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## **Symmetry Park Merseyside**

### **Phase 2 Reserved Matters**

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## **External Lighting Statement**

**R3**

**Document Validation**

|                 |                                                    |              |                                                 |             |                                    |  |
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## INDEX

|                                                        |           |
|--------------------------------------------------------|-----------|
| <b>1.0 INTRODUCTION .....</b>                          | <b>5</b>  |
| <b>1.1 Planning Application Description.....</b>       | <b>5</b>  |
| <b>1.2 Project Description .....</b>                   | <b>5</b>  |
| <b>2.0 DESIGN .....</b>                                | <b>6</b>  |
| <b>2.1 Assessment of the Need for Lighting.....</b>    | <b>6</b>  |
| <b>2.2 Lighting Standards .....</b>                    | <b>7</b>  |
| <b>2.3 Design Standards .....</b>                      | <b>7</b>  |
| <b>3.0 CONTROL MEASURES .....</b>                      | <b>9</b>  |
| <b>4.0 CONCLUSION .....</b>                            | <b>9</b>  |
| <b>5.0 APPENDIX A – EXTERNAL LIGHTING DRAWING.....</b> | <b>10</b> |

|                                                                                       |                         |
|---------------------------------------------------------------------------------------|-------------------------|
|  | building services       |
|  | fire engineering        |
|  | energy & sustainability |
|  | masterplanning          |
|  | commercial engineering  |

## **EXECUTIVE SUMMARY**

This External Lighting Statement has been prepared by Tate Consulting Ltd to support an application for reserved matters on behalf of Tritax Symmetry Merseyside 1 Limited for the Proposed Phase 2, Symmetry Park, Merseyside.

The proposed development will comply fully with Hybrid planning permission ref. 20/00494/HYB.

Careful consideration has been given to the immediate & surrounding environment, with regards to minimising nuisance glare, overspill lighting, haze reduction & careful luminaire selection to negate zero upward light.

The proposed Lighting scheme will offer an overall uniformed external illumination to the site to comply with the latest / relevant good practice guidance notes & standards set out in this document and ecological requirements.

To help mitigate the impact of the external lighting on the wildlife, surrounding areas and provide sufficient light levels, we have included the following measures:

- We are achieving lighting levels that is not detrimental to the amenity of nearby residential properties.
- Different luminaire optics are used throughout the site to achieve the required lux levels whilst minimising light spill on bat foraging/sensitive areas and upwards reflected light (sky glow)
- The lighting design has been coordinated with the Project Ecologist (TEP), we therefore understand it will not give rise to negative effects on terrestrial mammals that would be likely to occupy the proposed open space areas and bat foraging/sensitive areas.
- Shields will be fitted where required to reduce visual impact

## **1.0 INTRODUCTION**

This External Lighting Statement report has been prepared by Tate Consulting Ltd on behalf of Tritax Symmetry Merseyside 1 Limited to assist the local planning authority's consideration of an application for reserved matters approval for the appearance, landscaping, layout and scale of the site pursuant to hybrid planning permission ref. 20/00494/HYB.

### **1.1 Description of Development**

Application for the approval of reserved matters (scale, access, appearance, layout and landscaping) comprising the development of 365,542sqft (GIA) of storage and distribution floorspace (Use Class B8) with ancillary offices and light industrial (Use Class E(g)) across two warehouse units, together with the provision of landscaping and infrastructure submitted pursuant to planning permission 20/00494/HYB.

### **1.2 Proposed Details**

Total floorspace = 352,212sqft (GIA) comprising:

#### Unit 02

- 152,212sqft GIA of storage and distribution floorspace with ancillary offices
- 9 Loading Docks
- 14 Level Access Points
- 2 Van Dock Doors
- Van Storage Area
- 244 car parking spaces (including 12 accessible spaces and 122 electric charging points)
- 12 motorcycle parking spaces

#### Unit 03

- 200,000sqft GIA of storage and distribution floorspace with ancillary offices
- 20 Loading Docks
- 4 levels access points
- 60 HGV parking spaces
- 189 car parking spaces

The purpose of this document is to discharge Condition 61 of planning permission ref. 20/00494/HYB which states:

- Prior to the occupation of each phase of development approved as part of any subsequent reserved matters application details of all external lighting within the curtilage of each building shall be submitted to and approved in writing by the Local Planning Authority. The agreed details shall be implemented in full before each building is first occupied and maintained thereafter.
- Reason: To ensure the lighting proposed is acceptable and is not detrimental to the amenity of nearby residential properties.

The proposed development will comply with the local Council planning requirements regarding light pollution. The lighting scheme is based on the use of downward lit LED luminaires fixed to columns and building façade mounted at 10m. Also, our scheme identifies the lux levels and contour lines indicating the levels of overspill (measured in Lux) to site boundaries.

