M&E SERVICES

MEMORANDUM 02

JOB No:	2875	DATE:	30th November 2016
PROJECT:	**63-71 High Street, Hampton Hill**		
TITLE:	**Light Pollution**		

1.0 Introduction

1.1 This memorandum has been prepared to provide a technical overview of the lighting impacts of the proposed development and also provides a commentary on the findings of the illumination review of the existing buildings and surrounding public street lighting.

1.2 Light pollution or obtrusive light assessments consider the impact the proposed illumination levels may have on neighbouring properties and surrounding environs.

1.3 Light pollution control seeks to reduce upward light or 'Sky Glow' and lighting design should ensure that the objective of providing interesting, effective and quality external lighting schemes should have minimal impact on the surrounding environment.

1.4 In this case the proximity and visibility of the site from Bushy Park with its known biodiversity is a particular consideration.

1.5 The NPPG (Paragraph: 007 Reference ID: 31-007-20140306) addressed the factors that are relevant when considering possible ecological impact of light pollution. It notes that wildlife differs from humans in their sensitivity to light (e.g. they can be affected by very low levels of light) and may be adversely affected in a number of ways and that the positioning, duration, type of light source and level of lighting are all factors that can affect the impact of light on wildlife

2.0 Commentary

2.1 The proposed external lighting scheme for the development will comprise the strategic positioning of luminaires to address the aesthetics of the design, while providing wayfinding lighting and ensuring a safe environment for occupiers and visitors.

2.2 It is the intention to illuminate key architect features and points of interest throughout the development whilst ensuring that obtrusive light is avoided by utilising directional luminaires that limit the spill of light to other areas, particularly adjacent neighbouring windows and properties.

2.3 Low energy LED lighting will be utilised to reduce overall energy consumption combined with effective control in accordance with the ILE Guidance Notes for the Reduction of Obtrusive Light GN01:2011.

2.4 The pedestrian's routes through the site will have low level pathway lighting and directional bollard lighting to provide suitable illumination throughout the outer and inner access courts.

2.5 All access and doorway areas will be provided with lighting with enhanced illumination for the purpose of providing a secure environment controlled so as not to be intrusive within the apartments and any surrounding premises. The Estate Management Strategy has provisions to ensure the light fittings are regularly monitored and maintained.

3.0 Illumination Review

3.1 We have been requested to assess the potential impact of light emission from the proposed development on the neighbouring Bushy Park

3.2 To assess this, the existing illumination levels from the existing development have been recorded (see accompanying drawing 2875.E1.201). Lux level readings were taken with both the lighting in the existing office buildings on the site on and off. This enables the impact the lighting within the building has on the surrounding areas to be assessed. Readings were taken along the footpath directly adjacent to the property; across the High Street and within Bushy Park. These readings were taken with a calibrated Lux meter and at regular intervals.

3.3 As can be seen from the lux plot drawing there is a marginal difference in Lux levels directly outside of the existing development, with the lights on compared to when the lighting was switched off.

3.4 No change in Lux level was recorded outside of The Star Public House across the street from the existing development when the lights were on compared to when the lighting was switched off.

3.5 The Lux level readings taken along the path within Bushy Park, approximately 10m from the Park's boundary wall, were recorded as 0 lux with the lights on within the building and all other external illumination sources on.

3.6 From this we conclude that at night with the internal lights on the existing development has no registrable impact in the park.

3.7 The existing street lighting currently extends above the tops of the surrounding buildings adjacent to the Park. This lighting can be viewed from within the Bushy Park.

3.8 There will be no additional external street lighting or illumination of the façade and consequentially the development will have a negligible illuminance contribution to the High Street and the wider public realm. Within the courts accessed off the High Street and which lead to the entrances to the apartments and houses the lighting scheme comprises mostly directional low level wayfinding luminaires, not tall post mounted or flood light type luminaires. These lights will not be seen from Bushy Park.

3.9 In assessing lighting impacts from the existing building on the site and the proposed development it is necessary to have regards to the characteristics of the lighting and use of B1 offices in comparison with the proposed residential units.

3.10 Typical commercial office lighting is generally uniform ceiling mounted to provide a consistent task efficient illumination which will be extinguished relatively early in the evening but, when on, will not be shielded with blinds.

3.11 Experience shows that the lux emissions from residential accommodation is generally noticeably lower than from occupied office buildings with comparable window areas.

