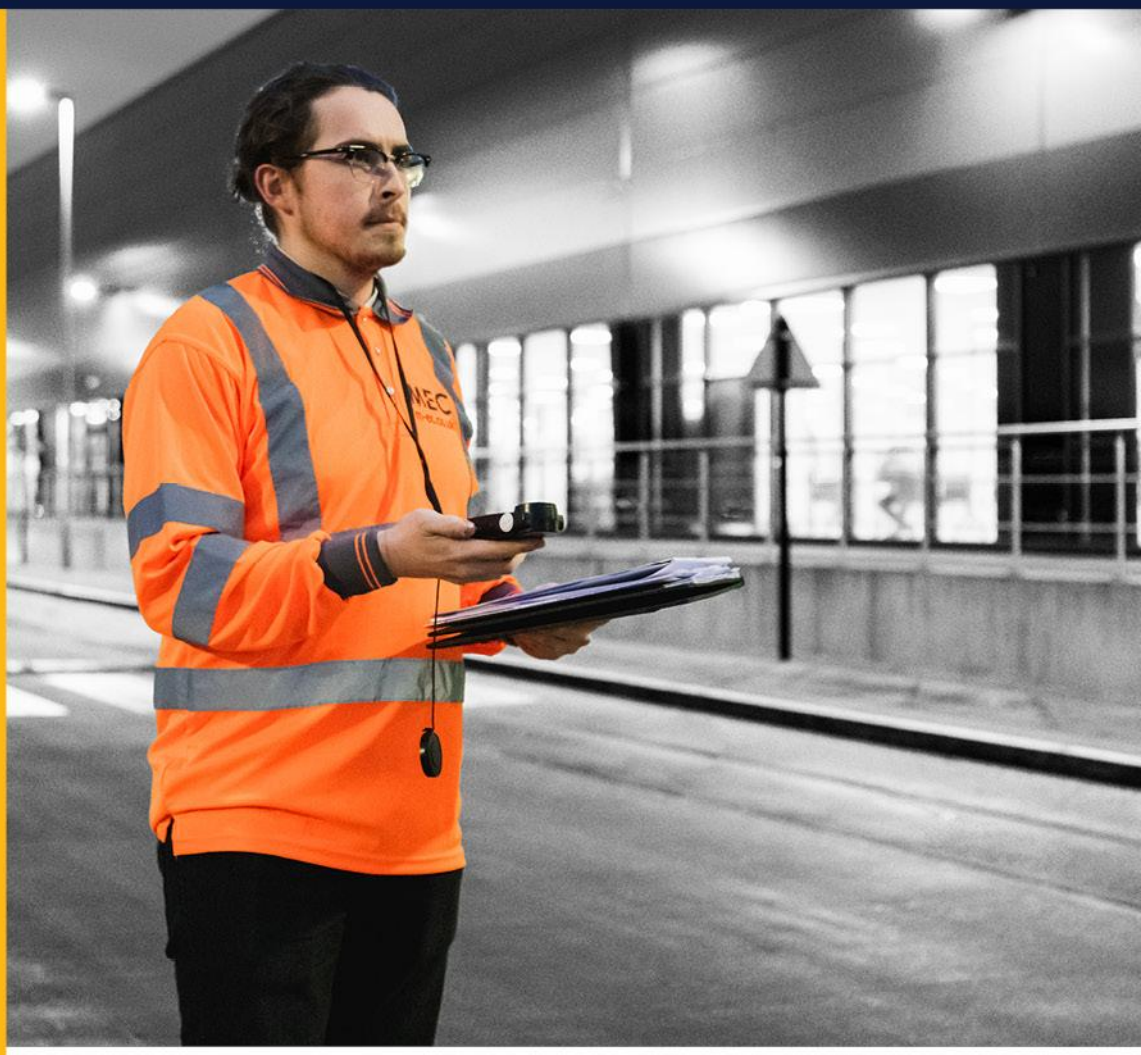
MEC Consulting Group

LIGHTING



Land to the West of Smock Alley, South of Little Haglands, West Chiltington

Lighting Impact Assessment

July 2025

Report Ref: 29875-LIGH-0401

Land to the West of Smock Alley, South of Little Haglands, West Chiltington
Lighting Impact Assessment
July 2025

REPORT REF: 29875-LIGH-0401

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REGISTRATION OF AMENDMENTS

Date	Rev	Comment	Prepared By	Checked By	Approved By
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A. PROPOSED SITE LAYOUT

