



1rL10191

REPORT FOR

ARTIFICIAL LIGHTING IMPACT ASSESSMENT

AT

67 CHEETHAM HILL ROAD, MANCHESTER, M4 4ES

PREPARED FOR

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Date

23rd MAY 2025

QUALITY ASSURANCE

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EXECUTIVE SUMMARY

PEC were commissioned by Brightwise Group to undertake an Artificial Lighting Impact Assessment in support of a proposed mixed use development at 67 Cheetham Hill Road, Manchester.

The proposals comprise the redevelopment of the existing site to provide commercial floor space at ground floor and residential on the upper two floors alongside associated infrastructure and artificial lighting. Following the submission of planning application 141647/FO/2024, the following condition has been issued in relation to artificial Lighting.

“Before its installation, any external lighting required in support of the development shall be related to a scheme to be submitted to and approved in writing by the City Council as local planning authority. Lighting shall only be installed in accordance with the approved scheme and maintained in situ unless any lighting installed as part of the development hereby approved, when illuminated, causes glare or light spillage which in the opinion of the Council as local planning authority is harmful to adjoining and nearby residential properties. In such circumstances and within 14 days of its written request, a scheme for the elimination of glare and/or light spillage shall be submitted to and approved in writing by the Council as local planning authority. The approved scheme shall be implemented to a timescale agreed with the City Council as local planning authority and maintained in situ thereafter.”

Reason - To minimise the impact of the illumination of the lights on the occupiers of nearby residential accommodation, pursuant to policies SP1 and DM1 of the Core Strategy for the City of Manchester.”

An Artificial Lighting Impact Assessment is therefore required in order to determine baseline conditions at the site, assess site suitability for the proposed end-use and assess the potential impacts as a result of the proposed development.

Modelling was undertaken in order to predict impacts associated with changes in lighting levels at sensitive locations in close proximity to the proposed development the site.

The modelling results indicated that lighting levels at nearby sensitive areas remained below the relevant lighting trespass values. The location is therefore considered suitable without the inclusion of best practice design measures to protect nearby receptors from artificial lighting impacts.

Based on the assessment results, artificial lighting is not considered a constraint to planning consent for the proposed development.

1 INTRODUCTION

1.1 BACKGROUND

Planning and Environmental Consultants (PEC) Ltd have been commissioned by the Brightwise Group, hereafter referred to as “the Client” to undertake an Artificial Lighting Assessment in support of a planning application for a mixed use development at 67 Cheetham Hill, Manchester, herein after referred to as the “Proposed Development”.

1.2 SITE LOCATION AND CONTENT

The Proposed Development is located at 67 Cheetham Hill Road, Manchester, M4 4ES, at approximate National Grid Reference (NGR) 384120, 399520. Reference should be made to Figure 1 within Appendix I for a location plan.

The proposals comprise the redevelopment of the existing site to provide commercial floor space at ground floor and residential on the upper two floors alongside associated infrastructure and artificial lighting.

As part of the proposal, a number of artificial lights will be introduced in close proximity to surrounding sensitive receptors. Subsequently, the Proposed Development has the potential to cause impacts at sensitive receptor locations as a result of light spill during the operational phase.

An Artificial Lighting Impact Assessment has therefore required to quantify baseline conditions, consider the suitability of the site for the proposed end-use and assess potential impacts as a result of the development. This is detailed in the following report.

1.3 LIMITATIONS

This report has been produced in accordance with PEC Ltd standard terms of engagement. This report is solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from PEC Ltd at which point a charge may be levied against such approval.

2 LEGISLATION, GUIDANCE AND POLICY

The following legislation, guidance and policy will be considered and adhered to during the preparation of the Lighting Impact Assessment:

- The National Planning Policy Framework (NPPF), updated on 20th December 2023
- The National Planning Practice Guidance (NPPG), relevant chapters updated on 1st November 2019
- Clean Neighbourhoods and Environmental Act
- Guidance Notes for the Reduction of Obtrusive Light, Institution of Lighting Professionals, 2011
- Lighting in the Countryside: Towards Good Practice, Department for Communities and Local Government, 2005
- Bats and Artificial Lighting in the UK, Institute of Lighting Professionals, BATS Conservation Trust Lighting Guidance, 2008
- Environmental Protection Act, 1990

2.1 LOCAL PLANNING POLICY

The Manchester City Council (MCC) core strategy was adopted in July 2012 and provides the key framework and development plans to facilitate development across the local authority. A review of the Core Strategy and associated documents indicated the following policies relevant to artificial lighting at the proposed development.

- SP1 – Spatial Principles
- DM1 – Development management.

Reference has been made to these policies within this assessment by assessing impacts on existing sensitive receptors as a result of the proposals.

3 METHODOLOGY

The Artificial Lighting Impact Assessment included the production of a computational model of the development and an evaluation of associated impacts.

