

SOUTH WOKINGHAM SDL

OVERARCHING LIGHTING STRATEGY

MILLER HOMES AND KIER VENTURES

13 FEBRUARY 2025



Abley Letchford Partnership Limited
3 Tealgate
Charnham Park
Hungerford
RG17 0YT

T: 01488 684390
E: contact@alpce.co.uk
W: www.alpce.co.uk

Quality Management:

Prepared by:	Rebecca Fletcher
Authorised by:	Leigh Abley
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1.0 Introduction

Context

- 1.1. This report has been prepared by Abley Letchford Partnership Ltd, on behalf of Miller Homes and Kier Ventures, and seeks to address Condition 24 of Planning Permission 191028 in respect to the provision of an overarching external lighting strategy for the overall development and reads as follows:-

i) The first application pursuant to reserved matters shall be accompanied by an Overarching External Lighting Strategy. The Strategy will balance the safety of the public realm with ecological and amenity considerations, referencing current guidance on lighting mitigation and establishing how light spill on habitats used by foraging and commuting bats will be avoided.

ii) The reserved matters for each phase of the development shall include detailed lighting scheme in accordance with the Overarching External Lighting Strategy.

iii) Lighting of the public realm shall be installed in accordance with the approved details before the area it will illuminate comes into use.

Reason: to ensure an appropriate balance is achieved between the safety of the public realm and avoiding detriment to wildlife or residential amenity in accordance with NPPF Section 15 (Conserving and Enhancing the Natural Environment); Core Strategy policies CP1, CP3, CP7, CP21; and Managing Development Delivery Local Plan policies TB21 & TB23.

- 1.2. The Site is located in South Wokingham, approximately 1.5km southeast of Wokingham town centre, with Waterloo Road to the east, a railway line to the north and Finchampstead Road beyond Phase 3 to the far west (The Site).
- 1.3. The Site is approximately centred on OS grid reference 482511E, 167800 N.
- 1.4. The site is open agricultural fields with established hedge and tree lined boundaries.

Development Proposals

- 1.5. The SDL site is an urban extension of Wokingham in Berkshire and is bisected by an existing railway line linking Wokingham and Bracknell. The SDL proposals comprise of approximately 2,500 homes, a new South Wokingham Distributor Road and other facilities such as two primary schools and a community centre.



- 1.6. The first phase of the development is named Montague Park and is located at the northeast of the SDL area, to the north of the railway line. The parcel was approved by Wokingham Borough Council in 2012 (WBC Planning Reference: O/2010/1712) and included approximately 620 dwellings which have since been constructed and occupied. A section of road between Montague Park heading south over the railway line to a new four arm roundabout with Waterloo Road was subsequently approved in 2019 (WBC Planning Reference: 172934) and constructed. The road over the railway line is named William Heelas Way and the new roundabout junction with Waterloo Road is known as the Eastern Gateway roundabout.
- 1.7. Phase 2a (WBC Planning Reference: 190914) and Phase 2b of the SDL (WBC Planning Reference: 191068) are both located south of the railway line and include proposals for 215 and 1,434 dwellings respectively.
- 1.8. Vehicular access to the site will primarily be via the new South Wokingham Distributor Road routing east to west through the larger Phase 2b parcel and will ultimately connect Finchampstead Road at the west to the Eastern Gateway roundabout.
- 1.9. A copy of the Site-Wide Masterplan is provided at **Appendix 1**.
- 1.10. The development proposals will require a system of artificial lighting for safety, security and amenity during the hours of darkness and low light levels. The Lighting Strategy shall be applied to ensure the potential for obtrusive light is suitably minimised in accordance with the predetermined obtrusive light limits within the E3 Environmental Zone in which the Site is located.

