

BUILDINGS AND BUILT ENVIRONMENT

Anwyl Homes Limited
Land off Wilbraham Road
Chorlton
Lighting Impact Assessment

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1. INTRODUCTION

Instruction

- 1.1 This Lighting Impact Assessment has been prepared on behalf of Anwyl Homes ('the Applicant') in support of a full planning application at land off Wilbraham Road, Chorlton, Manchester ('the site').
- 1.2 The description of development is as follows: "Full planning application proposing the erection of a residential development (Use Class C3a), with associated infrastructure, including landscaping, ecological mitigation, drainage, car parking, access from Wilbraham Road, demolition of garage to the rear of 354 Wilbraham Road and other associated works."
- 1.3 The site is owned by The Greater Manchester Trust for Recreation (working name "The Greater Manchester Youth Federation (GMYF)") and previously known as Boys' and Girls' clubs of Greater Manchester). GMYF, is a registered charity, whose origin dates to the mid 1800's.
- 1.4 GMYF has been operating in an extremely challenging environment owing to a long period of sustained funding cuts and the impacts of the Covid-19 pandemic. Following a strategic review, the charity is disposing of redundant land that it owns, including the application site, with the aim of reinvesting in several critical areas of the charity, such as safeguarding, governance and a new team of youth workers, to ensure that the 125 year old charity is able to support its affiliated clubs, volunteers and young people across Greater Manchester.
- 1.5 GMYF has selected Anwyl Homes as the preferred developer for the application site.

Proposed Development

- 1.6 The application site extends to approximately 2.22 hectares (ha) and comprises an irregular shaped parcel of land within the administrative boundary of Manchester City Council (Grid Reference – E 382643 / N 394254). The application site comprises two distinct parcels of land, as described below.
- 1.7 The part of the site identified for the proposed housing development comprises a roughly rectangular shaped parcel of land, which extends to 2 ha. 354 Wilbraham Road and its associated garage are the only existing buildings/structures within the site boundary. Access to the site is obtained from Wilbraham Road. The housing site is privately owned by GMYF and is secured on all boundaries by fencing and gates aside from 354 Wilbraham Road which is an occupied dwelling.
- 1.8 The part of the site identified for ecological enhancement comprises 0.22 ha. The ecological enhancement area is owned by the St Margaret's Centre.
- 1.9 The Proposed Site Layout is included within **Appendix 1**.

Objectives

- 1.10 This report has been produced to identify the proposed lighting strategy and subsequent impact of the external lighting installation on the existing site environment and the wider locality.
- 1.11 A lighting installation is required to enable users to operate safely and reduce the fear of crime. Lighting is needed for both pedestrians and vehicle drivers. For pedestrians, lighting for good viewing conditions and avoidance of dark areas is necessary. For vehicle drivers the emphasis is on good lighting for vehicle movement and use of roads.
- 1.12 This report reviews the potential effects of new lighting and reviews methods of lighting the proposed external areas while limiting potentially obtrusive effects to receptors that may have a negative response to a change in their lighting condition. Nearby residential properties and wildlife / habitat which are found on, near or utilising the site are typical receptors considered for analysis.

Scope of Works

- 1.13 The Scope of work includes:
- Identification and assessment of receptors and their sensitivity.
 - Identification of required / anticipated lighting provisions for the proposed development; and
 - Assessment of the potential effects created by a new lighting strategy with respect to the baseline condition.

2. RELEVANT POLICY AND GUIDANCE

International guidance

Commission Internationale De L'Eclairage (CIE 150)

- 2.1 The purpose of this guide is to help formulate guidelines for assessing the environmental effects of outdoor lighting and to give recommended limits for relevant lighting parameters to contain the obtrusive effects of outdoor lighting within tolerable levels. As the obtrusive effects of outdoor lighting are best controlled initially by appropriate design, the guidance given is primarily applicable to new installations; however, some advice is also provided on remedial measures which may be taken for existing installations. This guide refers to the potentially adverse effects of outdoor lighting on both natural and man-made environments for people in most aspects of daily life, from residents, sightseers, transport users to environmentalists and astronomers.

Guidelines for Minimising Sky Glow (CIE 126)

- 2.2 These guidelines prepared by Commission Internationale De L'Eclairage provide general guidance for lighting designers and policy makers on the reduction of sky glow. The report gives recommendations about maximum permissible values for lighting installations. These values must be regarded as limiting values. Lighting designers should seek to meet the lowest specifications for the design. Other uses of the open air areas at night will usually result in less stringent sky-glow requirements. Practical implementation of the general guidance is left to National Regulations.

National guidance

National Planning Policy Framework (2021)

- 2.3 The Revised National Planning Policy Framework (NPPF) provides guidance relating to planning and pollution control for new development in England. The purpose of the planning system is to contribute to achievement of sustainable development. In relation to lighting, Paragraph 185 states: "Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should: c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation"

DEFRA's Lighting in the Countryside: Towards Good Practice (2001)

- 2.4 The Office of the Deputy Prime Minister (ODPM – now Department for Communities and Local Government) in conjunction with the Countryside Commission published 'Lighting in the Countryside: Towards Good Practice' in July 1997, and a revised issue in 2001. The guidance was developed to 'provide practical advice on the prevention and control of lighting effects through appropriate action by all those involved with lighting in the countryside'. Its objective is 'to identify good practice in the planning and design of lighting in rural areas; and advise on how it can be achieved, using case study examples'. The guide aims to provide an overview and common understanding of all aspects of good lighting practice stating that close co-operation and participation is

required for all those involved in planning, designing and installing lighting schemes. The guidance provides valuable information on lighting best practice and the standard methodology outlined in this guidance document has been followed as part of this assessment. Whilst the guidance relates to 'lighting in the countryside', it is considered best practice to adopt many of the principles contained within the guidance to sites of a more urban nature.

Institute of Lighting Professionals (ILP) Guidance Notes for the Reduction of Obtrusive Light (2021)

- 2.5 The ILP has proposed lighting guidance and criteria for local authorities with a recommendation that they are incorporated at the local plan level. The guidance defines various forms of light pollution and describes a series of environmental zones (similar to the CIE 150 environmental zones). The ILP guidance provides suitable criteria against which the effects of artificial lighting can be assessed and is used in this assessment.
- 2.6 The ILP Guidance Notes recommends that the immediate environment is classified systematically as shown in **Table 1**. ILP Guidance Notes then make recommendations for limiting obtrusive light according to the environmental zone in which the lighting would be situated. The stringency depends on the capacity to absorb lighting effects, with Zone E0 requiring the strictest level of control and E4 the lowest.

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

- 2.7 For each Environmental Zone, recommended obtrusive light limits for exterior lighting installations have also been determined. These are summarised in **Table 2**.

Table 2. Obtrusive Light Limitations for Exterior Lighting Installations

Light Technical Parameter	Application Conditions	Environmental Zones				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E _v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx	1 lx	2 lx	5 lx
Upward light ratio (ULR) %		0	0	2.5	5	15

The Football Association (FA) Guide to Floodlighting (2013)

2.8 The purpose of this document is to guide clubs on the successful installation of artificial lighting for football. There are some key issues with regards to the development of sites with floodlights and these include planning, health and safety, costs – both installation and running costs, maintenance and achieving the required lux levels for the planned activities.

2.9 **Grass Pitches – Competitive matches:**

- Clubs wishing to compete in FA competition sand in the National League System must achieve the required standard relevant to the level of competition. They must obtain an approved Floodlighting Survey Chart and a Floodlighting Inspection Report in order for a club to be accepted for entry into a competition (see the Maintenance and Testing section for further details). Leagues sanctioned by The Football Association or County Football Association may also operate a floodlighting standard. If a League sets a standard below that set by The Football Association, Clubs must still comply with The Football Association's minimum standards if they are to be accepted into FA Competitions. Similarly, if a League sets a standard higher, then the Club must comply with the League requirement.
- A club should check the required floodlighting standard with the league and process required or acceptance to play in that league. As a general guide, the table opposite shows the minimum standards that apply to non-league clubs in the pyramid.