## **2.0 DESIGN**

### **2.1 Assessment of the Need for Lighting**

Notwithstanding the legislative requirements to provide adequate means of illumination to prevent the occurrence of dangerous incidents. External lighting is an industry standard requirement and focus on loss prevention policy, with further requirements to prevent vehicular and pedestrian incidences.

The three key issues that drive the requirement for artificial lighting in service yards are:

- safety of vehicular and pedestrian movement;
- security of property and goods; and
- extension of working practices;

The safety and loss prevention benefits of providing external lighting outweigh any negatives for not providing external lighting.

Lighting in itself is not a problem; it only becomes a problem where it is excessive, poorly designed or badly installed.

Additional control measures for providing artificial external lighting have been considered, and will be incorporated into the external lighting design, where required. Refer to Section 3.0 Control Measures, for a list of the control measures to be incorporated into the lighting design.

Whilst considering the impact of lighting on the residents and surrounding ecological sensitive areas, we have maintained focus on the safe operation for a distribution building

## 2.2 Lighting Standards

The following external lighting standards and guidance documents will form the basis for assessment of the minimum lighting design standard to be provided for the development:

### British Standards:

BS 5489, 1:2013 Code of Practice for the design of road lighting – Part 1: Lighting of roads and public amenity areas

BS EN 12464, 2:2014 Lighting of work places, Outdoor work places.

LG6, The Outdoor Environment (1992)

Guidance Notes for the Reduction of Obtrusive Light GN01 (2011)

## 2.3 Design Standards

The whole of the Lighting will be designed to achieve the following maintained illuminances at floor level, as detailed in tables No1 and No2 below:

Table No 1-Lighting Design Requirements-Unit 02

| EXTERIOR LIGHTING                                                                   | AVERAGE ILLUMINANCE (LUX) | UNIFORMITY U <sub>0</sub> | WORKING PLANE HEIGHT (m) |
|-------------------------------------------------------------------------------------|---------------------------|---------------------------|--------------------------|
| Parking Areas                                                                       | 20                        | 0.4                       | 0.00m AFFL               |
| Service / HGV Parking Yard                                                          | 25                        | 0.4                       | 0.00m AFFL               |
| Walkways exclusively for pedestrians                                                | 10                        | 0.25                      | 0.00m AFFL               |
| Circulation areas and shared pedestrian and electrically powered handling equipment | 50                        | 0.4                       | 0.00m AFFL               |
| Loading / Unloading Areas (Yard) for 18m from building elevation                    | 100                       | 0.4                       | 0.00m AFFL               |
| Loading / Unloading Areas (Yard), Remainder Of Yard                                 | 50                        | 0.4                       | 0.00m AFFL               |
| Entry / Exit roadways & gatehouse                                                   | 100                       | 0.4                       | 0.00m AFFL               |
| External Lighting plant areas                                                       | 100                       | 0.4                       | 0.00m AFFL               |
| Circulation road & other external areas                                             | 50                        | 0.4                       | 0.00m AFFL               |
| Pedestrian road crossings                                                           | 100                       |                           | 0.00m AFFL               |

Table No 2-Lighting Design Requirements-Unit 03

| EXTERIOR LIGHTING                         | AVERAGE ILLUMINANCE (LUX) | UNIFORMITY U <sub>0</sub> | WORKING PLANE HEIGHT (m) |
|-------------------------------------------|---------------------------|---------------------------|--------------------------|
| External Lighting, plant areas            | 100                       | 0.4                       | 0.00m AFFL               |
| External Lighting, loading bays           | 50                        | 0.4                       | 0.00m AFFL               |
| External Lighting, roadways               | 20                        | 0.25                      | 0.00m AFFL               |
| External Lighting, main entrance          | 50                        | 0.4                       | 0.00m AFFL               |
| External Lighting to yard and other areas | 25                        | 0.4                       | 0.00m AFFL               |
| External Lighting, cycle shelters         | 20                        | 0.4                       | 0.00m AFFL               |

The whole of the external lighting installation will achieve a minimum light level of 5 lux.

Floodlighting to the service yards will comprise a combination of lighting columns around the site perimeter and will be mounted on 10m columns, with building façade / wall mounted floodlights, mounted along the elevations will also be mounted at 10m high. These will be mounted horizontally with No (zero) or 5° tilt, this will further restrict the ability to view the peak intensity (obtrusive glare) against the horizontal (preventing upward light, sky-glow and light trespass).

Floodlighting to the sites access road will be mounted on 10m columns and will be strategically positioned along the access road to have maximum benefit for both operational and residential amenities and reduce obtrusive glare to the neighbouring properties to the south of the site.

The following table No 3 details the design statistics achieved within the various areas of the development, which should be read in conjunction with the external lighting drawing appended in this report.

