Artin Homes

53 Fitzroy Park, London

Lighting Impact Assessment

712940R01

8TH NOVEMBER 2018

RSK GENERAL NOTES

Project No.: 712940R01

Title: 53 Fitzroy Park – Lighting Impact Assessment

Client: Artin Homes

Date: 8th November 2018

Author	Rob Baker
Date:	8th November 2018
Reviewer	Joe Norton
Date:	8th November 2018

CONTENTS

APPENDICES

1 INTRODUCTION

1.1 Background

RSK Environment Ltd (RSK) has been appointed by Artin Homes to prepare this Lighting Impact Assessment in support of a planning condition discharge for a new dwelling at 53 Fitzroy Park, London.

1.2 Aim of the Report

This report presents the findings of an assessment of existing / baseline artificial lighting levels and the predicted effect of artificial lighting from the proposed scheme on the existing properties and wildlife surrounding the site.

2 PLANNING POLICY CONTEXT

2.1 National Planning Policy

2.1.1 National Planning Policy Framework

In July 2018 The National Planning Policy Framework (NPPF) was revised, superseding the bulk of previous Planning Policy Statements with immediate effect. The National Planning Policy Framework was intended to simplify the planning system and includes a presumption in favour of sustainable development.

Section 15 of the NPPF deals with Conserving and Enhancing the Natural Environment, and states that the intention is that the planning system should prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans. The document also states that 'new development [should be] appropriate for its location' and 'the effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account'..

2.1.2 Planning

Planning permission has been granted for the development with the following condition.

Full details of a lighting strategy, to include information about potential light spill on to buildings, trees and lines of vegetation to minimise impact on bats, shall be submitted to and approved by the Local Planning Authority, in writing, before the development commences. The development shall not be carried out otherwise than in accordance with the details thus approved and shall be fully implemented before the premises are first occupied.

3 SITE LOCATION

The proposed development site is located at 53 Fitzroy Park, London. The site has an existing dwelling which is due to be demolished prior to the new development being built. Fitzroy park is a private residential road and the site is bordered by the gardens of existing neighbouring properties and Fitzroy Park road. The site border has a number of trees forming a natural barrier to any artificial light that may spill beyond the site to the North, South and West. Fitzroy Park runs along the Eastern site border and there are neighbouring properties opposite.

A location plan of the development can be seen in Appendix A. The proposed development includes significant planting so that the site is surrounded by hedgerows and trees on all perimeters, giving a natural barrier to artificial light that may spill beyond the site boundary.

Photographs of the site can be found in Appendix E

4 ASSESSMENT SCOPE AND METHODOLOGY

4.1 Approach

In order to assess the effects of the development on existing artificial lighting levels, a site visit was conducted by Rob Baker of RSK on Wednesday 31st October 2018 to measure existing lighting levels within the site and surrounding area to establish baseline results. Measurements were taken at a height of 1.5m under an overcast sky between 5:30pm and 6.30pm hours using an ISO TECH ILM1335 Digital Light Meter at locations around the perimeter of the site.

A computer model has been constructed of the proposed development using Relux Pro lighting software version 2016.1.2.0 using an indicative lighting scheme to assess the potential effect of the development on the existing area. An indicative lighting scheme has been developed using lighting levels recommended in The Society of Light and Lighting (SLL) LG6 – The Outdoor Environment.

4.2 Statutory Documents

The Clean Neighbourhoods and Environment Act 2005 has made light pollution a statutory nuisance under the Environmental Protection Act 1990, which came into force on 6th April 2006. Section 79 of the Environmental Protection Act 1990 has been amended to include artificial light emitted from premises that potentially could be prejudicial to health or a nuisance.

No prescriptive limits or rules are set for such assessments, but the following guidance documents have been referred to while compiling this assessment:

- The SLL Lighting Handbook – The Society of Light and Lighting (SLL), this provides guidance on maximum recommended vertical illuminance levels measured at the sensitive receptors windows.
- Lighting Guide 6 The Outdoor Environment – The Society of Light and Lighting (SLL), this gives minimum safe lighting levels for the footpaths.
- ILP Guidance Notes for the Reduction of Obtrusive Light (2011) provides measurable design guidance limits and recommendations to ascertain acceptability of obtrusive light levels at night.

