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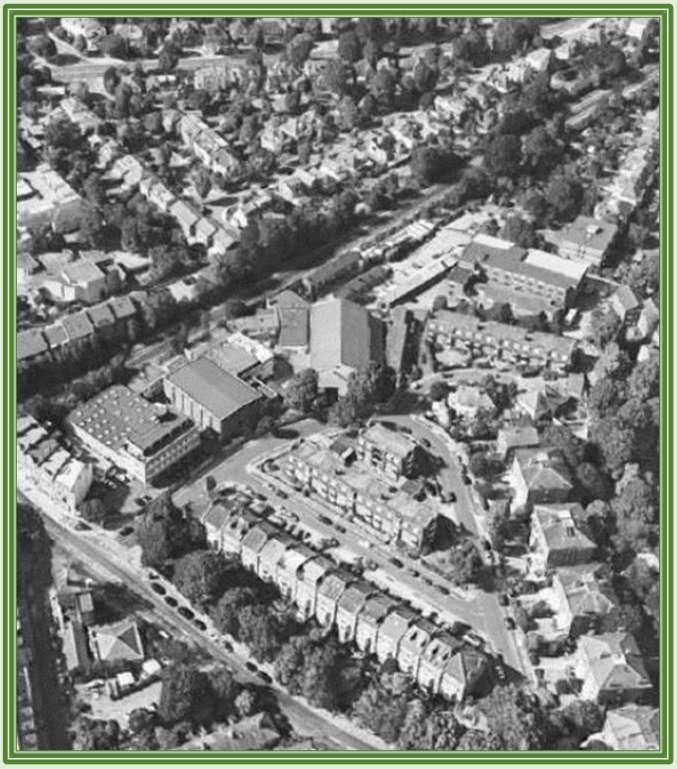
Twickenham Film Studios

Twickenham



Initial Biodiversity Impact Assessment and Biodiversity Enhancement Strategy

January 2021

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Contents

1 Introduction

1.1 Report Rationale

This report has been prepared at the request of Ms. Alexandra Bamford (Boyer Planning) on behalf of Twickenham Film Studios. It relates to the proposed development site located at Twickenham Film Studios, The Barons, Twickenham, London, Greater London, TW1 2AW (Central OS Grid Reference: TQ 16902 74311). For this report, a biodiversity impact assessment calculation has been made. This document should be read in conjunction with the completed excel spreadsheet.

1.2 Site Description

The site is situated in an urban setting in the settlement of Twickenham, London in the county of Greater London. The site contains numerous habitat types. These come in the form of mixed scattered trees, introduced shrub, buildings, bare ground, Climbers on the Ivy. Overgrown Weeds (possibly under bare ground with emergent weeds). Some of these habitats could be utilised by protected species.

Within the wider landscape, further habitats are present. These come in the form of agricultural land, hedgerows, residential structures (and their associated gardens/land) and woodland. The habitats that surround the site also have the potential to be utilised by a variety of protected species.

The proposed development will comprise the erection of a new block ("Block A") at the front corner of the site, together with the partial demolition of Block C and construction of a single-storey extension. The construction of an additional storey and external staircase to Block E, the construction of an additional storey above Block H and the refurbishment and modernisation of all existing blocks within the site.

1.3 Existing Habitats

The table below outlines the existing site status.

On-site Habitats

Habitat Description	Habitat Area (ha)	Distinctiveness	Score	Condition	Score	Habitats to be Retained (ha)		
						No Change	Enhanced	Lost*
Developed land; sealed surface	0.92	Very Low	0	N/A	0	0.9	0	0.02
Street Trees	0.033	Low	2	Moderate	2	0.033	0	0
Introduced Shrub	0.0048	Low	2	Fairly good	2.5	0.0048	0	0
TOTALS:	0.96					0.94	0	0.02

*Lost habitats are rounded to the nearest 2 decimal place.

Based on the above information, the on-site habitat biodiversity value is calculated at **0.16.**

Hedgerows

No Hedgerows are present on site.

1.4 Proposed Habitats

The tables below summarises the habitats of the new development, along with its target condition. **Please note** that this is based on the outline planning. The exact extent of habitats has not been finalised.

