



# FORMER NESTLE FACTORY, HAYES

EXTERNAL LIGHTING & CCTV ASSESSMENTS

MAY 2017

BARRATT  
— LONDON —

SEGRO



watkins payne  
designed - engineered - focused

WHITECODE DESIGN ASSOCIATES  
BUILDING SERVICES DESIGN CONSULTANTS

## EXECUTIVE SUMMARY

This covering report has been prepared for the joint Applicants, SEGRO plc and Barratt London Ltd, by Watkins Payne. It has been prepared to accompany a detailed planning application for the redevelopment of the former Nestlé factory site in Hayes in the London Borough of Hillingdon.

The proposals for the whole site comprise full planning permission for the part-demolition of existing factory buildings, associated structures and redevelopment to provide 1,381 dwellings (Use Class C3), office, retail, community and leisure uses (Use Classes A1/A3/A4/B1/B8/D1/D2) 22,663 sqm (GEA) of commercial floorspace (Use Classes B1c/B2/B8 and Data Centre (sui generis)), amenity and playspace, allotments, landscaping, access, service yards, associated car parking and other engineering works.

The joint applicants are leading developers in their respective fields, which are very different, and each employ Design Teams which are composed of architects and consultants who specialise in their development fields. So, while there will be a single planning application based on a single masterplan, there have been two contributing teams, and the External Lighting and CCTV Assessment for the site necessarily comprises two parts. This brief covering report brings together the two sets of proposals.

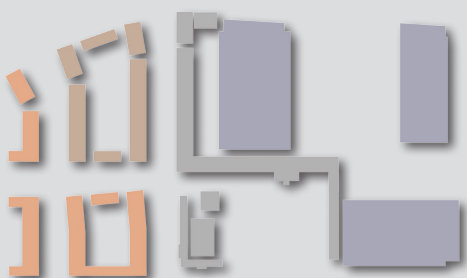
Due to the differing requirements of the joint applicants the two separate reports are at differing stages of design development and detail due to the nature of the respective residential and industrial proposals.

The industrial scheme report includes a detailed design external lighting plan with lux levels and isolines. This is the proposed external lighting scheme for the industrial element of the development. The scheme has been designed in accordance with the relevant British Standards and The Institute of Lighting Professional recommendations. The scheme design shows that light spill from the development site has been minimised and that no unacceptable light spill occurs on to adjoining land uses or the Grand Union canal.

The residential scheme report is at an earlier level of detailed design and does not include a detailed external lighting design. The residential development detailed design external lighting scheme can only be finally produced as other elements of the residential scheme are completed i.e. the landscape design etc.

Reference should be made to the individual sections within the following report for further details of the external lighting and CCTV systems proposed for the two parts of the development.

**BARRATT**  
— LONDON — **SEGRO**



WHITECODE DESIGN ASSOCIATES  
Highfield House  
No. 2 West Hill  
Dartford  
DA1 2EW



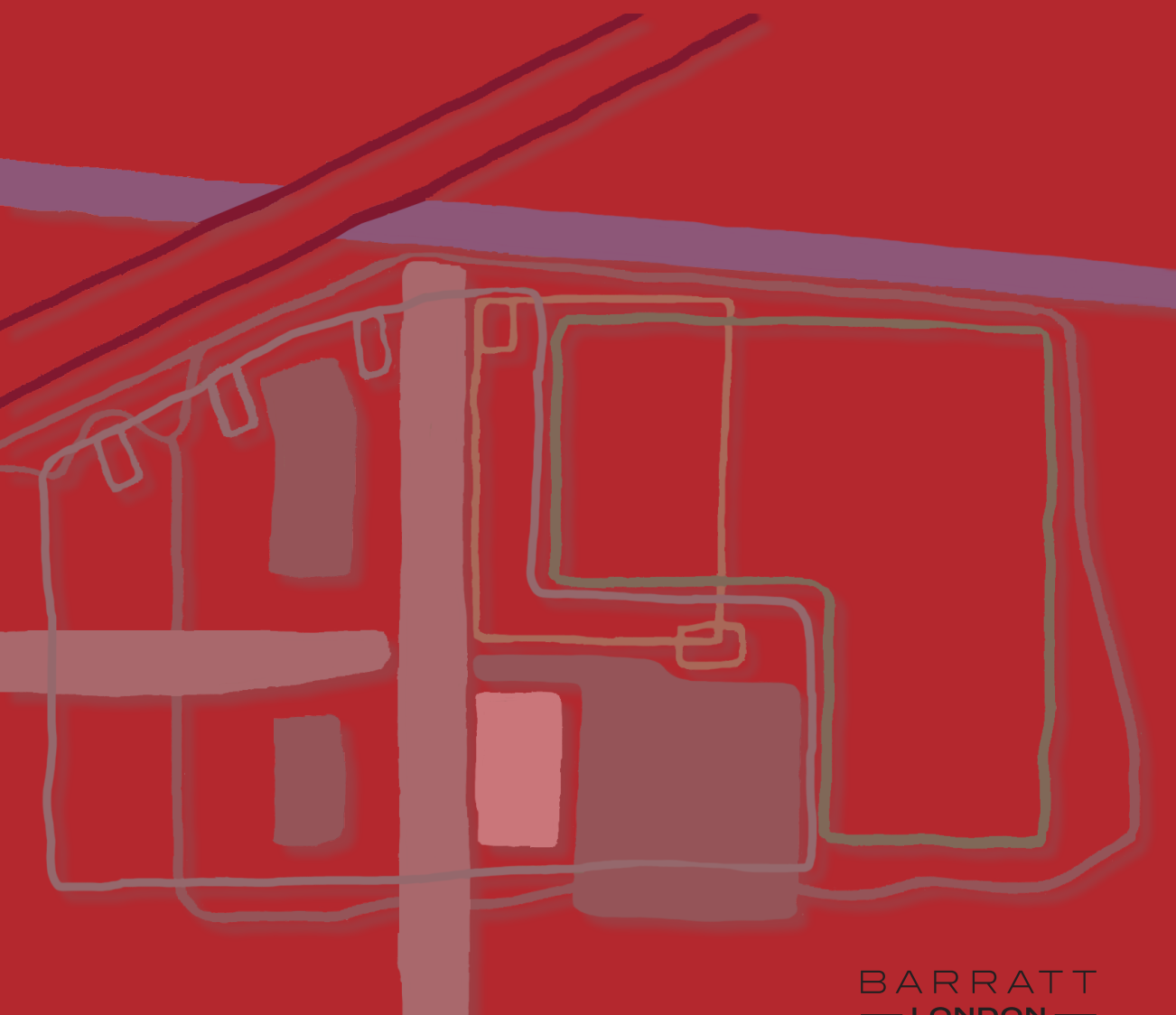
WATKINS PAYNE PARTNERSHIP  
7/8 Conduit Street  
London  
W1S 2XF