Table 3. FA - Comparative Floodlighting Chart

Ground Grade / Step	League Level	Eave	Emin	Emin/max	Requires Testing
Grade A (Step 1)	Conference	250 lux	100 lux	0.25	Every two years
Grade B (Step 2)	Conference N & S	180 lux	100 lux	0.25	Every two years
Grade C (Step 3)	-	180 lux	n/a	0.25	Every two years
Grade D (Step 4)	-	180 lux	n/a	0.25	Every two years
Grade E (Step 5 - 4)	-	180 lux	n/a	0.25	Every two years
Grade F (Step 5)	-	180 lux	n/a	0.25	Every two years
Grade G (Step 6)	-	180 lux	n/a	0.25	Every two years

British Standards

BS 5489: Code of Practice for the Design of Road Lighting – Part 1: Lighting of Roads and Public Amenity Areas (2020)

- 2.10 BS 5489 Part 1 provides recommendations on the general principles, aesthetic and technical aspects of road lighting and advises on statutory provisions, operation and maintenance of lighting. The standard provides recommendations for the design of lighting for all types of highways and public thoroughfares, including those specifically for pedestrians and cyclists, and for pedestrian subways and bridges.
- 2.11 **Table 4** is taken from BS 5489-1 which helps to define the lighting class for subsidiary roads (Class P – subsidiary roads including residential roads). The required lighting performance criteria for each class is defined in BS EN 13201 Part 2: Road Lighting Performance Requirements (2015).

Table 4. Lighting classes for subsidiary roads

Traffic flow	Lighting class		
	E1 to E4 ^{A)}	E1 to E2 ^{A)}	E3 to E4 ^{A)}
	Pedestrian and cyclists	Speed limit <30mph	Speed limit <30mph
Busy ^{B)}	P5	P4	P3
Normal ^{C)}	P5	P5	P4
Quiet ^{D)}	P6	P5	P4

^{A)} Environmental zone, as given in ILP Guidance Notes (refer to **Table 1**).

^{B)} Busy traffic flow refers to areas where the traffic usage is high and can be associated with local amenities such as clubs, shopping facilities, public houses, etc.

^{C)} Normal traffic flow refers to areas where the traffic usage is of a level equivalent to a housing estate access road.

^{D)} Quiet traffic flow refers to areas where the traffic usage is of a level equivalent to a residential road, and is mainly associated with the adjacent properties or properties on other equivalent roads accessed from this road.

BS EN 13201 Part 2: Road Lighting Performance Requirements (2015)

- 2.12 This standard defines lighting classes for road lighting according to photometric requirements and aiming at the visual needs of road users. It also considers environmental aspects of road lighting.
- 2.13 **Table 5** is taken from BS EN 13201-2 which defines the lighting performance requirements for Class P roads.

Table 5. P Lighting class performance requirements

Class	Horizontal illuminance	
	Maintained average (Lux)	Minimum (Lux)
P1	15.0	3.0
P2	10.0	2.0
P3	7.5	1.5
P4	5.0	1.0
P5	3.0	0.6
P6	2.0	0.4

BS EN 12193: Sports Lighting (2018)

- 2.14 This Standard deals with sports lighting to ensure good visual conditions for players, athletes, referees, spectators and CTV transmission. The objective of this document is to provide recommendations and specify requirements for good quality sports lighting by:
- Optimizing the perception of visual information used during sports events;
 - Maintaining the level of visual performance;
 - Providing acceptable visual comfort; and
 - Restricting obtrusive light.
- 2.15 This standard provides target lighting criteria for indoor and outdoor sporting applications based on the intended level of competition:
- **Lighting Class I:** Top level competition such as international and national competition which will generally involve large spectator capacities with long potential viewing distances. Top level training can also be included in this class. For some sports the requirements of the governing body might take precedence over the values in this standard.
 - **Lighting Class II:** Mid-level competition such as regional or local club competition which generally involve medium size spectator capacities with medium viewing distances. High level training can also be included in this class.
 - **Lighting Class III:** Low level competition such as local or small club competition which generally do not involve spectators. General training, physical education (school sports) and recreational activities will also come into this category.
- 2.16 **Table 6** is taken from BS EN 12193 (2018) which helps to establish suitable lighting class for varying levels of competition.

Table 6. Selection of lighting class

Level of competition	Lighting Class		
	I	II	III
International and National	X		
Regional	X	X	
Local	X	X	X
Training		X	X
Recreation/School sports			X

- 2.17 **Table 7** is taken from BS EN 12193 (2018) which helps to establish target lighting performance for outdoor football for varying levels of competition.

Table 7. Target lighting performance – football pitches

Lighting Class	Horizontal Illuminance	
	Eave	Uniformity U _o
I	500	0.70
II	200	0.60
III	75	0.50

Local guidance

Manchester City Council -Core Strategy Development Plan Document (Adopted 2012)

- 2.18 The Core Strategy was adopted by Manchester City Council on 11th July 2012. It is the key document in Manchester's Local Development Framework and covers a period of 15 years from 2012 to 2027. It describes Manchester today and outlines the Council's vision for Manchester in 2027 along with the planning policies which will be used to deliver that vision.
- 2.19 **Policy DM 1** (Development Management) states that all development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:-
- Appropriate siting, layout, scale, form, massing, materials and detail.
 - Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area.
 - Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.
 - Accessibility: buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes.
 - Community safety and crime prevention.
 - Design for health.

- Adequacy of internal accommodation and external amenity space.
- Refuse storage and collection.

Ecology Guidance

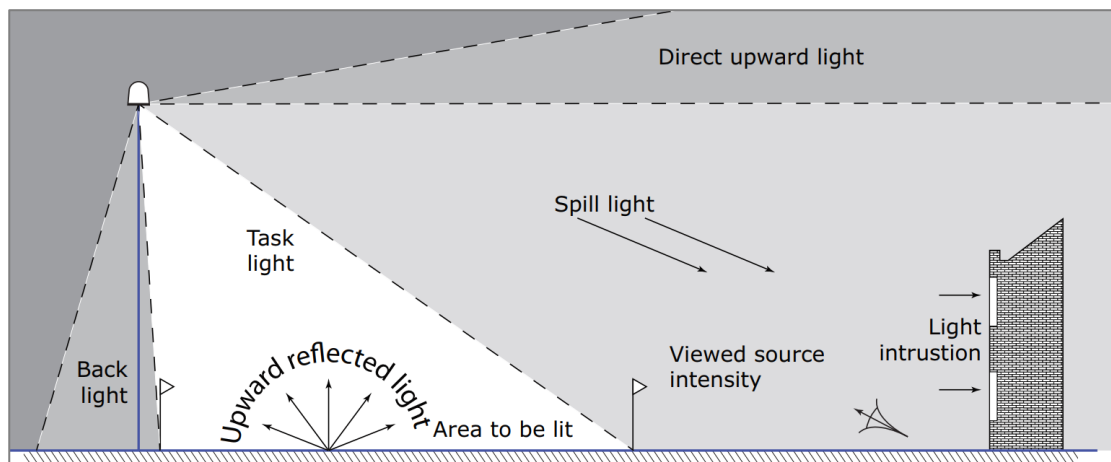
Ecological Impact Assessment (October 2022)

- 2.20 This report has been prepared by Tyler Grange Group Ltd. It sets out the findings of an Ecological Impact Assessment (EclA) to inform this planning application.
- 2.21 This report provides the following recommendations in terms of external lighting:
- Lighting impacts are also a key consideration and can impact the behaviour of bats and other wildlife. It is imperative that new external lighting features associated with the proposed development are sensitively deployed and that light spill onto the boundary features and trees is avoided, in accordance with relevant guidance.
 - Recommendations have been made with respect to nesting birds (during site clearance, bird box provision), bats (soft felling of trees, bat box provision and sensitive lighting design) and hedgehog (with respect to scheme design) to avoid potential impacts to these species.

3. LIGHT POLLUTION

- 3.1 Light pollution is a generic term for all the adverse impacts that artificial lighting can have after dark. The main types of light pollution are shown diagrammatically in **Figure 2**.