On-site Habitats

Habitat Description	Habitat Area (ha)	Target Distinctiveness	Score	Target Condition	Score	Time Till Target Condition		Difficulty of Creation		Habitat Biodiversity Value
						Time (years)	Score	Difficulty	Score	
Street Trees	0.027	Low	2	Moderate	2	27	0.382	Low	1	0.04
Introduced Shrub	0.019	Low	2	Good	3	1	1	Low	1	0.11

The above habitats combained with the remaining habitats, result in a Habitat Mitigation Score of **0.31**.

Hedgrows

No hedgerows have been proposed

1.5 Habitat Mitigation Score

The habitat mitigation score for the site is calculated at **+0.15**, with an anticipated Gain of **96.98%** in biodiversity.

2 Recommendations

2.1 Habitats

The following is comprised of existing and proposed habitats taken from the draft site plans, and the proposed enhancements to ensure a positive Biodiversity Impact Assessment (BIA) score. The BIA calculator for this development is submitted separately. The initial score without enhancements resulted in a gain of **0.15** habitat units based on the preliminary plans 18.141.100.3 revision R0 by Hallaway.

No further recommendations are made in regard to habitats.

2.2 Species Specific Enhancements

2.2.1 Bats

The site will need to incorporate four Eco Bat Boxes. The location of which are shown on the new habitat map in **Appendix C**. These features should avoid any artificial lighting.

The site can also be enhanced by introducing a bat friendly planting scheme in the soft landscaping plan. The table below outlines species recommended by the Bat Conservation Trust, all of which could be incorporated into the site post development.

Flowers for borders	Trees, shrubs & climbers
Aubretia	Bramble
Candytuft	Buddleia
Cherry pie	Common alder
Corncockle	Dogrose
Corn marigold	Elder
Corn poppy	English oak
Echniacea	Gorse
English bluebell	Guelder rose
Evening primrose	Hawthorn
Field poppies	Hazel
Honesty	Honeysuckle (native)
Ice plant ‘pink lady’	Hornbeam
Knapweed	Ivy
Mallow	Jasmine
Mexican aster	Pussy willow
Michaelmas daisy	Rowan
Night-scented stock	Silver birch
Ox-eye daisy	**Herbs**
Phacelia	Angelica
Poached egg plant	Bergamot
Primrose	Borage
Red campion	Coriander
Red valerian	English marigolds
Scabious	Fennel
St. John’s Wort	Feverfew
Sweet William	Hyssop
Tobacco plant	Lavenders
Verbena	Lemon balm
Wallflowers	Marjoram
Wood forget-me-not	Rosemary
Yarrow	Sweet Cicely
	Thyme

Artificial lighting **must avoid** the field boundary hedgerows and trees. If it is necessary to include artificial lighting in areas overlooking both hedgerows and trees, then this must include sensors to be triggered by larger bodies only. An artificial lighting plan should be drawn up to illustrate the spill of light. This is to include the proposed security lighting on the residential dwellings as well as all street lighting. This document should then be approved by a licenced bat ecologist. More information on bats and artificial lighting can be found within **Appendix D**.

2.2.2 Birds

The site should be enhanced for birds by installing a variety of bird boxes on site, such as an Apex Bird Box and an Apex Robin Box. Additional compensation, enhancement and mitigation measures will be devised following the additional survey effort.

2.2.3 Hedgehogs

The site should be enhanced for the local hedgehog population by installing at least 2 Eco Hedgehog Nest Boxes around the site. This will create more opportunities for hedgehogs within the local landscape.

2.2.4 Invertebrates

At present, the site is not considered to be of any importance to local invertebrate populations. In conjunction with the habitat creation, it is recommended that at least 2 Bumblebee Boxes are incorporated into the scheme, along with at least 2 Bug Hotels. This will enhance the site for the local invertebrate populations, which will thus attract species further up in the trophic level.

The site would benefit from plants rich in a pollen source throughout the year to enhance the area for the potential of bees. In order to ensure a nectar source year-round it is important to use plants that are relevant to the season. The table below includes just a few examples of which plants thrive through the different seasons to ensure a bee friendly area.

