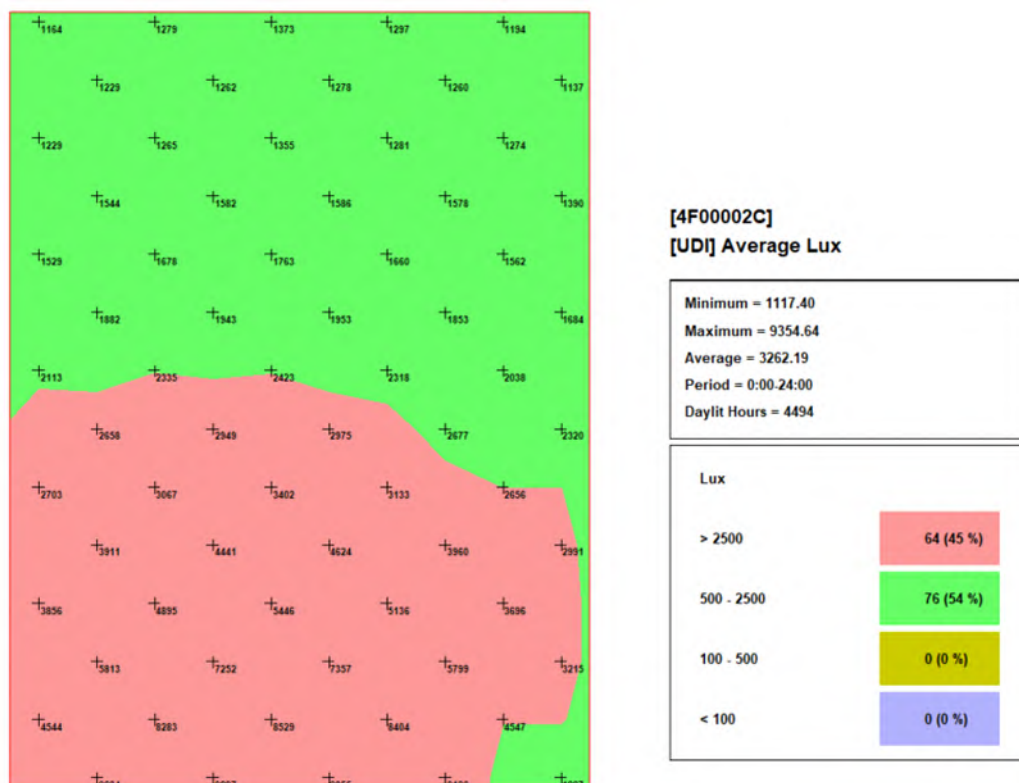


Figure B41: 5F 503: 1B1P SBED

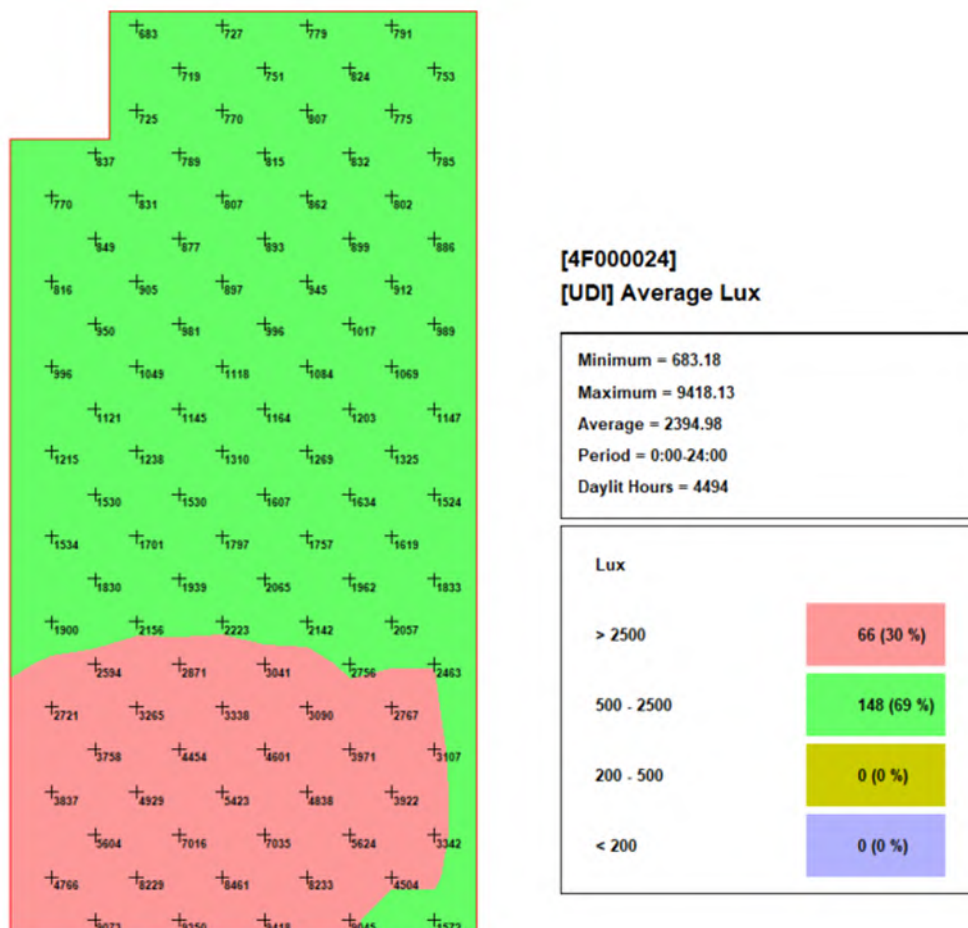


Figure B42: 5F 504: 1B1P KLD

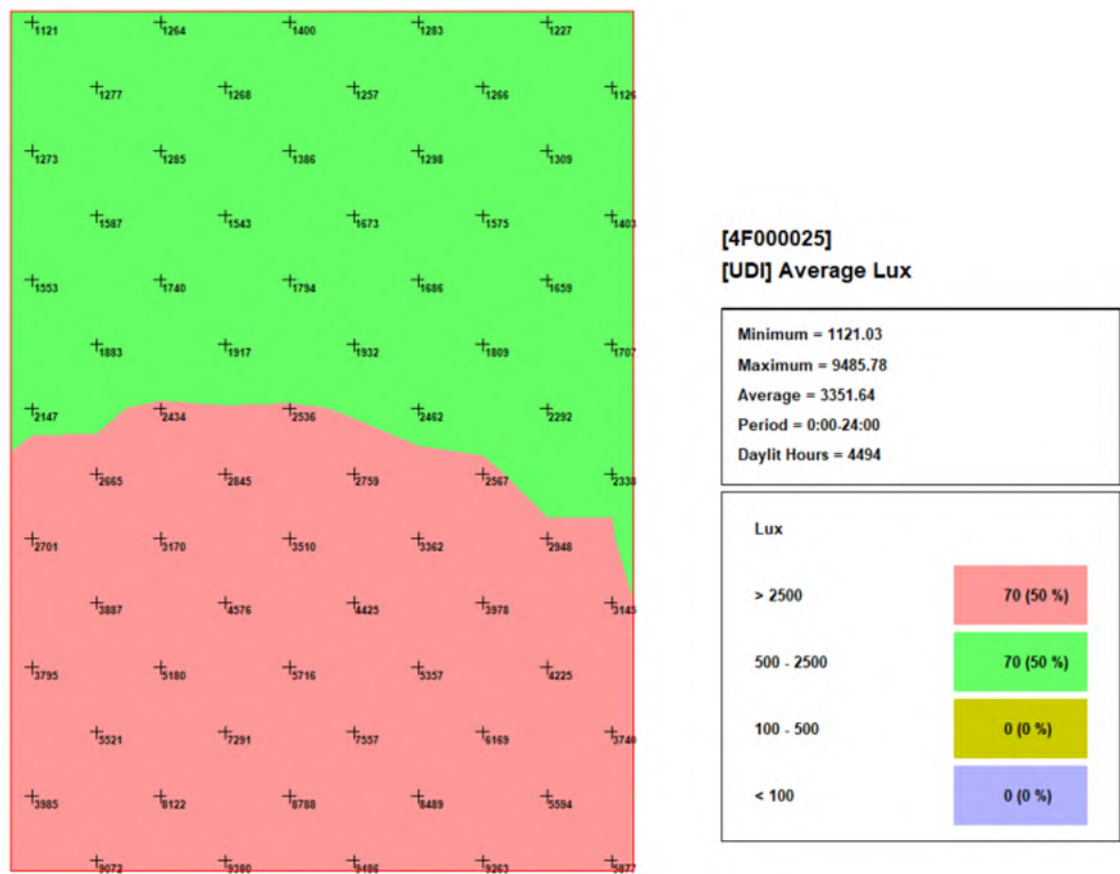


Figure B43: 5F 504: 1B1P SBED

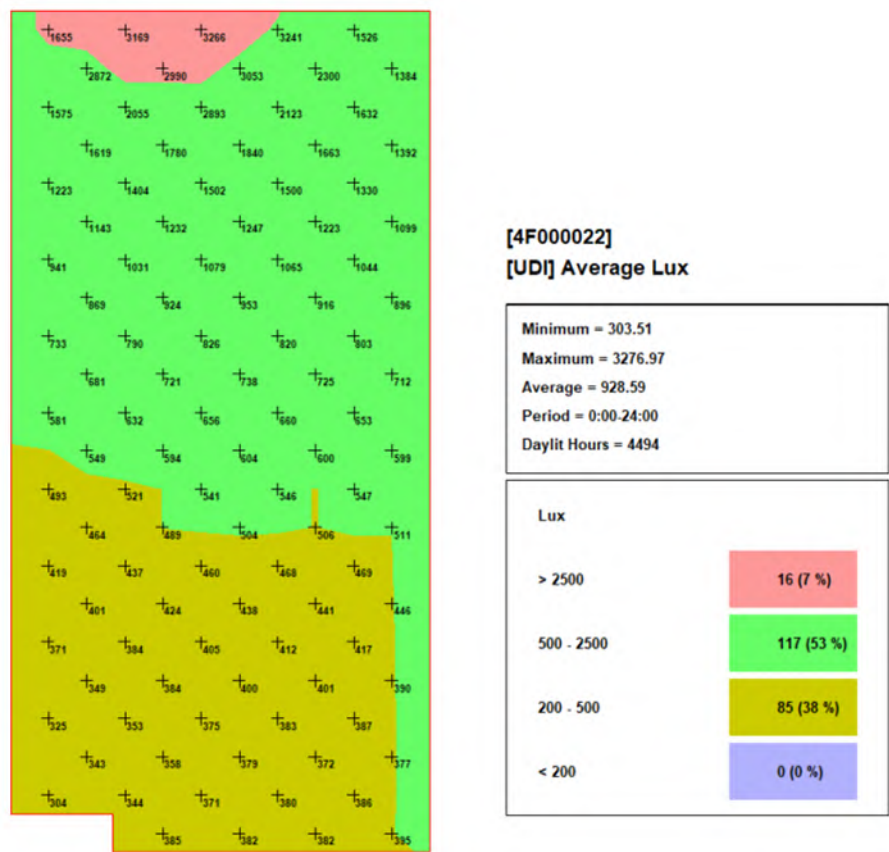


Figure B44: 5F 505: 1B1P KLD

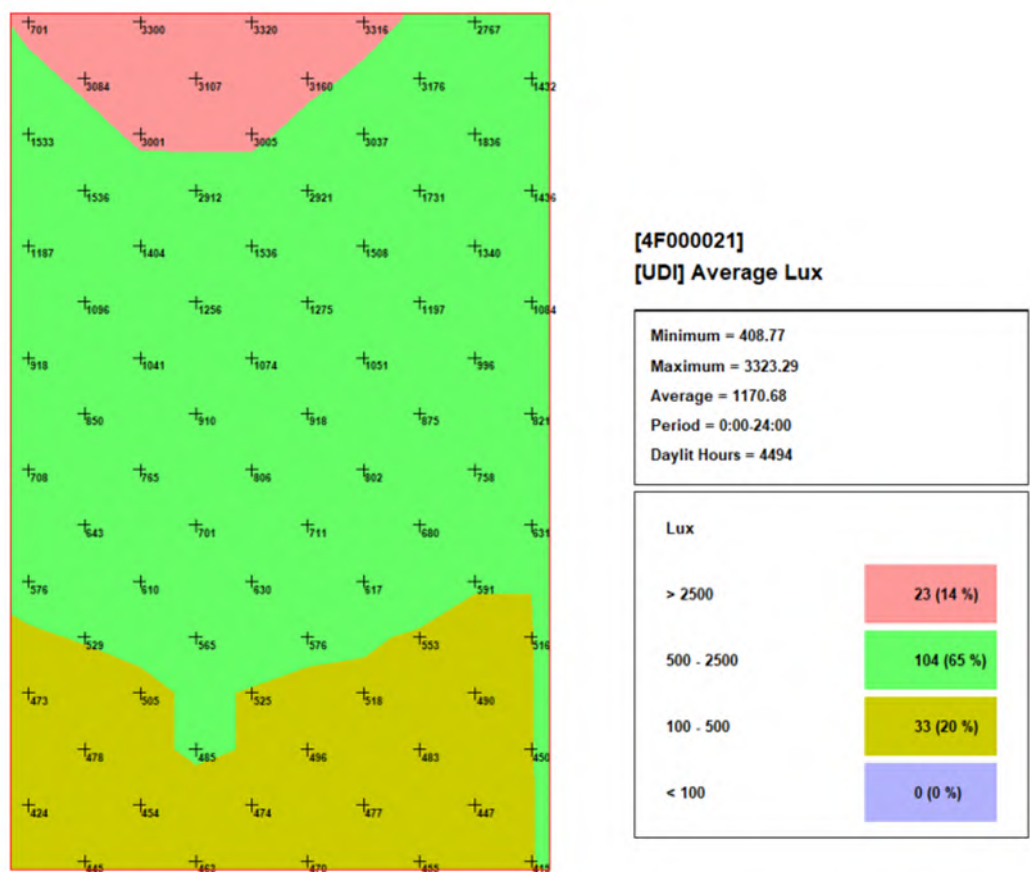
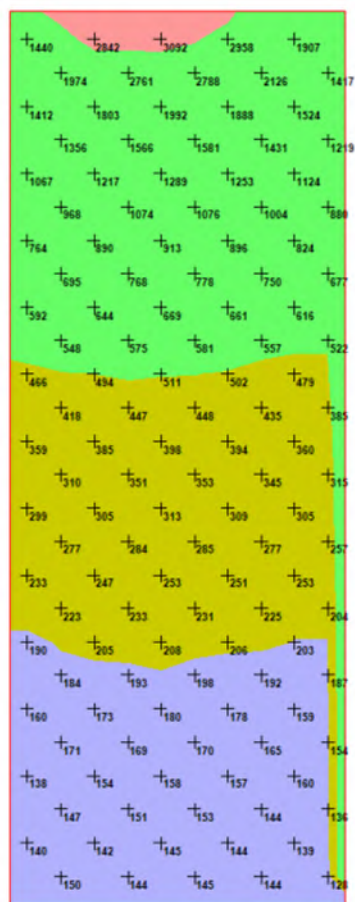


Figure B45: 5F 505: 1B1P SBED



Figure B46: 5F 506: 1B2P BED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test



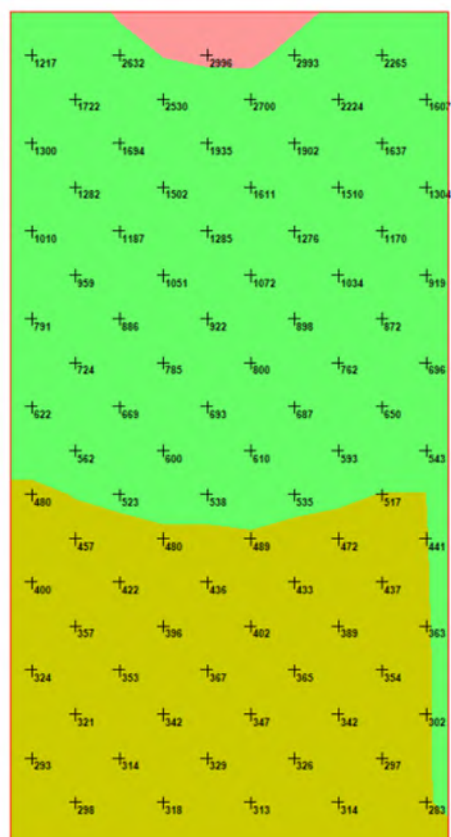
[4F00001A]
[UDI] Average Lux

Minimum = 127.77
 Maximum = 3091.99
 Average = 645.66
 Period = 0:00-24:00
 Daylit Hours = 4494

Lux

> 2500	10 (3 %)
500 - 2500	94 (36 %)
200 - 500	83 (31 %)
< 200	73 (28 %)

Figure B47: 5F 506: 1B2P KLD



[4F000052]
[UDI] Average Lux

Minimum = 283.28
 Maximum = 2996.19
 Average = 882.77
 Period = 0:00-24:00
 Daylit Hours = 4494

Lux

> 2500	10 (5 %)
500 - 2500	98 (54 %)
100 - 500	72 (40 %)
< 100	0 (0 %)

Figure B48: 5F 507: 1B2P BED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