To order to assess the potential impacts of proposed artificial lighting in the area, a model of assumed lighting design, has been constructed using the Relux Lighting Software (V2025.1.3.0). The calculations performed within the assessment assumed the worst-case effect of the proposed development lighting on existing receptors.

The methodology for each element of the assessment is outlined in the following subsections.

3.1 BASELINE

Existing lighting conditions in the vicinity of the development site were identified in order to provide a reference for assessment. The Lighting in the Countryside¹ document states the following items should be considered during the determination of baseline:

- A review of the area and landscape together with any designations;
- An overview of existing lighting;
- Identification of potential receptors; and
- Environmental Zone Classification.

The ILP has developed an Environmental Zone classification system for the categorisation of assessment locations. This is summarised in Table 1.

Table 1: Environmental Zone Classification

Category	Description	Examples
E0	Dark landscapes	UNESCO Starlight Reserves and IDA Dark Sky Parks
E1	Intrinsically dark landscapes	National Parks, Areas of Outstanding National Beauty, etc
E2	Low district brightness areas	Village or relatively dark outer suburban locations
E3	Medium district brightness	Small town centres or suburban locations
E4	High district brightness areas	Town/city centres with high levels of night-time activity

The criteria shown in Table 1 were utilised to determine the most appropriate Environmental Zone for the development location.

3.2 IMPACT SIGNIFICANCE

The development was assessed for the disturbance and/or nuisance to nearby existing receptors due to artificial lighting.

Light trespass was considered for the relevant Environmental Zone, as previously outlined in Table 1. Obtrusive light limitations for exterior lighting installations, relevant to this assessment, have been determined by the ILP. These are summarised in Table 2.

Table 2: Obtrusive Light Limitations for Exterior Lighting Installations

¹ Lighting in the Countryside; Towards Good Practice, Department for Communities and Local Government, 2005.

Environmental Zones	Light Trespass (into Windows) E_v (lux) ^(a)		Maximum Luminous Intensity (cd)		Maximum Building Luminance (cf/m ²)
	Pre-Curfew	Post-Curfew ^(b)	Pre-Curfew	Post-Curfew ^(b)	
E0	0	0	0	0	0
E1	2	1 ^(b)	2500	0	0
E2	5	1	7500	500	5
E3	10	2	10000	1000	10
E4	25	5	25000	2500	25

NOTE: (a) Vertical Illuminance measured flat at the glazing at the centre of the window.
 (b) From public road lighting installations only.

The criteria in Table 2 were utilised to determine the potential for adverse impacts of light trespass at sensitive locations across the development.

4 BASELINE

Existing lighting conditions in the vicinity of the proposed development site were identified in order to provide a baseline for assessment. These are detailed in the following sections.

4.1 EXISTING LIGHTING ENVIRONMENT

4.1.1. SURROUNDING AREA

The Surrounding area is predominantly light industrial, commercial and residential with roads located to the front and rear of the development. There are a number of existing light sources in the area including street lighting, commercial lighting and intermittent lighting from passing vehicles.

4.1.2. ENVIRONMENTAL ZONE

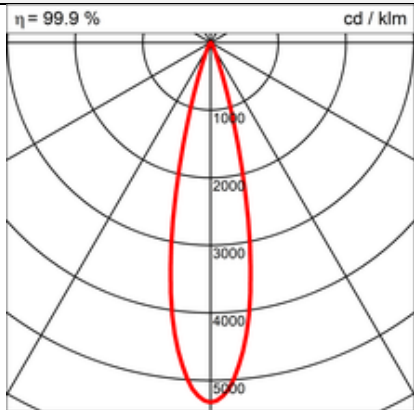
The Surrounding area is classified as category E4 due to its location in a heavily built up city area. Due to its location along a busy street, there is also a higher than average level of night time activity.

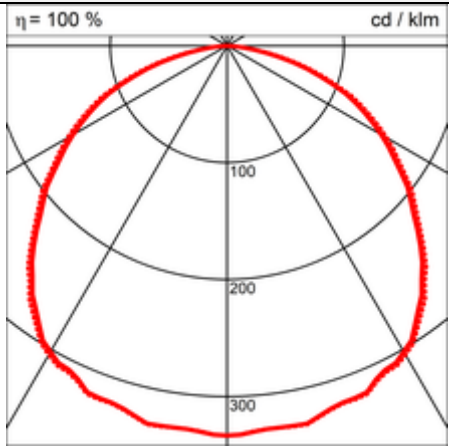
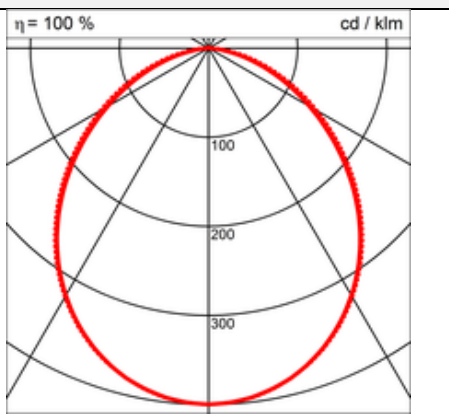
4.2 PROPOSED ARTIFICIAL LIGHTING

Based on the finding of section 4.2.1, a selection of luminaires have been indicated which allow for adequate illuminance across the site. Table 3 indicates the proposed forms of artificial light which will be utilised at the front and rear of the proposed development to provide security, ease of access for future residence and advertising for the commercial units at ground floor.