# FORMER NESTLE FACTORY, HAYES

EXTERNAL LIGHTING & CCTV ASSESSMENTS

(Residential Scheme)

MAY 2017

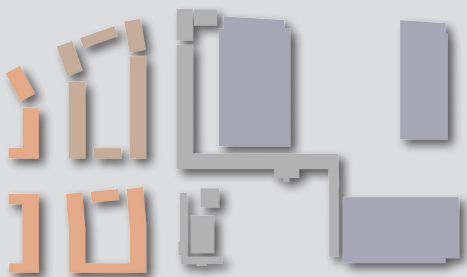


BARRATT  
— LONDON —



WHITECODE DESIGN ASSOCIATES  
BUILDING SERVICES DESIGN CONSULTANTS

The purpose of this document is to outline the strategy for the external lighting and CCTV services to be implemented at The Former Nestlé Factory project. The strategy will assess the impact of the new lighting scheme and outline measures to be implemented to ensure that it does not have a detrimental impact on the surrounding residents and wildlife.



BARRATT  
— LONDON —

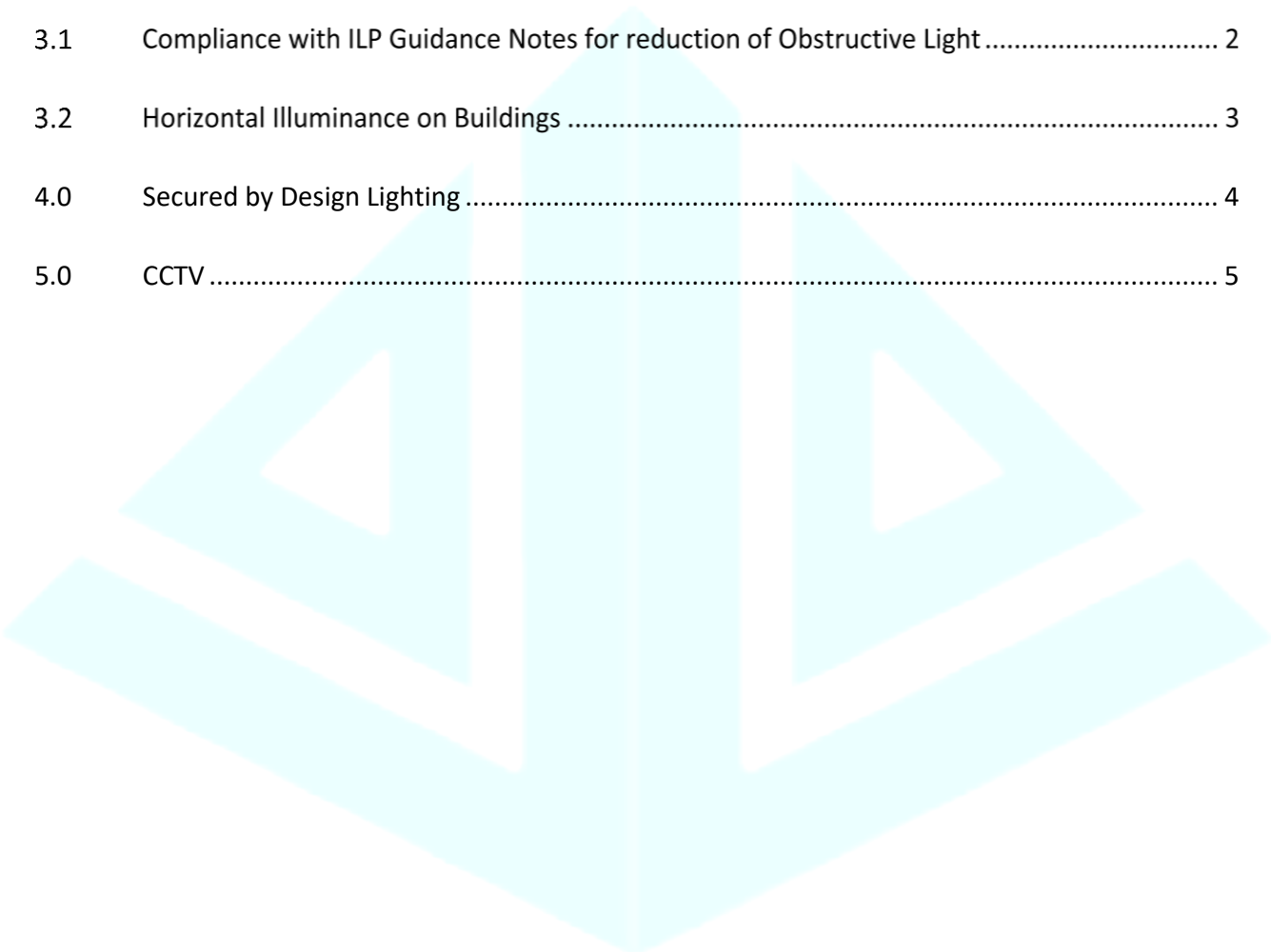


WHITECODE DESIGN ASSOCIATES  
BUILDING SERVICES DESIGN CONSULTANTS

WHITECODE DESIGN ASSOCIATES  
Highfield House  
No. 2 West Hill  
Dartford  
DA1 2EW

# Contents

|     |   |   |
|-----|---|---|
| 1.0 | Executive Summary.....  | 1 |
| 2.0 | Description of Development.....   | 1 |
| 3.0 | Light Spill .....   | 2 |
| 3.1 | Compliance with ILP Guidance Notes for reduction of Obstructive Light ..... | 2 |
| 3.2 | Horizontal Illuminance on Buildings .....                                   | 3 |
| 4.0 | Secured by Design Lighting .....  | 4 |
| 5.0 | CCTV .....  | 5 |



## 1.0 Executive Summary

This document has been prepared on behalf of Barratt London in relation to the residential element of The Former Nestlé Factory, Hayes.