Baseline Ecology

- 1.11. Bat activity surveys undertaken for the Site identified at least nine species of bat (barbastelle, brown long-eared bat, common pipistrelle, Leisler's bat, common Myotis species, Nathusius' pipistrelle, noctule, serotine and soprano pipistrelle) mainly associated with hedgerows and woodland edges.
- 1.12. Of these brown long-eared bat, Myotis species and barbastelle are known to avoid illuminated foraging and commuting routes. Key foraging areas identified include the edge of the Woodland near Ludgrove School LWS and Emm Brook. Activity recorded during activity surveys does not suggest that significant roosts are present within the woodland habitat on site.
- 1.13. The Lighting Strategy takes cognisance of these areas used by bats. This can be achieved through the implementation of a carefully planned and implemented lighting design in accordance with the guidance from Bat Conservation Trust and Institution of Lighting Professionals.

2.0 Standards and Policy

2.1. This chapter provides a review of policy relevant to the assessment and sources of information.

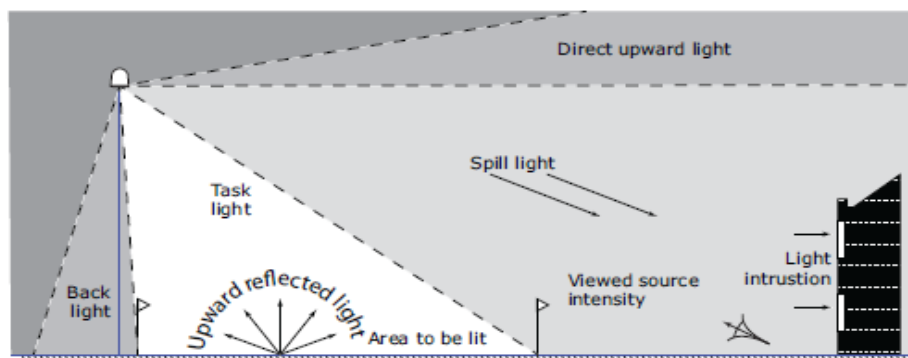
National Policies

- Clean Neighbourhoods and Environment Act 2005 gives local authorities and the Environment Agency additional powers to deal with a wide range of issues by classifying artificial light emitted from defined premises as a statutory nuisance.
- The CNEA 2005 amended paragraph 79(1)(fb) of the Environmental Protection Act 1990 to extend the statutory nuisance regime to include light nuisance stating the following: ‘artificial light emitted from premises so as to be prejudicial to health or a nuisance’.
- Guidance produced on Sections 101 to 103 of the CNEA 2005 by DEFRA (DEFRA, April 2006) extends the duty on local authorities to ensure their areas are checked periodically for existing and potential sources of statutory nuisances including nuisances arising from artificial lighting. Local authorities must take reasonable steps to investigate complaints of such nuisances from artificial light. Once satisfied that a statutory nuisance exists or may occur or recur, local authorities must issue an abatement notice (in accordance with section 80(2) of the Environmental Protection Act 1990), requiring that the nuisance cease or be abated within a set timescale.
- The National Planning Policy Framework (2023) encourages good design with planning policies and decisions aiming to limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation; and
- Planning Practice Guidance– Light Pollution, gives advice on how to consider light within the planning system:
 1. What light pollution considerations does planning need to address?
 2. What factors can be considered when assessing whether a development proposal might have implications for light pollution?
 3. What factors are relevant when considering where light shines?
 4. What factors are relevant when considering when light shines?
 5. What factors are relevant when considering how much the light shines?
 6. What factors are relevant when considering possible ecological impacts of lighting?
 7. What other information is available that could inform approaches to lighting and help reduce light pollution?

Local policies

- 2.2. The most relevant Local Authority policy that should be considered in relation to the Proposed Development is outlined within Wokingham Borough Council's Street Lighting and Illuminated Signs document, which forms part of the Highway Maintenance Management Plan (July 2019).
- 2.3. Reference is also drawn from Core Policy CP7 (Core Strategy) and TB23 (Managing Development Delivery Local Plan MDDL) in respect to biodiversity.

