



MEC
Consulting Group

LIGHTING



**Horncastle House Nursing Home, Plawhatch
Lane, Sharpthorne**
Lighting Impact Assessment
April 2025

Horncastle House Nursing Home, Plawhatch Lane, Sharpthorne

Lighting Impact Assessment

April 2025

REPORT REF: 29528-LIGH-0401

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REGISTRATION OF AMENDMENTS

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APPENDICES

- A. PROPOSED SITE LAYOUT
- B. LUX CONTOUR PLOT

1.0 INTRODUCTION

General

- 1.1 MEC Consulting Group Ltd (MEC) has been commissioned by Splendid Projects Limited to undertake a Lighting Impact Assessment for a proposed care home development at Horncastle House Nursing Home, Plawhatch Lane, Sharpthorne. A site location plan is provided in Figure 2.1, and a site layout plan is provided in **Appendix A**.
- 1.2 This report assesses, in terms of artificial lighting, the likely effects of the proposed development. The lighting assessment quantitatively assesses the potential effects of the proposed lighting on surrounding sensitive receptors and if required considers possible mitigation measures to reduce potential light spill into neighbouring properties, ecological receptors, and upward light (which can create sky glow). An indicative illuminance lux plot for exterior areas of the proposed development is included in **Appendix B**.

Disclaimer

- 1.3 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.
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2.0 SITE DESCRIPTION