A separate report has been prepared on behalf of Segro for the commercial part of the scheme.

The purpose of this document is to outline the strategy for the external lighting and CCTV services to be implemented at The Former Nestlé Factory project. The strategy will assess the impact of the new lighting scheme and outline measures to be implemented to ensure that it does not have a detrimental impact on the surrounding residents and wildlife.

## 2.0 Description of Development

Full planning permission for the part-Demolition of existing factory buildings and associated structures to provide 1,381 dwellings (Use Class C3), office, retail, community and leisure uses (Use Classes A1/A3/A4/B1/B8/D1/D2), 22,663sqm (GEA) of commercial floorspace (Use Classes B1c/B2/B8 and Data Centre (sui generis), amenity and playspace, allotments, landscaping, access, service yards, associated car parking and other engineering works.

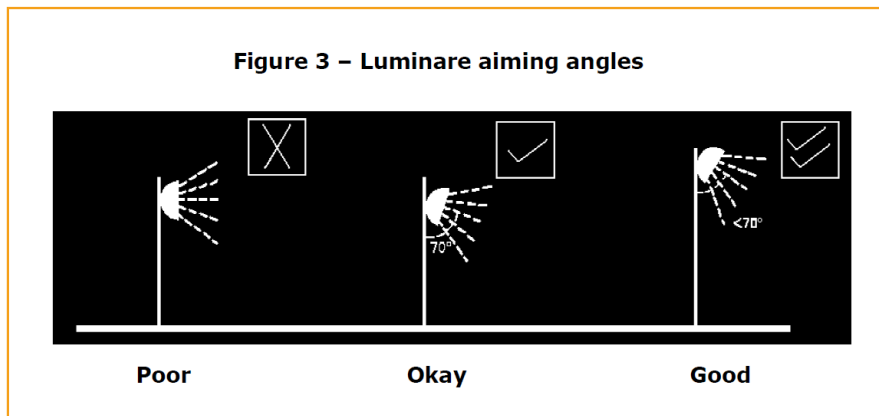
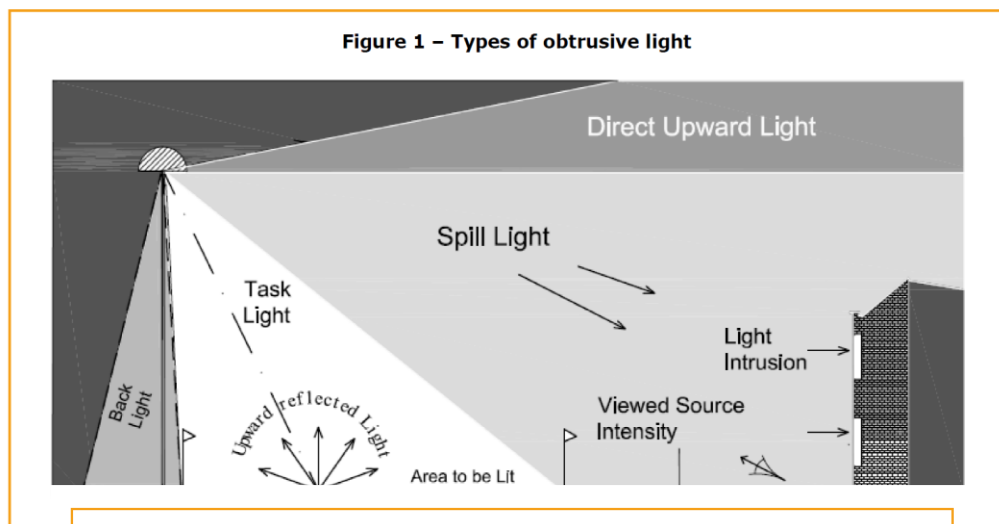
### 3.0 Light Spill

#### 3.1 Compliance with ILP Guidance Notes for reduction of Obstructive Light

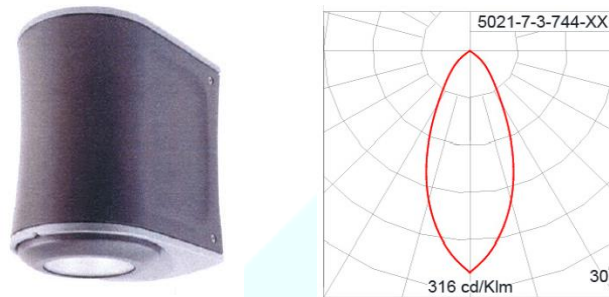
The external and podium car park lighting scheme at The Former Nestlé Factory will be designed to minimise glare into surrounding spaces while illuminating the external areas and podium car park as economically possible.

The ILP Guidance notes do not provide specific recommendations regarding the lighting to canals or other waterways. However, within the Environment Agency buffer area, adjacent to the canal, lighting will be kept to a minimum, while still providing sufficient illumination for safety and designed such that light spill onto the canal is no more than 2 lux average, which is a similar level to moonlight.

This will be achieved by using directional luminaires mounted on columns where appropriate in relation to the surrounding area. Shields will be provided to the back of fittings, where required, to prevent light intrusion into residential windows, trees and any other areas sensitive to light pollution. Bollards will also be used where feasible, subject to agreement with the Secured by Design officer.



The photograph below shows a typical column mounted downlight by Litex, which is a directional fitting selected to minimise light spill as discussed above. The final design will incorporate fittings of a similar design, where required.



The photometric data shows the beam angle of the light output is 70 degrees so is compliant with the guidance as discussed above.

The photograph below shows the typical column mounted Kirium Mini LED lantern by DW Windsor. The final design will incorporate fittings of a similar design, where required.



### 3.2 Horizontal Illuminance on Buildings

According to the ILP guidance notes, The Site is deemed and Environmental zone category E3 area as per the below extract.