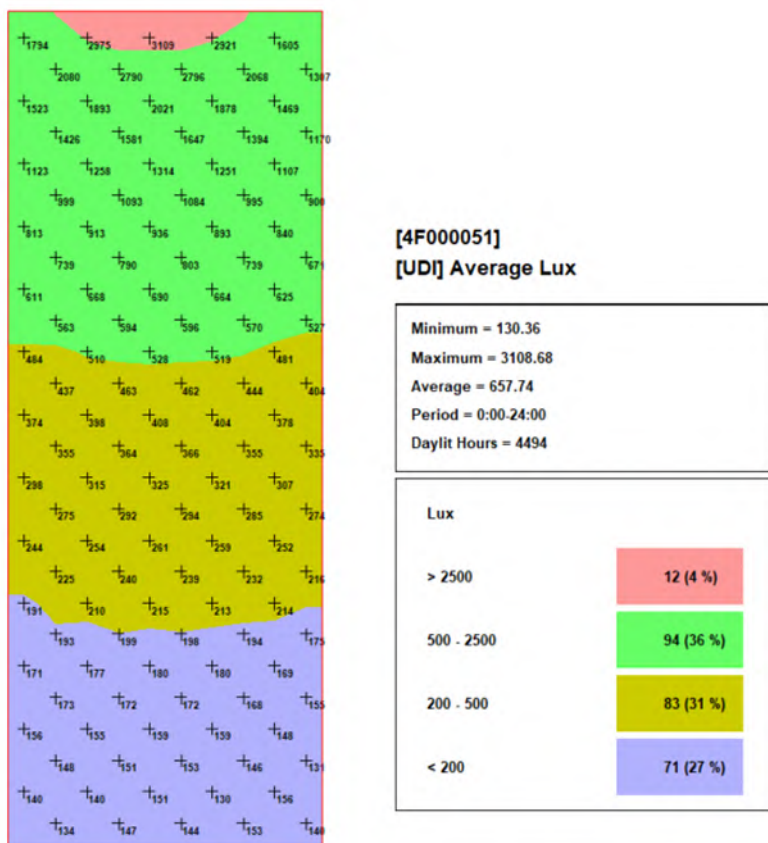


Figure B49: 5F 507: 1B2P KLD

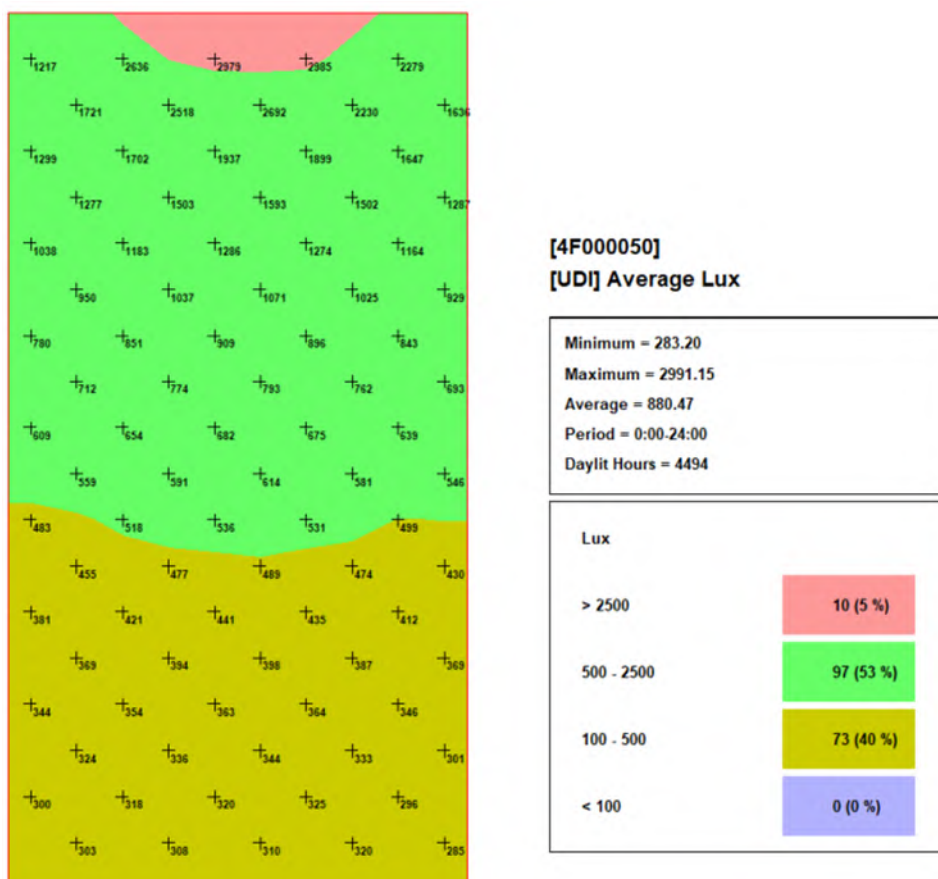


Figure B50: 5F 508: 1B2P BED

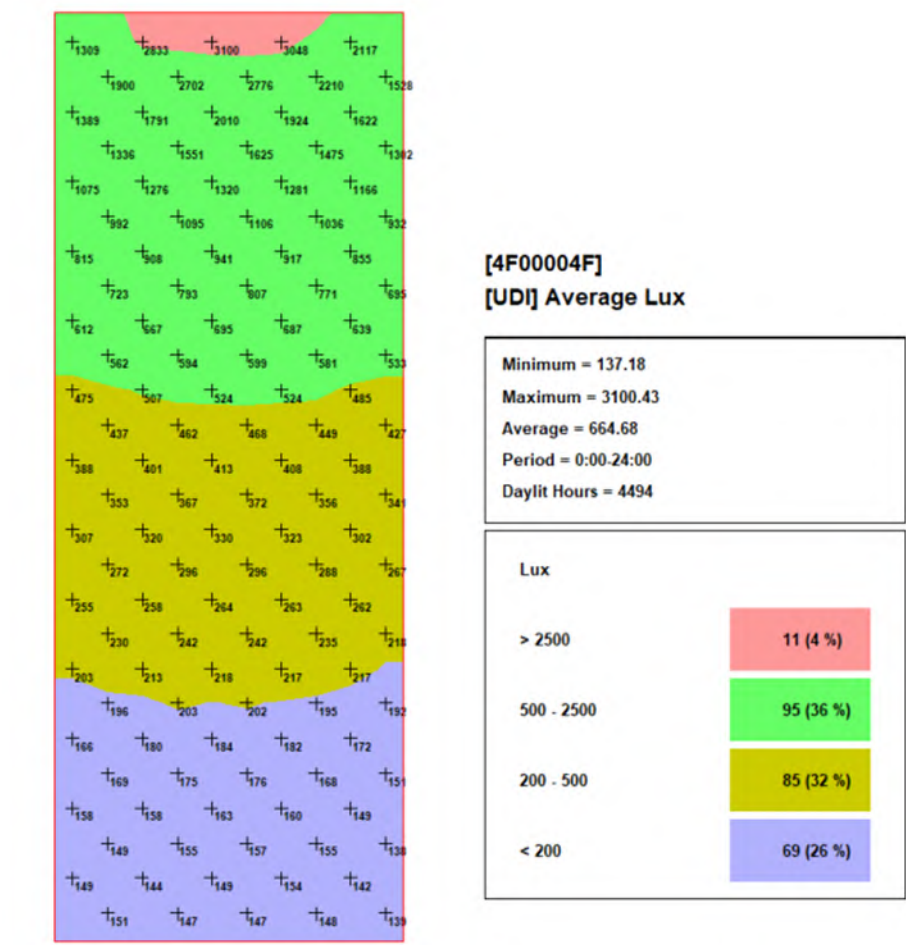


Figure B51: 5F 508: 1B2P KLD

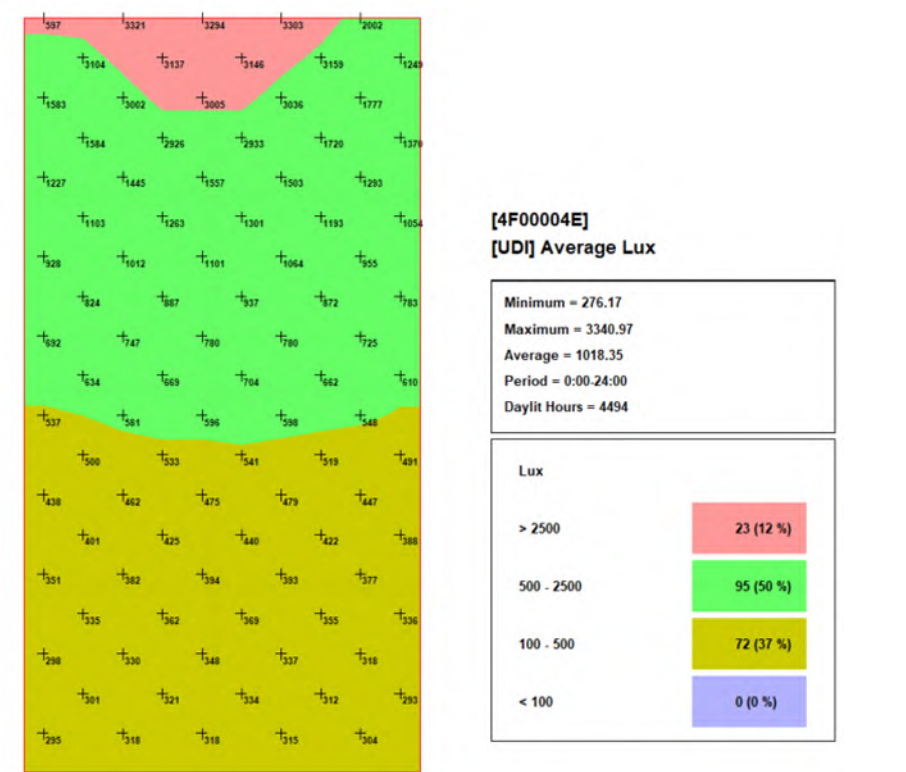


Figure B52: 5F 509: 1B2P BED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