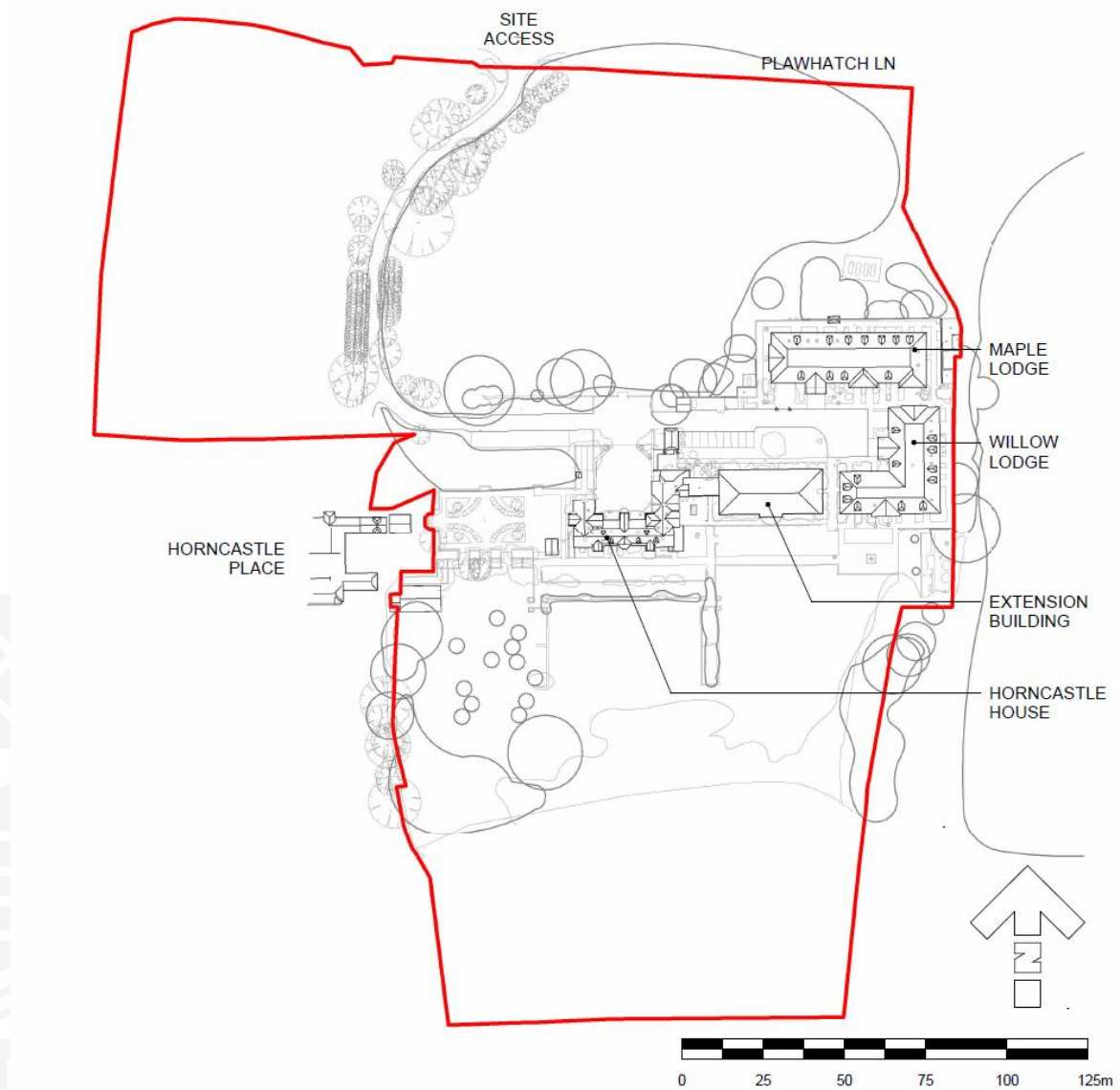
Existing Site

2.1 The proposed site is currently comprised of Horncastle House Nursing Home and grounds. The site is bound by:

- Plawhatch Lane to the north, with no major sources of light,
- Woodland to the east, with no major sources of light,
- Open countryside to the south, with no major sources of light, and;
- Horncastle Place to the west with no known 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 governments 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 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?

Mid Sussex District Plan 2014-2031

- 3.4 This report considers policy DP29: Noise, Air and Light Pollution of the Mid Sussex District Plan 2014-2031 which states the following with regards to lighting:
- 3.5 "The environment, including nationally designated environmental sites, nationally protected landscapes, areas of nature conservation or geological interest, wildlife habitats, and the quality of people's life will be protected from unacceptable levels of noise, light and air pollution by only permitting development where:

Light pollution:

- *The impact on local amenity, intrinsically dark landscapes and nature conservation areas of artificial lighting proposals (including floodlighting) is minimised, in terms of intensity and number of fittings;*
- *The applicant can demonstrate good design including fittings to restrict emissions from proposed lighting schemes.”*

Relevant British Standards and Design Mitigation

3.6 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

3.7 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 intrusion, source intensity and upward light spill/sky glow; and
- If required, consider possible mitigation measures to reduce potential light intrusion into neighbouring properties and 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 into windows (the spilling of light beyond the boundary of a property which may cause a nuisance to others).
- 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 to 4.3.

Table 4.2: Maximum values of vertical illuminance on properties

Application conditions	Environmental Zone				
	E0	E1	E2	E3	E4
Pre-curfew (07:00-23:00)	n/a	2lx	5lx	10lx	25lx
Post-Curfew (23:00-07:00)	n/a	<0.1 lx*	1lx	2lx	5lx
*Note: If the installation is for public (road) lighting then this may be up to 1 lx.					

- 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 4.3 below

Table 4.3: 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 the site visit, a desktop survey of the site and having liaised with the project team the following light-sensitive receptors have been identified;

- Residential
- Ecological

Figure 6.1: Ecological and Residential Receptor Locations



(Green = Ecological, Yellow = Residential)

Residential receptors

6.2 The following residential properties surrounding the site have been identified and assessed based on their proximity to the site and the potential impact of the proposed lighting on them. Each receptor has been modelled at 4.0m to represent a first-floor bedroom. The locations of these receptors are visually presented in Figure 6.1 below as well as in Table 6.1.

Table 6.1: Residential Receptor Locations

Receptor	Location Description	Height (m)	Environmental Zone (ILP)
R1	Maple Lodge	4	E2
R2	Maple Lodge	4	E2
R3	Maple Lodge	4	E2
R4	Horncastle Place	4	E2
R5	Horncastle Place	4	E2

Ecological receptors

- 6.3 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.
- 6.4 There is potential that a number of bat species are anticipated to use the treeline surrounding the site. Therefore, ecology receptors have been located along the woodland 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	Woodland within northern part of site	2
Eco 2	Woodland within northern part of site	2
Eco 3	Woodland within northern part of site	2
Eco 4	Woodland east of site boundary	2
Eco 5	Woodland east of site boundary	2
Eco 6	Woodland east of site boundary	2
Eco 7	Woodland east of site boundary	2
Eco 8	Trees south of Horncastle House	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 The assessment currently considers 24 hours operation of the light fittings as a worst-case scenario.

Light Intrusion Residential Receptors

- 7.3 Table 7.1 compares the modelled light intrusion at the surrounding residential properties with the relevant ILP environmental zone criteria as specified in Tables 4.1 and 4.2. For this assessment based upon the site location and survey results, this will be Environmental Zone E2 – Rural Area of Low-level brightness with the criteria being 5 lux pre curfew and 1 lux post curfew.

