

ST OSWALD'S SCHOOL EXTERNAL LIGHTING

- The Electrical Consultant confirms that the lighting is designed in accordance with the D.F.E.S. Guide 4, "Security Lighting for Schools", the D.F.E.S. Building Bulletins 67, 78, 83 & 87, the Secured by Design Guidance 2004, and the CIBSE Regulations.
- The lights are required for safety, security and insurance reasons, and are to be environmentally friendly and control light pollution in compliance with the above guides.
- The light fittings selected are the most environmentally friendly available being high efficiency, low wattage and automatically controlled. The building bulkhead light fittings and the footpath lighting columns have the light bulbs shrouded to direct the light and control light spillage, and are low wattage high efficiency fittings.
- The school is designed to be environmentally friendly, with the energy consumption of the school below the Government's standards as set out in Building Bulletin 87 - "Guidelines for the Environmental Design in Schools" and Building Bulletin 83 - "Schools Environmental Assessment Method" (SEAM).
- We can confirm that time clocks have been installed on the car park and footpath lighting as discussed with the Planners and as a compromise with local residents, and that these time clocks are now fully operational turning these lights off at 10.00pm and bringing them back on at 6.00am. In addition these lights are also controlled by Photocells which measure the level of daylight and only allow the lights to turn on when it's dark.
- The lighting columns to the footpaths have the light bulbs shrouded to direct the light downwards and control light spillage, and the Car Park lights are directed downwards at the car park and are very directional light fittings.
- However, the bulkhead light fittings fixed to the school building are required for safety and security, and are therefore illuminated all night.
- The bulkhead light fittings are 28 watt compact fluorescent bulbs which provide a low level of illuminance. They have an opal diffuser to mask the light and are part shrouded to direct light downwards with a limited throw outwards. The 28 Watt bulbs and high frequency control gear were selected for energy conservation.
- The "Secured by Design" guidance requires a level of lighting which "illuminates all the elevations, recesses and openings of the building" so as to "deter and reveal potential intruders and reduce the fear of crime". The D.f.E.S. Guide 4 requires lighting sufficient to "deny intruders the cover of darkness by illuminating their access routes and target areas, thus making them visible to passers-by and neighbours".
- The lighting scheme installed is designed to comply with the above requirements and the above noted Government guidance documents.

- The lighting scheme has been designed the number of light fittings required to achieve an even level of lighting required for security and surveillance in compliance with the guides referred to above. Fewer fittings would create shadows and weaknesses in the security, and not comply with the above.
- It is not practical to use motion detectors with the type of light fitting installed because of the “warm up time” required by the bulbs. In addition, motion detectors are not recommended by the D.f.E.S. and cause greater nuisance by the constant on/off triggering caused by animals and trees, and do not comply with the above quoted requirements.
- We would also wish to point out that the old school (prior to its demolition) had sodium flood lights mounted on the roof of the buildings for security. These were not time switched or motion controlled.
- In long discussions with Paul Marks, the school’s head teacher, he has confirmed the many problems the school used to suffer with vandalism and theft, and even an act of arson, before that security lighting was erected.
- The new school has been awarded “Secured by Design” status in consultation with York Police, which requires this lighting for security in compliance with the afore noted guidance. The Police Architectural Liaison Officer states in his response to the Planners that he is opposed to a reduction in the lighting as this would compromise security and the school’s “Secured by Design” status.
- We would respectfully point out that the Council “self insures” in respect of its other schools and therefore bears the risk regarding arson, theft and vandalism. However, in the case of St. Oswald’s School the Council decided to go down the PFI procurement route and the private sector cannot “self insure”.
- The PFI contract requires that a commercial insurance policy be in place to cover the school and this insurance is based on the Secured by Design status and requires security lighting to be installed in accordance with the D.f.E.S. guidance.
- We believe that the school external lighting discourages the gathering of youths which leads to anti-social behaviour and petty crime, and this added security afforded by this lighting also benefits the local community and neighbouring residents.