3.12 In this case there will be an increase in the overall extent of glazing within the façade of the new building, however a high percentage of this is recessed behind the inset balconies (which are in part shielded by the sliding privacy screens), or angled away from the park in the set-back top storey.

3.13 Even if a consistent lighting design is incorporated within the apartment (as proposed) the occupiers of the residential apartments will employ a wide variety of more random periods of use when compared to occupiers of the office building. Furthermore, we would expect residents to use blinds and or curtains for privacy and that these will tend to be drawn during evenings, particularly to bedrooms. Blinds and curtains significantly reduce light emissions from residential apartment windows.

3.14 While each of the apartments fronting the High Street will have access to a balcony (at 1st & 2nd floors) or a terrace (3rd floor) these will only be provided with low level wayfinding luminaires, not uplighters.

3.15 Although the internal apartment and low level balcony and terrace lighting will be visible from the Lux levels within the Park will be indiscernible.

3.16 In our opinion the form and level of lighting in the proposed residential apartments, whether or not blinds & curtains are installed and drawn shut, will be less apparent and less intense than the existing arrangement of windows and consistent level of light emission from the B1 office use of the buildings. As a consequence any impact on the biodiversity in the Park is likely to be improved.

3.17 The existing street lighting, as stated above, can be viewed from within the Bushy Park and in our opinion this has a greater impact within the Park than the future light emissions from the proposed development's apartment lighting, which is set behind the street lighting.

4.0 Summary

In our judgement the external and internal lighting of the proposed development will not have an adverse effect on the biodiversity of Bushy Park and when compared to the existing commercial development there should be an overall reduction of light spill from the building as perceived from within the Park.

5.0 Further Information / Design Criteria

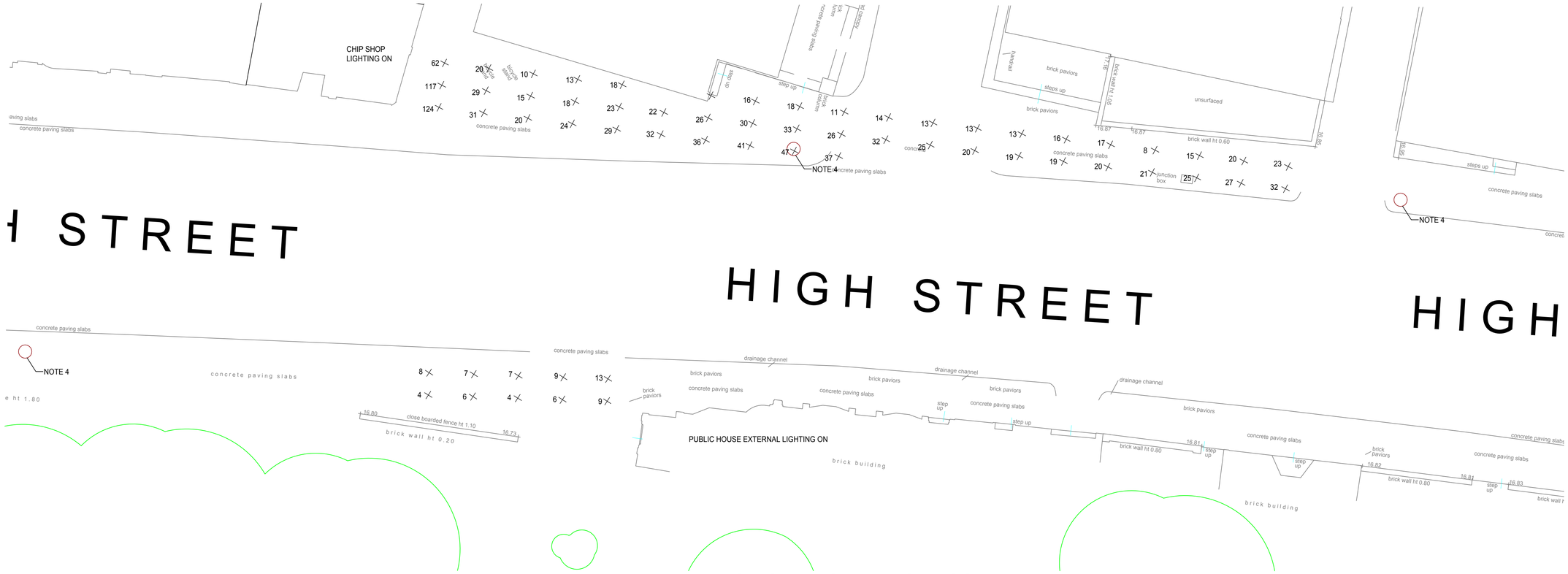
All External lighting will comply with CIBSE LG06/16 Lighting Guide 06: The Exterior Environment and shall comply with the following to achieve the appropriate BREEAM credits. The Contractor shall ensure that the following is undertaken:

