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B	20/07/18	C Fletcher	D Hopgood	C Fletcher	Drawing amended
A	15/01/18	C Fletcher	D Hopgood	C Fletcher	Planning Report for Discharge 21
Rev	Date	Written	Checked	Approved	Subject

PROJECT:

K3 CHP Facility

Kemsley Mill, Sittingbourne, Kent

K3 CHP
Powering the future

CUSTOMER:

Wheelabrator
TECHNOLOGIES

EPC CONTRACTOR:

CNIM CONSTRUCTIONS
INDUSTRIELLES DE LA MÉDITERRANÉE

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TITLE OF DOCUMENT:

Planning Condition 21 - Discharges Report

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Contents **Section**

1. Background

The Kemsley Energy from Waste is a large industrial waste recycling plant, adjacent to the Swale/Sheppey crossing.

LX Engineering have been commissioned by CCL to assist in the discharge of planning condition 21.

Condition number 21 specifically requires that:

We have taken into consideration Planning Condition No.21 which states that the external strategy needs to be submitted to the Waste Planning Authority for approval.

To demonstrate the impact of light spillage onto the adjacent SPA and RAMSAR site we must extend the lux levels beyond the boundary of the SPA and RAMSAR site.

2. Objectives

The aim of this introductory part of the document is to provide a non technical explanation of the details submitted to enable Swale Borough Council (As local planning authority) to approve and discharge the terms of condition 21. The submission provides a detailed design of the proposed lighting for the main development site.

A fundamental objective of the lighting scheme is to provide a safe working environment, both during operation and construction. Allied to this, the lighting arrangement has been designed to assist the ecological habitats being created at the site, avoid unnecessary use of light columns (and hence light sources), minimise unwanted light and light spillage, and provide for dimming and/or switching of off lighting outside normal operating hours.

The details of the proposed lighting schemes for the site are explained in this document, and comprise the Main Site.

3. SUMMARY OF PROPOSAL

3.1 Introduction

The attached Reports and accompanying drawings are to discharge Condition 21. They provide details of the proposed lighting for:

- Main Development site;
  AAK-04-20020117_LXG0907 Rev H

- External Lighting Technical Submission;
  AAK-04-20020117_LXJ0922 Rev I

The schemes of lighting have been designed to comply with British Standards and Codes of Practice, ensuring safety in both the operational and working environment.

At the same time, the lighting has been designed to assist the ecological habitats being created at the site. This has involved minimizing illumination and light spillage.

The scheme is designed to also minimize unwanted light, in the form of light spillage, sky glow, light pollution and visible light sources and to reduce the potential carbon footprint of the site.

3.2 The Scheme

The principal elements of the lighting scheme are as follows.

The Main Development site consists of the following areas—

LOADING/UNLOADING- (Waste Water Pit, Fuel Storage Tank, Silo Loading)

Loading areas will be illuminated with wall mounted twin head flood lights at high level, these will provide a good even spread of light and be capable of high enough outputs for the raised illumination levels required for these spaces. Refer to attached drawing for fitting type used. operational requirements, for example adjacent to roads, the ash container storage area, and staff parking facilities. The overhead lanterns are flat glass (full cut off) bowls to minimise the amount of light emitted above the horizontal line of the lanterns. To avoid a proliferation of tall lighting columns the horseshoe ramp is to be fitted with fluorescent lights inset into the inside of the ramp wall.

TRANSPORT AREAS

Transport circulation, and roadways will be illuminated with a mixture of single and double head column mounted lanterns. Certain spaces will also be supplemented with wall/building mounted floods. Refer to attached drawing for fitting types used.

CAR PARKS

Car parking will be illuminated predominantly using wall mounted flood lighting. Where the car parking is remote from the building, columns will be positioned to achieve recommended illumination levels for site security. Refer to attached drawing for fitting types used.

WALKWAYS

External walkways, pedestrian routes, and emergency escape routes will be served by wall mounted flood lights, and wall mounted emergency escape lighting above external escape doors. Refer to attached drawing for fitting types used.

Storage areas, depending on the height of walls and overall size of the spaces, will be illuminated with wall mounted flood lights. External storage spaces which are adjacent the main building will be illuminated with wall mounted battens or wall mounted floods. Refer to attached drawing for fitting types used.