Figure 1. Types of Light Pollution



- 3.2 Contributing to these direct effects are three design aspects that should be considered alongside the purpose for a new lighting installation and the type of sensitive receptors found in the local area. These are described later in this report.

Types of Light Pollution

Light Spill (Light intrusion, back light)

- 3.3 Light spill is 'the spilling of light beyond the boundary of the site on which a light source is located', such that it causes a noticeably adverse effect. More simply, light spill is often termed as the intrusion of light into homes. It can also have a negative effect on wildlife and ecological systems local to an installation.

- 3.4 As set out in the ILP Guidance Notes, the limits for light spill vary according to the environmental zone of the existing location and have been set to encourage appropriate lighting design. Through careful design, it can readily be ensured that this impact is prevented and that the illumination falling within any residential property can be reduced to zero. This is incorporated into the Lighting Strategy contained within this report.

Sky Glow (Direct upward light)

- 3.5 Sky glow is the 'the brightening of the night sky' above illuminated areas. The brightness created is constantly varying as a function of many parameters such as direct upward-lighting, ground surface reflectance, overhead cloud cover, and the degree of water droplets in the atmosphere - rain, fog/mist, and snow, for example, exacerbate the effect.

- 3.6 Mitigation is achieved by complying with the recommended limits in the ILP Guidance Notes for upward light emission. The limits vary according to the environmental zone of

the existing location and have been set to encourage appropriate lighting design. The Lighting Strategy will ensure that these limits can be met for the Proposed Development.

- 3.7 To mitigate sky glow as much as possible, lighting must be accurately targeted and kept to a minimum, and this design principle is incorporated into the Lighting Strategy.
- 3.8 The magnitude of the impact is a matter of judgement, taking into account the existing night-time view. The magnitude is lessened for those views where an observer is subject to direct illumination from, say, a nearby streetlight, or where light spill from a nearby light source illuminates the foreground, because the observer's vision is not fully dark adapted.

Glare (Viewed source intensity)

- 3.9 Glare occurs when an individual experiences visual discomfort or disability stemming from direct views of lamp sources, or high contrast of a lighting installation against a dark background. The placement of luminaires, their photometric characteristics, and the viewing context contribute to glare, which has been noted to result from uncontrolled private lighting installations, security lighting, street lighting mounted at high level near residences or habitat.

Design Aspects

Building Luminance

- 3.10 This considers the appropriateness and scale of brightness for the lighting / highlighting of built structures. Design criteria is included within ILP guidance notes as more of a main effect. While this is addressed independently, building luminance can also be considered as an indirect contributor to light spill, sky glow and glare.

Light Levels

- 3.11 Light levels, both as designed and installed, have the potential to create areas which have a noticeable difference in brightness. A new lighting installation in an area that has not been lit or is significantly brighter than the surrounding area may affect both adjacent receptors in the form of light spill or glare, and those over a larger area by contributing to sky glow through over-lighting.

Light Colour

- 3.12 Light colour has the potential to alter an individual's perception of their environment with respect to colour and clarity, as the human eye responds best to whiter light with higher quantities of ultraviolet wavelengths. Various wildlife species may respond differently to spectral composition depending on how reliant they are on darkness; many nocturnal animals continue their social habits and feeding behaviours with increased activity in the area while others may decrease their activity and possibly desert their habitat. This type of impact could affect pedestrians, vehicle operators and wildlife, and is likely to occur where new lighting is placed.

4. BASELINE

Overview

- 4.1 This section provides a review of the existing conditions at the site. The review is based on a baseline lighting survey which was undertaken on 21/04/2022.
- 4.2 The Site is accessed from the south off Wilbraham Road which is illuminated via assumed 10m high LED type street lighting columns.
- 4.3 The Site is bound to the north by residential properties off Brantingham Road which is illuminated via assumed 8m high LED type street lighting columns.
- 4.4 The Site is bound to the west by residential properties off Morville Road which is illuminated via assumed 8m high LED type street lighting columns.
- 4.5 The Site is bound to the east by Maine Road Football Club which contains an 11-a-side grass football pitch which is provided with 6No. 15m high lighting towers, each fitted with multiple floodlights at varying tilt and angle.
- 4.6 Operation of the Maine Road Football Club floodlights is restricted for use at specific days, times, and months of the year as detailed below under planning condition 053477/JO/CENTL1/97. For full details of the planning condition please refer to **Appendix 2**.
 - *“Use of the floodlights shall be restricted to the months of August to May, and to no more than three occasions per week for league matches and one occasion per week for coaching purposes. When used for league matches the use of the floodlights shall be restricted to the following hours therein; Monday to Friday, no later than 10.00pm, and on Saturday and Sunday, no later than 5.30pm. When the flood lights are in use for coaching young people they will be used no later than 9.00pm Monday to Friday, and on Saturday and Sunday no later than 5.30pm. In addition the floodlights shall be used on no more than four occasions in any single week (Monday to Sunday).”*
- 4.7 The Site itself does not currently contain any sources of artificial lighting. **Figure 2** shows an aerial view of the site.

Figure 2. Aerial view of site (googlemaps)



Environmental Zone

- 4.8 Following the baseline lighting survey, it was concluded that the Site is in a suburban location and the proposed development site should be classified as 'Environmental Zone E3 – Medium district brightness area, in accordance with the ILP guidance limits outlined within **Table 1**. Therefore, with reference to **Table 2**, the worst case permitted light intrusion limit at an offsite receptor in the pre-curfew period (typically considered to be 07:00-23:00) is 10 Lux and in the post curfew period (typically considered to be 23:00-07:00) is 2 Lux. The maximum upward light ratio (ULR) is 5%.

Baseline Lighting Survey

- 4.9 A baseline lighting survey was undertaken on 21/04/2022 to ascertain the likely lighting impact on proposed residential receptors at the proposed development caused by the floodlight installation at Maine Road Football Club.
- 4.10 The proposed residential properties whose rear elevations and gardens face onto Maine Road Football Club are considered the most sensitive due to unobstructive view and proximity. These receptors are most likely to experience adverse impact when the floodlights are operational.
- 4.11 Lux level measurements were recorded during hours of darkness at sample locations along the proposed east elevation of the proposed residential properties whose rear elevations and gardens face onto Maine Road Football Club. Measurements were taken vertically to simulate anticipated light intrusion into the proposed properties. These measurements are to be assessed against the limitations set out in the ILP Guidance for the Reduction of Obtrusive Light (2021).
- 4.12 Based on a development in an E3 environmental zone, operating during pre-curfew hours only, the maximum value for light intrusion is 10 lux.
- 4.13 The Baseline Lighting Survey results are summarised in **Table 8**.

Table 8. Baseline Vertical Illumination – proposed residential properties facing Maine Road Football Club

Measurement reference point	E3 environmental zone Limit (pre-curfew) Ev (Lux)	Measured Vertical Illuminance Ev (Lux)	PASS / FAIL
1	10	14.1	FAIL
2	10	13.6	FAIL
3	10	14.3	FAIL
4	10	20.6	FAIL
5	10	19.8	FAIL

- 4.14 The lighting installation is generally poor quality in terms of installation and fixed direction and does not appear to target task light efficiently to the intended surface (football pitch) which results in unnecessary light spill and sky glow.
- 4.15 Operation of the floodlights is infrequent, operating at sporadic intervals, particularly during months of Greenwich Mean Time (October to March) where artificial lighting is required more frequently during evenings. However, the results show that unacceptable light intrusion would be present at the new properties in closest proximity within the proposed development at times when the existing floodlight installation is in operation.

5. PROPOSED DEVELOPMENT

Introduction

- 5.1 An external lighting installation is required to adequately illuminate the site access and internal access roads to enable users to operate safely and reduce the fear of crime.
- 5.2 Based on the findings of the baseline lighting survey, it is proposed that the Maine Road Football Club floodlights are replaced with a modern LED type installation that adequately illuminates the pitch while complying with the limits set out in the ILP Guidance for the Reduction of Obtrusive Light (2021).