B. LIGHTING LAYOUT

1.0 INTRODUCTION

General

1.1 MEC Consulting Group Ltd (MEC) has been commissioned by Castle Properties Ltd to undertake a Lighting Impact Assessment for a proposed residential development at Land to the West of Smock Alley, South of Little Haglands, West Chiltington. A site location plan is provided in Figure 2.1 and in **Appendix A.**

1.2 This report is to assist in the discharge of condition 10 of planning application DC/24/1619, which states;

1.3 ***Pre-Commencement Condition****: No development shall commence until a lighting design scheme for biodiversity has been submitted to and approved in writing by the local planning authority. The scheme shall identify those features on site that are particularly sensitive for bats and that are likely to cause disturbance along important routes used for foraging; and show how and where external lighting will be installed (through the provision of appropriate lighting contour plans, isolux drawings and technical specifications) so that it can be clearly demonstrated that areas to be lit will not disturb or prevent bats using their territory. All external lighting shall be installed in accordance with the specifications and locations set out in the scheme and maintained thereafter in accordance with the scheme. Under no circumstances should any other external lighting be installed without prior consent from the local planning authority.*

1.4 This report assesses, in terms of artificial lighting, the likely effects of the proposed development. The lighting assessment includes information on the baseline lighting conditions within the area, quantitively assesses the potential effects of the proposed lighting on surrounding sensitive receptors and if required considers possible mitigation measures to reduce potential light spill onto ecological receptors and upward light (which can create sky glow). An illuminance lux plot for exterior areas of the proposed development is included in **Appendix B.**

Disclaimer

1.5 MEC has completed this report for the benefit of the individuals referred to in paragraph 1.1 and any relevant statutory authority which may require reference in relation to approvals for the proposed development. Other third parties should not use or rely upon the contents of this report unless explicit written approval has been gained from MEC.

1.6 MEC accepts no responsibility or liability for:

a) The consequence of this documentation being used for any purpose or project other than that for which it was commissioned;
b) The issue of this document to any third party with whom approval for use has not been agreed