Table 1 from the SLL Handbook shows the five qualitative environmental zones identified by the International Commission on Illumination (CIE) which reflect differing levels of light pollution which can affect an area. The limits recommended by the SLL for limiting light trespass are given in Table 2.

Table 1 - The environmental zoning system of the CIE

Environmental Zones	Zone description and examples of sub-zones
E0	Areas with dark landscapes: UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	Areas with intrinsically dark landscapes: National Parks, areas of outstanding natural beauty (where roads are usually unlit)
E2	Areas of 'low district brightness': outer urban and rural residential areas (where roads are lit to residential road standard)
E3	Areas of 'middle district brightness': generally urban residential areas (where roads are lit to traffic route standard)
E4	Areas of 'high district brightness': generally, urban areas having mixed recreational and commercial land use with high night-time activity

Table 2 - Maximum vertical illuminance on windows, maximum luminous intensity for obtrusive luminaires and maximum building luminance produced by floodlighting, for five environmental zones

Environmental Zones	Maximum vertical illuminance on windows (Lux)		Maximum luminous intensity (cd)		Maximum building luminance (cd/m2)
	Before curfew	After Curfew	Before curfew	After curfew	
E0	0	0	0	0	0
E1	2	1	2500	0	0
E2	5	1	7500	500	5
E3	10	2	10000	1000	10
E4	25	5	25000	2500	25

4.3 Measuring Elements

Measuring elements are virtual measuring surfaces inside the software model that are used to calculate illuminance. Potentially sensitive receptors to artificial light have been identified and measuring elements have been placed at these locations within the model. As the site itself was completely unlit, measurements were taken at potential sensitive locations at the site border and close to neighbouring properties on Fitzroy Park. Please refer to Table 3 for a full list of identified potential sensitive receptors. A plan view of the site showing the measuring element locations is shown in Appendix C.

5 BASELINE CONDITIONS

5.1 Within the Site

The site is currently unlit with no existing sources of artificial light within the site. Neighbouring properties all had decorative external lighting and this is reflected in the baseline measurements. The measurement locations (Appendix C) were chosen based on their relevant distance to the site and in a direction of potential sensitivity. All measurements were taken from within the site and along Fitzroy Park. An average of 0.15 Lux was measured across all measurement location. The site currently sits in Zone E2 as defined in Table 1 above.

5.2 Surrounding Area

Potentially sensitive receptors, with reference to the proposed development, are local residential properties, all of which border the site, and wildlife located around the perimeter of the site. Using Table 1 above, this indicates that the area would be classified as E2, areas of 'low district brightness', and in line with the SLL guidelines, the vertical illuminance on windows of identified receptors must be less than 5 Lux before and 1 Lux after curfew as indicated in Table 2. To date there are no set criteria to quantify the potential effects on ecological and landscape receptors. The locations of the measuring points are presented in Appendix C.

Table 3 –Existing Lighting Levels

Position	Measuring Element	Measured Illuminance (Lux)
1	MP1	0.20
2	MP2	0.30
3	MP3	0.40
4	MP4	0.05
5	MP5	0.05
6	MP6	0.05
7	MP7	0.05
8	MP8	0.05
9	MP9	0.05
10	MP10	0.05
11	MP11	0.30
12	MP12	0.30

The results show that the area is dark with 0.15 Lux recorded as the average across all measurement locations. The site is currently unlit but decorative lighting is present at the surrounding properties that results in some light spill into the site. The locations of the measuring points are presented in Appendix C. When considering direct Sky Glow, as a result of direct upwards light, there is the possibility of a site wide effect being visible from darker environments, however, direct Sky Glow cannot be measured. The baseline is assessed relative to visual baseline survey conditions and published Campaign to Protect Rural England (CPRE) – Night Blight data. Taken on a local scale, existing saturated Sky Glow was noticeable all around due to the location of the site in North London.