**ENVIRONMENTAL ZONES**

It is recommended that Local Planning Authorities specify the following environmental zones for exterior lighting control within their Development Plans.

| Table 1 – Environmental Zones |             |                            |   |
|-------------------------------|-------------|----------------------------|---|
| Zone                          | Surrounding | Lighting Environment       | Examples  |
| E0                            | Protected   | Dark                       | UNESCO Starlight Reserves, IDA Dark Sky Parks             |
| E1                            | Natural     | Intrinsically dark         | National Parks, Areas of Outstanding Natural Beauty etc   |
| E2                            | Rural       | Low district brightness    | Village or relatively dark outer suburban locations       |
| E3                            | Suburban    | Medium district brightness | Small town centres or suburban locations                  |
| E4                            | Urban       | High district brightness   | Town/city centres with high levels of night-time activity |



**Table 2 – Obtrusive Light Limitations for Exterior Lighting Installations – General Observers**

| Environmental Zone | Sky Glow ULR [Max %] <sup>(1)</sup> | Light Intrusion (into Windows) $E_v$ [lux] <sup>(2)</sup> |             | Luminaire Intensity I [candelas] <sup>(3)</sup> |             | Building Luminance Pre-curfew <sup>(4)</sup> |
|--------------------|-------------------------------------|---|-------------|---|-------------|--|
|                    |                                     | Pre-curfew  | Post-curfew | Pre-curfew                                      | Post-curfew | Average, L [cd/m <sup>2</sup> ]              |
| E0                 | 0                                   | 0   | 0           | 0   | 0           | 0  |
| E1                 | 0                                   | 2   | 0 (1*)      | 2,500   | 0           | 0  |
| E2                 | 2.5                                 | 5   | 1           | 7,500   | 500         | 5  |
| E3                 | 5.0                                 | 10  | 2           | 10,000  | 1,000       | 10   |
| E4                 | 15                                  | 25  | 5           | 25,000  | 2,500       | 25   |

This in turn gives rise to a maximum light intrusion illumination level of 2 lux through windows of dwellings.

## 4.0 Secured by Design Lighting

The scheme will be designed to comply as far as possible with the recommendations of BS 5489 Code of Practice for the design of road lighting, ILP Lighting against crime guide, Secured by Design New Homes and CIBSE Guide LG6.

The external lighting will be designed and developed to comply with the Secured by Design criteria to ensure a safe environment.

The illumination levels recommended for different areas are:

Car park: 10 lux

Road lighting: 6 – 10 lux

Pathways: 5 -10 lux

Court yard (pathway): 10 lux

The scheme will be designed to accord with the above.

## 5.0 CCTV

The site will be covered via a closed-circuit television system.

CCTV recording shall be via a series of fixed building mounted cameras located either internally or externally, as required to provide general coverage to vulnerable areas of the site and main entrance and exit points to individual blocks and cores. The CCTV system will also be designed to meet the guidance of the Secured by Design officer. Box, bullet or dome pattern cameras will be selected to best suit the area in which they are installed.

An Internet Protocol (IP) typology will be selected for the entire CCTV system. All external cameras will have smart IR support and the cameras shall be high definition over IP, with a minimum resolution of 2 Megapixels. All cameras will be of the Power Over Ethernet (POE) type as far as possible so as not to require separate power supplies.

Network video recorders (NVR's) will record all images and playback displays will be visible in the security or management office or at the concierge facility to best suit the eventual management company's requirements. The NVR's will be sized such that video recordings are stored for a minimum of 31 days.

Generally, camera coverage will be provided to all vehicular/pedestrian entry and egress points, pedestrian entrance points and vulnerable circulation areas, designed and installed to provide a head and shoulders shot of individuals, for identification purposes.

The CCTV system will be designed for future recovery of surveillance footage if required and to give a general view of the site. It will not be designed with the intention of being constantly monitored.

# FORMER NESTLE FACTORY, HAYES

EXTERNAL LIGHTING & CCTV ASSESSMENTS

(Industrial Scheme)

MAY 2017



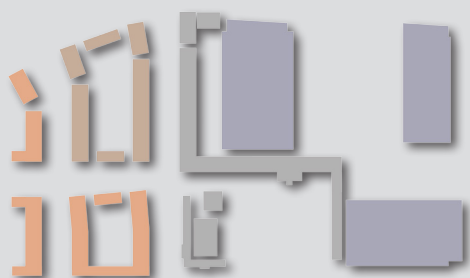
**SEGRO**



watkins payne  
designed engineered focused

This covering report has been prepared for the joint Applicants, SEGRO plc and Barratt London Ltd, by Watkins Payne. It has been prepared to accompany a detailed planning application for the redevelopment of the former Nestlé factory site in Hayes in the London Borough of Hillingdon.

Due to the differing requirements of the joint applicants the two separate reports are at differing stages of design development and detail due to the nature of the respective residential and industrial proposals.



**SEGRO**



WATKINS PAYNE PARTNERSHIP  
7/8 Conduit Street  
London  
W1S 2XF



SEGRO Plc

Planning Application  
for Development  
at  
the Former Nestlé Factory  
Nestles Avenue  
Hayes  
UB3 4RF

External Lighting  
and  
CCTV Assessment  
(Industrial Scheme)

Planning Submission  
Issue 7



**Client Name** Segro Plc

**Client Address** 258 Bath Road  
Slough  
SI1 4DX

**Property:** Former Nestlé Factory  
Nestles Avenue  
Hayes  
UB3 4RF

**Project Reference:** 3660

**Issue:** Planning Submission – Issue 7

**Date:** May 2017

**Prepared by:** PdJ

**Checked by:** MDC

**Validated by:** MDC



## **CONTENTS**

|             | <b>Page</b>                       |          |
|-------------|-----------------------------------|----------|
| <b>1.00</b> | <b>Introduction</b>               | <b>3</b> |
| <b>2.00</b> | <b>Description of Development</b> | <b>4</b> |
| <b>3.00</b> | <b>External Lighting</b>          | <b>5</b> |
| <b>4.00</b> | <b>CCTV</b>                       | <b>8</b> |

## **APPENDICES**

**Drawing No. 3660/E/100 - External Lighting & CCTV Layout**

**Drawing No. 3660/E/101 - External Lighting Design Criteria**

**Site Layout Plan**



## **1.00 INTRODUCTION**

The purpose of this document is to summarise the intended external lighting and external CCTV scheme to be provided to the commercial element of the development site known as the former Nestlé Factory, Hayes on behalf of SEGRO Plc.

