1 External Lighting

The external lighting will be designed in accordance with DfES Building Bulletin 90 and is covering car parks, sports facilities, walkways and roads, entrances, particular building features, security requirements, etc. as shown in the exterior Lux level plan.

The lighting is designed to achieve safe environments for people and traffic. It minimises light pollution and ensures light levels are kept within the requirements avoiding nuisance to the adjacent neighbourhood.

Design Parameters
The following mandatory, legislative and regulatory requirements, British Standards, Codes of Practice and Best Practice professional guidance publications will form the parameters of the lighting installation:

Building Bulletin 90: *Lighting for Schools*
DfEE, 1999

BS EN 5489-1 : 2003
Code of Practice for the Design of Road Lighting – Part 1: Lighting of roads and public amenity areas.
BSI, 2003 (incorporating corrigendum No. 1 and Amendment No. 1)

BS EN 13201-2 : 2003
Road Lighting – Part 2: Performance Requirements
BSI, 2003

Guidance Notes for the Reduction of Obtrusive Light, 2005
Institution of Lighting Engineers, 2005

***CIBSE* LG6 - The Outdoor Environment**
CIBSE, 1992

Security lighting will be provided only to those areas of a building or site which can be seen from overlooking property, road or frequently used footpath. Provision of lighting to areas which do not have the casual surveillance aspect, can be counter productive, attracting miscreants to a lit area, safe in the knowledge that they cannot be seen. Areas covered by external CCTV will be illuminated in accordance with the CCTV strategy.
Incorporated lamps have an efficacy of at least 45 lumens per circuit watt.

Pedestrian Circulation Routes
Class S3 7.5lx average 1.5 lx minimum

All pedestrian access routes including the informal hard play are to the south of the building will be lit by columns mounted luminaires and façade mounted luminaires as appropriate.
Generous vertical illumination from above will ensure good facial recognition between pedestrians.

Ceramic metal halide discharge lamps will be utilised on 4m-5m columns. The lighting equipment will ensure that upward light spill is kept to a minimum.

Evoluta - Kingfisher



Bicycle Racks/ Sheds
10 lx average 3 lx or
75 lux 0.40 uniformity if enclosed
The bicycle racks shall be illuminated by the surrounding ambient lighting solution but with increased lux level parameters.
In case of bicycle sheds (covered racks) the lux levels will be increased to 75 lux.
Linear fluorescent IP65 be surface mounted of suspended from structure.

External Courtyard
20 lx average 0.4 uniformity

The courtyard area will be lit with wall mounted luminaires with ceramic metal halide discharge lamps, IP65 - consideration will be given to the positioning and lit effect on the façade. Façade mounted luminaires will be coordinated with the façade design.

Stellar 1 – Kingfisher



Entrances and Under Soffit Areas
75 lx average 0.4 uniformity

Fluorescent luminaires recessed into the soffit will provide light to the exterior building overhangs.

Ray – Kingfisher



Car Park and Vehicular Routes

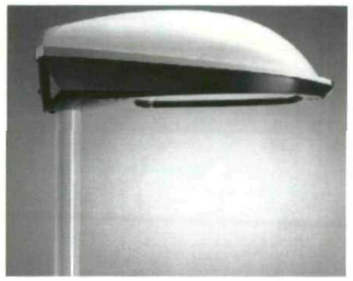
10lx average 0.25 uniformity

Car parks require good illumination in order to deter vehicle crime; ensure users feel safe; and ensure good driving conditions and minimize conflict with vehicles and pedestrians.

Typically, a combination of single and twin head luminaires on 6m height columns will form the basis of the car park lighting strategy. These luminaires will feature flat glass optics to ensure no direct upward light from luminaires.

Ceramic metal halide discharge lamps will be utilised operated by high frequency electronic control gear.

Kaos - Kingfisher



Synthetic Turf Pitch and Hard Games Courts

200 lux average 0.70 uniformity

Glare Rating 50

Lighting class II for Foodball, Hockey and Netball

Lighting class III for Tennis

The sports pitches shall be lit by flat glass asymmetric projectors minimising direct upward light, overspill and glare. Luminaires to be column mounted usually at 12m above ground level located to the side of the pitch (outside the main activity zone). High intensity discharge lamps with good colour rendering properties (Ra>82) will be used, operated by high frequency electronic control gear. The facility for curfew to be included. Luminaires located close to the neighbouring farm to the east will be complete with shrouds to make sure that light spill towards these premises is kept to a minimum. See images below for location of sport pitches.



Controls

All exterior luminaires are fitted with both time controls and daylight level photocell controls and will be off during hours of daylight, and switched on at dusk. Depending on client wishes, luminaires may be switched off at some time during the night (e.g. midnight or earlier) or at sunrise.

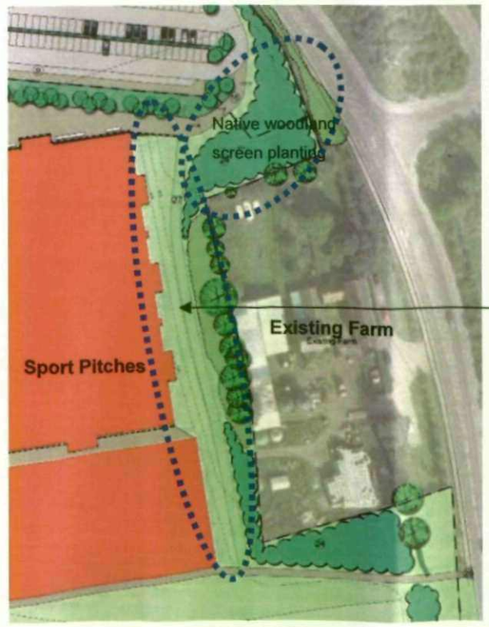
Lamps

Generally ceramic metal halide discharge lamps will be used with good colour rendering properties (Ra>82) and warm colour temperature (3000°K), operated by high frequency electronic control gear. In some areas the use of compact fluorescent of linear fluorescent luminaries might be required (bicycle sheds or under soffit areas)

Impact on the Surrounding Environment

The lighting scheme is designed to have minimal impact on the surrounding environment. Lighting is only installed where a visual task requires it for safety, comfort and wellbeing. Light levels are kept to the minimum levels needed to meet the requirements. The lighting scheme uses luminaries with no upward spill light in the car park, vehicular routes, courtyard areas and areas covered by soffits. Luminaires with a controlled light distribution will be specified in order to ensure that light falls only where it is required.

An analysis of the site shows that there are no properties which immediately border the school grounds except of the farm to the southern edge of the car park and east of the sports pitches. The farm is separated from the car park and sports pitches by native woodland screen planting and proposed individual tree planting which will help prevent light trespass to the property. Additionally sports pitch luminaires closest to the neighbouring farm will be complete with shrouds to make sure that light spills towards these premises is kept to a minimum.



Native woodland screen planting and individual tree planting. Additionally luminaires to be equipped with shrouds.

2. Exterior Lux Level Plan