6 DEVELOPMENT LIGHTING

6.1 Lighting Design

A detailed lighting scheme has been developed for the site by a lighting contractor and the lighting drawing can be seen in Appendix B. The design includes Low power LED lights mounted at low level. General recommendations for the detailed lighting scheme have been followed and these include:

- Lighting throughout the site has been designed to minimise horizontal spill of light to the site border.
- Lighting is directed away from site border.
- Lighting has been designed in accordance with ILP Guidance Notes for Reduction of Obtrusive Light and CIE 126 (1997) Guidelines for Minimising Sky Glow.

7 ASSESSMENT OF IMPACTS

7.1 Surrounding Area

Table 5 shows the results of the calculations and the predicted light levels within the site and at the windows of the identified potential sensitive receptors after curfew, where light levels are recommended not to exceed 1 Lux. For the purpose of this report, the calculations have been performed with all development lighting on to show the potential worst case effect. As previously stated, there are no set criteria to quantify the potential effects on ecological and landscape receptors. Calculation results for the measuring elements are shown in Table 5 below. The locations of the measuring points are presented in Appendix C. Predicted light spillage is shown in Appendix F.

Table 5 – Results For Proposed Scheme

Position	Measuring Element	Increase in Illuminance (Lux)	Maximum Illuminance (Lux)	Maximum Recommended Illuminance (Lux)
1	MP1	0.40	0.60	1
2	MP2	0.32	0.62	1
3	MP3	0.13	0.53	1
4	MP4	0.22	0.27	1
5	MP5	0.16	0.21	1
6	MP6	0.03	0.08	1
7	MP7	0.05	0.10	1
8	MP8	0.08	0.13	1
9	MP9	0.03	0.08	1
10	MP10	0.07	0.12	1
11	MP11	0.17	0.47	1
12	MP12	0.31	0.61	1

The results presented in Table 5 indicate that light spillage from the development is predicted to be negligible at all potential residential receptor locations. The increase in Lux as a result of the development is compliant with the standards of an E2 site, and also exceeds the requirements of an E1 site, as only a small increase is predicted. Light increase due to spillage from the development is minimal with a maximum increase limited to 0.4 Lux recorded at measuring position 1 which is located on Fitzroy Park and this increase is considered negligible due to the existing decorative lighting present at the neighbouring property locations.

8 CONCLUSION

The proposed development will have a negligible impact on the existing residential properties surrounding the site. The detailed lighting design uses low power LED lighting throughout and directs lighting away from the site border. The proposed landscaping and general layout contribute to the overall performance of the development and combined with the existing hedgerows and trees around the border form a natural barrier that helps to reduce light spill from the site. This results in a development that will have little or negligible impact on the surrounding area in line with the SLL recommendations.

In summary it has been shown that the proposed development will have an insignificant effect on the immediate environment with respect to lighting pollution. Although light spill has increased illuminance levels at some locations, the potential increase in illuminance is considered negligible.

APPENDIX A: EXISTING SITE PLAN


Fitzroy Park
Fitzroy Cl
Fitzroy Park
53 Fitzroy Park
Fitzroy Park
Haversham Pl

APPENDIX B: DEVELOPMENT PLAN

Proposed Site Plan

1 : 100

0m 5m 10m

Key

1- Window changed in height.
2- Window added.
3- Basement lightwell added.
4- Entrance relocated to the corner.
5- External stair removed.
6- Bike storage relocated.
7- Metal spandrel changed to natural stone.
8- Metal balustrade changed to glass.
9- Cornices changed to plain natural stone.
10- Recessed wall is revised.
11- The rear curved bay is squared off at lower ground level.
12- The recessed blind window omitted.