Table 7.1: Residential Receptor Results

Receptor	Predicted model vertical illuminance	ILP Pre-curfew criteria (Lx)	ILP Post Curfew Criteria (Lx)
R1	0.02	5	1
R2	0.02	5	1
R3	0.02	5	1
R4	0.00	5	1
R5	0.00	5	1

- 7.4 The results in the table above show that with the proposed development in place, lighting from the site will not exceed the recommended ILP pre- and post-curfew criteria.

Ecology Receptors

- 7.5 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. The results of this assessment can be found in Table 7.2 below.

Table 7.2: Ecology Receptor Results

Receptor	Predicted model vertical illuminance
Eco 1	0.01
Eco 2	0.01
Eco 3	0.01
Eco 4	0.01
Eco 5	0.04
Eco 6	0.01
Eco 7	0.04
Eco 8	0.20

- 7.6 The results show that lux levels along the woodland surrounding the development will be below 0.4 lux vertically, therefore lighting is not anticipated to have a significant impact on any light-sensitive species using this space.

SkyGlow

- 7.7 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 4.3, 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 Splendid Projects Limited to undertake a Lighting Impact Assessment for a proposed care home development at Horncastle House Nursing Home, Plawhatch Lane, Sharpthorne.
- 8.2 With the proposed development in place, lighting from the site will not exceed the recommended ILP pre- and post-curfew criteria.
- 8.3 Lux levels along the light sensitive ecological areas surrounding the development will be below 0.4 lux vertically, therefore lighting is not anticipated to have a significant impact on any light-sensitive species using this space.
- 8.4 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.