Thompson Spencer Architects
27th June 2006

APPENDIX A

POLICE ARCHITECTURAL LIAISON OFFICER'S RESPONSE

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Lighting (Extract from Secured by Design guide)

“A successful lighting scheme requires good but not oppressive levels of light that is evenly distributed, allows clear colour rendition and avoids light spillage. Well-positioned lighting deters and reveals potential intruders and reduces the fear of crime. Security lighting, such as metal halide units, shall be installed in all areas where surveillance is considered important, such as entrances, main pedestrian access routes, car parks and other facilities. Other areas should use vandal resistant perimeter lighting, operated by photoelectric cells, which should illuminate all elevations and recesses of the building. All fittings shall be vandal resistant and positioned out of reach. The lighting design and layout shall support natural surveillance and the operation of CCTV and shall not be restricted by trees, shrubs or other landscaping features”.

In addition to the above,

DfES Guide 4 - Improving School Security states :-

“Security Lighting

External lighting is provided to:

- * Illuminate pathways and car parking areas to enable individuals to see and move safely around the school grounds after dark.
- * Deny intruders the cover of darkness by illuminating their access routes and target areas thus making them visible to passers-by and neighbours. This is security lighting.

To be successful, both types of lighting must be reliable and provide adequate levels of illumination. In addition those areas lit by security lighting must be under regular surveillance from one or more of the following:

- * Neighbouring property or passers-by.
- * CCTV, in which case infra-red (black or non visible light) can be used.
- * Security Patrols.

Like CCTV, lighting units are vulnerable to attack and security lighting is particularly prone to deliberate damage. All lighting units and associated wiring should be located and installed in such a manner as to reduce the risk of deliberate damage. If areas lit by security lighting are not protected by fences and under surveillance, there is every likelihood that they will become informal, floodlit play areas. The Department Bulletin 78 gives more details on security lighting”.

In Conclusion

Secured by Design guidance does not stipulate the number of lighting units or columns that might be required around a school only that any lighting fitted should be compliant with the above advice. It is my opinion that current lighting fitted complies fully with Secured by Design advice. I would not advocate a reduction in lighting levels. It is my belief that bulkhead lighting around the school buildings are all low power units.

APPENDIX B

ELECTRICAL CONSULTANTS' REPORT

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For the

EXTERNAL LIGHTING INSTALLATION

At

ST OSWALDS PRIMARY SCHOOL – YORK

The information below has been prepared by Wheatley M&E Services Limited on behalf of Sewell Construction. Wheatley M&E services were responsible for the design and installation of the Electrical & Mechanical service on the above project.

Former School

The former St Oswalds Primary School was located in the foot print of the now new school car parking area. The existing School was located parallel with the Fulford Road approximately set back from the road by 8 metres and adjacent to School Lane set back by approximately 10 metres.

The existing building was fitted with high level Sodium Flood lights around the perimeter of the main School building and modular remote buildings to the rear area. The number of luminaires was not recorded prior to its demolition, however after discussions with the head teacher, Mr Paul Marks, he has informed us that the lighting around the perimeter was poor.

Mr Paul Marks commented that the previous site was prone to vandalism, which resulted in costly repairs and on one occasion an act of arson was committed which resulted in a new modular building being required. In his view, if security lighting had been brighter at that time he feels that this would have deterred the acts of vandalism committed.

New School

The new School has now been moved back from Fulford Road by 50 metres and remains 10 metres from School Lane. It is noted that the building form does not resemble the previous school.

The new building was handed over to the end users in January 2006.

Lighting Design Standards

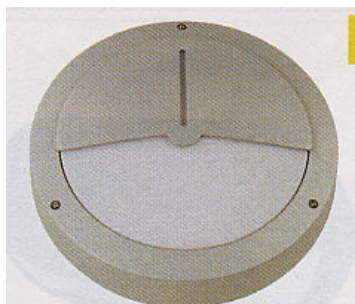
The external lighting scheme has been designed to comply with the following standards:-

- Department for Education and Science Building Bulletin 67 for Crime Prevention in Schools.
- Department for Education and Science Building Bulletin 78 for Security Lighting in Schools.
- The Chartered Institution of Building Services Engineers (CIBSE) Lighting Division Factfile No7 for Environmental Considerations for Exterior Lighting.
- The Chartered Institution of Building Services Engineers (CIBSE) Lighting Guide – The Outdoor Environment LG6:1996
- Secure by Design Schools Revision April 2004
- British Standard 5489-1: 2003, Revised.
- D.f.E.S. Building Bulletin 87 – Guidelines for the Environmental design in Schools
- D.f.E.S. Building Bulletin 83 – Schools Environmental Assessment Method (SEAM).
- D.f.E.S. Guide 4 – Improving School Security.