ILP Guidance Notes for the Reduction of Obtrusive Light - GN01:2021



- 2.4. The lighting strategy shall be prepared utilising the above guidance note which aims to limit the potential for obtrusive light to arise. The extract below, illustrates the types of obtrusive light to be considered.
- 2.5. It is recommended local planning authorities specify the environmental zones given in the table below for exterior lighting control within their development plan.

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, village 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

ILP Bats and Artificial Lighting in the UK – GN08:2023

- 2.6. The Lighting Strategy shall be prepared utilising the above guidance notes which is intended to raise awareness of the impacts of artificial lighting on bats, and mitigation is suggested for various scenarios.

- 2.7. The guidance notes suggest when selecting luminaires, the following should be considered:
- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent source should not be used.
 - LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 - A warm white spectrum (<2700Kelvin) should be adopted to reduce blue light component.
 - Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
 - Column height should be carefully considered to minimise light spill.
 - Only luminaires with an upward light ratio of 0% and with good optical control should be used (Refer to Guidance for the Reduction of Obtrusive Light).
 - Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
 - Any external security lighting to properties should be set on motion-sensors and short (1 minute) timers.
 - As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

British Standards

- 2.8. BS 5489-1:2020 – Code of Practice for the Design of Road Lighting – Lighting of Roads and Public Amenity Areas, gives recommendations for the design of lighting for all types of highway and public thoroughfare, including those specifically for pedestrians and cyclists.
- 2.9. This standard provides a solid point of reference for lighting designs but is often supplemented by local highway authority criteria.

Wokingham Borough Council Specification

- 2.10. Lighting on streets to be adopted by Wokingham Borough Council shall be designed in accordance with Wokingham Borough Council's specifications as listed below.
- 2.11. The standard street lighting specification (including columns height) for this development project is contained within Wokingham BC Street Lighting - Design Process, Requirements and Specification Guide - V2 (November 2013), and supporting Appendices.
- 2.12. These documents, specifically Appendix A – V11 (June 2023) provide the pre-requisite column and luminaire types based upon the appropriate road type.
- 2.13. Should amendments be made to the Wokingham Borough Council specification in the future, these shall take precedence over the strategy presented here.



3.0 Sensitivity Receptors

- 3.1. To the south of the proposed development, the area mainly consists of residential dwellings within rural areas to the south. To the north, the area is built up and streets are currently lit by systems of street lighting which are owned and maintained by Wokingham Borough council. Waterloo Road and Easthampstead Road are unlit in the main. Sensitive receptors to light are surrounding residential properties and local wildlife.
- 3.2. The principal of the lighting design shall be sympathetic to the sensitive receptors identified; the lighting design will accord with the criteria set out below as well as other relevant guidance. Therefore, the existing illumination levels will not be affected.
- 3.3. Occupied Residential – The Environmental Zone for the site and immediate surrounding is considered to be E3: Suburban, Medium district brightness – Well inhabited rural and urban settlements, small town centres of suburban locations. (ILP Guidance Notes for the Reduction of Obtrusive Light - GN01:2020)
- 3.4. Given the considered Environmental Zone E3. Table 3 (Maximum value of vertical illuminance on properties) of the ILP Guidance Notes for the Reduction of Obtrusive Light, identifies the recommended maximum values which are summarised below:

Pre Curfew (typically 2300hrs)

- Maximum value of vertical illuminance on properties – 10 Lux

Post Curfew

- Maximum value of vertical illuminance on properties – 2 Lux

4.0 Lighting Strategy

- 4.1. This section defines the requirements for a lighting design to ensure it is fit for purpose and adheres to the sensitivity receptors attributed to the site.
- 4.2. The Lighting Strategy has been prepared to ensure the lighting design associated with the development site is compliant with relevant British Standards, Local Authority Specification and ILP Lighting guidance.