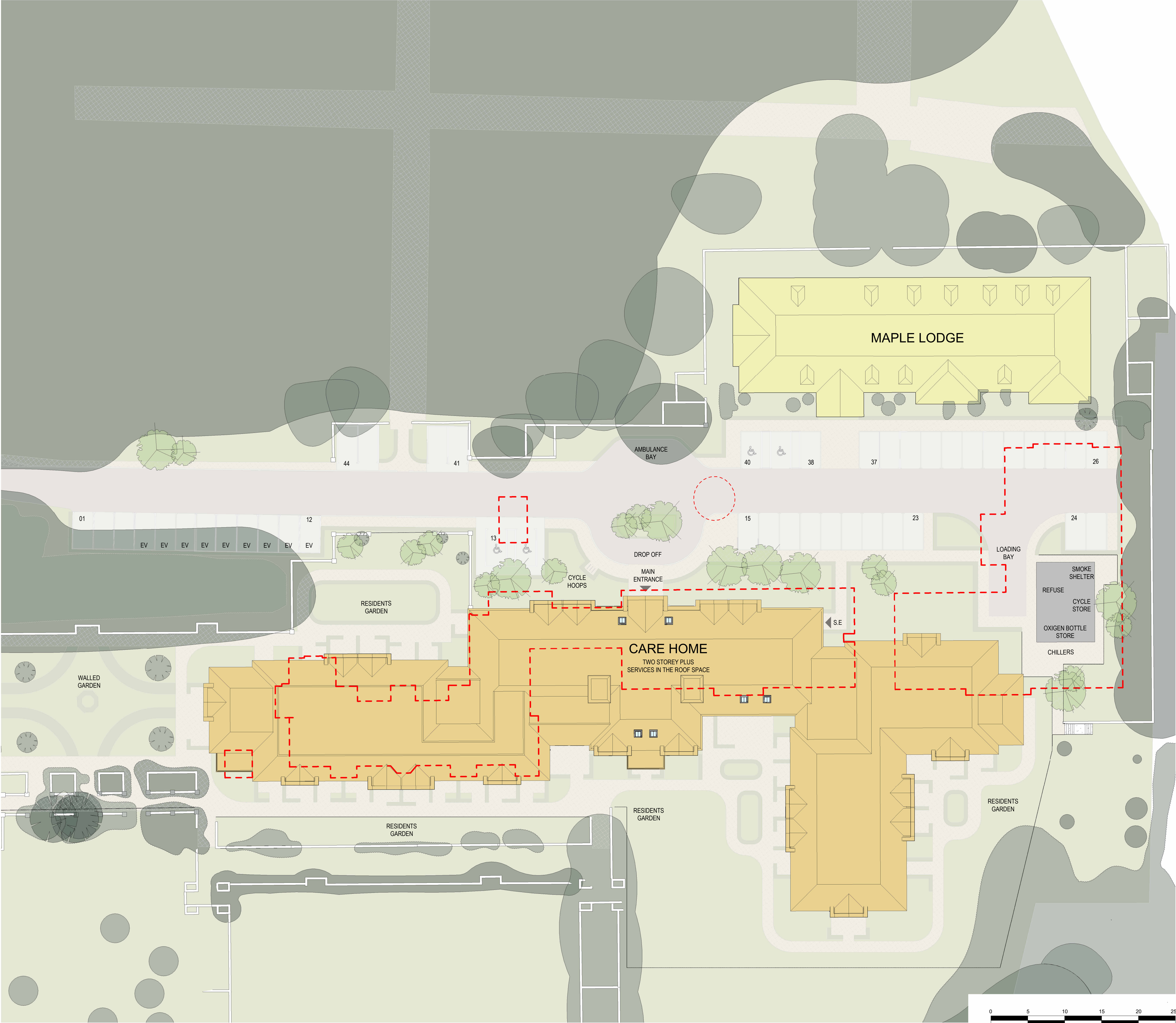


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APPENDICES



APPENDIX A

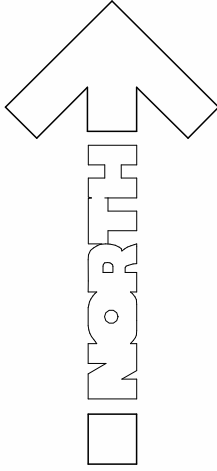


SCHEDULE OF ACCOMMODATION	
SITE AREA BOUNDARY	5.61 Ha / 13.86 acres
CARE HOME	
GROUND FLOOR	40 BEDROOMS
FIRST FLOOR	40 BEDROOMS
TOTAL	80
GROSS INTERNAL FLOOR AREA	
GROUND	2,050 m ²
FIRST	2,035 m ²
SECOND	405 m ²
TOTAL	4,495 m ²
SPACE PER RESIDENT	56.2 m ²
PARKING (INCL. 4 DISABLED BAYS)	44

--- OUTLINE OF EXISTING BUILDINGS TO BE DEMOLISHED

KEY:

- PROPOSED TREES
- EXISTING TREES
- REMOVED TREES



P8	ISSUED FOR COORDINATION	MD	PK	20/02/2025
P7	DESIGN REVIEW PANEL	MD	PK	12/12/2024
P6	ISSUED FOR COMMENTS	MD	PK	28/06/2024
P5	ISSUED FOR COMMENTS	MD	PK	30/05/2024
P4	ISSUED FOR COMMENTS	SR	MD	21/02/2024