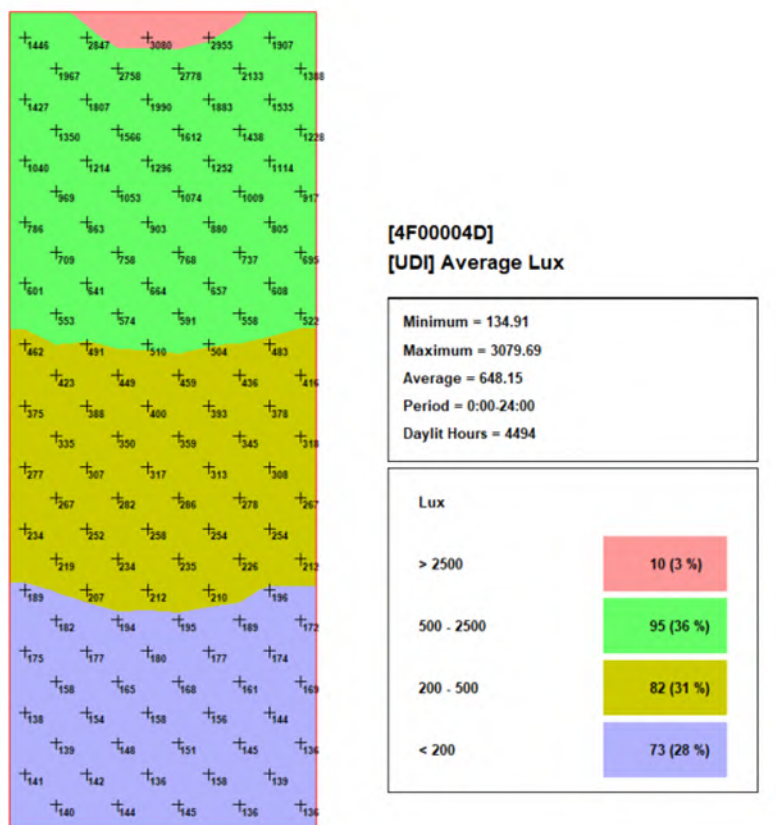


Figure B53: 5F 509: 1B2P KLD

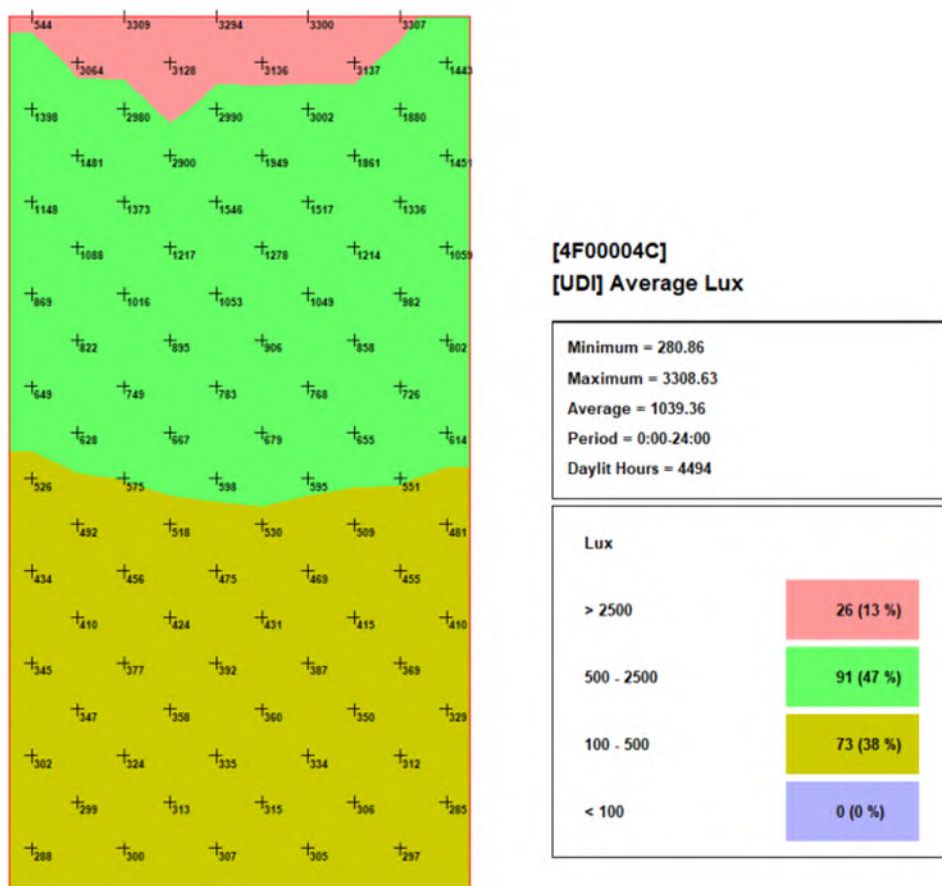


Figure B54: 5F 510: 1B2P BED

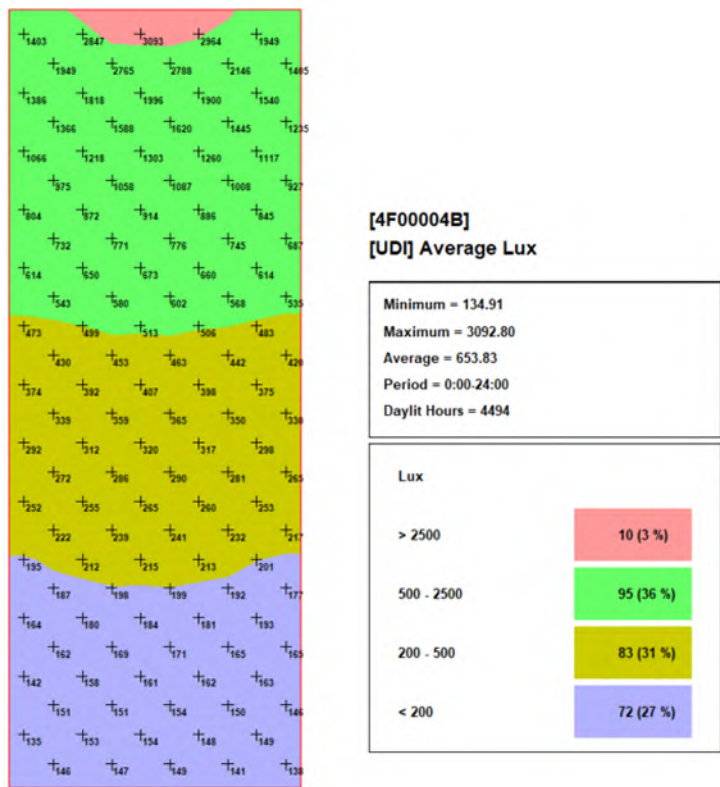


Figure B55: 5F 510: 1B2P KLD

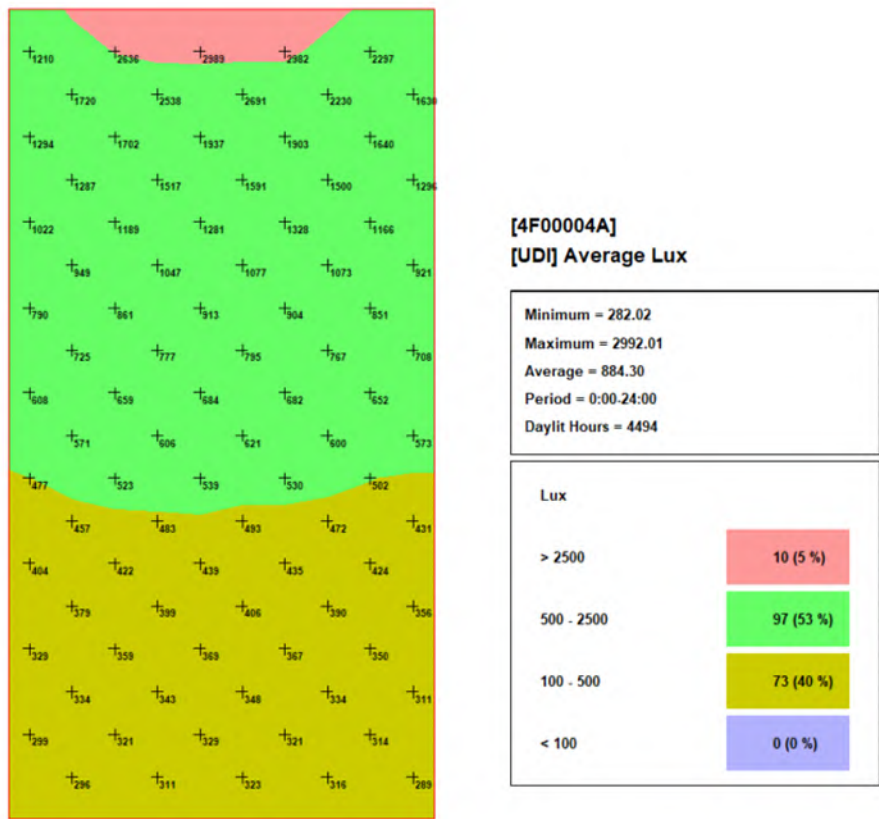


Figure B56: 5F 511: 1B2P BED

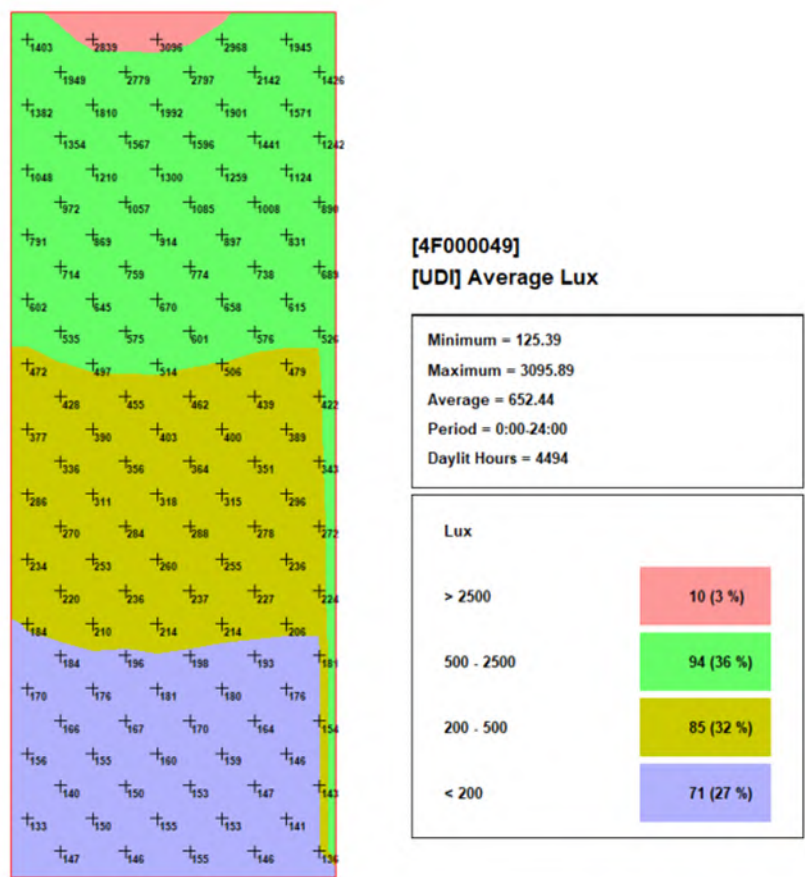


Figure B57: 5F 511: 1B2P KLD



Figure B58: 5F 512: 1B2P BED

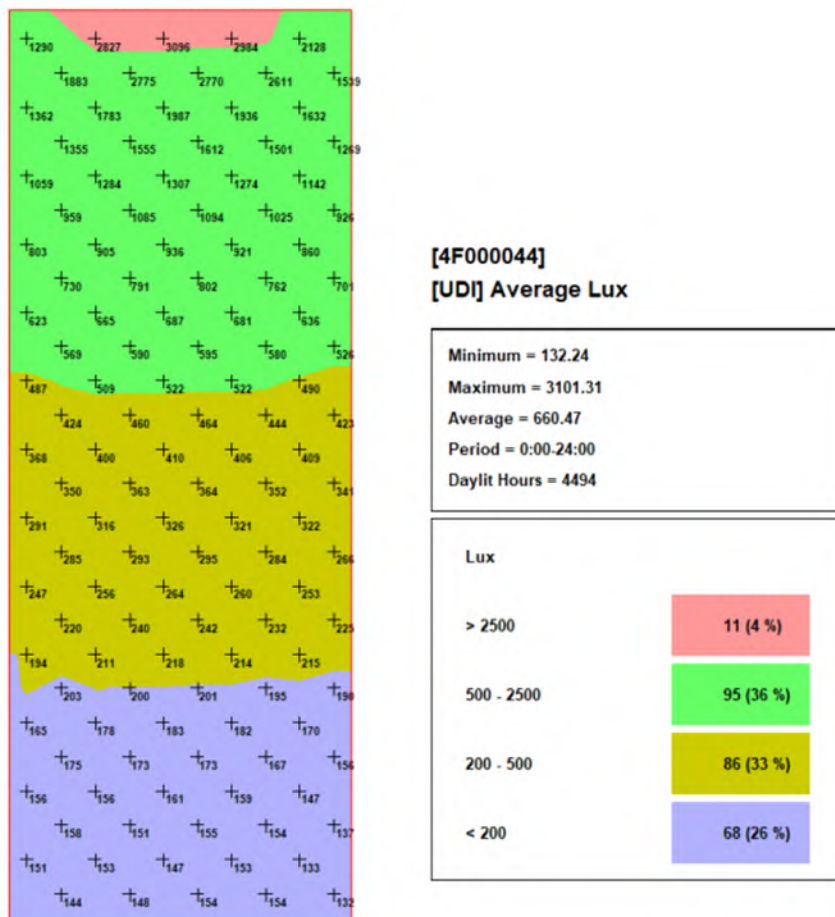


Figure B59: 5F 512: 1B2P KLD

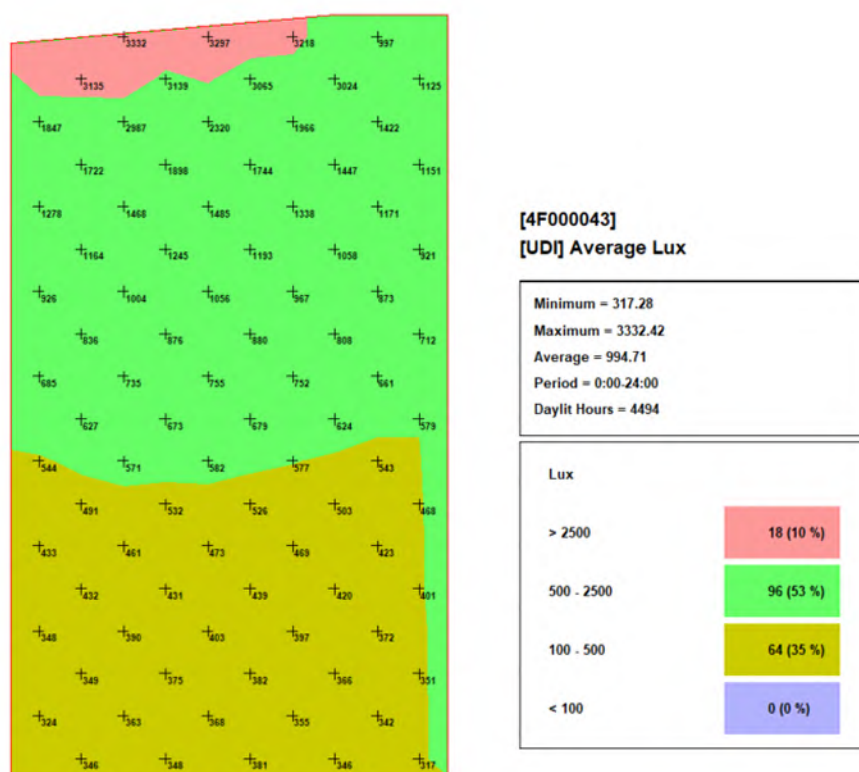
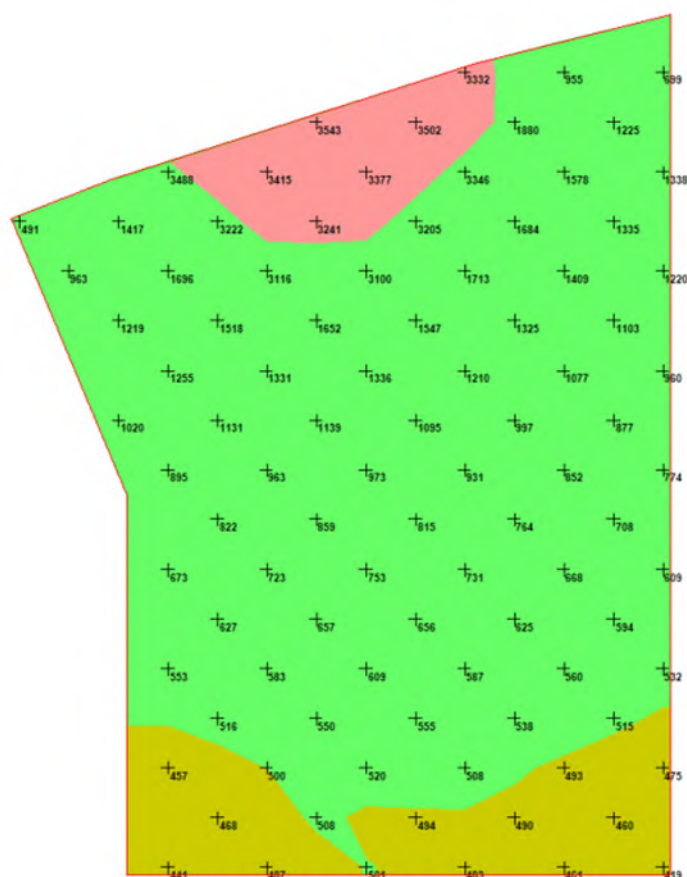