ARTIN HOMES
Design _Led Construction

3 Marlborogh House
Somerset Road
London Sw19 5HZ

Tel: 0208 9465515
E-mail: info@artinhomes.co.uk

No.	Description	Date

Client : Mr. M Saadati

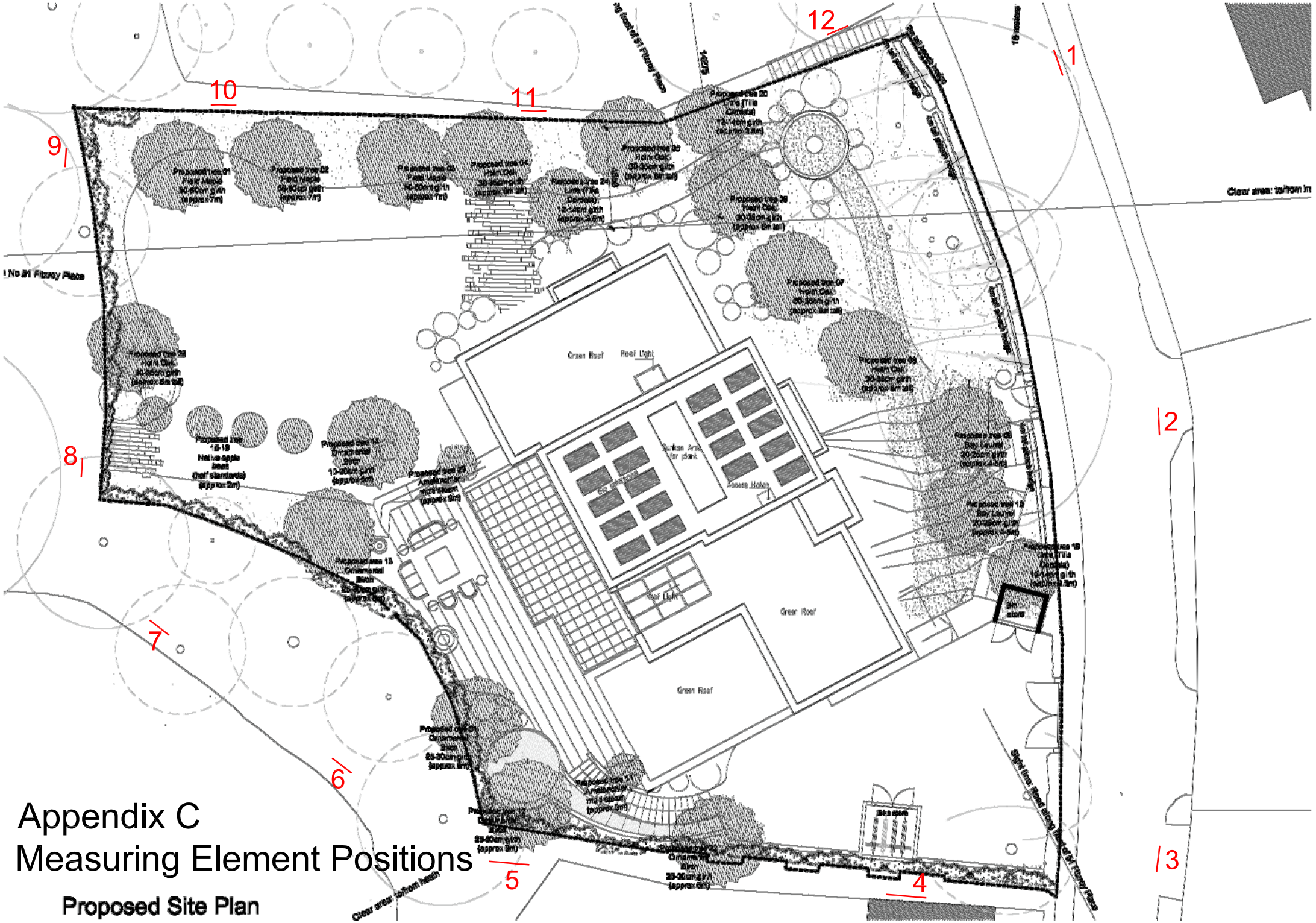
Project Name : 53, Fitzroy Park

Proposed Site Plan

Project number	110
Date	23/04/2018
Drawn by	S.J.
Checked by	A.J
110-A1-01-01	
Scale 1 :100 @	A1

