
Applied ENERGY
BUILDING SERVICES CONSULTING

J24070 PI Littlehampton

# EXTERNAL LIGHTING REPORT

Strategic MEP and Sustainability Consultants

10 Apr 2025

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# INTRODUCTION

**Background**

Applied Energy have been commissioned by Whitbread Plc to prepare this External Lighting Report to accompany the planning submission for the proposed redevelopment of the site to create a new Hotel.

This External Lighting Report to provide details of the proposed external lighting strategy.

**Site Description**

- Demolition of the vacant supermarket building
- Erection of a 130 bedroom, four storey with bedrooms at roof level Premier Inn hotel
- Provision of a restaurant facility available to hotel guests and members of the public.
- Creation of public realm areas to Anchor Springs, East Street and Avon Road and general landscape improvements.
- Retention of associated car park and all associated works

**Site Location**

The site comprises the vacant former Waitrose supermarket building to the south of Avon Road. The site also includes the vacant 95-space private car park to the north of Avon Road. It is understood that the retail unit has been vacant for over 8 years following the relocation of Waitrose to Rustington. The car park has also been out of use and inaccessible during this period

Site Location


Site Aerial

# POLICY AND PLANNING CONTEXT

**National Planning Policy Framework (NPPF) December 2024**

The NPPF sets out planning policies for England and how these are expected to be applied.

In determining planning applications, local planning authorities should expect new developments to:

- Comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- Take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

**Adoption Arun Local Plan 2011-2031 (July 2018)**

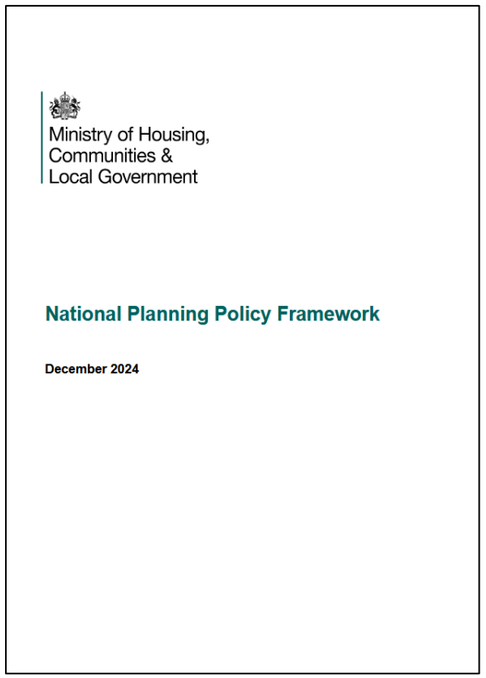
**Policy QE DM2**

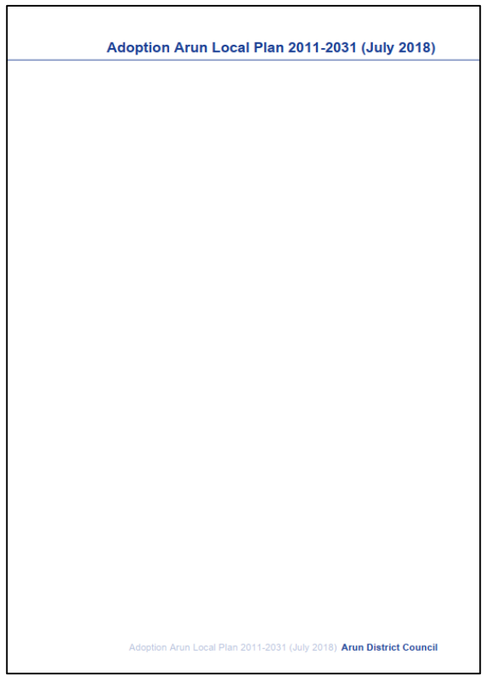
Light pollution

Planning permission for proposals which involve outdoor lighting must be accompanied by a lighting scheme prepared according to the latest national design guidance and relevant British Standards publications. Outdoor lighting schemes will be considered against the following criteria:

- No adverse impact on neighbouring uses or the wider landscape, particularly with regard the South Downs International Dark Sky Reserve designation;
- Light levels being the minimum required for security and working purposes;
- Minimising the potential glare and spillage; and
- The degree to which outdoor lighting can be powered by on-site renewable sources.

Where appropriate, the Local Planning Authority will seek to control the times of illumination



# DESIGN PHILOSOPHY

**Design Consideration**

The project is located within a busy urban area with residential housing within near proximity of the site. The external lighting strategy will be designed to provide safe access to and around the site and to deter theft and vandalism, whilst taking the local residential housing into account.

The scheme will be designed in accordance with the following principles:

- Sky Glow - To allow minimum upward light by utilising luminaires with 0% upward wasted light ratio.
- Glare - To allow minimum glare by utilising low glare luminaires in suitable positions and mounting heights.
- Light Trespass - To allow minimum light trespass to adjacent properties by utilising directional luminaires in suitable positions and mounting heights.