This external lighting and CCTV assessment supports the commercial part of the redevelopment which is shown on the architect's site layout, contained in the appendix.

This report should be read in conjunction with the external lighting and CCTV assessment prepared by White Code for the residential part of the proposed redevelopment. Combined, the two reports set out the proposed external lighting and CCTV strategy for the redevelopment of the factory site in its entirety.





## 2.00 DESCRIPTION OF DEVELOPMENT

Full planning permission for the part-demolition of existing factory buildings and associated structures, and redevelopment to provide 1,381 dwellings (Use Class C3), office, retail, community and leisure uses (Use Classes A1/A3/A4/B1/B8/D1/D2), 22,663 m<sup>2</sup> (GEA) of commercial floor space (Use Classes B1c/B2/B8 and Data Centre(sui-generis)), amenity and play space, allotments, landscaping, access, service yards, associated car parking and other engineering works.

The four industrial units that make-up the commercial element of the development are to be built as a shell warehouse with the associated office space being fitted-out to a category A standard. By their speculative nature the final use of the individual units cannot be defined at this early stage therefore the external lighting to the commercial development is to be provided to institutional standards. The CCTV scheme is split into two parts as follows:

- Landlord CCTV : To monitor the development access road
- Future tenant CCTV : Indicative camera locations, complete with installed below ground cable ducts will be provided to the corners of each units car park and service yard.



### 3.00 EXTERNAL LIGHTING

The site is located in close proximity to the Heathrow Airport, although not directly under the flight path the proposed external lighting scheme and the luminaires should comply with the recommendation of:

- Safeguarding of Aerodromes Advice Notice 2, lighting near aerodromes (produced by The Airport Operators Association and the General Awareness Council)
- BS5489 Code of practice for the design of road lighting, Part 1 Lighting of roads and public amenity areas
- BS EN 13201 Road Lighting, Part 2 Performance Requirements
- Institution of Lighting Professions (ILP) Guidance Notes for the Reduction of Obtrusive Light GN01: 2011

Considering the above documents, the acceptable level of luminous intensity of the proposed luminaires should comply with Class G4, G5 or G6 requirements which is shown in the below table extracted from the Safeguarding of Aerodromes Advice Notice 2.

| Angle from the downward vertical | Maximum Luminous Intensity (cd/klm) |          |          |
|----------------------------------|-------------------------------------|----------|----------|
|                                  | Class G4                            | Class G5 | Class G6 |
| 70°                              | 500                                 | 350      | 350      |
| 80°                              | 100                                 | 100      | 100      |
| 90°                              | 10                                  | 10       | 0        |
| >95°                             | 0                                   | 0        | 0        |

While compliance with any class listed above is acceptable, The Safeguarding of Aerodromes Advice Notice 2 particularly recommends compliance with Class G6 due to its zero luminous intensity above 90° angle.

Applying the above recommendations i.e. using luminaires without any upward light component (zero light output at a maximum of 90° from the downward vertical), to an initial external lighting scheme for the proposed development layout indicates that a reasonable external lighting scheme can be produced with the use of class G4 luminaires and the use of some class G6 luminaires.

In accordance with the ILP Guidance Notes the site has been assessed as Environmental Zone Category E3 (a small town centre or suburban location with a medium district brightness lighting environment).

To suit the operational requirements of the recommendations of the British Standards noted above, the external lighting scheme for the industrial element of the development has been sub-divided into the following usage areas:

1. Car park
2. Estate roadway
3. Service yard
4. Environment Agency buffer



The separate usage areas are indicated on drawing number 3660/E/101 contained in the appendix. Based on the lighting recommendations referred to above the following light levels have been identified for each area. The lux levels quoted are at roadway surface level.

|                           |                                 |
|---------------------------|---------------------------------|
| Car park                  | 10 lux average<br>5 lux minimum |
| Estate roadway            | 10 lux average<br>5 lux minimum |
| Service yard              | 25 lux average                  |
| Environment Agency Buffer | 2 lux average                   |

The Environment Agency buffer zone is a 5m strip from the edge of the canal bank back into the site. The lighting scheme is arranged to minimise light spill into this area to help maintain the habitat adjacent to the canal.

The proposed external lighting scheme, based on the above criteria, is indicated on drawing number 3660/E/100 contained in the appendix. The drawing indicates lux level isolines to show the areas of equal lighting levels. The scheme consists of building and column mounted floodlights and column mounted lanterns.

The following observations can be drawn from the illuminance levels indicated on drawing number 3660/E/100:

1. Based on the lux levels plotted on the attached drawing the average illuminance values meet the design criteria. Due to limited space where luminaires can be located the illuminance values in certain areas of the service yards and car parks exceed minimum requirements in order to achieve the overall required average illuminance level.
2. The column mounted floodlights are located at the perimeter of the yards to minimise light spill to the surrounding areas. The proposed lighting assessment does not take into consideration the new trees planted alongside the Environment Agency buffer (given the variety of the trees, they cannot be accurately modelled in the lighting calculation software), therefore the light spill into this area will be further reduced below the values shown on the drawing due to the shadowing effect of the trees.
3. As the operational requirements of the service yards and car parks dictate the location of the lighting columns and the applicant's requirement to reduce lighting energy consumption by using LED luminaires the lighting levels in the Environment Agency buffer area have been minimised. The 1 lux isoline is indicated to show that the lighting levels in the buffer zone adjacent to the canal do not exceed the 2 lux limiting criteria.
4. The 10 lux illuminance level isoline generally follows the boundary of the car parks and service yards. There is an instance, where to meet the lighting design criteria, the isoline crosses the site boundary. This occurrence is adjacent to the Unit 1 and Unit 4 service yards and the boundary of the residential development. This light spillage will have no material effect on the adjacent residential units as the facades that face the industrial development are circulation spaces and not habitable rooms.
5. The 5 lux illuminance level isoline generally follows the same principles as the 10 lux isoline.
6. The 2 lux illuminance level isoline is generally a few meters away from the site boundaries and does not enter the 5m buffer zone adjacent to the canal bank and does not cross the canal bank. To the east of the site adjacent to the Unit 2 car park the 2 lux isoline crosses the site boundary. This is due to the proximity of the car park and hence lighting columns to the site boundary. The 2 lux lighting level will be imperceptible



when it is combined with the existing North Hyde Gardens street lighting. The 2 lux isoline also crosses the site boundary at the estate entrance. Again the effect of this light spillage will be negligible on the existing lighting levels from the existing street lighting.