29/04/2018 13:10:27

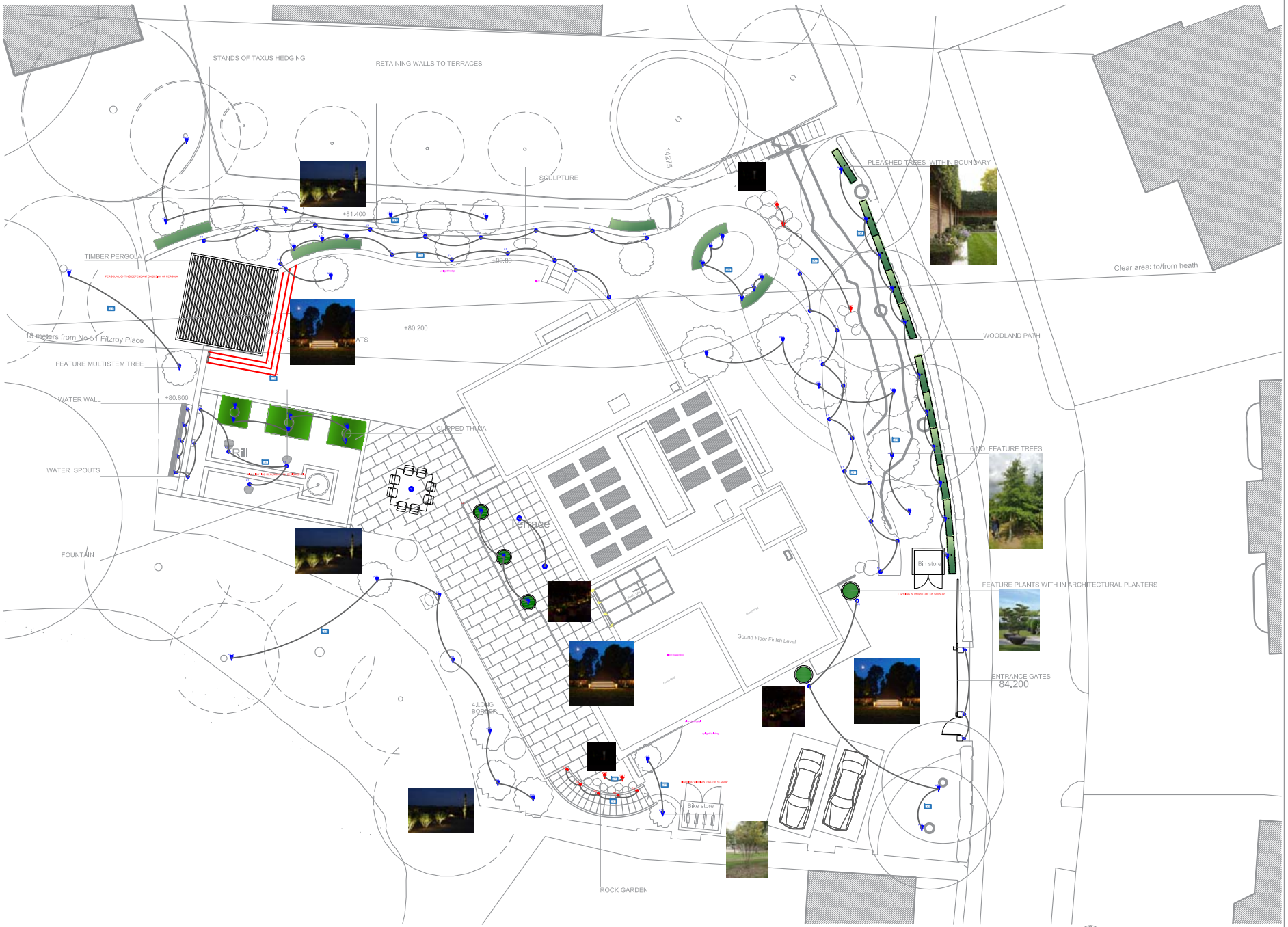
APPENDIX C: MEASURING ELEMENT LOCATIONS



Appendix C
Measuring Element Positions

Proposed Site Plan

APPENDIX D: LIGHTING DESIGN


STANDS OF TAXUS HEDGING
RETAINING WALLS TO TERRACES
SCULPTURE
PLEACHED TREES WITHIN BOUNDARY
Clear area: to/from heath
TIMBER PERGOLA
+81.400
+80.80
+80.200
18 meters from No 51 Fitzroy Place
WOODLAND PATH
FEATURE MULTISTEM TREE
WATER WALL
+80.800
CLIPPED THUJA
6 NO. FEATURE TREES
WATER SPOUTS
Rill
Terrace
Bin store
FEATURE PLANTS WITH IN ARCHITECTURAL PLANTERS
FOUNTAIN
Ground Floor Finish Level
ENTRANCE GATES
84.200
4 LONG BOSSES
Bike store
ROCK GARDEN
14275
0m
2m
4m
6m
8m
10m
VISUAL SCALE 1:50 @ A1