Figure B60: 5F 513: 2B4P BED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test



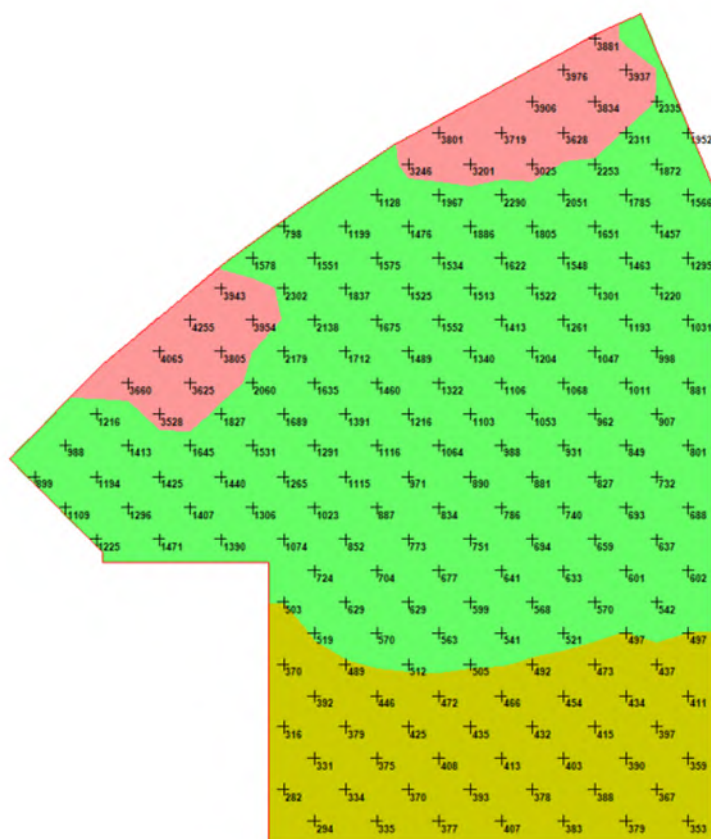
[4F000042]
[UDI] Average Lux

Minimum = 404.51
Maximum = 3542.56
Average = 1144.45
Period = 0:00-24:00
Daylit Hours = 4494

Lux

> 2500	20 (10 %)
500 - 2500	141 (74 %)
100 - 500	28 (14 %)
< 100	0 (0 %)

Figure B61: 5F 513: 2B4P BED



[4F00003F]
[UDI] Average Lux

Minimum = 262.84
Maximum = 4355.93
Average = 1278.01
Period = 0:00-24:00
Daylit Hours = 4494

Lux

> 2500	38 (10 %)
500 - 2500	259 (68 %)
200 - 500	82 (21 %)
< 200	0 (0 %)