UKPN SWITCH YARD

The UKPN switch yard will be illuminated with 10m hinged columns with a mixture of single and twin floods, general security lighting will be provided switched via centralized photocell and additional lighting can be manually switched from the compound to achieve the higher 50 lux requirement as per UKPN specification

IWW AND FUEL TANK

The IWW will be illuminated using low level LED battens mounted on unistrut which will be directional to the areas in question, these will be locally switched as and when required to minimise any unnecessary lighting spill over towards the RAMSAR site.

CHIMNEY PLATFORM

The chimney platform will be illuminated using LED battens mounted on Unistrut, these will be positioned to point away from the RAMSAR site and be manually switched locally to keep any lighting spill to an absolute minimum. The layout of this will be found on a dedicated drawing

for this.

ROOF AREAS

The roof areas where there is equipment that may need to be accessed or maintained during the hours of darkness will be illuminated using a mixture of wall mounted floods, wall mounted LED battens and LED battens mounted on unistruts. These will be manually switched upon entry to the roof area. Layout drawings will be provided on a zone by zone bases throughout detailed design.

CONTROLS

All general/security external lighting shall be controlled via timeclock, and photocell (location to be agreed) arrangement, with facility for manual override provided within main site control room. IWW, fuel tank and UKPN increased lighting, chimney platform and roof areas will be switched manually locally.

3.3 Design features

The design of this scheme of lighting has incorporated a combination of features to achieve the aims set out in 3.1 above:

- avoiding light sources within or directly illuminating the proposed ecological habitats;
- minimising the use of lighting columns, and for those that are used avoiding excessive height of the luminaire to minimise light spillage;
- using luminaires that do not project light directly upwards, coupled with good reflectors that arrest overspill and line of sight intensity;
- avoiding the use of white light;
- using photocells to turn lights on and off, thereby avoiding unnecessary lighting during daylight hours;
- switching off lights when they are not required.

By adopting these measures, the scheme as designed meets Health and Safety requirements for lighting, whilst minimising light spillage, sky glow and light pollution; at the same time it provides the ecological benefit of maintaining darkness within the proposed ecological habitats. The low intensity lighting, coupled with the inclusion of dimmers serves to contribute to reducing energy demand and the carbon footprint of the site.

The effect of the scheme is to provide night time lighting where it is required and only to a level that is required, avoiding unnecessary illumination, such illumination reducing into the night as activity levels reduce and dimming takes effect.

Overall, the scheme achieves a low intensity of lighting.

KINGFISHER
DESIGN STATEMENT

Our ref: Energy From Waste – Kemsley Sustainable Energy Plant

20th July 2018

To comply with section 21 of the planning conditions lighting strategy for Kemsley:

1. TYPE OF EXTERNAL LIGHTING PROPOSED AND WHY / HOW IT HAS BEEN DESIGNED FOR PURPOSE. IE DEFLECTED TOWARDS THE BUILDING TO REDUCE EXTERNAL GLARE.

The luminaires chosen have been proposed to eliminate sky glow and obtrusive light. The Italo LED lantern is a flat glass 0% ULOR (upward light output ratio) luminaire with 0° tilt to remove the potential for glare across the site. We have also designed using our Carina LED symmetrical floodlight fixed to building facias, some have been tilted up 30° (from the horizontal plane) to throw across areas which required a higher lux/uniform level. The 30° tilt is not a concern as it is within the maximum 70° peak set out by the ILP guidance notes, for the reduction of night time pollution and obtrusive light. The Carina floodlights to the northern elevations have been kept flat to ground to avoid any concerns with limiting bat roosting and potential glare to the neighboring northern properties.

2. HOW IT IS CONTROLLLED IE LIGHT SENSORS / TIMED / MANUAL OVERRIDE ETC.

All lighting will be controlled by time clock, photocell with manual override from control point, excluding the Waste Water Pit, Fuelling Area and 132kv Task Lighting as these areas are via local switch only.

3. FITTING TYPES AND MAUFACTURERS INFORMATION.

Please refer to the technical submission. AAK-04-20020117_LXJ0922 Rev I

4. OVERVEIW OF LUX LEVELS IN THE DIFFERING NORTH, EAST, SOUTH WEST, POSITIONS ETC.

Please refer to the technical submission. AAK-04-20020117_LXJ0922 Rev I

Kind Regards

Jamie Buck

Lighting Applications Engineer