SPRING	SUMMER	AUTUMN	WINTER
• Flowering Cherry • Crab Apple • Hawthorn • Bugle • Daffodils • Pulmonaria • Sea Thrift • Alliums • Grape Hyacinth	• Lavender • Agastache • *Erysimum* 'Bowles' Mauve' • Scabious • Comfrey • Foxgloves • Cardoon • Echinops	• Sedums • Single-flowered Dahlias • *Verbena bonariensis* • Japanese Anemones • Autumn Asters • *Actaea simplex*	• Snowdrops, • Winter Aconites, • Ivy, • Crocuses, • Winter Honeysuckle, • Hellebores, • Mahonia, • *Clematis cirrhosa*

3 References

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4. Appendices

Appendix A: Site Plans

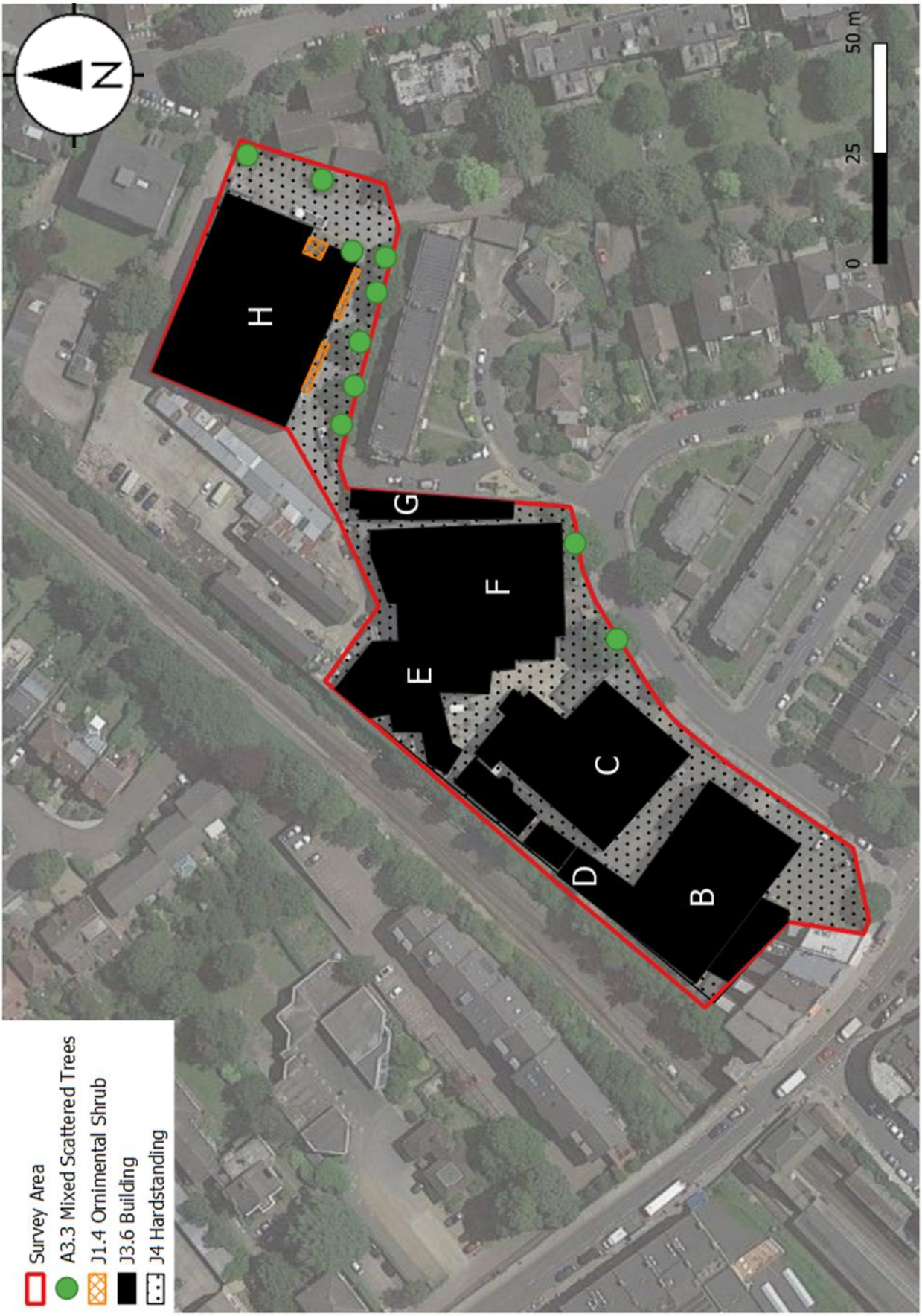
Appendix B: Phase 1 Habitat Map

Appendix C: New Habitat Maps

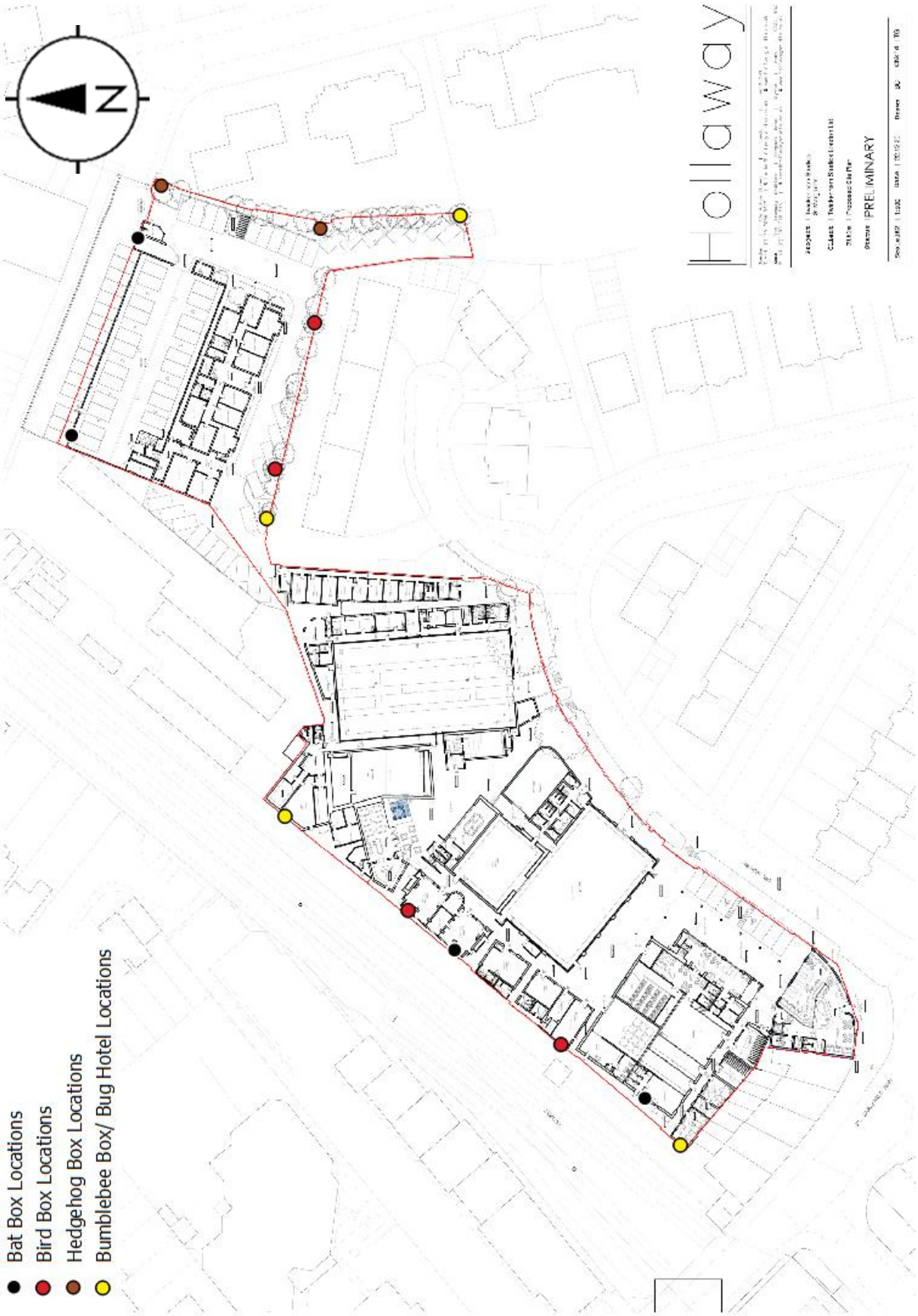
Appendix D: Bat and Artificial Light

Appendix A: Site Plans

Appendix B: Phase 1 Habitat Map



Appendix C: New Habitat Maps



Appendix D: Bats and Artificial Light

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotid bats (Myotis spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

- To introduce lighting curfews or use of PIR sensors.

  Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

- To consider no lighting solutions where possible.

  Options such as white lining, good signage and LED cats eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

- To use only high pressure sodium or warm white LED lamps where possible.

  High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

- To minimise the spread of light.

  The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

- To consider the height of the lighting column.

  While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

- To avoid reflective surfaces below lights.

  The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.