The products specified within Table 3 are examples which are used to determine the required specifications which the final products should mirror.

Table 3: Proposed Artificial Lighting

Luminaire	Luminaire Data		LDC
Luminaire 1 - Thorn - Cesar-96260451			
	LiTG Class	A80	
	CIE Flux Codes	97 100 100 100 100	
	System Power	6 W	
	Luminaire Output	68.1 lm/W	
	System Light Flux	409 lm	
	Protection Class	Protection Class I	
	Protection Degree	IP 65	

Luminaire	Luminaire Data		LDC
Luminaire 2 – Backlit signage (LED)			
	LiTG Class	A40	
	CIE Flux Codes	47 79 96 100 100	
	Efficiency	Absolute Photometry	
	System Power	2.7 W	
	Luminaire Output	27.8 lm/W	
	System Light Flux	75 lm	
	Protection Class	Protection Class I	
	Protection Degree	IP 66	
Luminaire 3 - ESYLUX - BASIC OFL/AFL-EL10810725			
	LiTG Class	A40	
	CIE Flux Codes	52 89 99 100 100	
	Efficiency		
	System Power	30W	
	Luminaire Output	100 lm/W	
	System Light Flux	3000 lm	
	Protection Class	Protection Class I	
	Protection Degree	IP 65	

The proposed Luminaire 1 as detailed in Table 3 is to be located adjacent to the front residential entrance door and spaced evenly at three locations across the rear of the building, all at a height of 2m (or as close as practically possible). These will provide sufficient light to for future users to access the buildings without the need of additional lighting, it will also provide a level of security.

The proposed Luminaire 2 as detailed in Table 3 are representative of the LEDs which are present within most types of back lit signage. The proposed development will have a variation of this at a height between 2.2m and 2.8m across the front facade. The nature of the recessed backlighting should ensure that light spill is minimised whilst providing sufficient light to adequately advertise the facility. The lights will be turned off outside of operational hours.

The proposed Luminaire 3 as detailed in Table 3 is to be located on the rear of the building, all at a height of 3.5m (or as close as practically possible). This will provide a level of security to future site users and will be attached to sensors and a 1 minute timer applied.

4.3 SENSITIVE RECEPTORS

A sensitive receptor is defined as any area which may be affected by changes in lux levels as a result of a development. Potential receptors which are sensitive to artificial light have been identified within figure 3.

4.3.1. OPERATIONAL PHASE SENSITIVE RECEPTORS

A desk-top study was undertaken in order to identify any sensitive receptor locations in the vicinity of the site that require specific consideration during the assessment and are summarised in Table 4.

Table 4: Receptor locations

Receptor	NGR (m)	
	X	Y
R1 – Back Elsworth Street	384090	399520
R2 - Chatley Street	384114	399583
R3 - Cheetham Hill Road	384159	399509
R4 – Front of 67 Cheetham Hill Road	384126	399518
R5 – Back of 67 Cheetham Hill Road	384108	399523

The sensitive receptors identified in Table 4 represent worst-case locations. However, this is not an exhaustive list and there may be other locations within the vicinity of the site that may experience artificial lighting impacts as a result of the proposed development that have not been individually identified above.

Reference should be made to Figure 2 within Appendix I for a graphical representation of operational phase artificial lighting sensitive receptor locations.

5 ASSESSMENT

There is the potential for artificial lighting impacts on receptors as a result of the operation of the Proposed Development. These are assessed in the following Sections.

5.1 OPERATIONAL PHASE ASSESSMENTS

Additional artificial lighting associated with the operation of the proposed development has the potential to impact upon receptors either from direct light or light spill. An assessment was therefore undertaken using dispersion modelling in order to quantify potential lux levels at sensitive locations in the vicinity of the site.

Predicted lux levels across the nearby receptors are summarised in Table 5. Exceedances of 5lx are highlighted in **bold**.