To minimise environmental impacts, hedgerows and watercourses (both small and large) should not be lit unless necessary. Where lighting is unavoidable, it should be designed according to the following key prescriptions: -

- Identify key points in the landscape where artificial light at night disrupts spatial connectivity of dark areas and reduce or remove lighting in these areas if possible.
 - Maintain and create unlit 'dark corridors' between habitat patches where possible.
 - Avoid use of, and remove where possible, luminaires that waste light by emitting vertically or horizontally – ensure that lighting is designed with minimum spill and is downward facing and directional and that retained hedges and watercourses are not lit.
 - Reduce as much as possible the intensities of light emitted from luminaires.
 - Avoid use of white and blue light wherever possible. The broader the spectrum of light that a lamp produces the wider the range of organisms it is likely to affect.
 - LEDs should generate colour temperatures of between 2700K (kelvin) and 2000K. In coordination with the Highway Authority, alternative colourations beyond warm white should be considered such as those in the red spectrum, as part of any emerging Reserved Matters submissions.
 - Avoid use of lamps that emit in the ultraviolet (UV) range. UV light is not seen by human`s but many animals see UV and it may disrupt their natural behaviour.
- 4.3. This Section and the supporting Lighting Strategy Plan (Appendix 2) established the principal criteria for the external lighting design for the proposed residential development areas located on land and the proposed South Wokingham Distributor Road. Expanding on this, five Lighting Zones have been identified for separate consideration as depicted on drawing A389-030 (Appendix 2) and summarised below. Main areas requiring lighting as overleaf.
 - 4.4. Lighting provision within the Neighbourhood Centre is subject to adjustment through the separate Design Brief required under Condition 5 of the Outline Permission.
 - 4.5. Subsequent Reserved Matters Application should be supported by a parcel specific Lighting Design Statement and Lighting Illuminance Contour Plans (both horizontal and vertical) to confirm compliance with this Strategy.



Zone 1: General Residential Areas including secondary and tertiary Roads (Green Areas)

- 4.6. Lighting for the 'General Residential' areas will reflect national and local standards for lighting in residential areas in accordance with British Standard BS EN 5489 Pt 1 2020. Shared surface and private drives will be unlit in the main.
- 4.7. Particular attention should be paid to residential areas near existing woodland, where the extent of adjacent Open Space is limited in depth.
- 4.8. Specific assessment and consideration should be given to how these areas interface, so that obtrusive light spill is minimised as far as practical.

Zone 2: Parcel Open Space (Yellow Areas)

- 4.9. The Parcel Open Space comprise areas apart from the dwelling and estate roads which will include the attenuation basins. The open space will be left predominantly unlit for reasons of ecology. Lighting adjacent to this zone shall be carefully designed to minimise the light pollution and wildlife disruption to the open space.

Zone 3: SANG (Grey Areas)

- 4.10. The SANG and the access footpaths will be left predominantly unlit for reasons of ecology and to ensure bats are not dissuaded. For the public safety especially in dark winter months, designated access footpaths will be illuminated to a lower level than that of the general residential area (zone 1) through the use of "wildlife friendly" luminaire configurations, low level lighting bollards are likely be proposed.

Zone 4: Secondary Road with Bus Route (Blue Areas)

- 4.11. Lighting for the 'Main Bus Route', which comprises a pedestrian / cycle / bus corridor alongside the South Wokingham Distributor Road and the R10/14 Link Road, would be to a higher illuminance level than that of the residential roadways.
- 4.12. Specific assessment and consideration should be given to how the new road bisects the existing hedgerow, so that obtrusive light spill is minimised as far as practical.

Zone 5: SWDR Land (Cyan Areas)

- 4.13. Lighting for the SWDR will be designed by WBC's designer.