Proposed On-site Lighting (Street Lighting)

- 5.3 A street lighting design for the residential development roads has been prepared that reflects:
- Environmental requirements and the applicable guidance / standards.
 - Local Authority requirements.
 - Technical requirements and the applicable guidance / standards; and
 - Appropriate selection of lighting typologies to suite the above.
- 5.4 The proposed street lighting design comprises high quality 6m high column mounted LED luminaires, equipped with specific optics to maximise useful light and minimise wasteful light.
- 5.5 Illumination has been proposed to meet the recommendations of BS 5489-1 and BS EN 13201-2. The design has been produced to provide illumination at Lighting Class P4 (5.0 Lux average, 1.0 Lux minimum), for a quiet residential road in an E3 environmental zone as defined in **Table 4** and **5**.
- 5.6 The street lighting lux plot layout is included in **Appendix 3**. Literature from the manufacturer of the proposed luminaire type is included in **Appendix 5**.
- 5.7 **Table 9** demonstrates the design lighting levels meet target levels for Lighting Class P4 without over lighting.

Table 9. Street lighting design levels

Area	Target		Design	
	Maintained Illuminance Em (Lux)	Minimum Illuminance Em (Lux)	Maintained Illuminance Em (Lux)	Minimum Illuminance Em (Lux)
Roads	5.0	1.0	6.3	1.0

- 5.8 The mounting height for all luminaires has been limited to a maximum of 6m, at zero tilt, to reduce the quantity of light spill. This is in line with recommendations of the ILP Guidance Notes for Obtrusive Light. Limiting column heights also helps to reduce the impact on the daytime setting.

- 5.9 The proposed luminaires are equipped with specific optics which minimises the distribution of light outside of the site boundary as far as practicable whilst maximising useful light.

Upward Light Ratio

- 5.10 The external lighting scene has been input into industry standard design software at 6m at zero tilt to calculate the predicted ULR. Model outputs predict a ULR of 0.0%. As illustrated in **Table 2**, the ILP sky glow limitation for an area classified as Environmental Zone E3 is 5% ULR. As such the proposed street lighting scheme meets the ILP sky glow limitations and is therefore not considered to result in unacceptable impacts on the dark sky landscape.

Light Spill

- 5.11 With reference to the street lighting lux plot layout, included in **Appendix 3**, the closest existing residential properties are at 338 and 354 Wilbraham Road. As illustrated in **Table 2**, the ILP obtrusive light limitation for an area classified as environmental zone E3 is 10 lux pre-curfew and 2 lux post-curfew. These properties have been assessed using unobstructed vertical calculation surfaces on the building elevations, demonstrating 0.0 lux. As such the proposed street lighting scheme meets the ILP obtrusive light limitations and is therefore not considered to result in unacceptable impacts on existing residential properties.

Ecology Measures

- 5.12 The street lighting design is sensitive to ecology and light spill onto the boundary features and trees has been minimised as far as practicable.
- 5.13 The EcIA recommends that bat boxes should be incorporated to the project. The appointed Ecologist has selected the locations of proposed bat boxes with direct reference to the proposed lighting layout to ensure the areas avoid direct illumination from the installation.

Proposed Off-site Lighting (Maine Road Football Club)

- 5.14 A replacement lighting design for the Maine Road Football Club floodlight installation has been prepared that reflects:
- Environmental requirements and the applicable guidance / standards.
 - Local Authority requirements.
 - Technical requirements and the applicable guidance / standards; and
 - Appropriate selection of lighting typologies to suite the above.
- 5.15 The proposed lighting design comprises high quality LED floodlights, equipped with specific optics to maximise useful light and minimise wasteful light. The floodlights on the west side of the pitch are proposed to be fitted with factory fitted cowls to further reduce light spill as far as practicable.
- 5.16 It is proposed that the replacement floodlights are installed on the existing 6No. 15m high lighting towers.

5.17 Illumination has been proposed to meet the recommendations of:

- BS EN 12193 Sports Lighting (2018) – Competition Class II
- FA Guide to Floodlighting (2013) – Grade B (Conference N & S)

5.18 **Table 10** demonstrates the design lighting levels meet the recommendations of BS EN 12193 Sports Lighting (2018) for Competition Class II.

Table 10. Maine Road Football Club lighting design levels – BS EN 12193

Area	Target		Design	
	Maintained Illuminance Em (Lux)	Illuminance Uniformity Uo	Maintained Illuminance Em (Lux)	Minimum Illuminance Em (Lux)
Football pitch	200	0.6	202.06	0.61

5.19 **Table 11** demonstrates the design lighting levels meet the recommendations of the FA Guide to Floodlighting for Grade B (Conference N & S).

Table 11. Proposed Maine Road Football Club lighting design levels – FA Guide to Floodlighting

Area	Target		Design	
	Maintained Illuminance Em (Lux)	Emin/Emax	Maintained Illuminance Em (Lux)	Emin/Emax
Football pitch	180	0.25	202.06	0.34

5.20 The football pitch lighting lux plot layout is included in **Appendix 4**. Literature from the manufacturer of the proposed luminaire type is included in **Appendix 5**.

5.21 The proposed floodlights are equipped with optics specific which minimises the distribution of light outside of the site boundary as far as practicable. The floodlights on the west side of the pitch are proposed to be fitted with factory fitted cowls to further reduce light spill as far as practicable.

Upward Light Ratio

5.22 The external lighting scene has been input into industry standard design software at 15m at zero tilt to calculate the predicted ULR. Model outputs predict a ULR of 0.0%. As illustrated in **Table 2**, the ILP sky glow limitation for an area classified as Environmental Zone E3 is 5% ULR. As such the proposed floodlight scheme meets the ILP sky glow limitations and is therefore will not result in unacceptable impacts on the dark sky landscape.

5.23 The replacement floodlight installation will result in a significant improvement on the existing installation in terms of contribution to local area sky glow. This will not only benefit residents of the proposed development but also existing local residents that currently experience adverse impact as a result of sky glow.

Light Spill

- 5.24 The proposed residential properties facing Maine Road Football Club are considered the most sensitive due to unobstructive view and proximity. These receptors are most likely to experience adverse impact when the floodlights are operational.
- 5.25 The floodlighting is permitted to operate during pre-curfew hours only. As illustrated in **Table 2**, the ILP obtrusive light limitation for an area classified as environmental zone E3 is 10 lux pre-curfew.
- 5.26 The proposed residential properties facing Maine Road Football Club have been assessed using an unobstructive vertical calculation surface on the building elevations, demonstrating maximum 3 lux vertical illumination. As such the proposed replacement floodlight scheme meets the ILP obtrusive light limitations and therefore will not result in unacceptable impacts on existing residential properties.
- 5.27 **Table 12** demonstrates the designed vertical illuminance at the surveyed Measurement reference points at the east elevation of the proposed residential properties on the east side of the proposed development. Full details can be found in **Appendix 3**.
- 5.28 To understand the reduction in lighting impact on the proposed development from the existing floodlight installation to the proposed floodlight installation, the designed vertical illuminance values in **Table 12** can be compared to the measured vertical illuminance values in **Table 8**.

Table 12. Designed Vertical Illumination – proposed residential properties facing Maine Road Football Club

Measurement reference point	E3 environmental zone Limit (pre-curfew) Ev (Lux)	Designed Vertical Illuminance Ev (Lux)	PASS / FAIL
1	10	1	PASS
2	10	3	PASS
3	10	1	PASS
4	10	2	PASS
5	10	2	PASS

- 5.29 The impact of the proposed floodlight installation has also been assessed on nearby existing residential properties on Wilbraham Road. The maximum designed vertical illuminance on these properties is 4 lux. Refer to **Appendix 4** for full details.

Table 13. Designed Vertical Illumination – existing residential properties on Wilbraham Road

Measurement reference point	E3 environmental zone Limit (pre-curfew) Ev (Lux)	Designed Vertical Illuminance Ev (Lux)	PASS / FAIL
Existing properties on Wilbraham Road	10	4 (maximum)	PASS

Ecology Measures

- 5.30 The replacement floodlight installation will be used infrequently but is anticipated to result in a significant improvement when compared to the existing installation in terms of contribution to light impact on sensitive ecology.
- 5.31 The EclA recommends that bat boxes should be incorporated to the project. The appointed Ecologist has selected the locations of proposed bat boxes with direct reference to the proposed lighting layout to ensure the areas avoid direct illumination from the installation.