Table 5: Modelling Results – Lux Levels

Receptor	Minimum Lux Levels	Maximum Lux Levels	Average Lux Levels
R1 – Back Elsworth Street	0.20	3.50	1.50
R2 - Chatley Street	<0.01	0.20	0.03
R3 - Cheetham Hill Road	<0.01	1.40	0.20
R4 – Front of 67 Cheetham Hill Road	<0.01	1.60	0.05
R5 – Back of 67 Cheetham Hill Road	<0.01	0.50	0.05

The predicted Lighting levels shown in Table 5 indicate that there were exceedances of 5lx at any of the near by receptor locations. Based on the above results of the lighting impact assessment and worse case assumptions used, the site is not considered to significantly impact on receptors in close proximity to the site boundary. As such artificial lighting impacts from the development are not considered to require any further mitigation and should not be considered a constraint to planning.

6 CONCLUSION

PEC were commissioned by Brightwise Group to undertake an Artificial Lighting Impact Assessment in support of a proposed mixed use development at 67 Cheetham Hill, Manchester.

Modelling was undertaken in order to predict impacts associated with changes in artificial lighting levels at sensitive in close proximity to the proposed development. The modelling results indicated that lux levels outside of the site boundary quickly fell to below 5 lux in all directions.

Based on the assessment results, artificial lighting is not considered a constraint to planning consent for the proposed development.

7 ABBREVIATIONS

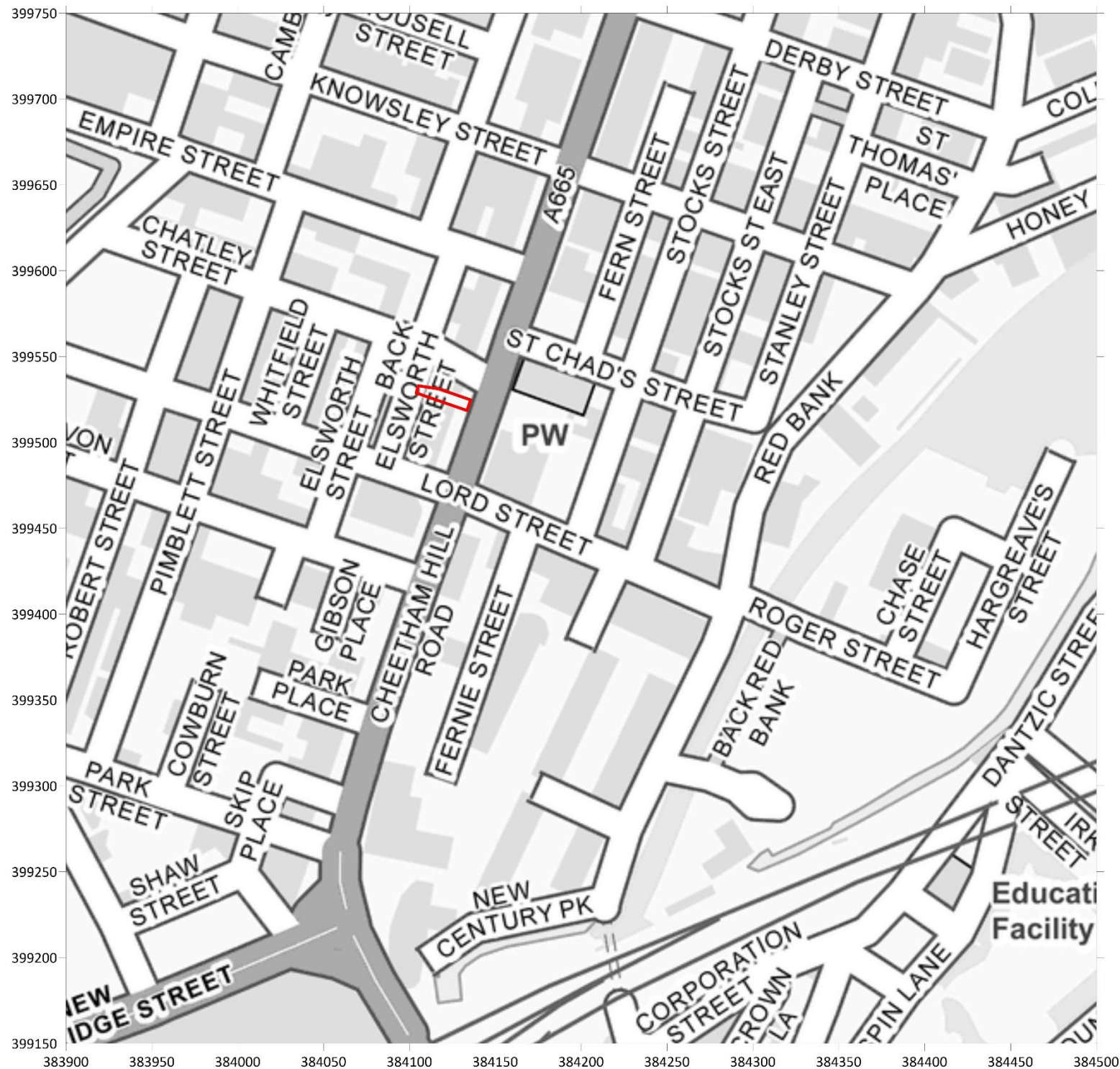
ILP	Institution of Lighting Professionals
MCC	Manchester City Council
NGR	National Grid Reference
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
PEC	Planning and Environmental Consultants
PIR	Passive Infrared Sensors