2.0 SITE DESCRIPTION

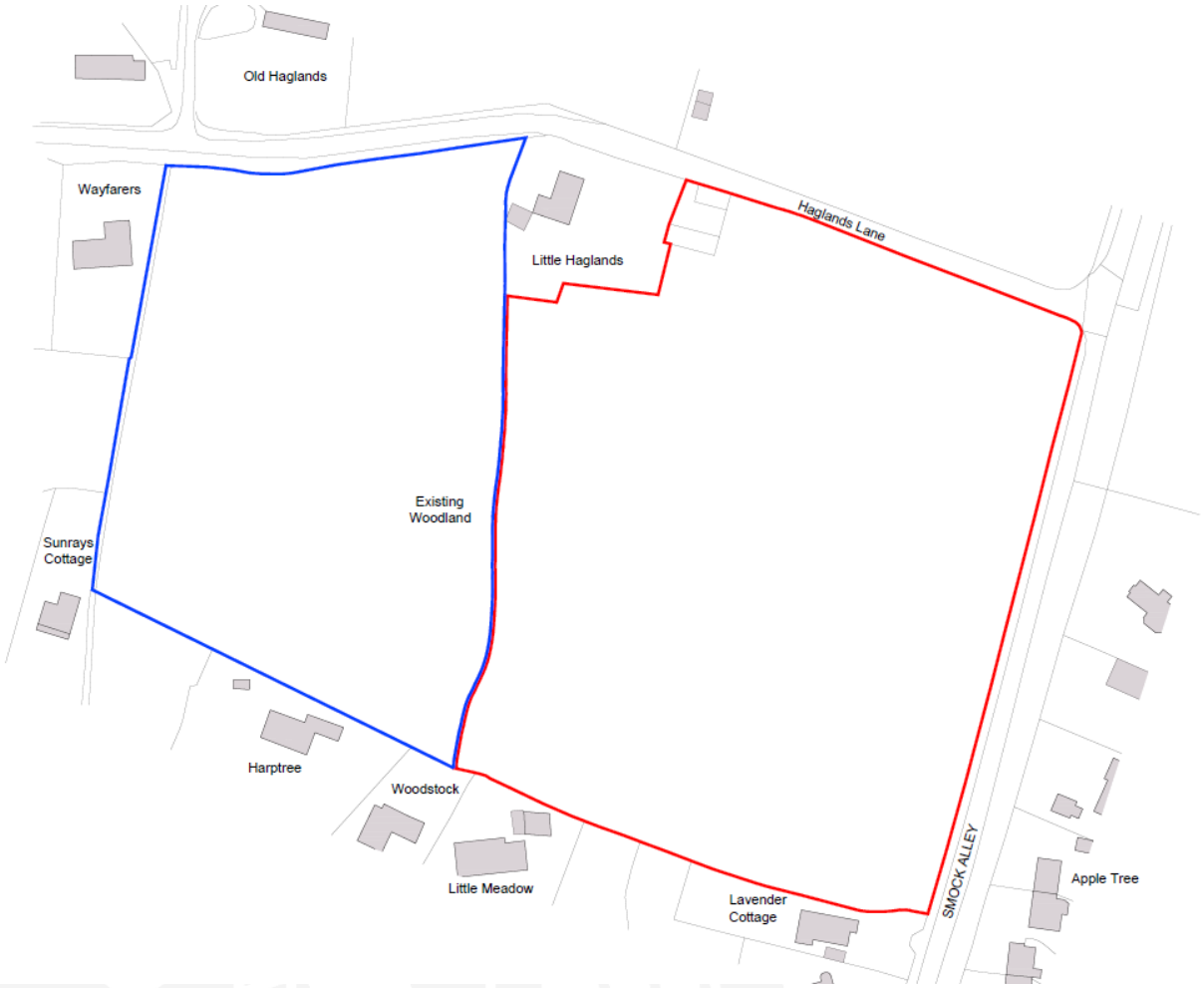
Existing Site

2.1 The proposed site is currently comprised of green fields. The site is bound by:

- Haglands Lane to the north, with no major sources of light,
- Smock Alley to the east, with no major sources of light, and;
- Residential properties to the south and west with no major sources of light.

2.2 A site location plan is provided in Figure 2.1 below.

Figure 2.1: Site Location Plan



3.0 POLICY AND GUIDANCE

Environmental Protection Act 1990 / Clean Neighbourhoods and Environment Act 2005

3.1 Light pollution was introduced within the Clean Neighbourhoods and Environment Act (2005) as a form of statutory nuisance under the Environmental Protection Act (the 'EPA', 1990), which states: "artificial light emitted from premises so as to be prejudicial to health or nuisance."

National Planning Policy Framework

3.2 The National Planning Policy Framework (NPPF), published in December 2024, sets out the government's planning policies for England and how they are expected to be applied and provides a framework for local plans. With regards to lighting, the following is stated;

198. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

C) Limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

National Planning Practice Guidance November 2019 Lighting

3.3 This report also has taken into account the relevant questions the PPG advises on how to consider light within the planning system detailed below;

- What light pollution considerations does planning need to address?
- What factors can be considered when assessing whether a development proposal might have implications for light pollution?
- What factors are relevant when considering where light shines?
- What factors are relevant when considering when light shines?
- What factors are relevant when considering how much the light shines?
- What factors are relevant when considering possible ecological impacts of lighting?
- What other information is available that could inform approaches to lighting and help reduce light pollution?

Relevant British Standards and Design Mitigation

3.4 The most applicable British Standards for lighting that relates to the proposed development are:

- BS EN 12464-2 Lighting of Work Places – Outdoor Work Places, 2014
- BS 5489-1:2020 Code of practice for the design of road lighting Part 1: Lighting of roads and public amenity areas

Institute of Lighting Professional Documents

3.5 The following Institute of Lighting Professional (ILP) guidance documents have been consulted with regard to lighting from the proposed development;

- PLG 04- Guidance on Undertaking Environmental Lighting Impact Assessments, ILP, 2013;
- Guidance Note 08/23 Bats and artificial lighting in the UK ILP, 2023
- Guidance Notes for the Reduction of Obtrusive Light, ILP, 2021;

4.0 ASSESSMENT METHODOLOGY

4.1 Guidance notes produced by the Institution of Lighting Professionals are among the most commonly referenced guidance notes for good practice within the lighting design industry.

4.2 The methodology of this report is as follows:

- Identify the environmental zone of the site and surrounding sensitive receptors in accordance with ILP GN01/21 and PLG 04;
- Produce a detailed 3D model using industry-standard light modelling software and quantitatively assess the following parameters; light spill, upward light spill/sky glow; and
- If required, consider possible mitigation measures to reduce potential light spill onto ecological receptors and upward light (which can create sky glow).