Table No 3-Lighting Design Calculation Results

| <b>STATISTICS</b>                         |            |            |            |                |
|-------------------------------------------|------------|------------|------------|----------------|
| <b>DESCRIPTION</b>                        | <b>Avg</b> | <b>Max</b> | <b>Min</b> | <b>Min/Avg</b> |
| Access Road - 20 lux / 0.25 Uo            | 20 lux     | 78 lux     | 5 lux      | 0.25           |
| Unit 2 Bypass lane - 50 lux / 0.4 uo      | 50 lux     | 132lux     | 20 lux     | 0.4            |
| Unit 2 Canopy - 100 lux / 0.4 Uo          | 116 lux    | 180lux     | 65 lux     | 0.56           |
| Unit 2 Canopy - 100 lux / 0.4 Uo          | 121 lux    | 169 lux    | 59 lux     | 0.49           |
| Unit 2 Car Park - 20 lux / 0.4 Uo         | 20 lux     | 69lux      | 8 lux      | 0.40           |
| Unit 2 Gatehouse - 100 lux / 0.4 Uo       | 108 lux    | 139lux     | 80 lux     | 0.7 4          |
| Unit 2 Gatehouse - 100 lux / 0.4 Uo       | 100 lux    | 124 lux    | 81 lux     | 0.81           |
| Unit 2 Loading - 100 lux / 0.4 Uo         | 110 lux    | 145 lux    | 77 lux     | 0.70           |
| Unit 2 Pedestrians - 10 lux / 0.25 Uo     | 31 lux     | 89 lux     | 8 lux      | 0.26           |
| Unit 2 Van Parking - 25 lux / 0.4 Uo      | 25 lux     | 101 lux    | 10 lux     | 0.4            |
| Unit 2 Yard - 50 lux / 0.4 Uo             | 54 lux     | 141 lux    | 25lux      | 0.46           |
| Unit 3 Access Road - 10 lux / 0.4 Uo      | 23 lux     | 56 lux     | 10 lux     | 0.43           |
| Unit 3 Car Park - 20 lux / 0.4            | 20 lux     | 67 lux     | 8 lux      | 0.4            |
|                                           |            |            |            |                |
| Unit 3 Gatehouse - 50 lux / 0.4 Uo        | 55 lux     | 62lux      | 42 lux     | 0.76           |
| Unit 3 HGV Hardstanding - 25 lux / 0.4 Uo | 29 lux     | 74 lux     | 12 lux     | 0.41           |
| Unit 3 Loading Bay - 50 lux / 0.4 Uo      | 59 lux     | 65 lux     | 44 lux     | 0.75           |
| Unit 3 Loading Bays - 50 lux / 0.4 Uo     | 54 lux     | 73 lux     | 26 lux     | 0.48           |
| Unit 3 Loading Bays - 50 lux / 0.4 Uo     | 55 lux     | 69 lux     | 35 lux     | 0.64           |
| Unit 3 Loading bays - 50 lux / 0.4 Uo     | 53 lux     | 62 lux     | 47 lux     | 0.89           |
|                                           |            |            |            |                |

Perimeter boundaries into adjoining areas including ecological sensitive zones have been kept to the minimum by reducing any potential light overspill which are identified by lux contour lines on the appended layout drawing which clearly show negligible impact on the neighbouring properties

### **3.0 CONTROL MEASURES**

This section describes the particular control measures that this site will incorporate to minimize light spillage, trespass and pollution:

The external lighting installation will incorporate a photo- electric cell control, to prevent the lighting installation operating during the hours of daylight, thus conserving energy and minimizing carbon emissions.

External lighting override switch to guard hut and local lighting to winter module to be provided.

The external lighting design will not incorporate any luminaires that have aiming angles beyond 5° , the horizontal working plane.

Measures will be taken to eliminate light spillage onto adjacent land from luminaires positioned on the development site, this shall be achieved by the following;

- Minimising spill light by using luminaires with superior precise optics and not general floodlights.
- Column mounted lanterns with either a FW Forward Throw, AY Asymmetric or SY Symmetric optic dependant on the size & shape of the area to be covered.
- Utilising high quality design packages, to predict and influence the lighting design.
- Shields will be fitted where required to reduce visual impact

### **4.0 CONCLUSION**

The designed lighting solution has been carefully generated to ensure the immediate environment has been protected including the adjoining property areas that border the development.

The illumination that would normally be free and overflowing from site boundaries has been restricted and has been further designed to mitigate any potential impact within any ecology zones.

Careful consideration has been appropriated to ensure no loss of amenity due to glare through choice of luminaires and efficient mounting heights

It should also be noted that the service yards and associated areas of illumination have been designed to meet operational and security requirements, whilst ensuring the design takes into consideration and limits light pollution and unobtrusive light impacting on the surrounding amenity and ecological zones.

The lighting uses a mixture of efficient high-quality building and column mounted luminaires which have been chosen to minimise impact on the natural environment including further consideration on ecological constraints. Full descriptions and details of the proposed luminaires are as detailed on the drawing in appendix A.

## **5.0 APPENDIX A – EXTERNAL LIGHTING DRAWING**