Building Mounted Lighting Scheme

The external building mounted luminaires are vandal resistant die cast aluminium fittings with ultraviolet stabilised opal white polycarbonate diffuser. The luminaires have High Frequency low loss control gear serving a 28 watt 2700k White 2D compact Fluorescent lamp, which has a colour rendering index of 82 group 1B. The lamps have an average life of 10,000 hours.

The luminaires selected have been fitted with an enclosed upper section to prevent upward lighting. (Refer to Picture below). A diffused light is produced by the Opal diffusers, which is directed outward and downward.



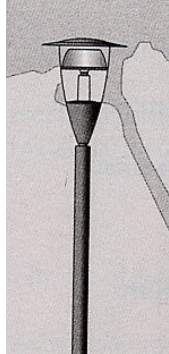
The luminaires have been mounted at a height of 2.4 metres above finished floor level around the whole perimeter of the building to meet the required illumination levels as stated within the documentation listed above and are evenly distributed to be visually in keeping with the new School. Spacing between luminaires is between 4 and 6 metres apart.

The building mounted luminaires are automatically controlled by the use of photo electric cells which switch the luminaires on/off on a dusk til dawn principle.

Foot Path Lighting Scheme

Column mounted luminaires have been utilised to illuminate the footpath leading from the main entrance gate to the rear Nursery entrance door which runs along side School Lane. The path follows the building outline which results in the columns being set back from School Lane by 3 metres to 10 metres.

The luminaires selected are 70 watt Metal Halide Cone shaped fittings fitted with canopy tops on 6 metre galvanised columns. A total of 6No luminaires have been installed around the path area. (Refer to Picture below)



The column mounted luminaires are automatically controlled by the use of a photo electric cell and 24 hour time clock. The time clock and photocell has been set up so that the time clock will switch on at 6am and go off at 10pm, 7 days a week. The photocell has been wired in series with the time clock so if there is adequate daylight the luminaires will not come on.

Currently the Nursery staff gain access into the building by the use of the footpath to the side of the building. The staff hours are from 7.30am to 7.30pm, however management staff hours are around 6am until 8pm and cleaning staff can be on site until 9.30pm.

As these footpaths provide means of escape in the case of fire and in order to provide a safe access route to the car parking area it is proposed to keep the time clock settings as currently installed, on at 6am off at 10pm.

Roundabout Lighting Scheme

One single lighting column has been installed in the centre of the round about located near to the main school entrance public drop off point. The luminaire selected is the same type as the footpath luminaires, however 3No lamp heads have been installed on a triple bracket.

This luminaire is automatically controlled by the use of a photo electric photocell and 24 hour time clock. The time clock and photocell have been set up so that the time clock will switch on at 6 am and go off at 10pm, 7 days a week. The photocell has been wired in series with the time clock so if there is adequate daylight the luminaire will not come on.

The School staff hours are from 8am to 5pm, however management staff hours are around 6am until 8pm. Also cleaning staff can be on site until 9.30pm.

Therefore in order to provide a safe access route to the car parking area it is proposed to keep the time clock settings as currently installed on at 6am off at 10pm.

Car park Lighting Scheme

4No single headed 250 watt HQ-I lighting columns have been installed to the corners of the car parking area.

Each Luminaire has been set to 20° above the horizontal plain at a 6 metre mounting height.

The luminaires are automatically controlled by the use of a photo electric cells and 24 hour time clock. The time clock and photocell has been set up so that the time clock will switch on at 6am and go off at 10pm 7 days a week. The photocell has been wired in series with the time clock so if there is adequate daylight the luminaire will not come on.

The School staff hours are from 8am to 5pm, however management staff commonly start about 6am until 8pm. Cleaning staff can be on site until 9.30pm.

Therefore in order to provide a safe access route to the car parking area it is proposed to keep the time clock settings as currently installed on at 6am off at 10pm.

Head Teachers Comments

Mr Paul Marks has reported to the electrical consultant that the existing site was prone to vandalism, which resulted in costly repairs and on one occasion an act of arson was committed. Additionally the school grounds have been used by drug users.

In his view if the security lighting had been brighter at that time he feels that this would have deterred the level of vandalism which was committed.

The new school was handed over to use in January 2006 and to this report date the school has not had any vandalism.

As part of the new School building a section has been provided to house the Fulford Public Library and is being used by all ages of the public. The demand is such that they are considering increasing the opening times to meet the demand.