4.3 In accordance with Guidance Notes for the Reduction of Obtrusive Light, the following definitions are used to describe lighting effects in this assessment:

- Light intrusion – light intrusion onto ecological receptors (the spilling of light beyond the boundary of a property which may cause a nuisance to light sensitive species including bats).
- Skyglow – a combination of direct upward light and indirect upward light, (the upward spill of light into the sky which can cause a glowing effect and is often seen above cities when viewed from a dark area).

4.4 The ILP Guidance Notes for the Reduction of Obtrusive Light: GN01/21 define environmental zones appropriate to the location of the proposed development shown in Table 4.1:

Table 4.1: Environmental Zones

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, villages or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small-town centres of suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

4.5 The environmental zone appropriate for the proposed development is considered to be Zone E2. The obtrusive light limits defined in ILP GN01/21 are summarised in Tables 4.2

4.6 Skyglow is the brightening of the night sky caused by artificial lighting resulting from the reflection of radiation (visible and non-visible); ULR (Upward Light Ratio) is the maximum permitted percentage of luminaire flux that goes directly into the sky. The ILP limits for ULR are shown in Table 4.2 below

Table 4.2: Maximum values of upward light ratio (ULR) of luminaries

Application conditions	Environmental Zone				
	E0	E1	E2	E3	E4
Upward Light ratio (ULR)/%	0	0	2.5	5	15

5.0 BASELINE CONDITION

5.1 A site visit has not been undertaken however due to the presence of light-sensitive species such as bats along the boundary of the site it has been assumed for the basis of this report that lighting levels along the boundary of the site from the existing site conditions will be 0.0lux.

6.0 RECEPTORS

6.1 Following a desktop survey of the site and having liaised with the project team the following light-sensitive ecological receptors have been identified.

Figure 6.1: Ecological and Residential Receptor Locations



(Green = Ecological)

Ecological receptors

6.2 The ILP Guidance Note 08/23 specifies that when a planning application includes additional artificial lighting, developers should ensure that a lighting assessment is done alongside an ecological assessment. Lighting can impact light-sensitive species such as bats by impacting roosting, commuting and foraging behaviour.

6.3 There is potential that a number of bat species are anticipated to use the retained hedgerow and treeline surrounding the site. Therefore, ecology receptors have been located along the adjacent woodland and retained hedgerows at a height of 2m. The locations of these receptors are visually presented in Figure 6.1, as well as in Table 6.2 below.

Table 6.2: Ecological Receptor Locations

Receptor	Location Description	Height (m)
Eco 1	Treeline along Smock Alley east of the site	2
Eco 2	Treeline along Smock Alley east of the site	2
Eco 3	Treeline along Smock Alley east of the site	2
Eco 4	Treeline along Smock Alley east of the site	2
Eco 5	Proposed Retention Pond	1
Eco 6	Treeline west of the site	2
Eco 7	Retained Hedgerow in the centre of the site	2
Eco 8	Treeline west of the site	2
Eco 9	Treeline north of the site	2
Eco 10	Treeline north of the site	2

7.0 LIGHTING ASSESSMENT

7.1 A site plan (**Appendix A**) was provided by the project architect for this development and the lighting criteria has been discussed with the project team. A 3D model has been produced using a range of industry-standard light modelling software including Lighting Reality and Dialux, the model only considers the effect of solid structures so natural structures such as trees will be assessed qualitatively outside the model calculations.

7.2 Downlighters have been placed around the entrances to the residential properties and low-level directional wooden bollards along the footpaths onto the site, both lights are 2,700k. PIR floodlights are proposed adjacent to car parking spaces for safety and these are downward facing and 3000k.

7.3 The assessment currently considers 24 hours operation of the light fittings as a worst-case scenario.

Ecology Receptors

7.4 The ILP Guidance Note 08/23 specifies that acceptable lux limits should be used to assess the impact of lighting upon ecological species including bats. Therefore impacts will be considered significant where predicted vertical illuminance levels exceed 0.4 lux vertically and 0.2 lux horizontally. The results of this assessment can be found in Table 7.1 below.

Table 7.1: Ecology Receptor Results

Receptor	Predicted model vertical illuminance
Eco 1	0.03
Eco 2	0.00
Eco 3	0.00
Eco 4	0.00
Eco 5	0.02
Eco 6	0.00
Eco 7	0.00
Eco 8	0.00
Eco 9	0.01
Eco 10	0.01

7.5 The results show that lux levels along the woodland surrounding the development will be below 0.4 lux vertically, the lighting levels in the contour plot in **Appendix B** also show that the 0.2 lux horizontal line will not reach any of the ecologically sensitive spaces, therefore lighting is not anticipated to have a significant impact on any light-sensitive species using this space.