Rev.	Description	Author	Checked	Date
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Client	SPLENDID HEALTHCARE
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Project	HORNCASTLE EAST GRINSTEAD
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Title	SITE LAYOUT	CAP no.	A
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scale	1 : 250	author	SR	chk'd	MD	date	21/02/2024	sheet size	A1
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For construction purposes dimensions shall not be scaled & figured dimensions must be verified on site before work commences.
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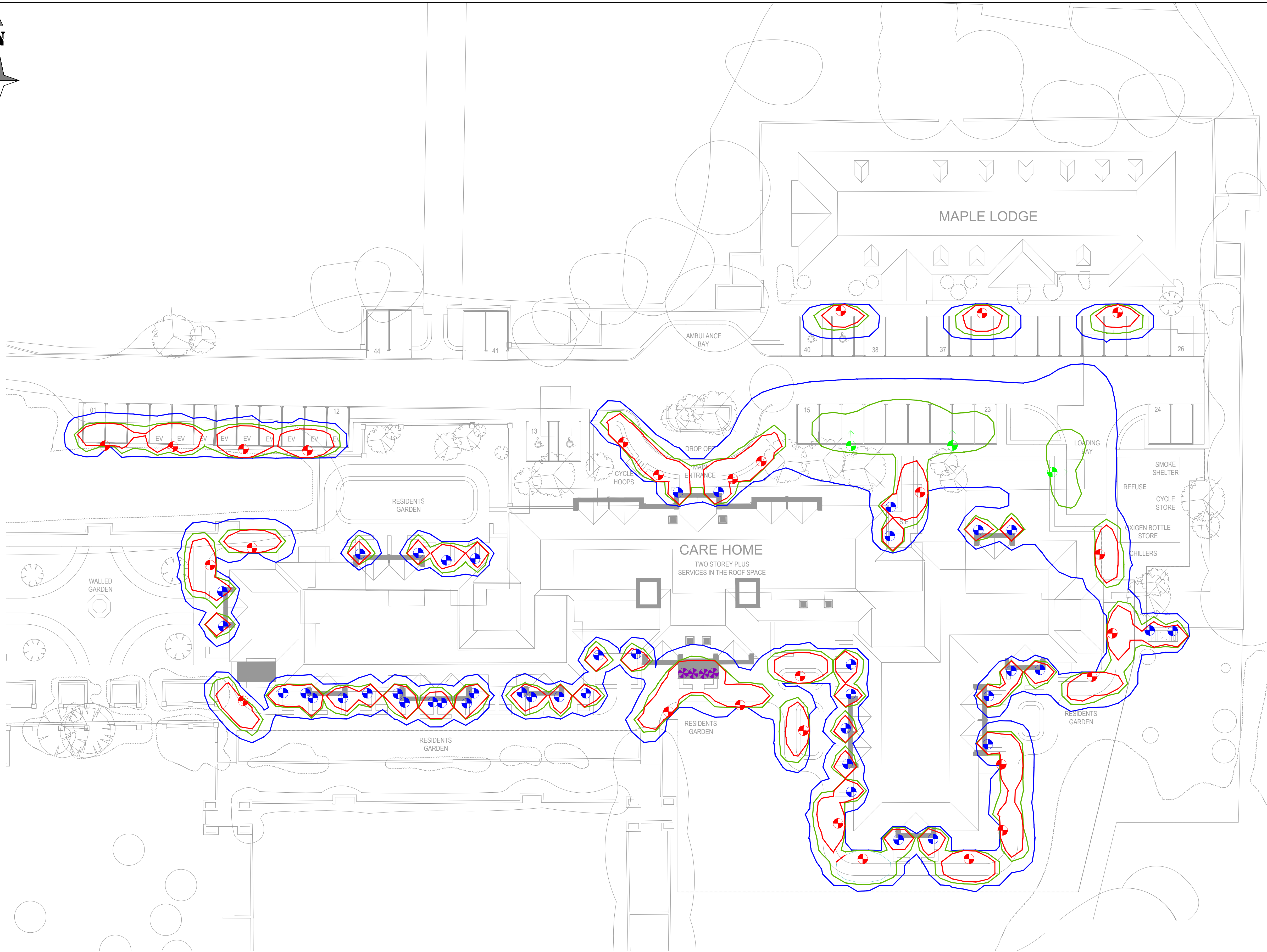
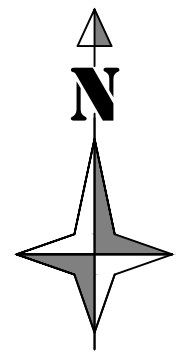


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APPENDICES



APPENDIX B



NOTES:

- DO NOT SCALE THIS DRAWING.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH REPORT 29528-LGH-0401.

LIGHTING KEY

PROPOSED LIGHTING COLUMN
COLUMN HEIGHT: 6m
PROJECTION: 0.3M POST TOP
LANTERN MANUFACTURER: THORN
LANTERN NAME: ISARO PRO
QUANTITY 3
INCLINATION: 0°
LAMP TYPE: LED 3000K WARM WHITE
OPTIC: 350mA 1.89KLM

PROPOSED LIGHTING BOLLARD
HEIGHT: 1.0m
LANTERN MANUFACTURER: THORN
LANTERN NAME: URBA BOLLARD
QUANTITY 27
LAMP TYPE: 4 LED 3000K WARM WHITE
OPTIC: 1050mA 1.01KLM

PROPOSED WALL LIGHT
HEIGHT: 2.0m
LANTERN MANUFACTURER: THORN
LANTERN NAME: CESAR
QUANTITY 42
LAMP TYPE: LED 3000K WARM WHITE
OPTIC: 330 LUMENS

PROPOSED DOWN LIGHT ATTACHED TO
CEILING ON ENTRANCE
HEIGHT: 2.0m
LANTERN MANUFACTURER: THORN
LANTERN NAME: D-CO MAXI
QUANTITY 4
LAMP TYPE: LED 3000K WARM WHITE
OPTIC: 661 LUMENS

10.0 LUX ISO CONTOUR
5.0 LUX ISO CONTOUR
1.0 LUX ISO CONTOUR

-	FIRST ISSUE	CA	NA	TR	30.04.25
REV:	AMENDMENTS:	DRN:	CHK:	APP:	DATE:

PROJECT: HORNCASTLE HOUSE
NURSING HOME,
PLAWHATCH LANE, SHARPTHORNE

DRAWING TITLE: LUX CONTOUR
PLOT

CLIENT: SPLENDID PROJECTS LIMITED

DRAWING NUMBER: 29528_02_100_01

REVISION: - SHEET SIZE: A1 SCALE: 1:250

STATUS: FOR INFORMATION / APPROVAL

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