APPENDIX E: SITE PHOTOS

Figure 1. Looking at existing property from Fitzroy Park

Figure 2. Looking North along Fitzroy Park

Figure 3. Looking South along Fitzroy Park

Figure 4. View of Existing site

Figure 5. View North to site border showing Number 51 Fitzroy Park the Nearest Neighbour

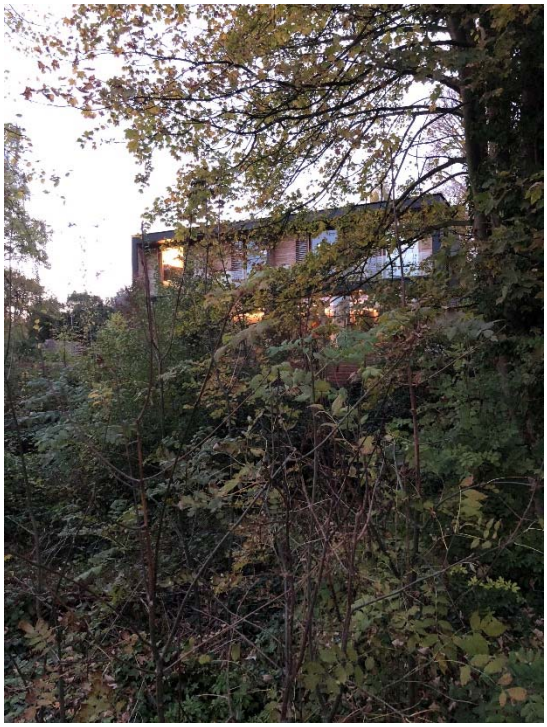