7. As can be seen from drawing 3660/E/100 the site lighting levels have no material effect on the lighting levels in Nestles Avenue.
8. The scheme complies with the obtrusive light limitations for exterior lighting installations recommendations of the ILP Guidance Notes for Environmental Zone E3.

The proposed luminaire's details are stated on drawing number 3660/E/100.

### **3.01 Conclusion**

The following conclusions can be drawn from this assessment.

1. The operational external lighting design criteria is met in each separate functional area of the site.
2. The proposed luminaires have no upward light output.
3. The light spillage into the buffer zone adjacent to the canal is minimised.
4. There is no light spill onto the canal.
5. Light spill over the site boundary is limited to a lighting level of 2 lux. This occurs on to adjacent existing roads (North Hyde Gardens) and is therefore negligible when the existing street lighting levels are taken into account.
6. There is no increase in lighting levels in the adjacent Nestles Avenue from the proposed lighting to the industrial development area of the site.
7. The scheme complies with the ILP Guidance for Environmental Zone E3.



#### **4.00 CCTV**

The intent is to provide a landlord's CCTV system to monitor the site access road. To achieve this four landlord CCTV columns are proposed, along the length of the site access road. The landlord CCTV cameras are shown on drawing number 3660/E/100.

There is the potential for future tenants to install external CCTV systems to their units. Tenants generally locate their CCTV columns in the corners of their service yards and car parks. The potential future locations of these CCTV columns are indicated on drawing number 3660/E/100. The landlord will provide below ground ducts to the proposed tenant CCTV column locations to facilitate the potential future tenant CCTV installations.





## **APPENDICES**

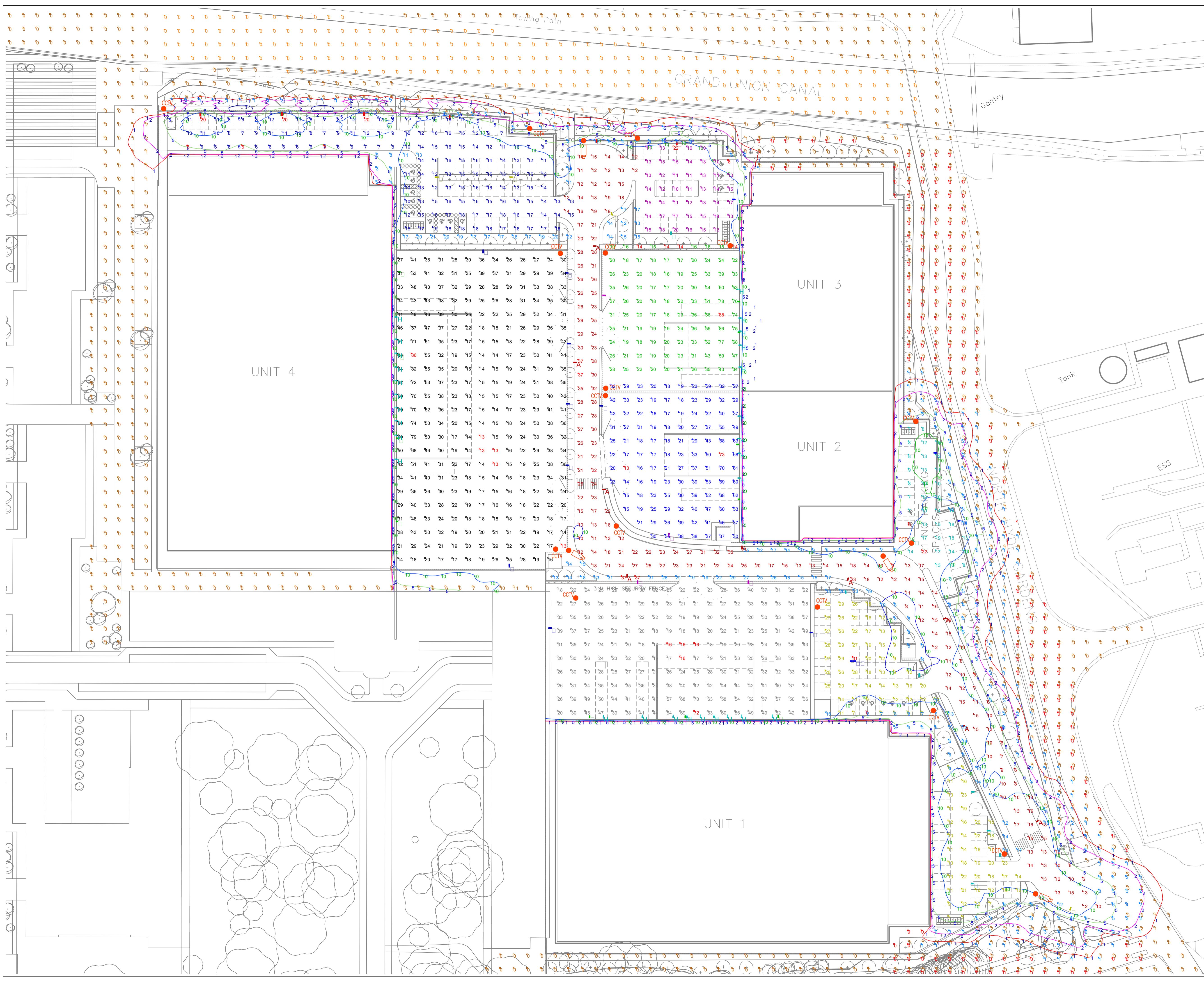
Drawing No. 3660/E/100 – External Lighting and CCTV Layout

Drawing No. 3660/E/101 – External Lighting Design Criteria

Site Layout Plan







- NOTES:-**
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND LEGEND DRAWING.
  - DO NOT SCALE FROM THIS DRAWING.
- LEGEND:-**
- 1.0 LUX ISOLINE
  - 2.0 LUX ISOLINE
  - 5.0 LUX ISOLINE
  - 10.0 LUX ISOLINE
  - CCTV PTZ CAMERA MOUNTED ON COLUMN
  - CCTV ● FUTURE TENANT CCTV COLUMNS.