Figure B62: 5F 513: 2B4P KLD

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

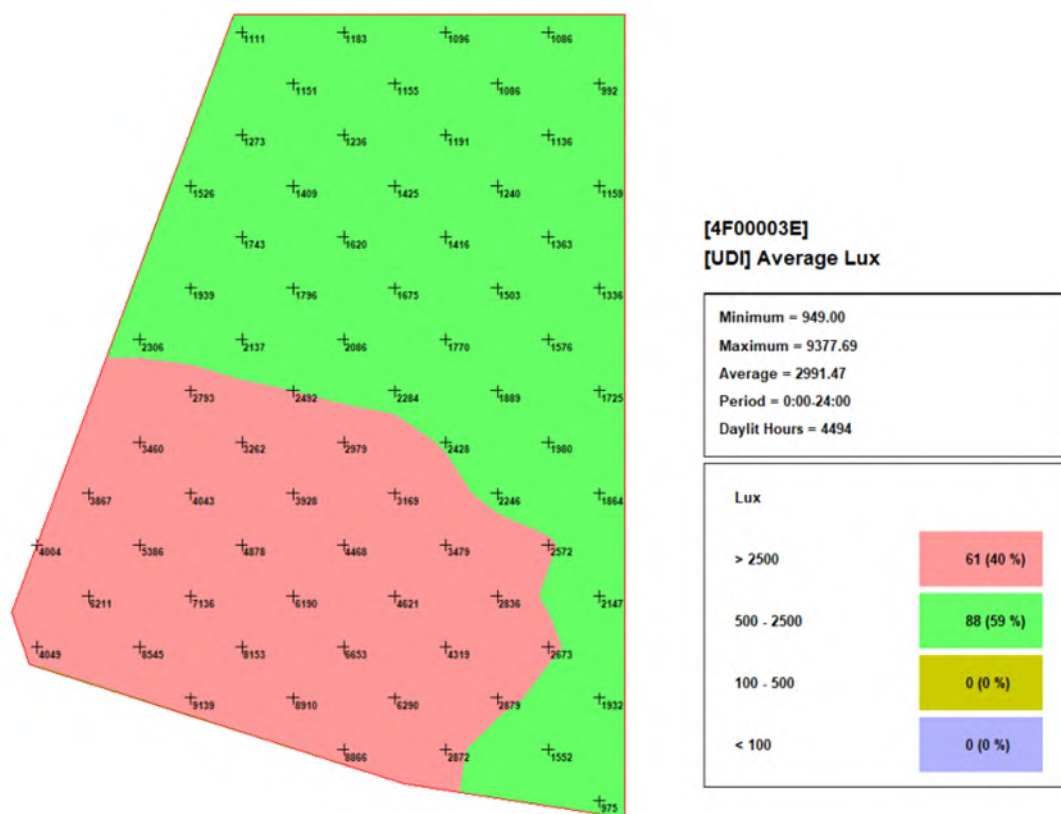


Figure B63: 5F 514: 2B3P BED

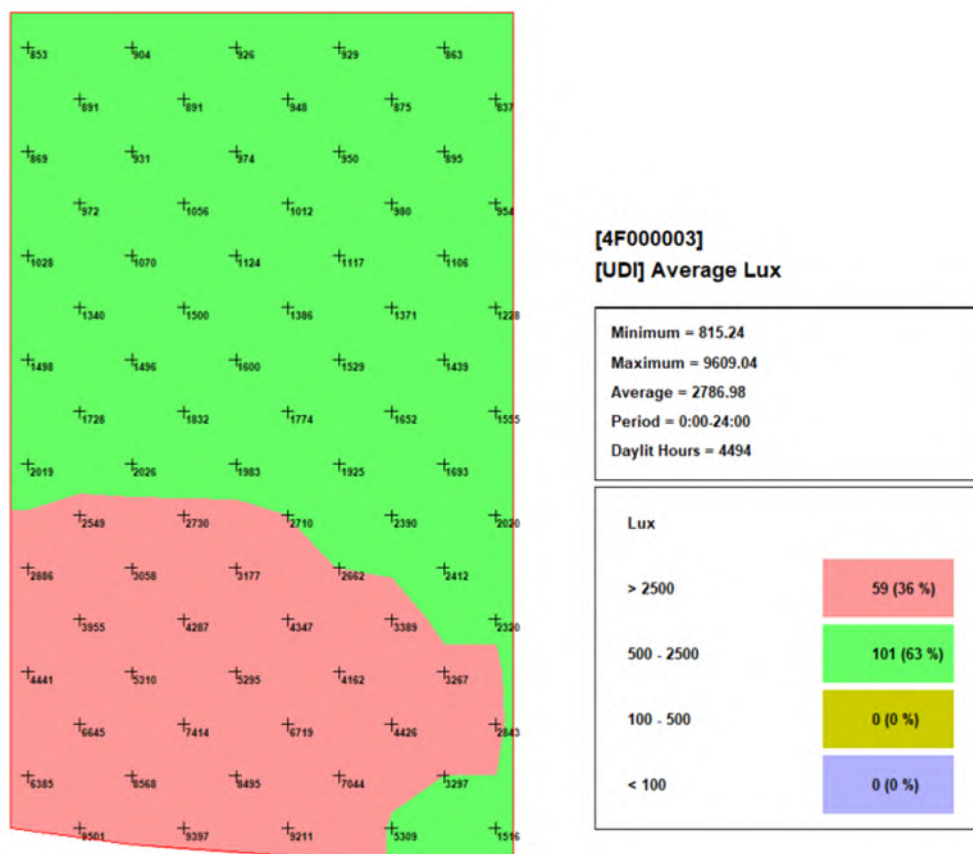


Figure B64: 5F 514: 2B3P BED



Figure B65: 5F 514: 2B3P KLD

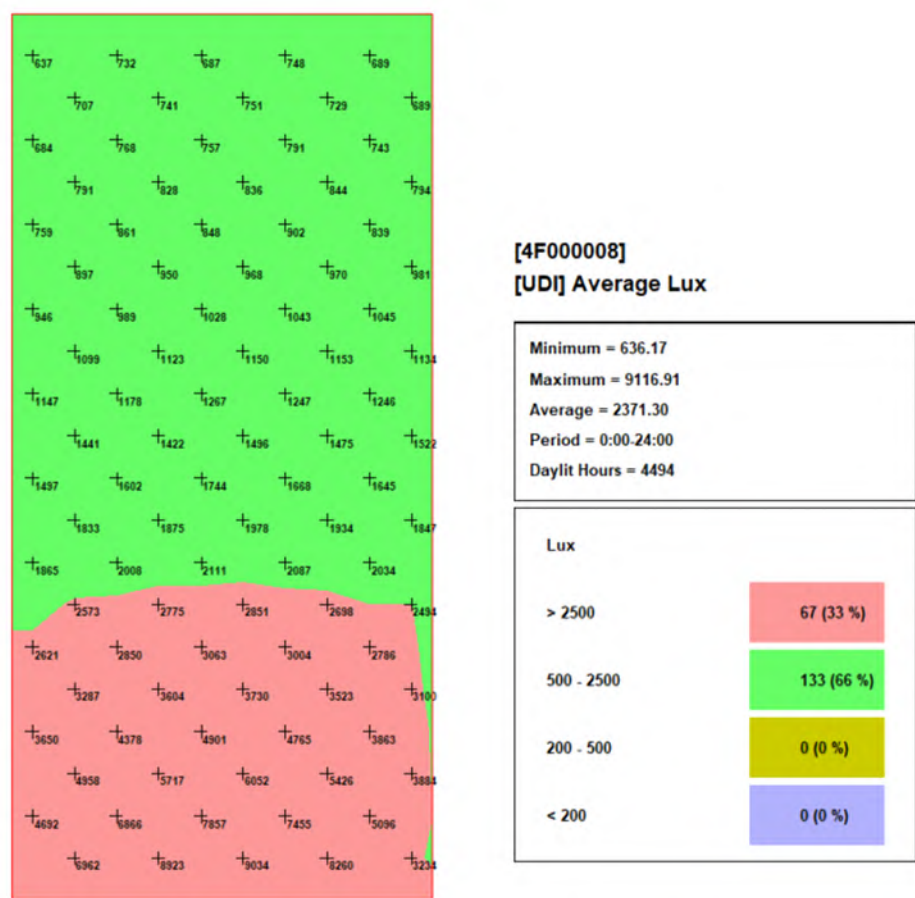


Figure B66: 5F 515: 1B1P KLD

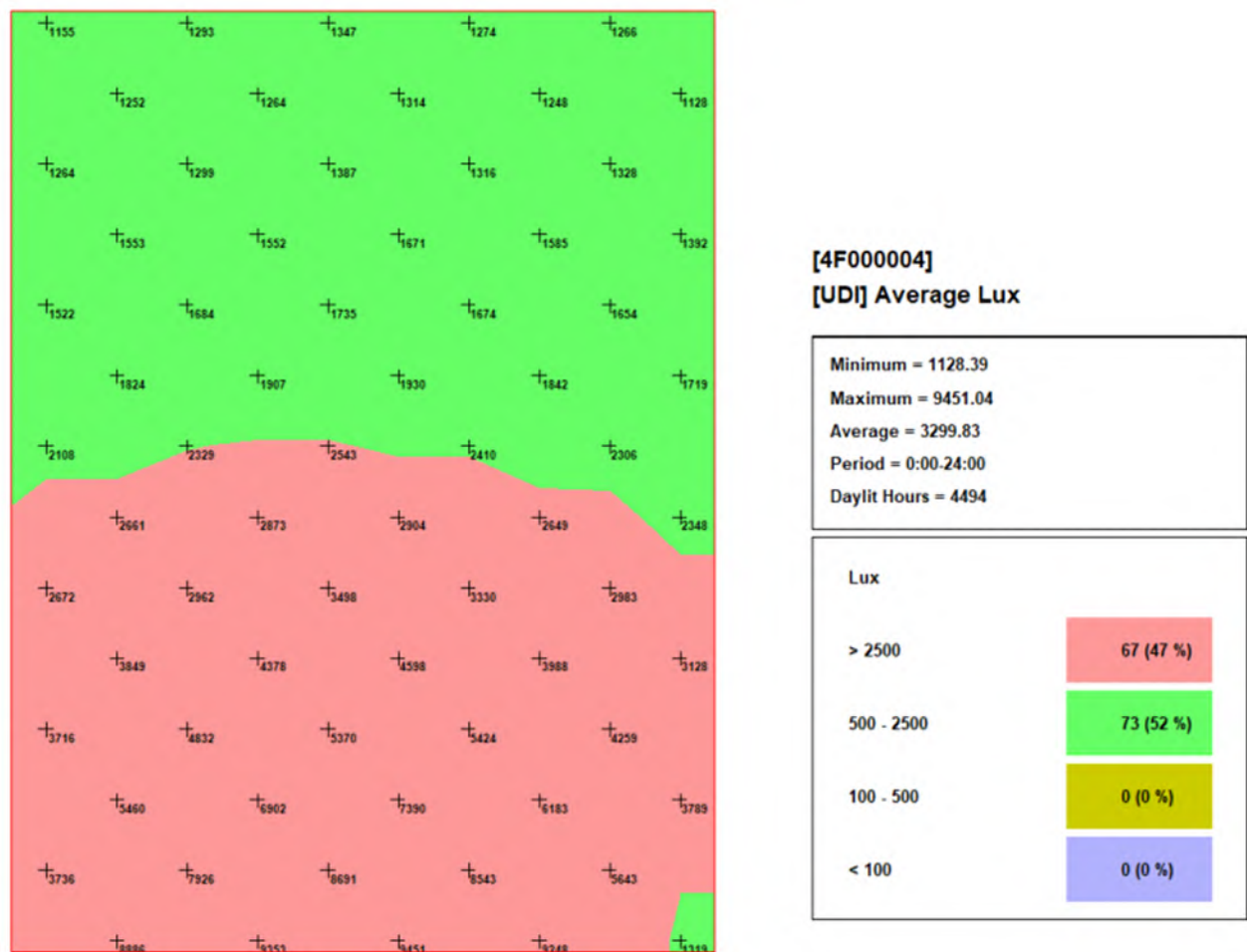


Figure B67: 5F 515: 1B1P SBED

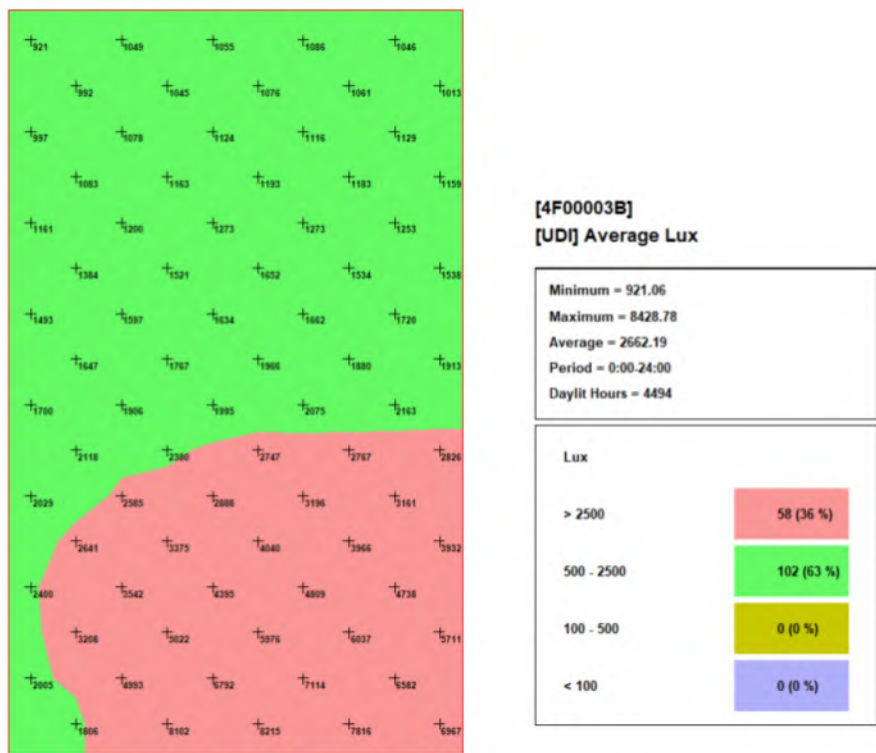


Figure B68: 5F 516: 2B3P BED

P24-3203– 400 Thames Valley Park Drive – Roof Extension
Appendix B- Illuminance test