6. RECOMMENDATIONS

- 6.1 All external lighting, whether for the construction or operation phase, must comply with the recommended limitations given in the ILP Guidance Notes for an Environmental Zone E3 location. The limits, set out in **Table 2**, prohibits excessive emission of upward light and helps to minimise light spill and glare.
- 6.2 Spectral composition is somewhat related to light colour, but the effects are not always immediately apparent. It is desirable for light quality, safety and wildlife effect limitation purposes to use LED technology. LEDs present good working efficacy, a smaller light emitting area which is good for light control and spectral compositions which are less disturbing to nocturnal wildlife or their food sources than UV rich traditional light sources.
- 6.3 The use of horizontal cut-off luminaires installed at zero tilt with flat glass lenses and internal optics is recommended to limit views of the lamp, control glare and direct light in a controlled pattern. This will help to minimise potential glare, sky glow and light spill.
- 6.4 New generation LED light sources are recommended for new external lighting.
- 6.5 Wattages shall achieve required light levels without over-lighting.

7. CONCLUSION

- 7.1 As part of the lighting strategy a review has been undertaken of the potential impact created by new and existing lighting in relation to the proposed development.
- 7.2 The lighting design strategy presented indicates the proposed street lighting installation and replacement floodlight installation can achieve the required minimum lighting levels and distribution to meet relevant standards and guidance while achieving compliant levels of lighting impact to the existing and proposed residential developments.
- 7.3 Legislation, British standards, and good practice guidance recommends the development requires new exterior lighting for purposes of vehicular and pedestrian safety.
- 7.4 Potentially significant effects from the proposed lighting on sensitive receptors can be managed to create a negligible night-time impact. Replacement of the existing football pitch lighting installation will also be significantly beneficial in terms of obtrusive light.
- 7.5 The lighting design strategy presented indicates the potential significant effects from new lighting for the proposed development can be adequately managed and all tested parameters are expected to meet recommended guidance benchmarks.
- 7.6 The appointed Ecologist has selected the locations of proposed bat boxes with direct reference to the proposed lighting layout to ensure the areas avoid direct illumination from the installation.
- 7.7 The proposed street lighting installation is likely to provide a negligible increase in local area sky glow.
- 7.8 The proposed replacement football pitch floodlight installation is likely to provide a significant reduction in local area sky glow during operational hours.

APPENDICES

Appendix 1: Proposed Site Layout



Proposed Colour Layout

Detailed Planning Application

Drawing Number : APD/AH158/PL01
Revision : F
Date : 13/10/2022
Scale/Sheet Size : 1:500/A1

URBAN
DESIGN
GROUP

ANWYL
thoughtful homes



Appendix 2: Floodlight Planning Condition

Planning

Growth & Neighbourhoods Directorate

Register of Applications

Application Reference

053477/JO/CENTL1/97

Date Registered

09 Jan 1998

Applicant's Name & Address

Manchester County F.A.,
Brantingham Road, Chorlton, Manchester, M21 0TT

**Agent's Name & Address (where
applicable)****Location**

Manchester County F.A., Brantingham Road, Chorlton

Proposal

Variation of condition no.2 attached to planning ref. 046628 to allow use of floodlights 4 times a week coaching young people on extra nights

Ward(s)

Whalley Range Ward

Decision

Approved

Date of Decision

26 Mar 1998

Conditions and Reasons:

1) Use of the floodlights shall be restricted to the months of August to May, and to no more than three occasions per week for league matches and one occasion per week for coaching purposes. When used for league matches the use of the floodlights shall be restricted to the following hours therein; Monday to Friday, no later than 10.00pm, and on Saturday and Sunday, no later than 5.30pm. When the flood lights are in use for coaching young people they will be used no later than 9.00pm Monday to Friday, and on Saturday and Sunday no later than 5.30pm. In addition the floodlights shall be used on no more than four occasions in any single week (Monday to Sunday).

3) This permission relates to a letter rec'd 18th December 1997 and a drawing rec'd on 10th March 1998

Reason

For the avoidance of doubt.

Appendix 3: Proposed Street Lighting External Lux Plot Layout

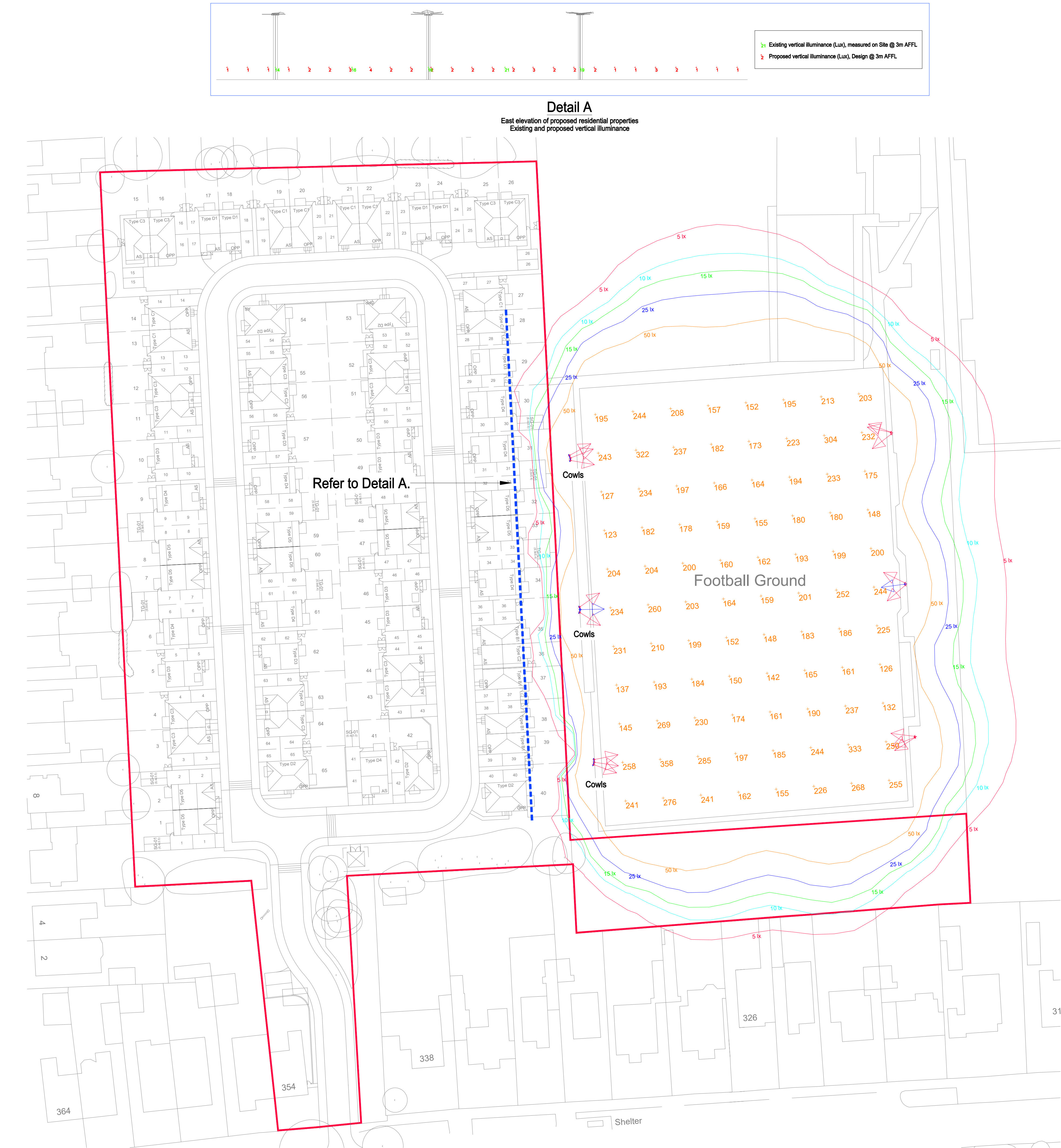


Luminaire Schedule						
Symbol	Qty	Label	Arrangement	LLF	Description	
	14	A	SINGLE	0.900	20.5w LED 4000K (1 module) 525mA Ratio 1 with STE-M Optic column mounted at 6m	

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max
Road	Illuminance	Lux	6.26	23.5	1.0	0.16	0.04
ObtrusiveLight_1_III_Seg1	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_1_III_Seg2	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_1_III_Seg3	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_1_III_Seg4	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_1_III_Seg5	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_2_III_Seg1	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_2_III_Seg2	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_2_III_Seg3	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_2_III_Seg4	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_2_III_Seg5	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.
ObtrusiveLight_2_III_Seg7	Obtrusive - II	Lux	0.00	0	0	N.A.	N.A.