The reason for this increased demand is partly due to the schools visual affect on the Fulford community, which in part is due to the safe working environment.

Mr Marks, all the teaching staff and pupils are very proud of the new school and welcome the Fulford community to take advantage of the new services which it can now offer, evening line dancing, computer training, public meetings etc.

York City Councils Requirements

Sewell Education has been employed by York City Council to provide a new school under a PFI project agreement and as such requires Sewell Education to insure the building.

As a privately owned company Sewell Education are unable to self insure, unlike the council which does self insure. As a result of this a commercial insurance company have been appointed and as part of the insurance requirements the building must be provided with security lighting that complies with D.f.E.S. guidance and the Secured by Design guidance.

The current scheme provided complies fully with the D.f.E.S. and Secured by Design requirements.

Police Liaison Officers

The following states/extracts have been provided by Mr Jim Shanks from the Police Community Safety/Architectural Liaison Officer.

Lighting (Extract from Secure by Design guide)

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To be successful, both types of lighting must be reliable and provide adequate levels of illumination. In addition those areas lit by security lighting must be under regular surveillance from one or more of the following:

- * Neighbouring property or passers-by.
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Conclusion (Statement)

Secured by Design guidance does not stipulate the number of lighting units or columns that might be required around a school only that any lighting fitted should be compliant

with the above advice. It is my opinion that current lighting fitted complies fully with Secured by Design advice. I would not advocate a reduction in lighting levels. It is my belief that bulkhead lighting around the school buildings are all low power units.

Highway Network Management (Comments)

No objections. Condition Highway 37 should be attached to any permission.

Environmental Protection Unit (Comments)

The environmental protection unit have concerns with this application, these focus around the loss of amenity to local residents through light.

Initial involvement in the St Oswalds C of E Primary School was through the investigation of statutory nuisance through complaints from residents.

Investigations have been unable to determine that a statutory nuisance exists.

Safer York Partnerships (Comments)

The school was given a secure by Design Award, the lighting was one of the factors which contributed to this.

No objections.

Street Lighting (Comments)

The proposed lights are satisfactory and do not create undue glare outside the premises.

Lighting Design Calculations

As part of the Electrical Design, Wheatley M&E Services have provided illumination plots for the external perimeter luminaires based on the actual installation.

Refer to lighting plots enclosed.

The information provided shows that an average lighting level of 5 Lux at 2 metres away from the building.

Actual Recorded Lighting Levels

External lighting design software programmes give average lighting levels based on measurements taken at set points across a grid type layout.

This type of system is not suitable for measuring around the perimeter of the site to assess what actual lux levels are being provided that may be affecting the adjacent buildings.

There are no set ways of measuring the external lighting levels, however as a common rule is for measurements to be taken around the perimeter of the site at set points spaced at equal distances.

As concerns have been raised by adjacent properties on School Lane and Fulford road Wheatley M&E services visited the site and found that the building mounted luminaires have no affect on the adjacent properties.

Objections (As listed in the Committee Report Agenda 4h)

Detailed below are the objections raised and comments by the Electrical Design consultant, Wheatley M&E Services Limited.

1. (Obj) Fulford Parish Council:-

- i. The application is retrospective and the applicants should have waited until planning permission was granted before installing the lights.

(Wheatley) It is agreed that the luminaires should not have been installed before the application was approved, however at the time of installation we were unaware that the application for the whole building did not detail the external lighting. As a result of this a separate application has now been submitted.

- ii The lights make the car park look like a football stadium. The council feels that the light pollution from these lights will dwarf the problem of the bulkhead fittings. During winter months the glare or reflection of the lights on the parked cars will exasperate the situation.

(Wheatley) We do not feel that the car parking area looks like a football stadium, this comment is a personal view and subjective, therefore should not be addressed.

The column mounted luminaires will now be switched off at the times detailed previously, therefore should not have any affect on the reported dwarfing of the bulkhead luminaires.

- iii The lights are not environmentally friendly as they use

a lot of power. Also the lights have thrown the synchronisation of the wildlife.

(Wheatley) The column mounted luminaires are high output luminaires and are angled down to only throw illumination to the areas required.

The building mounted luminaires are one of the most environmentally friendly fittings available, using high frequency control and low wattage lamps.