Any building feature lighting or signage is not covered part this report and will be detailed via a separate application.

**Standards and Illumination Levels**

The external lighting design will be provided in accordance with the following guidelines and documentations:

- CIBSE Lighting Guide 6 - The Outdoor Environment (2016)
- Secure by Design Guidance
- Table 2 (and its accompanying notes) of the ILP Guidance notes for the reduction of obtrusive light, 2021
- BS 5489-1:2020 Lighting of roads and public amenity areas
- BS EN 12464-2:2024 Light and lighting - Lighting of workplaces - Outdoor workplaces

The target illuminance levels for the various are will be designed to achieve the following:

- Car parking 10lux @ 0.25 Uniformity.
- Roadway with pedestrian path 20lux @ 0.4 Uniformity.
- Loading bay, turning area 50lux @ 0.4 Uniformity.

For all areas, a glare rating limit of 50 will be maintained.

| Zone | Surrounding | Lighting Environment | Examples |
|---|---|---|---|
| E0 | Protected | Dark (SQM 20.5+) | Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places |
| E1 | Natural | Intrinsically 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 |

Environmental Zones

| Environmental Zone | Sky Glow ULR [Max %] | Light Intrusion (into Windows) Ev [Lux] Pre-Curfew | Light Intrusion (into Windows) Ev [Lux] Post-Curfew | Luminaire Intensity Pre-Curfew | Luminaire Intensity Post-Curfew | Building Lumiance Pre-Curfew Average, L[cd/m2] |
|---|---|---|---|---|---|---|
| E0 | 0 | 0 | 0 | 0 | 0 | <0.1 |
| E1 | 0 | 2 | <0.1 | 2500 | 0 | <0.1 |
| E2 | 2.5 | 5 | 1 | 7500 | 500 | 5 |
| E3 | 5 | 10 | 2 | 10000 | 1000 | 10 |
| E4 | 15 | 25 | 5 | 25000 | 2500 | 25 |

Obtrusive Light Limitations for Exterior Lighting Installations - General Observers

ULR = Upward Light Ratio of the Installation is the maximum permitted percentage of luminaire flux that goes directly into the sky.

Ev= Vertical Illuminance in Lux - measured flat on the glazing at the centre of the window.

I= Light Intensity in Candelas (cd)

L= Luminance in Candelas per Square Metre (cd/m²)

Curfew = the time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of use of lighting applied by the local planning authority. If not otherwise stated - 23.00hrs is suggested.

# PROPOSAL

**Luminaire Types**

It is proposed that the following luminaire types will be utilised:

- Access pathways - Bollard/Wall Mounted Downlights
- Perimeter lighting - Wall Mounted Downlights
- Building feature lighting - Uplighters
- Car park lighting - Pole Mounted Lighting

**Lighting Controls**

External lighting shall be provided with the following controls:

- Time switch control - All luminaires
- Photocell control - Single photocell via contactor for all building mounted luminaires
- PIR control for specific pedestrian path luminaires
- Manual over-ride control at reception for all external luminaires

Bollard Lighting

Wall Mounted Downlight

Pole Mounted Lighting

Building Feature Uplighters

# APPENDIX A: PRELIMINARY SCHEME

A preliminary scheme has been prepared to show the areas for which external lighting will be provided and the current design intent.

This concept will be worked up in detail, with lighting calculations provided, during the next stage of the design

GREEN ZONE
CAR PARK LIGHTING VIA POLE MOUNTED LIGHTING.
EXISTING FITTINGS TO BE RETAINED AND REUSED

BLUE ZONE
ACCESS PATHWAYS TO BE LIT VIA BOLLARDS
BOLLARDS

YELLOW ZONES
PERIMETER LIGHTING ON FINAL EXITS VIA WALL MOUNTED DOWNLIGHTS

FEATURE LIGHTING TO BE PROVIDED VIA UPLIGHTERS

Infrastructure installed for future EV Charging Totems 2no. (4 Vehicles)

Hotel Car Park
96 Spaces

Pedestrian Crossing Renewed

Car Park Entrance

Car Park Exit

Car Park Exit

Pedestrian Crossing Renewed

New Substation

Hard Landscaping

Ground level planter (with trees) 12.0m²

Ground level planter (with trees) 12.0m²

Plant Enclosure
73m²

Lift Overrun

Loading Bay

Ground level Planters & Trees 24m²

Hard Landscaping

Ground level Planters & Trees 24m²

Linen Intake

Secondary Entrance

Food & Drink Deliveries

Photovoltaic Array
240m²

Kitchen Extract Plant (Low Level)
40m²

Main Entrance

External Seating

Raised planter with trees 10m²

Existing Bins Shop

Existing Bins Shop