	Colour Temperature (°K)		Qty	Range	Light Source	Sustainable Lumens (lm)	Watts (W)	lm/W	LOX	Total Lumens	LOX%	Upgraded Lumens	LOX	** Add'l Watts Per Hour	CO2 Emissions	Payback Year
	4000	34	Ind 1		305-M 1 Module 525mA	2800	22	126.07	100%	28000	0.4%	0	-0.0	12	6.26	1513.38
GHRI - 2011																
Tables & Components																
Environmental Zone																
E3																
Pay class																

Appendix 4: Proposed Football Pitch Lighting External Lux Plot Layout



Obtrusive Light - Compliance Report
CIE 150:2017, E3-Medium District Brightness, Pre-Curfew
Filename: Chorlie FC
29/06/2022 11:20:31

Illuminance
Maximum Allowable Value: 10 Lux

Calculations Tested (11):

Calculation Label	Test Results	Max. Illum.
New House Row_III_Seg1	PASS	4
Wilbraham Road_III_Seg1	PASS	1
Wilbraham Road_1_III_Seg1	PASS	2
Wilbraham Road_1_III_Seg2	PASS	0
Wilbraham Road_1_III_Seg3	PASS	2
Wilbraham Road_2_III_Seg1	PASS	4
Wilbraham Road_3_III_Seg1	PASS	2
Wilbraham Road_4_III_Seg1	PASS	1
Wilbraham Road_5_III_Seg1	PASS	1
Wilbraham Road_6_III_Seg1	PASS	0
New House Row_1_III_Seg1	PASS	1

Luminous Intensity (Cd) At Vertical Planes
Maximum Allowable Value calculated from CIE 150:2017 (varies by Projected Area sq.m. and Distance Factor)
For E3-Medium District Brightness, Projected Area and Distance Factors:
(0.002, 0.86) (0.01, 1.9) (0.03, 3.8) (0.13, 7.5) (0.5, 15)
Projected Area (sq.m) = Approx. projected emitting area of luminaire in direction of observer
Distance (m) = Distance from luminaire to observer
Max Cd Allowed = Projected Area Factor * Distance

Calculations Tested (11):

Calculation Label	Test Results
New House Row_Cd_Seg1	PASS
Wilbraham Road_Cd_Seg1	PASS
Wilbraham Road_1_Cd_Seg1	PASS
Wilbraham Road_1_Cd_Seg2	PASS
Wilbraham Road_1_Cd_Seg3	PASS
Wilbraham Road_2_Cd_Seg1	PASS
Wilbraham Road_3_Cd_Seg1	PASS
Wilbraham Road_4_Cd_Seg1	PASS
Wilbraham Road_5_Cd_Seg1	PASS
Wilbraham Road_6_Cd_Seg1	PASS
New House Row_1_Cd_Seg1	PASS

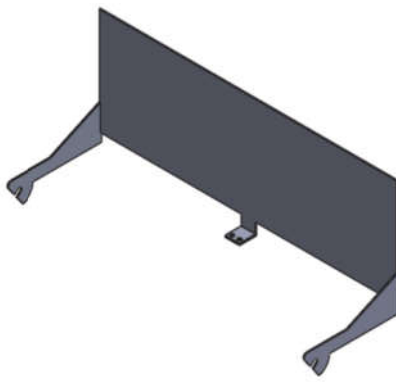
Calculation Summary							
Project: ILP	Label	CalcType	Units	Avg	Max	Min	Min/Avg
	New House Row_1_III_Seg1	Obtrusive - III	Lux	0.75	1	0	0.00
	New House Row_III_Seg1	Obtrusive - III	Lux	1.85	4	1	0.54
	Wilbraham Road_1_III_Seg1	Obtrusive - III	Lux	1.50	2	1	0.67
	Wilbraham Road_1_III_Seg2	Obtrusive - III	Lux	0.00	0	0	N.A.
	Wilbraham Road_1_III_Seg3	Obtrusive - III	Lux	2.00	2	2	1.00
	Wilbraham Road_2_III_Seg1	Obtrusive - III	Lux	3.75	4	3	0.80
	Wilbraham Road_3_III_Seg1	Obtrusive - III	Lux	2.00	2	2	1.00
	Wilbraham Road_4_III_Seg1	Obtrusive - III	Lux	1.00	1	1	1.00
	Wilbraham Road_5_III_Seg1	Obtrusive - III	Lux	1.00	1	1	1.00
	Wilbraham Road_6_III_Seg1	Obtrusive - III	Lux	0.00	0	0	N.A.
	Wilbraham Road_III_Seg1	Obtrusive - III	Lux	0.75	1	0	0.00

Calculation Summary							
Project: Project_1	Label	CalcType	Units	Avg	Max	Min	Min/Avg
	Pitch	Illuminance	Lux	202.06	358	123	0.61

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
→	8	A NST	SINGLE	900w Annis Flood with NST Optic @ 16m Existing
→	8	A NST + Cows	SINGLE	900w Annis Flood with NST Optic @ 16m Existing
→	1	C WST	SINGLE	900w Annis Flood with WST Optic @ 16m Existing
→	1	C WST + Cowl	SINGLE	900w Annis Flood with WST Optic @ 16m Existing



Annis Flood



Cowl for Annis Flood

Notes

- Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
- This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
- All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
- Any discrepancies noted on site are to be reported to the engineer immediately.

Notes

P5	24.11.22	Preliminary Issue		GCL DA
P4	23.11.22	Preliminary Issue		GCL DA
P3	17.10.22	Preliminary Issue		GCL DA
P2	30.08.22	Preliminary Issue		GCL DA
P1	06.07.22	Preliminary Issue		GEM DA
Rev	Date	Details of issue / revision	Drw	Rev

Issues & Revisions

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□ Nottingham | 0115 924 1100
www.bwbconsulting.com

Client
Anwyll Homes Limited

Project Title
**Land off Wilbraham Road
Chorlton**

Drawing Title
**Electrical Services
Proposed Football Pitch
External Lux Plot Layout
Proposed Site Plan**

Drawn:	G. E. Maher	Reviewed:	D. Alasfar
BWB Ref:	220679	Date:	06.07.22
Scale@A1:	1:500		
Drawing Status PRELIMINARY			
Project - Originator - Zone - Level - Type - Role - Number	Status	Rev	
WRC-BWB-XX-XX-DR-E-2300	S2	P5	

Appendix 5: Proposed Luminaire Type

Datasheet

Italo



Product Description

The Italo offers high performance functionality and comes with a wide optic selection suitable for any street, pathway or car park application.

Specification Text

The luminaire shall be manufactured from high-pressure die-cast aluminium. It shall have an LED efficacy of up to 131.0 lm/W and will be capable of producing up to 15,130 luminaire lumens at 4000K with a CRI >70. It shall have an asymmetric forward throw optic and is rated at IP66 and IK09.