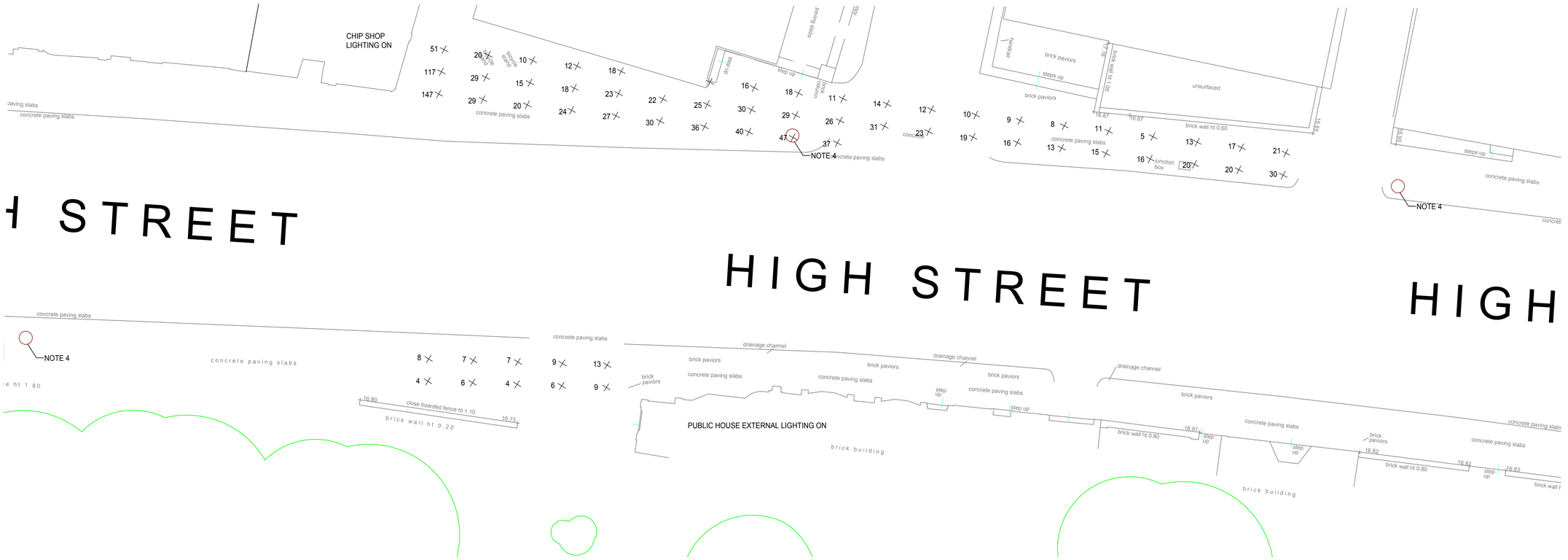
a) The external lighting strategy has been designed in compliance with Table 1 (and its accompanying notes) of the ILE Guidance notes for the reduction of obtrusive light, 2011. All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to the appropriate hours.

b) All external light fittings for the building, access ways and pathways have a luminous efficacy of at least 50 lamp lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or

equal to 60. **OR** 60 lamp Lumens/circuit Watt when the lamp has a colour rendering index (Ra) less than 60.

c) All external light fittings for signs and uplighting have a luminous efficacy of at least 60 lamp lumens/circuit Watt when the lamp wattage is greater than or equal to 25W. **OR** 50 lamp lumens/circuit Watt when the lamp wattage is less than 25W.