**REVISIONS**

| Symbol | Issue No. | Issue Description  | Issue Date | Issue Status | Issue Author |
|--------|-----------|--|------------|--------------|--------------|
| ■      | 1         | ISSUE 1: ADJUST LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT.   | 10/01/2017 | Resolved     | AW           |
| ■      | 2         | ISSUE 2: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 2.       | 15/01/2017 | Resolved     | AW           |
| ■      | 3         | ISSUE 3: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT.  | 20/01/2017 | Resolved     | AW           |
| ■      | 4         | ISSUE 4: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 1.       | 25/01/2017 | Resolved     | AW           |
| ■      | 5         | ISSUE 5: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT.  | 30/01/2017 | Resolved     | AW           |
| ■      | 6         | ISSUE 6: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 3.       | 05/02/2017 | Resolved     | AW           |
| ■      | 7         | ISSUE 7: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT.  | 10/02/2017 | Resolved     | AW           |
| ■      | 8         | ISSUE 8: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 4.       | 15/02/2017 | Resolved     | AW           |
| ■      | 9         | ISSUE 9: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT.  | 20/02/2017 | Resolved     | AW           |
| ■      | 10        | ISSUE 10: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 2.      | 25/02/2017 | Resolved     | AW           |
| ■      | 11        | ISSUE 11: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT. | 30/02/2017 | Resolved     | AW           |
| ■      | 12        | ISSUE 12: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 1.      | 05/03/2017 | Resolved     | AW           |
| ■      | 13        | ISSUE 13: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT. | 10/03/2017 | Resolved     | AW           |
| ■      | 14        | ISSUE 14: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 3.      | 15/03/2017 | Resolved     | AW           |
| ■      | 15        | ISSUE 15: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT. | 20/03/2017 | Resolved     | AW           |
| ■      | 16        | ISSUE 16: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 4.      | 25/03/2017 | Resolved     | AW           |
| ■      | 17        | ISSUE 17: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT. | 30/03/2017 | Resolved     | AW           |
| ■      | 18        | ISSUE 18: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 2.      | 05/04/2017 | Resolved     | AW           |
| ■      | 19        | ISSUE 19: CORRECT LUX READINGS AND ISOLINES TO REFLECT CHANGES TO LIGHTING LAYOUT. | 10/04/2017 | Resolved     | AW           |
| ■      | 20        | ISSUE 20: ADDITIONAL CCTV COLUMNS AND ISOLINES TO IMPROVE COVERAGE OF UNIT 1.      | 15/04/2017 | Resolved     | AW           |

**STATISTICS**

| Description       | Symbol | Avg    | Max    | Min    | MinMax | MinAvg |
|-------------------|--------|--------|--------|--------|--------|--------|
| Unit 1 - all Area | ■      | 0 lux  | 1 lux  | 0 lux  | 0.00   | 0.00   |
| Unit 2 - all Area | ■      | 17 lux | 37 lux | 5 lux  | 0.14   | 0.29   |
| Unit 3 - all Area | ■      | 0 lux  | 0 lux  | 0 lux  | 0.00   | 0.00   |
| Unit 4 - all Area | ■      | 4 lux  | 37 lux | 0 lux  | 0.00   | 0.00   |
| Unit 1 - all Area | ■      | 32 lux | 72 lux | 19 lux | 0.22   | 0.30   |
| Unit 2 - all Area | ■      | 16 lux | 39 lux | 6 lux  | 0.19   | 0.38   |
| Unit 3 - all Area | ■      | 23 lux | 73 lux | 13 lux | 0.18   | 0.41   |
| Unit 4 - all Area | ■      | 12 lux | 22 lux | 4 lux  | 0.27   | 0.50   |
| Unit 1 - all Area | ■      | 39 lux | 88 lux | 14 lux | 0.19   | 0.47   |
| Unit 2 - all Area | ■      | 14 lux | 23 lux | 8 lux  | 0.36   | 0.57   |
| Unit 3 - all Area | ■      | 30 lux | 88 lux | 13 lux | 0.15   | 0.43   |
| Unit 4 - all Area | ■      | 13 lux | 29 lux | 5 lux  | 0.25   | 0.42   |

|      |                                     |          |
|------|-------------------------------------|----------|
| PL2  | PROJECT TEAM COMMENTS INCORPORATED. | MAR 2017 |
| PL1  | DRAFT ISSUE FOR COMMENT             | JAN 2017 |
| Ref. | Revision                            | Date     |

**PLANNING**



**watkins payne**  
designed • engineered • focused

Watkins Payne Partnership 51 Staines Road West, Sunbury-on-Thames, Middlesex, TW16 7AH  
Tel: 01892 781641 Fax: 01892 785590 Email: wpp@wppgroup.co.uk Web: www.wppgroup.co.uk

Client  
**SEGRO PLC**

Project  
**FORMER NESTLES FACTORY HAYES**

Title  
**EXTERNAL LIGHTING AND CCTV LAYOUT**

|                |                     |             |              |
|----------------|---------------------|-------------|--------------|
| Date           | <b>JANUARY 2017</b> | Scale at A1 | <b>1:500</b> |
| Drawn By       | <b>PDJ</b>          | Validated   |              |
| Checked        |                     |             |              |
| Drawing Number | <b>3660/E/100</b>   | Revision    | <b>PL2</b>   |





- NOTES:-
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION AND LEGEND DRAWING.
  2. DO NOT SCALE FROM THIS DRAWING.