The Brightwise Group
67 Cheetham Hill Road, Manchester, M4 4ES
1rL10194
23rd May 2025



8 APPENDIX I - FIGURES

APPENDIX I - FIGURES



Legend



Title

Figure 1
Predicted Lux Level (0m)

Project

Artificial Lighting Assessment
67 Cheetham Hill Road

Project Number

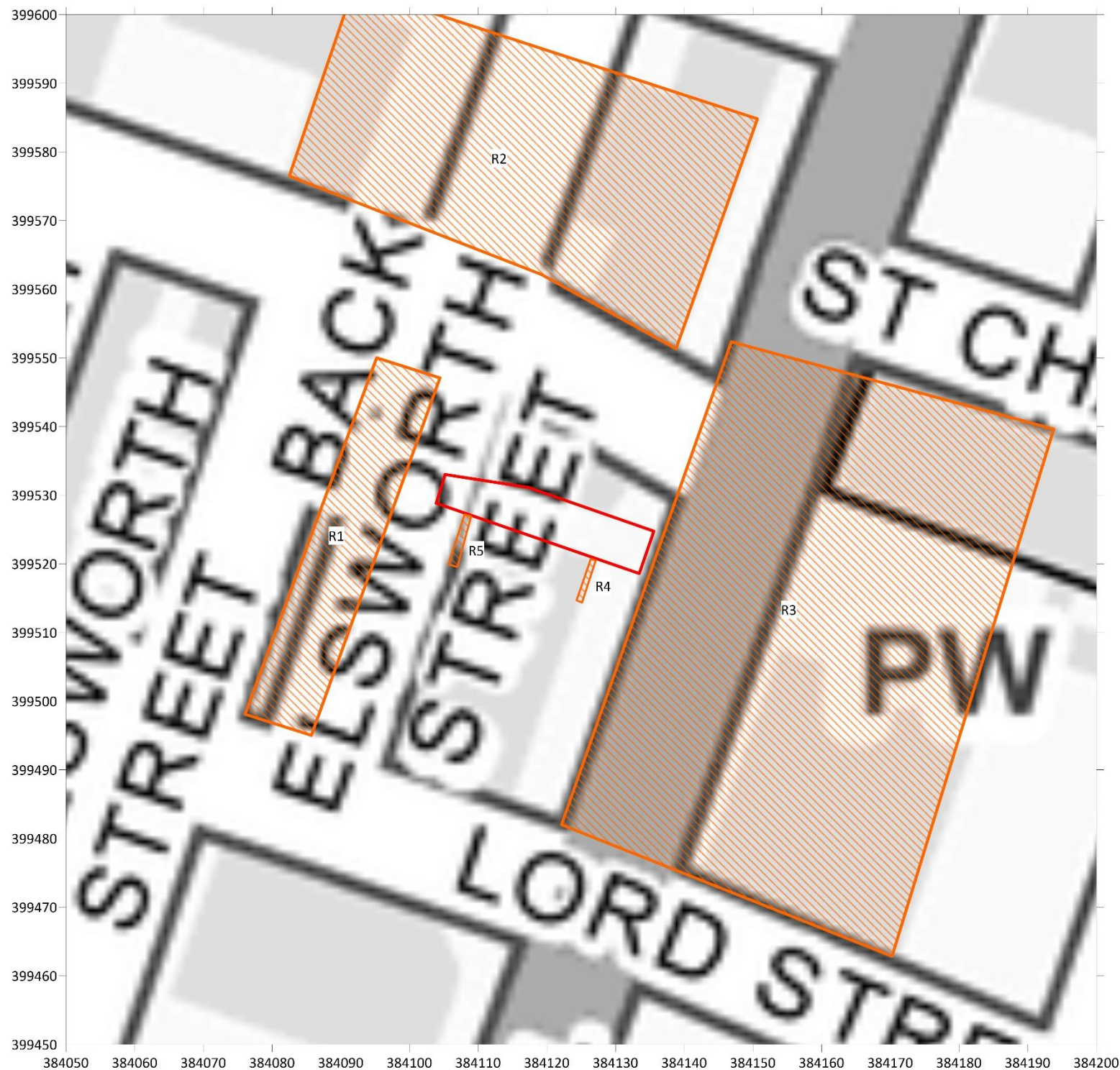
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Legend