Specification

Weight: 7.0kg
Windage: 0.06-0.18m²
Material: Die-cast Aluminium
Paint finish: Semi-Gloss Satin Grey

Key Features

- 15.0W - 146.0W
- 1,800 - 15,130 Luminaire Lumens
- Efficacy up to 131.0 lm/W
- 2700K, 3000K and 4000K, CRI >70
- Lifetime >100,000hr, L90
- Toolless Entry



Mounting Options

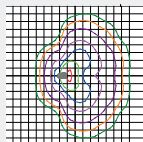
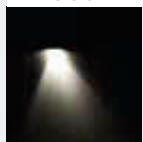
- 76mm Advised for Side Entry Fixing
- 76mm for Post Top as well as Side Entry

Other Options

- Colour Temperature Options
 - Photocell Options
 - Emergency Options
 - Paint Finish Options
- [Contact for details](#)

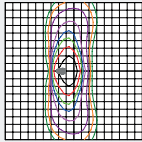
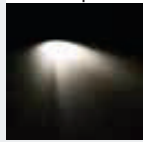
Optics

SO5



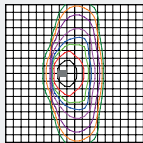
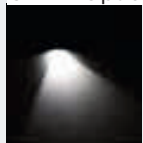
Asymmetrical optic suitable for street, urban and open area lighting

SV Optic



Asymmetrical narrow optic for lighting narrow urban streets and highway entrances and exits

STE-M Optic



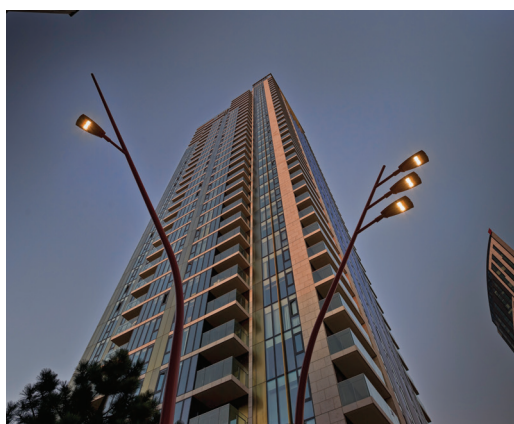
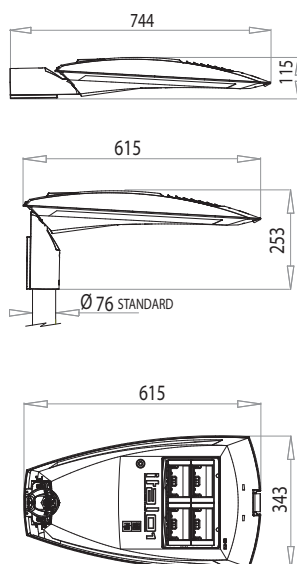
Asymmetrical optic suitable for suburban areas

Code	Power	Luminaire Lumens	No. Modules	Drive Current	Optic	CCT(K)	IP	IK	Weight kg	Paint Finish	Driver Included	Driver Type
IT1-SO5-4.5-1M1F	15.0	1,800	1	525	Asymmetric Suburban Street Optic (SO5)	4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.7-1M1F	21.5	2,420	1	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.5-2M1F	30.5	3,690	2	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.7-2M1F	40.0	4,720	2	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.5-3M1F	44.0	5,530	3	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.7-3M1F	58.0	7,030	3	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.5-4M1F	57.0	7,150	4	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.7-4M1F	76.0	8,990	4	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.8-4M1F	93.0	10,380	4	850		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SO5-4.100-4M1F	146.0	15,130	4	1000		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.5-1M1F	15.0	1,800	1	525	Asymmetric Urban Street Optic (SV)	4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.7-1M1F	21.5	2,420	1	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.5-2M1F	30.5	3,690	2	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.7-2M1F	40.0	4,720	2	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.5-3M1F	44.0	5,530	3	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.7-3M1F	58.0	7,030	3	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.5-4M1F	57.0	7,150	4	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-SV-4.7-4M1F	76.0	8,990	4	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI

Code	Power	Luminaire Lumens	No. Modules	Drive Current	Optic	CCT(K)	IP	IK	Weight kg	Paint Finish	Driver Included	Driver Type
IT1-STE-M-4.5-1M1F	20.5	2,610	1	525	Asymmetric Suburban Street Optic (STE-M)	4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-STE-M-4.7-1M1F	28.0	3,270	1	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-STE-M-4.5-2M1F	39.0	5,160	2	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-STE-M-4.7-2M1F	52.0	6,530	2	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-STE-M-4.5-3M1F	57.0	7,490	3	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-STE-M-4.7-3M1F	76.0	9,420	3	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-STE-M-4.5-4M1F	76.0	9,950	4	525		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI
IT1-STE-M-4.7-4M1F	102.0	12,550	4	700		4000	IP66	IK09	7.0	Semi-Gloss Satin Grey	Driver Inc	DALI



Dimensions





Kingfisher

SPORT

Part of the LUCECO group of companies

Datasheet

Amnis Flood



Specification Text

The luminaire shall be manufactured from high pressure die-cast aluminium. It shall have an LED efficacy of up to 139 luminaire lm/W and will be capable of producing up to 175,000 luminaire lumens at 4000K with a CRI >70. It shall have an asymmetric forward throw optic and is rated at IP66 and IK08.

For IDA Accredited Specification add: The luminaire shall produce a CCT of 2700K with a fixed bracket mount.



Specification

Weight:

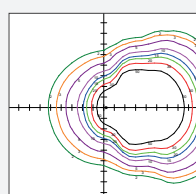
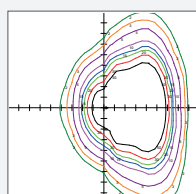
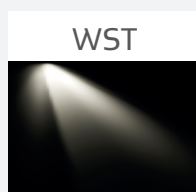
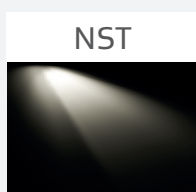
Fitting:	27.5 kg
Driver:	13.0 kg
Fitting with integral driver:	32.5 kg

Windage: 0.19m²

Material: Die-cast Aluminium

Paint Finish: Marine Grade
Powder Coated
Anthracite Grey

Optics

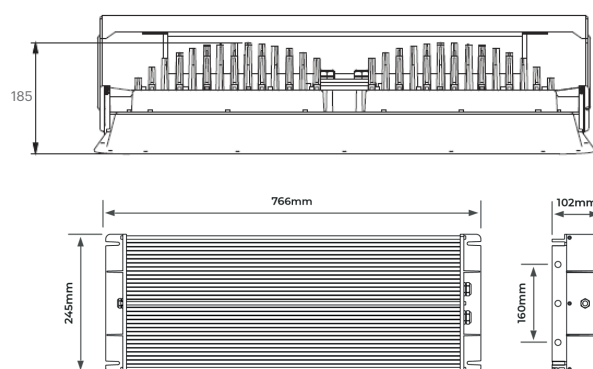
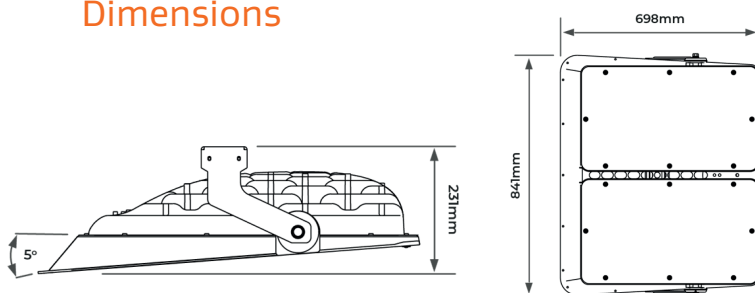


Key Features

- 900W - 1350W
- 118,000 - 175,000 Luminaire Lumens
- Efficacy up to 139lm/W
- 2700K, 4000K
- CRI >70, CRI >80, CRI >90
- Lifetime >100,000hr
- Asymmetrical
- Driver options
- Marine grade paint