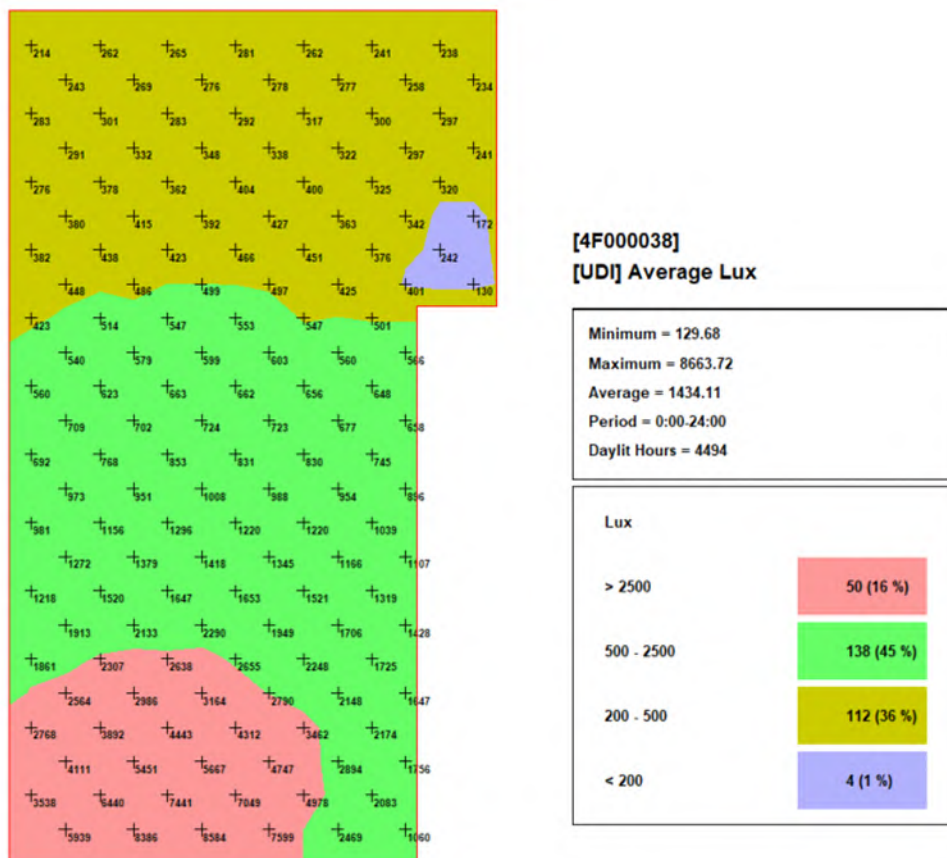


Figure B69: 5F 516: 2B3P KLD

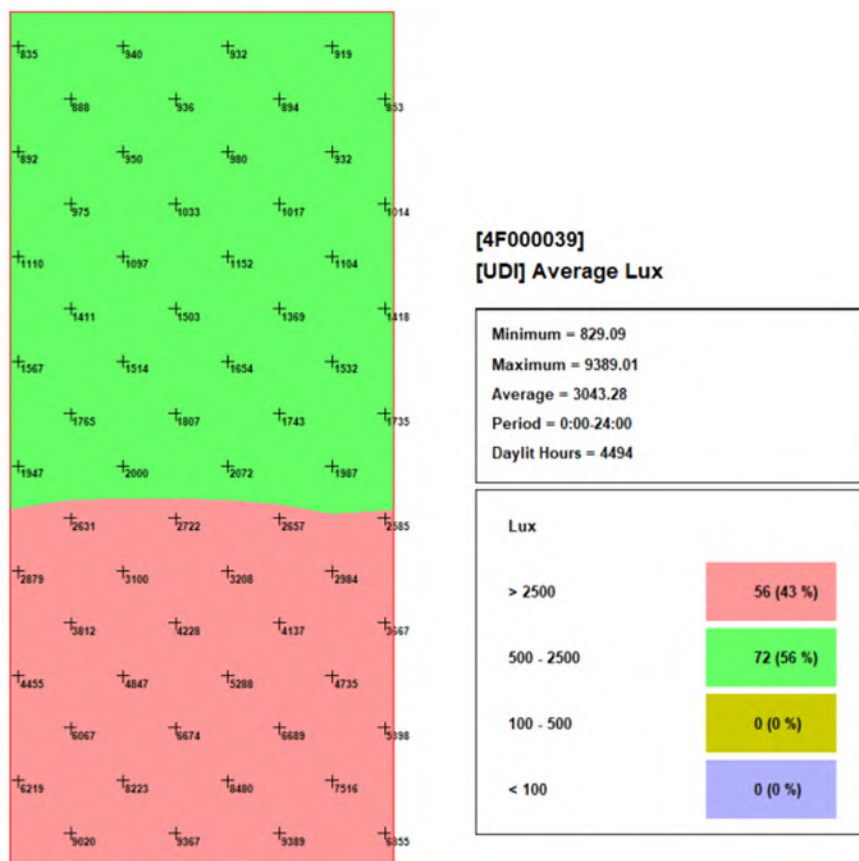


Figure B70: 5F 516: 2B3P SBED

APPENDIX C

400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 06:00

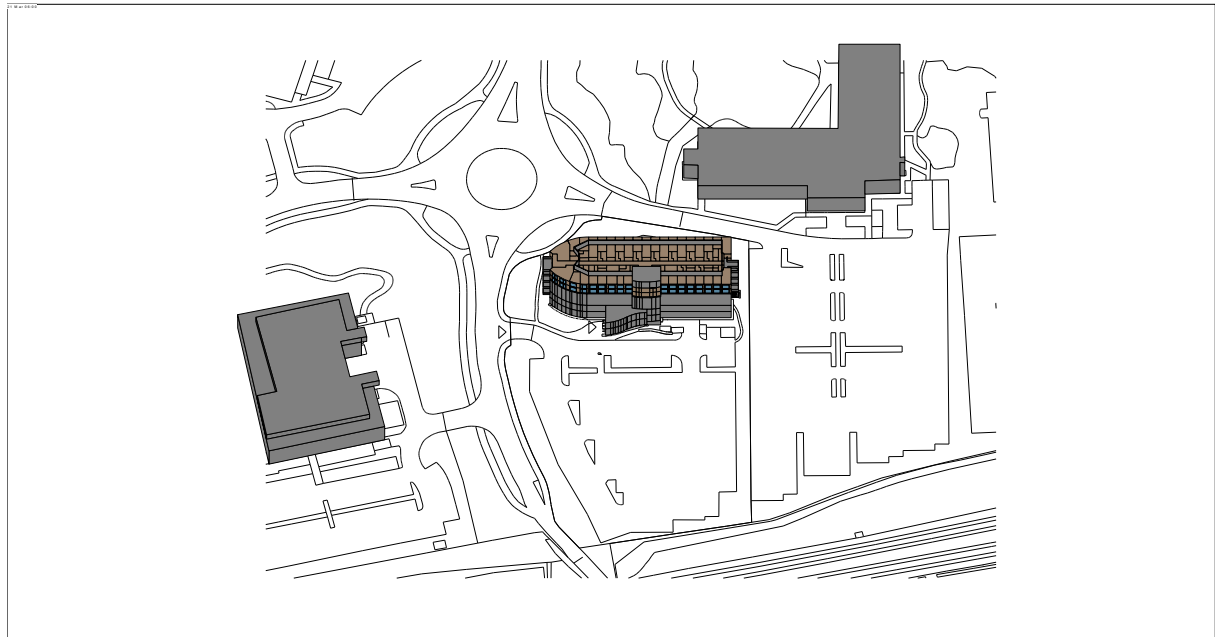
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun is not up

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 07:00

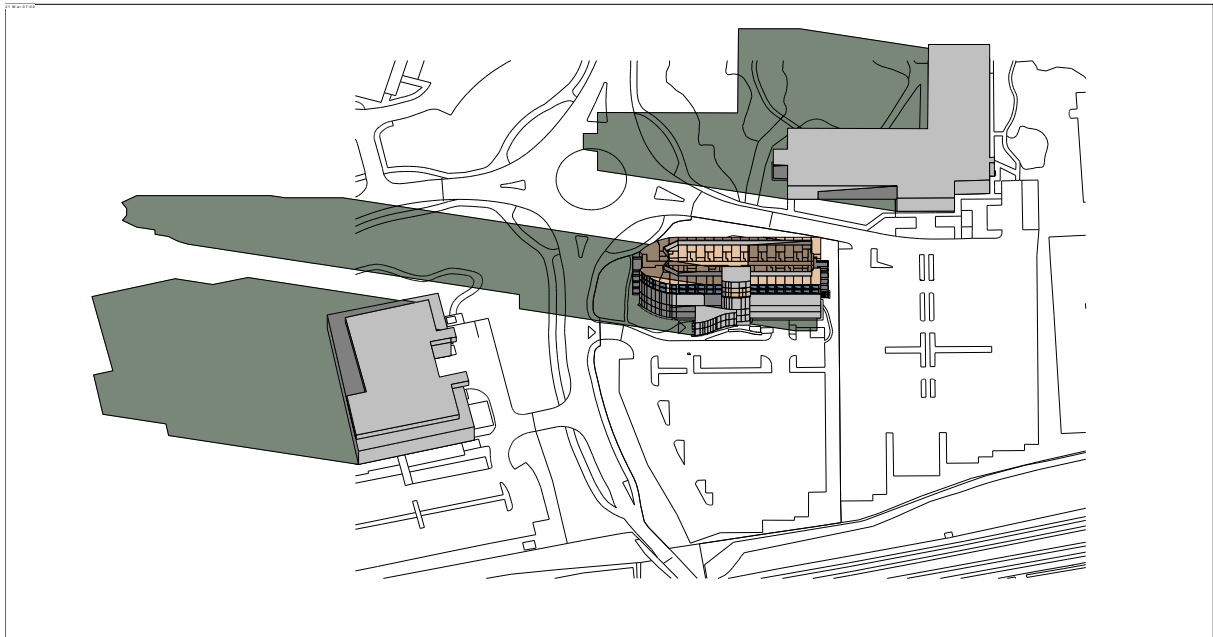
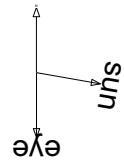
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 99.98 alt = 7.85

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 08:00

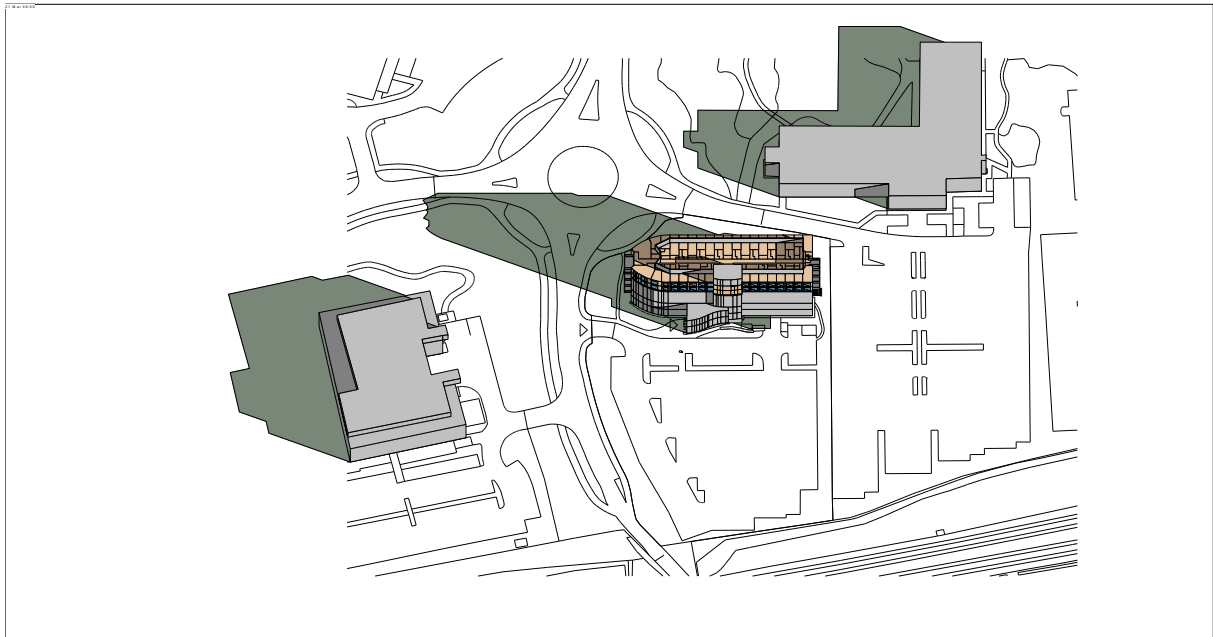
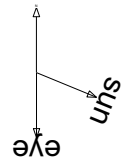
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 112.30 alt = 16.81