-  Site Boundary
-  Human Sensitive Location

Title

Figure 2
Sensitive Receptor Locations

Project

Artificial Lighting Assessment
67 Cheetham Hill Road

Project Number

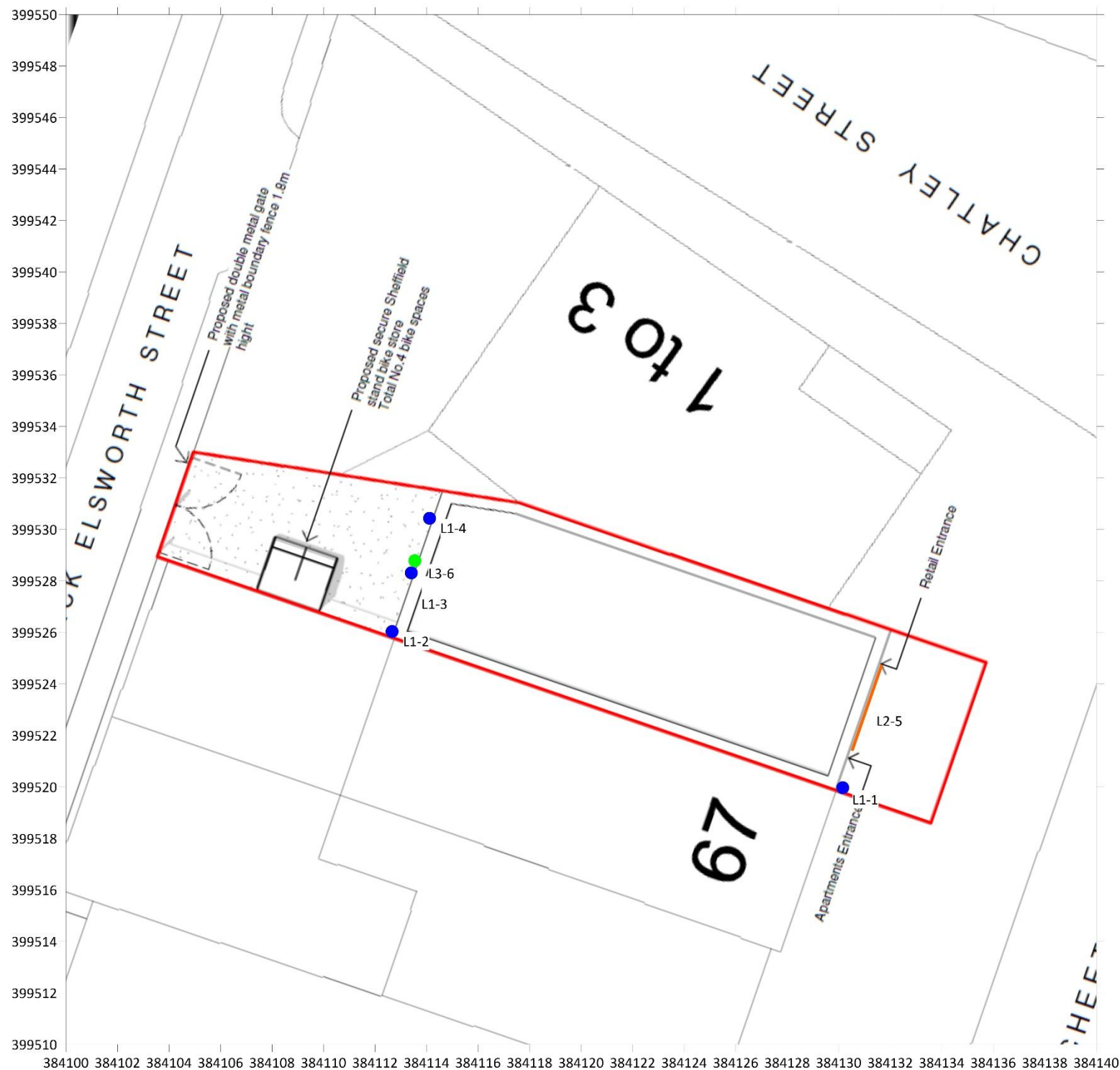
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- Legend**
- Site Boundary
 - Luminaire 1
 - Luminaire 2
 - Luminaire 3