The affect on wildlife should not be affected by the luminaires and it is more probable that wildlife will be drawn to the site due to the new plantation which has been formed.

iii The school borders the Fulford Conservation area.

(Wheatley) The school does not border the Fulford conversation area.

2. (Obj) Neighbour consultation letter:-

- i. Lighting an unused car park is a waste of energy, the cost of which is met by council tax payers.

(Wheatley) It has been agreed that the car park luminaires will be switched off at the times stated. The switching off is by automatic means and are preset to common working hours. It is not recommended that control of external lighting is by manual means.

3. (Obj) Neighbour consultation letter:-

- i. The council needs to set the right example in the light of growing concerns over global warming.

(Wheatley) The Schools electrical & mechanical design and installation is below the recommended levels stated within Building Bulletin 87 – Guidelines for the Environmental design in Schools and Building Bulletin 83 – Schools Environmental Assessment Method (SEAM).

4. (Obj) Neighbour consultation letter:-

- i. Light pollution is a growing problem to which these lights add. The problem would be worse in the winter with longer nights and minimal screening from trees.

(Wheatley) The luminaires installed have been designed and installed so that they do not give any upward illumination so do not give off any light pollution. This is supported by the environmental protection unit comments noted above.

5. (Obj) Neighbour consultation letter:-

- i. The lights should be turned off when the use of the car park and school have ceased.

(Wheatley) It has been confirmed that the column mounted luminaires will be turned off at the times stated, however the building luminaires must remain on to comply with the design standards as listed previously.

6. (Obj) Neighbour consultation letter:-

- i. Motion detection lights would be of greater benefit than permanent lights.

(Wheatley) Motion detection units are not recommended by the DfEE as the luminaires used with motion detection system are not environmentally friendly and cause more problem to adjacent properties due to the constant on/off triggered by natural movement of wildlife and surrounding trees.

7. (Obj) Neighbour consultation letter:-

- i. The lights should be turned off at night as they can be detrimental to a good nights sleep.

(Wheatley) The car park luminaires are to be switched off at the times stated. The building mounted luminaires do not have any affect on the adjacent properties. Refer to the environmental protection unit comments noted above.

8. (Obj) Neighbour consultation letter:-

- i. The glare of the lights has at times meant that it is not possible to see people using School lane at night, this is a safety concern.

(Wheatley) The car park luminaires are to be switched off at the times stated. The building mounted luminaires do not have any affect on School Lane. Refer to the Highway Network Management comments.

9. (Obj) Neighbour consultation letter:-

- i. The area does not suffer from high crime levels and the lighting is excessive as a security measure in this case.

(Wheatley) The design and installation has been completed as required by the standards listed previously and are not excessive. Refer to Police Liaison Officers comments below (Conclusion).

10. (Obj) Neighbour consultation letter:-

- i. It would be preferable to look out into darkness rather than an illuminated school and car park.

(Wheatley) Illumination has been provided as a security measure and is required.

11. (Obj) Neighbour consultation letter:-

- i. The lights are excessive in both number and strength.

(Wheatley) The design and installation has been completed as required by the standards listed previously and are not excessive in number or strength.

12. (Obj) Neighbour consultation letter:-

- i. The identified emergency lighting have been kept on all night recently. They should be switched off and only come on if there is an emergency.

(Wheatley) The luminaires noted as emergency are design to be used as part of the external lighting scheme and or working correctly. The units marked as emergency are also provided with inbuilt batteries. If the emergency unit was not fitted inside the external luminaire

additional separate emergency luminaires would be required above all exit doors.

13. (Obj) Neighbour consultation letter:-

- i. Some of the lights shine directly into bedroom windows.

(Wheatley) The building mounted luminaires fitted can not possibly shine into a first floor bedroom window due to the mounting height of the luminaires and the design of the actual eyelid type fitting.

Conclusion by Wheatley M&E Services Limited

- The external lighting scheme complies fully with the government guide lines.
- The adjacent properties are not affected by light pollution due to the installed luminaires.
- The Police Liaison Officers finds the scheme satisfactory and does not want any reduction in the illumination levels.
- The High Network Agency have no objections to the scheme.
- The Environmental Protection Management have been unable to determine that any statutory nuisance exists.
- Safer York Partnerships have no objections to the scheme.
- Street Lighting Department have stated that the scheme is satisfactory and does not create undue glare outside the premises.

APPENDIX C

INSURANCE BROKER'S LETTER