Dimensions



All measurements in mm

Code	Power	Luminaire Lumens	Optic	CCT(K)	IP	IK	Weight (kg)		Paint Finish
Separate driver							Fitting	Driver	
LAFL187NRS6WST740	1350W	187000	Wide Short Throw	4000	IP66	IK08	27.5	13.0	Anthracite Grey
LAFL175NRS6NST740	1350W	175000	Narrow Short Throw	4000	IP66	IK08	27.5	13.0	Anthracite Grey
LAFL187FRS6WST740	1350W	187000	Wide Short Throw	4000	IP66	IK08	27.5	13.0	Anthracite Grey
LAFL175FRS6NST740	1350W	175000	Narrow Short Throw	4000	IP66	IK08	27.5	13.0	Anthracite Grey
LAFL125FRS4WST740	900W	125000	Wide Short Throw	4000	IP66	IK08	27.5	13.0	Anthracite Grey
LAFL118FRS4NST740	900W	118000	Narrow Short Throw	4000	IP66	IK08	27.5	13.0	Anthracite Grey
Integral driver									
LAFL125ID4WST740	900W	125000	Wide Short Throw	4000	IP66	IK08	32.5	-	Anthracite Grey
LAFL118ID4NST740	900W	118000	Narrow Short Throw	4000	IP66	IK08	32.5	-	Anthracite Grey
Separate driver									
LAFL179NRS6WST727	1350W	178500	Wide Short Throw	2700	IP66	IK08	27.5	13.0	Anthracite Grey
LAFL167NRS6NST727	1350W	167000	Narrow Short Throw	2700	IP66	IK08	27.5	13.0	Anthracite Grey

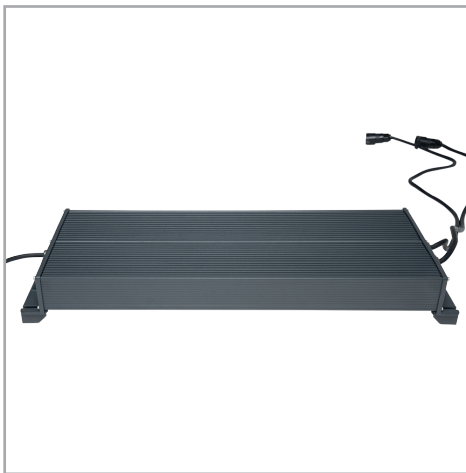


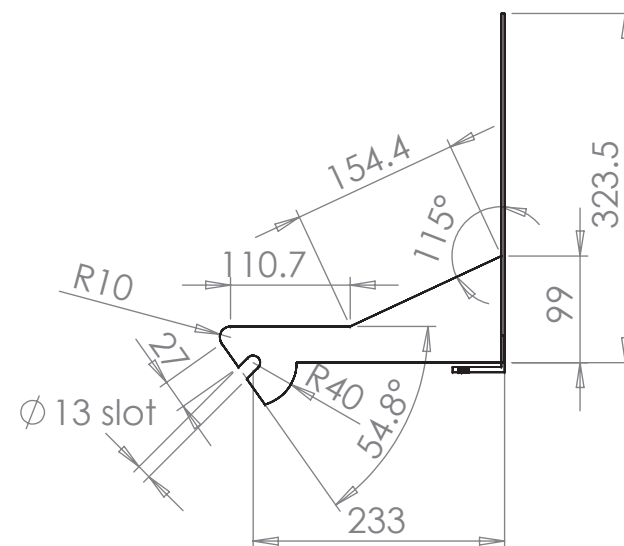
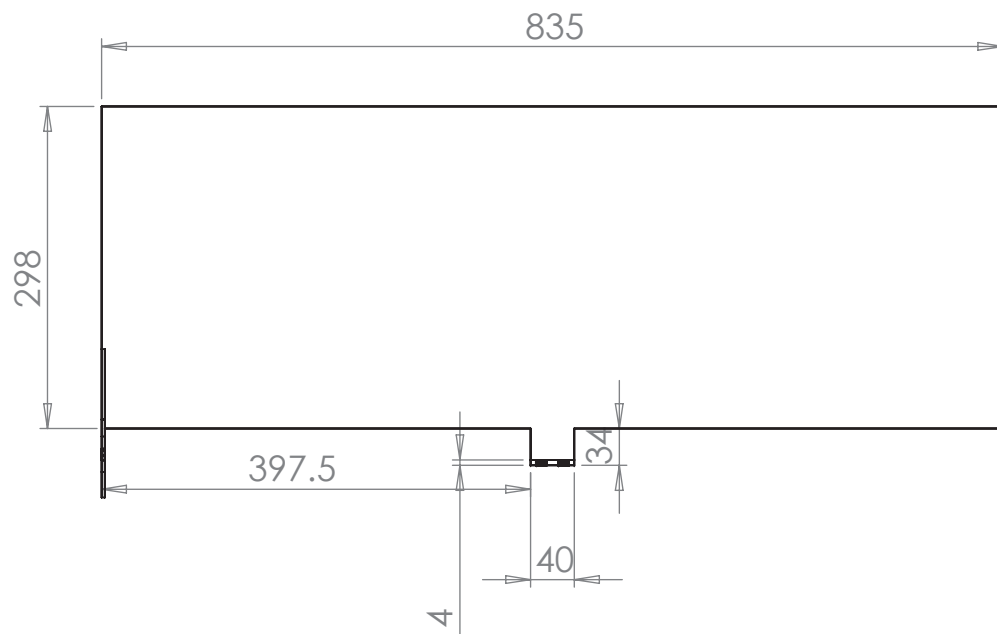
Accessories / Options

- External & integral shields
- Control options
- Dimmable options
- Colour Temperature options

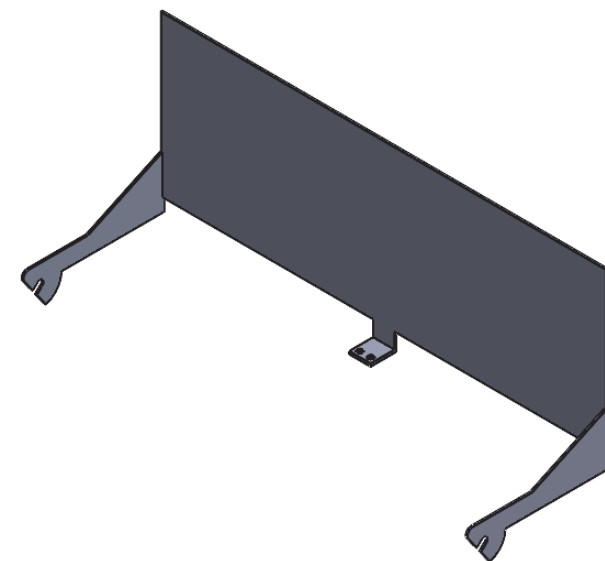
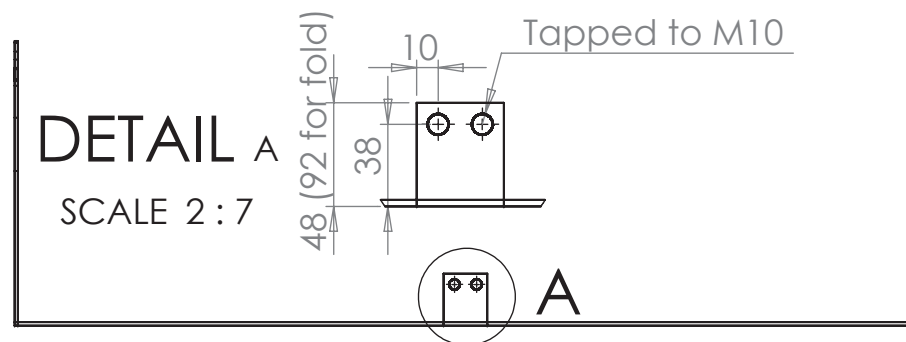
Mounting Options

- Bracket mounted





Tab to be folded back
onto itself to achieve 4mm thickness



RAL7016 Powder coated (matte finish)
Aluminium sheet 2mm thick
Weight 0.8kg

Detail of change:	
Detail of change:	Tab to have fold to achieve more threads on grub screws. (4mm thick)
Detail of change:	JKA 16/12/20 13mm hole to 13mm slot
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Title: AMN BACK SHIELD			
Drawn: JKA	Checked: RH	Drawing No: KL 4922	
Date: 01/02/22		Issue: B	
Material: 2mm thick aluminium			
All dimensions in mm (unless otherwise stated)			



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