Title
Figure 3
Luminaire Locations

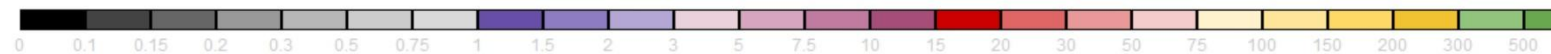
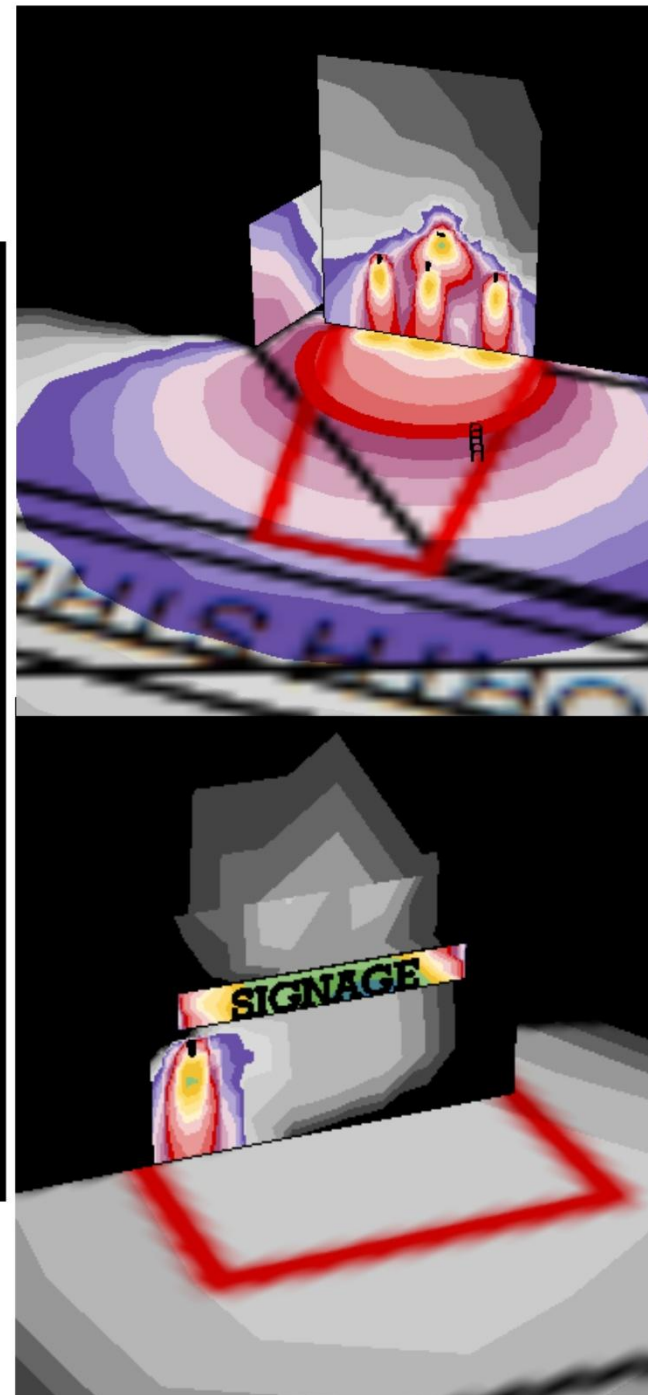
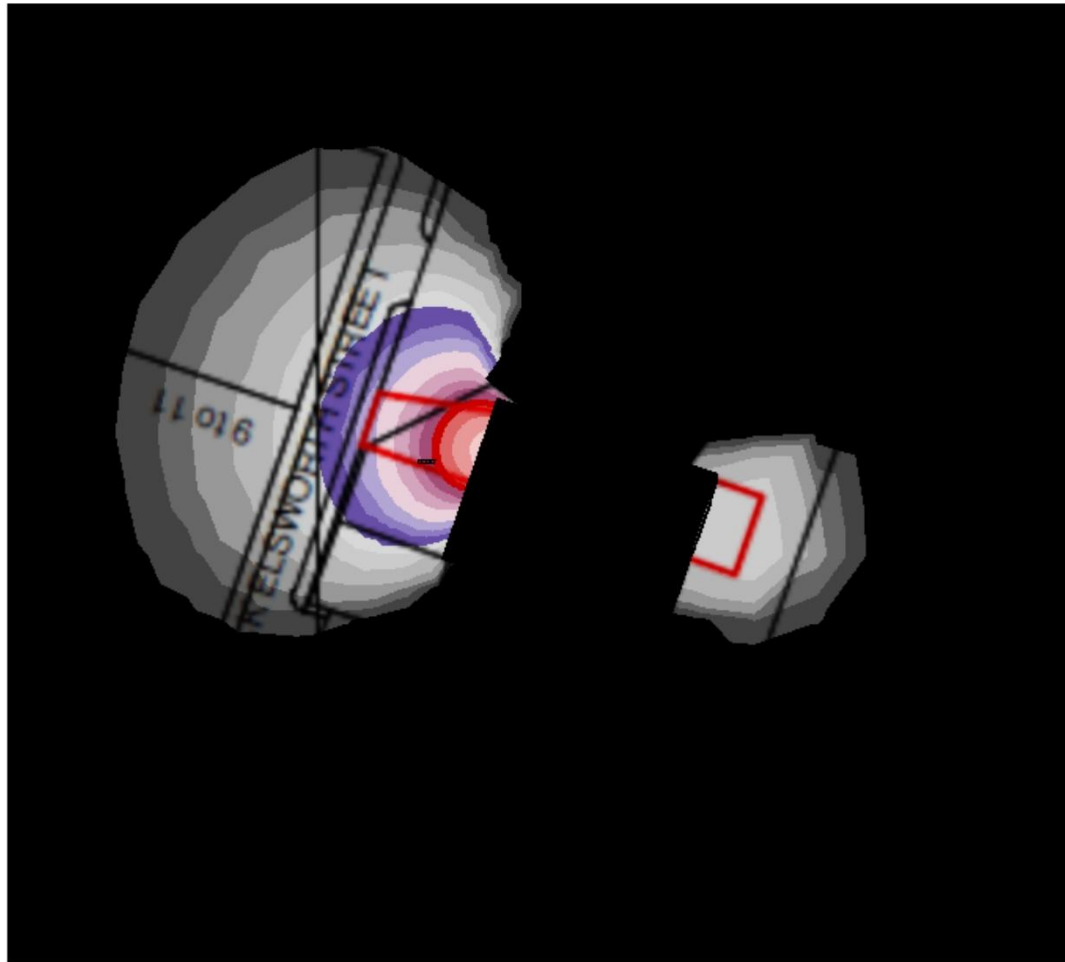
Project
Artificial Lighting Assessment
67 Cheetham Hill Road