Figure 6. 51 Fitzroy Park after dark showing external decorative lighting

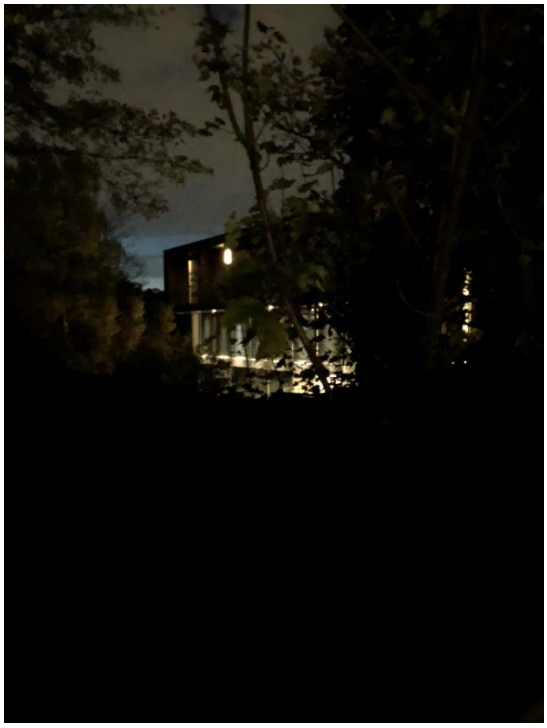
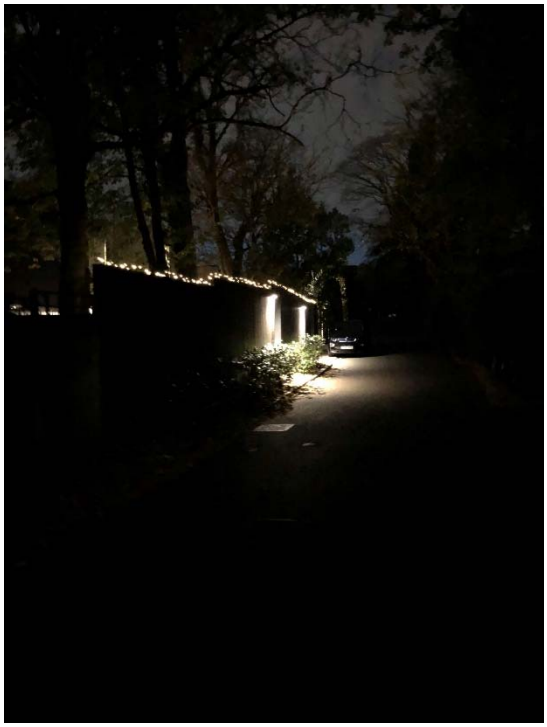
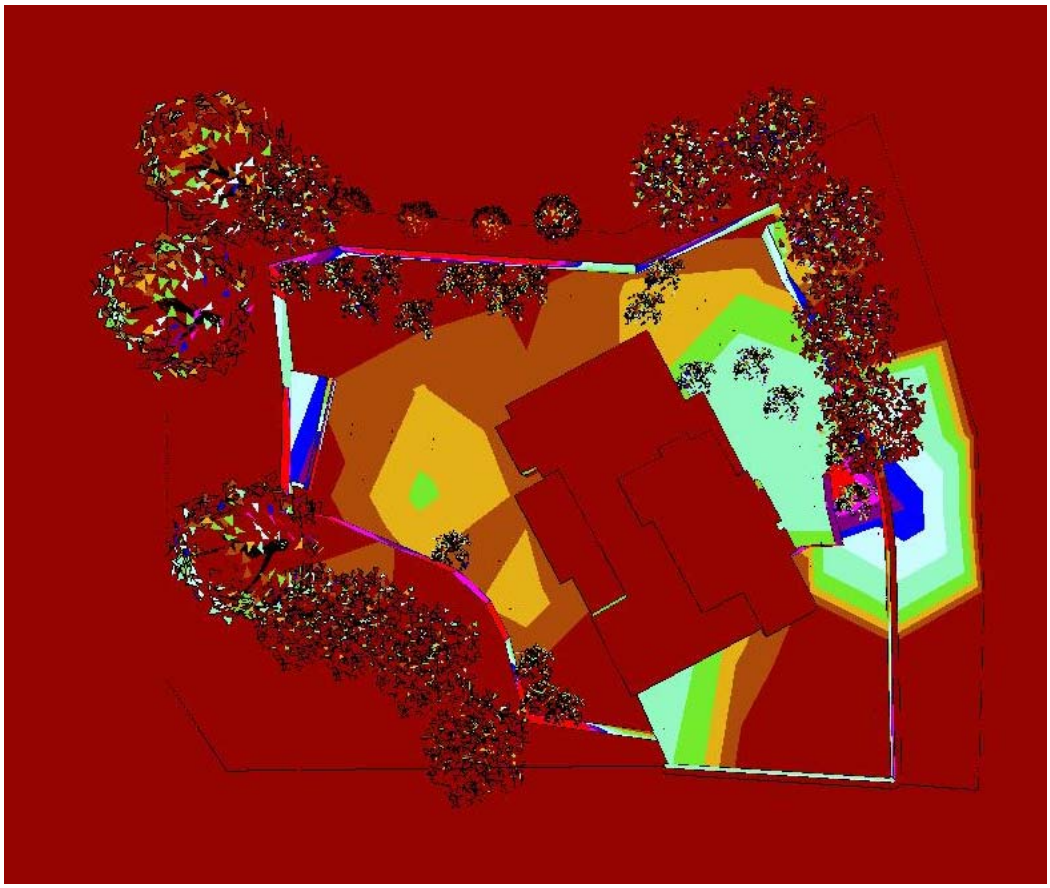


Figure 7. Looking South along Fitzroy Park after dark

Figure 8. Looking North along Fitzroy Park after dark



APPENDIX F: PREDICTED LIGHT SPILLAGE



Lux