SkyGlow

7.6 The model has been used to calculate the predicted Upward Lighting Ratio (ULR) of the proposed external lighting scheme. Model outputs predict a sky glow figure (ULR) of 0.0%. As illustrated in Table 4.2, the ILP sky glow limitation for an area classified as Environmental Zone E2 is 2.5% ULR. As such the indicative lighting scheme meets the ILP sky glow limitations and is therefore not considered to result in detrimental impacts on the dark sky landscape.

8.0 CONCLUSIONS

8.1 MEC Consulting Group Ltd (MEC) has been commissioned by Castle Properties Ltd to undertake a Lighting Impact Assessment for a proposed residential development at Land to the West of Smock Alley, South of Little Haglands, West Chiltington.

8.2 Lux levels along the light sensitive ecological areas surrounding the development will be below 0.4 lux therefore lighting is not anticipated to have a significant impact on any light-sensitive species using this space.

8.3 The proposed lighting scheme will comply with all relevant British Standards and the Institution of Lighting Professionals lighting guidelines and will serve to ensure safety and security of all areas of the development can be effectively maintained.

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APPENDICES



APPENDIX A

N

W E

S

0 25m 50m

Boundary Details

Application Site Boundary Line

Application Site Ownership Line

Site Area

2.49 ha

Old Haglands

Wayfarers

Little Haglands

Haglands Lane

Existing Woodland

Sunrays Cottage

Harptree

Woodstock

Little Meadow

Lavender Cottage

SMOCK ALLEY

Apple Tree

REV.	DATE	REVISIONS:	BY
A	22/09/20	Little Haglands footprint adjusted.	NL
B	06/08/21	Red line adjusted and blue line added.	AL
C	11/05/22	Blue line adjusted.	AL

STATUS: **Planning**

CLIENT:	Castle Properties Ltd	PROJECT:	Smock Alley, Haglands Lane, Chiltington
SCALE:	1:1250 (A3 ORIGINAL)	DRAWING:	Location Plan
DRAWN: NL DATE: 28.11.19	17311	S101	C

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REV.	DATE	REVISIONS:	BY
A	29.03.21	Topographical survey info for northern side of the site added. Tree information added. Client / Consultants comments added.	AL
B	13.05.21	Transport Consultant comments.	AL
C	04.06.21	House's footprints updated.	AL
D	06.08.21	Red line updated and blue line added.	AL
E	28.01.22	Planning Officer comments.	AL
F	11.04.22	Planning Officer comments.	AL
G	16.06.22	Planning Officer comments.	RPO
H	26.04.23	Horsham District Council's comments and water treatment plant added.	AL
J	13.11.24	Amended cycle store information	PG

STATUS: **Planning**

CLIENT:	Castle Properties Ltd.	PROJECT:	Smock Alley, Haglands Lane, Chiltington
SCALE:	1:500 (A1 ORIGINAL)	DRAWING:	Site Plan
DRAWN: AL DATE: 15/03/21	17311	P101	J