Zone 1: General Residential Areas including secondary and tertiary Roads - Lighting Principles

	Description
Light Source	LED
Luminaire Type	Philips Luma Gen2 Micro BGP702 DM10 luminaires, 10 LEDs (in accordance with Wokingham Borough Council Specification)
CCT of Light Source (Kelvin)	Max of 2700K (Warm White)
Luminaire Tilt	0 degree
Mounting Arrangement	Post top at 6m
Switching regime	In accordance with Wokingham Borough Council Specification
Lighting Standard	BS 5489-1:2020 – Code of practice for the design of road lighting
Lighting Class	Max of P5 (Average: 3.0 – 4.5 Lux; Minimum 0.6Lux) (S/P ratio not applied in line with BSEN5489-1:2020)
Constraints/Restrictions	Final column heights and luminaire configurations will be dependent on lighting design requirements but shall at all times align with Wokingham guidance

Zone 4: Secondary Road with Bus Route - Lighting Principles

	Description
Light Source	LED
Luminaire Type	Philips Luma Gen2 Micro BGP702 DM10 luminaires, 20 LED (in accordance with Wokingham Borough Council Specification)
CCT of Light Source (Kelvin)	Max of 2700K (Warm White)
Luminaire Tilt	0 degree
Mounting Arrangement	Post top at 6m.
Switching regime	In accordance with Wokingham Borough Council Specification
Lighting Standard	BS 5489-1:2020 – Code of practice for the design of road lighting
Lighting Class	Max of P4 (Average: 5.0 - 7.5 Lux; Minimum 1.0Lux) (S/P ratio not applied in line with BSEN5489-1:2020)
Constraints/Restrictions	Final column heights and luminaire configurations will be dependent on lighting design requirements but shall at all times align with Wokingham guidance

- 4.14. The lighting principles for adoptable remote “Footpaths and Cycleways” will be the same as estate roads apart from hinged ‘raise and lower’ columns being provided.



5.0 Conclusion

- 5.1. The Lighting Strategy outlines the criteria for the lighting design of the Proposed Development to ensure that the lighting is fit for purpose, whilst maintaining sensitivity towards the environment through compliance with relevant British Standards and Guidance.
- 5.2. To ensure that the potential for obtrusive light is minimised, it is necessary to restrict the mounting heights of the luminaires, tilt angle, colour temperature and lumen output of exterior light sources to those specified in **Section 4**.
- 5.3. The exterior lighting outlined in the lighting strategy shall comply with the requirements for an E3 Environmental Zone as per BS 5489-1:2020 unless otherwise agreed with the Highway Authority.
- 5.4. Compliance with the lighting strategy will allow a safe and sensitive level of light for way finding and guidance at night, whilst limiting obtrusive light to a negligible level and in compliance with ILP GN01:2021 and GN08:2023, which seeks to reduce light spill onto sensitive boundaries.
- 5.5. Through careful design and mitigation, this Lighting Strategy ensures the lighting installation at the proposed development mitigates light spill to sensitive receptors, in accordance with British Standards, Guidance and Local Policy.