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Legend

 Site Boundary

Title

Figure 4
Predicted Lux Level (0m)

Project

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PARTS LIST

Type	ID	Make	Model	X (m)	Y (m)	Z (m)	Orientation	Tilt (°)
L1	1	Thorn	CESAR W 90 3L50 930 NB	384,130.1	399,520.0	2.0	Wall Mounted	0
L1	2	Thorn	CESAR W 90 3L50 930 NB	384,113.4	399,525.8	2.5	Wall Mounted	0
L1	3	Thorn	CESAR W 90 3L50 930 NB	384,114.2	399,528.0	2.5	Wall Mounted	0
L1	4	Thorn	CESAR W 90 3L50 930 NB	384,114.9	399,530.1	2.5	Wall Mounted	0
L2	5	Dextra Group PLC	AluLED IP66/67	384,130.6	399,521.5	3.0	Wall Mounted	0
L3	6	ESYLUX	BASIC AFL TR 3000 840 MD WH	384,114.3	399,528.3	3.5	Wall Mounted	45

Lewis Ellison Technical Director MOcean, MIEEnvSc, MIAQM
KEY EXPERIENCE
Lewis is a Technical Director with specialist experience in the air quality sectors. His key capabilities include: • Production of Air Quality Assessments to the Department for Environment, Food and Rural Affairs (DEFRA), Environment Agency and Environmental Protection UK (EPUK) methodologies for clients from the residential, retail and commercial sectors. • Detailed dispersion modelling of road vehicle emissions using ADMS-Roads. Studies have included impact assessment of pollutant concentrations at various floor levels and assessment of suitability of development sites for proposed end-use. • Assessment of dust impacts from construction sites to the Institute of Air Quality Management (IAQM) methodology. • Assessment of Odour Impact from commercial and industrial processes in line with Environment Agency (EA) and IAQM methodologies and guidance • Quantification of Ecological Impacts associated with Nitrogen and Acid Deposition from industrial processes • Production of air quality mitigation strategies for developments throughout the UK.
SELECT PROJECTS SUMMARY
Permit Application Support • Elliot Hire Salford • Elliot Hire Wakefield • Elliot Hire Scunthorpe ES Chapters • Lyle Park West, Newham – residential development in close proximity to an active industrial estate. • Deansgate, Manchester – residential multistorey development in the centre of Manchester. • Land West of Stevenage – 1350 residential unit development with the potential to negatively impact local air quality Air Quality • Goulton Street Hull – Outline planning permission for 7 industrial units within Hull • Empire Cinema, Birmingham – Diffusion tube survey and air quality assessment for an assisted living accommodation • Tirrell's Lane, Tenbury Wells – residential assessment in the village of Tenbury Wells. Odour Assessments • Gowanbank, Forfar – Odour survey to support a residential development in close proximity to Gowanbank recycling centre • Squires Close, Pocklington – Odour risk assessment in support of a residential in close proximity to a sewage treatment works • Hawthorn Fields, Rufforth - Odour risk assessment in support of a residential in close proximity to a waste water treatment works Dust Assessment • Liverpool Docks – Construction dust monitoring survey • Lyle Park West – Dust impact assessment from adjacent concrete batching plant • High Street, Burton – Construction dust risk assessment London Experience • Gurnell Leisure Centre – mixed use development including residential, sports and commercial land use • Springfield Village Wandsworth – residential development and extension to the existing hospital building • Evelyn House, Greenwich – residential apartment block Monitoring & Surveying Experience • Liverpool Waters – Frisbee Dust gauge monitoring • Gownbank, Forfar – Field odour survey “sniff test” • Empire Cinema Birmingham – Diffusion tube survey
QUALIFICATIONS
• Masters of Geological Oceanography • Odour Acuity Certified Master of Science