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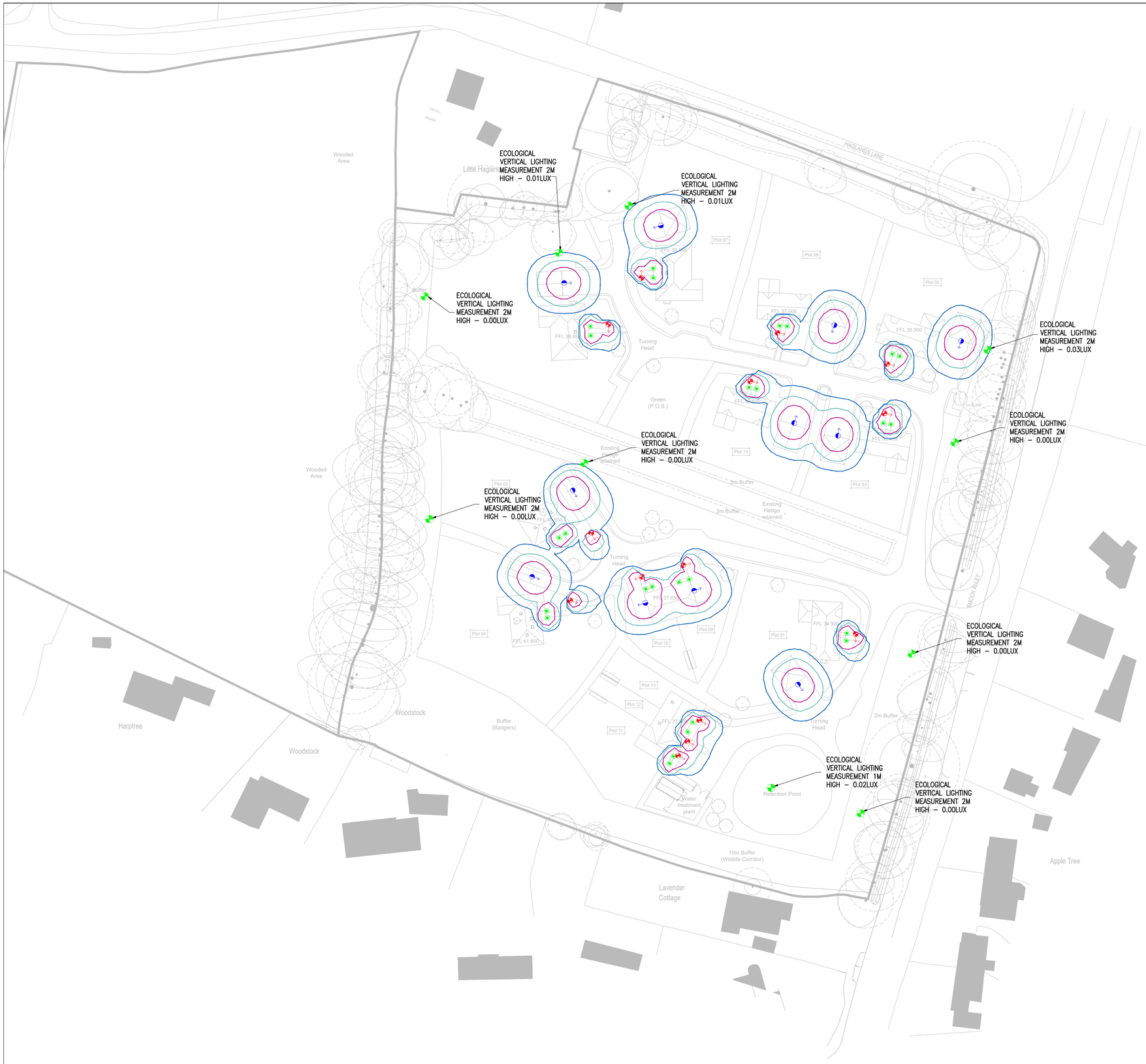
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APPENDICES



APPENDIX B



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NOTES:

1. DO NOT SCALE THIS DRAWING.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH REPORT 29875-LIGH-0401

LIGHTING KEY

QUANTITY 11 — PROPOSED FLOODLIGHT FROM TOP OF GARAGE UNIT OR 3m
LANTERN MANUFACTURER: COLLINGWOOD LIGHTING
LANTERN NAME: FL01 CS 30
LAMP TYPE: LED 3000K WARM WHITE
WATTAGE: 10W
OPTIC: 1.10KLM

QUANTITY 14 — PROPOSED LIGHTING BOLLARD
HEIGHT: 1.2m
LANTERN MANUFACTURER: COLLINGWOOD LIGHTING
LANTERN NAME: WOODEN BESPOKE BOLLARD BL03
LAMP TYPE: LED 2700K WARM WHITE
WATTAGE: 5W
OPTIC: 0.16KLM

QUANTITY 26 — PROPOSED DOWNLIGHT ADJACENT TO DOOR
COLUMN HEIGHT: 2m
LANTERN MANUFACTURER: COLLINGWOOD LIGHTING
LANTERN NAME: WL075
INCLINATION: 0°
LAMP TYPE: LED 2700K WARM WHITE
WATTAGE: 6W
OPTIC: 0.51KLM

5.00 LUX ISO CONTOUR
1.00 LUX ISO CONTOUR
0.20 LUX ISO CONTOUR

QUANTITY 10 — ECOLOGICAL LIGHT MONITORING LOCATION

REV:	AMENDMENTS:	DRN:	CHK:	APP:	DATE:
-	FIRST ISSUE	NA	CA	RM	14.07.25

PROJECT:
LAND TO THE WEST OF SMOCK ALLEY, WEST CHILTINGON

DRAWING TITLE:
LIGHTING DESIGN

CLIENT:
CASTLE PROPERTIES LTD

DRAWING NUMBER:
29875_02_100_01

REVISION:	SHEET SIZE:	SCALE:
-		1:500

STATUS:
FOR INFORMATION / APPROVAL

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