Appendices



Appendix 1 - Planning Drawings

Illustrative Masterplan

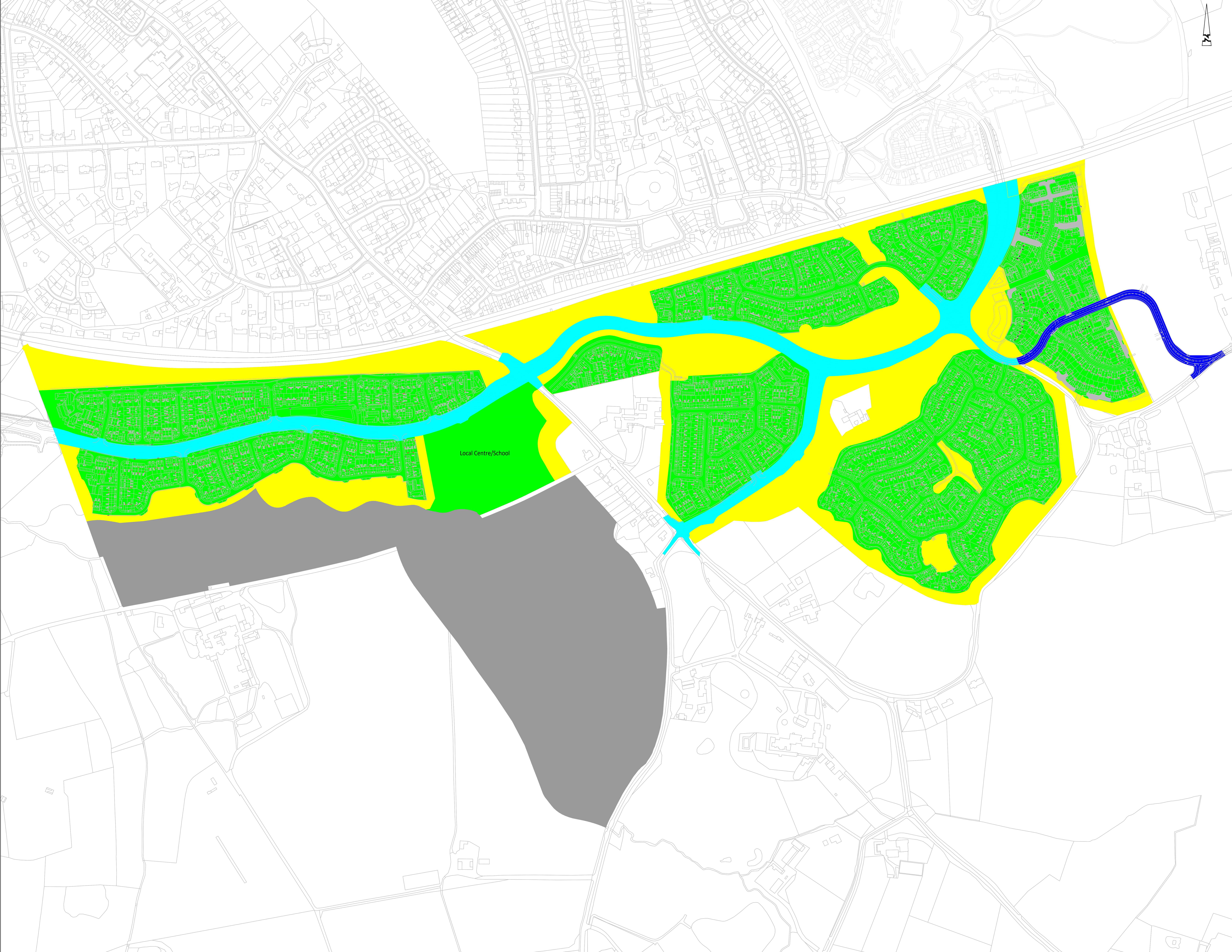


PHASE 2B, SOUTH WOKINGHAM – SITE-WIDE ILLUSTRATIVE MASTERPLAN



Appendix 2 - Lighting Strategy Plan

Illustrative Lighting Zoning Plan



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NOTES:
1. Do not scale from this drawing.
2. Refer to all other project drawings and supporting notes.

KEY:

- Zone 1 - General residential areas
- Zone 2 - Open spaces
- Zone 3 - SANG area
- Zone 4 - Secondary road with bus route
- Zone 5 - SWDR

P3	10.125	MASTERPLAN UPDATED	AS	RF
P2	05.124	EXTENT AMENDED	JA	KLW
P1	10.123	FIRST ISSUE	JA	KLW

3 Tealgate, Charnham Park
Hungerford, Berkshire RG17 0YT
www.alpce.co.uk Tel: 01488 684390

Client
**MILLER HOMES
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Project
SOUTH WOKINGHAM SDL

Title
**SITE WIDE STREETLIGHTING
STRATEGY**

Status
FOR INFORMATION

Scale 1:2000 @ A0	Date OCT 2023	Drawn KLW	Checked LPA
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