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 09:00

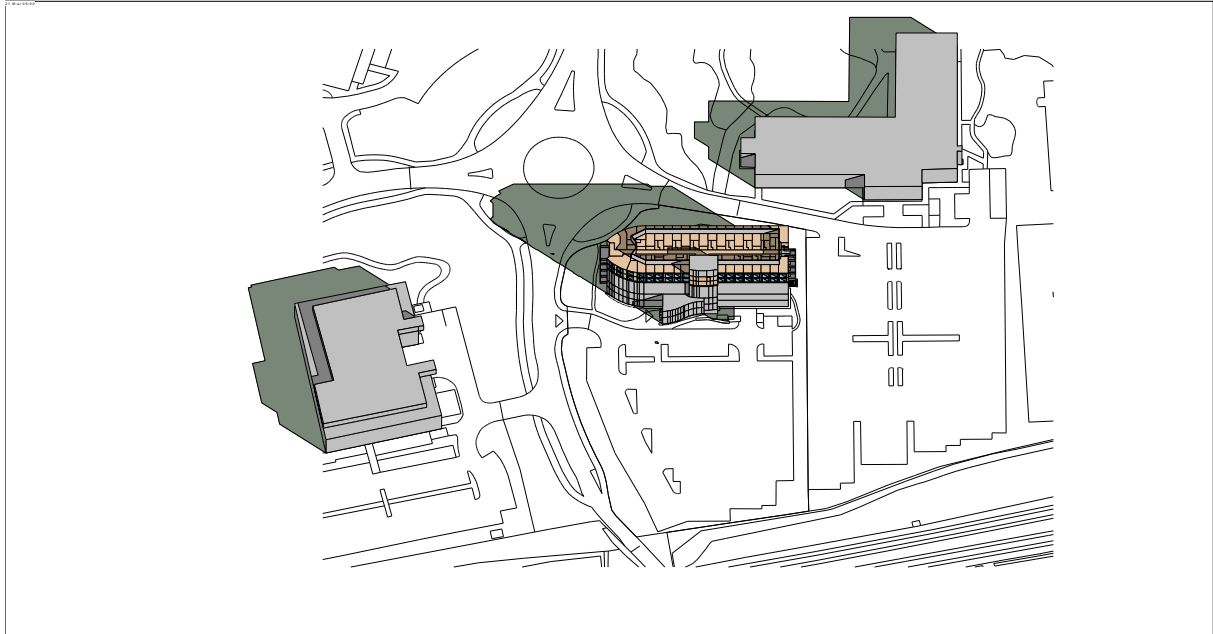
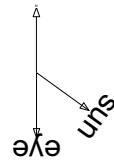
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 125.80 alt = 24.96

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 10:00

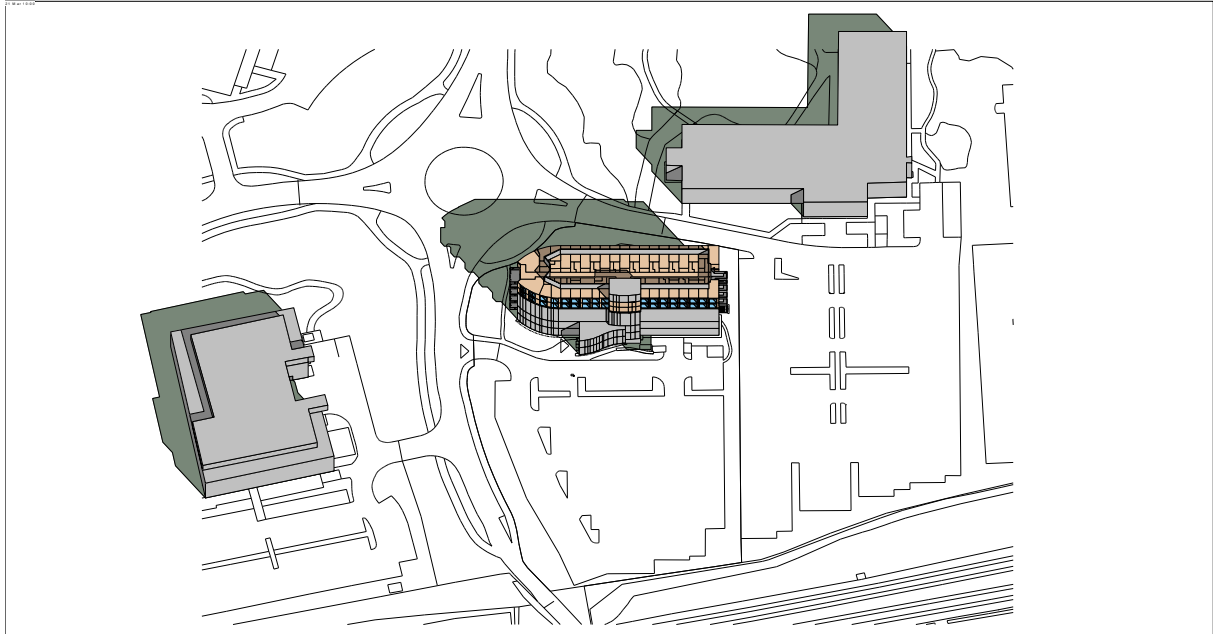
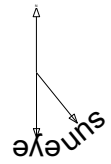
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 141.03 alt = 31.75

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 11:00

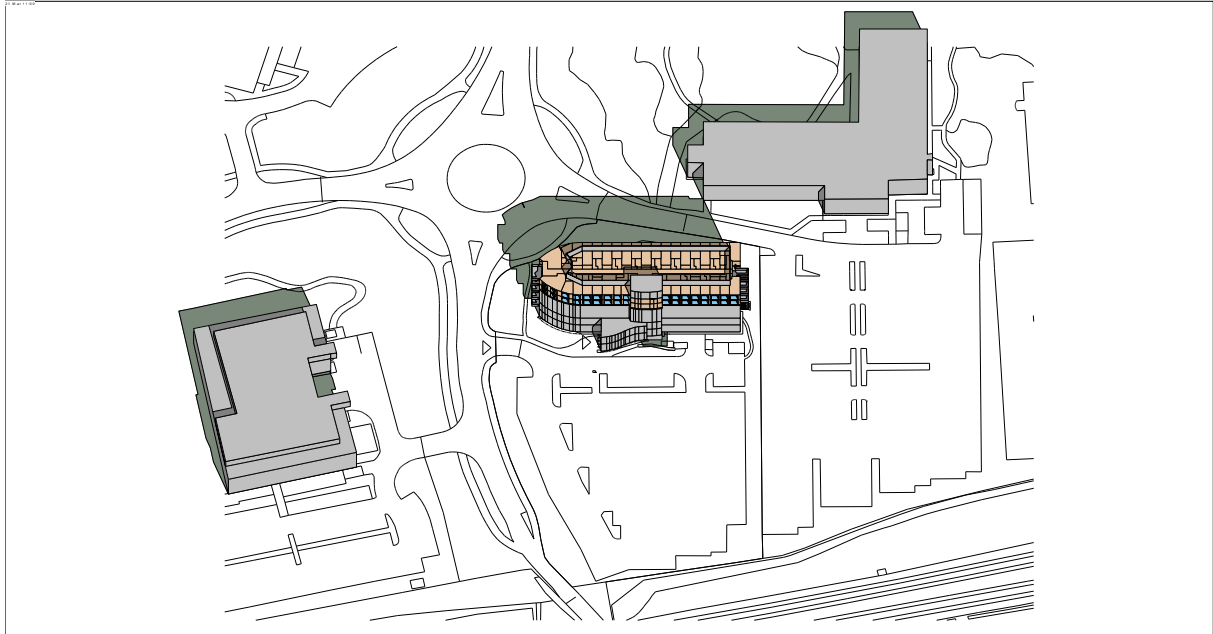
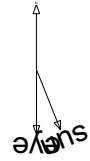
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 158.25 alt = 36.47

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 12:00

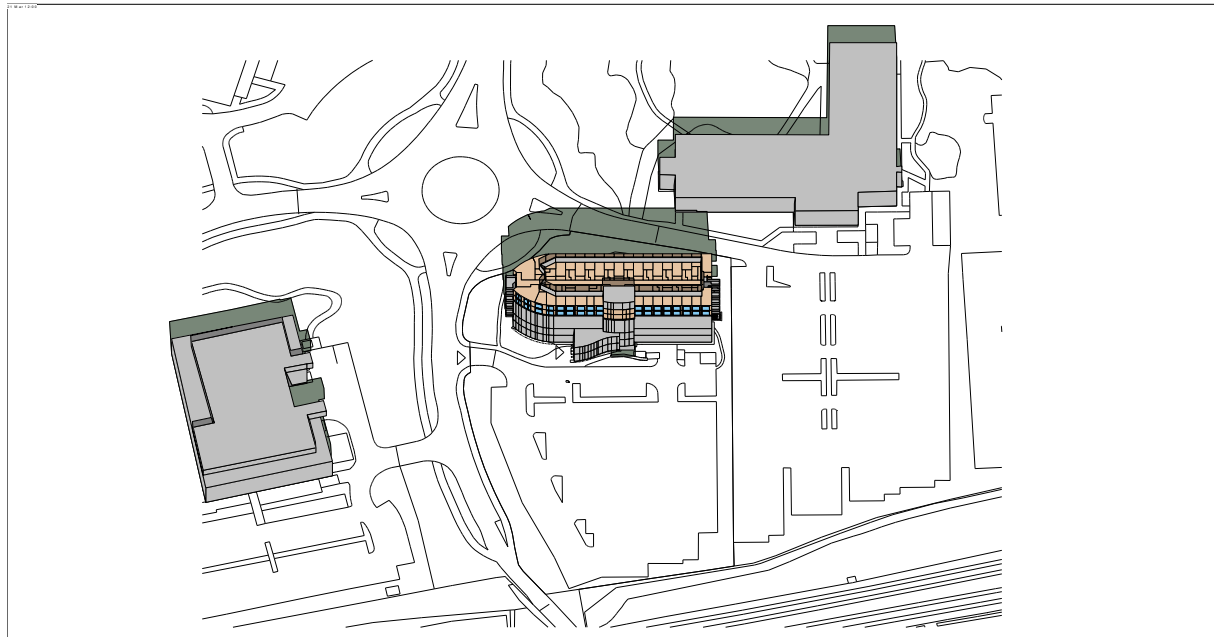
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 177.02 alt = 38.48