LEGEND:-

|  |   |
|--|---|
|  | ESTATE ROAD<br>- 10 LUX AVERAGE<br>- 5 LUX MINIMUM              |
|  | CAR PARK AND CIRCULATION<br>- 10 LUX AVERAGE<br>- 5 LUX MINIMUM |
|  | SERVICE YARD<br>- 25 LUX AVERAGE<br>- 0.4 UNIFORMITY            |
|  | EA BUFFER ZONE<br>LIMITING LIGHT LEVEL OF 2 LUX                 |

|      |                                     |          |
|------|-------------------------------------|----------|
| PL3  | FINAL BACKGROUND ADDED.             | MAY 2017 |
| PL2  | PROJECT TEAM COMMENTS INCORPORATED. | MAR 2017 |
| PL1  | DRAFT ISSUE FOR COMMENT             | JAN 2017 |
| Ref. | Revision                            | Date     |

**PLANNING**



**watkins payne**  
designed • engineered • focused

Watkins Payne Partnership 51 Staines Road West, Sunbury-on-Thames, Middlesex, TW16 7AH  
Tel: 01892 781641 Fax: 01892 785590 Email: wpp@wppgroup.co.uk Web: www.wppgroup.co.uk

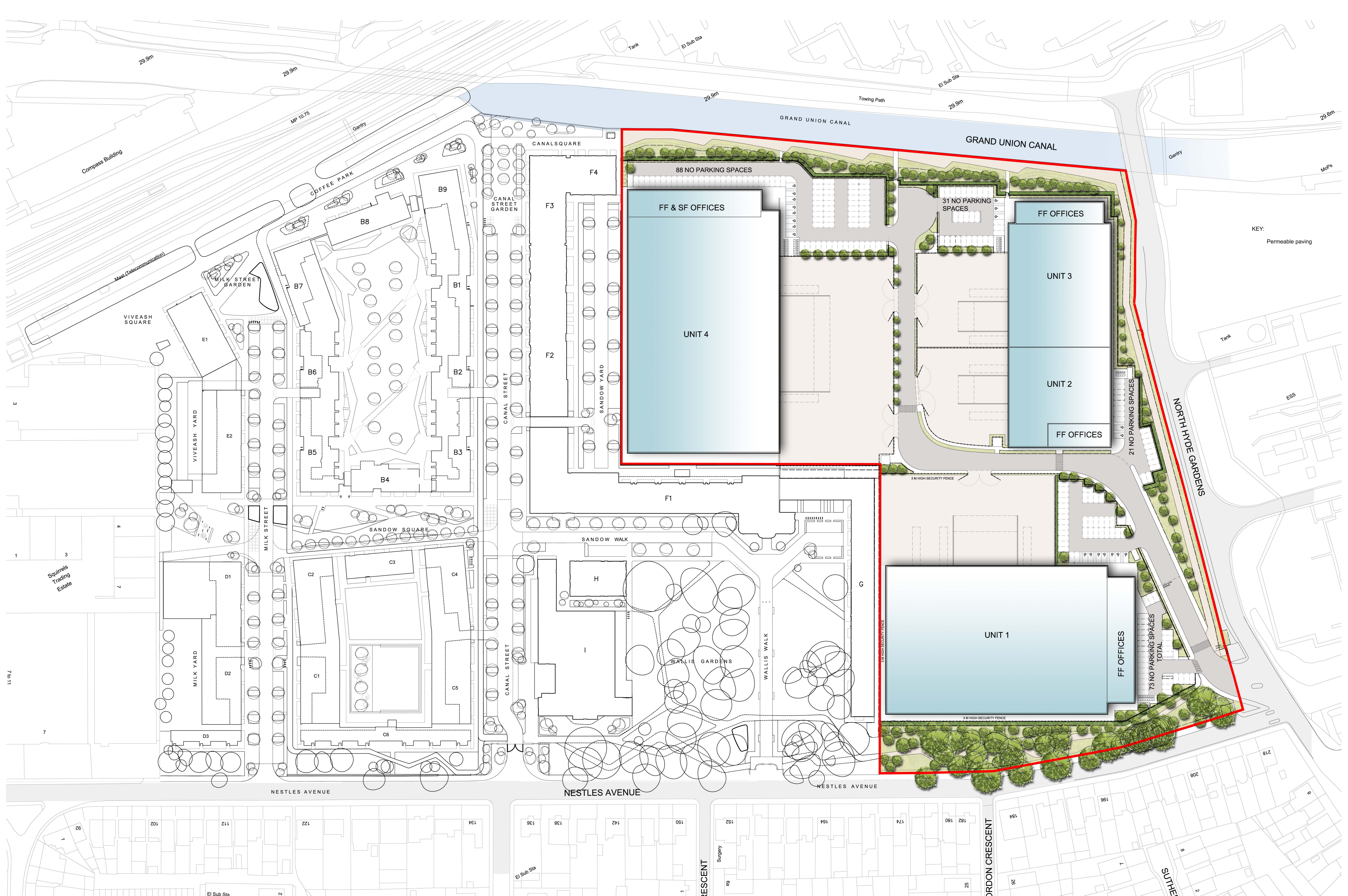
Client  
**SEGRO PLC**

Project  
**FORMER NESTLES FACTORY HAYES**

Title  
**EXTERNAL LIGHTING DESIGN CRITERIA**

|                |                     |             |              |
|----------------|---------------------|-------------|--------------|
| Date           | <b>JANUARY 2017</b> | Scale at A1 | <b>1:500</b> |
| Drawn By       | <b>PDJ</b>          | Validated   |              |
| Checked        |                     |             |              |
| Drawing Number | <b>3660/E/101</b>   | Revision    | <b>PL3</b>   |





KEY:  
Permeable paving



| DATE | REV. DESCRIPTION | CHK. |
|------|------------------|------|
|      |                  |      |
|      |                  |      |
|      |                  |      |

CONSULTANTS DWG NO.

11 Flax Place, 85 Dönitz Road  
London SW14 4LJ  
Tel: 0207 7796102  
www.michaelsparks.co.uk

**FORMER NESTLE FACTORY, HAYES**  
ILLUSTRATIVE SITE LAYOUT PLAN

MS 100

SCALE 1:500@ A0

ISSUE D6





BARRATT  
— LONDON —

SEGRO