SVM Consulting Engineers

Notes

1. THIS DRAWING IS NOT FOR CONSTRUCTION
2. ALL MEASUREMENTS TAKEN IN LUX @ 1.1M AFFL
3. REFER TO DESIGN MEMO FOR WRITTEN COMMENTARY
4. EXISTING LED STREET LAMP

Rev.	Date	Details

Drawing Status
FOR INFORMATION

Consulting Engineers Building Services
SVM
Berkhamsted 01442 869369
Edinburgh 0131 554 3666

Architect
3S Architects

Structural Engineer
HPBW

Quantity Surveyor
P2M UK LTD

Project Name
63-71 High Street Hampton Hill

Client
Great Planet Ltd

Drawing Title
Site Boundary External Illuminance Levels

Scale	Date	Orig. By	Drawn By	Checked
1:100@A1	NOV 2016	MJR	KD	MJR

Drawing Number
2875.E1.201

Revision
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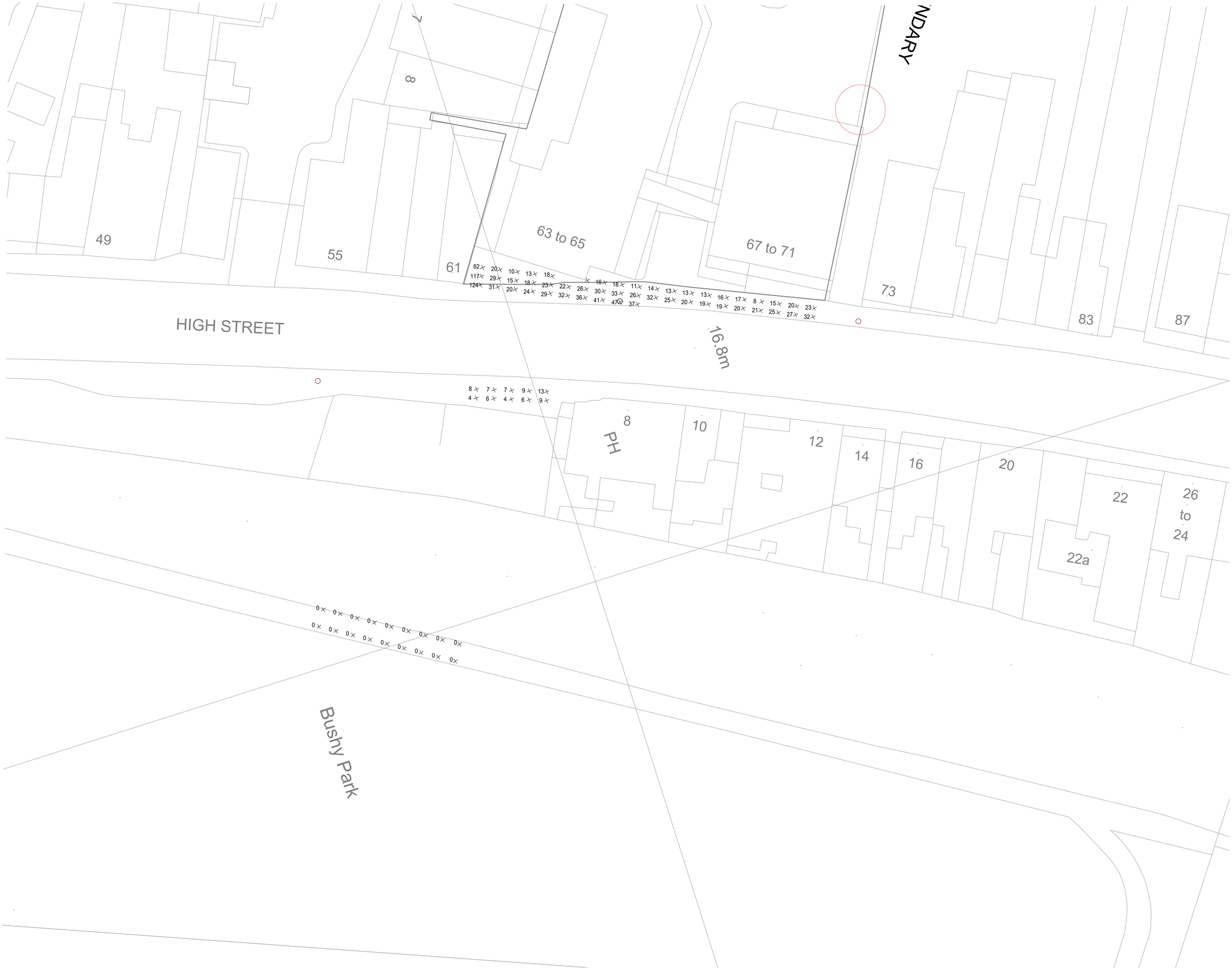

EXISTING DEVELOPMENT LIGHTING ON

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Drawing Title
Site Boundary & Bushy Park External Illuminance Levels

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Drawing Number
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Revision
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