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 13:00

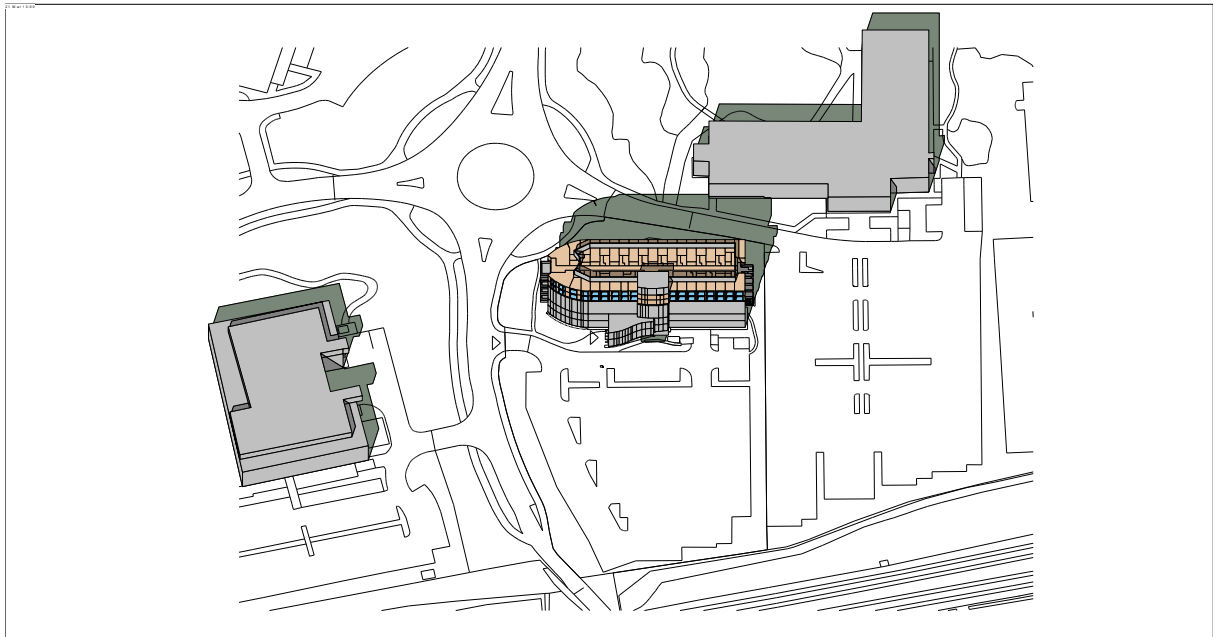
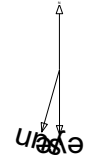
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 196.03 alt = 37.42

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 14:00

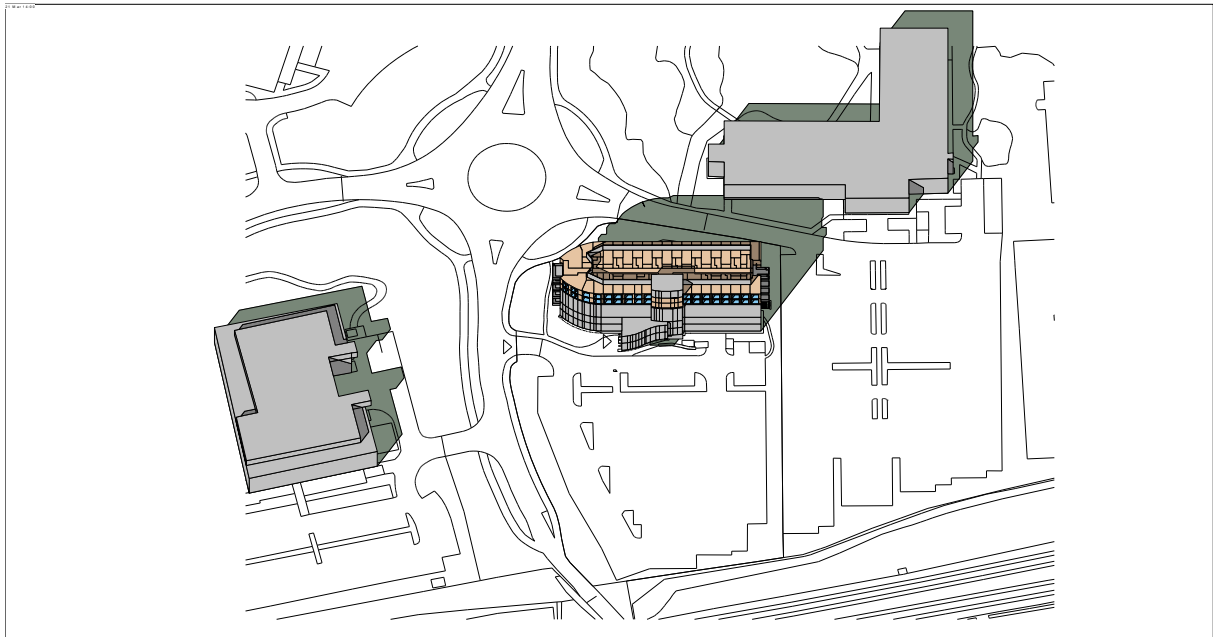
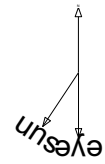
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 213.82 alt = 33.47

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 15:00

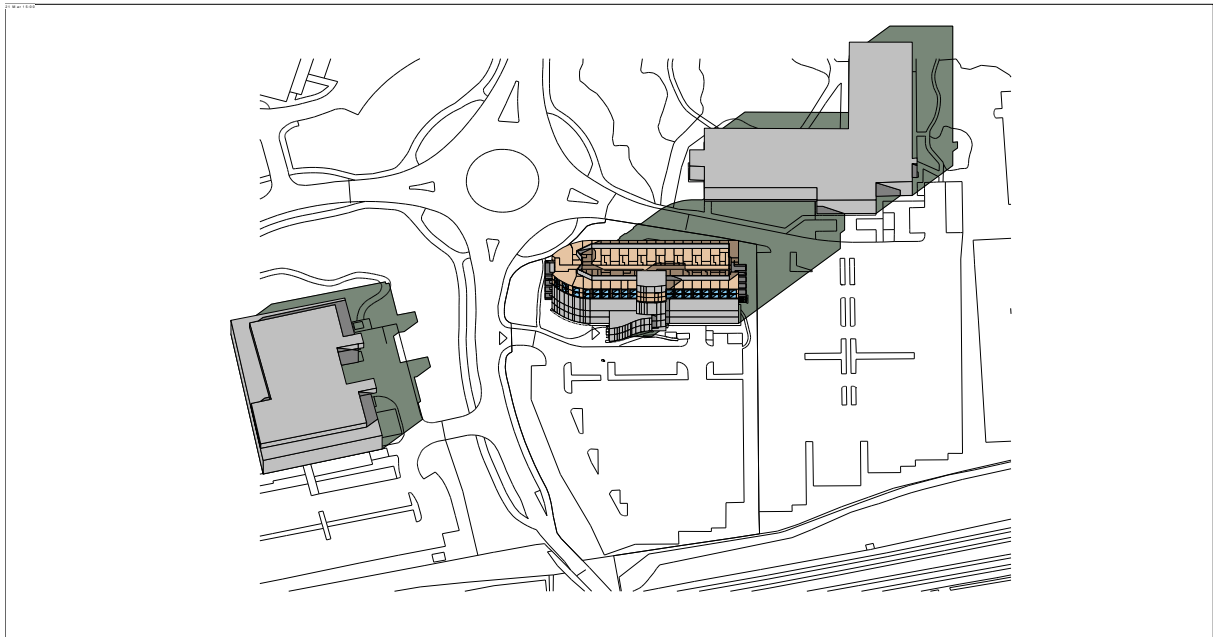
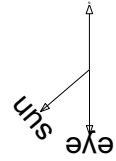
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 229.67 alt = 27.25

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 16:00

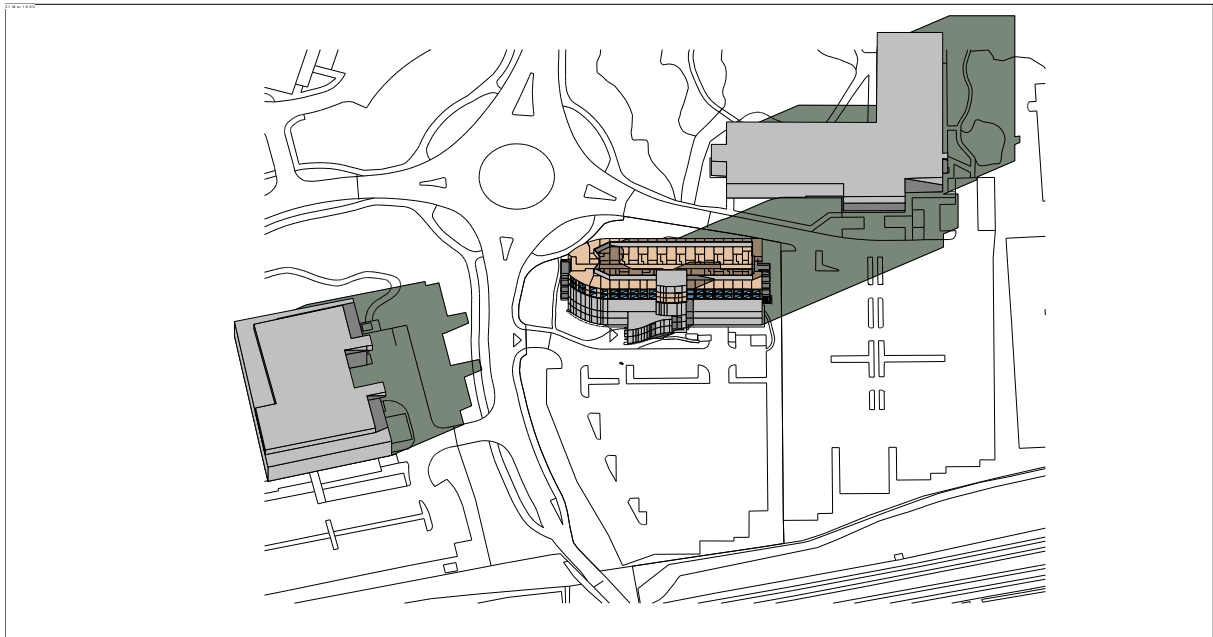
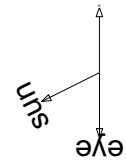
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 243.65 alt = 19.45

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 17:00

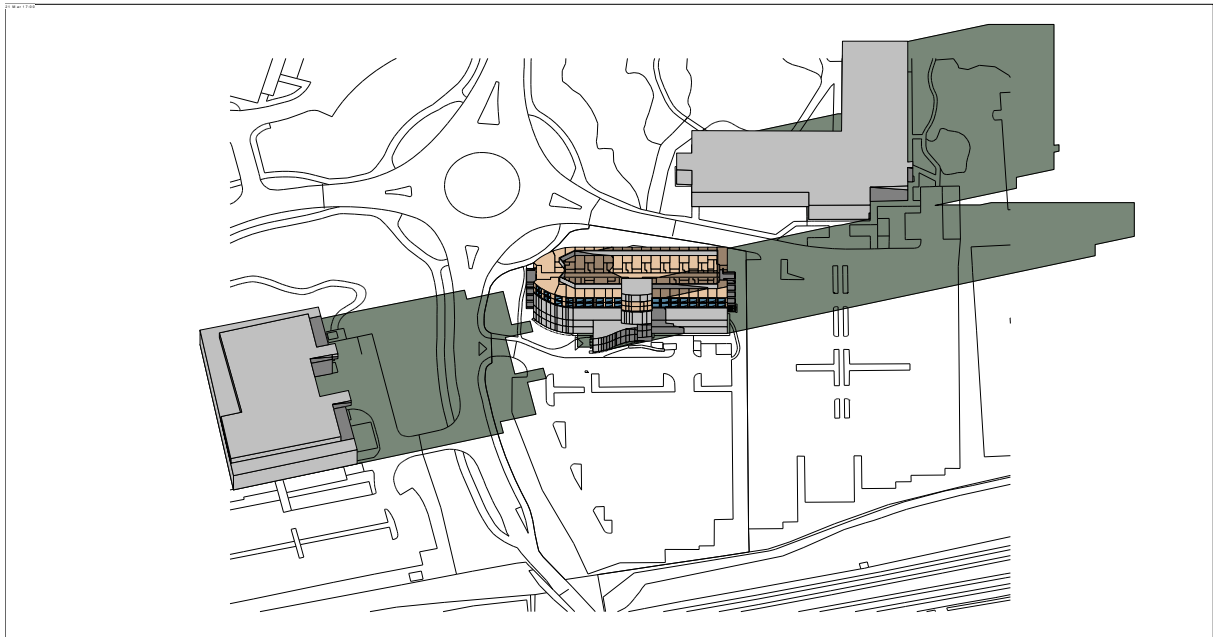
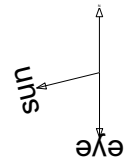
Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 256.28 alt = 10.69

Eye: azi = 180.00 alt = 60.00



400 Thames Valley Park Driver- Roof Extension

App C – Solar Shading Images

Suncast image:

View time = 21 Mar 18:00

Site Latitude = 51.48

Longitude diff. = -0.45

Model Bearing = 0.00

Sun: azi = 268.17 alt = 1.45

Eye: azi = 180.00 alt = 60.00

